green leather back & carmine cloth sides

QK1
G295
1854

C. J. Braine
Abbotsley
Newton Abbot

THE

GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE

FOR

1854.

LONDON:
PUBLISHED FOR THE PROPRIETORS,
AT 5, UPPER WELLINGTON STREET, COVENT GARDEN.

1854.

INDEX OF CONTENTS

TO THE

GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE,

FOR 1854.

A.

ABELIA uniflora, 662
Abies, Douglasi, timber of, 163, 237; Kæmpferi, 255, 455; Cilicia, 387
Acacias, 214; list of, 215; hardiness of, 595
Achimenes, culture of, 517
Acre, seed for an, 244, 541
Acrophyllum venosum, 645
Adamia versicolor, 404
Adams' Globe prepared for Man—a Guide to Geology, rev., 550
Æchmea fulgens, 741
Aeration, 19, 38, 53, 69, 357, 389, 405, 420, 437, 485; and ventilation, 501
Agents, land, 57, 60, 155
Ageratum mexicanum, 6
Agriculture, revolution in, 9; Gisborne's Essays on, rev., 13; Tullian, 35; Irish, 44, 569; and science, 75, 107, 123; and commerce, 171; and geology, 171; manures, advantageous to, 172; progress of, 171, 185, 204; stages of, 201; near Liverpool, 274; *v.* manufacture, 293; for the Million, rev., 203; products of, in the Crystal Palace, 345, 457; theory of, 459; steam, 457, 505, 508, 522, 796, 812; Lois-Weedon, 307, 377, 427, 521, 602, 804; Dr. Daubeny on ditto, 827, 842; Princetown, 650; Dartmoor, 188, 224, 364, 650, 667; Professorship of, in Edinburgh, 729; produce, increase of, 730; possibilities in, 730; in Ayrshire, 633, 697, 763; Mr. Mechi on British, 793, 796, 811; good, 793; capital required in, 796
Agricultural buildings, Lord Radnor's, 188; construction and arrangement of, 556
Agricultural chemistry, 292, 328, 410, 420, 492, 539, 554
Agricultural College, 425; experiments in the garden of, 43, 138, 222, 306, 619, 698, 714; and diplomas, 57, 123; sessional examinations, 410, 426, 539, 554, 571, 586
Agricultural diplomas, 57, 123
Agricultural education, 441, 442, 489, 491, 573, 684, 699, 714; French, 603; in Ireland, 700
Agricultural implements, 226, 395; hand hoes, 40; prizes for, at the Agricultural Meeting, 108; improved rollers, 141; root graters, 10, 107, 138; Samuelson's digger, 363
Agricultural labour, Morrison on, rev., 287: skilled, 604; ditto and moral, 620; rates of payment for, 669; economy in, 731, 746
Agricultural labourers, 171, 187, 525; education of, 60; food for, 28, 36, 43, 53, 86, 93, 101, 166, 196; relieving, 75, 100, 222; cottages for, 258; cookery of, 36, 196, 270; friends, 363, friend societies, 377, 379, 395, 537; shows, 633
Agricultural machinery, 13, 226; pulping, 138; stacking, 156; rotatory forking, 225; threshing, 226; reaping, 245, 413, 570, 617, 682
Agricultural meteorology, 155, 170, 217, 243, 259, 275, 290, 347, 363, 460; Martin's pamphlet on, 460
Agricultural statistics, 12, 41, 44, 74, 137, 153, 183, 205, 221, 226, 241, 325, 328, 378, 420, 492, 681, 701, 713, 732, 763; Canadian, 90; Levi on, 205, 226; Caird on, 226
Agricultural tour in Ireland, Martin Doyle's, 222, 326, 427, 505, 587
Air, importance of, to plants, 19
Algiers, Orange grounds of Blidah in, 420
Alloplectus Schlimii, 183; chrysanthus, 551
Allosorus flexuosus, 219
Allotment competition, Tortworth, 666
Almanac, Johnson's, Trade Directory of, 22; Scottish Agricultural, rev., 108, 708; Farm, rev., 749
Amaryllis, 405; treatment of, 696
Amateur Gardeners' Year Book, rev., 534
America, monies of, 6; a field for gardeners, 117, 182; shrubs in, 270; fungi of, 286; Osage Orange hedges in, 299; way of getting seedling prizes in, 551; pork manufacture in, 586; Rose hedges in, 583
American plants, at Regent's Park, 391; Waterer's Catalogue of, noticed, 839
American Birch, 792
American blight, 824
American Oaks, monograph of tropical, 504
American, Oak-gall Sphinx, 757
Amherstia nobilis, at Ealing Park, 87
Ammonia, purposes of in vegetable economy, 11; formation of, 59; uses of, 139, 243; origin of, 203; sources of, 427; from coal, 444; and nitric acid in rain water, 778
Anacharis alsinastrum, 406, 693, 724, 742
Analysis of Coveney's economical manure, 428
Anbury, 172, 538, 555, 571, 572, 636, 649, 665, 667, 683, 700, 747, 762
Andrews Modern Husbandry, rev., 189
Anemone japonica, 149
Angelonia grandiflora, 788
Anguloa Ruckeri, 271
Anigozanthos rufa, 532
Animals, Leidy's Flora within Living, rev., 218; indications of age in, 330, 348; Simonds on, rev., 588; cod-liver oil for, 412
Ansted's Notes on Geology, &c., rev., 662
Antipodes, memoranda from, 320, 755, 756
Antirrhinums, to winter, 710
Ants, to exterminate, 133, 150, 165
Aotus gracillima, 420
Aphelandra lateritia, 239; quarrosa Leopoldi, 303
Aphides, to kill, 552; on bedding plants, 517
Aphis blight and the weather, 829
Aphis rumicis, 550
Apples, storing of, 320; ditto in sawdust, 117; for west walls, 152; second crop, 742
Apricot, Musch Musch, 269; Japanese, 534; for a north-west aspect, 728
Aquarium, Crystal Palace, 344; Gosse's, rev., 422; artificial sea-water for, 661; experiments in a fresh water, 677
Aquatics, 518
Aquilegia glandulosa, 341; californica, 836
Aralia japonica, 760, 808
Araucarias, on chalk, 614; excelsa, 725
Arbutuses, hardiness of, 595
Arceuthos drupacea, 535
Archer's Economic Botany noticed, 791, 806
Ardisia crenulata, 132
Armagh Palace Farm, 620
Arnott's stoves, brick, 680
Aroideæ, hardy, 120
Artists, advice to, 220
Ash trees, in water, 165, 677
Asia Minor, trees of, 387
Aslit's Decimal Coinage, rev., 71
Asparagus, to plant, 760
Asparagus Kale, 536
Association, British, 661, 667
Auricula, treatment of, 39, 135; insects, 760
Australia, vineyards of, 756; wines of, 320, 755; state of horticulture in, 822
Ayrshire, Grass crops in, 633, 697; high farming in, 763
Azaleas, to force, 55

B.

BABINGTONIA camphorosmæ, 773
Bacon, to cure, 223
Balsamina latifolia alba, 21
Balsams, treatment of, 200
Bamboos, hardiness of, 595
Banks, savings, 779; scope for ditto, 618, 635; penny, 715, 747
Bark, management of, 659; Oak, 678, 694
Barley, harvest of 1853, 27; foreign, 156; sowing, 187; returns respecting the state of, 506; Peruvian, 588; averages, 667
Barns, Dutch, 107
Barometers, 56
Basing Park, noticed, 662
Bath Agri. Society's Journal, 173
Beans, harvest of 1853, 27; manure for, 93; returns respecting the state of, 506
Bean straw, for cattle feeding, 202; for pigs, 795
Beef, comparison of measured and actual weights of Smithfield, 11
Beehives, 632
Beer, economical, 460
Beer on Orchids, rev., 679
Bees, 134, 181, 197, 358; queen, 302
Beet, to store, 838
Beetle trap, 152
Begonia fuchsioides, 452; opuliflora, 567
Benthamia fragifera, 595, 694
Bentley Priory, noticed, 439
Berberies, hardiness of, 595
Bicton, winter at, 437, 501
Biddulph Grange, effects of frost at, 343
Billington (Mr.) and Chopwell Wood, 237; pamphlet on Royal Forests, 195
Birch, American, 792
Birch weevil, 101
Birds, British, 156; the woodcock, 389
Blidah, Orange grounds of, 420
Blight, Wheat, 19, 20, 290, 474, 505, 585, 588, 636; American, 824; Hop, 425, 429, 595, 611, 614, 829
Blight composition, M'Adam's, 324, 342; Page's, 565
Bochmeria nivea, 218
Bohn's (Mr.) garden, noticed, 487
Bones, composition of, 410; on Grass land, 765
Books, veterinary, 557; of agricultural instruction, 574, 750; dairy and poultry, 637
BOOKS NOTICED: Wilkinson's Ancient Egyptians, 6; Twining's letters on the Working Classes of Nassau, 6; Foreign Tour of Messrs. Brown, Jones, and Robinson, 7; Deane and Dray's Almanac, 7; Gisborne's Essays on Agriculture, 13; Grieve's Farmer's Assistant, 13; Rendle's Price Current, 23; Beauties of Byron, 23; English Cyclopædia, 23; Once upon a Time, 23; Jesse's Country Life, 39; Phillips' Guide to Geology, 54; Agricultural Society's Journal, 61, 444; Cuthill's Essay on the Potato, 61; Sunlight through Mist, 55; Lindley's lectures on the Symmetry of Vegetation, 55; Aslit's Decimal Coinage, 71; Weddell's Bolivia, &c., 86; Bon Jardinier for 1854, 87; Gorrie's Illustrations of Scripture from Botanical Science, 87; White's Selborne, 87; Paul's Supplement to Rose Garden, 102; Howitt's Pictorial Calendar of the Seasons, 102; London Corporation Coal Tax, 103; Collins on the Mangold Wurzel, 108; Scottish Agriculturist's Almanac, 108, 780; Payen on Food, 119; ditto on Diseases, 199; Black's Waverley Novels, 119; Reaping Machine Patents, 124; Lindley's School Botany, 135; Dove on Heat, 140; Hooker's Himalayan Journals, 150; do. Icones Plantarum, 255, 359; do. Flora of New Zealand, 287, 487; A visit to Belgrade, 167; Lance on Assurances, 167; Johnston's Chemistry of Common Life, 167, 375; Macaulay's Essays, 167, 255; Burn's Colonist's Handbook of Mechanical Arts, 167; Bath Agricultural Journal, 173; Robin on Parasites, 183; Dartmoor, Guide to, 188; Andrews Modern Husbandry, 189; Billington, How the Royal Forests have been Ruined, 195; Berkeley on the Potato Disease, 213; Leidy's Flora within Living Animals, 218, 582; Eaton on Pigeons, 226; Thomson's Cyclopædia of Chemistry, 239; Sutton's Instructions on the Cultivation of Seeds, 244; Hansard's Strikes and Lockouts, 219; Stainton's Entomologist's Companion, 255; Neill's Fruit, Flower, and Kitchen Garden, 255; Seeman's Botany of H.M.S. Herald, 255, 487; Hanstein's Structure of Bark, 255; Dickinson's Flora of Liverpool, 270; A Plain and Easy Account of British Ferns, 270; Schacht on Textile Materials, 270; ditto on the Functions of Cells, &c., 486; Synopsis Plantarum glumacearum, 271; Morrison on Labour and Capital, 287; Glenny's Farming for the Million, 293; Simmond's Commercial Products of the Vegetable Kingdom, 300; De Bary on the Rust of Corn, &c., 303; Micrographic Dictionary, 323, 375, 455, 631; Woodward's History of Wales, 331; Forester's Essay on Portugal, 343; Lund's Geometry, 343; Pamphlet on Canada, its Condition, &c., 355; Brewster's More Worlds than One, 359; Rivers' Orchard-house and Rose Amateurs' Guide, 359; ditto Miniature Fruit Garden, 775; Tanner on the Cultivation of Dartmoor, 364; Spooner on Root Crops, 364; Doyle's Domestic Poultry, 364; Young on the Salmon, 375; Knight's Old Printer and Modern Press, 375; Hopkins' Theory of Storms, 391; Kennedy's Correspondence with Lord John Russell, 403; Bradbury and Evans' Handbooks to the Crystal Palace, 407, 615; Horton's Russia, 407; Harvey's Seaside Book, 422; Gosse's Aquarium, 422; Hogg on the Microscope, 423; Robertson's Handbook to the Peak of Derbyshire, 439; Sharp on Fibrous Substances, 439; Swete's Flora Bristoliensis, 455; Pescatorea, 455; Thompson's Wanderings among Wild Flowers, 455; Pictures from the East, 455; Martin's Agricultural Meteorology, 461; Highland Society's Journal of Agriculture, 492; Sowerby's British Ferns, 502, 631; Piercy's Popular Tales, 502; Murchison's Siluria, 518; Burgess's Amateur Gardeners' Year Book, 534; Bryologia javanica, 535; Tuinbouw Flora, 535; Wakefield Farmers' Club Report, 540; Adams' Globe prepared for Man—a Guide to Geology, 550; Tegetmeier on Profitable Poultry, 556; Knox on the Cholera-fly, 563; Soyer's Cookery, 566; Catlow's Conchology, 566; Simonds on the Age of Cattle, 588; Wilson's Report of the New York Industrial Exhibition, 605; Phillips' Guide to the Crystal Palace, 615; Census of Great Britain in 1851, 630; Brande on the Arts connected with Organic Chemistry, 646; Ansted's Scenery, Science, and Art, 662; Thomas on Farm Implements, &c., 668; Mactaggart on the Potato Disease, 675; Duncan's History of Russia, 679; Beer on Orchids, 679; Schiller's Catalogue of Orchids, 711; Stepping Stone to Animal and Vegetable Physiology, 711; A Visit to the Seat of War, 711; Frazer's Handbook for Ireland, 711; Meall's Moubray's Treatise on Poultry, 717; Burn on the Steam Engine, 732; Wollaston's Insecta Maderensia, 742; Johnson and Shaw's Farm Almanac, 749; Elliot's Fruit Book, 759; Stanford's Map of Sebastopol, 775; Archer's Œconomic Botany, 791, 806; Stark's British Mosses, 791; Page's Text Book of Geology, 791; Piscator's Choice and Cookery of Fish, 791; Village Development, 807; Rees' Diary, 807; Galbraith and Haughton's Manual of Mechanics, &c., 822; Reichenbach's Xenia Orchidacea, 822; Sowerby's Conchology, 839; Shortland's Traditions and Superstitions of the New Zealanders, 839; Waterer's Catalogue of American Plants, 839; Talpa, or Chronicles of a Clay Farm, 845; miscellaneous, 839
Botanical Gardens, Dublin, 103; Palermo, 135; Kew, 151, 287; Regent's Park, 271; of the Agricultural College, experiments in, 43, 108, 222, 306; Helsingfors, 440; Ceylon, 563; Glasgow, 840
Botanical nomenclature, 38, 533
Botany, Dr. Lindley's School, 135; Seeman's, of H.M.S. Herald, rev., 255, 487; Archer's Œconomic, 791, 806
Botrytis fruit, 724
Botteri's (M.), arrival at Vera Cruz, 531
Bran, Wheat, 331
Brande on the Arts connected with Organic Chemistry, rev., 647
Brassavola cucullata, 758
Bread, price of, 44, 139; economical, 108; cheap, 122, 123; ditto, whole flour, 243; Wheaten, 187; making, 276; and paper, 276
Brewing, porter, 701
Brewster's More Worlds than One, rev., 359
British Association, 661, 677
Broccoli, Bates's, 86; wintering, 117
Brown (Mr.) appointment to the forest of Dean, 132; presentation to, 184
Brussels, effects of the frost at, 286; climate of, 774
Brussels Sprouts, to top, 568; from English seed, 774
Bryologia javanica, rev., 535
Bugs, cure for, 678; house, to kill, 728
Buildings, damp, 29; covered rick, 60, 76, 123; farm, Lord Radnor's, 188; construction and arrangement of do., 556, 828; damp walls in, 518, 533, 550, 598; cure for do., 491
Bull, Lord Ducie's Duke of Gloucester, 793
Burgess's Amateur's Gardeners' Year Book, rev., 534
Burn on the Steam Engine, rev., 732
Butter, rancid, 349, 750; potted, 461

C.

CABBAGES, culture of, 599, 614
Calceolarias, 23, 103, 823; specimen, 119; culture of, 343; cross breeding, 776
Calla æthiopica, 200, 392
Callistemons, hardiness of, 595
Calyptraria hæmantha, 566
Camellias, to propagate, 551; imported, 760
Canada, agricultural statistics of, 90; condition of, 362; resources of, 692; wages in, 811
Capsicums, to grind, 504
Carnations, tree, 71, 323; to pot, 71; soil for, 240, 488; to layer, 583; to winter, 599, 760; running of, 839
Carrots, culture of, 244; finger and toes in, 538, 555, 571, 572, 636, 649, 665, 667, 683, 700, 747, 762; crop, 733
Caterpillars, to kill, 437; Gooseberry, 453, 469, 485; vegetable, 839
Catlow's (Mrs.) Conchology, rev., 566
Cattle, weights of, 10, 11, 26, 105, 117; does live pay? 12, 44, 76; to measure, 26; feeding, 123, 202, 244, 362, 781; Grass do., 602; profitableness of do., 58, 61, 107; food for, 813; consumption of, 525; prepared for. 569; spring do., 573; experiments with feeding of, with fermented, 277; gorse for, 44, 379, 428; Rape-cake for, 634, 651, 747; short-horn, 260; sale of do., 364, 620; pedigrees of do., 793, 826, 844; ages of, 330, 348, 379; Simonds on do., rev., 588; fat, 26; cod-liver oil for do., 412; at the Agricultural Society's meeting, 476; at Dublin, 260; pools, 491; grazing, 540; for a farm of 150 acres, 557; farming, 571; breeding, 715; report of, at the Smithfield Club, 794; do., at the Midland Counties, 810
Cattleya labiata, fine, 711; monstrous, 804
Ceanothus, hardiness of, 595
Cedar of Lebanon wood, 116, 118
Cedar wood of the ancients, 148, 164, 182, 214
Cells, Schacht on the functions of, rev., 486
Cement, 187
Census of Great Britain in 1851, rev., 630
Ceratochloa unioloides, 758
Cercis japonica, 183
Cereus, night blowing, 320, 373
Cerochilus rubens, 87
Ceropegia Thwaitesi, 70
Cesspools, to disinfect, 645
Ceylon, poultry of, 444; Botanic Garden, 563
Chætogastra Lindeniana, 582
Chalk, Araucarias on, 614
Champion, death of Col., 819
Charcoal, a deodoriser, 393, 395; peat do. Prof. Way on, 395, 503
Cheese, false colouring of, 292; making, Gloucester, 698; Cheddar ditto, 714; Wiltshire ditto, 761
Chemistry, Thomson's Cyclopædia of, rev., 239; analytical, 292; agricultural, 328, 410, 427, 492, 439, 554; Brande on, rev., 646
Chesnut (Castanea vesca), 712; horse, 360; hardiness of, 691
Cherry, Merry, 582
China, spring flowers in, 54; grass, 218
China Rose, introduction of, 344
Chinese, note book, 54, 217, 533, 758; Yams, as food, 467, 486, 820; Indigo, a new kind discovered, 217; timber, 598; fragrant ditto, 614; Primroses, 743; entomologists, 758; economy of manure, 845
Chiswick, gardens at noticed, 71, 135, 199, 287, 359, 423, 503, 582, 647, 711, 775; fall of rain at, for the years 1841 to 1853, 7; effects of the frost at, 287; fêtes at, 317, 339, 371, 451; reports of ditto, 321, 374, 453; list of awards at ditto for May, 316; for June, 370; for July, 450; rumours respecting, 499; temperature at, and at Stevenage, 790
Cholera and fungi, 627
Cholera fly, 563, 596
Chopwell wood, 709; and Mr. Billington, 237
Chrysanthemums, 219, 271, 455; lists of, 726, 775; Pompone, 743; new, 759; Mr. Salter's, 759; at Stoke Newington, 776, 791
Churns, improvement in, 365
Cider, false colouring of, 292
Cinerarias, culture of, 471, 679, 760, 791; large, 776
Citronworts, 583
Civilisation, benefits of, 668
Clay, burnt, a material for walks, 117, 134, 150
Clematis, azurea grandiflora, 72; patens, 183; hardiness of, 595
Clerodendron splendens, 165; Bungei, 376, 518; fœtidum, 583, 549
Clianthus puniceus, 101
Climate, and Gulf Stream, 42; of the West of England, 701; of the Crimea, 755, 771, 802; of Brussels, 774; of St. Malo, 774
Climbers, greenhouse, 536, 824
Clover and Vetches, 138; Italian, 585
Clubs, benefit, 377, 379, 395, 537, 715
Coal, ammonia from, 444; substitutes for, 822; amount of ash in, 829
Coal tax, London corporation, rev., 103
Cock-roach parasite, 533
Cod-liver oil, for fattening animals, 412
Coinage, Aslet's Decimal, rev., 71
College, Cirencester Agricultural, 425; experiments in the garden of, 43, 138, 222, 306, 619, 698, 714; and diplomas, 57, 123; sessional examinations, 410, 426, 539, 554, 571, 586
Collins on Mangold Wurzel, rev., 108
Collodion, applied to cuttings, 84, 131, 166, 254; spoiled, 342, 357
Combretum purpureum, 693
Commerce and agriculture, 171
Conchology, Mrs. Catlow's, rev., 566; Sowerby's, rev., 839
Concrete, for walks, 216, 254
Conifers, 256; large Himalayan, 70; timber, of 118, 163, 181, 198, 237; seeds of, 181, 240, 472; to sow ditto, 240; effects of winter on, 286, 469, 579, 595, 614, 719, 741; affected by frost 302; at Bicton, 437.
Conoclinium ianthemum, 181
Constantinople, Radishes at, 134
Conway (Mrs.), Nursery, 535
Cookery, cottage, 36, 196, 270; stoves for, 38; Soyer's, rev., 566
Corn, machine for stacking, 156; new treatment of, 293; rust of, by Dr. De Bary, 303; saving damp, 540; crops, productiveness of, 698; averages, 92, 106, 667; market, 713; price of, 713; ditto in 1844, 54, 718; prospects, 748; waste in, 762
ru salad, 117
Cottage gardens, Scotch, 532
Cottagers, stoves, 22, 38; cookery, 36, 196, 270; food, 36, 53, 86, 93, 101, 166, 196, 427; relieving, 70, 100, 222; Cabbages for, 599, 613
Cottages, labourers', 258
Cotton, uses of gun, 84
Cotton mite, 318
Cotyledon umbilicus, 534
Coutarea diervilloides, 551
Covering material, 645, 664, 693, 744, 773; mode of making straw, 791
Cows, profitable, 652; extraordinary, 700; food of, 732; to put a, dry, 349, 365
Crab, fiddler, 422
Cratæguses, hardiness of, 595
Cream, good, in severe weather, 44
Cricket trap, 600
Crimea, a collector in the, 581; winter in the, 755, 771, 803; vegetation of the, 822
Crocuses and mice, 806, 822
Crops, returns of, 25, 27, 28, 171; ditto respecting the state of, 505, 506, 537, 555; green, nitrogen in, 186, 261; rotation of, 244, 261, 490; root, to sow, 325; ditto fingers and toes in, 127, 538, 555, 571, 572, 636, 649, 665, 667, 683, 700, 747, 762; Spooner on ditto, rev., 364; culinary, 405; to interline, 410; in Somerset and York, 411; fruit, injury done to, 267; ditto in France, 453, 582; Wheat, in successive years, 442; thin seeding in, 103, 260, 363, 427, 491, 588, 601, 715, 748; Shallots, large, 501; in Holstein, 523; in Sussex, 540; Grass, Mr. Mechi's, 572, 621; ditto in Scotland, 633, 697, 684; very fine Mangold Wurzel, 573; Flax of 1854, 606; cause of the late good, 620; Ayrshire hay, 666, 667; corn, productiveness of, 698; Carrot, 733; to increase, 729; of Swedes, 1853, 798; in East Lothian, 364
Cropping, green, 276
Crystal Palace, grounds of, 219; plants for, 236; aquariums, 344; agricultural products in, 345, 457; Handbooks, rev., 407; Phillips' Guide, rev., 615
Cucumbers, 549; winter, 38, 53; disease, 356
Cucumber pit, dung, 198
Cultivation, deep, 5; schemes of, 186; steam, 457, 505, 508, 522, 796, 812
Cupressus funebris, 134; torulosa, wood of, 164; Lamberti or macrocarpa, 789, 806
Currants for walls, 24
Cuttings, collodion applied to, 84, 131, 166, 254; potatoed, 254, 694; to strike, 453, 533; Roses from, 598, 696; Hollyhock, 743
Cutting pot, material for, 421
Cymbidium pendulum, 287
Cypresses, Eastern, 166; hardiness of, 579
Cypripedium insigne and venustum, 69; villosum, 135
Cyrtoceras reflexum, 615
Cytisuses, 388

D.

DACRIDIUM Franklini, 165, 238
Dahlia, culture of, 391, 551; seedling, 631; roots, to winter, 743
Dairy produce, 458; stock, 371, 602; book, 637; statistics, 682
Daphnes, hardiness of, 644
Dartmoor, Guide to the Eastern Escarpment of, 188; sheep feeding on, 224; Tanner on the cultivation of, 364; Prince Hall Estate at, 650; farming, 667
Delamere forest, &c , 709
Dendrobium Cymbidioides, 23; macrophyllum, 219
Deodar, 53; timber, 20, 115, 118, 164, 181, 237; seeds, 429; hardiness of, 579
Deodorising substances, 393, 395
Desfontainia spinosa, 287, 630
Deutzia, scabra, 320; gracilis, 469; hardiness of, 644
Dew, remarks on, 391
Dichorizandra picta, 7
Didymocarpus Humboldtiana, 71
Diervilla Middendorfiana, 756
Digger, Samuelson's, 363
Dioscorea Batatas, 467, 808, 820, 838
Diotostemon Hookeri, 679
Dipladenia splendens, 37
Diplomas, agricultural, 57, 123
Disa grandiflora, 483
Diseases of plants (see Pathology); Vine, 87, 164, 180, 419; in lambs, 187, 203; Payen on, rev., 199; of sheep, 203; Wheat, 199; Cucumber, 356; Melon, 356, 437; Hop, 425, 429, 595, 611, 614; Haricot, 437; Lettuce, 437; finger and toe, 172, 538, 555, 571, 572, 636, 649, 665, 667, 683, 700, 742, 762; poultry, 717
Dogs, mad, 204, 226, 259
Dove on Heat, rev., 140
Doyle's tour in Ireland, 322, 326, 427, 505, 587
Dracæna indivisa, hardiness of, 644
Drainage, 630; trunk, 42; arterial, 58, 273, 290, 713, 761; up-and-down, 76; effects of, 273; bill, 537; companies, 555; Mr. B. Denton on, 797;
Draining, 203; cross, 12; plough, 12; borrowed money for, 28; woodlands, 23; Cirencester premium for, 60, 75; pasture, 123; Dutch, 202; warning effects of, 325
Drains, 701: stoppage of, 44, 107, 123, 171, 187, 244, 358; underground, for plant-houses, 53; roots in, 76, 339, 358; directions of, 124; plans of, 156
deep, 809
Drill, dry *v.* water, 779
Dropmore, frost at, 341, 371
Dublin Botanic Garden, 103
Dung, pigeons', as manure, 40
Dung pit, Cucumber, 198
Duvauas, 644
Dyer, Love's Practical, rev., 21

E.

EALING PARK, 358: noticed, 55; plants, 184; sale of ditto at, 271; effects of the frost at, 287
East Lothian, crops in, 36 ; wages in, 413; use of portable manures in,
Eaton on Pigeons, rev., 226
Edging shears, 453
Edinburgh, chair of agriculture in, 729
Education, labourers', 60, 714; agricultural, 441, 442, 489, 491, 684, 699; French ditto, 603; in country schools, 573; Irish, 700
Edwardsias, 644
Eggs, vitality of, 364, 396; carriage of, 478, 493, 525, 573; Minasi's artificial incubator, 684; yearly imports of, from 1843 to 1852, 717
Egyptians, Wilkinson's Ancient, rev., 6
Elliot's Fruit Book, rev., 759
Emigrants, Canada for, 355
Entomologists, Chinese, 758
Enville Hall Gardens, 485
Eranthemum pulchellum, 284
Ergot, sphæria from, 515
Erysiphe graminis, 425
Escallonia macrantha, 104; densa, 599; hardiness of, 644
Espaliers, iron, 152; double, 760
Estates, improvement of, 730
Eucalypti, hardiness of, 644, 691
Eugenia, oleoides, 615; Ugni, 644
Euphorbias, out-door, 518
Euphorbia jacquiniflora, 268
Ewes, management of, 155; and lambs, 242, 258, 275
Exhibition, Russian horticultural, 99; Pelargoniums for, 119; floral, at Melbourne, New South Wales, 518; Paris, 444, 521; Hollyhock, 567; educational, Mr. Morton's lecture at, 573; Professor Wilson's Report of the New York, rev., 695
Experiments at the Agricultural College's Garden, 43, 138, 222, 306, 619, 698, 714; with Peruvian guano, 13; with feeding of cattle with fermented food, 277; on weeding, 277; in a fresh water aquarium, 677; farm, 778
Eyebright, 678

F.

FAGUS Cunninghami, 644
Fallows, grain, 59
Farm almanac, rev., 749
Farm, balance-sheet of a South Hants, 289, 291; managers, 361; management of a, 411; of a 150 acre, stock for, 557; experiments, 778
Farm buildings, 748; Lord Radnor's, 188; construction and arrangement of, 556, 828
Farmery, English, 276
Farmers, and grain selling, 682; premiums to, 682, 700, 715; daughters, 779; improvement of, 795; "Word in Season to," 842
Farming, revolution in, 9; Gisborne's essays on, rev., 13; Tullian, 35; Irish, 44, 569; and science, 75, 107, 123; and commerce, 171; and geology, 171; manures advantageous to, 172; progress, 171, 185, 204; stages of, 201; near Liverpool, 274; *v.* manufacture, 293; for the Million, rev., 293; produce of in the Crystal Palace, 345, 457; Lois-Weedon, 307, 377, 427, 521, 602, 804; Dr. Daubeny on do., 827, 842; theory of, 459; steam, 457, 505, 508, 522, 796, 812; stock, 571, 602; Princetown, 650; Dartmoor, 188, 224, 364, 650, 667; high, 777; Ayrshire ditto, 633, 697, 763; Mr. Mechi on British, 793, 796, 811; good, 793; capital, 796; produce, increase of, 730; possibilities, 730; deep and shallow, 844
Farms, small, 139, 186: cropping ditto, 733; Myremill, 331; Mr. Mechi's, 326, 346, 362, 379; manuring, &c., at ditto, 378; gathering at ditto, 489, 509; Grass crop at ditto, 572, 621; Armagh Palace, 620
Farm-yards, cool, for summer feeding, 378; covered, 540
Fences, planting young, 123, 171
Ferns, in Ward's cases, 341, 358; seed, 424; Sowerby's British, rev., 502, 631; rockwork for, 565; viviparous, 774
Fibrous substances, for paper, 17, 24, 179, 218 235, 238, 268, 269, 276, 285, 300, 302, 340, 341, 440, 566, 584, 599, 613, 792; Schacht on, rev., 270; Sharp on, rev., 429
Fig (Ficus carica), 727; Nerii and Pregussata, 269; out-door, 744
Fir beetle, 742
Fischer (Dr.), death of, 532
Fish, frozen, 38; gold, 88; offal as manure, 124, 155, 489, 523, 602; Young on the Salmon, rev., 375; Piscator's Choice and Cookery of, rev., 791
Flax, 188, 395, 525; question, 329; home-grown, 538; crop of 1854, 606
Flax fibre, improving, 845
Fleas, cure for, 678
Flora, Leidy's, within Living Animals, rev., 218, 582; of New Zealand, Dr. Hooker's, rev., 287, 487; Bristoliensis, Swete's, rev., 455; Tuinbouw, noticed, 535
Florence new Horticultural Society, 468
Flour, price of, 44, 139; bread, 243
Food, Payne on, rev., 119; fruit and farinacea as, 754; organic composition of, 349; Yams as, 467, 486; Rice as, 28; cottagers, 36, 53, 86, 101, 166, 196, 427; giving of, to do., 75, 100, 222; oatmeal cakes, 93; water in, 53; of plants (see Plants), green, 43, 222; of fungi, 515; of cattle, 813; Turnips as, 26; for sheep, 173, 732; experiments in feeding of, with fermented, 277; cooked *v.* fermented, 458; new, for sheep, 460; consumption of, 525; prepared, 569; spring, 573; Rape-cake as, 634, 651, 747; for cows, 732; for pigs, 795
Forbes, the late Prof., 771
Forests, royal, 38, 51, 71, 83, 168, 184, 196, 237, 283, 300, 302, 318, 319, 324, 341, 371, 403, 407, 435, 436, 437, 483, 501, 549, 579, 627, 659, 709, 835; Mr. Brown's appointment to, 132; Billington's pamphlet on, 195
Forest shrubs of America, 270
Forks, elastic steel digging, 91
Forking machine, rotatory, 225
Forrester's Essay on Portugal, rev., 343
Fountains, material for, 220
Flowers, Chinese spring, 54; green Strawberry, 102; plants with white, 200; ephemeral, 373; inconspicuous props for florist, 439; Thompson's Wanderings among Wild, rev., 455; symmetry of, 471; what are wild, 824
Flower gardening, villa, 357
Fly, cholera, 563, 596
Fowls, Cochin China, 61; Spanish, 76; Ptarmigan, 156; Ceylon, 444; Dorking, 522; quantity sold in the London markets, 717; Bramah Pootra, 733; fatting, 829
Foxglove, 758; monstrous, 660
Frames, substitute for, 270; to protect, 645, 664, 693, 744, 773, 774; mode of making straw coverings for, 791
France, grain statistics of, 170; fruit cro[ps] 453, 582; Wheat in, 460; agricultural e[duca]tion in, 603; railway wells in, 790
Fraxinus (Ornus) dipetala, 582
Frigi Domo, 774
Frost, effects of, 267, 285, 301, 320, 329, 340, 373, 389, 405; do. on exotics, 774; at Brus[sels] 286; at Kew, 287; conifers affected by, at Biddulph Grange, 341; at Dropmore, late spring, 285, 287, 301, 320, 329, 342; Bagshot, 358; Potatoes and spring, 390, trees bursting from, 614
Fruits, Pears, time for gathering, 676; Nutme[g] 822; Apples, storing of, 320; do. in saw-du[st] 117; second crop of, 742; Peaches, differe[nce] between Royal George and Noblesse, 552; farinacea, as food, 254; to preserve, 600
Fruit trees, effect of tight ligatures on, training, 680; horizontal do., 643; effects galvanised wire on, 104, 470, 501; in pots, sale of, 568; Currants and Gooseberry walls, 24; Pear, east wall, 88; M. de Jong on do., 387, 676, 709, 741, 757, 773, 789, new do., 388, 404, 420, 436, 464, 484, 517, 821; London, 484; to prune, 628; Pear grow[ing] 725, 790, 806; profits of do., 646, 678, 709, 741; house, 710; unproductiveness of, 499, culture of, 516, 548, 836; Van Mons-Leon Clerc, 723; to plant, 740; Pears, origin of, 772, 789; Beurré Superfin, 774, 789, 806, 838; of, 789; Beurré Clairgeau, 805; Apples west walls, 152; Peach, 256; protector for, culture of do., 531; and red spider, 536; curl 567; training of, 744; Peach trellises, Orange trees, 806, 822; and Citrons, 583; Apri[cot], Musch Musch, 269; Japanese, 534; for north-west aspect, 728; Fig (Ficus carica) 727; Neri and Pregussata, 269; out-door, Plums, in pots, 552; Cherry, Merry, 582; trees, to protect, 237, 240, 389, 438, 696; do. means of water, 269, 285; do. in spring, 742; for a flued wall, 569; for a north do., 584; for different aspects, 648, 760
Fruit Book, Elliot's, rev., 759; sale of, 840
Fruit crops, injury done to, 267; in France, 582
Fuchsias, culture of, 55, 274, 359, 519, 695 py[ra]midal, 255
Fuel, cheap, 117, 822
Funckia grandiflora, 303
Fungi, 304; on lawns, 133; American, 286; of, 515; to keep off timber, 515; soot, 547; cholera, 627
Furs, to kill moths in, 504
Furze, for cattle, 379, 428

G.

GAINES's nursery, noticed, 239
Galls, remarks on, 116
Galvanised wire, 519; ill effects of, 104, 470,
Gardens, Ealing Park, 55; Amherstia nobi[lis] at ditto, 87; Dublin Botanical, 103; Palerm[o] 135; Kew, 151, 287; Mr. Rucker's, 167, Crystal Palace, 219; Royal Botanic, Regent['s] Park, 271; Agricultural College, experime[nts] in, 43, 108, 222, 306, 619, 698, 714; Frogmore, Bentley Priory, 439; Helsingfors Botanic, Mr. Bohn's, 487; Enville Hall, 485; cottage Scotland, 532; Continental, 547; Cey[lon] Botanic, 563; Hampton Court, 567; Holla[nd] House, 599; Mr. Ker's, 615; Basing Pa[rk] 662; Mr. Simpson's, 743; Glasgow, 840
Gardening, villa flower, 357; in Victoria, 822
Garden pots, improvement in, 7
Garden seats, Larch-bark as a covering for, gutta percha ditto, 285; colour of, 392
Garden walks, 88; burnt clay for, 117, 134, concrete, 216, 254
Garden walls, cost of, 101, 117
Gardeners, America a field for, 117, 182
Gardeners' Benevolent Institution, 23, anniversary, 389
Garryas, hardiness of, 691, 692
Gas, sources of carbonic acid, 427
Gas heating, 71
Gas lime, 28; waste, 474
Gastrolobiums, 4
Gaudichaud, the late M., 102
Genista cinerea, 453
Geology, Phillips' Guide to, rev., 54; agriculture, 171; of Oxfordshire, 330; Ada[ms'] Guide to, rev., 550; Ansted's Notes on, rev., 662; Page's Text Book of, rev., 791
Geometry, Lund's, rev., 343
Gesneras, treatment of, 661
Geyer, the late Mr., 86
Ginger, treatment of, 488
Gisborne's Essays on Agriculture, rev., 13
Glasgow Botanic Garden, 840
Glass, burning by, 149; rough plate, 150, 166, 182, 198, 437; new arrangement of pl[ants] under, 182; coloured, for sea water plants, Glass houses, coverings for, 645, 664, 693, 773, 791
Glass walls and orchard-houses, 373
Gloves, kid, to clean, 288
Glyceria renata, 758
Gnats, 565; cure for, 582
Gold fish, 88; frozen, 38
Gomphrena coccinea, 359
Gonolobus pyrrhotrichus, 303
Gooseberries, for walls, 24
Gooseberry caterpillar, 453, 469, 485
Gorse, cover, 28, 107; for cattle, 44, 379, fibre for paper, 269; crushing, 329
Gosse's Aquarium, rev., 422
Grafting, impostors, 4; Vines, 88; March, Rhododendrons, 552, 758, 821
Grain, treatment of, 293; when to sell, 682
Grain fallows, 59
Grain statistics, French, 170
Grapes, Barbarossa, 5, 22, 69; ditto, and ot[her] 102; weights of, 197; colouring of, New South Wales, 238; to pack, 453; mond Villa, 533; Vine (Vitis vinifera), varieties of, 728; diseased Italian, 788; tralian, 755; growing, 774, 806, 822
Grape mildew, 87, 164, 180, 319, 357, 373, 419, 421, 451, 531, 662, 676, 774; preve[ntion] and destruction of, 55; in Greece, 268; for, 320, 341, 662, 678, 710; McAdam's position, 320, 342; and sulphur, 358, 662, in Portugal, 358
Grass, guano, to apply to, 205; China, growth of, 602, 604; Pampas, 708, 741, 774, 787, 807, 822, 823; Italian Rye, 633, 697, 748, 764, 779, 795, 812, 825, 843, 844

Grass crops, Mr. Mechi's, 572, 621; Scotch, 684; Ayrshire, 633, 697
Grass land, 381, 765, 798; manure for, 589; grubs on, 637; top-dressing for, 718; bones on, 765
Grasses, permanent, 92; for lawns, 168; agricultural, 619, 698, 714; new pasture, 758
Gravel, plants in, 237; forming an orchard on, 741, 758, 774
Greece, Vine disease in, 268
Greens, frosted, 6
Greenhouse, climbers for, 536, 824
Grevilleas, 691
Grieve's Farmer's Assistant, rev., 13
Guano, Peruvian, 13, 105, 106, 108, 730; market, 25; deposits, 45, 92; composition of, 70; Chincha, 89; and nitrate of soda, 90, 124; substitutes for, 92, 121; supply of, 105, 106, 108, 348; water, to make, 120; fish, 124, 155; to apply to Grass, 205; nature of, 23; adulteration, 260, 393, 441, 468, 491, 492; report on, 277; trade, 346; samples, 348; prize for, 365; detection of fraudulent, 523; essay on, 539; on Wheat, 557, 765, 795; qualities of, sold in the North of Ireland, 780
Gulf stream and mild winters, 42, 123
Gunnersbury, effects of the frost at, 287
Gutta percha, a covering for garden seats, 285
Gynerium argenteum, 708, 741, 759, 774, 787, 806, 822, 823
Gypsum and superphosphate, 428

H.

Hampton Court Palace gardens, 567
Hand-hoes, improvement in, 40
Haricots, disease in, 437
Harvest, prospects, 25, 27, 28, 171, 505, 506, 537, 555, 572, 588; causes of the late good, 620, 652; and its results, 715
Harvesting, cost of, 617
Hay, to steam, 28, 540; machine for stacking, 156; to salt, 474; returns respecting the state of, 506; Ayrshire, crops of in, 666, 667
Heat, Dove on, rev., 140; distribution of, 155
Heating, stoves for, 22, 38; gas, 71; cheap fuel for, 117, 822; Irish, 134; brick Arnott stoves for, 680; at Mr. Weeks', 807; galvanised iron tanks for, 774
Hedaroma tulipiferum, 323
Hemp, Manilla, 218; supply of, 439
Henderson (Messrs.), nursery, 87, 679
Heliotropes, 566
Helsingfors, Botanic Garden, 440
Heracleum giganteum, 758
Herbarium, Mr. Webb's, 598
Hexacentris lutea, 151; mysorensis, 837
Hippeastrum formosissimum, 7
Hoes, improved, 40
Hogg, on the microscrope, rev., 433
Hoitzia coccinea, 134
Holcus saccharatus, 835
Holland, its dyking, &c., 202
Holland House Gardens, 599
Hollies, hardiness of, 691
Hollyhocks, to propagate, 471; seedling, 304, 376; exhibition, 567; cuttings, 743
Holstein, crops in, 523
Hooker's (Dr.), Himalayan journals, 269; rev. of ditto, 150; Icones plantarum, rev., 255, 359; New Zealand Flora, rev., 287, 487
Hopkins' Theory of Storms, rev., 391
Hops, diseased, 425, 429, 595, 611, 614, 829
Hornbeam, 502
Horses, to rear, 12; ages of, 330; 348; breeding of, 428, 490; at the Agricultural Society's meeting, 477, 491
Horticultural statistics, 38
Houses, damp, 29, 518, 533, 550, 598; cure for ditto, 491; covered rick, 76, 123; covering for summer, 133, 285; bugs in, to kill, 678, 728
Howitt's Pictorial Calendar of the Seasons, rev., 102
Hoya bella, 500
Husbandry, spade, 35, 53, 67, 86, 457, 683; Andrews on Modern, rev., 189
Hydrolea azurea, 631
Hydrophobia, 204, 226, 259
Hygrometers and rain guages, 372

I.

Ice, curious formation of, on plants, 739
Implements, hand-hoes, 40; prizes for, at the agricultural meeting, 108; awards of ditto, 474; improved rollers, 141; root graters, 10, 107, 138; agricultural, 226, 395; Boyd's scythe, 269; Samuelson's Digger, 363; root cutters, 429; edging shears, 453; Chandler's manure drill, 540; Thomas on Farm, rev., 668
Incubator, Minasi's artificial, 685
Indigo, green, 199; Chinese, 217
Inga pulcherrima, 237
Ink for zinc labels, 824
Insects, remarks on the Birch and Vine weevil, 101; Ants, to exterminate, 133, 150, 165; wireworms, 141; trap for beetles, 152; ditto for crickets, 600; destroying green-fly, 220, 453; cotton mite, 318; caterpillars, to kill, 437; Gooseberry ditto, 453, 469, 485; moths, to kill in furs, 504; aphides, to kill, 552; cure for ditto on bedding plants, 517; cock-roach parasite, 533; red spider on Peaches, 536; Aphis rumicis, 550; cholera fly, 563, 596; gnats, 567; cure for ditto, 582; mealy bug, to kill, 584; Steropus madidus, 614; mosquitoes, 565, 581, 599, 678; Fir beetle, 742; Auricula, 760; American Oak-gall Sphinx, 757; scale, to kill, 808; vegetable caterpillar, 838
Insecta Maderensia, rev., 742
Ireland, farming in, 44, 569; agricultural statistics of, 41; Martin Doyle's tour in, 222, 326, 427, 505, 587; improved culture of, 303; state of, 363; Potatoes in, 438, 508, 700; Flax crop of 1854, 606; education in, 700; Frazer's Handbook of, rev., 711; qualities of guano sold in the north of, 780
Irises, select, 165
Iron, paint for, 376; galvanised, 774
Iron trellises, galvanised, 101
I wire (see Wire)
Irrigation and liquid manure, 459
Italian Rye-grass in Scotland, 633, 684, 697, 748, 764, 779, 812, 825, 843, 844; and Lucerne 795
Italy, state of the vintage in, 788
Ixora salicifolia, 372

J.

Jasmines, hardiness of, 691
Jesse's Country Life, rev., 39
Johnson's Almanac, Trade Directory of, 22
Junipers, hardiness of, 579
Juniperus drupacea, 455
Justicia speciosa, 725

K.

Kale, Buda, 536
Kalosanthes coccinea, 484
Kennedy's (Right Hon. T. F.) Correspondence with Lord J. Russell, 407
Kennington Park, 405, 421, 438, 470
Ker's (Mr.) Cheshunt, 615
Kew gardens, 151; effects of the frost at, 287
Kilmarnock Weeping Willow, 392
Knox on the Cholera Fly, 563
Kohl Rabi, 821

L.

Labels, ink for zinc, 824
Labour, Morrison on, rev., 287; skilled, 604; do. and moral, 620; rates of payment for, 669; economy of agricultural, 731, 746
Labourers, Nassau, Letters on, rev., 6; education, 60, 441, 442, 489, 491, 573, 714; food, 28, 36, 43, 53, 86, 93, 101, 166, 196; relieving, 75, 100, 225; agricultural, 171, 187, 525; cottages, 258; cookery, 36, 196, 270; friends, 363; friend societies, 377, 395, 537; shows, 633
Laburnum, sports, 342
Ladak, Major Cunningham's, 253
Ladies traces, new habitat for, 501
Lambs, disease in, 187, 203; mortality among, 188, 204; and ewes, 242, 258, 275
Land, top dressing, 77, 525, 718; management of 100 acres of grazing, 879; valuation bill, 444; agents, 57, 60, 155; planting a 4 acre piece, 557; manure for, 589; grass, 381, 765, 798; grubs on do., 637; bones on do, 765; waste, 731; Improvement Company, 826; value of, 844
Landlords, advice to, 698; and tenants, 747
Lane (Messrs.) nursery, 471; fruit trees in pots, 551
Lapageria rosea, 725
Larch, seedling, 22; thinning, 136; timber, 198; bark of, covering for garden seats, 133
Laurus regalis, 691
Law, relating to injury done to trees, 419; of tenancy, 584, 616; relating to railway, &c., traffic act, 612
Lawes, Mr., 257
Lawns, 440; fungi on, 133; Grasses for, 165; manure for newly sown, 304
Lawrence's (Mrs.), plants, 184; sale of, 271
Leaves, lettered, 217; paper from vegetable, 440; skeleton, 520
Lebanon, Cedar of, 116, 118
Lee's (Messrs.) nursery, 823
Leek, new, 88, 220
Leguminosæ agri, 138
Leidy's (Dr.) Flora within Living Animals, rev., 218, 582
Leptospermum grandiflorum, 318
Lettuce disease, 437; leaf, pitcher on, 646
Libocedrus, chilensis, 70; Doniana, 439
Ligatures, effects of tight, 55
Lilies, Japan, 7, 647; Guernsey, 664
Lily of the Valley, 133, 236
Lime, sulphate of, 7; gas, 28; waste ditto, 474; superphosphate of, 76; when to apply, 329; action of, 411; and salt, 557, 669; properties of quick, 765; burned with peat, 795
Lincolnshire, damage done by a storm in, 86
Linum grandiflorum, 39, 805
Liquid manure, 44, 172, 241, 327, 667, 748, 763; and irrigation, 459; Chandler's drill for, 540
Liverpool, farming near, 274
Lobelia Ghiesbreghti, 599
Lois-Weedon, culture of Wheat at, 307, 377, 427, 521, 602, 804; Dr. Daubeny on, 827, 842
London squares, 166
Love's Practical Dyer, rev., 218
Lucerne and Italian Rye-grass, 795
Lucuma deliciosum, 217
Lund's Geometry, rev., 343
Lycaste costata, 663
Lysimachia westphalica, British, 614

M.

M'Adam's blight composition, 320, 342
Machines, root grating, 10, 107, 138; M'Glashen's for moving trees, 39, 118, 197, 630, 660, 758, 791; reaping, 245, 413, 570, 617, 682, 825; ditto patents, rev., 117; pulping, 138; stacking, 156; rotatory forking, 225; threshing, 226; cost of ditto, 493; sowing, 328, 347, 394; rick, 428; sheep dipping, 572; horse-power, 765
Machinery, agricultural, 13
Maclura aurantiaca, 299
Malt, to dry, 277; v. sugar, 460
Malta, novel fête at, 456
Mammillaria senilis, flowering of, 120
Man, fruits and farinacea proper food for, 254
Manetti stock, Roses on, 117, 133, 181, 582
Mangold Wurzel, Collins on, rev., 108; culture of, 244; to sow, 325; running to seed, 540, 570, 604; fine crops of, 573; manure for, 589
Mangosteen, fruiting of the, 819
Manufacture v. farming, 292
Manures, patent, 3; humus and ammonia as, 22; pigeons' dung as, 40; treatment of, 43, 155; liquid, 44, 172, 241, 327, 667, 748, 763; when to apply, 329; and irrigation, 459; Pusey's papers on, 73; management of, 74, 90, 122, 123; for Beans, 93; British, 122; fish offal as, 124, 155, 489, 523, 602; blood as, 155; sewage, 76, 124, 156, 173, 614, 701, 707, 746, 748, 779, 836; kinds of, advantageous to agriculture, 172; gelatinous and saline, 187; Dr. Anderson on, 204; heaps, 204; salt as, 224, 365: artificial, 305; Prof. Way on, 307; for a newly sown lawn, 304; Coveney's economical, 409, 425, 443, 588; analysis of ditto, 428, 774, 809, 841; influence of shelter on, 348; various, 362; portable, 412; value of wood ashes as, 427; samples, 428; adulteration of, 260, 441, 468, 491, 492, 715; improvements in, 478; fish, 489; weight of, 491; analysis of different chemical, 493; woollen rags as, 509; detection of fraudulent, 523; and Potato disease, 549; definition of, 586; for Mangold Wurzel, 589; for Grass land, 589; town, 602; ochre as, 676; water and tank and hose, 684; seeds to, 795; Chinese economy of, 845
Manure drill, Chandler's liquid, 540
Marantas, 581
Marsdenia lucida, 756
Mathieua galanthoides, 23
Mats, substitute for, 710
Mealy bug, to kill, 684
Measurement, timber, 301, 405
Meat, preserving fresh, 685
Mechi's (Mr.) farm, 326, 346, 362, 379; manuring, &c. at, 378; gathering, 489, 509; Grass crop, 572, 621; address at Braintree, 716; on British agriculture, 793, 796, 811; annual statement, 809
Medinilla magnifica, 357
Melbourne (N.S. Wales) floral exhibition at, 518
Melons, 342; Victoria, 86; disease, 356, 437; to grow, 373; Cabul, 452
Meteorology, 155, 170, 217, 395; agricultural, 243, 259, 275, 290, 347, 363, 460; Hopkins', rev., 391; Martin's pamphlet on, 460
Mice and Crocuses, 806, 822
Micrographic Dictionary, rev., 323, 375, 455, 631
Microscope, Hogg on, rev., 423
Mignonette tree, 504
Milburn, the late Mr., 381
Mildew, Vine, 87, 164, 180, 319, 357, 373, 392, 419, 421, 451, 531, 662, 676, 774; prevention and destruction of, 55; cures for, 320, 341, 662, 678, 710; and sulphur, 358, 662, 679; in Portugal, 358; on Strawberries, 236, 254, 269, 285; M'Adam's composition, 320, 342; Hop, 425, 429, 595; Turnip, 739
Milk, composition of, 586; preserved, 605
Milk pans, Mecklenburg glass, 428
Mirbelia, the, 677
Money, American, 6
Monkshood, pigs killed by eating, 474
Montpelier, Nelumbiums at, 7
Moon plant, 584
Morrison's Essay on Labour and Capital, rev., 287
Mosquito smoke, 565, 581, 599, 678
Mosses, Stark's British, rev., 791
Moths, to kill in fur, 504
Moulds, fructification of, 724
Mowbray's Treatise on Poultry, rev., 717
Museum, trade, 258, 305
Mush, to make, 139

N.

Nassau, Twining's letters on the working classes of, rev., 6
Nectarine, Stanwick, 550
Nectria inaurata, 470
Nelumbiums at Montpellier, 7; seed, 85
Neriandra suberecta, 741
Nerine Fothergilli, 679
New Holland, plants of, to propagate, 582
New South Wales, Grapes in, 238
New Zealand Flora, Dr. Hooker's, 287
New Zealanders, Shortland's Traditions and Superstitions of, rev., 839
New York, Prof. Wilson's report of the Industrial Exhibition at, rev., 605
Nidularia fulgens, 373
Nitrate of soda, 245; a substitute for guano, 90, 124; to detect the adulteration of, 427; on Wheat, 765, 795
Nitric acid and ammonia in rain water, 778
Nitrogen in green crops, 186
Nomenclature, botanical, 38
Note-book, Chinese, 54, 217, 533, 758
Nursery Gardens, noticed, Messrs. Henderson's, 87, 679; Veitch's, 119; Gaines', 239; Groom's, 303; Lane's, 471, 551; Standish and Noble's, 519; Conway's, 535; Rivers', 631; Salter's, 759; Weeks', 807; Lee's, 823
Nutmeg, California, 519
Nycterinia selaginoides, 71

O.

Oaks, to plant, 133, 286; monograph of tropical American, 504; to bark, 659, 678, 694; hardiness of, 691
Oak-gall Sphinx, American, 757
Oak shingles, 6
Oats, harvest of, 1853, 27; returns respecting the state of, 506; winter, for food, 606; Tartarian, 652; averages, 667
Oatmeal cakes, 93
Obituary: Mr. Geyer, 86; M. Gaudichaud, 102; Dr. Wallich, 284; Mr. Milburn, 381; Dr. Fischer, 532; Dr. Stocks, 580; Mr. Webb, 580; Mr. Wingate, 653; Mr. Pontey, 708; Prof. Forbes, 771; Col. Champion, 819
Ochre as manure, 676
Odessa, exports from, 557, 572
Odontites rubra, 678
Oil, cod-liver, for fattening animals, 412
Oilcake, 107, 156, 204
Olive, hardiness of, 691
Oldenlandia Deppeana, 253
Oncidium cæsium, 219; umbrosum, 535
Ophioglossum lusitanicum, 53
Orange, Osage, 299, 664; and Citron, 583; trees, 806, 822
Orange grounds, of Blidah, 420
Orchard, to form on gravel, 741, 758, 774; houses, 22, 38, 54, 85, 102, 117, 565, 631; Rivers' on ditto, rev., 359; ditto and glass walls, 373
Orchids, Khasia, 181; news about, 217; new work on, 236; sales of, 356, 376; specimen, 518; Beer on, rev., 679; Schiller's Catalogue of, rev., 711
Orchis variegata, 694
Orobanche, germination of, 823
Osiers, 684
Ovules, fertilising, 629, 693
Ox, dentition of, 618, 631
Oxen, food for, 813
Oxalis tuberosa, 423
Oxford, geology of, 330

P.

Pæonies, select, 196
Page's Text Book of Geology, rev., 791
Paint, for iron, 376; sulphuric acid as, 550
Palermo botanical garden, 134
Palm, Chusan, 595
Palmetto, the, 254
Pampas Grass, 708, 741, 759, 774, 787, 806, 822, 823
Pansies, in pots, 135; from seed, 183; culture of, 503, 535
Paper, manufacture of, 7, 24; from soft wood, 179; Plantain, 218, 340, 342; wood, 238, 456; different materials for, 235, 268, 276, 285, 300, 302, 340, 342, 440, 566, 584, 599, 613, 792; Sharp on ditto, rev., 439; Schacht on ditto, rev., 270; gorse fibre for, 269
Parasites, Robin on, rev., 183; cock-roach, 533 nests, 536
Paris exhibition, 444; agricultural produce for, 521
Parks, Kennington, 405, 421, 438, 470; public, 374, 421
Parsnip, finger and toes, 537, 555
Pasture land, 379; draining, 123
Pathology, vegetable, 4, 19, 20, 36, 52, 68, 85, 100, 116, 132, 148, 164, 180, 196, 214, 236, 252, 268, 284, 301, 318, 340, 356, 372, 388, 404, 419, 436, 451, 468, 483, 500, 516, 532, 548, 564, 580, 596, 612, 628, 644, 660, 676, 692, 708, 724, 740, 756, 772, 788, 804, 820, 836
Paul's supplement to Rose Garden, rev., 102
Pavement, materials for, 88, 117, 134, 150
Pavettas, 629
Pavias, hardiness of, 691
Paxton, M.P., Sir Joseph, 788
Payen on Food, rev., 119; on Diseases, rev., 199
Peaches, difference between Royal George and Noblesse, 552
Peach trees, 256; protector for, 237; culture of, 531; and red spider, 536; curl in, 567; training, 744; on protected trellises, 775
Peach trellises, 822
Pears, time for gathering, 676; Beurré superfin, 774, 789, 806, 838; Beurré Clairgeau, 805; Nutmeg, 822; Cumberland, 838
Pear trees, east wall, 88; M. de Jonghe on, 387, 676, 709, 741, 757, 773, 789, 805; new, 388, 404, 420, 436, 464, 484, 517, 580; London, 484; growing, 725, 790, 806; profits of ditto, 646, 678, 709, 723, 741; house for, 710; unproductiveness of, 499, 549; culture of, 516, 548, 836; Van Mons-Leon le Clerc, 723; to plant, 740; origin, &c., of, 756, 772, 789; list of, 789; to prune, 628; sale of, 840
Peas, harvest of in 1853, 27; manure for, 93; Page's Prodigy, 320, 341; returns respecting the state of, 506; boiling, 557; winter, 645; chick, 694; Dan O'Rourke, 774
Peat charcoal, a deodoriser, 393, 395; Professor Way on, 395, 503; lime burned by, 795
Pelargoniums, fancy, 7, 119, 304; propagation of do., 791; tricolor, 53; scarlet, 303; culture of, 487, 551; unique, 535
Perilla nankinensis, 774
Perry, to make, 669
Persia, expedition to, 837
Peruvian Barley, 588
Peruvian guano, 105, 106, 108, 730; experiments with, 13
Pescatorea, 236
Phelipæa, 405
Philesia buxifolia, 485
Phillips' Guide to Geology, rev., 54
Phillips' Guide to the Crystal Palace, rev., 615
Phœnocoma proliferum, 710
Phrynium micans, 647
Physiology, vegetable, Prof. De Vriese on, 549, 564, 597, 612, 645, 693
Pigeons, Arabian, 108, 189; Eaton on, rev., 226
Pigeons' dung as manure, 40
Pigs, to breed, 12; to feed, 348; Bean stra as food for, 795; breeding and management of, 410, 426, 443, 523, 618; killed by eating Monkshood, 474; at the Agricultural Society's Meeting, 477, 492; ages of, 330, 348, 379; Simonds on ditto, rev., 588; and box feeding, 700
Pinckneya ionantha, 663
Pine-apple, fibre, 340; Bacaxi, 612
Pink, the, 219, 240; to propagate, 823
Pinus, Royleana, 55; Bourcieri, 535; Laricio, wood of, 163; Pinaster, to sow in sand, 632; var. maritima, 133
Pinuses, effects of the winter on, 101; hardiness of, 237, 579
Pitcairnia nubigena, 55; echinata, 694
Pits, dung, Cucumber, 198; to protect, 645, 664, 693, 744, 773; mode of making straw coverings for, 791
Pittosporum crassifolium, 271
Plants, food of, 3, 11, 19, 22; new, 7, 23, 55, 71, 87, 103, 119, 135, 151, 167, 183, 219, 239, 255, 271, 287, 303, 323, 359, 439, 455, 471, 487, 502, 519, 535, 551, 566, 582, 599, 615, 631, 647, 663, 679, 694, 727, 741, 756, 772, 805, 836; importance of air to, 19; naming, 38, 533; new British, 53, 614; new mode of striking, 84, 131; packages of, and railways, 117, 612; collodionised cuttings of, 84, 131, 166, 254; potting, 134; buyers of, caution to, 150; supports for, to fix, 149; new arrangement of, 182; white, 200, 582; for the Crystal Palace, 236; in Wardian cases, 251; of Scripture, 254; sale of, at Ealing Park, 271; hurt by frost, 267, 285, 286, 287, 301, 302, 320, 329, 340, 341, 342, 358, 373, 389, 614; diseases of (see Pathology); economic, 306; medicinal, 306; effect of low temperature on, 320; viviparous, 389; effects of water on, 405; Sikkim Himalayan, 102, 320, 357; new work on ditto, 468; watering, 501 to kill aphides on bedded, 517; aquatic, 518; rice paper, 533; moon, 584; New Holland, to

propagate, 582; collector of, in the Crimea, 581; hardiness of, 595, 644, 691, 694, 710, 725, 726; syringing time for, 599; influence of solar radiations on vital powers of, 660; sea, coloured glass for, 661; packing, 680; sale of rare, 692, 712; curious formation of ice on, 739; long Latin descriptions of, 804; American, 391, 839; Waterer's catalogue of ditto, 839; vinegar, 840
Plant frames, protections for, 645, 664, 693, 744, 773
Plant-houses, to ventilate, 38, 53, 69
Plant sticks, to preserve, 485
Plantain paper, 218, 340, 342
Plantations and woods, 69, 70, 86, 118, 500, 580; young, 182
Planting, in tree trunks, 4; advantage of draining woodlands before, 23; woods, 70; young fences, 123, 171; Oaks, 133, 286; Ranunculuses, 151, 727; a four acre piece of land, 557; Tulips, 647, 727; Pear trees, 740; Vines in brick boxes, 757; Asparagus, 760
Platometer, Sang's, 106, 108
Plough, draining, 13; v. spade, 53, 67, 86, 457
Ploughing, steam, 412
Plums, in pots, 552
Poinsettia pulcherrima, 196
Polyanthus, 87; in pots, 136; culture of, 616
Ponds, frozen fish, 38; weeds in, 550
Pontey (Mr.), death of, 708
Poor, relief for, 70, 100
Poor Law Bill, 170
Pork, to cure, 223; American, 586
Porter, to make, 701
Portugal, Forrester's Essay on, rev., 343; Vine disease in, 358
Potatoes, from seed v. the disease, 52, 86; Cuthill's Essay on, rev., 61; culture of, 92, 795; deep soiling v. disease, 101, 166, 198; how to grow sound, 285; autumn planting, 360; to store, 389; and spring frosts, 390, 405; in Ireland, 438, 508, 700; substitutes for, 452; large produce of, 471, 630; returns respecting the state of, 506; Fluke, 533, 550, 710, 806; seed of, to sow, 600; kiln dried, 613; to protect from disease, 645; longevity of, 675; from cuttings, 254, 694; sorts in Sussex, 726; early Cruffle, 806
Potato disease, 180, 213, 341, 435, 566; Berkeley's pamphlet on, 213; preventive of, 290; sulphur a cure for, 302; in Scotland, 453, 470; at Bath, 501; in Wales, 502, 517; in Ireland, 508; at Maldon, 485, 533; and manure, 549; Mactaggart's pamphlet on, 675
Potato sets, autumn dried, 133, 149
Potato Yam, 467, 486, 820
Pots, garden, 7; Pansies in, 135; Polyanthuses in, 136; shallowness of, 134; culture of Verbenas in, 519; fruit trees in, 551; Plums in, 552; Vines for, 568
Potting, Carnations, 71; plants, 134; cuttings, 421
Poultry, 76, 108, 173, 245, 261, 293, 364, 396, 429, 445, 589; Doyle on Domestic, rev., 364; Tegetmeier's pamphlet on, 556; management of, 557; book, 637; diseases, 716; Moubray's by Meall, rev., 717; quantity sold in the London markets, 717; prizes for, at the Agricultural Society's meeting, 108; awards of ditto, 478, 493; Fowls, Cochin China, 61; Spanish 76; Ptarmigan, 156; Ceylon, 440; Dorking, 522; Bramah Pootra, 733; Pigeons, Arabian, 108, 189; dung, as manure, 40; Shows, Birmingham, 13, 795, 811, 846; Metropolitan, 28; Liverpool, 45; Batto, 396; fatting, 829
Prangos pabularia, 604
Preserving fruit, 600; fresh meat, 685
Primroses, Chinese, 167, 743; double, 664
Protection, materials for, 645, 664, 693, 744, 773, 822; mode of making straw, 791
Pruning, time for, 272; Vines, 469, 501, 565; standard Roses, 583; Pears, 628
Psammisia penduliflora, 167
Pulmonaria angustifolia, 254
Pulteneas, 597
Pyrola rotundifolia, 120

Q.

Quercus rotundifolia, 487; rigida, 502; hardiness of, 691

R.

Rabbits, 421
Radiation, 724, 742
Radishes, 181; at Constantinople, 134
Radnor's (Lord) estate, 185
Railways, and plant packages, 117
Railway wells in France, 790; Boydell's endless, 842
Railway traffic act, 612
Rain, at Birmingham in 1853, 6; at Dorset, 22, 38; at Herts, 38; at Ross, 53; at Witham, 53; Dumfriesshire, 70; in Devon, 133; guages, 214, 252, 269, 341, 365, 421, 438, 598; ditto and hygrometers, 372; to measure, 712
Rain-water, ammonia and nitric acid in, 778
Ranunculus, treatment of, 87, 104, 404, 791; to plant, 151, 727; choice of, 711
Rapecake, for cattle, 634, 651, 747
Raspberry, to force, 805
Rats, to kill, 520
Reaping, intervals between sowing and, 461; machines, 245, 413, 570, 617, 682, 825; ditto Patents, rev., 124; cost of machine, 601, 636
Reichenbach's Xenia Orchidacea, rev., 822
Rendle's Price Current, 69; rev., 23
Retinospora, 456
Revalenta arabica, 632
Rheumatism, cure for, 710
Rhododendrons, Sikkim, 102, 320, 357; anthopogon, 182; seeds, 200; at Regent's Park, 391; grafting, 552, 758, 821; hybrid, 725; hardiness of, 691, 837
Rhodoleia, hardiness of, 486
Rhynchites Betuleti, 101
Rice, as food, 28, 139
Rice paper plant, 533
Rick yards, covered, 60, 76, 123
Rifles, 456
Rivers' Orchard House and Rose Amateur's Guide, rev., 359; Miniature Fruit Garden, rev., 775
Road reform, 604
Robin on parasites, rev., 183
Rollers, improved, 141
Roots, machine for grating, 10, 107, 138; in drains, 44, 76, 107, 123, 171, 187, 244, 339, 358; of Ash trees, water about, 165, 677; cutters, 429; Dahlia, to winter, 743
Root crops, to sow, 325; Spooner on, rev., 364; fingers and toes in, 172, 538, 555, 571, 572, 636, 649, 665, 687, 683, 700, 747, 762
Roses, yellow, 134; introduction of the China, 344; Amateur's Guide, Rivers's, rev., 359; hedges, 583; pruning standard, 583; from cuttings, 598, 696; new, 807; exaggerated description of, 840
Rose stock, Manetti, 117, 133, 181, 582
Rose Garden, Supplement to, rev., 102
Rotation of crops, 244, 261, 490
Roumelia, trees of, 387
Royal Botanic Gardens, Kew, 151, 287; Regent's Park, 271; Rhododendrons at ditto, 391
Royal Forests, 38, 51, 71, 83, 168, 184, 196, 237, 283, 300, 302, 318, 319, 324, 341, 371, 403, 407, 435, 436, 437, 483, 501, 549, 579, 627, 659, 709, 835; Mr. Brown's appointment to, 132; Billington's pamphlet on, 195
Royle's (Dr.) report on the properties of the Deodar as a timber tree, 20
Rucker's (Mr.) garden, 167, 694
Russia, horticultural exhibitions in, 99
Rust in corn, Dr. De Bary on, rev., 303
Rustic seats, covering for, 133, 285
Rye-grass, Italian, 584, 633, 697, 748, 764, 779, 812, 825, 843, 844; ditto, and Lucerne, 795

S.

Sabbatia stellaris, 471
Saintfoin, 138
Salisburia adiantifolia, 317
Salsify, to cook, 304
Salt, to apply, 189, 669; as manure, 224, 365; hay to, 474; and lime, 557, 669; on Wheat, 765, 795
Salter's (Mr.) Chrysanthemums, 739
Salvia splendens, 436; porphyrantha, 694
Sand, Pinus Pinaster sown in, 632
Sarracenias, 216, 742
Savings banks, 779; scope for, 618, 635; penny, 715, 747
Sawdust, to store Apples in, 117
Scale, to kill, 808
Schacht on Textile Materials, rev., 270; on the functions of cells, &c., 486
Schiller's Catalogue of Orchids, rev., 711
Schools, agricultural education in country, 573; pre-scientific, 627
School Botany, Lindley's, rev., 135
Science and agriculture, 75, 107, 123
Scotland, Potato disease in, 453, 470; cottage gardens in, 532; Grass crops, 633, 684, 697; professorship of agriculture in, 729; high farming in, 763
Scripture, plants and trees of, 254
Scythe, Boyd's, 269
Seakale, forcing, 117, 133, 166
Seasons, Howitt's Pictorial Calendar of, rev., 102
Seats, coverings for rustic, 133, 285; colour of, 392; sheltered, 630
Sebastopol, Stanford's map of, 775
Seeds, market, 37; sowing of early, 169; Conifer, 184, 240, 472; Pansies from, 183; Radish, 181; Rhododendron, 200; to steep, 237, 256; quantities for an acre, 244; Sutton's instructions on culture of, rev., 244; Turnip, 257; Hollyhock, 304, 376; Fern, 424; Deodara, 429; Growers' Society, 444, 491, 667, 700; for an acre, 244, 541; Potato, to sow, 600; Brussel Sprouts from English, 774; manuring, 795
Seeding, thin, 260, 427, 491, 588, 601, 748, 844; thick and thin, 108, 363, 715; of Mangold Wurzel, 540, 570, 604
Seedlings, American way of getting prizes for, 551
Seeman's, Botany of H.M.S. Herald, rev., 255, 487
Sequoia sempervirens, 22; gigantea, 22
Sericographis Ghiesbreghtiana, 149
Sewage, 76, 124, 156, 173, 602, 611, 701, 715, 746, 748, 779, 836; deodorising, 76; Manchester, 764
Shallots, large crop of, 501
Shanghai, news from, 199
Sharp on Fibrous Substances, rev., 439
Shears, edging, 453
Sheep, to house feed, 13; new instrument for shearing, 124; mountain, 203; diseases of, 203; ewes and lambs, 242, 258, 275; feeding, 173, 224; in doors, 276; new food for, 460; management of, 307; at the Agricultural Society's meeting, 477; fairs, 541, 589; foot rot in, 553; dipping apparatus, 572; ages of, 330, 348, 379; Simonds on ditto, rev., 588; stock, 683; food of, 732; cross-bred, 732
Shingles, Oak, 6
Shortland's Traditions and Superstitions of the New Zealanders, rev., 839
Shrubs in America, 270
Sikkim Himalayan plants, 102, 320, 327; new work on, 468
Siluria, Sir R. J. Murchison on, rev., 518
Simmonds' Commercial Products of Vegetable Kingdom, rev., 303
Simonds on the Age of Cattle, rev., 588
Simpson's (Mr.) garden, 743
Slugs, to kill, 157, 358, 438
Smithfield market, 813
Smoke, musquito, 565, 581, 599
Snow storms in January last, 203, 225
Soap, snow, 171
Soap mould, 216
Soaper's waste, 205
Societies: agricultural, 12; labourers' friend, 377, 379, 395, 537; seed growers', 444, 491, 667, 700; village horticultural, 597, 629; benefit, 715
Agricultural of England, 76, 139, 292, 716; ditto Journal, rev., 61, 444; veterinary report, 91; elastic steel digging forks, 91; Permanent Grasses, 92; guano, deposits, 92; supplies of ditto, 348; substitutes for ditto, 92; Potato culture, 92; guano deputation, 108; economical bread, 108; soil tester, 108; nitrate of soda, 124, 508; sheep shearing, 124; fish offal as manure, 124; oilcake, 156, 204; foreign Barley, 156; finger and toes in Turnips, 172; gelatinous and saline, 187; mortality among lambs, 188, 204; mad dogs, 204, 226; manure heaps, 204; lectures, 226; prize essays, 226, 292, 411; 379; analytical chemistry, 292; Prof. Way's lecture on manures, 307; indications of age in animals, 330, 348, 379; half yearly report, 347, 811; peat charcoal, 395; action of lime, 411; Paris exhibition, 444; French agriculture, 508; nature printing, 508; Lincoln meeting, 220, 292, 348, 444, 473, 716; prizes for implements at, 108; awards of ditto, 474; wool prizes at, 108; farm poultry prizes, 108; list of prizes for cattle at, 476; ditto for horses, 477, 492; ditto for sheep, 477; ditto for pigs, 477, 492; Hoskyns' speech on agricultural uses of steam power at the, 508
Agricultural Improvement of Ireland, 636; manures, 172; cattle show of, 260; green cropping, 276; management of sheep, 307; half-yearly report, 308; show of, 523; high farming in Scotland, and its application of liquid manure, 763
Arts, Levi on agricultural statistics, 205, 226; Caird on ditto, 226; Mr. Mechi on British agriculture, 796, 811
Bath Agricultural: implement and cattle awards at show of, 395
Birmingham Cattle and Poultry, 13, 705, 810, 846
Botanical of Edinburgh: 6, 86, 150, 322, 390, 470
Braintree and Bocking Agricultural: Mr. Mechi's address, 716
Caledonian Horticultural, 270, 470, 486, 838
Chemico-Agricultural of Ulster: experiments in feeding with fermented food, 277; report on guano, 277; soils, 717; qualities of guano sold in the North of Ireland, 780
Cheltenham Horticultural, 407
Cirencester Agricultural: draining premium, 60, 75
Dublin Chemico-Agricultural: feeding for pigs, 348; guano, 348
East Cumberland Agricultural: anniversary, 668
Entomological, 23, 102, 167, 239, 303, 422, 470, 534, 614, 678, 742, 807
Flax Improvement of Ireland: 188, 325, 525
Hammersmith Pansy, 392
Highland Agricultural: agricultural statistics, 44, 492; Peruvian guano, 45; progress of agriculture, 204; manures, 204; rotation of crops, 244, 261; cattle feeding, 244; show at Berwick, 492, 508, 525; chemical department, 492; journal, rev., 492
Hitcham Horticultural, 471, 597, 629
Horticultural, 39, 100, 118, 150, 182, 218, 254, 342, 421, 485, 678, 726, 790; anniversary, 287; fellowship, 72; rumours respecting, 499; garden noticed, 71, 135, 199, 287, 359, 423, 503, 582, 647, 711, 775; fall of rain at, for the years 1841 to 1853, 7; effects of the frost at, 287; schedule of prizes for 1854, 147, 200, 220; exhibitions at, 317, 339, 371, 451; reports of ditto, 321, 374, 453; award of ditto for May, 316; for June, 370; for July, 450; admission fee, 824
Kelvedon Agricultural, Tusser's Life and Writings, 363
Linnean, 54, 86, 135, 167, 199, 238, 270, 287, 391, 422, 759, 774, 807; anniversary, 359
Liverpool and Manchester, refuse of towns, 602; show, 604
Logan Agricultural, 684
Meteorological, 829
Microscopical, 303
National Floricultural, 183, 220, 271, 423, 456, 488, 567, 631
Northampton Agricultural, Sir C. Knightley's speech, 637
Peebleshire Floricultural, 68
Phytological Club, 534
Pomological, 727, 791
Royal Botanic, reports of its exhibitions, 342, 406, 438; awards of, 398, 402, 434; Rhododendrons at, 391
Royal Institution: Wardian cases, 183
Royal Horticultural of Ireland: value of horticultural knowledge in Irish improvements, 303
Royal South London Floricultural, 391, 583; Hollyhock show, 567
Scottish Pansy, 423
Stoke Newington Chrysanthemum, 776, 791
Thornham Village Horticultural, 662
Trafalgar Agricultural: Road Reform, 604
Witham Agricultural, 779
Farmers' Clubs:
Cirencester: deep and shallow tillage, 844
Fettercairn: ventilation, 172; steam-ploughing, 412
Hadleigh: agricultural buildings, 556
London, 226; subjects for discussion, 1854, 28; corn averages, 92, 103; labourers' friend societies, 379; farm buildings, 748; drainage, 797
Newcastle: agricultural statistics, 732
Oxford: geology of the district, 330
Probus: climate of the west of England, 701
Smithfield, 681; comparison of measured and actual weights of beef at, 11
Tring: testimonial to Mr. Brown, 717
Wakefield: spring food for cattle, 573
Soda, nitrate of, 90, 124
Soils, 717; deep culture of, 5; tester, 108; Potatoes in deep, 101, 166, 198; absorptive power of, 204; for Carnations, 240, 488; alumina in, 427; circumstances of the, 537; forming an orchard on thin, 741, 758, 774
Solanum verrucosum, 435
Sollyas, 301
Souerila margaritacea, 727
Soot fungus, 547
Sowerby's British Ferns, rev., 502, 631
Sowerby's Conchology, rev., 839
Sowing, intervals between reaping and, 461; machines, 328, 347, 224; wheat, 798; ditto, early, 588, 652
Soyer's Cookery, rev., 566
Spade, Walter's open, 134, 166; husbandry, 35, 53, 67, 86, 457, 683
Sphæria, from Ergot, 515
Sphinx, American Oak-gall, 757
Spider, red and Peaches, 536
Spiranthes æstivalis, new habitat for, 501
Spiræa callosa, 103; grandiflora, 439, 453; hardiness of, 691
Sports, Wheat, 515
Stackyard, covered, 60, 76, 123
Standish & Noble's nursery, 519
Stark's British Mosses, rev., 791
Statistics, agricultural, 12, 41, 44, 74, 137, 153, 188, 205, 221, 226, 241, 325, 328, 378, 420, 492, 681, 701, 713, 732, 763; Canadian ditto, 90; horticultural, 38; French grain, 170; Levi, 205, 226; Caird on, 226; dairy, 682
Steam, uses of in agriculture, 457, 595, 508, 796, 812; hay to, 28, 540
Steam Engine, by Burn, rev., 732
Steelbow, 222
Steps, cheap, 456; rustic, 485
Steropus madidus, 613
Sticks, preservation of plant, 485
Stirling, competition of reaping machines at, 6
Stock, weights of, 10, 11, 26, 105, 117; does it pay? 12, 44, 76; to measure, 26; feeding, 12, 202, 244, 362, 781; Grass ditto, 602; profitableness of ditto, 58, 61, 107; food for, 813; consumption of, 525; prepared, 569; spring, 571; experiments with feeding of, with fermented, 277; gorse for, 44, 379, 428; Rape-cake for, 63, 651, 747; short-horns, 260; sale of ditto, 36, 620; pedigree of ditto, 793, 826, 844; ages of, 330, 348, 379; Simonds on ditto, rev., 588; 26; cod-liver oil for ditto, 412; at the Agricultural Society's meeting, 476; at Dublin, 26, pools, 491; grazing, 540; for a farm of 150 acres, 557; farming, 571; breeding, 715; report at the Smithfield Club, 794; ditto at midland counties, 810
Stocks (Dr.), death of, 580
Storms, theory of, 170, 391, 395; rotatory, 20, 225, 243
Stoves, cottagers', 22, 38; cheap fuel for, 11, brick Arnott, 680
Straw, machine for stacking, 156; bean for cattle feeding, 202; ditto for pigs, 795; protections, 791
Strawberries, Black Prince, 22, 630, 646; flowers of, green, 102; meadow, 166; mildewed, 23, 254, 269, 285; culture of, 452, 596; Nicholson's 501; Underhill's Sir Harry, 502; Nimrod, 5, 693, 742; late, 726, 790; New Belgian, 739
Streptocarpus Rexi, 85
Stubbles, autumn cleaning, 684
Sugar, to distinguish cane from grape, 410; malt, 460
Sulphate of lime, effect of on vegetable substances, 7
Sulphur, a cure for Potato disease, 302; v. Vine mildew, 358, 662, 679
Sulphuric acid as paint, 550
Summer houses, covering for, 133, 285
Sunflower, the, 599, 758
Superphosphate of lime, 76; and gypsum, 428
Sutton's agricultural seeds, 244
Swainsonias, 117
Swammerdamnia, hardiness of, 691
Swans, sex of, 245; and water weeds, 742
Swete's Flora Bristoliensis, rev., 455
Sycamores, hardiness of, 595
Sydney, wages at, 136
Syringing, time for, 599

T.

Tabernæmontana, double, 340
Tally pins, 133
Talpa, or Chronicles of a Clay Farm, noticed,
Tanner on the Cultivation of Dartmoor, rev.,
Tares, early, 428, 461
Teas, scented, 806; hardiness of Assam, 691
Tecoma spectabilis, 631
Temperature at Birmingham in 1853, 6; Suffolk, 22; at Dorset, 22; effect of low, plants, 320; influence of spots on the sun disc on, 517; at Chiswick and Stevenage,
Tenants, outgoing, 222; and landlords, incoming, 845
Textile materials, 7, 24, 179, 218, 235, 238, 269, 276, 285, 300, 302, 340, 341, 441, 456, 599, 613, 792, 845; Schacht on, rev., 270; on, rev., 439
Thalia, structure of, 53
Thermometers, 56
Thomas on Farm Implements, rev., 668
Thompson's Wanderings among Wild Flowers, rev., 455
Thomson's Cyclopædia of Chemistry, rev.,
Threshing machines, 226; cost of fixed, 493
Thuja gigantea, 535
Thujopsis dolabrata, 615; borealis, 727
Thyrsacanthus rutilans, 548
Tiles, colour of, 550
Tillage, deep and shallow, 844
Timber, Deodar, 20, 53, 115, 118, 149, 164, 237; to make look old, 70; Cedar of Lebanon, 116, 118, 182; not profitable, 134; sale of, ancient Cedar, 148, 164, 182, 214; of Cupressus torulosa, 164; of Pinus Laricio, 163; of Abies Douglasii, 163, 237; Coniferous, 181, 198; 22, 136, 198; enhanced value of, 256; how to measure, 301, 405; preservation of, 378, 515; to keep fungi off, 515; Chinese, fragrant ditto, 614; tests for, 763
Tiptree, visit to, 326, 346, 362, 379; manure at, &c., 378; gathering at, 489, 509; crops at, 572, 621
Tithe commutation, 43
Tobacco, culture of, 443; history of, 823
Torreya myristica, 519
Tour, foreign of Messrs. Brown, Jones, Robinson, rev., 7; Doyle's notes of a, in land, 222, 326, 427, 505, 587
Tovaria pendula, 647
Towns, sewage of, 76, 124, 156, 173, 602, 611, 715, 746, 748, 779; Manchester ditto, 764
Trade memoranda, 133, 437, 645
Trade museum, 258, 305
Tragopogon porrifolius, 758
Training, fruit trees, 643, 680, 744
Traps, beetle, 152; cricket, 600; mouse, 80
Trees, planting in trunks of, 4; M'Glashen's machine for moving, 39, 118, 197, 630, 66 791; stoppage of drains by roots of, 107, 123, 171, 187, 244, 339, 358; comparative, 198; of 10,000, images, 217; of scripture, 254; remarks on those of Asia Minor, Kilmarnock Weeping Willow, 392; relating to injuring of, 419; how to kill, transplant, 552; composition for healing wounds in, 568; bursting of, from 614; removal of, 744; Yew poi 389, 405; Chesnut, Horse, 360; ditto tanea vesca), 712; Conifer, 118, 163, 18 237, 256; large Himalayan, 70; effects winter on, 286, 469; affected by frost, Bicton, 437; hardiness of, 579, 595, 6 741; seeds, 184, 240, 472; to sow ditto Larch, seedling, 22; thinning, 136; 198; bark of, covering for garden seats

Oak, to plant, 133, 286; monograph of Tropical American, 504; to bark, 659, 678, 694; Ash, in water. 165, 677; fruit, effects of tight ligatures on, 53; training, 680; horizontal ditto, 643; effects of galvanised wire on, 104, 470, 501; in pots, 551; sale of, 568; Currant and Gooseberry, for walls, 24; Pear, east wall, 88; M. de Jonghe on, 387, 676, 709, 741, 757, 773, 789, 805; new Pear, 388, 404, 420, 436, 464, 484, 517, 580, 821; London, 484; to prune, 628; Pear growing, 725, 790, 806; profits of ditto, 646, 678, 709, 723, 741; house, 710; unproductiveness of, 499, 549; culture, 516, 548; Van Mons-Leon le Clerc, 723; to plant, 740; origin, &c., of, 756, 772, 789; Beurré Superfin, 774, 789, 806, 838; list of, 789; Beurré Clairgeau, 805; Apples for west walls, 152; Peach, 256; protector, 237; culture of, 531, 548, 836; and red spider, 536; curl in, 567; training, 744; Peach trellis, 775, 822; remarks on Orange, 806; and Citrons, 583; Apricot Musch Musch, 269; Japanese, 584; for a north-west aspect, 728; Fig (Ficus carica), 727; Nerii and Pregussata, 269; out-door, 744; Plum, in pots, 552; Cherry, Merry, 582; wall, to protect, 237, 240, 389, 438, 696; ditto by means of water, 269, 285; ditto in spring, 184, 742; for a flued wall, 569; for a north do., 285, 584; for different aspects, 648, 760; sale of, 840
Trellises, galvanised iron, 104; for walls, 152
Trichocentrum Pineli, 772; purpureum, 772
Tritoma uvaria, 581
Tropæolum tuberosum, 488
Tuinbouw Flora, noticed, 535
Tulips, early, 287; Groom's, 303; to plant, 647, 727
Turnips, as food, 26; to store, 28; graters for, 138; best kinds of, 154; fingers and toes in, 172, 537, 555, 571, 572, 636, 649, 665, 667, 683, 700, 747, 762; for seed, 257; Swedish, 684; crops of ditto in, 1853, 798; economy in, 715; rot, 739; Lois Weedon, 804
Tusser's life and writings, 363
Twining's Letters on the Nassau Working Classes, rev., 7

U.

UDDER, inflammation of, 733
United States, monies of, 6; a field for gardeners, 117, 182; shrubs in, 270; fungi of, 286; Osage Orange of, 299; way of getting seedling prizes in, 551; pork manufacture in, 586; Rose hedges in, 583

V.

VALLOTA, (?) miniata, 119, 149; purpurea, 564
Vegetables, effect of sulphate of lime on, 7
Vegetable economy, purposes of ammonia in, 11
Vegetable Kingdom, Simmond's Commercial Products of, rev., 303
Vegetable leaves, paper from, 440
Vegetable pathology (see Pathology)
Vegetable physiology, Professor de Vriese on, 549, 564, 597, 612, 645, 693
Vegetable pitchers, 646
Vegetarianism, 254
Vegetation, accelerated, 421; symmetry of, 471; in the Crimea, 822
Veitch's (Messrs.) nursery, 119
Ventilation, 19, 38, 53, 69, 357, 389, 405, 420, 437, 485; of plant houses, 38, 53, 69; and aeration, 501
Vera Cruz, Mr. Botteri's arrival at, 531
Verbenas, pot culture of, 519; to winter, 551, 567
Vetches and Clover, 138
Vetiver, 504
Victoria Regia, 582
Villa gardening, 357
Village horticultural societies, 471, 597, 629, 662
Vincas, culture of, 820
Vines, to graft, 88; disleafing v. mildew, 341; Portuguese, 372; pruning, 469, 501; ditto and training, 565; enormous, 551; history of, 567; for pots, 568; horizontal training of, 643; in brick boxes, 757; state of in Italy, 788
Vine mildew, 87, 164, 180, 319, 341, 357, 373, 392, 419, 421, 451, 531, 662, 676; prevention and destruction of, 55; in Greece, 268; cure for, 320, 341, 662, 678, 710; M'Adam's composition, 320, 342; and sulphur, 358; in Portugal, 358
Vine borders, 725; Mr. Nash's, 840
Vinegar plant, 840
Vine weevil, 101
Vineyards, Australian, 320, 755, 756
Vivaria, marine, artificial sea-water for, 661

W.

WAGES: at Sydney, 136; in East Lothian, 413; in Canada, 811
Wales, Woodward's History of, rev., 330; Potato disease in, 502, 517
Walks, 88; burnt clay for, 117, 134, 150; concrete, 216, 254; cure for weeds on, 630, 646, 667
Wallich (Dr.), death of, 284
Walls, Currants and Gooseberries for, 24; cost of garden, 101, 107; Apples for west, 152; trellises for, 152; spring protection for trees on, 184; Pears, for east, 88; fruit trees, for north, 285; ditto for putting against flued, 568; damp lime, 518, 533, 550, 598; cure for do. 491
Wall trees, to protect, 184, 237, 240, 389, 438, 696, ditto by means of water, 269, 285; ditto in spring, 742; effects of galvanised wire on, 104, 470, 501
Walnut, Himalayan, 197
Waltham Forest, 437
Wardian cases, 183, 317; plants in, 251; Ferns in, 341, 358
Wasps, 406, 438
Water, in food, 53; about the roots of Ash trees, 165, 677; wall trees protected by means of, 269, 285; effects of on plants, 405; plants to, 501, 744; weeds, 550, 732; ditto and swans, 742; sea, artificial, 661; manure, tank and hose, 684; drill v. dry, 779; rain, ammonia and nitric acid in, 778
Waterer's (John) catalogue, 839
Way (Prof.) on manures, 307; on peat charcoal, 393, 395, 503
Weather, in Dorset, 22, 38, 70; in Suffolk, 22; good cream in severe, 44; in Herts, 38; at Pembroke, 217; severity of, 267; saving of corn in damp, 540; are farmers sufficiently grateful for abundance and fine? 620; at Chiswick and Stevenage, 790; at Bucks, 822; and aphis blight, 829
Weazels, 396
Webb (Mr.), death of, 580; herbarium, 598
Weddell's Bolivia, &c., rev., 86
Weeds in ponds, 550; cure for on walks, 630, 646, 667, 745; water, 550, 732; ditto and swans, 742
Weeds, to kill, 304
Weeding, experiments on, 277
Weeks' (Messrs.) Nursery, 807
Weevil, Birch and bine, 101
Weigela rosea, 421
Weights, cattle carcase, 10, 11, 26, 105, 171; of Grapes, 197
Wellingtonia gigantea, 40, 118, 134, 373
Wells, French railway, 790
Wheat, average growth of a Martin farm, 25; harvest of, 25, 27, 28, 171; bread, 187; disease, 199; origin of, 215; after Wheat, 276; Lois-Weedon culture of, 307, 377, 427, 521, 602, 804; Dr. Daubeny on ditto, 827, 842; bran, 331; rust, 393, 411, 521; culture, 409; in Dorsetshire, 411; parasite, 425; April, 428; successive crops, 442; ripening, 461; in France, 460; blighted, 474, 505, 585, 588, 636; returns respecting the state of, 505, 506, 540; sports, 515; Black Sea, 557, 572; fine ears of, 553; guano to, 537; in Yorkshire, 572; to sow, 798; ditto, early, 588, 652; ears of, 620; best sorts of, 650, 652; average, 92, 106, 667; price of, 713; ditto in 1844—54, 718; produce, average, 732; guano, nitrate of soda and common salt on, 765, 793
Whitlavia grandiflora, 679
Wilkinson's Ancient Egyptians, rev., 6
Willow, Kilmarnock weeping, 392
Wilson's (Prof.) report of the New York Industrial Exhibition, rev., 605
Wind register, 6
Wines, New South Wales, 238; Australian, 755
Wingate (Mr.), death of, 653
Winter, Gulf Stream and mild, 42, 123; effects of, 101, 253, 302, 358, 373, 595, 614, 644, 691, 694, 725, 726; ditto, on Conifers, 286, 469, 579; at Biddulph Grange, 340; in Westmoreland, 573; at Bagshot, 358; in Cheshire, 373; in Notts, 373; in Shropshire, 373; in Devon, 389, 437; in Derbyshire, 390; in Lancashire, 405; in Surrey, 437; at Bicton, 437, 501; Verbenas to, 551, 567; Carnations to, 599, 760; Oats, for feed, 606; Peas, 645; Anterrhinums to, 710; in Cornwall, 710; Dahlia roots to, 743; in the Crimea, 755, 771, 803
Wire, galvanised, 519; ill effects of ditto, 104, 470, 501
Wireworm, 141
Wollaston's Insecta Maderensia, rev., 742
Wood, how to make look old, 70; Deodar, 20, 53, 115, 118, 149, 164, 181, 237; Cedar of Lebanon, 116, 118; ancient Cedar, 148, 164, 182, 214; of Cupressus torulosa, 164; of Pinus Laricio, 163; of Abies Douglasi, 163, 237; coniferous, 181, 198; paper, 238, 456; ditto made from soft, 179; to keep fungi off, 515; preservation of, 378, 410, 515
Woodlands, draining, 23
Woods and Forests, 38, 51, 71, 83, 168, 184, 196, 237, 283, 300, 302, 318, 319, 324, 348, 371, 403, 405, 407, 421, 435, 436, 437, 438, 470, 483, 501, 549, 579, 627, 659, 709, 835; Mr. Brown's appointment to, 132; Billington's pamphlet on, 195
Woods and plantations, 69, 70, 86, 118, 182, 500, 580
Woodward's History of Wales, rev., 330
Wool, prizes for, at the agricultural meeting, 108; British, &c., 305
Works, veterinary, 557; of agricultural instruction, 574
Worms, to kill, 56

Y.

YAMS, Chinese, as food, 467, 486, 820
Yards, cool, for summer feeding, 378; covered, 540
Yew, poisonous, 389, 405
Yorkshire, crops in, 411, 572; East, notes from, 763
Yucca gloriosa, 501

ZINC labels, ink for, 824
Zingiberaceæ, structure of, 198

LIST OF WOODCUTS IN THE PRESENT VOLUME.

A.

Abies Kæmpferi, cone of, 455
Aeration, diagrams illustrative of, 357, 485
Ailanthus, adventitious buds of, 268
Anbury, illustrations of, 538, 555
Aquilegia californica, 836
Arbour, 630

B.

Brick Arnott stoves, 680

C.

Cattleya, monstrous, 804
Celery leaf, production of roots by a, 132
Cholera fly, 596
Cladophora, zoospore of, 68
Coal pug, 822
Cock-roach parasite, 533
Cotton mite, 319
Crocus bulbs and roots, 164
Cucumber pit, 198
Cynoglossum, cells from embryo of, 100

E.

Erysiphe Graminis, 425
Eugenia Ugni, 644

F.

Finger and toe in root crops, 538, 555
Foxglove, sections of monstrous carpels of, 660
Fruit tree protections, 389, 696
Fuel, plan of making cheap, 822
Fungi, soot, 547

G.

Grafting, illustrations of impositions in, 4
Grape disease, illustrations of, 419, 676
Gynerium argenteum, 708

H.

Heating, Arnott stoves for, 680; plan of making cheap fuel for, 822
Hendersonia polycystis, spores of, 100
Hydrodictyon utriculatum, 68

I.

Ice, curious formation of, on plants, 740
Insects, Birch and Vine weevil, 101; Cotton mite, 319; cock-roach parasite, 533; cholera fly, 596; steropus madidus, 613; American Oak-gall sphinx, 757

J.

Juniperus drupacea, 455

K.

Kæmpferia, diagram of flower of, 198

L.

Lettuce leaf, pitcher on, 646

M.

Madder root, section of tip of, 301
Mouse-trap, 822

N.

Nectria, asci and sporidia of, 470
Neriandra suberecta, 741
Nettle, section of root of, 180

O.

Oak-gall Sphinx, 757

P.

Pampas Grass, 708
Peziza, asci and sporidia of, 68
Photinia on Juniper stock, 4
Plant stems, ice on, 740
Plant support, 149
Platometer, Sang's, 106
Protections, fruit tree, 389, 696
Protococcus zoospores, 68

Q.

Quercus rotundifolia, 487; rigida, 502

R.

Railway wells in France, 790
Rhynchites Betuleti, 101
Roots, section of tip of young Madder, 301
Root formation, 132, 164, 180

S.

Soap-mould, 217
Sphæria, sporidia of, 100
Sphinx, American Oak-gall, 757
Soot, fungus, 547
Stairs, rustic, 485
Steropus madidus, 613
Storms, theory of, 225, 243, 275
Summer house, 630
Symplocos leaves, singular markings on, 21

T.

Tradescantia, section of root, 180
Trees, planting in hollow trunks of, 4

V.

Vegetable pitchers, 646
Ventilation, diagrams illustrative of, 357, 4

W.

Wall tree protections, 389, 696
Water Lily, adventitious roots of, 132
Weevil, Birch and Vine, 101
Wells, French railway, 790
Wheat, diagrams illustrative of sales and p 221, 241
Wheat parasite, 425
Wheat sports, 515
Whitlavia grandiflora, 679

Z.

Zingiberaceæ, structure of, 198

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 1.—1854.] SATURDAY, JANUARY 7. [PRICE 6*d*.

INDEX.

Ageratum mexicanum .... 6 *a*
Agriculture, revolution in ...... 9 *c*
— Gisborne's, rev. .... 13 *b*
Agricultural statistics .... 12 *b*
Ammonia .... 11 *a*
Botanical Soc. of Edinburgh .. 6 *b*
Calendar, horticultural .... 8 *a*
— agricultural .... 13 *c*
Cattle, weight of fat ...... 10 *c*—11 *a*
Cultivation, deep .... 5 *a*
Draining, cross .... 12 *a*
— plough .... 12 *b*
Egyptians, ancient, rev. .... 6 *c*
Food of plants .... 3 *b*—11 *a*
Gastrolobiums .... 4 *c*
Grafting impostors .... 4 *a*
Grape, Barbarossa .... 5 *c*
Greens, frosted .... 6 *a*
Guano, Peruvian .... 13 *a*
Horses, to breed .... 12 *c*
Labourers, Nassau, Letters on, rev. .... 6 *c*
Lilies, Japan .... 7 *b*
Lime, sulphate of .... 7 *a*
Machinery, agri. .... 13 *c*
Machine, root-grating .... 10 *c*
Manures, patent .... 3 *b*
Money, American .... 6 *a*
Nelumbiums at Montpellier .. 7 *b*
Oak shingles .... 6 *a*
Paper, manufacture of .... 7 *c*
Pathology, vegetable .... 4 *c*
Pelargoniums, fancy .... 7 *a*
Pigs, to breed .... 12 *c*
Plants, food of .... 3 *b*—11 *a*
— new .... 7 *a*
Planting in tree trunks .... 4 *a*
Plough, draining .... 12 *c*
Pots, garden .... 7 *c*
Poultry show, Birmingham .... 13 *c*
Rain, in 1853 .... 6 *a*
Root-grating machine .... 10 *c*
Sheep, to house feed .... 13 *a*
Shingles .... 6 *a*
Soil, deep culture of .... 5 *a*
Statistics, agricultural .... 12 *b*
Stock, does live pay? .... 12 *a*
Temperature .... 6 *a*
Tour, foreign, rev. .... 7 *a*
Trees, planting in trunks of .... 4 *a*
Vegetables, effect of sulphate of lime on .... 7 *c*
Vegetable pathology .... 4 *c*
Wind register .... 6 *a*

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—APPROACHING ELECTION.—Subscribers are earnestly requested to consider whether, by the laws of this Institution, they are not in conscience bound to give a preference to those candidates who for the greatest number of years have providently subscribed to the Funds from which they are now compelled to solicit relief.

GENUINE NEW SEEDS.

SUTTON AND SONS, SEED-GROWERS, Reading, Berks, *can supply all kinds of Agricultural and other Seeds genuine as grown, and true to their kinds.* The advantages of procuring *Seeds direct from the Growers* are obvious, especially in scarce seasons like the present.

NEW SEEDS FOR 1854.

SUTTON'S NEW CATALOGUE OF SEEDS is now ready, and will be sent post free on receipt of one penny stamp.
Address, JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

SEED POTATOES.—The importance of cultivating those sorts of Potatoes which, from their vigorous habit of growth and early maturity, are least subject to disease, has induced us for several years (ever since the first general development of the disease), to make many experiments as to the sorts most desirable, and the cultivation most suitable. Our New Seed List contains the names and prices of the principal kinds, and will be sent post free on receipt of one penny stamp.—Address, JOHN SUTTON & SONS, Seed Growers, Reading Berks.

YORK NURSERIES.

JAMES BACKHOUSE AND SON respectfully inform their Friends, that notwithstanding the scarcity of many kinds of Horticultural Seeds this season, their own crops have been safely harvested, and with very few exceptions are quite equal in quality to those of last season. *Being themselves Growers*, they are able to a large extent to insure the genuineness of the articles they supply.—January 7.

THE TRUE THIMBLE RASPBERRY.

JOHN A. WATSON (late THOMSON), FRUIT GROWER, begs to inform the public that he has a fine stock of the above o dispose of, which is by far the best that is sent to Covent Garden Market, at 10*s*. per 100. Pine Plants of all the best sorts, warranted clean and healthy from 1*s*. 6*d*. to 12*s*. each. Post Office orders payable at Brentford.—Ealing Lane, Ealing, Middlesex.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER has now ready a fine healthy stock of young plants of all the leading sorts. For price and description see General List, which also contains hints on their culture, with observations on the exhibition of Hollyhocks, &c. &c., and may be had by inclosing a postage stamp.
Saffron Walden Nursery, January 7.

HIMALAYA CEDAR.

MAULE AND SONS beg to intimate to Noblemen and Gentlemen engaged in Forest or Ornamental Planting th** *hey still hold large supplies of this universally admired timber tree, which they are sending out at the below s.

S DEODARA,	1 year seedlings,	20*s*. per 100,	8*l*. per 1000	
„	2 years	„ 25*s*.	„ 10*l*.	„
„ „	*1 foot	... 5*l*.	„	
„ „	*1 to 2 feet	... 7*l*. 10*s*.	„	
„ „	*2 to 3 feet	... 42*s*. per doz.,	15*l*. per 100	
„ „	**3½ to 4 feet	... 60*s*.	„ 23*l*.	„
„ „	**4 to 4½ ft., extra fine, for Avenues and single planting	80*s*.	„ 30*l*.	„

☞ Those marked * are grown in suitable sized pots; those marked ** may be had either in pots or from the open ground.
Large supplies of Taxodiums, Cryptomerias, Pinus excelsa, Abies Smithiana, Cupressus Goveniana, Lambertiana, &c. &c., offered at such prices as will admit of their introduction into mixed forest and other plantations. Terms sent on application.
The Nurseries, Bristol, Jan. 7.

LIME TREES, 12 to 14 feet, 42*s*. per 100.—SPRUCE FIRS, 2 to 3 feet, 6*s*. per 100.—LAURUSTINUS, very fine, 30*s*. per 100.—Apply to BENJAMIN R. CANT, St. John's Street Nursery, Colchester.

FRUIT TREES, &c.—The following are very strong, and finely grown:—Dwarf-trained Moor Park Apricots, and other sorts, 42*s*. per doz.; Standard trained Peaches and Nectarines, 60*s*. to 80*s*. per dozen; Dwarf trained Green-gage Plums, 30*s*. per dozen; Prince Albert Rhubarb, strong to force, 6*s*. per dozen.
Berberis aquifolium and Berberis dulcis.—These beautiful shrubs are 1 to 2 feet high; 8*s*. per 100, 60*s*. per 1000.—Usual discount to the Trade.—JOHN JEYES, Nurseryman, Northampton.

THE FINEST BALSAMS IN EUROPE, in Six Classes; Seed saved by Mr. GLENNY from flowers three inches across: the six, 37 stamps; Mixed Seeds, 13 stamps, in Sealed Packets only, signed and sealed. The finest seeds that can be had procured to order, and all other choice Horticultural subjects.—420, Strand.

TO FARMERS.

IN ACCORDANCE with the wishes of Farmers, Millers, and others interested in the Corn Trade, an Edition of the AGRICULTURAL GAZETTE AND GARDENERS' CHRONICLE will be published every Monday Afternoon, in time for post. The Monday's Edition will, in addition to the usual markets, contain a full report of the Mark Lane, Smithfield, and Newgate Markets of the day.—May be ordered of any Newsagent. Price 6*d*.

CONTENTS OF

SUTTON'S COLLECTIONS OF GARDEN SEEDS.—In consequence of the numerous applications for the particulars of sorts and quantities contained in these Collections, Messrs. SUTTON presented a List in the third page of last week's *Chronicle*, being the "CONTENTS of the NUMBER ONE COLLECTION," which they have no doubt will be generally and highly approved.

Gardeners and others who may prefer making their own selection are recommended to apply for our GENERAL PRICED CATALOGUE, *which will be sent prepaid on receipt of one penny stamp.*
JOHN SUTTON & SONS, SEED GROWERS, Reading, Berks.

TO THE SEED TRADE.

ABRAHAM HARDY AND SON, SEED-GROWERS and SEEDSMEN, Maldon, Essex, beg respectfully to inform the Trade that their Wholesale Priced List of Vegetable and Flow er Seeds for Jannary 1854 may be had on application.

NURSERIES, SLEAFORD.

JOHN AND CHARLES SHARPE, SEED GROWERS and NURSERYMEN, beg to state that their Wholesale Priced List of Seeds and Nursery Stock is now ready, and may be had on application.

STANDISH AND NOBLE'S CATALOGUE for the present season is Now Ready, and may be had on application. A selection from it appeared as a detailed advertisement in the *Gardeners' Chronicle*, of Saturday, Sept. 10th, to which they respectfully refer plant buyers. It contains many new and choice plants.—The Nursery, Bagshot, Surrey, Jan. 7.

CAREY TYSO'S CATALOGUE OF FLORISTS' FLOWERS for 1853-4 may be had post free for two labels. TREATISE on the ANEMONE, for four labels. Ditto on RANUNCULUS, for eight labels.

	£.	s.	d.
RANUNCULUSES: 100 splendid named sorts, 40*s*. to	4	0	0
„ 25 superb Seedlings, do.	1	15	0
„ 100 fine mixtures from ... 8*s*. ...	1	0	0
DOUBLE ANEMONES: 50 fine named sorts 12*s*. ...	0	15	0
Ranunculus and Anemone Seeds, per paper ...	0	2	6

IMPORTED GERMAN SEEDS:—Asters, Stocks, Balsams, Larkspurs, Poppies, Zinnias, &c., in named assortments, 2*s*. 6*d*. each; 25 varieties of Annuals, 5*s*. The above articles can be sent by post.
C. TYSO's Sovereign assortments, comprising 18 select Ranunculuses and 18 choice Double Anemones, sent postage free for 1*l*. 1*s*.—Wallingford, Berks.

DAHLIAS.

JOHN KEYNES, FLORIST, Salisbury, respectfully begs to announce that his Annual CATALOGUE of all the NEW and FIRST-RATE DAHLIAS for 1854 is now ready, and will be forwarded on application.
The two new and beautiful Dahlias, "FANNY KEYNES" and "RACHEL RAWLINS" will be figured in the February Number of "THE FLORIST;" and as drawings of these beautiful Dahlias cannot be procured through any other medium than "THE FLORIST," J. K. recommends his friends to order the February Number without delay.
Castle Street Nursery, Salisbury, Jan. 7.

AMERICAN PLANTS.

JOHN WATERER begs to announce that his NEW CATALOGUE of RHODODENDRONS, AZALEAS, CONIFEROUS PLANTS, &c., is now published, and may be had by enclosing two stamps for postage.
The colours of all the Rhododendrons worthy of cultivation are described in order to facilitate purchasers in making selections, together with a Treatise on their successful management.
☞ The Rhododendrons forming the American Exhibitions in the Royal Botanic Society's Garden, Regent's Park, London, are annually supplied from this establishment.
The American Nursery, Bagshot, Surrey, near the Farnborough Station, South-Western Railway, and 3 miles from Blackwater South-Eastern Railway.

GEORGE BAKER begs to say that his DESCRIPTIVE CATALOGUE of AMERICAN PLANTS, CONIFERS, ORNAMENTAL SHRUBS, FRUIT and FOREST TREES, &c., may be had by enclosing two postage stamps.
G. B. wishes to call particular attention to his fine Stock of GREEN and WEEPING HOLLIES, from 1 to 12 feet high.
G. B. has supplied the American Exhibition in the Royal Botanic Gardens, Regent's Park, from its commencement.
American Nursery, Windlesham, near Bagshot, Surrey, about six miles from Staines Station, Windsor Branch, South-Western Railway, where conveyances may be obtained.

GARDEN SEEDS AND IMPLEMENTS.—The Subscribers respectfully intimate that their PRICED CATALOGUE of VEGETABLE and FLOWER SEEDS, and GARDEN IMPLEMENTS, for 1854, is now published, and will be forwarded on application.
EDWARD SANG & SONS, Nurserymen and Seedsmen, Kirkcaldy.

AMERICAN PEACHES FOR CHRISTMAS.—This excellent fruit, perfectly fresh, and of the finest flavour, we are now importing from the United States, "hermetically sealed," in jars and cans. Those in jars, preserved in brandy, at the reduced price of 5*s*.; fresh Peaches, in cans, 4*s*.; spiced, 3*s*. They will be forwarded to all parts of the country on receipt of a Post-office order for the amount.—Sold, with every variety of American goods, at the American Warehouse, by ROGERS & Co., 546, New Oxford Street, London.

WAITE'S NEW EARLY PEA.

DANIEL O'ROURKE.—The earliest and best Pea in cultivation; a week earlier than the Emperor, longer pods, and a much better cropper; height 2½ to 3 feet. If this Pea does not give general satisfaction the money charged will be returned.
Trade price to be had on application to J. G. WAITE, Seed Merchant, 181, High Holborn, London.

JUDSON'S
RICHMOND VILLA BLACK HAMBURGH VINE.

ARTHUR HENDERSON AND CO. have the pleasure of informing their patrons and friends that they have good plants of this valuable and much-esteemed Vine at 5*s*. each; extra strong plants, 7*s*. each.
N.B.—For full particulars of the distinguishing characteristics of this Vine, we beg to refer our customers to the *Gardeners' Chronicle* of October 25th, 1851.

TROPÆOLUM AZUREUM	...	42*s*. per dozen.
„ BRACHYSERAS	...	18*s*. „
„ TRICOLORUM	...	24*s*. „

The above are very strong sound roots just commencing their growth, and might with safety be transmitted through the Post Office. Usual discount to the trade when ordered by the dozen.
HUGH LOW & Co., Clapton Nursery, London.—Jan. 7.

HUGH LOW AND CO. have the pleasure to announce to their Friends and the Public that they have now received the greater part of their Stock cf Vegetable and Flower Seeds, selected with considerable care from the best growers. They would more particularly recommend their collections of German Flower Seeds, consisting of Stocks, Asters, Larkspurs, Balsams, Zinnias, &c., all which are of the best quality, and imported direct from Erfurth.—Clapton Nursery, London, Jaunary 7.

SUPERB NEW APPLE.
BRADLEY'S GOLDEN PEARMAIN.

RICHARD BRADLEY begs to inform Nurserymen and the Public generally, that he is again prepared to send out t his very excellent New Apple. Fine healthy plants at the follo wing reduced prices:—Dwarfs, 2*s*. 6*d*. each; Half Standards, 3*s*. e ach; Full Standards, 3*s*. 6*d*. each; with the usual discount to the t rade when three plants are ordered. For full particulars of its e xcellent qualities see *Gardeners' Chronicle* of October 9th, 16th, and 23d, 1852.—Halam Nursery, Southwell, Notts.

FARNHAM HERO CUCUMBER.—This is an hybrid from Essex Hero, an excellent bearer; 12 fruit can be cut from it at one time, from 16 to 24 inches long, growing upright; and double that complement if pegged down. Four Seeds will be sent for 12 postage stamps.
JOHN HAYES, FLORIST, Farnham, Surrey.

SELECTED GARDEN SEEDS.—We beg to offer the following Collections of Garden Seeds:—

	£	s.	d.
No. 1.—A complete collection, suitable for a large garden	3	0	0
2.—A collection of equally choice varieties, but smaller quantities	1	10	0
3.—A collection suitable for a small garden ...	0	15	0

Nos. 1 and 2 collections will be sent carriage free to any Railway Station in England or Wales.
J. C. WHEELER & SONS, SEED MERCHANTS, Gloucester.

CHOICE SEEDS.

BASS AND BROWN'S SPRING CATALOGUE FOR 1854 is now in the Press. The Part containing the SEEDS can be forwarded immediately, on application, for two penny stamps.

PEAS, FINE NEW KINDS, of last and present year's introduction.

Fairbeard's Nonpareil, earlier than Champion of England, and fine rich flavour	5*s*.	0*d*.	per quart.
Waite's Daniel O'Rourke, very early	2	6	„
Sangster's New No. 1, 2½ ft., very early, prolific and fine pods	2	0	„
Stuart's Paradise, 4ft., a very fine large long-podded marrow, three weeks before Thurstone's Reliance, or other Peas of the same character	2	0	„
Hairs' Defiance, 4 ft., a fine new wrinkled marrow	2	0	„

The three last mentioned were grown last season by ourselves, and we can recommend each as an acquisition. Sangster's No. 1 and Stuart's Paradise will be included in the collections below.

BASS AND BROWN'S ASSORTED COLLECTIONS OF VEGETABLE SEEDS, comprising the best in cultivation, including several new sorts of excellent quality.

	£	s.	d.
No. 1.—Collection for a large garden, containing 20 quarts Peas, in 20 best sorts, and all other vegetable seeds in proportion, for one year's supply...	3	0	0
No. 2.—Collection in smaller proportions	2	0	0
No. 3.—Collection do. do.	1	5	0
No. 4.—Collection of good kinds for a small garden ...	0	15	0

Copies of the Autumn Catalogues may still be had for three penny stamps.
Goods (not under 20*s*.) carriage free to all stations in London.
Seed and Horticultural Establishment, Sudbury, Suffolk.

SUTTON'S COMPLETE COLLECTIONS OF KITCHEN GARDEN SEEDS FOR ONE YEAR'S SUPPLY *contain all the best sorts of Vegetable Seeds for sowing, from January to December, to stock the garden throughout the year, with descriptions and instructions.*

	£	s.	d.
No. 1.—A complete Collection of Garden Seeds for one year's supply, including 20 quarts of the best Peas for succession, 10 quarts of Beans, and full quantities of French Beans, choice sorts of Broccoli, Cucumbers, Melons, Lettuces, Cauliflowers, and every other sort of Vegetable required, in full quantities	3	0	0
No. 2.—A complete Collection, in quantities proportionately reduced	2	0	0
No. 3.—A complete Collection, equally choice sorts ...	1	5	0
No. 4.—A small and very choice Assortment	0	15	0

If some kinds of Seeds are already possessed, purchasers are requested to name them, that increased quantities of others may be sent in lieu of them.

As some sorts are very short in crop this year, purchasers are respectfully recommended to send their orders early.

CARRIAGE FREE, from JOHN SUTTON & SONS, Seed Growers Reading, Berks.

CLARENDON NURSERIES, CAMBERWELL.

JOSEPH FRYER can supply every description of Fruit Trees, Ornamental Trees, Evergreen and Flowering Shrubs, Standard and Dwarf Roses, Greenhouse, Herbaceous, and Alpine Plants, Vegetable and Flower Seeds, Peat Mould, Loam, Manure, Silver Sand, Turf, Gravel, &c.

J. F. can supply the trade with a large quantity of Limes, Planes, Elms, Poplars, Scarlet Thorns, Mulberries, Evergreen Privet, green and variegated Euonymus, Laurels, Lilacs, Ivies, Evergreen Oaks, Rhododendrons, Magnolia grandiflora, Hardy Heaths, Garrya elliptica, Glycine sinensis, Althæa frutex, Bignonia radicans major, Clematis azurea grandiflora, Passion-flowers, Menispermum canadense, Salisburia adiantifolia, Gladiolus psittacinus, Tiger Lilies, &c.

COLE'S SUPERB CRYSTAL WHITE CELERY.

J. THORNLEY, W. COLE, AND Co., NURSERYMEN, SEEDSMEN, and FLORISTS, Withington, Manchester, beg to announce that they are now prepared to supply this fine Celery at 1s. 6d. per half-ounce packets, or in larger quantities. This variety has given universal satisfaction, and has been proved to possess all the good qualities attributed to it by W. Cole last season. It can also be procured from the following agents:—

Messrs. Hurst and M'Mullen, 6, Leadenhall Street; Messrs. Noble, Cooper, and Bolton, 152, Fleet Street; Messrs. Minier & Co., 60, Strand; Messrs. Charlwood & Cumming, Covent Garden; Mr. Turner, Slough; Mr. Duncan Hairs, St. Martin's Lane; Mr. Denyer, Gracechurch Street; Mr. J. Fairbairn, Clapham; Messrs. A. Henderson & Co., Pine Apple Place; Messrs. Downie and Laird, Edinburgh; Messrs. F. & J. Dickson, Chester; Messrs. F. & J. Dickson, Manchester; Messrs. J. & J. Fraser, Lea Bridge, Essex; Messrs. Little and Ballantyne, Carlisle; Messrs. Veitch & Son, Exeter; Mr. J. Veitch, Exotic Nursery, Chelsea; Mr. Clarke, King Street, Covent Garden; Messrs. Finney & Co., Gateshead; Mr. A. Pontey, Plymouth; Mr. E. Rendle, Plymouth; Mr. Cattell, Westerham, Kent; Mr. Smith, Riverhead, Kent; Mr. Epps, Ashford and Maidstone, Kent; Messrs. Lucombe, Pince, & Co., Exeter; Mr. Browne, Norwich.

All orders to be addressed as above, instead of to "Dartford" as heretofore.

SUBSTITUTE FOR GARDEN MATS.—Waxed Sheeting nearly 2 yards wide, 1s. per yard run—admits light, and excludes cold; Thick Canvas Tarpauling, 1s. per square yard; Thick Canvas Waxed Sheeting, 1s. per square yard, may be had various widths: these Canvases are excellent for Roofing Sheds and Outhouses, as they are quite Waterproof.—R. RICHARDSON, 21, Tonbridge Place, Judd Street, New Road, London.

HORTICULTURAL BUILDINGS, ROCK AND RUSTIC WORK, ORNAMENTAL WATER, FOUNTAINS AND FALLS, AND LANDSCAPE GARDENING, executed on the best principles; Estates Improved, Land Laid Out for Building, &c., by Mr. GLENNY, Valuer, Estate and Horticultural Agent, 420, Strand.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

EDWARD AND A. WEEKS (late with J. WEEKS & Co.), Park Cottage, King's Road, Chelsea, are now in a position to execute any of the above works, in the very best manner, and at a reduced price. Materials and workmanship warranted best quality. Plans and estimates forwarded on application for all kinds of Horticultural Erections, also for the Heating of Churches, Hospitals, Halls, Offices, &c.

One, two, and three-light Boxes always on hand.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.

GRAY AND ORMSON, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

E. DENCH, PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

PATENT HOTHOUSES and excellent Glass at 1s. 3d. per foot super., which are superior to all others for price with quality, and if known would supersede all others. A Range of Houses and Hot Water Apparatus, was erected by E. D. for E. L. Betts, Esq., Preston Hall, Kent. Mr. J. Frost, head gardener, has shown their efficiency by their produce at the Royal Botanic Gardens, Regent's Park, June 8, and Chiswick, June 11. The editor of the *Gardeners' Chronicle* says: "Beautiful examples of Black Hamburgh, large both in bunch and berry, and as black as Sloes, were furnished by Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall, Kent; these well deserved the first prize which was awarded them."—*Gardeners' Chronicle*, June 18th, 1863. The Grapes were considered the best shown at Regent's Park during the season, and the Houses are as superior for the growth of everything else in horticulture, which has been fully proved, and they have been extensively erected for the nobility and gentry in all parts of the kingdom.

GLAZING WITHOUT PUTTY.—Iron and Glass alone. E. D. has Roofed the Public Baths and Washhouses, Endell Street, on this principle, and others are in hand. Patent Sashes for Peach Walls, Pits, &c., 8d. per foot super. Heating by Hot-water, on the most practical principles, and all the best materials used. Printed Price List sent on application.

GLASS.

THOMAS MILLINGTON, Importer of Foreign Sheet Glass, requests attention to the present Prices of Glass and Stock sizes, which are cheaper and better than those of English manufacture:—

PACKED IN ONE HUNDRED FEET BOXES, THIRDS QUALITY, BOXES INCLUDED.

Inches.	Per 100 ft.	Inches.	Per 100 ft.	Inches.	Per 100 ft	Inches.	Per 100 ft.	Inches.	Per 100 ft.	Inches.	Per 100 ft.
Under 6 by 4,	8s. 6d.	12 by 10		14 by 11		16½ by 12½		18 by 13		18 by 14	
6½ by 4½	... 12s.	12½ „ 10½		14½ „ 11½		17 „ 12		18½ „ 13½		18½ „ 14½	
7 „ 5		13 „ 10		15 „ 11		17½ „ 12½		19 „ 13		19 „ 14	
7½ „ 5½	13s. 6d.	13½ „ 10½	18s.	15½ „ 11½		18 „ 12		19½ „ 13½		19½ „ 14½	
8 „ 6		14 „ 10		16 „ 11		18½ „ 12½		20 „ 13		20 „ 14	
8½ „ 6¼		14½ „ 10½		16½ „ 11½		19 „ 12		20½ „ 13½		20½ „ 14½	
9 „ 7		15 „ 10		17 „ 11	20s.	19½ „ 12½	20s.	21 „ 13	20s.	21 „ 14	20s.
9½ „ 7¼		15½ „ 10½		17½ „ 11½		20 „ 12		21½ „ 13½		21½ „ 14½	
10 „ 8		16 „ 10		14 „ 12		20½ „ 12½		22 „ 13		22 „ 14	
10½ „ 8½	18s.	16½ „ 10½		14½ „ 12½		16 „ 13		16 „ 14		22½ „ 14½	
11 „ 9		17 „ 10	20s.	15 „ 12		16½ „ 13½		16½ „ 14½		23 „ 14	
11½ „ 9½		17½ „ 10½		15½ „ 12½		17 „ 13		17 „ 14		23½ „ 14½	
12 „ 9		13 „ 11		16 „ 12		17½ „ 13½		17½ „ 14½		24 „ 14	
12½ „ 9½		13½ „ 11½									

IMPROVED PATENT ROUGH PLATE, PLAIN, FLUTED, AND IN QUARRY PATTERNS.

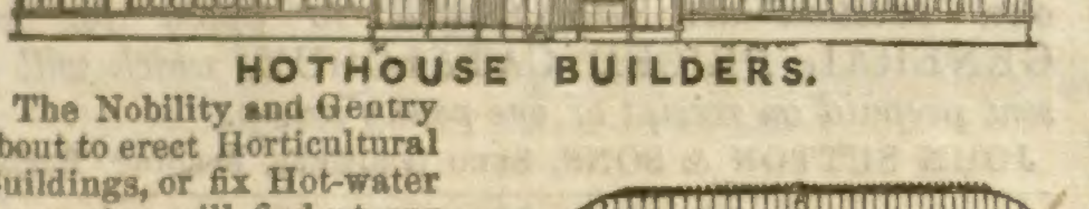
British Plate, Patent Plate, Sheet, Crown, and Coloured Window Glass. Pure White Shades for Ornaments. Pumps, Water Closets, and Plumbers' Brass Work. Genuine White Lead, Paint, Colours, Varnishes, Brushes, &c.

Tariffs of the above on application to

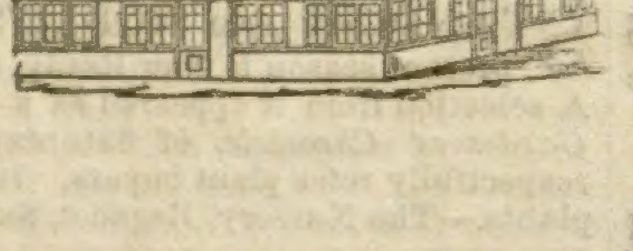
T. MILLINGTON, 87, Bishopsgate Street Without, London.

HORTICULTURE IN ALL ITS BRANCHES.

J. WEEKS & Co., King's Road, Chelsea,



HOTHOUSE BUILDERS.



The Nobility and Gentry about to erect Horticultural Buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. WEEKS & Co., King's Road, Chelsea, London.

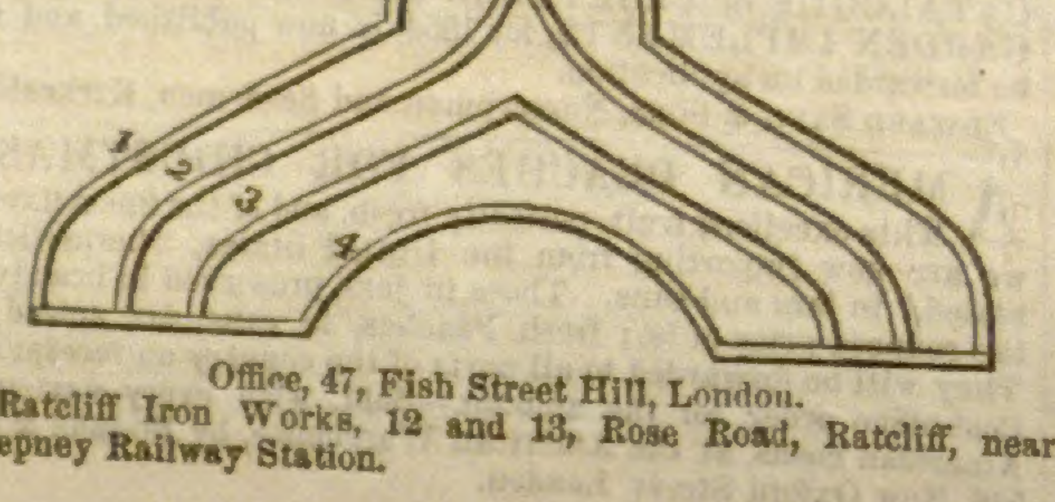
BISHOP AND Co., City Road (near the Toll Gate), London, beg to announce to the Nobility and Gentry that they have introduced quite a new style of Horticultural Buildings, composed of Iron and Wood made portable, and can be erected by Gardeners or Country Carpenters. Every part fixed and marked previous to packing.

BISHOP & Co. having had considerable experience and being practical

working men, are now prepared to execute orders at the lowest possible price consistent with their style of workmanship, which can be well recommended. Heating by Hot Water or Air on the most improved and scientific principles. Manufacturers of Photographic Houses, and the Portable Model Cottage suitable for Gardeners or Emigrants. Plans and Estimates forwarded on application to BISHOP & Co., City Road, London.

METAL CONSERVATORIES, PLAIN OR ORNAMENTAL, ERECTED TO ANY DESIGN.

THOS. WALLER AND CO. (many years Foreman to Messrs. Deane, Dray, & Deane, Finsbury Iron Works, and London Bridge), Iron Founders, House and Ship Smiths, Gas Fitters, and Manufacturers of all kinds of Metal Conservatories, Greenhouses, Verandahs, Balconies, Summer-houses; Hot, Cold, Shower, and Fumigating Baths; Public and Private Buildings. Greenhouse Conservatories heated by hot water or the Patent Drying Apparatus. Every description of open and close Kitchen Ranges for large or small establishments. The Trade supplied with Metal and Iron Sash Bars for Conservatories and Greenhouses, bent to these or any other design on the shortest notice. Experienced workmen sent to any part of the kingdom



Office, 47, Fish Street Hill, London.

Ratcliff Iron Works, 12 and 13, Rose Road, Ratcliff, near Stepney Railway Station.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

JAMES PHILLIPS AND Co. have the pleasure to hand their present prices of Glass for Cash:—

SHEET SQUARES. In Boxes of 100 feet.		£ s. d.		CROWN SQUARES. In Boxes of 100 feet. s. d.
Under 6 by 4	... ...	0 12 6	... ...	8 [illegible]
6 by 4, and 6½ by 4½	... ...	0 13 0	... ...	12 [illegible]
7 „ 5, — 7½ „ 5½; 8 „ 6, — 8½ „ 6½	... ...	0 15 0	... ...	14 [illegible]
9 „ 7, — 10 „ 8, 12 by 9, 12 by 10, 14 by 10...		1 0 0		

Larger Sizes, not exceeding 40 inches long.

16 oz. from 3d. to 3½d. per square foot, according to size.
21 oz. „ 3½d. to 5d. „ „ „
26 oz. „ 3½d. to 7½d. „ „ „

SHEET GLASS OF ENGLISH MANUFACTURE FOR ORCHARD HOUSES, THE SAME QUALITY AS WE SUPPLY TO Mr. RIVERS, and of various dimensions, always on hand.

London Agents for the Sale of HARTLEY'S PATENT ROUGH PLATE GLASS.

Cases of Sheet-Glass, about 40 by 30, 16 oz. to the foot, 2l. [illegible] per Case of 200 feet.

Milk Pans, Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoys' Milk Syphons, Tiles and Slates, Wasp Traps; Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the trade.

Horticultural Glass Warehouse, 116, Bishopsgate Street Without, London.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

HETLEY AND CO. are supplying 16-oz. Sheet Glass of British Manufacture, packed in boxes, containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

Sizes.—Inches.	Inches.		Per foot.		Per 100 feet
	Under 6 by 4	at	1½d.	is	£0 12 [illegible]
From 6 by 4	„ 7 „ 5	„	2d.	„	0 16 [illegible]
7 „ 5	„ 8 „ 6	„	2¼d.	„	0 18 [illegible]
8 „ 6	„ 10 „ 8	„	2½d.	„	1 0 10
10 „ 8	„ 12 „ 9	„	2¾d.	„	1 2 11

Larger sizes, not exceeding 40 inches long.

16 oz. from 3d. to 3½d. per square foot, according to size.
21 oz. „ 3½d. to 5d. „ „ „
26 oz. „ 3½d. to 7½d. „ „ „

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

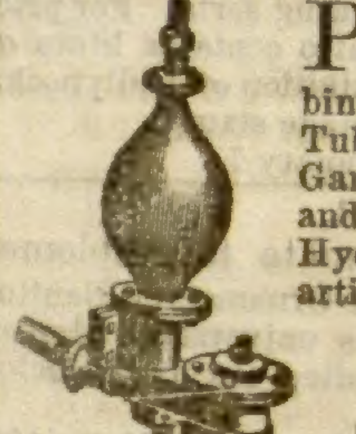
GLASS TILES AND SLATES made to any size or pattern, either in sheet or Rough Plate Glass.

Propagating Glasses, Beehive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in Glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the excise duty, reduced one-half. List of Prices and Estimates forwarded on application to JAMES HETLEY & Co., 35, Soho Square, London.

TO AMATEUR GARDENERS, LOCAL BOARDS OF HEALTH, & SANITARY WORKS.



PATENT GLASS TUBES, Iron Coated with Glass, Gutta Percha, Combinated ditto, Patent Flexible India Rubber Tubing, and every other Hose for Watering Gardens. The Hydraulic Ram, Fire, Garden and every other kind of Pump, Sluice Cocks, Hydrants, High Pressure Cocks, and all other articles to be had, Wholesale and Retail, of

FREEMAN ROE,
HYDRAULIC ENGINEER,
70, Strand, and Bridgefield, Wandsworth.

CUCUMBER AND MELON BOXES AND LIGHTS.—One hundred 1, 2, and 3-light Boxes and Lights of all sizes ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1l. 6s. Garden Lights of every description, Conservatories, Green and Hothouses made and fixed in all parts of the kingdom. References given to the nobility, gentry, and the trade, in most of the counties in England.—JAMES WATTS, Hothouse Builder, Claremont Place, Old Kent Road, London.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

Priced lists of plant tubs and boxes forwarded on application.

MAW'S ENCAUSTIC TILE PAVEMENTS.

MAW & CO. send for six stamps their NEW BOOK OF DESIGNS (with prices), adapting this most durable, economical, and decorative production of Mediæval Art to Entrance Halls, Passages, Conservatories, Verandahs, and every description of modern and ancient Building. Specimens at 11, Aldersgate Street, City.

Benthall Works, near Broseley, Shropshire.

WIRE FENCING, 6¾d. per square yard, in various widths, from 6 feet to 15 inches, an effectual fence against hares, rabbits, cats, dogs, sheep, deer, fowls, pheasants, &c. Wire Hurdles 3s. each (5 ft. 6 in. by 2 ft. 3 in). This Wire-work is worked in oil, and does not rust very quick, and is the cheapest article of the kind in the market.—R. RICHARDSON, 21, Tonbridge Place, New Road, near King's Cross, London.

PEAS! PEAS! THE BEST VARIETY IN CULTIVATION.

CHAMPION OF ENGLAND, a blue wrinkled Pea, very productive, of quick growth, and of a most delicious flavour. This extraordinary Pea combines in one the merits of all others, and has none of their demerits; for, although a wrinkled Pea, it is both hardy and early, and being of quick growth, it is the best kind to plant throughout the season for each crop. It is highly productive, bearing very long pods of a lively green, which are well filled, and the Peas are generally as large as small horse Beans, of a deep green colour, and beyond all others of a most delicious flavour. Height, 3 ft. to 3½ ft.

Price, in quantities of not less than 1 peck ...	Bag included	6s.
" " " 1 bushel	"	16s.
" " " 1 sack (4 bushels)	"	60s.
" " " 8 bushels (1 qr.)	"	106s.

Delivered, freight paid by Railway to London.

Orders, with remittance or satisfactory reference, will have immediate attention on application to

H. AND A. WALLIS, SEEDSMEN, Ipswich.

TO NOBLEMEN, GENTLEMEN, AND COMPANIES PLANTING.

THOMAS JACKSON AND SON respectfully invite an inspection of their extensive and fine collection of ORNAMENTAL SHRUBS and TREES; they are of fine growth, and in excellent condition for planting for immediate effect. To the undernamed T. J. & SON especially desire attention. Prices may be obtained by letter or personal application.

American Arbor-vitæ, 2 to 10 ft.	Deutzia gracilis, 1 to 2 feet, fine
Chinese do., 2 to 8 feet, fine	Pinus excelsa, 3 to 8 feet, fine
Arbutus, 2 to 5 feet	Pinus insignis, 3 to 5 feet
Aucubas, 2 to 4 feet, very bushy	Cryptomeria japonica, 2 to 6 ft.
Cedar, Deodar, 2 to 12 feet, fine	Taxus pyramidalis, 2 to 6 feet, fine
Cedar of Lebanon, 2 to 9 ft., fine	Laurustinus, 1 to 3 feet, very bushy
Variegated Hollies, 2 to 9 feet	Evergreen Oaks, 2 to 7 feet, fine
Green do., 2 to 9 feet	Portugal Laurels, 2 to 5 feet
Weeping do., 5 feet stems, fine	Magnolia acuminata, 4 to 10 ft.
Berberis aquifolium, 2 to 3 feet, bushy	Do. grandiflora Exmouth, 2 to 5 feet, fine
Taxodium sempervirens, 3 to 12 feet, fine	Tree Pæonies, 1 to 3 ft., bushy
English Yews, 2 to 9 feet	Chinese Junipers, 2 to 8 ft., fine
Irish do., 2 to 8 feet, very fine	Upright Cypress, 5 to 8 ft., fine
Tree Box, 2 to 7 feet	Forsythia viridissima, 2 to 4 ft.
Araucaria imbricata, 1 to 5 feet, fine	Red Cedars, 3 to 5 feet, fine

T. J. & Son having added to their previously good stock of American Plants, about one-third of the entire stock of the Norbiton Nursery, so long famed for its collections of Hybrid Rhododendrons, Azaleas, &c., can now offer on most advantageous terms—

Rhododendron ponticum, 1 to 5 ft., in great variety.
Do. aureum, and the varieties of yellows, 1 to 7 ft.
Do. Smithi, tigrinum, and other scarlets, 1 to 9 ft.
Do. campanulatum and light varieties, 1 to 7 ft.
Azaleas, Indian, American, and Ghent varieties, 1 to 6 ft.
Kalmia latifolia, and others, 1 to 4 ft.

T. J. & Son have a splendid healthy stock of the Sikkim Rhododendrons, of which they will furnish the 12 following fine kinds, in pots, for 63s., viz., Thompsoni, fulgens, glaucum, glaucum nanum, niveum, Falconeri, ciliatum, Edgeworthi, lancifolium, cinnabarinum, ferruginosum, and calycatum.

Fine Fruit and Forest Trees; strong Quick for Fences, and all other kinds of Nursery Stock.—Nurseries, Kingston, near London

KILMARNOCK WEEPING WILLOW, OR SALIX CAPREA PENDULA.—The Trustee on the sequestrated estate of Thomas Lang, Nurseryman, Kilmarnock, intimates that he is now ready to supply plants of this beautiful new Willow. Mr. Lang has received numerous testimonials as to its being a new, distinct, and interesting addition to our Ornamental Trees, from Professor Lindley, of London, Mr. MacNab, Royal Botanic Gardens, Edinburgh, and others; but the following letter from Sir William Jackson Hooker, Director of the Royal Gardens, Kew, is of itself sufficient both as a description and a recommendation of the plant.

"Royal Gardens, Kew, Sept. 29, 1853.

"Sir,—The Salix caprea pendula, or Kilmarnock Weeping Willow, is doing well with us, and is much admired for its decidedly weeping character. It bears the same relation to the ordinary Salix caprea that the Weeping Ash does to the Common Ash, and I need say nothing more in its favour. Every branch is gracefully curved downwards, and the great breadth of the foliage and its dark colour give it a totally different character from the common Weeping Willow, Salix Babylonica. I think very highly of it as an ornamental small tree.

"I am, &c. (signed) W. J. HOOKER."

Prices.—Furnished Plants, on own roots, trained to one stem, 2s. 6d. each.; do. do. extra fine, 3s. 6d. each; a few plants, grafted on tall stems, 5s. each.

☞ Plants will be delivered in London for 6d. each additional, and despatched from thence to any address.

Orders to be addressed to Mr. JOHN DICKIE, Seedsman, Kilmarnock, the Trustee, who will also forward, on application, a printed list of the General Nursery Stock, which is now being sold off at extremely low prices. The Trade supplied on favourable terms.

SEED ESTABLISHMENT AT 102, EASTGATE STREET, AND NURSERY GROUNDS AT NEWTON, NEAR CHESTER.

THE FIRM OF F. AND J. DICKSON having been DISSOLVED, I take the liberty of informing my Friends and the Public generally, that I purpose in future carrying on business in conjunction with my Sons, under the Firm of "JAMES DICKSON & SONS," and beg very respectfully to solicit a share of those kind favours hitherto conferred on my late partner and myself, and which will at all times continue to have my utmost care and undivided attention. I avail myself of this opportunity of returning to all the numerous customers and friends of the late Firm throughout the entire principality of North and South Wales, Cheshire, Shropshire, Lancashire, and adjoining counties, my most sincere thanks for the very liberal support and great kindness which for thirty-five years I have had the pleasure and satisfaction of experiencing whilst personally travelling through these districts. Trusting to be favoured with a continuance of the same support and commands, I am yours, very respectfully, JAMES DICKSON.

J. D. & SONS, holding a very heavy Stock of Forest, Fruit, and Ornamental Trees, Evergreen and Flowering Shrubs, and all kinds of Nursery Stock, on Grounds which must be cleared before the end of March next, have determined, rather than incur the additional expense of transferring them to other parts of their Grounds, to Dispose of the Stock thus situated at the lowest possible prices.

Their New Seed Warehouse, which is at 102, Eastgate Street, four doors from the south end of St. Werburgh Street end, towards the Cross, is fully supplied with a newly-selected Stock of all sorts of Garden, Farm, Flower, and other Seeds, of the very best quality, for the ensuing season, orders for which will much oblige.

J. D. & SONS beg to add, that the old-established Seed Business (heretofore carried on by the late firm) at 106, Deansgate, Manchester, has become their property, by which means they will be enabled to supply their friends in that city and neighbourhood with every article in the several branches of their business with every facility and despatch.

J. D. & SONS would further state, that they will retain and continue, on a greatly enlarged scale, the Nursery and Seed Establishment carried on by the late firm at Newtown, Montgomeryshire, from which place also they will have great pleasure and satisfaction in supplying their friends in that locality with such orders as they may favour them with

THE CUCUMBER SEASON.—Growers of this superb and select branch of Horticulture should endeavour to procure seeds of such varieties as will give them satisfaction, and meet every expectation for exhibition or otherwise. The under-mentioned have been thoroughly proved, and testimonials and orders again received from numerous correspondents.

CAPTIVATION CUCUMBER, a beautiful black spine, free from ribs and shrivels, carries its bloom well, fruit never turning colour at the point like many others, length from 20 to 28 inches. uniform from stem to point (a consideration to exhibitors), 2s. 6d. per packet.

PHENOMENON CUCUMBER.—Also a fine black spine, rapid grower, and the hardiest of all long Cucumbers, in other respects similar to the above, 2s. 6d. per packet. This will give every satisfaction to growers.

Victory of Bath Cucumber, 1s. per packet; Winter Cucumber, Lord Keynon's Favourite, 2s. 6d. ditto; Gordon White Spine, 1s. ditto; Chamberlain's Essex Hero (very fine), 2s. ditto; Sunderlandwick Cucumber (very fine), 2s. ditto; Hunter's Prolific, 1s. ditto; and numerous other good varieties, at 1s. per packet.

MELONS, the best sorts, true to name, and such as will give every satisfaction.—Tiley's Incomparable, 1s. 6d. per packet; Tiley's Bromham Hall, 1s.; Tiley's Golden Ball, 1s.; Tiley's Queen, 1s.; Tiley's Bowood, 1s.; Victory of Bath, 1s.; Camerton Court, 1s.; Beechwood, 1s.; Windsor Prize, 1s.; Emperor, 1s.; Fleming's Hybrid Persian, 1s.; Hampton Court, 1s.; Blackhall's Green Flesh, 1s.; Bailey's, 1s.; and numerous others.

*** A Packet of each of the first-named Cucumbers, and two packets of either of the Melons named, sent free for 60 penny stamps.

HOLLYHOCK SEED, saved from a splendid collection of all the newest and best varieties out, 2s. 6d. per packet.

GERMAN ASTER SEED, from some of the finest flowers ever exhibited, 1s. per packet, or a packet of this and of the Hollyhock for 3s.

ANTIRRHINUM SEED (SPLENDID), 1s. per packet.

A remittance must accompany every order by cash or penny postage stamps, when the whole or any part (as the case may be) will be immediately forwarded.

EDWARD TILEY, NURSERYMAN, SEEDSMAN, & FLORIST, 14, Abbey Churchyard, Bath, Somersetshire.

SUPERB LATE WHITE BROCCOLI—"EMPEROR."

EDMUND PHILIP DIXON having purchased the entire stock of the above Broccoli of Messrs. Elletson, Market Gardeners, Thorngumbald, near Hull, begs to announce that after the 1st of January next he will be prepared to send it out in sealed packets at 2s. 6d. each. This Broccoli has been raised by the Messrs. Elletsons, the raisers of the Mammoth, sent out some time ago, who state that the EMPEROR, if sown at the same time, will come into use before it. Is of very dwarf growth, perfectly hardy, with heads from 15 lbs. to 20 lbs. weight; keeps its colour, and stands firm three weeks after it is ready to cut. A noble flower and commands the best price of any other in the Hull market, where it is well known, and will be a great acquisition to the market gardeners around London, as well as those who wish for a first-rate Broccoli.

May be had of Messrs. NOBLE, COOPER, & BOLTON, 152, Fleet Street; and Messrs. HURST & M'MULLEN, 6, Leadenhall Street London. Also of the Advertiser, 57, Queen Street, Hull.

GOOD SEEDS.

HOME GROWN SEEDS, NEW AND TRUE, CARRIAGE FREE.—The great advantages of purchasing SEEDS OF THE GROWERS are the *superior germinating quality, trueness of the sorts, and economy of price.* These advantages have now been afforded by us to *retail* purchasers for several years, and are fully appreciated by the public, as is shown by the numerous recommendations we are receiving from our customers in all parts of the Kingdom.

Our New Seeds are all arranged for delivery, and we respectfully solicit early orders, which will have the preference of scarce sorts.

Prices and other particulars may be had on remitting one postage stamp.—Address, JOHN SUTTON & SONS, SEED GROWERS, Reading, Berks.

The Gardeners' Chronicle.

SATURDAY, JANUARY 7, 1854.

MEETINGS FOR THE ENSUING WEEK.

MONDAY, January	9	British Architects	8 P.M.
		Geographical	8½ P.M.
TUESDAY, —	10	Syro Egyptian	7½ P.M.
		Civil Engineers	8 P.M.
		Medical and Chirurgical	8½ P.M.
		Zoological	9 P.M.
WEDNESDAY, —	11	Literary Fund	3 P.M.
		Graphic	8 P.M.
		Pharmaceutical	8½ P.M.
		Ethnological	8½ P.M.
		Royal Soc. of Literature	8½ P.M.
THURSDAY, —	12	National Floricultural	3 P.M.
		Antiquarian	8 P.M.
		Royal	8½ P.M.
FRIDAY, —	13	Philological	8 P.M.
		Astronomical	8 P.M.
SATURDAY, —	14	Medical	8 P.M.

THOUGH it is quite true that practice will often effect much without theory, it is no less true that theory fairly deduced from correct and sufficient data is the best handmaid of practice. False theories, on the contrary, especially when supported, whether justly or not, by the authority of widely extended reputation, are great impediments to the progress of science and production of serious loss to those who implicitly trust in them. The theory first broached by INGENHOUSZ, and afterwards supported by SENEBIER, SAUSSURE, and LIEBIG, of the nutriment of plants from the carbonic acid contained in the air, is evidently one of great importance as regards the growth of vegetables, and more especially when combined with views like those of LIEBIG and SCHLEIDEN respecting the action of manures. If the organic matters contained in manure are unimportant, and an opinion to this effect prevails, the practice of agriculture, whether beneficially or not, will evidently be materially modified. Suppose, for instance, gypsum be used to any great extent with a view to fix the ammonia of animal manure, the consequences may be highly injurious in the cultivation of Beans and other pulse. For though the effect on green crops, such as Clover, is the production of a luxuriant vegetation, where the oxalic acid contained in the green leaves and stem combines with the lime of the gypsum, for which it has a great affinity, thus setting the sulphur free; yet if the crop be one of Peas or Beans, where the object is to obtain as large a produce of seed as possible, on the production of which it has no beneficial influence, the inevitable consequence will be a vast quantity of haulm, to the greater or less diminution of the ultimate harvest. On the other hand, where little or no oxalic acid enters into the composition of the object of cultivation, as in cereals, the gypsum will be inoperative. From such considerations and from the loss experienced in the use of some of the patent manures, depending for their composition on the theories of LIEBIG, Dr. SCHULTZ-SCHULTZENSTEIN has devoted much attention to the subject, and has laid some very sensible observations before the Prussian Horticultural Union relative to the theory of nourishment from the air, but more especially to the part which water performs in the process of vegetation, at the same time combating the notion of the nitrogen of plants being derived from the small quantity of carbonate of ammonia contained in rain-water, or that the principal object in manures is to supply nitrogen in that form in which he maintains that it is never assimilated by plants. He contends, on the contrary, that nutriment is conveyed to plants by humates and their allies, derived from various sources, whether as mere extract or in the form of geic and crenic acids dissolved in water, and that these are the only source of the oxygen which is given out by plants under the influence of light. Humus and humate contain all such elements as are in general necessary for vegetation, as carbon, hydrogen, nitrogen, oxygen and even sulphur and phosphorus, while mineral salts merely act as stimulants, or by way of modification.

The beneficial effect of irrigation on crops cannot be denied; the question is, from whence is this benefit derived, whether from organic or other matter dissolved in the water, or from the mere constituents of the water and the carbonate of ammonia which it may contain? Now, however true it may be that LIEBIG found certain waters deficient in organic matter, Dr. SCHULTZ shows clearly, from a multitude of instances, that such matters do exist in those waters which are in general used for irrigation, even in those which are nearly limpid, and that to a degree sufficient for the requirements of vegetation.

It is contended, however, that the products of vegetation are simply hydrated carbons, into which the elements of water enter in the same proportions in which they form water. But if so, the ultimate proportions of hydrogen and oxygen must be the same in both cases. Now, if it be assumed that this is the case in sugar and lignose, a multitude of instances may be given in which no such proportion is observed, but in which there is every possible variation, whether of excess of oxygen or hydrogen, or as in oil of lemons, which consists of 86.89 C; 12.32 H; deficiency of oxygen.

Again, BERTHOLLET conceived that the hydrogen was assimilated, and that the oxygen was set free. This has been completely disproved by SAUSSURE, who showed that plants do not increase by assimilation of water. LIEBIG, however, in ignorance probably of SAUSSURE's experiments, supposes that something takes places analogous to the mutual action of zinc water on carbonic acid, in which the zinc is rusted by the water, and the oxide of zinc combines with the carbonic acid to form carbonate of zinc; or, in other words, the living organism acts the part of zinc in galvanic decomposition.

If water, then, does not contribute to the nourishment of plants by its chemical composition, it must be only as the proper conductor of such substances as are necessary, and which can only be carried through such complicated tissues in a state of solution, whether pumped into the plant immediately by means of the spongy ends of the roots, or imbibed from the air by means of the stomates. Other arguments still remain, which we must reserve to a future occasion. *M. J. B.*

SOME 25 years since an English nobleman purchased in Italy, for a large sum, from an honest dealer there, a marvellous plant, which, as he thought, confirmed the old VIRGILIAN tale of Apples growing upon Plane trees. At least it appeared to his lordship to negative the general belief that dissimilar species cannot be made to unite by grafting; for here he had a Jasmine, a Honeysuckle, a Myrtle, and an Olive, all grafted on an Orange tree and flourishing luxuriantly. In due time the specimen reached England, and was for many months the admiration of the intelligent visitors at * * *. The clergyman of the parish, a very learned gentleman, who was familiar with everything except "common things," ransacked the classics for similar examples, and the soundness of VIRGILIAN physiology was triumphantly announced in the county paper, with an astonishing array of quotations from Greek and Latin authors. In short the famous

discovery that Maize and Tobacco were known to the Greeks and Romans, shrunk into insignificance before the parade of classical authority in that peculiar department of vegetable physiology which treats *de antiquis inserendi rationibus*. Let us add that the unlucky gardener at * * * was looked upon as a poor creature when he failed in grafting a Myrtle on a Gooseberry bush.

It appears from a statement by Mr. FORTUNE that the Chinese are even more skilful than the Romans were, for they know how to make a Thorn (Photinia) grow upon a Juniper. In one of his interesting communications (*Gardeners' Chronicle*, 1853, p. 741) he tells us not only of this, but that the Chinese claim greater powers of the same nature, for they take their common Pine tree as a stock on which to graft their eatable Myrica by way of improving its size and quality! A drawing sent home by Mr. FORTUNE, of which the annexed is a copy, will enable the reader to form some idea of the appearance of this Photinia on its Juniper stock.

We need not say that all these tales, like the ancient authorities so learnedly quoted by our classical friend, are mere fables; and that the examples by which they are supported, whether new or old, are instances of fraud and credulity.

In the park of his Grace the Duke of DEVONSHIRE, at Chiswick, there is a very old Cherry tree, which has been decayed in the centre for many years. Its hollow trunk has, however, been occupied by a common Birch tree, so that the same stem appears to support a top composed of Birch and Cherry branches. The Cherry trunk is 7½ feet in circumference, and 6 feet in height to the place where the branches diverged from it. To this height the Cherry tree once completely enveloped the Birch; but of late years the diameter of the Birch has increased so much that it has burst the decaying case of Cherry wood on the north-east side, where it is partially exposed to within 18 inches of the ground. Below this, the cylinder of Cherry wood is still complete. It is not surprising that the Birch should have burst the Cherry on the north-east side; for that side has usually the thinnest layers of wood, and would consequently give way the soonest to the expanding force of the Birch. The latter is now above 50 feet high, and measures 5 feet 4 inches in circumference at 6 feet from the ground, where it issues from the hollow Cherry. The portion of Cherry tree still alive is 20 to 25 feet high. This is evidently a natural explanation of the history of Mr. FORTUNE'S tree; and some such cases in ancient days may be well supposed to have given rise, in the first instance, to Virgilian fables, and afterwards to ingenious imitations.

The trick by means of which are obtained such trees as that to which we adverted in the beginning of these remarks, is now perfectly understood, and 30 years since was explained, under the name of "Impostors Grafting," by the late ANDRÉ THOUIN, from whose article *Greffe* in the *Nouveau Cours d'Agriculture* (1822), the following is an extract:—

"The so-called *greffe des charlatans* is nothing more than a plantation formed within the trunk of a tree, which has been hollowed out longitudinally quite into the ground below its roots. One or more young plants furnished with good roots are drawn through the trunk, and their roots are then covered with rich vegetable mould. These plants grow vigorously, fill up the cavity in the trunk with their stems, which squeeze closely together and eventually form at the top of the opening a swelling which perfectly resembles that produced by grafting.

"In this way was most probably formed the group of trees which PLINY the naturalist observed in the gardens of LUCULLUS at Tivoli, and which is described in his 'Natural History.' On the trunk of one tree he saw branches, some of which produced Pears, others Figs, Apples, Plums, Olives, Almonds, Grapes, &c.; but he adds, a little farther on, that this wonderful tree, which he considered as produced by the art of grafting, did not live long, and that it died some years after he first examined it.

"It is more probable that this tree had been formed merely by planting different species within some others in the way above mentioned, from the fact that at the present day at Genoa, Florence, Venice, and Rome, trees still continue to be formed in that manner. In some gardens at these places may be seen stems of Pomegranates, Myrtle, Lemon and Orange trees, from the midst of whose natural branches spring Jasmines, Roses, double-flowered Myrtles, and other shrubs of different genera, united by this process, of which the owners are very proud, and

make a prodigious mystery. In most instances only one species is introduced into the strange trunk, but sometimes you see numerous examples of different forms and kinds with the most brilliant colours associated in the same tree."

M. THOUIN farther tells us that he himself tried the operation with perfect success upon both a Lim[e] and an Ash tree a foot in diameter. He contriv[ed] to give both of them heads consisting of Plum[s,] Hazels, wild and cultivated Services, Walnut[s,] Peaches, and Vines, the branches of which we[re] thoroughly interlaced. Of one of the[se] he gives a figure which we reproduce, and which perfectly illustrates th[e] system.

We beg leave to offer this to th[e] notice of all credulous and ignora[nt] travellers, in the hope that it ma[y] teach them to use their understandin[g] to more purpose than those do wh[o] bring home tales of Oranges grafte[d] on Pomegranates, in order to becom[e] blood-red, or of Roses grafted o[n] Black Currants to make them blac[k] or even of miraculous trees with leav[es] covered by Tibetan characters.

VEGETABLE PATHOLOGY.

No. I.

A VARIETY of circumstances, but m[ore] especially the severe and widely exten[ded] maladies which have of late ye[ars] affected some of the more import[ant] objects of cultivation, have concur[red] since the commencement of this Jour[nal] to call the particular attention bot[h of] scientific and practical men to the dise[ases] which affect the vegetable world. Ma[ny] papers, in consequence, of more or l[ess] importance have appeared in our Jour[nal] and elsewhere, both in this country [and] on the Continent, but the process of [re]ference has now become so long [and] perplexing, and the amount of infor[ma]tion so large in point of mere bulk, [that] it seems desirable to place before [our] readers, in a compendious and m[ore] easily accessible form, all that is [yet] ascertained upon the subject as far as [our] own experience and access to reco[rded] information may enable us to do [so.] We propose, therefore, to institute a se[ries] of papers after a plan which will [be] presently stated, comprising everyth[ing] really valuable, both in theory and p[rac]tice, which can be supposed at all to c[ome] within the scope of an intelligent c[ulti]vator, and open to new information f[rom] every available source. It is purp[osed] indeed, to adhere strictly to the plan w[hich] has been laid down, in order to avo[id as] much as possible the confusion w[hich] must necessarily attend mere desu[ltory] essays or papers; but, inasmuch a[s the] series may possibly be of consider[able] extent, as important forms of disease may arise, [or] interesting information respecting those which have [been] already noticed, a system of numbering will be adop[ted] by means of which it will be possible to give sup[ple]mentary matter, at once referable to its proper pos[ition] in the series, considered as a whole. The method, [which] which it is purposed to adopt will be as follows:—

After such introductory matter as may be thought n[eces]sary before a more formal commencement of the sub[ject,] the subjoined division is proposed:—

I. PLANTS IN A STATE OF HEALTH.

Under this head their nature and structure[,] mode of nutrition must be briefly stated; [the] manner in which they are affected by ext[ernal] agents, as light, temperature, moisture, &c.; [the] more prominent chemical conditions, and [how] these are modified by the vital principle or [...] in organisms endowed with life.

II. WHAT IS DISEASE WITHIN THE MEANING OF [THE] TERM AS USED IN GENERAL BY CULTIVATORS?

III. THE CAUSES OF DISEASE.

- *a*. Internal or constitutional.
- *b*. External or accidental.
- *c*. Doubtful or conjectural.

IV. CLASSIFICATION OF DISEASE.

a. Internal or constitutional.	*b*. External or accid[ental].
* Functional.	* Functional.
** Organic.	** Organic.

V. REMEDIAL MEASURES.

a. Certain.	*b*. Doubtful.
* Rational.	* Rational.
** Empirical.	** Empirical.

M. J. B.

GASTROLOBIUMS.

THESE are free blooming plants, of comparativ[ely easy] cultivation, and being of good habit, they form ha[ndsome] specimens with no great amount of care. They m[ay be] increased either by means of seeds or cuttings made [of] young shoots in a half ripe state. Let us suppose a promising young plant in a 5-inch pot is in ha[nd in] March, ready to commence with, and in this cas[e the] beginning of the month will be a proper time to st[art it] into growth. About that season, therefore, remov[e the] plant to a light house, or pit, placing it near the [glass] where the night temperature may average abou[t]

allowing it to rise 10° higher on sunny days, with a circulation of air. Ascertain at once whether the roots require more space, and if so, give a moderate shift, but unless the ball is full of healthy, active roots, defer shifting until that is the case. A compost, consisting of three parts of prime, turfy peat, and one part light, turfy, sandy loam, mixed with a fourth of silver sand, and a quantity of clean, small potsherds, will be found most suitable for the Gastrolobiums. The peat and loam should be nicely broken up, selecting only the best; and the material should be well intermixed, taking care to have it in a moist but not wet state when wanted for use. In shifting, use clean pots, and be careful to ensure perfect drainage, by placing plenty of potsherds in the bottom. After shifting keep the atmosphere as moist as possible, syringing the plants over-head morning and evening, so as to avoid the necessity of giving much water to the soil till the roots reach the sides of the pot, which will happen in course of a fortnight or so. When fairly established after potting, and in free growth, give air liberally on fine days; also water the soil more freely; but in all stages of their growth Gastrolobiums require to be watered very carefully, as their delicate roots are very apt to suffer from an excess of this element, and if allowed to become too dry they will soon be infested with red spider. Never apply water, therefore, without first ascertaining that it is wanted, and then give sufficient to thoroughly moisten the ball. Tie out the shoots, and stop the stronger ones as may be required to secure a compact bushy habit of growth. Remove the plants to a cold frame as soon as can be done without danger of checking the growth by sudden exposure to a lower temperature. The treatment here during summer will consist in keeping the shoots properly tied out, and stopping any over luxuriant ones, so as to maintain a bushy habit of growth; shading on the forenoons of bright hot days, giving air freely, and maintaining a moist atmosphere. In warm weather it will be of great service to the plants to close the frame early in the afternoon, after moistening them over-head, raising the lights at the back before leaving for the night, as this produces a congenial moisture and greatly promotes active vigorous growth. A second shift will probably be required in June, and this should be afforded as soon as it may be necessary, and before the roots have become matted; a liberal shift may be given to such as may be ready for repotting in June, but this must be regulated by the health of the specimen, &c. Most of the varieties are somewhat subject to the attacks of red spider, particularly if in middling health, and no time should be lost in thoroughly eradicating this pest the moment it is perceived. Lay the plants upon a clean mat in such a position as will permit the under sides of the foliage to be well washed without saturating the soil, and repeat this operation every other day, until the spider shall have been fairly got rid of. Use tepid water, and repeat the washing occasionally as a preventive.

Discontinue shading as soon as the heat of summer is over, and when it can be done without danger from heavy storms of rain, expose the plants to the night dews in August and September. When cold uncongenial weather sets in, remove them to a light airy part of the greenhouse for the winter, and during this season apply water with great care; also keep a sharp look out for red spiders, and give any infected plant a good washing with the syringe. The plants may be allowed to remain in the greenhouse until they come into bloom, which will be in April, or later according to the temperature at which the house may be kept; a dry cool atmosphere, in which the flowers will endure longer than elsewhere, should be afforded while the plants are in bloom, and they should be guarded from bright sunshine.

After blooming, cut back the shoots sufficiently to insure a close form of growth, removing all seed-pods which may have made their appearance, unless any seed should be wanted. Give a moderate shift, and keep the specimens in the close end of the greenhouse until they start into growth, when they may be removed to a shady part of the plant ground, taking care to prepare them for the removal, by exposing them to a very free circulation of air for a time before placing them out of doors. *Alpha.*

DEEP CULTIVATION.

Some time ago, in the *Gardeners' Chronicle*, Dr. Lindley writing on the culture of late Peas, drew attention to the importance of the process of deeply loosening and aerating soils, technically called trenching.

As the season in which such work is usually done has now arrived, I have thought that a few observations based on the result of some experience might be useful in leading others to reflect upon the importance of the results which follow this process, and perchance to adopt it where practicable. I take it for granted that no one will dispute the importance of such a mechanical arrangement of the particles of soils as will allow the delicate roots of plants to range freely in seach of food, more particularly the roots of esculent vegetables, in dry and hot summers.

Believing fully in the advantages which follow this practice, as far as gardening results are concerned, and believing, too, that the progressive deepening beyond the shallow furrow with which many of our agricultural friends are content would be highly advantageous to them, I venture to offer these remarks, and to endeavour to reconcile them with approved and modern theory.

Of the twin-sisters, Agriculture and Horticulture, the latter art, while it is the most ancient of occupations, is also the most varied and elaborate in its processes; but the general and fundamental principles on which success depends are the same. Is the abstraction of superfluous moisture from the soil of vital import to the farmer, it is equally so to the gardener; and is not the one as much interested as the other in deepening and disintegrating the soil, in setting free its mineral ingredients, in the decomposition of organic matters, whether animal or vegetable, and in facilitating by every means the absorption of the gaseous constituents of the atmosphere? These are all elements of success, of equal and vital consequence to both parties. But there is an exception to be taken in the case of the farmer. While the gardener cannot have his land in too high a state of cultivation, to suit his ever varying and constant requirements, or his soil too rich, to suit the gross-feeding plants which he cultivates, as Asparagus, Rhubarb, Cabbages, Celery, Cauliflowers, &c., which depend for their good qualities upon the most rapid growth, and consequent succulence, tenderness, and crispness, the farmer in his most valuable cereal crops requires only a certain amount of luxuriance; if his straw is over fed with manure, and deficient in silicates, his crop is laid prostrate, and he is said "to farm too high." Some time ago, I think the Rev. L. V. Harcourt remarked in this Journal to the effect, that there is an economic point in farming, which if exceeded is not remunerative. "It is a great point," says a friend of mine, an extensive occupier, and one who has realised money by practical farming, "to know when the land is just sufficiently well done." The demands of the gardener upon the soil he cultivates are more continued and varied than those of the farmer; he generally speaking can allow little time for a fallow, and is frequently obliged to plant a second crop between one which has not completed its growth. How important then to seize all opportunity of turning and exposing the soil to atmospheric influence, as his supplies of food must be in a proportionate ratio. Deep spade culture and manure fresh and rich in ammoniacal matters are his resources, as testified in London market gardening.

But notwithstanding that market gardeners find deep digging profitable, and set us an example the correctness of which we cannot doubt, I am not exaggerating when I say that a majority of gardens are set down as "worn out," because they have not been half cultivated. I know many where the soil is only muddled over a shallow spade's depth, where the *pan* (as farmers call it) is never broken to a greater depth than an old-fashioned plough would leave it. Can such culture year after year tend to restore those elementary principles which have been abstracted by former crops, which when taken away have largely diminished the amount of mineral and saline matters, and which if continued cropping is practised will by degrees render the surface soil less and less productive until it is exhausted or "worn out." It is usual to apply a dressing of fresh soil to such ground, thereby restoring a supply of those inorganic substances which have been taken away from it.

It is customary for farmers to apply to their land which is deficient in lime a mixture of that substance and parings of turf from the sides of roads, ditches, and waste ground. This is a most valuable compost, partly owing to the solvency which lime gives to the organic substances, but perhaps largely consequent upon the mineral salts or inorganic elements of vegetation which it restores, and which the processes of cultivation reduce to an available form, as food for the future crops.

It is not wise to build castles in the air upon the ephemeral foundation of crude and visionary things; but while I must not be understood as deprecating the use of extraneous manures, I fully believe that all soils contain within themselves a much greater amount of fertilising matters than is generally supposed, provided always that means are taken by man to develope those hidden stores which are at his disposal, by deep cultivation and aeration.

An all-wise and beneficent Providence has placed the elements of vegetable life at our disposal—in the air which surrounds us, the rain which falls upon us, and in that earth from the "dust" of which, in the emphatic language of Holy Writ, we were formed; and to which the phosphates and carbonate of lime which so largely constitute, as bone, our skeletons must soon be returned; perchance to form new combinations in some of the ever-varying forms of vegetable life, and again to contribute their share to animal existence. But delightfully interesting as it is to trace these mutations of matter to their infinite source, our present purpose is limited to supplying them and their allied elements as available food for plants, and upon setting a proper estimate upon the valuable resources we have in the air, the rain, and the earth, if subjected to a course of cultivation — I say advisedly the valuable resources which mother earth affords independently of extraneous matters termed manures.

In proof of the position which I have advanced, I may mention that five years ago I took a piece of poor ground, upon which unhealthy Apple trees had long grown, into cultivation for culinary purposes. In the first year it was deeply trenched, receiving as manure only a small quantity of half-rotten leaves; after lying in a rough state for some time, and having frequent forkings, it was sown with Peas at large intervals, dwarfer summer Vegetables being grown between the rows. The crops of this legume were, in an extraordinary degree, fine and productive. At the first trenching a small depth of the bottom was picked up and left there, but in the following year, this was brought to the surface, when the process was in all respects repeated, the ameliorated soil from the bottom being annually brought up and mixed with the other earth. I have now grown four successive crops of equally fine Peas upon the same ground, and feel confident that by this cultivation, to use a homely phrase, I keep the soil "in good heart." Mentioning my practice and its results one day to Dr. Lindley, he kindly recommended me to procure the "Word in Season," a pamphlet I had at that time not heard of. I instantly got it, and I am a full and confiding believer in the theory of its reverend author, notwithstanding the practical scoffing and sarcasm which it has elicited. Whether the system is practicable and profitable on a large scale it is foreign to my intention to discuss. I leave this, therefore, to those whom it more immediately concerns.

All authority and experience acknowledges the importance of rendering soils permeable to water, air, and the roots of plants; the elementary principles of organic matter, the carbon, hydrogen, oxygen, and nitrogen are admitted and absorbed by the earth, its inorganic stores are developed by atmospheric agency, and free access is given by loose mechanical arrangement of the particles of soils to the tender rootlets. Let us then dig deeply, and remember that the earth contains hidden treasures, which those "who seek may find."

Let me not be misunderstood. I do not advocate the bringing to the surface a mass of crude soil, but a progressive deepening and bringing up only a small quantity which has for some months been subsoiled. I have long practised a system of biennial trenching, and I think that when a depth of 30 inches is obtained, it is impossible, or next to impossible, to exhaust a soil of the inorganic matters which plants require, if trenching and aeration are fully carried out; matter being infinitely divisible, and each separation of particles giving up fresh supplies. *Henry Baily, C.M.H.S., Gardener to G. Harcourt, Esq., Nuneham, Oxford, Dec.* 23.

Home Correspondence.

The Barbarossa Grape.—I have just read the article (see p. 838, 1853) from "J. B. W.," relating to this Grape; and in answer to his inquiries as to where it came from, I have only to annex a list of Vines I purchased in 1839 and 1840, at Isola Bella, on the Lago Maggiore and the Botanical Gardens in Naples, and request him and your readers to point out which the Barbarossa really is (Mr. Bevington, my then gardener at Welcombe, having lost the tallies). I have never thought the Grape rightly named, but I feel satisfied it is one of the under-named, to which I have added an asterisk:—Aleatico, Alicanthe, Altessa de Cipro, Barberossa, * Galetta (this is a first-rate Grape—nothing better), Hermitage, Lacryma Christi, * Lambrusca, * Blanquetti violette, * Montpellier grandes grappes, Montepulciano, * Damasco nero, Zibetto, Zibibbo. There are 500 different kinds in each of these collections, and of course many thousands in France. *Charles T. Warde, Clopton House, Stratford-on-Avon.* [Welcombe was sold by Mr. Warde to Mr. Mark Philips five years since.]——Permit me to correct a mistake which you have made in regard to this Grape. It was introduced to this country with many others from Italy, about 15 or 16 years ago, by C. T. Warde, Esq., of Clopton House, Stratford-on-Avon, and not by Mr. Mark Philips (the present proprietor of Welcombe), as you have stated; it was planted in a Pine stove at Welcombe, where it stood for several years before it fruited, and it was not until the growing of Pines in the house was discontinued that the true character of this Grape as a good, long-keeping, late variety was ascertained. It is very different in every respect from the Wortley Hall Grape, so fully described in Lindley's "Guide to the Orchard," No. 40, or from Money's "Escholata," which is a synonyme of the Poonah introduced by Sir J. Banks in 1817, see *Gardeners' Chronicle*, Vol. I., p. 201; and Lindley's "Guide," No. 29. The Black Raisin and the Black Muscadel are also very different. I have had the three last sorts under my charge at Picton Castle, Pembrokeshire, and the fruit has answered the description of them in Miller, Speechley, and Lindley. In the Hort. Soc. Fruit Catalogue, Mr. Thompson has fallen into an error in placing the last two sorts as synonyms of the Black Morocco, which is quite different from either of them. But to return to the Barbarossa: it came with that name, and is probably the same Grape which Miller notices as Barbaroux, in his account of the Provence Vines and wine making. I do not positively assert that this variety has not been introduced previous to the time above stated, and under another name, but I have never yet met, in any authority from Miller downwards, a description that would apply to this Grape. It is a very strong grower, wood very dark red, long jointed; eyes large and bold; leaves large glossy, coarsely serrated with long footstalks, changing early in the autumn to a most beautiful marbled dark red; bunches very large and long, well shouldered; berries large roundish oblong, and when well coloured very black, with a fine bloom; skin thin, tough, not liable to crack like many thin skinned Grapes; flesh juicy and rich, though not so high flavoured this season as in former years; there can be no question as to its long keeping qualities, as it has been preserved on the Vines at Welcombe fresh and good till March; and as to its superiority to Oldaker's St. Peter's. I state candidly that I give the preference to neither. Were I required to grow very late Grapes, I should plant both sorts in the same house, as the treatment of the St. Peter's, as practised by Mr. Oldaker some years since, will suit

the Barbarossa perfectly. *William Cooper, Charlecote Park Garden, Stratford-on-Avon.*

Temperature.—The following is a table of the temperature here. The thermometers for the maximum and minimum of the atmosphere are well secured from the direct heat of the sun and radiation at night, and have a free circulation of air. The thermometer laid on snow last night was 2° below zero, the air 5° above.

1853.	Temperature of the Air. Max.	Min.	Mean.	Temperature of the Earth. Min. on Surface.	1 Foot below Surface.	*Barometer. About 8 A.M.	Rain. Inches or parts of Inch
1st Mon.	43.9	34.3	39.1	31.6	36.1	29.10	2.21
2d „	35	26.1	30.5	24.1	32.1	29.14	0.90
3d „	43.5	28.4	36.1	24.6	34.5	29.38	1.41
4th „	51.4	37.6	44.5	34.5	42.2	29.29	1.71
5th „	61.6	39.3	50.4	36.3	48.8	29.37	1.52
6th „	66.6	48.2	57.5	46.8	55.7	29.29	4.47
7th „	67.9*	50.9	59.4	49.3	57.2	29.28	4.08
8th „	67.9†	49.2	58.6	47.7	57.6	29.38	2.72
9th „	64	44.6	54.6	40.2	53.0	29.41	2.33
10th „	55.9	42.7	49.3	40.3	48.3	29.14	4.04
11th „	46.9	34.6	40.7	31.9	40.7	29.51	2.01
12th „	38.1	29.1§	33.6	27.4	34.9	29.40	1.22
Yearly Average	53.5	38.7	46.1	36.2	45.0	29.30	28.62

* Elevation about 420 feet above the Sea.
† Absolute maximum 78°. ‡ Absolute maximum 78°.
§ Absolute minimum of the air 8°.

Register showing the Number of Days in the Month on which the Wind blew from each point, taken about 8 A.M. each day.

1853.	N.	S.	E.	W.	N.E	S.E.	NW	S.W	No. of days on which Rain fell.
1st Mon.	4	3	...	3	3	3	1	14	17
2d „	8	...	1	2	6	2	5	4	16
3d „	2	...	1	1	8	6	2	11	17
4th „	4	1	1	4	1	2	8	9	16
5th „	2	1	4	...	16	2	5	1	9
6th „	5	2	1	...	4	1	6	11	18
7th „	...	1	...	...	1	1	5	23	20
8th „	6	2	...	...	6	3	4	10	11
9th „	2	1	...	1	3	4	8	11	12
10th „	1	3	...	1	5	6	2	13	24
11th „	3	...	...	4	2	5	5	11	8
12th „	5	2	1	1	6	5	7	4	15
	42	16	9	17	61	40	58	122	183

T. Southall, Wellington Road Birmingham, Jan. 3.

Ageratum mexicanum.—Having noticed, at page 741, 1853, some remarks respecting the use of this Ageratum, as a useful winter greenhouse plant, allow me to add that I have grown it as a stove plant with equal success. My method is to strike cuttings of it about the end of June, placing three cuttings in a 5-inch pot; when fit to pot off I pot them singly into 4-inch pots, placing them in a gentle bottom heat. The last shift they get is into 11-inch pots, in the end of August, placing them for a short time in a cooler temperature, and pinching out the heads of the shoots, in order to keep them dwarf. I place them in heat in September, using the syringe freely, and under this kind of treatment they afford me a fine display of blossoms until Christmas. *James Hall, gr., Hawford House, near Worcester.*

Shingles.—Oak bark is used in Lord Carnarvon's Park, and on some cottages near it, at Burclere, near Newbury, Berks. For garden ornamental roofs it is preferable to anything, even thatch, as it never looks raw or new, and has from the first a pleasant tone, and in shade lasts longer than thatch; it is nailed when moist, I think, in shingles 1 foot by 6 or 9 inches. I do not see why Larch bark, Red Willow, and perhaps some few others would not do nearly as well, particularly Birch, if they are flattened out before dry. I may, perhaps, be allowed to add, that whilst all our flowers are gone, there are the Orange Gourds as bright as ever; the frost has not softened them as yet. *Somerset.*

American Monies.—As the value of the currency of the United States has been a subject of inquiry in recent numbers of the *Chronicle*, it may be stated that no definite value can be assigned to it, because it varies in different States. In some parts the dollar passes for 8*s.*; in others for 4*s.* 8*d.* Whilst this is the case, it will, nevertheless, be useful to emigrants and others to know the real value of the coinage according to the Government standard. This has been ascertained by M. Bernard and M. Neuhaus, of the Exchange and Mint of Paris. They have given, in the "Annuaire of the Bureau des Longitudes," the weight in grammes; the degree of fineness of the metals, or in other words the per centage of alloy; and the value of each piece in francs. From the data thus afforded, it appears that the *Gold coinage* consists of nine parts of pure gold and one of alloy; and by the law of the 3d March, 1849, the piece of

		grains.	val. £	*s.*	*d.*	*f.*
20 dols., or double eagle,	weighs	516 ...	4	2	2	$2\frac{950}{1000}$
10 dols., or eagle ...	„	258 ...	2	1	1	$1\frac{476}{1000}$
5 dols., or half eagle...	„	129 ...	1	0	6	$2\frac{738}{1000}$
2½ dols., or quarter eagle	„	64½ ...	0	10	3	$1\frac{869}{1000}$
1 dol.	„	$25\frac{8}{10}$	0	4	1	$1\frac{347}{100}$

Silver coinage—nine parts of pure silver and one of alloy.

		grains.	val. £	*s.*	*d.*	*f.*
Dol., or 100 cents (law of the 18th January, 1837)	weighs	412 ...	0	4	2	$3\frac{347}{1000}$
Half dol, or 50 cents	„	206 ...	0	2	1	$1\frac{673}{1000}$
Quarter dol, or 25 cents	„	103 ...	0	1	0	$2\frac{837}{1000}$
One dime, or 10 cents	„	$41\frac{2}{10}$	0	0	5	$0\frac{334}{1000}$
Half dime, or 5 cents	„	$20\frac{6}{10}$	0	0	2	$2\frac{167}{1000}$

R. T.

Frosted Greens.—Will you have the goodness to inform me under what circumstances persons have been poisoned by eating Greens in frosty weather, and whether there are any external indications of the vegetable being in an unwholesome state. I have eaten Greens during many winters with impunity, but I should be sorry to do so once too often. *D. E. L.* [We always thought that Greens were the better for being frosted.]

Rain collected at Itchen Abbas in 1853.—

	Inches.	Days on which rain fell.		Inches.	Days on which rain fell.
January	...4.04 ...	16	October	...5.21 ...	19
February	0.74 ...	17	November	1.10 ...	11
March	...1.28 ...	17	December	0.59 ...	13
April	...2.39 ...	15	Total	...30.30	187
May	...1.51 ...	10	Avr. each month	... 2.52	15
June	...4.05 ...	16			
July	...4.88 ...	25			
August	...2.97 ...	13			
September	1.54 ...	15			

The average annual quantity collected during the past 4 years has been 30.89, in 165 days. *W. W. Spicer, Itchen Abbas, Winchester.*

Rain at Cirencester in 1853.—

	Inches.		Inches.
January	4.00	August	3.72
February	1.05	September	1.87
March	1.00	October	4.23
April	2.56	November	2.20
May	3.40	December	1.00
June	3.80		
July	3.90		32.73

Thos. C. Brown.

Societies.

BOTANICAL OF EDINBURGH, *Dec.* 8.—Professor BALFOUR, in the chair. The following papers were read:—1. "Notice of a Botanical Trip to Helvellyn, with pupils, in July, 1853," by Prof. Balfour. The party, consisting of 45, left Edinburgh at noon, on 21st July, by the Caledonian Railway, for the Lake district of England. Reaching Carlisle soon after 4 P.M., they proceeded to Kendal. On the way to Ambleside they gathered an abundance of Stachys betonica, Sanguisorba officinalis and Lactuca muralis, plants, the last of which does not occur in the Scotch Flora, while the others are rare. The time was too limited to allow of a full examination of the shores of Windermere, and darkness came on ere the party reached their inn at Ambleside. Next morning (22d) some of the party were up at half-past four, eager to commence their rambles; they proceeded to Stockgill Force, and in the neighbourhood of that celebrated waterfall gathered a number of rare plants, including Impatiens Noli-me-tangere, Festuca sylvatica, Hymenophyllum Wilsoni, besides some more common plants, as Campanula latifolia, Polypodium Phegopteris and Dryopteris, with Scolopendrium vulgare. After breakfast 39 of the party started for Rydal, while six remained to examine the country near Ambleside. The walking party gathered Sedum album, reflexum, and Telephium, Sempervivum tectorum, and Meconopsis cambrica. They also picked Tilia parvifolia in fine flower. On the banks of the Rydal Water, and the grounds in the vicinity, the following plants were seen:—Quercus sessiliflora, Lastrea Oreopteris, and a variety of L. Filix-mas with singularly contorted fronds. In Rydal Lake the party gathered Lobelia Dortmanna, Myriophyllum spicatum, Potamogeton natans and oblongus; and on its banks, Carex vesicaria and dioica, Rhynchospora alba, Hypericum Androsæmum, and Berberis vulgaris. On the neighbouring roadside, Staphylea pinnata, Drosera rotundifolia, Anagallis tenella, Parnassia palustris and Narthecium ossifragum, were seen; and on the hilly grounds near Grassmere, Jasione montana, Allosorus crispus, which may be called the predominant Fern of the district, and Sedum anglicum. Between Grassmere and Dunmail Raise, Saxifraga umbrosa was obtained; and near Wythburn, Solanum Dulcamara. The party then proceeded to ascend Helvellyn, which rises at upwards of 3000 feet. In the ascent they gathered Saxifraga aizoides, stellaris and hypnoides, Lycopodium clavatum, selaginoides, alpinum and selago, Alchemilla alpina, and Oxyria reniformis. The party reached the top in a thick mist, cold and wet. They waited patiently for a time in the hope that some favourable change might take place, but seeing no prospect of this, they proceeded to Swirrel Edge with the view of descending to the rocks below. They had not, however, proceeded far down when the mist suddenly began to clear off, and the beautiful scenery around became visible. As the clearance continued to progress, there was a loud cry, "To the summit!" "To the summit!" Accordingly they willingly retraced their steps. On reaching the top, they were gratified by one of the most splendid scenes they had ever witnessed. The thick mist gradually rose, and ever and anon displayed some interesting spot, some peaked or rounded summit, some lake or estuary, until at length the whole curtain rose, the sun shone in all its brilliancy, and the entire lake district was illuminated. It is not easy to describe the ecstacy of the party, as scene after scene opened up to their delighted eyes, and when the whole mountainous district was discerned by them, their enthusiasm rose to the highest pitch. Scrawfell, Bowfell, Honister, Craig, Borrowdale, Skiddaw, Saddleback, Windermere, Coniston, Esthwaite, Morecombe Bay and its islands, the Solway, the Hills of Northumberland, were all distinctly seen. Below the summit, between Swirrel Edge and Stridling Edge, they gathered Saxifraga aizoides, stellaris, nivalis, oppositifolia, and hypnoides, Oxyria reniformis, Poa alpina vivipara, Festuca vivipara, Alchemilla alpina, Juncus triglumis, Carex rigida (which was also seen on the summit), Thalictrum alpinum, Hieracium alpinum and Lawsoni, Cerastium alpinum, Vaccinium Vitis Idæa, Rubus saxatilis, Polygonum viviparum, Splachnum mnioides, Polytrichum alpinum; also, Cochlearia officinalis, Viola sylvatica, Alsine verna, Sedum Rhodiola, Solidago Virgaurea, Veronica serpyllifolia var. humifusa, Armeria maritima, Salix herbacea, and Juniperus nana. July 23.—After breakfast, the party proceeded by the shores of Ullswater to Gowbarrow Park, visited the waterfall, and then walked to Pooley Bridge; the following plants were gathered:—Hieracium boreale, prenanthoides, Senecio aquaticus, Hypericum maculatum, hirsutum and humifusum, Stachys Betonica, Aquilegia vulgaris, Prunus Padus, Ligustrum vulgare, Sanguisorba officinalis, Calamintha Clinopodium, Lactuca muralis, Spiræa salicifolia, Serratula tinctoria near Pooley Bridge, Quercus pedunculata, and sessiliflora at Gowbarrow, Genista tinctoria, Galium boreale and Mollugo near Pooley Bridge, Thalictrum saxatile, Geranium phæum, and G. nodosum and Papaver somniferum, both near a cottage. The best plants were gathered between two and three miles of Pooley Bridge. After passing the Bridge, Plantago media was gathered abundantly on the roadside. The party walked to Penrith by the Round Table and Brougham Hall, gathering Potentilla reptans, Malva moschata, Galium Mollugo and Plantago media.—2. Notes of a Tour on the Hartz Mountains. Part III. By Dr. Lindsay. 3. On the Physiological and Therapeutical actions of Cannabis indica. By Dr. J. B. Balfour, Kilsyth. 4. Notice of Plants found in the neighbourhood of Dollar in the autumn of 1853. By Dr. Balfour. Dr. B. now recorded a few of the more important species, namely, in the immediate vicinity of Dollar the rare Rumex alpinus, on the banks of the Dollar water, and by the roadside near the Rumbling Bridge and Mackart. Equisetum umbrosum abounds on the banks of the Devon, near Cauldron Linn, and is likewise found near Castle Campbell, on the Dollar water, where also occur Rubus saxatilis, 12 Ferns, including Hymenophyllum Wilsoni, and Cystopteris fragilis; Festuca sylvatica, Poa nemoralis, &c. On the Ochils the following plants occur:—Saxifraga stellaris and hypnoides, Juncus triglumis, Epilobium alpinum and alsinefolium, Sedum villosum, Hieracium prenanthoides, Lycopodium alpinum, Selago, selaginoides and clavatum. Near the summit of Ben Cleugh, Gnaphalium supinum and Salix herbacea were found; and at the Cauldron Linn, Carex pendula and remota. The following were noticed by Mr. Westwood:—Arenaria rubra, Paris quadrifolia, Trientalis europea, Lathræa squamaria, Neottia Nidus-avis, and Meum athamanticum.

Notices of Books.

A Popular Account of the Ancient Egyptians. Revised and abridged from his larger work, by Sir J. Gardner Wilkinson. 2 vols. small 8vo. Murray: with 500 woodcuts.

No Christmas book could have been more acceptable than this cheap but excellent edition of Sir Gardner Wilkinson's great work on the Egyptians. The woodcuts are well drawn and well printed; besides which the learned author has added matter rendered necessary by recent discoveries, in order to complete his history. Moreover, there is a capital Index, which greatly increases the sterling value of the volumes before us. The student of the Scriptures, whose means did not enable him to possess the original work, although indispensable to him, has now the opportunity of acquiring it upon easy terms, while to the general reader it is no less welcome as an inexhaustible mine of information concerning a people whose manners and customs must have been a subject of curiosity from earliest childhood. It would be presumption in us to criticise such a work in this place, but we cannot forbear asking Sir Gardner whether the fruits represented in the wicker basket at p. 43, vol. i., were not Figs or Pomegranates rather than Grapes.

Letters on the Condition of the Working Classes of Nassau, by T. Twining, jun. G. Barclay. A pamphlet.—Now that attention seems to have taken a turn towards the desirableness of teaching common things which are useful, rather than uncommon things which are useless, it is to be hoped that the present pamphlet will find numerous readers. It contains an excellent detailed account of the manner in which industrial education is conducted in the Duchy of Nassau. The following extract from Mr. Twining's introduction explains how he has done what we regard as extremely well done:—"During more than 20 years spent in various parts of the continent, I have often seen capable minds and ready pens wander unemployed through the most valuable fields of information, and have frequently noticed how many useful observations, which the zest of a definite purpose would render delightful to make, remain unmade, or are doomed to sleep away their existence in the Lethean pages of a family diary. I hope to see adopted during the coming winter session arrangements by which the council of the Society of Arts may induce many travellers to offer their services to the society, for acting under instructions which would greatly facilitate inquiry, and secure uniformity of purpose. It is, then, the humble ambition of the present little pamphlet to be but No. 1 of a long string of miniature likenesses, each representing the industrial features of some foreign country, and each somewhat rounded in itself, yet only acquiring its full value by the concatenation and joint meaning of the whole. In each country those industrial features will of course be most dwelt upon which are most prominently developed, most different from what we see at home, or most commend-

able for imitation. The Duchy of Nassau is not a manufacturing country—the produce of its manufacturing industry is not to be compared to that of its vineyards, or to its mineral wealth—nor does it possess technical institutions like those described by Dr. Playfair in his valuable account of the training colleges of Germany; but its system of elementary education, its regulations concerning the apprenticeship of artisans, and the examinations they have to undergo, and the various means which its remarkably centralised administrative system affords for influencing beneficially the condition of the poorer classes, are well worthy of consideration. On most of these points, and also as regards the mode of the working population (Proletariat), their wages, expenditure, and resources, it is a very good sample of the south-western part of Germany; and in many respects it will be found to present a very convenient standard of comparison to those who may undertake the review of the neighbouring States. I have spared no pains to ensure for my statements the greatest attainable degree of accuracy. My plan has been to draw up a series of classified queries, calling attention to the special information I required, to employ a well-qualified person to collect it, and after getting into a readable form the materials thus procured, to submit them to friends competent from their official or professional position to judge of their accuracy and to supply deficiencies; and in this, as well as at every step of my task, I have been favoured by them with an amount of courtesy and zealous co-operation, for which I cannot too warmly express my acknowledgments."

The Foreign Tour of Messrs. Brown, Jones, and Robinson (Bradbury and Evans) is a 4to volume, containing 80 leaves of admirable sketches by Richard Doyle. For a winter's evening, it furnishes an unfailing source of amusement to the idle; while to the artist it is equally recommended by the singular skill with which many of the most crowded scenes are managed. In this respect indeed, G. Cruikshank and R. Doyle are unrivalled in the present day. Although extravagant and fantastical, as may be imagined from the title of the volume, the author may, nevertheless, justly claim for his volume a place among works of high art. We would more especially point to the scene where the Rhine boat is starting from Bonn, to the "doing" Cologne cathedral, the Jew quarter in Frankfort, and the interiors of the gaming-house at Baden, and the billiard-room at Prague, which have never been surpassed in their peculiar style.

Deane and Dray's Illustrated Almanac, although last in the field, is far from being the least of its class; on the contrary, it excels its contemporaries in the number and quality of its illustrations, and equals them in the useful knowledge collected in its pages.

New Plants.

35. HIPPEASTRUM FORMOSISSIMUM.

H. tubo brevi, fauce paucè tuberculatâ, perianthii laciniis angustis canaliculatis undulatis elongatis obtusis apiculatis, staminibus stylo multò brevioribus, stylo perianthio paulò breviore.

This plant was obtained from the late Dean Herbert's collection, by Charles Leach, Esq., of Clapham Park, with whom it has just flowered. The Dean does not appear to have had any knowledge of it, for we find no record of it among his MSS. now in our possession. In colour the flowers are singularly like those of the Jacobean Lily (*Sprekelia formosissima*), but in form and magnitude they may be compared with H. vittatum or the mule Johnsoni; there is a little green at the base of the flower, otherwise it is one sheet of the deepest crimson. The long narrow channelled obtuse apiculate segments and the very short stamens are apparently good marks of distinction. A hothouse bulb of very great beauty, not much disposed either to flower or produce offsets.

36. DICHORIZANDRA PICTA, *W. J. Hooker, B. M.* 4760.

Among the plants with variegated leaves now coming so much into fashion, is one with broad glossy foliage often edged and stained with dark dull brown, but pale green and pink on the under side. Having now flowered at Kew, it proves to be a species of this well known showy Brazilian genus, remarkable for having cream-coloured sepals, and large rich violet petals. The flowers appear in short downy slightly panicled racemes. The origin of the plant is unknown, except that it was received at Kew from Mr. Low, of Clapton.

FLORICULTURE.

PROPAGATION OF FANCY PELARGONIUMS.—About the beginning of February is as good a time as any for taking cuttings: select some good tops from the very best sorts that are out; get as many thumb-pots as you will require for the purpose; fill them with rich turfy mould, and put one cutting into each pot; but previous to filling the pots let them be well drained with broken charcoal or potsherds; then with a piece of round stick, make a hole an inch deep, fill it with silver-sand, and then put in the cutting, giving the pot a slight tap on the potting-board to settle the soil; dip a piece of stick into some water, and hold it downwards, in order that three or four drops may fall close to the side of the cutting, this will settle the whole together, and the quantity of water will be quite sufficient for three or four days; after that add a little more in a similar way, or with a fine-rosed watering-pot, as may be thought needful. When you have finished this part of the work, let all the pots be plunged in a slight bottom-heat, say from 65° to 70°; give a little air in the day-time, to prevent the cuttings from damping off. I do not recommend the practice of putting a great quantity of hard-wooded cuttings into one pot; two out of three will take root, and then you spoil several in getting them apart; strong cuttings struck singly in pots as directed, and well managed after they have rooted, will make fine specimens by June or July the following season. *S.*

CULTIVATION OF JAPAN LILIES.—These noble autumnal flowering plants form when in bloom objects of the greatest beauty, either in the greenhouse, drawing-room, or flower-garden; for they will be found to succeed well planted out in the open borders or beds. I have no doubt that they will shortly become general favourites for out-door work. The situation that should be selected for planting them in the open ground should be somewhat sheltered by shrubs or other means, in order to protect them from heavy winds, which are very injurious to the flowers and foliage. The best season for planting them in the open ground is February. At the time of planting examine the soil where they are intended to be placed, and if found wet, put some pots herds at the bottom for drainage. Then place on these some rough fibrous peat and sand well mixed together, covering the bulbs 8 inches deep. If the bulbs are strong, they may be planted a foot apart each way, if intermediate sized bulbs, 9 inches will be sufficient. About the latter end of March, or the beginning of April, they will appear above ground. Should the weather at this period be cold or frosty, place some rough pieces of peat around their stems, and keep them covered with it until there is a favourable change. This will be found the best protection for them at that season, as well as adding to their strength and vigour when they are in a more advanced state of growth, as it will induce them to throw out their strong fleshy roots into the peat with the greatest freedom, and often cause them to form fine bulbs round the stem. Should the summer be hot and dry, some manure-water would be of the greatest benefit to them. It should be prepared from sheep or cow-droppings, but not over-strong, as it can be applied more frequently if given them in a moderate state. When they have done blooming in autumn, and show a disposition to rest, take them up, and put them in some dry mould, to keep them from shrivelling, placing them either in a room or shed until planting time arrives next season. It will be found that an over supply of water while at rest is the principal thing that will injure them; and after such an unusually wet season as the one just past, I would always advise all bulbs to be taken up in winter, as I have seen numbers of fine bulbs completely destroyed by too much wet. Should fine specimens be required in pots for decorating the greenhouse or conservatory, prepare some 14-inch pots; well drain them, and use the same compost as before recommended, selecting three of the largest bulbs for each pot, and covering them the same depth with the soil as in the open border. When potted, place them in a cold pit or frame, giving them plenty of air, but no water until they show their stems above ground, when water may be applied very sparingly at first, increasing the supply as they advance. When they have made growth from 12 to 18 inches long, place round their stems some large pieces of rough peat, which will cause them to throw out fine strong roots in great profusion, and invigorate their growth amazingly. In the mouth of April they may be placed in the open air in some rather sheltered situation, where they can be liberally supplied with manure-water. Should any portion of them be required for decorative purposes at an earlier period, they may be removed into the greenhouse, to forward them into bloom; but if not required early, they may remain out of doors until they bloom, and then taken to the place where their beauty is required to be seen. I have no doubt that shortly some very fine hybrids will be brought into general cultivation, as I have in my collection from 12 to 20 distinct varieties varying in shape and colour, some of them very robust in their growth, with a clear white ground, distinctly spotted with rich crimson; others of a pinkish ground, beautifully spotted; some with beautiful stripes and blotches upon white grounds, while others are of a delicate pink ground finely spotted, with very broad petals, and beautifully reflexed. These have been produced by hybridisation; and I have no doubt that many other cultivators of these beautiful plants have been trying their skill in the same way; and I hope ere long to see our present collection enriched by their perseverance and attention. *W. Barnes, Camberwell.*

Miscellaneous.

Flowering of Nelumbiums at Montpellier.—The *Revue Horticole* contains an article extracted from the *Gardeners' Chronicle* on the flowering of these two species in Lancashire, and observations upon the same subject by M. Martins. N. luteum flowered in water having a temperature of 75°, whereas N. speciosum did not develope its flowers till the temperature of the water was raised to 86°. At Montpellier these two species flower perfectly well every year in the open air, in wooden tubs or stone troughs, the water in which is only heated by the sun's rays; but N. luteum generally flowers about the end of June, whilst N. speciosum does not do so till the middle of July. There is usually an interval of 20 days between the flowering of the two species. This fact was furnished by the intelligent gardener who has grown them since 1835. It supports what has been observed in Lancashire, and proves that the Nelumbium from North America requires less heat for flowering than the one from India. The temperature of the water in which these two species flower never exceeds 77° in the day, at night it always falls 9° or 10°. In winter the Nelumbiums are placed in three different situations. Those which are planted in the stone troughs remain in the open air; the water is let off so that the rhizomes are buried in a thin mud, the water is replaced by leaves so as to fill the trough, which is then surrounded with a heap of leaves. The other Nelumbiums which grow in the large wooden tubs are removed, some into a greenhouse, and others into the orangery. In the greenhouse, the temperature frequently falls to 46° in the clear, cold, winter nights; and in the orangery it is sometimes only 4° or 5° above freezing; but these comparatively low temperatures are of short duration. Still in spring, when the tubs are again removed into the open air, the Nelumbiums which were kept in the greenhouse are observed to come into leaf before those which were wintered in the orangery or out of doors. These species would doubtless remain perfectly well all the year in the open air, in the south and west of England; for at Montpellier it freezes a little every winter, and in the months of January and February the thermometer falls for an hour or two in some nights to 12° or 13° below the freezing point; in the day it rises to 47° or 50°, and sometimes higher. But in the months of May and June, when Nelumbiums begin to vegetate, the temperature is high. In May the maximum always rises as high as 79°, and sometimes exceeds that temperature. In June the maximum in the shade is as much as 95°. In May, the minimum in the shade is rarely below 46°. However, in the beginning of May there are still some nights in which the thermometer falls, a little before sunrise, nearly to the freezing point. In July the minimum is never below 50°. In the beginning of July, the time when Nelumbiums generally flower, the maximum is every day more than 86°, and it frequently reaches 95°. The minimum is about the same as in June. It is evident that the English gardener must obtain artificially the amount of heat necessary for the flowering of these plants, by heating simultaneously both the water and the air; and it is worth while trying whether this plant could not be flowered in the open air in August, by raising the temperature of the water to between 104° and 113°. I have so often seen plants grow exceedingly well in warm water, that I am convinced that this new method of forcing might be successfully attempted.

Improvements in the Manufacture of Paper. By E. Maniere, Bedford Row. Patent granted June 9, 1853. (No. 1413).—This invention consists in applying asbestos in the manufacture of paper. For this purpose the asbestos is to be pulped and manufactured according to the methods practised in making paper of other materials; but by the employment of asbestos a fire-proof paper will be produced. The inventor claims the employment of asbestos in the manufacture of paper.—*Mechanics' Magazine.*

Effect of Sulphate of Lime on Vegetable Substances.—About six weeks since I was engaged in making various experiments on the effect of sulphate of lime on vegetable substances. A portion of the substances then used by me was carelessly thrown aside, and on returning to my experiments about a fortnight afterwards, I was surprised to find that decomposition had not taken place in those portions of the vegetables which had been subjected to the action of sulphate, while those which had not been so treated were completely decayed. Among the articles experimented upon were a number of Potatoes, each of which was affected by the prevalent disease; some of these remain sound to the present day, the others have some time since completely rotted away. Subsequently, I procured some more Potatoes, and also some Beet-roots, the former being, as far as I could judge, all diseased. I divided the Potatoes into three portions. One lot I placed in a vessel with a weak solution of sulphuric acid, and from thence I placed them in a solution of weak lime-water. In the second lot the process was reversed; that is to say, the Potatoes were first placed in the lime-water, and then in the acid. The third lot was left untouched. Ten days afterwards I examined the Potatoes, and found, as I expected, that the Potatoes which had not been treated with the sulphate were rapidly decaying,—those which had been first placed in the solution of lime and then in the acid were more nearly decomposed,—while those which had been treated in the mode first described remained as sound as when first taken in hand. Upon being cut open the diseased part of the Potatoes was not found to have spread internally, and the flavour of the root was in no degree affected by the application of the process, nor do I think that its germinating power was injured by the effect of the sulphate. The effect upon the Beet-roots was similar to that produced on the Potatoes, and which would seem to be somewhat analagous to that of galvanising metals, viz, protecting the substances from the effect of atmospheric agencies. I may add, that muriatic and other acids have been employed by me on other occasions with equal success, the only agents required appearing to be those which will most readily produce a sulphate in contact with the substances required to be preserved. I do not think that any insuperable difficulty exists with respect to the application of the process. The acid I employed was very weak—about one part to two hundred of water; the lime-water was about the consistency of milk. *The Chevalier Claussen, in the Chemist.*

Improvement in Garden Pots. By G. Wilkins, Queen's Road, Walworth, Surrey. Patent granted June 1, 1853. (No. 1340.)—This invention consists

in so shaping flower-pots, and such like vessels, as to form a reservoir for the supply of liquid manure or gas to the plants grown in them, such reservoir being capable of being closed for the purpose of preventing the escape of any offensive odours or of gas, as described. *Mechanics' Magazine.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Conservatory and Greenhouse.—The present severe weather will render it necessary to employ a considerable amount of artificial heat, in order to prevent injury from frost; and unless great care is observed to maintain a soft moist atmosphere, the drying effects of so much fire heat will be highly injurious to the plants, especially to such as are in bloom. While severe weather continues be satisfied with as low a night temperature in all plant houses as it will be safe to keep, taking advantage of bright days to increase the temperature, and using a little fire heat, if necessary, in order to be able to admit fresh air to dispel damp, &c. The proper night temperature for the conservatory or flower house very much depends upon the kind of plants it may contain. Where Camellias, Epacrises, Heaths, and other winter blooming plants form the principal inmates of the house, 40° will be sufficiently high, and with a dry atmosphere it may safely be allowed to sink a few degrees on hard nights; but in cases where the hardier kinds of winter flowering stove plants are brought into the house while in bloom, 45° should be considered the proper mean night temperature. Let whatever watering may be required be done early in the day, so as to allow advantage to be taken of sunshine, whenever such may occur, to give air for the purpose of drying the foliage, &c. Many persons appear to entertain an opinion that very little attention is needed to properly supply plants with water at this season; and they only look over their stock at intervals of several days. We would, however, caution young gardeners against this mistake, and advise them to examine every plant, at least every other day, deferring the application of water until it is really required, and then giving a liberal soaking. We need not say that specimens which may be placed near heat-yielding surfaces will require water oftener than others occupying a cooler position, and they will be much more liable to suffer from neglect, and hence such should receive particular attention. At any season it is unwise to water a plant lest it should be too dry before next examination, and the way to avoid the temptation to do so is to look over the stock often. Attend daily to the removal of dead or decaying leaves, and directly any of the flowering specimens become shabby, remove them to some out-of-the-way place, taking care that they are put in proper circumstances as to temperature, &c., according to their wants, and supply their places with others in full beauty. Advantage should be taken during the present unfavourable weather for out-door operations to forward in-door work as much as possible, so as to be in a position at the proper time to concentrate all the available force you possess upon such work as cannot now be expeditiously or comfortably executed. Where necessary, the leaves of plants should be sponged over, and thoroughly cleaned, twiners pruned, trimmed, and put into proper order for the spring. Soils, crocks, charcoal, and whatever else may be necessary for potting, should be got into readiness for use when wanted. It will be of service in pulverising soils to be used for potting, and also in destroying insects, to spread them out in an exposed situation, and leave them to become frozen through, but they should not be placed where they will be liable to get wet. Orchid baskets may be made or repaired, also stakes, tallies, &c. Cold Pits.—Where the stock of bedding plants has to be wintered in structures of this description, the present will be found a most trying time, and the utmost vigilance and care will be required to preserve the plants from harm. Apply sufficient covering to the glass, and also to the walls of the pits or frames, to ward off the effects of the most severe frost, and embrace every possible chance of admitting fresh air, and removing decaying leaves, in order to prevent damp and mould. Too little water can hardly be given during the present month to plants in cold frames, and when it becomes necessary to give any, let it be done on the morning of a fine day, freely admitting air afterwards, in order to dry up all superfluous moisture before evening. Plants that may have been covered up for several days should not be suddenly exposed to bright sunshine, but should be partially shaded for a few hours; admitting air in the meantime, if the state of the external atmosphere will admit of it; this will dispel damp, and greatly assist in preventing the injury which might otherwise result from sudden exposure to sunshine. It is, however, neither economical nor judicious to attempt to winter general bedding stock in structures not artificially heated, for under such circumstances, in unfavourable seasons, it is scarcely possible to prevent a considerable loss taking place, and the trifling expense of 2-inch hot-water pipes, is more than repaid by the saving of labour, &c., in covering, which such an arrangement effects. Where the convenience of supplying fire heat is at command, it will still be advisable to cover the glass in frosty nights, and care should be observed not to render the plants tender by an excess of warmth.

FLORISTS' FLOWERS.

Look over beds of Pansies, Pinks, &c., after frost, to see that the plants are not thrown out of the ground. Turn heaps of soil frequently during frost, in order to pulverise and sweeten it. See that the stock of plants in frames does not suffer from the attacks of insects or mildew, and apply tobacco-smoke immediately the former is discovered; and remove infected leaves, and dust with sulphur, to check the progress of the latter. Dahlia roots may now be placed in heat where a large increase is required, but in most cases, if the roots are keeping well, they had better be allowed to remain in the store for another month.

FLOWER GARDEN AND SHRUBBERIES.

While the ground remains in its present frozen state, little can be done in these departments; wheeling may, however, be more expeditiously and cheaply carried on now than when the surface of the ground is soft; hence, where they are wanted, fresh soils or manures should be put upon the flower beds and borders. Shrubberies may also be thinned, where this involves only the cutting out of overgrown plants, or lopping deciduous trees, but where evergreens generally require pruning, that is best done in March; for although, when the winter proves mild, such work may safely be performed at any time, it is never safe to depend upon this. When the hands cannot be profitably employed at out-door work, get a good stock of pegs, Dahlia stakes, tallies, brooms, and such like things prepared and stored away in an orderly manner, so as to be ready for use when wanted.

FORCING DEPARTMENT.

Pinery.—A night temperature of about 60° should be maintained in the fruiting pits, letting it rise to 70° or 75° by day; and, where fruit is swelling, it may be allowed to rise 10° higher with sunshine and air; aim at keeping up a steady bottom heat of about 80°, which for the present will be high enough. Maintain a moist atmosphere, and water such plants as may require it with tepid manure water, but guard against an accumulation of moisture in the heart of such plants as may be showing fruit. In the succession pit the night temperature need not exceed 55° while the present hard weather continues, and from 60° to 65° will be sufficiently high on cold sunless days. See that none of the young stock suffers through dryness at the root, which is apt to be the case where much fire heat is employed. Where there is a convenience for repotting the plants, and re-arranging them without exposing them to cold air, such as require it should be got through hand, taking care to have a supply of properly moist warm soil before commencing the operation. Vineries.—Wash and dress the Vines in houses about to be started, and prepare materials for covering the outside border, if this is not already done; this, however, should always be effected before this season, so as to retain a portion of the warmth infused by the summer's sun; a substantial covering of dry leaves, fern, or some such material, should be applied before raising the inside temperature, and where it can be obtained these may be mixed with a portion of stable manure, to create a moderate fermentation and infuse a gentle warmth into the border, which will be of great service in promoting a vigorous root action. Care must be observed, however, if heat is once applied to the border, to replace the fermenting materials as they become exhausted, so as to maintain a regular temperature, and prevent the roots sustaining any check. Commence with a night temperature of from 45° to 50°, allowing it to rise some 10° by day. Syringe freely in fine weather, and admit air on every possible opportunity to strengthen the buds, and induce the production of short jointed strong shoots. Bend the Vines so as to place the lower buds in the most favourable position for receiving the sap in its ascent. Where Peaches and Figs, &c., are being started, maintain a night temperature of about 45° or 50° according to the state of the external atmosphere, and see that their roots are properly protected from the effect of frost; but for early forcing, it is greatly preferable to have a stock of plants in pots or boxes, which allows of keeping the roots in a favourable temperature. A small portion of Strawberry plants may now be placed in a pit or frame where the temperature can be kept at about 45°, giving plenty of air whenever the weather will permit, and if the pots can be plunged in a gentle bottom-heat, this will be advantageous in encouraging a healthy root action. Where very early Melons are required, seed should be sown at once. Cucumbers being generally grown for early use, it is scarcely necessary to say anything about them, but if not already done, seeds should be got in.

HARDY FRUIT DEPARTMENT & KITCHEN GARDEN.

Take advantage of the present state of the weather to get manure wheeled upon the quarters for which it may be intended. Cover Celery with dry litter to protect it from frost, and Cauliflower plants under hand-lights, or in frames, should be guarded from damp by admitting air on every favourable opportunity, and a slight protection against frost will be useful, particularly where the plants may not have been properly hardened. Lettuce and Endive in cold pits will require protection from frost, and air to dispel damp whenever this can be given. Attend to keeping up a supply of Seakale, Rhubarb, and Asparagus, &c., according to the demand and convenience, by introducing quantities of the roots into heat at intervals of about a fortnight. Also see to keeping up a supply of French Beans by making frequent sowing under favourable circumstances. These are generally grown in pots placed in Vineries or plant houses, but their liability to the attacks of red spider render them dangerous inmates of such structures, and where it can possibly be done they should be planted in lines in the bed of a pit devoted to their culture.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,

For the week ending Jan. 5, 1854, as observed at the Horticultural Gardens.

Dec. and Jan.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind.	Rain.
Friday 30	[illegible]	29.670	29.550	37	22	29.5	34½	38½	W.	[illegible]
Satur. 31	1	29.679	29.501	33	19	26.0	34	38	N.W.	[illegible]
Sunday 1	2	29.427	29.378	32	17	24.5	34	38	S.W.	[illegible]
Mon.. 2	3	29.291	29.205	32	4	18.0	34	38	S.W.	[illegible]
Tues. 3	4	29.316	29.132	32	28	30.0	34	38	E.	[illegible]
Wed. 4	5	28.940	28.912	32	31	31.5	34	37	S.E.	[illegible]
Thurs. 5	6	28.920	28.900	36	31	33.5	34	38	N.E.	[illegible]
Average.		29.320	29.225	33.4	21.7	27.5	34.1	37.9		0.9[illegible]

Dec. 30—Snow-shower, 6 a.m.; great fall of barometer; rain; clear and frosty.
— 31—Very clear and frosty; partially overcast at night.
Jan. 1—Clear and frosty; snowing; clear and frosty.
— 2—Frosty; snowing; clear, with intense frost at night.
— 3—Frosty and foggy; uniformly overcast; sleet at night.
— 4—Snow to the depth of 6—8 inches; uniformly overcast; fall of snow at night.
— 5—Thick haze; uniformly overcast; rain and sleet.
Mean temperature of the week, 9½ deg. below the average.

Errata.—In last week's Table read, mean of 24th, 31; aver. min. 18.7; mean of week, 27.3

STATE OF THE WEATHER AT CHISWICK,

During the last 28 years, for the ensuing week, ending Jan. 14, 1854.

January.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 8	39.32	30.53	34.92	7	0.26 in.	3	3	7	4	—	9	1	[illegible]
Mon. 9	39.64	31.21	35.42	9	0.20	1	6	3	3	3	7	4	[illegible]
Tues. 10	41.53	30.35	35.94	13	0.40	1	6	3	4	5	4	3	[illegible]
Wed. 11	41.21	31.67	36.44	16	0.83	3	4	3	1	5	8	2	[illegible]
Thurs. 12	41.85	31.00	36.42	14	0.76	2	5	2	2	5	9	2	[illegible]
Friday 13	42.78	33.57	38.17	15	0.29	4	3	4	2	5	6	3	[illegible]
Satur. 14	42.35	31.25	36.80	15	0.80	4	4	4	3	3	5	2	[illegible]

The highest temperature during the above period occurred on the 14th, 1849—therm. 56 deg.; and the lowest on the 14th, 1838—therm. 4 deg.

Monthly Depth of Rain, in inches and hundredth parts of an inch, which fell at Chiswick in the years 1841 to 1853 inclusive.

	1841.	1842.	1843.	1844.	1845.	1846.	1847.	1848.	1849.	1850.	1851.	1852.	1853.
	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.
January ...	2.60	1.06	1.33	2.25	2.97	2.85	1.31	1.16	1.73	1.43	3.07	2.72	2.14
February ...	0.76	1.32	2.35	2.27	0.93	1.47	1.34	3.12	2.52	0.95	0.90	1.06	0.59
March ...	1.32	1.81	0.47	2.44	1.25	1.02	0.41	3.05	0.85	0.13	3.57	0.25	1.48
April	1.58	0.15	1.62	0.33	0.95	3.93	0.92	3.06	2.21	1.79	1.65	0.52	2.52
May	2.16	1.73	5.26	0.25	2.89	1.35	1.59	0.28	3.53	1.84	0.74	1.74	1.60
June	2.45	1.58	1.62	0.97	1.36	0.80	1.31	3.20	0.31	1.40	1.33	4.69	2.54
July	3.56	1.52	1.67	2.10	2.31	1.78	0.79	2.21	2.82	2.68	3.90	2.27	4.17
August ...	2.69	2.81	3.28	1.84	2.79	4.50	1.50	4.70	1.60	0.97	2.03	3.71	1.87
September...	3.71	3.39	0.98	1.31	1.77	1.76	1.66	2.20	2.49	2.36	0.42	3.64	2.41
October ...	4.61	1.71	4.19	4.13	1.39	5.54	1.75	2.93	2.18	1.55	2.01	3.87	3.78
November...	3.41	4.43	2.13	3.06	2.11	1.43	2.26	0.90	1.32	2.03	0.55	6.20	0.91
December ...	2.12	0.76	0.58	0.39	2.61	1.21	1.81	2.03	1.28	1.15	0.62	1.97	0.30
Annual amount	30.97	22.27	25.48	21.34	23.33	27.71	16.65	28.84	22.84	18.28	20.79	32.64	24.37

Notices to Correspondents.

Books: *A B.* There is no book that we know of that "tre[illegible] exclusively of rustic work, giving examples of baskets, suitab[illegible] for pleasure-grounds, &c." ‡

Names of Fruits: *Rudolph.* Powell's Russet.

Names of Plants. We have been so often obliged reluctantly to decline naming heaps of dried or other plants, that we ven[illegible] to request our correspondents to recollect that we never ha[illegible] or could have, undertaken an unlimited duty of this ki[illegible] Young gardeners, to whom these remarks more especially app[illegible] should bear in mind that, before applying to us for assistan[illegible] they should exhaust their other means of gaining informati[illegible] We cannot save them the trouble of examining and thinki[illegible] for themselves; nor would it be desirable if we could. All [illegible] can do is to *help* them—and that most willingly. It is n[illegible] requested that, in future, not more than four plants may [illegible] sent us at one time.—*Erzeroum.* 219, Hypericum scabrum; 753, Clematis orientalis —; 416, C. vitalba; 458, Consoli[illegible] Aconiti; 630, Pæonia paradoxa; 989, Papaver orientale; [illegible] Papav. armeniacum; 190, Romeria rhæadiflora, *Boiss.*; [illegible] Delphinium Olivierianum; 298, D. Ajacis; 1018, Anemo[illegible] apennina.

Potatoes: *D E.* There is no doubt that frozen Potatoes will [illegible] if thawed in the dark, unless the temperature has been ve[illegible] unusually low. But we cannot undertake to say that Potato[illegible] sprouted in a pit or shed, and therefore tender, would equal[illegible] resist cold when suddenly planted out. We should think not.

Wellingtonia: *S R F.* The size of the Wellingtonia, as give[illegible] in the *Chronicle* of Dec. 24, is as reported by Mr. Lobb. [illegible] it was over 30 feet in diameter is pretty clear from the numb[illegible] of persons who can be seated in it. We understand that [illegible] mounted horseman rode into the interior of a hollow tree th[illegible] had been blown over, and after proceeding some distanc[illegible] the interior, turned the horse and rode out again.

Woods and Forests: *P E.* We are merely waiting in the ho[illegible] of learning that Government intends to do what is right in [illegible] future management of this branch of the public service. [illegible] that the blue book is out it must necessarily come under [illegible] consideration of the Cabinet; and we are unwilling to belie[illegible] that the responsible ministers of the Crown will tolerate th[illegible] management of the deputy-surveyors and their abettor[illegible] Should we be mistaken the exposure must go on, for th[illegible] subject is of great public interest as well as importance, whi[illegible] we most certainly shall not allow to be burked. It we sough[illegible] for a personal triumph we should not pause for an hour.

Misc: *H.* Since you have no room in front of your house, [illegible] Vine border for late Grapes, formed in the Vinery and exte[illegible] ing under and behind the back wall, may be made to answ[illegible] perfectly. We know of no such plant as Baccella violecia.

PERUVIAN GUANO, the guaranteed import of Messrs. ANTHONY GIBBS AND SONS, Lobos Island Guano, Superphosphate of Lime, and all Artificial Manures, Linseed and Rape Cakes, &c.—WM. INGLIS CARNE, 10, Mark Lane, London.

MANURES.—The following Manures are manufactured at Mr. LAWES' Factory, Deptford Creek:—

Turnip Manure ... ... per ton	£7	0	0
Superphosphate of Lime	„	7	0	0
Sulphuric Acid and Coprolites... ...	„	5	0	0

Office, 69, King William Street, City, London.

N.B.—Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia.—Sulphate of Ammonia, &c.

THE LONDON MANURE COMPANY'S WHEAT MANURE, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. EDWARD PURSER, Sec. Bridge Street, Blackfriars.

ARTIFICIAL MANURES, &c. — Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and dispatch.

Gentlemen desirous of receiving instructions in Chemical Analysis and Assaying, will find ample facility and accommodation at the College.

GUTTA PERCHA BOOTS FOR SHEEP, for the Cure and Prevention of FOOT-ROT (price 4*d*., 5*d*., and 6*d*. each). Price of the Powder, in tin cases, sufficient for 100 sheep, 2*s*. 6*d*.—Address JOHN JONES and Co., Patent Works, Sheffield. London Agent, Mr. F. HAINES, 22, Lime Street, City.

BIRD NETS, SHEEP NETS, RABBIT NETS, BAT FOLDING NETS with Bamboo Poles, 14 feet long 10*s*. each; Partridge Nets, 2*d*. per square yard; Rabbit Nets, 4 feet wide, 1½*d*. per yard; Cocoa Nut Fibre; Sheep Folding Nets, 4 feet high, 4*d*. and 6*d*. per yard.—At W. CULLINGFORD'S Manufactory, 1, Edmund Terrace, Ball's Pond Road, Islington (late of Strathmore Terrace, Shadwell), London.

GARDEN NETS, FISHING NETS, SHEEP NETS, and RABBIT NETS, made by machinery, and supplied on very low terms. Samples sent free.—R. RICHARDSON, 21, Tonbridge Place, New Road, near King's Cross, London.

"FRIGI DOMO."—Patronised by Professor Lindley for the Royal Horticultural Society, the Royal Zoological Society, by his Grace the Duke of Northumberland at Syon House, and many cultivators of first class Horticultural and Floricultural produce.

"FRIGI DOMO," a Canvas made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1*s*. 6*d*. per yard run, of E. T. ARCHER, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey.

PROTOXIDE ANTI-CORROSION PAINT, at a very considerable reduction of price. This article is extensively used by the principal Railway and Gas Companies, and by Builders and others for painting Stucco. It prevents iron from rusting, wood from decay, masonry from damp, and the hottest sun has no effect upon it.—Manufactured by CHARLES FRANCIS and SONS, Cement Works, Nine Elms, London.

PRIZE CHURN.

ANTHONY'S PATENT AMERICAN. — The Royal Agricultural Society again awarded the prize to this Churn, at their last meeting at Gloucester; at the trial this Churn made 4 lbs. 6 oz. of butter from 4 quarts of cream, the best of the other Churns tried made only 3¾ lbs. from the same quantity and quality of cream; 2000 of these Churns are sold yearly. Copies of testimonials, and list of prices sent on application.—BURGESS & KEY, Agricultural Implement Warehouses, 103, Newgate Street, and 52, Little Britain, London.

WINTON'S PARKES' STEEL DIGGING FORKS.

I HEREBY GIVE NOTICE that the Steel Digging Forks hitherto sold by Messrs. Winton & Son, of Birmingham, and called by them "Winton's Parkes' Forks," were manufactured by me, or by my direction, for the said Messrs. Winton & Son, and that I have now discontinued to manufacture for them; and that I have appointed Messrs. BURGESS & KEY, of 103, Newgate Street, London, my wholesale Agents, to whom I respectfully request orders to be addressed.

29th Sept., 1853. Signed, FRANCIS PARKES.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

STEPHENSON AND PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms Cottages, Manure Tanks, and Shallow Wells.

	£	s.	d.
Patent Pump	1	15	0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing	3	0	0

Larger sizes if required.

The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,

8, CRESCENT, JEWIN STREET, LONDON.

Every description of Machinery for Raising Water; Fire Engines, &c.

An Illustrated Book sent on application post free.

LAND DRAINAGE.

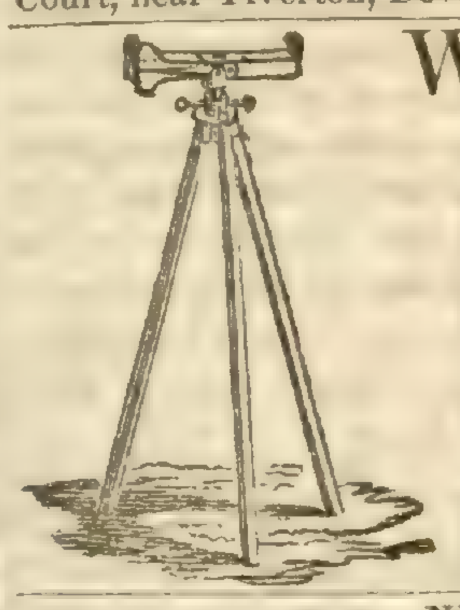
MR. BAILEY DENTON'S TABLES OF COST, &c., price 1*s*. 4*d*. Sold by METCHIM, Parliament Street.

MR. BAILEY DENTON'S WORKMAN'S A LEVEL, price 1*l*. 10*s*. Sold by JONES & Co., High Holborn, London.

DRAINAGE AND IRRIGATION.

HENRY WEBBER begs to inform Landowners and the Public, that having had several years' practical experience, he is prepared to undertake the Drainage and Irrigation of Estates upon the most improved principles, either by Contract or on Commission. Reference given.

H. W. wishes particularly to call attention to his improved and inexpensive method of Irrigation, whereby, at an outlay of a few pounds an acre, he can convert land having a sufficient quantity of water at command into water meadow, which may be mown every year without the application of manure. Any further information will be given on application.—Halberton Court, near Tiverton, Devon.



WEIR'S DRAINING LEVEL, PRICE 30*s*.

These Draining Levels have lately been greatly improved; they have stood the test of five years' use, during which upwards of 1000 of them have been sold. They are so simple that any labourer who can read can use them. They require no graduated staff, the index telling at once the rise and fall in inches without any computation.

EDWARD WEIR, Agricultural Engineer, 16, Bath Place, New Road, (6 Doors West of the Hampstead Road), Removed from Oxford Street.

NEW FOREST.

TO LAND DRAINERS.

BY ORDER OF THE COMMISSIONER IN CHARGE OF HER MAJESTY'S WOODS AND ROYAL FORESTS.

NOTICE is hereby given that Tenders at per rod are required for Under-Draining with Pipes and Collars about 93 Acres of Land on New Park Farm, three miles from Lyndhurst, and 1½ mile from Brockenhurst, in the New Forest.

The supply of pipes and collars to be drawn from the Victoria Tilery in the New Forest, from 2½ to three miles distant from the land to be drained.

Plans, Specifications, and Particulars of the Drainage, and of the price at which pipes can be obtained at the Victoria Tilery, may be seen on application to Mr. L. H. Cumberbatch, at the Queen's House, Lyndhurst, Hants.

Persons tendering are required to state their qualifications for the undertaking, and will be required to be bound themselves in the sum of 100*l*. and two sureties in the sum of 50*l*. each for the due performance of their contract to the satisfaction of Mr. L. H. Cumberbatch, the Deputy Surveyor of the New Forest, and Mr. William Dickinson, the lessee of New Park Farm.

Sealed tenders, to be headed "Tender for New Park Drainage," will be received by the Right Hon. T. F. KENNEDY, Office of Woods, &c., 2, Whitehall Place, London, until 12 o'clock at noon on Friday, the 13th of January, 1854.

The lowest tender will not necessarily be accepted.

TO LANDOWNERS, SOLICITORS, ESTATE AGENTS, ETC.

THE LANDS IMPROVEMENT COMPANY, incorporated by special Act of Parliament, 1853, having perfected their organisation, are prepared to receive applications for the execution of improvements, under the provisions of their Act.

The Act extends to England, Wales, and Scotland; and empowers persons in the actual possession of lands, or in receipt of the rents, such as tenants for life, trustees, bodies corporate, incumbents of benefices, mortgagees in possession, guardians of infants, &c., to effect substantial improvements on their estates, and to convert the outlay on such improvements into a terminable annuity or rent-charge of from 14 to 25 years, at will.

The Company, acting under the supervision of the Inclosure Commissioners, will undertake and execute improvements, or will supply the capital to landowners preferring to execute improvements themselves, or will grant the powers of their Act to landowners seeking merely to charge the inheritance with the outlay on improvements.

The Agricultural Works of Improvement particularly specified in the Company's Act, are:—

1. The Drainage of any Lands by any such means as the Inclosure Commissioners shall approve.
2. Irrigation, and Warping of Lands.
3. Embanking of Land from the Sea, or Tidal Waters, or Rivers, in a permanent manner.
4. Enclosing or Improving the Drains, Streams, or Watercourses of the Land, under the Inclosure Commissioners.
5. Reclamation of Land lying waste.
6. Making Farm-roads to the extent of one-half of the outlay for such roads.
7. Clearing Lands.
8. Erection of Farm-houses, and other Buildings required for farm purposes to the extent of three-fourths of the outlay for such Farm-houses and other Buildings.

In effecting the above Improvements there may be erected any Engines, Machinery, Engine-houses, Mills, Kilns, Sheds, Yards, Shafts, Tanks, and Reservoirs, Pipes, Conduits, and Watercourses for Irrigation, Tram-roads and other ways, Bridges, Weirs, Sluices, Flood-gates, and Hatches.

For Forms of Application and further Information apply to the Hon. W. NAPIER, Managing Director, 2, Old Palace Yard, Westminster, London.

BAKER'S FOUNTAINS.

THE PHEASANTRY, BEAUFORT STREET, KING'S ROAD, CHELSEA.

MESSRS. BAKER can confidently recommend their FOUNTAINS for Poultry, Pheasants, Pigeons, &c., as the most simple, efficient, and economical; they are easily filled, no screw or plug required. Price, containing 4 quarts, 6*s*.; 9 quarts, 8*s*. And at 3, Half-moon Passage, Gracechurch Street.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL AND GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.

Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

THE LABORATORY OF THE ROYAL POLYTECHNIC INSTITUTION is always open for the reception of pupils, under J. H. Pepper, Esq., F.C.S., A.C.E., &c. Careful Analyses and Assays of Soils, Minerals, Waters, Mercantile or Agricultural Products are performed with despatch, accuracy, and economy.

For terms apply to Mr. R. J. LONGBOTTOM, Secretary.

MANCHESTER POULTRY EXHIBITION.—An Exhibition will be held in the Free Trade Hall, on the 24th and 25th of January, the entries must be made with the Secretary on or before the 10th of January; the entrance money must be paid before pens can be entered for competition. One Hundred and Fifty Pounds will be given in Prizes; Poultry not in the Prize List can be Exhibited as Extra Stock. The judges will be instructed to award prizes to such as they consider deserving.—For further particulars, see Regulations and Prize List, to be had from the Honorary Secretary, Mr. GEORGE POTTER, 13, Cooper Street, Manchester.

THE GREAT METROPOLITAN EXHIBITION of POULTRY, PIGEONS, and RABBITS, will take place at the Bazaar, Baker Street and King Street, Portman Square, on Tuesday, the 10th, Wednesday, the 11th, Thursday, the 12th, and Friday, the 13th of January, 1854. Admission—Tuesday 2*s*. 6*d*., Wednesday, Thursday, and Friday, 1*s*. each day.

The Agricultural Gazette.

SATURDAY, JANUARY 7, 1854.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY, Jan. 12—Agricultural Imp. Society of Ireland.
THURSDAY, — 19—Agricultural Imp. Society of Ireland.

A HARD CONTINUED old-fashioned Frost—a frost that men of all ages of life declare 'reminds them of their boyhood,' has brought in the new year radiant with promise to the farmer of a cycle of more propitious seasons than he has of late for several years experienced. But mankind are not all farmers, nor the most inveterate farmers always on the farming topic: and viewed in other than the agricultural light, what a year has just opened upon us! Men verging on middle life are too young to realise the features that lower over the coming twelvemonth—and who shall say how many more?—with the prospect of another European and more than European war. It would not be easy to exaggerate the consequences that stand threateningly poised upon the moment when we have just turned from the old to the new year; a moment from which the view spreads back over nearly forty years of a Peace that had antiquated the very name of War amongst civilised countries, while before it lies an embroilment spreading like an Eastern pestilence, and enveloping nation after nation in its progress. It is impossible at a moment of suspense so circumstanced as that which this opening year brings with it not to feel a temporary lull of interest in every other less exciting topic, and to reflect with wonder on the mysterious power of evil to intercept and check the progress of good, and to compel even Peace to arm itself for Justice, to plunge into a calamitous struggle, after every unavailing effort to avert it, and to encounter a future whose probable vicissitudes baffle all foresight and conjecture.

And yet how full of instructive contrast to turn from the grievous and bewildering view of warlike preparation with all its grand deformity and moral falsehood, to the peaceful and truthful beauty of that eternal art whose noblest boast and destiny are written in its undying antagonism to the sword. How fortunate the destiny of a people who *can* turn from the contemplation of War, as from a foreign thing at worst and at all times, and pursue the uninterrupted work of cultivation upon fields ploughed without cannon and manured without blood. Truly there lies a rich moral in the anecdote of the Warwickshire ploughman who, on hearing the bells ringing for the Victory of Waterloo, and the final close of our long three-and-twenty years' struggle by the Proclamation of Peace in 1815, enquired with honest wonderment and scratching of the head—"What 'av' 'em bin a-*warring* then?"

In a recent Number of 'Chambers's Edinburgh Journal' there appeared an interesting article, which must have attracted some share of general notice and perusal, by the happy, though not quite new character of its heading. The words 'Approaching Revolution in Agriculture' contain a charm which operates alike on every eye, and is as irresistible now as it was a century ago, and will, perhaps, remain the same when other centuries have passed away. There are some, it is true, to whose faces it will

bring a smile—the smile with which men recognise an old visitor whom experience has made familiar, without any great change for the better or the worse by his accustomed visits: but compared with the mass of expectants and lookers on, the number of these graduates is small. The great majority of us have a tolerably keen and credulous appetite for a 'revolution' every now and then, in most of the arts of life that own dependence on the progress of scientific discovery; and in none is this instinct or illusion, whichever it may be, more perceptible or more permanently fresh than in agriculture.

In the article above referred to, some disappointment perhaps awaited the agricultural reader, on discovering that the 'revolution' indicated was *only* a chemical one; that it chiefly related to the organic constituents of the atmosphere, the absorption of carbon and ammonia by the earth and its growing products, with an allusion to SCHLEIDEN's researches into the phenomena of vegetation, and to the discovery of 'interstitial currents' in the soil, by Professor BAUDRIMONT, of Bourdeaux, subjects of deep interest, but, with the exception of the last, not unfamiliar as matter of study and experiment to the agriculturists of this country.

The word revolution, however, has begun of late to bear relation to a different branch—to the mechanics rather than the chemistry of farming; and, indifferently circumstanced as parts of this country are for the growth of cereal crops, by soil and climate, whilst especially favoured in all the elements of mechanical capability, the reflection is likely to increase that in that direction lies the task which —more than ever in the present state of the labour market — presents claims upon our attention and ingenuity almost of an exclusive and national complexion. The advancement in the knowledge of agricultural chemistry amongst us during the last ten years has, in the aggregate, been great; but from the very nature of such knowledge, its direct application to practical use is necessarily gradual, and obscure to the eye, being absorbed in the generally improved practices of the field, and existing rather as a mental guide to the farmer than a matter for innovation or display. Its effect is rather to assimilate general practice to the standard of the best examples already existing, which the chemist after all does but approve and explain, than to produce startling deviations or unlooked-for results. The best of all revolutions are those which so proceed; but where they do so proceed they afford safe assurance against any sudden revolution of practice derived from fresh discovery; like the lightning-conductor, they draw away in detail the force of the shock which advancing knowledge may direct against the prevalence of erroneous practice; and it is only seen, by looking back over past periods of some duration, what that effect is, both in nature and amount, which the gradual spread of true principles of practice (commonly abbreviated into the term science) actually produces upon the husbandry of the age.

It does not appear why more than this should ever have been looked for from agricultural chemistry. The instinct of practice, in dealing with the elements and everyday phenomena of nature, in a business so old and so universal as husbandry, might well be expected to have discounted, in course of time, the most ingenious discoveries of modern chemistry; and when the best chemists of our day have themselves, from time to time, acknowledged this in admitting that chemical truth is most happily illustrated by the results of the best practice—one does not see what more there is to be said upon the question: what you seek is not so much the establishment of something hitherto unknown, as the diffusion of the known, with the *rationale* appended to it that shall explain and commend it to an inquiring mind and prove it to a doubting one.

But in the mechanics of the art the case is different. If in any region of the earth, at any time, a man might, in course of practice, hit upon a succession of crops, a mode of mixing and applying his manures, and a sagacity in the exposure of his soil to the influences of the atmosphere that would answer the best requisitions of modern science, yet all that practice could ever do for the mechanics of husbandry would be to gradually develope and improve the instruments best suited to the capabilities of the hand or of the team, the only agents of field tillage that, till recently, existed.

But not so now. The agency of Steam bound by no vassalage to the two modes of tillage prescribed by the nature and necessities of manual or of horse-labour, as instanced in the spade and the plough, does seem to promise a revolution not less (and it need not be greater) than that it has achieved in almost every other process of art it has yet been applied to; in obedience to that feature so happily phrased by Professor Sir A. ALISON as "the almost miraculous multiplication it has produced of the *powers of mechanical invention*."—"When we contemplate the effect of the steam-engine on machinery," continues that historian "and the conducting of nearly all the branches of manufacturing industry, as it has been exemplified in Great Britain for the last eighty years, we seem to have been *entering on a career to which imagination itself can assign no limit.*"

Powerfully true. But what will the surprised reader say, then, to the 'limit assigned to its career by the *imagination*' of the same distinguished writer, in the very next paragraph, which proceeds as follows:—

"Great as are the things which the steam-engine has done for mankind, it may be doubted whether what it has left undone are not still more important to human happiness and the moral purity of the species. Its marvels are confined to manufacturing industry;—it is incapable of application to the cultivation of the soil. It enables one man to do the work of 200 in providing dress or luxuries, but it has not superseded even the hand of infancy or old age in furnishing the means of subsistence. Behold that boy who tends his flock on the turf-clad mountain brow, he is as ignorant of art as his predecessors were in the valleys of Arcadia; but will the steam-engine ever encroach on his blessed domain? Listen to the song of the milk-maid, as she trips along yon grassy mead—is that gladsome note to become silent in the progress of civilisation! Observe that old man who is delving the garden behind his cottage; the feebleness of age marks his step, the weakness of time has all but paralysed his arms—yet art, in all its glory, will not equal his labour in the production of food for man. Cast your eyes on that orchard, which is loaded with the choicest fruit of autumn—on that sunny slope, which seems to groan under the riches of the vintage—on that garden, which realises all that the soul of MILTON has figured of the charms of Paradise—and say, will these primeval and delightful scenes ever, in the march of improvement, be lost to mankind? The powers of steam, the inventions of mechanism, the division of labour, have done wonders in all the branches of handicraft and art; but they have left untouched the marriage of Industry with Nature in the fields. And in the last days of mankind, as in the first, it is in the garden of Eden that man is to find his earthly paradise."

There is no replying to poetry of the 'Deserted Village' school: no arraigning the 'limits that imagination may set to a career' it had just pronounced illimitable in every sphere where trial had been practically made, followed by a *de facto* negation of it to one where no trial can be said to have been made as yet, worthy of the name of serious experiment. But is it *true* that steam has been proved inapplicable to agricultural purposes, and "has not superseded the arm of infancy or old age in furnishing the means of subsistence?"—'Behold, then, that middle-aged individual serenely threshing in a barn! listen to the alternate rhythm of the Flail as it glances through the air and 'lights resilient upon the dancing corn-sheaf; is that gladsome sound to become silent in the progress of dispurifying vaporotrition?—will the steam-engine ever encroach on the blessed domain of the barn-door: and the fattening cottage pig be robbed of his evening meal, poured from recondite under-smock and miraculously furnished wallet?'

Or, to change the venue but a very little way back—'Cast your eyes on that stage-coach, which is loaded inside and out, and seems to groan under a *testudo* of umbrellas and pea-jackets; "please to remember the coachee," who sips the vintage at each road-side inn, "and that in every stage," and the guard, who realises all that the soul of MILTON has figured of LUCIFER going to and fro upon the earth, and say, will these primeval and delightful scenes ever, in the march of improvement, be lost to mankind?'

Alas! yes: the demoralising Steam-engine has erst invaded the moral purity of the Stable, and eke of the Farm-yard, after seventy years' negation to the former and eighty to the latter, from the date of its first infliction upon the degenerate wants and uses of mankind. And in spite of all the picturesque sentiment that appeals to prejudice it might be employed to enlighten and correct, and in defiance of all the pleasant poetry that leaves in the lurch, unproven and untouched, the thesis it was summoned to illustrate, and regardless of the one-eyed philosophy that ascribes illimitability to what it has seen and impossibility to what it has not seen; the steam-engine which has fought its way into the Farm-yard may yet fight its way out of it, to the arable land; and yet the sunny slopes and orchards, and cottage gardens and grassy meads, and tripping milk-maids of the country be as charming as before, and great historians be able to 'babble of green fields,' while binding and loosing at pleasure "the marriage of Industry with Nature" in field and factory; sinking History into an old almanack, by quenching its most useful and truly glorious rays—not those which stare and dwell upon the acknowledged marvels of the Past, but those which penetrate and illumine 'the ignorant Present time, and reflect the Future in the instant.'

THE Tables, in another page, of the measured and actual weights* of the live stock shown at Baker Street deserve attention. Our columns are so full, and so many communications from valued correspondents are waiting publication, that we can merely name the facts they seem to convey.

And, first, of what they teach about the three different breeds exhibited, the following Table is sufficiently instructive. The averages stated are taken from those in page 827 of last year's volume; the weights given are therefore only estimates, but they have proved in all cases below the truth, and for comparison may be trusted.

	DEVONS.				HEREFORDS.				SHORT-HORNS.			
	No.	Age.		Weight.	No.	Age.		Weight.	No.	Age.		Weight.
	hd.	yrs.	mo.	st.	hd.	yrs.	mo.	st.	hd.	yrs.	mo.	st.
Oxen ...	7	2	9½	68	5	2	10	73	8	2	9	84
Ditto ...	9	4	4	78	12	4	0	98	14	4	2	108
Heifers ...	4	3	9	66	2	3	1	64	7	3	5	85
Cows ...	4	8	8	69	1	5	1	72	14	7	4	90

The two first lines are the most significant, indicating, we think, among other things, the earlier maturity and greater weight of the short-horn breed, and so far as this goes (for it is not all that is required to determine the problem, the quantity of food consumed would be needed too), pointing out the short-horn as the best farmer's beast of the three.

As to which is the best butcher's beast the following may tell.

Thirteen Devon cattle weighed 1085½ stone, and yielded 143½ stone of loose fat, or 13.2 per cent. of their carcase weight.

Twelve Hereford cattle weighed 1128½ stone, and yielded 130 stone of loose fat, or 11.5 per cent. of their carcase weight.

Nineteen short-horn cattle weighed 1960 stone, and contained 213 stone of loose fat, or 10.8 per cent. of their carcase weight. These figures are perfectly consistent with the general idea that the Devon and Hereford cattle "die" better for the butcher than the short-horn. And if we confine our attention only to the young and prime beef the same truth is still more apparent. Thus nine Devon oxen and three Devon heifers, averaging 3 years 8 months, weighed 995 stone, and yielded 131½ stone of loose fat, or 13.1 per cent. of their carcase weight. Twelve Hereford oxen, averaging 3 years 8 months, weighed 1128½ stone, and yielded 130 stone of loose fat, or 11.5 per cent. of their carcase weight. Sixteen short-horn oxen and one short-horn heifer, averaging 3 years 6½ months, weighed 1688 stone, and contained 177 stone of loose fat, or only 10.5 per cent. of their carcase weight. Probably the numbers compared are not sufficient to give very trustworthy results, still it is worthy of remark that they tally with the general idea on the subject.

The second point illustrated in these tables is the capability of estimating the weights of cattle by their measurements. But to this, and to the relative *merits* of the two cattle guages employed in working out these results, we must refer next week.

Meanwhile we conclude with a question. How comes it that so many pure-bred short-horn heifers find a place in the catalogues of our fat cattle shows? How comes it that animals with most valuable pedigrees find their way to the butcher at so early an age? The answer is to be found in the excessive feeding by which breeding stock is so often injured. Well might Mr. PUSEY say at the annual meeting of the Farmers' Club, that for his part he could see but little difference between the show yards of July and December. Much of the responsibility of this destruction of valuable stock rests upon those whose competitions encourage, if they do not sanction this treatment of our breeding stock. How comes it, for instance, that Mr. AMBLER's pure-bred white short-horn heifer competes for prizes at Baker Street and Birmingham, and is slaughtered at three years old, whilst her dam, now 14 years old, has been a regular breeder, and has had a calf within the past four months? The answer is—*She once tried for the premium of the Royal Agricultural Society of England.*

ROOT-GRATING MACHINE.

"*A. Z.*—We do not know what you refer to, but we are quite sure that no one with a regard to his own respectability will advertise his ability, by means of it or any other such contrivance 'to effect a saving of 50 per cent. in feeding cattle.'"—*Agricultural Gazette, No.* 47.

The above paragraph was cut out of your Paper and forwarded to me from Scotland. I never made the

* We beg to return our best thanks to those who have kindly answered our application for information as to weights, &c., of cattle sold at Baker Street.

assertion which you quote on feeding cattle; but, at the same time, I think it very likely to be the case. Any contrivance which teaches a farmer to economise his fodder must be beneficial to him, and I believe the art lies in fermentation. The large carters in the south of England are fed upon Barley, but it is fermented before it is given to them. A friend of mine had a lot of very fine Cochin China fowl; he fed them on raw Barley, in a fermented state, and, as he stated to me, it is very good food for them.

In the experiment brought forward in the pamphlet of which I send you a copy, and which was made with the greatest precision and care, pigs alone are mentioned. It shows that 48 cwt. of Turnips fermented, of themselves obtained the object better than 97 cwt. steamed, besides the consumption of 20 cwt. of coal, and the trouble. In another experiment by Sir John Power, who feeds a great quantity of pigs, and is anxious to find out the most economical way of doing so, he writes:—"I selected 12 of my own pigs, and divided them into two lots, as equal as I could, and gave your steward in the county of Kilkenny six to feed for me on the fermented food, and I laid him a wager that I would beat him on the steamed Turnips, both parties being bound to use an equal quantity of cracked Barley." In his letter to me he further states, "the only thing certain as yet is that my lot consumes double the quantity of Turnips."

This is the only answer I make to your paragraph.

Dr. Barter, who is proprietor of the patent in conjunction with my brother, and who is a very large farmer, was here last week. I told him of the opposition there seemed to be to the system in Scotland; his answer was, "So there will be until it is tried."

The call for the root-graters in this country is extraordinary, and it has been found quite impossible as yet to meet the demand.

For cattle, the idea consists in the admixture of the shreds of Turnips, very thin, with farinaceous food; and the reason why I think it probable that it may prove a saving of 50 per cent. is that straw, and rough stuff of all sorts, otherwise rejected by animals, become, when chaffed and so cooked, grateful to them. In this country it seems applied to the feeding of all animals, from fowls to bullocks, and even some go so far as to say dogs, although I cannot say that I have so tried it. It certainly seems admirable for farm-horses; one-third Carrots, two-thirds Turnips, mixed up with chaff, with one feed of Oats in the morning, keep mine in good condition. For my other horses (hunters excepted) their daily rations are—7 lbs. of crushed Oats; 7 lbs. of shredded Turnips or Carrots; 10 lbs. of chaffed hay and straw, with a very small lock of hay in the rack. They stand upon sawdust, upon which I find horses lie down much more during the day, and therefore consider it as agreeable to them as the straw, all which they eat.

I have no share in the patent, but wish to assist my brother's invention. *Gervase Bushe, Glencairn Abbey, Lismore, Ireland.*

COMPARISON OF MEASURED AND ACTUAL WEIGHTS OF SMITHFIELD BEEF.

No. in Catalogue.	Name and Address of Purchaser.	Measurements.			Measured Weights.*				Actual Weight.*	
		Age.	Length.	Girth.	Carey's Gauge.	Ewart's Gauge. "Fat."	"Very fat."	"Extra fat."	Carcase.	Loose fat.
	Devon Steers (under 3 years old):	yrs. mo.	ft. in.	ft. in.	stones	stones.	stones.	stones.	stones.	stones.
1	Mr. Edwards, 2, Russell Place, Tunbridge Wells	2 11	4 11	8 1	77	80	84	88	80	11½
2	Mr. Gurney, Charles Street, Westbourne Terrace, Paddington	2 10	5 1	7 10	75	77	81	85	77	10
3	Mr. Russell, Windsor Street, Uxbridge ...	2 7	4 8	7 9	68	70	73	77	69	10
4	Mr. G. Curtis, Andover, Hants	2 11	4 8	7 1	56	58	61	64	69	8½
5	Mr. Pothecary, Grove Place, Lunatic Asylum, Southampton	2 5	4 9	7 0	56	58	61	64	77	8
	Devon Oxen (over 3 years old):									
12	Mr. Page, 18, Cross Street, Hoxton New Town	4 3½	5 11	8 5	90	94	99	104	105	19
15	Mr. Fawkes, Queen Street, Hammersmith ...	4 11	5 2	8 0	79	82	86	90	83	10
17	Mr. Pawsey, Bath	4 10	5 1	8 6	88	92	96	100	103	13
19	Mr. C. Frampton, Wimborne, Dorsetshire ...	4 9	5 9	8 10	110	112	117	123	109	12
	Devon Heifers (under 4 years old):									
20	Mr. Edwards, 2, Russell Place, Tunbridge Wells	3 10	4 11	7 6	67	69	72	75	77	11
21	Mr. J. M. Stedwell, Twickenham	3 10	5 0	7 3	63	65	69	72	68	9¼
23	Mr. Elphick, East Mountsey, Surrey	3 10	5 9	7 9	82	86	90	94	78	9
	Devon Cows (over 4 years old):									
26	Mr. R. Dominy, Bland[illegible] Dorset	9 7	5 3	8 3	85	89	93	98	90½	12
	Hereford Steers (under 3 years old):									
30	Mr. Stevens, 69, Holyw[illegible], Oxford	2 9	5 3	7 3	66	69	72	76	72	
31	Mr. Copeland, Abingdon	2 11	5 0	7 8	70	73	77	80	83	4
32	Mr. Jeffrey, Fo[illegible]bert's Place, Regent Street ...	2 11	5 5	7 10	80	83	88	91	76	
34	Mr. H. Edwards, Tunbridge Wells	2 8	5 0	8 0	77	80	83	87	76	
	Hereford Oxen (over 3 years old):									
36	Mr. T. Bancroft, Great Grimsby	3 11	5 6	8 10	103	107	112	118	108	12
39	Mr. Minton, Windsor	4 9	5 5	9 4	114	118	123	128	123½	11
40	Mr. Mason, Queen Street, King's Road, Chelsea	4 0	5 6	8 5	93	97	102	107	93	12
42	Mr. Collingwood, Islington	4 0	5 5	8 2	87	90	94	99	90	14
43	Mr. Jones, Heatherfield, Essex	4 3	5 7	8 6	97	101	105	110	111	11
44	Mr. Horwood, Esher, Surrey	3 4	5 5	8 5	92	95	100	105	92	12
45	Mr. Bannister, Threadneedle Street	3 11	...	...	...	...	...	...	101	14
47	Mr. White, Shadwell	3 9	5 5	8 8	98	101	106	112	103	16
	Short-horn Steers (under 3 years old):									
51	Mr. Page, 158, Hoxton Old Town	2 9	5 3	8 0	81	84	87	92	87	10
53	Mr. Hill, Harrow	2 10	5 3	8 7	93	96	101	105	95	14½
56	Mr. Lynn, Cobham, Surrey	2 7	5 5	8 1	85	88	92	97	87	
	Short-horn Oxen (over 3 years old):									
59	Mr. Dobbin, 15, High Street, Poplar	3 11	5 7	9 1	110	115	120	126	109	
60	Mr. Bottrill, 41, Rochester Row, Westminster	4 4	5 9	9 1	114	119	124	130	106	14½
61	Mr. Ferris, Westgate Place, Bath	3 9	5 5	8 5	92	96	100	105	103	14
63	Mr. Chapman, Barnsbury Park, Islington ...	4 5	5 9	8 9	105	110	115	121	113	15
64	Mr. Stevens, 69, Holywell Street, Oxford ...	3 9	5 6	8 7	97	102	106	111	91	
65	Mr. Cooper, Mill Street, Macclesfield	5 8	6 1	9 11	143	149	156	163	157	18
66	Mr. G. Stone, Watford	3 9	5 4	8 7	94	98	103	108	94	13
68	Mr. Hopson, Stroud, Gloucestershire	3 8	5 8	8 6	98	104	107	112	107	13
69	Mr. Rudland, Fakenham Market, Norfolk ...	3 8	5 2	8 4	86	90	94	98	90	10
70	Mr. Snape, 18, Three Colts Street, Limehouse	3 10	5 7	8 4	93	97	102	106	104	11
71	Mr. Dobbins, 6, Drury Lane	5 5	5 10	9 5	124	129	137	144	143	12
72	Mr. Woodley, Aldgate High Street	4 8	6 0	8 11	114	119	124	130	120	18
	Short-horn Heifers (under 4 years old):									
77	Mr. Woodard, George Street, Richmond ...	2 3	5 5	7 10	80	83	87	91	82	8
	Short-horn Cows (over 4 years old):									
84	Mr. Ponting, Stroud, Gloucestershire	4 8	5 5	8 2	87	90	94	99	95	16
87	Mr. Attwell, 20, Three Colts Street, Limehouse	9 7	5 1	7 9	73	76	79	83	80	10
94	Mr. White, Stingo Lane, Marylebone	7 5	5 4	8 4	89	93	97	101	97	16
	Total, omitting No. 45	...	...	...	3831	3984	4159	4369	4073	448¼

* In every case imperial weights and measures are and will be used.

PURPOSES OF AMMONIA IN VEGETABLE ECONOMY.

In the *Gardeners' Chronicle* of the 10th of January, 1852, you gave place to a communication from me on the "Use and Purposes of Ammonia in Vegetable Economy," in which I attempted to show, contrary to the general opinion, that the universal appetence of plants for ammonia was due to their requirements for the hydrogen of the ammonia, to form or build up their structural substance, in conjunction with carbon, derived from the carbonic acid of the atmosphere and other sources; and that their demand for nitrogen, the other constituent of ammonia, was only of a partial and limited character, varying very much in different plants, and shown in the fact of plants giving out nitrogen, in other words, rejecting it; just as they give out, or reject, much of the oxygen of carbonic acid, because they have no use for it, and cannot appropriate or assimilate it.

Will you permit me to resume the subject in a few additional observations, by asking—Of what is the general substance or fabric of plants, their roots, stem, branches, leaves, composed, omitting at present any reference to the mineral or other matters, which enter in smaller quantities into the composition of plants? Is it not hydro-carbonaceous matter, or matter formed by the union or combination of carbon and hydrogen, derived from substances taken in by their roots and leaves? It is, I believe, generally allowed that the carbon is derived from carbonic acid, which is always found in the atmosphere, and produced from decaying vegetable matter in the ground; but whence is the hydrogen derived? It will be said, that it is derived from the de-oxydation or decomposition of water, effected in or by the leaves, under the agency of sunlight and heat. Admitting that this explanation at first sight appears feasible enough, it still occurs to ask, whether there is any direct proof of such decomposition of water taking place. The circumstance of plants giving out oxygen is of itself no such proof; inasmuch as we know that oxygen, given out by plants, is also derived from carbonic acid. In what other way then can it be proved? But further, we also know that ammonia is greedily absorbed by plants, and they flourish and expand amazingly in bulk on a liberal supply of it. What becomes of the hydrogen which enters into the composition of all the ammonia, that has contributed so largely to the bulk and substance of the plants? Is there any proof that hydrogen is given out by plants; and if not, in what way is it disposed of? Here, then, are two things, which they who maintain that the hydrogen of vegetable matter is derived from the de-oxydation of water should undertake to show; 1st. That as much oxygen is given out by plants as existed in the water and carbonic acid, from which their hydro-carbonaceous matter is supposed to be derived. 2d. What becomes of the hydrogen of the ammonia absorbed by plants, and how it is that a liberal application of ammonia to plants so greatly enlarges the bulk and mass of their hydro-carbonaceous fabric.

Let me offer an illustration, from which a twofold observation may be deduced, in support of the view I am advocating. Here is a field of Wheat, which grain I select, as it is known to contain a considerable portion of nitrogenous matter; a certain number of square yards at the side of the gate had some months previous to the sowing of the Wheat been occupied by a large heap of manure, carted from the farmstead, which was subsequently applied to the land. Throughout the growth of the Wheat, the plants on this small portion of the field exhibit an extraordinary luxuriance, and ultimately finish their course by being laid, through their own excessive rankness, without producing any grain, while the remainder proceed to maturity in the usual way. Two remarks here present themselves: 1st, The non-formation of nitrogenous products, notwithstanding, and even in consequence of, the excessive amount of ammonia in the ground. Though saturated to richness with it, the only result is, not an increased amount of nitrogenous products, but an excessive development and increase of the hydro-carbonaceous matter of the roots, stems, and leaves of the plants. How is this reconcilable with supposing that the avidity of plants for ammonia and their luxuriance of growth from its liberal application is due to the nitrogen it contains? 2d. The amount of hydro-carbonaceous matter, produced on the piece of ground saturated with ammonia from the manure heap, is greatly in excess of that produced on a similar area of any other part of the field. But, if plants derive their hydrogen from the de-oxydation of water, why should there be this difference? The plants were respectively placed in precisely similar conditions, in relation to light, heat, and moisture, in whatever form; and so they were also in relation to their supplies of carbon from the atmosphere, and probably from the ground; and they should therefore have eliminated from these sources an equal amount of hydro-carbonaceous matter. The difference, I conceive, is incapable of satisfactory solution on such a view; besides that, it is palpable to common observation and experience that ammonia supplied to plants through their roots does in some way or other exert a powerful effect in largely increasing the hydro-carbonaceous matter of their structural substance—their roots, stems, and leaves.

On the supposition that the primary use and purpose of ammonia in vegetable economy are to supply hydrogen to enable them to perfect their substance, the fact of their extraordinary expansion and growth under a liberal application of it is susceptible of an easy and consistent explanation, which may be thus stated. Apart from whatever carbon may exist in the ground in a state fit for the use of plants, there is an inexhaustible supply of carbonic acid in the atmosphere from which the carbonaceous element of their structural substance may be obtained. Practically it is inexhaustible, for the researches of chemists have shown that after all the demand made on this fund by vegetation over the whole world, there is a constant though small and unvarying quantity of carbonic acid at all times existing in, and equally diffused through, the atmosphere. If then the substance of plants were simply carbon, there seems no reason why, from this source alone, they might not attain the fullest development they are susceptible of; but as they consist not of carbon alone, but of carbon united with hydrogen or hydro-carbonaceous matter, they require a proportionately ample supply of the latter element, in conjunction with an already provided and inexhaustible magazine of carbon, to enable them to attain the largest dimensions their structure is capable of reaching. In regard to the first of these two elements of vegetable structure, carbon, plants are at all times and in all situations favourably circumstanced for attaining their full development and expansion by the constant presence of an unstinted supply of carbonic acid in the atmosphere. But they are not always in a position to make the most of this condition, from the more or less partial absence of a suitable proportion of hydrogen to unite with the carbon in forming vegetable substance; and hence the different degrees of luxuriance which characterise vegetation in different situations and circumstances. The ammonia which is to furnish the hydrogen neither exists in the same abundant quantity in the atmosphere as carbonic acid, nor, as far as we know, is it available by plants in that state; it is only as it is brought down dissolved in rain, at distant and uncertain intervals of time, that it can be appropriated by plants through their roots. Limited and variable as is this source of supply, it is the only one that partakes of the character of general or universal in being equally accessible to all plants. If, however, they had nothing else to depend upon, it would be impossible that they should exhibit any remarkable luxuriance of growth, though all the while their leaves were bathed in an atmosphere rich in carbonic acid. But there is also a large, though most unequally distributed, amount of ammonia produced from decomposing animal and vegetable substances brought into the soil by natural or

contingent causes, or by the intentional arrangements of man, which, according as it is more or less abundant in any portion of ground, gives the character of luxuriance or otherwise to the vegetation growing on it by the amount of hydrogen it furnishes for the formation of vegetable substance. The abundance of decomposing matter in the soil, and consequent generation of ammonia, induces in plants luxuriance of growth and enlargement of structure; a comparative deficiency on the other hand is marked by more meagre growth and less ample development, the difference being due to the amount of hydrogen respectively furnished for the formation of vegetable structure. In both cases there is the same unfailing and universally diffused supply of carbon in the atmosphere equally at command; but the plants cannot equally appropriate it, from the different conditions affecting their obtaining hydrogen to assist in the elaboration of their substance.

This subject is not one of mere barren speculation, but of practical importance, for, if the view I have taken be in the main correct, it both explains the action of ammoniacal manures (often erroneously, I think, termed nitrogenous, as if nitrogen was the only important element in them), in enlarging vegetable structure, and shows in what cases their liberal application will be most serviceable. Thus, whenever the desired product is enlargement, or increase of vegetable substance, either in roots, stones, or leaves, a beneficial result may be anticipated from the liberal use of ammoniacal manures; and I apprehend this conclusion corresponds with the results of experience in what are called green crops. But it is otherwise when farinaceous seeds, fruits, tubers, &c, of which starch and sugar form a material part, are the desired products; then a more reserved and cautious use of ammonia is pointed out. There should be enough to produce healthy and vigorous growth, without inducing over-luxuriance or rankness, which is unfavourable to reproductive development, and may even entirely prevent it, the energies of the plant being wholly diverted to the increase and enlargement of its structural substance, by the presence of an excessive amount of hydrogenous matter. As carbon is the basis of starch and saccharine matter, which abound in farinaceous seeds, tubers, and fruits, the state in which organic manures will be most serviceable for their production will be, not when they are rank and fresh, but after a portion of their ammonia has been volatilised or dissipated, and the remainder has become fixed, and when the carbonaceous part of the manure has also been reduced to a state suitable for being made use of by the plants; or, to express it in more general terms, organic manures will be most serviceable for the development of these products, when the activity of the ammoniacal or hydrogenous element is moderated, and the carbonaceous brought into action, by more perfect decomposition. *J. H. H.*

Home Correspondence.

Does Live Stock Pay?—I shall consider that I have done some service to the cause of scientific as well as practical agriculture, by the fact of my analysis, under the above title, of Mr. M'Culloch's Report, having called forth the very valuable and instructive paper on "The Profitableness of Cattle-feeding," by "Y.," in a late Paper. The light he throws on the quantity and value of manure produced by stall-fed beasts, is a great help towards the elucidation of one of the hitherto almost unknown points of agricultural practice. On money results he does not give details: but had he done so, they could not be a criterion on that part of the subject, for he is, by his own statement, so favourably located that he can sell in a dear market at his door, and buy in a cheap one not far off. A very small proportion of the agriculturists of Great Britain are so placed. The feeders of Norfolk, and Lincoln, and Aberdeen, and many another county, will re-echo my assertion that "lean stock costs as much or more per stone than when fattened." Another correspondent "Aliquis," p. 828, also takes up my analysis; and reviewing the reviewer, examines the subject of the value of manure in detail, and proves, doubtless to his own satisfaction (and I quite anticipate that his discovery will be well trumpeted forth, that Mr. M'Culloch's report shows a production of manure containing "8955 6 lbs. of ammonia, which, at 6*d*. per lb. is worth 223*l*. 17*s*. 9*d*., at the cost, according to 'S.,' of 158*l*. 5*s*. 5*d*, making the profit on the transaction 65*l*. 12*s*. 4*d*." I am not unwilling to take his criterion of ammonia as a standard of value; in fact, I myself had suggested it when endeavouring to elucidate the question; but the ammonia contained in a large dunghill is not of the same value as when concentrated in a portable manure. The cost of carriage and expense of handling and spreading would surely have to be deducted, which at 1*s*. 6*d*. per ton on 270 tons (the quantity of manure that, judging by "Y.'s" experience, would be produced), would make a deduction of 20*l*. 5*s*., leaving, taking "Aliquis'" figures as quite correct, a profit of only 45*l*. 7*s*. 4*d*. But "Aliquis'" figures are not correct. In his calculation of nitrogen in the Bean-meal he makes a mistake of 5367 lbs!! Converting this into ammonia (with his own deduction of 10 per cent. waste) we have 5867 lbs., which, at 6*d*. per lb., is 146*l*. 13*s*. 6*d*.; deduct apparent balance per last paragraph, 45*l*. 7*s*. 4*d*.; leaving a loss on the whole result of 101*l*. 6*s*. 2*d*., after the manure has been valued by a mode "that does not seem to be so liable to objection" to "Aliquis" as was that adopted by *S.*

Draining across the Fall.—Much has been said in favour of cutting drains across or obliquely to the fall, with a view of intercepting the water in its descent from the higher to the lower ground, as if water in the soil lay in a sheet on a plain, and flowed as it does after rain off an undrained surface, and drains underground could be cut and made like gutters to catch the water off the upper side, and carry it away without any escaping on the lower side. Were the facts really as are here assumed, still to make such drains effective we must further suppose the water to lie at an uniform depth, that the drains may with certainty be cut to and placed across the line of water, so that none may escape into the lower ground, or the land below the drains will be little the drier for the drains above. These conditions, each and all, appear to me essential to the success of cross draining, and yet in practice I believe not one is ever found to exist, and every attempt that I have ever known to drain out of the line of greatest fall has been imperfect, because, as Mr. Bailey Denton has well expressed it, "The course of water will always be governed by ordinary laws of gravity, and in its descent will take the line of greatest inclination open to it;" and cross drains can never present as great an inclination as the natural channels afford, whilst upright drains will offer a greater fall, whether the water lie in fissures, pits, or on a plain; and their direction be any other than in line straight down the fall. Many of your readers will be familiar with the failure of ditches, cut across the hill-side for the purpose of carrying off the water from above, in laying the land below drier. Here we have the ditch intercepting the water, and the water flowing in a way it is impossible to suppose can be the case underground, and yet they not only fail to drain the ground below, but are often the cause of much mischief to it. The level of the water in the ditch may often be traced on the land below by its oozing to the surface, and by the ground being kept wet all the time that water runs in the ditch above; and in the same way I have often found the water reach the surface from a main taken across the line of fall, when the drains leading into it have lain the land above perfectly dry. *Hewitt Davis, 3, Frederick Place, Old Jewry, London.*

Hampshire Statistics.—Mr. Hawley's circular to us landlords is considered very imperfect to attain any real or satisfactory evidence as to the condition of the land, its yield, and the kind of implements in use, &c. There is much good land unreclaimed, and very little attention paid to the fences, hedges, and ditches; and as to draining nothing at all. The cottages of some proprietors are in a very tumble-down condition; windows out, no wells for water, and puddles around the doors. I shall not name the owners, but I believe the agents are to blame. My lord cannot come himself, and his heart is not so inclined as to permit such a state of things. Deep ploughing is disregarded by many in spite of the old saying:—

> "Plough deep whilst sluggards sleep,
> And then you shall have plenty to sow and to reap."

And vastly true it is. One will grow nine sacks of Wheat and his next-door neighbour only five. The Turnips of one grow away all harvest, whilst those of the other stand still for a shower, then they commence growing again. We should have been glad to have taken a district for Mr. Hawley. The Scotch statistics are a pattern to all, and so is their farming. *X. Y. Z., Hants.*

Statistics.—So much has been said of the value of agricultural statistics that it requires a species of hardihood to entertain any doubt of their utility. The country insists upon knowing the quantity of food on hand or in prospect! but, in complying with this demand, the farmers may be permitted to hesitate about divulging the number of labourers they employ, or describing their mode of management, or giving pedigrees of their stock. The information sought need not entail upon the person supplying it any unpleasant inferences, or partake of the nature of a repulsive task. The returns should not be so inquisitorial or diffuse as to harass or perplex an intelligent man, much more an uneducated one; but be framed so as, if possible, to invite a voluntary statement of the few facts really essential. Then all honest men may be expected to co-operate cheerfully; as, if willingly rendered, the replies will be so much the more full and accurate, and therefore more useful and complete. A list of queries should be issued about the month of May, when all the land is appropriated to the different crops intended to be grown, and when the quantity of Wheat and other grain, Pulse, Potatoes, and other roots, Clover and other seeds, in cultivation and pasture may be ascertained. A second return should be taken about October, when all the corn crops will probably be secured, and when the quantity and quality, the condition and average yield of each article of agricultural produce will be sufficiently notorious to enable the "enumerator" or inspector to check or verify any startling or irregular declaration. This much for vegetable matter. If, further, animal life should require examination and details, the greatest care should be used to frame the queries in the most simple and efficient manner possible. It may be suggested that, with respect to horned stock, they may be classed as of all ages, or under the heads of cows, stores, and feeding beasts;—sheep, or as ewes, lambs, shearlings, and other sheep;—pigs of all ages;—horses, as those under three years of age, cart-horses, other horses;—wool;—poultry in classes, and eggs, are thought by some to require answers, but they would be liable to error, and are not of so great importance as other kinds of farming stock; even horses present a difficulty, as not being articles of food, and so many being used and maintained by other than occupiers of land; but they are articles of agricultural produce and they are great consumers of agricultural produce, and their number seems requisite to be known for the solution of various knotty problems of political and social economy. In organising the machinery for collecting and arranging these data, superintendents of districts devoted to the business seem necessary; the relieving officers of Poor-law unions might be advantageously associated in these labours, as in the census, at least in the commencement of any plan, as they are well acquainted with the farmers, and indeed with the inhabitants generally; other assistants can of course be added, according to the extent and richness of the several districts. The indirect consequences of a measure of this sort may be estimated as of nearly equal importance to those directly contemplated, when a cosy farmer is obliged to state an undue proportion of white crops when the colour ought to be green, the confession will gradually lead to better customs, and efforts will, no doubt, be made to cut a tolerable figure in the number of quarters grown per acre, as well as the quantity of live stock upon the farm; but, above all, these annual or half-yearly accounts will lead to attempts being made of keeping regular accounts by hundreds who never before dreamed of taking stock. And when once this practice is begun, common prudence will speedily recognise the value of the habit, and John Bull will in his own good time, notwithstanding his constitutional eccentricity of temper, become reconciled to the arbitrary innovation of statistics. *J. W., Peterborough.*

Agricultural Societies.—I have been a little interested in your remarks on farmers' clubs. I fear the attempt to establish a central farmers' club for the discussion of agricultural politics will not meet with general approval from the other farmers' clubs throughout the kingdom. As far as it is practicable, I have no doubt it will prove the best policy to exclude politics from the discussions carried on at agricultural meetings, simply because politicians have plenty of other opportunities of expressing their sentiments, or of otherwise using their influence in promoting their own views. And besides, agriculture is not so barren a field as to require assistance from such a quarter. Nevertheless, it must be confessed that it is often difficult to draw the line of distinction between what is strictly agricultural, and what may be considered as touching upon the political. Why, the constitution of the Royal Agricultural Society forbids it from having anything to do with agricultural statistics. This, it will be generally admitted, is very unfortunate at this crisis in the question. On the other hand the Highland Society takes a very different view of this subject, and has been of the greatest service in testing the machinery whereby correct data can be best obtained for supplying the disgraceful want of information, in regard to the amount of our agricultural produce. How then are we to distinguish between the political and agricultural, for it is evident that we may be too tight-laced on some questions, while it is highly desirable we should not be so. I have no doubt a central (almost) strictly agricultural club might be of the greatest service to agricultural progress, in merely assisting to direct the discussions of the other farmers' clubs throughout the country; by this means united action might be secured, and peculiar views arising from diversity of circumstances might also be rendered far more instructive, whatever the subject happened to be. I believe this might be the means of reviving many a feeble club. If such men as Mr. Baker, Mr. Fisher Hobbs, Mr. Mechi, and Mr. Hope, Fenton, or other experienced agriculturists agreed on what subjects were best to be discussed, I do believe the character of the subjects might be safely left in their hands. On many questions a little more unison in action might be attended with the happiest results. Would the statistical question, or the guano-monopoly question, or any other question, not be promoted far better by the united efforts of all the clubs, than by the solitary efforts of any club, however influential? On one point I have often thought agricultural societies greatly erred, that is in having too many discussions in one year. A good thing in this way becomes too common, and unless the club is a very powerful one, such as the London Farmers' Club, you may depend upon it this will prove a source of weakness. One or two discussions a year might be a very healthy stimulus to many a weak club, but a dozen would assuredly be a deadly dose to the strongest. I am inclined to think this may have formed an injurious element in some of the dead and dying farmers' clubs which you chronicled in the *Gazette* the other week. *R. Russell, Kilwhiss.*

Draining Plough, &c.—In the 9th volume of the Journal of the Royal Agricultural Society of England, there is an article on the farming of the North Riding. The author of it mentions that a Mr. Maynard used successfully a draining plough to assist in cutting the drains in his clay land. If you are able, I should feel greatly obliged by your giving me an idea (through your *Gazette*) of the character of the plough used for the purpose, and whether you are aware of its successful use in other localities. I have also another favour to ask of you, as to the method of preparing calves for the shambles the day or so before their death. Fattening calves for veal is very unusual here, but when it is done and the calf is sold, the butcher comes the day before it is to be killed, and bleeds it in the neck, till it cannot stand, and repeats the operation the following morning. I have now one in my yard in the above condition, and have much doubt whether so barbarous a system is in vogue in Essex and other places where much veal is produced. *Rusticus.* [It is very generally in vogue.]

Breeding of Horses and Pigs.—I was much interested

with that portion of "J. G.'s" remarks which had reference to the breeding of horses and dogs, and as your correspondent was kind enough to say he would communicate still further information privately, I shall be glad of his address. As to the cross recommended between the Highland Scot and short-horn, there is no doubt of its answering as a first cross. The produce of a good Durham bull and a Galloway cow is a very perfect animal, perhaps better than would be obtained by breeding the other way; but the produce again from heifers bred in this manner by a short-horn bull, show a considerable falling off in quality. How they might have succeeded had they been tried again with the Scot, I am not able from experience to state. By some it is, I know, supposed that the short-horns themselves have had a dip into the Galloway blood at some remote period, and that to this some of their peculiarities are attributable. I know the late Mr. Webb Edge, of Strelly, tried several experiments on this cross, but even his success, I believe, was doubtful. If anything could have been done, Mr. Edge was a likely man to do it; he had great discernment, and he would breed from nothing that was not first-rate of its kind. His pointers, and they were cross bred, were a marvel, as those who were fortunate enough to purchase them can testify—speed, great endurance, and steadiness were combined; but, with all this, I am not aware of more than one person who has succeeded in breeding good dogs from them: I have not, and I must say that I hold to the pure breed in most things. Crossing past a first cross has not answered for me; I always say, "Cross blood as much as you like, but do not cross breed." *W. Lort, Great Heath, Tenbury.*

House-Feeding Sheep.—Major M'Inroy has my thanks for his reply to my inquiry relative to the breed of sheep he alluded to as having house-fed and sold at such dismal rates, which I thought so discouraging that, if allowed to pass without notice, might do mischief by deterring feeders of sheep from attempting to house them, which system (except in some favoured localities) I believe to be by far the most profitable method of making mutton, and though I have had the boards in use about four years, I never yet had one single sheep out of health whilst so confined. The Major asks the value of my hogs when put up to feed; to this I reply that, on the 6th of December, 1852, the 11 hogs weighed 907 lbs., and the following 4th of April the butcher took 6 away, weighing 807 lbs., and April 11th he had the remaining 5, weighing 729 lbs., thus giving, on the 11 hogs, from December 6th to the April dates, an increase of 629 lbs., and this at a cost of only one halfpenny per day for purchased food. Now we will come to the age of the hogs. The Major states his when sold to be 13 months old; mine might possibly average two weeks more, as the lambing commenced January 21, and finished March 24; and when I state that my land is 1100 feet above sea level, the Major must admit that he is quite as favourably circumstanced as I am in regard to climate: he values the rental of his land at 16s. per acre—thousands of uncultivated acres around my grounds he may have at 5s. per statute acre. Now arrives the important question, how it occurs that his house-fed hogs only make about 24s. 9d. clipped, whilst mine (but unclipped) averaged 43s. 10½d.? The solution I believe to be this—the Leicester will not do for either him or me—the soil and climate quite unsuitable; the South Downs do not increase the weight of the Cheviots, and I am fully persuaded that if the Major will confine the breed of his flock to pure first quality Cheviot ewes, and put to these well-selected Gloucestershire Cotswold rams, he will never again have to name so discouragingly low a figure for his house-fed hogs as he alluded to at the Fettercairn Farmers' Club.—*George Wm. Fowler, Prince Hall, Dartmoor, Dec.* 29, 1853.

Foreign Correspondence.

Curibaya, Peru, August 22, 1853.—[We have been favoured with the following communication by the brother of the writer to whom it was addressed.] "I am happy to note the success of your experiments with guano; it could hardly be otherwise. Choose always a day when there is a prospect of a shower for its application. Mix it, to make it more divisible, with the dry manure from the pond I suppose you have in Blandfield, and try its effects on hastening the maturity of plants, for which our summers in general are too short, such as Cucumbers, even Melons in sheltered borders, Maize, Capsicums, &c. How finely the great Author of Nature has fitted in everything the means to the end to be accomplished, and with what wisdom adjusted that system of compensations everywhere traceable in the world around us. Here is a country—'a dry parched land'—its soil a worthless, unproductive sand, which the former and the latter rain never moistens; and to which the application of common animal manure would be worse than useless, inasmuch as instead of undergoing decomposition it would only dry, and thus aggravate, by keeping the earth open, the want of humidity necessary to vegetable life. But its coasts teem with the remedy; in guano, we have not only the food vegetation principally requires, but have it presented exactly in the form in which, by chemical reaction on the atmosphere, produces in no small degree the humidity that Nature has denied us. Here, then, 'the bane and antidote are both before us;' did it rain, the ammoniacal salts would be dissipated and lost; it does not rain, and the ammonia in a great measure compensates the want. You cannot form an idea of the immensity of the deposits of guano at particular places along these coasts. Thousands of millions of tons are as difficultly comprehensible as they are easily written, but applied to the quantity of guano on the coasts of Peru, involve no exaggeration. It is rapidly coming into universal use. All the European nations, the United States, the West Indies, and even China itself, now consume it; and there can hardly be a doubt that the despised 'cormorant's dung' of our early navigators will become an element in human progress, a source of increased comfort and happiness to man, compared with which the gold of California and Australia sinks into insignificance. When, William, were these deposits formed? The birds that produce them still abound, but it requires a life-time to add an inch to their thickness, and here we have hundreds, not of feet but of yards accumulated. The geologist, indeed, with his 'periods' will soon answer our inquiry, perplexing us only the more by assuring us that they are quite recent—and recent they must necessarily be, compared with that epoch when the peaks of the Andes were but a chain of small islands; or earlier still, when the ocean deposited on the summit of the mountain of Potosi the sea shells mine own hands have gathered; but we can form no more definite idea of such 'periods,' and by consequence of the age of the planet we inhabit, than we can fix a date for the time when 'the morning stars sang together, and all the sons of God shouted for joy.'"

Notices of Books, &c.

Essays on Agriculture. By the late Thomas Gisborne Esq., of Yoxall Lodge, Staffordshire. (Reprinted by permission from the "Quarterly Review.") John Murray, Albemarle Street.

Most of our readers will have read the earlier portions of this little volume in the pages of the "Quarterly Review," where they originally appeared. The paper on Land Drainage has had an independent publication since its appearance in the Review, and in its separate form was commended to the notice of our readers. The last paper of the four here published is on so-called "High Farming," and is equal to any of the others in point of readableness and interest. The works reviewed are those of Mr. Pusey, Mr. Huxtable, Mr. Caird, Mr. Milne, and others. The theory of manures furnishes the main topic of discussion; and any one wishing to see the aspect in which such a subject appears to the practical man, the man of science, and the popular amateur respectively, will find very well-drawn pictures presented to him here. We make an extract on agricultural literature generally; and are the more ready to do so, as, written by such a man, it contains so high a compliment to the correspondents of the *Agricultural Gazette*:—

"The reproach of British agriculture, that she had no literature, is fast passing away. The works which we have placed at the head of this article would be creditable to any science or to any age. We are not acquainted with the agricultural publications north of the Tweed, but we have been told that they have great merit. We constantly see with wonder and admiration the variety and spirit by which the Royal Agricultural Journal is sustained. The *Agricultural Gazette*, attached to the *Gardeners' Chronicle*, contains almost weekly some practical article of sterling value. The letters of the *Times'* commissioner have ably supplied a deficiency which has existed ever since the time of Arthur Young's agricultural tour. They have informed the general body of agriculturists of the varieties of practice which have obtained a permanent footing in various districts, causing each to contribute its quota of knowledge and experience to the general stock of information. In offering our own humble mite we are indeed proud of our fellow-labourers."

The Farmer's Assistant and Agriculturist's Calculator. By John Grieve, Engineer and Land Surveyor, Smallholm. Arthur Hall, Virtue & Co., London.—This little work is not only a ready reckoner in a good many sorts of agricultural calculations, such as those relating to the cost of draining and of any other lineal operation, to the cost of sowing and digging and any other surface operation, to the value of grain and any other material of solid contents, to values such as wages into which time enters as an element, to the measurement and weight of cattle, on which there is very full information; but it is also a treatise on land-draining, on land-surveying, and on various other departments of agricultural engineering. It is a very respectable and useful performance in all these respects.

Poultry.

The Birmingham Show.—I was surprised on reading a late number to see it stated in the report of the Birmingham Show that there was not a purely black Cochin China cock in the exhibition; this is certainly doing an injustice to the class, for to go no further than myself, I had two there as black as crows; they were late hatched, and were justly beaten by birds from my own stock, but they were *black*—yes, entirely free from any brassy feathers. I have observed that the blacks are too frequently placed, at exhibitions, in such dark situations that it would be difficult to tell whether they were black or brown, indeed it has often puzzled me to distinguish the cocks from the hens. To be seen to advantage, no fowls require more light than the blacks; in a bad light the fine metallic lustre upon the feathers is not seen at all. They also look better, perhaps, when placed a little below the level of the eye. I am fond of the blacks, and should like to see them become favourites with others. *W Lort, Great Heath, near Tenbury.* [Many of these so-called pure black Cochin China cocks appear so, till they are taken out and examined, when the peccant feathers are seen. It is the more remarkable because the pullets are always of a pure and good colour. I have, I think, some of the best black pullets ever seen; but although I have bought perfectly black young cocks, at large prices, I have not one that does not show coloured feathers as he approaches maturity. *The Reporter.*]

Miscellaneous.

Improvements in Agricultural Machinery. (A communication.) By J. H. Johnson, of Lincoln's-Inn-Fields.—Patent granted May 10, 1853. (No. 1151.)—Claims: 1. The general arrangement and construction of machinery, apparatus, or means for accomplishing agricultural operations, as described. 2. The system or mode of digging or disintegrating the soil, and of reaping, mowing, and performing other agricultural operations, by means of mechanism actuated directly by steam-power, but traversed or conveyed over the land by horse, or other separate power, the same being applicable for the cutting of drains. 3. The application and use in digging or pulverising operations of a digging or soil-loosening cylinder, which is driven at a high velocity by steam-power. 4. The application and use of spring-hinged arms for receiving the cut grain, or other crop, as described. 5. The application and use of a hollow or tubular driving or first-motion shaft, arranged to work loose upon the axle of the supporting running-wheels, as described. 6. A system or mode of driving the main running-wheels, whereby the machine is rendered self-locomotive. 7. The simplified arrangement and use of the steam cylinder and valve, and gearing, as described. 8. The application and use of the levelling-box, or grating and roller, in conjunction with a seed-box or manure-distributor. 9. The mode of sowing or distributing seeds and manure by apparatus driven by the travelling motion of the machine. 10. The mode of effecting agricultural operations by the use of a machine, in which the horses or actuating medium go before the pulverising apparatus in digging, preparing, and sowing, and behind it in reaping and mowing. 11. The mode of arranging the platform-wheels, either in the same plane or in a different plane, with the large running-wheels. 12. The mode of supporting the digging-cylinder or rotary arms by means of a frame carried on fixed centres in the body of the cart, and capable of adjustment vertically. 13. The mode of facilitating the turning of the machine at the head-lands, by elevating the hind or trailing-wheels, and thus throwing the whole weight of the implement upon one pair of wheels. *Mechanics' Magazine.*

Calendar of Operations.

JANUARY.

Wester Ross, *Jan.* 3.—Out-door operations are for the present entirely suspended, save such as carting manure. On the morning of the 26th we were surprised to find that a large quantity of snow had fallen, and throughout that day it continued to descend abundantly, and, a strong northerly wind prevailing, it was driven in beautiful abundance into every hollow, and with admirable dexterity through every aperture, however small; and such is the intensity of the frost now that the earth bids fair to be held in its icy grasp, and covered with its mantle of white for some time to come. The ground being now sealed up from the operations of the labourer, the price of every eatable being unusually high, the pittance from the Poor-law board being so stinted as to supply the recipient with the means of only a scrimp subsistence, even in a year when provisions are cheaper than now, and begging being now entirely prohibited, this is a year in which, I greatly fear, many will sit at a table on which there will not be enough to supply their daily returning wants; will sit at a fire insufficient to keep up the necessary rate of circulation, and lie down in a bed on which there will not be covering enough to keep the poor one from feeling the intensity of the cold. Fortunate it is for the Highlands that the Potatoes did not fail this year, as they have done for years by-gone. The prices of grain are once more on the increase, and a large part of the late decline has been again recovered, and unless the importation of grain be very liberal throughout the spring months, prices must still farther advance. Wheat is but a poor affair in many parts in the north, and in the south it is not greatly better. I mentioned early in the season that Oats were turning out ill; but as we still further test them by measure and weight, we find they are worse even than we anticipated. Not only is there a miserable return per acre, but the quality is little better than ordinary dressings. The miller is receiving Oats so light as 36 lbs. per bushel; and I have scarcely heard of any this season weighing so high as 42 lbs. per bushel, which is our standard for Oats. I should not be surprised to see, ere we have another crop, Oats selling so high as 2*l.* per quarter. Barley turns out well, weighs heavy, and brings a good price. There have been a large quantity of superior Potatoes shipped from the north this season, and there are still a good many to dispose of. The season having been dry and open up till now sheep have thriven well on the Turnips, and there having been an average crop of Turnips in this quarter, there will be a good many fat cattle to dispose of by-and-by.

Notices to Correspondents.

Blindness in Sheep. *P V R.* Sheep are more frequently affected with disease of the eyes, and even blindness, than is generally supposed. The causes may either be a plethoric state of the system or external injuries. The best remedy is bleeding from the eye-lids and the eye vein. *W. C. S.*

Fruit Trees: *J M B.* It is reasonable under the circumstances to expect you should be paid for them, but as to what the law or the custom is, you must consult your legal adviser. To another correspondent who writes from Pwlheli we must make the same answer. We are not learned in the law.

Peat Charcoal: *C L.* We do not know where it is sold. That is a thing the salesmen should advertise.

Perforation in Pig's Leg. *Anon.* The purpose of these perforations is probably to furnish a supply of lubricating secretion for the diminution of friction. *W. C. S.*

Small Farm: *R J.* Blacker on Small Farms, O. Roberts on Agricultural Economy. We do not know any account book for small farms especially.

Sow: *G J C.* Feed her well; a few Beans will be useful. If medicine is wished for, give five drops of tincture of cantharides in her food. *W. C. S.*

FENDERS, STOVES, AND FIRE-IRONS.—Buyers of the above are requested, before finally deciding, to visit WILLIAM S. BURTON'S SHOW ROOMS, 39, Oxford Street (corner of Newman Street), Nos. 1 and 2, Newman Street, and Perry's Place. They are the largest in the world, and contain such an assortment of FENDERS, STOVES, RANGES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with bronzed ornaments and two sets of bars, 2*l*. 14*s*. to 5*l*. 10*s*.; ditto, with ormolu ornaments and two sets of bars, 5*l*. 10*s*. to 12*l*. 12*s*; Bronzed Fenders complete, with standards, from 7*s*. to 3*l*.; Steel Fenders from 2*l*. 15*s*. to 6*l*.; ditto, with rich ormolu ornaments, from 2*l*. 15*s*. to 7*l*. 7*s*.; Fire-irons from 1*s*. 9*d*. the set to 4*l*. 4*s*. Sylvester and all other Patent Stoves, with radiating hearth plates. All which he is enabled to sell at these very reduced charges,

1st,—From the frequency and extent of his purchases; and,

2dly,—From those purchases being made exclusively for cash.

DISH COVERS AND HOT-WATER DISHES in every material, in great variety, and of the newest and most *recherché* patterns. Tin Dish Covers, 6*s*. 6*d*. the set of six; Block Tin, 12*s*. 3*d*. to 28*s*. 9*d*. the set of six; elegant modern patterns, 34*s*. 0*d*. to 58*s*. 6*d*. the set; Britannia Metal, with or without silver-plated handles, 76*s* 6*d*. to 110*s*. 6*d*. the set: Sheffield Plated, 10*l*. to 16*l*. 10*s*. the set; Block Tin Hot-water Dishes, with wells for gravy, 12*s*. to 30*s*.; Britannia Metal, 22*s*. to 77*s*.; Sheffield plated, full size, 11*l*. 11*s*.

GAS CHANDELIERS AND BRACKETS.—The increased and increasing use of gas in private houses has induced WILLIAM S. BURTON to collect from the various manufacturers all that is new and choice in Brackets, Pendants, and Chandeliers, adapted to offices, passages, and dwelling-rooms, as well as to have some designed expressly for him; these are now ON SHOW in one of his TEN LARGE ROOMS, and present, for novelty, variety, and purity of taste, an unequalled assortment. They are marked in plain figures, at prices proportionate with those which have tended to make his Ironmongery Establishment the largest and most remarkable in the kingdom, viz., from 12*s*. 6*d*. (two lights) to 16*l*. 6*s*.

LAMPS OF ALL SORTS AND PATTERNS.—The largest, as well as the choicest, assortment in existence of PALMER'S MAGNUM and other LAMPS, CAMPHINE, ARGAND, SOLAR, and MODERATEUR LAMPS, with all the latest improvements, and of the newest and most *recherché* patterns, in ormolu, Bohemian, and plain glass, or papier-mâché, is at WILLIAM S. BURTON'S, and they are arranged in one large room, so that the patterns, sizes, and sorts can be instantly selected.

PALMER'S CANDLES, 8½*d*. per lb.—Palmer's Patent Candles, all marked "Palmer."

Single or double wicks	8½*d*. per lb.
Mid. size, 3 wicks	9*d*. "
Magnums, 3 or 4 wicks	9½*d*. "
English Patent Camphine, in sealed cans	5*s*. 9*d*. per gallon.
Best Colza Oil	4*s*. 0*d*. "

WILLIAM S. BURTON has TEN LARGE SHOW ROOMS (all communicating), exclusive of the shop, devoted solely to the show of GENERAL FURNISHING IRONMONGERY (including Cutlery, Nickel Silver, Plated and Japanned Wares), Iron and Brass Bedsteads, so arranged and classified that purchasers may easily and at once make their selections.

Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of.

No. 39, Oxford Street (corner of Newman Street); Nos. 1 and 2, Newman Street; and 4 and 5, Perry's Place.

THE COMFORT OF A FIXED WATERCLOSET for 1*l*.—Places in gardens converted into comfortable water-closets by the PATENT HERMETICALLY-SEALED PAN, with its self-acting valve, entirely preventing the return of cold air or effluvia. Any carpenter can fix it in two hours. Price 1*l*. Hermetically-sealed Inodorous Chamber Commodes, 1*l*. 4*s*., 2*l*. 6*s*., and 3*l*.; also Improved Portable Waterclosets, with pump, cistern, and self-acting valve. Articles forwarded by railway, carriage paid. A prospectus, with engravings, forwarded by enclosing two postage stamps.—At FYFE & Co.'s, 26, Tavistock Street, Covent Garden, London.

THE MECHIAN DRESSING CASE, the most portable ever invented, being only the size of a pocket-book, containing One Pair of MECHI'S Ivory-handled Peculiar Steel Razors, his Magic Strop, Comb, Badger-hair Shaving Brush, and Nail and Tooth Brushes, price only 25*s*.; the same with Hair Brush and Soap Dish, 35*s*. To military men, and as a steam-boat or travelling companion, this invention is an invaluable acquisition. An immense variety of other Dressing Cases for ladies and gentlemen, either in fancy woods or leather, at all prices, to suit either the economical or luxurious. An extensive stock of Writing Desks, Writing Cases, Work Boxes, Bagatelle Tables, Razor Strops, Table Cutlery, Superb Papier Maché articles, &c.—Manufactory, 4, Leadenhall Street, four doors from Cornhill.

THE ROYAL EXHIBITION.—A valuable, newly-invented, very small, powerful, waistcoat-pocket Glass, the size of a Walnut, to discern minute objects at a distance of from 4 to 5 miles, which is found to be invaluable for YACHTING, and to SPORTSMEN, GENTLEMEN, and GAMEKEEPERS.

TELESCOPES.—A new and most important invention in Telescopes, possessing such extraordinary powers that some—3½ inches, with an extra eye-piece—will show distinctly Jupiter's Moons, Saturn's Ring, and the Double Stars. They supersede every other kind, and are of all sizes—for the waistcoat-pocket, Shooting, Military purposes, &c. Opera and Race-course Glasses with wonderful powers; a minute object can be clearly seen from 10 to 12 miles distant. Invaluable Acoustic Instruments for relief of extreme Deafness.

Messrs. S. & B. SOLOMONS, Opticians and Aurists, 39, Albemarle Street, Piccadilly, London, opposite the York Hotel.

CHRISTMAS.—At the Social Reunions of this Season, the fair and youthful are more than usually desirous of shining in Personal Attraction under the gaze of many friends, and the following unrivalled discoveries for the toilet are called into increased requisition, namely, ROWLANDS' MACASSAR OIL, for creating and sustaining a luxuriant head of hair; ROWLANDS' KALYDOR, for rendering the skin soft, fair, and blooming; ROWLANDS' ODONTO, or Pearl Dentifrice, for imparting a pearl-like whiteness to the teeth; and ROWLANDS' AQUA D'ORO, a fragrant and spirituous perfume, an essential accompaniment to places of public amusement and crowded assemblies. The patronage of royalty throughout Europe, and their general use by the aristocracy and the élite of fashion, render them a peculiarly elegant and seasonable present. Beware of spurious imitations. The only genuine of each bears the name of ROWLANDS' preceding that of the article on the wrapper or label.—Sold by them at 20, Hatton Garden, London; and by Chemists and Perfumers.

WM. HALSE'S FIVE GUINEA APPARATUSES are now ready.—Invalids are solicited to send to Mr. W. HALSE, of 22, Brunswick Square, London, for his Pamphlet on MEDICAL GALVANISM, which will be forwarded free, on receipt of two stamps. In it will be found the particulars of cures in cases of asthma, rheumatism, sciatica, tic doloureux, paralysis, spinal complaints, headache, deficiency of nervous energy, liver complaints, general debility, indigestion, stiff joints, nervous disorders, &c. Mr. HALSE's method of applying the galvanic fluid is quite free from all unpleasant sensation. Terms: One Guinea per week. The above Pamphlet contains his Letters on Medical Galvanism.

EDUCATION FOR YOUNG LADIES,
AT CHESHUNT, HERTS, ADJOINING THE NURSERIES.

MISS PAUL, who has had several years' experience in Tuition, begs to announce that she has vacancies for a few Pupils as Boarders. Terms moderate. Prospectuses will be forwarded by post on application.

THE VINE DISEASE EFFECTUALLY CURED BY WATSON'S BLIGHT EXTERMINATOR AND PREVENTIVE, for present application to Grape Vines, Fruit Trees, &c. Price 2*s*. 6*d*. per bottle.—To be had of H. WATSON, 198, Shoreditch; W. DENYER, 82, Gracechurch Street, and of all Florists and Seedsmen.

LAMPS, OIL, CANDLES, SOAP, ETC.

AT THE WHOLESALE PRICE FOR CASH, at the ALBANY LAMP and CANDLE MANUFACTORY, 55, ALBANY STREET, REGENT'S PARK.

Country orders amounting to £10 or upwards carriage free. Price lists sent on application.

DARE'S REGISTERED PICCADILLY SHIRT COLLAR, price 12*s*. per dozen; or a sample Collar sent by post for 14 stamps. Measure required round the neck.

SHIRTS made from the best long-cloths and linens, at 33*s*., 40*s*., and 45*s*., the half-dozen.—A. N. DARE, 88, Piccadilly, London.

NO CHARGE FOR STAMPING ARMS, CRESTS, INITIALS, &c., on paper and envelopes, at LOCKWOOD'S well-known establishment, 75, New Bond Street. Good cream-laid Note-paper, five quires for 9*d*.; Thick ditto, five quires, 1*s*.; Albert and Queen's sizes, five quires for 6*d*., 9*d*., and 1*s*.; Envelopes, 3*d*. to 1*s*. 6*d*. per hundred; Foolscap paper, 7*s*. 6*d*. per ream; Copybooks, 2*s*. 6*d*. per dozen. Card Plate engraved, 2*s*. 6*d*.; 100 Cards printed, 2*s*. 6*d*. Mourning Stationery equally cheap. Wedding Orders promptly executed. A large variety of Writing and Dressing Cases, Envelope Boxes, Blotting Books, Inkstands, Gold Pens, Church Services, &c. Copy address, LOCKWOOD'S, 75, New Bond Street. Country orders for 20*s*. sent carriage free.

METCALFE AND CO.'S PERFUMERY DEPARTMENT.—PROPRIETARY ARTICLES.—METCALFE'S celebrated ALKALINE TOOTH POWDER is acknowledged as the safest and most efficient now in use. Dupuytren's Medicated Pomade is the most certain remedy for preventing the hair prematurely falling off, and for restoring it when baldness has already commenced. Dupuytren's Medicated Balm strengthens, cleanses, and improves the growth, and is generally acknowledged as the best wash for the hair.—Manufacturers of British and Importers of Foreign Soaps, Perfumery, and J. M. Farina's genuine Eau de Cologne, at METCALFE, BINGLEY, & Co.'s only Establishment, 130B and 131, Oxford Street, second and third doors west from Holles Street.

ATKINSON AND BARKER'S ROYAL INFANTS' PRESERVATIVE.—Mothers call at your Druggist's and purchase a bottle of the above. It is the best medicine in the world for infants and young children for the prevention and cure of those disorders incident to infants; affording instant relief in Convulsions, Flatulency, Affections of the Bowels, Difficult Teething, &c. &c., and may be given with safety immediately after birth. It is no misnomer cordial! no stupefactive, deadly narcotic! but a veritable preservative of infants! Mothers would act wisely in always keeping it always in the nursery.—Prepared only by ROBERT BARKER, Bowden, near Manchester (Chemist to Her Most Gracious Majesty Queen Victoria), in bottles at 1*s*. 1½*d*., 2*s*. 9*d*., and 4*s*. 6*d*. each. CAUTION.—Observe the names of "Atkinson & Barker" on the Government Stamp.

IMPORTANT TO ALL WHO SING.—From S. Pearsall, Esq., Vicar Choral of Lichfield Cathedral:—"A lady of distinction, having pointed out to me the qualities of Dr. LOCOCK'S PULMONIC WAFERS, I was induced to make trial of a , and from this trial I am happy to give my testimonial in their favour. I find by allowing a few of the wafers—taken in the course of the day—to gradually dissolve in the mouth, my voice becomes bright and clear, and the tone full and distinct. They are decidedly the most efficacious of any I have ever used."—Dr. Locock's Wafers give instant relief and a rapid cure of asthma, coughs, and all disorders of the breath and lungs. —Price 1*s*. 1½*d*., 2*s*. 9*d*., and 11*s*. per box. Sold by all Druggists. Beware of counterfeits.

QUANTITY AND QUALITY OF THE HAIR.

NO TOILET can be considered complete without a careful attention to that department which so materially affects the entire contour, viz., the Hair, which, both in quantity and quality, is susceptible of the most material alteration. That which is weak can be strengthened, and be made to receive a most beautiful gloss by artificial applications. It is to its extraordinary and valuable properties in these respects that is due the character of C. AND A. OLDRIDGE'S BALM OF COLUMBIA, for its invigorating, nutritious, and regenerative qualities. OLDRIDGE'S BALM causes Eyebrows to grow, prevents the Hair from turning grey, and the first application causes it to curl beautifully, frees it from scurf, and stops it from falling off. Price 3*s*. 6*d*., 6*s*., and 11*s*. per bottle. No other prices are genuine.—N.B. Ask for OLDRIDGE'S BALM, 13, Wellington Street North, Strand, London.

DO YOU WANT LUXURIANT HAIR, WHISKERS, &c.?—EMILY DEAN'S CRINILENE has been many years established as the only preparation that can be relied upon for the Restoration of the Hair in Baldness from any cause, preventing the Hair falling off, strengthening weak Hair, and checking Greyness, and for the production of Whiskers, Moustachios, Eyebrows, &c., in three or four weeks with certainty. It is an elegantly scented compound, price 2*s*., sold by all chemists, or will be sent post free, on receipt of 24 penny postage stamps, by Miss DEAN, 37A, Manchester Street, Gray's Inn Road, London.—"I have used your Crinilene, and have now a good pair of Whiskers." J. L. HIGGS, Dudley.—"It has certainly improved my hair." J. THOMPSON, Durham.

RUPTURES EFFECTUALLY CURED WITHOUT A TRUSS.

ALL Sufferers from this complaint are earnestly invited to consult or write to Dr. LESLIE, as he guarantees them relief in every case. His remedy has been successful in curing thousands of persons during the last 11 years, and is applicable to every kind of single and double rupture, however bad or long standing, in male or female of any age, causing no confinement or inconvenience in its use whatever. Sent post free, with full instructions, on receipt of 7*s*. 6*d*. in postage stamps, or Post Office order, payable at the General Post Office, to Dr. HERBERT LESLIE, 37A, Manchester Street, Gray's Inn Road, London, where he may be consulted daily, Sundays excepted, from 11 till 1, mornings, and 5 till 7 evenings only.

PAUL GAGE'S ELIXIR.—This family medicine has been established 44 years as a most valuable remedy for

PHLEGM,

and all the disorders arising from it, viz., bilious complaints, catarrh, asthma, convulsive coughing, indigestion, colics, cholera morbus, ague fevers, gout, worms, hooping cough, females' complaints, &c. It is demonstrated in a pamphlet on Phlegm, delivered gratis at all the depots, why PAUL GAGE'S ELIXIR has not failed in desperate cases, where other means have been found of no avail. Sold in bottles at 2*s*. 9*d*., 4*s*. 6*d*., and 11*s*., by PAUL GAGE, 462, New Oxford Street; and by all respectable medicine vendors.

WINTER OVERCOATS AND CAPES, Superior Garments at reduced charges, one of the largest Stocks in London, all thoroughly waterproof; also of ditto for Youths, at W. BERDOE'S, 96, New Bond Street, and 69, Cornhill—(nowhere else.)

BY HER MAJESTY'S ROYAL LETTERS PATENT.

BAILY'S ROUP AND CONDITION PILLS FOR POULTRY.—This remedy has been extensively tried with uniform success, and is offered to amateurs and the public with the greatest confidence. It will effectually overcome that disease which has hitherto been the bane of the poultry-yard, and destroy that apprehension known to all poultry keepers, when a favourite and valuable fowl is seen to droop. It is inestimable for poultry returning from exhibitions, and greatly facilitates moulting.—Sold, with full instructions for use, in boxes containing 50 pills, by JOHN BAILY, 113, Mount Street, Grosvenor Square, price 3*s*. per box, or by post 3*s*. 4*d*. "Fowls by Baily," the most useful and plainest treatise of the day; price 2*s*., by post 2*s*. 6*d*.

Baily's Registered Fountains, universally adopted and approved. Drawings and particulars, by post, on application.—113, Mount Street, Grosvenor Square.

DAMAGED WHEAT AND RICE MEAL FOR PIGS is now acknowledged to be the best and cheapest FOOD. It is now being extensively used by all the large Pig feeders in the kingdom. To whom reference can be given. In order that small consumers may test the merits of each, JAMES MAY and Co. will send 1 quarter of Wheat and 2 cwt. of Rice Meal for Post-office order of 2*l*. 18*s*., including sacks.

DAMAGED WHEAT	35*s*. per qr.
RICE MEAL	9*l*. per ton.

JAMES MAY & Co., Finsbury Wharf, City Road Basin, London. Delivered free to any Railway in London. 1*s*. 6*d*. each charged for Sacks.

"HIGH FARMING UNDER LIBERAL COVENANTS."

DAIRY, PIG, AND POULTRY FARM.

WANTED immediately, in England or Wales, a Pretty COTTAGE or Modern FARM-HOUSE, with about 100 ACRES (more or less) of Prime Light LAND for first-class varieties of the above stock. The Jersey system of Cropping, Spade Husbandry, and most approved general management will be gradually introduced. Advertiser will be found an eligible improving tenant, and thoroughly solvent.—Address, RICHARD PAYNE, Esq., Daventry, Northamptonshire.

TO BE LET, with immediate possession, the old-established SEED BUSINESS, 181, High Street, Southampton, comprising a front shop, with a large range of Greenhouses, Hothouses, Cold and Forcing Pits, together with the Stock of Plants, Seeds, Fixtures, &c., &c. The above to be disposed of in consequence of the proprietor, Mr. Rogers, sen., finding the demand for Nursery Stock at his grounds at Red Lodge so great, that he is unable to superintend the Seed Department.—For particulars and to treat for the same, apply to Mr. RICHARD BELL, 2, Clifford Street, Southampton.

TO BE DISPOSED OF, DENYER'S NURSERY, celebrated for Roses, Fruit Trees, &c. Established 26 years, with a first-rate connection; consisting of 5 acres of land, Cottage and Seed Shop attached, of which a 14 years' lease will be granted The Proprietor being about to retire is desirous of offering the above; no goodwill is expected; the Stock, &c., to be taken at valuation.—Apply to Messrs. PROTHEROE & MORRIS, Leytonstone, Essex, or Mr. E. DENYER, on the premises, Loughborough Road, Brixton, within 3 miles of London.

PRIZE WHITE AND BUFF SHANGHAES.—An amateur who has this last season been highly successful at the most important Poultry Exhibitions, with both these varieties of Fowls, has now for disposal a few Pairs of WHITE CHICKENS, of unusual merit; also a White Cock hatched March, 1853, winner of the first prizes at Gloucester, Metropolitan, and Bury Shows; and a Buff Cock, Patriarch, the sire of many prize Chickens of this year, and the winner of two first prizes, being a complete model for shape and shortness of legs, &c.—For price, &c., apply to T. B. F., Maldon, Essex.

Sales by Auction.

DORKING, COCHIN CHINA, & OTHER FANCY POULTRY.
PERIODICAL SALE.

MR. J. C. STEVENS will Sell by Auction at his Great Room, 38, King Street, Covent Garden, on TUESDAY, January 17th, at 12 o'clock precisely, first-rate COLOURED DORKINGS from the yards of the Rev. F. Thursby, of Abington, Northampton, and J. W. F. Noyes, Esq., of Salisbury. Also, some very choice COCHINS from Mrs. George of Chaldon, Brahma Pootras, Spanish, &c.—Catalogues by enclosing a stamped directed envelope to Mr. J. C. STEVENS, 38, King Street, Covent Garden, London.

COCHIN CHINA FOWLS.
MR. PUNCHARD'S ANNUAL SALE.

MR. J. C. STEVENS will sell by Auction (without any reserve), at his Great Room, 38, King Street, Covent Garden, on WEDNESDAY, January 11, at 12 o'clock precisely, 160 FIRST-CLASS COCHINS, all bred by Mr. Punchard, at Blunt's Hall, Haverhill, and including many which have taken prizes at the principal Poultry Exhibitions this season, chiefly bred from descendants of his celebrated imported bird "Contest," and all of the favourite light colours.—Catalogues by enclosing a stamped directed envelope to Mr. J. C. STEVENS, 38, King Street, Covent Garden, London.

TO NURSERY AND SEEDSMEN, FLORISTS, AND CAPITALISTS.

MESSRS. ACTON & SON will Sell by Auction, at the White Horse Inn, Coppergate, York, on TUESDAY, the 24th January, 1854, at Two o'clock in the afternoon, for Three precisely (unless previously disposed of by Private Contract, of which Notice will be given), together, or in the following, or such other Lots as may be determined upon at the time of sale.

LOT 1.—Part of the VALUABLE NURSERY GROUNDS situate in Fulford Road, York, and adjoining on Property of James Backhouse, Esq., containing 8A. 3R. 32P., well stocked with every variety of Choice Forest and Fruit Trees, Shrubs, Roses, &c., in vigorous growth. Upon this Lot, fronting the Fulford Road, is erected a Modern and Commodious DWELLING-HOUSE and SHOPS, with GREENHOUSE and other requisite OUT-BUILDINGS adjoining.

LOT 2.—The remaining Part of the NURSERY GROUNDS, containing 4A. 3R. 24P., lying between Fulford Grange and Lot 1; and also those two Substantial DWELLING-HOUSES, constituting neat and pleasant suburban residences for small families, with suitable OUT-OFFICES attached, also fronting the Fulford Road. The Land extends from Fulford Road to the New Walk, adjoining the river Ouse, is of freehold tenure, of first-rate quality, in a high state of cultivation, and comprises valuable beds of gravel. The late proprietor, Mr. George Clarkson, for many years carried on an extensive and flourishing business on the premises, and a most eligible opening is therefore presented for any person desirous of succeeding him. The Property is also well worth the attention of capitalists as an investment, the whole being available for building purposes. The purchaser may, if preferred, take the Stock, or a portion thereof, on liberal terms, and have immediate possession.—Further Particulars may be had, and Plans of the Property seen, on application on the Premises, or at the offices of Mr. LUKE THOMPSON, Solicitor, Judges' Court, York.

On Jan. 1st was published, to be had of every respectable Bookseller and Nurseryman of the United Kingdom,

THE

NATIONAL GARDEN ALMANACK,

AND

HORTICULTURAL TRADE DIRECTORY FOR 1854.

By JOHN EDWARDS, F.H.S.,

Hon. Secretary of the National Floricultural Society; the "J. E." of the *Gardeners' Chronicle;* Florist Censor at Chiswick, Regent's Park, and many Provincial Exhibitions; President of the Stoke Newington Chrysanthemum Society; and in Committee or as Member connected with the principal Horticultural Societies of England.

In his Work will be found Lists of the Nurserymen, Seedsmen, and Florists, and comprising many hundred names not to be found in any Horticultural work extant, with at least 500 corrections of self-evident blunders to be found in those vague lists attempted by other periodical compilations.

The London Trade List must be pronounced perfection.

The Provincial includes double the firms elsewhere to be found, and all arranged in Counties and Towns Alphabetically.

The Irish and Scotch collated to the latest period, and threefold over our contemporaries.

The Continental fourfold, and from the most reliable sources peculiar to ourselves.

The American solely and exclusively our own, of which it will be pronounced we have indeed "gone ahead."

The whole containing more than 2000 Names with Addresses, and forming the most elaborate Trade Directory ever offered to the Horticultural and Floricultural public, at once totally eclipsing all existing contemporaries.

PRICE ONE SHILLING.

The Lists of New Flowers and Plants are of a character, and by such sterling authorities, which must prevent the possibility of a rival. The Garden Directions, separately and collectively, emanate from the leading cultivators of the day. Much space is devoted to Horticultural Societies, to which is added Names of Secretaries and promoters of Horticulture in connection therewith; while of Trade Announcements, as heretofore, our pages afford a summary not only of the leading but of every novelty of the season.

Packets for distribution by the Nursery Trade to their customers and friends may be had at 2*l.* for 50, 1*l.* for 24, or 10*s.* 6*d.* for 12 by prepayment only, when they will be delivered at any Office or Wholesale Seed House in London.

CHAPMAN AND HALL, 193, PICCADILLY, LONDON.

SIX VOLUMES FOR SEVEN AND SIXPENCE.

THE FAMILY ECONOMIST,

FIRST SERIES, COMPLETE AS ABOVE, INCLUDING THE NEW VOLUME FOR 1853,

In elegant binding, containing One Thousand Four Hundred Pages of most useful information on Domestic Economy, Home Education, Sanitary Matters, Cottage Gardening and Farming, Poultry Management, many hundreds of valuable Recipes, &c.

The First Number of the NEW ILLUSTRATED SERIES of the FAMILY ECONOMIST and ENTERTAINING COMPANION FOR TOWN AND COUNTRY, will be published on 1st of January.

LONDON: GROOMBRIDGE AND SONS; AND SOLD BY ALL BOOKSELLERS.

Just published, Nos. I. and II., each One Penny, and Part I., price Fivepence, of the

MUSEUM OF SCIENCE AND ART.

A MISCELLANY OF INSTRUCTIVE AND AMUSING TRACTS

ON THE

PHYSICAL SCIENCES, AND ON THEIR APPLICATION TO THE USES OF LIFE.

EDITED BY DR. LARDNER.

To place these Essays within the reach of all Classes, they will be published at ONE PENNY, in weekly numbers of sixteen pages, large 12mo, printed on good paper, in a clear type, and Illustrated, when necessary, by Engravings on Wood; also in Monthly Parts, price 5*d.*, in a wrapper; and in Quarterly Volumes, neatly bound, price 1*s.* 6*d.*

The following Subjects will form Early Numbers of the Work:—

The Planets—Are they Inhabited Globes?
Weather Prognostics.
Popular Fallacies.
The Sun and Moon.
Latitudes and Longitudes.
The Tides.
Locomotion by Land and Water in the United States.
The Electric Telegraph
Lunar Influences.
Cometary Influences.
Eclipses
Meteoric Stones and Shooting Stars.
Steam Power.
The Eye and Sight.
The Ear and Hearing.
Thunder and Lightning
Light
The Obsolete Elements—Air, Earth, Fire, and Water.
Anecdotes of the Arts—No. I., The Potter's Art.
The Plurality of Worlds.

LONDON: WALTON AND MABERLY, UPPER GOWER STREET, AND IVY LANE, PATERNOSTER ROW.

This day is published, in one handsome quarto volume, beautifully bound in cloth, price 21s.,

THE FOREIGN TOUR

OF

MESSRS. BROWN, JONES, & ROBINSON.

BEING THE

HISTORY OF WHAT THEY SAW AND DID IN BELGIUM, GERMANY, SWITZERLAND, AND ITALY.

By RICHARD DOYLE.

BRADBURY AND EVANS, 11, BOUVERIE STREET.

Complete in 1 Vol., 8vo, handsomely bound in cloth, price 14*s.*,

MR. SPONGE'S SPORTING TOUR. Illustrated with Coloured Engravings and Woodcuts by JOHN LEECH.

By the same Author, Price 1*s.*, Part 10.

HANDLEY CROSS; OR MR. JORROCKS' HUNT. With Coloured Engravings and Woodcuts by JOHN LEECH.

BRADBURY AND EVANS, 11, Bouverie Street.

On the 10th of December was published, price 10*s.* each, strongly bound in cloth,

VOLUME I. OF THE GEOGRAPHICAL DIVISION, AND VOLUME I. OF THE NATURAL HISTORY DIVISION OF

THE ENGLISH CYCLOPÆDIA. A NEW DICTIONARY OF UNIVERSAL KNOWLEDGE, Illustrated with more than Five Thousand Wood Engravings. Conducted by Mr. CHARLES KNIGHT.

*** A Number of the CYCLOPÆDIA is published every Saturday, price 6*d.*; one week a Number of GEOGRAPHY, the next a Number of NATURAL HISTORY; and a Part, price 2*s.*, on the last day of each month.

London: published by BRADBURY & EVANS, 11, Bouverie Street.

On the 9th of January will be published, price 3*s.* in cloth,

THE FOURTH VOLUME OF

THE HOUSEHOLD NARRATIVE OF CURRENT EVENTS OF 1853.

*** The First, Second, and Third Volumes, being a Record of Public Events of 1850—51 and 52, may always be had, price 3*s.* each, neatly bound in cloth.

Office, 16, Wellington Street North. Sold by all Booksellers and Newsmen.

Just published, price 2*s.*, post free, 2*s.* 6*d.*,

NERVOUS AFFECTIONS; an Essay on Spermatorrhœa, its Nature and Treatment; with an Exposition of the Frauds that are practised by persons who advertise the speedy, safe, and effectual cure of Nervous Derangement. By a Member of the Royal College of Physicians, London.

London: AYLOTT & Co., 8, Paternoster Row.

Just published, price 2*d.*, free by post 3*d.*,

COMPARATIVE TABLES OF FRENCH AND ENGLISH MEASURES, WEIGHTS, &c., Reprinted from the *Gardeners' Chronicle and Agricultural Gazette.*

CONTAINING—

Measures of Length
Square Measure
Cubic Measure
Measures of Capacity for Liquid and Dry Substances
Weights
Old French Measures of Capacity for Liquids
Do. for Dry Substances
Old French Weights reduced to English Avoirdupois
Thermometers
Various Conversion Tables.

JAMES MATTHEWS, 5, Upper Wellington Street, Covent Garden.

Price 2*s.* 6*d.*,

FOLIA ORCHIDACEA.—Part IV. By Professor LINDLEY. Containing the conclusion of EPIDENDRUM, HEMISCLERIA, PINELIA, ACACALLIS, ABOLA, ONCODIA, COCHLIODA, CHEIRADENIA, ACAMPE, VANDA, LUISIA.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden, London.

Third Thousand, Improved.

CUTHILL'S BELGIAN PRIZE ESSAY ON THE POTATO, with Twenty other articles upon Asparagus, Seakale, Rhubarb Wine, Strawberries, Cucumber, Melon, Herbs and Salads. Price by post, 2*s.* 4*d.*—Also his "Market Gardening Round London," by post, 1*s.* 8*d.*

Strawberry Plants (Black Prince), 5*s.* per 100; (Prince of Wales), 15*s.* Cucumber Seed (Black Spine), per packet, 1*s.* 1*d.*

JAMES CUTHILL, Camberwell, London.

NOW READY, MR. DOD'S PEERAGE, ETC.

New Edit. for 1854; thoroughly revised, with many improvements.

PEERAGE, BARONETAGE, KNIGHTAGE, &c., for 1854 (Fourteenth Year): by CHARLES R. DOD, Esq., Author of "The Parliamentary Companion," "Electoral Facts," &c. Foolscap 8vo, handsomely bound in cloth, gilt.

London: WHITTAKER AND Co., Ave-Maria Lane.

NEW EDITION OF COL. GREENWOOD'S WORK ON TRANSPLANTING FOREST TREES.

Now ready, in 8vo, with Frontispiece and Diagrams, price 12*s.*

THE TREE-LIFTER; or, a New Method of Transplanting Forest Trees. By Colonel GEORGE GREENWOOD. Second Edition.

London: LONGMAN, BROWN, GREEN, & LONGMANS.

ACTON'S COOKERY BOOK.

The Twelfth Edition, in foolscap 8vo, price 7*s.* 6*d.*,

ELIZA ACTON'S MODERN COOKERY REDUCED TO A SYSTEM OF EASY PRACTICE. With Directions for Carving.

London: LONGMAN, BROWN, GREEN, & LONGMANS.

NEW EDITION OF

PHILLIPS' GUIDE TO GEOLOGY.

Just published, in fcp. 8vo, with Four Plates, price 5*s.*

A GUIDE TO GEOLOGY. By JOHN PHILLIPS, F.R.S., F.G.S., Deputy Reader in Geology in the University of Oxford, &c. New Edition, corrected to the Present Time.

London: LONGMAN, BROWN, GREEN, & LONGMANS.

Just published, in 18mo, with Woodcuts, price 9*d.*,

A CHILD'S FIRST BOOK OF GEOGRAPHY, arranged in a Series of Easy Reading Lessons. By WILLIAM HUGHES, F.R.G.S. Forming a part of the new School Series, edited by the Rev. G. R. Gleig, M.A.

Also in Gleig's School Series, price 1*s.* each,

MR. W. HUGHES'S GEOGRAPHY OF THE BRITISH EMPIRE, AND GENERAL GEOGRAPHY, for the use of beginners.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

THE EDINBURGH REVIEW. No. CCI. will be published on Wednesday next.

CONTENTS.

I. LORD J. RUSSELL'S MEMORIALS OF MR. FOX, AND THE BUCKINGHAM PAPERS.
II. THE BLIND: THEIR WORKS AND WAYS.
III. PUBLIC WORKS IN THE PRESIDENCY OF MADRAS.
IV. ECCLESIASTICAL ECONOMY.
V. EDUCATION FOR THE RICH AND POOR.
VI. THACKERAY'S WORKS.
VII. THE MACHINERY OF PARLIAMENTARY LEGISLATION.
VIII. THE OTTOMAN EMPIRE.

London: LONGMAN & Co. Edinburgh: A. & C. BLACK.

Price One Shilling, on the

CULTIVATION OF THE VINE IN POTS. By R. ELPHINSTONE, Gardener to Sir R. Shafto Adair, Flixton Hall.

"A very small and very short account of an important subject, written by a good practical gardener. People so often fail in this branch of cultivation, that we can hardly have too much information concerning the methods pursued by those who are successful."—*The Gardeners' Chronicle.*

"The book before us is the production of a practical man, whom we believe to be well qualified to speak on such a subject; and we can have no hesitation in recommending his work to the attentive perusal of all who are engaged, or about to be engaged, in the cultivation of Vines in pots."—*The Gardeners' and Farmers' Journal.*

The Cottage Gardener, after enumerating the previous works on the subject, says, "By none is this pot culture made easy so well as Mr. Elphinstone in a little shilling volume, entitled 'A Treatise on the Cultivation of the Vine in Pots.'"

ARTHUR HALL, VIRTUE, and Co., 25, Paternoster Row.

POPULAR SCIENCE.

NEW WORK BY PROFESSOR JOHNSTON.

THE CHEMISTRY OF COMMON LIFE. By JAMES F. W. JOHNSTON, M.A., F.R.SS. L. & E., &c., Author of "Lectures on Agricultural Chemistry and Geology," "A Catechism of Agricultural Chemistry," &c.

It is the object of the author to exhibit in this work the present condition of chemical knowledge and matured scientific opinion upon the subject it treats of; the reader will not be surprised, therefore, should he find in it some things which differ from what is to be found in other popular works already in his hands or on the shelves of his library. It will be issued in Monthly Numbers in the following order:—

1. The Air we Breathe; The Water we Drink.
2. The Soil we Cultivate; The Plant we Rear.
3. The Bread we Eat; The Beef we Cook.
4. The Beverages we Infuse.
5. The Sweets we Extract; The Liquors we Ferment.
6. The Narcotics we Indulge in.
7. The Odours we Enjoy; The Smells we Dislike.
8. What we Breathe and Breathe for; What, How, and Why we Digest.
9. The Body we Cherish. The Circulation of Matter, a Recapitulation.

Nos. 1 and 2 are published, price Sixpence each.

WILLIAM BLACKWOOD & SONS, Edinburgh and London.

HANDSOME GIFT-BOOK—MEMORIAL OF THE GREAT EXHIBITION.

In Four handsome Volumes, cloth lettered, gilt edges, price Four Guineas, including the Supplementary Volume,

THE OFFICIAL DESCRIPTIVE AND ILLUSTRATED CATALOGUE OF THE GREAT EXHIBITION OF THE WORKS OF INDUSTRY OF ALL NATIONS, 1851.

"Every branch of science, art, and industry is here fully and efficiently represented."—*Morning Herald.*

"The Exhibition has lived its allotted time, and died; but this Catalogue is the sum of the thoughts and truths to which it has given birth—and which form the intellectual ground whereon the generations that we are not to see must build."—*Athenæum.*

"Long after the rare and curious contents of the Crystal Palace have been scattered over the world, this work will be valued as a memento and reflex of that marvellous collection."—*Atlas.*

A few Impressions remaining of the Imperial 4to Edition, printed for the Royal Commissioners, to be by them presented to Foreign Governments, &c., are now on sale. Cloth lettered, price Twenty Guineas.

London: Office at SPICER BROTHERS, 19, New Bridge Street, Blackfriars.

ON NERVOUS DEBILITY AND INDIGESTION.

Just published, New Edition, price 1*s.*; or, by post, for 1*s.* 6*d.*

THE SCIENCE OF LIFE; OR, HOW TO LIVE, AND WHAT TO LIVE FOR. With ample Rules for Diet, Regimen, and Self-Management; together with Instructions for securing perfect health, longevity, and that sterling state of happiness only attainable through the judicious observance of a well-regulated course of life. By a PHYSICIAN.

Also, by the same Author, price 2*s.* 6*d.*; by post, 3*s.* 6*d.*,

A MEDICAL TREATISE ON NERVOUS DEBILITY AND CONSTITUTIONAL WEAKNESS, with Practical Observations, illustrated with Anatomical Plates, in Health and Disease.

This work, emanating from a qualified Member of the medical profession, the result of many years' practical experience, is addressed to the numerous classes of persons who suffer from the various disorders acquired in early life. In its pages will be found the causes which lead to their occurrence, the symptoms which indicate their presence, and the means to be adopted for their removal.

London: JAMES GILBERT, 49, Paternoster Row; HANNAY, 63, Oxford Street; MANN, 39, Cornhill; and all Booksellers.

ESTABLISHED 1786.

WEST OF ENGLAND AGRICULTURAL AND HORTICULTURAL ESTABLISHMENT,

FOR THE SUPPLY OF EVERY REQUISITE FOR THE FARM AND GARDEN,

UNION ROAD, PLYMOUTH,

Adjoining the Station and Terminus of the South Devon Railway, and the Chief Office of the Electric Telegraph Company.

UNDER THE PATRONAGE OF

HER MOST GRACIOUS MAJESTY THE QUEEN,
HIS MAJESTY THE KING OF THE BELGIANS,
HER IMPERIAL HIGHNESS THE DUCHESS OF BRABANT,
HER ROYAL HIGHNESS THE DUCHESS OF ORLEANS,
HIS EXCELLENCY THE NEPAULESE AMBASSADOR & SUITE

WILLIAM E. RENDLE AND CO. SEED MERCHANTS, Plymouth, *have this season secured a most excellent assortment of all kinds of Garden, Agricultural, and Flowe Seeds, which have either been saved by themselves or by Seed Growers of the first respectability.*

They would beg to direct particular attention to their COLLECTIONS OF SEEDS, *which have given such infinite satisfaction to all who have obtained them; and not withstanding the high price of seed this year, owing to the very wet season that has been experienced, they have put them down as low as the circumstance of the season will permi*

COLLECTIONS OF KITCHEN GARDEN SEEDS.

COMPRISING ALL THE CHOICEST AND BEST SORTS OF VEGETABLES, ARE OFFERED AT THE FOLLOWING REASONABLE PRICES:—

No. 1.—Complete Collection, sufficient for a large Garden, for one year's supply ... £3 0 0
No. 2.—Complete Collection for a moderate size Garden 2 0 0
No. 3.—Complete Collection in small quantities £1 5 0
No. 4.—Complete Collection for a small Garden 0 15 0

The following will be the sorts and quantities furnished for a **No. 1 COLLECTION**, *and contains a general Assortment of all the best kinds of Vegetables known, which have been selected with care and attention.*

PEAS—1 quart Rendle's First Early
2 „ Early Prince Albert
2 „ Early Warwick
2 „ Woodford's Marrow
2 „ Bedman's Imperial
1 „ Flack's Dwarf Victory
1 „ Blue Scimetar
2 „ Blue Prussian
1 „ Knight's Tall Marrow
1 „ British Queen
1 „ Auvergne
1 „ Fairbeard's Champion of England
1 „ Burbidge's Eclipse
1 „ Bishop's New Long-podded
1 „ Victoria Marrow
1 „ Fairbeard's Surprise
BEANS—4 quarts Early White Longpod
4 „ Green Windsor
2 „ Johnson's Wonderful
1 pint Scarlet Runners
1 „ Dwarf French
BEET—1 oz. Rendle's Superb Crimson
½ oz, Whyte's Black Red
¼ oz. Silver or Seakale
BORECOLE—½ oz. Dwarf Curled

BORECOLE—Packet Green Cabbaging
BRUSSELS SPROUTS—½ oz. imported
BROCCOLI—¼ oz. Granger's Early Dwarf Cape
Packet Adam's Superb White
„ True Walcheren
„ Chappel's Cream
„ Victoria White
„ Rendle's Improved Wilcove
„ Coming's Reliance
CABBAGE—½ oz. Shilling's British Queen
¼ oz. Wheeler's Imperial
¼ oz. Rendle's Early Admirable
¼ oz. Early Cornish
¼ oz. Large Paignton
¼ oz. Prince Albert
½ oz. Enfield Market
¼ oz. Dutch Red (pickling)
¼ oz. Atkin's Early Matchless
SAVOY—½ oz. Green Curled
½ oz. Globe Savoy
Packet Cattel's Green Curled
CARROT—1 oz. Earliest Horn (for frames)
4 oz. Improved Altringham
2 oz. James's Green-Top
1 oz. White Belgian
CAULIFLOWER—½ oz. Early London

CELERY—Packet Seymour's Champion
„ Cole's Superb Red
„ Lawes's Giant White
CRESS—1 lb. Curled
CUCUMBER—Packet Rendle's Fine Ridge
„ Cuthill's Black Spine
„ Barnes' Man of Kent
DELAWARE GREENS—half oz.
ENDIVE—half oz. green Curled
half oz. imperial Batavian
LEEK—1 oz. large Scotch
LETTUCE—qr. oz. white Coss
qr. oz. Ady's large Coss
qr. oz. Bath Coss
half oz. Drumhead Cabbage
qr. oz. Victoria Cabbage
qr. oz. Ice ditto
qr. oz. Grand Admirable
MUSTARD—1 lb. white
MELON—Packet Bromham Hall
„ true Beechwood
ONION—4 oz. White Spanish
4 oz. Red Deptford
2 oz. James's Long-keeping
1 oz. Silver-skinned
1 oz. Tripoli

PARSLEY—2 oz Rendle's Treble Garnishing
1 oz. Mitchell's Winter
2 oz. Myatt's Treble Curled
PARSNIP—4 oz. improved Guernsey
RADISH—¼ lb. Wood's earliest Frame
½ lb. Beck's early Scarlet
¼ lb. white and red Turnip
SPINACH—1 lb. Round
½ lb. Prickly
½ oz. Salsafy
½ Scorzonera
TOMATOES—¼ oz.
TURNIPS—¼ lb. Rendle's Early Six-weeks stone
2 oz. early white Dutch
4 oz. white Stone
2 oz. yellow Altringham
1 oz. Six-weeks Yellow
1 oz. Chirk Castle Black Stone
2 oz. American Red-top Stone
VEGETABLE MARROW—¼ oz.
HERBS—Packet Sweet Basil
„ Sweet Marjoram
„ Summer Savory
„ Thyme
„ Pot Marigold
„ Sage

The quantities contained in the other Collections, Nos. 2, 3, and 4, will be found detailed in our NEW PRICE CURRENT AND GARDEN DIRECTORY FOR 1854. If there should be any sorts that are n required in the above Collection, increased quantities of those most desired could be sent.

COLLECTIONS OF FLOWER SEEDS.

The Collections sent out from Messrs. RENDLE's establishment have always given satisfaction, and they have much pleasure in stating that they have this season a very superior stock of all kinds, either grown by themselves or by seed growers of the first respectability. It is on this account, therefore, that they can depend on their being quite new and correct to name.

Scale of Prices—Sent Postage Free.

One Hundred packets (choice sorts) including all the best hardy and half-hardy annuals, biennials, and perennials (see Price Current for 1854.)

The packets will be of fair average size; those who offer Collections at less rates, generally speaking, considerably reduce the size of their packets.

	Purchasers' Selection.	Own Selection
No. 1.—100 Packets	£1 5s. 0d.	£1 0s. 0
No. 2.— 50 ditto	0 15 0	0 12 0
No. 3.— 25 ditto	0 8 0	0 6 0
No. 4.— 12 ditto	0 4 0	0 3 0
	Large Pkts.	Small Pkts.
50 Packets Hardy Annuals	10s. 0d.	8s. 0d.
25 ditto ditto	5 0	4 0
12 ditto ditto	3 0	2 0
25 varieties choice Greenhouse Annuals	8 0	6 0
12 ditto ditto	4 0	3 0
25 varieties choice Greenhouse Perennials	10 0	8 0
12 ditto ditto	5 0	4 0

All Flower Seeds sent postage free. Complete lists of the varieties included in the above Collections will be found in our NEW PRICE CURRENT AND GARDEN DIRECTORY FOR 1854.

RENDLE'S NEW PRICE CURRENT FOR 1854,

WITH NEWSPAPER STAMP TO GO FREE BY POST.

At the earnest solicitation of numerous friends and patrons, WILLIAM E. RENDLE & CO. have been again induced to publish another Edition of their PRICE CURRENT AND GARDEN DIRECTORY, which will be found in every respect superior to the last.

They have prepared it regardless of expense, so as to be a correct and useful Guide to the Amateur and young Gardener, a remembrancer to the more advanced in Horticulture, and a source of reference to all.

They have on the present occasion obtained the valuable assistance of Mr. Robert Errington, the Gardener to Sir P. Egerton, Bart., Oulton Park, who is well known to be one of the best practical writers on gardening of the present day.

It will contain a very serviceable descriptive Catalogue of Kitchen Garden Seeds, with prices affixed to every article; and, in addition to the descriptions, there will be short and concise cultural remarks for every kind of vegetable, introducing the best varieties for early, medium, and general crops.

The List of Flower Seeds will also be much improved, with descriptions of all the leading varieties, and good practical advice on their cultivation.

There will also be a good article on "Rotation of Crops," written expressly for the present edition by Mr. Errington.

The very useful Calendar of Operations, which has been found to be of so much service, will be improved and enlarged.

A useful "Garden Almanack" for 1854 is also introduced, and much other information relating to Gardens and Garden Operations.

The "Price Current and Garden Directory" is just published. PRICE SIXPENCE EACH, returned to purchasers. Copies can be obtained from

WILLIAM E. RENDLE & Co.,
Seed Merchants,
Plymouth:

Or from the London Office, 294, Strand.

ALL SEEDS CARRIAGE FREE. SEE THE FOLLOWING ANNOUNCEMENT.

All Orders for Seeds above £1 (excepting heavy articles, as Grain, Tares, Clover, Seed Potatoes, &c.), will be delivered FREE OF CARRIAGE *to any Railway Station between Plymouth and Paddington. All Orders above £2* FREE *to any Station on the following Railways:*—GREAT WESTERN, BRISTOL and BIRMINGHAM, SOUTHAMPTON and DORCHESTER, BRISTOL and EXETER, SOUTH WESTERN, SOUTH DEVON, SOUTH WALES, *or to any Market Town in Devon and Cornwall, or to Cork, Dublin, and Liverpool, by Steamers. All Orders for Seeds above £5, with the above exceptions, will be delivered,* FREE OF CARRIAGE, *to every Railway Station in England and Wales, and to every Steam Port in England, Wales, Scotland, and Ireland.*

The Terminus and principal Station of the South Devon Railway is close to our Union Road Establishment, so that we now enjoy direct Railway Communication to all the principal Towns in England, Scotland, and Wales. Our Premises are also within five minutes' walk of the Great Western Docks, from whence Steamers are continually running to Cork, Dublin, Belfast, Glasgow, London, Falmouth, and most of the principal Ports in the Kingdom.

Counting House, Seed Warehouses, and Plant Establishment, Union Road, adjoining the South Devon Railway, and within a few hundred yards of the Great Western Docks. Extensive Nurseries at Compton, two miles from Plymouth, for growing all kinds of Forest Trees, Shrubs, and Fruit Trees. Large Warehouses in Bath Street, and capacious Waterside Premises at the Great Western Docks, for loading and unloading Vessels.

THE CAPE, INDIA, CHINA, AND AUSTRALIAN MAIL PACKETS LEAVE THIS PORT EVERY MONTH.

All Goods not thoroughly approved of immediately exchanged; and it is particularly requested that any deficiency in quantities, or inattention to orders, be immediately communicated to us.

N.B.—All Post-Office Orders should be made payable to WILLIAM EDGCUMBE RENDLE.

SEEDS FOR EXPORTATION CAN BE OBTAINED PROPERLY PACKED TO ARRIVE IN GOOD CONDITION.

EVERY KIND OF SEED IS PROVED BEFORE IT IS SENT OUT.

WILLIAM E. RENDLE AND CO., PROPRIETORS.

ESTABLISHED 1786.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, JANUARY 7, 1854.

THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 2.—1854.] SATURDAY, JANUARY 14. [PRICE 6*d*.

INDEX.

Aeration ... 19 *b*
Almanac, Johnson's ... 22 *a*
Balsamina latifolia alba ... 21 *c*
Books noticed ... 23 *b*
Calceolaria, the ... 23 *c*
Calendar, horticultural ... 24 *a*
— agricultural ... 29 *a*
Cattle, to measure ... 26 *a*
— fat ... 26 *a*
Cottagers' stoves ... 22 *c*
Cover, Gorse for ... 28 *a*
Crops, returns of ... 25 *c*—27 *c*
Currants for walls ... 24 *c*
Deodar as timber ... 20 *b*
Draining, borrowed money for ... 28 *a*
— woodlands ... 23 *a*
Entomological Society ... 23 *b*
Food of plants ... 19 *c*—22 *c*
— cattle ... 26 *b*
— Rice as ... 28 *b*
Gardeners' Benevolent Institution ... 23 *b*
Gas lime ... 28 *a*
Gooseberries for walls ... 24 *c*
Gorse cover ... 28 *a*
Grape, Barbarossa ... 22 *b*
Guano market, the ... 25 *b*
Harvest reports ... 28 *c*
Hay, to steam ... 28 *a*
Heating, stoves for ... 22 *c*
Houses, damp ... 29 *b*
Larch, seedling ... 22 *a*
London Farmers' Club ... 28 *b*
Manure, humus and ammonia as ... 22 *c*
Orchard houses ... 22 *c*
Paper, manufacture of ... 24 *a*
Pathology, vegetable ... 19 *b*—20 *a*
Plants, new ... 23 *c*
— importance of air to ... 19 *b*
— diseases of ... 19 *c*—20 *a*
— food of ... 19 *c*—22 *c*
Poultry show, metropolitan ... 28 *b*
Rendle's Price Current, rev. ... 23 *b*
Rice ... 28 *b*
Sequoia sempervirens ... 22 *a*
— gigantea ... 22 *a*
Stoves, cottagers' ... 22 *c*
Strawberry, Black Prince ... 22 *b*
Timber tree, Deodar as a ... 20 *b*
Turnips as food ... 26 *b*
— to store ... 28 *a*
Vegetable pathology ... 19 *c*—20 *a*
Ventilation ... 19 *b*
Weather in Dorset ... 22 *b*
— in Suffolk ... 22 *b*
Woodlands, draining ... 23 *a*

CHELTENHAM GREAT EXHIBITION OF 1854. To open on the 1st June.—In addition to all kinds of Horticultural productions, this Exhibition will comprehend every description of Implement or Article Manufactured, Designed, taken from, or in any way connected therewith.—Programmes, Schedules of Prizes, &c., may be obtained on application to the Secretary, Mr. HENRY J. COCHRANE, 128, High Street, Cheltenham.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—APPROACHING ELECTION.—Subscribers are earnestly requested to consider whether, by the laws of this Institution, they are not in conscience bound to give a preference to those candidates who for the greatest number of years have providently subscribed to the Funds from which they are now compelled to solicit relief.

SEEDS FOR IRELAND, SCOTLAND, & WALES.

SUTTON AND SONS having many customers in North and South Wales, Scotland and Ireland, whom they have supplied with Agricultural and Horticultural Seeds for many years, are well acquainted with the sorts which thrive best in each locality.

SUTTON & SONS *deliver their Goods Free of Carriage to the Seaports, and many other parts of Ireland, Scotland, and Wales. For particulars, address*

JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

SEEDS—CARRIAGE FREE.

WILLIAM E. RENDLE AND CO. *have, from the very extensive patronage they have received, been induced this season to offer the following liberal arrangement to all who purchase Seeds from their establishment.*

ALL ORDERS ABOVE £5 WILL BE DELIVERED CARRIAGE FREE TO ANY RAILWAY STATION IN ENGLAND OR WALES, AND TO ANY STEAM PORT IN ENGLAND, WALES, IRELAND, OR SCOTLAND.

Two or three purchasers joining together will therefore have the advantage of having their orders delivered free of any cost for carriage.

RENDLE'S PRICE CURRENT FOR 1854 should be obtained by all who have gardens, or who take an interest in the cultivation of the soil.

HUNTER'S LONG PROLIFIC CUCUMBER, to which have been awarded more Prizes than to any other variety in cultivation. Gentlemen, Amateurs, and others desirous of successfully competing at the Exhibitions of this year, can be furnished with the above first class variety, "improved, if anything," in packets at 1*s*. and 2*s*. Fine Seeds, from fruit of surpassing excellence.—JAMES G. RENWICK, Seed Warehouse, 107, St. John Street, London.

SUPERB FLOWER SEEDS.—The following select Seeds, saved from the best varieties, sent post free at 1*s*. per paper:—Antirrhinum, Petunia, Verbena, Double Balsam, and Pansy.—From WILLIAM KNIGHT, Florist, 53, High Street, Battle, Sussex. Select lists of Seeds sent on application.

WAITE'S NEW EARLY PEA.

DANIEL O'ROURKE.—The earliest and best Pea in cultivation; a week earlier than the Emperor, longer pods, and a much better cropper; height 2½ to 3 feet. If this Pea does not give general satisfaction the money charged will be returned.
Trade price to be had on application to J. G. WAITE, Seed Merchant, 181, High Holborn, London.

DOUBLE ITALIAN TUBEROSES.

DAWE, COTTRELL, AND BENHAM (successors to FREDERICK WARNER), have just received their Annual Importation of the above, in excellent condition, which they offer at 3*s*. 6*d*. per dozen, with the usual allowance to the trade. Their wholesale Lists of Garden, Agricultural, and Flower Seeds are ready, and may be obtained on application.
3, Lawrence Pountney Lane; and 36, Moorgate Street, London.
Established 28, Cornhill. 1720.

BRITISH QUEEN POTATO.—As early as a Shaw, the quality of a Regent, and one of the most productive kinds grown, recommended with perfect confidence; price per bushel, 10*s*.; per peck, 3*s*., bag included, for pre-payment only.
HART AND NICKLIN, Guildford, Surrey.

CARTER'S NEW GIGANTIC RUNNER.—In introducing this new variety of the Scarlet Runner French Bean, to the notice of his customers, J. CARTER can testify to its great superiority over the old sort. It is a most abundant bearer, and the pods are considerably longer. Price 2*s*. 6*d*. per quart.—JAMES CARTER, Seedsman and Florist, 238, High Holborn, London.

TO FARMERS.

IN ACCORDANCE with the wishes of Farmers, Millers, and others interested in the Corn Trade, an Edition of the AGRICULTURAL GAZETTE AND GARDENERS' CHRONICLE will be published every Monday Afternoon, in time for post. The Monday's Edition will, in addition to the usual markets, contain a full report of the Mark Lane, Smithfield, and Newgate Markets of the day.—May be ordered of any Newsagent. Price 6*d*.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER has now ready a fine healthy stock of young plants of all the leading sorts. For price and description see General List, which also contains hints on their culture, with observations on the exhibition of Hollyhocks, &c. &c., and may be had by inclosing a postage stamp.
Saffron Walden Nursery, January 14.

TROPÆOLUM AZUREUM ... 42*s*. per dozen.
„ BRACHYSERAS ... 18*s*. „
„ TRICOLORUM ... 24*s*. „
The above are very strong sound roots just commencing their growth, and might with safety be transmitted through the Post Office. Usual discount to the trade when ordered by the dozen.
HUGH LOW & Co., Clapton Nursery, London.—Jan. 14.

BENJAMIN R. CANT begs to offer the following—
12 first class New Show Geraniums, for ... 30*s*.
12 excellent but older kinds of ditto „ ... 15*s*.
12 good distinct ... ... „ ... 9*s*.
12 Fancy ... ... „ ... 9*s*.
12 first-rate Show Cinerarias ... „ ... 9*s*.
12 good and distinct ditto ditto ... „ ... 6*s*.
6 superior New ditto ditto ... „ ... 12*s*.
Apply to BENJAMIN CANT, St. John's Street Nursery, Colchester.
N.B.—A few fine specimens of Cinerarias to be sold cheap.

SELECTED GARDEN SEEDS.—We beg to offer the following Collections of Garden Seeds:—

	£	s.	d.
No. 1.—A complete collection, suitable for a large garden ...	3	0	0
2.—A collection of equally choice varieties, but smaller quantities ...	1	10	0
3.—A collection suitable for a small garden ...	0	15	0

Nos. 1 and 2 collections will be sent carriage free to any Railway Station in England or Wales.
J. C. WHEELER & SONS, SEED MERCHANTS, Gloucester.

CAREY TYSO'S CATALOGUE OF FLORISTS' FLOWERS for 1853-4 may be had post free for two labels. TREATISE on the ANEMONE, for four labels. Ditto on RANUNCULUS, for eight labels.

	£.	s.	d.
RANUNCULUSES: 100 splendid named sorts, 40*s*. to	4	0	0
„ 25 superb Seedlings, do.	1	15	0
„ 100 fine mixtures from ... 8*s*. ...	1	0	0
DOUBLE ANEMONES: 50 fine named sorts 12*s*. ...	0	15	0
Ranunculus and Anemone Seeds, per paper ...	0	2	6

IMPORTED GERMAN SEEDS:—Asters, Stocks, Balsams, Larkspurs, Poppies, Zinnias, &c., in named assortments, 2*s*. 6*d*. each; 25 varieties of Annuals, 5*s*. The above articles can be sent by post.

C. TYSO's Sovereign assortments, comprising 18 select Ranunculuses and 18 choice Double Anemones, sent postage free for 1*l*. 1*s*.—Wallingford, Berks.

GENTLEMEN, NURSERYMEN, GARDENERS, AND OTHERS, having Surplus Choice Fruits, Vegetables, and Flowers to dispose of during the Winter and Spring, will meet with a CASH Purchaser by forwarding to
GEORGE TAYLOR, Jun.,
Fruit Salesman,
St. John's Market,
Liverpool.
Contractor and Commission Salesman for Choice Garden Produce.
Terms—CASH on Receipt of Goods.

CHOICE FRUIT AND VEGETABLES WANTED.
PINES, 2 lbs. to 4 lbs. each, 4*s*., 4*s*. 6*d*., 5*s*. per lb.
MUSHROOMS, 1*s*. 6*d*., 1*s*. 9*d*., 2*s*. per lb.
ASPARAGUS, 5*s*., 7*s*. 6*d*. per hundred.
CUCUMBERS, 1*s*., 1*s*. 6*d*., 2*s*. each.
Choice Flowers according to quantity.—Forward immediately to
GEORGE TAYLOR, Jun.,
Fruit Salesman,
St. John's Market,
Liverpool.
Contractor and Commission Salesman for Choice Garden Produce.
Terms—CASH on Receipt of Goods.

THE FINEST BALSAMS IN EUROPE, in Six Classes; Seed saved by Mr. GLENNY from flowers three inches across: the six, 37 stamps; Mixed Seeds, 13 stamps, in Sealed Packets only, signed and sealed. The finest seeds that can be had procured to order, and all other choice Horticultural subjects.—420, Strand.

TRANSPLANTED LARCH AND SCOTCH FIR.

STEWART AND MEIN beg to intimate that they have a large and excellent stock of the above for sale.
LARCH, 1½ to 3 feet | SCOTCH FIR, 1 to 2 feet.
Also a quantity of fine 2 years Seedling Native Scotch Fir or Highland Pine. Prices moderate, may be had on application.
Paradise Nurseries, Kelso, Roxburghshire, Jan. 14.

LIME TREES, 12 to 14 feet, 42*s*. per 100.—SPRUCE FIRS, 2 to 3 feet, 6*s*. per 100.—LAURUSTINUS, very fine, 30*s*. per 100.—Apply to BENJAMIN R. CANT, St. John's Street Nursery, Colchester.

FRUIT TREES, &c.—The following are very strong, and finely grown:—Dwarf-trained Moor Park Apricots, and other sorts, 42*s*. per doz.; Standard trained Peaches and Nectarines, 60*s*. to 80*s*. per dozen; Dwarf trained Green-gage Plums, 30*s*. per dozen; Prince Albert Rhubarb, strong to force, 6*s*. per dozen.
Berberis aquifolium and Berberis dulcis.—These beautiful shrubs are 1 to 2 feet high; 8*s*. per 100, 60*s*. per 1000.—Usual discount to the Trade.—JOHN JEYES Nurseryman, Northampton.

THE MOST CONCISE AND USEFUL SEED CATALOGUE YET PUBLISHED.

SUTTON'S NEW PRICED CATALOGUE *will be sent gratis on receipt of One Penny Stamp for Postage.* It contains descriptive Lists of
KITCHEN GARDEN SEEDS | AGRICULTURAL SEEDS
FLOWER SEEDS | SEED POTATOES
AND BEDDING PLANTS.
Address JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

RENDLE'S NEW PRICE CURRENT FOR 1854 *should be obtained by all who have gardens, whether small or large. It will be found to be a correct and useful Guide to the amateur and young gardener; a remembrance to the more advanced in horticulture, and a source of reference to all.*
Can be obtained from the London Publishing Office,
294, STRAND;
or from the Proprietors,
WILLIAM E. RENDLE & Co.,
Seed Merchants,
ESTABLISHED 1786. Plymouth.

CARTER'S CATALOGUE OF SEEDS.

J. CARTER begs to announce the publication of the nineteenth annual series of his Systematic CATALOGUE of Culinary, Floricultural, and Agricultural Seeds, comprising many novelties. It will be forwarded prepaid on application.
No. 238, High Holborn, London.

NURSERIES, SLEAFORD.

JOHN AND CHARLES SHARPE, SEED GROWERS and NURSERYMEN, beg to state that their Wholesale Priced List of Seeds and Nursery Stock is now ready, and may be had on application.

DAWE, COTTRELL, AND BENHAM'S ANNUAL DESCRIPTIVE LIST OF FLOWER AND GARDEN SEEDS, &c., containing all the New and Choice Varieties of the Season, is Published, and will be forwarded post free to any address.—36, Moorgate Street, and 3, Laurence Pountney Lane, London. (Successors to F. Warner, established 28, Cornhill, 1720.)

STANDISH AND NOBLE'S CATALOGUE for the present season is Now Ready, and may be had on application. A selection from it appeared as a detailed advertisement in the *Gardeners' Chronicle*, of Saturday, Sept. 10th, to which they respectfully refer plant buyers. It contains many new and choice plants.—The Nursery, Bagshot, Surrey, Jan. 14.

CHARLES DOMINICK begs to announce to his friends and the public, that his CATALOGUE of GARDEN SEEDS is now ready, and may be had on application. They have been selected with great care from the best stocks in the country, and the growing qualities tried as soon as received.
Horticultural Establishment, 112 and 113, High Street, Ryde Isle of Wight.—January 14.

THOMAS SIBBALD, NURSERYMAN and SEEDSMAN, Bishop Auckland, will forward on application his DESCRIPTIVE CATALOGUE OF GARDEN AND FLOWER SEEDS. The stock is selected with care, and may be depended on as being genuine, and of equal quality with any offered.

DAHLIAS.

JOHN KEYNES, FLORIST, Salisbury, respectfully begs to announce that his Annual CATALOGUE of all the NEW and FIRST-RATE DAHLIAS for 1854 is now ready, and will be forwarded on application.
The two new and beautiful Dahlias, "FANNY KEYNES" and "RACHEL RAWLINS" will be figured in the February Number of "THE FLORIST;" and as drawings of these beautiful Dahlias cannot be procured through any other medium than "THE FLORIST," J. K. recommends his friends to order the February Number without delay.
Castle Street Nursery, Salisbury, Jan. 14.

AMERICAN PLANTS.

JOHN WATERER begs to announce that his NEW CATALOGUE of RHODODENDRONS, AZALEAS, CONIFEROUS PLANTS, &c., is now published, and may be had by enclosing two stamps for postage.
The colours of all the Rhododendrons worthy of cultivation are described in order to facilitate purchasers in making selections, together with a Treatise on their successful management.
☞ The Rhododendrons forming the American Exhibitions in the Royal Botanic Society's Garden, Regent's Park, London, are annually supplied from this establishment.
The American Nursery, Bagshot, Surrey, near the Farnborough Station, South-Western Railway, and 3 miles from Blackwater, South-Eastern Railway.

GEORGE BAKER begs to say that his DESCRIPTIVE CATALOGUE of AMERICAN PLANTS, CONIFERS, ORNAMENTAL SHRUBS, FRUIT and FOREST TREES, &c., may be had by enclosing two postage stamps.
G. B. wishes to call particular attention to his fine Stock of GREEN and WEEPING HOLLIES, from 1 to 12 feet high.
G. B. has supplied the American Exhibition in the Royal Botanic Gardens, Regent's Park, from its commencement.
American Nursery, Windlesham, near Bagshot, Surrey, about six miles from Staines Station, Windsor Branch, South-Western Railway, where conveyances may be obtained.

CHOICE FRUIT TREES.

JOHN ADAMS, NURSERYMAN AND SEEDSMAN, Brompton Park, Kensington Gore, London, begs to call the attention of the trade, and planters generally, to his extensive Stock of FRUIT TREES, embracing all the best varieties in cultivation, under their correct nomenclature; but more particularly to his Standard Trained Cherries, Plums, Pears, Apricots, Peaches, and Nectarines; Dwarf Trained Cherries, Pears, Plums, Peaches, and Apples; Standard Cherries, Plums, Pears, and fine large Mulberries; Dwarf Pears, Plums, Apples, and Nectarines, of which he has a large stock, all of first-rate quality.

NEW SEEDS—GROWTH OF 1853.

RENDLE'S COLLECTION OF GARDEN SEEDS, FOR ONE YEAR, *will be sent out as usual by the Subscribers.*

The collections have given universal satisfaction, and they will be found sufficient to supply a garden during the whole of the 12 months.

	£	s.	d.
No. 1.—A complete Collection, to supply a large garden for 12 months, including 20 quarts of the newest and most approved Peas, for early, medium, and late crops; 10 quarts of Beans, and full quantities of all other kinds of vegetable seeds ...	3	0	0
For the detailed quantities contained in the No. 1 Collection, see back page Gardeners' Chronicle, Jan. 7, 1854.			
No. 2.—A complete Collection, in reduced quantities, for a smaller garden ...	2	0	0
No. 3.—A complete Collection do. ...	1	5	0
No. 4.—A small and choice Collection ...	0	15	0

☞ *All orders above 20s. carriage free (see* PRICE CURRENT*), and all orders above 5l. delivered carriage free to every Railway Station in England and Wales, and to every Steam Port in England, Wales, Ireland, and Scotland.* WILLIAM E. RENDLE & Co., Seed Merchants, ESTABLISHED 1786. Plymouth.

The quantities contained in the above Collections will be found in our PRICE CURRENT AND GARDEN DIRECTORY, *just published.*

HAWKES' CHAMPAGNE RHUBARB.—This most desirable variety is now for the first time offered to the public. It has stood the severest test that can be applied, and has beaten everything in Covent Garden and other London Markets in realising higher prices, from its magnificent colour and size. It has been seen by the very highest authorities and pronounced to be a most valuable introduction. In earliness it equals the Prince Albert, but of a deeper colour, and much greater bearer. It forces remarkably well, and is very hardy out of doors. Mr. HAWKES has placed the entire sale in the hands of Duncan Hairs.

One-year-old plants, strong, 5s. each. A few two years old, very strong, for sale.

LAING'S MAMMOTH RED CELERY.—This is considered the largest yet grown, attaining the extraordinary weight of from 10 to 12 lbs., and at the same time perfectly solid. It is nearly perennial in its habit, as it will not, under any circumstances, run to seed the first season, and it is difficult sometimes the second when planted out for that purpose. In colour it is a bright red. In flavour unsurpassed if equalled.

It has been seen growing by many practical gardeners, who deem it a new feature in the garden, from the fact that it may be had nearly all the year. Packets 2s. 6d. each.

MITCHELL'S HARDY EARLY CAULIFLOWER.—This is grown precisely as the handglass variety, but when removed from the frame does not require the same protection, and comes in immediately after. This is particularly recommended for gentlemen's establishments. The head is not large, but handsome and compact, and is so firm that you may let them stand from 10 days to a fortnight and they will not get frothy or loose. This is quite a distinct variety. Packets 2s. 6d. each.

DUNCAN HAIRS, Seedsman, 109, St. Martin's Lane. Post Office orders to be made payable at Charing Cross.

THE CUCUMBER SEASON.—Growers of this superb and select branch of Horticulture should endeavour to procure seeds of such varieties as will give them satisfaction, and meet every expectation for exhibition or otherwise. The under-mentioned have been thoroughly proved, and testimonials and orders again received from numerous correspondents.

CAPTIVATION CUCUMBER, a beautiful black spine, free from ribs and shrivels, carries its bloom well, fruit never turning colour at the point like many others, length from 20 to 28 inches, uniform from stem to point (a consideration to exhibitors), 2s. 6d. per packet.

PHENOMENON CUCUMBER.—Also a fine black spine, rapid grower, and the hardiest of all long Cucumbers, in other respects similar to the above, 2s. 6d. per packet. This will give every satisfaction to growers.

Victory of Bath Cucumber, 1s. per packet; Winter Cucumber, Lord Keynon's Favourite, 2s. 6d. ditto; Gordon White Spine, 1s. ditto; Chamberlain's Essex Hero (very fine), 2s. ditto; Sunderlandwick Cucumber (very fine), 2s. ditto; Hunter's Prolific, 1s. ditto; and numerous other good varieties, at 1s. per packet.

MELONS, the best sorts, true to name, and such as will give every satisfaction.—Tiley's Incomparable, 1s. 6d. per packet; Tiley's Bromham Hall, 1s.; Tiley's Golden Ball, 1s.; Tiley's Queen, 1s.; Tiley's Bowood, 1s.; Victory of Bath, 1s.; Camerton Court, 1s.; Beechwood, 1s.; Windsor Prize, 1s.; Emperor, 1s.; Fleming's Hybrid Persian, 1s.; Hampton Court, 1s.; Blackhall's Green Flesh, 1s.; Bailey's, 1s.; and numerous others.

⁎ A Packet of each of the first-named Cucumbers, and two packets of either of the Melons named, sent free for 60 penny stamps.

HOLLYHOCK SEED, saved from a splendid collection of all the newest and best varieties out, 2s. 6d. per packet.

GERMAN ASTER SEED, from some of the finest flowers ever exhibited, 1s. per packet, or a packet of this and of the Hollyhock for 3s.

ANTIRRHINUM SEED (SPLENDID), 1s. per packet.

A remittance must accompany every order by cash or penny postage stamps, when the whole or any part (as the case may be) will be immediately forwarded.

EDWARD TILEY, NURSERYMAN, SEEDSMAN, & FLORIST, 14, Abbey Churchyard, Bath, Somersetshire.

KILMARNOCK WEEPING WILLOW, OR SALIX CAPREA PENDULA.—The Trustee on the sequestrated estate of Thomas Lang, Nurseryman, Kilmarnock, intimates that he is now ready to supply plants of this beautiful new Willow. Mr. Lang has received numerous testimonials as to its being a new, distinct, and interesting addition to our Ornamental Trees, from Professor Lindley, of London, Mr. MacNab, Royal Botanic Gardens, Edinburgh, and others; but the following letter from Sir William Jackson Hooker, Director of the Royal Gardens, Kew, is of itself sufficient both as a description and a recommendation of the plant.

"Royal Gardens, Kew, Sept. 29, 1853.

"Sir,—The Salix caprea pendula, or Kilmarnock Weeping Willow, is doing well with us, and is much admired for its decidedly weeping character. It bears the same relation to the ordinary Salix caprea that the Weeping Ash does to the Common Ash, and I need say nothing more in its favour. Every branch is gracefully curved downwards, and the great breadth of the foliage and its dark colour give it a totally different character from the common Weeping Willow, Salix Babylonica. I think very highly of it as an ornamental small tree.

"I am, &c. (signed) W. J. HOOKER."

Prices.—Furnished Plants, on own roots, trained to one stem, 2s. 6d. each.; do. do. extra fine, 3s. 6d. each; a few plants, grafted on tall stems, 5s. each.

☞ Plants will be delivered in London for 6d. each additional, and despatched from thence to any address.

Orders to be addressed to Mr. JOHN DICKIE, Seedsman, Kilmarnock, the Trustee, who will also forward, on application, a printed list of the General Nursery Stock, which is now being sold off at extremely low prices. The Trade supplied on favourable terms.

HIMALAYA CEDAR.

MAULE AND SONS beg to intimate to Noblemen and Gentlemen engaged in Forest or Ornamental Planting that they still hold large supplies of this universally admired and fine timber tree, which they are sending out at the below quotations.

CEDRUS DEODARA, 1 year seedlings, 20s. per 100, 8l. per 1000
„ „ 2 years „ 25s. „ 10l. „
„ „ *1 foot „ 5l. „
„ „ *1 to 2 feet ... 7l. 10s. „
„ „ *2 to 3 feet ... 42s. per doz., 15l. per 100
„ „ **3½ to 4 feet ... 60s. „ 23l. „
„ „ **4 to 4½ ft., extra fine, for Avenues and single planting } 80s. „ 30l. „

☞ Those marked * are grown in suitable sized pots; those marked ** may be had either in pots or from the open ground.

Large supplies of Taxodiums, Cryptomerias, Pinus excelsa, Abies Smithiana, Cupressus Goveniana, Lambertiana, &c. &c., offered at such prices as will admit of their introduction into mixed forest and other plantations. Terms sent on application.

The Nurseries, Bristol, Jan. 14.

MESSRS. J. AND H. BROWN will forward their New Catalogue of 1854 by post for six stamps; they also offer the following choice Plants and Fruit Trees, which they will forward when the weather permits.

	s.	d.
25 Azaleas, new hardy Belgian varieties, on their own roots, with flower-buds, one of a sort by name ...	20	0
25 American Azaleas, do. do. ...	15	0
25 Hardy American Plants, one of a sort, by name ...	10	6
12 Hardy Heaths and Kalmias ...	6	0
12 Rhododendrons, including scarlet, white, and rose—hardy varieties ...	12	0
6 Fine hardy Magnolias, one of a sort, by name ...	10	6
Cedar of Lebanon, 3 feet, in pots, well grown, per doz. ...	12	0
Roses, fine standards and half standards, per doz.... 12s. to	15	0
12 Greenhouse Azaleas, one of a sort, fine plants ...	20	0
12 Choice Camellias, by name, do. ...	30	0
24 Choice Ericas, one of a sort, by name ...	16	0
50 Choice Greenhouse Plants, one of a sort ...	42	0

FRUIT TREES.

Fine Dwarf and Standard Peaches, Nectarines, Apricots, Plums, Pears, and Cherries. The best and most approved sorts of these respective kinds, to name, each 2s. 6d., or, per dozen ...	24	0
Untrained or maiden do., 1s. 6d. each, or, per dozen ...	15	0
Apples, dwarfs and standards of best sorts, per dozen ...	15	0
Fine Gooseberries, Currants, and Raspberries, per dozen	3	0
Fine Figs, Medlars, Walnuts, and Mulberries, each ...	2	0
Strong Vines, from eyes and layers, in pots, per dozen ...	15	0
Filberts, new thin shelled and red skinned, per dozen ...	3	0

New List of Vegetable and Flower Seeds by post.

Albion Nursery, Stoke Newington, London, Jan. 14.

CHARLWOOD AND CUMMINS beg to announce that their PRICED LISTS OF AGRICULTURAL, GARDEN, AND FLOWER SEEDS, are now ready, and will be sent free on application. In the Flower Seed List will be found many varieties rare and worthy of cultivation, amongst which they venture to name—

Abronia umbellata	Lisianthus Russellianus
Ageratum albiflorum	Lobelia Erinus alba oculata
Alyssum Wiersbacki	„ ramosa rosea
Amaranthus Globe, new orange	Lupinus venustus
Aquilegia Durandi	Madaria corymbosa
Arctotis breviscarpa	Melampodium macranthum
Balsam, pale yellow	Nycterinia capensis
Calendrinia rosea	„ selaginoides
„ umbellata	„ villosa
Calceolaria, species from California	Nolana alba grandiflora
Cenia turbinata alba	Pennisetum longistylum
Chrysanthemum Sibthorpi	Pink, Indian, new dwarf
Coreopsis coronata	„ white striped, new
„ marmorata	Phlox Drummondi alba
Erigeron Beyrichi	„ „ coccinea
Gaillardia Josephus	„ „ Mayi
Gilia, new var. from California	„ „ Leopoldiniana
Grammanthus gentianoides	„ „ oculata
„ „ lutea	Podolepis auriculata
Impatiens roseaflora	„ rugata
Ipomœa Ferrandia	Salpiglossis azurea grandiflora
„ quamoclit alba	Schizanthus retusus albus
„ limbata	Tropæolum minus coccineum
„ rubra cærulea	„ Lilli Schmidt
„ tyrianthina	„ Sheurmanianum
„ hybrida	„ Lobbianum
Kaulfussia Burrowsi, new white	„ Moritzianum, var.
Leptosiphon luteum, new yellow	ornatum
Linaria triornatophora	Venidium calenduloides
Linum grandiflorum coccinea, new and splendid	Wahlenbergia grandiflora

Fine Flowering Plants of Aquilegia glandulosa, 2s. each, or 20s. per dozen.—14, Tavistock Row, Covent Garden, London.

TO NOBLEMEN, GENTLEMEN, AND COMPANIES PLANTING.

THOMAS JACKSON AND SON respectfully invite an inspection of their extensive and fine collection of ORNAMENTAL SHRUBS AND TREES; they are of fine growth, and in excellent condition for planting for immediate effect. To the undernamed T. J. & SON especially desire attention. Prices may be obtained by letter or personal application.

American Arbor-vitæ, 2 to 10 ft.	Deutzia gracilis, 1 to 2 feet, fine
Chinese do., 2 to 8 feet, fine	Pinus excelsa, 3 to 8 feet, fine
Arbutus, 2 to 5 feet	Pinus insignis, 3 to 5 feet
Aucubas, 2 to 4 feet, very bushy	Cryptomeria japonica, 2 to 6 ft.
Cedar, Deodar, 2 to 12 feet, fine	Taxus pyramidalis, 2 to 6 feet,
Cedar of Lebanon, 2 to 9 ft., fine	fine
Variegated Hollies, 2 to 9 feet	Laurustinus, 1 to 3 feet, very
Green do., 2 to 9 feet	bushy
Weeping do., 5 feet stems, fine	Evergreen Oaks, 2 to 7 feet, fine
Berberis aquifolium, 2 to 3 feet, bushy	Portugal Laurels, 2 to 5 feet
	Magnolia acuminata, 4 to 10 ft.
Taxodium sempervirens, 3 to 12 feet, fine	Do. grandiflora Exmouth, 2 to 5 feet, fine
English Yews, 2 to 9 feet	Tree Pæonies, 1 to 3 ft., bushy
Irish do., 2 to 8 feet, very fine	Chinese Junipers, 2 to 8 ft., fine
Tree Box, 2 to 7 feet	Upright Cypress, 5 to 8 ft., fine
Araucaria imbricata, 1 to 5 feet, fine	Forsythia viridissima, 2 to 4 ft.
	Red Cedars, 3 to 5 feet, fine

T. J. & Son having added to their previously good stock of American Plants, about one-third of the entire stock of the Norbiton Nursery, so long famed for its collections of Hybrid Rhododendrons, Azaleas, &c., can now offer on most advantageous terms—

Rhododendron ponticum, 1 to 5 ft., in great variety.
Do. aureum, and the varieties of yellows, 1 to 7 ft.
Do. Smithi, tigrinum, and other scarlets, 1 to 9 ft.
Do. campanulatum and light varieties, 1 to 7 ft.
Azaleas, Indian, American, and Ghent varieties, 1 to 6 ft.
Kalmia latifolia, and others, 1 to 4 ft.

T. J. & Son have a splendid healthy stock of the Sikkim Rhododendrons, of which they will furnish the 12 following fine kinds, in pots, for 63s., viz., Thompsoni, fulgens, glaucum, glaucum nanum, niveum, Falconeri, ciliatum, Edgeworthi, lancifolium, cinnabarinum, ferruginosum, and calycatum.

Fine Fruit and Forest Trees; strong Quick for Fences, and all other kinds of Nursery Stock.—Nurseries, Kingston, near London.

SUPERB LATE WHITE BROCCOLI—"EMPEROR."

EDMUND PHILIP DIXON having purchased the entire stock of the above Broccoli of Messrs. Elletson, Market Gardeners, Thorngumbald, near Hull, begs to announce that after the 1st of January next he will be prepared to send out in sealed packets at 2s. 6d. each. This Broccoli has been raised by the Messrs. Elletsons, the raisers of the Mammoth, sent out some time ago, who state that the EMPEROR, if sown at the same time, will come into use before it. Is of very dwarf growth, perfectly hardy, with heads from 15 lbs. to 20 lbs. weight; keeps its colour, and stands firm three weeks after it is ready to cut; a noble flower and commands the best price of any other in the Hull market, where it is well known, and will be a great acquisition to the market gardeners around London, as well as those who wish for a first-rate Broccoli.

May be had of Messrs. NOBLE, COOPER, & BOLTON, 152, Fleet Street; and Messrs. HURST & M'MULLEN, 6, Leadenhall Street, London. Also of the Advertiser, 57, Queen Street, Hull.

IMPROVEMENT OF GRASS LANDS.

SUTTON'S RENOVATING GRASS SEEDS FOR IMPROVING OLD PASTURES.—Many Old Upland Pastures, Parks, and Meadows are nearly destitute of Clovers and the finer and more nutritious sorts of Grasses, in which case we are in the practice of furnishing such sorts only as are wanting. If the Seeds are *sown early in the season*, the improvement in the Pasture will be very considerable, and at a small expense.

The following is similar to many other letters received from former purchasers :—

From D. T. Cunynghame, Esq., Wellesbourne, Warwick, Nov. 1853.

"The meadows that were renovated with your Seeds are looking very well. I cut nearly 2 tons of hay to the acre, and three years ago the same land hardly produced half a ton per acre. The Garden Seeds I have had from you exceed by far any that I have bought elsewhere."

Quantity of Seed required, 8 lbs. to 12 lbs. per acre. Price ... per lb., Carriage Free.—Address

JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

N.B.—We have a very fine Stock of Mangold Wurzel and Carrot Seed.

DILCOCK'S BRIDE BROCCOLI.

BAINBRIDGE AND HEWISON (late Jas. Edward) have the pleasure of again offering to their friends and the public their DILCOCK'S BRIDE BROCCOLI, at 2s. 6d. per packet, each containing 1300 Seeds; and while returning their thanks to their numerous patrons of last season, they beg to refer them to the following extract, taken from the *Yorkshireman* newspaper of the 30th of April last, when it was exhibited at York, for the fourth time :—"Mr. Dilcock deservedly obtained the three prizes for Broccoli with his seedling—the 'Bride.' Taking the season into account, these vegetables were really remarkable specimens." It was equally successful the two previous years.

B. & H. will be prepared to send out their Catalogues of Kitchen Garden and Flower Seeds for 1854, early in January, post free, on application, and also their Catalogue of Plants early in March, containing Stove, Greenhouse, &c., including many of the newest and choicest of the season. Their Seeds will be of the very best quality, and in the greatest possible variety.

Sold Wholesale by NOBLE, COOPER, & BOLTON, Fleet Street; CHARLWOOD & CUMMING, Covent Garden; and by all respectable Seedsmen in town and country.—York Nurseries, Dec. 31.

CEDRUS DEODARA AND ARAUCARIA IMBRICATA.—The beauty and unique character of the above hardy and most ornamental of all Evergreen Trees are too well known to admit of any comment. Our plants are grown within 500 yards of the wash of the Sea, in this the most easterly point of England, and consequently fully exposed to the gales of the North Sea and German Ocean, which they stand with impunity. It is, therefore, obvious to Noblemen and Gentlemen who purpose planting their Marine Villas, and other exposed situations, that they will not meet with that disappointment so frequently attending plants reared in milder counties. We submit the following scale of prices for robust, handsome, and well formed plants, either in or out of pots :—

CEDRUS DEODARA... ... 4 to 6 inches 6s. per dozen
„ „ ... ... 12 to 15 „ 12s. „
„ „ ... ... 1½ to 2 ft. 20s. „
„ „ ... ... 2 to 2½ ft. 30s. „
„ „ ... ... 3 ft. 42s. „
„ „ ... ... 3½ to 4 ft. 60s. „
„ „ large specimens, 15s. to 21s. each.

If 100 or more of the above be taken, a considerable reduction will be made.

ARAUCARIA IMBRICATA ... 4 inches 6s. per dozen
„ „ ... 1 ft. 30s. „
„ „ ... 1 ft. to 1½ ft. 42s. „
„ „ ... 1½ to 2 ft. 60s. „
„ „ ... 2 to 2½ ft. 80s. „
„ „ ... 3 ft., fine, 15s. each.

Catalogues will be forwarded free on application. Orders of ... and upwards are delivered Carriage Free to London or Hull, or any Railway Station within 150 miles of the Nursery.

YOUELL & Co., Royal Nursery, Great Yarmouth.

"FASTOLFF RASPBERRY."—It is with much satisfaction that we announce a third award made by the London Horticultural Society, on 26th of July last, for examples of the above most excellent Raspberry, unequalled by any other variety for the size of its fruit and richness of flavour.

It is reported in the *Gardeners' Chronicle* of July 30th, page ..., as follows :—"Messrs. Youell, of Great Yarmouth, sent a box of beautiful fruit of the Fastolff Raspberry; they were unusually fine, and well deserved the certificate of merit awarded them."

Strong well-rooted canes, 15s. per 100; Large White Raspberry, 24s. per 100; New Monthly Fruiting, 24s. per 100.

CHOICE FRUITS. (Warranted true to name.)

APPLES, standard, in best selection, good heads 9s. per dozen
„ dwarf „ „ 6s. „
„ trained „ „ 30s. „
PEARS, standard „ „ 12s. „
„ dwarf „ „ 8s. „
„ trained „ „ 30s. „
PLUMS, dwarf „ „ 9s. „
„ trained „ „ 36s. „
PEACHES, dwarf trained, in fine strong plants, 36s. to 60s. „
NECTARINES, dwarf trained, „ 36s. to 60s. „
APRICOTS „ „ 36s. to 60s. „
CHERRIES, standard, in fine variety ... ... 12s. „
„ dwarf „ ... ... 9s. „
„ trained „ ... ... 36s. to 42s. „

GOOSEBERRIES, 25 of the finest varieties (good bushes selected for size and flavour, 30s. per 100; 4s. per dozen.

CURRANTS, improved large white Dutch, Black Naples, Red Castle (red), and Large Red Grape, 4s. per dozen; Knight's Sweet Red, 6s. per dozen; these are the most desirable kinds in cultivation, and are highly recommended.

RHUBARB, Myatt's Victoria, 9s. per dozen; Royal Albert, ... per do.; Linnæus, 9s. per do.; Tobolsk, 6s. per do. (strong).

SEAKALE, extra strong, 2 years, 6s. per 100; 3 years, 8s. per ...

ASPARAGUS, extra strong, for forcing 5s. per 100; 3 years ... 3s. 6d.; 2 years old, 2s. 6d.

⁎ Less quantities than those named above supplied at the same prices. Orders of 2l. and upwards are delivered Carriage Free to London or Hull, or to any Railway Station within ... miles of the Nursery.

YOUELL & Co. beg to refer to their Advertisement of a choice and extensive Collection of Plants which appeared in this Paper of October 15, and for Conifers, October 22. Catalogues will be forwarded free on application. Anemone Seed, saved from selected roots, 10s. per lb. The usual discount to the trade.

YOUELL & Co., Royal Nursery, Great Yarmouth.

JUDSON'S
RICHMOND VILLA BLACK HAMBURGH VINE.

ARTHUR HENDERSON AND CO. have the pleasure of informing their patrons and friends that they have good plants of this valuable and much-esteemed Vine at 5s. each; extra strong plants, 7s. each.

N.B.—For full particulars of the distinguishing characteristics of this Vine, we beg to refer our customers to the *Gardeners' Chronicle* of October 25th, 1851.

HUGH LOW AND CO. have the pleasure to announce to their Friends and the Public that they have now received the greater part of their Stock of Vegetable and Flower Seeds, selected with considerable care from the best growers. They would more particularly recommend their collections of German Flower Seeds, consisting of Stocks, Asters, Larkspurs, Balsams, Zinnias, &c., all which are of the best quality, and imported direct from Erfurth.—Clapton Nursery, London, January 14.

QUICKS! QUICKS! QUICKS!

WILLIAM YOUNG begs to inform Gentlemen, Contractors, and others, that he has a large quantity of extra large Bedded Quicks, besides several hundred thousand of four and five years old Quicks, fine, samples of which, with price, will be forwarded on application. Likewise a quantity of bedded Mahonia aquifolium or American Berberry, for Cover.

Milford Nursery, near Godalming, Surrey.

YORK NURSERIES.

JAMES BACKHOUSE AND SON respectfully inform their friends and the public that they have erected new and much more commodious PREMISES, near the Village of Holdgate, on the west side of the City, and will henceforth carry on their business of NURSERYMEN and SEEDSMEN in all its branches there. The situation is very superior to that formerly occupied in Fishergate, and the distance from the Railway Station nearly the same—about one mile. A large tract of ground being now devoted to the cultivation of Horticultural Seeds, Ornamental Forest Trees, &c. &c., under their immediate superintendence, they believe that they will thereby be enabled more successfully than ever to supply articles of the best quality to all who favour them with their orders.

PYRAMIDAL PEAR TREES ON THE QUINCE STOCK.

J. AND J. FRASER, NURSERYMEN, Lea Bridge Road, Essex, beg to offer the above in fine strong trees, and such as would fruit the first and second year after planting, at the undernamed prices. These Pears are remarkable for their compact style of growth and prolific bearing; the collection comprises the following fine sorts:—Beurré d'Amanlis, Beurré d'Aremberg, Beurré de Capiaumont, Beurré Diel, Beurré Easter, Beurré Grise d'Hiver, Nouveau, Beurré Rance, Williams's Bon Chretien, Crassane, White Doyenné, Duchesse d'Angoulême, Forelle or Trout Pear, Glout Morceau, Hacon's Incomparable, Jargonelle, Louise Bonne of Jersey, Marie Louise, Napoleon, Winter Nelis, and Passe Colmar.—Price 2s. 6d. to 3s. 6d. each.

A BEAUTIFUL ORNAMENT FOR THE DRAWING-ROOM.

THE DOUBLE LILY OF THE VALLEY is universally admired, on account of its delicious Fragrance, Elegant Flowers, and Graceful Habit; as a pot plant it is superior to any flower in cultivation, its hardy nature also renders it a suitable ornament for the open garden. One dozen Roots, with directions for their culture both in pots and the open garden, will be sent free by post to any part, on receipt of 36 penny postage stamps.—JOHN J. REID, Monkton Nursery, Ryde, Isle of Wight.

PEAS! PEAS! THE BEST VARIETY IN CULTIVATION.

CHAMPION OF ENGLAND, a blue wrinkled Pea, very productive, of quick growth, and of a most delicious flavour. This extraordinary Pea combines in one the merits of all others, and has none of their demerits; for, although a wrinkled Pea, it is both hardy and early, and being of quick growth, it is the best kind to plant throughout the season for each crop. It is highly productive, bearing very long pods of a lively green, which are well filled, and the Peas are generally as large as small horse Beans, of a deep green colour, and beyond all others of a most delicious flavour. Height, 3 ft. to 3½ ft.

Price, in quantities of not less than 1 peck ... Bag included 6s.
" " " 1 bushel ... ... " 16s.
" " " 1 sack (4 bushels) " 60s.
" " " 8 bushels (1 qr.) " 106s.

Delivered, freight paid by Railway to London.

Orders, with remittance or satisfactory reference, will have immediate attention on application to

H. AND A. WALLIS, SEEDSMEN, Ipswich.

T. APPLEBY AND SON, NURSERYMEN and SEEDSMEN, Victoria Nursery, Uxbridge, return their sincere thanks to their numerous patrons during the past year, and beg to inform them and the public in general, that their ANNUAL CATALOGUE of NEW SEEDS is now ready, and will be sent free on prepaid application.

T. A. & SON have a large stock of the finest varieties of Show and Fancy GERANIUMS, which they are prepared to dispose of at reduced prices. A good stock of TRAINED FRUIT TREES yet on hand.

SELECTED GARDEN SEEDS.

We beg to offer the following Collections of Kitchen Garden Seeds, containing all the best sorts of Vegetable Seeds, to stock the garden throughout the year:— £ s. d.
No. 1. A complete Collection, suitable for a large garden 3 0 0
No. 2. A Collection of smaller quantities, but equally choice 1 10 0
No. 3. A choice Collection for a small garden 0 15 0

Nos. 1 and 2 Collections will be sent Carriage Free to any part of Great Britain.

A large quantity of SPRUCE FIRS, 1½ to 6 feet, on sale.

Victoria Nursery, January 14.

CHOICE SEEDS.

BASS AND BROWN'S SPRING CATALOGUE FOR 1854 is now in the Press. The Part containing the SEEDS can be forwarded immediately, on application, for two penny stamps.

PEAS, FINE NEW KINDS, of last and present year's introduction.
Fairbeard's Nonpareil, earlier than Champion of England, and fine rich flavour ... ... 5s. 0d. per quart.
Waite's Daniel O'Rourke, very early ... ... 2 6 "
Sangster's New No. 1, 2½ ft., very early, prolific and fine pods ... ... 2 0 "
Stuart's Paradise, 4ft., a very fine large long-podded marrow, three weeks before Thurstone's Reliance, or other Peas of the same character ... ... 2 0 "
Hairs' Defiance, 4 ft., a fine new wrinkled marrow 2 0 "

The three last mentioned were grown last season by ourselves, and we can recommend each as an acquisition. Sangster's No. 1 and Stuart's Paradise will be included in the collections below.

BASS AND BROWN'S ASSORTED COLLECTIONS OF VEGETABLE SEEDS, comprising the best in cultivation, including several new sorts of excellent quality. £ s. d.
No. 1.—Collection for a large garden, containing 20 quarts Peas, in 20 best sorts, and all other vegetable seeds in proportion, for one year's supply... ... ... 3 0 0
No. 2.—Collection in smaller proportions 2 0 0
No. 3.—Collection do. do. 1 5 0
No. 4.—Collection of good kinds for a small garden ... 0 15 0

Copies of the Autumn Catalogues may still be had for three penny stamps.

Goods (not under 20s.) carriage free to all stations in London.

Seed and Horticultural Establishment, Sudbury, Suffolk.

PARADISE PEA.

STEWART AND MEIN having received from all quarters the most favourable reports of the above Pea, beg again to call attention to it, and to intimate that in consequence of the generally defective crop of last season, their stock of it is very limited, and they would therefore advise an early application from intending purchasers. Price and other particulars may be had on application. Agents in London: Messrs. Charlwood & Cummins, Covent Garden; and Messrs. Nutting & Sons, Cheapside; and in Edinburgh, Messrs. Lawson & Son, and Messrs. Dickson & Sons.

S. & M. have also on hand Ash-leaved Kidney, Jackson's Improved Ash-leaved Kidney, Shaw's Early, and Chinese Early Potatoes, at moderate prices.

Paradise Nurseries, Kelso, Roxburghshire, Jan. 14.

DISSOLUTION OF PARTNERSHIP.

THE PARTNERSHIP which has existed for thirty-five years between my cousin and myself, as Seed Merchants and Nurserymen in this City, under the firm of "FRANCIS AND JAMES DICKSON," and also in Manchester for upwards of four years, under the firm of "FRANCIS AND JAMES DICKSON AND CO.," has been this day DISSOLVED by mutual consent; and I beg to tender my grateful acknowledgments and sincere thanks to the numerous patrons and friends of the late firm, for the kind and liberal patronage extended to my late partner and myself for so many years, and as I have now entered into Partnership with my Sons, I venture to hope that we may, unitedly, continue to merit a share of that confidence and patronage which I enjoyed for so long a period as senior partner in the late firm.

Our Seed Business will be carried on in the same premises as before, and our Nursery Business at the Upton Nurseries near Chester, under the firm of FRANCIS and ARTHUR DICKSON & SONS.

Chester, Dec. 28, 1853. FRANCIS DICKSON.

SEED WAREHOUSE, 106, EASTGATE STREET.

FRANCIS AND ARTHUR DICKSON AND SONS, in soliciting a continuance of the confidence and patronage enjoyed by the late firm, have only to state that they are determined that every article sent out by them, whether in Seeds or Plants, shall not only be of first quality but shall also be charged the most moderate price; and they further assure their customers and friends that no effort shall be wanting on their part at all times to meet the wishes of those who entrust their orders to them. Their stock of New Seeds for the ensuing season is now complete; catalogues of which will be ready in a few days, and may be had on application.—January 14.

The Gardeners' Chronicle.

SATURDAY, JANUARY 14, 1854.

MEETINGS FOR THE ENSUING WEEK.

MONDAY, January	16	Chemical	8 P.M.
		Statistical	8 P.M.
TUESDAY, —	17	Horticultural	2 P.M.
		Linnean	8 P.M.
		Civil Engineers	8 P.M.
		Pathological	8 P.M.
WEDNESDAY, —	18	London Institution	7 P.M.
		Society of Arts	8 P.M.
		Geological	8 P.M.
THURSDAY, —	19	Antiquarian	8 P.M.
		Royal	8½ P.M.
FRIDAY, —	20	Royal Institution	8½ P.M.
SATURDAY, —	21	Asiatic	2 P.M.
		Royal Botanic	3¾ P.M.
		Medical	8 P.M.

IT is now many years since we began to insist upon the paramount importance of as continual an access of air to plants as to animals; and our most intelligent correspondents have from time to time abundantly supported our assertion. Now-a-days we hardly think that experienced men entertain a doubt upon the subject; for it is fully understood that there is as much difference in the health, colour, flavour, and other qualities of coddled plants and those over which free air incessantly passes, as between a pallid factory child and the stout ruddy urchin that is all day running about in the fields.

The fact is admitted; but the difficulty is to secure a copious admission of ever-changing air, without the dryness or the wetness, or the coldness which accompanies it. We have in this case a theoretical certainty in direct and formidable opposition to a practical difficulty, which, indeed, is so great that nine-tenths of the attempts which have been made to overcome it have ended in failure. We want the breath of ZEPHYR, not the gusts of BOREAS or the parching air of NOTUS, or the icy embrace of AQUILO or EURUS.

Perhaps no one has, upon the whole, succeeded more skilfully, on a small scale, in overcoming the difficulty attending this subject than the Rev. T. PHILLPOTTS, of Porthgwidden, near Truro. An account of this gentleman's operations was published in the Journal of the Horticultural Society for January, 1852, with good working plans, which enable any builder to follow his suggestions. At that time results had been obtained which left nothing to be desired. As it will, however, sometimes happen that good and ingenious plans go wrong in the long run from a variety of unexpected circumstances, it was with no little gratification that we received, the other day, from Mr. PHILLPOTTS the following communication:—

"You cannot too strongly urge the necessity of ventilation, or rather of keeping up a constant circulation of air in plant-houses, Cucumber pits, &c., at *this season especially*. A few weeks ago you mentioned that a Cucumber had been cut about the end of November, 18 inches long. On the 13th December we cut one of 23 inches; and I see no reason to doubt that we might do the same at any time. As this was done with a very moderate fire-heat, I attribute it principally to a good system of 'aeration,' without which, success is almost impossible. An account of my pits was published in the Horticultural Society's Journal for January 1852, and subsequent experience only confirms my opinion of their efficiency. They have, you may observe, a constant supply of fresh air night and day."

NIGHT and DAY! We hope that these words will not escape observation. To feed plants with good nutritious air all day long and to stifle them at night, is to undo with the left hand all that the right hand has been labouring to accomplish. And yet how constantly this happens everywhere except in the lap of our Mother Nature, where plants are rocked all night long, however gently they may be lulled during the day.

Such a subject as this cannot be too much discussed; and we very much wish that those who have experience, whether successful or unsuccessful, in perpetual äeration, would communicate their observations. There is not a gardener in the United Kingdom who would not be grateful for the information, and able to derive some advantage from it.

What, for instance, has been the result of the system of äeration by means of underground drains, put in action some years since at Drayton Manor by the late Sir ROBERT PEEL?

AT the time we issued an invitation a few days since to such intelligent cultivators as are in the habit of paying attention to the DISEASES OF PLANTS, to communicate good specimens of morbid changes of structure accompanied by illustrative remarks, we were not aware that a similar proposition had been laid by Dr. ALEXANDER BRAUN before the Horticultural Union of the Royal Prussian States, in the form of a circular from the Agricultural College, accompanied by a request that members of the Union would forward for inspection well selected cases of disease in different stages of development, in order that they might be submitted to microscopic inspection. Dr. CASPARY, who was formerly resident in this country, and paid great attention to its more obscure vegetation, has just forwarded to us some of the results of this proposition in a joint memoir by himself, Dr. BRAUN, and Dr. ANTON DE BARY, the latter of whom has published a very instructive volume on the various species of rust with which living vegetables are affected. Four cases are brought forward, all of which are new, and one of considerable interest, detailing the particulars of a disease with which Heaths, as exemplified in *Erica Wilmoreana*, are affected in winter, and totally different from one to which they are subject at an earlier period of the year, which has been described by Dr. KLOTZSCH.

It is not our intention to enter now into the particulars of the disease, as they will find their proper place in some future communication, but merely to point out one curious circumstance, that the communication has brought to light a very striking instance of a second form of fruit, capable of germination, arising from the spawn of a minute mould, and preceding in order of time the larger and more complicated spores which are the true fruit of the parasite—a fact of the same import clearly as the different forms of fruit which appear in *Fusisporium Solani*, the fungus which is so characteristic of the Potato murrain of MARTIUS. *M. J. B.*

AMONGST other arguments adduced by LIEBIG against the GROWTH OF PLANTS by means of organic matters contained in the water which is absorbed by their roots, is that which asserts that within a given time water cannot contain so much humic acid or humate of lime in solution as is necessary for the increase in weight of plants for that time, supposing that to be the only source of nutriment. This, if correct, would be almost decisive of the point, but it is evident that the data for such questions are, to say the least, very unsatisfactory; and, even supposing the quantity of rain which falls insufficient for the purpose, there is another source of moisture from beneath, by means of the ascending waters of springs which arrive already charged with organic matter; while, moreover, other modifications of humus, easily dissolved in water, are generally present, insomuch that the two before mentioned, taken by themselves, are no proper measure of the nutritious powers of the water which is imbibed.

Another argument, which may be called the geological argument, asserts that plants must originally have derived their nutriment simply from air and water, because humus could not exist before the decomposition of vegetable matter had taken place. It is, however, quite incorrect to suppose that carbon existed only in the air, for it could be supplied in quantities amply sufficient by the bituminous shales, basalts, and lavas. Water, therefore, derived from more or less deep seated springs, could carry a supply of nutritive matter amply sufficient for vegetation, without the necessity of the requisite materials being drawn from the surrounding atmosphere. The proportions of oxygen and hydrogen

moreover, in coal, are quite different from those which would prevail, had the plants of which it is composed been nourished merely by carbonic acid and water. According to URE's analysis it contains from 75-76 per cent. of carbon, 5-8-10 O, 5-6 H, and 1-2 N. If, however, it be a hydrated carbon, there must be from 40-48 O to 5-6 H, that is, eight times as much per cent. of oxygen. There is, however, on the contrary, an excess of from 4-5 per cent. of hydrogen, which is quite inconsistent with the notion in question.

Another argument still remains, which may perhaps be called the topographical, deduced from certain facts recorded by DARWIN and others to the effect that in many parts of the world successive crops are borne by land through a long series of years without any accession of manure, and that luxuriant vegetation takes place in soils where no humus exists. Without entering upon any particular instances, it is easy to see that in the former cases there is always an abundant supply of humus, sometimes of many feet in thickness, which gradually imparts its nutritious qualities to the water which either falls upon it or ascends from below, and the cultivation of crops like Maize in dry sand is effected by irrigation, the influence of which depends, in great measure, on the organic matter contained by the water. Besides, the deep land in question after a series of years loses its fertility, and whereas in the sandy soil in which Cocoa trees flourish, the nutriment is derived from beneath, there is an immense difference in the degree of fertility in proportion to the richness of the water in humates. While on some coasts the Cocoa Palm bears fruit in eight years, in proportion as nutriment is deficient the period is deferred, and while in one situation fresh flowers are produced every month, and the produce amounts annually to 100 nuts, in others the production of flowers is much less frequent, and the produce diminished to six or even to two nuts. Many other examples might be brought forward as recorded by BUCHANAN HAMILTON respecting the cultivation of cotton in India, by RAFFLES and JUNGHUHN in Java, by FORTUNE in China, all tending to show the fallacy of those theories of vegetation which would derive the nutriment from air and water alone.

The fertility of soil depends upon its capability of communicating to the water with which it is more or less saturated, those matters which are requisite for the nourishment of plants, and in due proportions. The insolubility of the ulmin of turf renders it unfertile, while matters too easily soluble would supply more nutriment than could be borne consistently with health, and cause a wasteful expenditure by percolation. Plants require for their proper nutriment a very attenuated solution, insomuch that perfectly limpid water may contain a sufficient quantity of humates for all the purposes of vegetation. It is in consequence of the highly attenuated state in which nutriment is received that plants are endowed with such amazing powers of evaporation, which is so excessive in the case of *Pistia Stratiotes*, that the negroes of Guinea keep it in their houses in vessels filled with water, for the purpose of cooling the air.

Several other matters are brought forward by Dr. SCHULTZ in corroboration of his argument, as the easy conversion of humus into gum and sugar, the analogy of humates to many of the products of vegetation, the facility with which humus is obtained from sap, &c., to which we cannot now advert particularly. We shall mention only, in conclusion, the fact connected with the first of these points, of the far greater success which attends the cultivation of Sugar Beet and Vines in soils which are black with humus—in both which cases the formation of sugar is the main object. In light-coloured soils, though the immediately apparent produce may sometimes be greater, the sugar is less in quantity, and consequently the wine weaker. One of the best manures for Sugar Beet is turf which has been well exposed to the action of air, while ammonia and fresh animal dung prevent almost completely the formation of saccharine matter.

VEGETABLE PATHOLOGY.—No. II.

1. HISTORICAL.—Those plants by the cultivation of which the common comforts and necessities of man are principally supplied, are subject to so many diseases, the consequences of which are so fatal to the interests not only of the cultivator but of society in general, that it was impossible, even in the infancy of agriculture, that they should fail to attract very general notice. We find accordingly in the earliest records various indications on the subject confirmatory of the great truth in which the religious man finds his most certain ground of confidence, while the sceptic regards it as an excuse for doubt, "that all things continue as they were from the beginning of the creation." The blasting and mildew in the corn, the casting off of the young fruit of the Grape, of the flowers and fruit of the Olive, the stinking Grapes which belied the hope of the Vine-dresser, the barrenness, badness, and casting of the green Figs, are all so many indications of affections to which the several plants are subject now. In ancient Rome, again, so fearful were the ravages among the crops, that an especial Deity was erected, according to their custom, whose wrath might be deprecated, and her protection sought. It would be an easy matter to select passages from the earlier and later Greek and Latin authors, either occurring incidentally or in works expressly devoted to the subject of vegetables, illustrative of the matter before us, but at present it would be quite out of place to do so. The revival of literature in the middle ages brought with it but few just views on such matters, nor indeed was it to be expected that very sound and tenable opinions should be held on points which even now are subjects of dispute, so long as all the absurdities of animal pathology, which were current up to a very late period, were received with undoubting favour. The subject, however, taken as a whole, did not at a comparatively later period excite much interest amongst men of science, and even up to the present day, except as regards particular affections, the list of works is meagre almost beyond conception. Till the beginning of the 18th century we can find nothing but a very few scattered notices of particular diseases. During the course of the 18th century itself, beginning with 1708, we have Academical Dissertations, or short pamphlets by Zwinger, Eysfarth, Hasselbom, Bring, Seetzen, and a larger work by Zallinger,* with a slight admixture of tracts on particular subjects, amongst which one of the most important towards the close of the century is that of Forsyth on the diseases of fruit and forest trees. At the commencement of the 19th century appeared the important work of Re, with which our readers are well acquainted, from the translation which has appeared in our pages. It was the first attempt at a system of classification, and though relating to many objects, on which we are in this country very imperfectly informed, it is throughout full of interest, and may still be read with advantage. At the same time with the first edition of Re, appeared that of Werneck, on the diseases of plants and their remedies, consisting of a few pages only, and bearing principally on points connected with the culture and treatment of forests. In 1833, Turpin published his notions on vegetable nosology, always harping on his one idea of the important part performed by chlorophyll, or as he calls it globuline, not only in the formation and increase of vegetable tissues, but in the production of certain diseases; and in the same year Unger printed his remarkable treatise on the eruptions of plants, in which, after the manner of so many of his countrymen, he strove to make it appear that the organisms by which they are accompanied, or rather caused, are mere modifications of the cellular tissue of the matrix, or the spontaneous development of matter with which the intercellular spaces are gorged. In 1846 Raspail gave his work on the "Natural History of Health and Disease in Vegetables and Animals," with a view, however, principally to human pathology. Previously to this, in 1839, an article by Moretti appeared in "Bibliotheca Agraria," tom. XXII., and in the same year a formal treatise of considerable merit by Wiegmann, in which the diseases of vegetables are arranged according to their functional effects; viz., 1, those which affect the system of nutrition; 2, those which affect the organs of respiration; 3, those which affect the organs of reproduction. Two years later a very important, but unhappily imperfect and posthumous, work appeared from the pen of Meyer, in which diseases are divided into external and internal. Even in its present form it must be regarded as a valuable contribution to the subject, though confined principally to the description of disease, forming, in fact, only part of a complete whole which he had in view. Finally, in 1847, a small pamphlet appeared, containing the substance of a lecture by Regel on the influence of external agents on the life of plants, which places many matters in a very clear and interesting light, and of which the author of the present series of papers has availed himself in the short article on the Diseases of Plants in the Encyclopædia of Agriculture.

It is not pretended that the list above given is at all complete; it, however, contains the principal sources from which general views on the subject can be obtained, though hundreds of separate memoirs might be quoted treating on particular points, and some, like those of Knight, Decaisne, Payen, Schleiden, &c., containing matter of the greatest import on the subject of vegetable pathology in general.

The researches of the last ten years on the true structure of the cellular tissue in plants, as ascertained by the improvements, not only in the microscope, but in organic chemistry, have more especially tended to throw light on many points which were before obscure, and give hopes that the day is not far distant when vegetable pathology will stand upon as firm ground as animal pathology. *M. J. B.*

* A translation of the work of Zallinger, in German, appeared as late as 1809.

EXTRACTS FROM A REPORT FROM DR. ROYLE TO MR. KENNEDY ON THE USEFUL PROPERTIES OF THE DEODAR AS A TIMBER TREE.

(*From 31st Report of Commissioners of Her Majesty's Woods and Forests; Appendix No. 19, M.*)

HAVING heard, much to my surprise, that doubts are entertained by some respecting the goodness of the Deodar as a timber tree, I have been induced, though considering it unnecessary, to inquire again into the facts upon which the general, but opposite opinion has been formed. These I beg to be allowed to bring to your notice, as you are making arrangements for planting the royal forests with this magnificent tree. The Court of Directors of the East India Company have now for several years introduced Deodar seeds into this country from their botanic garden at Saharunpore, near the foot of the Himalayan Mountains, in consequence of its having been considered a valuable acquisition for this country. These seeds have been freely distributed to landed proprietors, as well as to nurserymen, so that the tree, from being one of the most rare, is becoming one of the more common of the imported kinds. Mr. Loudon, in his Arboretum, in the year 1838, quotes the plants as being sold for 2*l*. 2*s*. They are now obtainable for 6*d*. a-piece. This tree is everywhere admired for its beauty, and valued as a hardy evergreen. I hope it will be still more esteemed for the goodness of its timber.

The Deodar or Devadara (so named from Deva, a deity, and Dara, timber), called also Kelon, is one of the sacred trees mentioned in the ancient hymns of the Hindoos. Hence the inhabitants of different parts of India are apt to apply the name to trees indigenous in their own districts. There is no doubt, however, that the true Devadara of the Shastras is a tree of the Himalayan Mountains; but there the name has been applied to two distinct trees, one a Cypress and the other the Pine, which is the subject of this communication, and which is the true Deodara. It is so called by the natives of several districts in the Himalayas, and was known to Avicenna 800 years ago, as I have stated in my Hindoo Medicine, who mentioned it by the name Duidar as an Indian Pine, yielding a kind of turpentine, perhaps tar or Cedar oil, which the Cypress does not do. The tree is the Cedrus, or Abies Deodara, of botanists.

Some discussion has, I observe, lately taken place respecting the Deodar as to whether it is specifically distinct from the Cedar of Lebanon. This is a revival of an old opinion: Major Hodgson, when surveying the Himalayas, promulgated this idea, which was adopted by Captain A. Gerard; but neither could have had any materials for comparing the Deodar of the Himalayas with the Cedar of Lebanon. Though both plants are now common in this country, the former has not yet attained maturity, and therefore no good comparison can be made, until it has flowered, and formed its cones. In habit and general appearance nothing can be more distinct than the two trees, considering that they are considered by some to be so nearly allied. I myself do not believe that any sowing of the seeds of one plant will produce the other. Besides which, the cones of the Deodar differ from those of the Cedar in this, that they cannot be prevented from falling to pieces, the scales and seeds falling to the ground immediately they are ripe, so that, even to retain them as specimens, we are obliged to envelop them with a netting, while the cones of the Cedar of Lebanon remain for months upon the tree, and may be kept for years after they have been detached, and are even then with difficulty separated into pieces and the seed extracted. This identification with, or difference from, the Cedar of Lebanon as a species, might be considered immaterial, for the Deodar still retains its own peculiar and beautiful habit as a tree; but it seems to have been inferred, that as the Cedar of Lebanon is indifferent as a timber tree, it is probable that the Deodar is not better. But Dr. Lindley has well observed, "that no inference can be legitimately drawn from the supposed relationship of it (the Deodar) to the Cedar of Lebanon is sufficiently shown by the Scotch Pine and the Pinaster: they are also nearly related, and yet the old timber of the first has great durability and strength, while the latter is at all ages worthless for any purpose except firewood." "A similar, but more striking contrast is offered by the Pinaster and Pinus hispanica species, surely more nearly allied than the Deodar and the Cedar of Lebanon." He has further observed of the Deodar, "that it is an evergreen tree of singular beauty, perfectly hardy in these latitudes, the value of which cannot be over-rated, whether it be regarded as a nurse, most useful for protection and profitable for thinning, or, according to the testimony of those who were familiar with it in India, strong and durable as timber."

Before proceeding to adduce testimonies respecting the nature of the timber, it is desirable to take some notice of the natural sites and climates in which the Deodar grows and flourishes. Major Madden, who has written expressly on these Himalayan Coniferæ, describes the Deodar as found on the higher parts of these mountains, from Nepal to Cashmere, at elevations of from 5500 to 12,000 feet above the sea, but to be seen in perfection near the snowy range and lofty mountains of the interior, where for nearly half the year it is enveloped in snow. It seems very indifferent to site and substratum, flourishing equally amongst the clefts of the most scarped rocks, gneiss, quartz, limestone, granite, clay, and mica slate, as in the black vegetable mould of the brae or glen, provided always the surface of the latter slope to an angle sufficient to ensure thorough drainage. The climate of the various localities differs much at different seasons of the year; for from March to the middle of June there is considerable dryness in most of the situations where it is found; from the middle of June to the middle of September there is a cloudy atmosphere, almost continuous rain, and great moisture of the climate. In

autumn there is fine clear weather, but in winter heavy falls of snow occur; with great reduction of temperature at the higher, and down to the freezing point of water at the lower elevations. So that there are great vicissitudes of climate, not only with regard to temperature, but also in reference to dryness and moisture, which account for its being able to bear so well the extremes of temperature, as well as of moisture, from one end to the other of the British Isles, as I long since anticipated would be the case in my Himalayan Botany, pp. 42 and 350. In its natural sites the Deodar attains a great size both in diameter and in height. On lofty mountains and near the sources of the Ganges, forests of this tree may be seen from 15 to 20 feet in circumference; several have been measured 33 and 36 feet in circumference, 4 and 5 feet from the soil. Some trees that had fallen have been measured, and found to be 160 feet in length; others have been calculated to be 180, and even 200 feet in height.

This gigantic, and at the same time most beautiful of Pine trees, being common near Gungotree, the reputed source of the Ganges, might easily come to be esteemed a sacred tree. But though it might on this account be at first selected, it would not continue to be employed as a timber tree, unless it possessed some valuable properties. The natives, however, of the Himalayas, having within their reach every variety of tree and its timber, select that of the Deodar, and prefer it to all others for the construction of their houses, temples, and bridges. They appear fully justified in their preference, as may be seen from the testimony of European residents and travellers. Many of their houses and temples are built on a plan which, though most trying to timber, is yet well calculated to show how capable the Deodar is of bearing all the vicissitudes of the Himalayan, and therefore, probably, of any other climate. It is used not only as timber is commonly used, under cover, but for the verandahs and the roofs, as well as for the external frame-work of their houses. This frame-work is first made, and then the interstices between the timbers are filled up either with hewn or unhewn stones, so that the wood is exposed as much as the stone, as well to the influence of wet as to cold and drought. Their bridges are wooden bridges, formed by Deodar timbers overlapping each other until they meet in the centre, the other ends being steadied by being sunk into the banks, and kept down by great weights. In Cashmere the Deodar is also employed for making the piers of the bridges on which the arches rest, as well as for building houses and mosques. It is evident, therefore, that the people must have considerable experience respecting this wood, and that the impressions of Europeans who have travelled in these mountains and seen these various buildings, may be considered to have some weight.

Taking them in the order in which they have written, I may first mention Mr. J. B. Fraser, the earliest British traveller in the Himalayas. He writes of the Deodar—Edinburgh, 16th May 1853, "It is a tree that must strike all travellers with admiration, and is certainly used throughout the districts I have known for the purposes you allude to, wherever durability was a desideratum. My impression is, that all the old wooden temples, houses, &c., were built of it, and that it was generally regarded as imperishable. I have not a doubt that, when fully grown, its wood (that is, the fully ripened heart-wood) will be found as lasting as that of any known tree, quite equal to, if not surpassing, the Cedar of Lebanon, which it so much resembles, and superior to the Larch, which, when old, is known to be so durable. Colonel Hodgson, the first surveyor of the Himalayas, describes the Deodar as "the largest, most noble and durable of all trees."

Moorcroft, who was a careful observer and trustworthy narrator, says, "the most valuable tree of Cashmere is, however, the Deodar, a variety of Cedar, the timber of which is exclusively employed in the construction of houses, temples and bridges; pieces of it from the Zem-al-Kudal bridge (over the Jelum) were found little decayed, although exposed to the action of water for 400 years." In his Journal, as quoted in Lambert's Pinus, he also says, "that a building erected by the Emperor Akbar was taken down, and its timber, which was that of the Deodar, was found to be so little impaired as to be fit to be employed in a house built by Rajah Shah." Its age, it was calculated, could not be less than 225 years. He also mentions a building with dome of excellent brick and mortar work, in which was buried the mother of a sovereign who began to reign in A.D. 1417, and died in A.D. 1473. In this building pieces of Deodar were let into the walls, by way apparently of strengthening the bond, and their ends or sides were left on the same plane with the brick-work. This wood, though so much exposed to the influence of the weather, was neither crumbly nor worm-eaten, but was jagged, from the softer part of the wood between the plates or ribs having been often washed by the rain, though its structure had not been attacked by the worm." Further, in his travels, vol. ii. p. 121, he describes the great Jumma Musjid of that city, built by Aurungzebe, as entirely constructed of Cedar: "Such also is the durability of the Deodar, that in none of the columns was any vestige of decay from exposure or insects to be discovered, although they have been erected above a century and a half, and have received for some time past very little care or attention."

Mr. Vigne also, in his travels, writes, that "in Cashmere, bridges, boats, and musjids are built of the imperishable Deodar." *See a musjid built of Deodar.* Vigne's Travels, I. p. 269.

Lord Elphinstone and Mr. Hardinge, still more recent travellers, I am informed by the Hon. Leslie Melville, bear the same testimony to the durability of the Deodar, especially adducing the fact of almost all public buildings in Cashmere being constructed of it, and referring especially to the very tall pillars in the principal mosque being of Deodar wood; also to a much older mosque, of very curious architecture, which is built entirely of Deodar wood. This is said to have been constructed at the latest in our fifteenth century. The same parties refer to the great esteem in which the Deodar is held as a timber in Nepal. Both these valleys, it may be observed, are moist in climate.

The late Sir A. Burnes, in his Travels, Vol. I. p. 50, says, when at Pind Dadun Khan, "The frameworks of the houses are made of Deodar Cedar, which is floated down with the inundations of the River Jhelum or Hydaspes from the Himalayas. The durability and fragrance of the wood recommend it for buildings of every description."

Major Madden writes, "In the walls of temples in Kunawar beams were pointed out to me, showing no signs of decay, except being a little charred and blackened on the surface by the action of the sun and weather, and these temples were said to have been built from 600 to 800 years ago. This is probably an exaggeration; but Captain P. Gerard lived in a house at Summer Kot, between Rooroo and Rampore, the property of the Bissehur Rajah, and ascertained to be 200 years old, in which the timber was as sound as the day it was cut. It is in great request for the walls and roofs of temples and houses, and for granaries, chests, and other purposes, where the ravages of insects, &c., are apprehended." The climate of Kunawar, it should be added, is a dry one. Of the timber of the Deodar Major Madden writes, generally, that it is held in the highest estimation in the Himalayas, being considered almost imperishable, and peculiarly exempt from the attack of worms and insects. It has the advantage of requiring little or no seasoning, takes the saw kindly, but will not split into planks. Its only defect for building purposes lies in its being extremely inflammable, and, on this account, brands of it are often employed as torches."

I will conclude these several favourable testimonies with a note from Lieut.-Colonel Tait, C.B., to the Hon. W. Leslie Melville, and an extract from a report by Dr. Jameson, both of whom have had most recent experience of the Deodar as a timber tree, the one for house and the other for boat building. Colonel Tait writes, 30th April, 1853, "You yesterday asked some questions regarding the Deodar Pine as to its durability. When in Cashmere, I found the bridges over the River Jhelum, at the town of Terrienuggur (the old capital) built entirely of Deodar. Even the piers on which the arches rest are composed of large blocks of this wood; and, from the constant rising and falling of the river, they must be exposed alternately to the action of water and to the burning heat of the sun, as well as to intense cold in winter; and these bridges are known to have existed for an immense number of years, and may have been built centuries ago. They appear never to have had aid from painting. In all the old temples in Cashmere, where wood is employed, the Deodar alone is used, and the antiquity of some of the temples is very great indeed. When my regiment was ordered to be cantoned at Jhelum, in the Punjab, after the last campaign, we had to build houses for ourselves, and lines for our men to live in. I procured the Deodar timber from the hills bordering on Cashmere, as being considered the kind of wood best adapted for building purposes, both on account of its durability, and as being less likely to suffer from white ants."

Dr. Jameson, Superintendent of the East India Company's Botanic Garden, in a report on the Physical Aspect, Agriculture, Botany, &c., of the Punjab, dated 5th October, 1851, says of the wood of this tree, "Of all coniferous trees met with in the Himalayas, the Deodar is most valued for its durability and wood, which is compact, rather close grained and long fibred, highly resinous, and giving a delicious perfume to the air. For both naval and architectural purposes it is admirably adapted, owing to its strength and great durability, it lasting for numbers of years, even though much exposed to the elements, and being but little affected by water. On the banks of the Jhelum, Chenab and Ravee Rivers, extensive boat manufactories exist, and the following are the prices asked: for boats completely built of Deodar, 1400 to 1500 maunds (that is, from 114,800 to 123,000 lbs.) measure, 1200 to 1500 rupees. A boat of 1400 or 1500 maunds, outside Deodar, and lined with Cheel (that is, the wood of Pinus longifolia), 1000 to 1200 rupees. A boat of 400 to 450 maunds, outside Deodar, and lined with Cheel, 250 to 300 rupees. A boat built of Deodar will last from 20 to 30 years." In his concluding remarks, Dr. Jameson further says, "In the foregoing observations we have briefly noticed all the species of coniferous trees met with in the British Himalayas, pointed out that the Deodar (Cedrus Deodara) is most valuable both for ship-building and for architectural purposes. The only timber fitted for spars for ships is the Deodar, all other being either too soft or too easily acted on by the weather; that timbers of the Deodar, of the dimensions (80 to 90 feet in length) wanted by the ship-builders in Bombay, as stated by the Superintendent of Marine (July 1844, No. 498) could not be transported from the British Himalayas with advantage, owing to the rugged and inaccessible nature of the country, and the difficulties caused by falls and rapids existing in the Sutlej. On the banks of the Beas but few Deodar timbers, comparatively speaking, exist worth exporting."

The foregoing testimonies in favour of the wood of the Deodar might, I believe, be easily multiplied by consulting several other officers who have travelled in, or have been on duty in the Himalayas; but this appears to me unnecessary; for in reply to my inquiries, I have obtained only uniform and unvarying testimony in favour of the wood, and consequently of the great value of the Deodar as a timber tree.

It is much to be regretted that no good specimens of Deodar wood are attainable in this country for experiment; I myself possess only a small piece, which, from its appearance, would seem to have been cut from the outer, and consequently younger part of a tree, and therefore not calculated to give a fair idea of the mature wood. A large piece of the Deodar, which was being sent to the Great Exhibition of 1851, unfortunately fell into the River Hooghly as it was being hoisted into the ship with other timbers. Dr. Jameson has reported that several thick planks, 20 feet long, and cut from a tree 5 feet in diameter, have been despatched from the Saharunpore Botanic Garden to the India House. In the meantime we may refer to the reports which Major Madden quotes, and which were chiefly made by engineer officers in India. But he first mentions Mr. Mines, apparently a practical man, as giving the following opinion of the Deodar wood: "It has a peculiar odour, so that no insect will touch it; the grain is open and straight; it is not liable to warp, even in thin boards exposed to all weathers, and may, in a word, be considered the best wood of its class in the world. Like all other woods, if cut young, it will soon decay when in contact with much damp."

The Deodar had been said by some one to be inferior to the Cheer, another Himalayan Pine tree (P. longifolia), in resisting pressure at right angles; but Major Abbott, of the East Indian Company's Engineers, gives Cheer 593 and Deodar 760 as the relative strength of picked specimens of these two woods. Captain W. Jones, of the Bengal Engineers, found the specific gravity of the Deodar on an average of 20 trials to be 680. He further submitted the Deodar wood to careful experiment, and states that pieces of seasoned Deodar wood 4 feet in length and 2 inches in breadth, broke with weights of 1588 lbs., 1636 lbs. and of 1540 lbs.; that is, pieces of good straight-grained wood; while pieces of 3 feet long, $2\frac{1}{4}$ and 3 inches thick, broke the cross-grained with 1092 lbs., the fine-grained at 1188 lbs. and 1700 lbs.; but that knotty pieces broke at 750 and 964 lbs., while specimens of the same length and thickness, but which had been cut only one month, broke at 829, 908, 964, 1116, and 1028 lbs., the two latter from the heart of the tree, the others from the outside of the tree.

Having taken all reasonable pains to inquire into the opinions of others who have had opportunities of judging correctly of the nature of this wood, I think I am justified in concluding what I have long thought, that the timber of the Deodar, from fineness of grain, strength, and durability, is not only one of the most valuable of the Himalayas, but as good as any other of its class in any other part of the world. Its durability is probably owing to its being so thoroughly imbued with resinous matter, which, though diffusing rather an agreeable odour, of course increases its inflammability. The wood is fine enough in grain to allow furniture, chests of drawers, and even writing desks to be made of it. It is strong enough to be employed for the vertical pillars of mosques, and not only for the piers, but also for the horizontal beams of wooden bridges. It bears exposure to the wet, dry, and cold seasons of the Himalayas when employed for the roofs, verandahs, and the outer framework of houses and of temples seemingly without injury for ages; while boats made of it float on the Sutlej for 20 and 30 years. There seems therefore no doubt of the Deodar being fit for all the purposes to which any of the Pine tribe are applied in Europe. If required, it may form the "mast of some great Admiral," be probably as good as the Larch for building the hulls of ships, and better than the much used yellow Deal for spars.

The great precaution required in planting this, as in other timber trees, is to avoid planting it in too moist or too rich a soil when it is required for timber. It would be proper, indeed, to select well-drained sites, on the steep and barren acclivities of hills. With respect to climate, there are few parts of the British Isles where it will not succeed, as it already flourishes as far north as Forres; so that we may hope to see everywhere continuous forests of "the Deodar of young Gunga," that is, of the sources of the Ganges, or, as Colonel Hodgson calls it, one of "the gigantic sons of the snow."

BALSAMINA LATIFOLIA ALBA.

If it cannot be said of this Balsam that it is one of the most beautiful plants which we possess, it certainly is one of the most useful, for it is perpetually in bloom, forms specimens of good size in a short time, and is so easily managed that even the most inexperienced grower could scarcely fail in its cultivation.

If afforded a gentle bottom heat, cuttings made of firm pieces of the wood emit roots freely; they should be planted in sandy soil, covered with a glass, placed in a shady situation, and not allowed to droop. When sufficiently rooted to bear handling, pot them singly in small pots, and replace them in a close moist warm situation, shading them from direct sunshine till they get established in their pots; then give air more freely and pinch out the tops in order to obtain a bushy plant.

Shift into 6-inch pots, and get them strong well established plants in these before winter. To effect this the cuttings need not be put in earlier than June. The young plants should be placed near the glass in a house where the temperature may average about 50°, giving no more water to the soil than will keep the foliage in health. Towards March, or earlier if required, remove them to a warm house, placing them where they will receive all the light possible; and give a liberal shift, using good, rich, turfy loam, leaf-soil, and thoroughly decayed cow manure, in about equal proportions, well intermixed, adding sufficient sharp sand and lumpy pieces of charcoal to keep the compost open and porous, in order to ensure the free percolation of air and water through the mass. Peg down the shoots, and as they advance in growth stop the stronger ones, keeping the leading shoot tied up to a stake and regulating the others so as to obtain nice well-furnished pyramidal specimens. Give a free supply of water to the soil, and keep the atmosphere moist; syringe the plants over head morning and evening, and if green-fly makes its appearance fumigate with tobacco. As the plants advance in growth, more pot room will soon be wanted, and the second shift should be into the flowering-pots, the size of which must be regulated by the size which it may be desired to have the specimens. With a light, warm, airy position the plants will make very rapid growth, and soon form large handsome specimens. Discontinue stopping a few weeks—say three—before the time you may wish to have your plant in bloom; and except pinching out the point of any shoot which may incline to so far outgrow the others as to spoil the form of the specimen, stopping should not be practised after the plants are considered large enough for flowering. By keeping them in a light, sufficiently airy position while in bloom, they will grow slowly, forming short-jointed wood, and retaining a compact bushy habit; and as a constant succession of blossom depends upon securing a regular development of healthy young wood, it is of importance to provide for this, which will be best done by placing the specimens while in bloom where it will be convenient to regulate the admission of air, &c, according as the state of the plant may indicate.

With attention to the above remarks, a somewhat close part of the greenhouse will be found a very suitable position for those blooming during summer; but if it should be desirable to prolong their flowering into autumn they must be removed into an intermediate house, when cold damp weather occurs. Give a liberal supply of water at the root, and clear weak manure water may be given once or twice a week with advantage to such as are at all pot-bound.

I may add that it is useless to occupy space in winter with large plants of this Balsam, therefore attend to keeping up a stock of young ones, and throw old specimens to the rubbish heap after blooming. *Alpha.*

Home Correspondence.

Sequoia sempervirens and gigantea the same.—I am well acquainted with every part of the country trod by Douglas. Douglas's journeys seldom exceeded 30 miles from the coast, and if he visited the grounds in latitude 38° 15′ N., the only Coniferous tree he could have seen for 20 miles from the coast was Taxodium sempervirens, some scattered specimens of Abies Douglasi, and Pinus Edgariana. From 20 miles from the coast eastward to an elevation of 1000 feet on the Sierra Nivada, scarcely a coniferous tree of any kind exists. Hartweg travelled over Douglas's tract from south to north, and never saw Wellingtonia, from which I venture to say that that plant was never found except in the locality stated in the *Chronicle*, which is more than 160 miles from the coast, and full 120 miles from Douglas's track. The tree alluded to by Douglas is unquestionably the Taxodium sempervirens of Lambert, or Sequoia of Endlicher, which he must have seen in great abundance both on the mountains of Santa Cruz and of Santa Lucia. From my own knowledge of this tree, it abounds along the coast from latitude 35° ; 0′, to Humboldt in latitude 41° North, which may be its northern limits. It occupies the deep, gloomy ravines of the western slopes of the mountains, rarely on the east sides, and seldom beyond the elevation of 2000 feet above the level of the sea. Taxodium sempervirens is the largest tree I saw in California, before the discovery of Wellingtonia; it presents to the eye all the beauty and grandeur that Douglas has described. I have often seen trees 300 feet high, and from 10 feet to 15 feet in diameter. *W. Lobb.* [It will be seen from this statement that we were right in regarding Wellingtonia as different from the plant described by Douglas. Sequoia gigantea must now be erased from catalogues, it being a nonentity.]

Seedling Larch.—Persons are not sufficiently careful in the choice of seedling trees. I have 7 acres of Larch on a hill looking north, and which I have vigorously thinned, and yet every other has the rot; in many cases the wood has grown round the rotten part vigorously. I attribute this rot, in a place otherwise well adapted to Larch, entirely to the seedlings having come from some rich or confined or low ground. *Constant Reader.* [We must question this conclusion.]

Johnson's Almanac: Trade Directory.—Mr. Johnson having advertised in your columns that his Almanac contained a "correct list" of nurserymen and seedsmen in England, and my business lying, as it does, exclusively with that branch of gardening, I purchased a copy, and was much disappointed at finding such an incorrect and false statement of names and addresses inserted in its directory. Several of the principal firms are altogether omitted, and many persons who have left the country, or are dead and have been so for many years, have still their names continued in it, making it perfectly useless to me, and I think it only justice to others situated like myself, to give publicity to the fact. My doing so may also possibly be the means of inducing a more correct list to appear in his next edition. *J. Edmonson, Wells, Somerset.*

Weather in Dorsetshire.—

Date. 1853	Cold of the Night.	Thermometer at 9 A.M.	Rain Gauge.	Heat of the Day.	Thermometer at 9 P.M.	Barometer.	Wind.	Observations.
Dec.								
12	25	29	...	38	30	$29\frac{5}{10}$	NE	Cold; dull day.
13	28	33	.1	45	41	$29\frac{1}{10}$	SE	Cloudy; rain.
14	36	36	.18	39	32	$28\frac{8}{10}$	NE	Cloudy; cold.
15	22	25	...	35	31	29	W	Clear; keen air.
16	31	34	...	34	31	29	NW	Overcast.
17	30	32	.1	35	25	$29\frac{3}{10}$	NE	Hazy morning.
18	25	35	...	37	34	$29\frac{1}{10}$	SE	High wind; wet day.
19	34	35	.95	35	29	29	SE	Boisterous wind; rain.
20	29	30	.3	34	30	$29\frac{3}{10}$	NE	Overcast; sleet.
21	30	32	...	34	30	$29\frac{6}{10}$	NE	Overcast.
22	28	31	...	32	29	$29\frac{7}{10}$	NE	Overcast.
23	28	31	...	33	30	$29\frac{7}{10}$	NE	Cloudy; showers; sleet and rain.
24	27	30	.6	33	29	$29\frac{7}{10}$	NE	Clear morning; variable day.
25	21	25	...	31	23	$29\frac{9}{10}$	NE	Clear.
26	17	20	...	31	30	$29\frac{9}{10}$	NE	Clear.
27	23	23	...	...	...	$29\frac{7}{10}$	W	Clear; sprinkling of snow on ground.
1854 Jan.								
1	21	21	...	30	25	29 [illegible]/10	W	Clear; snow; 1½ in. more.
2	25	29	...	35	20	29	SW	1½ in. more snow.
3	19	23	...	30	29	$28\frac{8}{10}$	NE	Cold snowy stormy day.
4	26	27	.45*	32	30	$28\frac{5}{10}$	NE	Stormy night; snow much drifted.
5	23	25	..	35	31	$28\frac{5}{10}$	N	Clear morning; depth of snow in all 8½ in.—sleet.
6	21	23	...	34	31	$28\frac{7}{10}$	SW	Clear.
7	29	37	.50†	41	36	$28\frac{6}{10}$	W	Stormy and wet.
8	35	37	.43	41	34	$28\frac{6}{10}$	SW	Clear.
9	33	35	.6	35	...	$28\frac{7}{10}$	W	Overcast; showers.

* Snow-water. † Snow-water.

Until these last few days, the most remarkable feature of this month has been—the ground continuing soft under foot, with the thermometer so low. *W. F. S., Melbury, Dorset.*

Weather in East Suffolk.—

1854. Jan.	Temperature. Max.	Min.	Mean.	Observations.
1st	23	8	15½	Bright morning, snow storms at times during the day.
2d	29	14	21½	Bright morning, alternately bright and stormy during the day.
3d	27	21	24	Bright morning, snow storms with stormy wind in the evening.
4th	27	25	26	Dull day, violent S.E. winds, with some snow storms.
5th	29	27	28	Dull day, sleet and rain, wind very changeable.
6th	33	24	28½	Dull day, some showers, westerly winds
7th	36	30	33	Morning very changeable, afternoon heavy rain.

W. Breadley, Somerleyton Hall, Lowestoft.

Cuthill's Black Prince Strawberry.—Permit me to say that this variety has again proved, with me, to be the best for early forcing, as I have this day (Jan. 3) gathered a dish of fine fruit, and I have likewise a quantity well set. The blooms appear in succession, and I expect that I shall be able to gather continually from it for the next two months. *Wm. Brown, Waltham Abbey, Essex.*

The Barbarossa Grape.—I have read Mr. Cooper's excellent letter on this subject in your number of Saturday last, which may very probably clear up the real name of this unquestionably valuable Grape. On perusal of the list of Vines sent from Italy, I find the name of Barbarou (Dunal) and Barberousse (Dunal)—is this, therefore, the "Barbaroux" which Mr. Cooper asserts is mentioned by Miller? I am inclined to think it must be, though there are many Vines with far more gigantic bunches, as any one who has travelled in the autumn in the sunny south can testify. I should very much like to hear of any one acquainted with the list of Vines named, and also of the Siracusa—but particularly the Galetta (Black and White), which I believe to be a first-rate Grape; very many I ordered from their peculiar shaped berries; some I have still, and others I sent to Luton Hoo, Beds, but whether any valuable sorts remain there I know not. *Charles T. Warde, Clopton House, Stratford-on-Avon, Jan. 9, 1854.*—P.S. Speaking of gigantic fruit, I saw a Pine Apple (Cayennensis) at Florence, 18 French lbs. weight; is this kind grown in England? *C. T. W.* [The old French pound was an ounce and more heavier than the lb. avoirdupois. No Cayenne of anything like this weight has been fruited in England.]——In Prince's Treatise on the Vine we find the Barbarous is inserted as a synonyme to the Black Morocco. This is well known to be a large, black, oval, or somewhat obovate Grape. Amongst black oval Grapes, as classed by Audibert of Tonelle, near Tarascon, there is the name of Barbera noir, said to be cultivated near the Po; and the same author places the Barbaroux rose amongst Grapes with grizzly or rose-coloured berries, said to be grown near the mouths of the Rhone. In the Catalogue of Dauvesse, of Orleans, we find the name of Barba rosa. M. Jamin, Bourg-la-Reine, near Paris, mentions the Barbarossa as a large white Grape, requiring a warm situation. He also has the Barbera noir marked in his Catalogue as a large Black Grape. From the above it is probable that the Black Morocco, the Barbarous Grape of Prince, the Barbera noir of Audibert and of Jamin, are the same, but certainly different from the Black Barbarossa exhibited in this country. Then, according to Audibert, there is a Barbaroux rose, a rose-coloured Grape, which may be the same as the Barba rosa of Dauvesse. And, finally, according to Jamin, the Barbarossa has white fruit. Mr. Warde is of opinion that the Grape known in this country as the Black Barbarossa is one of those which he marks with an asterisk; the most probable amongst them is the Damasco nero, for the so-called Black Barbarossa appears to be allied to a group of such sorts as the Black Damascus, Black Prince, Black St. Peters, &c. *R. T.*

Cottagers' Stoves.—I have observed with great interest the attention recently paid in your columns to the subject of cookery for the poor. In your last, you advert to the great desirability of an effective cooking stove. Such an one as you suggest is much needed. In the United States they have stoves of the very sort you describe. They are of iron, however, with suitable apertures, and well adapted for coal. I observed, while a medical student in France, a delf or porcelain stove, which I have often thought, if pierced for cooking vessels, would answer very well. It realised a very genial temperature. Wood was employed to heat it, but turf, charcoal, and cinders or coke would also suffice, if not coal. Such a cooking stove could be made for a very trifle out of common pottery clay or fire clay. A ventilating chamber, oven, and draught regulator might be easily added. Such a stove would cook, heat, and prove a great boon to the multitude. Permit me to pass a word of remark on some of the recent cooking receipts. They are calculated, unless with a proper stove, to lead to the consumption of a great deal of fuel, and to take up much time. Besides, it is quite a mistake to suppose that to boil a pound of rice in a gallon of water creates a gallon, or whatever a gallon weighs, of food. There is just a pound of nutriment and no more, though a hogshead of water were used. Such messes are highly useful to eat with bread, but almost worthless as exclusive nourishment. *Henry M'Cormac, M.D., Belfast.*——It has been observed, with regard to the cooking stoves indicated in the *Gardeners' Chronicle* of the 31st ult., that, on account of ventilation, they would not be advisable for families occupying but a single room for sleeping as well as all other purposes; but this objection was made on the notion that the stove would be built into the chimney, so as to prevent the usual current of air upwards through the shaft. On the contrary, it is essential that though the draught through the stove itself should be capable of regulation, yet the chimney itself should be left open, excepting that small part of it occupied by the pipe from the stove. Such an opening is essential for the carrying up the water evaporated in cooking, as also the various odours that arise from it. The pottery recommended as the material of such a stove would doubtless be not only the best, but also the cheapest substance of which it could be composed. Small cooking stoves of pottery are made in France, and sold for so small a sum as 12 sous, (6*d.*), including for this price an iron grating, and an iron bandage around the fire-place. The fuel for these stoves is charcoal, and they are found to be exceedingly economical. Some years ago a gentleman requested a friend in the East India Company's service to bring home one of the common stoves used by the Chinese; it was procured accordingly and proved to be, of course, China ware, and of precisely the same form as the above-mentioned French stoves. The Chinese stove was, for many years, used for experiments in a chemist's laboratory, and proved in frequent use to be far more durable than are the French ones, though these last long with moderate care. *B.*

Humus and Ammonia as Fertilisers.—The paper of Dr. Schulzenstein, on the fertilising action of the humates, quoted by "M. J. B.," at p. 3 of your current volume, is of so much apparent importance, that an abstract of it (if too long to give entire) would be very desirable. Whether he may have generalised too far, upon the many cases hardly reconcileable with the mere carbonic acid theory, without due consideration of those for which the humates will not account, we may better judge when his own arguments are before us. Of "J. H. K." "On the Action of Ammonia," p. 11, who seems to incline towards the other extreme, I would ask, whether he has borne in mind, 1st, That in starch, wood, &c., the hydrogen is still united with oxygen, in the full proportion to form water, so that they may be regarded, atomically, as compounds of water and carbon; 2d, That nitrate of soda produces the like profuse and luxuriant vegetation to ammonia? A mixture of nitrate of soda with gypsum and wood ashes threw up such a dark green dense mat of Clover, 2 to 3 feet deep, as I have rarely seen; while the other fields, on the same estate, were pale, thin, and sickly looking; probably not half the crop. And gypsum, with farm-yard dung, has been found to produce a heavy crop of Beans (Mr. Hannam, *Highland Journal*), different from "M. J. B.'s" inference. *J. Prideaux.*

Orchard Houses.—One of the chief demands upon a gardener's attention being a good supply of fruit for his employer's table, it becomes an important question with

him to decide upon the best means of securing that requisite. Foremost, in the estimation of many at the present day, stands the orchard house. "A house for the cultivation of miniature fruit trees in pots." Now, I admit, that such trees are well adapted to afford a vast amount of pleasure to the cultivator, and also some fruit; but are they adapted to supply a table with fruit regularly for the season, such as with Peaches, Nectarines, Apricots, Plums, Cherries, and even Pears? I doubt not. They were in the first place intended for small gardens, where the proprietor himself would direct and assist in the management of the trees; and if "the pleasure" arising from the cultivation of the trees is considered an equivalent for fruit, they will doubtless prove satisfactory; but where, I would ask, is the experienced cultivator who would substitute these "miniature trees in pots" for his walls, or say his walls faced with glass? Let me beg of those who advocate them so strongly as rivals to garden walls, to publish a fair statement of their success both with these houses, and with walls faced with glass; giving the average of the produce in each case, and the time devoted to their management; thus balanced, I think the superiority of walls will be apparent. If we are to have (as I anticipate and trust we shall have), glass structures or houses for the cultivation of our tender fruits, let us have them something like equal to the demand to be made on them, and instead of covering a few square feet with glass, let us adopt the ridge and furrow principle of roofing, over a much larger space than we have hitherto been in the habit of doing. We might then plant in the borders in brick compartments or divisions, training the tops to strained wires, espalier fashion, or otherwise, as might seem best, having still a quantity of portable plants in boxes and tubs: we might then safely calculate on producing a serviceable supply of fruits, besides choice winter and early spring vegetables, salads, &c. With such a structure I would still think it unwise to abandon walls for Pears, Plums, and Cherries; and a good south wall in favourable localities for Peaches and Nectarines, even without glass, will generally supply a very useful amount of fruit. Until we get something near what I have just been attempting to describe, my experience is in favour of walls faced with glass, as compared with small orchard houses for the purposes mentioned. *W. C. E., Gloucester.*

Advantages of Draining Woodlands before Planting.—Arboricultural operations are now being more looked into, and the future benefits of such are better understood than they were 30 years ago. At that time it was thought sufficient to drain only decidedly wet portions of land and at about 50 feet apart, and even the practice then was to plant with Oaks, averaging 5 feet in height—adoptions known by the scientific arboriculturists of the present day to be highly disadvantageous where rearing a healthy crop of trees is kept in view; for it is now ascertained that thoroughly draining land before planting, constitutes the very key-stone of future success; and the neglect of this in former days accounts for the general inferiority of plantations which at present exist. Drainage does not merely remove stagnant water, which is all it is supposed to do by many, it has also a tendency to open up the soil, thereby admitting heat and furnishing food congenial to the growth of vegetation; nor are these all the advantages to be derived from drainage—it also ameliorates the climate, for in undrained plantations there always exists a humid atmosphere, which favours the growth of Lichens and other plants that like moist air; while, on the other hand, in thoroughly drained plantations the atmosphere is kept free of all such noxious vapours. Seeing, therefore, that such circumstances as those described above are favourable to the healthy growth of trees, I would at this time urge on all foresters the great necessity there exists for thorough drainage; such as putting the drains in at about 35 feet apart, 30 inches in depth, and, of course, with a proper outlet. Although at the time this kind of draining may be thought an "unnecessary waste of money," the future results will show the contrary to be the fact. Planting with Oaks averaging 5 feet in height is still partially adopted; such never succeed so well as plants from 2½ to 3 feet high, even although the ground be covered with rough Grasses, for they are affected so much by wind as to loosen the earth round the stems, permitting frost to enter, thereby causing damage to the roots; and in addition to trees of such a size never succeeding so satisfactorily as those of a smaller description, the former before being removed have become habituated to their situations, they have taken permanent hold of the soil, making large growths; and, in short, they appear as if they had set themselves down with the intention of never being removed; consequently, when taken out for planting, it is a long time before they begin to grow, and they never afterwards make such vigorous growths as they formerly did; while, on the other hand, Oak trees from 2½ to 3 feet in height are not subject to such inconveniences. Although they may at first be overtopped by rough Grasses, yet a few shillings extra expense will obviate this difficulty; better have a future healthy crop than a sickly and unpromising one. I would also in most cases strongly recommend the use of Larch as nurses, more especially in sheltered and low-lying situations; they have been found by experience to be best adapted to the rearing of Oak, and to soonest repay the planter. Larch has now nearly beat its rival (the Scotch Pine), although the latter is preferable in high lying districts, where a much greater degree of shelter is required, and where by its thick foliage it may nurse the Larch, although not in perfection. *W. R. A.*

Gardeners' Royal Benevolent Institution.—I perceive by my polling paper that an election of two Pensioners on the funds is to take place on the 18th inst. Being a subscriber I think it no more than prudent to raise my voice against the present system of electing pensioners on the funds of this charity. There are 17 candidates, and out of that number there are the names of seven who have not been subscribers at all. From the last report, it appears that the funded stock of the Institution is 3000*l*., and the present 19th Rule shows how that money is disposed of. It looks as if annual subscribers would never be much benefited by the liberal donations which some are so kind to give to the Institution. If, therefore, the committee shall continue to allow non-subscribers to be placed on the same footing with subscribers, and do not think proper to confine the pension to subscribers only, giving the preference to such as have contributed longest, I, as well as I believe many others, shall feel disposed not to subscribe any more to the funds: for any reasonable man cannot, I think, but admit that the present system of election is very unjust. *A Subscriber.*

Societies.

Entomological, *Jan* 2.—The President in the chair. Amongst the donations to the library and museum were the recent publications of the Natural History Society of Vienna, the Entomological Society of Stettin, an elaborate memoir on Blatta orientalis by Dr. Cornelius, a number of beautiful lepidoptera (from Bogota) by Mr. Jones Stevens, and also a variety of rare British micro-lepidoptera by Mr. Vaughan, of Bristol. The Secretary gave notice that, at the anniversary meeting, it was intended to propose the removal from the council of Messrs. Spence, Curtis, Westwood, and Janson, and the introduction of Messrs. Dallas, Stainton, F. Smith, and Edward Shepherd in their place; and that no alteration was intended to be proposed in the officers. Mr. Samuel Stevens exhibited some specimens of the splendid Morpho Ganymede (M. Sulkowskyi, of Kollar), received by him from Mr. Jones Stevens, of Bogota; one of the specimens had arrived saturated with an exudation of grease, which he had entirely removed by dipping the insect in camphine, and then covering it with magnesia, by which its beauty was quite restored. Mr. Stevens also exhibited some rare lepidoptera from Manilla. The Secretary read an extract of a letter from Mr. Jones Stevens, on the occurrence of numbers of species of micro-lepidoptera in Bogota, many of which come to the lamps at night, but are difficult to be captured and preserved in good condition. He also read the account of the mode of taking honey from bee-hives in China, given by Mr. R. Fortune in a previous number of the *Gardeners' Chronicle* (1853, p. 822), upon which Mr. Westwood stated that a similar plan of taking honey by turning up the hives and raising a cloud of tobacco-smoke had been adopted by an apiarian neighbour of his at Chiswick, and that he had himself succeeded in driving the bees into an empty hive and cutting out as much comb as was considered advisable, even without any smoke, simply by working slowly and quietly, brushing off the few bees that remained on the comb with a feather. Mr. Curtis read a note on the habits of Panurgus ursinus, a curious wild bee which he had observed forming its burrows in hard earth at Tunbridge Wells. He had noticed the females occasionally curled up as if asleep in the flowers of Hieracium, and at other times with their hind legs laden with pollen. The first portion of a memoir by Mr. Baly on the Chrysomelidæ of Australia, containing monographs of the genera Phyllocharis and Lamprolina (new gen.) was read; also the description by Mr. Hewitson of some new species of butterflies from Bogota, presented to the Society by Mr. Jones Stevens, with two plates, and an elaborate memoir by Dr. Davy, F.R.S., on the chemical composition of the excrement of insects, from which some remarkable results were derived, by way of analogy with the nature of the urinary and excrementitious secretions of birds, serpents, &c.

Notices of Books.

In *Rendle's Price Current and Garden Directory for* 1854, the descriptive notes and practical observations will, on the whole, prove useful. We must, however, observe that what is called a "complete" collection of seeds, "sufficient for a large garden" for one year's supply, is by no means what it professes to be. In the first place, 1 quart of Knight's Tall Marrow Pea is not enough; nor is 1 pint of French Beans. Half an ounce of Cauliflower seed is a very small quantity to withstand all risks, and afford a large supply. No Cardoons are furnished. The quantities of Mustard and Cress are insufficient, and many things deservedly recommended in the Descriptive Catalogue are not included. Mazagan Beans "esteemed the best for early crops;" Hammersmith Hardy Green Cabbage Lettuce, "the best for autumn sowing to stand the winter;" Lettuce-leaved and Flanders Spinach; all recommended in the Price Current, are omitted, to say nothing of Corn Salad, and various other things requisite in a large garden. The "collection" in question is, on the whole, a good one; but most certainly neither complete nor sufficient for a large garden.

Beauties of Byron. (Murray's Railway Reading.)—A careful selection, "by a Clergyman," from the prose and verse of the greatest of our mo'ern poets. The name of the publisher, and the profession of his editor, offer a satisfactory guarantee that the volume contains nothing which is unfit to be placed before the most fastidious reader. To us the poetical selections appear to have been made with taste as well as care, and to present a really good example of the various styles of a most versatile and brilliant writer.

The first volumes of the Geographical and Natural History divisions of the *English Cyclopædia* (Bradbury and Evans) are now completed, and dedicated to Her Majesty. It is difficult to conceive that the capital woodcuts in the Natural History department can be the same as those in the "Penny Cyclopædia," so great is the difference between beautiful and bad typography.

Once Upon a Time (2 vols., 12mo, Murray), is the quaint title of a collection of literary pieces from the agreeable pen of Mr. Charles Knight. As may be inferred from the title, they refer to things and times now for ever passed away, and we know no one in whose hands such subjects would be more successfully treated. The Farmer's Kitchen will be recognised by everyone who can reckon half a century in his life, as a truthful and clever sketch of agricultural manners, that we suspect have now wholly died out even in Ireland, although we saw some remains of them a few years ago in that country.

A very useful supplement to *Willich's Popular Tables* (Longmans) has just appeared, explaining the duties upon successions and legacies chargeable under the act passed last session of Parliament.

New Plants.

37. Dendrobium cymbidioides, *Lindl.*

The "Botanical Magazine" for December contains (fig. 4755) a good figure of this rare plant, which has been obtained from Java, by Messrs. Rollisson. It is a psuedo-bulbous species, with a pair of short leathery oblong leaves, and an erect raceme of five or six rather distant yellow flowers, with a white crimson and yellow lip. If it should prove easily cultivable, as is probable, it will form a gay ornament to hothouses.

38. Mathieua galanthoides, *Klotzsch.*

This is a diminutive bulb brought from Payta, in Peru, by M. Warczewitz, which has flowered with Mr. Mathieu, of Berlin. It appears to have the habit of a Snowdrop, with from 2 to 4 sessile, erect, white flowers, tipped with green upon a solid compressed scape, about 3 inches high. The leaves are oval, narrowed into a long petiole. According to Dr. Klotzsch, who has published an account of it in the *Allgem. Gartenzeitung*, 1853, p. 327, the genus is near Calostemma, from which it differs in having a straight three-cornered tube and inflated limb, a toothless coronet, sessile flowers, &c. It seems to be a mere botanical curiosity.

FLORICULTURE.

The Calceolaria.—Within the last few years, this flower has improved much, both in form, size, and colour of marking, and we now possess an almost endless variety; yet—it is the case as with other flowers—all are not perfection that are offered for sale: in fact, many of them are scarcely worth cultivating. It therefore behoves the amateur to use some caution, if he intends to make a judicious selection. The properties of the Calceolaria, I believe, are very generally admitted to be the following: a plant of a shrubby or half-shrubby habit, the flower-stems strong and erect, the flower large and globular, good outline and clear of indentation, and the marking decided and striking in colour. I believe the Calceolaria is generally considered difficult of culture; but this is a fallacy easily refuted, for, with care and attention there is scarcely any florists' flowers better to manage; and often do we see this plant in cottage-windows glossy, luxuriant, and full of bloom. The grand secret in growing the Calceolaria is to keep the plants tolerably dry in winter, and well protected from frost, with as little fire-heat as possible; and during the summer months to supply them liberally with water, and keep them well shaded from the scorching rays of the sun. I grow the plants in frames placed against a wall with a south-east aspect, the front and ends being glass as well as the top. The top lights lift up, instead of sliding, so that I can admit air (most essential to the successful culture of this plant) in wet foggy weather, and at the same time exclude the rain. The frames are elevated by brick-work, about 2½ feet, in order to show the plants when in bloom to greater advantage, as well as being a more convenient height for watering and general management. In autumn I like my plants rather small than otherwise, if healthy and well-rooted; then I place in 4-inch pots, in compost consisting of one-third good friable loam, well rotted from an old pasture, one-third peat or heath soil, and one-third leaf or vegetable mould, well mixed together, with a quantity of silver sand: good drainage is indispensable. Such new varieties as I require I get from the nurserymen as soon as I can in autumn. During the winter months the plants require but little water, but they must be kept from flagging; all decayed leaves should be picked off; and they should be well protected from frost by covering at night with mats, &c. If the plants should by any means get frosted, keep them covered up for a few days from the light and sun (which would now prove fatal); and if not too far gone they will recover. About the last week in February, the plants begin to exhibit signs of growth, and then I re-pot them into a fourth vegetable-mould, and one-fourth good rotten cow or horse dung, with silver sand as before; and during

the two succeeding months of March and April I continue to re-pot them according to their growth, until I get them into the pot I intend them to bloom in. The "one-shift system" does not at all answer with the Calceolaria. About a month previous to their coming into bloom, I use a little weak guano-water, about twice a week, which I find excites their growth considerably, and improves the bloom. Watering the plants over the top with a fine rose and tepid water, occasionally, in the mornings, during their growth, will be found very beneficial. In May and June they will be in full bloom, and then the cultivator receives his reward for the "care and attention" bestowed on them during the inclemency of winter, by the grand display of flowers which they furnish. After the plants have done blooming, cut them down, top-dress, and remove them to a shady situation, supplying them liberally with water, when they will soon throw out side-shoots, which must be taken off when 2 or 3 inches long, for increase. After blooming is a trying season for the Calceolaria; for the plant is greatly exhausted, and if exposed too much to the sun, it causes the thrips (the greatest enemy to this plant); and the loss of the old plants is then the almost inevitable consequence. Green fly is also a great pest, and must be kept down at all seasons of the year. This may be done effectually by fumigating with tobacco. In September, offsets and cuttings may be taken, and struck in the usual compost, adding more silver sand, by inserting them about 2 inches apart, in wide-mouthed pots; if a bell-glass is placed over them, they will strike all the sooner. After the cuttings are well rooted, plant them in 4 inch pots, as before recommended; and, by proper treatment, they will make fine blooming plants in the ensuing spring. *B.*

Hydrangeas.—In his article on the Hydrangea (see p. 839, 1853), your correspondent has inadvertently fallen into error in the following passage, viz.:—"Few I imagine will have forgotten the fine specimens of this plant that were exhibited in the Horticultural Society's Gardens by Mr. Hill, in 1852; these were in small pots, and were certainly excellent examples of skilful cultivation;" I therefore take the liberty of correcting him. The plants referred to were exhibited by me and in my name, Mr. Hill being at that time my foreman. I have every reason to believe that I shall produce, in the coming season, plants in every respect as fine as those so deservedly praised by "E. B." *John Westwood, Floral Nursery, Acton Road, Turnham Green.*

Picotees: *H F.* Mrs. Barnard (Barnard), light-edged rose; Alfred (Dodwell), heavy-edged purple; Princess Royal (Wilmer), heavy-edged red. Yellows: Euphemia, Princess Alice, and Conrad. We never recommend dealers.

Miscellaneous.

Improvements in the Manufacture of Paper. By R. A. Brooman, 166, Fleet Street. (A communication.) Patent granted June 10, 1853. (No. 1422).—*Claim.* The manufacture of paper from wood and woody fibres, reduced to fibrous pulp by means of mechanical agents, acting in the direction of the length or grain of the said fibres, and parallel thereto, together with water or other suitable liquid, applied as described. — *Mechanics' Magazine.*

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

Conservatory and Stove. — If not already done this season, take advantage of the present unfavourable state of the ground for out-door operations to thoroughly wash the paint and glass of all plant houses, especially the show-house, in order to give all a clean and neat appearance, as well as to facilitate the admission of the greatest possible amount of light to the plants. Nothing adds so much to the enjoyment of a collection of plants as seeing not only them, but everything connected with the houses, scrupulously clean and orderly, and the gardener who studies his own interest as well as the gratification of his employers, will make order and cleanliness his first consideration. See that the foliage of Camellias and other broad-leaved plants is perfectly clean before the blossoms begin to expand, for nothing detracts so much from the beauty of such plants as seeing their leaves covered with dust, or otherwise exhibiting signs of neglect; and this should be effected before the blossoms open, as it cannot afterwards be done without injuring them. Salvia splendens, and Euphorbia jacquiniflora, although requiring very different treatment during the growing season, are exceedingly useful for the decoration of the conservatory in winter, both being brilliant in colour and remaining long in beauty; they do very well in a temperature of about 50°, and they will sustain no injury if, on severe nights, the house is allowed to sink to 40°. Except for its bad habit, Poinsettia pulcherrima is one of the most effective winter blooming plants in cultivation; Luculia gratissima is also a splendid plant for winter decoration, loading the atmosphere of the house with the pleasing fragrance of its large heads of blossom. When plants have done flowering remove them from the show-house, throwing away at once such as can be spared, reserving in the case of Salvia splendens, and such things as are annually propagated from cuttings, only one or two plants, and others as circumstances may dictate; this will avoid over-crowding the houses with useless stock, and allow of giving proper attention and sufficient space to that kept. Take every opportunity of admitting air to greenhouse plants, and when necessary use a little fire-heat by day to dispel damp. On frosty nights be satisfied with a temperature a few degrees below the mean, and avoid the drying effects of fire-heat as much as can safely be done. For the present the mean night temperature of the stove may be about 55°, raising it to 65° by day, and with sunshine and air 75° may be allowed. Such plants as Allamandas, Clerodendrons, Ixoras, Dipladenias, &c., may now be started into growth when wanted to be in blosson early. Old specimens of the two former should be pruned back rather closely, and disrooted, repotting them in such sized pots as will allow of giving them a liberal shift by-and-by. Such plants will be greatly benefited by a gentle bottom heat, particularly those that may have had their roots disturbed. Crowea saligna and others of this genus, if placed in a light part of the stove, will make vigorous growth during the spring, and bloom finely in the conservatory for months in summer. These are amongst the most useful plants we possess and well deserve the attention of those who have a show-house to keep gay. By making two divisions of the stock of plants, and placing one portion of them in heat at once and the other about the latter end of March, they will be in bloom from May till November. Cold Pits.—The past fortnight has been a trying time for bedding stock wintered in cold frames, showing the absolute necessity, in garden affairs, of exercising forethought and precautionary measures betimes. Where the previous directions of the Calendar have been properly attended to, the plants having been rooted early, well established, and hardened by exposure to air, will have ceased growth some time ago; and the wood being now in a firm state will not be injured by exposure to a few degrees of frost, and will not be so liable to suffer from damp if excluded from light and air for a few days as if the tissue had been full of sap, and the plants in a soft growing state. Keep the atmosphere of the pits as dry as possible by giving air on every favourable occasion, removing at once any leaves, &c., affected by mould or frost, and covering up early in the afternoon to avoid condensation and damp. Look over your plants at the earliest opportunity, comparing them with your wants, and remove to a growing atmosphere at once such as it may be necessary to propagate extensively. Healthy young wood of Verbenas, Anagallises, and most "bedding out plants" roots very freely when placed in a temperature of about 70°, and with proper care soon forms nice stock. It is, however, of importance to provide a sufficient stock of cuttings at once, so as to allow of getting them rooted, and the plants removed to cold frames, thus making room for other things in the propagating house, and securing strong plants, properly inured to the weather, by turning out time.

FORCING DEPARTMENT.

Pinery.—Where leaves and tan are used for affording bottom-heat, take advantage of the earliest possible opportunity to provide a stock proportionate to the demand, storing them in a dry place till wanted for use. Tan should always be procured some time previous to its being wanted for use, and placed under cover, allowing it to heat sufficiently to drive off the superfluous moisture it may contain, which will tend to prevent its heating excessively when placed about the roots of the plants. Having a stock of necessaries in good order and readiness, greatly facilitates the operation of shifting and rearranging the plants, and allows of this work being done at the proper time. Attend to the directions in last Calendar as to temperature, &c. Vinery.—Maintain a moist atmosphere, syringing the Vines morning and evening on bright days. Proceed slowly during the present unpropitious season, remembering that a few degrees maintained against cloudy dull weather are barely repaid by the result; and that a little hindrance now is easily made up under the favouring assistance of sunshine, which may be expected soon. Do not exceed 55° by night, until all the buds are plump and ready to start into growth; but by day, with sunshine, 65° or even 70° may be allowed. See that the roots are at least properly protected from the vicissitudes of the weather, for without a healthy root-action it is vain to hope for success. Peaches.—Except that the temperature should be slightly lower, and a freer circulation of air afforded, the above remarks are applicable here. Trees in blossom should not be syringed, and air should be admitted on every favourable opportunity. Look over the stock of Strawberry plants in pots, and remove to the protection of a cool house or pit, a portion to succeed those first placed in heat.

FLOWER GARDEN AND SHRUBBERIES.

Proceed vigorously with any alterations which may be in hand whenever the state of the ground and weather will admit. Where it can be done, alterations, particularly those involving the transplanting of large shrubs, should be done in autumn, for there is much less chance of failure in removing evergreens, &c., at that season than at the present; and, in most cases, the longer such work is delayed after this time the more care and expense will be required to ensure success. Sweep and roll lawns and walks after the late frosts, which will be of great service in improving the surface and giving it a neat appearance. If not already done, get plants on walls pruned, and nailed or tied as soon as possible, leaving Tea Roses, or any plants liable to be injured by frost, to be done in March.

FLORISTS' FLOWERS.

As much cannot be done out of doors whilst the weather continues so unfavourable, everything which will be required for summer's use should undergo a thorough repair; possibly there may be some small hand-glasses broken—these should be mended. Carnation sticks may be repainted; the larger ones, used for supporting Dahlias, will also require seeing to, and those which are decaying at the bottom will want repointing. It is well to char the ends of new ones, or give them a coat of gas tar as far as they are inserted in the ground. The lights of the Auricula frame may possibly be defective, and it will be highly necessary to see to them. Make also a quantity of small deal pegs, smoothing them on one side so that they may be written on; these should be rubbed with white paint, so that when wanted at a moment's notice, in the summer, to mark seedling Pansies, or any other florists' flowers, they will be ready, and form a cheap substitute for "Mapplebeck's Menogram." As for what is to be done with the general stock we must talk about that when the weather allows such operations. The hint we have now thrown out, if acted on, will, we are sure, prove beneficial.

HARDY FRUIT DEPARTMENT & KITCHEN GARDEN.

Proceed with the pruning and nailing of wall trees whenever the weather will allow of doing so, but, depend upon it, there is nothing gained by keeping the hands at this sort of work in all weathers, as some gardeners do. Push forward the pruning of small fruit bushes; and take advantage of frosty mornings to get manure or compost wheeled upon the ground where it may be wanted; and get all vacant ground dug or trenched, throwing it up rough so as to expose the greatest possible surface to the action of the weather. See that Peas above ground are not injured by birds or slugs, and as soon as the state of the ground permits get in a second crop, and also of Beans. Look carefully after Lettuce, Endive, and Cauliflower plants, &c., under glass, admitting air on every possible opportunity, and protect them from slugs. Preparations should be made for planting Potatoes in frames by getting leaves and manure sweetened by fermentation previous to forming the bed.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending Jan. 12, 1854, as observed at the Horticultural Garden.

January.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind.	Rain.
Friday 6	[illegible]	29.104	28.989	38	28	33.0	34	37½	W.	[illegible]
Satur. 7	8	29.158	28.851	42	37	39.5	33½	37	S.	[illegible]
Sunday 8	9	29.169	28.897	46	31	38.5	33	36	S.W.	[illegible]
Mon.. 9	10	29.119	29.096	40	37	38.5	34	37½	E.	[illegible]
Tues. 10	11	29.606	29.435	38	34	36.0	34	38	N.	[illegible]
Wed. 11	12	29.896	29.833	38	31	33.0	34	38	N.	[illegible]
Thurs. 12	13	29.833	29.659	40	29	34.5	35	38	S.E.	[illegible]
Average.		29.412	29.383	39.8	32.4	36.1	33.9	37.5		[illegible]

Jan. 6—Hazy; uniform thick haze; sleet and rain.
— 7—Hazy clouds; heavy rain; partially overcast.
— 8—Fine; clear and fine; overcast.
— 9—Rain; foggy; rain at night.
— 10—Cloudy and cold; uniformly overcast.
— 11—Cloudy and cold throughout.
— 12—Cloudy; uniformly overcast; slight rain.
Mean temperature of the week, ½ deg. above the average.

STATE OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending Jan. 21, 1854.

January.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 15	41.60	29.50	35.55	10	0.54 in.	3	4	3	2	3	6	[illegible]	[illegible]
Mon. 16	41.50	31.50	36.50	15	0.34	—	7	5	—	5	6	[illegible]	[illegible]
Tues. 17	42.39	30.50	36.44	9	0.48	3	5	2	3	2	7	[illegible]	[illegible]
Wed. 18	42.10	31.14	36.62	12	0.55	1	3	1	3	4	9	[illegible]	[illegible]
Thurs. 19	42.60	30.80	36.70	12	0.88	4	2	4	—	5	7	[illegible]	[illegible]
Friday 20	41.57	30.71	36.14	10	0.65	4	6	4	1	6	5	[illegible]	[illegible]
Satur. 21	43.46	33.21	38.33	13	0.48	—	4	4	1	6	7	[illegible]	[illegible]

The highest temperature during the above period occurred on the 19th, 1828—therm. 60 deg.; and the lowest on the 19th, 1838—therm. 4½ deg. below zero.

Notices to Correspondents.

Books: *A C.* The best treatise in English on Peach management is in the last volume of the Journal of the Horticultural Society. Lindley's "Theory" is out of print; but a new and much enlarged edition is in preparation. The "Guide to the Orchard" can be had of all booksellers. There is no likelihood of a new edition of the last.

Disease: *R C A.* Your inquiry is not intelligible. What is meant by "the" disease of Larch? That tree, like others, is subject to many wholly different kinds of disease.

Feigi domo: *A M.* If you will refer to the advertising columns of our last week's Paper, p. 9, you will find the information you seek respecting this material.‡

Gooseberries and Currants: *Alpha.* For training against a wall, the most deserving, on account of flavour, is the Red Champagne; and its shoots naturally grow upright. If you wish a larger sort, and to be trained horizontally, the Red Warrington is recommended. Currants for a wall, Knight's Large Red and the White Dutch.‖

Mushrooms: *Reader.* The most certain plan would be to make a new bed. If, however, you have any means of applying heat, either in the shape of dung linings or otherwise, to the one you have, you may still perhaps be able to infuse sufficient warmth into it to induce the spawn to run.‡

Names of Plants. We have been so often obliged reluctantly to decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*A D.* Pray make no apology; we are always happy to attend to inquiries from correspondents like you. The plant is Pholidota undulata.—*F H S.* A very bad variety of Oncidium Cavendishi.—*H R S.* A Gesnerad, called Nematanthus chloronema.

Orchids from India: *T P.* You will find full particulars in the first number of our volume for last year. The agents in Calcutta to whom you must apply are Messrs. Charles Cantor and Co.

Peach-house: *S B.* A foot from the glass is considered a proper distance to train the trees.‖

Misc: *Gaidheal.* We do not know, and cannot satisfy your curiosity; certainly not Scotland, we rather think Bedfordshire.

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

MANURES.—The following Manures are manufactured at Mr. Lawes' Factory, Deptford Creek:—

Turnip Manure	per ton £7	0 0
Superphosphate of Lime	„ 7	0 0
Sulphuric Acid and Coprolites... ...	„ 5	0 0

Office, 69, King William Street, City, London.

N.B.—Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia.—Sulphate of Ammonia, &c.

PERUVIAN GUANO, the guaranteed import of Messrs. ANTONY GIBBS AND SONS, Lobos Island Guano, Superphosphate of Lime, and all Artificial Manures, Linseed and Rape Cakes, &c.—Wm. Inglis Carne, 10, Mark Lane, London.

THE LONDON MANURE COMPANY'S WHEAT MANURE, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. Edward Purser, Sec.
Bridge Street, Blackfriars.

ARTIFICIAL MANURES, &c. — Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. Nesbit, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and dispatch.

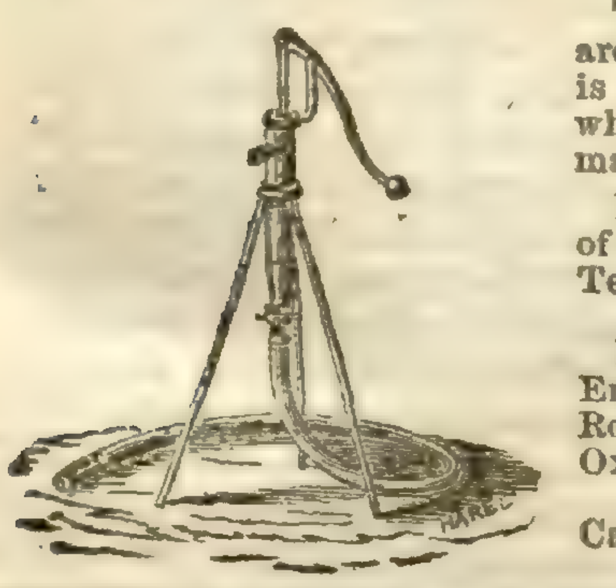
Gentlemen desirous of receiving instructions in Chemical Analysis and Assaying, will find ample facility and accommodation at the College.

SEWAGE CHARCOAL MANURE.—This highly fertilising Manure, which is Peat Charcoal completely saturated with London Sewage, will be found most efficient for every species of crop; more especially for Peas, Beans, Turnips, Mangold Wurzel, and other root crops. It will produce a greater return for the outlay than Guano or any other Manure at an equivalent value: it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained from the SEWAGE MANURE WORKS, Stanley Bridge, Fulham, at 60*s*. per ton, and in quantities less than half a ton, at 4*s*. per cwt., for ready money only, and in quantities not less than a ton, will be delivered at the London Termini of the Railroads free of charge for cartage.

It may also be had from Messrs. G. Gibbs & Co., 26, Down Street, Piccadilly, Agricultural Seedsmen, and from all the other Agents of the Company. Recommendations and Testimonials may be seen at the Works.

REDUCTION IN PRICE.

WEIR'S Improved GALVANISED WROUGHT IRON LIQUID MANURE PUMP.



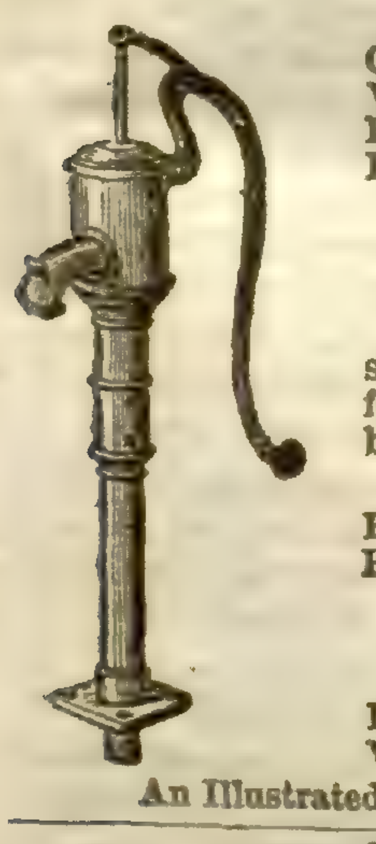
The Fittings of these Pumps are wholly of Brass, and there is no leather or other matter which can be affected by the manure.

Price, complete, with 10 feet of Flexible Suction Pipe, 4*l*. 15*s*. Terms, cash on delivery.

Edward Weir, Agricultural Engineer, 16, Bath Place, New Road, London. Removed from Oxford Street.

Catalogues, with Illustrations, sent free by post.

WARNER'S PATENT FARM AND COTTAGE PUMPS.



Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

	£	s.	d.
Patent Pump	1	15	0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing	3	0	0

Larger sizes if required.

The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,

8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water; Fire Engines, &c.

An Illustrated Book sent on application post free.

PRIZE CHURN.

ANTHONY'S PATENT AMERICAN. — The Royal Agricultural Society again awarded the prize to this Churn, at their last meeting at Gloucester; at the trial this Churn made 4 lbs. 6 oz. of butter from 4 quarts of cream, the best of the other Churns tried made only 3¾ lbs. from the same quantity and quality of cream; 2000 of these Churns are sold yearly. Copies of testimonials, and list of prices sent on application.—Burgess & Key, Agricultural Implement Warehouses, 103, Newgate Street, and 52, Little Britain, London.

WINTON'S PARKES' STEEL DIGGING FORKS.

I HEREBY GIVE NOTICE that the Steel Digging Forks hitherto sold by Messrs. Winton & Son, of Birmingham, and called by them "Winton's Parkes' Forks," were manufactured by me, or by my direction, for the said Messrs. Winton & Son, and that I have now discontinued to manufacture for them; and that I have appointed Messrs. Burgess & Key, of 103, Newgate Street, London, my wholesale Agents, to whom I respectfully request orders to be addressed.

29th Sept., 1853. Signed, Francis Parkes.

THE LANDOWNERS' DRAINAGE AND INCLOSURE COMPANY.
Incorporated by Special Act of Parliament.

Tenants for Life, Trustees, Mortgagees, Incumbents of Livings, &c., can have all works of Draining, Warping, Irrigating, Inclosing, and every other improvement to land, executed by the Landowners' Drainage Company, either by Contract or on Commission. They will provide the *money* by a permanent charge on the inheritance, or repayable by instalments. They are also ready to undertake the Drainage of Towns, and all works incident to such improvements. This Company having been engaged in extensive works for many years in most of the Counties in England, and having in their employ the largest Practical Staff in the United Kingdom, whose sole attention is devoted to such improvements, is the best guarantee for the success of their works.

Every information will be given at the Offices of the Company, 30, Parliament Street, London, or 9, Bedford Circus, Exeter.
Thomas May, Secretary.

TO LANDOWNERS, SOLICITORS, ESTATE AGENTS, ETC.

THE LANDS IMPROVEMENT COMPANY, incorporated by special Act of Parliament, 1853, having perfected their organisation, are prepared to receive applications for the execution of improvements, under the provisions of their Act.

The Act extends to England, Wales, and Scotland; and empowers persons in the actual possession of lands, or in receipt of the rents, such as tenants for life, trustees, bodies corporate, incumbents of benefices, mortgagees in possession, guardians of infants, &c., to effect substantial improvements on their estates, and to convert the outlay on such improvements into a terminable annuity or rent-charge of from 14 to 25 years, at will.

The Company, acting under the supervision of the Inclosure Commissioners, will undertake and execute improvements, or will supply the capital to landowners preferring to execute improvements themselves, or will grant the powers of their Act to landowners seeking merely to charge the inheritance with the outlay on improvements from their own funds.

The Agricultural Works of Improvement particularly specified in the Company's Act, are:—

1. The Drainage of any Lands by any such means as the Inclosure Commissioners shall approve.
2. Irrigation, and Warping of Lands.
3. Embanking of Land from the Sea, or Tidal Waters, or Rivers, in a permanent manner.
4. Enclosing or Improving the Drains, Streams, or Water-courses of the Land, under the Inclosure Commissioners.
5. Reclamation of Land lying waste.
6. Making Farm-roads to the extent of one-half of the outlay for such roads.
7. Clearing Lands.
8. Erection of Farm-houses, and other Buildings required for farm purposes to the extent of three-fourths of the outlay for such Farm-houses and other Buildings.

In effecting the above Improvements there may be erected any Engines, Machinery, Engine-houses, Mills, Kilns, Sheds, Yards, Shafts, Tanks, and Reservoirs, Pipes, Conduits, and Water-courses for Irrigation, Tram-roads and other ways, Bridges, Weirs, Sluices, Flood-gates, and Hatches.

For Forms of Application and further Information apply to the Hon. W. Napier, Managing Director, 2, Old Palace Yard, Westminster, London.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

Patron—His Royal Highness PRINCE ALBERT.
President of Council—Earl BATHURST.
Principal—Rev. J. S. HAYGARTH, M.A.
Professors, &c.
Chemistry—J. A. C. Voelcker, Ph.D., F.C.S.
Geology, Zoology, and Botany—James Buckman, F.G.S., F.L.S.
Veterinary Medicine and Surgery—G. T. Brown, M.R.C.V.S.
Surveying, Civil Engineering, and Mathematics—F. Armstrong, C.E.
Manager of Farm—G. Austin.
Assistant to Chemical Professor—A. Williams, M.R.C.S.

The first Session of 1854 will commence early in February. The annual fees for Boarders vary from 45 to 80 guineas, according to age and other circumstances. The Fee for Out-Students is 40*l*. per annum. The College Course of Lectures and Practical Instruction is complete in one twelvemonth—though a longer time is recommended. There is a department for general as well as for agricultural purposes. Prospectuses and information can be had on application to the Principal.

The GUIDE to the ROYAL AGRICULTURAL COLLEGE FARM may be obtained of Hamilton, Adams, & Co., Paternoster Row, London; and Edwin Baily, Cirencester. Price 1*s*.

COLLEGE of AGRICULTURE and CHEMISTRY, and of PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.

Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

The Agricultural Gazette.

SATURDAY, JANUARY 14, 1854.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Thursday,	Jan. 19	—Agricultural Imp. Society of Ireland.
Thursday,	— 26	—Agricultural Imp. Society of Ireland.

A few remarks will be necessary to explain the reports of last harvest, given by our correspondents in another page. We may mention, in the first place, that exception has been taken by some to the method of inquiry adopted. One of those on whose judgment we should be most inclined to rely, writes as follows in answer to our circular:—

"I must really beg to be excused making such a report as is here asked for, on the simple ground that I have no data worth the name on which to found such estimations. I can as yet only guess at the probable yield from my own farm; how much less can I know with any measure even of probability what it is for a neighbourhood, especially one where soil, &c., varies as it does in this county? This return now asked for is something very different from those general reports on the character of the growing crops which I have repeatedly furnished to you. I appreciate your endeavour to supply your readers with such information, drawn from all parts of the kingdom; but believing as I do that such estimations as are specified in the schedule must inevitably be delusive, I must decline having anything to do with it."

In reply to this we would only remark that the answers desired to our questions were simply the expression of such a judgment on the subject as could not but be formed after conversation at the market table or elsewhere amongst those whom the writer admits may each of them, by this time, be able to "guess" at the produce of his own farm. If *one* can state pretty safely, after what threshing has been done, the probable produce of his share of any given district, then surely the average verdict of all, thus arrived at, may be trusted with equal confidence for the whole of that district. This, conducted in of course a much more careful and systematic manner, was, we believe, the plan on which the estimates of the crops in Haddington, Roxburgh, and Sutherlandshire were formed for the Highland Society; and that it is not necessarily and altogether "delusive," that it is not likely rather to mislead than to instruct, may be judged of from the fact that such men as Mr. Hope of Fenton Barns, Mr. Grey of Dilston, Mr. Woodward of Worcestershire, Mr. Baker of Writtle, and others of similar standing in other counties of England and Scotland, have not hesitated to furnish the opinions asked for. We have omitted the names of our correspondents simply for want of room—as, if we are to publish any considerable portion of the correspondence which reaches us, we must condense and epitomise in every possible way. It will be remembered, however, that the several returns are for distinct localities and not for whole counties. The differences of judgment in any one county will be of course found considerable, in proportion to the variety of climate and soil it presents. In some this variety is very great, in others, as Worcestershire for instance, where geology and agriculture are both pretty uniform, no such great differences are observable.

We shall not now attempt to classify these reports or draw any detailed inference from them; but it must be remembered that the figures given represent produce per acre, and that the relation in which the crops are reported to stand to average produce is again significant merely of produce *per acre*. The produce of a district, a county, or a country, depends of course not merely on produce per acre, but upon the number of acres sown; and this in its influence on the past Wheat crop would very materially increase the deficiency of yield indicated in the reports from our correspondents. It was impossible to combine the two with any chance of telling a true tale; and we have, therefore, preferred stating the judgment pronounced only on the crop *per acre*, along with this reminder of the great influence, on the whole produce of the crop, exerted by the diminished breadth of the Wheat grown. As instances, we quote from the north and south of England three separate notices.

"Yorkshire.—Estimated crop of Wheat per acre, 18 bushels; *acreage* of Wheat [nearly] 20 per cent. below average—yield per acre, 20 below average; making the gross deficiency of yield below average 36 per cent."

This is translated in the adjoining page into—

Yorkshire: Bushels per acre, 18; one-fifth under average crop.

Again:—

"Westmoreland.—Estimated crop of Wheat per acre, 22 bushels; *two below average*—the great deficiency is in the short number of acres sown."

Lastly:—

"Kent.—I shall endeavour to comply with your wish respecting the growth of corn in 1853, not that I think my account will be of much value, as I do not get about now much amongst the farmers, and my system, as you are aware, being Wheat and green crop. I have threshed several small pieces of Wheat, the growth of which I now enclose; and to enable you to judge of the deficiency, I have added my average growth of the farm for the time I have occupied it. I think the little I have threshed will be a fair average of my year's growth; some I expect will be better, and some worse. I have since been through the whole of my growth, which I find for 24 years to be 4 qrs. 1 bush. 5 gals. What is your opinion of this quantity on light land worth about 20*s*. per acre? I have a letter this morning from a friend near Canterbury, who writes as follows:—I have threshed the whole of my Wheat,—total 91 qrs. 1¼ bush., *from* 28 acres, something over 3 qrs. per acre; the Rivet, 3 qrs. only; White Peas, 21¼ bush. per acre. The farm usually grows, I should think, from 32 to 36 bush. per acre of Wheat.

Average Growth of Wheat, Martin Farm, Langdon, near Dover.

		qrs.	bush.	gals			qrs.	bush.	gals
1829	... ...	2	7	3	1841	... ...	3	6	1
1830	(nearly)	4	0	0	1842	... ...	4	4	0
1831	... ...	4	0	0	1843	... ...	3	2	4
1832	... ...	4	2	0	1844	... ...	4	5	0
1833	... ...	3	5	4	1845	... ...	3	6	6
1834	... ...	3	6	0	1846	... ...	4	5	0
1835	... ...	4	6	0	1847	... ...	5	0	0
1836	... ...	4	5	0	1848	... ...	3	4	0
1837	... ...	4	3	7	1849	... ...	5	4	0
1838	... ...	4	0	0	1850	... ...	4	3	0
1839	... ...	4	1	2	1851	... ...	4	4	5
1840	... ...	4	4	0	1852	... ...	4	4	0

Average for 24 years, 4 qrs. 1 bush. 5 gals. 1853—Seven fields yet threshed, 3 qrs. 3 bush. *M. S.*

The guano market is closed! There is not a ton in the possession of the great importers, and the agents of the Peruvian Government are compelled to decline all orders till further supplies shall arrive from the Pacific. People naturally inquire how this has come to pass. Are the Chincha Islands, and the

Lobos, and all the other deposits, exhausted? Or are the Americans running off with this valuable substance? Nothing of the kind. The explanation we understand to be that notwithstanding a most unusual provision made by the importers to satisfy the demand here, that demand has increased so enormously as to baffle all calculation. Nearly three times the quantity consumed in 1852 has been bought in 1853.

We believe we are not far wrong when we set the sales of guano, during the last eight years, at something very near the following quantities :—

1846,	from June to	December,	24,600 tons.
1847,	"	"	15,200 "
1848,	"	"	22,600 "
1849,	"	"	23,800 "
1850,	"	"	28,000 "
1851,	"	"	24,000 "
1852,	"	"	23,400 "
1853,	"	"	64,000 ! !

Upon this we have no comment to make; no one could have anticipated a deficiency of supply when considerably above 60,000 tons were provided to meet a demand which had never exceeded 28,000 tons. Whether it is that the dread of a rise in price has caused consumers and dealers to lay in twice their usual stock, or whether Admiral MORESBY's report has led to the belief in an approaching scarcity, which we believe to be a groundless apprehension, we do not know; but the following passage in a circular now before us, issued by the Peruvian agents, seems to indicate that the former is believed by them to be the true cause of the unexpected demand which has arisen.

"We are inclined," say Messrs. A. GIBBS and Co., "to think that most of our friends have forestalled their demands, and thus thrown a large portion of our orders in the earlier arrivals, instead of spreading them over the whole season; but as we cannot execute them, *we must decline any new orders*, at all events, *till we see more clearly what the course of the business may be during the spring*, and in how far the large orders we have already executed have forestalled the demand which usually occurs later in the season."

For ourselves, we lean to the opinion that there are no great holders of guano, and that the demand has arisen from nothing more than the improved condition of the agricultural interest, and from an increased conviction of the sterling value of a manure formed of fish that have been digested by sea-birds.

IN order to an inference of the weight of cattle from their measurement, there needs—1st, that such measurements be taken as shall furnish data for calculating correctly the solid contents of the cylindrical carcase; and 2d, that the weight of meat be known which that carcase furnishes on the average to every cubic foot of these solid contents. This weight must obviously vary considerably with the character of the breed, the age, sex, and fatness of the animal; and all such gauges as furnish only one indication to given measurements necessarily fail in every case, except the average one for which they are calculated and constructed. In Mr. EWART's cattle gauge, referred to last week, the same measurements are made to furnish a number of readings, any one of which may be selected according to the judgment of the valuer; and how necessary this is to an accurate judgment appears from our last week's table of weights, where three of the readings corresponding to the 'fat,' 'very fat,' and 'extra fat' condition of animal, are given, differing, it will be seen, very materially, and offering a choice which requires the exercise of considerable care on the part of the measurer. We quote the following explanation of the whole process from Mr. EWART's instructive article on MEAT in BLACKIE's Cyclopedia :—

"*The dimensions to be taken* are the length of the back of the animal, and its girth at the fore-ribs. The length should be taken from the junction of the cervical and dorsal processes," and it should extend "to that point on the upper part of the tail from which a plumb line will just include the whole of the round of beef. The girth should be taken *squarely* round the body, immediately behind the elbow of the fore leg. Both dimensions must be taken in feet and inches, with the most careful accuracy, when the beast is standing perfectly at its ease.

"*The Computation of the Dimensions.*—In the first place, to find the solid content of a cylinder, of which the girth and length of the animal are respectively the circumference and length, as noticed above :—The rule for this is to multiply the square of the circumference or girth by the decimal .07958, which is the area of the circle whose circumference is unity, and such product again by the length. Having thus found the solidity of the cylinder, the next step, to ascertain the carcase weight, is to multiply the former by some number representing the weight in stones of each cubic foot contained in the assumed cylinder. This weight we have found, from numerous experiments, to vary from about two and a half to four imperial stones per cubic foot; and by the use of which the rule will become the square of the girth in feet and inches, multiplied by the length in feet and inches, and that product again by .2 (very nearly the product of .07958 multiplied by 2½), or by .32 (very nearly the product of .07958 multiplied by 4), for the weight of carcase in imperial stones in the extreme instances of our experiments. Now, to meet the gradation in the extent of the several circumstances which occasion discrepancy of carcase weight of animals of equal dimensions, the following table of multipliers has been constructed from elements obtained in our experiments on the subject; and the classification as to breed which we have adopted therein, is the same as that used in ascertaining the carcase weight of oxen from their weight alive :—

Table of multipliers of the product of the square of the girth multiplied by the length, to ascertain the carcase weight of oxen in imperial stones—the dimensions being taken in feet and inches.

Condition of Beast.	Decimal Multipliers. Class 1.	Class 2	Class 3.
FOR BULLOCKS AND HEIFERS.			
Half fat	.23	.225	.22
Moderately fat	.24	.24	.23
Prime fat	.25	.245	.24
Very fat	.262	.26	.24
Extraordinarily fat	.275	.27	.25
FOR BULLS			
Moderately fat	.262	.25	.24
Ordinarily fat	.275	.262	.25
Very fat	.288	.275	.262
Extraordinarily fat	.32	.288	.275

FOR CATTLE NOT INCLUDED IN THE CLASSIFICATION REFERRED TO IN THE FOREGOING TABLE.

Dutch cattle require the same multipliers as those in Class 2.
Holstein bullocks fattened after having been worked in draught ... ... .22
Shetland bullocks and heifers, prime fat ... ... .2"

The result of the calculation is the weight of carcase in imperial stones. By comparing the actual and measured weights of cattle from last week, two things are, we think, apparent, namely, first that with certain unexplained exceptions there is a very considerable resemblance between them — and secondly, that the gauge such as EWART's, which furnishes a variety of readings to any given measurements, leaving the selection to the judgment of the measurer, is greatly to be preferred to one with only one class of readings, which can be true only of one set of circumstances. It will be seen that on the whole the verdict of EWART's cattle gauge, regarding the Baker Street cattle, is that they were more than 'fat,' verging, in fact, upon a 'very fat' show.

TURNIPS AS FOOD.

ON THE CONNECTION BETWEEN THE PER CENTAGE OF NITROGEN IN THE TURNIP, AND ITS QUALITIES AS FOOD FOR STOCK.

IN a letter on the guano question, addressed by Mr. Caird to the editor of the *Times*, and published in that paper on the 17th November, he said :—"It is well to be publicly known that Peruvian guano, though the best guano for the production of Wheat, does not possess the same superiority over other and cheaper guano as a manure for green crops. Bolivian guano has been proved over and over again to be, weight for weight, the more effective manure of the two for the growth of Swedes."

It will be admitted that Mr. Caird has had opportunities superior to most of ascertaining the opinions of practical men on such a subject as the one in question. This conclusion, from general experience, is, too, in perfect accordance with the results of more direct experimental investigation at Rothamsted, bearing upon the points involved. Some of these have already been long ago published, and their bearings frequently pointed out; yet it may be well, when the practical question is thus brought prominently before the public, to take the opportunity afforded of reiterating, and a little further illustrating, some of the conclusions of direct experiment—which, being discordant with the doctrines currently taught on the subject, are but slowly accepted, unless when pretty obviously supported by the teachings of practice itself—but which, if true, it is the more important that they should be generally understood.

To say that the cheaper Bolivian guano is a more effective manure for the Turnip than the dearer Peruvian, is in fact to say, in other words, that in ordinary practice an artificial manure containing so large a proportion as does the Peruvian guano of the expensive element, nitrogen (or ammonia), may with advantage be substituted by those containing more of some less costly ingredient. Bolivian guano has not been imported into this country in large quantities; but it would appear that in point of composition it is intermediate between the Peruvian and that which was formerly imported from the island of Ichaboe. The average quantity of ammonia (or nitrogen estimated as ammonia) in these three kinds of guano, may be roughly taken at 15 to 17 per cent. in the Peruvian, 9 to 12 per cent. in the Bolivian, and about 7 to 8 per cent. in the Ichaboe. The phosphate of lime, on the other hand, is the highest in the Ichaboe, the lowest in the Peruvian, and in the Bolivian intermediate between the two. To manure an acre of Turnips, therefore, with a given weight of the Bolivian guano instead of the Peruvian, is to supply to the land one-third less of ammonia but a larger quantity of phosphate of lime and some other matters. It is not my object to enter upon the nevertheless, at the present time, very important commercial and economical considerations connected with the substitution of the cheaper for the dearer kinds of genuine guano—we say genuine guano, for unfortunately, owing to the enormous extent to which the adulteration of this manure is carried on, a variation in name or price is by no means certain to secure to the purchaser only a different kind of the genuine guano. Nor shall we now stop to recall attention to the particular effects of an excess of ammonia in the manure, upon the acreage yield of the Turnip crop—a point upon which the decisions of practical experience would seem daily to become more in accordance with those of more direct experimental investigation. The only points which we shall now endeavour very briefly to illustrate are—1st, that the per centage of nitrogen in the Turnip bulb can be greatly increased by highly nitrogenous manuring; 2d, that the per centage of nitrogen in Turnips cannot be taken as a correct measure of their comparative feeding properties. In reference to the first of these two points, we showed in our paper on "Turnip Culture," and also in one on "Sheep-feeding," published some years ago, the effects of nitrogenous manures in increasing the per centage of nitrogen in the Norfolk White Turnip; and it may be useful here to subjoin an abstract of the results then given in reference to the Norfolk Whites by the side of some more recently obtained with the Swede. This is supplied in the following table.

TABLE I.—Showing the effect of highly-nitrogenous manuring upon the per centage of Nitrogen in Turnips.

STANDARD MANURES.	By Standard Manures only.	By Standard Manures, with cross dressing of ammoniacal salts.	By Standard Manures, with cross dressing of Rape-cake.	By Standard Manures, with cross dressing of Rape-cake and ammoniacal salts.
NORFOLK WHITES. Season 1845.				
The standard manure, farm-yard dung	1.56	2.54		
Do. do., minerals only (No. 1)	1.46	2.82	1.93	2.22
Do. do. do. (No. 2)	1.58	2.89	1.89	2.44
NORFOLK WHITES. Season 1848.				
The standard manure, minerals only.....................	1.56	2.08	2.36	3.20
SWEDES.—Season 1850.				
The standard manure, minerals only (No. 1)	1.48	1.77	2.15	2.60
Do. do. do. (No. 2)	1.30	2.20	2.24	2.58
Do. do. do. (No. 3)	1.28	1.30	2.08	2.47

The Rape-cake, of which there were in some of these cases very large quantities employed, itself contains about 4 per cent. of nitrogen; and hence the effect which it, when freely used, as well as the ammoniacal salts, is seen to have in increasing the per centage of nitrogen in the Turnip bulb. It would, however, be impossible in a mere notice of this kind to enter into any adequate explanation of the greater or less amount of increase in the per centage of nitrogen in the different cases. Some of these points we have alluded to more fully in our paper on "Turnip Culture;" and it is sufficient to say generally, that the variations depend chiefly upon the relative amounts of nitrogen in the manure, upon the season, and upon the state of maturity of the crop. It may, however, be mentioned that since the year 1845 the amounts of the ammoniacal salts have been diminished, and those of the Rape-cake considerably increased; and the effect of this upon the per centages of nitrogen in the produce is clearly seen. We have then, with different descriptions of Turnips, with different seasons, and with various proportions of nitrogen in the manure, the fact clearly brought out of a great increase in the per centage of nitrogen in the Turnip, by highly nitrogenous manuring. Indeed, we believe this result is in accordance with some of the published analyses of other experimenters; but the conclusion that has been drawn, viz., that the higher the per centage of nitrogen in the roots the better will they be as food for stock, would appear to be fallacious.

Dr. Anderson, in the report of his very elaborate investigation on the composition of Turnips grown under different circumstances, which he published in the Highland Society's Journal for 1851, apparently conforming fully to the current theory, in the more limited form of it recently put forth by Boussingault—namely, that the quantity of nitrogen is a very safe indication of the comparative values of different specimens of the same kind of food—says, "It is certain, however, that a tolerably close approximation is obtained, so long as we compare with one another similar kinds of food. Thus, for instance, to suppose a case, if we had two varieties of Turnip, one of which contained exactly twice as much nitrogen as the other, there is no doubt that their feeding values would be pretty exactly in the ratio of two to one."

There is, perhaps, no theoretical notion more currently taught, or more generally accepted, in agricultural chemistry, than that which assumes that the comparative values of foods generally are in proportion to their richness in nitrogen; and yet there is perhaps none more discordant both with common practice and with the records of direct experiment. In our various papers on sheep feeding, although at first we were ourselves to a certain extent inclined to adopt the current theoretical opinions, we have called attention to the bearing of the results on this point; and more particularly so in one on pig feeding, which will appear in the forthcoming Journal of the Royal Agricultural Society of England; as well as also in a paper now published as a report in the volume for 1852 of the British Association for the Advancement of Science. An examination of these papers, which relate not only to Turnips but chiefly to other foods, would show that by the results of direct experiment, we have been necessarily led to opinions opposite to those generally held by writers on the subject of the chemistry of feeding.

But confining our attention now exclusively to the subject of Turnips, we have given, in the upper portion of Table II., which now follows, a summary from our paper on sheep feeding (Journ. Roy. Ag. Soc. Eng., vol. x., part 1), of the results obtained by feeding sheep upon Norfolk White Turnips, which had been grown by different manures, and which contained accordingly very different per centages of nitrogen. And in the lower portion of the same Table (II.) is given a short account of the results of feeding experiments of a similar kind, not before published, in which Swedes, grown by different manures in the season of 1850, and also con-

taining very various per centages of nitrogen, were employed.

TABLE II.—Showing the per centage of Nitrogen in Norfolk White and Swedish Turnips, grown by different manures, in the seasons respectively of 1848 and 1850; and also the influence of this per centage upon the rate of consumption, and the increase of sheep fed upon them.

	By Mineral Manures only.	By Mineral Manures and ammoniacal salts.	By Mineral Manures and Rape-cake.	By Mineral Manures, and Rape-cake and ammoniacal salts.
NORFOLK WHITES. Grown Season 1848.				
Per centage of nitrogen in the dry substance	1.56	2.08	2.36	3.20
	lbs. oz.	lbs. oz.	lbs. oz.	lbs. oz.
Lbs. of fresh Turnips consumed per 100 lbs. live weight per week	164 0	157 12	173 12	156 4
Lbs. of dry substance consumed per 100 lbs. live weight per week	15 5	14 1	13 10	12 5
Oz. of nitrogen consumed per 100 lbs. live weight per week	0 $3\frac{3}{4}$	0 $4\frac{4}{5}$	0 5	0 $6\frac{1}{4}$
Lbs. of increase in weight of six sheep in 68 days	28 0	45 0	22 0	20 loss
Lbs. of dry substance eaten to produce 100 lbs. increase in live weight	2452 4	1428 0	2583 12	
Lbs. of nitrogen eaten to produce 100 lbs. increase in live weight	39 0	29 8	60 12	
SWEDES. Grown Season 1850.				
Per centage of nitrogen in the dry substance	1.35	1.76	2.16	2.55
	lbs. oz.	lbs. oz.	lbs. oz.	lbs. oz.
Lbs. of fresh Swedes consumed per 100 lbs. of live weight per week	85 10	92 12	90.12	89.8
Lbs. of dry substance consumed per 100 lbs. of live weight per week	9 5	9 13	9 5	9 0
Oz. of nitrogen consumed per 100 lbs. of live weight per week	0 2	0 $2\frac{3}{4}$	0 $3\frac{1}{5}$	0 $3\frac{2}{3}$
Lbs. of increase in weight of 27 sheep in (about) seven weeks	114 loss	204 0	66 0	50 0
Lbs. of dry substance eaten to produce 100 lbs. increase in live weight	...	1165 0	3402 0	4475 0
Lbs. of nitrogen eaten to produce 100 lbs. increase in live weight	...	20 8	73 8	114 2

The Swedes consumed in the latter set of experiments were, like the Norfolk Whites in the former one, grown in our systematic course of Turnip experiments, upon land which has been devoted to that crop year after year since 1843; manures of the same description, but sometimes varying in the quantities employed, having been applied to the same plots throughout, Swedes being, however, substituted for Norfolk Whites, in the season of 1849, and since. For the purposes of the feeding experiment 10 tons of Swedes were weighed out from the produce of each of the four descriptions of manure indicated in the table; and each of these lots of 10 tons, the produce of a particular kind of manure, was allotted to 27 sheep. The four sets were folded side by side in a Grass field (which had previously been fed down quite close); and no other food was allowed, though of Swedes, after being cut, they were permitted to eat as many as they chose.

It is seen that whether we look to the amounts of constituents consumed by a given weight of animal within a given time, or to those required to produce a given amount of increase—there is a considerable difference between the results of the Norfolk Whites and the Swedes, in the quantities both of the nitrogen and of the total dry substance consumed under equal circumstances, the amounts required in the Norfolk Whites being always much greater than in the Swedes. Thus, taking the results of each variety of Turnips separately, and looking first to the amounts consumed by a given weight of animal within a given time, there is much less of uniformity in the quantities of nitrogen so consumed in the Turnips grown by different manures, than there is in those of either the fresh Turnips or the dry substance.

Looking next to the question of the amount of constituents required to produce a given result, and taking first the results of the Norfolk Whites, we see that, excluding those grown by mineral manures only, which were too far grown and "pithy,"—those of the other three lots, which contained the lowest per centage of nitrogen, and in which the animals consumed the least of it, gave the greatest increase; whilst the sheep fed upon the Turnips containing the highest amount of nitrogen lost instead of gained in weight. The result with the Swedes is very similar. In this case, however, there is an actual loss of weight, upon the Turnips grown by mineral manures alone—which, being much too far grown were not only, like the Norfolk Whites upon the same manure, very pithy, but they contained a per centage of nitrogen below the usually observed amount. Again, excluding, then, this lot, we find, that of the other three those Swedes containing the lowest per centage of nitrogen gave the best result, and those containing the highest per cent. the worst result.

Further, when we compare the amounts of food consumed to produce a given amount of increase in these experiments, with the amounts in other cases with foods of known superior quality—it is evident that those Turnips which in each set of experiments respectively gave the best result, were, notwithstanding the somewhat artificial circumstances of their growth, well adapted as food for stock. But it is equally clear that in all the other cases the bulk of matter which the animals were enabled to take into their stomachs contained barely enough of the important digestible non-nitrogenous constituents of food, to support the natural functions of the body.

We cannot, however, enter into a detailed consideration of the circumstances probably affecting the comparative feeding value of the Turnips, in the different cases—any more than of those yielding the particular per centages of nitrogen observed in the Tables—in, as we have said, a mere notice of this kind. Our only object at the present time, is, whilst the subject of the effect of highly nitrogenous manuring upon the Turnip crop is before the public, to fix attention upon the general facts so clearly brought out in the experiments quoted—namely, that the per centage of nitrogen in the Turnip is very much increased by the free use of highly nitrogenous artificial manures—and that a high per centage of nitrogen in the Turnip is no sure indication of increased feeding value—but, on the contrary, that such an increased per centage beyond a somewhat narrow limit would seem to be injurious. *J. B. Lawes.*

REPORTS OF HARVEST OF 1853.

COUNTIES.	WHEAT. Bushels per acre.	WHEAT. Compared with an average crop.	BARLEY. Bushels per acre.	BARLEY. Compared with an average crop.	OATS. Bushels per acre.	OATS. Compared with an average crop.	BEANS. Bushels per acre.	BEANS. Compared with an average crop.	PEAS. Bushels per acre.	PEAS. Compared with an average crop.
SCOTLAND.										
ABERDEEN	...	...	...	One-fifth under	...	One-fourth under	...	...	...	...
FORFAR	27	One-fourth under	36	Good	40	One-sixth under	26	One-fifth under	22	One-fifth under
	30	One-sixth under	43	Average	50	One-sixth under	40	One-fifth under	...	...
FIFE	25	One-fourth to one-third under	45	One-fifth under	50	Average	48	Average	...	...
STIRLING	...	One-sixth under	...	Average	...	One-sixth under	...	One-tenth under	...	...
EAST LOTHIAN	30½	One-fifth under	51	Full	60	Over	32	Full	...	...
MID-LOTHIAN	30	Rather under	48	Full average	48	Full average	32	Rather under	...	...
	...	One-fifth under	...	One seventh und.	...	One-third under	...	...	...	...
LANARKSHIRE	26	One eighth under	...	...	40	One-tenth under	29	One-ninth under	...	...
RENFREW	32	One eighth under	42	One-fifth under	36	One-sixth under	40	Average	...	...
AYR	24	One-sixth under	...	...	40	Near	32	Average	...	...
BERWICK	26	One-12th under	42	Average	42	Average	...	...	...	...
ROXBURGH	24	One-sixth under	32	Average	33	One-11th under	24	One eighth under	24	One eighth under
	20	One-sixth under	33	Average	33	One-ninth under	27	One-tenth under	21	One eighth under
DUMFRIES	...	...	38	Average	33	One eighth under	...	...	...	...
	20	One-fourth under	32	One eighth under	28	One-seventh und.	32	One eighth under	...	...
WIGTON	27	Average	40	Average	30	Under	30+	Under	...	...
ENGLAND.										
NORTHUMBERLAND	20	One-fourth under	32	Average	36	Average	...	...	...	...
	20	One-third under	33	Average	48	Full average	...	Full crop	...	Full crop
CUMBERLAND	24	One-fourth under	36	Average	40	Average	45	One-eighth over	27	Average
	18	One-fourth under	10	Average	12	Average	...	...	...	...
DURHAM	12	One-half under	20	...	20	...	14	...	10	...
	...	Much under	...	Much over	...	Under	...	Average	...	Average
WESTMORELAND	24	One eighth under	33	One-tenth under	36	One-ninth under	30	One-fifth under	...	...
	22	Under	38	Full average	40	Four above	...	...	...	...
YORKSHIRE	27	...	40	...	48	...	32	...	32	...
	25	One-fourth under	40	One-tenth under	44	...	...	...	...	...
	24	One-sixth under	36	Average	44	Under	36	Average	...	...
	18	One-fifth under	32	Average	...	...	24	Average	...	...
	20	One-fourth under	40	Average	...	...	...	Average	...	...
	...	One-third under	...	Average	...	Average	...	Under average	...	...
LANCASHIRE	...	One-fourth under	...	...	...	Rather under	...	...	...	...
	22	One-third under	45	Average	45	Under	...	...	...	...
	28	One-third under	38	One-fourth under	50	Average	...	...	...	...
	22	Much under	39	Full average	36	Not average	...	...	...	...
CHESHIRE	16	One-third under	30	Average	35	Average	20	One-third under	20	One-third under
	...	Much under	...	Average	...	Average	...	Good	...	...
	18	One-third under	40	Average	40	Average	...	...	...	...
DERBY	...	...	...	...	36	One-third under	...	...	...	...
	25	One-fourth under	...	...	40	Average	...	...	...	...
NOTTS	24	One-third under	40	Average	...	...	24	One-third under	24	One-third under
	20	One-third under	36	Average	36	Under	20	One-third under	20	One-third under
	22	One-third to one-half under	36	One-third under	...	...	...	Under	...	...
LINCOLNSHIRE	26	One-third under	32	One-sixth under	50	One-fifth under	34	One eighth under	28	One-third under
	32	One-ninth under	...	...	44	One-fifth under	...	...	20	One-third under
	28	One seventh und.	40	One-10th under	...	...	...	...	...	...
SALOP	15	One-third under	20	Under	...	...	...	...	...	...
STAFFORDSH.	16	Near one half und	35	One eighth under	40	...	20	...	20	...
LEICESTERSHIRE	22	One-fourth under	40	Average	44	Under	34	Over	30	Average
	20	One-fifth under	32	One-sixth under	40	One-sixth under	...	...	...	...
RUTLAND	28	Average	34	One-sixth over	35	One-eighth over	24	Average	24	One seventh over
HEREFORDSHIRE	25	One-sixth under	30	One-fourth under	...	...	...	...	...	...
	20	One-fifth under	30	One-tenth under	...	...	...	...	...	...
WORCESTER	18	Two-fifths under	...	Average	...	...	...	Near average	...	Deficient
	12	One-half under	33	Average	...	Average	36	Over average	...	Very bad
	16	One-third under	36	One-sixth over	...	...	36	One-sixth over	10	Two-thirds under
	18	One-third under	40	Average	40	Average	24	One-fifth under	24	Average
	19	Two-fifths under	28	One-third under	30	One-fourth under	24	One-fifth under	12	One-half under
	18	Two-fifths under	30	One-sixth under	30	One-fourth under	30	Average	...	Very bad
WARWICKSH.	...	Not half	...	Much under	...	Rather under	...	Average	...	Various
	18	Two-fifths under	40	Average	...	Much under	36	Average	24	One-fifth under
	19	One-third under	32	One fourth under	...	...	27	One-sixth under	22	One-fourth under
NORTHAMPTN.	24	Rather under	40	Average	40	Under	32	Average	24	Under
	24	One-fourth under	48	Full average	24	One-sixth under	40	Full average	12	Two thirds under
HUNTINGDON	18	One-third under	36	One-tenth under	...	...	36	Average	32	Average
CAMBRIDGESH.	28	One-fifth under	...	...	56	One-tenth under	34	Average	...	...
NORFOLK	20	One-third under	32	One-fifth under	...	...	...	...	...	...
	30	One eighth under	44	Average	48	One-seventh und.	36	Average	16	One-half under
	22	One-fifth under	32	One-third under	48	One-fourth under	24	One-third under	...	...
SUFFOLK	...	One-third under	...	Barely	...	...	...	One-fifth under	...	One-third under
	20	One-fourth under	32	One-fifth under	...	...	16	Two-fifths under	10	Two-thirds under
	20	One third under	36	Average	52	One-tenth under	22	Two-fifths under	16	Half
	20	One-sixth under	30	One-seventh und.	48	Under	24	One-seventh und.	16	Very bad
ESSEX	16	Two-fifths under	28	One eighth under	32	One-sixth under	24	Average	16	One-third under
	18	Two-fifths under	28	One-fourth under	40	Average	40	One-fifth over	14	Two-fifths under
	14	One-half under	28	Two-fifths under	36	One-fifth under	20	Average	16	One-third under
BEDFORDSH.	15	Two-fifths under	32	One fifth under	40	One-sixth under	30	Average	25	One-sixth under
BUCKS	14	One-half under	28	One-fifth under	30	One-fourth under	24	One-fifth under	...	...
	24	One-third under	38	One-fourth under	34	Much under	40	Over	...	...
OXFORD	16	One-third under	40	Average	45	Average	...	Over	...	...
	24	One-fourth under	40	Average	24	Under	36	Over	18	One-fourth un
GLOUCESTER	20	One-third under	30	Average	30	One-fifth under	30	Average	20	Two-fifths un
	18	One-fourth under	32	Average	30	One-fourth under	24	One-fourth under	32	Average
	20	One-fourth under	38	Average	40	Average	26	Average	18	Near
SOMERSET	24	Average	32	Average	40	Average	28	Average	16	One-third under
WILTS	22	One-third under	28	Average	40	Average	28	Average	20	One-fourth under
	22	One-third under	...	...	40	One eighth under	24	Average	24	One-sixth under
	20	One-third under	36	Average	40	Bad	32	Average	26	Under
	18	One-fourth under	30	One-sixth under	40	Average	38	One-sixth over	28	One-fifth under
BERKSHIRE	16	One-third under	36	One-tenth under	44	One-12th under	28	One eighth under	26	Over
	20	One-third under	40	One-12th under	48	One-seventh und.	30	Under	24	Under
	25	One-third under	40	...	...	...	32	Fair	...	...
SUSSEX	12	One-half-under	28	One eighth under	28	One-fourth under	20	Two-fifths under	20	One-third under
	20	Two-fifths under	32	One-fifth under	60	Under	20	Under	10	Much under
SURREY	16	Half under	24	One fourth under	40	Average	...	...	...	...
KENT	28	One-third under	40	One-sixth under	50	One-fifth under	32	One-seventh und.	24	One-third under
	20	Two-fifths under	28	One-fourth under	48	One seventh und.	48	One-third over	32	Average
	26	One-sixth under	...	...	52	One-tenth under	...	...	...	...
HANTS.	16	One-third under	16	One-third under	...	Under	12	Two-thirds under	...	One-fourth under
	12	One-half under	16	Two-fifths under	24	Two-fifths under	16	One-fourth under	12	One-half under
	18	One-third under	28	One-seventh und.	40	Average	26	Over	24	Average
	18	Two-fifths under	32	One-ninth under	48	Average	20	Two-fifths under	18	Two-fifths under
	16	Nearly one-half	28	One eighth under	44	One-12th under	20	One-third under	18	Two-fifths under
	20	Two-fifths under	32	One-fifth under	56	One eighth under	20	Three-fifths und.	8	Two-thirds under
	16	One-third under	26	Average	36	Average	20	One-sixth under	16	One-third under
DORSET	24	One-half under	32	Not average.	38	Average	...	...	...	...
	12	More than half under	22	One-fifth under	24	One-fifth under	...	...	...	Failure
	28	One-fifth under	36	One-fifth less	...	...	32	One-fifth under	40	One-fifth over
DEVONSHIRE	12	One-fourth under	30	Average	...	...	...	...	...	...
	...	Half a crop	..	Average	...	Average	...	...	...	...

Home Correspondence.

Gorse Cover.—In answer to inquiry by "Fox" as to how to get up a Gorse cover, I should recommend the following plan:—First, have the ground dug 2 feet deep, that is, the upper and sub-soil dug, and then sow it with Oats and Gorse together, and cut the Oats when ripe. I have obtained a much better plant of Gorse by sowing with Oats than without. Gorse should not be put in too forward; being delicate, it is apt to be hurt by the frost. April is a good time. *Venator.*

Storing Swede Turnips.—This operation, like many others, has not yet attained to perfection, nor have your excellent correspondents the writers of the Calendar (as far as I can recollect), alluded to this subject at such length as would justify others in adopting their methods. It is therefore with the view of bringing it under their notice that I have recurred to the subject, and hope you will kindly devote a little space to what may be considered the best methods known of preserving the Swede till spring. Hitherto I have selected the following as being the safest way, viz.:—The first thing done is to select a piece of dry ground in the most convenient place; then the Turnips (which should be ripe) are pulled and carefully topped, tailed, and led in dry weather, when they are piled in heaps about 6 feet wide at the base and 3 to 4 feet high; these proportions in my opinion are the most convenient for covering, which should consist of short loose straw, and be laid on first about 6 inches in thickness, then covered with a coat of long straw about 2 inches thick, which should be laid on in the manner of thatch, and tied down with small ropes, and fastened in the sides or to the ground with pegs. The portion of the Turnip crop which is to be consumed on the land by sheep towards spring we protect in the following way:—The double mould or other plough is introduced between each drill a good depth, so as to cover the bulbs completely with a smooth furrow, in which state they are protected both from severe frosts and draughts, as the latter in spring are equally injurious. Towards this period they will begin to grow, and take severe hold of the land, when they are uncovered by heavy harrows, and collected into small heaps, which may be covered over with straw or with shaws until they are eaten off at seed time. Were they allowed to remain fixed by the roots even for a short period at this time of year, much of the nutritive properties would be lost by being converted into woody fibre. *P. Deane, Houghton, Dec.* 19.

Gas Lime.—In your last number's "Notices to Correspondents" I find—"Lime fresh from the kiln and gas lime are not capable of comparison. The latter is to be had cheapest (money value) and it is generally, we believe, intrinsically worth more than the other. Its value arises from a portion of it having been so acted upon, that by subsequent exposure to the air that portion becomes gypsum." Some years ago I applied to Professor Johnston, then chemist to the Agricultural Chemical Association of Edinburgh, for his opinion on the relative value of these articles; I subjoin his reply. I should be glad to have your opinion as to its correctness, or whether it can be reconciled to the preference you give to gas lime, on the ground of its convertibility to sulphate of lime—"Unless you had sent some of the gas lime for examination, it is impossible to give an exact answer to your question; but, from the examination of other gas limes, I suppose that yours may consist in a cwt. of about—water, 56 lbs.; carbonic acid, 20 lbs.; lime and sulphur, 36 lbs.; total, 112 lbs.; so that in 112 lbs. you have only 36 lbs. or thereabouts of lime such as you get it from the kiln in the state of shells." *C. Ley.* [We do not think that Professor Johnston's reply is inconsistent with ours. His "lime and sulphur" will, by exposure to air, become "gypsum," so that ultimately a certain portion of the whole is gypsum and the rest chalk, in such a mixture as is, we believe, worth more per ton in our market than an equal weight of lime shells at the kiln. The two, however, differ altogether in their uses, and hence are not capable of comparison directly, *i. e.*, one may be useless and the other useful, and *vice versâ*, according to the circumstances of the soil to which they are to be applied.]

Steaming Hay.—Steam being an excellent searching cleanser, I willingly store up the fact that it is a good means of sweetening spoiled hay; but I wish to be informed how sweet hay is improved by steaming? I can understand how vegetables with much starch (such as Potatoes) are improved by this operation, the starch being rendered soluble, which we know it is not in cold water. I believe the quantity of starch in hay is not great; are the flesh-forming substances improved as food for cattle by being cooked?—or are they only rendered more palatable, like Bean and Wheat straw? *W. S.* [It does improve things that are not spoiled—at least, cattle think so. Try its effect on good clean Oat straw chaff—it improves the smell, and we doubt not the flavour too; and so induces the cattle to consume more than they otherwise would, though we do not suppose it is intrinsically more nourishing from the process.]

Interest on money borrowed for Draining.—There is at this present time much agitation amongst tenant farmers of lands in my immediate vicinity; a locality from its elevation causing a climate wet and late in its seasons; and, on that account, almost exclusively confined to permanent Grass. The remarks I here wish to call attention to are upon the charges made for interest upon the public money borrowed to be expended in underdraining. This excitement, so far as I can judge, will seriously here increase, and I much fear must cause the ultimate abandonment of many of the holdings, held for generations past, unless great sacrifices be made by the owners of the soil. This state of things has all arisen for want of a little thought, as poor Richard says in his "Almanack," in not taking into consideration the vast difference between Grass and arable lands; for I hold this as an incontrovertible axiom, that the larger the expenditure necessary to produce and reap the crops, the larger the margin for the cost of permanent improvement. I trust some of your correspondents will canvass the subject more fully, and not allow me to be led away to assert that it is rare to find land in Grass for tenants to pay fair interest for deep drainage improvements even upon that of the first quality. I speak from long experience as a landlord. *C. P.* [We do not imagine that many will agree with you. Undrained pasture lands will generally benefit by draining sufficiently to pay for it, unless the work be done injudiciously or expensively.]

Rice.—A letter in your paper to the purport that Rice is neither good for, nor popular with, the peasantry of England, has caught my eye. I beg to say that in my parish I have for many years sold rice at cost price, or may be rather less, to the poor around me. It has been bought eagerly by an ordinary agricultural population. I attribute this to their being taught to cook it properly, which I have taken pains to do with the girls in the village school; and I have traced the taste for this useful article of food, and the knowledge of its value, to the school, and the manner there inculcated of soaking Rice overnight, and slowly simmering it for hours before it is eaten, adding such flavouring as can be afforded. A little Oatmeal mixed with the Rice removes all astringencies, and makes it more agreeable to some palates. I think it is really of importance that Rice should be understood in a season of so much scarcity and high prices. *A Country Squiress.*

Farmers' Clubs.

LONDON: Subjects for discussion, 1854. Chairman for the year, W. Fisher Hobbs, Esq:

	Proposed by
February 6.—The present imperfect mode of taking the Corn Averages. (It is proposed to follow this up by a deputation to the Board of Trade on the day after the discussion. A general invitation is also given to the members of local farmers' clubs to attend this meeting)...	Mr. W. PAIN, of Compton, Winchester.
March 6—Agricultural Statistics, and the best Mode of Collecting them	Mr. W. BENNETT, of Cambridge.
April 3.—On the Application of Manure in a Liquid State—to Roots, Grasses, and Grain Crops	Mr. W. C. SPOONER, of Eling, Hants.
May 1.—On the Diseases and Blights affecting Plants, and the best Means for their Cure or Prevention	Mr. R. BAKER, of Writtle, Essex.
June 5.—The present Policy of our Labourers' Friend Societies	Mr. J. C. MORTON, Upper Wellington St., London.
November 6.—How can the Letting and Hiring of Land be effected to best insure the General Interests of the Community at large?	Mr. S. CHEETHAM, of Tugby, Leicester.
December 5.—On the Results arrived at from the several Systems of Drainage in Practice during the last few Years ...	Mr. J. BAILEY DENTON, of Gravely, Herts.

The discussions will commence at half-past Five o'clock, P.M. There are no meetings for discussion in January, July, August, September, or October.

Poultry.

THE METROPOLITAN SHOW.—We believe we must at last discontinue the use of the term "poultry mania." That which has continued during a period of five years with increasing interest may safely lay claim to a more rational appellation, and must rest on a more solid basis. It is now proved beyond a doubt that the previously neglected question of poultry has assumed that measure of importance which legitimately belongs to it. In addition to the pleasure derived from keeping poultry, the friendly competition at exhibitions, while it offers an inducement to breed superior birds, at the same time provides a remunerating market for them. These shows also form an immense "conversazione," where amateurs meet, where knowledge and experience are acquired and communicated; where points are defined, and where the utility and profits of the various breeds are settled. For these reasons, to describe the different shows as they occur, is to chronicle an uninterrupted course of success; save cases where, perhaps, three very small shows fill the space, which would be more profitably occupied by one larger. This is, however, for the consideration of the local committees, and does not impugn the justice of our preceding remarks.

The great Metropolitan Poultry Show of the past week had 1139 entries of poultry, 425 pens of pigeons, and 50 of rabbits, making a total of 1614 competing pens. There lacked not beautiful and perfect specimens of almost every breed, although some of the most celebrated exhibitors were prevented by the snow-storm of last week from sending up their birds. Following the classification adopted at Birmingham, the prize list opens with adult Spanish, producing 15 competitors. The prizes were awarded in order to Messrs. Fox, Botham, and Fisher. The chickens numbered 36, and Messrs. Plummer, Owen, and John Taylor, jun., took the prizes. Miss Shaw, and Messrs. Botham and Crawther were commended. This brings us to a novelty in prize lists, namely, two classes, one for a single cock and one for a single hen. The two prizes for cocks were awarded to Mr. Davies, of Hounslow, and Mr. Rake, of Bristol. For the hens, Mr. Plummer, of Bristol, and Mr. Mold, of Belper. Nowhere is the increase of competition more perceptible than in the Dorking classes; in that for a cock and two hens there were 27 entries, and here the prizes went to the well-known names of the Rev. Mr. Boyes, Mrs. Finch Noyes, and Mr. W. Smith. In the sixth class, for a cock and two pullets, were 43 pens, many of them of great merit. The difference in the prize pens was but trifling, but they were taken as follows:—Mr. Smith, Mr. Terry, and Mr. Boyes. The next was the competition confined to cocks only, and here both prizes were easily gained by Mr. Fisher Hobbs. A pen of this gentleman's birds was purchased for his Royal Highness Prince Albert. Those for hens were awarded to the Rev. J. Boyes and Mr. Bleabington. Although the White Dorkings were as usual weak, still there was an improvement. The awards in the two classes were to Messrs. Edwards and Jennens, and Messrs. Rawson and Davies.

We now enter upon the Cochin China classes, which have added to the success that seems to belong to some breeders, and especially to Mr. Fairlie. In class 11, from 21 exhibitors, Mr. Fairlie took both the first prizes. The honour of carrying off the first in class 12, where 134 pens entered the list, belonged to Mr. Steggall, of Weymouth; second and third went to Mr. Fairlie. The numbers of competitors in some of these classes must, of necessity, weaken the others, and in 13 there were only 13 entries—in 14, 20. Here the awards were in favour of Messrs. Bridges, Fairlie, and Strutt; and Messrs. Fairlie and Chater. Class 15 again presented a large array of entries, 81 in number. It was for a cock and one hen of any colour. This will always be a favourite arena; numbers of amateurs can show a capital pair, who would not dare to hope for success, if it were necessary to produce four birds. The judges had but two prizes to award among these numerous competitors, and, after much labour, they went to Messrs. Gilbert and Gandy. The best white Cochin Chinas in class 16 belonged to Mrs. Herbert, Messrs. Reynolds and Rake, and were rewarded accordingly. The chicken class produced 25 entries, and added another triumph to those already recorded of Mr. Eason, Mrs. Herbert, and the Rev. S. Allen. The adult class of blacks was weak, and only one prize was given—to Mr. Fox. But in revenge 19 pens of chickens were sent; this we believe is one of the largest classes yet seen of these beautiful birds. Every bird was taken out and accurately inspected in strong light, and the result was, that five cocks were found without apparent foul feathers. The prizes were awarded to Mr. Blake, of Birmingham, and Mr. Harding. Next came the contest for the best cock. Twenty-four birds competed, and Messrs. Rawson and John Taylor, jun., took the honours. Forty-one hens were entered in class 21, and Messrs. Fairlie and Emery were successful. Next in order is the great novelty, viz., a class for Brahma Pootras. These birds after a long occasional appearance among the anomalies that make up the "various" class, have taken their stand as public favourites, and heading their list with the name of H. R. H. Prince Albert, brought 34 competitors. The first prize was gained by a pen of transcendent merit, which far outstripped all others, and belonged to Mr. Davies, of Spring Grove, Hounslow, and the second by a capital pen belonging to Mr. Gilbert, of Kensington. The Malays were better than usual, and the prizes went to Messrs. Cricket, Hedges, Leighton, and Owen.

The length to which a report runs, necessarily compels us to condense some of the more numerous classes, such as the game, but one thing will excuse it in this instance, which is, that the same birds are successful whenever their owners send them, thus showing that the necessary qualities insure success. First prizes for these birds were taken by the Rev. T. L. Fellowes, Messrs. Hatfield, Thumall, Lowe, Jennens, Choyce, and Fairhead. Second, by Messrs. Monsey (3), Farmer, Adkins, Vivian, and Freere. The golden pencilled Hamburghs merited a commendation for the whole class. The first prizes were awarded to the Rev. F. W. Freeman in both the adult and chicken classes. The second to Mr. Rawson and Mrs. Mills. In gold spangled, the first prize went to Mr. Mold and Mr. Henry Fookes; the second to Mr. Adkins and Mr. Dixon. The adult class of silver pencilled was not a good one. The only prize awarded was to Mr. T. M'Cann. The chickens, however, made amends, by exhibiting in numbers and quality that justly gave them importance. After much competition, the Rev. F. W. Freeman and Mr. Aberdein were successful. Classes 39 and 40 of silver spangled Hamburghs were also excellent, and we were glad to notice the absence of the hen-tailed birds, evidently crossed with laced bantams. The Rev. T. L. Fellowes, and Mr. Edwards, of Bulstrode, took first, and Messrs. Jordan and Dixon second prizes. The first prize for Black Polands with white crests, as usual, was taken by Mr. Adkins, of Birmingham. In chickens, Mr. Edwards, of Bulstrode, and Mrs. Mills, were successful. Class 43, for golden Polands, awarded their favours to Messrs. Bush and Rawson. Class 44, chickens of the same, to Messrs. Vivian and Kostin. The next in order were the silver Polands, and a beautiful class: Messrs. Adkins and Baker took the prizes; the chickens were equally meritorious. Messrs. Edwards, of Bulstrode, and Boulnois, jun., were here successful. The honour of class 47 went to Messrs. Dutton and Fairlie, and Mr. Vivian took both prizes in class 48. The various classes were rich in its curiosities, and the following were distinguished by the judges:—Mr. John Taylor's Andalusians; Mr. H. F. Davies's Rangoons; Mr. Higgs's, of Southampton, birds; Rev. T. L. Fellowes' black Hamburghs. Second prizes: Mr. Fairlie's dum-

pies; Mr. Vivian's frizzled and Normandy; Mr. J. C. Mold's rumpless.

We are bound to express our continued disapprobation of the next prize, viz., one for cross-bred birds. Judges cannot give satisfaction in such a class, as they have no rule to guide them; one prize was awarded to Mr. Thomas Sheen. The bantams were good, but not equal to many exhibitions we have lately visited. The first prizes, both in gold and silver, went to Mr. Uriah Sharey. The second to Messrs. Adkins and Mousey. In white, first to Mr. W. Curtis; second to Mrs. Caroline Brace. In black, first to Mr. Mousey; second to Mr. F. L. Astley. We are bound to mention in the class of "any other variety" some beautiful duck-wings, such as we saw last year, and which deservedly took first prize; the second went to Mr. Vivian for some remarkably handsome speckled and top-knotted birds. The geese were not a very good class; both prizes were gained by Mr. Williams, of Reading. Aylesbury ducks were excellent; Messrs. Terry and Brevington took first and second. Messrs. Green and Brooksbank were the successful competitors in Rouen; Messrs Fairlie (2), Botham, and Taylor in other varieties. It is almost unnecessary to say that Mr. Fairlie took the two first prizes for turkeys. Mr. Williams, of Reading, took the third. The show was deservedly successful, and all concerned exerted themselves most laudably. Their energies were put to the test, as Mr. Catling, certainly one of the most indefatigable secretaries in England, was absent from illness. The judges were—E. Hewitt, Esq., Eden Cottage, Spackbrook, Birmingham; W. Symonds, Esq., 6, Belfield Terrace, Weymouth; Mr. John Baily, Mount Street, Grosvenor Square. We should add, the commendations were deservedly so numerous, we must refer our readers to the prize lists for them. We would also warn exhibitors that in classes for cocks and two hens, disqualification follows if an extra hen is shown. Much trouble will be avoided, both to committee and judges, if more pains are taken in sending Hamburghs, to be sure they are accurately described, as it constantly occurs that pencilled are entered for spangled, and *vice versâ*.

Calendar of Operations.

JANUARY.

FORFARSHIRE GLENS.—During the past two months the weather has been very changeable, but, upon the whole, seasonable and favourable for farming operations. The miserable remains of the grain crops were carried home about the middle of November; the produce is even more deficient than during harvest was anticipated; no drying winds have come to carry off the superfluous moisture, consequently the deteriorating process has been still going on, and good seed and good meal will be valuable in this quarter before May month. Ploughing stubble and lea has progressed with but little interruption since harvest, and the work is well forward. Turnips have improved vastly, and, although not a full crop, are much better than was at one time expected; they are now being taken up and stored when weather will permit, to save them from the vermin, and to have a supply during frost. Feeding stock have improved apace, the Turnips having been generally fresh, and the weather mild. Where there is rough pasture, the young cattle still go out so long every day; good fodder is likely to be scarce before the end of winter, and is now carefully husbanded. The sheep are now generally gathered from the glens, well conditioned and healthy, and sent to winter quarters, in flocks of from 300 to 400 each, under the charge of one man and two dogs. Besides protecting and feeding the flock, the shepherd has to attend to the state of the fleece; so soon as any begin to break in the wool, from whatever cause, a remedy must be immediately applied. We find winter keep becoming yearly more difficult to be got. Many tenants of arable farms are prohibited from letting the foggage of their fields for sheep, as it is said, lest the sheep should break down the fences; but some would infer the true cause to be, lest the shepherd and his dogs should disturb or kill the game. The tenant is bound by his lease to keep up the fences; it therefore appears rather absurd that he should be denied a means of improving his farm and increasing his income for fear of breaking them down. We have been often told that the interests of landlord and tenant are one, but we feel the contrary. Doubtless it is the interest of both that the soil should be brought under the best system of cultivation, and made to yield the greatest amount of produce, but that is not always kept in view; smaller interests often press in from both sides, and mar the business. A sporting laird will prefer abundance of game and good sport to abundant crops and good husbandry. A narrow-minded tenant will prefer a small present advantage to a large one more remote, and will therefore often save his money when he ought to expend it. Farm letting is now-a-days quite a commercial transaction, and there the interests of landlord and tenant are as directly opposed as those of buyer and seller. As a general rule, the highest offerer is preferred, if he is supposed capable of fulfilling his engagements; but if the landlord would look to his own true interest, he would have regard to something else in his tenant besides the likelihood of his paying the rent. He should, if possible, choose a man of character, of education, and of some practical knowledge of his profession. Without the first he will, right or wrong, turn everything to his own advantage, and will prove to his landlord a continual source of annoyance; without the second he will rarely make progress; and without the third his progress, if any, will likely be in an unprofitable direction. Every landlord is entitled to the full value of his land; but if at any time he shall choose a tenant merely because he is the highest bidder, without regarding the other essentials, ten to one but at some future period he must repay all—and more than all—the additional rent he gets by so doing. A lease, like every other bargain, ought to be fully explained at once, and bear upon the face of it every payment of every kind which the tenant is required to make in the name of rent. The landlord has no right to come in at an after period with a demand for the performance of extra labour, for butter, cheese, and chickens; because at one time these, and similar payments in kind, constituted the rent, and have in many cases continued to be paid in addition to the rent. Whatever the landlord requires, either in labour or produce, beyond what is specified in the "tack" ought to be paid for; and when a lease is entered upon, the tenant ought to be as independent in his own sphere as the landlord is in his—nothing should be extorted by, and nothing yielded to, the mere force of influence. Up to Christmas-day, which was very fine, winter had only been seen waving his banners on the distant hill tops; since then he has come down upon us in his fiercest form—intense frost, heavy snow-showers, and strong north wind. The weatherwise say it is too severe to continue long; wise may they be. *S.*

RHINS OF GALLOWAY, *Jan.* 10.—Until yesterday ploughing has been at a standstill for nearly a fortnight. We have had a thaw for two days, but frost has again set in, which will be injurious to the young Wheat, much of which being late sown is not yet above ground. There has been a larger breadth of Wheat sown this season than on many former ones, the great desire being with most farmers to have it sown before spring, as that which was deterred till then has proved most deficient both in quantity and quality for several years past. Grain has been threshed off freely, to supply stock with fodder; it has required a much larger supply of food than usual to keep young stock in condition during the severe weather. Feeding stock are progressing satisfactorily, though in some cases they have suffered a little from not having a sufficiency of Turnips stored to meet an emergency; it should always be a first consideration in good management to make provision for any contingency which is likely to arise. Sheep and Turnips have had rather hard times of it of late, though they have had one advantage—having a dry bed. Several lots of feeding cattle have been sent to the Glasgow market, and realised good prices, from 50*s*. to 60*s*. per cwt., according to quality. Fat sheep have been making 7*d*. per lb., so that even with the high in-laid price of feeding stock, they are leaving a fair profit. Grain markets are still on the advance; 9*s*. per bushel can now be obtained for Wheat of good quality; and Oats are worth about 3*s*. 2*d*. per bushel. Work for labourers is plentiful; but of late they must have been pretty hard up, draining and other outdoor work not being able to be proceeded with, which is the more to be regretted, as the price of provisions is very high. We are much gratified to see that you propose giving a more full account of grain and cattle markets than usual, which will be a great boon to most of your readers.—[Only in the Monday's edition.]

SOUTH LANCASHIRE.—We have closed the past eventful year of 1853 and commenced the new year 1854 with a very severe frost and a great quantity of snow, so much so that all our canals are impassable, and that the ice could not be broken this morning with even eight or nine horses, causing scores of flats laden with coals and other commodities for Liverpool steamers exportation, and the great Northwick salt works to be at a standstill. The contents of our stack-yard are fast being diminished. Hay is rising, although very inferior to past years, owing to the wet weather. Milk cows are selling high, and milk has a tendency to partake with other articles. Butter, too, has risen from 10*d*. to 1*s*. 3*d*. and 1*s*. 4*d*. per lb., whilst store pigs are selling at enormous prices, considering the high price of produce which parties will have to pay for their keep, and taking into account the vast number of pigs and their sties which have been ordered to be removed out of our large towns on sanitary grounds: fat pigs are realising something like 6½*d*. and 7*d*. per lb., eggs 9 and 10 for 1*s*., and poultry equally as dear. Winter fruit is also selling well, but scores of farmers have none to sell, where formerly they had loads to dispose of, owing to the obnoxious vapours from upwards of 40 copper, chemical, and alkaline works in the St. Helen's and Wigan districts, and which continue to do everlasting damage to all around, for last year we had four red carts newly painted, and within the last month they are all turned lead or slate colour. Our varnished Whitechapels are also turned, but into what colour no one can tell. Our brooks at present are a treat, for the ice is blue, green, black, white, or chocolate, and, indeed, almost every colour you could name, and that within the space of 100 yards; our field gates, door posts, and window frames, are all one uniform lead colour; our pocket keys, silver, copper, and even gold is instantly changed in our pockets; our coppers, brasses, and chimney ornaments are also varnished a Wimeberry colour. Such is the awful state of South Lancashire. On foggy mornings our macadamised roads are to all appearances tarred over by its devastating influence; what then must it be to our cattle and the tender family of the vegetable kingdom? Our Wheat crops in past years have been good, and the yield from 15 to 22 loads per Cheshire acre very frequently obtained, but this year the yield is proved and admitted to be from 4½ loads to 9 loads per Cheshire acre, only one side of the growing Corn and straw being affected. Oats and Barley suffered much from the bad weather, and the yield is much below former years, thanks for a slight increase of prices which makes up the deficiency. Turnips and Mangold Wurzel are but indifferent crops—much below the average, but it is our painful duty to record that during the past season several seedsmen have sold Scarisbrick and Cauliflower seeds for Improved Swede seeds, and many farmers have been great sufferers in consequence. This ought not to be, particularly by seedsmen professing to be classed amongst respectable tradesmen. Bones and superphosphate of lime are very much in demand in Lancashire. Agricultural day labourers are mostly out of employ, whilst farm servants are kept busily engaged in the barns. Sheep are scarce at moderate prices, and cheese is somewhat dearer. *J. A.*

Notices to Correspondents.

BARLEY AND WHEAT: *L P.* We do not know how you can separate them. Some sorts of Wheat would pass through a riddle which would retain Barley, and *vice versâ*.

CAPITAL: *A Sub.* From 5*l*. to 15*l*. per acre! Positively, that is the only answer to your question as you put it. If you will tell us the quality of the land, and how you intend to manage it, something more explicit might be stated in reply.

COVERED CORN YARDS: *A Welsh Farmer* will oblige us by forwarding his address, and we shall then be able to send him a communication on the subject by post.

DAMP IN BUILDINGS, &c.: *A Continental Subscriber.* In order effectually to provide against damp, you must take care that your foundation be perfectly drained, so that your walls may stand on a dry base. A course of slates interposed above the footings, or a layer of asphalte from ½ an inch to an inch thick, would effectually prevent the rising of any dampness from the ground. Where neither slates nor asphalte, or the chief substitute for the latter (the pitch of coal tar), can be obtained, cement will be beneficial. The true preventive, however, is the perfect drainage of the foundation. A wall built hollow of two brick-lengths will, of course, be stronger than one of a brick and half. If brick and half be adopted, the half brick should be inside, and the two tied together by heading bricks. Not knowing the thickness of the brick, I cannot give a diagram showing the construction of the wall. It may be well to remark that, if the walls are well plumbed and cleanly built, the space between the outer and inner walls does not require to exceed 1½ or 2 inches. *J N.*—As to drains, the pipes must be placed end to end *close* to one another; the junctions will not be so tight as to hinder the entrance of water. The sum of all the spaces left for entrance by the tightest joints in the whole length of an ordinary tile-drain is much greater than the space for egress afforded at the termination of the drain. Blackie's Cyclopedia will, we hope, be concluded in two or three months.

DUTY ON FRENCH WINES: *J R S O.* The relationship of this matter to English Agriculture is really so very slight that we cannot in justice to other subjects enter upon its discussion.

GAS LIME: *G W L.* Most of the ammonia is taken up by the water in the purifying apparatus. The lime absorbs the sulphuretted hydrogen, and will to that extent become, by exposure to the air, gypsum. You should lay it in a heap and turn it frequently over, and by and by spread it, a ton or two per acre, over stubbles before ploughing.

LAMPAS: *L P.* For lampas, lance the bars of the mouth; burning is cruel and unnecessary. *W. C. S.*

LIBRARIES FOR VILLAGES: *Clericus.* We should have added to our former list "Spade Husbandry," by Alexander Yule, of the Palace Farm, Armagh.

SATURDAY'S EDITION: *W F G F.* You will no doubt have discovered before this that your remonstrance is founded on a mistake. The markets are reported as before—their position in the Paper only being altered.

SPRING WHEAT: *T P.* The true Triticum æstivum is a bearded red Wheat, called April Wheat, but varieties of T. hybernum have acquired habits of early maturity fitting them for spring sowing; among these the best is Le Couteur's Talavera.

DRAINAGE AND IRRIGATION.

HENRY WEBBER begs to inform Landowners and the Public, that having had several years' practical experience, he is prepared to undertake the Drainage and Irrigation of Estates upon the most improved principles, either by Contract or on Commission. Reference given.

H. W. wishes particularly to call attention to his improved and inexpensive method of Irrigation, whereby, at an outlay of a few pounds an acre, he can convert land having a sufficient quantity of water at command into water meadow, which may be mown every year without the application of manure. Any further information will be given on application.—Halberton Court, near Tiverton, Devon.

A GENTLEMAN of extensive literary and scientific attainments, and of experience in tuition, offers to teach the Sons of a respectable Farmer various branches, including Agricultural Chemistry. He might consider board and lodging an equivalent for his service.—M. W. M., Post Office, Southport.

WANTED, for breeding purposes, high bred BOAR and SOWS. They should be of the most celebrated strains of the various breeds, and the pedigree must be capable of proof. The Boar must be a remarkably fine one, and the Sows must be finely made, and be good mothers.—Address, WILLIAM ——, Esq., Post Office, Kinson, Dorset, with particulars and prices asked.

DO YOU BRUISE YOUR OATS YET?—New Oat Crushers, 2*l*. 15*s*. 6*d*.; ditto, 4*l*. 5*s*. 6*d*.; Chaff Cutters, 1*l*. 7*s*. 6*d*.; ditto, 2*l*. 19*s*. 6*d*.; Mangles, 2*l*. 10*s*. 6*d*.; Flour Mills, 4*l*. 10*s*. 6*d*.—MARY WEDLAKE & Co., 118, Fenchurch Street.

THE BEST FOOD FOR PIGS.

DAMAGED WHEAT AND RICE MEAL is now acknowledged to be the best and cheapest FOOD FOR PIGS. References can now be given to the largest feeders in England, and to several who won prizes at the last Smithfield Cattle Show. In order that small consumers may test the merits of each, 1 quarter of Wheat and 2 cwt. of Rice Meal will be sent for Post-office order of 3*l*. 2*s*., including sacks.

DAMAGED WHEAT ... ... 36*s*. per qr.
RICE MEAL ... ... 9*l*. 5*s*. per ton.

JAMES MAY & Co., Finsbury Wharf, City Road Basin, London. Delivered to any Railway in London. 1*s*. 6*d*. each charged for Sacks.

TO MARKET GARDENERS AND OTHERS.

TO BE LET, with immediate Possession and liberal terms, about 8 Acres of good and productive GARDEN GROUND (the Stock on which is good and saleable), situated within three miles from town, with every facility for carriage to the Markets, comprising Dwelling-house, Stabling, Piggeries, and convenient Out-houses.—For particulars, apply to PHILLIPS & SON, Auctioneers, 24, Chiswell Street, Finsbury, London.

ASPARAGUS FOR FORCING.

TO BE SOLD, by Private Treaty, 3 acres of very fine Roots, of four years' cutting, at an easy distance, seven miles west of London.—Apply to E. H., Post Office, Burfield's, Strand, London.

CHELTENHAM EXHIBITION, 1854.

TO PARTIES ABOUT TO ERECT CONSERVATORIES OR PUBLIC EXHIBITION ROOMS.

TO BE SOLD.—At the end of July, the BUILDING now constructing in Cheltenham for the Crystal Palace Exhibition of Horticulture will be disposed of either in one or more Lots, to suit the convenience of Purchasers. It will comprise 20,000 superficial feet of Lights, in sizes suitable for Conservatories, Greenhouses, &c., made of the very best materials, and glazed with 16 oz. Sheet Glass. Parties contemplating the Erection of Exhibition Rooms or Greenhouses and other Garden Works, will find this a rare opportunity for providing themselves with the most expensive portions of such undertakings at a low price.—Applications to be made to Mr. G. PARSONAGE, Builder and Undertaker, Cheltenham.

WHITE FACED SPANISH FOWLS.

TO BE SOLD, a few COCKERELS and PULLETS of the above breed from a Cock bred by Capt. Hornby and Prize Hens.—Apply to Mr. JOHN READ, Churchyard, Boston.

COCHIN COCHIN FOWLS.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, 24th January, at 12 o'clock precisely, PRIZE COCHINS, buff colour, from the yards of J. Harrison, Esq., of Snelston Hall; G. W. Johnson, Esq., of Winchester; and Mr. Griggs, of Holloway, many of which especially deserve the attention of amateurs.—Catalogues by enclosing a stamped directed envelope to Mr. J. C. STEVENS, 38, King Street, Covent Garden, London.

NURSERY STOCK, WEELEY, ESSEX.

R. G. CRASKE respectfully announces that the Sale of the above Stock, which was postponed on account of the heavy fall of snow, after about 300 lots had been sold, will be resumed on WEDNESDAY next, Jan. 18, and two following days, and the whole will be disposed of without the least reserve. —Catalogues may be had of the Auctioneer, Observatory House, Colchester.

TO NURSERY AND SEEDSMEN, FLORISTS, AND CAPITALISTS.

MESSRS. ACTON & SON will Sell by Auction, at the White Horse Inn, Coppergate, York, on TUESDAY, the 24th January, 1854, at Two o'clock in the afternoon, for Three precisely (unless previously disposed of by Private Contract, of which Notice will be given), together, or in the following, or such other Lots as may be determined upon at the time of sale.

LOT 1.—Part of the VALUABLE NURSERY GROUNDS situate in Fulford Road, York, and adjoining on Property of James Backhouse, Esq., containing 8A. 3R. 32P., well stocked with every variety of Choice Forest and Fruit Trees, Shrubs, Roses, &c., in vigorous growth. Upon this Lot, fronting the Fulford Road, is erected a Modern and Commodious DWELLING-HOUSE and SHOPS, with GREENHOUSE and other requisite OUT-BUILDINGS adjoining.

LOT 2.—The remaining Part of the NURSERY GROUNDS, containing 4A. 3R. 24P., lying between Fulford Grange and Lot 1; and also those two Substantial DWELLING-HOUSES, constituting neat and pleasant suburban residences for small families, with suitable OUT-OFFICES attached, also fronting the Fulford Road. The Land extends from Fulford Road to the New Walk, adjoining the river Ouse, is of freehold tenure, of first-rate quality, in a high state of cultivation, and comprises valuable beds of gravel. The late proprietor, Mr. George Clarkson, for many years carried on an extensive and flourishing business on the premises, and a most eligible opening is therefore presented for any person desirous of succeeding him. The Property is also well worth the attention of capitalists as an investment, the whole being available for building purposes. The purchaser may, if preferred, take the Stock, or a portion thereof, on liberal terms, and have immediate possession. —Further Particulars may be had, and Plans of the Property seen, on application on the Premises, or at the offices of Mr LUKE THOMPSON, Solicitor, Judges' Court, York.

ESTABLISHED ABOVE SIXTY YEARS.

ROBERT METTAM, BRITISH and FOREIGN WHOLESALE WINDOW GLASS WAREHOUSE, 30, Princes-street, Leicester-square.

16 oz. Sheet Glass in Boxes of 100 feet.	Sheet Glass cut to size, not exceeding 40 inches.
Under 6 ins. by 4 ... 1½d. p. foot.	16 oz. ... 3d. to 3½d. per foot.
6 by 4, under 8 by 6, 2d. "	21 oz. ... 3¾d. to 5d. "
8 by 6 " 12 by 10, 2¼d. "	26 oz. ... 5d. to 7d. "

Foreign Sheet Glass, packed in boxes of 200 feet each, large sizes—4ths, 2¼d.; 3rds, 2½d. per foot net.

Hartley's Patent Rough Plate Glass, Glass Tiles and Slates, and every description of Glass now manufactured. Estimates and Price Lists forwarded post free.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

JAMES PHILLIPS & Co.,
116, BISHOPSGATE STREET WITHOUT.

PRICES OF

HARTLEY'S PATENT ROUGH PLATE GLASS, for CONSERVATORIES, PUBLIC BUILDINGS, MANUFACTORIES, SKYLIGHTS, &c.

Packed in Crates, for Cutting-up of the sizes manufactured.	⅛th inch thick.	3/16th inch thick.	¼ inch thick.
	s. d.	s. d.	s. d.
30 inches wide and from 40 to 50 long	0 5½	0 7	0 9
Or 20 " " 50 " 70 " / above 70 " ...	0 6	0 7½	0 9½
In Squares cut to the sizes ordered.			
Under 8 by 6	0 4	0 5	0 6
8 by 6 and under 10 by 8	0 4½	0 6	0 7
10 by 8 " 14 by 10	0 5	0 6½	0 8
14 by 10 " 1½ ft. sup., if the length does not exceed 20 inches	0 5½	0 7	0 8½
ft. sup. " 3 ft. sup., or if above 20 and not above 30 inches long	0 6	0 7½	0 9
3 " " 4 " 20 " 30...	0 6¼	0 8	0 9½
4 " " 5 " 30 " 35...	0 7	0 8½	0 10
5 " " 6 " 35 " 40...	0 7½	0 9	0 10
6 " " 8 " 40 " 45...	0 8	0 9½	0 10½
8 " " 10 " 45 " 55...	0 8	0 9½	0 10½
10 " " 12 " 55 " 65...	0 8½	0 10	0 11
12 " " 15 " 65 " 75...	0 9	0 10	0 11½
15 " " 20 " 75 " 90...	0 10	0 11	1 0
20 " " 25 " 90 " 100...	...	1 0	1 1½
25 " " 30 " 100 " 120...	...	...	1 3
Quarries	0 6	...	...

"There *can be no question now* that Rough Plate Glass is the most beautiful, as well as the most useful, kind of glass that can be employed in horticulture. It is free from all the faults of sheet or transparent glass, and it has many advantages peculiar to itself, *without a single disadvantage as a set-off.*"—*Gardeners' Chronicle.*

JAMES PHILLIPS & Co., Horticultural Glass Merchants, 116, Bishopsgate Street Without, London.

GLASS FOR CONSERVATORIES, GREENHOUSES, DWELLINGS, ETC.

ESTABLISHED MORE THAN ONE HUNDRED YEARS.

THOMAS MILLINGTON requests attention to his present prices of SHEET GLASS in 100 feet boxes.

Squares under 6 inches by 4	8s. 6d.
" 6 by 4 and 6½ by 4½	12 0
" 7 by 5 and 7½ by 5½ / " 8 by 6 and 8½ by 6½	13 6
" 9 by 7 and 10 by 8 / " 12 by 10 to 15 by 10	18 0

Orchard House Squares on Mr. Rivers's approved plan, to whom I have sold some thousands of feet:—20 inches by 12, 20 by 13, 20 by 14, 20 by 15, 20½ by 12½, 20½ by 13½, 20½ by 14½, at 20s. per 100 feet.

200 feet cases at 42s., and 300 feet case 63s., in large sheets.

Boxes charged 1s. extra per 100 feet, and the same allowed if returned free of all charge,

HARTLEY'S PATENT ROUGH PLATE GLASS, Fern Shades, Striking Glasses, Milk-pans, Bee Glasses, Cucumber Tubes, Sheet and Rough Plate Glass Tiles, Wasp Traps; Plate, Patent Plate, Crown and Sheet Window Glass, in every thickness and quality, and Ornamental Glass, plain and coloured; pure white Shades for Ornaments, Crystal Glass for Pictures.

Warehouse, 87, Bishopsgate Street Without—same side as Eastern Counties Railway.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.

GRAY AND ORMSON, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

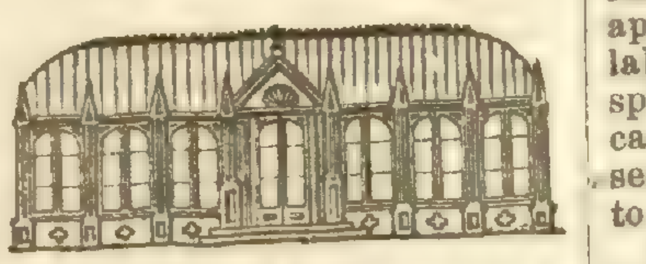
G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

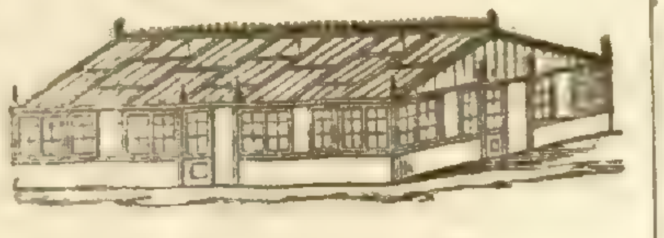
Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

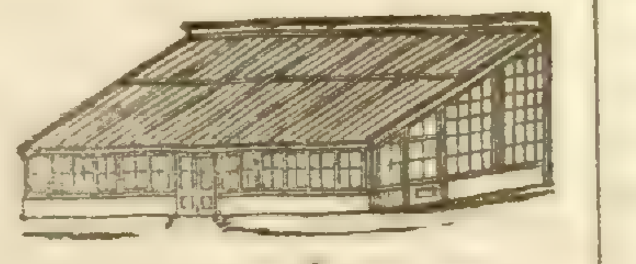
HORTICULTURE IN ALL ITS BRANCHES.

J. WEEKS & Co., King's Road, Chelsea,

HOTHOUSE BUILDERS.





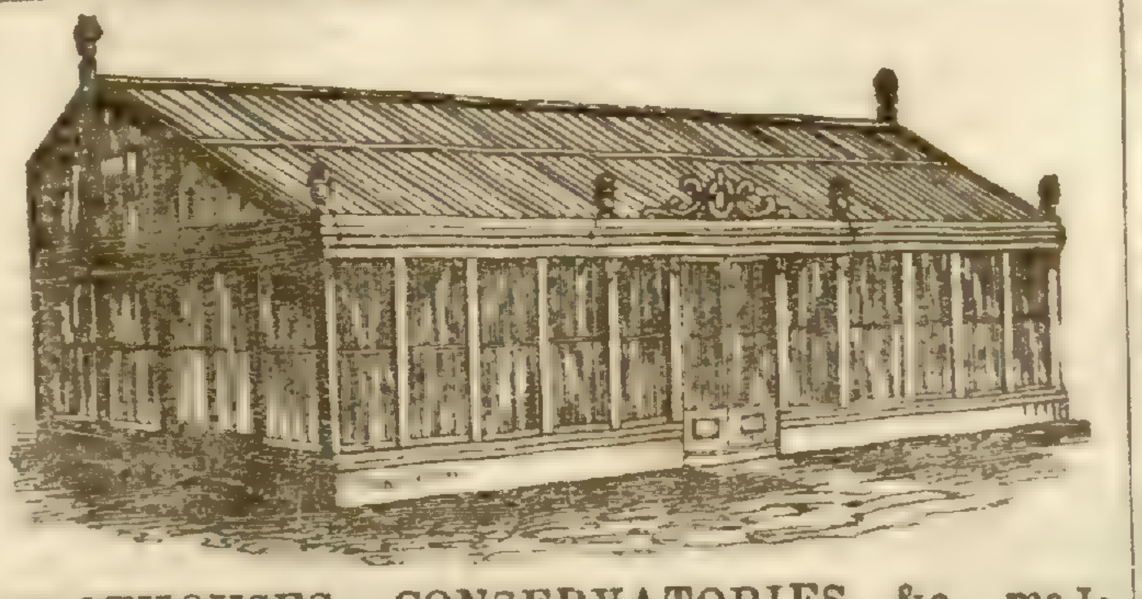


The Nobility and Gentry about to erect Horticultural Buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

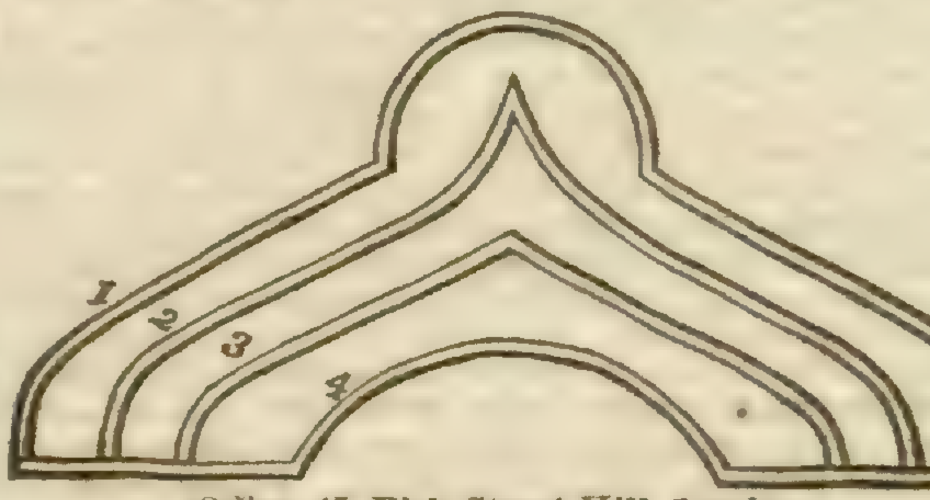
Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application. J. WEEKS & Co., King's Road, Chelsea, London.



HOTHOUSES, CONSERVATORIES, &c., made and fixed complete, at a considerable reduction. CUCUMBER and MELON BOXES and LIGHTS of all sizes, made of the best materials, glazed and painted complete, kept ready for immediate use, packed and sent to all parts of the kingdom. Reference may be had to the nobility, gentry, and the trade in most of the counties in England.—JAMES WATTS, Hothouse Builder, Claremont Place, Old Kent Road, London.

METAL CONSERVATORIES, PLAIN OR ORNAMENTAL, ERECTED TO ANY DESIGN.

THOS. WALLER AND CO. (many years Foreman to Messrs. Deane, Dray, & Deane, Finsbury Iron Works, and London Bridge), Iron Founders, House and Ship Smiths, Gas Fitters, and Manufacturers of all kinds of Metal Conservatories, Greenhouses, Verandahs, Balconies, Summer-houses; Hot, Cold, Shower, and Fumigating Baths; Public and Private Buildings. Greenhouse Conservatories heated by hot water or the Patent Drying Apparatus. Every description of open and close Kitchen Ranges for large or small establishments. The Trade supplied with Metal and Iron Sash Bars for Conservatories and Greenhouses, bent to these or any other design on the shortest notice. Experienced workmen sent to any part of the kingdom.



Office, 47, Fish Street Hill, London.
Ratcliff Iron Works, 12 and 13, Rose Road, Ratcliff, near Stepney Railway Station.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

E. DENCH, PATENT HOTHOUSE WORKS,
KING'S ROAD, CHELSEA.

PATENT HOTHOUSES and excellent Glass at 1s. 3d. per foot super., which are superior to all others for price with quality, and if known would supersede all others. (See Appendix, in "Book of the Garden," by Mr. M'Intosh.) A Range of Houses and Hot Water Apparatus, was erected by E. D. for E. L. Betts, Esq., Preston Hall, Kent. Mr. J. Frost, head gardener, has shown their efficiency by their produce at the Royal Botanic Gardens, Regent's Park, June 8, and Chiswick, June 11. The editor of the *Gardeners' Chronicle* says: "Beautiful examples of Black Hamburgh, large both in bunch and berry, and as black as Sloes, were furnished by Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall, Kent; these well deserved the first prize which was awarded them."—*Gardeners' Chronicle*, June 18th, 1853. The Grapes were considered the best shown at Regent's Park during the season, and the Houses are as superior for the growth of everything else in horticulture, which has been fully proved, and they have been extensively erected for the nobility and gentry in all parts of the kingdom.

GLAZING WITHOUT PUTTY.—Iron and Glass alone. E. D. has Roofed the Public Baths and Washhouses, Endell Street, on this principle, and others are in hand. Patent Sashes for Peach Walls, Pits, &c., 8d. per foot super. Heating by Hot-water, on the most practical principles, and all the best materials used. Printed Price List sent on application.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

EDWARD AND A. WEEKS (late with J. WEEKS & Co.), Park Cottage, King's Road, Chelsea, are now in a position to execute any of the above works, in the very best manner, and at a reduced price. Materials and workmanship warranted best quality. Plans and estimates forwarded on application for all kinds of Horticultural Erections, also for the Heating of Churches, Hospitals, Halls, Offices, &c.

One, two, and three-light Boxes always on hand.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

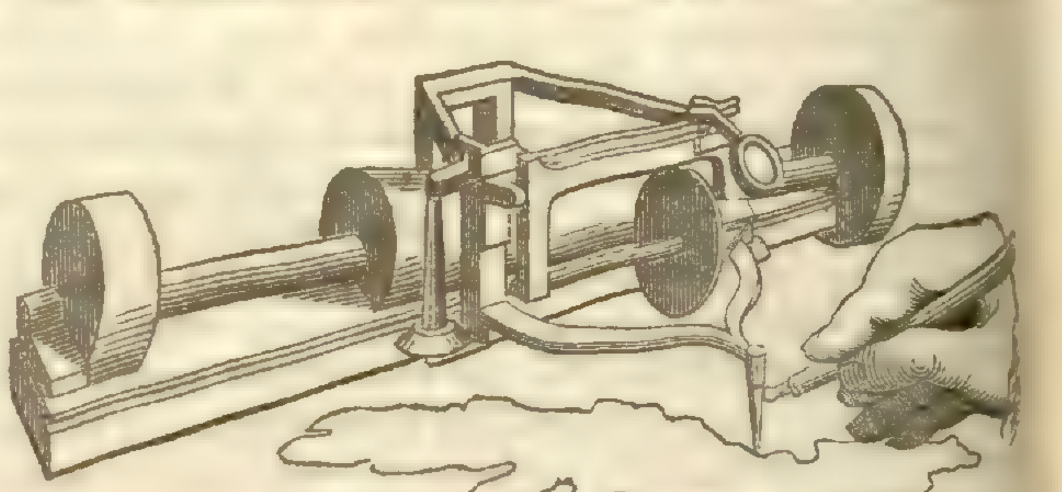
THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

GUTTA PERCHA BOOTS FOR SHEEP, for the Cure and Prevention of FOOT-ROT (price 4d., 5d., and 6d. each). Price of the Powder, in tin cases, sufficient for 100 sheep, 2s. 6d.—Address JOHN JONES and Co., Patent Works, Sheffield. London Agent, Mr. F. HAINES, 22, Lime Street, City.

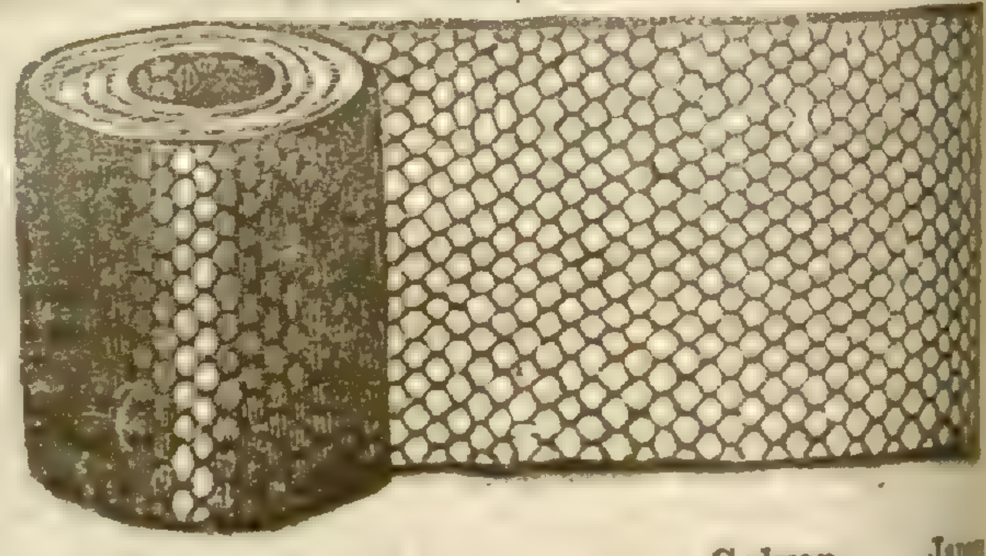
TO SURVEYORS, ARCHITECTS, & ENGINEERS.



SANG'S PLATOMETERS; OR, SELF-ACTING CALCULATORS.—These Instruments tell accurately the contents of figures drawn on Maps. They effect a great saving of time and labour, as in order to find the area it is only necessary to lead a tracer round the outline of the figure, however irregular it may be. Price 10*l*. each. Sold by JOHN SANG, Kirkaldy.

WIRE FENCING, 6¾d. per square yard, in various widths, from 6 feet to 15 inches, an effectual fence against hares, rabbits, cats, dogs, sheep, deer, fowls, pheasants, &c. Wire Hurdles 3s. each (5 ft. 6 in. by 2 ft. 3 in). This Wire-work is worked in oil, and does not rust very quick, and is the cheapest article of the kind in the market.—R. RICHARDSON, 21, Tonbridge Place, New Road, near King's Cross, London.

GALVANISED WIRE GAME NETTING,
7d. PER YARD, 2 FEET WIDE.



	Galvanised.	Japanned.
2-inch mesh, light, 24 inches wide ...	7d. per yd.	5d. per yd.
2-inch " strong " ...	9 "	6½ "
2-inch " extra strong " ...	12 "	9 "
1⅝-inch " light " ...	8 "	6 "
1⅝-inch " strong " ...	10 "	8 "
1⅝-inch " extra strong " ...	14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the price one-fourth. Galvanised Sparrow-proof Netting for Pheasantries ... per square foot. Patterns forwarded post free.

Manufactured by BARNARD & BISHOP, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, Newcastle.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

BENJAMIN GREENING AND Co's. PORTABLE WIRE FENCES, Manufactured by Patent Machinery. The new method of manufacturing Wire Fencing (which B. G. & Co. have invented and patented) makes it at once the cheapest, strongest, and most durable fence ever offered to the public. It is elegant in pattern and light in appearance, but also an entire fence in itself; it is much superior to the common Wire Netting Fence now in use. It can be fixed or removed by any labourer. It requires fewer supports than any other, and is infinitely cheaper than hand-made Fences.

PORTABLE HORSE and CATTLE FENCE.—PORTABLE SHEEP and LAMB FENCE.—POULTRY-PROOF FENCING.—PORTABLE HARE and RABBIT-PROOF FENCING.

Trainers for Peas, Garden Bordering, Aviaries for Pheasants, Light & Pheasant Breeding Cages, Ornamental Varieties, Light & Cheap Kinds, Twisted Wire Strand Fence for the Colonies, &c.

For Prospectuses, Engraved Sheet of Patterns, and any other information, apply to Messrs. B. GREENING & Co., 1 and 3, Chapel Gates, and 2 and 2A, Cateaton Street, Manchester.

PRIZE MEDAL—1851.
AT A VERY ECONOMICAL RATE.

SAMUEL CUNDY, MASON and BUILDER, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Lower Belgrave Place, Pimlico, London.

Marble Chimney-pieces manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price. A good Marble Chimney-piece for 40s. Marble Work in all its branches at a remarkably cheap rate for Halls, Dairies, Larders, &c. Circulars sent on application.

N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

Priced lists of plant tubs and boxes forwarded on application.

MAW'S ENCAUSTIC TILE PAVEMENTS.

MAW & CO. send for six stamps their NEW BOOK OF DESIGNS (with prices), adapting this most durable, economical, and decorative production of Mediæval Art to Entrance Halls, Passages, Conservatories, Verandahs, and every description of modern and ancient Building. Specimens at 11, Aldersgate Street, City.

Benthall Works, near Broseley, Shropshire.

HORTICULTURAL BUILDINGS, ROCK AND RUSTIC WORK, ORNAMENTAL WATER, FOUNTAINS AND FALLS, AND LANDSCAPE GARDENING, executed on the best principles; Estates Improved, Land Laid Out for Building, &c., by Mr. GLENNY, Valuer, Estate and Horticultural Agent, 420, Strand.

"FRIGI DOMO."—Patronised by Professor Lindley for the Royal Horticultural Society, the Royal Zoological Society, by his Grace the Duke of Northumberland at Syon House, and many cultivators of first class Horticultural and Floricultural produce.

"FRIGI DOMO," a Canvas made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard run, of E. T. ARCHER, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey.

GARDEN NETS, FISHING NETS, SHEEP NETS, and RABBIT NETS, made by machinery, and supplied on very low terms. Samples sent free.—R. RICHARDSON, 21, Tonbridge Place, New Road, near King's Cross, London.

SUBSTITUTE FOR GARDEN MATS.—Waxed Sheeting nearly 2 yards wide, 1s. per yard run—admits light and excludes cold; Thick Canvas Tarpauling, 1s. per square yard; Thick Canvas Waxed Sheeting, 1s. per square yard, may be had various widths: these Canvases are excellent for Roofing Sheds and Outhouses, as they are quite Waterproof.—R. RICHARDSON, 21, Tonbridge Place, Judd Street, New Road, London.

EMIGRANTS' IRON AND WOOD HOUSES from 10l. each; Drawings of 21 Houses sent free. Also maker of Iron and Wood Summer Houses for Gardens. Portable Poultry Houses, Pheasantries, &c.—R. RICHARDSON, 21, Tonbridge Place, New Road, near King's Cross, London.

WATERPROOF CAPES, TARPAULINGS, &c. —Waterproof Capes to effectually protect a man from wet while stooping down, 3s. each; London Policemen's Capes, fresh dressed, 18s. and 24s. per dozen; Tarpauling Coats, 7s. 6d. each; Horses' Waterproof Loin Cloths, 7s.; Driving Aprons, 7s. 6d.; Tarpaulings, 2s. per square yard, any size made up; India Rubber Coats, 20s. each; all kinds of Horse Blankets, Rollers, Tilting, Nose Bags, &c., &c.—R. RICHARDSON, 21, Tonbridge Place, Judd Street, New Road, London.

BERDOE'S WINTER OVER-COATS AND CAPES. —One of the Largest Stocks in London of Superior Garments, at reduced charges; also of ditto for YOUTHS. All thoroughly waterproof. At W. BERDOE'S, 96, NEW BOND STREET, and 69, CORNHILL. (*Nowhere else.*)

PROTOXIDE ANTI-CORROSION PAINT, at a very considerable reduction of price. This article is extensively used by the principal Railway and Gas Companies, and by Builders and others for painting Stucco. It prevents iron from rusting, wood from decay, masonry from damp, and the hottest sun has no effect upon it.—Manufactured by CHARLES FRANCIS and SONS, Cement Works, Nine Elms, London.

STEPHENSON AND PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

FIRE ANNIHILATOR, OR VAPOUR FIRE ENGINE.—Its practical value proved incontestably by 23 remarkable cases of successful use. See "Bradshaw" of this month, p. 132. Engines for Dwelling-houses, 3l. to 4l.—Office of the Fire Annihilator Company, 105, Leadenhall Street, London.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

BAILY'S ROUP AND CONDITION PILLS FOR POULTRY.—This remedy has been extensively tried with uniform success, and is offered to amateurs and the public with the greatest confidence. It will effectually overcome that disease which has hitherto been the bane of the poultry-yard, and destroy that apprehension hitherto known to all poultry keepers, when a favourite and valuable fowl is seen to droop. It is inestimable for poultry returning from exhibitions, and greatly facilitates moulting.—Sold, with full instructions for use, in boxes containing 50 pills, by JOHN BAILY, 113, Mount Street, Grosvenor Square, price 3s. per box, or by post 3s. 4d. "Fowls by Baily," the most useful and plainest treatise of the day; price 2s., by post 2s. 6d.

Baily's Registered Fountains, universally adopted and approved. Drawings and particulars, by post, on application.—113, Mount Street, Grosvenor Square.

PAUL GAGE'S ELIXIR.—This family medicine has been established 44 years as a most valuable remedy for PHLEGM, and all the disorders arising from it, viz., bilious complaints, catarrh, asthma, convulsive coughing, indigestion, colics, cholera morbus, ague fevers, gout, worms, hooping cough, females' complaints, &c. It is demonstrated in a pamphlet on Phlegm, delivered gratis at all the depots, why PAUL GAGE'S ELIXIR has not failed in desperate cases, where other means have been found of no avail. Sold in bottles at 2s. 9d., 4s. 6d., and 11s., by PAUL GAGE, 462, New Oxford Street; and by all respectable medicine vendors.

EDUCATION FOR YOUNG LADIES,
AT CHESHUNT, HERTS, ADJOINING THE NURSERIES.

MISS PAUL, who has had several years' experience in Tuition, begs to announce that she has vacancies for a few Pupils as Boarders. Terms moderate. Prospectuses will be forwarded by post on application.

LAMPS, OIL, CANDLES, SOAP, ETC.

AT THE WHOLESALE PRICE FOR CASH, at the ALBANY LAMP and CANDLE MANUFACTORY, 55, ALBANY STREET, REGENT'S PARK.

Country orders amounting to £10 or upwards carriage free. Price lists sent on application.

PIGGOTT'S GALVANIC BELT, without any fluid, for the Cure of Disease. See the Treatise, sent free, for one stamp.—Mr. W. P. PIGGOTT, Medical Galvanist, 523 c, Oxford Street, London.

KNOW THYSELF!—Professor BLENKINSOP continues to receive from individuals of every rank the most flattering testimonials of his success in describing the CHARACTERS of Persons from their HANDWRITING, pointing out their mental and moral qualities, whether good or bad.—Address by letter, stating age, sex, and profession, inclosing 13 uncut postage stamps, to Dr. BLENKINSOP, 344, Strand, London.

DO YOU SUFFER TOOTHACHE?—If so, instant ease and a lasting cure will be effected by using Dr. BARKER'S ENAMEL, the only efficient preparation ever discovered for filling decayed Teeth, preventing Toothache, and stopping the progress of decay, rendering them sound and useful for mastication and ornament. Price 1s., sent post free, with instructions, &c., on receipt of 13 penny stamps, by Dr. BARKER, 25, Argyle Square, London.—"My Teeth now look sound and good. Your Enamel has quite cured the Toothache." Miss RAY, Bath.—"I would have given a guinea for your Enamel 12 months ago." Rev. E. SMITH.—"I have not had a moment's pain since I filled my Teeth; I can now eat my food freely." Mr. ROBERTS, Bedford.—"The decay is quite arrested, and my Teeth look as sound as ever they did." Major BANKS, Windsor.

DO YOU WANT LUXURIANT HAIR WHISKERS,&c.? If so, use Miss GRAHAM'S NIOUKRENE, the most efficacious Hair generant ever introduced. It reproduces the Hair when lost either by disease or decay, prevents its falling off, effectually checks greyness, strengthens weak hair, and is guaranteed to produce those attractive ornaments, Whiskers, Moustachios, Eyebrows, &c., in three or four weeks. For nourishing and beautifying the hair, and sustaining its curling powers in all weathers, it has no equal. Price 2s., and sent post free to any part of the kingdom on receipt of 24 penny postage stamps, by ELLEN GRAHAM, 14, Hand Court, Holborn, London.—"My hair is quite restored." Miss ORME.—"I have a full pair of whiskers, thanks to your Nioukrene." H. ROBB, Esq.

CLOSE OF HOLIDAYS.—The return of Youth to their respective Boarding Schools induces a solicitude from Parents and Guardians for their Personal Comfort and Attraction, and ROWLANDS' MACASSAR OIL, for accelerating the growth and improving and beautifying the hair, ROWLANDS' KALYDOR, for improving the skin and complexion, and removing cutaneous eruptions, and ROWLANDS' ODONTO, or Pearl Dentifrice, for rendering the teeth beautifully white, and preserving the gums, are considered indispensable accompaniments for the attainment of those Personal Advantages so universally sought for and admired. BEWARE OF SPURIOUS IMITATIONS. The only GENUINE of each bears the name of "Rowlands" preceding that of the article on the wrapper or label.—Sold by A. ROWLAND AND SONS, 20, Hatton Garden, London, and by Chemists and Perfumers.

HOLLOWAY'S OINTMENT AND PILLS CERTAIN REMEDIES FOR OLD SORES AND ULCERS.—Copy of a letter from Mr. John Johnson, of Tregaron, Wales, dated Dec. 19, 1853:—To Professor HOLLOWAY. Sir,—For 12 years I was afflicted with sores on my legs and arms, which gradually broke out into ulcerous wounds, and disabled me from following any of the active duties of life. I tried a variety of medicines, and applied several liniments without benefit, but a friend recommended me to use your Ointment and Pills, which completely healed the wounds, and restored me to health, after every other means had failed.—Sold by all Druggists, and at Professor HOLLOWAY'S Establishment, 244, Strand, London.

THE EAST INDIAN ANTI-NERVOUS PILLS, a cure when all other means fail for Nervous Debility, Lowness of Spirits, Loss of Memory, Head-ache, Dimness of Sight, Fear, Blushings, Tremblings, Melancholy Thoughts, Rheumatic Pains in any part of the body, Urinal Diseases, Constitutional Wasting, &c.

Mr. ROBERTS, late Army Surgeon, discovered these Pills during his residence in India, testing their curative powers for years. In his own private practice, in numbers of hopeless cases, never failing to produce ease of body and tranquillity of mind in one or two days, and ultimately effecting a permanent cure.

Price, 1s. 1½d., 2s. 9d., 4s. 6d., 11s., and 33s. per box. Sent post free to any part upon receipt of postage stamps or Post-office order for the amount. Address J. ROBERTS, Surgeon, Hall Square, Yarmouth, Norfolk. Advice and Medicine in every form of disease sent to any part.

PAINS IN THE BACK, GRAVEL, LUMBAGO, RHEUMATISM, GOUT, INDIGESTION, FLATULENCY, NERVOUSNESS, DEBILITY, &c.

DR. DE ROOS' COMPOUND RENAL PILLS, as their name Renal (or the Kidneys) indicates, are a most safe and efficacious remedy for the above dangerous complaints. For depression of spirits, incapacity for society, study, or business, giddiness, drowsiness, nervousness, and insanity itself, when arising from or combined with urinary diseases, they are unequalled. Price 1s. 1½d., 2s. 9d., 4s. 6d., 11s., and 33s. per Box, through all Medicine Vendors, or sent (free) on receipt of the amount in postage stamps, by Dr. DE ROOS, 35, Ely Place, Holborn, London. At Home for consultation daily from 11 till 1, and 5 till 8, Sunday excepted. Advice and Medicines, 1l.

Price 5s. 6d. cloth,
SECOND EDITION, REVISED AND ENLARGED,

ORNAMENTAL AND DOMESTIC POULTRY; THEIR HISTORY AND MANAGEMENT.
BY THE REV. EDMUND SAUL DIXON, M.A., Rector of Intwood with Keswick.
J. MATTHEWS, 5, Upper Wellington Street, Covent Garden London.

Third Edition, considerably enlarged, price 5s. 6d.,

RURAL CHEMISTRY.
By EDWARD SOLLY, F.R.S., F.L.S., F.G.S.,
Honorary Member of the Royal Agricultural Society of England, Professor of Chemistry to the Horticultural Society of London, Lecturer on Chemistry in the Hon. E. I. Co.'s Military Seminary at Addiscombe, &c., &c.
J. MATTHEWS, 5, Upper Wellington Street, Covent Garden, London.

In 8vo, with Woodcuts, price 60s; or half-bound in russia, 65s.,

BRANDE'S DICTIONARY OF SCIENCE, LITERATURE, AND ART. Second Edition, corrected; with a Supplement, which may be had separately, price 3s. 6d.
London: LONGMAN, BROWN, GREEN, & LONGMANS.

NEW EDITION OF COL. GREENWOOD'S WORK ON TRANSPLANTING FOREST TREES.

Now ready, in 8vo, with Frontispiece and Diagrams, price 12s.

THE TREE-LIFTER; or, a New Method of Transplanting Forest Trees. By Colonel GEORGE GREENWOOD. Second Edition.
London: LONGMAN, BROWN, GREEN, & LONGMANS.

NEW EDITION OF
PHILLIPS' GUIDE TO GEOLOGY.
Just published, in fcp. 8vo, with Four Plates, price 5s.

A GUIDE TO GEOLOGY. By JOHN PHILLIPS, F.R.S., F.G.S., Deputy Reader in Geology in the University of Oxford, &c. New Edition, corrected to the Present Time.
London: LONGMAN, BROWN, GREEN, & LONGMANS.

New and Enlarged Edition, 12mo, with Plates, &c., price 6s. 6d.

KEITH'S TREATISE ON THE USE OF THE GLOBES; or, a Philosophical View of the Earth and Heavens. A New Edition, greatly improved, by ALFRED TAYLOR, M.D., F.R.S., Lecturer on Chemistry, &c. in Guy's Hospital; R. A. LE MESURIER, B.A., Scholar of Corpus Christi College, Oxford; and J. MIDDLETON, Esq., Professor of Astronomy.

KEY. 12mo, price 2s.
London: LONGMAN, BROWN, GREEN, and LONGMANS.

Fifth Edition, in 8vo, price Half-a-Guinea,

BAYLDON'S ART OF VALUING RENTS AND TILLAGES, AND THE TENANT'S RIGHT OF ENTERING AND QUITTING FARMS, EXPLAINED. Adapted to the use of Landlords, Land Agents, Appraisers, Farmers, and Tenants. Re-written and enlarged by JOHN DONALDSON. With a Chapter on the Tithe Commutation Rent Charge.

"A work equally valuable to the principal or the agent. The new statements and calculations incorporated will be found of great practical use. This work should be read and revised by every one having an interest in the soil, whether as landlord, tenant, or agent."—*Mark Lane Express.*
London: LONGMAN, BROWN, GREEN, and LONGMANS.

The Fifth Edition, in fcp. 8vo, price 6s.

THE POWER OF THE SOUL OVER THE BODY, considered in relation to Health and Morals. By GEORGE MOORE, M.D., Member of the Royal College of Physicians.
By the same Author.
THE USE OF THE BODY IN RELATION TO THE MIND. The Third Edition, fcp. 8vo, price 6s.
MAN AND HIS MOTIVES. Third Edition. Fcp. 8vo, price 6s.
HEALTH, DISEASE, AND REMEDY. Post 8vo, price 7s. 6d.
London: LONGMAN, BROWN, GREEN, & LONGMANS.

The Sixteenth Edition, revised and corrected, in 2 vols. fcp. 8vo, price 14s. cloth,

CONVERSATIONS ON CHEMISTRY; In which the Elements of that Science are familiarly explained and illustrated by Experiments. By JANE MARCET.

"In the present edition the author has attempted to give a sketch of the principal discoveries which have recently been made in Chemistry; and wishing that her pupils should obtain some knowledge of the progress which has taken place in Agriculture, resulting from its connection with Chemistry, she has found it necessary to add a Conversation upon this subject."—*Extract from Preface.*

By the same Author, New Editions of
CONVERSATIONS on LAND and WATER, Map, 5s. 6d.; on VEGETABLE PHYSIOLOGY, Plates, 9s.; on NATURAL PHILOSOPHY, Plates, 10s. 6d.; on POLITICAL ECONOMY, 7s. 6d.
London: LONGMAN, BROWN, GREEN, & LONGMANS.

GOLDSMITH'S GEOGRAPHY IMPROVED BY HUGHES.
A New and much enlarged Edition, in fcp. 8vo, price 3s. 6d.,

GOLDSMITH'S GRAMMAR OF GEOGRAPHY, for the use of Schools and young persons, carefully corrected to the present time, enlarged and improved, with the Physical Geography of each of the great Continents and of the Globe incorporated; a new set of Twelve Maps and many Diagrams, including a large coloured Physical Map of the World, and an entirely new series of illustrative Plates. Edited by EDWARD HUGHES, F.R.G.S., Head Master of the Royal Naval Lower School, Greenwich Hospital.

Also, in oblong 4to, price 1s. 6d.,
S. HALL'S FIRST OR ELEMENTARY ATLAS for the use of schools, comprising 10 Coloured Maps.
S. HALL'S FIRST GEOGRAPHICAL COPY BOOK or Outline Maps, containing the Coast Line, for the Pupil to fill up. Oblong 4to, price 1s., or each Outline separately, price 1d.
London: LONGMAN, BROWN, GREEN, and LONGMANS.

HANDSOME GIFT-BOOK—MEMORIAL OF THE GREAT EXHIBITION.

In Four handsome Volumes, cloth lettered, gilt edges, price Four Guineas, including the Supplementary Volume,

THE OFFICIAL DESCRIPTIVE AND ILLUSTRATED CATALOGUE OF THE GREAT EXHIBITION OF THE WORKS OF INDUSTRY OF ALL NATIONS, 1851.

"Every branch of science, art, and industry is here fully and efficiently represented."—*Morning Herald.*

"The Exhibition has lived its allotted time, and died; but this Catalogue is the sum of the thoughts and truths to which it has given birth—and which form the intellectual ground whereon the generations that we are not to see must build."—*Athenæum.*

"Long after the rare and curious contents of the Crystal Palace have been scattered over the world, this work will be valued as a memento and reflex of that marvellous collection."—*Atlas.*

A few impressions remaining of the Imperial 4to Edition, printed for the Royal Commissioners, to be by them presented to Foreign Governments, &c., are now on sale. Cloth lettered, price Twenty Guineas.

London: Office at SPICER BROTHERS, 19, New Bridge Street, Blackfriars.

ON NERVOUS DEBILITY AND INDIGESTION.
Just published, New Edition, price 1s.; or, by post, for 1s. 6d.

THE SCIENCE OF LIFE; OR, HOW TO LIVE, AND WHAT TO LIVE FOR. With ample Rules for Diet, Regimen, and Self-Management; together with Instructions for securing perfect health, longevity, and that sterling state of happiness only attainable through the judicious observance of a well-regulated course of life. By a PHYSICIAN.

Also, by the same Author, price 2s. 6d.; by post, 3s. 6d.,
A MEDICAL TREATISE ON NERVOUS DEBILITY AND CONSTITUTIONAL WEAKNESS, with Practical Observations, illustrated with Anatomical Plates, Health and Disease.

This work, emanating from a qualified Member of the medical profession, the result of many years' practical experience, is addressed to the numerous classes of persons who suffer from the various disorders acquired in early life. In its pages will be found the causes which lead to their occurrence, the symptoms which indicate their presence, and the means to be adopted for their removal.

London: JAMES GILBERT, 49, Paternoster Row; HANNAY, 63, Oxford Street; MANN, 39, Cornhill; and all Booksellers.

GREAT WESTERN, GREAT NORTHERN, SOUTH-WESTERN, AND SOUTH-EASTERN

SEED ESTABLISHMENT, READING, BERKS,

FOR

SUPPLYING SUTTON'S HOME-GROWN SEEDS TO ALL PARTS OF THE UNITED KINGDOM.

THE GARDEN AND FARM SEEDS grown in Berkshire and the adjoining Counties having obtained great celebrity and gained us a very extensive connection in almost every county in the United Kingdom, we have made such arrangements with Messrs. Pickford & Co., who have Offices on most of the great lines of Railways, as will enable us (with a few exceptions), to deliver our Goods CARRIAGE FREE TO ALL PARTS OF THE UNITED KINGDOM.

Our General Catalogue of Seeds is now ready, with prices affixed to every article, and may be had post free in return for one penny stamp; but those who are not acquainted with the best sorts of Garden Seeds, and the proportions of each suitable for a Garden, are confidently recommended to order one of the undermentioned COMPLETE COLLECTIONS FOR ONE YEAR'S SUPPLY, *with descriptions and instructions :—*

SUTTON'S COLLECTIONS OF GARDEN SEEDS.

No. 1.—A COMPLETE COLLECTION OF GARDEN SEEDS, FOR ONE YEAR'S SUPPLY OF A LARGE GARDEN ...	£3 0 0
No. 2.—A COMPLETE COLLECTION, QUANTITIES REDUCED (SIMILAR SORTS) ...	2 0 0
No. 3.—A COMPLETE COLLECTION, EQUALLY CHOICE SORTS ...	1 5 0
No. 4.—A VERY CHOICE ASSORTMENT ...	0 15 0

If some kinds of Seeds are already possessed, purchasers are requested to name them, that increased quantities of others may be sent in lieu of them.—A List of the sorts and quantities in these Collections may be had in return for one penny stamp. The contents of the No. 1 Collection is given at full in the third page of the GARDENERS' CHRONICLE *of December* 31.

SUTTON'S COLLECTIONS OF FLOWER SEEDS.

These may be had in Collections of "*Hardy sorts only*," or assorted in "Hardy," "Half-hardy," and "Tender," as preferred.

No. 5.—THE MOST SHOWY 50 SORTS KNOWN (Post Free) ...	£0 10 6
No. 6.—THE MOST SHOWY 36 DO. DO. ...	7 6
No. 7.—THE MOST SHOWY 24 DO. DO. ...	0 5 0

N.B. Purchasers are at liberty to name any sorts of Flower Seeds they wish included in the above Collections; or the selections may be left to us, in which case the most showy kinds only will be sent.—The superior quality of our Seeds is plainly testified by the numerous orders we are daily receiving from parties who have had them in previous seasons. The following are a few Extracts from Letters now before us, which may be seen at our Counting-house, and hundreds of others similar :—

From Lord Cuninghame, Edinburgh, Jan. 26, 1853.
The Seeds sent by Messrs. SUTTON to Lord Cuninghame were most successful.

From Peter Murdoch, Esq., Glasgow, Jan. 31, 1853.
The quality of all seeds you have yet sent us has been first-rate, and we are much obliged to you for introducing here several new varieties of edibles, amongst others, the universal favourite, "Couve Tronchuda Cabbage."

From the Rev. C. J. Hume, Meonstoke, Jan. 12, 1853.
My friend complains that he cannot get satisfactory seeds. I have referred him to you for an end of all his disappointments in that way.

From Mr. Alex. Gray, Hartwood Gardens, N.B., Feb. 9, 1853.
The seeds sent last season were very fine. The Onions are beyond all praise.

From Mr. Thomas Rowe, Gardener to Mr. Nicholl, Edge Grove, Feb. 10, 1853.
I am glad you sent me a large packet of your Goliah Peas. It was the best cropper I had last season.

From Mr. W. Reid, Gardener to J. Hunt, Esq., Sydenham Hill, Kent, Oct. 24, 1853.
The flower seeds I had from you last spring gave entire satisfaction. I never had finer Stocks and Asters — they were splendid.

From Mr. John Capers, Gardener to Captain Cunynghame, Wellsbourne, Oct. 1, 1853.
I never knew a lot of seeds so good and so true to what they are represented to be.

From the Rev. J. Beauchamp, Crowell Rectory, Tetsworth, July 16, 1853.
I never saw two finer sorts of Lettuce grown than your White and Green Cos; also your Goliah Pea is first rate.

From Jas. N. Constable, Esq., Balmyh, by Blairgowrie, Feb. 15, 1853.
I particularly wish you to send me SUTTON'S Solid White Celery, which is the best I have ever had, and SUTTON'S Superb Pink, which is also excellent.

The advantages of purchasing "SUTTON'S COLLECTIONS OF SEEDS" *are threefold*, viz., superiority *of sorts*, superior *germinating* quality, and great *economy in the cost*; besides the benefit generally derived by procuring Seeds from a distance, being in fact *a change of soil*.

SUTTON'S PERMANENT GRASS SEEDS.

Gentlemen intending to lay down Land to Permanent Pasture, or for one or two years lay, are recommended to communicate with us, stating the nature of the soil and situation, that we may advise as to sorts of Grass Seeds most suitable.

OLD MEADOWS DEFICIENT OF THE MOST NUTRITIVE GRASSES AND CLOVERS may be greatly improved by sowing at this season "SUTTON'S Renovating Mixture" of Seeds at the rate of 8 to 12 lbs. per acre, price 1*s*. per lb. Our finest LAWN GRASS SEEDS *are highly useful to improve Garden Lawns.*

Post-office Orders should be made payable to JOHN SUTTON & SONS; but WE DO NOT REQUIRE PRE-PAYMENT FOR GOODS, as we have connections in almost every county in the United Kingdom therefore a reference will be sufficient.

N.B.—We are extensive Growers of Mangold Wurzel, Turnip, and other Agricultural Seeds, of which a separate Catalogue is published.

JOHN SUTTON AND SONS, SEED GROWERS, READING, BERKS.

SEEDS.

W. AND S. GAINES beg to offer to Gardeners, Farmers, and Nurserymen, the following seeds :—WHITE SPANISH ONION, 4*s*. 6*d*. per lb.; Deptford do., 4*s*. 6*d*. per lb.; Reading do., 4*s*. per lb.; quantities not less than 1 lb. SCARLET RUNNERS, 21*s* per bushel; quantities not less than one peck. GOOD RHUBARB PLANTS: Albert, Linnæus, and Victoria, 40*s*. per 100; 6*s*. per dozen. Also collections of ANNUAL FLOWER SEEDS, packets of 60 varieties, 10*s*.; 30 do., 5*s*.; 15 do., 2*s*. 6*d*.—Post-office orders payable to W. & S. GAINES, Covent Garden Market, London.

THE EARLIEST PEA IS "FAIRHEAD'S EARLY CONQUEROR." To be had of CLARKE AND CO., Borough, London; 2*s*. per quart (price per bushel on application).

LILIUM LANCIFOLIUM, RANUNCULUSES, & ANEMONES.

HENRY GROOM, Clapham Rise, near London, by appointment FLORIST TO HER MAJESTY THE QUEEN, AND TO HIS MAJESTY THE KING OF SAXONY, begs to say that this is a good season to procure bulbs of the above FLOWERS, which he can supply at the following prices :—

		Each.—*s*. *d*.
LILIUM LANCIFOLIUM ALBUM ...	from	9*d*. to 1 6
Do. do. PUNCTATUM ...	„	5*s*. to 10 6
Do. do. ROSEUM ...	„	3*s*. to 10 6
Do. do. CRUENTUM ...	„	5*s*. to 10 6
Do. do. Seedling Varieties of RUBRUM ...	„	2*s*. 6*d*. to 10 6
Do. EXCELSUM ...	„	5*s*. to 10 6
Do. JAPONICUM TREE, or BROWNI	„	5*s*. to 10 6
Do. THOMSONIANUM, New ...	„	5*s*. to 15 0
6 HYBRID SEEDLING LILIES BY NAME ...		15 0
100, RANUNCULUSES, in 100 superfine sorts, named		£2 10 0
Superfine mixtures per 100 ...	from	5*s*. to 10 6
100 ANEMONES, in 50 superfine sorts, named ...		£1 10 0
Superfine mixtures, double, per 100 ...	from	6*s*. to 10 6
„ „ single, „ ...	„	5*s*.
HIPPEASTRUM AULICUM, strong bulbs ...		each 5 0
VALLOTA PURPUREA ...		„ 3 6
CALOCHORTUS LUTEUS ...		„ 3 6
GLADIOLUS, fine-named sorts, each, from ...		9*d*. to 2 6
ANOMATHECA CRUENTA ...		per dozen 4 0

H. GROOM begs to say that his Catalogue will be forwarded by post on application.—Foreign Orders executed.

COLE'S SUPERB CRYSTAL WHITE CELERY.

J. THORNLEY, W. COLE, AND CO., NURSERYMEN, SEEDSMEN, and FLORISTS, Withington, Manchester, beg to announce that they are now prepared to supply this fine Celery at 1*s*. 6*d*. per half-ounce packet, or in larger quantities. This variety has given universal satisfaction, and has been proved to possess all the good qualities attributed to it by W. Cole last season. It can also be procured from the following agents :—

Messrs. Hurst and M'Mullen, 6, Leadenhall Street; Messrs. Noble, Cooper, and Bolton, 152, Fleet Street; Messrs. Minier & Co., 60, Strand; Messrs. Charlwood & Cumming, Covent Garden; Mr. Turner, Slough; Mr. Duncan Hairs, St. Martin's Lane; Mr. Denyer, Gracechurch Street; Mr. J. Fairbairn, Clapham; Messrs. A. Henderson & Co., Pine Apple Place; Messrs. Downie and Laird, Edinburgh; Messrs. F. & J. Dickson, Chester; Messrs. F. & J. Dickson, Manchester; Messrs. J. & J. Fraser, Lea Bridge, Essex; Messrs. Little and Ballantyne, Carlisle; Messrs. Veitch & Son, Exeter; Mr J. Veitch, Exotic Nursery, Chelsea; Mr. Clarke, King Street, Covent Garden; Messrs. Finney & Co., Gateshead; Mr. A. Pontey, Plymouth; Mr. E. Rendle, Plymouth; Mr. Cattell, Westerham, Kent; Mr. Smith, Riverhead, Kent; Mr. Epps, Ashford and Maidstone, Kent; Messrs. Lucombe, Pince, & Co., Exeter; Mr. Browne, Norwich.

All orders to be addressed as above, instead of to "Dartford" as heretofore.

Just published, price 2*d*., free by post 3*d*.,

COMPARATIVE TABLES OF FRENCH AND ENGLISH MEASURES, WEIGHTS, &c., Reprinted from the *Gardeners' Chronicle and Agricultural Gazette.*

CONTAINING—

Measures of Length	Old French Measures of Capacity for Liquids
Square Measure	Do. for Dry Substances
Cubic Measure	Old French Weights reduced to English Avoirdupois
Measures of Capacity for Liquid and Dry Substances	Thermometers
Weights	Various Conversion Tables.

JAMES MATTHEWS, 5, Upper Wellington Street, Covent Garden.

Price 2*s*. 6*d*.,

FOLIA ORCHIDACEA.—Part IV. By Professor LINDLEY. Containing the conclusion of EPIDENDRUM, HEMISCLERIA, PINELIA, ACACALLIS, ABOLA, ONCODIA, COCHLIODA, CHEIRADENIA, ACAMPE, VANDA, LUISIA.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden, London.

Now ready, price 21*s*., with 15 highly finished coloured Plates and numerous Wood Engravings (or with Supplement and four additional plates, 5*s*. extra),

THE ROSE GARDEN. By WILLIAM PAUL, of the Nurseries, Cheshunt, Herts.

"Infinitely the best work ever written on the culture of the Rose."—*Botanic Garden.*

By the same Author, price 1*s*.,
AN HOUR WITH THE HOLLYHOCK.
London: PIPER, BROTHERS, & Co., 23, Paternoster-row; and all Booksellers.

Third Thousand, Improved.

CUTHILL'S BELGIAN PRIZE ESSAY ON THE POTATO, with Twenty other articles upon Asparagus, Seakale, Rhubarb Wine, Strawberries, Cucumber, Melon, Herbs and Salads. Price by post, 2*s*. 4*d*.—Also his "Market Gardening Round London," by post, 1*s*. 8*d*.

Strawberry Plants (Black Prince), 5*s*. per 100; (Prince of Wales), 15*s*. Cucumber Seed (Black Spine), per packet, 1*s*. 1*d*.
JAMES CUTHILL, Camberwell, London.

Just ready,

A CENTURY OF FERNS. Being Figures with brief descriptions of 100 new or rare Species of Ferns. A Selection from the "Icones Plantarum," by Sir WILLIAM JACKSON HOOKER, K.H., LL.D., F.R.A., and L.S., &c., and Director of the Royal Botanical Gardens at Kew.

The work is handsomely printed on a super-royal paper, and a Specimen Number can be sent to any address for four postage stamps. Coloured Copies will not be ready before March 1.
London: WILLIAM PAMPLIN, 45, Frith Street, Soho, London.

This day,

A CATALOGUE OF SECOND-HAND BOOKS, chiefly BOTANICAL, now on Sale, by WILLIAM PAMPLIN, 45, Frith Street, Soho, London, will be sent by post to any address for two postage stamps.

Now ready, Vol X., Part 1, price 14*s*.,

ICONES PLANTARUM; or Figures, with Brief Descriptive Characters and Remarks, of New or Rare Plants, selected from the Author's Herbarium. By Sir WILLIAM JACKSON HOOKER, K.H., LL.D., F.R.A., and L.S., &c. &c., Vice-President of the Linnean Society, and Director of the Royal Botanical Gardens, Kew.
London: WILLIAM PAMPLIN, 45, Frith Street, Soho Square.

Just Ready,

JOURNAL OF THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND. No. XXXII.

1. Farming of East Lothian ... ... C. Stevenson.
2. Covered Homestalls ... ... W. Fisher Hobbs.
3. Covered Farm-steadings ... ... Lord Kinnaird.
4. Implement Report, Gloucester, from Sir M. W. Ridley, Bt.
5. Nitrate of Soda, a substitute for guano The President.
6. Fish-refuse in Newfoundland: a dispatch to the Duke of Newcastle, from the Governor of Newfoundland.
7. Farming of Surrey ... ... H. Evershed.
8. Bean-turnip Fallow ... ... Rev. Th. Burrows.
9. Improving Grass land ... ... R. Milward.
10. New System of Irrigation ... ... J. Druce.
11. Farming of Herefordshire ... ... Th. Rowlandson.
12. Report on Live Stock ... ... R. Milward.
13. Agricultural Chemistry—Pig-feeding J. B. Lawes.

JOHN MURRAY, Albemarle Street.

REAPING MACHINES.

THE JOURNAL of AGRICULTURE and the TRANSACTIONS of the HIGHLAND and AGRICULTURAL SOCIETY of SCOTLAND, No. XLIII. for January contains SOME ACCOUNT of BELL'S REAPING MACHINE. By the Inventor, the Rev. P. BELL. Price 3*s*., or 3*s*. 6*d*. by post.
WILLIAM BLACKWOOD & SONS, Edinburgh and London.

No. II., price 6*d*., of

THE CHEMISTRY OF COMMON LIFE, by Professor JOHNSTON, contains—THE SOIL WE CULTIVATE; THE PLANT WE REAR.

A Second Edition of No. I. is now ready, containing THE AIR WE BREATHE and THE WATER WE DRINK, price Sixpence.
WILLIAM BLACKWOOD & SONS, Edinburgh and London.

PEOPLE'S EDITION.

ALISON'S HISTORY OF EUROPE, FROM THE COMMENCEMENT OF THE FRENCH REVOLUTION TO THE BATTLE OF WATERLOO.

To be completed in 44 Shilling Parts, forming 12 Volumes at 4*s*., bound in cloth. Volumes I., II., and III., and Parts I. to X. are now published.
WILLIAM BLACKWOOD & SONS, Edinburgh and London.
Sold by all Booksellers and Newsmen.

Now Ready, in one thick octavo volume, price One Guinea,

THE COMMERCIAL PRODUCTS OF THE VEGETABLE KINGDOM, forming a Practical Treatise and Hand-book of Reference for the Colonist, Manufacturer, Merchant, and Consumer. By P. L. SIMMONDS.
London: T. F. A. DAY, 13, Carey Street.

Just published, price 2*s*., post free, 2*s*. 6*d*.,

NERVOUS AFFECTIONS; an Essay on Spermatorrhœa, its Nature and Treatment; with an Exposition of the Frauds that are practised by persons who advertise the speedy, safe, and effectual cure of Nervous Derangement. By a Member of the Royal College of Physicians, London.
London: AYLOTT & Co., 8, Paternoster Row.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitefriars, in the City of London: and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be ADDRESSED to THE EDITOR.—SATURDAY, JANUARY 14, 1854.

THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 3.—1854.] SATURDAY, JANUARY 21. [PRICE 6*d.*

INDEX.

Aeration	38 *a*	Horticultural Society	39 *a*
Agri. College garden	43 *b*	— statistics	38 *c*
— statistics	46 *c*—44 *c*	Jesse's Country Life, rev.	39 *b*
Auricula, treatment of	39 *c*	Linum grandiflorum	39 *c*
Bread, price of	44 *c*	Manure, pigeons' dung as	40 *c*
Calendar, horticultural	40 *a*	— management of	43 *a*
— agricultural	45 *b*	— liquid	44 *a*
Climate, mildness of	42 *b*	Nomenclature, botanical	38 *b*
Cookery, cottage	36 *a*	Orchard houses	38 *a*
— stoves for	38 *c*	Pathology, vegetable	36 *c*
Cream	44 *b*	Plants, naming	38 *b*
Cucumbers, winter	38 *c*	Plant house, to ventilate	38 *a*
Dipladenia splendens	37 *a*	Poultry show, Liverpool	45 *a*
Drains, stoppage of	44 *c*	Seed market, the	37 *b*
Drainage, trunk	42 *a*	Spade husbandry	35 *c*
Farming, Tullian	35 *c*	Statistics, horticultural	38 *c*
— Irish	44 *b*	— agricultural	41 *c*—44 *c*
Fish, frozen	38 *c*	Stock, does live pay?	44 *b*
Food, Cottagers'	36 *a*	Stoves, cooking	38 *c*
— green	43 *c*	— cottagers'	38 *fc*
Forests, royal	38 *b*	Tithe commutation	43 *b*
Gorse	44 *a*	Tree lifter, M'Glashen's	39 *a*
Guano deposits	45 *a*	Vegetable pathology	36 *c*
Gulf Stream and mild winters	42 *b*	Ventilation	38 *a*
Hand-hoes	40 *a*	Weather in Dorset	38 *b*
Heating, stoves for	38 *c*	— Herts	38 *b*
Highland Agricultural Society	44 *c*	Wellingtonia gigantea	40 *a*
Hoes, improved	40 *a*	Winters, mild	42 *b*

CHELTENHAM GREAT EXHIBITION OF 1854. To open on the 1st June.—In addition to all kinds of Horticultural productions, this Exhibition will comprehend every description of Implement or Article Manufactured, Designed, taken from, or in any way connected therewith.—Programmes, Schedules of Prizes, &c., may be obtained on application to the Secretary, Mr. HENRY J. COCHRANE, 128, High Street, Cheltenham.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—At a General Meeting of the Members of this Society, held on Wednesday, the 18th inst., for the purpose of electing Two Pensioners on the Funds, the following was the result of the ballot:—

No.	CANDIDATES.				VOTES.
1.	EDWARD MARSHALL,	13th	application,	aged	73—643
2.	JOHN APPLEBY,	9th	„	„	61—214
3.	CORNELIUS ROBINSON,	7th	„	„	76—198
4.	HENRY SCHNEIDER,	6th	„	„	88—210
5.	WILLIAM CARTER,	6th	„	„	73— 22
6.	JOHN BLACKE,	3rd	„	„	79— 25
7.	SARAH LAWRENCE,	3rd	„	„	65—349
8.	ROBERT OLIVER,	3rd	„	„	71—215
9.	WILLIAM THACKER,	3rd	„	„	66— 21
10.	CHARLES CHARLTON,	2nd	„	„	68— 35
11.	ELIZABETH CURTIS,	2nd	„	„	69—196
12.	ELIZABETH HEATH,	2nd	„	„	71—685
13.	JOSEPH JEFFREY,	2nd	„	„	61— 23
14.	JOHN KENT,	2nd	„	„	71— 29
15.	GEORGE KIDD,	2nd	„	„	68— 66
16.	JOHN LAWSON,	1st	„	„	75— 13
17.	JAMES SMITH,	1st	„	„	68— 14

The meeting declared Elizabeth Heath and Edward Marshall, as having the greatest number of votes, duly elected pensioners of this charity. By order, E. R. CUTLER, Sec.,

20th January. 97, Farringdon Street.

SEEDS—CARRIAGE FREE.

WILLIAM E. RENDLE AND CO. *have, from the very extensive patronage they have received, been induced this season to offer the following liberal arrangement to all who purchase Seeds from their establishment.*

ALL ORDERS ABOVE £5 WILL BE DELIVERED CARRIAGE FREE TO ANY RAILWAY STATION IN ENGLAND OR WALES, AND TO ANY STEAM PORT IN ENGLAND, WALES, IRELAND, OR SCOTLAND.

Two or three purchasers joining together will therefore have the advantage of having their orders delivered free of any cost for carriage.

RENDLE'S PRICE CURRENT FOR 1854 should be obtained by all who have gardens, or who take an interest in the cultivation of the soil.

SEEDS FOR IRELAND, SCOTLAND, & WALES.

SUTTON AND SONS having many customers in North and South Wales, Scotland and Ireland, whom they have supplied with Agricultural and Horticultural Seeds for many years, are well acquainted with the sorts which thrive best in each locality.

SUTTON & SONS *deliver their Goods Free of Carriage to the Seaports, and many other parts of Ireland, Scotland, and Wales. For particulars, address*

JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

THE EARLIEST PEA IS "FAIRHEAD'S EARLY CONQUEROR." To be had of CLARKE AND CO., Borough, London; 2*s.* per quart (price per bushel on application).

YORK NURSERIES.

JAMES BACKHOUSE AND SON respectfully inform their Friends, that notwithstanding the scarcity of many kinds of Horticultural Seeds this season, their own crops have been safely harvested, and with very few exceptions are quite equal in quality to those of last season. *Being themselves Growers*, they are able to a large extent to insure the genuineness of the articles they supply.—January 21.

PELARGONIUMS.

JOHN DOBSON begs to announce that he is now sending out, in good strong plants, with four or five strong breaks to them, the new PELARGONIUMS raised by E. Beck, Esq., which will be found to possess every good quality. A Catalogue, with full description of the above, with every other good variety, may be had in exchange for one stamp.

J. D.'s Seed Catalogue is now ready, and will be found to contain the best varieties at the lowest possible prices. May be had in exchange for one postage stamp. A General Catalogue is nearly ready, which will contain every novelty in Fancy Geraniums, Pansies, Cinerarias, Antirrhinums, &c., and will be forwarded on receipt of one postage stamp. Any twelve of the following Geraniums for 42*s.*, hamper, &c., included in the price: Optimum, Magnet, Commander, Rosa, Gertrude, Harriet, Purpurea, Virgin Queen, Magnificent, Rachel, Galatea, Basilisk, First of May, Plantagenet, Eleanor, Vulcan, Zaria, Exhibition.

Woodlands Nursery, Isleworth.

TO FARMERS.

IN ACCORDANCE with the wishes of Farmers, Millers, and others interested in the Corn Trade, an Edition of the AGRICULTURAL GAZETTE AND GARDENERS' CHRONICLE will be published every Monday Afternoon, in time for post. The Monday's Edition will, in addition to the usual markets, contain a full report of the Mark Lane, Smithfield, and Newgate Markets of the day.—May be ordered of any Newsagent. Price 6*d.*

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER has now ready a fine healthy stock of young plants of all the leading sorts. For price and description see General List, which also contains hints on their culture, with observations on the exhibition of Hollyhocks, &c. &c., and may be had by inclosing a postage stamp.

Saffron Walden Nursery, January 21.

J. G. WAITE begs to return thanks to his friends and purchasers of the DANIEL O'ROURKE PEAS, and to inform them and the public generally, that on account of the extraordinary demand for this valuable Pea, he will not be able to supply any more this season.

J. G. W. will be ready to supply seed of this year's crop in the months of July and August.—181, High Holborn, London.

BRITISH QUEEN POTATO.—As early as a Shaw, the quality of a Regent, and one of the most productive kinds grown, recommended with perfect confidence; price per bushel, 10*s.*; per peck, 3*s.*, bag included, for pre-payment only.

HART AND NICKLIN, Guildford, Surrey.

DOUBLE ITALIAN TUBEROSES.

DAWE, COTTRELL, AND BENHAM (successors to FREDERICK WARNER), have just received their Annual Importation of the above, in excellent condition, which they offer at 3*s.* 6*d.* per dozen, with the usual allowance to the trade. Their wholesale Lists of Garden, Agricultural, and Flower Seeds are ready, and may be obtained on application.

3, Lawrence Pountney Lane; and 36, Moorgate Street, London. Established 28, Cornhill. 1720.

A BEAUTIFUL ORNAMENT FOR THE DRAWING-ROOM.

THE DOUBLE LILY OF THE VALLEY is universally admired, on account of its delicious Fragrance, Elegant Flowers, and Graceful Habit; as a pot plant it is superior to any flower in cultivation, its hardy nature also renders it a suitable ornament for the open garden. One dozen Roots, with directions for their culture, sent free by post on receipt of 36 postage stamps.—JOHN J. REID, Monkton Nursery, Ryde, Isle of Wight.

THE FINEST BALSAMS IN EUROPE, in Six Classes; Seed saved by Mr. GLENNY from flowers three inches across: the six, 37 stamps; Mixed Seeds, 13 stamps, in Sealed Packets only, signed and sealed. The finest seeds that can be had procured to order, and all other choice Horticultural subjects.—420, Strand.

SUPERB FLOWER SEEDS.—The following select Seeds, saved from the best varieties, sent post free at 1*s.* per paper:—Antirrhinum, Petunia, Verbena, Double Balsam, and Pansy.—From WILLIAM KNIGHT, Florist, 53, High Street, Battle, Sussex. Select lists of Seeds sent on application.

"NORFOLK HERO" CUCUMBER. — Without exception the very best Cucumber for open ground cultivation that has yet been offered. It is a most prolific bearer, as handsome as any frame variety, and is delicate in point of texture, the fruit measuring from 16 to 20 inches in length. It is in the sole possession of YOUELL and Co., who will forward per post free (on receipt of postage stamps) packets containing six Seeds, 1*s*; 18 seeds, 2*s.* 6*d.*—"To Market Gardeners the above will be found a great acquisition."

Royal Nursery, Great Yarmouth.

CHOICE FLOWER SEEDS, FOR PRESENT SOWING.

PANSY, saved from 100 of the best vars., by name, 2*s.* 6*d.* per pkt.
POLYANTHUS, do. 50 do. „ 2*s.* 6*d.* „
VERBENA, do. 50 do. „ 2*s.* 6*d.* „
HOLLYHOCK, do. 60 of the most superb kinds, by name ... ... 2*s.* 6*d.* „
CALCEOLARIA, do. 24 do., spotted varieties 2*s.* 6*d.* „
DAISY, do. 50 of the new Belgian do. do. 1*s.* 6*d.* „
ANTIRRHINUM, do. 20 best named varieties ... 1*s.* 0*d.* „
ANEMONE, from the most showy and brilliant kinds, 1*s.* „
FASTOLFF RASPBERRY SEED, for exportation, p. oz., 3*s.* 6*d.*
The above, per post, free.—Postage Stamps received in payment.

YOUELL AND CO., Royal Nursery, Great Yarmouth.

CHOICE FRUIT TREES.

JOHN ADAMS, NURSERYMAN AND SEEDSMAN, Brompton Park, Kensington Gore, London, begs to call the attention of the trade, and planters generally, to his extensive Stock of FRUIT TREES, embracing all the best varieties in cultivation, under their correct nomenclature; but more particularly to his Standard Trained Cherries, Plums, Pears, Apricots, Peaches, and Nectarines; Dwarf Trained Cherries, Pears, Plums, Peaches, and Apples; Standard Cherries, Plums, Pears, and fine large Mulberries; Dwarf Pears, Plums, Apples, and Nectarines, of which he has a large stock, all of first-rate quality.

TO FOREST PLANTERS.—The Subscribers beg to offer about 50,000 very fine English OAKS, 5 feet high, of great substance, and twice transplanted. They will be sold cheap. Price on application.—W. JACKSON & Co., Bedale, Yorkshire.

LIME TREES, 12 to 14 feet, 42*s.* per 100.—SPRUCE FIRS, 2 to 3 feet, 6*s.* per 100.—LAURUSTINUS, very fine, 30*s.* per 100.—Apply to BENJAMIN R. CANT, St. John's Street Nursery, Colchester.

FRUIT TREES, &c.—The following are very strong, and finely grown:—Dwarf-trained Moor Park Apricots, and other sorts, 42*s.* per doz.; Standard trained Peaches and Nectarines, 60*s.* to 80*s.* per dozen; Dwarf trained Green-gage Plums, 30*s.* per dozen; Prince Albert Rhubarb, strong to force, 8*s.* per dozen.

Berberis aquifolium and Berberis dulcis.—These beautiful shrubs are 1 to 2 feet high; 8*s.* per 100, 60*s.* per 1000.—Usual discount to the Trade.—JOHN JEYES Nurseryman, Northampton.

WHEELER'S SHORT SELECT SEED LIST.

J. C. WHEELER AND SON'S SEED LIST *is now ready, and will be forwarded free on application. We have tried to make it as short and as select as possible, leaving out the names of all inferior varieties, so that it is really a List of the best Seeds in cultivation. Grasses and other Agricultural Seeds, Garden and Flower Seeds, all described, and prices put to every article. We deliver our Seeds Carriage Free to almost every Railway Station in the kingdom, and take especial care that every sort we send out is true to name, and of the best quality.*

J. C. WHEELER & SONS, Seed Merchants, Gloucester.

RENDLE'S NEW PRICE CURRENT FOR 1854 *should be obtained by all who have gardens, whether small or large. It will be found to be a correct and useful Guide to the amateur and young gardener; a remembrance to the more advanced in horticulture, and a source of reference to all.*

Can be obtained from the London Publishing Office, 294, STRAND;

or from the Proprietors, WILLIAM E. RENDLE & Co., Seed Merchants, ESTABLISHED 1786. Plymouth.

THE MOST CONCISE AND USEFUL SEED CATALOGUE YET PUBLISHED.

SUTTON'S NEW PRICED CATALOGUE *will be sent gratis on receipt of One Penny Stamp for Postage.* It contains select Lists of

KITCHEN GARDEN SEEDS | AGRICULTURAL SEEDS
FLOWER SEEDS | SEED POTATOES
AND BEDDING PLANTS.

Address JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

NURSERIES, SLEAFORD.

JOHN AND CHARLES SHARPE, SEED GROWERS and NURSERYMEN, beg to state that their Wholesale Priced List of Seeds and Nursery Stock is now ready, and may be had on application.

THOMAS SIBBALD, NURSERYMAN and SEEDSMAN, Bishop Auckland, will forward on application his DESCRIPTIVE CATALOGUE OF GARDEN AND FLOWER SEEDS. The stock is selected with care, and may be depended on as being genuine, and of equal quality with any offered.

DAWE, COTTRELL, AND BENHAM'S ANNUAL DESCRIPTIVE LIST OF FLOWER AND GARDEN SEEDS, &c., containing all the New and Choice Varieties of the Season, is Published, and will be forwarded post free to any address.—36, Moorgate Street, and 3, Laurence Pountney Lane, London. (Successors to F. Warner, established 28, Cornhill, 1720.)

STANDISH AND NOBLE'S CATALOGUE for the present season is Now Ready, and may be had on application. A selection from it appeared as a detailed advertisement in the *Gardeners' Chronicle*, of Saturday, Sept. 10th, to which they respectfully refer plant buyers. It contains many new and choice plants.—The Nursery, Bagshot, Surrey, Jan. 21.

CHARLES DIMMICK begs to announce to his friends and the public, that his CATALOGUE of GARDEN SEEDS is now ready, and may be had on application. They have been selected with great care from the best stocks in the country, and the growing qualities tried as soon as received.

Horticultural Establishment, 112 and 113, High Street, Ryde, Isle of Wight.—January 21.

DAHLIAS.

JOHN KEYNES, FLORIST, Salisbury, respectfully begs to announce that his Annual CATALOGUE of all the NEW and FIRST-RATE DAHLIAS for 1854 is now ready, and will be forwarded on application.

The two new and beautiful Dahlias, "FANNY KEYNES" and "RACHEL RAWLINS" will be figured in the February Number of "THE FLORIST;" and as drawings of these beautiful Dahlias cannot be procured through any other medium than "THE FLORIST," J. K. recommends his friends to order the February Number without delay.

Castle Street Nursery, Salisbury, Jan. 21.

AMERICAN PLANTS.

JOHN WATERER begs to announce that his NEW CATALOGUE of RHODODENDRONS, AZALEAS, CONIFEROUS PLANTS, &c., is now published, and may be had by enclosing two stamps for postage.

The colours of all the Rhododendrons worthy of cultivation are described in order to facilitate purchasers in making selections, together with a Treatise on their successful management.

☞ The Rhododendrons forming the American Exhibitions in the Royal Botanic Society's Garden, Regent's Park, London, are annually supplied from this establishment.

The American Nursery, Bagshot, Surrey, near the Farnborough Station, South-Western Railway, and 3 miles from Blackwater, South-Eastern Railway.

GEORGE BAKER begs to say that his DESCRIPTIVE CATALOGUE of AMERICAN PLANTS, CONIFERS, ORNAMENTAL SHRUBS, FRUIT and FOREST TREES, &c., may be had by enclosing two postage stamps.

G. B. wishes to call particular attention to his fine Stock of GREEN and WEEPING HOLLIES, from 1 to 12 feet high.

G. B. has supplied the American Exhibition in the Royal Botanic Gardens, Regent's Park, from its commencement.

American Nursery, Windlesham, near Bagshot, Surrey, about six miles from Staines Station, Windsor Branch, South-Western Railway, where conveyances may be obtained.

MYATT'S VICTORIA RHUBARB.—For Sale 4000 VICTORIA (true) RHUBARB ROOTS, in lots, to suit purchasers. Price on application.—Address JOHN SCHOFIELD & SON, Seedsmen, &c., Knowsthorpe, near Leeds, Yorkshire.

STANDARD TRAINED "MORELLO AND MAY DUKE CHERRIES."

YOUELL AND CO. are commissioned to offer for Sale a few very handsome "fan-trained" trees of the above (seven years trained) in full bearing, and will remove with perfect safety. Stems from 4½ to 6 feet in height, and heads measuring from 10 to 16 feet across, price 15s. to 21s. each. Those wishing to furnish their walls without loss of time, will seldom meet with a like opportunity.

Royal Nursery, Great Yarmouth.

LILIUM LANCIFOLIUM, RANUNCULUSES, & ANEMONES.

HENRY GROOM, Clapham Rise, near London, by appointment FLORIST TO HER MAJESTY THE QUEEN, AND TO HIS MAJESTY THE KING OF SAXONY, begs to say that this is a good season to procure bulbs of the above FLOWERS, which he can supply at the following prices:—

		Each.—s. d.
LILIUM LANCIFOLIUM ALBUM ...	from	9d. to 1 6
Do. do. PUNCTATUM	"	5s. to 10 6
Do. do. ROSEUM	"	3s. to 10 6
Do. do. CRUENTUM	"	5s. to 10 6
Do. do. Seedling Varieties of RUBRUM...	"	2s. 6d. to 10 6
Do. EXCELSUM	"	5s. to 10 6
Do. JAPONICUM TREE, or BROWNI	"	5s. to 10 6
Do. THOMSONIANUM, New	"	5s. to 15 0
6 HYBRID SEEDLING LILIES BY NAME ...		15 0
100 RANUNCULUSES, in 100 superfine sorts, named		£2 10 0
Superfine mixtures per 100	from	5s. to 10 6
100 ANEMONES, in 50 superfine sorts, named ...		£1 10 0
Superfine mixtures, double, per 100	from	6s. to 10 6
" " single, " ...	"	5s.
HIPPEASTRUM AULICUM, strong bulbs ...		each 5 0
VALLOTA PURPUREA		" 3 6
CALOCHORTUS LUTEUS		" 3 6
GLADIOLUS, fine-named sorts, each, from ...		9d. to 2 6
ANOMATHECA CRUENTA		per dozen 4 0

H. GROOM begs to say that his Catalogue will be forwarded by post on application.—Foreign Orders executed.

EXOTIC NURSERY, CANTERBURY.

WILLIAM MASTERS, at the commencement of a new season, has the pleasure to tender his very grateful thanks to his numerous Patrons for the very kind support with which they have favoured him during the last thirty-five years, and begs to solicit a continuance of the same on behalf of himself and his Son, with whom he has now entered into PARTNERSHIP, and who has been engaged with him in the practice of Landscape Gardening and the various branches of his business for some years.

WILLIAM MASTERS AND SON beg to offer the following Collections of GARDEN SEEDS, in assortments containing a supply for the whole year in proportionate quantities of each.

No. 1 Collection, for a large garden, containing 20 quarts of Peas in 20 best sorts for succession, 10 best sorts of Broccoli, 8 ditto of Lettuce, with all other vegetables in proportion	£2 10 0
No. 2, the best new and other sorts, in smaller quantities	1 10 0
No. 3, ditto ditto	1 0 0
No. 4, a Collection of esteemed kinds for a small garden	0 10 0

Grass Seeds for Lawns, Permanent Pasture, or alternate Culture.

FLOWER SEEDS, with printed Directions for their Culture, in Collections of 12 for 2s. 6d.; 25 for 5s.; 50 for 9s.; 100 for 18s.

Their New Seed Catalogue for 1854 will be forwarded on application.—January 21, 1854.

DISSOLUTION OF PARTNERSHIP.

THE PARTNERSHIP which has existed for thirty-five years between my cousin and myself, as Seed Merchants and Nurserymen in this City, under the firm of "FRANCIS AND JAMES DICKSON," and also in Manchester for upwards of four years, under the firm of "FRANCIS AND JAMES DICKSON AND CO.," has been this day DISSOLVED by mutual consent; and I beg to tender my grateful acknowledgments and sincere thanks to the numerous patrons and friends of the late firm, for the kind and liberal patronage extended to my late partner and myself for so many years, and as I have now entered into Partnership with my Sons, I venture to hope that we may, unitedly, continue to merit a share of that confidence and patronage which I enjoyed for so long a period as senior partner in the late firm.

Our Seed Business will be carried on in the same premises as before, and our Nursery Business at the Upton Nurseries near Chester, under the firm of FRANCIS and ARTHUR DICKSON & SONS.

Chester, Dec. 28, 1853. FRANCIS DICKSON.

SEED WAREHOUSE, 106, EASTGATE STREET.

FRANCIS AND ARTHUR DICKSON AND SONS, in soliciting a continuance of the confidence and patronage enjoyed by the late firm, have only to state that they are determined that every article sent out by them, whether in Seeds or Plants, shall not only be of first quality but shall also be charged the most moderate price; and they further assure their customers and friends that no effort shall be wanting on their part at all times to meet the wishes of those who entrust their orders to them. Their stock of New Seeds for the ensuing season is now complete; catalogues of which will be ready in a few days, and may be had on application.—January 21.

SEED ESTABLISHMENT AT 102, EASTGATE STREET, AND NURSERY GROUNDS AT NEWTON, NEAR CHESTER.

THE FIRM OF F. AND J. DICKSON having been DISSOLVED, I take the liberty of informing my Friends and the Public generally, that I purpose in future carrying on business in conjunction with my Sons, under the Firm of "JAMES DICKSON & SONS," and beg very respectfully to solicit a share of those kind favours hitherto conferred on my late partner and myself, and which will at all times continue to have my utmost care and undivided attention. I avail myself of this opportunity of returning to all the numerous customers and friends of the late Firm throughout the entire principality of North and South Wales, Cheshire, Shropshire, Lancashire, and adjoining counties, my most sincere thanks for the very liberal support and great kindness which for thirty-five years I have had the pleasure and satisfaction of experiencing whilst personally travelling through these districts. Trusting to be favoured with a continuance of the same support and commands, I am yours, very respectfully, JAMES DICKSON.

J. D. & SONS, holding a very heavy Stock of Forest, Fruit, and Ornamental Trees, Evergreen and Flowering Shrubs, and all kinds of Nursery Stock, on Grounds which must be cleared before the end of March next, have determined, rather than incur the additional expense of transferring them to other parts of their Grounds, to Dispose of the Stock thus situated at the lowest possible prices.

Their New Seed Warehouse, which is at 102, Eastgate Street, four doors from the south end of St. Werburgh Street end, towards the Cross, is fully supplied with a newly-selected Stock of all sorts of Garden, Farm, Flower, and other Seeds, of the very best quality, for the ensuing season, orders for which will much oblige.

J. D. & SONS beg to add, that the old-established Seed Business (heretofore carried on by the late firm) at 106, Deansgate, Manchester, has become their property, by which means they will be enabled to supply their friends in that city and neighbourhood with every article in the several branches of their business with every facility and despatch.

J. D. & SONS would further state, that they will retain and continue, on a greatly enlarged scale, the Nursery and Seed Establishment carried on by the late firm at Newtown, Montgomeryshire, from which place also they will have great pleasure and satisfaction in supplying their friends in that locality with such orders as they may favour them with.

SEEDS CARRIAGE FREE.

SUTTON'S COLLECTIONS OF SEEDS THE BEST YET OFFERED.

KITCHEN GARDEN SEEDS.

	£ s. d.
No. 1.—A complete Collection, for one year's supply of a large Garden	3 0 0
No. 2.—A complete Collection, in reduced quantities, of the same sorts	2 0 0
No. 3.—Ditto Ditto Ditto	1 5 0
No. 4.—Ditto Ditto Ditto	0 15 0

A List of the sorts and quantities contained in these Collections may be had post free in return for one penny stamp.

HARDY AND SHOWY FLOWER SEEDS (POST FREE).

No. 5.—A Collection of the best 50 sorts known ...	0 10 6
No. 6.—A Collection of the best 36 sorts known ...	0 7 6
No. 7.—A Collection of the best 24 sorts known ...	0 5 0

Purchasers are at liberty to name any sorts of Flower Seeds they wish included in the above Collections. If left to our selection, the most hardy and showy kinds only will be sent.

SUTTON'S GENERAL PRICED CATALOGUE OF SEEDS AND PLANTS will be sent post free on receipt of one penny stamp.

JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

NEW SEEDS—GROWTH OF 1853.

RENDLE'S COLLECTION OF GARDEN SEEDS, FOR ONE YEAR, *will be sent out as usual by the Subscribers.*

The collections have given universal satisfaction, and they will be found sufficient to supply a garden during the whole of the 12 months.

	£ s. d.
No. 1.—A complete Collection, to supply a large garden for 12 months, including 20 quarts of the newest and most approved Peas, for early, medium, and late crops; 10 quarts of Beans, and full quantities of all other kinds of vegetable seeds	3 0 0

For the detailed quantities contained in the No. 1 Collection, see back page Gardeners' Chronicle, Jan. 7, 1854.

No. 2.—A complete Collection, in reduced quantities, for a smaller garden	2 0 0
No. 3.—A complete Collection do.	1 5 0
No. 4.—A small and choice Collection	0 15 0

☞ *All orders above 20s. carriage free (see* PRICE CURRENT*), and all orders above 5l. delivered carriage free to every Railway Station in England and Wales, and to every Steam Port in England, Wales, Ireland, and Scotland.* WILLIAM E. RENDLE & Co., Seed Merchants,

ESTABLISHED 1786. Plymouth.

The quantities contained in the above Collections will be found in our PRICE CURRENT AND GARDEN DIRECTORY, *just published.*

CHOICE SEEDS.

BASS AND BROWN'S SPRING CATALOGUE FOR 1854 is now in the Press. The Part containing the SEEDS can be forwarded immediately, on application, for two penny stamps.

PEAS, FINE NEW KINDS, of last and present year's introduction.

Fairbeard's Nonpareil, earlier than Champion of England, and fine rich flavour	5s. 0d. per quart.
Waite's Daniel O'Rourke, very early	2 6 "
Sangster's New No. 1, 2½ ft., very early, prolific and fine pods	2 0 "
Stuart's Paradise, 4ft., a very fine large long-podded marrow, three weeks before Thurstone's Reliance, or other Peas of the same character	2 0 "
Hairs' Defiance, 4 ft., a fine new wrinkled marrow	2 0 "

The three last mentioned were grown last season by ourselves, and we can recommend each as an acquisition. Sangster's No. 1 and Stuart's Paradise will be included in the collections below.

BASS AND BROWN'S ASSORTED COLLECTIONS OF VEGETABLE SEEDS, comprising the best in cultivation, including several new sorts of excellent quality.

	£ s. d.
No. 1.—Collection for a large garden, containing 20 quarts Peas, in 20 best sorts, and all other vegetable seeds in proportion, for one year's supply...	3 0 0
No. 2.—Collection in smaller proportions	2 0 0
No. 3.—Collection do. do.	1 5 0
No. 4.—Collection of good kinds for a small garden ...	0 15 0

Copies of the Autumn Catalogues may still be had for three penny stamps.

Goods (not under 20s.) carriage free to all stations in London.

Seed and Horticultural Establishment, Sudbury, Suffolk.

SELECTED GARDEN SEEDS.—We beg to offer the following Collections of Garden Seeds:—

	£ s. d.
No. 1.—A complete collection, suitable for a large garden	3 0 0
2.—A collection of equally choice varieties, but smaller quantities	1 10 0
3.—A collection suitable for a small garden ...	0 15 0

Nos. 1 and 2 collections will be sent carriage free to any Railway Station in England or Wales.

J. C. WHEELER & SONS, SEED MERCHANTS, Gloucester.

T. APPLEBY AND SON, NURSERYMEN and SEEDSMEN, Victoria Nursery, Uxbridge, return their sincere thanks to their numerous patrons during the past year, and beg to inform them and the public in general, that their ANNUAL CATALOGUE of NEW SEEDS is now ready, and will be sent free on prepaid application.

T. A. & SON have a large stock of the finest varieties of Show and Fancy GERANIUMS, which they are prepared to dispose of at reduced prices. A good stock of TRAINED FRUIT TREES yet on hand.

SELECTED GARDEN SEEDS.

We beg to offer the following Collections of Kitchen Garden Seeds, containing all the best sorts of Vegetable Seeds, to stock the garden throughout the year:—

	£ s. d.
No. 1. A complete Collection, suitable for a large garden	3 0 0
No. 2. A Collection of smaller quantities, but equally choice	1 10 0
No. 3. A choice Collection for a small garden	0 15 0

Nos. 1 and 2 Collections will be sent Carriage Free to any part of Great Britain.

A large quantity of SPRUCE FIRS, 1½ to 6 feet, on sale.

Victoria Nursery, January 21.

PARADISE PEA.

STEWART AND MEIN having received from all quarters the most favourable reports of the above Pea, beg again to call attention to it, and to intimate that in consequence of the generally defective crop of last season, their stock of it is very limited, and they would therefore advise an early application from intending purchasers. Price and other particulars may be had on application. Agents in London: Messrs. Charlwood & Cummins, Covent Garden; and Messrs. Nutting & Sons, Cheapside; and in Edinburgh, Messrs. Lawson & Son, and Messrs. Dickson & Sons.

S. & M. have also on hand Ash-leaved Kidney, Jackson's Improved Ash-leaved Kidney, Shaw's Early, and Chinese Early Potatoes, at moderate prices.

Paradise Nurseries, Kelso, Roxburghshire, Jan. 21.

JUDSON'S RICHMOND VILLA BLACK HAMBURGH VINE.

ARTHUR HENDERSON AND CO. have the pleasure of informing their patrons and friends that they have plants of this valuable and much-esteemed Vine at 5s. each, extra strong plants, 7s. each.—N.B. For full particulars of distinguishing characteristics of this Vine, we beg to refer customers to the *Gardeners' Chronicle* of October 25th, 1851.

CHOICE FERTILISED PETUNIA SEEDS.

ROBERT DEBRON begs to offer the above, which he can recommend with the greatest confidence as being carefully saved from one of the Finest Collections in the Kingdom. Warranted to produce flowers equal to any out. In packets sufficient to grow 200 plants, 2s. 6d. per packet; second quality, 1s. per packet. Strong Seedling Plants from the above, established in separate pots in April, 3s. to 6s. per dozen.—May be obtained of Messrs. LEE, Hammersmith Nursery; also of Messrs. NOBLE, COOPER, & BOLTON, 152, Fleet Street, London.

Ely Nursery, Ely, Cambridgeshire.

SHRUBS, FRUIT AND FOREST TREES, SEEDS, &c.:—Sycamore, Chestnut, Walnut trees, 5 feet high, each; Laurels, 2d. each; Privet, 1d. each, 4 feet high; White, and Black Currants, 3 feet high, 4d. each; Ilex, English Yew, Euonymus, Weigela Rosea, Gold and Silver, Cypress, variegated Holly, Escallonia macrantha, all at 1s. each; Cryptomeria japonica, 3s. to 5s. each; Cedar of Lebanon, 3s. 5s. each; Rhododendrons, 1s. to 5s. each; Box Edging, 4d. yard. Every other Shrub, Flower, or Tree, at equally low prices.—At W. CULLINGFORD'S, 1, Edmund Terrace, Ball's Pond Road, Islington, London. Flower and Vegetable Seeds of every kind.

CORN MARKET, WISBEACH, CAMBRIDGESHIRE.

CHARLES SHARPE begs to call the attention of the nobility, gentry, and trade to the undermentioned choice collection of SEED POTATOES, grown with great care upon marsh land near the sea, which is the most appropriate soil for the culture of the Potato, as it is less affected by the disease, and of finer quality. The undermentioned prices include hampers and package. Smaller quantities can be had if required. The Trade Price can be had on application.

POTATOES (FOR FORCING AND EARLY PLANTING).

Per bushel of 4 stones.		Per bushel of 4 stones.	
Early Ash-leaf Kidney ...	12s.	Early Flourball (Rylott's)	1[illegible]
" " (Jackson's)	12s.	" Round Frame ...	[illegible]
" Emperor	12s.	" Cockney	[illegible]
" Fox's Seedling ...	10s.	" Oxford (very true)...	[illegible]

POTATOES (FOR SECOND PLANTING AND LATE CROP).

Per bushel of 4 stones.		Per bushel of 4 stones.	
American Native	10s.	Kentish Kidney	[illegible]
White Rough	8s.	White Kidney	[illegible]
Yorkshire Regent	8s.	British Queen (this is the largest producer and best quality in cultivation) ...	[illegible]
Forty Fold	10s.		

"FASTOLFF RASPBERRY."—It is with much satisfaction that we announce a third award made by the London Horticultural Society, on 26th of July last, for examples of the above most excellent Raspberry, unequalled by any other variety for the size of its fruit and richness of flavour.

It is reported in the *Gardeners' Chronicle* of July 30th, page [illegible], as follows:—"Messrs. Youell, of Great Yarmouth, sent a box of beautiful fruit of the Fastolff Raspberry; they were unusually fine, and well deserved the certificate of merit awarded them."

Strong well-rooted canes, 15s. per 100; Large White Raspberry, 24s. per 100; New Monthly Fruiting, 24s. per 100.

CHOICE FRUITS. (Warranted true to name.)

APPLES, standard, in best selection, good heads			9s.	per dozen
" dwarf	"	"	6s.	"
" trained	"	"	30s.	"
PEARS, standard	"	"	12s.	"
" dwarf	"	"	8s.	"
" trained	"	"	30s.	"
PLUMS, dwarf	"	"	9s.	"
" trained	"	"	36s.	"
PEACHES, dwarf trained, in fine strong plants,			36s. to 60s.	"
NECTARINES, dwarf trained,		"	36s. to 60s.	"
APRICOTS	"	"	36s. to 60s.	"
CHERRIES, standard, in fine variety		... ...	12s.	"
" dwarf	"	... ...	9s.	"
" trained	"		36s. to 42s.	"

GOOSEBERRIES, 25 of the finest varieties (good bushes) selected for size and flavour, 30s. per 100; 4s. per dozen.

CURRANTS, improved large white Dutch, Black Naples, Bath Castle (red), and Large Red Grape, 4s. per dozen; Knight's Sweet Red, 6s. per dozen; these are the most desirable kinds in cultivation, and are highly recommended.

RHUBARB, Myatt's Victoria, 9s. per dozen; Royal Albert, per do.; Linnæus, 9s. per do.; Tobolsk, 6s. per do. (strong).

SEAKALE, extra strong, 2 years, 6s. per 100; 3 years, 8s. per 100.

ASPARAGUS, extra strong, for forcing 5s. per 100; 3 years old, 3s. 6d.; 2 years old, 2s. 6d.

*** Less quantities than those named above supplied at the same prices. Orders of 2l. and upwards are delivered Carriage Free to London or Hull, or to any Railway Station within [illegible] miles of the Nursery.

YOUELL & Co. beg to refer to their Advertisement of a choice and extensive Collection of Plants which appeared in this Paper of October 15, and for Conifers, October 22. Catalogues will be forwarded free on application. Anemone Seed, saved from selected roots, 10s. per lb. The usual discount to the trade.

YOUELL & Co., Royal Nursery, Great Yarmouth.

CHARLWOOD AND CUMMINS beg to announce that their PRICED LISTS OF AGRICULTURAL, GARDEN, AND FLOWER SEEDS, are now ready, and will be sent free on application. In the Flower Seed List will be found many varieties rare and worthy of cultivation, amongst which they venture to name—

Abronia umbellata	Lisianthus Russellianus
Ageratum albiflorum	Lobelia Erinus alba oculata
Alyssum Wiersbacki	" ramosa rosea
Amaranthus, Globe, new orange	Lupinus venustus
Aquilegia Durandi	Madaria corymbosa
Arctotis breviscarpa	Melampodium macranthum
Balsam, pale yellow	Nycterinia capensis
Calendrinia rosea	" selaginoides
" umbellata	" villosa
Calceolaria, species from California	Nolana alba grandiflora
Cenia turbinata alba	Pennisetum longistylum
Chrysanthemum Sibthorpi	Pink, Indian, new dwarf
Coreopsis coronata	" white striped
" marmorata	Phlox Drummondi alba
Erigeron Beyrichi	" " coccinea
Gaillardia Josephus	" " Mayi
Gilia, new var. from California	" " Leopoldiniana
Grammanthus gentianoides	" " oculata
" " lutea	Podolepis auriculata
Impatiens roseæflora	" rugata
Ipomœa Ferrandia	Salpiglossis azurea grandiflora
" quamoclit alba	Schizanthus retusus albus
" limbata	Tropæolum minus coccineum
" rubra cærulea	" Lilli Schmidt
" tyrianthina	" Sheurmanianum
" hybrida	" Lobbianum
Kaulfussia Burrowsi, new white	" Moritzianum, var.
Leptosiphon luteum, new yellow	ornatum
Linaria triornatophora	Venidium calenduloides
Linum grandiflorum coccinea, new and splendid	Wahlenbergia grandiflora

Fine Flowering Plants of Aquilegia glandulosa, 2s. each, 20s. per dozen.—14, Tavistock Row, Covent Garden, London.

GREAT WESTERN, GREAT NORTHERN, SOUTH-WESTERN, AND SOUTH-EASTERN

SEED ESTABLISHMENT, READING, BERKS,

For Supplying SUTTON'S HOME-GROWN SEEDS to all parts of the United Kingdom.

THE GARDEN AND FARM SEEDS grown in Berkshire and the adjoining Counties having obtained great celebrity and gained us a very extensive connection in almost every county in the United Kingdom, we have made such arrangements with Messrs. Pickford & Co., who have Offices on most of the great Lines of Railways, as will enable us (with a few exceptions), to deliver our Goods **CARRIAGE FREE TO ALL PARTS OF THE UNITED KINGDOM.**

We take every care and spare no expense to grow and supply our customers with good Seeds, true to their kinds; and we have much pleasure in presenting the following description of our Establishment from the "GARDEN MEMORANDA," *in the* GARDENERS' CHRONICLE *of November* 27, 1852:—

"MESSRS. SUTTON AND SONS', READING, BERKS.—This important Seed Establishment is situated in the Market-place of the fine old town of Reading, which is easily and speedily reached by the Great Western Railway. The shop is fitted up with all the appliances and conveniences for despatch which an extensive business demands. The excellent mode of labelling everything is worthy of especial remark, as the possibility of committing mistakes must be greatly diminished. Behind the shop is an extensive double range of warehouses, which are occupied by Garden and Agricultural Seeds, more especially Turnip and Grass Seeds, of both of which Messrs. Sutton have one of the best collections in the country. Beyond the warehouses is a small garden in two compartments, both furnished with glass houses and pits. Here the vitality of the different kinds of Seeds is tested, and the gayer kinds of plants kept for decorating the shop and for sale in pots. The principal Nursery, however, belonging to this establishment lies on the south side of the town, in a fine level situation. Here, Roses, Fruit Trees, Evergreens, and Conifers are chiefly cultivated, together with, here and there, patches of the most choice vegetables for trial. This firm have given up the saving of Rye, Vetches, and Seed corn, in order that undivided attention may be given to the finer Seeds, such as those of Turnips, Clovers, and Grasses. Of the latter, examples of all that are valuable to the Farmer, or for forming Permanent Pastures, are collected here, and correctly labelled, so that an opportunity is afforded of inspecting their different characters while growing in the same soil and under precisely the same treatment. In the horticultural portion is a piece of land set apart as 'sample ground,' in which we observed rows of Broccolies, Cabbages, Lettuces, &c., all growing side by side, and labelled with their names in full; also beds of choice Beets, Carrots, &c., for transplanting for Seed. Upwards of 30 varieties of Peas had been grown here, but they were cleared off, excepting Sutton's Goliah, which was still producing pods and blossoms; it was sown on the 22d of August. It is therefore a good Pea for a late crop, and it appears to be very productive; its flavour resembles that of Knight's Marrowfat. Many sorts of Potatoes had been cultivated here, but now stored away. Of agricultural crops, a compartment was allotted to Turnips, containing about 40 varieties of Swedish, Hybrid, and other kinds. Of the former, the best appeared to be Sutton's Purple-top and Rivers's Stubble Swede. Among Hybrids, Sutton's, Skirving's, and Rivers's are all especially worthy of mention. Chivas's Orange Jelly was particularly fine, both as regards smoothness and colour. The largest Turnip in the grounds was the New Lincolnshire Red, so called from its being brought originally from that county by Philip Pusey, Esq., who presented the stock to Messrs. Sutton. Of Mangold Wurzel and Beet (which were of great size), we noticed a large red variety, called the Elvetham Long Red, a new sort introduced by Messrs. Sutton; also very finely formed Yellow Globe Mangold Wurzel, besides the large Crimson Beet, and the White Silesia Sugar Beet. There were also Kohl-Rabi, Drumhead, and other Cabbages, White Belgian Carrots, and a very large new Orange-colour variety, which seemed likely to vie with the White Belgian itself for size."

The foregoing notes were written by a Gentleman in connection with the GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE, *who is in the practice of inspecting the principal Horticultural and Agricultural Establishments in the kingdom, for the purpose of reporting the peculiar features of each, in that valuable Journal. See* GARDENERS' CHRONICLE, *Nov.* 27, 1852.

N.B.—We are extensive Growers of Mangold Wurzel, Turnip, and other Agricultural Seeds, as well as all kinds of Kitchen Garden and Flower Seeds, of which a Catalogue is published annually, and will be sent Post Free on receipt of One Penny Stamp. Estimates given, and special contracts made for Seeds in large quantities. Post-office Orders should be made payable to JOHN SUTTON & SONS; but WE DO NOT REQUIRE PRE-PAYMENT FOR GOODS, as we have connections in almost every county in the United Kingdom, therefore a reference will be sufficient.

JOHN SUTTON AND SONS, Seed Growers, Reading, Berks.

YEWS! YEWS! YEWS!

WILLIAM YOUNG informs Gentlemen, Contractors for Cemeteries, and others, that he has a large stock of fine Fanned YEWS, 6, 8, and 10 feet high, well furnished, and will remove with safety. Likewise a quantity of fine quartered Yews, 7 to 8 feet, of a good colour, all recently removed. Persons requiring a quantity will find the above well worth their inspection.

Melford Nursery, near Godalming, Surrey, two miles from the South-Western and three from the South-Eastern Railways.

THE CUCUMBER SEASON.—Growers of this superb and select branch of Horticulture should endeavour to procure seeds of such varieties as will give them satisfaction, and meet every expectation for exhibition or otherwise. The under-mentioned have been thoroughly proved, and testimonials and orders again received from numerous correspondents.

CAPTIVATION CUCUMBER, a beautiful black spine, free from ribs and shrivels, carries its bloom well, fruit never turning colour at the point like many others, length from 20 to 28 inches, uniform from stem to point (a consideration to exhibitors), 2*s.* 6*d.* per packet.

PHENOMENON CUCUMBER.—Also a fine black spine, rapid grower, and the hardiest of all long Cucumbers, in other respects similar to the above, 2*s.* 6*d.* per packet. This will give every satisfaction to growers.

Victory of Bath Cucumber, 1*s.* per packet; Winter Cucumber, Lord Kaynon's Favourite, 2*s.* 6*d.* ditto; Gordon White Spine, 1*s.* ditto; Chamberlain's Essex Hero (very fine), 2*s.* ditto; Sunderlandwick Cucumber (very fine), 2*s.* ditto; Hunter's Prolific, 1*s.* ditto; and numerous other good varieties, at 1*s.* per packet.

MELONS, the best sorts, true to name, and such as will give every satisfaction.—Tiley's Incomparable, 1*s.* 6*d.* per packet; Tiley's Bromham Hall, 1*s.*; Tiley's Golden Ball, 1*s.*; Tiley's Queen, 1*s.*; Tiley's Bowood, 1*s.*; Victory of Bath, 1*s.*; Camerton Court, 1*s.*; Beechwood, 1*s.*; Windsor Prize, 1*s.*; Emperor, 1*s.*; Fleming's Hybrid Persian, 1*s.*; Hampton Court, 1*s.*; Blackhall's Green Flesh, 1*s.*; Bailey's, 1*s.*; and numerous others.

*** A Packet of each of the first-named Cucumbers, and two packets of either of the Melons named, sent free for 60 penny stamps.

HOLLYHOCK SEED, saved from a splendid collection of all the newest and best varieties out, 2*s.* 6*d.* per packet.

GERMAN ASTER SEED, from some of the finest flowers ever exhibited, 1*s.* per packet, or a packet of this and of the Hollyhock for 3*s.*

ANTIRRHINUM SEED (SPLENDID), 1*s.* per packet.

A remittance must accompany every order by cash or penny postage stamps, when the whole or any part (as the case may be) will be immediately forwarded.

EDWARD TILEY, NURSERYMAN, SEEDSMAN, & FLORIST, 14, Abbey Churchyard, Bath, Somersetshire.

CEDRUS DEODARA AND ARAUCARIA IMBRICATA.—The beauty and unique character of the above hardy and most ornamental of all Evergreen Trees are too well known to admit of any comment. Our plants are grown within 500 yards of the wash of the Sea, in this the most eastern point of England, and consequently fully exposed to the gales of the North Sea and German Ocean, which they stand with impunity. It is, therefore, obvious to Noblemen and Gentlemen who purpose planting their Marine Villas, and other exposed situations, that they will not meet with that disappointment so frequently attending plants reared in milder counties. We submit the following scale of prices for robust, handsome, and well-formed plants, either in or out of pots:—

CEDRUS DEODARA... ...	4 to 6 inches	6*s.*	per dozen
" "	12 to 15 "	12*s.*	"
" "	1½ to 2 ft.	20*s.*	"
" "	2 to 2½ ft.	30*s.*	"
" "	3 ft.	42*s.*	"
" "	3½ to 4 ft.	60*s.*	"
" "	large specimens, 15*s.* to 21*s.* each.		

If 100 or more of the above be taken, a considerable reduction will be made.

ARAUCARIA IMBRICATA ...	4 inches	6*s.*	per dozen.
" " ...	1 ft.	30*s.*	"
" " ...	1 ft. to 1½ ft.	42*s.*	"
" " ...	1½ to 2 ft.	60*s.*	"
" " ...	2 to 2½ ft.	80*s.*	"
" " ...	3 ft, fine,	15*s.* each.	

Catalogues will be forwarded free on application. Orders of 2*l.* and upwards are delivered Carriage Free to London or Hull, or to any Railway Station within 150 miles of the Nursery.

YOUELL & Co., Royal Nursery, Great Yarmouth.

PYRAMIDAL PEAR TREES ON THE QUINCE STOCK.

J. AND J. FRASER, NURSERYMEN, Lea Bridge Road, Essex, beg to offer the above in fine strong trees, and such as would fruit the first and second year after planting, at the undernamed prices. These Pears are remarkable for their compact style of growth and prolific bearing; the collection comprises the following fine sorts:—Beurré d'Amanlis, Beurré d'Aremberg, Beurré de Capiaumont, Beurré Diel, Beurré Easter, Beurré Grise d'Hiver, Nouveau, Beurré Rance, Williams's Bon Chretien, Crassane, White Doyenné, Duchesse d'Angoulême, Forelle or Trout Pear, Glout Morceau, Hacon's Incomparable, Jargonelle, Louise Bonne of Jersey, Marie Louise, Napoleon, Winter Nelis, and Passe Colmar. Price 2*s.* 6*d.* to 3*s.* 6*d.* each.

COLE'S SUPERB CRYSTAL WHITE CELERY.

J. THORNLEY, W. COLE, AND Co., NURSERYMEN, SEEDSMEN, and FLORISTS, Withington, Manchester, beg to announce that they are now prepared to supply this fine Celery at 1*s.* 6*d.* per half-ounce packet, or in larger quantities. This variety has given universal satisfaction, and has been proved to possess all the good qualities attributed to it by W. Cole last season. It can also be procured from the following agents:—

Messrs. Hurst and M'Mullen, 6, Leadenhall Street; Messrs. Noble, Cooper, and Bolton, 152, Fleet Street; Messrs. Minier & Co., 60, Strand; Messrs. Charlwood & Cumming, Covent Garden; Mr. Turner, Slough; Mr. Duncan Hairs, St. Martin's Lane; Mr. Denyer, Gracechurch Street; Mr. J. Fairbairn, Clapham; Messrs. A. Henderson & Co., Pine Apple Place; Messrs. Downie and Laird, Edinburgh; Messrs. F. & J. Dickson, Chester; Messrs. F. & J. Dickson, Manchester; Messrs. J. & J. Fraser, Lea Bridge, Essex; Messrs. Little and Ballantyne, Carlisle; Messrs. Veitch & Son, Exeter; Mr. J. Veitch, Exotic Nursery, Chelsea; Mr. Clarke, King Street, Covent Garden; Messrs. Finney & Co., Gateshead; Mr. A. Pontey, Plymouth; Mr. E. Rendle, Plymouth; Mr. Cattell, Westerham, Kent; Mr. Smith, Riverhead, Kent; Mr. Epps, Ashford and Maidstone, Kent; Messrs. Lucombe, Pince, & Co., Exeter; Mr. Browne, Norwich; J. Cole, Keyfield Nursery, St. Albans; Garaway & Mayes, Bristol; Drummond & Son, Stirling.

All orders to be addressed as above, instead of to "Dartford" as heretofore.

TO NOBLEMEN, GENTLEMEN, AND COMPANIES PLANTING.

THOMAS JACKSON AND SON respectfully invite an inspection of their extensive and fine collection of ORNAMENTAL SHRUBS and TREES; they are of fine growth, and in excellent condition for planting for immediate effect. To the undernamed T. J. & SON especially desire attention. Prices may be obtained by letter or personal application.

American Arbor-vitæ, 2 to 10 ft.	Deutzia gracilis, 1 to 2 feet, fine
Chinese do., 2 to 8 feet, fine	Pinus excelsa, 3 to 8 feet, fine
Arbutus, 2 to 5 feet	Pinus insignis, 3 to 5 feet
Aucubas, 2 to 4 feet, very bushy	Cryptomeria japonica, 2 to 6 ft.
Cedar, Deodar, 2 to 12 feet, fine	Taxus pyramidalis, 2 to 6 feet, fine
Cedar of Lebanon, 2 to 9 ft., fine	Laurustinus, 1 to 3 feet, very bushy
Variegated Hollies, 2 to 9 feet	Evergreen Oaks, 2 to 7 feet, fine
Green do., 2 to 9 feet	Portugal Laurels, 2 to 5 feet
Weeping do., 5 feet stems, fine	Magnolia acuminata, 4 to 10 ft.
Berberis aquifolium, 2 to 3 feet, bushy	Do. grandiflora Exmouth, 2 to 5 feet, fine
Taxodium sempervirens, 3 to 12 feet, fine	Tree Pæonies, 1 to 3 ft., bushy
English Yews, 2 to 9 feet	Chinese Junipers, 2 to 8 ft., fine
Irish do., 2 to 8 feet, very fine	Upright Cypress, 5 to 8 ft., fine
Tree Box, 2 to 7 feet	Forsythia viridissima, 2 to 4 ft.
Araucaria imbricata, 1 to 5 feet, fine	Red Cedars, 3 to 5 feet, fine

T. J. & Son having added to their previously good stock of American Plants, about one-third of the entire stock of the Norbiton Nursery, so long famed for its collections of Hybrid Rhododendrons, Azaleas, &c., can now offer on most advantageous terms—

Rhododendron ponticum, 1 to 5 ft., in great variety.
Do. aureum, and the varieties of yellows, 1 to 7 ft.
Do. Smithi, tigrinum, and other scarlets, 1 to 9 ft.
Do. campanulatum and light varieties, 1 to 7 ft.
Azaleas, Indian, American, and Ghent varieties, 1 to 6 ft.
Kalmia latifolia, and others, 1 to 4 ft.

T. J. & Son have a splendid healthy stock of the Sikkim Rhododendrons, of which they will furnish the 12 following fine kinds, in pots, for 63*s.*, viz., Thompsoni, fulgens, glaucum, glaucum nanum, niveum, Falconeri, ciliatum, Edgeworthii, lancifolium, cinnabarinum, ferruginosum, and calycatum.

Fine Fruit and Forest Trees; strong Quick for Fences, and all other kinds of Nursery Stock.—Nurseries, Kingston near London.

SUPERB LATE WHITE BROCCOLI—"EMPEROR."

EDMUND PHILIP DIXON having purchased the entire stock of the above Broccoli of Messrs. Elletson, Market Gardeners, Thorngumbald, near Hull, begs to announce that after the 1st of January next he will be prepared to send it out in sealed packets at 2*s.* 6*d.* each. This Broccoli has been raised by the Messrs. Elletsons, the raisers of the Mammoth, sent out some time ago, who state that the EMPEROR, if sown at the same time, will come into use before it. Is of very dwarf growth, perfectly hardy, with heads from 15 lbs. to 20 lbs. weight; keeps its colour, and stands firm three weeks after it is ready to cut. A noble flower and commands the best price of any other in the Hull market, where it is well known, and will be a great acquisition to the market gardeners around London, as well as those who wish for a first-rate Broccoli.

May be had of Messrs. NOBLE, COOPER, & BOLTON, 152, Fleet Street; and Messrs. HURST & M'MULLEN, 6, Leadenhall Street, London. Also of the Advertiser, 57, Queen Street, Hull.

PEAS! PEAS! THE BEST VARIETY IN CULTIVATION.

CHAMPION OF ENGLAND, a blue wrinkled Pea, very productive, of quick growth, and of a most delicious flavour. This extraordinary Pea combines in one the merits of all others, and has none of their demerits; for, although a wrinkled Pea, it is both hardy and early, and being of quick growth, it is the best kind to plant throughout the season for each crop. It is highly productive, bearing very long pods of a lively green, which are well filled, and the Peas are generally as large as small horse Beans, of a deep green colour, and beyond all others of a most delicious flavour. Height, 3 ft. to 3½ ft.

Price, in quantities of not less than 1 peck ...	Bag included	6*s.*
" " " 1 bushel	"	16*s.*
" " " 1 sack (4 bushels)	"	60*s.*
" " " 8 bushels (1 qr.)	"	106*s.*

Delivered, freight paid by Railway to London.

Orders, with remittance or satisfactory reference, will have immediate attention on application to

H. AND A. WALLIS, SEEDSMEN, Ipswich.

CAREY TYSO'S CATALOGUE OF FLORISTS' FLOWERS for 1853-4 may be had post free for two labels. TREATISE on the ANEMONE, for four labels. Ditto on RANUNCULUS, for eight labels.

	£.	*s.*	*d.*
RANUNCULUSES: 100 splendid named sorts, 40*s.* to	4	0	0
" 25 superb Seedlings, do.	1	15	0
" 100 fine mixtures from ... 8*s.* ...	1	0	0
DOUBLE ANEMONES: 50 fine named sorts 12*s.* ...	0	15	0
Ranunculus and Anemone Seeds, per paper ...	0	2	6

IMPORTED GERMAN SEEDS:—Asters, Stocks, Balsams, Larkspurs, Poppies, Zinnias, &c., in named assortments, 2*s.* 6*d.* each; 25 varieties of Annuals, 5*s.* The above articles can be sent by post.

C. TYSO's Sovereign assortments, comprising 18 select Ranunculuses and 18 choice Double Anemones, sent postage free for 1*l.* 1*s.*—Wallingford, Berks.

GEORGE MILLS, Uxbridge Road, Ealing, begs to offer Plants of his best BLACK or WHITE-SPINED CUCUMBER, unpacked, at 1*s.* each; packed, 1*s.* 3*d.* each.

MELON PLANTS of the best kinds raised to order on the same terms.

The Gardeners' Chronicle.

SATURDAY, JANUARY 21, 1854.

MEETINGS FOR THE ENSUING WEEK.

MONDAY, January	23	Entomological (Anniversary) ..	8 P.M.
		British Architects	8 P.M.
		Geographical	8½ P.M.
TUESDAY, —	24	Meteorological	7 P.M.
		Civil Engineers	8 P.M.
		Medical and Chirurgical	8½ P.M.
		Zoological	9 P.M.
WEDNESDAY, —	25	Royal Soc. of Literature	4½ P.M.
		Society of Arts	8 P.M.
		Microscopical	8 P.M.
THURSDAY, —	26	Numismatic	7 P.M.
		Antiquarian	8 P.M.
		Royal	8½ P.M.
FRIDAY, —	27	Philological	8 P.M.
		Royal Institution	8½ P.M.
SATURDAY, —	28	Medical	8 P.M.

WE purpose calling attention to a paragraph on spade husbandry in page 247 of Mr. GISBORNE's "Essays on Agriculture." The paragraph in question belongs to that portion of the posthumous essay, the fourth, which had not been corrected by the author, or been fully approved by the editor of the "Quarterly Review," for which it was designed. And we cannot but think that, had the author lived to make that correction, he would not have permitted so hasty and ill-considered a judgment to go forth into the world on a subject of which he was clearly in utter ignorance.

We are justified in supposing this, because he himself, while living, declared that "nothing is so contemptible as to sneer at [even] unsuccessful experiments;" adding that "truly our very best hopes for agriculture are founded on the entire explosion of the spirit which used to prevail at our farmers' market-tables in this respect." (P. 46.) To confirm our supposition, the editor of the essays assures us that "truth and enlightenment were his sole aim; and that if he were now alive he would have honestly abandoned any demonstrated error; he scorned sinister falsehood and ignorant prejudice —and he had little sympathy with their victims." (Preface.) In full reliance on the sincerity of these declarations, we proceed to point out some grave errors in the passage referred to, which, considering the undoubted popularity of the author in many respects, might tend to mislead the unthinking reader on a point in which a great principle of gardening as well as agriculture is, as we think, deeply concerned.

The passage runs thus:—"Now, a word with the spade-husbandry men; and we shall treat them very curtly, because, among the many humbugs which benevolent individuals have run after, we believe this to be the rankest of all. They found themselves on JETHRO TULL, and say that he discovered that culture would supply the place of manure. He discovered nothing but a mare's nest. The discovery of which they speak would have been

the greatest ever made in agriculture, and such discoveries never die. But Tull's no-discovery has been dead these hundred years. Ancient or modern, there is not a single evidence in his favour except his own. But, they say, garden culture and garden produce. See how a gardener digs, and chops, and trenches. Did they ever know a gardener who would cultivate without manure?" Tull's system of cultivation is considered at length in the "Word in Season," where the author gives a comparative estimate of his practice. It will be sufficient then for our purpose briefly to state here that Tull does assert, without reserve, that culture will supply the place of manure; that the almost only use of manure is to assist in pulverising the soil; and that with wide intervals between single or more rows of the growing plant, any crop could thus be grown successively, year after year, on the same acre of land. But, the plan has been tried, and failed. The difficulty and danger of the required operations; the small average yield, being, of Wheat, only about 16 bushels; the inevitable exhaustion of the soil; all these objections were fatal to Tull's plan; and so, with few and scattered exceptions, it died away. Had this been the scheme against which Mr. Gisborne had levelled his remarks, they would have required and received no notice from us.

But, here was the grave error into which he fell. By the "spade husbandry men," he clearly meant the author of the "Word in Season," and those who think with him; and, in evident and utter ignorance of the plan proposed by Mr. Smith, he condemns him curtly and without hearing his evidence, as an unqualified approver of the "no-discovery" of Tull, and as one acting upon it. Why, it was precisely because he differed from Tull that Mr. Smith proposed another plan, and carried it out, and succeeded, and continues to succeed. It was precisely because of the difficulty and danger, and comparative unprofitableness of the operations of the gifted author of the "horse-hoeing husbandry," that he resorted to the spade or the fork, which perform better work than the plough in a narrower compass; and by these means raised the average produce of Wheat from 16 bushels to 34. It was especially because speedy exhaustion must follow the practice of Tull, who laid it down as a rule that "we must never plough below the staple," that Mr. Smith varied also the practice here, and digs deep, and brings up the subsoil, and insists besides, in the strongest possible way, on the necessity of manure, *where it is required*. It is required on land in which there is not the necessary supply of the mineral elements of food for the Wheat plant. It is required on all descriptions of land for every other crop, excepting cereals, on the proposed plan. It is required above all in the garden, for there the object is to force, which the Wheat crop will not bear. Why, in all these cases, is manure required? Because Nature, of herself, does not afford a sufficient supply for the purpose. But, on Wheat land, that is, on the great majority of clays and loams, manure is not required by Mr. Smith for Wheat. Why? Because, for that which is indispensable for man's subsistence Nature has made abundant provision there; because there the manure to feed the Wheat plant already exists—manure of the very same description with that which comes from the yard or the store. Take before winter a portion of the clay or loamy subsoil from the intervals—take just so much as can be well acted upon by the atmosphere, stir it in the spring, mix it in summer with the staple, and with the annual change of the intervals, there will be found in the same acre of land a practically inexhaustible supply of every element of fertility year after year for the growth and perfection of successive crops of Wheat.

Such is the theory proposed by the great improver at Lois Weedon, and carried out by him with signal success for many years. Without discussing just now whether it is indeed the greatest discovery ever made in husbandry, we at least have the indisputable fact that, with reference to Wheat on Wheat land, culture can supply the place of manure, at least for many successive years.

Mr. Gisborne was not, we trust, the man to misrepresent things knowingly; and in common charity we must suppose that in the instance before us he wrote in entire ignorance of the subject with which he was dealing. The language, indeed, in which his opinion was recorded, sounds more like the after-dinner vociferation at a convivial meeting, than that of a sober-minded critic. Let us hope that the remainder of his essays will bear a more strict examination than that which related to spade husbandry. If not, they must be consigned to oblivion in company with the swarms of trashy pamphlets hatched by Corn-law fermentation in the great political dunghill.

In this rigorous winter, provisions and fuel having at the same time considerably advanced in price, many are the benevolent persons who, to mitigate the sufferings of the humbler classes, furnish them with soups, but no attempt appears to be made to introduce kinds of food not entering into the dietary of the people of this country, though in constant use abroad. The recommendation that appeared in the *Gard. Chron.* of the 26th Nov. last, to collect scraps from the table and kitchen, and convert them into soup and stews for the poor, might be advantageously adopted in most houses, especially if care were taken not to encourage pauperism by so doing. The habituating the "million" to soups and stews is likely to be of permanent advantage to the people so soon as a good cooking apparatus shall be at their command.

There are already many published receipts for the preparation of cheap and nourishing food, as are those of Count Rumford towards the end of the last century, many in the "Family Economist," and those which from time to time have appeared in the *Gardeners' Chronicle*, as, for instance, that which prescribes Sago as a principal ingredient. Still the progress made in adopting new or unusual articles of diet has been so slow, that we gladly lay before our readers the following hints from a very experienced correspondent.

Amongst the many really good articles of food that are habitually used in other countries, though not at all, or but partially, in England, the following may be enumerated:—

Gelatine and the marrow and fat from bones.—Of this nourishing and palatable food enough is thrown away, or, at best, used for the inferior purpose of manure, as would furnish the basis of a pint of rich soup daily to every individual of the town and its suburbs. This fact was ascertained about 25 years ago, and that such soup could be furnished for so little as a halfpenny a pint; the population of the metropolis has greatly increased since that time, but as the consumption of meat in proportion to inhabitants is certainly not less now than it was then, there can be no doubt but that the proportion of bones would be the same. The extraction of the gelatine and fat was, in this instance, by a chemical process, largely employed in a public establishment at Paris, but till it be made familiar in this country, gelatine, though in a less quantity, may be obtained by means of a Papin's digester, such as is kept by all considerable ironmongers and kitchen-furniture dealers. It may not be amiss to add that digesters were used at Birch's great culinary establishment in Cornhill, and that when a small one was given to a woman with three children, she found that the provision of two days in the ordinary mode of cookery was abundant for three days if prepared in the digester. It is essential, however, that the valve of a digester should be kept perfectly clean, to avoid explosion of the vessel.

Chitterlings.—These are habitually used as skins for sausages, and for black and white puddings, but the greater part of chitterlings is thrown away, or given as food for swine in this country; but in France, under the name of *andouilles*, chitterlings, after due preparation, are enclosed in parts of themselves, and are purchased at about two-thirds of the price of sausages.

Blood of Sheep, Oxen, and Calves.—The blood of pigs is habitually made into black puddings, but that of sheep, oxen, and calves, in most parts of England, is literally allowed to run away in the gutters. Not so in Scotland, for in that part of Great Britain cottagers use as food that of all animals that are slaughtered, stirring it over a fire with salt and oatmeal till the mass is coagulated, and by farmers the blood of sheep is considered a dainty when made into black-puddings, as Allan Ramsay has testified in his "Gentle Shepherd." His Simon, in the invitation to a feast in celebration of the landlord's return to his estates—says

> "Fat are the pudings, hede and feet well sung,*
> And we've enveted neebors auld and young."

Two wethers had been killed for the entertainment, the only animal that would have afforded the basis of these "pudings." In France, too, under the appellation of *sanguettes*, blood with salt, fat, and sweet herbs is constantly prepared in deep dishes over a water-bath, and is sold by the pound by all vendors of partially prepared food.

There are many parts of butchery animals used as food on the continent that are not eaten in England; *mou*, for instance, as lights are called in France, which meat, if tolerably well stewed and seasoned, is exceedingly good; even a bullock's liver—though not comparable with a rump steak or a sirloin—may, if nicely cooked, be made good and nourishing. The Scotch *haggis* is the stomach of a sheep filled with other internal parts chopped small, mixed with oatmeal and fat, and flavoured with Onion and pepper. Scotch Barley broth, made with *Scotch*, not pearl Barley, is exceedingly nourishing. Scotch *brose*, that is, oatmeal stirred into the hot liquor in which salt beef is boiled, may be made, though the bit of beef be but such a morsel as half a pound; and in the same way a rasher of bacon might be made to give zest to a large bulk of Oat or Barley meal. Medical men have held that *bulk* of food is as essential to health as mere nourishment; this should not be forgotten in giving receipts for cheap cookery. It was on this account that Count Rumford found it necessary to give hard crusts with his soups; and for the same reason it seems a mistaken policy to sift out more than the coarsest bran from the flour of which bread is to be made; in every part of the Continent of Europe the bread of the great mass of the people is from flour containing more or less of bran or pollard, and in Russia, at the best tables, common Rye bread with bran in it is often preferred to the *sitney* bread, that is of sifted Rye, and to the French bread, as it is called, that is of sifted Wheat flour.

The cottager's wife has many avocations that necessarily prevent constant attendance on her cookery, but surely it would be a humane and pleasing enterprise in a gentleman's or farmer's family to cause sundry dishes to be prepared in their kitchens from articles that are now neglected or despised. The distribution of such food at cost price would be a wholesome lesson to the people, proving that a hot nourishing meal may be obtained at less expense than is now the rasher, or the baker's bread and cheese. And why should not a portion of such fare be served at the master's table? It would need the example of superiors to induce the "million" to eat of food they have hitherto despised. It was thus practised by the gentry during the dearth that occurred towards the end of last century—a dearth so great as to have caused the Act of Parliament prohibiting the sale of new bread; it was then a fashion to have some of the cheap foods then recommended to be served at entertainments, as well as at the gentleman's family meals. There has resulted from this *fashion* at least one beneficial effect, that of a very extensive use by the humbler classes of herrings as salted at Yarmouth. There was adopted also at that time a proposition to half salt fish at distant fisheries, so that London might be served with it in an eatable state. Were a hint taken from this, it might turn out a profitable speculation, as well as a great additional supply of food, to marinade or otherwise cook fish on the west coast of Ireland, for example, and to have it conveyed for sale to British towns. Even on our own coasts some kinds of fish are despised for want of a better mode of cooking them—the conger eel, for instance; it is too fat and luscious plainly boiled or baked, but dressed as a curry and eaten with rice it is delicious. Pilchards with spices, or mixed with a dry fish like skate, often a drug in the west of England, might probably find a ready sale in the metropolis at the low price at which they could be profitably afforded.

* Singed.

VEGETABLE PATHOLOGY.—No. III.

2. General Remarks.—Before entering on the subject of vegetable pathology, in pursuance of the plan which has been laid down, it may be proper to make a few remarks, either with a view to place it within practicable and useful limits, or to show what may reasonably be expected in the present state of our knowledge.

Now as the main scope of a journal like the *Gardeners' Chronicle* is specific, it would obviously be absurd to enter into any lengthened account of diseases or morbid changes of structure or form in those plants which are not objects of cultivation, except so far as they may throw light on points of more immediate and practical interest. The numerous diseases, for instance, with which Lichens are affected, and the various changes to which they are subject, however interesting in a systematic and physiological point of view, would be wholly out of place here, and would indeed demand a special study for their due apprehension. On the contrary, any maladies immediately affecting an important crop like that of artificial Mushrooms, or plants such as Ferns and their allies, for which there is a large and extensive sale, would fairly come within our province, and any extraneous matter bearing on those points would very properly demand admittance. A due degree of forbearance will therefore be exercised in such matters, so that nothing may be introduced which has not some palpable relation to the end in view.

It is moreover to be premised that novelty is not the object at which the series will aim. The point if possible to be attained, is to present to our readers, without any necessity of further reference, whatever, within certain prescribed limits, has a direct bearing on diseased action in vegetables. Facts, and not merely ingenious theories unsupported by experiments are what is wanted, and these stated in clear and simple language, so as with an ordinary degree of attention to be perfectly intelligible by themselves. It may not indeed always be possible to speak without hesitation, from the absence of such complete information as may satisfy every requirement, and the more especially, because even in points where the difficulties involved may not be deemed insurmountable,

recorded observations are either too recent, or so far unsupported by a multitude of evidence, as to justify a reasonable degree of doubt. It must be remembered, besides, that vegetable pathology is comparatively in a state of infancy. The last 10 years indeed have conspired to call the attention of physiologists to morbid structures in vegetables, and the causes from which they are derived, and much light has in consequence been thrown on points which were before involved in obscurity, but still the amount of information which has been obtained is nothing in comparison of what a full development of the subject would demand. If it is recollected how many thousands, urged by every motive of ambition, gain, or a simple love of truth, have been engaged for centuries on the sister science of animal pathology, the immense mass of experience which has been gained, the multitudes of direct observations and experiments which are registered for constant reference, and these sifted and scrutinised so as to eliminate every possible or probable error, and that, after all, the functions of many organs which are obvious to the most superficial examination, are either wholly unknown or very imperfectly understood; and much more when we consider the subject of disease itself, its mode of origination and communication, or even, where the proximate cause is ascertained, its manner of action, it can be no matter of surprise if the vegetable pathologist is not always in a condition to speak positively, even though it be taken into account that he has less complicated organisms to deal with. And then, again, if the history of disease is contemplated, and we have not far to go for an example, when we find that a malady like that of Asiatic cholera has been ravaging the earth for nearly thirty years, counting its victims by millions, that every practician of any weight or authority has had all his powers of observation and intelligence on the stretch to find a remedy, and that, instead of witnessing any increased power of controlling the disease in individual cases when once established, we have seen it recently even more unmanageable than on any former occasion, it need not be made matter of reproach, as is so frequently the case, against vegetable pathologists, that they can merely describe disease and prate about the causes without discovering any certain remedy. Indeed, the illustration just introduced by way of comparison may be further extended. It is confessed that diseases in the vegetable kingdom when once established are for the most part uncontrollable; they are like consumption or other fatal maladies to which the aid of medicine is called, when nothing more than palliation can be supplied, the prevention of which ascends far higher than to be subject to the control of one generation of physicians, or the influence of a few short years on general habits, on which they are more or less dependent for their origin. But though little may be effected, or be even within the bounds of possibility when once disease has been developed, and though established habits, however fatal in their consequences, are difficult of change, still occasionally, provided there be rational grounds of action, much may be done by way of prevention. The removal of the causes of disease, or perhaps rather of those accidental circumstances which favour or aggravate its development, was attended with complete success in the late prevalence of cholera, although remedies and appliances seemed wholly ineffectual where the disease was once established, and this, be it remembered, in consequence of the powers of mind which had been applied to its investigation by persons of the highest intelligence; and so exactly in the vegetable kingdom, though it may be and is, in many instances, impossible to cure a disease when once contracted—as, for instance, bunt or deep-seated canker—it may be very possible to prevent its occurrence, or to keep them within reasonable bounds. Sometimes, indeed, the cause may be inveterate, and admit of remedy only by a long and painful course, or be so dependent on general habit as to make all hope of immediate or speedy alleviation desperate. Take, for instance, scrofulous affections or insanity by way of comparison. If proper prudence were exercised in the formation of alliances between families, or habits of a vicious tendency as regards these diseases could be controlled by general opinion, there can be no doubt that either disease would, to a very great extent, disappear; and so again in the vegetable world. It is acknowledged that the objects of cultivation have a greater tendency to disease now than the experience of earlier years would justify us in attributing merely to temporary circumstances; and it is also tolerably clear that this tendency depends on a higher system of manuring, and a want of care in the selection of seed produced under circumstances which might insure health; but then the difficulties in the way of the preparation of such seed in a sufficient quantity to supply the demands of cultivation, and the impossibility of at once controlling any habits or practices generally established, are so insurmountable that the vegetable pathologist must, like the moralist, wrap himself up in his own virtue, and cast his bread upon the waters, assured that it will be found after many days, if not by himself, at least by his fellow-men in some succeeding generation. *M. J. B.*

DIPLADENIA SPLENDENS.

The large, Convolvulus-like, and exquisitely coloured blossoms of this plant are hardly matched by those of any twiner with which I am acquainted, and, under proper management, its charming flowers are produced very abundantly for some two or three months in succession. Notwithstanding that it is perhaps the finest of all twiners which we possess, it is by no means universally cultivated; for in the hands of many it is found to bloom very shyly, or not at all, consequently it has never received the attention which it deserves. To insure success in its culture, a light, warm, moist situation, and a brisk bottom heat are indispensable, and where such accommodation cannot be commanded, it is useless to attempt to grow it; with proper convenience, however, it grows very rapidly, and blooms abundantly.

Cuttings made of short-jointed, half ripe shoots, root freely if inserted in sandy, peaty soil, covered with a bell-glass, and afforded a sharp bottom heat. They should be got in as early in the season as possible, potted off immediately they are found to be sufficiently rooted, and kept growing in a brisk bottom heat, with a close, moist atmosphere, so as to get them strong and well established in 6-inch pots in the course of the season, in which state there will be no danger of losing them during winter. In autumn gradually reduce the supply of water, and expose the plants to a circulation of warm dry air, in order to ripen the wood, and when this is effected remove them to a house where the temperature may average from 50° to 60°, and allow them a period of rest, giving no water to the soil during that season. Towards the end of January, or as soon afterwards as circumstances will admit, turn the plants out of their pots, shaking away a portion of the old soil, so as to be able to repot them in fresh material without using much larger pots, at the same time cutting back the shoot to a strong bud near the base. Be careful to have the fresh soil in a moist, healthy state, so as to prevent the necessity of giving much water until growth shall have commenced, and the roots taken to the soil. After potting place the plants in a pit, or house, where the atmosphere is kept warm and moist, and where the pots can be plunged in a bottom heat of about 80°, syringing over-head in the morning and evening of fine days. Here growth will soon commence, and when this is the case give a more liberal supply of water at the root.

As the shoots advance keep them regularly tied to supports, in order to prevent their being broken, and as soon as the roots get good hold of the soil, shift into the flowering pots, which, for the present season, should not be larger than 12-inch ones. Return the plants after shifting to a brisk bottom heat, and maintain a warm moist atmosphere, to induce active growth. Decide upon the method of training to be adopted at once, and keep the shoots regularly tied in, placing them sufficiently far apart to insure the production of strong, short-jointed wood, and to induce the formation of side shoots, upon which the flowers are borne. Whilst it may be desirable to ensure active growth, give a liberal supply of manure water to the soil, syringing the plants overhead morning and evening, and maintaining a moist warm atmosphere; but avoid much shading, the only result of which is to induce the production of soft spongy wood, from which flowers can hardly be expected. When a good-sized plant is obtained, unless it begins to show for flowering, give less water at the root, and a freer circulation of air, with full exposure to sunshine, which will check the tendency to growth, and assist in inducing the formation of flowers. The specimens may be removed to a close part of the conservatory while in bloom, where they will flower in great perfection for some two months, but care must be observed to prepare them for the change by rendering it gradual. And specimens intended to be removed to the conservatory while in flower should be started into growth early in spring, so as to have them in flower in June, in which month the temperature of the conservatory will, with a little care, as to placing them in the warmest corner, be suitable for them, but plants blooming late in autumn must be afforded the temperature of an intermediate house. Give a liberal supply of manure-water to the soil during the blooming season, and carefully guard the blossoms from the effects of damp, by which they are very easily injured.

When the beauty of the specimens is over remove them to a light airy part of a house, giving a sparing supply of water to the soil, and when the wood is well ripened discontinue the application of water altogether during the period of rest, which should not be less than six weeks or two months. By annually shaking the greater portion of the old soil from amongst the roots, so as to a low of repotting in fresh soil, trimming away any unhealthy roots, and properly cutting back the shoots, the specimens will last for several seasons.

The most suitable soil for this Dipladenia is good fresh turfy loam, leaf soil, and fibrous peat, in about equal proportions, with a liberal admixture of sharp sand and lumpy pieces of charcoal to keep the mass open and porous. It is a very good practice to slightly bake the leaf soil before using it, so as to destroy any worms it may contain, which are very mischevious to plants in bottom-heat. *Alpha.*

Home Correspondence.

The Seed Market.—Among the absurdities of former times which ought to have died out long ago is the all-prevailing fallacy that no seeds but those that are new, that is of the preceding year's growth, can be good, or ought to be used for horticultural purposes. Now, if such was really the fact, what would be the consequence at the present moment? why, that a great number of our finest vegetables and flowers would go out of cultivation, for it is notorious that the season of 1853 was the worst for saving seeds, not only in England, but also on the Continent, in the memory of the "oldest inhabitant." Many things are a complete failure, and all new seeds are bad, not only of low vegetative power, but being necessarily immature, are deficient in true and life-invigorating pabulum, and consequently they will not only grow indifferently, but the plants produced, especially among Brassicas, even though from a true stock, will lack their usual pure character. All the trade lists now before me have one complaint, that of the badness of the season, and the scarcity of many things. Vilmorin Andrieux & Co. say, "We are extremely sorry the list of vegetable seeds is so very poor; this is caused by the general failure of the crops, in consequence of which a certain number of articles which have been demanded eagerly on account of their scarcity are already exhausted by previous orders." One of the leading London houses says, "Radish is exceedingly scarce, Lettuce a complete failure. Round seeds, though deficient in quality, have not suffered so much as light seeds, as Carrot, Mangold, &c.; Onion is higher, agricultural Turnip by no means plentiful, Peas deficient in quantity, samples better than might be expected; Wrinkled or Marrow Peas, however, are of very indifferent quality." Nor is this all; new seeds are not only very bad, but they are also very dear; the wholesale price of Lettuce, the finest kinds of Cos, is just 50 per cent. more than the retail prices of respectable houses for some years past, and many other things are in the same proportion. Of course the old remedy of "sowing thick" is recommended, and I should further advise those who cannot insure nice curdy Cauliflower and Broccoli to "keep friends with the cook," for their new seeds will produce plenty of "froth." But it is not so necessary to point out the badness of the last seed harvest, as to demonstrate the absurdity of the prevailing opinion that seeds must be new to be good. It is true light seeds, such as Lettuce, are not improved by keeping, but if kept clean and free from damp and atmospheric moisture it will vegetate at seven years old, Carrot at five, Beet and Mangold the same, Onion six to seven, and round seeds, such as Broccoli, Cabbage, and Turnips, almost at any age. Last season I had some seed of Atkins's Matchless Cabbage sent to me, which I have reason to know was 14 years old, having been kept by a friend from the original stock sent out by Mr. Atkins. It was sown under a hand-glass and covered slightly with fine soil, and at least 90 per cent. of the seed vegetated. This seed had been dried and tightly corked and sealed in a bottle, and kept in a dry closet, only being opened once or twice in a season to get seed for sowing, and there it is as fresh and good as if fresh gathered. In a field in Hertfordshire upon which Stone Turnips had been grown for seed, and a good part of which was lost, a crop of Turnips appeared every time the ground was turned up, for nine years to my knowledge, and how long afterwards I know not. Of heavy seeds, Wrinkled or Marrow Peas suffer the most from age; indeed, unless the seed is unusually well ripened, it vegetates badly the second year, and is quite useless for purposes of growth; the third, French Beans and Scarlet Runners denote by their colour that their season is past, and the same may be said of Broad Beans, which can hardly be trusted the second year. Early and Round Peas will grow when six or seven years old. Apart, however, from their vegetative power, new seed, if sown directly it is gathered, especially of such things as Cauliflower and Broccoli or Cabbage, never produces so good a sample of plants, or comes into cutting so soon and regular as plants raised from old seed; and I learn from one of the most extensive market growers that Cauliflower plants raised from old seed will be "in cut" from 10 days to a fortnight earlier than plants from new seed sown on the same day, and be less likely to come frothy. Now this is an important fact, but only one which science would expect practice to confirm, it being an incontrovertible fact that new seeds are not only scarce but deficient in quality, and as it is equally certain that old stores of "trio," and other questionable seeds must be used as make-weights in this season of general scarcity, it will be well that other precautions in addition to the old one of "sowing thick" should be observed. Practically I should recommend the growing quality of all seeds to be tried before sowing for a general crop, not in a strong heat or hot-bed, for that would be no test in a season like this, with the ground excessively cold and full of "snow broth," but by sowing in pots and placing them in a cool greenhouse or under the protection of a hand-glass or cold frame; for many seeds, especially light ones, such as Parsnip, Carrot, and Onion, though they may grow tolerably well with summer heat, will scarcely grow at all in the cold ground. If the vegetative power is 75 in 100 seeds, it may be trusted in the open ground, but if only 50 grows, double the usual quantity should be sown. Round seeds should be similarly tried, and even Peas (especially the wrinkled ones), Beans, and French Beans should be sprouted, or just started before they are sown for the early crops; indeed such crops would be best raised in pots or boxes or on turf, for the extra trouble is little as compared with the certainty of the crop, and much seed may be saved. One of the finest crops of late Peas I ever saw was raised in 6-inch pots, and then planted out on a deeply trenched and well manured border, in single clumps like Dahlias, at 4 feet apart; they were afterwards mulched with manure and a coating of short Grass, and being well attended to with manure water, nothing could exceed either the quantity or the quality of the crop they produced. I am quite certain a pint of seed so managed will produce as many Peas as two

quarts under ordinary treatment. In sowing early crops of all kinds, particularly upon heavy ground, it will be wise to cover with some light, dry soil, intermixed with burnt earth and soot, or even fine cinder ashes. This has been a rule with the writer, who had to contend with an unusually heavy soil for many years, and I am quite convinced of the advantages of the plan, not for early crops alone, but practised throughout the season. Having now pointed out the absurdity of the "new seed" cry, especially in a season like the present, when it is notorious there is of many things little or none to offer, and having also shown that many seeds, if properly preserved, are as good at five or even 10 years old as when fresh gathered, let me supply the means by which the trade, if so disposed, and gardeners in particular, may depend upon their stock being true to name, and coming in at the right season, and in proper succession. To insure this, nothing more is necessary than to procure sufficient seed this season to give a supply for two years, and by sowing just a pinch of each to produce a score or so of plants to prove the variety, if true or suitable may be sown next year for the main supply, and by continuing the rule of purchasing and proving the seeds annually prior to using them for the principal crop, all disappointment both to the seedsman and gardener may be avoided. I know nothing more annoying to a gardener or indeed perilous to his reputation than to plant out a breadth of Broccoli, expecting it to come in for autumn supply, than to find it unfit for use until the following March or April; yet how often is this the case with Grange's Cauliflower Broccoli and what is called Autumn-sprouting, and many other kinds? It will be naturally inferred that I have little faith in seeds as supplied to the public generally. I certainly have not; for to such a length has competition run, and so wretchedly poor is the price paid for growing, that growers care little for the quality so long as they can get a quantity of seed to weigh or measure. In fact, the seed trade is rotten, bad to the core, so bad that not a twentieth part of the seeds in any catalogue in London could be guaranteed to be true to name. Last year I had six kinds of Cabbage from one of the principal houses in the trade, and they were sent as ordered with the following names—Early York, Enfield Market, Atkins's Matchless, Wheeler's Imperial, Preston's Victoria, and Vanack, and now they are proved they are all the same kind, and if not all supplied from the same bag or drawer they might as well have been. But it is unfortunately the rule, even with the most respectable houses, to supply everything ordered, so that it matters little what names are used, something that will tell in the bill is sure to be attached to them; nor are the trade altogether to be blamed, for if they were to be honest, and say "not known," "unworthy of cultivation," "not to be procured this season," or any similar remark, they would be set down as very second-rate people, and quite unworthy of support in future. This, good public, is your rule; you offer a premium to dishonesty, and leave the just dealer to pay the penalty of his attempt at fair dealing. Such, however, is the morality (save the mark!) of trade at the present time, not in our own alone, but I fear in almost every other. *Judex, Jan* 10.

Orchard Houses.—Of all the fruit I ever ate at home or abroad I never tasted such high flavoured Apricots as those I ripened in one of Rivers's orchard houses in my garden last summer. The pots were not more than 13 inches in diameter, and the trees only the second year of being planted. The sorts were various, but the best bearer was the Moor Park; Plums, Peaches, and Nectarines bore abundantly, and suffered in flavour with me from not having thinned them. The Cherry trees promise great crops this season, but they did not respond to the care taken of them the first year, as the Apricots did. Pears bore well this year, but they do not seem to reach perfection like the stone fruit. I had splendid fruit ripen on my wall (Moor Park), but not comparable in flavour with those in the orchard house. Had I to begin gardening again I should exclusively cultivate the best stone fruit in orchard houses, and leave walls for Pears only, the certainty of immediate fructification being the grand recommendation of the orchard house; and how much cheaper in construction than lofty walls! As Mr. Rivers says, "You get in these fruit houses the climate of the south of France, with little cost and no more care than every gardener derives pleasure from, in cultivating the fruits and flowers of the earth." In many instances the recompense comes in the first season, having gathered myself the year the house was made both Pears, Plums, and Cherries. Consult "Rivers' Orchard House," sold by Longman, Brown, and Co., Paternoster Row, and the cultivator is sure to succeed. *Wm. Mason, Necton, Norfolk, Jan.* 15.

Aëration of Plant-houses.—Your remarks on this subject, and the acknowledged difficulty in practically effecting it, induces me to submit my attempt, and I do so, because I think success attends it; but the discussion of the matter must do good. My theory is very old. Every one admits and knows that air when heated is lighter than it was before, and ascends; but the converse is not so generally thought of—viz., that cool air descends: on this thought I acted. My plant-house is quite a small affair; a long narrow lean-to place, between two walls, 32 feet long by 7 wide, where my plants were alternately coddled with damp, and burnt up with heat. It is about three weeks ago that I determined to try to improve their forlorn appearance; and I argued thus. If I will let it, the warm used-up air which accumulates at the ridge of this place, will go off of itself, and if I will but allow it the pure cool air from outside would cheerfully come in to occupy the place of the other: and this will I do, I will put the excess of weight of the cool air to move and lift out of the way the warm effete useless air at the ridge. So I had a box made without top or bottom, with a partition down the middle; one compartment was 1 foot deeper than the other; the shallow side was put next the back wall, the deep side then hung down 1 foot in the house, only the perpendicular. The box was the whole width of the sash and 2 feet across from back to front; the sash was slid down, this box put in the opening, and in a very little time the effect on the air of the house was perceptible to the feelings. Since then this rude ventilating apparatus has been in action night and day to the manifest improvement of my plants, which seem to rejoice in the gentle abundance of air, whilst not the tiniest spray or leaf is moved thereby; and this morning I saw their edges decorated with beautiful beads of dew. Since this was put in I have fitted another to a plant pit adjoining, and with the same good results. Both pit and house are warmed by hot water, and I find no difficulty in obtaining plenty of heat; for, as the air is in constant motion, whilst the pipes have ever so small an excess of heat above the air of the house, they are constantly parting with it; and I have no doubt that if it was a measurable quantity the whole amount of heat given out is more than was given when the house was entirely closed. I give some temperatures, the times nearly 8 o'clock morning and evening.

	External.	Internal.	
Dec. 29 ...	Morning... 4° !	34°	
	Evening . 22	45	
„ 30 ...	Morning . 34	44	Fire out; pipes cool.
	Evening . 24	44	Pipes hot, but not at highest
„ 31 ...	Morning . 20	39	Ventilator closed for experiment.
	Evening	...	
Jan. 1 ...	Morning	...	(Once in this interval the pipes were raised to 150°)
	Evening . 26	45	
„ 2 ...	Morning . 20	42	
	Evening . 19	41	Ventilator reopened.
„ 3 ...	Morning . 11	43	
	Evening . 31	45	Pipes 135°.
„ 4 ...	Morning . 31	42	Fire out; deep snow on [roof.
	Evening . 31	38	
„ 5 ...	Morning . 31	45	The first five days named the fire was kept in all day, but since then it has been lighted about four, afternoon, and allowed to burn out by about 8 a.m.
	Evening . 31	43	
„ 6 ...	Morning . 31	45	
	Evening . 28	42	

J. P. S., Chesterford, Essex.

Botanical Nomenclature.—Pray tell me if I am to call an old favourite ever-blooming Rose "A China Rose," according to Loudon; or "Chinese Rose," according to some of our more recent writers on Roses? If the latter, it appears to me, that we must also call our cups and saucers "Chinese ware," instead of using an universal word "China." Loudon and some botanical authors also write Briar, according to Johnson it is Brier, which should it be? *Rosa.* [These are matters of taste and custom, upon which we can offer no opinion. For ourselves we prefer China Rose.]

Weather in Dorsetshire.—I perceive that four most important days were omitted in the list of temperatures for December, 1853, which was published last week (see p. 22). The following memorandum will supply the defect:—

Date. 1853	Cold of the Night.	Thermometer at 9 A.M.	Rain Gauge.	Heat of the Day.	Thermometer at 9 P.M.	Barometer.	Wind.	Observations.
Dec. 28	16	20	24	28	21	$29\frac{7}{10}$	NW	Clear.
29	10	12	...	29	16	$29\frac{9}{10}$	W	Clear.
30	16	34	...	37	24	$29\frac{4}{10}$	W	Overcast.
31	22	28	...	35	24	$29\frac{4}{10}$	W	Haze with clouds.

In spite of all the appearance of thaw, we have had slight frosts for a few hours every night lately, and in shady places and lanes, and on the hills, the ground is still hard frozen below and slippery above. The ice is very slow in melting on any piece of water; it has been 3 inches thick. *W. F. S., Melbury, Dorset.*

Weather near Stevenage, Herts, in 1853—

1853.	N.	NE.	E.	SE.	S.	SW	W.	NW	Var.	Wet Days.	Rain.
Jan.	2	5	1	...	3	7	9	3	1	18	2.51 In.
Feb. ...	6	6	1	3	1	1	1	9	...	12	1.74 „
March ...	2	8	3	3	3	6	2	3	1	11	1.99 „
April ...	1	2	2	1	...	8	5	11	...	14	2.82 „
May ..	3	8	10	1	1	1	...	7	...	10	1.69 „
June ...	1	5	..	2	1	11	3	6	1	14	3.24 „
July ..	...	1	..	3	3	18	4	2	...	18	4.32 „
Aug. ...	...	5	3	3	1	10	2	5	2	11	3.20 „
Sept. ...	2	2	2	2	2	7	3	10	...	14	2.03 „
Oct.	1	3	3	2	6	8	4	4	...	20	3.21 „
Nov. ..	2	5	4	2	2	5	2	8	...	13	1.96 „
Dec. ...	4	7	4	4	...	1	1	10	...	10	1.08 „
	24	55	33	26	23	85	36	78	5	165	29.79 „

C. B. N. P.

The Woods and Forests.—I have taken your advice, and read the last blue book; and I own myself unable to conceive how you can delay, what is your plain public duty, a continued exposure of the incredible incompetency of the inferior Government officers, and of the agents by whom the Treasury had been advised in former years. I have had too much experience of the gentlemen in Whitehall to believe that they will leave off jobbing except upon compulsion. The whole tenour of the Commissioners' last report, and of the evidence on which it is founded, shows that there is a dogged resistance to improvement, and a determination, somewhere or other, to uphold the most glaring abuses. Look, for example, at the New Forest, near which I live, and which has been for years a national scandal. Look at the official reports upon Dean, Delamere, and others, and consider whether it is possible to reconcile silence with an honest fulfilment of the trust reposed by the country in the judgment and impartiality of the Editor of the *Gardeners' Chronicle.* *** *Lymington.* [Wait a little longer.]

Horticultural Statistics.—The detailed statistical account of the nurseries near Niort, which appeared in the *Gardeners' Chronicle* of the 31st ult., takes no notice of the value of the interest on the capital lying dead for six years. The loss of this interest is, however, no less an expense incurred than is the rent the nurseryman pays for the ground he cultivates; for, supposing a capitalist—great or small—to place his money out at interest, and to add that interest half-yearly to his original capital, he would find it, at 5 per cent., to be doubled in between 14 and 15 years. Though the rate of interest varies at different times, and according to circumstances, it may be concluded that a nurseryman would not obtain a loan of money at less than 5 per cent. per annum; accordingly a calculation has been made at that rate of this item of expense in the nurseries at Niort, excluding fractions, as also the money expended from time to time during the six years for digging, hoeing, and manure. The land in nurseries near Niort is stated to amount to 74 acres 32 perches, and is said by this species of cultivation to give in six years a profit of 3432*l.*, but that profit would be reduced by between 360*l.* and 370*l.* were the compound interest taken into account of the capital expended in the first of the six years, namely, for trenching, and for the stock of young plants. *B.*

Winter Cucumbers.—Observing (see p. 775, 1853) some account of a Cucumber having been cut in December last, measuring 18 inches long, and also notice taken (see p. 19, 1854) of another having been cut in January last 23 inches long, has induced me to furnish you with the number of Cucumbers cut here during these last three months. But in the first place let me give the dimensions of the house and an account of the mode of heating. The house is span-roofed, 34 feet long by $11\frac{1}{2}$ feet wide, and is heated by a hot-water pipe running round the outside of the brickwork which forms the bed. A flow and return pipe supplies top heat, and for bottom heat I have the same in a 2 feet chamber running the whole length and breadth of the bed. I planted 18 plants on the 25th of August, and I cut the first Cucumber on the 7th of October; since then I have cut from the same plants 151 fruit measuring from 12 to 20 inches in length. The house being employed for the culture of Cucumbers in winter and Melons in summer, I am obliged to destroy the Cucumbers to make room for the Melons. Another house heated upon the same plan is now yielding most beautiful fruit, and though cut from daily they promise a very lengthened supply. *G. James, Pontypool Park, Monmouthshire.*

Cooking Stoves.—The American stove of which Dr. M'Cormack speaks at p. 22 is doubtless similar to that now for sale in Poland Street. One of the kind has been long used to cook the dinners of numerous inmates, and has been found economical; but it being of iron, it is objectionable on account of its requiring frequent attention to the fire, though it be of coke. The smallest size of these American stoves considerably exceeds the wants of the cottager, and it could not on that plan be made on a smaller scale without losing the advantages it derives from the passage of a flue round the large oven. The public are indebted to the Dr. for his bringing to notice the French delf stoves; they are in general use in that country for heating apartments of secondary importance, as also dining rooms. Some of the least ones are provided with an oven of sheet iron, and many of the lower orders of the people in Paris cook in it a considerable part of their food. But the pottery of which these stoves are made is very liable to crack even with a wood fire, and certainly would not bear the intense heat of coals. Not so the Russian and Swedish stoves, also of pottery, for they bear with impunity the burning in them a pile of Birch wood measuring a cubic archive (28 inches), when placed so as to be speedily consumed; for it is desirable in these stoves to burn the wood to braize as speedily as possible, in order to shut up the stove with a great body of live braize within it. All of these stoves, French, Russian, and Swedish, have a particularly neat and clean appearance, their surface being a kind of white enamel, and they are very easily washed. A small delf stove, having its oven, was a few years ago purchased for a louis (20*s.*), in a provincial town in France; so that doubtless a cottager's stove of pottery might be manufactured and sold in England at even a lower price than is charged for an iron one; but it would seem that potters would be the most competent persons to contrive a suitable stove, its durability depending so materially on the kind of ware employed in its manufacture. *B.*

Gold-fish in Frozen Ponds.—Are any of those good people (who are always telling you to break the ice in your ponds) aware that gold-fish in China, their native place, live in rivers which are frozen over every year? one would suppose that these fishes were small whales which were obliged to come to the surface for air, which true fish, of course, never do; and the reason why you must break the ice in your ponds is that if allowed to continue freezing it lowers the temperature of the water, so that the fish are starved from cold, not want of air. If your correspondent's ponds were as deep as mine, more than 4 feet in every part, he might allow the ice to remain untouched in ordinary winters. I believe

the fish bury themselves in the mud near the borders, and so are soon killed; but most fish-ponds are too shallow. Mine is not 22 feet across, and has been frozen for more than a week at a time, and I have never lost one; my chief enemies are owls. Common carp can be transported in a frozen state and thawed again alive! *Somerset.*

Societies.

HORTICULTURAL, *Jan.* 17. — J. R. Gowen, Esq., Treasurer, in the chair. The Duke of Rutland, E. Rosher, Esq., and G. H. Taylor, Esq., were elected Fellows. Of English Grapes, exhibitions of which were specially invited on this occasion, Mr. Forbes, gr. to the Duke of Bedford at Woburn Abbey, sent six bunches of Black Hamburgh, three being this year's produce and three retarded fruit of last season's growth. The latter were remarkable for the small amount of shrivelling which they possessed, being indeed almost as plump and fresh as the new bunches, which were also finely ripened and coloured. These well deserved the Banksian Medal which was awarded them. Other Grapes consisted entirely of last year's produce; by far the best among them were three bunches of Muscats from Mr. Wortley, gr. to Mrs. Maubert, of Norwood. These had large well-ripened berries, scarcely at all shrivelled. A Certificate of Merit was awarded them. Other Muscats, considerably past their best, were furnished by Mr. Thomson, gr. to Mrs. Byng, at Wrotham Park; and Mr. Munro, gr. to Mrs. Oddie, of Colney House, St. Alban's; the latter also sent some indifferent bunches of 'West's St. Peters.— Mr. Jones, gr. to Lady Charlotte Guest, sent a Queen Pine Apple, weighing 3 lbs. 7 oz. It was reported to have been grown in a mixture of turfy peat, sand, and broken oyster shells, which Mr. Jones is of opinion will prove to be a good compost for winter fruit.—M. Langelier again furnished examples of Pears from Jersey, which, independent of any merit belonging to them, are valuable as showing what fruits are cultivated under certain names in the Channel Islands. One labelled Duchesse de Berri appeared to be Mons. le Curé; Rous Lench was Jaminette; Beurré de Flandres was B. Rance; Winter Crassane was true, and there were two kinds unknown, viz., Beurré de Zabert and Epine de touris. M. Webber & Co., of Covent Garden, sent very fine specimens, for the season, of Beurré Rance and Easter Beurré, Winter Nelis, Ne Plus Meuris, Old Colmar, and Jean de Witte. These, it may be remarked, were all quite true to name. —A Certificate of Merit was awarded to Mr. Brown, gr. to J. Parnell, Esq., of Waltham Abbey, for a dish of Cuthill's Black Prince Strawberry, again stated to be a sure setter, and altogether a good sort for early forcing. —From Messrs. Jackson & Son, of Kingston, came three kinds of Orchids, viz., Warrea Lindeniana, a good variety of Lycaste Skinneri, and the purple Barkeria Skinneri. A Banksian Medal was awarded.—J. Luscombe, Esq., of Combe Royal, near Kingsbridge, sent some cut specimens of plants in illustration of the mildness of the climate of Devon. Among them was a bunch of flowers of Luculia gratissima, which had wintered satisfactorily, and expanded its blooms on an east wall near a chimney, with no other protection than that of a ragged mat, or more recently, when the weather became colder, that of a wooden shutter; also a flowering spike of Linum trigynum, which was stated to be growing on an open wall without any protection, and beside it Gardenia Fortuni was reported to be in fair condition, thus showing how favourable the climate of South Devon must be for the growth of tender plants. —From E. Brande, Esq., of Turnham Green, came specimens of glass labels. They were made in the same way as common apothecaries' phials, except that they had their tops closed up and their bottoms cut off. The latter is done for the purpose of admitting a slip of common paper (on which the name is written) into the bottle in such a manner that it can be most easily read through the glass, and then the end is stopped up with a common cork. This kind of label was more especially recommended for use in glass houses, where they would not be blown about and broken. They have this advantage over Mr. Bohn's glass labels, that the names can be changed at pleasure; whereas, Mr. B.'s, when once hermetically closed, as they are by the blowpipe, do not admit of the label being altered. Specimens, showing the effect upon roots of Mr. M'Glashen's transplanting apparatus, were exhibited. It was mentioned that this apparatus has been objected to on account of the root-pruning a tree lifted by it necessarily sustains, and the rough manner in which it is wrenched by it out of the ground. It was further stated that although the transplanting of the large tree in the Society's Garden, at Chiswick, had proved perfectly successful, yet that some had attributed that success rather to the tree being a Poplar, one of the least liable of all trees to die from the operation of moving, and to the ground and weather favouring its well-doing, than to any merit that belonged to the machine. Mr. M'Glashen, however, opposes this view of the matter, and states that he has lifted above 1200 trees with perfect success by his apparatus, and he sent from Edinburgh the root and top of a Scotch Fir transplanted by his contrivance, to show that wherever the principal roots had been divided by the spades of his machine they had thrown out healthy young rootlets in the greatest possible profusion from the shortened stumps, giving the tree even greater facilities of collecting food than it had before it was moved. The top (which for convenience of carriage was separated from the root) also showed that it had received no check whatever in its growth, and there were other roots likewise confirmatory of the success of his mode of transplanting. A letter from Mr. Black, at Hamilton Palace, was also read, in which it was stated that 14 large evergreens moved for the Duke of Hamilton by Mr. M'Glashen's machine all had succeeded most satisfactorily, and scarcely showed any symptoms of having been removed, their rates of growth having been in no way impeded by the root-pruning they had sustained in the moving. Among them were Portugal Laurels of large size; Yews from 9 to 12 ft. high; Arbor-vitæs, from 14 to 16 ft. high; and Hollies, 10 to 15 ft. in height; all of which, as has already been stated, have succeeded perfectly. It was stated, however, that although the evidence, so far as it went, was quite satisfactory, yet that it did not settle the question, because it must be admitted that there is a great difference between the demand made on the roots by a tree 15 feet high and one 50 feet in height. The results of moving very large trees by this machine have, therefore, yet to be ascertained.—From the garden of the Society came various Corræas, Gesnera zebrina, Selago distans, Linum trigynum, a gay plant at this season; Acacia lineata, Thyrsacanthus rutilans, a promising scarlet-flowered plant, and the following salad vegetables, viz., Chou de Naples and Romaine Verte Maraichère Lettuces, both from frames; the Corn Salads Mache ronde and Mache d'Italie, Scarlet Short-top Radish from frames; Curled Cress, White Mustard, American Cress, Cole's Superb Red and Sutton's Superb Pink Celery, a very good variety; also Celeri Court-hatif, very full and solid, and by many preferred to the last-named kinds; Curled Chervil, French, Garden, and Broad-leaved Sorrel; in the late severe weather these required to be taken up out of the border and placed in a frame with a little heat; also Oseille de Belleville, a milder sort than the other Sorrels; together with Burnet, Chicorée fine d'Eté, an excellent curled Endive for all seasons; and Scarole à fleur blanche, which blanches exceedingly pure—like ivory; Betterave rouge plat de Bassano, grosse longue de Hollande (Van Houtte), rouge de Castlenaudary, this is the most generally esteemed; and Barret's Crimson and Cattel's Blood-red Beet.

Notices of Books.

Scenes and Occupations of Country Life. By E. Jesse, Esq. New and revised edition. Murray. 12mo.

We formerly spoke with praise of this pleasant country book, and are now happy to announce its reappearance with rather considerable additions. Among other things there is a most interesting account of the hippopotamus in the Zoological Gardens, from the pen of Prof. Owen, from which we must borrow the history of the creature's being led into captivity:—

"The Nubian soldiers who had been commanded by the Pacha of Egypt to procure and send down to Cairo a young living Hippopotamus, hunted along the most shaded banks and least frequented parts of the White Nile for a female and her calf, for they were aware that the time for the bringing forth of the young was the month of July. They had killed several old hippopotami without succeeding in capturing a young one; when towards the evening, having mortally wounded a large animal, which from the minor development of the tusks they knew to be a female, they were struck by observing that instead of diving, after receiving the mortal wound, she endeavoured to make her way towards a small wooded island, evidently desirous of reaching it, but sank before she could gain the banks. This aroused the suspicions of the Nubians, and a party of them, headed by an intelligent subaltern, named 'Hamet,' put off in a small raft boat to the island. The density of the shrubs and herbage at the steep banks made the landing difficult, but, when it was effected, they found in a snug leafy hollow, where the branches and creepers had been trodden down into a thick elastic bed, an obese, smooth, and shining dark-coloured object, like a hydrocephalic corpulent hog, that had undergone the operation of scalding. The creature stared at them with a pair of protuberant juicy eyes, and uttered a short interrogative grunt. On the first step forwards made by one of the soldiers to seize the prize, the young animal instinctively sprang forwards; and, with a degree of agility for which they had not given it credit, it forced its way through the opposite brushwood down the steep bank. Hamet, who had witnessed the movement, seized the boat-hook, ran to meet the young animal, and was in time to arrest its progress by striking the hook into its haunch, just as it was making its plunge into the stream. He seized, and bore it grunting and snorting for its dam, to the boat, the burden being as much as his strength would permit him to carry, and the party then made off triumphantly with their prize. But how to nourish the young suckling? Teeth at that period the broad gaping mouth showed none; but it was fenced round by thick, soft, fleshy lips, the very model for effectually exhausting the loaded dugs of a teeming mother. The difficulty was summarily solved by the characteristic relations of the governors and governed in long enthralled Egypt. The boats of the party anchored opposite the first village, the milch-kine were driven down to the boats, their udders drained into a vast calabash, and this was speedily emptied by the hungry foundling. The process was repeated at each village as the *cortège* descended the Nile towards Cairo, and the young hippopotamus was finally left in excellent condition, and with the Pacha's compliments, at the court-yard gate of our active and excellent Chargé d'Affaires, the Hon. Charles Murray."

When we add that Mr. Jesse's volume abounds in similar anecdotes, it is needless to say that it is one of the most welcome which the present publishing season has produced.

New Plants.

39. LINUM GRANDIFLORUM. *Desfontaines; alias* Linum splendidissimum *of some German gardens.*

A brilliant little annual, with large rich crimson flowers, lately introduced from Paris. It was originally found in heavy land near Masacara by Desfontaines, who called it species pulcherrima, as it certainly is. He described it as throwing up clusters of erect or decumbent stems, from 8 to 12 inches high, with smooth scattered leaves, of which the lowest are linear, the upper broader, narrowly lanceolate, and rough at the edge. The flowers are in loose panicles, with very large rose-coloured petals, about twice as broad as in the officinal Flax. The young plants which have been raised are found so unmanageable that the following remarks by M. Ysabeau, recording the experience gained about it in France, will be read with advantage:—"This pretty annual was figured in the 'Revue Horticole' of Nov. 1, 1848. The plant bears a profusion of flowers which remain long in bloom; it is consequently one which is greatly to be recommended. Since the above date it has been lost in most gardens, and, notwithstanding its splendid colour and other valuable qualities, it still is only in the hands of a small number of amateurs. Messrs. Courtois-Gérard and Vilmorin imagine that they have discovered the cause of the disappearance of a plant which was very favourably received at first. It was generally believed that it should be cultivated in pure peat, or at least in peat mixed with a little vegetable mould, or common garden earth. This soil appears to be too unsubstantial for a plant which, like other Linums, requires much vegetable nourishment; and this nourishment not being supplied in sufficient quantity, the plant did not ripen its seeds and eventually perished. Messrs. Courtois-Gérard and Vilmorin made the experiment of pricking some plants into the open ground, in a border of light but tolerably rich soil, containing much more nourishment than peat earth, either pure or mixed. This experiment succeeded perfectly. Although sown and pricked out somewhat late, the plants are at the present time (August 2) covered with flowers having well formed ovaries full of seeds, the perfect ripening of which does not appear doubtful, judging from the good state of the plants. It is probable that the cultivation of Linum grandiflorum failed from the excess of precautions taken to ensure its success; if the plant had been treated the same as other hardy annuals which are sown in beds or under glass, and pricked out into the borders, it would have perpetuated itself without difficulty. Now that it is in a manner reintroduced, it will be the duty of amateurs not to allow it to disappear again from the flower-garden, to which it is undoubtedly a valuable acquisition." *Journal of Hort. Society; Vol. IX.*

Among the devices of the day is the attempt to sell this under the name of *Linum splendidissimum, Vill.* Who is *Vill.*? no such abbreviation is known to botanists except that of *Villars*, who had no hand in the publication of the name. Can it possibly mean *Villain*, the seedsman at Erfurt?

FLORICULTURE.

TREATMENT OF THE AURICULA.—This flower, although a favourite both with gardeners and amateurs, as well as with professional florists, is certainly not so extensively cultivated as it deserves to be. This may be owing to good varieties being still somewhat expensive to buy, or to beginners killing their plants through careless watering, over potting, or keeping them too closely housed up. The Auricula must have abundance of air, and be carefully watered, or it will not thrive. It is easily propagated by offsets or suckers, which should be taken off when sufficiently strong for the purpose, which is about potting season. If required, they should be stripped of their lower leaves, and then inserted in a well-drained pot or wide pan, filled with a mixture of leaf-mould, loam, and sand, and placed in a shady situation in a cool frame, or under a hand-glass, shaded from the mid-day sun, and cautiously watered. If not planted too thickly in the pans, they may remain in them until the general potting season has arrived, but they should be wintered along with the old-established plants. Potting should take place soon after the plants have gone out of bloom, although some prefer shifting their stock in August. At this shift the young plants as well as the old ones should be turned out of their pots, and the mould shaken from their roots, in order that they may be thoroughly examined, to see if the fibres are sound. Any roots that are growing too vigorously should be shortened, and all decayed or yellow leaves should be removed. In potting, bear in mind that the pots should be thoroughly drained, this being one of the most essential points in their culture; and if it is not attended to they will not flourish as they should do, and may even possibly prove a complete failure. The collar of the plants should be kept well up, in order that water may not lodge in the lower leaves, for, if not very skilfully watered, this often happens and the plants rot off. After the potting is finished, they may either be re-

moved into a frame for a few days, in order to get the mould thoroughly settled, or placed in their summer quarters, which should be under a north wall, and they should be set on a bed of coal-ashes, keeping a sharp look-out for slugs. If convenient, a temporary framing should be erected, in order that some protection might be thrown over them to screen them from heavy rains, and care must be taken to keep the offsets free from drip. They may remain in this situation until the end of October, and besides gathering seed, carefully watering, and in hot weather syringing them now and then, little else will be required until the end of October, when they should be removed to their winter quarters. A pigeon-holed brick pit will be found very suitable for them, as they delight in abundance of air, and should on no account be kept close, unless the frost is very severe. But little water will now be required, as the plants will be in a semi-dormant state; what they do have should therefore be given cautiously. About the end of February remove a portion of the old soil from the pots, top-dress them with a rich compost, and remove any early blossoms that may happen to have been thrown up. Keep also a sharp look-out for green fly. As spring advances, give them more air and water. As the truss grows, and previous to the pips expanding, remove those that are deformed or over crowded; sharp-pointed scissors will be found most suitable for the purpose, bearing in mind that the less they are handled the better; and at this stage of growth they should be slightly protected from the hot sun. While in blossom they may be removed to any shady and airy situation most suitable for prolonging their beauty; but care must be taken not to drop any water on them at this stage, or their blooms will be partially spoiled; they should also be protected from rough winds. The soil best suited for the culture of the Auricula is rich loam, rotten cow-dung, and river sand; these should be well mixed previous to use, and should be employed only when in a proper state. Manure-water, with occasional applications of soot-water, will be found beneficial during the growing and blooming season. As there have been given, a few weeks ago, excellent directions for sowing seed, I will omit that point, and merely say that as soon as the young seedlings appear, keep a sharp look-out for woodlice, which often prove very destructive to them. When the plants are sufficiently strong, plant them in boxes, or whatever may be most convenient, in good compost, thoroughly drained; they may remain there until they flower, when the best should be selected, and the remainder discarded. Many of the weaker plants will, doubtless, not flower until another season; but they should be kept, and receive good treatment, until they do bloom; the remainder of their treatment should be similar to that already recommended for established plants. The Alpines may be successfully cultivated in the open borders. *E. B.*

DAHLIAS: *A P.* The first shoots will probably be excessively robust, and may be destroyed, unless the variety is scarce; they seldom strike readily. Topping the shoot early will induce other breaks to follow quickly, which root rapidly and make the best stock. Keep your pot roots dormant as long as you can, say end of March; they will almost break naturally, and then be in time for turning out by the end of May.

PICOTEES: *Tyro.* Yellow ground varieties are generally acknowledged to be more tender than white ground kinds, but we do not find them to require more than common attention. The following will form a nice collection, viz., Conrad, Euphemia, Queen, Princess Alice, Royal Standard, Topaz, and William Clough; there is, however, more room for improvement in this than in any class of flowers that come under our notice.

RHODODENDRONS: *Anon.* R. coriaceum is one of the best white hardy Rhododendrons we have seen; album elegans is also very good.

TULIPS: *William D—s.* Do not protect your bed from cold weather. Nothing but frost will do any harm; guard, however, from wet, in case frost should follow.

Miscellaneous.

Wellingtonia.—A friend and correspondent residing at San José, writes to us as follows, in regard to this wonder of vegetation:—The hills opposite are covered with beautiful timber of Taxodium sempervirens, Pinus Benthamiana and Lambertiana, and at Santa Cruz, about seven miles distant, you would sit down and gaze upon them with admiration; but if you were to see the big Arbor Vitæ, now on exhibition at San Francisco, 30 feet in diameter, you would be perfectly amazed. When I went to see it, there were 20 people dancing in the hollow part, with chairs and sofas all round; I tried to get some seeds, but could not. I know some men who are going to cut wood in or near the locality, and will make arrangements with them to procure some. *Hovey's Magazine of Horticulture.*

Improvement in Hand-hoes.—By F. Huckvale, of Choice Hill, near Chipping Norton, Oxford. Patent granted June 22, 1853. (No. 1523.) The inventor describes and claims a method of constructing hand-hoes with two blades. *Mechanics' Magazine.*

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

CONSERVATORY, &c.—The weather for some time past having been very unfavourable for out-door operations, everything in the plant houses should, by this time, have received an extra cleaning, which even those who maintain the greatest order and neatness find to be occasionally necessary; and where not already completed, this kind of work should be pushed forward with the greatest possible despatch. It is highly beneficial to twiners growing in boxes or having limited root room to annually remove as much of the soil as can be done without greatly injuring their roots, replacing it with some good fresh turfy materials, and this cannot be done at a more suitable season than the present. The conservatory or show house should very soon be full of floral beauty. Camellias, Epacrises, Heaths, Primulas, Mignonette, tree Violets, Cinerarias, Daphne indica, and many other showy things may easily be had in bloom about this time, and a few Roses, Tulips, Hyacinths, and Narcissus will also be coming in, and will greatly assist in keeping the house gay. Where a mean temperature of 45° is maintained the house will, with a little management, be perfectly suitable for numbers of showy stove plants which bloom at this season. The greenhouse and hardier plants should occupy the cooler parts of the house, while such as may be introduced from the stove or forcing pit should be afforded the warmer positions, taking care not to place them near where air is admitted. By attending to trifling arrangements of this kind very much may be done to render the house suitable for the various kinds of plants in bloom. COLD PITS.—Take every advantage of mild weather to expose the stock kept in these to the external air, in order to prevent damping, and to keep them hardy. Remove all decaying leaves as they appear, and keep the plants as dry and cool as can be safely done. Attend to the directions given last week about propagation, and proceed vigorously in repairing losses and providing a sufficient stock for the supply of your wants at turning out time. Any plants infested with mildew, whether in the propagating pit or elsewhere, should be dusted with sulphur the moment this pest is perceived.

FORCING DEPARTMENT.

PINERY.—There is sometimes considerable difficulty in getting the plants to show fruit at this season, and where this is the case, advantage should be taken of the present mild weather to increase the temperature, which may be kept at from 70° to 75° by night, and from 80° to 85° by day. It will, however, be better to select as many of the most promising plants as it may be desirable to get to show fruit, and remove them to a compartment by themselves, than to subject a large portion of the stock to so high a temperature. Avoid syringing over-head plants showing fruit, as water when allowed to settle in the heart of the plant is apt to cause deformed fruit; keep the atmosphere moist, however. Look over the whole of the stock frequently, and see that it does not suffer for want of water at the root—giving tepid manure-water to such plants as are swelling their fruit. Maintain a steady bottom-heat, and in cases where tan is used, be careful, after renewing the bed, not to let the heat about the pots exceed 85°; more injury is done by too much bottom-heat than many growers suspect. VINERY.—In houses being started use means to get the buds to break regularly, and where necessary bend the Vines, raising the backward buds to the highest point; maintain a moist atmosphere, and sprinkle the Vines morning and afternoon. When the buds begin to break the night temperature may be increased a few degrees, but it should not exceed 55° until they are all fairly started, and 65° by day should not be exceeded except with sunshine and air. Rub off all superfluous buds, taking care to leave the stronger ones, but in cases where there is any fear about the show of fruit, it will be advisable to leave all promising buds until the bunches can be perceived. It is only in cases, however, where the Vines are in a bad state that there need be any fear about destroying all superfluous buds as soon as this can be done. Admit air on every mild day, using a sufficient amount of fire heat to maintain the proper temperature. Look well to the border, and see that it is protected from wet or sudden changes of weather; and, where fermenting materials are used, turn them as often as necessary, adding a small quantity of fresh leaves and dung, in order to maintain a steady heat. PEACH HOUSE.—Proceed cautiously with trees starting, maintaining a moist atmosphere until the blossoms expand, when a little more fire heat must be used during the day, in order to be able to give a freer circulation of air, which must be afforded on all possible occasions. See that the borders inside the house are in a moist healthy state, and, where this is not the case, give a liberal soaking with weak manure water, at a temperature of about 80° or 90°. STRAWBERRIES.—These should be allowed to have as much air as possible when ever the weather will permit, and care should be observed to keep the roots of such as are now being started in advance of the tops. The most suitable situation for Strawberries, until the blossoms appear, is a dung pit, where they will require very little attention beyond giving them air. The day temperature should not exceed 60° except with sunshine, and a very free circulation; and 50° will be sufficiently high at night.

HARDY FRUIT DEPARTMENT & KITCHEN GARDEN.

Proceed with digging and trenching until all vacant ground is turned over, but avoid this kind of work on stiff soils, when the ground is very wet. Where any fruit trees remain to be planted, get this done as soon as convenient; the present mild weather is very favourable for this kind of work, and it cannot be done too soon. It is worth while to be at the trouble and expense of properly preparing the ground intended to be planted with fruit trees, and particular care should be exercised to secure perfect drainage. Take advantage of every mild day to concentrate the greatest available force upon the nailing, and get this finished as soon as possible. Early Peas should be sown on a warm border at once, where not already done. Prepare a bed for early Potatoes, putting in the soil and le the heat settle before planting the Potatoes.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending Jan. 19, 1854, as observed at the Horticultural Gardens.

January.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind.	Rain.
Friday 13	14	29.656	29.596	42	28	35.0	35½	38	S.	[illegible]
Satur. 14	○	29.873	29.707	45	26	35.5	35½	38½	S.W.	[illegible]
Sunday 15	16	29.715	29.624	40	32	36.0	37	38½	S.E.	[illegible]
Mon. 16	17	29.863	29.815	46	41	43.5	37	39½	S.E.	[illegible]
Tues. 17	18	30.076	29.928	48	45	46.5	38½	40	S.W.	[illegible]
Wed. 18	19	30.151	30.134	48	35	41.5	44	41	S.W.	[illegible]
Thurs. 19	20	30.065	29.944	45	29	37.0	41	41½	S.E.	[illegible]
Average	—	29.914	29.821	44.8	33.7	39.3	38.3	39.5		[illegible]

Jan. 13—Slight haze; clear, with bright sun; rain; slight frost.
— 14—Clear; bright sun; hazy at night.
— 15—Foggy; hazy and dull; cloudy.
— 16—Dense fog; cloudy; overcast.
— 17—Overcast; hazy; slight rain; overcast.
— 18—Densely clouded; overcast throughout.
— 19—Dense fog; foggy; uniformly overcast at night.

Mean temperature of the week, 2½ deg. above the average.

STATE OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending Jan. 28, 1854.

January.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 22	43.6	34.0	38.8	11	0.57 in.	2	4	1	5	3	9	[illegible]	[illegible]
Mon. 23	44.3	33.4	38.8	11	0.27	1	3	2	3	4	9	[illegible]	[illegible]
Tues. 24	43.2	32.8	38.0	12	0.51	3	3	2	1	3	10	5	[illegible]
Wed. 25	44.1	33.5	38.8	13	0.90	1	3	3	1	4	9	4	[illegible]
Thurs. 26	44.8	32.6	38.7	12	0.34	1	4	3	3	1	9	4	[illegible]
Friday 27	43.8	32.3	38.1	14	0.43	2	3	4	—	4	11	4	—
Satur. 28	44.7	31.7	38.2	15	0.17	2	4	2	—	—	11	[illegible]	[illegible]

The highest temperature during the above period occurred on the 24, 1834—therm. 58 deg.; and the lowest on the 25th, 1827—therm. 15 deg.

Notices to Correspondents.

BACK NUMBERS; One Shilling will be given for the *Gardeners' Chronicle* of July 16, 1853.

BOOKS: *H J T.* The best practical book upon the management of forest trees, woods, &c., beyond all comparison, is "Brown's Forester," the last edition.—*P G.* "Pritchard on the Microscope," "Schacht" on the same subject, and "Microscopic Objects," an anonymous work, published by Whittaker.—*G Ste.* The new edition of "School Botany," now in the press, will contain a great number of illustrations not in the former edition, and a chapter of simple propositions explaining the first principles of vegetable physiology.

FRUIT TREES: *J M B.* You are too little acquainted with facts to be in a condition to criticise the Supplement to the Horticultural Society's Fruit Catalogue. Of Gooseberries, enough has been said for the present generation. In the Society's Transactions, 70 sorts are described; and in the last edition of the Catalogue, which, according to your own statement, you have not seen, upwards of 140 sorts are characterised. After all, the only sorts really worth growing are the good old English kinds. Fruiting a vast collection of Figs and Vines, so as to clear up the endless confusion that exists amongst them, is the work of a century, not of a few years, and requires an enormous quantity of glass. As to the Stanwick Nectarine, there is no proof that it will not succeed against a good south wall, in a fine season; and, in our opinion, the account given of it is sufficient. We deny that the Napoléon Pear tree is apt to canker, although, like other Pear trees, it may do so under unfavourable circumstances. With regard to other sorts of fruits, have you any idea of the number included in nurserymen's catalogues, English and foreign? It is more important to grow fruits of ascertained excellence, and to distribute them, than to be always occupying ground with pretended novelties. From ascertained trees, nurserymen and Fellows of the Society have been supplied with upwards of 30,000 labelled parcels of cuttings since the last edition of the Fruit Catalogue was published in 1842. The demand for them having diminished arrangements have been made for increasing the means of proving satisfactorily the more important of those new and unknown kinds of fruits which are yearly introduced.

GARDENIA FORTUNI: *Col. M.* You will find full instructions respecting the culture of this plant, in an article by "Alpha," in the first Number of our volume for last year.‡

INSECTS: *Tyro.* It is only by great care and perseverance that these small species of scale insects (Coccidæ) can be got rid of. Washing the leaves with common oil, or turpentine and soft soap-suds, or gas-tar water, will be effectual; warm water, at 145°, may be also applied to the stems and woody parts. *W.*

OAKS: *Quercus.* There is no doubt that Q. sessiliflora and Q. pedunculata are distinct species. This is now admitted by the most experienced foresters, as it always has been practically by carpenters, who have fancied the wood of the former to be Chesnut, finding that it was not what they were accustomed to call Oak. The acorns of the first have sometimes long stalks, and the latter short ones: in other words, they are both disposed to lose the marks by which they are distinguished by mere closet botanists; but they are not the less distinct on that account. Even the people employed by Government in the New Forest (no good authority, indeed, as we must own) have been driven by the weight of evidence to admit the great importance of the distinction, as you will find in turning over the reports in the Blue Books.

PEACH TREES: *A S.* The Peach tree blossoms naturally at a cool period of the year, and a high temperature cannot be safely applied in the early stage of its vegetation. As you wish to have fruit early you may, when the trees are in flower, allow the temperature to be 50° at night and 65° in the day, or 70° by sun heat; but abundance of air must be admitted, and at the same time cold currents of it must be avoided.‖

PEARS: *S P.* The Crassane and Orange Bergamot will fruit against a west wall; but surely you would find a better sort, or one more deserving of a wall, than the Orange Bergamot.

PIGEONS' DUNG: *L L S.* Surely there is no decent work on manures which does not contain the information you seek. The substance in question is analogous to guano; but varies in quality with circumstances. If kept dry, and never allowed to ferment, it is far more powerful than if left to the accidents of weather and the consequences of accumulation. It should be used in the same manner as guano itself, which is nothing more than the droppings of sea birds *kept dry.* All such manures "burn;" and therefore require to be applied in wet weather, and largely mixed with inactive matter, such as peat, sand, dry vegetable mould, or whatever of a like nature can be most conveniently procured. It suits all crops which require strong manure. The pretence that such manures "breed weeds" is the most ignorant of notions. All strong manures encourage the growth of weeds, as they encourage the growth of a crop: and we dare say that slovenly cultivators find it more easy to keep in check half-starved weeds on half-run out land than rank weeds in rich soil. But it would not be a great stretch of intellect if they were to discover that keeping land regularly clean was the true mode of dealing with such a difficulty, instead of abusing manures.

THALIA: *M T M.* Next week.

VINES: *W A C.* Your Vines, from the specimen of wood received, appear to have been weakened from an attack of mildew, two or perhaps three years ago. But the preventive having lately become well known, it is presumed that you have maintained a healthy foliage last year; and in that case you may expect your Vines to produce good wood in the ensuing season.‡

*** As usual, many communications have been received too late and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

MANURES.—The following Manures are manufactured at Mr. Lawes' Factory, Deptford Creek:—
Turnip Manure ... ... per ton £7 0 0
Superphosphate of Lime ... ... " 7 0 0
Sulphuric Acid and Coprolites... ... " 5 0 0
Office, 69, King William Street, City, London.
N.B.—Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia.—Sulphate of Ammonia, &c.

PERUVIAN GUANO, the guaranteed import of Messrs. ANTONY GIBBS AND SONS, Lobos Island Guano, Superphosphate of Lime, and all Artificial Manures, Linseed and Rape Cakes, &c.—Wm. Inglis Carne, 10, Mark Lane, London.

THE LONDON MANURE COMPANY'S WHEAT MANURE, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. Edward Purser, Sec.
Bridge Street, Blackfriars.

ARTIFICIAL MANURES, &c. — Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. Nesbit, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and dispatch.
Gentlemen desirous of receiving instructions in Chemical Analysis and Assaying, will find ample facility and accommodation at the College.

PEAT MOSS CHARCOAL, AND OTHER MANURES.—The Undersigned are appointed sole Agents by the Peat Moss Charcoal Company, for the sale of this valuable fixer and distributor of ammoniacal matter.
Also on Sale, Peruvian Guano, Superphosphate of Lime, Gypsum, Nitrate of Soda, Bone-Dust, Sulphuric Acid, and all other Manures of known value.—Apply to Mark Fothergill & Co., 204a, Upper Thames Street, London.

WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

	£	s.	d.
Patent Pump	1	15	0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing	3	0	0

Larger sizes if required.
The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.
May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,
JOHN WARNER & SONS,
8, Crescent, Jewin Street, London.
Every description of Machinery for Raising Water; Fire Engines, &c.
An Illustrated Book sent on application post free.

PROTOXIDE ANTI-CORROSION PAINT, at a very considerable reduction of price. This article is extensively used by the principal Railway and Gas Companies, and by Builders and others for painting Stucco. It prevents iron from rusting, wood from decay, masonry from damp, and the hottest sun has no effect upon it.—Manufactured by Charles Francis and Sons, Cement Works, Nine Elms, London.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.
THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.
The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.
Manufacturers of the Cement, J. B. White & Brothers, Millbank Street, Westminster.

PRIZE CHURN.
ANTHONY'S PATENT AMERICAN. — The Royal Agricultural Society again awarded the prize to this Churn, at their last meeting at Gloucester; at the trial this Churn made 4 lbs. 6 oz. of butter from 4 quarts of cream, the best of the other Churns tried made only 3½ lbs. from the same quantity and quality of cream; 2000 of these Churns are sold yearly. Copies of testimonials, and list of prices sent on application.—Burgess & Key, Agricultural Implement Warehouses, 103, Newgate Street, and 52, Little Britain, London.

WINTON'S PARKES' STEEL DIGGING FORKS.

I HEREBY GIVE NOTICE that the Steel Digging Forks hitherto sold by Messrs. Winton & Son, of Birmingham, and called by them "Winton's Parkes' Forks," were manufactured by me, or by my direction, for the said Messrs. Winton & Son, and that I have now discontinued to manufacture for them; and that I have appointed Messrs. Burgess & Key, of 103, Newgate Street, London my wholesale Agents, to whom I respectfully request orders to be addressed.
29th Sept., 1853. Signed, Francis Parkes.

BAKER'S FOUNTAINS.
THE PHEASANTRY, BEAUFORT STREET, KING'S ROAD, CHELSEA.
MESSRS. BAKER can confidently recommend their FOUNTAINS for Poultry, Pheasants, Pigeons, &c., as the most simple, efficient, and economical; they are easily filled, no screw or plug required. Price, containing 4 quarts, 6s.; 9 quarts, 8s. And at 3, Half-moon Passage, Gracechurch Street.

BY HER MAJESTY'S ROYAL LETTERS PATENT.
BAILY'S ROUP AND CONDITION PILLS FOR POULTRY.—This remedy has been extensively tried with uniform success, and is offered to amateurs and the public with the greatest confidence. It will effectually overcome that disease which has hitherto been the bane of the poultry-yard, and destroy that apprehension known to all poultry keepers, when a favourite and valuable fowl is seen to droop. It is inestimable for poultry returning from exhibitions, and greatly facilitates moulting.—Sold, with full instructions for use, in boxes containing 50 pills, by John Baily, 113, Mount Street, Grosvenor Square, price 8s. per box, or by post 3s. 4d. "Fowls, by Baily," the most useful and plainest treatise of the day; price 2s., by post 2s. 6d.
Baily's Registered Fountains, universally adopted and approved. Drawings and particulars, by post, on application.—113, Mount Street, Grosvenor Square.

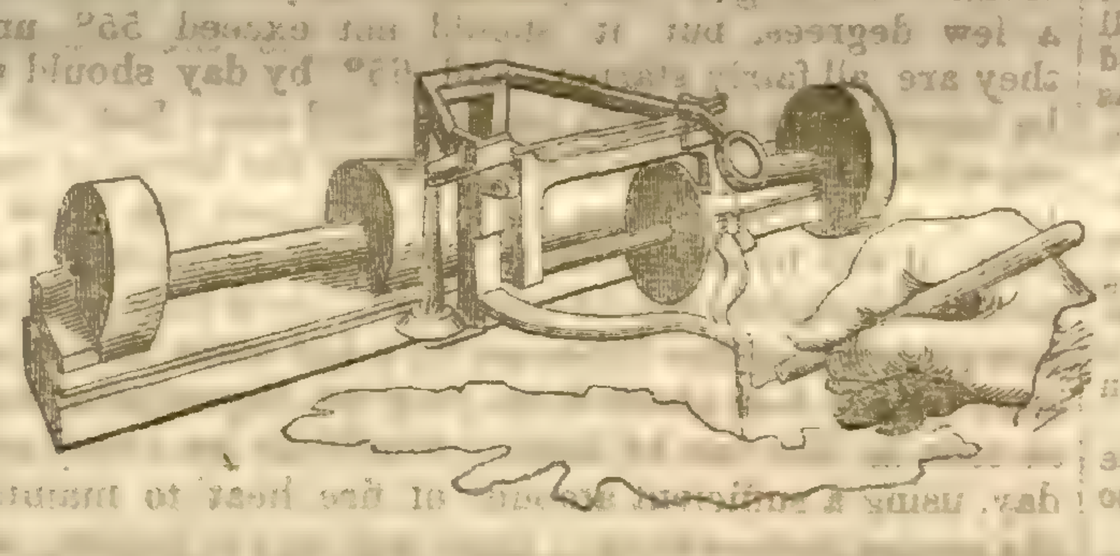
"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.
"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard run, of E. T. Archer, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey.

LAND DRAINAGE.
MR. BAILEY DENTON'S TABLES OF COST, &c., price 1s. 4d. Sold by Metchim, Parliament Street.
MR. BAILEY DENTON'S WORKMAN'S A LEVEL, price 1l. 10s. Sold by Jones & Co., High Holborn, London.

LAND DRAINAGE.
MR. JOHNSON begs to inform Landowners, Agents, &c., that he is prepared to undertake the Drainage of Land, either by Contract, or by a small charge per acre for planning and setting out the Drains, taking Levels, superintending the Work, &c.
Mr. J. has been for several years constantly employed as a Drainer in most of the Counties in England, and can give numerous satisfactory references. Plans for Tilery Buildings, and every information on Drainage can be obtained at the Office, 12, Abingdon Street, Westminster.

WEIR'S DRAINING LEVEL, Price 30s.
These Draining Levels have lately been greatly improved; they have stood the test of five years' use, during which upwards of 1000 of them have been sold. They are so simple that any labourer who can read can use them. They require no graduated staff, the index telling at once the rise and fall in inches without any computation.
Edward Weir, Agricultural Engineer, 16, Bath Place, New Road, (6 Doors West of the Hampstead Road), Removed from Oxford Street.

TO SURVEYORS, ARCHITECTS, & ENGINEERS.



SANG'S PLATOMETERS; or, SELF-ACTING CALCULATORS.—These Instruments tell accurately the contents of figures drawn on Maps. They effect a great saving of time and labour, as in order to find the area it is only necessary to lead a tracer round the outline of the figure, however irregular it may be. Price 10l. each. Sold by John Sang, Kirkaldy.

TO LANDOWNERS, SOLICITORS, ESTATE AGENTS, ETC.
THE LANDS IMPROVEMENT COMPANY, incorporated by special Act of Parliament, 1853, having perfected their organisation, are prepared to receive applications for the execution of improvements, under the provisions of their Act.
The Act extends to England, Wales, and Scotland; and empowers persons in the actual possession of lands, or in receipt of the rents, such as tenants for life, trustees, bodies corporate, incumbents of benefices, mortgagees in possession, guardians of infants, &c., to effect substantial improvements on their estates, and to convert the outlay on such improvements into a terminable annuity or rent-charge of from 14 to 25 years, at will.
The Company, acting under the supervision of the Inclosure Commissioners, will undertake and execute improvements, or will supply the capital to landowners preferring to execute improvements themselves, or will grant the powers of their Act to landowners seeking merely to charge the inheritance with the outlay on improvements from their own funds.
The Agricultural Works of Improvement particularly specified in the Company's Act, are:—
1. The Drainage of any Lands by any such means as the Inclosure Commissioners shall approve.
2. Irrigation, and Warping of Lands.
3. Embanking of Land from the Sea, or Tidal Waters, or Rivers, in a permanent manner.
4. Enclosing or Improving the Drains, Streams, or Water-courses of the Land, under the Inclosure Commissioners.
5. Reclamation of Land lying waste.
6. Making Farm-roads to the extent of one-half of the outlay for such roads.
7. Clearing Lands.
8. Erection of Farm-houses, and other Buildings required for farm purposes to the extent of three-fourths of the outlay for such Farm-houses and other Buildings.
In effecting the above Improvements there may be erected any Engines, Machinery, Engine-houses, Mills, Kilns, Sheds, Yards, Shafts, Tanks, and Reservoirs, Pipes, Conduits, and Water-courses for Irrigation, Tram-roads and other ways, Bridges, Weirs, Sluices, Flood-gates, and Hatches.
For Forms of Application and further Information apply to the Hon. W. Napier, Managing Director, 2, Old Palace Yard, Westminster, London.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.
Patron—His Royal Highness PRINCE ALBERT.
President of Council—Earl BATHURST.
Principal—Rev. J. S. HAYGARTH, M.A.
Professors, &c.
Chemistry—J. A. C. Voelcker, Ph.D., F.C.S.
Geology, Zoology, and Botany—James Buckman, F.G.S., F.L.S.
Veterinary Medicine and Surgery—G. T. Brown, M.R.C.V.S.
Surveying, Civil Engineering, and Mathematics—F. Armstrong, C.E.
Manager of Farm—G. Austin.
Assistant to Chemical Professor—A. Williams, M.R.C.S.
The first Session of 1854 will commence early in February. The annual fees for Boarders vary from 45 to 80 guineas, according to age and other circumstances. The Fee for Out-Students is 40l. per annum. The College Course of Lectures and Practical Instruction is complete in one twelvemonth—though a longer time is recommended. There is a department for general as well as for agricultural purposes. Prospectuses and information can be had on application to the Principal.
The GUIDE to the ROYAL AGRICULTURAL COLLEGE FARM may be obtained of Hamilton, Adams, & Co., Paternoster Row, London; and Edwin Baily, Cirencester. Price 1s.

COLLEGE of AGRICULTURE and CHEMISTRY, and of PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.
Principal—J. C. NESBIT, F.G.S., F.C.S., &c.
The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.
Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

The Agricultural Gazette.

SATURDAY, JANUARY 21, 1854.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Thursday,	Jan. 26	—Agricultural Imp. Society of Ireland.
Wednesday,	Feb. 1	—Agricultural Society of England.
Thursday,	— 2	—Agricultural Imp. Society of Ireland.

Whatever may be the value of any one of the reports on the Agricultural Statistics of Ireland, which are annually published—the facts being obtained, we believe, through the agency of the constabulary force—there can be no doubt of their usefulness, considered as a series. Any inaccuracy which may be inseparable from the mode of their preparation must affect all alike, and therefore, for purposes of comparison, and in order to ascertain the direction and amount of agricultural progress, they may be safely trusted. All our Irish contemporaries are just now engaged in stating and discussing the facts brought out by the lately published returns of Irish agricultural produce for 1852; and a most important set of truths they tell, indicating generally, we think, a satisfactory state of things. They tell of a decrease in the number of small holdings, nearly 20,000 of such holdings under 30 acres having during the previous year been amalgamated, so that the increase in holdings above 50 acres is 2332. And it is satisfactory to think that this is a process which, however necessary it may be considered, has not been effected as hitherto at the expense of great suffering amongst a cottier population. The exodus of small farmers sufficiently accounts for the disappearance of the small farms. The process has been effected with benefit to those who have gone, and with ultimate benefit to those whom they have left behind.

The next great fact indicated in these returns is that the extent of land in Grass is on the increase; and though this, perhaps, is not to be considered a mark of progress, yet there is a bright side here also. If there were in 1852 100,000 acres of land less in grain and pulse crops than there were in 1851, yet, the gross produce from the smaller extent was nearly 16,000 tons greater than from the larger extent. This, we are told, is to be accounted for, chiefly from the larger extent of the Oat crop with its heavier acreable produce; but also from the larger produce generally, from a favourable season, and also no doubt from improved management.

The extent in green crops and their produce does not present so favourable an appearance.

"The extent of land under Potatoes in 1852 exceeded that in 1851 by 8031 acres; but, notwithstanding this increase of cultivation, the produce was less by 1,645,279 barrels. There was also a reduction in the produce of Turnips, amounting to 405,429 tons; in Parsnips, of 676 tons; in Vetches, 7182 tons; and in Rape, 5612 barrels; but in these latter cases that result arose from their diminished cultivation. Mangold Wurzel shows an increase of 90,904 tons; Cabbage, of 3058 tons; Beet-root, of 1350 tons; Carrots, 17,781 tons; and Flax, of 256,228 stones."

But here, too, we can see degrees of increased energy and enterprise. The increase in produce of Mangold Wurzel and Flax indicates the growth of manufacturing as well as the activity of agricultural industry.

A great deal of very interesting information is given on the cattle population, and its distribution amongst different orders of occupiers. The increase is very considerable, especially, we are glad to see, in sheep; and it is worthy of note that, while the

number of small occupiers is diminishing, the gross wealth in this kind of property of the smaller number is much greater than the gross wealth of the greater number used to be.

Altogether, the returns tell a most satisfactory tale of Irish agricultural progress; and while they may not furnish positive truth, or indicate with accuracy the stage at which, in that progress, Irish agriculture has arrived—yet, as we have said, the nature and rapidity of that progress may be safely and satisfactorily gathered from them.

HAVING commenced a series of articles last spring upon the important topic of ARTERIAL, or "TRUNK" DRAINAGE (as MR. PUSEY, considering the true office of "arteries," will have it called), we again renew our endeavours to convey information which is perhaps not very easily attainable. Indeed, the discussion already excited* and gaining ground upon this matter, urges us once more to our task; now that storms of thickly drifted snow, all of which will have to melt, may be setting some minds upon the thought—where will this downfall find its exit? and are the channels along which it will run also capable of carrying away the heaviest outpouring of water-torrents which those blustering and blazing weather-divinities, old Æolus and Sol, can unitedly collect into clouds? Such an inquiry will of course occasion little anxiety to the man whose land rests aloft upon dry chalk rock, fissured limestone, or absorbing sandstone, which suck away his drain-water, often to issue it again in wet springs under, over, and within unfortunately neighbouring soils in the valleys; but to the great proportion of farmers who are not so comfortably sited, and whose indefatigable pipe-layings and subsoil-ploughings perform during several months in the year only half the good effects they ought—this question becomes of great consideration, and awakens some concern.

It is a prevalent error that the principles of drainage are to be applied on a great scale only in districts artificially reclaimed; but scarcely to be followed out in regard to streams that Nature herself is supposed to have provided for what is neither transformed lake nor estuary, but immemorially dry land. Cut new channels or divert old ones, if you please, upon ground newly won from the waters, and imitate imperfectly upon your fens and marshes the rivers which form your models on the world's self-made, self-drained surface; but beware how you touch natural water-courses, or attempt the artist's absurdity of "improving Nature." Here are wanted no new works, but only repairs.

Now, we admit that the engineer has far less to perform upon the latter than on the former order of land, but maintain that the difference is only in degree. Works of the same *kind* are required; one system of drainage, rules and principles, applies to both; and the methods proved successful upon the one are those which should be adopted in improving the other; of course omitting such as are merely incidental to the locality. Hence we regard our lowland districts, where embankment and drainage, by gravitation or machinery, in natural or made channels, have been pursued by all varieties of means, in all times, under all difficulties, with more of success than failure, as the best schools for instruction respecting our forthcoming operations in arterial drainage. We say that "upland" and "level" drainage must both be conducted upon the same principles; only that more labour is required on the latter than on the former ground. In the latter case we have the rivers to cut—in the former they flow ready to our hands; but these main-drains, when once in existence, may evidently be maintained and improved by applying one set of rules, quite irrespective of their different origin.

If man, not content with the land already available, will adventurously usurp the dominion of the waves, he must both defend his conquest and expel alien waters; if he will seize for his occupation a bay into which Nature empties her highland drainage, he must not only lay dry its bottom, but also carry forward the floods to the ocean which he has pushed off from its former margin. Our enclosed deltas and marshes are all held under this responsibility. Again, if man will draw off the volume of water naturally caught in some inland lake or basin, for the sake of tilling its hollow bed, he must sustain the charge of permanently baling out the inflowing rivulets and springs—by steam pumps, as in the case of "Whittlesea Mere," or by syphon or tunnel, as now exampled in Scotland.

In the same way with regard to ground which has not been previously submerged: Nature does certainly provide a sufficient drainage *for her own crops*; she dries the soil enough for her copse, moss, Reed, and Osier; but if we choose to cultivate choicer vegetation, we have not only to disburden the land of the wild growth encumbering it, but also to furnish it with extra facilities for dryness and warmth suited to its now artificial condition. The same thing has to be done either upon old or reclaimed land; only that the latter requires the larger amount of outlay and exertion.

The cultivable surface of our country may therefore be divided simply into two classes, one comprising the elevations and dry subsoiled tracts, which, like well-sloped roofs, shoot off descending rains; the other embracing the far more spacious areas, most of which, like eave-gutters, catch and convey away this water in addition to that which they independently receive, while some (as the fens) more resemble pump-dried tanks and cisterns into which the spouts discharge themselves. The same hydraulic laws applying to pipes and gutters as to vats and reservoirs, whoever has dried a well may safely set his wits at a water-trough, and in like reason may the great engineers who have desiccated our fen flats be entrusted to devise simple means for the complete trunk draining of all the land needing it. But though we are careful to dislodge bird-nests from eave spouts, and stop leakages that might spill the current short of its appointed tub, we have yet to scour out the main streams in all parts of our country, to clear away fords and shoals, weirs and mill-wheels, locks and pinching bridges, to side-up fallen banks, and dredge out bars of sediment, not to speak of sedges and water-weeds innumerable (scarcely yet including the dreaded new "water thyme") which we still allow to perpetrate garotte robbery in our brooks and ditches.

Our first series of articles promised our readers to notice briefly the principles on which our fenmen and those of other countries have proceeded in their works of general drainage, together with some information upon the subject of steam drainage. Our future communications will therefore run in this direction. *I. A. C.*

* We refer especially to a very instructive letter, lately published, addressed by MR. BAILEY DENTON to MR. PUSEY, in which the evils of the present system of reversing the proper order of operations are powerfully set forth. Mr. DENTON contends that it will lead only to delay and failure to attempt at once the improvement of mill-streams and main rivers; and that the best plan now will be to carry out the remedial work by continuing the reverse order in which we have begun. "It is with the minor tributary streams we should now deal; those water-courses on which no mills exist, and with which no peculiar water interests are connected, but which are nevertheless the arterial receivers and water-ways of the drainage and surface waters of the higher lands." The following, then, is Mr. DENTON's suggestion:—"By far the larger proportion of the corn lands of this kingdom are the higher lands, and are so situate that the minor arteries and outfall ditches receiving the surface and drainage waters are to the mill-streams what the ordinary highways and by-ways are to the turnpike-roads; and there is no reason why some general measure should not place these important but inferior water-ways under some central jurisdiction, represented by district officers, whose duty it shall be to examine the state and efficiency of any water-course (not affecting mills and water-rights), at the bidding of any landowner, prejudiced by the neglect of another, and thereupon report the same to the central authorities, who shall direct, after notices have been given and objections heard, such works of cleansing, scouring, widening, deepening, and straightening, to be executed as they may think proper, with funds raised by their orders on the landowners, in shares proportionate to the properties benefited by the works. As the law now stands (10 & 11 Vict., cap. 38, sec. 14, et seq.), the necessity of giving formal and legal notices—the uncertainty and delay of obtaining a warrant from two justices in petty sessions—the personal annoyance of appearing as an opponent to a neighbour who, peradventure, may be a magistrate himself—the disagreeable process of levying a distress for costs and expenses—and sundry other invidious discomforts and troubles attending the Act—render it practically nugatory. And, after all, the Act contemplates merely the cleansing and scouring of existing ditches; no provision is made for widening, deepening, and straightening such as are shallow and tortuous, without which it is waste of money to interfere with them. By the appointment of a district public officer (who, in fact, would act as public prosecutor as well as engineer for the district), all such objections will be avoided. In the Inclosure Commissioners there already exists a central and competent board of appeal and jurisdiction; and it will not be difficult to find active and competent engineers who will perform the local duties intrusted to them creditably to the country and to themselves. As one greatly interested in the subject of general drainage, and engaged in various works, I can confidently say that if such powers as I have suggested were placed in the hands of the Inclosure Commissioners, to be carried into effect by the district officers, not only would the under-draining of the country be better executed, but a great number of minor valleys of great fertility, and comprising a vast number of acres of land, would be rendered free from floods, and capable of under-draining, to the increased productiveness of the soil, and the improved healthiness of numerous districts." We add to this a reference to an instance in illustration of Mr. DENTON's remarks, contained in a report to the Cirencester Farmers' Club, which we shall soon publish.

IT is very common to refer the MILDNESS of our WINTERS to the effects of the Gulf Stream, which is well known to issue from the Gulf of Mexico through the narrow strait of Florida. This vast current of warm water, after running along nearly the entire seaboard of the United States of America, afterwards spreads out and takes a northerly and easterly direction, and is supposed to impinge upon the west coasts of Britain and Norway. That the Gulf Stream has a certain amount of influence on the character of the climate of Britain we do not doubt, but at the same time we consider it is usually very much overrated, and not a little misapprehension exists in regard to its exact influence. We thought the President of the British Association, in his inaugural address at Hull, gave an undue preponderance to the effects of the Gulf Stream on the climate of western Europe, while he overlooked other elements which are more general and important in their operation.

For some weeks before and after Christmas 1852, the mean temperature was from 5° to 8° above the mean for the season. The early part of the winter was mild and rainy, in short we had the temperature of April with great floods. But what an extraordinary contrast have we in 1853-4. The mean temperature of the week ending 15th ult. was 5° below the average of the season, the weeks ending 22d, 29th ult., and 5th inst. were 7½, 10¾, and 9½ degrees respectively below the average. Our rivers, from the Thames to the Tay, have been more ice-bound in December than they have been in any year since 1838. Less rain has fallen in London last month than has fallen in the same month for nearly a quarter of a century.

What, then, is the cause of this great variation in the temperature of this season and that of last year? Can we for a moment suppose that it is owing to any difference in the temperature of the narrow stream which issues from the Gulf of Mexico, and which is supposed to spread its waters over the wide bosom of the Atlantic, and to be the prime agent in imparting warmth to the whole ocean which washes the western coast of Europe? We think it is very questionable whether the Gulf Stream is the cause of the high temperature of the sea even around the British Isles; for our ideas in regard to the effects of terrestrial radiation would require to be greatly modified to explain the retention of heat in a fluid after having been spread out in so thin a stratum over so great a surface. There are other causes, however, in operation, to which we must ascribe the high temperature of the Atlantic in our latitude, and which impart the curious curves to the monthly isothermal lines of winter.

If the mere proximity of a warm current of water to any country should have much influence on its winter temperature, the eastern states of North America should have very warm winters; but the isothermal line which runs over the British islands in January, descends as low as latitude 37° in America, where the temperature of the Gulf Stream not far from the coast is 20° higher than that of the sea of our own shores. If an easterly current of wind had constantly prevailed on the east coast of America, then the adjoining states would have had very warm winters; but as DOVE has justly remarked, the N.W. winds in the United States and Canada are the cause of the low course of the isothermal lines of the winter months in that part of the American continent. The influence of the Gulf Stream is thus scarcely felt in raising the mean temperature of those coasts, but the changes in the direction of the wind often causes a difference of more than 60° within 24 hours in the winter months. The absence of regular tracts of east winds in winter, allows the great accumulation of ice and snow to take place on the Labrador coast and in Baffin's Bay.

In the eastern Atlantic, S.W. winds are far more prevalent than any other; whenever they blow for any length of time they cause slight surface currents of water to flow in the same direction. Coming from a lower latitude they tend to warm and to keep warm the space over which they travel. It is the S.W. winds which retain the heat in the waters over the supposed course of the Gulf Stream, and which cause the high winter temperatures over western Europe. This much is certain, that where the S.W. winds are not felt, the influence of the Gulf Stream is not felt. The vapour which these winds contain is a reservoir of heat which imparts to them their genial influence; when they are robbed of this element their heat-carrying power is gone. When they prevail on the coast of Norway the winters are rendered very mild, but in rising over the high ridge of mountains they lose their moisture, and Sweden experiences all the rigours of a continental winter.

The mild winters of the British islands are always the result of a continuance of S.W. winds, which rarely blow in any part of Britain more than a few hours without raising the temperature above the freezing point. The most formidable collection of snow soon vanishes on hill and dale when a strong current sets in from the southern Atlantic. On the other hand, northern and eastern currents of wind give us hard winters by bringing air cooled down by ice and snow, and the influence of the Atlantic is then little felt. The low temperature of last month has arisen from the steady current that has flowed from the continent of Europe, a little modified by its short passage across the German ocean; had east winds been at all common at this period of the year, our winters would be much more severe than they commonly are, and we should have heard much less regarding the influence of the Gulf Stream.

The S.E., E., and N.E. winds which prevailed during the last month were of a very peculiar character. They have been quite different in their

nature from similar winds that sometimes are common at this season of the year. It is curious that our meteorological observers have not drawn any distinction between the two classes. During last month these winds came to us as an undivided current; we have had nothing resembling them since January, 1838. The great proportion of the east winds which blow on the east coast of Britain have an overlying current from the S.W., and are usually rainy with a low barometer. The winds of last month, however, not only flowed from the east on the surface of the ground, but the currents in the higher strata were from the same quarter, and the barometer has showed great pressure; when this last state of matters exists very little rain or snow falls—it seldom falls continuously for any length of time, but only in showers which succeed each other at pretty regular intervals.

The cold weather, however, seems to have been sooner and more severely established in the southern part of the kingdom than in the northern. This circumstance has probably arisen from the greater extent of surface of water which the east wind had to travel over before it reached the Scottish coast. The lowest temperature at Chiswick has been 4°, but 11° seems to have been the minimum in the middle districts of Scotland. Two remarkable snow storms have occurred, one in the south and middle districts of England, the other in the north-east of Scotland, which suspended railway traffic for a time, and have caused much loss to our shipping on the east coasts. Little snow has apparently fallen between the Grampians and Lammermuirs. We shall reserve the details of these storms for another article, and review some of the opinions of Professor Dove, of Berlin, in regard to the atmospheric currents of the high latitudes of the northern hemisphere. *R.*

THE MANAGEMENT OF MANURE.

SHOULD FARM-YARD MANURE BE APPLIED PRIOR TO OR AFTER DECOMPOSITION?

The new "Cyclopedia of Agriculture," now in course of publication by Blackie & Son, is, in my judgment, by far the most important and useful contribution hitherto made to the agricultural library. In truth, to the farmer, it supersedes the necessity of (I may say) encumbering himself with other works, as it embraces the entire field of Practice and Science connected with agriculture, according to the latest and best authorities; and excludes much matter, to be found in earlier treatises, which carefully-conducted practical experiments, and the application of science in later times, have taught us to reject as founded in error. Such is the impression I have formed after reading the whole of the 24 parts which have been delivered to subscribers, so far as they relate strictly to the science and practice of agriculture.

It could not be expected that a work produced by numerous contributors should exhibit a consistent whole, like the effort of a single mind; and I will, with your permission, point out that which appears to me to be an inconsistency in the article "Manure," because it involves a very material consideration, not only in the manufacture and application of this very important article, but as to the comparative values of fresh and decomposed farm-yard manure, on which the practice and opinion of agriculturists differ materially. For the present purpose I would exclude what may be called the mere mechanical effect (such as the choice of long fresh manure to be ploughed in on heavy land), with the view of eliciting the opinion of scientific men to the chemical illustration of the question.

At page 338 (No. 18) is the following paragraph, "It will be observed that it is chiefly the proportion of water which is subject to the greatest variations, and that well-fermented or perfectly-decomposed manure contains much more nitrogen than fresh; for which reasons its effects on vegetation are much more immediate and energetic than those produced by applying fresh farm-yard manure to the land." In page 343 it is stated, "By far the most valuable constituent of farm-yard manure we have seen is ammonia, which, being very volatile, is continually given off from fermenting dung-heaps, and consequently lost to the farmer. It is clear that the longer the process of fermentation is carried on in the heap, the greater the loss of this valuable fertiliser will become; for which reasons care is taken by intelligent farmers to stop the process of fermentation before all the nitrogen of the manure is converted into ammonia, and to retain the latter in the heap." Then, after showing the loss in weight and bulk of manure during fermentation, the article proceeds; "This loss not only affects the water and other less valuable constituents of farm-yard manure, but also its most fertilising ingredient, nitrogen. Chemical analysis has shown that 100 cwts. of common farm-yard manure contain about 40 lbs. of nitrogen; and that during fermentation, in the first period, 5 lbs. of nitrogen are dissipated in the form of the volatile ammonia; in the second, 10 lbs; in the third, 20 lbs. Completely decomposed common manure has thus lost about one-half of its most valuable constituents" (all the nitrogen).

Now, if this be so, it is perfectly clear that well fermented and perfectly decomposed manure cannot contain any nitrogen at all, the whole having been disposed of in the three stages of decomposition in the form of ammonia, which is quite at variance with the reason given in the foregoing extract from page 338.

It has been suggested to me that the author meant to convey this fact—"that a ton of well fermented or perfectly decomposed manure contained more ammonia (not nitrogen) than a ton of fresh manure, so that, equal weights being taken, the former would be more energetic in its immediate action than the latter." This does not, however, resolve the difficulty; for, according to the subsequent paragraph, the whole of the nitrogen, the source of the ammonia, will have been disposed of in the last stage of decomposition.

My own impression is, that decomposition of all farm-yard manure ought to go on in the land, which at once absorbs all the results of such decomposing material for vegetable nutrition; and that no decomposition ought to be permitted elsewhere—that whenever the state of the land, the season, and other circumstances admit of it, it should be placed (prior to decomposition commencing) on the land and covered in; and when an accumulation cannot be so disposed of, it should be put in a heap and carefully covered at all points with earth. When that has been done effectually, I have found the manure, when carted out many months afterwards, substantially in the same state in which it was when placed in the heap—simply consolidated by its own pressure, but not decomposed.

On reading the portions of this article to which I have hitherto referred, I began to doubt whether my practice was based on so sound a foundation as I had supposed; but, on arriving at the close, I was pleased to find it thus confirmed: "The practical deduction which appears to be warranted by these experiments is, where possible, to apply farm-yard manure in a fresh state to the land. By ploughing in fresh dung, all the volatile matters—which are slowly given off during the fermentation that continues for some time in the soil—are absorbed by the soil, as well as the soluble salts, which are so easily washed out by the rain falling upon manure kept long in heaps." *C. L., Cirencester.*

TITHE COMMUTATION.

As your readers may feel anxious to know the result of the corn averages for the seven years to Christmas last, published in the *London Gazette* of Jan. 7, viz.:—

Wheat	6*s.* 0*d.*	per imperial bushel
Oats	2 6¼	"
Barley	3 9½	"

I beg to state for their information that each 100*l.* of tithe rent charge will, for the year 1854, amount to 90*l.* 19*s.* 5*d.*, which is a reduction of nearly three quarters per cent. from last year's value.

The following statement from my "Annual Tithe Commutation Tables" will show the worth of 100*l.* of tithe-rent charge for each year, since the passing of the Tithe Commutation Act, viz.:—

	£	*s.*	*d.*
For the year 1837	98	13	9¾
" 1838	97	7	11
" 1839	95	7	9
" 1840	98	15	9½
" 1841	102	12	5¼
" 1842	105	8	2¾
" 1843	105	12	2¼
" 1844	104	3	5¼
" 1845	103	17	11¼
" 1846	102	17	8¾
" 1847	99	18	10¼
" 1848	102	1	0
" 1849	100	3	7¾
" 1850	98	16	10
" 1851	96	11	4¾
" 1852	93	16	11¼
" 1853	91	13	5¾
" 1854	90	19	5
	£1788	18	9½
General average for 18 years	£99	7	8½

C. M. Willich, 25, Suffolk St., Pall Mall East.

NOTES OF EXPERIMENTS IN THE BOTANICAL GARDEN OF THE ROYAL AGRICULTURAL COLLEGE.

By J. Buckman, F.G.S., F.L.S., Prof. of Geology & Botany.

The botanical garden of the College comprises about 3 acres of ground, which a few years since was inclosed from one of the highest and most exposed fields of the farm, its situation near the house having decided its choice; it is a long patch of ground, with its length from south to north, and merely walled in with a dry freestone wall, from which data it will at once be seen that there can be no reason for supposing it a garden of the first class.

The subsoil for the most part is a thin bed of clay resting upon the freestone of the great or Bath oolite; however, at the north-east corner the brash comes near to the surface, and on this are now planted about 50 species of Conifers, whilst the north end is laid out with turf, dotted here and there with forest trees as may be calculated to afford subjects of interest in teaching the students, and at the same time act as a shelter from the colder winds.

The rest of the ground is divided into two parts, one of which is devoted to the growth of such esculent vegetables as are calculated to be useful in a large community like that of the college, the object aimed at being to get a constant supply in succession without reference to curious or rare sorts, or of early growths, for which the garden is ill-suited. Of course fruit trees of all kinds are excluded, as the larger trees, such as Apples and Pears, never thrive so near the rock, and more especially in exposed situations, and small fruits would stand but little chance with so many botanical students constantly examining their structure.

The other portion of the garden is devoted more particularly to exhibition of examples of agricultural crops or to experiments of agricultural value; and here perhaps the very fact that the soil is hardly so good as the average of the farm renders this much better for our purpose, as in the endeavour to ascertain the capabilities of a plant for field cultivation, it seems hardly wise to draw conclusions from garden culture; and again where the crops obtained are subjected to chemical examination, as many of them have been by Dr. Voelcker, the college professor of chemistry, the derived facts are of more value to the farmer when obtained from the analyses of crops grown under ordinary rather than extraordinary circumstances either of soil or cultivation.

This portion of the garden, which is yet only in progress towards completion, is divided into square plots, a few of which contain five square yards, whilst the generality of them are 2½ yards square; these vary more or less in their crops each season; at the present moment there are 64 plots in cultivation, the crops of which may conveniently be ranged under the following heads—1st, plants suitable for green food, 28 species; 2d, British pasture Grasses, 24 do.; 3d, plants for economic uses, 8 do.; 4th, medicinal plants, 4 do.; total, 64. Of the green food plants 22 plots are occupied with the Leguminosæ, the remainder being various; the following is the list of leguminous green food plants:—

1. Ervum lens, Lentils.
2. Lathyrus aphaca, Yellow Vetchling.
3. Lathyrus pratensis, Meadow ditto.
4. Lathyrus sylvestris, Narrow-leaved Everlasting Pea.
5. Medicago lupulina, Black Medick.
6. Medicago sativa, Lucerne.
8. Melilotus leucantha (two plots), White Melilot.
9. Melilotus officinalis, yellow ditto.
10. Trifolium filiforme, Lesser Trefoil.
11. Trifolium hybridum, Alsike Clover.
12. Trifolium incarnatum, Annual Clover.
13. Trifolium pratense, Broad Clover.
14. Trifolium medium, Zigzag Clover.
15. Trifolium repens, White Clover.
16. Ulex Europæus, Furze.
17. Vicia cracca, Cow Vetch.
18. " sativa, common ditto.
19. " sepium, Bush ditto.
20. " angustifolium, Narrow-leaved ditto.
21. Onobrychis sativa, Saintfoin.
22. Onobrychis sativa, var. bifera, Giant ditto.

Of these it will only be necessary to make the remark that they generally grow very well. The seeds for the most part were obtained from Mr. Gibbs, the seedsman to the Royal Agricultural Society. Other remarks will apply to special experiments. The three species of Lathyrus were brought into the garden in order to point out the important structural facts in connection with their leaves, stipules, and tendrils, and at the same time to observe the amount of herbage they were capable of yielding. The first, L. aphaca, grows much more luxuriantly than in a wild state, and it is curious to see the great quantity of herbage produced from a single root of a plant which after a few weeks' growth does not put forth a single true leaf, the leaves in reality being metamorphosed into tendrils, and the stipules therefore grow to an extraordinary extent, as they have to perform the leaf function.

As an agricultural plant, it is not likely to be of much value, as there is great difficulty in getting the seeds to germinate; indeed, this is the case with all the three species experimented upon, and notwithstanding Hooker describes it as an annual, it is nevertheless two years in perfecting its full size, when it seeds readily, and then dies.

The L. pratensis does not succeed with us, its herbage is scanty, and it does not perfect its seed. The L. sylvestris was sown in the autumn of 1852, and is now covering a plot with an abundance of luxuriant foliage; this is a perennial species, which if it will bear cutting is likely to be a very useful plant.

With respect to the Medicks it is only necessary to remark that my experiments fully confirm the general regard for their value. It seems curious that the Medicago lupulina should be called Hop Trefoil by the farmer, whilst the Trifolium procumbens is the Hop Trefoil of the botanist; the two plants are very different in habit; the former does not necessarily die on being cut down, indeed its habit is to seed well before withering, whilst the latter is a decided annual; it may further be noted that the former prefers better soil, whilst the latter gets on well in poor sands, and is deficient in nutritive properties.

In 1850 I had two sets of seeds sent me, one of which was said to be that of a Cabool, the other of a Bokhara, Clover; I find them both to be Melilotus leucantha; they both grow a large quantity of herbage, which will allow of being cropped twice or thrice in the year, under which treatment it may be made to assume a perennial growth, but when once it has seeded it then dies; the same may be said of the M. officinalis. These plants in the tender state are greedily eaten by cattle, notwithstanding they have a bitter aromatic taste. In drying they exhale the smell of newly made meadow hay, and no doubt contain the same aromatic principle as Anthoxanthum odoratum (the Sweet Vernal Grass). Now, is it not probable that the superiority of meadow hay over artificial hay may be due to this flavouring matter as it occurs in some few meadow Grasses? It is well known that vapid food disagrees with most people; I recollect that Soyer's soup for the poor was considered highly nutritious, though at much less cost than that usually made, which latter was rejected, as it disordered the stomach, but Soyer knew how to give it flavour, which made all the difference, not only in taste but in its effects; by the way, it may be noticed that, as a rule, our peasantry dislike stews, which they call messes, and the manner in which this is pronounced by a countryman

testifies his disgust at them—it is the same thing, John Bull is no *artiste*, his stews want the flavour. Now, to bring this to bear on our subject, would it not be worth while to mix a small quantity of Melilotus seed with "Seeds and Clovers?" This would give the hay the rich scent and flavour of meadow hay, and besides being a luxuriant growing plant of itself, it would, from its upright growth, tend to draw up its neighbours.

For the purpose of experiment in this matter, I should recommend trial to be made of the M. officinalis, as it is not so woody as those mentioned; my plot was sown last autumn, and it is now in rich foliage, about 18 inches high, from which I conclude that it may be sown with the Barley crop as usual with seeds; it will bear cutting as well as the Clover, and if prevented seeding will last equally long.

This plant has not yet been analysed, but from the result of analyses of the M. leucantha, as described by Dr. Voelcker, in the Journal of the Highland and Agricultural Society of Scotland, for July 1853, we are led to infer that the M. officinalis may rank high as a feeding substance.

The following is the composition of M. leucantha, arranged according to the two great classes of alimentary substances:—

	In Natural State.	Dried at 212° Fahr.
Water	81.300	—
Flesh forming constituents (*i. e.*, substances containing nitrogen) ...	3.281	17.56
Heat and fat producing matter (*i. e.*, substances not containing nitrogen)	13.529	72.33
Inorganic matters (ash)	1.890	10.11
	100.000	100.00

To this the doctor adds, "It resembles closely in composition a sample of red Clover, and may be regarded as possessing about the same nutritive value in the state in which it has been analysed."

(*To be continued.*)

Home Correspondence.

Liquid Manure.—On clay lands the importance of liquid manure is incontrovertible; as from its not so readily admitting the air, the decomposition of solid excrement, &c., is too slow a process to become available as the immediate food of plants; and the advantage of irrigation expressly of manure on such lands (not forgetting their retentiveness), especially pasture, is immense. These lands are also under the necessity of being drained; and in time of drought (the most important time for irrigation), the drainage pipes are empty, consequently the fertilising liquid might be forced into the already laid tubes (previously plugging up the outfalls) where the inclination of the pipes might fail; and from them forced up by forcing-pumps, here and there, for distribution over the parched or thirsty lands, without incurring the expense of a second relay of pipes for the occasion, at no less than about an equal cost with the first. And, moreover, these pipes could be made to join any company's main that may hereafter be established, and shut off at pleasure by a stop-cock. —Blight also is often the cause of drought, through overcharge of electricity, which may be carried off by water. Then how many cereal as well as green crops might be saved by water irrigation, forced into these pipes and distributed in like manner over the languishing fields? A season or two back such an application would have saved thousands of quarters, and tons of field produce. *An Old Subscriber, Cirencester, January 7.*

Gorse.—In page 845 of your last Number there is an interesting paper, by Mr. Burnett, upon the use of Gorse for cattle. It is surprising how little way this most useful winter and spring food has made in this country, I believe, principally from a supposed difficulty in preparing it. I have now used it extensively for horses, cows, and young stock for many years, and find it the best food for them. After, like Mr. Burnett, trying many modes of preparing it, about five years since I adopted the following with perfect success:—I have a chaff-machine of Richmond and Chandler's, of Manchester, worked by horse-power. This is set to cut half-inch length. The Gorse is mown by a short, strong scythe—two years' growth. A man wearing gloves feeds the cutter, a boy piling it on the feeder with a fork. After a cartload is cut in this way, a little straw is laid upon the wooden trough or feeder of the engine, and the Gorse, which has been cut once, laid upon it with a shovel. The straw pulls the chopped Gorse with it to the cutters, and it thus gets another chop, which renders it quite sufficiently bruised for any sort of cattle. Indeed I like it better than when more bruised. By this method you get the Gorse prepared in a very short time, and with little expense or trouble. In Richmond and Chandler's chaff-machine the stalks, &c., are all cut, without any trouble in looking the Gorse over; and a morning's work will suffice amply to cut Gorse and chaff enough for 100 beasts and 20 horses. I think no one who has ever tried Gorse for either horses, or milking and feeding beasts, or young stock, in conjunction with straw chaff and Turnips, will give it up again. I have lately been in Yorkshire, and seen some of the best farm-yards there. I do not give names, because I do not wish to call down a shower of indignation at my ignorance, but I was astonished at the enormous waste of food in what they called their fold-yards. I saw at the establishments of wealthy and well-known men, farming their own land, and with unlimited means at command, well bred cattle of all ages, milking and feeding stock, standing shivering all day in fields, and just at nightfall brought into fold-yards, where they were up to their bellies in wet straw (called manure) with piles of straw and bad hay put for their food. Of course a good fight and scrimmage took place, the straw was all thrown about, and much wasted and trodden down in comparison to what was eaten. In the morning the shivering and expectant system would go on through the day; the cattle would drop all their manure and urine in one spot by the gate, and at night the fold-yard system of making manure would be resumed. Now, if these (say 100) cattle were in boxes, 2 or 3 together, according to ages, the same straw chopped and steamed and mixed with Gorse, Turnips cut by Moody's crusher, and a little ground Corn, or oil-cake, would feed about ten times the number; they would be dry, warm, and comfortable, and their bedding would be really manure of the best quality, without any water in it or loss from it, and in spring would be ready to put upon the land for Turnips, &c., at once. But instead of this, the Yorkshire men (our best agriculturists, in many respects, I am quite ready to admit), too many of them, cast out this wet mass of tangled straw into heaps, and have to leave it there for months, and often even till next year, for the sun and rain to ruin it before they can use it. A farm of 500 acres, with boxes for the cattle and stock of all ages and kinds, fed entirely upon chopped and steamed straw and hay, with Gorse, Turnips, &c., mixed, would be a sight worth going any distance to see. In using Turnips with chaff, Moody's crusher is essential to success; cattle do not pick out the Turnips cut by it, as I find they do by all others. *W. D. Fox.*

Good Cream in Severe Weather.—There is a simple method of obtaining this luxury which I find quite efficacious, and to which I wish to call attention, because I believe it is little practised. The method is to apply hot water under the milk pans immediately on the milk being brought in, and again in 12 hours time. Pans are made by some Staffordshire manufacturers (*e. g.* Wedgewoods or Copelands), so constructed as to allow the hot water to be drawn off, and renewed without disturbance. *P. P. P.*

Does Live Stock Pay?—When a person falls into a mistake, especially when it has a tendency to mislead others, the least amends he can make is to acknowledge it. My calculation being vitiated by the blunder pointed out by "S.," which, gross and culpable as it is, arose not from malice prepense, but from inattention in misplacing a decimal point, I own myself fairly driven from my position. Being thus compelled to reconnoitre the ground, I have determined, in the hope of retrieving my defeat, to take up a new position, which I hope will prove more tenable than the last one. But first I may be permitted to observe that I have no more knowledge of Mr. M'Culloch than any one has who is conversant with the agricultural literature of the past few years, and that I am a tenant-farmer in a county of no mean reputation both for breeding and feeding; and being engaged to some extent in both pursuits, I have no interest or wish but that the matter may be sifted to the bottom. To come to the point, then, it will be found on examining Table I., in Mr. M'Culloch's report, that, in converting live into dead weight, he has multiplied the live weights at the commencement and close of the experiment by the same decimal (.55), which, and not the adventitious rise in the market, accounts for the different values put upon the cattle in the lean and fat state, and likewise for the small apparent increase of dead weight. This will be seen by putting the matter in another form. The proportion of live to dead weight in cattle of the breed employed in this experiment is stated by Mr. Ewart thus (see article "Meat" in Morton's Cyclopedia):—

Condition.	Per cent. of Beef of Live Weights.
Half fat	50 to 55
Moderately fat	56 to 60
Prime to very fat	61 to 63

We cannot be very far wrong then in estimating the dead weight at 50 per cent. of the live weight when lean, and 60 per cent. when fat. We thus arrive at the following result:—

	Live weight.	Dead weight.
At conclusion of experiment ...	4911¼ st. × .6 =	2946.7 st.
At commencement...	4193½ st. × .5 =	2096.7 st.
Increase		850 st.

Which at 6*s.* 6*d.* per stone amounts to 276*l.* 5*s.* Let us now see at what cost this increase is produced.

	£	*s.*	*d.*
Food (including straw not charged by Mr. M'Culloch)	203	6	2
Interest and Insurance	19	10	0
Attendance	20	0	0
	£242	16	2

Leaving a profit of 33*l.* 8*s.* 10*d.*, and the difference between the value of the litter used and the manure produced. Mr. M'Culloch seems to have considered the manure an equivalent for the straw consumed, attendance, &c. This would account for those omissions which led "S." to suspect that he had been trying his hand at "cooking" his report as well as his cattle food. As to the general question, it is evident that the higher the price of lean stock the greater the share of profit that goes into the breeder's pocket, and that by the unprofitableness of fattening cattle bought lean at a higher rate than they are sold at when fat a negative cannot be proved to the query—"Does Live Stock Pay?" *Aliquis.*

Farming in Ireland.—It seems strange that members of the English Agricultural Society should be ignorant of the progress made in husbandry in the north of the Emerald Isle. For 20 years past the best tups, and the choicest of short-horned cattle have been purchased in Scotland to send to that country. In the selection of implements, in draining, in deep ploughing, &c., they are not behind any agriculturist in this country. Their soil is proverbially fruitful, and it might become in a few years "a land flowing with milk and honey;" nature has been very bountiful to her, but it is unnecessary here to recapitulate the causes of her past troubles and difficulties. It is to be trusted life may be secure, and respect shown for the persons of the future tenants, who may one day prove themselves the true regenerators of this favoured isle. She is capable of producing corn and beef for the support of double or treble her population, and there is no Englishman of any love of country who will not rejoice to behold the day (which may not be far distant) of seeing Ireland one of the most flourishing as well as the most productive of agricultural countries. *X Y Z., Hants.*

Stoppage of Drains.—In the hopes that some of your agricultural readers who have paid attention to the accidents that works of drainage are liable to may be able to explain to me the cause of the following stoppage at the outlet, I send you the particulars for insertion in your next paper. The outlet in question is for two 8-inch pipes, laid side by side, which convey the drainage of 150 acres or thereabouts. The rapid thaw of Saturday and Sunday last of course filled every drain to overflowing, and a large body of water escaped at this outlet. An iron grating, the bars of which are 2 inches apart, is built into masonry to prevent rabbits or other vermin from entering the drain. On examining this outlet yesterday, I found the bars of the grating totally stopped up with a substance which appears to me to consist of fine white threads or rootlets, but reduced to a solid mass by the finest particles of sand, and when squeezed dry in the hand almost resembles putty in consistency. The stoppage had caused the water to find another exit through the masonry. The whole of the small drains are 4 feet deep; so if I am right in supposing these threads to be roots, from what can they spring? No doubt the flushing the drains got would cleanse them from a great deal of sediment, &c.; but what I should wish to learn from some of your readers who may be more practical drainers than I am is, whether any of them have experienced a similar stoppage, or can inform me of any contrivance that would exclude vermin from the drain, at the same time allowing this sediment to pass out. *J. P.* [These growths ascend the stream, and their origin should be looked for in the ditch if they block up only the termination of the drain.]

Bread and Flour.—As one of your subscribers, may I ask you or any of your contributors to explain to me the disproportion in the price of bread and flour at this time to the price of Wheat, as compared with other periods of high prices. The average price of Wheat by the last returns is 73*s.* a quarter, and the price of the quartern loaf now is 11*d.*; but in the month of May, 1847, when the average price of Wheat rose to 105*s.* a quarter, the highest price of the quartern loaf was 1*s.* 2*d.* Now, the youngest of your readers would condemn such arithmetic as that of this Rule of Three sum — 105*s.* : 73*s.* : : 14*d.* : 11*d.* Ought not the millers and bakers to be sent back to school to learn that, instead of 11*d.*, 9¾*d.* should be the fourth term? The schoolmaster, however, is abroad in your columns, and to him I will look for a solution of the problem. Does it lie in the bad flour quality of the Wheat of last harvest? What is the usual proportion in average seasons of flour to the Wheat grain; *i. e.*, how many pecks of the former to a bushel of the latter? and what is the supposed or ascertained proportion for this season? *John Hall, Brentwood.*

Societies.

HIGHLAND AND AGRICULTURAL, *Jan.* 10.—A general meeting of the Society was held, and attended by about 140 of the members; the Duke of Hamilton in the chair. One hundred and twenty-one new members were admitted.

Agricultural Statistics.—Sir John M'Neill reported the satisfactory conclusion of that work.

The inquiry naturally divided itself into two parts: the first being to ascertain the number of acres, and the distribution of crops in the three counties to which the inquiry was confined. That part of the inquiry was conducted in this manner:—Returns were sent to the different occupants of land, which they filled up and returned to the enumerator. Committees, consisting of the enumerator and agricultural representatives from each parish, were formed in the different districts, and to them it was intrusted to state from their own observation and experience the amount of produce per acre. That duty necessarily involved a perfect reliance on the part of the Society on their integrity and intelligence, and he had pleasure in stating that all the information which he had collected led him to the conclusion that that duty had been most faithfully performed. He was aware that a doubt had been expressed as to the sufficiency of the information attained in that way; but he believed that almost every one connected with agriculture, and acquainted with the subject, would concur with him in thinking that the information so obtained as to the acreable produce of these counties was at least as much to be relied upon as if returns had been filled up by each occupant of land, giving the amount of produce on his own farm. He thought it would be expecting too much to suppose that there would be in every return a perfectly accurate statement of the produce per acre, and he believed the truth to be that they got nearer to an accurate estimate by the help of these committees than they would have done had they relied on the individual accuracy of each occupant of land. He thought it would be wrong not to direct the attention of the Society to the obligations which they owed to the enumerators and to the gentlemen who had served upon these committees. There was also another person to whose services he had in a more special manner to direct attention. The directors, on the completion of the returns, had agreed upon a minute to the effect that, in reporting the termination of the work to the

general meeting, it was the opinion of the directors that the secretary should receive the thanks of the Society for the manner in which he had conducted the inquiry. (Cheers.) It was hardly necessary for him to add one word to such an opinion expressed by the Board of Directors, but having had occasion to observe very closely the proceedings of Mr. Maxwell during the whole course of the inquiry, he felt that he could not speak in terms too high of the estimate he had formed of his tact, of his activity, and of his judgment and good management. He thought the Society was deeply indebted to Mr. Maxwell for the manner in which he had conducted a rather delicate and difficult duty. (Applause.)—The Duke of Buccleuch said he might be allowed to second the proposal of Sir John M'Neill, with reference to the enumerators engaged in collecting these statistics, and also with reference to the unwearied zeal and activity of their secretary, to whom the success of the great work just completed was mainly to be attributed.—Mr. Hall Maxwell acknowledged the compliment paid him.

Peruvian Guano.—Mr. Pringle, of Whytbank, proposed the adoption of the following memorial to the Treasury upon this subject.

"That the attention of your memorialists has lately been called to a report, by the admiral in command on the Pacific station, as to the supply which the existing deposits of Peruvian guano will probably yet afford. Your memorialists observe with some alarm that Admiral Moresby's opinion of the quantity available for exportation differs materially from, and is far below, the estimates that have been formed by other parties; and they submit that, in a matter of such vast importance to the British agriculturist, immediate steps should be adopted with the view of ascertaining, by means of a detailed and authoritative survey, the actual state of the case. The memorialists, looking to the possible failure of the Peruvian supply, would further respectfully suggest the expediency of employing the most efficient means for exploring other deposits of guano which may yet exist undiscovered; and, if necessary, of despatching a special expedition for this purpose. May it therefore please your lordships to take the premises into consideration, and to order such measures as may give effect to the prayer of your memorialists."

The memorial was adopted.

Berwick Show.—Mr. Horne, of Langwell, convener of the committee on general shows, reported the satisfactory nature of the arrangements for the meeting at Berwick.

The show takes place during the first week of August on the Magdalene Fields, granted for the purpose by the Duke of Northumberland. The premium list had been finally adjusted, after having been approved of by meetings held at Berwick, Dunse, and Kelso; and the premiums offered by the Society for stock and implements amount to between 1200*l.* and 1300*l.*

Poultry.

LIVERPOOL.—The first annual exhibition at this town of merchant princes was held at Lucas's Repository, on Tuesday and Wednesday last. The place is well adapted for the purpose, and the committee, at considerable expense, removed part of the roof, and substituted glass; thus adding to the light of the building and its general appearance. Although our province is to speak of poultry, yet as the place in which a show is held has to do with the exhibition itself, we cannot help remarking the graceful appearance of that chosen, and the air of cheerfulness it imparted to the *coup d'œil*. The roof is coloured after the manner of the Crystal Palace in London, and the building is surrounded by full-sized casts of the best of the ancient and modern statues. The novelty of the thing will be our excuse for mentioning that which would otherwise be irrelevant. The show consisted of 357 entries, and it may be safely averred that in the same number of pens so many good birds were never before met. Spanish came first in order, and being within a few miles of Knowsley Cottage, it was predicted the prizes would fall to the lot of Capt. Hornby, and the prophets were right. He took first and second prizes for adults, and first for chickens. The second was taken by Mr. Hardy, of Warrington. There were 29 entries in these two classes. The next class of adult Dorkings was pronounced by the judges highly meritorious. Capt. Hornby here again took both prizes. In class 4, chickens of 1853, against 22 competitors, Mrs. Towneley Parker took first, and Captain Hornby second, prizes. These classes of Dorkings deserved every commendation, being composed, with few exceptions, of first-rate birds. The white Dorkings were not numerous, but in the adult class Mr. James, of Moseley, and Mr. Fell, of Warrington, had good birds. In class 6, Mr. Rawson took first prize with a pen of remarkably good chickens; Mr. R. Gibson took the second. Next came the Cochin Chinas, and here the old birds were certainly the best we have seen for many months. Mrs. Lydia Stow, a well-known name in poultry annals, took the first, and Mr. Mitchell, of Keighley, second. There were 49 entries for competition in the chicken class, and the honours were awarded as follows, in order, to Mr. J. Harrison and Capt. Hornby. Mrs. Stow here took three commendations, and her birds were immediately sold. Class 9 was weak, Messrs. Hindson and Clare took the prizes. In the young birds Mr. Archer of Malvern stood first, with a pen of unusual weight, and Mr. Job was second. There was no award in class 11 for white adults, but Messrs. Rawson and Job were deservedly successful in the birds of 1853. We cannot speak favourably of the black Cochins, the cocks are invariably faulty, one only prize was given to Mr. Fox. Mr. Trapp, of Bedford, was successful in both classes of Malays. The largest prize-taker in the game classes is always Mr. Mousey, of Norwich, and as usual he here took three prizes. Messrs. Bullock, Turner, Cox, of Derby (2), Dixon, and Pearse, also took prizes in the various classes. Messrs. Rawson and Josiah Chune carried off the first in the golden pencilled Hamburgh classes, and Mr. Worrall took the second. Among the spangled, Mr. Fell and Mr. West had the honours of the adult classes, while those in the younger birds were awarded to Messrs. Dixon and Rawson. We cannot praise Class 27, and one prize only was awarded, to Mr. Mitchell, of Keighley. The same gentleman took the first prize for chickens, class 28, silver pencilled Hamburgh, while the second was given to Mr. Dixon. We expected good silver spangled in the country of the "moonies," and were not disappointed. Mr. Mitchell was here again in force, taking one first and one second prize; Mr. Rawson also took a first, and Mr. Alison, jun., a second.

We now come to the Polands, in which this show was pre-eminently strong. We have seldom seen so many good birds at one time. We believe we may say, without fear of contradiction, never, save at Birmingham. The black with white top-knots deserved their name, not from trimming but from their goodness. Mr. Thomas Beesley and Mr. Joseph Conyers were first and second. For golden, Mr. Joseph Conyers and Mr. C. Rawson. For silver, Mr. Baker and Mr. Greenall. The gold laced bantams were good, and Mr. G. W. Moss and Mr. C. Rawson were first and second on the list. For the silver-laced, Mr. Rawson took both prizes. For white, Master Brockelbank. For black, Mr. G. W. Moss and Mr. Joseph Conyers. To the amateur the 10 pens of competing geese were in themselves an exhibition. Mrs. Towneley Parker took both prizes, the first pen weighing 74 lbs. Mr. Rawson was foremost in Aylesbury ducks, with excellent birds that won in spite of the bad condition in which they were exhibited. Mr. Weston second. Mr. Pearse took first prize with a pen of remarkably well bred Rouen ducks; Mr. Worrall stood next with very good birds. Mr. Bradford was successful with Buenos Ayrean, and Mr. Bird with call ducks. These were very excellent specimens. The turkeys were very large and remarkably handsome; Mr. J. Conyers took first, and Mr. John B. Neilson second prizes. A pen of wild turkeys of such extraordinary merit was also exhibited by the latter gentleman, that an especial extra first prize was given to them. We doubt if they can be equalled for purity in the United Kingdom.

The attendance was large, too much so for the space, and next year a larger building must be found. Everything was conducted in a praiseworthy spirit of liberality, and perfect success was not only deserved but attained. Much of it is due to the unwearied exertions of Mr. G. W. Moss, the Secretary. The most salient points of the show, to those interested as breeders or exhibitors, will be—first, the continuation at every successive show of the difficulty, we might almost say the improbability, of getting a black Cochin China cock. Next, the hopelessness of expecting a prize for white Cochins, if green-legged birds are to be found in the pen, and to reiterate the assertion in regard to game fowls. It is almost painful for judges to pass over pen after pen of otherwise meritorious birds, because the colour of the legs of the three birds are all different. In no class is uniformity more essential. We were very glad to see cottagers competing in the different classes. The judges were—E. Hewitt, Esq., Eden Cottage, Spark Brook, Birmingham; Mr. Baily, Mount Street, London.

TORQUAY AND SOUTH DEVON.—The second exhibition of the Torquay and South Devon Association for the improvement of domestic poultry, took place on Wednesday, Thursday, and Friday, the 11th, 12th, and 13th of January, in Union Street, Torquay, and was well attended by the nobility and gentry of the town and neighbourhood. The show, altogether, was decidedly a superior one; and although it could not vie in numbers of pens with some which have preceded it in other parts of the country, the quality of birds shown amply made up the deficiency. The Spanish, Dorkings, Shanghaes, game and Hamburghs were well represented, and equally well contested, as were also the turkeys and ducks. Mr. Edward Hewett, of Eden Cottage, Sparkbrook, near Birmingham, acted as judge, and gave general satisfaction by his awards.

Right or Wrong?—A friend lately sent me a fine Cochin China cock and two hens. As I dislike any fighting in the yard, I made way for the stranger by removing the late Sultan. I am now told that I did an injudicious thing, "for," says my informant, "I lately saw a Cochin fowl brought to table, a large coarse bird, and I was told he had eat as much as would fatten a pig! that he made fat in lumps, but very little meat on the breast." If this is the propensity of this species of fowl, I shall not encourage the breed, for in a hurry, or in a dark day, one might get a lump of this golden treasure in the mouth! then farewell to poultry for ever! * * *

Calendar of Operations.

JANUARY.

BORDER OF THE FENS.—The work done on the farm has been of a desultory character for the last few weeks, all regular employment being much interrupted by the weather. We finished Wheat seeding on December 15, the very day the frost set in with any severity, snowing and blowing alarmingly while the last acre was put in, since which time the horses have not been on the land at all, excepting for the purpose of carting manure. Our chief care has been to attend to the stock, which have gone on very well, having before the blast had 7 or 8 acres of Swede Turnips "topped and tailed," and secured with earth in large clumps or heaps. Near these the lamb hogs have been folded with a double line of trays enclosed, to contain Oat straw, which they eat readily, and which shelters them from the wind, as shown by their lairing close to the trays every night. The snow has been so deep that persons having only white Turnips and eating them on the land, have been obliged to have their lamb hogs brought near the homestead, and fed on hay and corn. One farmer who had not folded his sheep, lost seven last week by their walking into a dike concealed by the snow. The frost has been so intense as to make it difficult to procure water for the stock; the troughs became a mass of ice, and when broken in a pond it was of great thickness and somewhat dangerous to keep open. The desirableness of keeping sheep in tolerably good condition has been sufficiently shown this winter, for the ewes have chiefly had to subsist on such a scanty supply of Grass as they could procure by scraping away the snow with their feet, some hay or straw, with a few Turnips, being carted to them daily. Last week we threshed Barley, the produce of a 5-acre field yielding 4½ qrs. per acre. The rent of the field was 10*l.*; tithes and rates, 2*l.*; seed, 3*l.*; ploughing, drilling, weeding, &c., 4*l.*; mowing and tying, 1*l.* 15*s.*; threshing, 3*l.* 6*s.*; dressing, 15*s.*; delivering, 17*s.*—in all, 25*l.* 13*s.* It was sold at 44*s.* per quarter, leaving a far greater profit than we expected. Manure carting has been proceeded with when practicable, but the roads have been in a dangerous state, as, although "turned up" by the smith, one mare slipped and sprained one of her legs seriously by falling with a load. Gravel raising has employed two men at 4*d.* per yard. Dyking and draining could not be done, owing to the snow and wet. Frost has hindered hedging operations; but we may observe on this head that more attention should be bestowed on Brambles and Elders than is usually accorded. Brambles and Briars are very troublesome to sheep, and, if not rooted up, will choke the Whitethorn and get the mastery; Elder, on the other hand, will make a naked fence and encourage gaps. Wherever the crops have been at all decent, the present prices must be admitted to be greatly remunerative; but persons who are not farmers exhibit most illiberal scepticism on the possibility of agriculturists suffering loss at the present untoward season. The returns of some farmers are almost incredible, from their unexpected nothingness, comparatively speaking; some (as the itinerant threshers with steam or horse-power have the misfortune too often to verify) do not realise a sack an acre. We commonly hear of less than 2 qrs. an acre, the weight of such defective crops being generally less than 17½ stones per coomb. The delivery, unless first dressed and measured, scarcely ever equalling the estimate formed in the stack. Is it surprising, then, that the quantities brought to market should be so small, or that the prices should range so high? A miller said the other day, it was to be desired that prices should now get up, or the chance of our future privation must be increased by the facility afforded to the foreign buyer to decrease our stock. Better supplies will, no doubt, be forthcoming from this quarter in the spring; but it is a grave consideration whether the free operations of commerce can be coerced to preserve for our own use a sufficiency of the necessaries of life until the next harvest is available. It is a very grave question whether any steps can be safely taken to obtain larger supplies without creating such an exaggerated alarm as will only in the end increase the mischief. At all events, we hope the vigilance of those in power will not neglect any fair means of encouraging the transit from abroad of every article of food that friendly nations may have to dispose of; for it is fearful to contemplate the agony of masses of misguided people wanting bread! *J. W., Peterborough.*

SOUTH HANTS.—The late sown Wheat is but just visible and looks very weak; we never remember November sown Wheat so backward. The early sown has been eaten short down by larks in some places. The yield of Barley is very indifferent, but much of the soil on the southern coast, though admirable for Wheat, is not a Barley soil, 10 sacks to 12 being the most off these loams per acre. The average yield of Wheat is not more than 5 sacks; of Barley, 6 to 7 sacks; of Oats, 6 to 8 sacks; but in South Hants Barley and Oats follow Wheat. Very few beasts are fattened on a farm; on most farms none at all. Sheep are the principal stock, and a few milch cows. Very few breed any kind of stock. Pigs are numerous, and the breeds good, but there are few who pay any regard to this very valuable animal on a farm, viz., the pig. The sheep are clearing fast their Turnip "breaks." The hay turns out bad; of 100 ricks not above four or five are sweet. Most of the hay crop was water-washed, and consequently the saccharine matter lost. Ploughing is again commenced, and the frost which penetrated 6 to 7 inches in depth has rendered the land wholesome and friable. Markets are high, and amongst the poor much distress prevails. *R. S.*

WEST SUSSEX, *Jan.* 10.—The snow has not been very thick with us, and during the intense frost that we have had the young Wheat has been quite exposed to its cutting action; but not with any bad effect, for during these four or five days that we have had of very mild damp weather, it looks as fresh as it has done at any time, and having had the soil laid more open about the roots it will be able to spread them more freely when the season induces it to do so. Turnips have been bound up in the land, and the sheep depending upon them have not done so well, especially as they do not relish the quality of the hay, which is common this year. There is not much out-door labour that can now be done, as the land is very wet on the top and the frost is not entirely out of the under part, where it has got itself well established. But on the heavy lands we are never at a loss for horse labour in carting chalk, and the season has done well with it, the frosts having broken it down on the land as quicklime falls when water is applied to it. The prices of all provisions are getting higher, and, as the weather has been unusually severe, it has been very hard with the labourer. No doubt the rule of supply and demand must always regulate the labour market, as well as others, yet when there are sufferings like the present brought upon the labourer, some extra remedy ought to be provided. But of all the cures that can be applied none are more mischievous than that of giving the highest wages to those who most require it instead of to those who are most worthy of it. *G. S.*

Notices to Correspondents.

AVERAGES: *T P.* The average prices of Wheat in 1851, 1852, and 1853, were 88*s.* 6*d.*, 48*s.* 4*d.*, and 48*s.*

BONE-DUST: We do not know where near Liverpool genuine steamed bone-dust is to be had. For that and superphosphate you had better apply to Mr. Lawes (see Advertisement). The best Turnip manure, probably, is 3 or 4 cwt. of Bolivian guano, in which the ammonia has been fixed, and a portion of the phosphate of lime dissolved by the addition of 60 or 70 lbs. of sulphuric acid.—For Grass soot might be, in some places, as cheap a dressing as any, but generally guano is one of the best.—To correct the overgrowth of haulm in a peaty soil you must add earthy matter to the soil. Put on a hundred cubic yards of clay per acre before winter.—One of the best yellow Turnips we know is the common (so-called) "Aberdeen Bullock" Turnip.

CLEARINGS ROUND A FIELD: *Constant Subscriber.* You could get a good crop of Vetches from the cleared space, and the soil would then be in better order—older and firmer—for receiving small seeds afterwards.

COVERED STACKYARDS: *Derby.* We do not know where in the Midland Counties you can see a roofed stackyard. Perhaps some correspondent can inform you. We should be obliged, too, if any one can inform us, for your information, where any instance exists of the use of *moveable* sheds or other shelter for sheep folded in the fields, and where (in the Midland Counties) house-feeding of sheep all the year round is practised.

DARTMOOR: *D H McD* says, "On the sheep feeding in the house, in the *Agri. Gazette* of the 7th inst., it would be most satisfactory if Mr. G. W. Fowler would describe the food he feeds his sheep with at a ½*d* per day."

DIRECTIONS OF DRAINS: *A Draining Engineer.* We hope you can wait for a while.

FARM-RECEIPTS: *Neophyte.* A long answer is needed and hence the delay, for we really have not room for long replies. You shall have a full reply as soon as possible.

INDIAN CORN: *M B W.* If you consult the Index to the Volume for 1847, under head of "Food," you will find receipts.

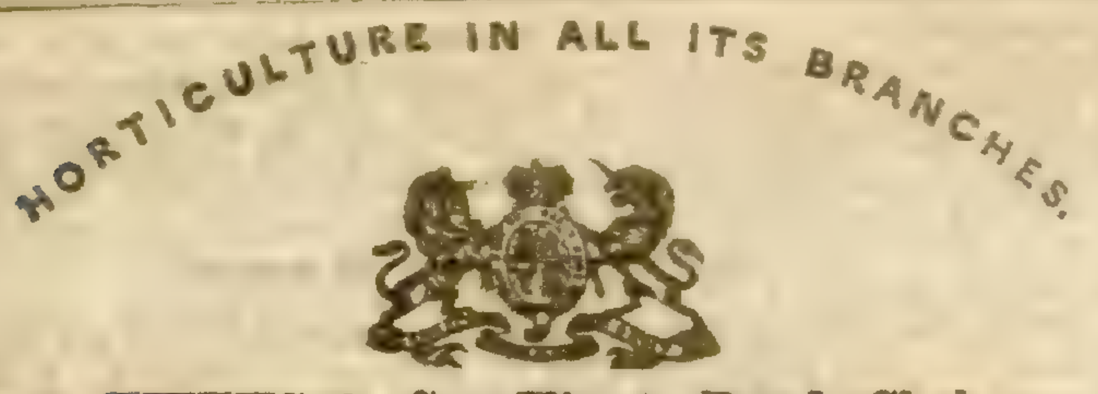
OAT-CAKES: *A Distressed Housekeeper* asks for a receipt for making "Scotch Oat-cake."

PERUVIAN SKINLESS BARLEY: *H W C.* You must trust to our advertising columns; if they do not help you, we cannot.

ROOT-GRATING MACHINE: *D H McD.* It should be advertised. We will speak of its use next week.

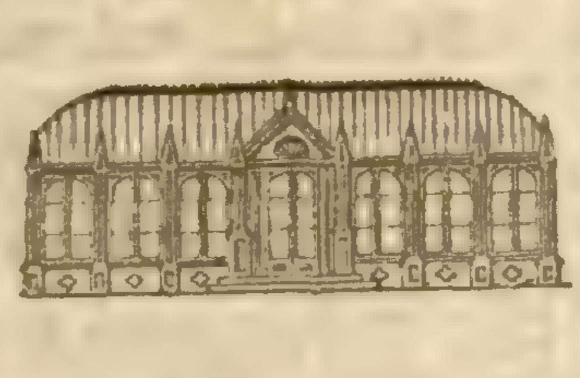
SEED: *J. L.* Oats of 1852, not yet threshed, will make good seed for spring of 1854; many farmers would *prefer* it.

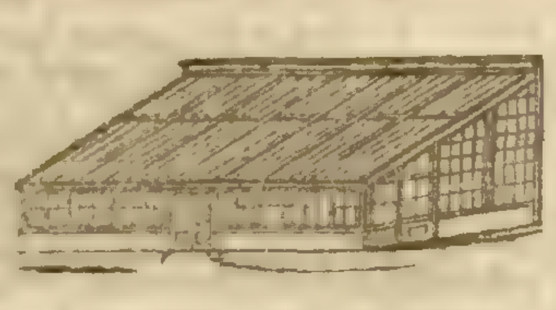
WOODEN SHOES: *A Constant Subscriber* asks where they are made, and at what prices.



J. WEEKS & Co., King's Road, Chelsea,

HOTHOUSE BUILDERS.





The Nobility and Gentry about to erect Horticultural Buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application. J. WEEKS & Co., King's Road, Chelsea, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.

GRAY AND ORMSON, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

BY HER MAJESTY'S

ROYAL LETTERS PATENT.

E. DENCH, PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

PATENT HOTHOUSES and excellent Glass at 1s. 3d. per foot super., which are superior to all others for price with quality, and if known would supersede all others. (See Appendix, in "Book of the Garden," by Mr. M'Intosh.) A Range of Houses and Hot Water Apparatus, was erected by E. D. for E. L. Betts, Esq., Preston Hall, Kent. Mr. J. Frost, head gardener, has shown their efficiency by their produce at the Royal Botanic Gardens, Regent's Park, June 8, and Chiswick, June 11. The editor of the *Gardeners' Chronicle* says: "Beautiful examples of Black Hamburgh, large both in bunch and berry, and as black as Sloes, were furnished by Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall, Kent; these well deserved the first prize which was awarded them."—*Gardeners' Chronicle*, June 18th, 1853. The Grapes were considered the best shown at Regent's Park during the season, and the Houses are as superior for the growth of everything else in horticulture, which has been fully proved, and they have been extensively erected for the nobility and gentry in all parts of the kingdom.

GLAZING WITHOUT PUTTY.—Iron and Glass alone. E. D. has Roofed the Public Baths and Washhouses, Endell Street, on this principle, and others are in hand. Patent Sashes for Peach Walls, Pits, &c., 8d. per foot super. Heating by Hot-water, on the most practical principles, and all the best materials used. Printed Price List sent on application.

TO AMATEUR GARDENERS, LOCAL BOARDS OF HEALTH, & SANITARY WORKS.

PATENT GLASS TUBES, Iron Coated with Glass, Gutta Percha, Combinated ditto, Patent Flexible India Rubber Tubing, and every other Hose for Watering Gardens. The Hydraulic Ram, Fire, Garden, and every other kind of Pump, Sluice Cocks, Hydrants, High Pressure Cocks, and all other articles to be had, Wholesale and Retail, of

FREEMAN ROE,
HYDRAULIC ENGINEER,
70, Strand, and Bridgefield, Wandsworth.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

JAMES PHILLIPS AND Co. have the pleasure to hand their present prices of Glass for Cash :—

SHEET SQUARES. In Boxes of 100 feet.	£ s. d.	CROWN SQUARES. In Boxes of 100 feet. s. d.
Under 6 by 4	0 12 6	8 6
6 by 4, and 6½ by 4½	0 13 0	12 6
7 „ 5, — 7½ „ 5½ / 8 „ 6, — 8½ „ 6½	0 15 0	14 0
9 „ 7, — 10 „ 8, 12 by 9, 12 by 10, 14 by 10...	1 0 0	

Larger Sizes, not exceeding 40 inches long.
16 oz. from 3d. to 3½d. per square foot, according to size.
21 oz. „ 3½d. to 5d. „ „ „
26 oz. „ 3½d. to 7½d. „ „ „

SHEET GLASS OF ENGLISH MANUFACTURE FOR ORCHARD HOUSES, THE SAME QUALITY AS WE SUPPLY TO Mr. RIVERS, and of various dimensions, always on hand.

London Agents for the Sale of HARTLEY'S PATENT ROUGH PLATE GLASS.

Cases of Sheet-Glass, about 40 by 30, 16 oz. to the foot, 2l. 2s per Case of 200 feet.

Milk Pans, Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoys' Milk Syphons, Tiles and Slates, Wasp Traps; Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the trade.

Horticultural Glass Warehouse, 116, Bishopsgate Street Without, London.

GLASS FOR CONSERVATORIES, GREENHOUSES, DWELLINGS, ETC.

ESTABLISHED MORE THAN ONE HUNDRED YEARS.

THOMAS MILLINGTON requests attention to his present prices of SHEET GLASS in 100 feet boxes.

Squares under 6 inches by 4	8s. 6d.
„ 6 by 4 and 6½ by 4½	12 0
„ 7 by 5 and 7½ by 5½ / „ 8 by 6 and 8½ by 6½	13 6
„ 9 by 7 and 10 by 8 / „ 12 by 10 to 15 by 10	18 0

Orchard House Squares on Mr. Rivers's approved plan, to whom I have sold some thousands of feet:—20 inches by 12, 20 by 13, 20 by 14, 20 by 15, 20½ by 12½, 20½ by 13½, 20½ by 14½, at 20s. per 100 feet.

200 feet cases at 42s., and 300 feet case 63s., in large sheets.

Boxes charged 1s. extra per 100 feet, and the same allowed if returned free of all charge.

HARTLEY'S PATENT ROUGH PLATE GLASS, Fern Shades, Striking Glasses, Milk-pans, Bee Glasses, Cucumber Tubes, Sheet and Rough Plate Glass Tiles, Wasp Traps; Plate, Patent Plate, Crown and Sheet Window Glass, in every thickness and quality, and Ornamental Glass, plain and coloured; pure white Shades for Ornaments, Crystal Glass for Pictures.

Warehouse, 87, Bishopsgate Street Without—same side as Eastern Counties Railway.

READ'S GARDEN ENGINES, SYRINGES, &c.—When an article of real utility attracts public attention, imitators start into the field to snatch from the inventor the just reward of his labours. It has now become a daily practice of exhibiting in the windows of ironmongers and others, Syringes of the *very commonest description*, with the words "READ'S PATENT," as an inducement to purchasers. This, as an eminent writer on Horticulture has recently remarked on the subject, is indeed "living upon another man's fame."

READ'S instruments have the royal arms, with the address, THIRTY-FIVE, REGENT CIRCUS, LONDON.

HORTICULTURAL BUILDINGS, ROCK AND RUSTIC WORK, ORNAMENTAL WATER, FOUNTAINS AND FALLS, AND LANDSCAPE GARDENING, executed on the best principles; Estates Improved, Land Laid Out for Building, &c., by Mr. GLENNY, Valuer, Estate and Horticultural Agent, 420, Strand.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

Priced lists of plant tubs and boxes forwarded on application.

CUCUMBER AND MELON BOXES AND LIGHTS.—One hundred 1, 2, and 3-light Boxes and Lights of all sizes, ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1l. 6s. Garden Lights of every description, Conservatories, Green and Hothouses made and fixed in all parts of the kingdom. References given to the nobility, gentry, and the trade, in most of the counties in England.—JAMES WATTS, Hothouse Builder, Claremont Place, Old Kent Road, London.

STEPHENSON AND PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

HEAL AND SON'S EIDER DOWN QUILT is the warmest, the lightest, and the most elegant covering, suitable for the bed, the Couch, or the Carriage; and for Invalids, its comfort cannot be too highly appreciated. It is made in three varieties, of which a large assortment can be seen at their Establishment. Lists of Prices of the above, together with the Catalogue of Bedsteads, sent free by post.—HEAL & SON, Bedstead and Bedding Manufacturers, 196, Tottenham Court Road, London.

QUALITY THE TEST OF CHEAPNESS.

BERDOE'S OVERCOATS AND CAPES resist any amount of rain. One of the largest Stocks in London of First-Class GARMENTS at Lowest Charges. DRESS COATS 3l.; BOY'S SUIT, 11d. per inch, according to height.—96, New Bond Street, and 69, Cornhill. (Nowhere else.)

GLENNY'S BALBRIGGAN HOUSE, Lombard Street, City.—Established for the Sale of GENUINE BALBRIGGAN HOSIERY, manufactured by CHARLES GLENNY, who introduced this beautiful Irish fabric at the Great Exhibition, and obtained the Prize Medal.—Irish Knit Hose and Half-Hose, Limerick Gloves, &c. Irish Linens can be obtained at the above Establishment.

GREAT SAVING OF TIME AND MONEY.

R. RESTELL'S PATENT ECONOMICAL GAS APPARATUS for Forcing Houses, Greenhouses, Conservatories, Pits, Shops, Counting Houses, Warehouses, Drying Rooms, &c. &c., possessing all the advantages of Hot Water, at half the expense of fitting, and most trifling cost for Gas; far surpassing any ordinary Gas Stove, requiring no furnace, and allowing of no fumes or evaporation in the Building, or possibility of accidents from negligence or carelessness. It has been tested through the late severe weather, on a variety of Plants, and found most satisfactory. It is very quickly fitted up and requires no night attention.—Apply to the Inventor and Patentee, R. RESTELL, 35, High Street, Croydon, Surrey.

Persons wishing to have Houses fitted will please to send the height and dimensions.

FIRE ANNIHILATOR, OR VAPOUR FIRE ENGINE.—Its practical value proved incontestably by 23 remarkable cases of successful use. See "Bradshaw" of this month, p. 132. Engines for Dwelling-houses, 3l. to 4l.—Office of the Fire Annihilator Company, 105, Leadenhall Street, London.

THE COTTAGER'S STOVE.—An economical, compact, and portable COOKING APPARATUS, combining a good sized Oven and Hotplate; may be had with or without boiler, and will cook sufficient for a dozen persons with the consumption of 1 lb. of coal or coke per hour. It requires no fixing, may be placed in any apartment, and is a great security against accidents from fire. It will burn Coal, Coke, or Wood. They are also specially adapted for Emigrants, and may be seen in operation daily, at the Manufacturers', D. & E. BAILEY, 272, High Holborn, London.—Price 50s., and upwards.

TO BE LET, a GOOD FARM of 400 Acres and upwards (of which 117 acres are Pasture), at Arlsey, Bedfordshire. On Lease. The Shooting to be reserved. The Homestead is about a mile from the Arlsey Station, on the Great Northern Railway.—For further particulars, and an order to view, apply by letter, giving references as to responsibility, &c., to Mr. S. WRIGHT, Solicitor, Hitchin, Herts; or to Mr. HEARD, Land Agent, St. Margaret's, near Ware, Herts.

TO BE LET, with immediate possession, a well-stocked MARKET GARDEN, containing Four Acres with a good House and Appurtenances, situate at Harborough Hills, in the flourishing town of Barnsley.—Application to be made to Mrs. POLLARD, Harborough Hills, Barnsley.

DENYER'S NURSERY, celebrated for ROSES, &c., Established 26 years, consisting of Five Acres of Land, House and Seed Shop attached, of which a 14 years' Lease will be granted. The Proprietor being about to retire, is desirous of offering the above, as an opportunity that rarely occurs to the trade, with a first-rate ready-money connexion, and the Stock to be taken at a valuation, two-thirds to be paid on taking possession; time will be given to pay the balance. No Goodwill expected.—Apply to Messrs. PROTHEROE & MORRIS, Leytonstone, Essex; or Mr. E. DENYER, on the premises, Loughborough Road, within three miles of London.

TO BE SOLD, a SEED BUSINESS in one of the principal towns in the North of England. The premises, situated in the best business part of the town, are extensive and calculated for carrying on a large trade.—For further particulars, or to treat, apply, with real name and address, to A. Z., Office of this Paper. N.B. A Nursery Stock may also be had at a valuation, if desired.

SILVER SPANGLED HAMBURGHS.—Fine well-bred BIRDS of the above sorts, 8 months old, to be disposed of, at from 10s. to 15s. per pair.—Enquire of Mr. CANTRELL, Surgeon, Wirksworth: or the parties would be willing to exchange some of them for the White-faced Spanish, if good ones.

FANCY POULTRY.—One Dorking Cockerel, nine months old, 30s.; three Rumpless Fowls, Cock and two Pullets, 36s.; three Sebright Bantam Pullets, 25s.; two Black Bantam, Cock and Pullet, 20s.; three White Turkeys, Cock and two Hens, 45s.; three Golden-pencilled Turkeys, each, 25s.; two pair of White Cochins, per pair, 48s.; three pair of Light Buff, per pair, 25s.; one Brahma Pootra Cockerel, 7 months, 10s.; two Brahma Chickens (Cocks), late hatched, 50s. each.—Apply, enclosing stamped directed envelope, to Rev. T. PRATER, Middleton Stoney, near Bicester.

Sales by Auction.

PRIZE POULTRY.

MR. J. C. STEVENS is instructed by John Fairlie, Esq., of Cheveley, to announce for sale by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, 31st January, 1854, at Twelve o'Clock precisely, a selection from his renowned Yard of Poultry, consisting of FIRST CLASS COCHIN CHINA, DORKINGS, BRAHMA POOTRAS, SCOTCH DUMPIES, &c., including many of his Prize Birds.—Catalogues, by enclosing a stamped directed envelope to Mr. J. C. STEVENS, 38, King Street, Covent Garden.

Important sale at Betley Hall Poultry Yards, of pure bred Shanghae Poultry, including almost every variety of fancy colours, and many really choice and valuable birds; bred from stock procured from some of the most celebrated amateurs in the kingdom.

MR. FOWLES has been honoured with instructions from GEORGE TOLLET, Esq., of Betley Hall, Staffordshire, to sell by Auction, at his Poultry Yards, at Betley Hall aforesaid, on FRIDAY, January 27, at 12 for 1 o'clock precisely, 125 pens of PURE BRED SHANGHAE POULTRY, containing 250 birds, which may be viewed on the morning of the sale. Catalogues may be had from Mr. W. FOWLES, Wall-fields Farm, Nantwich, on receipt of two postage stamps.

A CONSIGNMENT FROM GHENT, FROM A CELEBRATED GROWER, FOR ABSOLUTE SALE.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, at the Mart, Bartholomew Lane, on THURSDAY, February 2, at 12 o'clock, about 400 Double Camellias, 300 Indian and Ghent Azaleas, well set with bloom buds; also 30 Rhododendron Arborea, 500 Gladiolus Gandavensis, with 50 Standard and Dwarf Roses.—May be viewed the morning of sale. Catalogues had at the Mart; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO NOBLEMEN, GENTLEMEN, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Cutbush, to Sell by Auction, on the premises, Barnet Nurseries, Middlesex, on THURSDAY, Feb. 9th, at 11 o'clock, without reserve, in consequence of a portion of the land being purchased by the Magistrates of the County of Middlesex for the erection of stores for the militia, the whole of the NURSERY STOCK growing on the two acres, consisting of Ornamental Fruit and Forest Trees, Evergreens and Deciduous Shrubs, Standard and Climbing Roses, Box Edging, &c.—May be viewed prior to the Sale. Catalogues may be had on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

EDUCATION FOR YOUNG LADIES,
AT CHESHUNT, HERTS, ADJOINING THE NURSERIES.

MISS PAUL, who has had several years' experience in Tuition, begs to announce that she has vacancies for a few Pupils as Boarders. Terms moderate. Prospectuses will be forwarded by post on application.

NO CHARGE FOR STAMPING ARMS, CRESTS, INITIALS, &c., on paper and envelopes, at LOCKWOOD's well-known establishment, 75, New Bond Street. Good cream-laid Note-paper, five quires for 9d.; Thick ditto, five quires, 1s.; Albert and Queen's sizes, five quires for 6d., 9d., and 1s.; Envelopes, 3d., to 1s. 6d. per hundred; Foolscap paper, 7s. 6d. per ream; Copybooks, 2s. 6d. per dozen. Card Plate engraved, 2s. 6d.; 100 Cards printed, 2s. 6d. Mourning Stationery equally cheap. Wedding Orders promptly executed. A large variety of Writing and Dressing Cases, Envelope Boxes, Blotting Books, Inkstands, Gold Pens, Church Services, &c. Copy address, LOCKWOOD's, 75, New Bond Street. Country orders for 20s. sent carriage free.

KNOW THYSELF!—Professor BLENKINSOP continues to receive from individuals of every rank the most flattering testimonials of his success in describing the CHARACTERS of Persons from their HANDWRITING, pointing out their mental and moral qualities, whether good or bad.—Address by letter, stating age, sex, and profession, inclosing 13 uncut postage stamps, to Dr. BLENKINSOP, 344, Strand, London.

YOURSELF! WHAT YOU ARE, AND WHAT FIT FOR. ELLEN GRAHAM continues to give her novel and interesting delineations of character from an examination of the Handwriting, in a style of description peculiarly her own, filling the four pages of a sheet of paper. Persons desirous of knowing their true character, or that of any friend, must send a specimen of the writing, stating sex and age, or supposed age (including 13 penny postage stamps) to Miss GRAHAM, 14, Hand Court, Holborn, London, and they will receive in a few days a minute detail of the gifts, defects, talents, tastes, affections, &c., of the writer, with many other things hitherto unsuspected.

Seventh Edition, "A Few Words before Matrimony," sent post free on receipt of six postage stamps.

RUPTURES EFFECTUALLY CURED WITHOUT A TRUSS.

ALL Sufferers from this complaint are earnestly invited to consult or write to Dr. LESLIE, as he guarantees them relief in every case. His remedy has been successful in curing thousands of persons during the last 11 years, and is applicable to every kind of single and double rupture, however bad or long standing, in male or female of any age, causing no confinement or inconvenience in its use whatever. Sent post free, with full instructions, on receipt of 7s. 6d. in postage stamps, or Post Office order, payable at the General Post Office, to Dr. HERBERT LESLIE, 37A, Manchester Street, Gray's Inn Road, London, where he may be consulted daily, Sundays excepted, from 11 till 1, mornings, and 5 till 7 evenings only.

WM. HALSE'S FIVE GUINEA APPARATUSES are now ready.—Invalids are solicited to send to Mr. W. HALSE, of 22, Brunswick Square, London, for his Pamphlet on MEDICAL GALVANISM, which will be forwarded free, on receipt of two stamps. In it will be found the particulars of cures in cases of asthma, rheumatism, sciatica, tic doloureux, paralysis, spinal complaints, headache, deficiency of nervous energy, liver complaints, general debility, indigestion, stiff joints, nervous disorders, &c. Mr. HALSE's method of applying the galvanic fluid is quite free from all unpleasant sensation. Terms: One Guinea per week. The above Pamphlet contains his Letters on Medical Galvanism.

ATKINSON AND BARKER'S ROYAL INFANTS' PRESERVATIVE.—Mothers call at your Druggist's and purchase a bottle of the above. It is the best medicine in the world for infants and young children for the prevention and cure of those disorders incident to infants; affording instant relief in Convulsions, Flatulency, Affections of the Bowels, Difficult Teething, &c. &c., and may be given with safety immediately after birth. It is no misnomer cordial! no stupefactive, deadly narcotic! but a veritable preservative of infants! Mothers would act wisely in always keeping it always in the nursery.—Prepared only by ROBERT BARKER, Bowden, near Manchester (Chemist to Her Most Gracious Majesty Queen Victoria), in bottles at 1s. 1½d., 2s. 9d., and 4s. 6d. each. CAUTION.—Observe the names of "Atkinson & Barker" on the Government Stamp.

PAUL GAGE'S ELIXIR.—This family medicine has been established 44 years as a most valuable remedy for PHLEGM, and all the disorders arising from it, viz., bilious complaints, catarrh, asthma, convulsive coughing, indigestion, colics, cholera morbus, ague fevers, gout, worms, hooping cough, females' complaints, &c. It is demonstrated in a pamphlet on Phlegm, delivered gratis at all the depots, why PAUL GAGE's ELIXIR has not failed in desperate cases, where other means have been found of no avail. Sold in bottles at 2s. 9d., 4s. 6d., and 11s., by PAUL GAGE, 462, New Oxford Street; and by all respectable medicine vendors.

HOLLOWAY'S PILLS FOR THE CURE OF BILE, GIDDINESS, AND DETERMINATION OF BLOOD TO THE HEAD.—These Pills, so well known, supersede all other medicine, for the suppression of an undue secretion of bile, they give relief to that sensation of fulness frequently felt after eating; cure headaches, prevent pains, giddiness and determination of blood to the head, habitual costiveness is obviated by their use, and for dropsical complaints they stand pre-eminent for strengthening and cleansing the stomach. HOLLOWAY's Pills are the very best remedy ever discovered; they also increase the appetite and promote digestion, giving an hilarity of feeling and buoyancy to the spirits.—Sold by all Druggists, and at Professor HOLLOWAY's Establishment, 244, Strand, London.

PAINS IN THE BACK, GRAVEL, LUMBAGO, RHEUMATISM, GOUT, INDIGESTION, FLATULENCY, NERVOUSNESS, DEBILITY, &c.

DR. DE ROOS' COMPOUND RENAL PILLS, as their name Renal (or the Kidneys) indicates, are a most safe and efficacious remedy for the above dangerous complaints. For depression of spirits, incapacity for society, study, or business, giddiness, drowsiness, nervousness, and insanity itself, when arising from or combined with urinary diseases, they are unequalled. Price 1s. 1½d., 2s. 9d., 4s. 6d., 11s., and 33s. per Box, through all Medicine Vendors, or sent (free) on receipt of the amount in postage stamps, by Dr. DE ROOS, 35, Ely Place, Holborn, London. At Home for consultation daily from 11 till 1, and 5 till 8, Sunday excepted. Advice and Medicines, 1l.

THE EAST INDIAN ANTI-NERVOUS PILLS, a cure when all other means fail for Nervous Debility, Lowness of Spirits, Loss of Memory, Head-ache, Dimness of Sight, Fear, Blushings, Tremblings, Melancholy Thoughts, Rheumatic Pains in any part of the body, Urinal Diseases, Constitutional Wasting, &c.

Mr. ROBERTS, late Army Surgeon, discovered these Pills during his residence in India, testing their curative powers for years. In his own private practice, in numbers of hopeless cases, never failing to produce ease of body and tranquillity of mind in one or two days, and ultimately effecting a permanent cure.

Price, 1s. 1½d., 2s. 9d., 4s. 6d., 11s., and 33s. per box. Sent post free to any part upon receipt of postage stamps or Post-office order for the amount. Address J. ROBERTS, Surgeon, Hall Square, Yarmouth, Norfolk. Advice and Medicine for every form of disease sent to any part.

Price 3s. 6d. (post free),

THE TREE ROSE.—Practical Instructions for its Formation and Culture. Illustrated by 24 Woodcuts. Reprinted from the GARDENERS' CHRONICLE, with additions.

CONTENTS.

Annual pruning; time, principle of execution, &c. — Binding up — Budding knife — Budding, time of year, day, time of day, state of the plant, care of buds — Budding upon body — Bud, insertion of, into stock — Bud, preparation of, for use — Buds, dormant and pushing — Buds, failing — Buds, securing a supply of — Caterpillars, slugs, and snails, to destroy — Causes of success — Dormant buds, theory of replanting with, explained — Guards against wind — Labelling — Loosing ligatures — March pruning — Mixture for healing wounds — Pruning for transplantation — Planting out, and arrangement of trees — Pushing eye, spring treatment of dwarf shoots from — Roses, different sorts, on the same stock — Roses, short list of desirable sorts for budding with a pushing eye — Sap-bud, treatment of — Shape of trees — Shoots and buds, choice of — Shoots for budding upon, and their arrangement — Shoots, keeping even, and removing thorns — Shortening wild shoots — Stocks, planting out for budding upon; the means of procuring; colour, age, height; sorts for different species of Rose; taking up, trimming roots, sending a distance, shortening heads, &c.; saw proper for the purpose.

GRAFTING.

Aphides, to keep down — Free growers, remarks on — Graft, binding up and finishing of — Grafting, advantage — Grafting, disadvantage of — Operations in different months — Preliminary observations — Roses, catalogue and brief description of a few sorts — Scion, preparation and insertion of — Scion, choice and arrangement of — Stock, preparation of.

APPENDIX.

A selection of varieties — Comparison between budding and grafting.

JAMES MATTHEWS, 5, Upper Wellington Street, Covent Garden.

Just ready,

A CENTURY OF FERNS. Being Figures with brief descriptions of 100 new or rare Species of Ferns. A Selection from the "Icones Plantarum," by Sir WILLIAM JACKSON HOOKER, K.H., LL.D., F.R.A., and L.S., &c., and Director of the Royal Botanical Gardens at Kew.

The work is handsomely printed on a super-royal paper, and a Specimen Number can be sent to any address for four postage stamps. Coloured Copies will not be ready before March 1.

London: WILLIAM PAMPLIN, 45, Frith Street, Soho, London.

Now ready, Vol X., Part 1, price 14s.,

ICONES PLANTARUM; or Figures, with Brief Descriptive Characters and Remarks, of New or Rare Plants, selected from the Author's Herbarium. By Sir WILLIAM JACKSON HOOKER, K.H., LL.D., F.R.A., and L.S., &c. &c., Vice-President of the Linnean Society, and Director of the Royal Botanical Gardens, Kew.

London: WILLIAM PAMPLIN, 45, Frith Street, Soho Square.

SCHOOL-BOOKS BY WILLIAM BUTLER.
EDITED BY THOMAS BOURN.

EXERCISES ON THE GLOBES AND MAPS. With Questions for Examination. 15th Edit. 12mo, 6s. bd.

CHRONOLOGICAL, BIOGRAPHICAL, HISTORICAL, and MISCELLANEOUS EXERCISES. 13th Edition. 12mo, 7s. 6d. bd.

A KEY to the EXERCISES on the GLOBES. 2s. 6d. sewed.

MISCELLANEOUS QUESTIONS in ENGLISH HISTORY and BIOGRAPHY. 6th Edition. 12mo. 4s. bd.

GEOGRAPHICAL EXERCISES on the NEW TESTAMENT. 6th Edition. 12mo, 5s. 6d. bd.

ARITHMETICAL TABLES, &c. 25th and cheaper Edit. 4d.

London: SIMPKIN, MARSHALL, and Co.

SIX VOLUMES FOR SEVEN AND SIXPENCE.

THE FAMILY ECONOMIST, First Series, including the New Volume for 1853, complete as above, in ELEGANT BINDING, containing One Thousand Four Hundred Pages of most useful information on Domestic Economy, Home Education, Sanitary Matters, Cottage Gardening and Farming, Poultry Management, many hundreds of Valuable Recipes, &c., &c.

⁂ As a New Year's Present to Work-people, &c., and for Cottage and Village Libraries, nothing can be more suitable than a set or a volume of this interesting and useful work.

The First Number of the NEW ILLUSTRATED SERIES of the FAMILY ECONOMIST and ENTERTAINING COMPANION FOR TOWN AND COUNTRY, is just published. Price 2d. monthly.

London: GROOMBRIDGE & SONS; Sold by all Booksellers.

HANDSOME GIFT-BOOK—MEMORIAL OF THE GREAT EXHIBITION.

In Four handsome Volumes, cloth lettered, gilt edges, price Four Guineas, including the Supplementary Volume,

THE OFFICIAL DESCRIPTIVE AND ILLUSTRATED CATALOGUE OF THE GREAT EXHIBITION OF THE WORKS OF INDUSTRY OF ALL NATIONS, 1851.

"Every branch of science, art, and industry is here fully and efficiently represented."—*Morning Herald.*

"The Exhibition has lived its allotted time, and died; but this Catalogue is the sum of the thoughts and truths to which it has given birth—and which form the intellectual ground whereon the generations that we are not to see must build."—*Athenæum.*

"Long after the rare and curious contents of the Crystal Palace have been scattered over the world, this work will be valued as a memento and reflex of that marvellous collection."—*Atlas.*

A few Impressions remaining of the Imperial 4to Edition, printed for the Royal Commissioners, to be by them presented to Foreign Governments, &c., are now on sale. Cloth lettered, price Twenty Guineas.

London: Office at SPICER BROTHERS, 19, New Bridge Street, Blackfriars.

ON NERVOUS DEBILITY AND INDIGESTION.

Just published, New Edition, price 1s.; or, by post, for 1s. 6d.

THE SCIENCE OF LIFE; OR, HOW TO LIVE, AND WHAT TO LIVE FOR. With ample Rules for Diet, Regimen, and Self-Management; together with Instructions for securing perfect health, longevity, and that sterling state of happiness only attainable through the judicious observance of a well-regulated course of life. By a PHYSICIAN.

Also, by the same Author, price 2s. 6d.; by post, 3s. 6d.,

A MEDICAL TREATISE ON NERVOUS DEBILITY AND CONSTITUTIONAL WEAKNESS, with Practical Observations, illustrated with Anatomical Plates, on Health and Disease.

This work, emanating from a qualified Member of the medical profession, the result of many years' practical experience, is addressed to the numerous classes of persons who suffer from the various disorders acquired in early life. In its pages will be found the causes which lead to their occurrence, the symptoms which indicate their presence, and the means to be adopted for their removal.

London: JAMES GILBERT, 49, Paternoster Row; HANNAY, 63, Oxford Street; MANN, 39, Cornhill; and all Booksellers.

This day,

A CATALOGUE OF SECOND-HAND BOOKS, chiefly BOTANICAL, now on Sale, by WILLIAM PAMPLIN, 45, Frith Street, Soho, London, will be sent by post to any address for two postage stamps.

THOMAS MOORE'S MEMOIRS.

Just published, in post 8vo., with Portraits of Lord John Russell and Mr. Corry, and Vignettes by T. Creswick, R.A., of Moore's Residence at Paris and at Sloperton, the Fifth and Sixth Volumes, price Half-a-Guinea each,

MEMOIRS, JOURNAL, AND CORRESPONDENCE OF THOMAS MOORE. Edited by the Right Hon. Lord JOHN RUSSELL, M.P.

London: LONGMAN, BROWN, GREEN and LONGMANS.

YOUATT'S WORKS ON THE DOG AND HORSE. (By assignment of C. Knight.) LONGMAN and Co.

THE DOG. With Woodcuts. 8vo, price 6s. cloth.

THE HORSE. The only Edition with the Author's latest Corrections, and Illustrations on Wood. 8vo, price 10s. cloth.

"The author has subjected it to so complete a revision as to make it in many respects a new work."—*Preface.*

⁂ Purchasers should order the Edition published by LONGMAN and Co.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

Just published, in 8vo, price 14s., cloth,

THE RIFLE AND THE HOUND IN CEYLON. By S. W. BAKER, Esq. With numerous Illustrations printed in Colours, and Engravings on Wood.

"A more readable, entertaining work we never met with. In addition to a long string of sporting exploits and hair-breadth escapes, it contains much valuable information, not only for sportsmen intending to visit Ceylon, but for all who delight in the chase of heavy game in all countries." *Bell's Life in London.*

London: LONGMAN, BROWN, GREEN, and LONGMANS.

Just published, in fcp. 8vo, price 6s. boards,

THE EXECUTOR'S GUIDE. By J. C. HUDSON, Esq., late of the Legacy-Duty Office, London. A New and enlarged Edition; with the Addition of Directions for paying Succession Duties on Real Property under Wills and Intestacies, and a Table for finding the Values of Annuities and the Amount of Legacy and Succession Duty thereon.

Also, in fcp. 8vo, price 2s. 6d.,

Mr. HUDSON'S PLAIN DIRECTIONS FOR MAKING WILLS in conformity with Law.

London: LONGMAN, BROWN, GREEN, AND LONGMANS.

Twelfth Edition, carefully revised, with new discoveries introduced by the Author, in fcap. 8vo, with Plates, 10s. 6d.,

CONVERSATIONS ON NATURAL PHILOSOPHY; in which the Elements of that Science are familiarly explained and adapted to the comprehension of Young Persons. By JANE MARCET.

By the same Author, New Editions of

CONVERSATIONS ON CHEMISTRY, 2 vols., 14s.; on LAND AND WATER, 5s. 6d.; on POLITICAL ECONOMY, 7s. 6d.; on VEGETABLE PHYSIOLOGY, 9s.

London: LONGMAN, BROWN, GREEN, & LONGMANS.

KNOWLEDGE FOR THE YOUNG.

A New Edition, in 18mo, price 1s.,

THE STEPPING-STONE TO KNOWLEDGE: Containing upwards of 700 Questions and Answers on Miscellaneous Subjects, adapted to the Capacity of Infant Minds. By a MOTHER.

By the same Author, price 1s. each,

THE STEPPING-STONE TO GEOGRAPHY.
THE STEPPING-STONE TO ENGLISH HISTORY.
THE STEPPING-STONE TO BIBLE KNOWLEDGE.
THE STEPPING-STONE TO BIOGRAPHY.

In the same Series, price 1s. each,

PARKHURST'S STEPPING-STONE TO MUSIC.
PARKHURST'S STEPPING-STONE TO ROMAN HISTORY.
SADLER'S STEPPING-STONE TO ENGLISH GRAMMAR.
SADLER'S STEPPING-STONE TO FRENCH PRONUNCIATION AND CONVERSATION.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

Just published, in fcap. 8vo, price 3s. 6d. cloth,

THE INVALID'S OWN BOOK: A Collection of Recipes from various Books and various Countries. By the Honourable LADY CUST.

"This little book ought to be in the hands of every housekeeper, and of every young lady who aspires to be a housekeeper, in the British Empire."—*British Banner.*

London: LONGMAN, BROWN, GREEN, and LONGMANS.

NEW EDITION OF NESBIT'S MENSURATION, LAND-SURVEYING, &c.

A New and Improved Edition, augmented by a Treatise on Levelling, in 12mo, price 6s. bound.

A TREATISE ON PRACTICAL MENSURATION, in Ten Parts: containing—

The most approved Methods of drawing Geometrical Figures. — Mensuration of Superficies. — Land-Surveying. — Mensuration of Solids. — The Use of the Carpenter's Rule. — Timber Measure, in which is shown the method of Measuring and Valuing standing Timber. — Artificers' Works, illustrated by the Dimensions and Contents of a House. — Mensuration of Haystacks, Drains, Canals, Marlpits, Ponds, Mill-dams, Embankments, Quarries, Coal-heaps, and Clay-heaps. — Conic Sections and their Solids. — The most useful Problems in Gauging, according to the New Imperial Measures. — Plane Trigonometry, with its application to the Mensuration of Heights and Distances. — Trigonometrical Surveys. — A Dictionary of the Terms used in Architecture.

By A. NESBIT. New Edition, enlarged, and greatly improved.

To which is added, a

TREATISE ON LEVELLING. The whole illustrated by nearly Seven Hundred Practical Examples and nearly Three Hundred Woodcuts.

KEY TO NESBIT'S PRACTICAL MENSURATION: containing Solutions to all questions which are not answered in that work; with References to the Problems, Rules, and Notes, by which the Solutions are obtained. New Edition, corrected and greatly improved. 12mo, price 5s. bound.

By the same Author, New Edition, 8vo, with Plates, Woodcuts, and Field-Book, price 12s.

TREATISE ON PRACTICAL LAND-SURVEYING. Corrected and improved, with the addition of Plane Trigonometry, including the use of the Theodolite, and Railway Surveying, Railway Engineering, Levelling, Planning, Laying out Curves, &c., by T. BAKER.

TREATISE ON PRACTICAL ARITHMETIC. Part I. 5s.; KEY, 5s.—Part II. 7s. 6d.; KEY, 7s.

INTRODUCTION TO ENGLISH PARSING. 18mo, 2s. 6d.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

Weekly, price 2d. each,

ORR'S CIRCLE OF THE SCIENCES.

COMPRISING TREATISES ON EVERY BRANCH OF KNOWLEDGE.

THIRTY-TWO OCTAVO PAGES, HIGHLY ILLUSTRATED.

No. I. INTRODUCTORY TREATISE on the Nature, Connexion, and Uses of the Great Departments of Human Knowledge.

Nos. II. and V. PHYSIOLOGY OF ANIMAL AND VEGETABLE LIFE. By the EDITOR.

No. III. ARITHMETIC, INTRODUCTORY TO MATHEMATICAL SCIENCE. By Professor YOUNG, Examiner in Mathematics in the University of London.

No. IV. THE PROPERTIES OF MATTER. By the Rev. WALTER MITCHELL, St. Bartholomew's Hospital.

These Subjects comprise Part I., which will be issued February 1.

LONDON: WILLIAM S. ORR AND CO., AMEN CORNER, PATERNOSTER ROW.

NEW ILLUSTRATED MAGAZINE FOR 1854.

Now Publishing, Numbers 1 to 4, Price Three Halfpence each, (or in one Monthly Part, Price Sevenpence,) of an entirely New Series of

THE HOME COMPANION;

AN ILLUSTRATED MAGAZINE OF LITERATURE, CRITICISM, AND THE FINE ARTS.

Containing 64 handsomely printed pages, imperial 8vo, in a Wrapper, with Illustrations by JOHN GILBERT BIRKET FOSTER, and other Eminent Artists.

CONTENTS OF PART I.

No I.—GRANVILLE: a Domestic Story, with an Illustration by JOHN GILBERT—The Old and the New Year—Gossip about the Goodwin Sands, with an Illustration—Poetry: Be Gentle to the Lowly Born—The Burial-place of Milton, with an Illustration—Mr. Crabberley's New Year's Eve; a Story in Two Chapters.

No. II.—GRANVILLE; Chapters II. and III., with an Illustration by JOHN GILBERT—Common Things by the Wayside: a piece of Chalk—Charles Lamb, with an Illustration of his House at Islington—Mr. Crabberley's New Year's Eve, Chapter II.—Forest Life in Ceylon.

No. III.—GRANVILLE; Chapters IV. and V., with an Illustration by JOHN GILBERT—Random Notes on Beards—A Peep at Amiens—Chateau Bouret: A Tale from the French, with an Illustration by MORIN—Memorials of Eminent Men—Cowley's House at Chertsey, with an Illustration.

No. IV.—GRANVILLE; Chapters VI., VII., and VIII., with an Illustration by JOHN GILBERT—A Word or Two about Coal Gas and its Impurities—Omer Pacha, with a Portrait by NICHOLSON—What is called a Pleasant Dream—Round the World.

LONDON: WM. S. ORR AND CO., AMEN CORNER, PATERNOSTER ROW.

Price 4s. 6d., handsomely bound in cloth,

THE STAR-CHAMBER;

AN HISTORICAL ROMANCE.

BY WILLIAM HARRISON AINSWORTH, ESQ.,

Profusely Illustrated, is now completed in the "HOME COMPANION," for 1853, which also contains "The Adventures of a Stray Yankee in Texas," "The Quorndon Hounds," and numerous Tales, Poems, and Articles of General Interest, with upwards of One Hundred and Fifty Illustrations.

Orders should be immediately given for the Illustrated Edition, published by

WM. S. ORR AND CO., AMEN CORNER, PATERNOSTER ROW.

In Weekly Numbers, price 2d., and in Monthly Parts, price 9d.,

THE FAMILY FRIEND,

A MAGAZINE OF DOMESTIC ECONOMY, INSTRUCTION, AND PRACTICAL SCIENCE.

CONTENTS OF PART XIX.

No. 80.—Chemical Experiments—Instructions in Illuminated or Vellum-Painting (with eleven Engravings)—Miscellaneous: A few Words on the Power of the Letters—Guy's Cliff, Warwickshire (with an Engraving)—The Papyrus (with three Engravings)—Poetry: Mens Divinior, by Barry Cornwall—Tales: KATHERINE, a Tale of Woman's Trials (with an Engraving)—St. Sylvester's Night, a True Story, from the German—Work-Table Friend.

No. 81.—Family Pastime: Charades, Enigmas, Riddles—Miscellaneous: The Hair Harvest—History of Marmotinto—Poetry: Meditation, by John Norris—Tales: The Artist's Patron (with an Illustration)—KATHERINE, a Tale of Woman's Trials (with an Engraving, from a design by BIRKET FOSTER)—Work-Table Friend.

No. 82.—Family Pastime: Practical Puzzles, Mental Recreations—Miscellaneous: Affections of the Eye—Art of Listening—The Silkworm and its Products (with an Illustration)—Tales: The Artist's Patron; Chapter II.—KATHERINE, a Tale of Woman's Trials (with an Engraving, from a design by BIRKET FOSTER), Chapter III.—Chess Problem and Game, by HERR HARRWITZ—Work-Table Friend.

No. 83.—Art of Illuminated or Vellum-Painting (with five Engravings)—Work-Table Friend—Miscellaneous: A Household Account-Book of the Thirteenth Century—Tynemouth Priory, Northumberland (with an Engraving, from a design by BIRKET FOSTER)—A Wonderful Horse—Family Pastime: Enigmas, Practical Puzzles—Tales: KATHERINE, a Tale of Woman's Trials (with an Engraving, from a design by BIRKET FOSTER), Chap. IV.

LONDON: WM. S. ORR & CO., AMEN CORNER, PATERNOSTER ROW.

Just published, price 2d., free by post 3d.,

COMPARATIVE TABLES OF FRENCH AND ENGLISH MEASURES, WEIGHTS, &c., Reprinted from the *Gardeners' Chronicle and Agricultural Gazette.*

CONTAINING—

Measures of Length	Old French Measures of Capacity for Liquids
Square Measure	Do. for Dry Substances
Cubic Measure	Old French Weights reduced to English Avoirdupois
Measures of Capacity for Liquid and Dry Substances	Thermometers
Weights	Various Conversion Tables.

JAMES MATTHEWS, 5, Upper Wellington Street, Covent Garden.

Price 2s. 6d.,

FOLIA ORCHIDACEA.—Part IV. By Professor LINDLEY. Containing the conclusion of EPIDENDRUM, HEMISCLERIA, PINELIA, ACACALLIS, ABOLA, ONCODIA, COCHLIODA, CHEIRADENIA, ACAMPE, VANDA, LUISIA.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden, London.

Third Thousand, Improved.

CUTHILL'S BELGIAN PRIZE ESSAY ON THE POTATO, with Twenty other articles upon Asparagus, Seakale, Rhubarb Wine, Strawberries, Cucumber, Melon, Herbs and Salads. Price by post, 2s. 4d.—Also his "Market Gardening Round London," by post, 1s. 8d.

Strawberry Plants (Black Prince), 5s. per 100; (Prince of Wales), 15s. Cucumber Seed (Black Spine), per packet, 1s. 1d.

JAMES CUTHILL, Camberwell, London.

L'ILLUSTRATION HORTICOLE.—Published by A. VERSCHAFFELT, Nurseryman, Ghent, Belgium.

The Illustration Horticole will appear Monthly, and contain each number three Splendid Coloured Plates, of new and rare Plants, with a description of each. The first number is now out, and contains Rhododendron album speciosum, Oncidium Barkeri, Philesia buxifolia.

Price 12s. a year. The first number may be seen at Mr. R. Silberrad's, 5, Harp Lane, Great Tower Street, London; Agent to the Foreign and English Nurserymen.

Just published, price 2s., post free, 2s. 6d.,

NERVOUS AFFECTIONS; an Essay on Spermatorrhœa, its Nature and Treatment; with an Exposition of the Frauds that are practised by persons who advertise the speedy, safe, and effectual cure of Nervous Derangement. By a Member of the Royal College of Physicians, London.

London: AYLOTT & Co., 8, Paternoster Row.

MURRAY'S MODERN COOKERY BOOK (210th Thousand), with 100 Woodcuts, price 5s., is now ready.

JOHN MURRAY, Albemarle Street.

THE QUARTERLY REVIEW, No. CLXXXVII., is published THIS DAY.

CONTENTS:—

I. LIFE AND WORKS OF GRAY.
II. HUMBOLDT'S COSMOS—SIDEREAL ASTRONOMY.
III. MISSIONS IN POLYNESIA.
IV. M. GUIZOT.
V. RELIGION OF THE CHINESE REBELS.
VI. CASTREN'S TRAVELS AMONG THE ALPS.
VII. MEMOIRS OF KING JOSEPH.
VIII. TURKEY AND RUSSIA.

JOHN MURRAY, Albemarle Street.

REAPING MACHINES.

THE JOURNAL OF AGRICULTURE and the TRANSACTIONS of the HIGHLAND and AGRICULTURAL SOCIETY of SCOTLAND, No. XLIII. for January, contains SOME ACCOUNT of BELL'S REAPING MACHINE. By the Inventor, the Rev. P. BELL. Price 3s., or 3s. 6d. by post.

WILLIAM BLACKWOOD & SONS, Edinburgh and London.

POPULAR SCIENCE.

NEW WORK BY PROFESSOR JOHNSTON.

THE CHEMISTRY OF COMMON LIFE. By JAMES F. W. JOHNSTON, M.A., F.R.SS. L. & E., &c., Author of "Lectures on Agricultural Chemistry and Geology," "A Catechism of Agricultural Chemistry," &c.

It is the object of the author to exhibit in this work the present condition of chemical knowledge and matured scientific opinion upon the subject it treats of; the reader will not be surprised, therefore, should he find in it some things which differ from what is to be found in other popular works already in his hands or on the shelves of his library. It will be issued in Monthly Numbers in the following order:—

1. The Air we Breathe; The Water we Drink.
2. The Soil we Cultivate; The Plant we Rear.
3. The Bread we Eat; The Beef we Cook.
4. The Beverages we Infuse.
5. The Sweets we Extract; The Liquors we Ferment.
6. The Narcotics we Indulge in.
7. The Odours we Enjoy; The Smells we Dislike.
8. What we Breathe and Breathe for; What, How, and Why we Digest.
9. The Body we Cherish. The Circulation of Matter, a Recapitulation.

Nos. 1 and 2 are published, price Sixpence each.

WILLIAM BLACKWOOD & SONS, Edinburgh and London.

This day is published in one handsome quarto volume, beautifully bound in cloth, price 21s.,

THE FOREIGN TOUR OF MESSRS. BROWN, JONES, AND ROBINSON, being the History of what they saw and did in Belgium, Germany, Switzerland, and Italy. By RICHARD DOYLE.

BRADBURY & EVANS, 11, Bouverie Street.

CHEAP EDITION OF VANITY FAIR.

This day is published, in One Volume, price 6s.,

VANITY FAIR.—By W. M. THACKERAY. "One of the most remarkable books of this age—a work which is as sure of immortality as ninety-nine hundredths of modern novels are of annihilation."—*Edinburgh Review.*

BRADBURY & EVANS, 11, Bouverie Street.

WORKS BY W. M. THACKERAY.

THE NEWCOMES. Illustrated by RICHARD DOYLE. In Monthly Parts, price 1s. each.

PENDENNIS. With Illustrations by the Author. In 2 vols., 8vo, price 26s.

THE GREAT HOGGARTY DIAMOND. Ten Illustrations, price 4s. cloth.

*** It is admitted that Mr. Thackeray is unrivalled by any living writer as an inventor and describer of character.—*Edinburgh Review*, No. 201.

BRADBURY & EVANS, 11, Bouverie Street.

Fourth thousand, cloth and interleaved, price 1s.

THE SCOTTISH AGRICULTURIST'S ALMANAC AND YEAR BOOK OF PROGRESS FOR 1854, by JOHN LOCKHART MORTON, C.E.

"We recommend it to Agriculturists as at once the cheapest and best annual monitor of the sort yet issued."—*Ayr Advertiser.*

"Our hearty praise is nothing compared with the encouragement which it ought to receive from every person connected with Agriculture."—*Fife Herald.*

Edinburgh: A. & C. BLACK, and by order of any respectable Bookseller.

Eighth Thousand, price 1s.

COBDENIC POLICY THE INTERNAL ENEMY OF ENGLAND.—The Peace Society—its Combativeness. Mr. Cobden—his Secretiveness. A Narrative of Historical Incidents. By ALEXANDER SOMERVILLE, "One who has Whistled at the Plough."

"A more dreadful, a more withering exposure was never made public."

London: ROBERT HARDWICKE, 38, Carey Street; and all Booksellers.

WEEKLY PROGRESS OF MEDICAL SCIENCE.

THE MEDICAL TIMES AND GAZETTE.—On Saturday, the 7th of January, appeared the First NUMBER of a NEW VOLUME.

This Volume of the *Medical Times and Gazette* will comprise a COURSE of

CLINICAL LECTURES ON SURGERY, to be delivered at St. George's Hospital during the present Session,

BY CÆSAR HAWKINS, ESQ., Late President of the Royal College of Surgeons.

CLINICAL LECTURES ON FEVER, Delivered in the Meath Hospital, Dublin, BY WILLIAM STOKES, M.D., M.R.I.A.

CLINICAL LECTURES ON RENAL DISORDERS, IN RELATION TO DISORDERS OF THE STOMACH, AND TO OTHER ACUTE AND CHRONIC DISEASES, BY H. BENCE JONES, M.D., F.R.S., Physician to St. George's Hospital.

CONTRIBUTIONS TO AURAL AND OPHTHALMIC SURGERY, BY W. R. WILDE, ESQ., F.R.C.S.I., Surgeon to St. Mark's Hospital, Dublin.

LECTURES ON THE FUNCTIONAL DISORDERS OF THE STOMACH, BY GEORGE BUDD, M.D., F.R.S., Physician to King's College Hospital.

LECTURES ON MALFORMATIONS OF THE HEART, BY T. B. PEACOCK, M.D., Assistant-Physician to St. Thomas's Hospital.

CLINICAL REPORTS ON PRACTICAL MIDWIFERY, BY F. H. RAMSBOTHAM, M.D., Obstetric Physician to the London Hospital.

CLINICAL MEDICINE AND PATHOLOGY, BY GEORGE BURROWS, M.D., F.R.S., Physician to St. Bartholomew's Hospital;

AND

W. SENHOUSE KIRKES, M.D., Registrar and Demonstrator of Morbid Anatomy at St. Bartholomew's Hospital.

ORTHOPÆDIC SURGERY, BY BERNARD E. BRODHURST, ESQ., Assistant-Surgeon to the Royal Orthopædic Hospital.

This Journal has taken the first position; it is supported by the Contributions of the most eminent men in the profession, and has attained a character, an influence, and a circulation, not possessed by any other Medical Periodical. It reflects faithfully the progress of Medical Science, enabling its subscribers in all parts of the world to know what is doing, and keeping en *courant* with the medical knowledge of the day.

Price 7d., Stamped 8d.

TERMS OF SUBSCRIPTION:—

12 Months, stamped for post, 1l. 14s. 8d.; or prepaid ... £1 10 0
6 Months 0 17 0

Regularly transmitted by Post throughout Great Britain, and the most distant of the British Colonies.

Post-office Orders should be made payable at the Post Office, No. 1, Coventry Street, in favour of Mr. JAMES LUCAS, 46, Princes Street, Soho.

LONDON:

JOHN CHURCHILL, PRINCES STREET, SOHO;

And may be ordered of all Booksellers.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be ADDRESSED to THE EDITOR.—SATURDAY, JANUARY 21, 1854.

THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 4.—1854.] SATURDAY, JANUARY 28. [PRICE 6d.

INDEX.

Aeration	53 c	Labourers' education	60 b
Agents land	57 c—60 a	Land agents	57 c—60 a
Agricultural diplomas	57 c	Ligatures, tight	53 b
— Soc. Journal, rev.	61 b	Linnean Society	54 b
Ammonia, formation of	59 c	Mildew, Vine	55 c
Azaleas, to force	55 b	Note-book, Chinese	54 a
Calendar, horticultural	56 a	Ophioglossum lusitanicum	53 c
Cattle feeding, profitableness of	58 c	Orchard houses	54 a
China, spring flowers in	54 a	Pathology, vegetable	52 c
Cirencester Agri. Soc.	60 c	Pelargonium tricolor	53 a
College, agri., and diplomas	57 c	Plants, new	55 a
Cucumbers, winter	53 c	— new British	53 c
Deodar, the	53 c	Plant houses, to ventilate	53 c
Diplomas, agricultural	57 c	Plough v. spade	53 b
Drainage, arterial	58 b	Potatoes, &c., Cuthill on, rev.	61 b
Draining, Cirencester premium for	60 c	— from seed v. the disease	52 b
Ealing Park, noticed	55 a	Rain, at Ross	53 b
Education, labourers'	60 b	— Witham	53 b
Fallows, grain	59 a	Spade husbandry	53 b
Flowers, Chinese spring	54 a	Stack yard, covered	60 b
Food, water in	53 c	Thalia, structure of	53 c
Forests, royal	51 c	Trees, effect of tight ligatures on	53 b
Fowls, Cochin China	61 b	Vegetable pathology	52 c
Fuchsias, culture of	55 c	Ventilation	53 c
Geology, Phillips's, rev.	54 c	Vine mildew	55 c
Grain fallows	59 a	Woods and forests	51 c

DOUBLE ITALIAN TUBEROSES.

DAWE, COTTRELL, AND BENHAM (successors to FREDERICK WARNER), have just received their Annual Importation of the above, in excellent condition, which they offer at 8s. 6d. per dozen, with the usual allowance to the trade. Their wholesale Lists of Garden, Agricultural, and Flower Seeds are ready, and may be obtained on application.

3, Lawrence Pountney Lane; and 36, Moorgate Street, London. Established 28, Cornhill. 1720.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER has now ready a fine healthy stock of young plants of all the leading sorts. For price and description see General List, which also contains hints on their culture, with observations on the exhibition of Hollyhocks, &c. &c., and may be had by inclosing a postage stamp.

Saffron Walden Nursery, January 21.

SEEDS.

W. AND S. GAINES beg to offer to Gardeners, Farmers, and Nurserymen, the following seeds:—WHITE SPANISH ONIONS, 4s. 6d. per lb.; Deptford do., 4s. 6d. per lb.; Reading do., 4s. per lb.; quantities not less than 1 lb. SCARLET RUNNERS, 21s. per bushel; quantities not less than one peck. GOOD RHUBARB PLANTS: Albert, Linnæus, and Victoria, 40s. per 100; 6s. per dozen. Also collections of ANNUAL FLOWER SEEDS, packets of 60 varieties, 10s.; 30 do., 5s.; 15 do., 2s. 6d.—Post-office orders payable to W. & S. GAINES, Covent Garden Market, London.

ROSES.

A. PAUL AND SON can still supply good plants of most of the fine new and popular sorts, either as Dwarfs or Standards. Priced Descriptive Catalogue forwarded free by post for two stamps.—Nurseries, Cheshunt, Herts, Jan. 28.

JUDSON'S RICHMOND VILLA BLACK HAMBURGH VINE.

ARTHUR HENDERSON AND CO. have the pleasure of informing their patrons and friends that they have good plants of this valuable and much-esteemed Vine at 5s. each; extra strong plants, 7s. each.—N.B. For full particulars of the distinguishing characteristics of this Vine, we beg to refer our customers to the *Gardeners' Chronicle* of October 25th, 1851.

SUTTON'S COMPLETE COLLECTIONS OF KITCHEN GARDEN AND FLOWER SEEDS may still be obtained, as see last week's *Gardeners' Chronicle*.—JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

MYATT'S VICTORIA RHUBARB.—For Sale, 4000 VICTORIA (true) RHUBARB ROOTS, in lots, to suit purchasers. Price on application.—Address JOHN SCHOFIELD & SON, Seedsmen, &c., Knowsthorpe, near Leeds, Yorkshire.

THE EARLIEST PEA IS "FAIRHEAD'S EARLY CONQUEROR." To be had of CLARKE AND CO., Borough, London; 2s. per quart (price per bushel on application).

J. G. WAITE begs to return thanks to his friends and purchasers of the DANIEL O'ROURKE PEAS, and to inform them and the public generally, that on account of the extraordinary demand for this valuable Pea, he will not be able to supply any more this season.

J. G. W. will be ready to supply seed of this year's crop in the months of July and August.—181, High Holborn, London.

CORNWELL'S VICTORIA RASPBERRY; unequalled for size, flavour, and brightness of colour—containing more juice than any other, and an abundant bearer. The certificate of merit has been awarded to them at all the principal metropolitan shows; the fruit also sells for more than any other at Covent Garden Market. Canes of the above to be had of GEORGE CORNWELL, Market Gardener, Barnet, at 15s. per 100. The usual allowance to the trade.

"NORFOLK HERO" CUCUMBER.—Without exception the very best Cucumber for open ground cultivation that has yet been offered. It is a most prolific bearer, as handsome as any frame variety, and is delicate in point of texture, the fruit measuring from 16 to 20 inches in length. It is in the sole possession of YOUELL and Co., who will forward per post free (on receipt of postage stamps) packets containing six Seeds, 1s.; 18 seeds, 2s. 6d.—"To Market Gardeners the above will be found a great acquisition."

Royal Nursery, Great Yarmouth.

THE FINEST BALSAMS IN EUROPE, in Six Classes; Seed saved by Mr. GLENNY from flowers three inches across: the six, 37 stamps; Mixed Seeds, 13 stamps, in Sealed Packets only, signed and sealed. The finest seeds that can be had procured to order, and all other choice Horticultural subjects.—420, Strand.

TO FARMERS.

IN ACCORDANCE with the wishes of Farmers, Millers, and others interested in the Corn Trade, an Edition of the AGRICULTURAL GAZETTE AND GARDENERS' CHRONICLE will be published every Monday Afternoon, in time for post. The Monday's Edition will, in addition to the usual markets, contain a full report of the Mark Lane, Smithfield, and Newgate Markets of the day.—May be ordered of any Newsagent. Price 6d.

A BEAUTIFUL ORNAMENT FOR THE DRAWING-ROOM.

THE DOUBLE LILY OF THE VALLEY is universally admired, on account of its delicious Fragrance, Elegant Flowers, and Graceful Habit; as a pot plant it is superior to any flower in cultivation, its hardy nature also renders it a suitable ornament for the open garden. One dozen Roots, with directions for their culture, sent free by post on receipt of 36 postage stamps.—JOHN J. REID, Monkton Nursery, Ryde, Isle of Wight.

RANUNCULUSES.

GEORGE LIGHTBODY'S SEEDLINGS, the finest in cultivation, can be supplied at the following prices, viz.:

	£	s.	d.
100 ROOTS, finest Mixtures	£1	0	0
50 „ fine varieties named	1	10	0
50 extra „ „	2	10	0
50 ex. ex. „ superb	5	0	0

Falkirk, January 28.

JOHN HOLLAND, Bradshaw Gardens, Middleton, near Manchester, has for Sale—

	Per packet.—s.	d.
AURICULA SEED, from best sorts cultivated	2	6
PANSY, „ „ „	1s. and 2	0
HEAVIEST LANCASHIRE SHOW GOOSEBERRY TREES, per dozen	6	0

SELECTED GARDEN SEEDS.—We beg to offer the following Collections of Garden Seeds:—

	£	s.	d.
No. 1.—A complete collection, suitable for a large garden	3	0	0
2.—A collection of equally choice varieties, but smaller quantities	1	10	0
3.—A collection suitable for a small garden	0	15	0

Nos. 1 and 2 collections will be sent carriage free to any Railway Station in England or Wales.

J. C. WHEELER & SONS, SEED MERCHANTS, Gloucester.

SUPERB FLOWER SEEDS.—The following select Seeds, saved from the best varieties, sent post free at 1s. per paper:—Antirrhinum, Petunia, Verbena, Double Balsam, and Pansy.—From WILLIAM KNIGHT, Florist, 53, High Street, Battle, Sussex. Select lists of Seeds sent on application.

CHOICE FLOWER SEEDS, FOR PRESENT SOWING.

PANSY, saved from 100 of the best vars., by name, 2s. 6d. per pkt.
POLYANTHUS, do. 50 do. „ 2s. 6d. „
VERBENA, do. 50 do. „ 2s. 6d. „
HOLLYHOCK, do. 60 of the most superb kinds, by name ... 2s. 6d. „
CALCEOLARIA, do. 24 do., spotted varieties 2s. 6d. „
DAISY, do. 50 of the new Belgian do. do. 1s. 6d. „
ANTIRRHINUM, do. 20 best named varieties ... 1s. 0d. „
ANEMONE, from the most showy and brilliant kinds, 1s. „
FASTOLFF RASPBERRY SEED, for exportation, p. oz., 3s. 6d.
The above, per post, free.—Postage Stamps received in payment.

YOUELL AND CO., Royal Nursery, Great Yarmouth.

SELECT FRUIT TREES.—Per dozen.—Apples and Pears, of the most approved kinds, good strong standards, 9s. Ditto, ditto, dwarfs, 8s.; trained, 24s. to 30s.

Cherries and Plums, good strong standards, 12s. Ditto, ditto, dwarfs, 9s.; trained, 36s.

Apricots, Peaches, and Nectarines, trained, of the most approved kinds, 48s.

Linnæus, Royal Albert, Buck's Scarlet, and Victoria Giant Rhubarb, true, 7s. 6d.

The above are first-rate; persons in want should apply as soon as possible to WILLIAM JACKSON & Co., Bedale, Yorkshire.

ROUGH CHEAP EVERGREENS.—Red Cedars, 4 to 5 feet; Box Leaved and Myrtle Leaved Evergreen Privets, 5 to 6 feet; Portugal Laurels; Arbor-vitæs. The above will all remove safely, and are well adapted for filling up plantations and for blinds.—Particulars and Prices can be had of Mr. KERNAN, 4, Great Russell Street, Covent Garden, London.

JOHN SCHOLEY, NURSERYMAN, &c., Pontefract, Yorkshire, begs to announce that he has a fine Stock of LARCH, from 1½ to 4 feet, well topped, and fibrous rooted. Also a large quantity of Seedling and Transplanted Berberis aquifolium. Prices moderate, may be had on application.

TO FOREST PLANTERS.—The Subscribers beg to offer about 50,000 very fine English OAKS, 5 feet high, of great substance, and twice transplanted. They will be sold cheap. Price on application.—W. JACKSON & Co., Bedale, Yorkshire.

LIME TREES, 12 to 14 feet, 42s. per 100.—SPRUCE FIRS, 2 to 3 feet, 6s. per 100.—LAURUSTINUS, very fine, 30s. per 100.—Apply to BENJAMIN R. CANT, St. John's Street Nursery, Colchester.

SHRUBS, FRUIT AND FOREST TREES, SEEDS, &c.:—Sycamore, Chestnut, Walnut trees, 5 feet high, 3d. each; Laurels, 2d. each; Privet, 1d. each, 4 feet high; Red, White, and Black Currants, 3 feet high, 4d. each; Ilex Oak, English Yew, Euonymus, Weigela Rosea, Gold and Silver leaf Cypress, variegated Holly, Escallonia macrantha, all at 1s. each; Cryptomeria japonica, 3s. to 5s. each; Cedar of Lebanon, 3s. to 5s. each; Rhododendrons, 1s. to 5s. each; Box Edging, 4d. per yard. Every other Shrub, Flower, or Tree, at equally low prices.—At W. CULLINGFORD'S, 1, Edmund Terrace, Ball's Pond Road, Islington, London. Flower and Vegetable Seeds of every kind.

PRESENT PRICES OF AGRICULTURAL SEEDS.—*See* MESSRS. SUTTON'S DESCRIPTIVE LIST, *on the last page of this day's* GARDENERS' CHRONICLE.

RENDLE'S NEW PRICE CURRENT FOR 1854 *should be obtained by all who have gardens, whether small or large. It will be found to be a correct and useful Guide to the amateur and young gardener; a remembrance to the more advanced in horticulture, and a source of reference to all.*

Can be obtained from the London Publishing Office, 294, Strand; or from the Proprietors, WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth. ESTABLISHED 1786.

JOHN KERNAN'S ADVERTISEMENT OF VEGETABLE AND FLOWER SEEDS will appear in next week's Paper, 4th February. Catalogues may be had on application.—4, Great Russell Street, Covent Garden.

WILLIAM HAMILTON'S DESCRIPTIVE AND PRICED CATALOGUE is now ready, and may be had on application. It contains a List of the best Vegetable Seeds, and a choice assortment of Flower Seeds, as also a numerous list of Roses, New and Rare Plants, Carnations and Picotees, Fruit Trees, &c., and gives a description of all of them.—Address, W. HAMILTON, 41, Margaret Street, Cavendish Square, London.

DAWE, COTTRELL, AND BENHAM'S ANNUAL DESCRIPTIVE LIST OF FLOWER AND GARDEN SEEDS, &c., containing all the New and Choice Varieties of the Season, is Published, and will be forwarded post free to any address

No. 36, Moorgate Street, and 3, Laurence Pountney Lane, London. (Successors to F. Warner, established 28, Cornhill, 1720.)

SAMUEL FINNEY AND CO.'S DESCRIPTIVE CATALOGUE OF FLOWER AND VEGETABLE SEEDS, with prices, is now ready, and may be had on application. It contains an extensive assortment of Imported German Flower Seeds, the celebrated French Asters, and many splendid novelties.—Gateshead Nursery, January 28.

CHARLES DIMMICK begs to announce to his friends and the public, that his CATALOGUE of GARDEN SEEDS is now ready, and may be had on application. They have been selected with great care from the best stocks in the country, and the growing qualities tried as soon as received.

Horticultural Establishment, 112 and 113, High Street, Ryde, Isle of Wight.—January 21.

STANDISH AND NOBLE'S CATALOGUE for the present season is Now Ready, and may be had on application. A selection from it appeared as a detailed advertisement in the *Gardeners' Chronicle*, of Saturday, Sept. 10th, to which they respectfully refer plant buyers. It contains many new and choice plants.—The Nursery, Bagshot, Surrey, Jan. 21.

GEORGE BAKER begs to say that his DESCRIPTIVE CATALOGUE of AMERICAN PLANTS, CONIFERS, ORNAMENTAL SHRUBS, FRUIT and FOREST TREES, &c., may be had by enclosing two postage stamps.

G. B. wishes to call particular attention to his fine Stock of GREEN and WEEPING HOLLIES, from 1 to 12 feet high.

G. B. has supplied the American Exhibition in the Royal Botanic Gardens, Regent's Park, from its commencement.

American Nursery, Windlesham, near Bagshot, Surrey, about six miles from Staines Station, Windsor Branch, South-Western Railway, where conveyances may be obtained.

BRITISH QUEEN POTATO.—As early as a Shaw, the quality of a Regent, and one of the most productive kinds grown, recommended with perfect confidence; price per bushel, 10s.; per peck, 3s., bag included, for pre-payment only.

HART AND NICKLIN, Guildford, Surrey.

DOUBLE ITALIAN TUBEROSE ROOTS, 4s. per dozen.—The annual importation of the above-named beautiful and fragrant Flower has just been received, and large and well selected Bulbs may be obtained, without disappointment, at A. COBBETT'S Foreign Warehouse, 18, Pall Mall.

N.B. Printed regulations for treatment sent; also, just arrived very moist and open Parmasan Cheeses.

LILIUM LANCIFOLIUM, RANUNCULUSES, & ANEMONES

HENRY GROOM, Clapham Rise, near London, by appointment FLORIST TO HER MAJESTY THE QUEEN, AND TO HIS MAJESTY THE KING OF SAXONY, begs to say that this is a good season to procure bulbs of the above FLOWERS which he can supply at the following prices:—

		Each.—s.	d.
LILIUM LANCIFOLIUM ALBUM ... from	9d. to	1	6
Do. do. PUNCTATUM ... „	5s. to	10	6
Do. do. ROSEUM ... „	3s. to	10	6
Do. do. CRUENTUM ... „	5s. to	10	6
Do. do. Seedling Varieties of RUBRUM ... „	2s. 6d. to	10	6
Do. EXCELSUM ... „	5s. to	10	6
Do. JAPONICUM TREE, or BROWNI „	5s. to	10	6
Do. THOMSONIANUM, New ... „	5s. to	15	0
6 HYBRID SEEDLING LILIES BY NAME ...		15	0
100 RANUNCULUSES, in 100 superfine sorts, named	£2	10	0
Superfine mixtures per 100 ... from	5s. to	10	6
100 ANEMONES, in 50 superfine sorts, named ...	£1	10	0
Superfine mixtures, double, per 100 ... from	6s. to		6
„ „ single, „ ... „	5s.		
HIPPEASTRUM AULICUM, strong bulbs ...	each	5	0
VALLOTA PURPUREA ...	„	3	6
CALOCHORTUS LUTEUS ...	„	3	6
GLADIOLUS, fine-named sorts, each, from ...	9d. to	2	6
ANOMATHECA CRUENTA ...	per dozen	4	0

H. GROOM begs to say that his Catalogue will be forwarded by post on application.—Foreign Orders executed.

THE PLANTING SEASON.

FRANCIS AND ARTHUR DICKSON AND SONS respectfully invite the attention of Planters to their very extensive Stock of Forest and Ornamental Trees, Evergreens, and Flowering Shrubs, Fruit Trees, Roses, Herbaceous and Alpine Plants, Stove and Greenhouse Plants, &c., growing at their Upton Nursery Grounds, near Chester. The Nurseries lying high and exposed, the whole of their Plants are hardy and well-grown, and having been regularly transplanted are also well rooted, and cannot fail to give satisfaction.

The following Lists are published, and will be forwarded on application: Forest and Ornamental Trees and Shrubs, Fruit Trees (Descriptive Catalogue), Roses (Descriptive Catalogue), Herbaceous and Alpine Plants, Stove and Greenhouse Plants, Dahlias, Bedding-out Plants, Florists' Flowers, &c.

☞ It being necessary to clear the plants off certain portions of their Grounds before the end of March, F. & A. D. & SONS will dispose of this part of their Stock at much reduced prices, rather than incur the expense of removing them to other parts of their Nurseries.—Upton Nurseries, Chester, Jan. 28.

NEW AND SUPERIOR SEEDS.

FRANCIS AND ARTHUR DICKSON AND SONS, respectfully intimate that their CATALOGUE OF VEGETABLE AND FLOWER SEEDS, &c., for the present season is published, and will be forwarded on application. Their Stock of NEW SEEDS is now complete, and as each article has been procured direct from the most particular and careful growers, they feel satisfied that the quality of their Seeds is such as cannot fail to merit the approbation of their customers and friends.

F. & A. D. & SONS further beg to assure their patrons that everything supplied by them shall be of the first quality; and that all orders entrusted to them shall be executed with fidelity and despatch.

Seed Warehouses, 106, Eastgate Street, Chester, and 14, Corporation Street, Manchester.—Jan. 28.

DISSOLUTION OF PARTNERSHIP.

THE PARTNERSHIP which has existed for thirty-five years between my cousin and myself, as Seed Merchants and Nurserymen in this City, under the firm of "FRANCIS AND JAMES DICKSON," and also in Manchester for upwards of four years, under the firm of "FRANCIS AND JAMES DICKSON AND CO.," has been this day DISSOLVED by mutual consent; and I beg to tender my grateful acknowledgments and sincere thanks to the numerous patrons and friends of the late firm, for the kind and liberal patronage extended to my late partner and myself for so many years, and as I have now entered into Partnership with my Sons, I venture to hope that we may, unitedly, continue to merit a share of that confidence and patronage which I enjoyed for so long a period as senior partner in the late firm.

Our Seed Business will be carried on in the same premises as before, and our Nursery Business at the Upton Nurseries near Chester, under the firm of FRANCIS AND ARTHUR DICKSON & SONS.

Chester, Dec. 28, 1853. FRANCIS DICKSON.

SEED WAREHOUSE, 106, EASTGATE STREET.

FRANCIS AND ARTHUR DICKSON AND SONS, in soliciting a continuance of the confidence and patronage enjoyed by the late firm, have only to state that they are determined that every article sent out by them, whether in Seeds or Plants, shall not only be of first quality but shall also be charged the most moderate price; and they further assure their customers and friends that no effort shall be wanting on their part at all times to meet the wishes of those who entrust their orders to them. Their stock of New Seeds for the ensuing season is now complete; catalogues of which will be ready in a few days, and may be had on application.—January 28.

EXOTIC NURSERY, CANTERBURY.

WILLIAM MASTERS, at the commencement of a new season, has the pleasure to tender his very grateful thanks to his numerous Patrons for the very kind support with which they have favoured him during the last thirty-five years, and begs to solicit a continuance of the same on behalf of himself and his Son, with whom he has now entered into PARTNERSHIP, and who has been engaged with him in the practice of Landscape Gardening and the various branches of his business for some years.

WILLIAM MASTERS AND SON beg to offer the following Collections of GARDEN SEEDS, in assortments containing a supply for the whole year in proportionate quantities of each.

	£	s.	d.
No. 1 Collection, for a large garden, containing 20 quarts of Peas in 20 best sorts for succession, 10 best sorts of Broccoli, 8 ditto of Lettuce, with all other vegetables in proportion	£2	10	0
No. 2, the best new and other sorts, in smaller quantities	1	10	0
No. 3, ditto ditto	1	0	0
No. 4, a Collection of esteemed kinds for a small garden	0	10	0

Grass Seeds for Lawns, Permanent Pasture, or alternate Culture.

FLOWER SEEDS, with printed Directions for their Culture, in Collections of 12 for 2s. 6d.; 25 for 5s.; 50 for 9s.; 100 for 18s.

Their New Seed Catalogue for 1854 will be forwarded on application.—January 28, 1854.

TO NOBLEMEN, GENTLEMEN, AND COMPANIES PLANTING.

THOMAS JACKSON AND SON respectfully invite an inspection of their extensive and fine collection of ORNAMENTAL SHRUBS and TREES: they are of fine growth, and in excellent condition for planting for immediate effect. To the undernamed T. J. & SON especially desire attention. Prices may be obtained by letter or personal application.

American Arbor-vitæ, 2 to 10 ft.	Deutzia gracilis, 1 to 2 feet, fine
Chinese do., 2 to 8 feet, fine	Pinus excelsa, 3 to 8 feet, fine
Arbutus, 2 to 5 feet	Pinus insignis, 3 to 5 feet
Aucubas, 2 to 4 feet, very bushy	Cryptomeria japonica, 2 to 6 ft.
Cedar, Deodar, 2 to 12 feet, fine	Taxus pyramidalis, 2 to 6 feet, fine
Cedar of Lebanon, 2 to 9 ft., fine	Laurustinus, 1 to 3 feet, very bushy
Variegated Hollies, 2 to 9 feet	Evergreen Oaks, 2 to 7 feet, fine
Green do., 2 to 9 feet	Portugal Laurels, 2 to 5 feet
Weeping do., 5 feet stems, fine	Magnolia acuminata, 4 to 10 ft.
Berberis aquifolium, 2 to 3 feet, bushy	Do. grandiflora Exmouth, 2 to 5 feet, fine
Taxodium sempervirens, 3 to 12 feet, fine	Tree Pæonies, 1 to 3 ft., bushy
English Yews, 2 to 9 feet	Chinese Junipers, 2 to 8 ft., fine
Irish do., 2 to 8 feet, very fine	Upright Cypress, 5 to 8 ft., fine
Tree Box, 2 to 7 feet	Forsythia viridissima, 2 to 4 ft.
Araucaria imbricata, 1 to 5 feet, fine	Red Cedars, 3 to 5 feet, fine

T. J. & SON having added to their previously good stock of American Plants, about one-third of the entire stock of the Norbiton Nursery, so long famed for its collections of Hybrid Rhododendrons, Azaleas, &c., can now offer on most advantageous terms—

Rhododendron ponticum, 1 to 5 ft., in great variety.
Do. aureum, and the varieties of yellows, 1 to 7 ft.
Do. Smithi, tigrinum, and other scarlets, 1 to 9 ft.
Do. campanulatum and light varieties, 1 to 7 ft.
Azaleas, Indian, American, and Ghent varieties, 1 to 6 ft.
Kalmia latifolia, and others, 1 to 4 ft.

T. J. & SON have a splendid healthy stock of the Sikkim Rhododendrons, of which they will furnish the 12 following fine kinds, in pots, for 63s., viz., Thompsoni, fulgens, glaucum, glaucum nanum, niveum, Falconeri, ciliatum, Edgeworthi, lancifolium, cinnabarinum, ferruginosum, and calycatum.

Fine Fruit and Forest Trees; strong Quick for Fences, and all other kinds of Nursery Stock.—Nurseries, Kingston, near London.

CUCUMBER SEED.

SAGGS'S "ROYAL EXHIBITION," a hybrid between the Scotch Hero and Mills's Jewess. It was awarded Two First Prizes at the Stamford Hill Show; One First Prize at the Surrey Gardens; and has been exhibited at 21, Regent Street, and very highly commended. It is considered by Nurserymen and Gardeners who have seen it to be the best Cucumber yet let out. Jet-black spine, good bloom, 18 inches to 24 inches long. In packets of six seeds, 2s. 6d. To be had of Messrs. HURST & M'MULLEN, Leadenhall Street; Messrs. CHARTRES, King William Street; Mr. SOLOMON, and Messrs. HOOPER & Co., Covent Garden; Messrs. PAUL, Cheshunt; Mr. FRANCIS, Hertford; and of the grower, WILLIAM SAGGS, High Hill Ferry, Upper Clapton, London. Postage stamps to the amount will be taken in return.

COLE'S SUPERB CRYSTAL WHITE CELERY.

J. THORNLEY, W. COLE, AND CO., NURSERYMEN, SEEDSMEN, and FLORISTS, Withington, Manchester, beg to announce that they are now prepared to supply this fine Celery at 1s. 6d. per half-ounce packet, or in larger quantities. This variety has given universal satisfaction, and has been proved to possess all the good qualities attributed to it by W. Cole last season. It can also be procured from the following agents:—

Messrs. Hurst and M'Mullen, 6, Leadenhall Street; Messrs. Noble, Cooper, and Bolton, 152, Fleet Street; Messrs. Minier & Co., 60, Strand; Messrs. Charlwood & Cumming, Covent Garden; Mr. Turner, Slough; Mr. Duncan Hairs, St. Martin's Lane; Mr. Denyer, Gracechurch Street; Mr. J. Fairbairn, Clapham; Messrs. A. Henderson & Co., Pine Apple Place; Messrs. Downie and Laird, Edinburgh; Messrs. F. & J. Dickson, Chester; Messrs. F. & J. Dickson, Manchester; Messrs. J. & J. Fraser, Lea Bridge, Essex; Messrs. Little and Ballantyne, Carlisle; Messrs. Veitch & Son, Exeter; Mr. J. Veitch, Exotic Nursery, Chelsea; Mr. Clarke, King Street, Covent Garden; Messrs. Finney & Co., Gateshead; Mr. A. Pontey, Plymouth; Mr. E. Rendle, Plymouth; Mr. Cattell, Westerham, Kent; Mr. Smith, Riverhead, Kent; Mr. Epps, Ashford and Maidstone, Kent; Messrs. Lucombe, Pince, & Co., Exeter; Mr. Browne, Norwich; J. Cole, Keyfield Nursery, St. Albans; Garaway & Mayes, Bristol; Drummond & Son, Stirling.

All orders to be addressed as above, instead of to "Dartford" as heretofore.

WHEELER'S SHORT SELECT SEED LIST.

J. C. WHEELER AND SON'S SEED LIST *is now ready, and will be forwarded free on application. We have tried to make it as short and as select as possible, leaving out the names of all inferior varieties, so that it is really a List of the best Seeds in cultivation. Grasses and other Agricultural Seeds, Garden and Flower Seeds, all described, and prices put to every article. We deliver our Seeds Carriage Free to almost every Railway Station in the kingdom, and take especial care that every sort we send out is true to name, and of the best quality.*

J. C. WHEELER & SONS, Seed Merchants, Gloucester.

TO POTATO GROWERS.

W. DRUMMOND AND SONS, SEEDSMEN and NURSERYMEN, Stirling, N. B., offer for sale several tons of ROS'S EARLY AMERICAN POTATOES, grown expressly for seed, on reclaimed peat or moor, and without manure. Not a trace of disease could be seen in the crop. The Potato has been well known in Scotland for the last 40 years, as one of the very best for general garden or field crops. It is very productive, full sized, dry, and finely flavoured; and is earlier than the Regent.

Price 22s. per sack of 2 cwt., sack included, and delivered carriage free in London, Liverpool, and Hull.

Unknown correspondents will please send a remittance with their orders.

May be had on application, a very useful priced Descriptive CATALOGUE of VEGETABLE SEEDS, containing only such varieties as are really worth cultivating.

HAWKES' CHAMPAGNE RHUBARB.—This most desirable variety is now for the first time offered to the public. It has stood the severest test that can be applied, and has beaten everything in Covent Garden and other London Markets in realising higher prices, from its magnificent colour and size. It has been seen by the very highest authorities and pronounced to be a most valuable introduction. In earliness it equals the Prince Albert, but of a deeper colour, and much greater bearer. It forces remarkably well, and is very hardy out of doors. Mr. HAWKES has placed the entire sale in the hands of Duncan Hairs.

One-year-old plants, strong, 5s. each. A few two years old, very strong, for sale.

LAING'S MAMMOTH RED CELERY.—This is considered the largest yet grown, attaining the extraordinary weight of from 10 to 12 lbs., and at the same time perfectly solid. It is nearly perennial in its habit, as it will not, under any circumstances, run to seed the first season, and it is difficult sometimes the second when planted out for that purpose. In colour it is a bright red. In flavour unsurpassed, if equalled.

It has been seen growing by many practical gardeners, who deem it a new feature in the garden, from the fact that it may be had nearly all the year. Packets 2s. 6d. each.

MITCHELL'S HARDY EARLY CAULIFLOWER.—This is grown precisely as the handglass variety, but when removed from the frame does not require the same protection, and comes in immediately after. This is particularly recommended for gentlemen's establishments. The head is not large, but handsome and compact, and is so firm that you may let them stand from 10 days to a fortnight and they will not get frothy or loose. This is quite a distinct variety. Packets 2s. 6d. each.

DUNCAN HAIRS, Seedsman, 109, St. Martin's Lane. Post Office orders to be made payable at Charing Cross.

STRAWBERRIES!—FOUR NEW & DISTINCT VARIETIES.

NICHOLSON'S AJAX.—Very large and handsome, most exquisite flavour, unequalled as a Dessert Fruit, and forces well.

NICHOLSON'S RUBY.—Medium size, excellent quality, and an immense bearer, producing a succession of fine fruit for an unusually lengthened period, also a good forcer.

NICHOLSON'S CAPTAIN COOK.—A first-rate market fruit, colour scarlet, very large size, great bearer, and bears carriage well. Plants remarkably strong and hardy.

NICHOLSON'S FILL-BASKET.—Nothing can surpass this fine sort as a market fruit, in colour it is a very bright scarlet, general shape round, gets very large, but never out of shape; excellent for preserving, a tremendous bearer, and will bear carriage a great distance. Plants very robust and healthy.

These splendid Strawberries have been admired by all who have seen them: the two first for their surpassing excellence as Dessert Fruit, the two latter for their size, colour, abundance, and other good qualities as market fruit.

Gentlemen, Amateurs, and Market Gardeners wishing to possess these valuable Strawberries can now be supplied with well rooted plants, by WILLIAM NICHOLSON only, at 15s. per 100; or 25 each of any two sorts for 10s., box included.

Post-office orders payable at Yarm, Yorkshire, or cash expected with the order.

Testimonials have been received from some of the principal horticulturists in the kingdom, which will be forwarded to any person on application.—Egglescliffe, near Yarm, Jan. 28.

AMERICAN PLANTS.

JOHN WATERER begs to announce that his NEW CATALOGUE of RHODODENDRONS, AZALEAS, CONIFEROUS PLANTS, &c., is now published, and may be had by enclosing two stamps for postage.

The colours of all the Rhododendrons worthy of cultivation are described in order to facilitate purchasers in making selections, together with a Treatise on their successful management.

☞ The Rhododendrons forming the American Exhibition in the Royal Botanic Society's Garden, Regent's Park, London, are annually supplied from this establishment.

The American Nursery, Bagshot, Surrey, near the Farnborough Station, South-Western Railway, and 3 miles from Blackwater, South-Eastern Railway.

CHELTENHAM EXHIBITION, 1854.

TO PARTIES ABOUT TO ERECT CONSERVATORIES OR PUBLIC EXHIBITION ROOMS.

TO BE SOLD.—At the end of July, the BUILDING now constructing in Cheltenham for the Crystal Palace Exhibition of Horticulture will be disposed of either in one or more Lots, to suit the convenience of Purchasers. It will comprise 20,000 superficial feet of Lights, in sizes suitable for Conservatories, Greenhouses, &c., made of the very best materials, and glazed with 16 oz. Sheet Glass. Parties contemplating the Erection of Exhibition Rooms or Greenhouses and other Garden Works, will find this a rare opportunity for providing themselves with the most expensive portions of such undertakings at a low price.—Applications to be made to Mr. G. PARSONAGE, Builder and Undertaker, Cheltenham.

TO NURSERYMEN, ETC.

TO BE SOLD, at a very low price, 500 RUSSIA MATS. May be inspected at 6, Campden Mews, Kensington.

TO NURSERYMEN, FLORISTS, & OTHERS.

TO BE SOLD, a NURSERY GROUND, containing 1½ acre of Land with Stock, Green and Hot-houses, Cottage, &c., surrounded by respectable residences, near London. Held on Lease for 80 years at a Ground Rent.—Particulars to be had of Mr. GEORGE SMITH, Auctioneer, Surveyor, and Land Agent, 3, Philpot Lane, City, London.

DENYER'S NURSERY, celebrated for ROSES, &c., Established 26 years, consisting of Five Acres of Land, House and Seed Shop attached, of which a 14 years' Lease will be granted. The Proprietor being about to retire, is desirous of offering the above, as an opportunity that rarely occurs to the trade, with a first-rate ready-money connexion, and the Stock to be taken at a valuation, two-thirds to be paid on taking possession; time will be given to pay the balance. No Goodwill expected.—Apply to Messrs. PROTHEROE & MORRIS, Leytonstone, Essex; or Mr. E. DENYER, on the premises, Loughborough Road, within three miles of London.

TO BE SOLD, a SEED BUSINESS in one of the principal towns in the North of England. The premises are situated in the best business part of the town, are extensive and calculated for carrying on a large trade.—For further particulars or to treat, apply, with real name and address, to A. Z., Office of this Paper. N.B. A Nursery Stock may also be had at a valuation, if desired.

TO BE SOLD, a splendid BLACK PEACOCK, 3 years old; also a pair of common coloured and same age. Apply to Mr. M. TRUMPER, Tenbury.

CLEAR BUFF COCHIN CHINA FOWLS' EGGS may be had of Mr. GILBERT, Wine Merchant, Grays, Essex, from Hens bred by Thomas Sturgeon, Esq., in 1852, and reserved for stock at 16s. per dozen. They are unequalled for beauty of plumage, short legs, and great weight, with perfect clear golden hackle, and many of them falcon hockled. Also 50 very splendid first-class PULLETS for sale, nearly all clean in hackle. May be seen at any time.

Sales by Auction.

PRIZE POULTRY.

MR. J. C. STEVENS is instructed by J. Fairlie, Esq., of Cheveley, to announce for sale by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, 31st January, 1854, at Twelve o'Clock precisely, a selection from his renowned Yard of Poultry, consisting of FIRST CLASS COCHIN CHINA, DORKINGS, BRAHMA POOTRAS, SCOTCH DUMPIES, &c., including many of his Prize Birds.—Catalogues, by enclosing a stamped directed envelope to Mr. J. C. STEVENS, 38, King Street, Covent Garden.

TO NOBLEMEN, GENTLEMEN, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Cutbush, to Sell by Auction, on the premises, Barnet Nurseries, Middlesex, on THURSDAY, February, at 11 o'clock, without reserve, in consequence of a portion of the land being purchased by the Magistrates of the County of Middlesex for the erection of stores for the militia, the whole of the NURSERY STOCK growing on the two acres, consisting of Ornamental Fruit and Forest Trees, Evergreens and Deciduous Shrubs, Standard and Climbing Roses, Box Edging, &c.—May be viewed prior to the Sale. Catalogues may be had on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

A CONSIGNMENT FROM GHENT, FROM A CELEBRATED GROWER, FOR ABSOLUTE SALE.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, at the Mart, Bartholomew Lane, on THURSDAY, February 2, at 12 o'clock, about 400 Double Camellias, Indian and Ghent Azaleas, well set with bloom buds; also Rhododendron Arboreum, 500 Gladiolus Gandavensis, with Standard and Dwarf Roses.—May be viewed the morning of sale. Catalogues had at the Mart; and of the Auctioneers, American Nursery, Leytonstone, Essex.

LAMBETH.

TO NOBLEMEN, GENTLEMEN, AND THE TRADE.

MESSRS. PROTHEROE AND MORRIS are Instructed by Messrs. Hay, Sangster and Co. to Sell by Auction, on the Premises, Pleasant Place, West Square, Lambeth, without the least reserve, on MONDAY, February 6, at 11 o'clock, the whole of the NURSERY STOCK, consisting of Dwarf Trained and Untrained Peach, Nectarine, Apricot, Standard and Dwarf Apple, Pear, Plum, Cherry, China Arbor-vitæs, and Evergreen Oaks, in pots, 2 to 5 feet; Green and Variegated Holly, 3 to 7 feet; Aucuba Japonica, Arbutus 1 to 3 feet; Cypress, 4 to 6 feet; Common Laurels, 3 feet; Filberts, Gooseberries, Currants, Raspberries, Weeping Elms, Willows and Ash, Standard and Dwarf Roses, Bedded Pear Stocks, Seakale, and Giant Asparagus, Vines in pots, Box Edging, Sangster's New Early Scarlet Rhubarb (Prince of Wales), which no garden should be without; also the large Stock of the well-grown Standard Dwarf and Dwarf Trained Mulberries, for which Messrs. H. S. and Co. have been so justly celebrated. A large quantity of rotten Dung, &c.—May be viewed prior to the sale. Catalogues may be had (6d. each, returned to purchasers) on the premises; of the principal seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

GREAT YORKSHIRE
CENTRAL SEED ESTABLISHMENT,
AT THE HOPE NURSERIES, NEAR BEDALE, YORKSHIRE.
ESTABLISHED 1750.

MAY'S COLLECTIONS OF GARDEN SEEDS.

	£	s.	d.
No. 1.—A complete Collection of KITCHEN GARDEN SEEDS for a large garden, 1 year's supply	3	0	0
No. 2.—A complete Collection of do., in quantities proportionately reduced	2	0	0
No. 3.—A complete Collection of do., equally choice sorts	£1	5	0
No. 4.—A choice assortment of do. for a small garden...	0	15	0

These Seeds are all of the best quality, being new, and of home growth principally.

CONTENTS OF NO. I. COLLECTION,
PRICE £3, CARRIAGE FREE.

PEAS—2 quarts Knight's tall, white, or green Marrow
2 do. do., Dwarf do do.
2 do. Early Race Horse
2 do. do. Frame
2 do. Champion of England
2 do. Burbidge's Eclipse
2 do. Dwarf Imperial
2 do. Royal Adelaide
2 do. early green Marrow "Bellamy"
2 do. Blue Prussian
2 do. Bishop's long-podded Dwarf
BEANS—3 do. Dutch Longpods
1 do. Johnson's Wonderful
1 do. Taylor's Windsor
1 do. Green Longpod
1 do. do. Windsor
2 do. Mazagan
1 do. Dwarf Fan
FRENCH BEANS—1 do. Scarlet Runners
½ pint York and Lancaster
½ do. improved long-podded Negro
½ do. Dun
½ do. Purple Speckled
BEET—1 large packet Lindsay's Imperial Dark
1 oz. Seakale, Beet, or Silver
2 do. Crimson
SPROUTING KALE—1 oz. fine green curled Scotch
1 large packet fine Purple
1 do. do. Couve Tronchuda
BROCCOLI—8 large packets best sorts
BRUSSELS SPROUTS—1 large packet of fresh imported seed
CABBAGE—6 large packets, best sorts
SAVOY CABBAGE—1 oz. Dwarf green curled
1 do. Drumhead
CARROT—4 oz. Early Scarlet Horn
4 do. Improved Altringham
2 do. long Surrey
2 do. James' Orange
CAULIFLOWER—¼ do. Early London White
1 large packet Walcheren
CELERY—1 packet Seymour's White
1 do. Cole's Superb Red
1 do. Manchester Giant
CRESS—1 lb. Curled
1 packet American
CUCUMBER—2 packets, best sort for forcing
ENDIVE—1 large packet fine Curled
1 do. Batavian
LEEK—1 oz. large Flag
LETTUCE—5 large packets, including best sorts
MELON—2 packets best sorts
MUSTARD—1 lb. Mustard
ONION—2 oz. White Spanish
ONION—4 do. Reading
4 do. Strasburgh
1 do. White Globe
1 large packet Blood Red
1 do. do. Tripoli
1 do. do. James' Keeping
PARSLEY—2 oz. Harrogate Prize, extra curled
1 oz. Myatt's Garnishing
1 do. Mitchell's Matchless Winter
PARSNIP—4 do. finest Guernsey
RADISH—¼ lb. Wood's Earliest Frame
½ do. Beck's Early Scarlet
¼ do. White and Red Turnip
SPINACH—1 lb. Round
½ do. Prickly
SALSAFY—½ oz.
SCORZONERA—½ oz.
TOMATOES—Large packet
TURNIPS—2 oz. Early Six Weeks
2 do. Nonsuch May's
2 do. Miller's Rattail
2 do. Yellow Maltese
2 do. Orange Jelly
4 do. Snowball
VEGETABLE MARROW—Large packet
SWEET AND POT HERBS.—12 packets, including Basil, Marjoram, Thyme, Savory, and all the best.

The smaller Collections of Nos. 2, 3, and 4 consist of nearly all the same sorts in reduced quantities.

N.B. If any of the above sorts are not required, we will substitute any desired, or increase the quantities of others.

COLLECTIONS OF FLOWER SEEDS.

No. 1.—100 packets, including hardy, half hardy, and tender ... ... 20s. 0d.
No. 2.—50 packets, including hardy, half hardy, and tender 10s. 0d.
No. 3.—25 " " " " 5s. 0d.

The above CARRIAGE FREE *to London, or to any Railway Station within* 150 *miles of the Nurseries, on any Line of Railway whatever.*—N.B. *All Post-office Orders made payable to*

HENRY MAY, The Hope Nurseries, Bedale, Yorkshire.

PEAS! PEAS! THE BEST VARIETY IN CULTIVATION.

CHAMPION OF ENGLAND, a blue wrinkled Pea, very productive, of quick growth, and of a most delicious flavour. This extraordinary Pea combines in one the merits of all others, and has none of their demerits; for, although a wrinkled Pea, it is both hardy and early, and being of quick growth, it is the best kind to plant throughout the season for each crop. It is highly productive, bearing very long pods of a lively green, which are well filled, and the Peas are generally as large as small horse Beans, of a deep green colour, and beyond all others of a most delicious flavour. Height, 3 ft. to 3½ ft.

Price, in quantities of not less than 1 peck ... Bag included 6s.
" " " 1 bushel ... ... " 16s.
" " " 1 sack (4 bushels) " 60s.
" " " 8 bushels (1 qr.) " 106s.

Delivered, freight paid by Railway to London.

Orders, with remittance or satisfactory reference, will have immediate attention on application to

H. AND A. WALLIS, SEEDSMEN, Ipswich.

PAUL'S EARLY DWARF PROLIFIC PEA.—This Pea having proved itself one of the best early dwarf varieties, A. PAUL & SON have pleasure in offering it this season at 2s. per quart. May be obtained of them, or from Messrs. Noble & Co., 152, Fleet Street, and from Messrs. Hurst & McMullen, 6, Leadenhall Street, London.

N.B. A general assortment of Agricultural and Horticultural Seeds of the best quality and most approved races, at London prices. Catalogues free by post on application.

Nurseries, Cheshunt, Herts, Jan. 28.

DILCOCK'S BRIDE BROCCOLI.

BAINBRIDGE AND HEWISON (late Jas. Edward), have the pleasure of again offering to their friends and the public their DILCOCK'S BRIDE BROCCOLI, at 2s. 6d. per packet, each containing 1300 Seeds; and while returning their thanks to their numerous patrons of last season, they beg to refer them to the following extract, taken from the *Yorkshireman* newspaper of the 30th of April last, when it was exhibited at York, for the fourth time:—"Mr. Dilcock deservedly obtained all the three prizes for Broccoli with his seedling—the 'Bride.' Taking the season into account, these vegetables were really remarkable specimens." It was equally successful the two previous years.

B. & H. are prepared to send out their Catalogues of Kitchen Garden and Flower Seeds, post free, on application, and also their Catalogue of Plants early in March, containing Stove, Greenhouse, &c., including many of the newest and choicest of the season. Their Seeds will be of the very best quality, and in the greatest possible variety.

Sold Wholesale by NOBLE, COOPER, & BOLTON, Fleet Street; CHARLWOOD & CUMMING, Covent Garden; and by all respectable Seedsmen in town and country.—York Nurseries, Jan. 28.

CUCUMBERS, MELONS, &c., the best varieties in Cultivation:—

CUCUMBER SEED—Captivation, 2s. 6d. per packet; Phenomenon, 2s. 6d.; Victory of Bath, 1s.; Lord Keynon's Favourite, winter Cucumber, 2s. 6d.; Gordon's White Spine, 1s.; Chamberlain's Essex Hero, 2s.; Sunderlandwick, 2s.; Hunter's Prolific, 1s.; and numerous others at 1s. per packet.

MELON SEED, at 1s. per packet—Incomparable, Bromham Hall, Golden Ball, Queen, Bowood, Victory of Bath, Camerton Court, Beechwood, Windsor Prize, Emperor, Fleming's Trentham Hybrid, Hampton Court, Blackhall's Green Flesh, Bailey's, and numerous others at 1s. per packet.

A packet of each of the first-named Cucumbers, and two packets of either of the Melons named, sent free for 60 stamps.

SUPERB HOLLYHOCK SEED, 2s. 6d. per packet.—GERMAN ASTER SEED (very fine and double), 1s. per packet.—ANTIRRHINUM SEED (splendid), 1s. per packet.—For further particulars respecting the before-mentioned Seeds see this Paper of the 21st inst.

A remittance must accompany every order by cash, or penny postage stamps, when the whole or any part of the above will be sent immediately, postage and package free.

EDWARD TILEY, NURSERYMAN, SEEDSMAN, & FLORIST, 14, Abbey Church Yard, Bath.

PYRAMIDAL PEAR TREES ON THE QUINCE STOCK.

J. AND J. FRASER, NURSERYMEN, Lea Bridge Road, Essex, beg to offer the above in fine strong trees, and such as would fruit the first and second year after planting, at the undernamed prices. These Pears are remarkable for their compact style of growth and prolific bearing: the collection comprises the following fine sorts:—Beurré d'Amanlis, Beurré d'Aremberg, Beurré de Capiaumont, Beurré Diel, Beurré Easter, Beurré Grise d'Hiver, Nouveau, Beurré Rance, Williams's Bon Chretien, Crassane, White Doyenné, Duchesse d'Augoulême, Forelle or Trout Pear, Glout Morceau, Hacon's Incomparable, Jargonelle, Louise Bonne of Jersey, Marie Louise, Napoleon, Winter Nelis, and Passe Colmar.—Price 2s. 6d. to 3s. 6d. each.

SUPERB LATE WHITE BROCCOLI—"EMPEROR."

EDMUND PHILIP DIXON having purchased the entire stock of the above Broccoli of Messrs. Elletson, Market Gardeners, Thorngumbald, near Hull, begs to announce that he is prepared to send it out in sealed packets at 2s. 6d. each. This Broccoli has been raised by the Messrs. Elletsons, the raisers of the Mammoth, sent out some time ago, who state that the EMPEROR, if sown at the same time, will come into use before it. Is of very dwarf growth, perfectly hardy, with heads from 15 lbs. to 20 lbs. weight; keeps its colour, and stands firm three weeks after it is ready to cut. A noble flower and commands the best price of any other in the Hull market, where it is well known, and will be a great acquisition to the market gardeners around London, as well as those who wish for a first-rate Broccoli.

May be had of Messrs. NOBLE, COOPER, & BOLTON, 152, Fleet Street; and Messrs. HURST & M'MULLEN, 6, Leadenhall Street, London. Also of the Advertiser, 57, Queen Street, Hull.

THE BEST DESCRIPTIVE SEED LIST YET PUBLISHED IS THAT OF

RICHARD SMITH, NURSERYMAN and SEEDSMAN, Worcester, of whom it may be had GRATIS on application.

RICHARD SMITH'S SEED LIST for 1854 contains full particulars of his COLLECTIONS of GARDEN SEEDS.

		£.	s.	d.
No. 1	contains 20 QUARTS of the best garden PEAS for succession, with full quantities of EVERY OTHER VEGETABLE for a year's supply of a large garden, price	3	0	0
No. 2	a smaller collection of equally choice sorts ...	2	0	0
No. 3	do. do. in reduced quantities ...	1	0	0
No. 4	50 sorts of the SHOWIEST AND BEST FLOWER SEEDS, with descriptive labels to each, post free	0	10	0
No. 5	36 do. do. do. do. do.	0	7	6
No. 6	24 do. do. do. do. do.	0	5	0

Any alteration of equal value that may be wished in the sorts or quantities intended for these Collections will be willingly made by RICHARD SMITH, Nurseryman and Seedsman, Worcester.

CORN MARKET, WISBEACH, CAMBRIDGESHIRE.

CHARLES SHARPE begs to call the attention of the nobility, gentry, and trade to the undermentioned choice collection of SEED POTATOES, grown with great care upon marsh land near the sea, which is the most appropriate soil for the culture of the Potato, as it is less affected by the disease, and of finer quality. The undermentioned prices include hampers and package. Smaller quantities can be had if required. The Trade Price can be had on application.

POTATOES (FOR FORCING AND EARLY PLANTING).

Per bushel of 4 stones.		Per bushel of 4 stones.	
Early Ash-leaf Kidney ...	12s.	Early Flourball (Rylott's)	12s.
" " (Jackson's)	12s.	" Round Frame ...	12s.
" Emperor	12s.	" Cockney	12s.
" Fox's Seedling ...	10s.	" Oxford (very true)...	12s.

POTATOES (FOR SECOND PLANTING AND LATE CROP).

Per bushel of 4 stones.		Per bushel of 4 stones.	
American Native	10s.	Kentish Kidney	8s.
White Rough	8s.	White Kidney	8s.
Yorkshire Regent... ...	8s.	British Queen (this is the largest producer and best quality in cultivation) ...	12s.
Forty Fold	10s.		

SEEDS—CARRIAGE FREE.

WILLIAM E. RENDLE AND CO. *have, from the very extensive patronage they have received, been induced this season to offer the following liberal arrangement to all who purchase Seeds from their establishment.*

ALL ORDERS ABOVE £5 WILL BE DELIVERED CARRIAGE FREE TO ANY RAILWAY STATION IN ENGLAND OR WALES, AND TO ANY STEAM PORT IN ENGLAND, WALES, IRELAND, OR SCOTLAND.

Two or three purchasers joining together will therefore have the advantage of having their orders delivered free of any cost for carriage.

RENDLE'S PRICE CURRENT FOR 1854 should be obtained by all who have gardens, or who take an interest in the cultivation of the soil.

NEW SEEDS—GROWTH OF 1853.

RENDLE'S COLLECTION OF GARDEN SEEDS, FOR ONE YEAR, *will be sent out as usual by the Subscribers.*

The collections have given universal satisfaction, and they will be found sufficient to supply a garden during the whole of the 12 *months.*

	£	s.	d.
No. 1.—A complete Collection, to supply a large garden for 12 months, including 20 quarts of the newest and most approved Peas, for early, medium, and late crops; 10 quarts of Beans, and full quantities of all other kinds of vegetable seeds	3	0	0

For the detailed quantities contained in the No. 1 *Collection, see back page Gardeners' Chronicle, Jan.* 7, 1854.

No. 2.—A complete Collection, in reduced quantities, for a smaller garden	2	0	0
No. 3.—A complete Collection do.	1	5	0
No. 4.—A small and choice Collection	0	15	0

☞ *All orders above* 20s. *carriage free (see* PRICE CURRENT*), and all orders above* 5*l. delivered carriage free to every Railway Station in England and Wales, and to every Steam Port in England, Wales, Ireland, and Scotland.*

WILLIAM E. RENDLE & CO., Seed Merchants,
ESTABLISHED 1786. Plymouth.

The quantities contained in the above Collections will be found in our PRICE CURRENT AND GARDEN DIRECTORY, *just published.*

CHOICE SEEDS.

BASS AND BROWN'S SPRING CATALOGUE FOR 1854 is now in the Press. The Part containing the SEEDS can be forwarded immediately, on application, for two penny stamps.

PEAS, FINE NEW KINDS, of last and present year's introduction.

Fairbeard's Nonpareil, earlier than Champion of England, and fine rich flavour	5s.	0d.	per quart.
Waite's Daniel O'Rourke, very early	2	6	"
Sangster's New No. 1, 2½ ft., very early, prolific and fine pods	2	0	"
Stuart's Paradise, 4ft., a very fine large long-podded marrow, three weeks before Thurstone's Reliance, or other Peas of the same character	2	0	"
Hairs' Defiance, 4 ft., a fine new wrinkled marrow	2	0	"

The three last mentioned were grown last season by ourselves, and we can recommend each as an acquisition. Sangster's No. 1 *and Stuart's Paradise will be included in the collections below.*

BASS AND BROWN'S ASSORTED COLLECTIONS OF VEGETABLE SEEDS, comprising the best in cultivation, including several new sorts of excellent quality.

	£	s.	d.
No. 1.—Collection for a large garden, containing 20 quarts Peas, in 20 best sorts, and all other vegetable seeds in proportion, for one year's supply...	3	0	0
No. 2.—Collection in smaller proportions	2	0	0
No. 3.—Collection do. do.	1	5	0
No. 4.—Collection of good kinds for a small garden ...	0	15	0

Copies of the Autumn Catalogues may still be had for three penny stamps.

Goods (not under 20s.) carriage free to all stations in London.

Seed and Horticultural Establishment, Sudbury, Suffolk.

TO THE SEED TRADE.—As we are constantly receiving from Provincial Seedsmen applications for Wholesale Priced Lists of Seeds, and incur considerable inconvenience in replying to each individually, we beg respectfully to intimate that we grow Seeds *only for retailing, and do not profess to do the wholesale trade,* that being carried on by many highly respectable wholesale houses in London, Edinburgh, and Dublin.

JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

PRESENT PRICES OF AGRICULTURAL SEEDS.—*See* MESSRS. SUTTON'S DESCRIPTIVE LIST *on the last page of this day's* GARDENERS' CHRONICLE.

The Gardeners' Chronicle.

SATURDAY, JANUARY 28, 1854.

MEETINGS FOR THE ENSUING WEEK.

MONDAY, January	30	Institution of Actuaries	7 P.M.
TUESDAY, —	31	Civil Engineers	8 P.M.
WEDNESDAY, Feb.	1	Society of Arts	8 P.M.
		Geological	8 P.M.
THURSDAY, —	2	Photographic (Anniversary)	8 P.M.
		Antiquarian	8 P.M.
		Royal	8½ P.M.
FRIDAY, —	3	Botanical	8 P.M.
		Royal Institution	8½ P.M.
SATURDAY, —	4	Asiatic	2 P.M.
		Medical	8 P.M.

WHEN attempts are made to influence public journalists by anonymous correspondents, a suspicion is inevitably raised as to the motives of the writers. If, in addition, all the resources of ingenuity are put in action to destroy every trace of the authors, whose aim is to deprecate inquiry into abuses in the administration of public affairs, what was before optional becomes a duty, and a journalist is driven to deal with subjects which he might otherwise have passed in silence. Such is the case as regards ourselves and the WOODS and FORESTS. As soon as the last Report of the Commissioners appeared we announced its publication, and begged those who, by their position in society, are guardians of the public interest, to read it carefully. Forthwith some masked agent of the deputy-surveyors, painfully impressed, we presume, with a recollection of the exposure which these gentlemen and their abettors underwent in our columns

some months since, begs us to refrain from further notice of the subject, at least till something or other shall have been said or done in their behalf. Others follow in the same strain, and thus we are forced to the conclusion that the present game of the writers is delay, which we must decline to afford them any longer.

The Blue Book now before us contains the annual reports from Mr. GORE, in charge of the Land Revenues of the Crown in England and Wales, and from Mr. KENNEDY, to whom is assigned the management of the Land Revenues in Scotland and Ireland, and, in addition, all the Woods and Royal Forests. The first, consisting of 116 pages, calls for no remark at present; the second, filling 564 pages, is a document which demands very serious criticism. It has been evident, from the commencement of the proceedings before Lord DUNCAN'S Committee, that strenuous efforts would be made in certain quarters to screen the forest officers, and even to make the public believe that their miserable management was the best possible. To effect this object awkward circumstances were dexterously smoothed down; apologetic Reports were carefully prepared by the complaisant agents of the Treasury; where exposure was inevitable a bold face was put upon the matter, and the most discreditable principles of management were audaciously defended. Lord DUNCAN'S Committee having done little beyond collecting a mass of complicated evidence laid before Parliament in some huge blue books which it was well known that few would think of reading, the battle was supposed to have been won by the forest officers, who became triumphant. They evidently believed that no further reckoning would be demanded from the present generation. No wonder then that when a new Commissioner was placed over them long trained to public business, active, well informed in rural affairs, deeply sensible of the responsibility of his high office, and resolved to execute it without fear or favour, the forest officers and their friends should have flown to arms, and resolved to thwart by every device in their power the introduction of a system of official management which contrasted disagreeably with that to which they had been accustomed. To admit that the measures of the new Commissioner were right was to undo all that had been so adroitly accomplished, and to stultify themselves in the eyes of the country. The deputy-surveyors were resolved upon not becoming suicides.

It has therefore excited no surprise to find that they hold by their old customs, and that when active opposition was too dangerous they have tried the effects of the *vis inertiæ*. It has clearly been this on which they have relied, hoping, we suppose, that official patience would be exhausted, and that a public disease would be left to itself as soon as it was thought to be incurable. We now find the Commissioner officially reporting that the duties assigned to him by Parliament have been performed "amidst very many difficulties and *obstructions*." Difficulties and obstructions—we beg that the words may be remembered. This is a serious matter. It is officially declared that a great public officer is obstructed in his duty. Obstructed by whom? Let us endeavour to find an answer to so important an inquiry in the papers before us. They tell us, among many other things, that Mr. KENNEDY was till lately in charge of Hainault Forest. In January, 1853, while reporting largely upon it, he expressed his disapprobation of certain estimates of expenditure furnished by Messrs. CLUTTON and DRIVER, the Treasury advisers; refused to recommend such expense to be incurred, declared his conviction that the necessary works could be executed at a considerably smaller cost, and desired that the opinion of Mr. CAIRD or some other competent person should be taken. One would have thought that this was no more than what the commissioner was bound to do. But the hint that Messrs. CLUTTON and DRIVER were not infallible, and that Mr. CAIRD might offer advice more advantageous to the public, seems to have given mortal offence, and on the 24th March Mr. KENNEDY was superseded in the charge of Hainault by Mr. GORE. In the reformation of Chopwell woods there was another struggle, but with a different result; for the opinions of Mr. CLUTTON, upon whom the Lords of the Treasury rely, were disposed of in a masterly report by Mr. BROWN, whose judgment Mr. KENNEDY prefers, we think very naturally, and eventually the Treasury abandoned their ground, authorising Mr. BROWN'S more judicious recommendations to be carried out. This happened in February, 1853, just a month before the management of Hainault was taken out of Mr. KENNEDY'S hands; can we doubt that the result of Chopwell contributed to that act? Then there is Delamere, the deputy surveyor of which snapped his fingers at the commissioner, defied his orders, and so conducted himself as to render it necessary that he should be removed from his office. Not that he is actually removed; but his unfitness having been publicly declared it is evident that he must be speedily replaced, if his unseen supporters will permit it. In Bere the deputy surveyor has signified his inability to furnish what his forest ought to realise, within about 1150*l.*; and in Parkhurst the same surveyor can produce no more than 2*l.* 16*s.*! while Mr. BROWN estimates the place to be capable of yielding 313*l.* As to Dean, the people would neither fell their trees before they stripped them, nor cure their bark as they were directed.

We have no doubt that a little patient search would produce plenty more such difficulties and obstructions; we have, in fact, a few others noted down for future remark, and it is evident that the whole forest department is in such a state of insubordination as to call for interference from the highest advisers of the Crown. That the Commissioner will be supported by them we cannot for a moment doubt. In the meanwhile it is satisfactory to know that we have at last an officer in command who is resolved to exact obedience from even the most refractory, as is in some measure shown by the striking fact that the deputy surveyors are no longer allowed to return 6*d.* an acre into the public purse, but have been, in 1852-53, compelled to produce among them the net sum of 36,239*l.*, notwithstanding the inability of the gentleman in charge of the New Forest to furnish his quota by the amount of nearly 1600*l.* But to the management of this important property we must devote a separate article.

WE have received a printed circular from Mr. JNO. ANDERSON, an officer of Inland Revenue at Fermoy, in which he gives the results of his experience in raising Potatoes from the seed (properly so called), or, as he terms it, the "seed of the Apple produced on the top of the stalk." The paper is much too long for insertion; but since Mr. ANDERSON does not pretend that *his* seedlings are exempt from disease, although much improved, and as he appears to have a good deal of experience, we select a part of his statement for the consideration of our readers. The most novel point adverted to in the paper in question is, that every successive generation of Potatoes raised from seed is found to be fitted for the climate and circumstances in which it has been produced, becoming more and more naturalised to withstand every change and vicissitude peculiar to the situation in which it becomes thus naturalised. That all have a certain duration of life, according to their time of arriving at maturity, which is generally between four and eight years, the early and most vigorous first, and so on in regular order of their maturation; and that while any variety is arriving at and remains in full perfection, it may be cultivated from the tubers, and that particular kind preserved with advantage, and no longer. That period he finds to be much shorter in some varieties than many are led to believe, and hence the great mistake in propagating from tubers of varieties in their decline.

Is this true? Is the statement susceptible of direct proof? Has any one determined the point *experimentally?* Is Mr. ANDERSON'S assertion hypothesis, or is it theory? It will be observed that the whole question of extinction of races, about which so much has been written, is involved in the inquiry. If varieties of the Potato can be shown to have no power of retaining their vigour beyond seven or eight years, after which they sink into decrepitude, and finally die out, then we shall be justified in recognising the existence of a similar law in the case of fruit trees and other ligneous plants; and Mr. ANDREW KNIGHT'S theory will stand on a solid foundation.

Mr. ANDERSON rests his opinion upon his own long experience, and upon a report by the Board of Guardians of Fermoy. But the report to which he refers merely states that the committee of the board was peculiarly struck with the care and perseverance with which Mr. ANDERSON had carried his experiments to what they think great perfection in many varieties, and great promise in others not yet matured. They saw many valuable old varieties (supposed to be extinct) renewed, and a great number of new kinds, which appeared sound and healthy, and of considerable value.

This report, then, although speaking highly of the varieties which had been raised at Fermoy, does not touch the main question, namely, whether the varieties of Potato have any fixed period of existence; it merely says that valuable varieties have been raised from seed, which nobody doubts.

For ourselves, we confess our inability to reconcile Mr. ANDERSON'S statement with English experience. Thirty years ago, at least, the common market Potatoes were Ash-leaved Kidneys, Champions, Oxnobles. In what respect are these worse now than they then were? It is useless to appeal to disease as a proof of their wearing out; because in some districts Potatoes have never been diseased at all; and yet the age of a variety is the same in one district as in another. It is probable that some of our old experienced correspondents can throw light upon this curious question, to which we venture to invite their attention. What, for instance, is the ascertained age of the varieties of Potato now commonly grown; of the Shaws, for example, or the York Regent, or the Fluke?

It will be observed that these remarks are not offered in disparagement of Mr. ANDERSON'S varieties, of which the Fermoy guardians speak so well. Their quality can be verified by anybody, since he sells the seeds as well as the tubers. The only point to which we desire to draw attention is the assertion, founded upon long experience, that the duration of life in the varieties of Potato lies between four and eight years. Had this been given as a speculation, we should have thrown it upon the heap of Potato rubbish which the last eight years have engendered. But being asserted as a fact, by a respectable witness, it deserves to be seriously examined.

VEGETABLE PATHOLOGY.—No. IV.

3. *Uses of the Science.*—There is, however, beyond doubt, much immediate benefit to be derived from the subject of vegetable pathology. Prevention is at all times more important than the cure of maladies already established, and the person who from mere ignorance would throw doubt on the labour of the vegetable pathologist is the very person who is loudest in his outcries against the theory of horticulture. The two sciences, in fact, go hand in hand, or rather the one is merely an extension of the other. The very principles which form the base of the one are the foundation of the other; and if the aphorisms which appear in our most approved treatise on the true theory of horticulture were verbally reproduced here, excepting as regards such points only as have been illustrated by new observations or experience since its appearance, they would supply a very considerable portion of what is demanded by a series of memoirs like that which we have undertaken. To keep a plant in perfect health, it is not only necessary to know what its healthy condition is, and on what such condition depends, but also to be able to estimate properly what may prevent or cause disease. And the case is not to be judged by the failures of mere theorists, or by the success which often attends just sense when accompanied by tact, which is in fact but an expression for an intuitive perception of what just theory would suggest, but by a comparison of the results which are obtained where information and practical skill go hand in one. The mere theorist assents at once to the enunciation of some undoubted verity, but applies it ignorantly, and where particular circumstances render it unsuitable; and consequently not only fails of the object in view, but induces diseases by improper treatment. Under such direction, go where you will over an establishment, and, in spite of the most restless activity and earnestness, there is failure everywhere; the Grapes are shanked or mildewed, the Melon-pits unfruitful or full of corruption, the Asparagus wiry, the fruit trees mossy and unproductive, and nothing ready at the time when it is most wanted and expected. And in such cases every remedy which is applied to prevent evil is sure to aggravate it, because it is improperly employed; mere chance, indeed, or empiricism, will often lead to better results, because there is a possibility of their being right, exactly as the mere novice at billiards will make more chance hazards than one who has some particular end in his play, without the necessary skill or science. It is sound knowledge which can alone enable the cultivator to grapple effectually with the difficulties which wait upon him at every turn—which can appreciate important facts when they come before him, and turn them to account. It is sound knowledge, too, which alone possesses the patience which is necessary to the complete investigation of phenomena, in order to their effective control. An apposite instance is afforded by the history of the Grape mildew, which is only second in importance to that fatal murrain which has produced effects on society which could never have been imagined when it first made its appearance. From local circumstances great facilities existed at the spot where the Grape mildew was first observed, for the proper direction of talent in whatever condition of life it might exist. It so happened that a clergyman deeply imbued with the love of natural history and science, though with no pretensions as an author, perceived the good that might be effected in the place by bringing under the control of religion the talent which he perceived existed in no ordinary degree amongst his parishioners. He was seconded in his views by persons of weight and influence either from their position or abilities, and in consequence a most flourishing literary and scientific institution was established, with the greatest desire on every side to promote inquiry even in persons of the humblest station. One of the fruits of the impression thus made was the production of a statistical account of the place, comprising more especially a review of its sanitary condition, which has obtained a circulation far beyond any local interest, though from the pen of a mere dispenser of the produce of what the Euphuist called "the milky mothers of the herd." It was in this particular locality the Grape mildew first appeared, and as soon as its calamitous nature was ascertained, a gardener in a comparatively small establishment was ready

to apply his native talents improved by the local culture just mentioned to the important subject. He began by a microscopical examination, in which he found very ready and competent assistance, and he did not desist from the study till he had discovered an effectual remedy, and in consequence his name, though that of a humble labourer, is now in every one's mouth wherever the scourge has passed. And there is not a doubt that much is to be effected by the talented and industrious cultivator in the same way, and that even where there is no encouragement on the part of the employer, but where every deviation from the accustomed routine is regarded with suspicion, as the writer of these remarks can bear witness. The subject was illustrated before by that extraordinary and destructive malady which has marched through the breadth and length of the world, carrying desolation everywhere. It will not, however, be out of place to say a few words in reference to the experience of that disease in the particular spot of which we have been speaking, because it has a close bearing on the end which is contemplated by these prefatory remarks. Its ravages in the years 1832 and 1833 were very severe, and, as in other places, the attempts at cure were at first vague and unsatisfactory. It was determined, however, by one of the resident practitioners to study the matter deeply, and more especially the phenomena exhibited by blood under the influence of oxygen and carbonic acid. Some important additions to the knowledge of the physiology of circulation were made in consequence, and recorded at the time, which were much appreciated in France and Germany,* though but little noticed at home. One singular circumstance was elicited, namely, that blood once blackened by the presence of carbonic acid, resumed for a single time, when highly impregnated by saline matter, a most vivid arterial tint on the passage of a stream of oxygen through it, but when this scarlet hue was dispersed by a new stream of carbonic acid it was utterly incapable of again becoming arterial. This curious circumstance led to a consideration of the proper limits within which transfusion of saline matters into the circulation of persons labouring under cholera should take place, and this combined with other remedial measures was attended by the most happy results, and was confirmed on the reappearance of cholera in 1848, and in many insulated cases between the two principal periods of visitation. The application to the subject before us is easy enough, and without further preface or apology we shall pass on to the exposition of such principles as it is necessary to lay down before treating of different forms of disease. *M. J. B.*

PELARGONIUM TRICOLOR.

The well contrasted and vivid colours of the blossoms of this plant, together with their lasting a long time in perfection, render it extremely useful for all decorative purposes. Indeed, when seen in the form of a well grown specimen, and thickly covered with numerous trusses of charming flowers, few plants with which I am acquainted are more attractive or striking.

In commencing its cultivation be sure you select a vigorous healthy plant, carefully avoiding such as are at all leggy or sickly. Place it in growing circumstances early in March, for it is not a plant of rapid growth, and unless it has a long growing season a large specimen will not soon be obtained. Before starting it examine the state of the roots, clearing away all sodden or unkind soil, and thoroughly repair the drainage, repotting in the same sized pot, or giving a small shift according to circumstances. The best situation for it at first is a light airy place near the glass, where the night temperature may average about 55°, allowing it to rise some 10° during the day with sunshine and air; keep the atmosphere moderately moist and sprinkle the plants overhead with the syringe on the mornings and afternoons of fine days, but apply water to the soil with caution until free growth has been induced. If a bushy specimen has been secured at first little trouble will be required to maintain a compact habit of growth, but if the plant is at all leggy, it will be necessary to pinch out the points of the shoots. After pinching, the plant should be allowed to break and get into free growth before shifting, otherwise defer that operation until the roots have taken to the fresh soil, for the plant is somewhat apt to die off suddenly, and there may be considerable risk in cutting back the shoots and repotting at the same time. As the shoots advance in growth keep them tied or pegged out in a regular manner, removing all trusses of flowers as they appear, and pinching out the points of the shoots as may be necessary to secure well formed specimens. It will, however, be found that the habit of the plant when in good health, and not kept in too warm a place, is such that very little stopping will be required to keep the specimens bushy.

When the weather becomes warm in spring, so as to allow of freely exposing the plant to light and air, the night temperature may be increased to about 60°, but it should not exceed this at any season; and when the weather will admit a slight circulation of air should be allowed during night. The plants should occupy a position in a cold pit or frame in summer, and be slightly shaded from the direct rays of the sun on very bright warm days, permitting a free circulation of air, and maintaining as moist an atmosphere as can conveniently be done. Have an eye to the state of the roots, and as soon as it may be necessary to afford these space shift into a pot about two sizes larger if early in summer; but if after the middle of June be contented with a smaller shift. Be particular to have the ball and soil in a moist but not wet state when the shifting is performed, and apply water with great caution until the roots get hold of the fresh soil, for this plant is very easily injured by excess of moisture at the root. During fine warm weather the lights may be left off at night, for the plants will be greatly benefited by exposure to the night dews. Discontinue shading and syringing over-head as soon as the heat of summer is over, and after this aim at securing slow growth and getting the wood properly ripened before winter, giving a freer circulation of air, and keeping the atmosphere cooler. When cold damp weather occurs, remove the plants to their winter quarters, which should be a light situation near the glass, in the warm end of the greenhouse, where they will be out of the way of cold draughts, which are apt to turn the foliage foxy. While in a state of rest, water must be very cautiously applied to the soil, giving a good soaking when it is wanted, and carefully avoiding frequent surface waterings. It will be necessary to grow the plants a second season, if large specimens are desired, in the shortest possible time, and in this case they may be treated the second season as they were last, taking care to stop or cut back the shoots sufficiently in spring, to ensure compact close growth. Specimens intended for blooming should be allowed to remain in the greenhouse until they come into flower, when they may be removed to the conservatory, or any cool situation, where they will bloom profusely from the middle of April to the end of June, or longer, if they are slightly shaded. After their beauty is over, remove them to a close part of the greenhouse, or to a cold pit or frame, cutting back any shoot, as may be necessary to ensure compact growth, and give a moderate shift if the pots are full of healthy roots. Syringe over-head on the mornings and afternoons of fine days, to encourage free growth.

Cuttings of the half ripe shoots root with care and attention, but not so freely as those of many plants. Insert them in sandy peat soil, covering them with a bell glass, and place them for a month in a shady situation in the same temperature in which they have been growing, guarding them carefully from damp, then plunge in a gentle bottom-heat of about 70°, where they will soon emit roots. Good turfy peat, and sandy turfy loam in the proportion of two of the former to one of the latter, liberally intermixed with sharp silver sand and clean small potsherds, will ensure the free percolation of water through the mass, after the decay of the fibre. Use plenty of potsherds in the bottom of the pot, so as to ensure perfect drainage. *Alpha.*

Home Correspondence.

Plough v. Spade.—In your Leading Article of the 21st you seem to think Mr. Gisborne unjust towards the Lois Weedon system of cultivation, inasmuch as he treats it as a revival of Jethro Tull's plan, without taking into account Mr. Smith's improvements, one of which is the use of the fork or spade instead of the plough. But would Mr. Gisborne have considered this an improvement? In the very page from which you make extracts he seems to speak disrespectfully of the spade. Even in what is considered garden work, such as the cultivation of Potatoes, he calls the plough the more efficient implement. This preference of the plough to the spade, on the part of a practical as well as clever man, seems to deserve consideration, particularly at a time when the good old toast of "Speed the plough" is giving way to the cry of "Supersede the plough." You may perhaps remember that Mr. Pusey expresses something like a similar preference, in speaking of the cultivation of Wheat, in the Agricultural Journal, vol xii. p. 590. *Sinope, Jan.* 24.

Rain at Rocklands, in the valley of the Wye, near Ross, in 1853:—

	Inches.		Inches.
January	3.81	August	2.55
February	0.86	September	2.07
March	0.89	October	3.90
April	1.80	November	2.05
May	3.08	December	0.95
June	3.55		
July	4.68		30.19

The rain gauge is 8 inches in diameter. *Rocklands, Jan.* 6.

Rain at Witham, Essex in 1853.—

	Inches.		Inches.
January	2.12	August	2.42
February	1.61	September	1.74
March	0.55	October	4.46
April	2.00	November	1.46
May	1.66	December	0.61
June	2.21		
July	5.36		26.20

Henry Dixon, Dorwards Hall, Witham, Jan 9.

Effect of Tight Ligatures.—Four years ago I planted some Peach and Nectarine trees some feet in advance of a south wall, with a view to erect glass over them at my convenience, which is now done. For the last two years they have been under hotbed frames. In the spring of 1852 I found that one of the Peaches was too erect, I therefore tied two single pieces of tar band round the main stem, within a few inches of the point where the branches begin to spread, fastening them down tightly to a stake in the ground, and thus brought the tree to a proper slope. On pruning it a day or two ago, I observed that the band had become completely imbedded in the tree; the bark appears to have grown over both places where the string was tied, with the exception of what I may term the skin, and instead of this there at present appears a rim of gum round the tree in each place; its growth has been rapid, otherwise what I have stated could not have taken place, and it is looking in perfect health; a gardener of experience, however, is under the impression that the tree will eventually be materially injured, if not almost destroyed by this occurrence. I shall be greatly obliged if you will give me your opinion on the subject. *S. B., Jan.* 24. [The gardener is right.]

New British Plant.—A specimen of Ophioglossum lusitanicum has been sent me from Guernsey, having been found growing wild in a meadow in that island. *J. Smith, Royal Gardens, Kew, Jan.* 24.

Anatomy of Thalia.—Can you give me any information with respect to the structure of the leaf-stalk in Thalia, in which there seems to me to be something unusual. The leaf-stalk of this plant contains a number of long air canals disposed in a regular manner, and, one of which is much larger in diameter than the others, but all have at intervals horizontal septa made up of stellate cells between which there are large intercellular spaces. Passing vertically through the air canals, and quite distinct from the walls of these cavities, are a number of delicate fibres quite visible to the naked eye, and which appear to pass through the intercellular spaces, and have sometimes an attachment to the sides of the cells. These fibres under the microscope have, as far as I have seen, no very distinct structure. They may be seen as well in dried specimens of this genus as in fresh, but in Canna, Maranta, Hedychium, Strelitzia, and other similar plants which I have examined for the purpose, I can detect none of these thread-like bodies. If you could kindly tell me where I could find an account of this, to me, unusual structure, you would greatly oblige. *Maxwell T. Masters, Fielding Herbarium, Oxford.* [The structure is as you describe it, and very curious. We do not recollect any published account of it. The fibres are bundles of woody tissue, and are here and there distinctly tubercled.]

The Deodar.—The accounts which you have published of the durability of the wood of the Deodar are certainly conclusive as to its merits in India; I do not think that we ought, therefore, at all to expect that it will be valuable when grown in England. The wood of the Cedar of Lebanon grown in England is always said to be of small value, yet I believe the wood of the old trees on Mount Lebanon to be as durable as that of the Deodar in India. The pieces which I possess have every appearance of being so, and I do not remember seeing any signs of decay even in the most broken and shattered of the old trunks. I believe, also, that the wood which Mr. Layard brought from Nineveh is the wood of a Cedar, which would probably be the Cedar of Lebanon, or a variety much more closely allied to that than to the variety of the Himalaya mountains, which we call the Deodar. If this be so, as I believe it to be, it would not be wise to plant the Deodar extensively in England, under the supposition that it is to turn out a valuable timber tree here. *C. W. Strickland.* [We should much like to see a specimen of Cedar of Lebanon wood, from Mount Lebanon itself.]

Underground Drains for Plant Houses.—I beg to add my testimony to the advantages of underground drains for admitting air constantly to plants, especially in such weather as we have lately had, when other means of aëration must have been but limited. The plan adopted here is different from that at Drayton Manor; one large pipe is laid 3 feet deep, beginning at 90 feet from the front flues; it is carried to within 15 feet of the intended openings in the house, where three small pipes are cemented with their ends inside the larger one, one giving air in the middle of the house, the two others at equal distances on either side. It was inconvenient to bring the drain in front of the house, consequently it begins at the back, and is carried under the floor of the potting-shed and the house itself to the front flues. Besides the advantage of furnishing air at all times, the drains materially assist in keeping out frost; taking for instance, the morning of Jan. 3, when the thermometer was at 4°, I firmly believe that the plants would have been frozen, had it not been for the air admitted at the temperature of the earth three feet deep. I should prefer the plan employed at Drayton Manor, where the drains are in front and each drain entire throughout. The late Mr. Milne (once gardener at Drayton), told me that the drains exceeded his most sanguine expectations, as indeed the health of his plants abundantly testified. I should mention that the heating apparatus in the house above alluded to is very small—quite insufficient for such extreme cold as that on the night of Jan. 2. On stopping the drains on cold nights, the temperature of the house has been lower than on similar nights when the drains have been open, the external temperature in both cases being the same. *T. Dowell, Amington Hall.*

Winter Cucumbers.—Since Mr. James, gardener at Pontypool Park, has considered it worth while to state (see p. 38) that a 34 feet house with 18 plants in it has produced him 151 Cucumbers, from the 7th October to the 18th January, it may perhaps not be uninteresting to know that at Chatsworth 280 have been cut from the same number of plants between the 11th of November and the 24th of January, and they have had but little attendance. *Thomas Bland, Chatsworth.*

Water in Food.—The observation in your columns of the 14th inst., that "it is quite a mistake that to boil a pound of rice in a gallon of water creates a gallon, or whatever a gallon weighs, of food—there is just a pound of nutriment, and no more, though a hogshead of water were used," though strictly true, it is much to be feared may have a mischievous tendency; it may deter many from the adoption of economical cookery. The lower orders of

* Hoffmann in London Medical Journ., May, 1833. Annales des Sciences Naturelles, Ser. 2, vol. i. p. 315, and the memoir of Gustave Magnus, in vol. 8, p. 79, of the same journal.

the people are little aware of the great proportion of water that is contained in the ordinary articles of their food, so that it may be useful to instance how much water is in bread, butchers' meat, and Potatoes. One lb. of flour made 1 lb. 6 oz. of bread,—these additional 6 oz. could be nothing but water; 1 lb. and 1 oz. of fresh beef weighed no more than 10 oz. when boiled—it therefore must have contained nearly 7 oz. of water, besides that which still remained in it after boiling; the same weight of salted beef lost but 3 oz. in boiling, though in the Royal Navy the loss of weight allowed is exactly half of that put into the copper. Potatoes contain about four-fifths of their weight of water. But it is not merely the water contained in cooked aliments themselves that can suffice for wholesome digestion of them; hence the agricultural labourer drinks a considerable quantity of water, either the pure element or in the shape of weak tea, weak beer, or weak cider, especially if his diet be the so frequent one of bread and a shaving of cheese to give it relish. True the quantity of water remaining in aliments may be too great for the due support of man, as is practically seen in those poor-houses where water-gruel enters largely into the dietary of paupers; and no one would consider rice water to afford sufficient nourishment, though rice made to absorb as much water as it will do without breaking down the grain, forms the chief nutriment of thousands in the east. But there is another consideration which influences cookery, especially that called economical: it is that of late years scientific investigations have demonstrated that many different properties are essential in the food of man; there must be the materials requisite for the formation of flesh, of fat, of bones, &c. Now economical cookery provides these requisites for the poor man, as a luxurious kitchen does it for the rich. It is noticed above that boiled fresh beef contains nearly 7 oz. of water: this implied that water was not the only element given out by the beef; that other element was the basis of a nourishing soup, and in economical cookery the whole is made available, whether the produce be a soup or a stew. It would seem that at the present relative prices of butchers' meat, grain, and sugar, the latter should enter more largely than is customary into the composition of cheap food. Sugar seems to be particularly fattening: it was 60 years ago remarked that negroes on a sugar plantation always became plump, healthy, and fat at times of harvesting the crop, when they luxuriated in sucking the sugar-cane; also that ruffs and rees when put up to fatten had usually a large quantity of sugar mixed with their food; but experiments made in consequence were amongst the first proofs that different properties are requisite in the substances destined for alimentation; some ruffs and rees were fed exclusively on sugar; these birds were all of them literally starved to death. From this it may be concluded that although sugar might advantageously be used in cheap cookery, still it should not be to the exclusion of other constituents of flesh, fat, and bone. Indeed it would be found on investigation that a variety of constituents does actually enter into the food which at first sight seems to be the simplest; and a due mixture of these constituents should be a chief aim in all receipts for cookery for the humbler classes. This in a great degree really has been effected in Scotch, as it is in French cookery; and it may be hoped that science will combine with benevolence to point out means by which the English cottager may be as well fed as his continental neighbours, and at as little cost. *B.*

Orchard House.—"W. C. E.'s" definition of an "orchard house" (see p. 23), viz., "a house for the cultivation of miniature fruit trees in pots," is, I think, an incorrect one. It is certainly a house for the cultivation of fruit trees, but it is surely not imperative that they should either be miniature trees or in pots; if so, I for one would join him in condemning orchard houses. *J. Stevenson, Lambton Castle.*

Foreign Correspondence.

LEAVES FROM MY CHINESE NOTE BOOK, No. IV.—*Spring Flowers in the North of China.*—In the north of China there are a number of plants which have their flower-buds very prominently developed in autumn, so much so that they are ready to burst into bloom before the winter has quite passed by, or, at all events, on the first dawn of spring. Amongst these Jasminum nudiflorum occupies a prominent position. Its yellow blossoms, which it produces in great abundance, may be seen not unfrequently peeping out from amongst the snow, and reminds the stranger in these remote regions of the beautiful Primroses and Cowslips which grow on the shaded banks of his own land. Nearly as early as this, the pretty daisy-like Spiræa prunifolia, the yellow Forsythia viridissima, the lilac Daphne Fortunei, and the pink Judas tree, become covered with blossoms, and make our northern Chinese gardens extremely gay. There are also some good Camellias which flower at this time, but they are generally grown in pots under such shelter as mat sheds and other buildings of a like kind can afford. The double blossomed Peach, of which there are three very distinct varieties now in England, are perhaps the gayest of all things which flower in early spring. Fancy, if you can, trees fully as large as our Almond, literally loaded with rich coloured blossoms, nearly as large and double as Roses, and you will have some idea of the effect produced by these fine trees in this part of the world. On the south-west side of Shanghae there are numerous Peach gardens studded over the country. These are well worth a visit in the month of April, as the trees are then in full bloom, and have a charming effect upon the landscape. It is in this part of the country where the celebrated Shanghae Peach is largely cultivated. On the graves, which are here scattered over all the fields and appear like huge mounds of earth, I observed many pretty Violets in flower, both white and purple, but all nearly scentless. A little later in the season, that is from the 20th April to the beginning of May, another race of flowering shrubs and herbaceous plants succeed those I have already named. The most conspicuous amongst them are Viburnum macrocephalum and dilatatum, with their large heads of snow-white flowers; Spiræa Reevesiana, and the double variety, which is more beautiful than the original species; Weigela rosea, now well known in Europe; Moutans of various hues of colour; Azaleas, particularly the lovely little "Amœna;" Kerria japonica, the lilac and white Glycines, Roses, Dielytra spectabilis, and Primula cortusoides. It will easily be believed that with such a host of Flora's beauties these Chinese gardens must be gay indeed. But perhaps the most beautiful sight of all is the Glycine sinensis, climbing upon and hanging down from other trees. I believe I noticed in my former "Notes" the fine effects produced by this climber when in such situations. I have again observed numerous examples this spring and cannot help drawing attention once more to the subject. The fine plant of this species upon the Chiswick garden wall is much and justly admired, but if you will imagine a plant equally large, or in some instances much larger, attaching itself to a tree, or even a group of trees, entwining itself round the stems, running up every branch, and weighing down every branchlet; and, in the end of April, or beginning of May, covered with flowers, some faint idea may be formed of the fine effects produced by the Glycine in its native country. I believe it would not succeed if managed in this way near London, or anywhere in the north, but the experiment would be worth a trial in some parts of Europe, where the summers are warmer than they are in England. As I know you have many readers in the United States of America who are as fond of their parks and gardens as we are of ours, I cannot do better than recommend the experiment to them. Many of our northern Chinese plants succeed admirably in America.* China and America are both situated on the eastern side of large continents, they are equally liable to extremes of heat and cold, and consequently the shrubs and trees of one country are almost certain to succeed as well in the other, provided they are reared in the same latitudes, and grown in the same kind of soil. *R. F.*

Societies.

LINNEAN, *Jan.* 17.—R. BROWN, Esq., V. P., in the chair. J. Disney, Esq., F. W. Headland, Esq., G. H. K. Thwaites, Esq., and Rev. J. G. Wood, were elected Fellows. Mr. S. Stevens exhibited a series of dried specimens, accompanied by notes on their properties and uses, of barks, woods, &c., of economic and medicinal plants, collected at Santarem, on the river Amazon, by Mr. H. W. Bates. Among these was the *Cupa-ubu*, the Copaifera; the heart of this tree yields the balsam, as much as five gallons sometimes flowing from a single tree; sometimes a tree overcharged will burst spontaneously with a loud report, and the same also occurs with the India Rubber tree. Another was the Urtiga branca, an arborescent Nettle, a decoction of the root of which is an effective remedy in bloody flux; but the specimens were for the most part noticed only under their native names. The following papers were read:—1. Note on the Introduction of Anacharis alsinastrum, Bab., into Ireland, being an extract from a letter addressed to T. Yates, Esq., by Mr. D. Moore, of Glasnevin. The plant appears to have been first noticed about 1842, in the garden of M. D'Olier, Esq., of Booterstown, near Dublin, and to be at present confined to a few gardens in the neighbourhood of the Irish capital. 2. Extracts from a Letter addressed to Dr. Berthold Seeman, by Dr. Vogel, dated Murzuk, on the Botany of the region between that place and Tripoli. In the great valleys at about 30° N. lat., through which Dr. Vogel passed, the whole vegetation, with the exception of a Ruta, was dried up; withered Grasses, Wormwoods, and Thyme, being met with in abundance. Southwards the country became still more naked until, about Fezzan, nearly every vestige of wild plants had disappeared, save a shrubby Tamarix, and a spinose Papilionacea, called Agùl by the Arabs, and used as fodder for the camels. In the gardens about Murzuk, several kinds of grain and culinary plants are cultivated by sowing the seeds in a layer of a couple of inches thick of decomposed manure, with which the hard saline soil is covered. During winter, Barley and Wheat are grown; in summer, Gosub and Gafuli, the two latter furnishing the chief food of the inhabitants of the Sahara. Specimens of these have been sent by Dr. Vogel for the determination of their botanical names. The Gafuli mosri, so often mentioned by African travellers, is the Indian Corn. In this part of the world, so little return is obtained from the agricultural crops, that the inhabitants surround each spike of the Gosub and Gafuli, with a neatly-made basket, to prevent the attacks of wild pigeons. The finest among the trees is a Cornus, called Kurno by the Arabs, which attains 80 feet in height, and a diameter of 3 feet. The Gum Acacia adorns the stony sides of the valleys of the Wadi Schergi and Cherbi. The principal bulk of the gum is brought by the Tuariks, and seems to grow between Dgerma and Ghat. The Senna of commerce was collected near Dgerma, west of Murzuk, under Date Palms, and is found in enormous masses in Abir, but the leaves are now gathered in very small quantities, on account of their trifling commercial value. Peganum Harmala, called Harmal, is a prominent plant, and celebrated as a preventive against ophthalmia. Every Arab swallows in the spring about a dozen of the immature seed-vessels, with the belief that this will exempt him from all diseases of the eye. The Colocynth is also common; its fruit is used against urinal and venereal complaints; Ricinus communis is very common about Tripoli, and the oil might become an article of export. The Date Palm is much cultivated about Fezzan, all Fezzen, and half of Tripolitania living upon it; every door and post is made of its wood, and the fruits are the food of man and beast. Some idea of the enormous number of Date Palms growing here may be formed from the fact that in 1829 when Abdel Gelil besieged Sokua, he cut down during seven days, 43,000 trees, yet there are still 70,000 to be found; 100 full grown trees yield about 40 cwt. of Dates. When the heart of the leaves has been cut out, a sweet thickish fluid collects in the cavity called Laghi, which is very refreshing and slightly purgative; in a few days this fluid ferments and becomes acid and intoxicating. In Tripoli there are cultivated the following fruits:—Oranges, Lemons, Pistacias, Pomegranates, Figs, St. John's Bread, Mulberries, Peaches, Apricots, Almonds, Olives, Opuntias, and Grapes in abundance; Apples and Pears are plentiful, but of poor flavour; Melons and Water-Melons arrive at great perfection, the latter weighing 150 lbs. Potatoes succeed in Tripoli, and are large and fine flavoured. Of the above fruits the following extend as far south as Murzuk (lat. 25° 55′); namely, Pomegranates, Figs, Peaches, Almonds, and Grapes. The Vine succeeds well on the shores of the Natron Lakes of Fezzan, its branches climbing over Pomegranates and Fig trees.* Oranges, Lemons, Pistacias, and St. John's Bread do not go further than the Targona mountains. The Olive tree is not found beyond Benoulin, on the southern slope of the Targona. The Mulberry extends as far south as Sokua (29° 4′); the Apricot as far as Sebba (27° 3′). The Vine is said to grow wild in Tripolitania, but that statement Dr. Vogel considered incorrect, as he had never seen it, except in a cultivated condition. 3. Observations on the genus Oxycladus, by John Miers, Esq. The object of the author was to answer the objections raised on a former occasion by Dr. Seeman, against placing this genus in Bignoniaceæ, and to point out the features which he considered to establish its affinity with that order, rather than with the Myoporaceæ, to which group Dr. Seeman refers it. In Oxycladus it was stated that the branches and rudimentary leaves are distinctly opposite; the flowers present a fifth sterile stamen; the anther cells are distinct and widely divaricated upon a large fleshy connection; the ovary is seated on a five-lobed fleshy disk, and is completely two-celled, with about six ovules in each cell, suspended and attached by a ventral thread to a distinct flat dissepiment, and arranged in three superimposed pairs on its opposite faces; the ovules all but one become abortive, so that the fruit is one-celled and monospermous. In all these characters the plant does not agree with Myoporaceæ. The want of wings to the seeds occurs, moreover, in other Bignoniaceous plants besides Oxycladus, as in the genus Spathodea. In Oxycladus, too, the seeds are exalbuminous, in which they also differ from Myoporaceæ. "After the comparison of these several features," Mr. Miers concludes, "I confess I cannot perceive the existence of any marked affinity between Oxycladus and any genus of Myoporaceæ, and therefore see no reason to alter the conclusion at which I formerly arrived, that this genus, although deviating from the usual form of its fruit and seed, bears in every essential respect all the characteristic features of a member of the Bignoniaceous family."

Notices of Books.

A Guide to Geology, by John Phillips, F.R.S. Fourth Edition, 12mo, pp. 211 (Longmans).—This is perhaps the best work we have on the elementary principles and fundamental facts of geology. Coming from the successor of Dr. Buckland at Oxford it would carry with it authority, even had the author's reputation been less than it is. But it is no disparagement to other geologists to say that Mr. Phillips stands in the foremost rank of British science—*Princeps inter principes*; and we feel grateful to such a man for occupying himself as he does in this instance with an exposition of the alphabet of his science. We congratulate our Oxford friends upon the possession of a text book so eminently suited to sustain the reputation of the school which Buckland founded. The illustrations, although without pretension, are capital diagrams for the purpose of teaching. What Mr. Phillips says upon the progress of geological science will show the reader what he may expect from the little book itself.

"It is obvious that for the right and full understanding of the phenomena which come before a geologist, he must often refer to the established results of other branches of physical science. Mineralogy must be his guide in ascertaining the ingredients of rocks; chemistry must teach him their ultimate constitution; he must apply to botany and zoology for the examination of extinct plants and animals; and to astronomy and general physics for correct general data within which to confine his inferences. How clearly does this show us the reason why the universally occurring facts concerning the structure of the globe have only within a few years been submitted to any regular investigation, or reduced to general truths! Generalisation in geology can only be based upon the established results of other more limited natural sciences. Every discovery of laws in chemistry and zoology widens the foundation of rational geology; and so long as men adhere to the method of philosophy taught by Bacon, geology can never again be lost in vain speculations, never again be an arena for discussing delusive hypotheses and unsubstantial conjecture.

"Geology, whether regarded as a history of the early physical revolutions of the earth, or as the science by which this history has been in some degree recovered, has really no other foundation than exact observation and careful induction. It would, therefore, be not a harsh sentence to refuse this title to the mass of mere opinions and conjectures which for some hundred years before the nineteenth century were pompously designated Theories of the Earth. With much better right may the title of geologists be conceded to Strabo and

* See an account of Spiræa prunifolia pleno, and Forsythia viridissima, by Mr. Saul.

* A combination, it was observed, which occurs on the Nineveh sculptures.

the old philosophers who studied the local phenomena of their countries and proposed limited hypotheses, in agreement with their notion of the laws of nature, than to Burnet and Buffon, whose systems of cosmogony have the air of a philosophical romance rather than of a serious generalisation of facts. The history of the progress of opinions in geology may be useful as a warning to men advanced in geological inquiries, not to reason upon assumptions while facts remain to be explored, and to repress that impatience of spirit which ever seeks to anticipate observation by the efforts of invention; but the student should, if possible, be kept in impartial ignorance of these conflicting hypotheses, which are too apt to fascinate the young and imaginative mind. For this reason we shall pass silently over the whole subject of the history of theoretical or rather hypothetical geology, and shall proceed to record those positive facts and limited inferences which are the real discoveries in the science."

Sunlight through the Mist (Murray) is a book for young people to amuse themselves with on Sundays. The authoress states that her object is to interest children, and at the same time to teach them lessons of piety and wisdom by showing them the result of religious principle on the lives of others. To us it appears that the attempt is likely to be perfectly successful.

The Symmetry of Vegetation by Prof. Lindley (Chapman and Hall) is a sketch of the principles to be borne in mind in representing plants, whether pictorially or conventionally. It is the substance of three lectures given in 1852 to the students of practical art at Marlborough House.

New Plants.

40. Pinus Royleana. *Jameson.*

Although the seeds, cones, and a few loose leaves of this plant are all that have as yet reached Europe, there is no doubt that it forms a species previously quite unknown. The leaves are like those of the Scotch Fir in almost all particulars, except that they are much more slender and short; and the cones, of the size of Pinus sylvestris, have an entirely different form, are smooth as if they had been half polished, and their scales are flat-headed, with a fine, hard, sharp mucro, very distinctly hooked back. All that is known of its history is that the fragments above alluded to were received at the India House in 1853, from Dr. Jamieson, as belonging to a noble tree, growing in Nepal at an altitude of 8—10,000 feet, and therefore perfectly hardy. From the seeds a very few plants have been raised in the Garden, where they prove to be, in their seedling state, quite different from any species previously raised there. It certainly is new to our collections. Previously we had no Pine from India with only two leaves in a sheath, and very small cones. *Journal of Hort. Society; Vol. IX., with a figure of the cone.*

41. Pitcairnia nubigena, *Planchon and Linden.*

A very fine species with broad strongly ribbed perfectly green leaves, and beautiful thyrses of deep rose-coloured flowers. It inhabits the cloud-compelling summits of the Columbian Alps at the height of 8000 or 9000 feet above the sea on the *Paramo de los Conejos*, whose crests, occasionally covered with snow, overhang the boundless virgin forests that extend down to the lake of Maracaybo. There it was discovered by Mr. Linden's collectors, Funck and Schlim, in 1847. *Flore des Serres*, 847.

Garden Memoranda.

Mrs. Lawrence's, Ealing Park.—It may be interesting to know even thus early in the season that the magnificent collection of plants for which this establishment is so justly celebrated is at the present time in most excellent condition, and that the Metropolitan exhibition tents may be expected to be furnished with even, if possible, finer examples of skilful cultivation from this establishment this year than they were last. In a small stove were Rondeletia speciosa, Cyrtoceras reflexum, Franciscea, and Ixoras, plunged in tan to start them into growth. The tan has hitherto been placed immediately on the top of a heated chamber, but in future Mr. May intends introducing about 6 inches in depth of coal-ashes below the tan, with a view to keep it moist, as wherever it comes in contact with the warm surface of the chamber it is found to get much too dry to be of service to the plants. A greenhouse adjoining this stove has just been painted and reglazed with long panes, which admit considerably more light than the old roof did, and the plants being now placed under more favourable circumstances have become in consequence greatly improved in condition. Among others we remarked five most excellent specimens of Boronia serrulata, measuring nearly 3 feet through and as much high, with not a brown point or leaf on them. Some idea of the rate at which these plants have grown will be conceived from the fact that three years ago they were only in 6-inch pots. The soil used for them is a mixture of peat and sand. Some Pimeleas which were in 3-inch pots this time last year are now about 18 inches in height, proportionally wide, and covered with flower buds.

In an intermediate stove were huge specimens of Allamandas, Stephanotis, Hoyas, &c., just being trained into shape, strong wire trellises being used for the purpose, which are found to be more lasting and otherwise better than wood. A stove at the end of this house contained some admirable specimens of Ixoras, but more especially of I. javanica. These are plunged in tan with their tops in a nice growing temperature, and have already pushed abundance of young shoots all over them. Some idea may be formed of their size when we state that they are in 22-inch pots. Associated with them was a plant of Messrs. Veitch's Hexacentris mysorensis, in an 18-inch pot, and covering a trellis nearly 3 feet high, and as much through. This was in a 3-inch pot last July. There were also in this stove various Dipladenias, which promised in a short time to be very fine specimens.

Passing through the Heath house, in which were some remarkable plants, we come to the specimen house, in which were immense bushes of Boronias, Polygalas, Eriostemons, Coleonemas, Gompholobiums, Pultenæas, Pimeleas, and other plants of that kind. As regards Pimeleas, we may mention that the enormous plant of P. spectabilis, which was covered with such multitudes of blossoms, and which was the admiration of every body who visited the garden exhibitions of the Horticultural Society last year, will not appear in public this season. It had got from age so naked in the centre, that it was found necessary to prune it well back, and although it is pushing vigorously, it will not be fit to show this year. Its loss for a season, however, need not be regretted, for there are already magnificent specimens of the same kind of plant standing side by side with it, and ready to take its place.

What is called the "New Holland house" also contains many noble specimens of greenhouse plants, such as one rarely has the good fortune to see. This house has been altered since we were last at Ealing Park. Instead of the stage being in the middle and a path all round it, a broad passage now runs up the centre of the house, and a stage on either hand falls quite back to the glass, giving the opportunity of placing the smallest plants in front and the largest ones next the passage, which causes their tops to slope to both sides at an angle nearly corresponding with that of the roof. In this house were huge examples of Epacrises, Heaths, Pimeleas, Chorozemas, Everlastings, Eriostemons, &c., and all in the most luxuriant condition.

In the stove a compartment at the entrance prepared for flowering Orchids in summer is at present filled with Cacti. In another compartment is the famous Amherstia nobilis, which this establishment contains. It would have been very fine this season; but on smoking it with tobacco a short time ago to kill aphides it dropped all its flower spikes, and almost every leaf which it possessed. It is, however, again covered with foliage, and several fresh flower-spikes which it has made are already beginning to expand their blooms, the colours of which, notwithstanding the dulness of the weather, are extremely brilliant. Two plants of Heliconia braziliensis are also very gay here at present. Among Orchids there was, as a matter of course, little in flower, but the plants which are wintered on the dry and cool system look exceedingly healthy and clean. In order to diminish the amount of fire-heat required to keep out the intense cold we have lately experienced, we observed that coverings of frigi-domo had been placed on rollers, so as to be let down over the roofs of some of the houses at night. This is everywhere found to be a much better protecting material than mats.

In the open ground several of the large timber trees are being felled where they are too thick, or where they would ever be likely to shade valuable plants. We also understand that other alterations as regards the improvement of the lawn are in contemplation.

FLORICULTURE.

Forcing Azaleas.—The ordinary mode of treating Azaleas is well known to most people, but there are many who do not seem to be aware that they can be managed so as to be had in flower at least nine months out of the 12; and this merely by means of paying a little attention to well ripening the wood, allowing them a season of rest, and being particular as to time of introducing them into heat, &c. By attending to these matters they will not only continue to keep the conservatory gay during the winter and spring months; but they will also furnish cut flowers for glasses and bouquets. They may be propagated freely by means of cuttings, or by grafting; but I would recommend those beginning to grow them to leave their propagation to the trade, as they can now be had from any nursery at a very moderate price. The plants should be examined as soon as you get them; and if a shift is necessary, which will be known by turning them out of their pots and inspecting the roots, move them into pots a size larger than those they are in; previously clean them, however, and well drain them. Should the roots be at all matted, which is sometimes found to be the case, the space between the ball and the new pots should be filled rather firmly with the fresh compost, as, if this is not attended to, the water will probably run off the balls into the loose soil, and may cause the death of the plant. The soil I would recommend for growing the Azalea is simply sandy peat; I have found them to succeed better in this alone than in any other compost. After shifting, place the plants in a pit or house, as near the glass as possible, and where the temperature will range between 55° and 60° at night, allowing it to rise a few degrees in the day-time. Great attention must be paid to giving water, of which the plants will take a great deal, provided the drainage is good. As the plants advance in growth weak manure-water may be given twice a week, which will assist materially in keeping them robust and healthy, sprinkling them over-head with tepid water, and shutting up early in the afternoon. Air should be given on all favourable opportunities; this will not only tend to keep down red spider, but also thrips. This latter pest is considered by some difficult to eradicate I have, however, found tobacco-smoke at all times effectual in removing it. Fumigate in a mild evening, keep the house close the following day, and should there be bright sunshine, shade rather than give air; should this not prove effectual, fumigate again the following evening, and in the morning you will have the satisfaction of finding every insect destroyed. It will be necessary to tie out the shoots of such plants as have a rambling tendency, in order to secure a compact and bushy habit, stopping any over-luxuriant shoot. Some of the plants may require a second and even a third shift during the season, which should be given the moment it is perceived to be needed. After the plants have perfectly ripened their wood, and have formed their flower-buds, they may be gradually hardened off and removed to a rather shady situation where they can be protected from storms and heavy rains. When cold weather sets in they should be removed to their winter quarters; and although they will not require much water at this season, they must never be allowed to get dry at the root. It would be well previous to placing them in their winter quarters to turn them out of their pots, in order to seek for worms, and also to see if the roots are in good condition, for a plant is sometimes allowed to get so dry that the water will not penetrate the ball, but will run down the sides of the pot. In this case the plants should be placed in a tub of water until the soil is thoroughly soaked through. If a regular succession of bloom is the object aimed at, the plants first excited into growth should be properly labelled, so as to indicate their time of introduction into heat, &c., and these plants should be commenced at exactly the same time the following season, the next succession as before, and so on in rotation. If this is properly attended to, a beautiful display of these lovely flowers may be had all through the dull periods of the year. *J. R.*

Culture of the Fuchsia.—This useful plant is, I fear, seldom employed now for decorating the greenhouse and conservatory, and therefore its cultivation has of late years been unfortunately much neglected; for in one place where you will find a well grown specimen, in 20 you will get them more like Broom bushes than properly managed plants. I therefore beg to offer a few remarks on the mode of culture which I pursue. I start my early Vinery about the 1st of January at 45° Fahr., and I place a few of my best ripened Fuchsias in it, choosing the oldest of my plants for the purpose. I syringe them over-head morning and evening with tepid water, which I also apply to the Vines. Under this treatment, in the course of a fortnight or so they begin to show symptoms of growth; I then raise my house to 50°, after which they push vigorously. I now take cuttings off all I can, and, having a bed made previously for their reception, I insert them in a compost of leaf-mould and silver sand, taking care to drain the pots well. I also put about half an inch of white sand on the top of the pot; this keeps the soil open round the neck of the cutting, and prevents damping off, which Fuchsia cuttings are apt to do at this season in mould alone. Supposing my cuttings to be struck now, I pot them off singly into 3-inch pots, in a mixture of leaf-mould, a little well-decomposed cow-dung and some sand, watering them sparingly. I then place them in a slight bottom-heat, where they soon make a start, and if all goes on well they will soon be 6 inches high, when I shift them into a 5-inch pot in a compost of rich turfy loam, rotten cow-dung, a little leaf-mould, and sand. I now bring them to the Vinery, keeping them close up to the glass; they now reap the benefit of their shift, and become strong and vigorous, throwing out laterals or side shoots in abundance. About this stage I apply a small stake, to which I tie the leader very loosely. The side shoots now make rapid progress, and when they have attained the length of two or three joints, I pinch off one, leaving one or two, according to the length of the joints. In this way I double my side shoots. I now give a little weak liquid manure, made of sheeps' dung, if that can be got; I give them this twice a week, which invigorates them, and makes them push fresh laterals, which I again pinch, tying the leader to the stake as it grows. By this time the pot will be pretty well filled with roots. I now give them their final shift for the season, using a 10-inch pot, and good rough compost, consisting of turfy loam and cow-dung, in equal parts, mixed with a little leaf mould. By the beginning of August I have got pretty tolerable plants; I therefore let them come into bloom, watering liberally with manure water, and putting a slight mulching of cow-dung on the top of the pots. They will flower till the end of October, or middle of November. I now have the foundation laid for specimen plants the following season. After they have done flowering, I store them in an empty pit, giving only as much water as will keep them alive till spring. Next year they get the same treatment as last, and by these means I succeed in getting plants which are the admiration of all who see them. *B.*

Miscellaneous.

Prevention and Destruction of Vine Mildew. By T. J. Herapath.—The substances with which I have experimented are:—1. A solution of the super-sulphide of calcium, made by boiling together quick-lime and an excess of sulphur, and afterwards diluting with water to the necessary degree. 2. A weak solution of the super-sulphide of sodium. 3. A solution of the hypo-

chloride of lime, prepared by digesting the common bleaching powder of the shops in water; the powder being used in the proportion of about three ounces to the gallon of water. 4. A sulphuretted alkaline soap, made by a process to be hereafter described. Solutions Nos. 1, 2 and 3, effectually stayed the progress of the disease, but their application was found in practice to be attended with one great inconvenience; that is to say, the solutions did not attach themselves readily to the surface of the fruit; the thin film of waxy matter with which the latter was covered being found to exert, so to speak, a repellent action towards the fluid, which flowed off again without wetting it. This difficulty was only overcome at the cost of much time and trouble. With the alkaline soaps, however, the case was very different. This solution was easily applied, and spread itself readily over every part of the fruit, and moreover proved more destructive to the fungi than any of the other substances before alluded to. I am hence induced to give the preference to it. The mode by which I prepare it is as follows: I take equal parts by weight of common yellow and soft soap, dissolve them in boiling-water in a saucepan over a slow fire, taking care to stir the mixture occasionally with a stick, and then allow it to cool. To this saponaceous liquid I then add milk of lime, in small quantities at a time, until curdling is no longer produced. The clots of stearate and margarate of lime thus formed are next removed by straining the liquid through a piece of coarse towelling, and the clear solution which passes through is then boiled for a short time with a little flower of sulphur; the latter being used at the rate of a quarter of an ounce to the four pounds of the mixed soaps. So soon as the sulphur is completely dissolved, a sufficient quantity of water is added, and the mixture is ready for use. One pound of the mixed soaps will make about four gallons of the preservative fluid. This may be distributed over the diseased Vines either by means of a hand syringe or an ordinary garden pump. It is sometimes preferable to dip the Grapes by hand into a basinful of the composition, and paint over the stems and young shoots affected with a common brush. If under glass, one application suffices; but I have not yet had an opportunity of ascertaining if this is the case with out-of-door Vines. Before applying the preparation to the great bulk of the Grapes, it is advisable to try one or two experiments with a separate bunch, in order to ascertain if the composition is too strong. When such is found to be the case, of course all that is necessary is to add more water. *Abridged from the Chemist.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

CONSERVATORY AND GREENHOUSE.—Maintain a night temperature in the mixed conservatory of about 45°, taking advantage of fine days to increase it to 55°, but give air at the same time, to keep the atmosphere sweet and to prevent damp. Go carefully over the plants every morning, and remove any decaying leaves or flowers as soon as they are perceived, for no amount of floral display will render a house agreeable unless order and neatness are carefully maintained. As soon as the beauty of any of the pot specimens is over, remove them to some suitable situation, supply their places with others in full flower; and at this season, when other parts of the garden are so devoid of attraction, spare no effort to render this house as agreeable and effective as possible. Examine the state of the beds and borders, and see that the soil is not allowed to become too dry, for although very little moisture at the root is required by plants growing in beds at this season, it is advisable to avoid letting the soil become excessively dry, as when that is the case it is not soon got into a properly moist state. If it should be found necessary to water the beds, choose a bright morning, and give a good soaking, using sufficient fire heat to allow a gentle circulation of air to be kept up day and night, so as to prevent the injury to the delicate blossoms which might occur from keeping the house close while the atmosphere is loaded with moisture. Attend to maintaining a constant supply of flower by introducing into gentle heat proper quantities of the various plants suitable for forcing into early blossom, such as Azaleas, Rhododendrons, Kalmias, Dutch Bulbs, Roses, &c., of which every person who has a conservatory to keep gay at this season should have a stock of well prepared plants, proportionate to the demand. Camellias, and other plants that have done flowering, and are pushing their buds, should be properly cleaned, repotted, and placed in a moist growing temperature, to encourage them to make early growth. Camellias delight in a moist shady situation while making their growth, and will be quite at home under the shade of Vines, but they should not be placed in a temperature above 55° until the buds are started, for these will break irregularly, and the growth will be weak and thin if the plants are forced prematurely into growth, and the same holds good in the case of all plants. Where the greenhouse contains a general collection, as it too often of necessity does, considerable care will be requisite at this season to manage it so as to render it suitable for its various inmates; for what are generally termed hard-wooded greenhouse plants should be kept cool, and allowed the freest possible circulation of air; whereas, soft-wooded plants, such as Pelargoniums, Cinerarias, &c., require a temperature considerably higher and closer than would be conducive to the well-being of hard-wooded specimens. But by arranging so as to have the soft-wooded plants together in the warmest end of the house, where air should be admitted only on favourable occasions, or when it may be absolutely necessary to dispel damp, and by careful management, very much may be done towards properly accommodating in one house plants which require somewhat different treatment. It is very much better, however, to have a separate small house or pit for soft-wooded plants, than to attempt to grow them in the ordinary greenhouse.

FORCING DEPARTMENT.

VINERY.—Use every precaution to induce the buds to break strongly and regularly, for unless this is secured wood will be weak, and this ought to be avoided by every possible means; for if strong short-jointed wood is not secured good crops cannot be expected. Do not let impatience induce you to raise the temperature above 55° by night, or 65° by day, until the buds are fairly broken, and be particularly careful to guard against all undue excitement, whether arising from the neglect of the fireman, or from whatever other cause. A little time lost now in securing strong wood will be easily overtaken after the berries are set, without injury to the wood or crop. When the buds are fairly broken, the night temperature should range about 60°. Maintain a regularly moist atmosphere, but avoid syringing on cold cloudy afternoons where the young foliage is making its appearance, and take every possible opportunity of admitting gentle currents of fresh air. PEACHES.—Maintain a steady night temperature of about 55° where the trees are in blossom, and discontinue syringing until the fruit is set, but keep the borders and passages regularly sprinkled so as to secure a soft moist atmosphere, and admit air freely whenever the state of the external atmosphere will admit, but avoid cold currents of frosty air. FIGS.—See that trees planted out are properly moist at the root, and also keep those in pots or tubs carefully supplied with water. Any excess as respects the presence or absence of moisture at the root is very dangerous after the appearance of the fruit, and is the frequent cause of its dropping off. Maintain a moist atmosphere, and admit air freely on mild days. Let the thermometer range from 60° to 65° by day, and 50° to 55° by night.

FLOWER GARDEN AND SHRUBBERIES.

Finish pruning summer and Hybrid Perpetual Roses, and get the beds manured and dug; but Chinas, Teas, and other delicate sorts will be better left unpruned for some time longer. In digging the ground amongst Roses, be careful not to injure the roots. The borders of young shrubberies should be dug at once, where not already done, and leaves, &c., collected. Proceed vigorously with alterations during the present favourable weather, so as to be able to get the place into order, which can hardly be the case during the progress of alterations, and also to allow of giving undivided attention to the pressure of routine work, which if allowed to fall behind at this season will not be easily overtaken. Look round masses of American plants and see whether any of the more delicate kinds are being overgrown; and if so, prune away the stronger growers, or if desirable to remove any of the plants to other situations, this may be done without the smallest risk, for the roots of these plants seldom extend far; hence they may be transplanted at almost any age or size without any injury. Where any of the walks or lawns are found to be in want of draining, this should be done at once, and when such work is in hand no expense should be spared which may be necessary to do it efficiently.

KITCHEN GARDEN AND HARDY FRUIT DEPARTMENT.

As soon as the ground is sufficiently dry to work comfortably make a small sowing of Radish, also of Early Horn Carrot and early Dutch Turnip, and a small breadth of Parsley may be got in if necessary, choosing a warm sheltered border where the soil is rather light and not over rich. Where the winter Lettuces have been injured by the late severe weather it will be advisable to prepare a frame for raising a supply of these and other things, as Cauliflowers, to succeed those in frames. The frame should, if possible, be placed on a bed of leaves of sufficient thickness to afford a bottom-heat of about 65° or 70°, and the leaves should be covered with about 6 inches of sifted soil. Here the plants can be better attended to with air, &c., than if they were raised in pans or boxes in the forcing houses, but where such a convenience cannot be commanded, the best possible shift must be adopted, and with attention to keeping them near the glass, and removing them early to a cool place, there will be little difficulty in securing strong robust plants in a short time. Attend to keeping up a succession of French Beans, and use the syringe freely on those growing in the forcing houses, as they are particularly liable to the attacks of red spider. Also introduce roots of Asparagus, Seakale, and Rhubarb into heat at regular intervals, so as to secure a constant supply. Rhubarb and Seakale do perfectly well on a shelf, or the floor of the Mushroom house, which is probably the cheapest and most convenient method of forcing them. Proceed with pruning and nailing on every fine day. It is of great service when the ground is wet to provide planks or boards for the men to stand upon, which keep them from treading the borders, and also greatly assist in preventing the suffering from cold feet too usually endured at this work during cold damp weather.

COTTAGERS' GARDEN.

If any digging or trenching remains to be done, get this finished as soon as possible, but avoid getting upon the ground when it is excessively wet. Also get the Currant and Gooseberry bushes pruned, the ground dressed and dug, and proceed with any operations necessary to be done, in order that neatness may prevail everywhere. Make a sowing of early Conqueror Peas in the most sheltered part of the garden, on a bit of dry not over-rich ground. Sow rather thickly in drills about 3 inches deep, mixing with the seed some chopped Gorse, which will assist in preventing the ravages of mice. The drills should be 6 feet apart, and the intermediate spaces should be planted with early Potatoes. —[illegible]

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON

For the week ending Jan. 26, 1854, as observed at the Horticultural Gardens.

January.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind.	Rain.
Friday 20	21	30.005	29.927	51	35	43.0	40	42	S.W.	.02
Satur. 21	22	30.267	30.175	50	28	39.0	40	42	S.	.09
Sunday 22	☾	30.107	29.978	49	24	36.5	40	41	S.W.	.00
Mon.. 23	24	30.089	30.028	50	36	43.0	40	42	S.	.00
Tues. 24	25	29.743	29.576	51	24	37.5	40	42	S.W.	.02
Wed. 25	26	30.123	30.084	48	36	42.0	39	41	S.W.	.06
Thurs. 26	27	30.536	30.331	50	26	38.0	40	42	S.W.	.00
Average.		30.124	30.014	49.8	29.8	39.8	39.8	41.7		.09

Jan. 20—Partially overcast; rain; densely overcast.
— 21—Densely overcast; fine; clear; slight frost.
— 22—Frosty haze; clear and fine; overcast.
— 23—Sharp frost; very fine; clear at night.
— 24—Cloudy and windy; rain; clear; frosty.
— 25—Clear; sharp frost at sunrise; sudden rise of barometer; fine; cloudy; rain.
— 26—Fine; clear and fine; very clear at night; frosty.

Mean temperature of the week, 1½ deg. above the average.

STATE OF THE WEATHER AT CHISWICK,

During the last 28 years, for the ensuing week, ending Feb. 4, 1854.

January. and Feb.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 29	45.2	31.7	38.5	11	0.32 in.	4	4	—	1	2	8	5	4
Mon. 30	44.1	31.5	37.8	13	0.38	2	2	3	3	3	7	7	1
Tues. 31	44.2	31.6	37.9	14	0.38	3	4	1	2	9	6	2	1
Wed. 1	43.0	31.9	37.5	11	0.52	5	5	1	2	3	6	2	4
Thurs. 2	44.2	31.2	37.7	11	0.75	2	5	3	3	2	7	4	2
Friday 3	44.7	31.7	38.2	13	0.42	2	3	3	2	2	11	3	2
Satur. 4	44.7	33.1	38.9	12	0.31	3	4	2	—	6	7	4	2

The highest temperature during the above period occurred on the 3d, 1850—therm. 57 deg.; and the lowest on the 4th, 1830—therm. 12 deg.

Notices to Correspondents.

AQUILEGIAS: *A H.* Of Aquilegia Durandi and californica we know nothing; they are probably nurserymen's names. A. grandiflora is a variety of either A. alpina or glandulosa, and no doubt partakes of their habits.

BOOKS: *W G G.* The French periodicals contain much useful matter. That which suits England is usually translated in our columns. All foreign booksellers can supply such works.—*J T B.* If you will explain what you mean by "botanical purposes," we will advise you; but no answer can be given to such a vague enquiry.—*A Sub.* We suppose the best books on Cucumber and Melon growing are those by Moore and Mills. The first is called "Theory and Practice applied to the Cucumber," and is published by Groombridge; the second is a "Treatise on the Cucumber and Melon." The first has no plans, the second has what is a sufficient guide to a workman.

CAPE BULBS: *Rudolph.* You had better pot them at once in fibrous loam, and place them in your greenhouse, keeping them dry till they begin to grow. Afterwards treat them as you would Hyacinths. When they have finished their growth and ripened their foliage, keep them dry; and when they begin to move again, shift them into fresh compost. You will find good instructions on the growth of Brunsvigias in our volume for 1850, p. 581.‡

CUCUMBERS: *Sub.* The bitterness of which you complain, doubtless results from your not growing them quick enough.‡

FERNS: *Scotia.* Apply to Mr. Sims, Foots Cray, Kent.

FRUIT: *T U B.* Botanically speaking this term is applied to the ripened pistil, whatever be its texture, size, colour or quality. Thus a grain of Wheat is as much the fruit of the Wheat plant, and the Acorn of the Oak, as the Apple is of the Apple tree. Nuts, of course, are fruits; but not Brazil Nuts, or Sapucaya Nuts, all which are seeds, just as the Almond is the seed, not fruit, of the Almond tree.

ICE IN CASKS: *D.* Break it every night, as well as every morning.

NAMES OF FRUITS: *X.* Your Apple is not known; it is firm fleshed, keeps well, and a good kitchen Apple, suitable for your part of the country; but it cannot be recommended as a dessert Apple. ¶

NAMES OF PLANTS. We have been so often obliged reluctantly to decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*Erzeroum.* 828, Cerasus Laurocerasus; 1020, Pyrus edulis; 850, Pyrus sinaica? 692, Cratægus monogyna; 1035, Cotoneaster Fontanesiana; 553, Alchemilla vulgaris; 554, Alch. sericea; 1057, Comarum palustre.—*C L P.* 1, Barkeria elegans; 2, Lælia rubescens.—*Agnes.* We fear they are all named wrong. You will know next week, although we decline naming cryptogamic plants.

OAK TREES: *Quercus.* You cannot heap solid materials on the roots of any hardwood trees to any depth, without bringing on ill health and eventually killing them. It is useless to build a wall round the stem, because no important roots are there. The chief absorbents lie beyond the circumference of the head.

TIMBER: *Acorn.* Of the timber you name, the relative merit is expressed by the order in which they here follow:—1, Larch; 2, Spruce; 3, Scotch; 4, Silver; 5, Pinaster. The last is never of any value; the others vary in quality according to climate, soil, and situation. Scotch is excellent in Scotland, though not much esteemed when produced here in the low lands.

THE DEODAR: *A P.* This tree appears to suffer from nothing except snow, which sometimes breaks it down, as it occasionally will all evergreens. Of course, in dry slaty soil it will not grow so fast as in rich alluvial land; but it is in such as the former that we must expect it to produce timber similar to that which it is said to form in India.

THERMOMETER AND BAROMETER: *A R.* A Six's thermometer fixed, facing the north, to a post on an open lawn, would be affected by the heat of the post when the latter became heated by the sun's rays, but this you may prevent by shading the post itself; and you may also secure the instrument so as to be an inch or so from contact with its support. In the weekly returns given in the *Chronicle* the readings of the barometer are reduced to 32° Fahr. by Prof. Schumacher's Tables, which you will find in a "Report of the Committee of Physics, including Meteorology," and approved by the Royal Society: published by Richard Taylor, Red Lion Court. Corrections are also made for capacity, and for capillary action. ‡

WORMS: *Watchful.* Lime water will clear your pots of them, and will not injure the plants; but water in any form, whether holding lime in solution or not, will produce disease at this time of year, unless you can give plenty of air and a little dry heat.

MISC: *A Lady.* Mr. Maund's address is B. Maund, Esq., [illegible] Bromsgrove. ‡

MANURES.—The following Manures are manufactured at Mr. Lawes' Factory, Deptford Creek:—
Turnip Manure ... ... per ton £7 0 0
Superphosphate of Lime ... ... „ 7 0 0
Sulphuric Acid and Coprolites... ... „ 5 0 0
Office, 69, King William Street, City, London.
N.B.—Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia.—Sulphate of Ammonia, &c.

PERUVIAN GUANO, the guaranteed import of Messrs. ANTONY GIBBS and SONS, Lobos Island Guano, Superphosphate of Lime, and all Artificial Manures, Linseed and Rape Cakes, &c.—Wm. Inglis Carne, 10, Mark Lane, London.

THE LONDON MANURE COMPANY'S WHEAT MANURE, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. Edward Purser, Sec.
Bridge Street, Blackfriars.

ARTIFICIAL MANURES, &c. — Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. Nesbit, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and dispatch.
Gentlemen desirous of receiving instructions in Chemical Analysis and Assaying, will find ample facility and accommodation at the College.

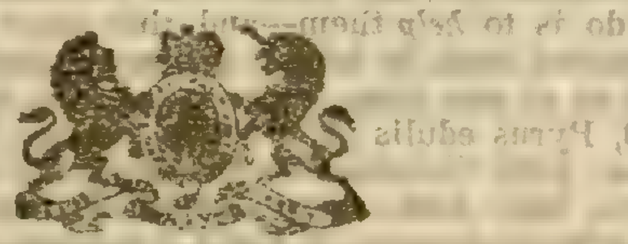
PEAT MOSS CHARCOAL, AND OTHER MANURES.—The Undersigned are appointed sole Agents by the Peat Moss Charcoal Company, for the sale of this valuable fixer and distributor of ammoniacal matter.
Also on Sale, Peruvian Guano, Superphosphate of Lime, Gypsum, Nitrate of Soda, Bone-Dust, Sulphuric Acid, and all other Manures of known value.—Apply to Mark Fothergill & Co., 204a, Upper Thames Street, London.

SEWAGE CHARCOAL MANURE.—This highly fertilising Manure, which is Peat Charcoal completely saturated with London Sewage, will be found most efficient for every species of crop; more especially for Peas, Beans, Turnips, Mangold Wurzel, and other root crops. It will produce a greater return for the outlay than Guano or any other Manure at an equivalent value: it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained from the SEWAGE MANURE WORKS, Stanley Bridge, Fulham, at 60s. per ton, and in quantities less than half a ton, at 4s. per cwt., for ready money only, and in quantities not less than a ton, will be delivered at the London Termini of the Railroads free of charge for cartage.
It may also be had from Messrs. G. Gibbs & Co., 26, Down Street, Piccadilly, Agricultural Seedsmen, and from all the other Agents of the Company. Recommendations and Testimonials may be seen at the Works.

ANTHONY'S PATENT AMERICAN CHURN.—Extract from the Royal Agricultural Society's Report of the trial of Churns at the Gloucester meeting in July last. "In this trial the American Churn not only maintained its character in producing butter rapidly, but in producing a greater quantity from the like amount of cream." It made from 4 quarts of cream 4 lbs. 6 oz. of butter, being 8 oz. more than any of the other Churns from the same quantity and quality of cream. Price Lists of Churns and Implements by the best makers sent free, and Illustrated Catalogues on receipt of eight postage stamps. Burgess & Key, 103, Newgate Street, and 52, Little Britain, London, who have always a large stock of Steam-engines, Ploughs, Harrows, Diggers, Waggons, Carts, Threshing and Dressing Machines, Mills, Oat and Grain Bruisers, Oilcake Breakers, Reaping Machines, Haymakers, Horse-rakers, Turnip Cutters, Liquid Manure Carts, Parkes' celebrated Steel Digging Forks and Draining Tools, Pumps for Manure, Farm Fire Engines, and for Garden Purposes, &c. &c.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.
MESSRS. BURGESS and KEY, as Mr. Parkes' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.
103, Newgate Street, and 52, Little Britain, London.

PATENT ROOT GRATING MACHINE.

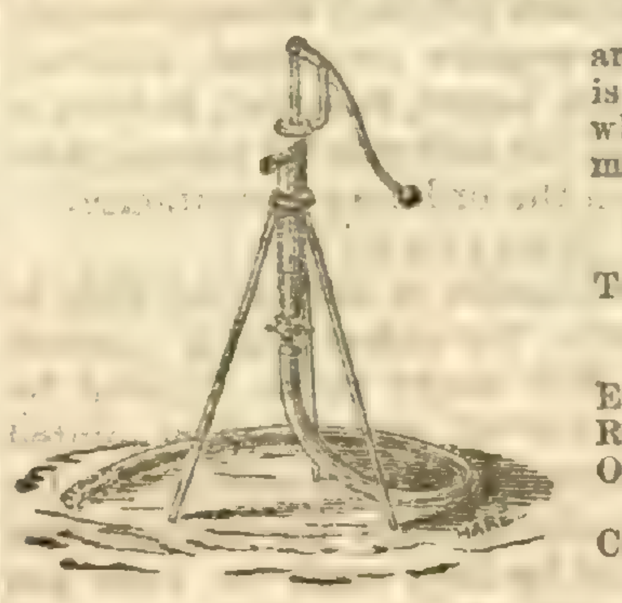


BUSHE & BARTER'S PATENT ROOT GRATING MACHINE. Manufactured and Sold by Alex. Shanks & Son, Arbroath, Forfarshire, from whom particulars, with prices, may be had.—Arbroath, Jan. 28.

STEPHENSON and PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.
From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

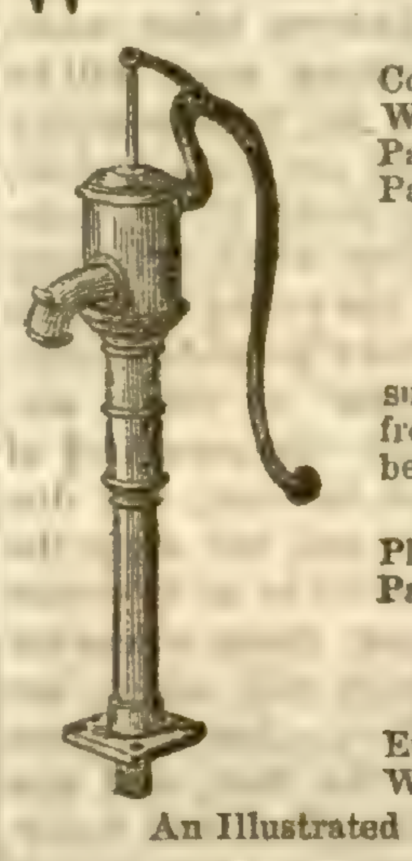
WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.
THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.
The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.
Manufacturers of the Cement, J. B. White & Brothers, Millbank Street, Westminster.

REDUCTION IN PRICE.
WEIR'S Improved GALVANISED WROUGHT IRON LIQUID MANURE PUMP.



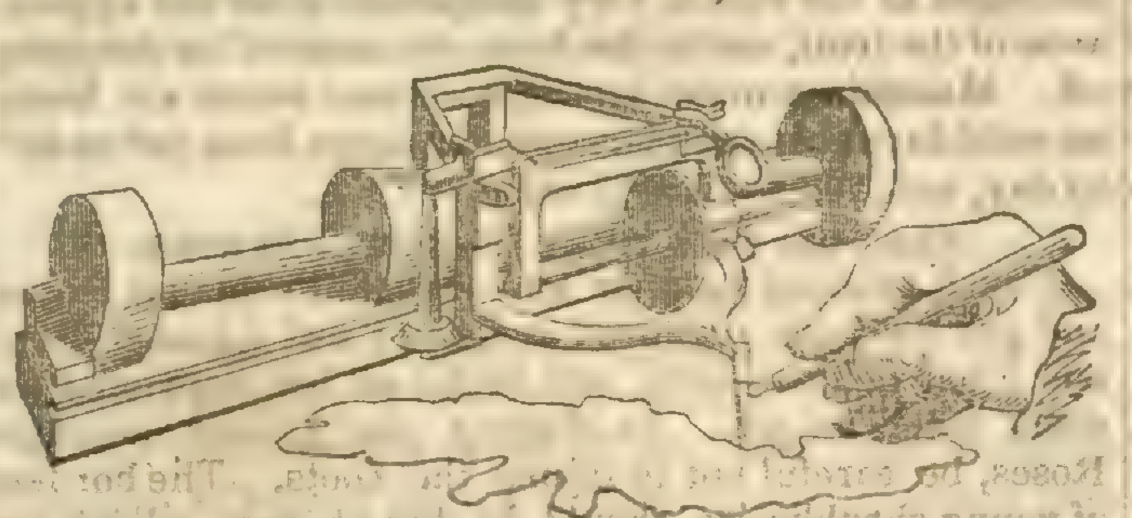
The Fittings of these Pumps are wholly of Brass, and there is no leather or other matter which can be affected by the manure.
Price, complete, with 10 feet Flexible Suction Pipe, 4l. 15s. Terms, cash on delivery.
Edward Weir, Agricultural Engineer, 16, Bath Place, New Road, London. Removed from Oxford Street.
Catalogues, with Illustrations, sent free by post.

WARNER'S PATENT FARM AND COTTAGE PUMPS.



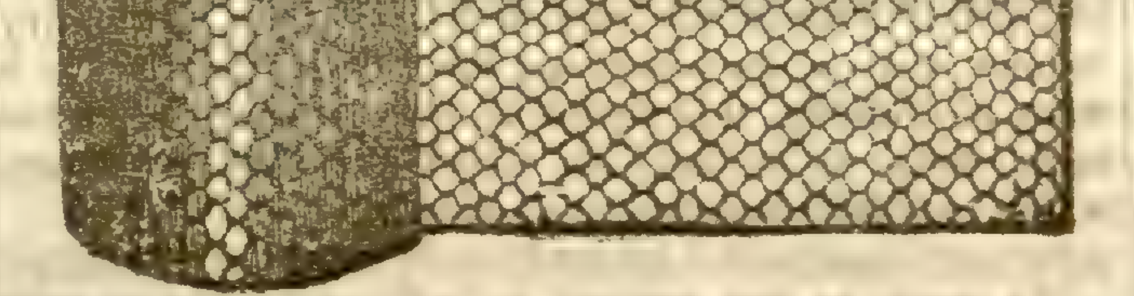
Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells. £ s. d
Patent Pump 1 15 0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing 3 0 0
Larger sizes if required.
The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.
May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,
JOHN WARNER & SONS,
8, Crescent, Jewin Street, London.
Every description of Machinery for Raising Water; Fire Engines, &c.
An Illustrated Book sent on application post free.

TO SURVEYORS, ARCHITECTS, & ENGINEERS.



SANG'S PLATOMETERS; or, SELF-ACTING CALCULATORS.—These Instruments tell accurately the contents of figures drawn on Maps. They effect a great saving of time and labour, as in order to find the area it is only necessary to lead a tracer round the outline of the figure, however irregular it may be. Price 10l. each. Sold by John Sang, Kirkaldy.

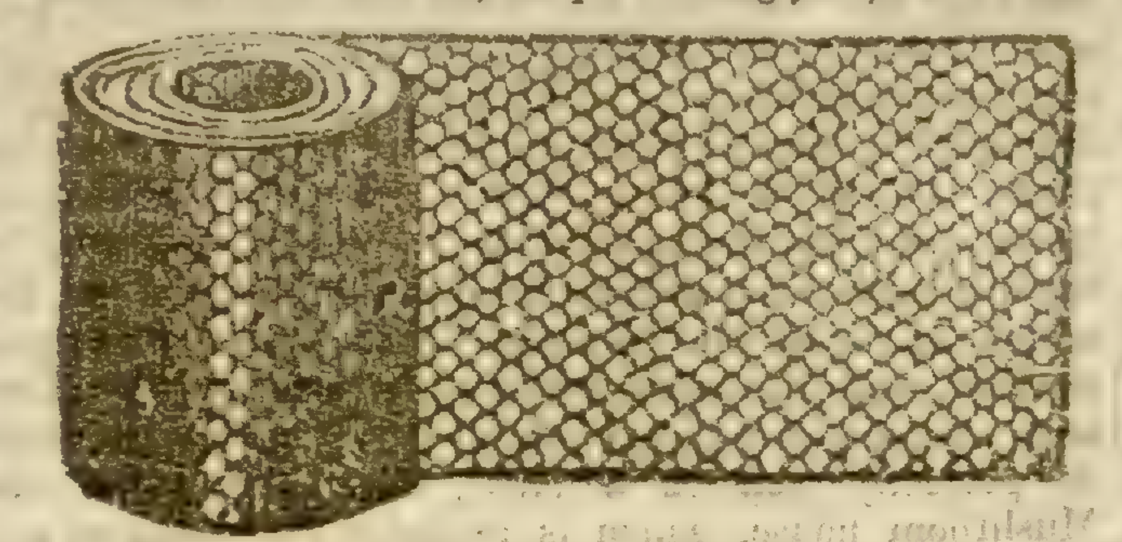
GALVANISED WIRE GAME NETTING.—
7d. per Yard, 2 Feet Wide.



		Galvanised.	Japanned iron.
2-inch mesh, light, 24 inches wide	...	7d. per yd.	5d. per yd.
2-inch „ strong „	...	9 „	6½ „
2-inch „ extra strong „	...	12 „	9 „
1⅝-inch „ light „	...	8 „	6 „
1⅝-inch „ strong „	...	10 „	8 „
1⅝-inch „ extra strong „	...	14 „	11 „

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasantries, 3d. per square foot. Patterns forwarded post free.
Manufactured by Barnard & Bishop, Market Place, Norwich; and delivered free of expense in London, Peterborough, Hull, or Newcastle.

CHEAP WIRE GAME & POULTRY NETTING, 5d. per running yard.
GALVANISED DITTO, 7d. per running yard, 2 feet wide.



	Galvanised.		Not Galvanised
24 in. wide, 2 in. mesh,	7d. per yard.	... ...	5d. per yard.
30 in. „ 2 in. „	9d. „	... ...	6½d. „
36 in. „ 2 in. „	10½d. „	... ...	7½d. „
48 in. „ 2 in. „	1s. 2d. „	... ...	10d. „

Sparrow Proof Netting, Galvanised, 3d. per square foot, made to any size for the same proportionate price. This article was shown at the Great Exhibition, where it was so much admired for its light and durable appearance, and acknowledged to be the cheapest and best article of the kind ever offered. Extra strong Wire Sheep Netting, 3 feet high, 1s. 6d. and 2s. 8d. per yard. Also every description of Flower Trainers, Dahlia Rods, Garden Arches, Bordering, Flower Stands, Tying Wire, Trellis Work, Invisible Wire Fencing, Hurdles, and every description of Wire Work for Horticultural purposes.—Illustrated Catalogues of Patterns forwarded, post free, on application to T. H. Fox, City of London Wire Work and Iron Fence Manufactory, 44, Skinner Street, and 6 and 8, Snow Hill, London.

TO LANDOWNERS, SOLICITORS, ESTATE AGENTS, ETC.
THE LANDS IMPROVEMENT COMPANY, incorporated by special Act of Parliament, 1853, having perfected their organisation, are prepared to receive applications for the execution of improvements, under the provisions of their Act.
The Act extends to England, Wales, and Scotland: and empowers persons in the actual possession of lands, or in receipt of the rents, such as tenants for life, trustees, bodies corporate, incumbents of benefices, mortgagees in possession, guardians of infants, &c., to effect substantial improvements on their estates, and to convert the outlay on such improvements into a terminable annuity or rent-charge of from 14 to 25 years, at will.
The Company, acting under the supervision of the Inclosure Commissioners, will undertake and execute improvements, or will supply the capital to landowners preferring to execute improvements themselves, or will grant the powers of their Act to landowners seeking merely to charge the inheritance with the outlay on improvements from their own funds.
The Agricultural Works of Improvement particularly specified in the Company's Act, are:—
1. The Drainage of any Lands by any such means as the Inclosure Commissioners shall approve.
2. Irrigation, and Warping of Lands.
3. Embanking of Land from the Sea, or Tidal Waters, or Rivers, in a permanent manner.
4. Enclosing or Improving the Drains, Streams, or Water-courses of the Land, under the Inclosure Commissioners.
5. Reclamation of Land lying waste.
6. Making Farm-roads to the extent of one-half of the outlay for such roads.
7. Clearing Lands.
8. Erection of Farm-houses, and other Buildings required for farm purposes to the extent of three-fourths of the outlay for such Farm-houses and other Buildings.
In effecting the above Improvements there may be erected any Engines, Machinery, Engine-houses, Mills, Kilns, Sheds, Yards, Shafts, Tanks, and Reservoirs, Pipes, Conduits, and Water-courses for Irrigation, Tram-roads and other ways, Bridges, Weirs, Sluices, Flood-gates, and Hatches.
For Forms of Application and further Information apply to the Hon. W. Napier, Managing Director, 2, Old Palace Yard, Westminster, London.

THE LANDOWNERS' DRAINAGE AND INCLOSURE COMPANY.
Incorporated by Special Act of Parliament.
Tenants for Life, Trustees, Mortgagees, Incumbents of Livings, &c., can have all works of Draining, Warping, Irrigating, Inclosing, and every other improvement to land, executed by the Landowners' Drainage Company, either by Contract or on Commission. They will provide the money by a permanent charge on the inheritance, or repayable by instalments. They are also ready to undertake the Drainage of Towns, and all works incident to such improvements. This Company having been engaged in extensive works for many years in most of the Counties in England, and having in their employ the largest Practical Staff in the United Kingdom, whose sole attention is devoted to such improvements, is the best guarantee for the success of their works.
Every information will be given at the Offices of the Company, 30, Parliament Street, London, or 9, Bedford Circus, Exeter.
Thomas May, Secretary.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.
Patron—His Royal Highness PRINCE ALBERT.
President of Council—Earl BATHURST.
Principal—Rev. J. S. HAYGARTH, M.A.
Professors, &c.
Chemistry—J. A. C. Voelcker, Ph.D., F.C.S.
Geology, Zoology, and Botany—James Buckman, F.G.S., F.L.S.
Veterinary Medicine and Surgery—G. T. Brown, M.R.C.V.S.
Surveying, Civil Engineering, and Mathematics—F. Armstrong, C.E.
Manager of Farm—G. Austin.
Assistant to Chemical Professor—A. Williams, M.R.C.S.
The first Session of 1854 will commence early in February. The annual fees for Boarders vary from 45 to 80 guineas, according to age and other circumstances. The Fee for Out-Students is 40l. per annum. The College Course of Lectures and Practical Instruction is complete in one twelvemonth—though a longer time is recommended. There is a department for general as well as for agricultural purposes. Prospectuses and information can be had on application to the Principal.
The GUIDE to the ROYAL AGRICULTURAL COLLEGE FARM may be obtained of Hamilton, Adams, & Co., Paternoster Row, London; and Edwin Baily, Cirencester. Price 1s.

COLLEGE of AGRICULTURE and CHEMISTRY, and of PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.
Principal—J. C. NESBIT, F.G.S., F.C.S., &c.
The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.
Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

THE LABORATORY of the ROYAL POLYTECHNIC INSTITUTION is always open for the reception of pupils, under J. H. Pepper, Esq., F.C.S. A.C.E. &c. Careful Analyses and Assays of Soils, Minerals, Waters, Mercantile or Agricultural Products are performed with despatch, accuracy, and economy.
For terms apply to Mr. R. I. Longbottom, Secretary.

HEXHAM POULTRY SHOW.—The SECOND ANNUAL EXHIBITION for Promoting the Improvement of POULTRY, will be held at Hexham, on FRIDAY and SATURDAY, the 12th and 13th days of May, 1854.—Further Particulars will be given on application to Mr. William Turner, the Secretary, Hencotes, Hexham.

The Agricultural Gazette.

SATURDAY, JANUARY 28, 1854.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Wednesday,	Feb. 1	—Agricultural Society of England.
Thursday,	— 2	—Agricultural Imp. Society of Ireland.
Thursday,	— 9	—Agricultural Imp. Society of Ireland.

A very important omission occurs in the report of the late examination at the Royal Agricultural College:—"The R. A. C. Diploma or Certificate of Merit was awarded to C. H. Inge and C. D. Barstow on their passing a strict examination in the whole course of subjects in every department." It is worth noting what this diploma signifies: because there is no doubt of the need of some agricultural diploma by which proficiency may be marked; and to none is it more apparent than to landed proprietors in search of intelligent agents.

The letter on land agents in another column plainly proves the necessity of some such mark of competency for such an office; and we feel sure that this need is more generally felt than our correspondent seems to think. The ownership of land is more and more felt to be *a profession* involving management as well as mere lordship, needing therefore in the owner or his deputy something more than mere ability to secure the receipt of rents: and while some few may still give the chief offices in such management to incompetent men, who may have claims of other kinds upon them, so that these offices become at the best mere sinecures, and more generally sources of great injury to the property, the great majority see the necessity of the duties of ownership being efficiently executed, if its rights are to be secured.

One of the best proofs of the importance of some diploma in agriculture, in which all may have confidence as the trustworthy evidence of agricultural skill and intelligence, lies in the fact that it has been recognised by those in the direction of the Highland and Agricultural Society.

So long ago as 1848 they applied to Government for a Supplementary Charter to enable them to grant diplomas to agricultural students, but their petition was refused by the Home Secretary, owing to the unfavourable report of the Lord Advocate of the day; a gentleman whose business it may have been to interpret the existing charters of the Society, and whose legal experience no doubt qualified him for such a duty, but whose agricultural intelligence, we venture to say, cannot have qualified him as a member of the Society in question, or he must have perceived that nothing could be more consistent with the aims of the institution than the powers desired in this new charter, which were to enable them to set their seal, as it were, upon the agricultural ability which they had been the means of conferring. Their plan embraced a curriculum of study for a certain number of years. The classes were:— Agriculture, Chemistry, Botany, Natural History, Veterinary Surgery, and we believe Surveying. Attendance at these classes in any University would have been sufficient. In the absence of a model farm, residence with a practical farmer for a couple of years and his certificate were to have been required. The board of examiners was to have consisted of the Lord Justice General, the President of the Society, and one or two other extraordinary members; together with the professors of the classes we have mentioned in the University of Edinburgh, a certain number of the directors of the Society, and a certain number of practical farmers, along with the veterinarian lecturer of the Society. We believe that the application to Government was unnecessary; and that, with the co-operation of the professors, the Society might at any time establish a board, examine students, and grant diplomas, as in the case of their veterinary college, where such diplomas are recognised by the Horse Guards and by the India House. But be this as it may, what could have more effectually marked the agricultural standing of any man than a diploma of the kind described? and what could have greater influence in determining the choice of candidates for any office in which agricultural efficiency was required? It is not too much to say that the whole character of British agriculture would improve under a system which should give good eyesight in this way to landowners in the appointment of their deputies.

Since the failure of the Highland Society in connection with this subject, we are glad to know that the Royal Agricultural College has for the last two or three years granted its diploma to such of its students as were worthy of it; and that our readers may understand what degree of intelligence and ability is required to render them worthy, we will just state the kind of examination which they have to undergo.

The object in the examination for the College Certificate is to determine an acquaintance with the whole course of studies pursued at the College, excepting those which are merely auxiliary and only undertaken from the necessity of supplying occasional deficiencies in early education. For instance: mathematics and arithmetic would not be subjects of examination, except indirectly, in such subjects as required mathematical or arithmetical calculations. The candidates are not pitted against each other, but are expected each to reach a certain standard of proficiency in every one of the following subjects:—Chemistry—inorganic, organic, and agricultural—geology, palæontology, zoology, botany and vegetable physiology, veterinary medicine and surgery—including anatomy, pathology, and materia medica—surveying and mensuration, agricultural engineering, together with, of course, all the details of practical agriculture. This examination is conducted both on paper and *vivâ voce*. Half of it is always included in the sessional examination for the time being; and of the admirable character of these sessional examinations our readers have already for several years had full opportunity of judging. We have the papers for the past year before us now, and perceive that, without any approach to sameness, they preserve their character as really admirable counterparts to a remarkably well-selected mass of the most important facts in the great range of agricultural practice, and in the sciences which it illustrates. This sessional examination will thus always supply a sufficient criterion of the proficiency of the candidates for the diploma of the college up to a very respectable status indeed.

Practically, therefore, the four professors and principal, who are the examiners, only examine separately on one half the year's subjects, taking the result of the sessional examination as their criterion as to the other half. A report from any *one* of these that a student has done *badly* in his department, is fatal to success. A report of *middling* proficiency in one department is not fatal, if the others are particularly good. There have been given six certificates during the past three years. It is rarely gained after only one year's residence, so that full knowledge of the art of farming, as well as of the theory of agriculture, is thoroughly insured.

A diploma* thus secured must, it is obvious, mark out its possessor as being also in possession of such a degree of agricultural intelligence as would fit him for the management of land either for himself or others. When it shall be conferred upon the student by a body of examiners altogether unconnected with the College, as it is ultimately, we believe, intended to be, this diploma will still further, we doubt not, secure that public confidence of which it is already worthy.

We have, we believe, said enough to prove the need of some such mark of proficiency in agriculture as other professions require and possess, and while we have shown that the Highland Society has tried, and still, we believe, desires to appoint some board whose certificate would have the desired weight, we have also so far detailed the constitution and methods of such a board of examiners in the college at Cirencester as may serve to give public confidence in those who there obtain the diploma which is to mark them in public esteem as efficient agriculturists.

* The certificate, we may mention, is on a large ornamented piece of vellum, with suitable inscriptions, and is signed by the President, Vice-President, Chairman of Council, Principal, and by each of the Professors.

ARTERIAL DRAINAGE being a subject of considerably wide range and minute ramification, we have not hitherto hemmed in our observations within home limits; and having already spoken a word about Assyrian drainings on the plains of the Tigris and Euphrates, about Roman enterprises in the Pontine and other marshes, and some of the more modern Italian applications of true hydraulic engineering,—we must just advert to the banks of the Nile, before stepping over into the dyke-defended Polders of Holland. However, should the business-reader object to our antique references, which send him almost to his old school LEMPRIERE, for the whereabout of the "Fen of Lerna," we can only remind him that DUGDALE, the standard drainage historian, actually goes back to the book of Genesis, citing the command "Let the waters be gathered together, and the dry land appear," and also the fact of the merciful assuaging of the deluge, to prove the *Divine institution* of works of draining!

In turning to a country without rain, whose fertility depends rather upon irrigation than drainage, we are reminded that not simply an evacuation of drain-water, but an entire command of the water, either for draining or flooding, is indispensable to a perfect agriculture. In what way did the Egyptians obtain this?

Now, the valley of Egypt is *not* a tract of corn land open to the overflowings of its great river. It is, for the most part, a narrow valley, many hundreds of miles long, but only a few leagues in breadth, flanked by barren mountains and deserts of sand. Through it flows the Nile, half to three-quarters of a mile wide, swollen in *summer* by the melting snows of its native mountains, but restrained along almost its whole course by artificial embankments. The contiguous lands are watered from it by machinery; while innumerable canals lead the water to the parts more remote. That portion of the valley called "Lower Egypt" expands into a great delta of marshy land toward the sea; and here the river, never many feet below the surface of the ground, periodically inundates and summer-warps the unguarded plain, enriching the unctuous soil from its slimy flood. The drains and banks of Lower Egypt, and especially of the Delta, are said to have been considerably increased by SESOSTRIS, in the 17th or 18th century, B.C.; and notwithstanding the obliterations of subsequent ages, about 80 of the canals yet remain—all excavated by manual labour, and several of them 60, 90, and even 120 miles in length. They receive the inundation of the Nile, circulating through the country the waters which had formerly overflowed and stagnated on it. The large lakes of Mœris, Behire, and Mareotis, formed vast reservoirs for containing surplus water brought into them by great canals; and this was again conducted by canals, as required, over the adjacent plains.

The Egyptian cuts were for two purposes—the discharge of excessive water as well as the disposal of what might be useful. Hence, besides those of the latter order, many auxiliary outlets were made to assist the Nile outfall — the natural mouths having proved insufficient for the drying of the country. HERODOTUS, describing the several mouths, says—"But the Bolbitic and Bucolic channels are not natural, but made by digging." The ruins of immense embankments still remain; some of which were for curbing the rise of the Nile, some for the defence of cities against the inundations, and others for opposing the torrents of sand which are blown from the Great Desert. The kings did not wear out all their slaves and captives in piling pyramids and Carnac palaces, hollowing hills into temples, and carving miles of colossal sphinxes; they expended lives and treasure in labours of industrial improvement, so that the names of SESOSTRIS, MŒRIS, PHARAOH NECHO, the PTOLEMIES, DARIUS, and ALEXANDER, are connected with works of drainage or irrigation. Of one piece of engineering—a canal for navigation, joining the Nile with the Red Sea—we read that, in digging it, there perished 120,000 Egyptians. The PTOLEMIES, kings of Egypt, completed it; and (according to STRABO) "set a *sluice* upon the channel, that they might sail out into the sea, and in again, as they pleased. It was 100 cubits in breadth, and deep enough for a large ship." Although it is in the application of machinery to the purposes of agriculture that the Egyptians have set the most wonderful examples, still, it seems, their "arterial" works were of a magnitude sufficiently surprising even to a Hollander or an English fen-man. And now that health no less than hunger is urging us to better our system of semi-discharging drains and dilatory rivers, we shall surely be ashamed to allow "water interests" or any other obstacle to damage lands which Egyptians thousands of years ago would have drained and irrigated had the thing been necessary. *I. A. C.*

PROFITABLENESS OF CATTLE FEEDING.

IN my statement in your publication of December 24 it will be observed that, in the tabular form of food with results, I give the gain of weight as accounting for the whole of the deficiency of nitrogen shown in the excrement, as compared with that computed in the food supplied. To those who have given their attention to this subject it will at once be obvious that this will show a much more than due proportion of nitrogen to the weight gained. I have now to explain that the analyses of the various descriptions of food were not those of the food actually supplied, but such as I found in different publications. I gave the per-centage of nitrogen in Rape-cake at 5 per cent. I recollect observing one analysis at about 4½; and Mr. Lawes, in No. 2 of your *Gazette*, January 14, states it at only 4 per cent. It is of great interest to trace and account for the properties and effects of the food; but no precise result can be arrived at, except by a careful analysis of the food itself, which is scarcely within the reach of the farmer, but which I think deserving the attention of our agricultural societies. There is also said to be an escape of nitrogen from exudation, which Boussingault computes at 400 grains per day from each bullock. It is proper, too, to state that the heifers under treatment were young, being but 2 to 2½ years old when purchased, up to the time they were sent off they would be increasing both in muscle and bone.

I now proceed to compare my treatment of cattle with that of others, and I select for this purpose those of Mr. M'Culloch (lots 21 and 22), and those of Mr. George Hope, of Fenton Barns, both given in the Royal Highland Society's Journal. My mode consists in inducing my cattle to consume as much straw as I can, with a limited supply of cake or other concentrated food, thereby reducing their requirements in Turnips to from 50 lbs. to 60 lbs. per day for each animal. The treatment with which I draw the comparison is to give but a limited supply of straw with an abundant one of Turnips, and without other artificial food. Mr. M'Culloch, in the example I have stated, supplies each of his cattle with 150 lbs. Turnips, and 7 lbs. straw; together, 157 lbs. per day. Mr. Hope, 178 lbs. Turnips, 5 lbs. hay, with straw; together, 183 lbs. per day. My own as per tabular statement, 60 lbs. Turnips, 26½ lbs. hay, with straw; together, 88½ lbs.; being rather more than one-half of the former (Mr. M'Culloch's), and less than one-half of the weight of the latter (Mr. Hope's supply). On reducing these quantities to water and dry material the comparison will be—In Mr. M'Culloch's treatment, 135 lbs. water, 21½ lbs. dry; together 156½ lbs. Mr.

Hope's, 160 lbs. water, 22½ lbs. dry; together, 182½ lbs. My own, 60¾ lbs. water, 27¾ lbs. dry; together, 88½ lbs. Taking into account that in my treatment 15 lbs. of shells of Oats and inferior hay, which contain about 50 per cent. of woody fibre, which is said to serve no other purpose but that of filling, whilst in the other instances only 7 lbs. or 5 lbs. of straw are given, the remainder being Turnip, which has only 20 per cent. of fibre, the amount of dry food serviceable for nutrition will in each instance more nearly approximate.

My practice is to offer my cattle, under whatever treatment, water each day. In the experiment under notice the water was previously weighed; it will be seen that in addition to that supplied in the Turnips they took mixed with the shells of Oats and alone, about 5 lbs. each, many of them refusing to taste the water alone. Admitting that my cattle, with 61 lbs. of water per day, are supplied to the extent it is serviceable, it follows that in the mode of treatment with which the comparison is made, the cattle will be supplied with more than double or nearly treble what they require. My experiments tend to show that whatever element of food is supplied, more than is necessary or serviceable goes to the excrement or manure; it is evidently true as regards nitrogen, phosphates, and other minerals, and I do not see that it will be otherwise in regard to carbon and water; the result will then be a more than double quantity of excrement during the same time, and from the like number of cattle, without any increase in its value; reckoning each beast to consume 1 cwt. per day more of Turnips, it would, for 20 head of cattle, require 7 tons more of Turnips per week, which are to be gathered, turned, and carted from the field; taking the manure to be doubled in quantity, it would to myself, who, with a very limited horse power, am precluded from applying the means introduced by Mr. Kennedy, and adopted by the spirited Mr. Mechi, be burdensome to find my 300 tons doubled in quantity without any increase in its value. To set against this extra labour is that of preparing the additional straw, which is on the premises, and the 5 lbs. of cake. I leave it to those interested to estimate the relative cost and labour of the two modes. Chemistry tells us that of azote or nitrogen, 1 lb. of oilcake contains as much as 20 to 25 lbs. of Turnips, of oil (an important agent in the formation of fat), more than 50 times as much; while of gum and other heat-sustaining properties, this comparison, though favourable, is not so in the same degree; still this will be compensated by the additional straw. If we take 5 lbs. of Linseed-cake to be equal in nutritive property to 1 cwt. of Turnips, valued at *9s.* per ton, the cost of 100 lbs. will be *8s. 4d.*, and will represent the like value per ton of Turnips; if we take Rape-cake, which chemistry tells us is of equal value in feeding with Linseed, and which is usually bought at *4l.* per ton lower, then 100 lbs. will cost *4s. 4d.*, and will equally represent a ton of Turnips, admitting the teaching of chemistry to be correct.

One advantage of the system of giving artificial food will be obvious. You are buying a fertilising material, enriching your land, and enabling yourself to maintain 2½ head of cattle from an acre of Turnips in place of one. There is still to be taken into account the value of straw, which varies so much in the different localities that no general estimate of it will apply. I hold no sympathy with those who think straw loses in value by going through the stomach of the animal, and I have already explained my views on the subject at some length in your Paper, No. 24, of the 11th of June.

Before I began these experiments, I had sought for information in various publications without being able to give satisfactory data applicable to my own procedure. During the experiments I have left what I had read out of sight and memory, and have instituted no comparisons. If I have made erroneous deductions or conclusions, I hope I have established my claim to be set right by some of your more competent readers and correspondents. *Y., Jan. 18, 1854.*

GRAIN FALLOWS.

Whatever doubts may exist as to the Lois-Weedon system being applicable to farms, under the management of men possessed of the ample capitals that enable them to pursue those expensive economies comprehended under the term of "high farming," there can be none of its being so to the lands held by the less wealthy tillers of the soil. This is more especially the case with Ireland, where, from deficient farming capital and neglect of house feeding, a repetition of grain crops has obtained that fills the ground with weeds. To Ireland, a system of grain fallows would be of incalculable value; to induce its reception, however, it must not only be proved to be as remunerative as Mr. Smith shows it to be, it must also be shown to be accessible to the Irish farmer, as not demanding a greater outlay than the ordinary tillage of the country. This I think may also be proved, as in the saving of seed may be found the wages of the additional labour required, although in this respect we have much to contend with in Irish prejudice, for a most lamentable distrust of the value of farm labour prevails in Ireland—"'tis enough to rob any one;" money is therefore most grudgingly laid out on it, and here the proverb is most amply exemplified "of losing a pound in saving a penny;" the general excuses are in the idleness of the labourers, and in the want of means. Both have perhaps been much induced by the sordidness of employers; in other countries, where a reasonable stimulus to industry is given, it is a well-known fact that the Irish labourer is not an idler; but here, a *minimum* of payments being the principle on one side, it will not excite much surprise if a *minimum* of returns be the rule on the other side. An eye service—a supineness in labour—has therefore obtained. This has become a habit, which at home, where there is no mixture of greater diligence to stimulate to exertion, perhaps nothing can immediately overcome; the want of sufficient food also diminishes the natural energies of the labourer. In the low returns superinduced by this under labour, this slurring over of all field operations—and we are to recollect the deficiency of labour is in no way made up for by manuring—we can find a sufficient cause for a want of means to employ labour. But while the Irish farmer grudgingly employs labour, he is more than sufficiently profuse in seeding his land; he does not here find a deficiency of means, for "we must not rob the ground;" and indeed, from the foul state of the land, a very heavy seeding is necessary, that the crop may run a race on anything like equal terms with the weeds.

In the following statement it will be seen that the saving effected in the seeding of the ground is sufficient to pay for the additional labour on it, and that labour hand work. In a field of 4 acres, three-fourths of it being sown with Oats broadcast, I have this year sown a little over one acre (about 8 perches), in rows 18 inches apart, with 4 stones 3 lbs. of seed, black Bere, Chevalier Barley, Dun and Hopetoun Oats. The expenses incurred have been—

Seed 4 st. 3 lbs., at 1*s.* 6*d.* a stone	£0	6	4
Opening drills with hoe	0	3	0
Sowing and covering by hand	0	3	0
2 hand-hoeings	0	6	0
Weeding rows	0	3	0
	£1	1	4
Expenses of a broad-cast crop:—			
Seed 12 stones (this is under the average) ...	0	18	0
Sowing and covering	0	3	0
	£1	1	0

There is no question of the sowed crop being superior to the crop on the rest of the field. It is indeed looked upon as being excelled by very few crops in this part of the country. The whole field is sown with Clover and Italian Rye-grass, this sowing in the drilled part being deferred till after the second hoeing; were it not for this, instead of the second hoeing, the ground would have been deeply dug between the rows, and the shovel would have been passed between them, laying the clay against the rows of corn, which would have assisted to support them, and left channels for drilling in the seed of the succeeding crop. As the ground is very stony, and surcharged with the weeds of many years' accumulation, the expenses of hoeing and weeding have been heavier than they would have been under more favourable conditions.

Let us now look upon the advantages this plan of tillage has over the broadcast. Little more than half the number of hands will reap it; from its comparative exemption from weeds the crop may be sooner carried; from its cleanliness, too, the Clover crop will be better, and the ground having by the two hoeings been kept pervious to atmospheric influence must have gained something in fertility. But in our ordinary practice this year's crop of grain would be succeeded by others, each deteriorating the land and diminishing in amount, with an annual increasing production of weeds. By pursuing this system of fallowing with each crop, we may still continue our succession of grain crops, at the same time improving the soil and increasing the return, and continually reducing the amount of weeds. Whether three rows of grain at equal distances in 5 feet breadths will or will not be more or less productive than three rows 1 foot apart, with intervals of 3 feet, will remain for future experiments, but I think it likely the general farmer will more readily adopt the equal distances, as they will not so much shock his pre-conceived notions. I believe myself that in setting apart a field for the production of grain, the equal distance of the rows is preferable to the Lois-Weedon plan. In the equidistant rows each row draws in equal proportion its supply of food from the soil and air, and the earth is loosened about each to the same extent. On the contrary, in the Lois-Weedon practice, the centre row does not receive an equal current of air with the outside rows, nor can its roots luxuriate in a soil loosened and aerified to the same depth, nor indeed do the inner roots of the outside rows. I cannot satisfy myself with Mr. Smith's three rows; the thing may answer in practice, but to me it does not seem that the centre rows are placed on an equality with the outside ones.

The farming world is much indebted to Mr. Smith; he came forward at a moment of general despondency and showed—practically showed—that the Wheat grower need not fear; he demonstrated with ocular proof, when the poor-houses were crowded with the unemployed labourers, that a greater use of manual labour, in aiding the operations of Nature, was able to confer a fertility on the soil equal to that which had usually been effected by a less judicious application of labour with the aid of various substances under the name of manures, at least for the production of grain crops. He showed the poor man how he might realise a profit from his acres equal to that of his richer neighbour. He showed him that he might sempiternally crop his Wheat soil with Wheat and throw all his manure—including the straw of his Wheat, the product of the natural causes he had brought to his aid—on the fields he appropriated to green crops, thus largely augmenting their productiveness, and, which he has still further increased by availing himself of that great law of nature of dissimilar plants appropriating in different proportions their common food. All this he has shown to the great benefit of the poor man, whose acres exceed his ability to cultivate on a higher scale of production. We want a Smith in every parish in Ireland.

Yet I do not regard the Lois-Weedon practice as the perfection of a system, I look upon it rather as the pioneer, I think much more may follow—a whole train of experiments; the first and simplest might be the introduction, as a stolen crop, of Rape either sown or transplanted in the intervals with manure, which however would necessitate a spring sown crop of grain to succeed it. Or, by adding a foot or perhaps more to the breadth of the intervals, summer crops might be interlined with the Wheat, which, by the union of labour and natural and artificial causes of fertility, might bring a return even greater, notwithstanding the increased breadths of the intervals, than Mr. Smith's. I cannot satisfy myself with an average crop of the produce of inefficient and unscientific conditions; I must have a *maximum* result or, at least, at the same time and on the same acre with the average crop of Wheat, something else equivalent to a *maximum* crop of Wheat. I have had in a small experiment at the rate of seven quarters of Barley to the acre, in double rows, 21 inches apart, with intervals of 3 feet 6 inches; I must have it on the broad acre; and by increasing the breadth of the intervals, perhaps by taking the odd 9 inches from the space between the double rows and adding them to the intervals, gain a summer crop in them. *J. M. Goodiff, Granard.*

ON THE FORMATION OF AMMONIA IN THE DECOMPOSITION OF ORGANIC MATTER.

Ammonia is a compound of hydrogen and azote or nitrogen, which does not exist, *eo nomine*, in organic subjects, either in a living or in a fresh state; but its constituents exist in them, in other combinations; and it is only as organic matter begins to decay or become decomposed, that ammonia is formed or developed. A question then arises: when ammonia is formed or developed in decomposing organic matter, is the presence of both its constituent elements necessary in the decaying substance, to its formation or development? or, if not, which of its two constituents is the one whose presence is necessary, in the decomposing matter, to its formation or development?

I think the tendency of current opinion, so accustomed to regard azote or nitrogen as the useful element in ammonia, would be to maintain that it could not be formed or developed without the presence of nitrogen in the decaying matter: but if the view I have taken in my communication of the 12th November, "On the use and purposes of ammonia and vegetable economy," be founded in truth, it becomes merely the converse of the proposition therein advocated, to affirm that, whenever ammonia is developed in the decomposition of organic matter, it is in virtue of hydrogen being contained in it; and that the presence of nitrogen in the decaying substance is not necessary for that end or purpose. By this, I do not mean to imply that both the constituent elements of ammonia may not exist at times in organic matter, in such proportional quantities as to reconstitute that substance on decomposition: or that ammonia may not be formed by the union of its constituents previously existing in the decaying matter. I merely wish to be understood as affirming that the presence of hydrogen alone is necessary in organic matter, for the development of ammonia; and that, if it be so present, ammonia will necessarily be developed in the process of decomposition, though there be no nitrogen in the decaying substance.* A simple experiment will prove this. Let a heap of vegetable matter, in which there is no appreciable quantity of nitrogen present, be subjected to fermentation or decomposition under the requisite conditions of moisture and temperature. It will be found that in the progress of decomposition a sensible amount of ammonia will be developed, making itself known by its pungent odour. Whence is this ammonia derived? Certainly, not from any nitrogen contained in the vegetable substance, since there was none, or next to none, from which it could be formed. But there was hydrogen in it, as there is in all vegetable matter, from which alone, therefore, it could have been derived. If it be asked, whence the nitrogen was obtained? I reply—from the atmosphere, into which the nitrogen was originally discharged, or given out by the plant, when the ammonia absorbed by its roots was decomposed, for the purpose of appropriating the hydrogen in the formation of its structural substance. Of course, if there be any nitrogen present in the decomposing vegetable matter, the hydrogen may as readily unite with it, as far as it will go, in forming ammonia, as with the nitrogen of atmospheric air. But that will make no essential difference in the question: for unless the nitrogen contained in the vegetable substance be in sufficient abundance to convert the whole of the hydrogen into ammonia, the uncombined or unappropriated portion of hydrogen will seek and find its complement of nitrogen in atmospheric air. It does not pass into the atmosphere in a free or uncombined state; for there are no traces of uncombined hydrogen in the atmosphere; while there are at all times abundant indications of the presence of ammonia in it. Now, as there must be immense quantities of hydrogen being continually evolved from decaying vegetable matter, does not this fact prove the remarkable

* When sulphur, for which hydrogen seems to have a ready affinity, is present in organic matter, sulphuretted hydrogen gas will also be formed.

facility or readiness with which hydrogen unites with the nitrogen of the atmosphere in forming ammonia?

The fact of ammonia being formed from hydrogen, and not from azote or nitrogen, in the decomposition of organic matter, may be shown by a reference to other facts. Take, for instance, flesh or animal fibre—a highly azotised substance—from the decomposition of which, of all organic matter, there should be abundance of ammonia formed, if nitrogen in organic matter be the source or origin of ammonia. But does the result correspond with the hypothesis? or, are the gases given off by putrid or decomposing animal matter at all indicative of the formation of ammonia? Take, again, the excreta of animals, which being merely the refuse of their food, after supplying the wants of the animal system, must partake of the nature and properties of the substances they eat—are the excreta of strictly carnivorous animals, or even of those whose food is of a mixed or partly vegetable character, as rich in ammonia-producing matter as the excreta of animals whose food is derived entirely from the vegetable kingdom? An apparent difficulty, I am aware, is suggested by the properties of guano, which generally contains a very noteable proportion of ammonia. This substance is considered as the excrementitious deposit of sea-birds, deriving their subsistence from the stores of the ocean. But what is our exact knowledge respecting their food? What were the chemical constituents of the fish tribes they are supposed to have subsisted on?—did they abound or not in oleaginous or fatty matter? It is to be borne in mind, that even in the animal kingdom there is a vast amount of hydro-carbonaceous matter, in the form of fat, oil, spermaceti, &c., which, when reduced to its constituent elements, of which hydrogen is one, may, in certain circumstances or conditions, be productive of ammonia; in others of water. Thus, if fat or oil be burned in a lamp or candle, the products of combustion are carbonic acid and water, the carbon and hydrogen uniting with the oxygen of the atmosphere. It is important to observe, however, that hydrogen unites with oxygen only at the temperature of ignition. But the result is different when fat or oleaginous matter is decomposed in the body of an animal. In this case, the carbon is taken into the sanguiferous system, and is carried to the lungs, where it unites with the oxygen of the atmosphere, and forms carbonic acid, producing animal heat, which is its designed object. But the hydrogen having no part to perform in the functions of the animal system, is ejected with the excreta, and, meeting with the nitrogen of the atmosphere, is converted into ammonia. If the food then of those sea-birds abounded in oleaginous or hydro-carbonaceous matter, the difficulty of accounting for a large proportion of ammonia in their excreta ceases; and whatever successive assimilations such hydro-carbonaceous matter may have undergone in the bodies of a class of animated beings (fishes) whose existence is maintained by preying on each other, still it must primarily have been derived from vegetable matter, as the food of some living creatures, which in their turn become the food of others.

The bearing of all these considerations tends, I conceive, to the conclusion that ammonia is of vegetable origin, that is, derived from an element inherent in vegetable matter, that element being hydrogen; and this brings me back to the proposition I set out with, that the primary use and purpose of ammonia in vegetable economy is to supply hydrogen for the formation of vegetable substance; at the same time furnishing whatever nitrogen is found under any form or combination in vegetable productions. *J. H. H.*

Home Correspondence.

Land Agents.—With your permission I again take leave to offer a few remarks in connection with this subject, and, however feebly my observations may be felt, I feel deeply convinced that the progress of agricultural improvement hereafter, as well as its sluggishness hitherto, may be mainly attributed to land agents as a body being extremely inefficient. Your numerous readers in different parts of the kingdom may easily discover whenever a vacancy occurs in the management of a gentleman's estate, that in four out of five cases the individual selected to supply the void has generally never had any previous connection with the duties he is now for the first time appointed to perform. Knowing a good deal of the agriculture of different counties, as well as some of the largest estates in the different localities, the facts bear me out in making this statement; and, of my own knowledge, I can aver that during the past year vacancies occurred upon the estates of two large and wealthy landowners in the same county, when, as a matter of course, numerous applicants presented themselves; each post had many appendages to make them coveted, and were the best of this description of employment. Two or three of the applicants were gentlemen who had served their articles with land agents, and had otherwise qualified themselves, but who being unsupported by any direct influence in the necessary quarter were unsuccessful, and those who were appointed were in no way whatever capable of fulfilling the duties they undertook. Neither of them had before any knowledge beyond their own particular localities, nor had either of them any previous experience in the management of agricultural property. The estates in each of these cases were as large, if not the greatest, in the particular county; and if those possessed of large property adopt this plan of proceeding in selecting parties to manage their affairs, it follows as a natural consequence that the more ignorance prevails on the part of an agent, that it will eventually turn to his advantage. Independently of this, it deters many from incurring expenses in pursuit of the requisite knowledge, seeing that it carries no recommendation. How is it possible under these circumstances that agriculture can keep pace with other branches of knowledge; and why should it be urged upon tenant farmers that they must keep up with the times, when a landlord thinks their superintendent is best suited to his employment, when he is in profound ignorance of the duties he has appointed him to perform? Are improved methods likely to be introduced to the notice of agriculturists through such channels as these? or are suggestions emanating from such a source likely to command the attention of the tenantry? Should sound and practical advice be given by a person occupying the position of such an agent, it will always be received with doubt, on the ground of his previous want of skill disqualifying him from being a competent judge. The old plan which has attached to this species of management has been on the first difficulties presenting themselves, either by low prices or otherwise, to give an indiscriminate reduction by way of so much per cent.; and if an improper and undue weight of arrear has accumulated against any one or more tenants, then to sweep it away, without any just reason, leaving the man who keeps his payments regularly without any reward whatever. A certain quantity of newspaper praise is bespattered upon a landowner, without his having any one to advise him whether he be doing an act of justice or injustice; and in the majority of those who return a per centage, the farms are more highly charged than those who give none at all; and if a maximum reduction of 20 per cent. were returned, the chances are an owner of such an estate would not then be on a level with the man who always lets his land on reasonable terms. If buildings have to be constructed, an ignorant agent resorts for assistance to a neighbouring architect or builder; if a farm has to be valued, to some practising land valuer; if drains are to be laid down, to a drainage company or their engineer; if an ordinary agreement has to be entered into, then to his principal's attorney; or if any correspondence arises with a person of superior standing, this part of the duty is also handed over to the lawyer. Do any of your readers imagine that all this machinery brought to bear upon a great majority of the estates in the kingdom opposes no obstructions to progressive advancement? Talk of simplifying titles, when every estate owner may correct such anomalies as these himself. When decisions are sought to be obtained and so many people to be consulted, it is obvious much delay must necessarily arise, and work prejudicially to the best interests of an estate; but if one man held the power in his hands, with a competent judgment to decide the whole, things would be very different. Should these mixed duties engender a bad feeling between the agent and attorney, it produces a clashing of duties, jealousy and obstruction by first one, then the other, which must prove detrimental to the property. This eventually divides the confidence of the principal, and destroys the efficacy and confidence requisite to consolidate the efficacy of one man; responsibility becomes divided, and is constantly removed from one quarter to another. *B.*

Covered Rick Houses.—I once saw what was called a Dutch barn; it was as it were a very tall cart-house, raised on a dozen Oak trees, six on each side, about 12 feet high, open all round, with a common thatched roof; in each post say 10 feet of timber, at 2*s.* a foot = 1*l.* each. The trees were fixed in the ground, wide enough to admit a loaded waggon; first one bay was filled, and so on till the whole building was occupied. This may be a useful erection in wet weather, and would always save the expense of new thatch, and that at a time when a thatcher can hardly be procured; but it occurred to me at the time, and I still think there are several disadvantages; it ought to be placed in a sheltered spot, or when empty the wind would have great power to push it out of the perpendicular, or even to blow the roof off bodily; then it would not be convenient to fill it to the roof, which would be a harbour for all the sparrows in the neighbourhood; and, on my making this remark to the proprietor, he said "no complaint had ever been made on that score," whereupon I clapped my hands, when lo! out flew about a score of pigeons! "Hem!" said I. "Oh, they are my pigeons," said he. "Fortunate birds," said I; "nice and fat, no doubt; but do they leave no dirt behind?" *Delta.*

Education of the Working Classes.—To recur frequently to the same subject may seem tedious to those who merely look at the surface of things. When suggestions come from an anonymous writer, little attention is paid to hints thus appearing, though they may contain a certain amount of common sense worth consideration, as bearing upon the welfare of mankind. If a man who has really the wish to benefit his fellow creatures was deterred from pressing his observations on the notice of the public, because they did not receive the praise which, in his vanity, he considered they deserved, he would be giving way to a silly feeling, and probably lose the pleasure of seeing, in the course of time, some more able and influential member of society carry out his wishes. The over-education of children, like over-feeding pigs, is a faulty system. The former is beginning to be felt, and the latter will soon cease to be even an amusement. At present the interest of the biped properly takes precedence of that of the quadruped. It is to be hoped the meeting lately held at Winchester will meet with the attention it deserves, on which occasion Lord Ashburton so ably introduced the "education of the working classes," dwelling upon the mistake usually made of neglecting essentials because they are "small things," in favour of matters of no use to the labourer and mechanic in comparison with their daily comfort. Enthusiasm carries away well-intentioned persons, whose thoughts run upon reading and the higher branches of education, as if the scholar was to carry everything before him; speaking with all due respect for such individuals, and not meaning in any way to disparage learning, yet it must be admitted that no men are so unfit to rough it in the world. If it be so in one case, why should the fact alter when applied to men who have to earn their bread by strength of arm, economise their means, and understand how to accomplish this end? The use of the globes, the longitude of Timbuctoo, learnt like a parrot, will teach neither boy nor girl in after life to mend a rent in a coat, or make a flannel petticoat, both accomplishments being exceedingly useful in practice during a long winter evening. In all schools for the labouring population, reading, writing, and the common rules of arithmetic are necessary, in order that all members of society, in whatever grade they may be, should have an opportunity of advancing themselves in after life. However, it must be always borne in mind, that the Christian religion is the only sure foundation on which to build good conduct and contentment; though leading journals would leave this to Nature or chance, yet we may rest assured all must fail without a faithful knowledge of Him to whom we owe everything. The injudicious distribution of tracts is doing incalculable mischief, many of them from their puerile phraseology tending to excite the ridicule of those for whose instruction they are written. It should be recollected that many of the uneducated are strong-minded prejudiced men, requiring a very different kind of evidence to convince them of error, than what is contained in silly anecdotes and weak verbiage. The practical system of "house to house visitation," to enable the seed sown in youth to produce fruit in advancing age, is worth all the tracts ever printed. How true it is, you may lead where you cannot drive! In a large straggling parish, served by one unfortunate half-starved curate, who besides vamping up his sermons has other duties to perform, it is next to impossible, even if he was a Hercules in strength, to call upon and converse with his poorer neighbours, so as to have any influence over them. Hence ignorance and crude ideas flourish, where knowledge should vegetate. If a man wishes to become a gardener, he must know how to prepare his land before he sows his seeds. An agriculturist cannot expect his farm to yield crops spontaneously; to attain his object he must use the plough, harrows, &c. &c. A youth cannot run before he is able to walk. Instead of cramming parish children with the higher branches of education, it would be better after they are grounded in the rudimental parts to instruct them in domestic duties and economy in all its uses. Saving pence, making and mending clothes, are preferable to idleness at home or drinking in a beer-shop; a nail put in here, a brick there, a bit of mortar or a slate in another place, will save much wretchedness and ill-health, and preserve the cottage from the keen winter blasts, frost, and snow. This is a long story, but long as it is, if nobody else considers the subject worth notice, the same unworthy pen may be induced to spoil a sheet or two more of note paper. *Falcon.*

Societies.

CIRENCESTER.—*Report of the Judges for the Draining Premium offered by the Hon. C. F. Ponsonby.*—There were three competitors for this prize:—The Right Hon. Lord de Mauley, the Hon. C. F. Ponsonby, and Mr. W. J. Sadler, of Bentham, near Purton. Lord de Mauley's field, on Town's-end Farm, is arable, and was very wet previously to draining. It lies in lands of various widths, but in a good form for draining. The soil is a good clay loam, intermixed with stones. The subsoil is a strong clay, with layers of thin stones, and in some places a hard solid rock. It is on the forest marble formation. The drains are put in the furrows 4 feet deep, except in two or three flat furrows, where they are a few inches less. The main drain is walled, and covered with flat stones, and of ample dimensions. The furrows are tile drained, and the whole filled up with small stones to within 16 or 18 inches of the surface, besides having an extra heap at each junction with the main; the width of drain necessary for the men to use the pick and sledge hammer in digging them, will account for the quantity of stones used. On 10 acres there are 899 perches of drains, which will make the average distance about 30 feet apart. The cost of digging is as follows:—

145 perches at 2s		£14	10s.	0d.
142 ,, at 1s.		7	2	0
130 ,, at 11d.		5	19	0
237 ,, at 10d.		9	17	6
245 ,, at 9d.		9	3	8
899		£46	12	2

The stones, hauling, and filling the drains, cost as under:

Digging 356 loads of stones, at 5½d.	£8	3s.	2d.
Hauling 416 loads of stones, 79 days, at 5s.	19	15	0
Filling ditto, 44 days, at 20d.	3	13	4
Filling drains with stones 899 perch, at 1½d.	5	12	4½
	£37	3	10½

Making a total cost of 83*l.* 16*s.*, or 8*l.* 7*s.* 7*d.* per acre.

The Hon. C. F. Ponsonby's field, situate on the Dean Farm, is also arable, and lies partly in wide flat lands of

irregular widths. It is somewhat a difficult piece to drain effectually, having a fall in two directions. In one direction from west to east, which is the way the furrows run, and in which the drains are mostly put; and also a considerable slope to the south. Part of the piece drained is a nasty clay soil, having a subsoil of the same formation as Lord de Mauley's 10 acres, but not so good in quality, and a portion is a stone brash intermixed with clay, with the great oolite for the subsoil. The drains are chiefly in the furrows, and are from 26 to 36 inches deep, placed at very irregular widths, varying from 18 to 48 feet apart. The main drain is walled; the drains in the furrows are tile drains, with small stones at top. In the account given us the total number of perches is stated to be 600, which will give the average distance just 44 feet apart. The drains were cut at 7*d.* per perch, amounting to 17*l.* 10*s.* The men are stated to have earned 2*s.* per day on the average. The stones, hauling, and filling the drains, cost as follows:—

	£.	s.	d.
Hauling 300 loads of stone, one horse and one boy, at 3*s.*	4	10	0
Quarrying and filling stones	2	5	0
Placing stones in drains, at 1*d.* per perch ...	2	10	0
Four-fifths of the stones were collected from other lands drained by Government Loan, and cost nothing ...	0	0	0
	9	5	0
Digging drains	17	10	0
	26	15	0

Making a total cost of 26*l.* 15*s.*, or 2*l.* 13*s.* 6*d.* per acre.

Mr. Sadler's is pasture land, lying in low lands of rather irregular widths, with very little fall. In one furrow we had an opportunity of seeing the fall by the water lying in it before draining; it was 4 inches only in a distance of 7 chains. The soil is partly a sandy loam, and the remainder a very stiff clay, geologically termed the Oxford clay, but not of the worst description, like the neighbouring district of Braydon. The drains are put up the furrows from 23 to 39 inches deep, a few only of the shallowest depth, where the land is very flat; beside the furrow drains there are several skew drains on the clayey side of the field running under the furrow drains, but not connected with them. Pipes are used in draining this field with a few broken stones on them, about a chain up the furrows from the main. The main drain is laid within pipes, and has three deep wells or settling pits in it, to prevent the sediment stopping up the pipes. The cost was as follows, as near as we can estimate it from the plans, Mr. Sadler not having furnished us with the number of perches nor the quantities of the different sized pipes:

	£	s.	d.
Cost of stones	0	16	0
Hauling ditto and pipes	2	6	0
About 1250 perch draining, at 2¾*d.* ...	14	6	5
Pipes	18	14	11
Total	£36	3	4

The object in offering a prize for the best draining, we take it, was to compare the different modes adopted in the neighbourhood, and if there were one or more better than the others to bring it or them more prominently before the public for their benefit; and on the other hand, if there were any bad systems either from injudicious arrangement, or more expensive in their construction than is necessary, to expose them as a warning. According to our opinion the Society has only succeeded in the present instance in the latter; for we do not consider either of the competitors worthy of the prize, although there are some good points in two of them. To begin with Lord de Mauley's, the arrangement is good in putting the drains in the furrows; there is a good outlet for the main to empty itself; the work is executed well, and according to the quantity, with economy; but to dig large 4-feet drains, and fill them with stones up to within 16 or 18 inches of the surface, is much too expensive, for besides the 416 loads of stones brought from a distance of over half a mile, there was a great quantity dug out of the drains, so that in reality the quantity of stones is much greater than those carted. We have no hesitation in saying, had 3 feet drains been dug, and 15 inches of stones put in the same way, and the land kept in its present form, it would have answered every purpose at little more than half the cost. On the Hon. Mr. Ponsonby's, the arrangement of the drains is bad, in consequence, in some measure, of keeping the drains in the furrows, as they are very shallow, and ought not in this case to have been regarded; we have before said it is a somewhat difficult piece to drain. From its being sidelong, it requires the drains deeper and nearer together than leveller land: it is a piece where a little geological knowledge would be of service, for there is no doubt but drains have been put where they were unnecessary, if the water from the wet land above had been properly cut off, or sunk in the hollow rock below; besides, where the land is wettest on the clay the drains are farthest apart, as much as 48 feet in some instances, so that it is far from being effectually drained, in fact there is not one point in this case we can commend.

There are some good points in Mr. Sadler's draining; the putting the drains in the furrow is right, although on a portion they are rather closer than necessary, and had he stopped at the furrows he would have been a richer man in more ways than one, as we consider he has spent 5*l.* in the skew drains to no good purpose whatever. As regards the workmanship it is well and economically done in every respect; and the dead wells are to be commended, especially on sandy land, where the drains are apt to silt up. We could have wished that Mr. Sadler had been able to get a better outlet for his main drain, as when we inspected it after the late heavy rains, the mouth of it was some 12 or 15 inches under water. We mention this just to draw the attention of Mr. Sadler, and others suffering from the cause, to a remedy which can be put in force by the magistrates at petty sessions, who have the power to compel the proper cleansing and deepening of watercourses, under Lord Lincoln's Act; and we have little doubt if Mr. Sadler were to follow the watercourse, he would find various little obstructions, which are generally thought of no consequence, but are in reality sufficient to make a great difference in the height of water in a flat country.

THOMAS ARKELL.
EDMUND RUCK.

Reviews.

The Journal of the Royal Agricultural Society of England. Vol. XIV. Part II. John Murray, London.

THE current Part of the Society's Journal is one of the most instructive and useful that has yet been issued. It is really astonishing to all but those who are fully acquainted with the extent and wealth of the territory within agricultural jurisdiction, to find, year after year, for so long a period, these large volumes issuing in unabated freshness and instructiveness. Not only the standard topics of the profession continue to furnish the subjects of useful and most readable communications, but those of more immediate interest, and which are attracting especial notice for the time, receive the attention which the intelligent reader would desire, but which in an annual periodical he could hardly expect, unless it were under the guidance of equal tact and ability to that which Mr. Pusey has displayed.

In the number before us we find notices of the refuse of cod-fishery as manure, and of nitrate of soda as a substitute for guano—both of them admirably timed to the present condition of the guano market—and both of them likely to remain useful when the present pressure there may have passed away. Of course, the reports of the Gloucester meeting, and several county reports of English and Scottish Agriculture, occupy the bulk of the volume; Mr. Stevenson's paper on the farming of East Lothian is especially valuable—the statistical information collected by the Highland Society being already made use of in the exactness and certainty with which all the principal agricultural features of the county are given. In addition to these, and as the principal feature of the volume, we have one of those extraordinary contributions to our knowledge of agricultural chemistry for which, during several years, we have had to thank Mr. Lawes, of Rothamsted. A mass of well-arranged facts, arrived at by well-devised and extensive experiments, are admirably discussed, and inferences are drawn which bear directly on the economy and practice of feeding. This paper and many of the others require closer study than we have yet been able to give them; we must be satisfied at present with this general statement of the contents of the volume, but to many of the communications which it contains we shall hereafter direct the more particular attention of our readers.

Cuthill's Belgian Prize Essay on the Potato, &c. &c. J. Cuthill, Camberwell.—This is the third edition of a pamphlet that has already been referred to more than once in our columns, as describing the method of Potato culture most likely to attain success in the present state of the plant. It contains also information on the cultivation of other garden vegetables.

Poultry.

Cochin China Fowls.—The gentleman who heads his article in your last week's Number "Right or Wrong," is, in my opinion, decidedly wrong when he says Cochin China fowls are not good eating. I have kept them some little time, and all I have ever killed, when eaten, have been pronounced by first-rate cooks, and well-known and acknowledged good judges of eating, excellent. If not properly fattened, and dressed by an ignorant second-rate cook, of course they are bad. *An Admirer of Cochin China Fowls.*

POULTRY: *C P.* I have no ceiling to any of my poultry houses; they are plainly tiled with a layer of straw beneath the tiles. The perches are 5 feet below the roof; I do not line them at all, and my birds are always healthy. If you have a ceiling, the best is the ordinary one, such as you would put in a dwelling, but of a rougher description. It should be 2 feet below the roof, and have apertures to allow the foul air to escape into the roof, and be there carried off by a current of air which you must provide by openings at the extremities. My impression is, it looks comfortable but is unnecessary. First-class young turkeys at Christmas weigh from 16 to 24 lbs.—*Durham.* I am not learned in pigeons, and do not know the "Arabian."—*Nine Years' Subscriber.* Keep your pheasants dry; let them have a shed under which they can shelter themselves; supply it with a perch 3 feet from the ground, and let it be the highest spot in the mew. The bottom should be fine dry gravel. Feed on the best Barley, changing sometimes for Wheat, with now and then a little Hempseed. They are fond of bread, and it keeps them tame if they are fed by hand at times. Let them always have clean water.—*J S.* Eight lbs. for the cock, and 6½ lbs. for the hen will be fair weights, but not large.—*Oronoco Goose.* We know nothing of the Oronoco goose. *John Baily,* 113, *Mount Street.*

Notices to Correspondents.

INDIAN CORN: *W A* asks how "mush," so strongly recommended by Mr. Lort at p. 810 last year, is made. Dealers in Indian meal would do well to advertise: we cannot do it for them.

PRICES: *An Old Subscriber.* The *yearly* averages were named. The figures were taken, we think, from Mr. Willichs's table.

QUALITY THE TEST OF CHEAPNESS.

BERDOE'S OVERCOATS AND CAPES resist any amount of rain. One of the largest Stocks in London of Superior GARMENTS at Lowest Charges. First-Class DRESS COATS, 3*l.*; BOY'S SUIT, 11*d.* per inch, according to height.—96, New Bond Street, and 69, Cornhill. (Nowhere else.)

MECHI'S, 4, LEADENHALL STREET, LONDON.—A visit to the SHOW ROOMS of this well-known emporium will afford an agreeable occupation for an hour or two. They will be found to contain the most superb specimens of Papier Maché produced in this country. MECHI has also a world-wide reputation for Bagatelle Tables, Dressing Cases, Work-boxes, Work-tables, Desks, Table and all other descriptions of Cutlery, everything for the Toilet and Work-table, and an infinity of other articles.

N.B.—The renowned Magic Strop, Paste, and Razors.

FENDERS, STOVES, AND FIRE-IRONS.—Buyers of the above are requested, before finally deciding, to visit WILLIAM S. BURTON'S SHOW ROOMS, 39, Oxford Street (corner of Newman Street), Nos. 1 and 2, Newman Street, and Perry's Place. They are the largest in the world, and contain such an assortment of FENDERS, STOVES, RANGES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with bronzed ornaments and two sets of bars, 2*l.* 14*s.* to 5*l.* 10*s.*; ditto, with ormolu ornaments and two sets of bars, 2*l.* 10*s.* to 12*l.* 12*s.*; Bronzed Fenders complete, with standards, from 7*s.* to 3*l.*; Steel Fenders from 2*l.* 15*s.* to 6*l.*; ditto, with rich ormolu ornaments, from 2*l.* 15*s.* to 7*l.* 7*s.*; Fire-irons from 1*s.* 9*d.* the set to 4*l.* 4*s.* Sylvester and all other Patent Stoves, with radiating hearth plates. All which he is enabled to sell at these very reduced charges, 1st,—From the frequency and extent of his purchases; and, 2dly,—From those purchases being made exclusively for cash.

WILLIAM S. BURTON has TEN LARGE SHOW ROOMS (all communicating), exclusive of the shop, devoted solely to the show of GENERAL FURNISHING IRONMONGERY (including Cutlery, Nickel Silver, Plated and Japanned Wares), Iron and Brass Bedsteads, so arranged and classified that purchasers may easily and at once make their selections.

Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of.

No. 39, Oxford Street (corner of Newman Street); Nos. 1 and 2, Newman Street; and 4 and 5, Perry's Place.

METCALFE AND CO'S NEW PATTERN TOOTH BRUSH, PENETRATING HAIR BRUSHES, AND SMYRNA SPONGES.—The Tooth Brush performs the highly-important office of searching thoroughly into the divisions and cleansing in the most extraordinary manner—hairs never come loose. Peculiarly penetrating Hair Brushes, with durable unbleached Russian bristles, which will not soften like common hair, and immense stock of genuine unbleached Smyrna Sponge, with every description of British and Foreign Perfumery, at METCALFE, BINGLEY, & Co.'s only Establishment, 130 B and 131, Oxford Street, second and third doors west from Holles Street.

CAUTION.—Beware of the word "from" Metcalfe's, adopted by some houses. Metcalfe's Alkaline Tooth Powder, 2*s.* per box.

NO CHARGE FOR STAMPING ARMS, CRESTS, INITIALS, &c., on paper and envelopes, at LOCKWOOD's well-known establishment, 75, New Bond Street. Good cream-laid Note-paper, five quires for 9*d.*; Thick ditto, five quires, 1*s.*; Albert and Queen's sizes, five quires for 6*d.*, 9*d.*, and 1*s.*; Envelopes, 3*d.* to 1*s.* 6*d.* per hundred; Foolscap paper, 7*s.* 6*d.* per ream; Copybooks, 2*s.* 6*d.* per dozen. Card Plate engraved, 2*s.* 6*d.*; 100 Cards printed, 2*s.* 6*d.* Mourning Stationery equally cheap. Wedding Orders promptly executed. A large variety of Writing and Dressing Cases, Envelope Boxes, Blotting Books, Inkstands, Gold Pens, Church Services, &c. Copy address, LOCKWOOD'S, 75, New Bond Street. Country orders for 20*s.* sent carriage free.

KNOW THYSELF!—Professor BLENKINSOP continues to receive from individuals of every rank the most flattering testimonials of his success in describing the CHARACTERS of Persons from their HANDWRITING, pointing out their mental and moral qualities, whether good or bad.—Address by letter, stating age, sex, and profession, inclosing 13 uncut postage stamps, to Dr. BLENKINSOP, 344, Strand, London.

TO NERVOUS SUFFERERS.

A RETIRED CLERGYMAN having been restored to health in a few days, after many years of great nervous suffering, is anxious to make known to others the means of cure. Will, therefore, send (free), on receiving a stamped envelope (properly addressed), a copy of the prescription used.—Direct to the Rev. E. DOUGLAS, 18, Holland Street, Brixton, London.

THE EAST INDIAN ANTI-NERVOUS PILLS, a cure when all other means fail for Nervous Debility, Lowness of Spirits, Loss of Memory, Head-ache, Dimness of Sight, Fear, Blushings, Tremblings, Melancholy Thoughts, Rheumatic Pains in any part of the body, Urinal Diseases, Constitutional Wasting, &c.

Mr. ROBERTS, late Army Surgeon, discovered these Pills during his residence in India, testing their curative powers for years. In his own private practice, in numbers of hopeless cases, never failing to produce ease of body and tranquillity of mind in one or two days, and ultimately effecting a permanent cure.

Price, 1*s.* 1½*d.*, 2*s.* 9*d.*, 4*s.* 6*d.*, 11*s.*, and 33*s.* per box. Sent post free to any part upon receipt of postage stamps or Post-office order for the amount. Address J. ROBERTS, Surgeon, Hall Square, Yarmouth, Norfolk. Advice and Medicine for every form of disease sent to any part.

PAINS IN THE BACK, GRAVEL, LUMBAGO, RHEUMATISM, GOUT, INDIGESTION, FLATULENCY, NERVOUSNESS, DEBILITY, &c.

DR. DE ROOS' COMPOUND RENAL PILLS, as their name Renal (or the Kidneys) indicates, are a most safe and efficacious remedy for the above dangerous complaints. For depression of spirits, incapacity for society, study, or business, giddiness, drowsiness, nervousness, and insanity itself, when arising from or combined with urinary diseases, they are unequalled. Price 1*s.* 1½*d.*, 2*s.* 9*d.*, 4*s.* 6*d.*, 11*s.*, and 33*s.* per Box, through all Medicine Vendors, or sent (free) on receipt of the amount in postage stamps, by Dr. DE ROOS, 35, Ely Place, Holborn, London. At Home for consultation daily from 11 till 1, and 5 till 8, Sunday excepted. Advice and Medicines, 1*l.*

PARR'S LIFE PILLS are now, from their many virtues, the established Family Medicine throughout the British Empire. PARR'S LIFE PILLS will be found speedily to reanimate the spirits, improve the digestive powers, and restore the whole nervous system to a happy and natural state; the balsamic powers of this medicine produce that delightful feeling of good spirits so very desirable, and disposes both mind and body to healthy exercise—everything under its influence soon wears a joyous aspect, and the varied duties of life are performed with pleasure: and, instead of long and weary nights, gives sound and refreshing sleep. If the stomach and bowels require it, PARR'S LIFE PILLS act as the mildest and most agreeable purgative, and by their cleansing powers totally eradicate a redundancy of bile.—Sold by E. EDWARDS, 67, St. Paul's Churchyard; BARCLAY and SONS, Farringdon Street; SUTTON and Co., Bow Church-yard; HANNAY and Co., and SANGER, Oxford Street, London; and by all respectable Chemists and Medicine Vendors in Town and Country. In boxes, price 1*s.* 1½*d.*, 2*s.* 9*d.*; and in Family Packets, 11*s.* each.—*** None are genuine without the English Government stamp fixed round the sides of each Box.

PRIZE MEDAL—1851.
AT A VERY ECONOMICAL RATE.
SAMUEL CUNDY, MASON and BUILDER, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Lower Belgrave Place, Pimlico, London.
Marble Chimney pieces manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price. A good Marble Chimney-piece for 40s. Marble Work in all its branches at a remarkably cheap rate for Halls, Dairies, Larders, &c. Circulars sent on application.
N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank.

SLATE WORKS, ISLEWORTH, MIDDLESEX.
EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.
Priced lists of plant tubs and boxes forwarded on application.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.
"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard run, of E. T. ARCHER, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey.

PROTOXIDE ANTI-CORROSION PAINT, at a very considerable reduction of price. This article is extensively used by the principal Railway and Gas Companies, and by Builders and others for painting Stucco. It prevents iron from rusting, wood from decay, masonry from damp, and the hottest sun has no effect upon it.—Manufactured by CHARLES FRANCIS and SONS, Cement Works, Nine Elms, London.

FIRE ANNIHILATOR, OR VAPOUR FIRE ENGINE.—Its practical value proved incontestably by 23 remarkable cases of successful use. See "Bradshaw" of this month, p. 132. Engines for Dwelling-houses, 3l. to 4l.—Office of the Fire Annihilator Company, 105, Leadenhall Street, London.

THE COTTAGER'S STOVE.—An economical, compact, and portable COOKING APPARATUS, combining a good sized Oven and Hotplate; may be had with or without a boiler, and will cook sufficient for a dozen persons with the consumption of 1 lb. of coal or coke per hour. It requires no fixing, may be placed in any apartment, and is a great security against accidents from fire. It will burn Coal, Coke, or Wood. They are also specially adapted for Emigrants, and may be seen in operation daily, at the Manufacturers', D. & E. BAILEY, 272, High Holborn, London.—Price 50s., and upwards.

GREAT SAVING OF TIME AND MONEY.
R. RESTELL'S PATENT ECONOMICAL GAS APPARATUS for Forcing Houses, Greenhouses, Conservatories, Pits, Shops, Counting Houses, Warehouses, Drying Rooms, &c. &c., possessing all the advantages of Hot Water at half the expense of fitting, and most trifling cost for Gas, far surpassing any ordinary Gas Stove, requiring no furnace, and allowing of no fumes or evaporation in the Building, or possibility of accidents from negligence or carelessness. It has been tested through the late severe weather, on a variety of Plants, and found most satisfactory. It is very quickly fitted up and requires no night attention.—Apply to the Inventor and Patentee, R. RESTELL, 35, High Street, Croydon, Surrey.
Persons wishing to have Houses fitted will please to send the height and dimensions.

WANTED IMMEDIATELY, the Address of every Gardener or his Employer wishing to have (free by post) Patterns, with prices and particulars, of HAYTHORN'S HEXAGON GARDEN NET, patronised by the Nobility, Clergy, Gentry, and all the principal Gardeners. The best and cheapest article for the protection of bloom, fruit, and flowers from frosts, birds, wasps, flies, children, and servants; and also for covering Hothouses.—Letters and orders to be directed to J. W. HAYTHORN, Nottingham. Parcels, carriage paid to London, Liverpool, Leeds, Bristol, Hull, &c.

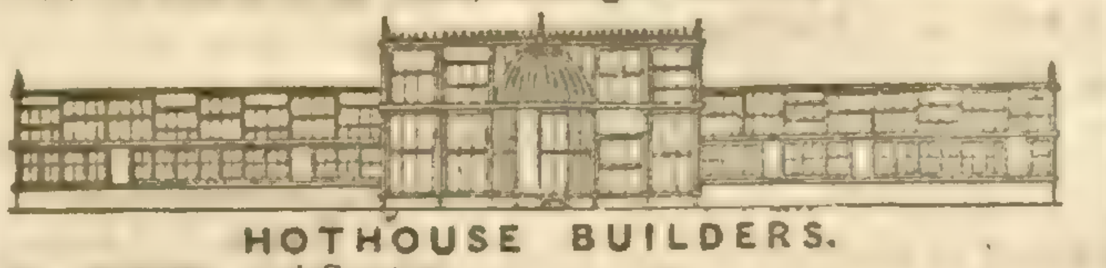
HORTICULTURAL BUILDINGS, ROCK AND RUSTIC WORK, ORNAMENTAL WATER, FOUNTAINS AND FALLS, AND LANDSCAPE GARDENING, executed on the best principles: Estates Improved, Land Laid Out for Building, &c., by Mr. GLENNY, Valuer, Estate and Horticultural Agent, 420, Strand.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.
EDWARD AND A. WEEKS (late with J. WEEKS & Co.), Park Cottage, King's Road, Chelsea, are now in a position to execute any of the above works, in the very best manner, and at a reduced price. Materials and workmanship warranted best quality. Plans and estimates forwarded on application for all kinds of Horticultural Erections, also for the Heating of Churches, Hospitals, Halls, Offices, &c.
One, two, and three-light Boxes always on hand.

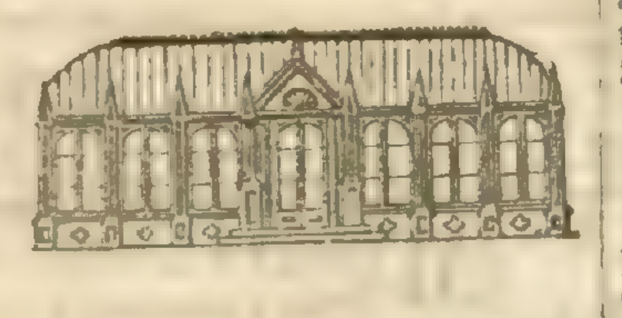
HORTICULTURAL BUILDING AND HEATING BY HOT WATER.
AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.

GRAY AND ORMSON, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.
G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.
Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

HORTICULTURE IN ALL ITS BRANCHES.
J. WEEKS & Co., King's Road, Chelsea,

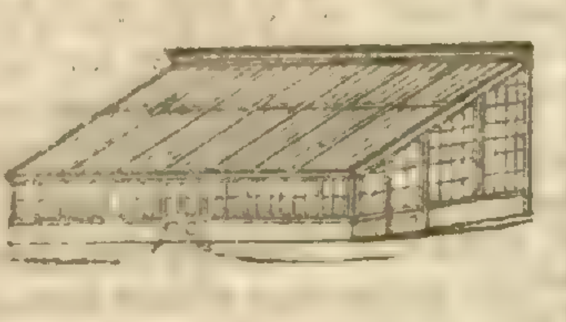


HOTHOUSE BUILDERS.
The Nobility and Gentry about to erect Horticultural Buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

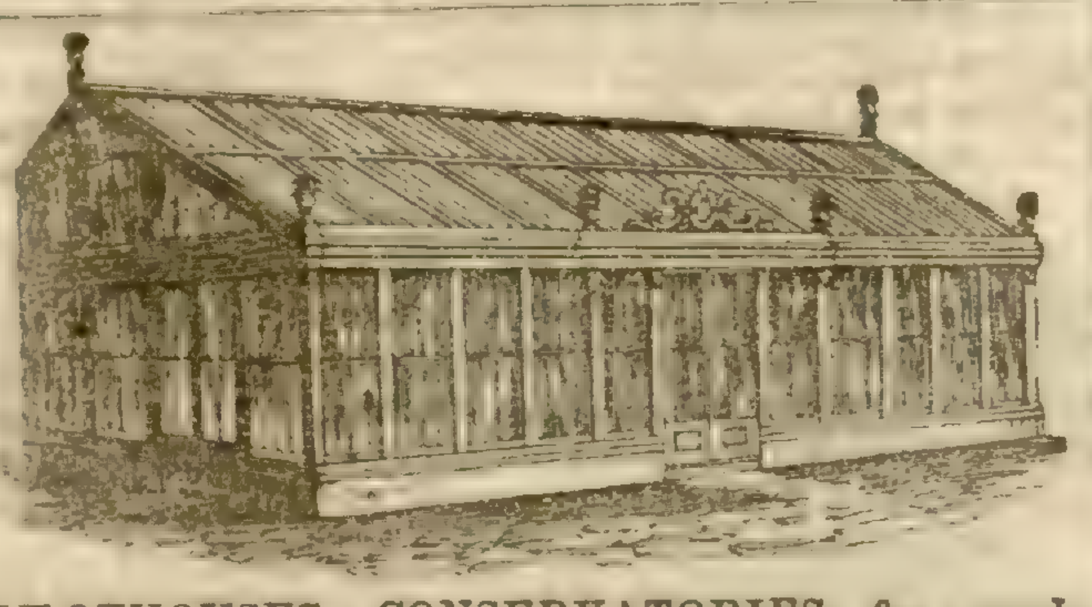


The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.



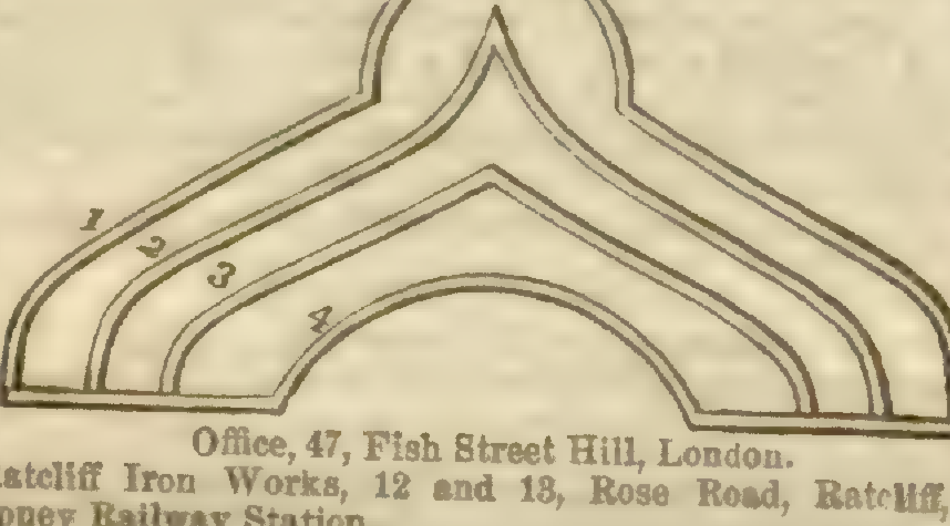
Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.
J. WEEKS & Co., King's Road, Chelsea, London.



HOTHOUSES, CONSERVATORIES, &c., made and fixed complete, at a considerable reduction. CUCUMBER and MELON BOXES and LIGHTS of all sizes, made of the best materials, glazed and painted complete, kept ready for immediate use, packed and sent to all parts of the kingdom. Reference may be had to the nobility, gentry, and the trade in most of the counties in England.—JAMES WATTS, Hothouse Builder, Claremont Place, Old Kent Road, London.

BY HER MAJESTY'S ROYAL LETTERS PATENT.
E. DENCH, PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.
PATENT HOTHOUSES and excellent Glass at 1s. 3d. per foot super., which are superior to all others for price with quality, and if known would supersede all others. (See Appendix, in "Book of the Garden," by Mr. M'Intosh.) A Range of Houses and Hot Water Apparatus, was erected by E. D. for E. L. Betts, Esq., Preston Hall, Kent. Mr. J. Frost, head gardener, has shown their efficiency by their produce at the Royal Botanic Gardens, Regent's Park, June 8, and Chiswick, June 11. The editor of the *Gardeners' Chronicle* says: "Beautiful examples of Black Hamburgh, large both in bunch and berry, and as black as Sloes, were furnished by Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall, Kent; these well deserved the first prize which was awarded them."—*Gardeners' Chronicle*, June 18th, 1853. The Grapes were considered the best shown at Regent's Park during the season, and the Houses are as superior for the growth of everything else in horticulture, which has been fully proved, and they have been extensively erected for the nobility and gentry in all parts of the kingdom.
GLAZING WITHOUT PUTTY.—Iron and Glass alone. E. D. has Roofed the Public Baths and Washhouses, Endell Street, on this principle, and others are in hand. Patent Sashes for Peach Walls, Pits, &c., 8d. per foot super. Heating by Hot-water, on the most practical principles, and all the best materials used. Printed Price List sent on application.

METAL CONSERVATORIES, PLAIN OR ORNAMENTAL, ERECTED TO ANY DESIGN.
THOS. WALLER AND CO. (many years Foreman to Messrs. Deane, Dray, & Deane, Finsbury Iron Works, and London Bridge), Iron Founders, House and Ship Smiths, Gas Fitters, and Manufacturers of all kinds of Metal Conservatories, Greenhouses, Verandahs, Balconies, Summer-houses; Hot, Cold, Shower, and Fumigating Baths; Public and Private Buildings. Greenhouse Conservatories heated by hot water or the Patent Drying Apparatus. Every description of open and close Kitchen Ranges for large or small establishments. The Trade supplied with Metal and Iron Sash Bars for Conservatories and Greenhouses, bent to these or any other design on the shortest notice. Experienced workmen sent to any part of the kingdom.



Office, 47, Fish Street Hill, London.
Ratcliff Iron Works, 12 and 13, Rose Road, Ratcliff, near Stepney Railway Station.

ESTABLISHED ABOVE SIXTY YEARS.
ROBERT METTAM, BRITISH and FOREIGN WHOLESALE WINDOW GLASS WAREHOUSE, 30, Prince's-street, Leicester-square.

16 oz. Sheet Glass in Boxes of 100 feet.	Sheet Glass cut to size, not exceeding 40 inches.
Under 6 ins. by 4 ... 1½d. p. foot.	16 oz. ... 3d. to 3½d. per foot.
6 by 4, under 8 by 6, 2d. „	21 oz. ... 3½d. to 5d.
8 by 6 „ 12 by 10, 2¼d. „	26 oz. ... 5d. to 7d. „

Foreign Sheet Glass, packed in boxes of 200 feet each, large sizes—4ths, 2¼d.; 3rds, 2½d. per foot net.
Hartley's Patent Rough Plate Glass, Glass Tiles and Slates, and every description of Glass now manufactured. Estimates and Price Lists forwarded post free.

HARTLEY'S PATENT ROUGH PLATE GLASS, 1-8th thick, or 2 lbs. to the foot; 3-16ths, or 3 lbs.; and 1-4th, or 4 lbs. to the foot, for Ridge and Furrow Roofs, Greenhouses, Railway Stations, Engine Sheds, Mills, Market Halls, and Public Buildings generally.—For further information apply to JAMES PHILLIPS and Co., London Agents, 116, Bishopsgate Street Without.

GLASS FOR CONSERVATORIES, ETC.
HETLEY AND CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.
Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.
See *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES, GREENHOUSES, DWELLINGS, ETC.
ESTABLISHED MORE THAN ONE HUNDRED YEARS.
THOMAS MILLINGTON requests attention to his present prices of SHEET GLASS in 100 feet boxes.

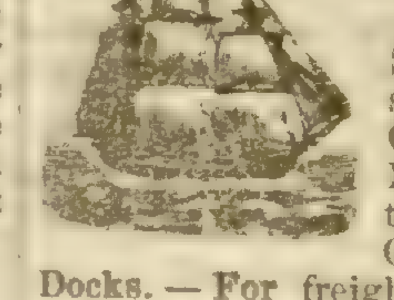
Squares under 6 inches by 4	... 8s. 6d.
„ 6 by 4 and 6½ by 4½	... 12 0
„ 7 by 5 and 7½ by 5½ / „ 8 by 6 and 8½ by 6½	... 13 6
„ 9 by 7 and 10 by 8 / „ 12 by 10 to 15 by 10	... 18 0

Orchard House Squares on Mr. Rivers's approved plan, to whom I have sold some thousands of feet:—20 inches by 12, 20 by 13, 20 by 14, 20 by 15, 20½ by 12½, 20½ by 13½, 20½ by 14½, at 20s. per 100 feet.
200 feet cases at 42s., and 300 feet case 63s., in large sheets.
Boxes charged 1s. extra per 100 feet, and the same allowed if returned free of all charge.
HARTLEY'S PATENT ROUGH PLATE GLASS, Fern Shades, Striking Glasses, Milk-pans, Bee Glasses, Cucumber Tubes, Sheet and Rough Plate Glass Tiles, Wasp Traps; Plate, Patent Plate, Crown and Sheet Window Glass, in every thickness and quality, and Ornamental Glass, plain and coloured; pure white Shades for Ornaments, Crystal Glass for Pictures.
Warehouse, 87, Bishopsgate Street Without—same side as Eastern Counties Railway.

PURVEYORS OF LIVE BIRDS
(BY SPECIAL APPOINTMENT)
TO HER MAJESTY AND H.R.H. PRINCE ALBERT.
DISEASES OF POULTRY.
BAKER'S POULTRY RESTORATIVE, having been used for many years with uniform success, is recommended with the greatest confidence; and will be found invaluable during and after the periods of the various Exhibitions. Not least among its many advantages being the easy manner in which, in its liquid form, it is administered, and thus obviating the troublesome necessity of handling the birds. Great economy will result from the use of the RESTORATIVE in the improved condition and well-doing of Poultry, in testimony whereof an inspection of the extensive and choice Collection at the Pheasantry is invited.
"It cannot but be extensively brought into use."—*The Field*, *Jan.* 7, 1854.
Price, with full Directions for Roup, &c., 2s. 6d., either in Liquid or in Pills. May be obtained through any respectable Chemist.
BAKER'S REGISTERED POULTRY, PHEASANT, AND PIGEON FOUNTAIN is gradually and surely supplanting all others, being found the most simple, useful, and economical.
"We have seen the Fountains; they look well, and cannot fail to answer. Being well made of strong metal, are durable and cheap."—*Gardeners' Chronicle, Feb.* 12, 1853.
"The article is both neat in appearance and durable, and will no doubt meet with a great sale; it deserves it."—*The Field*, *March* 19, 1853.
Price—4 quarts, 6s. 6d.; 9 quarts, 8s. 6d. Drawings by post.
S. C. & C. N. BAKER, City, and the Pheasantry, Chelsea.

BY HER MAJESTY'S ROYAL LETTERS PATENT.
BAILY'S ROUP AND CONDITION PILLS FOR POULTRY.—This remedy has been extensively tried with uniform success, and is offered to amateurs and the public with the greatest confidence. It will effectually overcome that disease which has hitherto been the bane of the poultry-yard, and destroy that apprehension known to all poultry keepers, when a favourite and valuable fowl is seen to droop. It is inestimable for poultry returning from exhibitions, and greatly facilitates moulting.—Sold, with full instructions for use, in boxes containing 50 pills, by JOHN BAILY, 113, Mount Street, Grosvenor Square, price 3s. per box, or by post 3s. 4d. "Fowls, by Baily," the most useful and plainest treatise of the day; price 2s., by post 2s. 6d.
Baily's Registered Fountains, universally adopted and approved. Drawings and particulars, by post, on application.—113, Mount Street, Grosvenor Square.

NEW ZEALAND.



FRED YOUNG AND CO.'S LINE.—To follow the BATUNGUITH, and to Sail punctually on Feb. 25, embarking passengers at Gravesend, for WELLINGTON, CANTERBURY, and AUCKLAND, the NORMAN MORRISON, A 1 12 years, 1000 tons, with a full poop, G. F. S. MAUNSELL, Commander, loading in the East India Docks.—For freight, passage, &c., apply to FRED. YOUNG and Co., 9, Adelphi Terrace, Strand; or, 74, Cornhill.

HEAL & SON'S ILLUSTRATED CATALOGUE of BEDSTEADS, sent free by post; it contains designs and prices of upwards of 100 different bedsteads, in iron, brass, japanned wood, polished birch, mahogany, rosewood, and walnut tree woods; also of every description of bedding, blankets, and quilts.—HEAL & SON, Bedstead and Bedding Manufacturers, 196, Tottenham Court Road.

GLENNY'S BALBRIGGAN HOUSE, 33, Lombard Street, City, is the only Establishment in London where the GENUINE BALBRIGGAN STOCKINGS can be purchased in every quality and size, for ladies, gentlemen, and children.
N. B. The Imitation Stockings are not made at Balbriggan.

On the 1st of January was published, the first Number for 1854 of

THE

FLORIST, FRUITIST, AND GARDEN MISCELLANY.

A MONTHLY ILLUSTRATED PERIODICAL,

Devoted to Floriculture, Horticulture, and General Gardening Information.

BY CHARLES TURNER AND JOHN SPENCER,

ASSISTED BY THE BEST PRACTICAL WRITERS OF THE DAY.

Price One Shilling.

This work is now permanently enlarged to 32 pages, consisting of Original Papers on the most popular subjects, Notices of New Plants, and Inventions, Reviews, &c.

The February Number will contain two Coloured Illustrations and seven Woodcuts. Those who are not already Subscribers should order promptly, as a New Volume was commenced with the January Number.

LONDON: CHAPMAN AND HALL, 193, PICCADILLY;
J. MENZIES, EDINBURGH; J. M'GLASHAN, DUBLIN. SOLD BY ALL BOOKSELLERS AND SEEDSMEN.

RENDLE'S PRICE CURRENT AND GARDEN DIRECTORY.

The following is from JOHN EDWARDS, Esq., F.H.S., *Hon. Secretary of the National Floricultural Society, and Editor of the "National Garden Almanack," &c.:—*

Wace Cottage, Holloway, Jan. 6, 1854.

GENTLEMEN,—The reputation acquired by your "Price Current" for 1851 is amply sustained by that for the present year just issued. I can but congratulate you on the tone adopted, by which you so fairly meet the objection to long lists of names; your policy is just. However needful the reformation, such should scarcely be obtained by violent or revolutionary measures; it will need but a few years of perseverance to convince both vegetable and floricultural *gourmands* that selections and not collections is the true policy. I feel you have nobly done your part to convince purchasers of their erroneous notion, and which, if followed up dispassionately, must ultimately produce the wished-for result. After all, I can but think that in a majority of cases the fault rests with isolated growers. Our modern or fast men would, I should hope, shun to require other than the latest improvements; vendors, of course, risk their reputation, when they offer other than proved sorts, even though they be novelties. I offer the above for your use, if such be of service.

I am, yours truly,
JOHN EDWARDS.

Messrs. W. E. RENDLE & Co., Plymouth.

From CHARLES M'INTOSH, Esq., *the Editor of the "Book of the Garden," the most sterling work on Gardening at present known:—*

Dalkeith Park, Jan. 20, 1854.

DEAR SIR,—I am much obliged to you for your attention in sending me your nicely arranged "Price Current," which is well got up, and must be of much use to your customers and purchasers generally.—With kind regards, I am, dear Sir, yours truly,

To MR. RENDLE. CHAS. M'INTOSH.

The following is from DONALD BEATON, Esq., *well known as one of the most popular writers on Horticulture of the day:—*

Kingston, Surrey, Jan. 12, 1854.

DEAR SIR,—I have a copy of Mr. RENDLE'S "Price Current" for this year, and I can tell you at once that it is the most useful Catalogue and Calendar that was ever sent out from any house of business in our line, and I do not see what more you could add to it by way of usefulness. How different from the bare-bone lists to which you and I had access, when we first took to the spade on our own account!—I am, dear Sir, yours truly,

To MR. ERRINGTON. D. BEATON.

The PRICE CURRENT *should be obtained by all who have gardens, whether small or large. It can be had through any Bookseller, price 6d.; from the London Publisher's Office, 294, Strand; or from the Proprietors,* WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

On January 31, Nos. 57 and 58, price 1*s*. 6*d*. each, of the

ORNAMENTAL FLOWER GARDEN AND SHRUBBERY. The cheapest and most beautiful coloured periodical of the day, comprising the works of the first writers, including Professor Don, R. Sweet, &c.; also all of the most recent practical Hints on Culture, Propagation, &c., by the Editor. Published monthly. Each number contains four large and beautifully-coloured engravings. Also, now ready, Vols. I. to III., each containing 72 coloured plates, price 1*l*. 8*s*. per vol. cloth.
G. WILLIS, Great Piazza, Covent Garden, London.

On January 31, Nos. 34 and 35, price 2*s*. each.

MEYER'S BRITISH BIRDS and their EGGS, COLOURED ILLUSTRATIONS of.—This is the most complete and beautiful work of the kind ever offered to the public. Each number contains four accurately-coloured plates, executed by the Author, with descriptions. Published in monthly numbers. Also now ready, vols. 1 and 2, each containing 60 coloured plates, price 1*l*. 11*s*. 6*d*. each, bound in cloth.
G. WILLIS, Covent Garden, London.

L'ILLUSTRATION HORTICOLE.—Published by A. VERSCHAFFELT, Nurseryman, Ghent, Belgium.

The Illustration Horticole will appear Monthly, and contain each number three Splendid Coloured Plates, of new and rare Plants, with a description of each. The first number is now out, and contains Rhododendron album speciosum, Oncidium Barkeri, Philesia buxifolia.

Price 12*s*. a year. The first number may be seen at Mr. R. Silberrad's, 5, Harp Lane, Great Tower Street, London; Agent to the Foreign and English Nurserymen.

Now ready, price 21*s*., with 15 highly finished coloured Plates and numerous Wood Engravings (or with Supplement and four additional plates, 5*s*. extra),

THE ROSE GARDEN. By WILLIAM PAUL, of the Nurseries, Cheshunt, Herts.

"Infinitely the best work ever written on the culture of the Rose."—*Botanic Garden.*

By the same Author, price 1*s*.,
AN HOUR WITH THE HOLLYHOCK.
London: PIPER, BROTHERS, & Co., 23, Paternoster-row; and all Booksellers.

PROFESSOR JOHNSTON'S

CHEMISTRY OF COMMON LIFE.—No. III., price 8*d*., contains—
THE BREAD WE EAT—THE BEEF WE COOK.
Nos. I. and II. contain THE AIR WE BREATHE and THE WATER WE DRINK; THE SOIL WE CULTIVATE and THE PLANT WE REAR, price Sixpence each.
WILLIAM BLACKWOOD & SONS, Edinburgh and London.
Sold by all Booksellers.

MURRAY'S MODERN COOKERY BOOK (210th Thousand), with 100 Woodcuts, price 5*s*., is now ready.
JOHN MURRAY, Albemarle Street.

THE QUARTERLY REVIEW, No. CLXXXVII., is published THIS DAY.

CONTENTS:—
I. LIFE AND WORKS OF GRAY.
II. HUMBOLDT'S COSMOS—SIDEREAL ASTRONOMY.
III. MISSIONS IN POLYNESIA.
IV. M. GUIZOT.
V. RELIGION OF THE CHINESE REBELS.
VI. CASTREN'S TRAVELS AMONG THE ALPS.
VII. MEMOIRS OF KING JOSEPH.
VIII. TURKEY AND RUSSIA.
JOHN MURRAY, Albemarle Street.

Now Ready,

JOURNAL OF THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND. No. XXXII.

1. Farming of East Lothian ... ... C. Stevenson.
2. Covered Homestalls ... ... W. Fisher Hobbs.
3. Covered Farm-steadings ... ... Lord Kinnaird.
4. Implement Report, Gloucester, from Sir M. W. Ridley, Bt.
5. Nitrate of Soda, a substitute for guano The President.
6. Fish-refuse in Newfoundland: a dispatch to the Duke of Newcastle, from the Governor of Newfoundland.
7. Farming of Surrey ... ... H. Evershed.
8. Bean-turnip Fallow ... ... Rev. Th. Burrows.
9. Improving Grass land ... ... R. Milward.
10. New System of Irrigation ... ... J. Druce.
11. Farming of Herefordshire ... ... Th. Rowlandson.
12. Report on Live Stock ... ... R. Milward.
13. Agricultural Chemistry—Pig-feeding J. B. Lawes.

JOHN MURRAY, Albemarle Street.

Fourth thousand, cloth and interleaved, price 1*s*.

THE SCOTTISH AGRICULTURIST'S ALMANAC AND YEAR BOOK OF PROGRESS FOR 1854, by JOHN LOCKHART MORTON, C.E.

"We recommend it to Agriculturists as at once the cheapest and best annual monitor of the sort yet issued."—*Ayr Advertiser.*

"Our hearty praise is nothing compared with the encouragement which it ought to receive from every person connected with Agriculture."—*Fife Herald.*

Edinburgh: A. & C. BLACK, and by order of any respectable Bookseller.

This day.

A CATALOGUE OF SECOND-HAND BOOKS, chiefly BOTANICAL, now on Sale, by WILLIAM PAMPLIN, 45, Frith Street, Soho, London, will be sent by post to any address for two postage stamps.

Just ready,

A CENTURY OF FERNS. Being Figures with brief descriptions of 100 new or rare Species of Ferns. A Selection from the "Icones Plantarum," by Sir WILLIAM JACKSON HOOKER, K.H., LL.D., F.R.A., and L.S., &c., and Director of the Royal Botanical Gardens at Kew.

The work is handsomely printed on a super-royal paper, and a Specimen Number can be sent to any address for four postage stamps. Coloured Copies will not be ready before March 1.

London: WILLIAM PAMPLIN, 45, Frith Street, Soho, London.

Now ready, Vol X., Part 1, price 14*s*.,

ICONES PLANTARUM; or Figures, with Brief Descriptive Characters and Remarks, of New or Rare Plants, selected from the Author's Herbarium. By Sir WILLIAM JACKSON HOOKER, K.H., LL.D., F.R.A., and L.S., &c. &c., Vice-President of the Linnean Society, and Director of the Royal Botanical Gardens, Kew.

London: WILLIAM PAMPLIN, 45, Frith Street, Soho Square.

Just published, price 2*s*., post free, 2*s*. 6*d*.,

NERVOUS AFFECTIONS; an Essay on Spermatorrhœa, its Nature and Treatment; with an Exposition of the Frauds that are practised by persons who advertise the speedy, safe, and effectual cure of Nervous Derangement. By a Member of the Royal College of Physicians, London.

London: AYLOTT & Co., 8, Paternoster Row.

Eighth Thousand, price 1*s*.

COBDENIC POLICY THE INTERNAL ENEMY OF ENGLAND.—The Peace Society—its Combativeness. Mr. Cobden—his Secretiveness. A Narrative of Historical Incidents. By ALEXANDER SOMERVILLE, "One who has Whistled at the Plough."

"A more dreadful, a more withering exposure was never made public."—*Manchester Courier.*

London: ROBERT HARDWICKE, 38, Carey Street; and all Booksellers.

ON NERVOUS DEBILITY AND INDIGESTION.

Just published, New Edition, price 1*s*.; or, by post, for 1*s*. 6*d*.

THE SCIENCE OF LIFE; Or, How to Live, and What to Live For. With ample Rules for Diet, Regimen, and Self-Management; together with Instructions for securing perfect health, longevity, and that sterling state of happiness only attainable through the judicious observance of a well-regulated course of life. By a PHYSICIAN.

Also, by the same Author, price 2*s*. 6*d*.; by post, 3*s*. 6*d*.,

A MEDICAL TREATISE ON NERVOUS DEBILITY AND CONSTITUTIONAL WEAKNESS, with Practical Observations, illustrated with Anatomical Plates, on Health and Disease.

This work, emanating from a qualified Member of the medical profession, the result of many years' practical experience, is addressed to the numerous classes of persons who suffer from the various disorders acquired in early life. In its pages will be found the causes which lead to their occurrence, the symptoms which indicate their presence, and the means to be adopted for their removal.

London: JAMES GILBERT, 49, Paternoster Row; HANNAY, 63, Oxford Street; MANN, 39, Cornhill; and all Booksellers.

On the 31st inst. will be published, price 1*s*., No. V. of

"THE NEWCOMES." By W. M. THACKERAY, Author of "Vanity Fair," "Pendennis," &c. &c. With Illustrations by RICHARD DOYLE.

London: BRADBURY & EVANS, 11, Bouverie Street.

On the 31st inst., will be published, price 1*s*., the Eleventh Number of

HANDLEY CROSS; or, MR. JORROCKS'S Hunt. By the Author of "Mr. Sponge's Tour." Illustrated with Coloured Plates and Numerous Woodcuts by JOHN LEECH, uniformly with "Sponge's Tour."

London: BRADBURY & EVANS, 11, Bouverie Street.

On the 30th January will be published, price 2*s*.,

THE ENGLISH CYCLOPÆDIA, PART IX., extending in the NATURAL HISTORY DIVISION from CLIVINÆ to CORALLINACEÆ, and in the GEOGRAPHICAL DIVISION from BOHARI to BRISTOL, including articles on Bohemia, Bokhara, Bolivia, Bordeaux, Borneo, Bosnia, Boston U.S., Brazil, Bremen, Brescia, Bristol, &c., &c.

London: BRADBURY & EVANS, 11, Bouverie Street.

This day, Eighth and Cheaper Edition, with Illustrations, price 1*s*., of the

ELEMENTS OF BOTANY.

London: JOHN W. PARKER & SON, West Strand.

Fifth Edition, price 1*s*., bound in cloth,

CATECHISM OF GARDENING AND COTTAGE FARMING. By MARTIN DOYLE.

London: GROOMBRIDGE & SONS, Paternoster Row.

A BOOK FOR DEAR TIMES.

COTTAGE COOKERY. By ESTHER COPLEY. Author of "Cottage Comforts," &c. A New Edition, price 1*s*., bound in cloth. Sold by all Booksellers.

London: GROOMBRIDGE & SONS, Paternoster Row.

Third Thousand, Improved.

CUTHILL'S BELGIAN PRIZE ESSAY ON THE POTATO, with Twenty other articles upon Asparagus, Seakale, Rhubarb Wine, Strawberries, Cucumber, Melon, Herbs and Salads. Price by post, 2*s*. 4*d*.—Also his "Market Gardening Round London," by post, 1*s*. 8*d*.

Strawberry Plants (Black Prince), 5*s*. per 100; (Prince of Wales), 15*s*. Cucumber Seed (Black Spine), per packet, 1*s*. 1*d*.

JAMES CUTHILL, Camberwell, London.

TEGG'S CHRONOLOGY.

In One handsome Volume, post 8vo, cloth, price 9*s*.

TEGG'S DICTIONARY OF CHRONOLOGY; or, Historical and Statistical Register, from the Birth of Christ to the Present Time. Fifth Edition, Revised and Improved.

London: WILLIAM TEGG & Co., 85, Queen Street, Cheapside.

JOHN PETHERAM'S CATALOGUE OF BOOKS ON AGRICULTURE, BOTANY, RURAL ECONOMY, &c., may be had gratis, or will be sent post free on application.

THE BIBLIOGRAPHICAL MISCELLANY, and General Catalogue of Books (32 pages), is published Monthly, price 2*d*., or stamped by post, 3*d*.

JOHN PETHERAM, 94, High Holborn, London.

NEW ILLUSTRATED SERIES OF THE

FAMILY ECONOMIST AND ENTERTAINING COMPANION FOR TOWN AND COUNTRY, to which is added the BOYS' and GIRLS' TREASURY. Price 2*d*., monthly, in elegant wrapper. No. 2—February—just published.

HOUSEKEEPING, FURNISHING COOKERY, ETC.

In One Volume, 8vo, with 1000 Woodcuts, price 50*s*.

WEBSTER & PARKES'S ENCYCLOPÆDIA OF DOMESTIC ECONOMY.

"This large volume contains scarcely a line which may not be made useful in extending the experience of young and old housekeepers."—*Britannia.*

London: LONGMAN, BROWN, GREEN, & LONGMANS.

On Tuesday next, in 16mo, price One Shilling,

INDICATIONS OF INSTINCT. By T. LINDLEY KEMP, M.D. A Sequel to "The Natural History of Creation" (price 1*s*.) by the same Author. Forming the Fifty-fourth part of the Traveller's Library.

The Fifty-third Part, price One Shilling.

THE RUSSIANS OF THE SOUTH. By SHIRLEY BROOKS.

London: LONGMAN, BROWN, GREEN, & LONGMANS.

YOUATT'S WORKS ON THE DOG AND HORSE. (By assignment of C. Knight.) LONGMAN & Co.

THE DOG. With Woodcuts. 8vo, price 6*s*. cloth.

THE HORSE. The only Edition with the Author's latest Corrections, and Illustrations on Wood. 8vo, price 10*s*. cloth.

"The author has subjected it to so complete a revision as to make it in many respects a new work."—*Preface.*

*** Purchasers should order the Edition published by LONGMAN & Co.

London: LONGMAN, BROWN, GREEN, & LONGMANS.

NEW WORK BY THE HON. G. F. BERKELEY.

Just published, in 8vo, with Four Etchings by John Leech (One coloured), price 14*s*.

REMINISCENCES of a HUNTSMAN. By the Hon. GRANTLEY F. BERKELEY.

London: LONGMAN, BROWN, GREEN, & LONGMANS.

Just published, in fcp. 8vo, with Two Plates by B. Herring, price 7*s*. 6*d*. half-bound,

RECORDS OF THE CHASE AND MEMOIRS OF CELEBRATED SPORTSMEN: illustrating some of the Usages of Olden Times, and comparing them with prevailing Customs: together with an Introduction to most of the Fashionable Hunting Countries; and Comments. By CECIL, Author of "The Stud Farm" (5*s*.), and "Stable Practice" (5*s*.)

London: LONGMAN, BROWN, GREEN, & LONGMANS.

Just published, in 8vo, price 14*s*., cloth,

THE RIFLE AND THE HOUND IN CEYLON. By S. W. BAKER, Esq. With numerous Illustrations printed in Colours, and Engravings on Wood.

"Mr. Baker has a loving relish of the beauties of Nature, a keen eye for the antecedents of wild animals, and the coolness to observe them when face to face in a deadly struggle. He has also graphic powers of no mean order, whether as regards landscape, its living denizens, or the sportsman's actions. Some of his descriptions of scenery and wild creatures may vie with anything Wilson or Audubon could produce."—*Spectator.*

London: LONGMAN, BROWN, GREEN, & LONGMANS.

Just published, in fcap 8vo, price 3*s*. 6*d*. cloth,

THE INVALID'S OWN BOOK: A Collection of Recipes from various Books and various Countries. By the Honourable LADY CUST.

"This little book ought to be in the hands of every housekeeper, and of every young lady who aspires to be a housekeeper, in the British Empire."—*British Banner.*

London: LONGMAN, BROWN, GREEN, & LONGMANS.

GREAT WESTERN, GREAT NORTHERN, SOUTH-WESTERN, AND SOUTH-EASTERN RAILWAY

SEED ESTABLISHMENT, READING, BERKS,

(Under the distinguished Patronage of the principal Members of the Royal Agricultural Society of England),

FOR SUPPLYING

SUTTON'S HOME-GROWN SEEDS TO ALL PARTS OF THE UNITED KINGDOM.

A SELECT LIST OF SEEDS GROWN AND SOLD BY

JOHN SUTTON AND SONS, SEED GROWERS, READING, BERKS.

HAVING been urgently desired by some of our regular customers to quote PRICES OF THE LEADING KINDS OF AGRICULTURAL SEEDS, that they may send us their orders immediately for the season, while we have a good Stock, we have the pleasure of presenting the following Select List of our Home-Grown Seeds, WITH THEIR PRESENT PRICES;

AND FOR ANY LARGE QUANTITIES WE SHALL BE HAPPY TO MAKE A SPECIAL CONTRACT.

AGRICULTURAL SEEDS (CARRIAGE FREE),

WITH PRICES FOR THE MONTH OF FEBRUARY ONLY.

AGRICULTURAL BEET.

Per lb.—*s. d.*

NEW LARGE CRIMSON; nearly as large as Mangold, *contains 50 per cent. more saccharine matter* 3 6

WHITE SILESIAN SUGAR, French Seed 1 0

CARROT.

White Belgian Carrot and Mangold Wurzel are necessarily higher than last year, and will probably be dearer as the season advances, but the QUALITY of that we have now to offer is as good as that of any former season.

WHITE BELGIAN, the heaviest cropper and most certain 2 0

ORANGE BELGIAN; more saccharine, and quite as large as the white 2 6

LARGE RED ALTRINGHAM; large and nutritious ... 1 6

MANGOLD WURZEL.

FROM SELECTED ROOTS.

YELLOW GLOBE (or Orange Globe), suitable for any soil 1 4

RED GLOBE, suitable for any soil 1 4

LONG RED; this sort requires good deep soil 1 0

LONG YELLOW; very similar to the preceding in shape 1 4

SUTTON'S ELVETHAM LONG RED: this is a very superior new variety. Every year the demand for Seed of this sort increases; but, owing to the unfavourable season, we have not been able to save nearly so much as we calculated upon, and we cannot procure this sort from other growers 2 6

We take great pains in selecting the best kinds of Mangold Wurzel, and have much pleasure in receiving continually such remarks from our customers as the following:—

From Col. Kingscote, Kingscote Park, Dec. 5, 1853.

"I could not wish for a better crop than I have of the Elvetham Long Red Mangold, it succeeded with me far beyond what I could expect from the light soil in which it was planted; the crop was a very heavy and even one, and far superior to either my Yellow or Red Globe."

From J. C. S—, Esq., West Cliff Cottage, Bideford, Dec. 3, 1853.

"I have had a most excellent crop of Mangold Wurzel from the Seed I had of you last April. Whereas the roots in general have been very small in our neighbourhood, I have had the Elvetham weighing 31 and 32 lbs., and Yellow Globe upwards of 25 lbs. each; I shall require a considerable quantity of each sort the ensuing season."

Mangold Wurzel Seed may be had cheaper in quantities of a Cwt. and upwards, if ordered immediately, except "The Elvetham."

KOHL RABI.

LARGE GREEN; Turnip-rooted Cabbage ... ... 2*s.* 6*d.*

LARGE PURPLE; scarcely so large as the preceding ... 2 6

There are many varieties of Kohl Rabi, varying materially in size. From them we select the above, as most worthy of cultivation.

EARLY WHITE FIELD PEA.

NEW EARLY RACEHORSE—comes off in good time for Globe Turnips, and is a good cropper, price 12*s.* per bushel.

TURNIP SEEDS.

A GALLON OF TURNIP SEED WEIGHS $6\frac{1}{2}$ LBS.

	Bush.	Gall.		Pound	
	s.	*s.*	*d.*	*s.*	*d.*
GREEN-TOPPED YELLOW SWEDE ...	...	6	0	1	0
ASHCROFT SWEDE, very large, hardy, and of quick growth, yellow flesh with reddish top	56	8	0	1	6
SKIRVING'S LIVERPOOL SWEDE ...	48	7	0	1	4
LAING'S SWEDE; fine shape, purple top	48	7	0	1	4
PURPLE-TOPPED YELLOW SWEDE (SUTTON'S fine stock), a heavy cropper, good form, hardy, and stores well	48	7	0	1	4
RIVERS' STUBBLE SWEDE; a large and first-rate sort in every respect, especially for late sowing	...	8	0	1	6
DALE'S HYBRID, green-topped yellow ...	...	6	0	1	0
SUTTON'S PURPLE-TOPPED YELLOW HYBRID, the hardiest, largest, and most nutritious of all hybrid Turnips	...	7	0	1	4
GLOBE, Red, Green, or White	48	7	0	1	4
LINCOLNSHIRE RED GLOBE, a superior variety, presented to us by Philip Pusey, Esq., M.P., being more solid and larger than any other. (See remarks by reporter of *Gardeners' Chronicle*)	...	8	0	1	6
TANKARD; Red, White, or Green ...	48	7	0	1	4
YELLOW TANKARD (or Tankard Swede) an excellent sort	...	8	0	1	6
SUTTON'S EARLY SIX WEEKS, very early and large	...	7	0	1	4
GREEN-TOPPED & PURPLE-TOPPED YELLOW ABERDEEN, each	40	6	0	1	0
ORANGE JELLY, grown from seed received from Mr. Chivas	...	10	6	2	0
SUTTON'S IMPERIAL GREEN GLOBE, *shape of Matson's, but much larger, and quite hardy*	...	7	0	1	4
YORKSHIRE PARAGON; a fine new White Globe Turnip, as solid and nearly as large as Lincolnshire Red. The grower of this says our Lincolnshire Red Globe *might be well called the "Red Paragon"*	...	7	0	1	4
SUTTON'S GREEN-TOPPED YELLOW HYBRID possesses same good properties as our Purple-topped Hybrid, but is of quicker growth, and more suitable for poor soils	...	7	0	1	4
HARDY GREEN ROUND; a good old sort	40	6	0	1	0
STUBBLE STONE	40	6	0	1	0
SUTTON'S CRUICKSFIELD HYBRID SWEDE; a valuable new Hybrid, between Kohl Rabi and Skirving Swede ...	...	...		5	0

PARSNIPS.

COMMON CATTLE ... ... Per lb. 1*s.* 6*d.*

NEW LARGE GUERNSEY, altogether a superior kind, some of the roots weighing seven pounds each 2 6

COW CABBAGE.

LARGE DRUMHEAD, from fine selected plants 3 0

THOUSAND-HEADED, very productive, tall, branching 2 6

SUTTON'S EARLY CATTLE; this, if planted 18 inches asunder, produces a very heavy crop, and in a short time. (Sow in March and August.)

CLOVERS.

Common Red (or broad)	Red Suckling (Trifolium minus)
White (or Dutch)	Alsike Clover
Trefoil (or Hop Clover)	True Perennial Red Clover
Trifolium incarnatum	

CLOVERS.—Notwithstanding the scarcity this season, we have succeeded in procuring a fine stock of each of the above kinds of Clovers. We do not ourselves grow Clover Seeds, but these are obtained direct from the growers, and can be warranted genuine unadulterated Seeds; we always prefer sacrificing what little we have left each year, rather than mix it with the new, and if others offered us mixed seed we could easily detect it. Prices of Clovers on application.

RYE-GRASSES

Per bushel.—*s. d.*

TRUE ITALIAN RYE-GRASS 5 6

DITTO (SUTTON'S IMPROVED) ITALIAN 6 6

DITTO (DICKENSON'S) ITALIAN 6 6

PACEY'S PERENNIAL RYE-GRASS 6 6

ANNUAL RYE-GRASS, OR COMMON RAY 3*s.* 6*d.* to 5 0

MISCELLANEOUS.

Per lb.—*s. d.*	
Keen's Forty-day Maize —	Yarrow, or Millefoil.
Lucerne (fresh imported) 1 0	Buckwheat,
Furze, for fence and cover 1 0	Field Parsley, for sheep feed.
Broom 1 0	Potatoes, choice sorts.
Dwarf Rape, or Cole ... 0 4	Linseed or Flax, clean English.
White Mustard 0 4	Ditto, Riga, imported.
Burnet.—Spurry.—Chicory.	Giant Saintfoin, 12*s.* per bushel.

"BISHOP'S LAST AND BEST" PEA, FOR DOUBLE CROPPING, between the rows of Mangold, Swedes, &c., 12*s.* per bushel.

QUANTITIES OF SEED REQUIRED TO SOW PER STATUTE ACRE.

The quantity of seed sown per acre varies greatly in different localities, but the following table may be a guide to gentlemen ordering Seeds:—

	Per Acre.		Per Acre.
Swedish Turnips...	3 to 4 lbs.	Lucerne	16 to 20 lbs.
Other Turnips ...	2 to 3 lbs.	Furze, for feed ...	12 lbs.
Rape	8 to 12 lbs.	Chicory	4 lbs.
Mustard	14 to 21 lbs.	Italian Rye Grass,	$2\frac{1}{2}$ bushels.
Mangold Wurzel	3 to 4 lbs.	Buckwheat ...	3 to 4 pecks.
Carrot	6 to 8 lbs.	Saintfoin, common,	4 bushels.
Parsnip	5 to 6 lbs.	——— giant ...	5 bushels.
Cow Cabbage (to transplant) ...	1 lb.	Linseed, for flax ...	$2\frac{1}{2}$ bushels.
Kohl Rabi—ditto...	1 lb.	——— for seed...	3 to 4 pecks.
Ditto; drilled ...	4 lbs.		
Trifolium incarnatum	20 to 24 lbs.	Grass Seeds vary according to soil and purposes.	

Not bound by the above prices after March 1, as Seeds are scarce this season, and will probably be worth much higher rates.

One of the finest exhibitions of Mangold Wurzel, Carrots, Swedes, Turnips, and other Roots (open to all England) was held at the Reading Cattle Show, on 1st December, 1853. The competitors were very numerous, but we had the satisfaction of observing that the whole of the prizes were gained by roots raised from seeds purchased of us. This was the case also (with one exception) at the previous annual show. The Editor of the *Berkshire Chronicle*, at the conclusion of his report of the above show, remarked:—"No doubt the excellence of these roots must be mainly attributed to the cultivation, but it is worthy of remark that every prize was won by roots grown from Messrs. SUTTON'S seeds."—See *Berkshire Chronicle*, Dec. 10, 1853.

At the Annual Root Show held at Basingstoke, Hants, on December 21, at which a large number of prizes was awarded for root crops, the whole of the prizes (except two) were gained with the produce of our seeds; and we are constantly hearing from our customers in other parts of the kingdom of their similar success, all which strongly confirms our opinion and practice in saving seeds, viz., *that for success in growing root crops attention to the stocks from which the seed is saved is as important as in the breeding and fattening of cattle.*"

SUTTON'S PERMANENT GRASS SEEDS.

Gentlemen intending to lay down Land to Permanent Pasture, or for one or two years lay, are recommended to communicate with us, stating the nature of the soil and situation, that we may advise as to sorts of Grass Seeds most suitable.

OLD MEADOWS DEFICIENT OF THE MOST NUTRITIVE GRASSES AND CLOVERS may be greatly improved by sowing at this season "SUTTON'S Renovating Mixture" of Seeds, at the rate of 8 to 12 lbs. per acre, price 1*s.* per lb. Our finest LAWN GRASS SEEDS *are highly useful to improve Garden Lawns or to form new ones.*

The following sorts of NATURAL and ARTIFICIAL GRASSES MAY BE HAD SEPARATE, at low prices. All the best and most suitable of them are contained in MESSRS. SUTTON'S MIXTURES.

Achillea millefolium (Yarrow)
Agrostis stolonifera (Creeping Bent)
Anthoxanthum odoratum (Sweet Vernal)
Alopecurus pratensis (Meadow Foxtail)
Avena flavescens (yellow Oat Grass)
Agrostis alba (white Bent Grass)
Agrostis vulgaris (common Bent Grass)
Bromus arvensis (Field Brome Grass)
Cynosurus cristatus (Crested Dogstail)
Dactylis glomerata (round-headed Cocksfoot)
Festuca duriuscula (hard Fescue)
Festuca loliacea (Darnel Fescue)
Festuca ovina (Sheep's Fescue)
Festuca rubra (red Fescue)
Festuca pratensis (Meadow Fescue)
Festuca elatior (Tall Fescue
Festuca heterophylla (various-leaved)
Festuca tenuifolia (fine-leaved Fescue)
Glyceria aquatica (water sweet Grass)
Holcus avenaceus (tall Oat-like Grass)
Hordeum bulbosum (bulbous Barley Grass)
Lolium perenne (Perennial Rye-grass)
Lolium perenne sempervirens
Lolium perenne Paceyanum
Lolium perenne Stickneyanum
Lolium perenne tenue
Lolium italicum (Italian Rye-grass)
Lotus corniculatus (Bird's-foot Trefoil)
Medicago lupulina (black Medick Grass, or yellow Trefoil)
Phleum pratense (Timothy)
Poa nemoralis (wood Meadow Grass)
Poa pratensis (smooth Meadow Grass)
Poa trivialis (rough Meadow Grass)
Poa fertilis (fertile Meadow Grass)
Poa sempervirens (evergreen)
Trifolium minus (red Suckling)
Trifolium pratense perenne (Perennial red Clover)
Trifolium repens (white Clover), best
Trifolium hybridum (Alsike Clover)

And many other kinds, a Priced List of which may be had on application, post free.

As some Agriculturists feel a pleasure in making their own selection of Grass Seeds, the above List is presented, but the greatest economy and certainty of success will be obtained by procuring Messrs. SUTTON'S Mixtures.

*** *Sacks and Bags are charged at cost price only, and the full amount allowed, if they are returned.*

ADDRESS, JOHN SUTTON AND SONS, SEED GROWERS, READING, BERKS.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, JANUARY 28, 1854.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 5.—1854.] SATURDAY, FEBRUARY 4. [PRICE 6*d*.

INDEX.

Agri. Soc. of England	76 *c*	Horticultural Society's garden	71 *b*
Aeration	69 *c*	Libocedrus chilensis	70 *c*
Agriculture and science	75 *a*	Manures, Pusey's paper on	73 *c*
Agricultural statistics	74 *a*	— management of	74 *b*
Aslit's Decimal Coinage, noticed	71 *a*	Pathology, vegetable	68 *b*
Calendar, horticultural	72 *a*	Peeblesshire Hort. Soc.	68 *a*
— agricultural	77 *a*	Plants, new	71 *a*
Carnations, tree	71 *b*	Plant houses, aeration of	69 *c*
Cattle feeding	76 *a*	Plough v. spade	67 *c*
Coinage, Decimal	71 *a*	Poultry	76 *c*
Conifer, large Himalayan	70 *c*	Rain in Dumfriesshire	70 *b*
Cottagers, relieving	70 *c*	Rendle's Price Current	69 *c*
Cypripediums	69 *c*	Science and agriculture	75 *a*
Drainage, report on	75 *c*	Sewage Company, Deodorising	76 *c*
Draining, up-and-down	76 *a*	Spade v. plough	67 *c*
Drains, roots in	76 *b*	Statistics, agricultural	74 *a*
Food, giving of, to cottagers	70 *c*	Stackyards, covered	76 *b*
Forest, management of	69 *a*—70 *a*	Stock, live	76 *b*
— royal	71 *c*	Superphosphate of lime	76 *a*
Fowls, Spanish	76 *c*	Timber, to make look old	70 *c*
Gas heating	71 *a*	Vegetable pathology	68 *b*
Grapes, new	70 *b*	Ventilation	69 *c*
— Barbarossa	69 *a*	Weather in Dorset	70 *a*
Guano, composition of	70 *a*	Woods and plantations	69 *a*—70 *a*
Heating, gas	71 *a*	— and forests	71 *c*

NOTICE TO EXHIBITORS.

CHELTENHAM GREAT EXHIBITION.
To Open June 1st, 1854.—Applications for Space under Sections II. & III., must be made previous to the 25th of March. Official Forms may be obtained of the Secretary, Mr. HENRY J. COCHRANE, 128, High Street, Cheltenham.

GARDENERS' BENEVOLENT INSTITUTION.
—The FRIENDS of ROBERT OLIVER (for 11 years a Subscriber to the above Institution), return thanks to those members of the Society who kindly favoured him with their Votes at the late Election, and beg their renewed exertions to secure his success at the next.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER has now ready a fine healthy stock of young plants of all the leading sorts. For price and description see General List, which also contains hints on their culture, with observations on the exhibition of Hollyhocks, &c. &c., and may be had by inclosing a postage stamp.
Saffron Walden Nursery, February 4.

SUPERB FLOWER SEEDS.—The following select Seeds, saved from the best varieties, sent post free at 1*s*. per paper:—Antirrhinum, Petunia, Verbena, Double Balsam, and Pansy.—From WILLIAM KNIGHT, Florist, 53, High Street, Battle, Sussex. Select lists of Seeds sent on application.

THE EARLIEST PEA IS "FAIRHEAD'S EARLY CONQUEROR." To be had of CLARKE AND Co., Borough, London; 2*s*. per quart (price per bushel on application).

CORNWELL'S VICTORIA RASPBERRY; unequalled for size, flavour, and brightness of colour—containing more juice than any other, and an abundant bearer. The certificate of merit has been awarded to them at all the principal metropolitan shows; the fruit also sells for more than any other at Covent Garden Market. Canes of the above to be had of GEORGE CORNWELL, Market Gardener, Barnet, at 15*s*. per 100. The usual allowance to the trade.

GRASS SEEDS.—Gentlemen intending to lay down land to Permanent Pasture, or for one or two years' lay, are recommended to communicate with us, stating the nature of the soil and situation, that we may advise as to sorts of Grass Seeds most suitable. OLD MEADOWS DEFICIENT OF THE MOST NUTRITIVE GRASSES AND CLOVERS may be greatly improved by sowing at this season "SUTTON'S" "Renovating Mixture" of Seeds at the rate of 8 to 12 lbs. per acre, price 1*s*. per lb.
OUR FINEST LAWN GRASS SEEDS are highly useful to improve Garden Lawns.
N.B. We are extensive growers of Mangold Wurzel, Turnip, and other Agricultural Seeds, of which a separate Catalogue is published.
JOHN SUTTON & SONS, SEED GROWERS, READING, BERKS.

SEEDS.

W. AND S. GAINES beg to offer to Gardeners, Farmers, and Nurserymen, the following seeds:—WHITE SPANISH ONIONS, 4*s*. 6*d*. per lb.; Deptford do., 4*s*. 6*d*. per lb.; Reading do., 4*s*. per lb.; quantities not less than 1 lb. SCARLET RUNNERS, 21*s*. per bushel; quantities not less than one peck. GOOD RHUBARB PLANTS: Albert, Linnæus, and Victoria, 40*s*. per 100; 6*s*. per dozen. Also collections of ANNUAL FLOWER SEEDS, packets of 60 varieties, 10*s*.; 30 do., 5*s*.; 15 do., 2*s*. 6*d*.—Post-office orders payable to W. & S. GAINES, Covent Garden Market, London.

THE BLACK BARBAROSSA,

"A GRAPE THAT DON'T KNOW HOW TO SHANK."

JOHN BUTCHER has on sale true plants of the above splendid late Grape; families may obtain fruit of the above through the months from January to April. For further particulars see *Gardeners' Chronicle* of Oct. 23, 1852, page 678, &c., and Oct. 18, 1853. Fruiting Plants, 10*s*. 6*d*.; Good Plants, 5*s*. 6*d*. each. May be obtained of Messrs. DAWE, COTTRELL & BENHAM, 36, Moorgate Street, London; and JOHN BUTCHER, Nurseryman, Stratford-on-Avon. A sample of berries sent on receipt of twelve postage stamps post free.

JOHN JEYES, NURSERYMAN and SEED-MERCHANT, Northampton, begs to offer Agricultural Seeds of every kind and the best quality: Horticultural and Floricultural Seeds in great variety and of the choicest selection; Ornamental Shrubs and Trees of various sizes and immense variety; a Fine Collection of Roses; Fruit Trees carefully selected from the finest proved sorts; a large Stock of Forest Trees; Russian Mats.
Plans and Estimates given for making Pleasure Grounds, Cemeteries, &c. Seeds selected and packed for Exportation.
Experienced Gardeners recommended.

WILLIAM NICHOLSON still continues to send out very strong well-rooted Plants of his four new and distinct varieties of STRAWBERRIES, viz., AJAX, dessert Fruit; RUBY, ditto; CAPTAIN COOK, Market Fruit; FILLBASKET, ditto, at 15*s*. per 100, or 25 each of any two sorts for 10*s*., box included. Post-office orders payable at Yarm. Yorkshire. For a full description, see Advertisement *Gardeners' Chronicle*, Jan. 28, 1854.—Egglescliffe, near Yarm, Yorkshire.

TO FARMERS.

IN ACCORDANCE with the wishes of Farmers, Millers, and others interested in the Corn Trade, an Edition of the AGRICULTURAL GAZETTE AND GARDENERS' CHRONICLE will be published every Monday Afternoon, in time for post. The Monday's Edition will, in addition to the usual markets, contain a full report of the Mark Lane, Smithfield, and Newgate Markets of the day.—May be ordered of any Newsagent. Price 6*d*.

ROSES.

A. PAUL AND SON can still supply good plants of most of the fine new and popular sorts, either as Dwarfs or Standards. Priced Descriptive Catalogue forwarded free by post for two stamps.—Nurseries, Cheshunt, Herts, Feb. 4.

GRASS SEEDS FOR PERMANENT PASTURE.

WHEELER AND SON'S DESCRIPTIVE LIST of GRASS SEEDS will be forwarded free on application.
J. C. WHEELER AND SONS, GLOUCESTER.

LARGE YELLOW GLOBE MANGOLD WURZEL, WHITE BELGIAN CARROT, TRUE BRONZE TOP SWEDE TURNIPS, and all other Farm Seeds. Our Priced List for February is now ready, and will be forwarded free on application.
J. C. WHEELER AND SONS, Gloucester, SEEDSMEN to the Gloucestershire Agricultural Society.

PRESENT PRICES OF AGRICULTURAL SEEDS.—*See* MESSRS. SUTTON'S DESCRIPTIVE LIST, *on the last page of* GARDENERS' CHRONICLE *for January* 28.

RENDLE'S NEW PRICE CURRENT FOR 1854 *should be obtained by all who have gardens, whether small or large. It will be found to be a correct and useful Guide to the amateur and young gardener; a remembrancer to the more advancedin horticulture, and a source of reference to all.*
Can be obtained from the London Publishing Office, 294, Strand; or from the Proprietors, WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth. ESTABLISHED 1786.

GENUINE SEEDS.

JAMES CHARTRES and Co. beg to announce that their Catalogue of the above is now ready, and will be forwarded on application.—Seed Warehouse, 74, King William Street, City, London; February, 1854.

DENYER'S SHORT AND DESCRIPTIVE LIST OF SEEDS, containing all that is New and Rare—the *inferior sorts are omitted.* Copies of the above forwarded on application, by WILLIAM DENYER, Seedsman and Florist, 82, Gracechurch Street, London.

MESSRS. J. and H. BROWN'S NEW CATALOGUE of GREENHOUSE PLANTS, HARDY SHRUBS, CONIFERS, &c. Can be had by Post, also a separate List of Garden and Flower Seeds, for American Plants, Fruit Trees, &c. See our Advertisement of January 14th. Albion Nursery, Stoke Newington, London.

STANDISH AND NOBLE'S CATALOGUE for the present season is Now Ready, and may be had on application. A selection from it appeared as a detailed advertisement in the *Gardeners' Chronicle*, of Saturday, Sept. 10th, to which they respectfully refer plant buyers. It contains many new and choice plants.—The Nursery, Bagshot, Surrey, Feb. 4.

CHARLES ALEXANDER (late of DICKSONS & Co.), SEEDSMAN and FLORIST, 32, West Register Street, Edinburgh. His Descriptive Catalogue of Select Garden and Flower Seeds is just published and will be forwarded free on application.

E. SPARY, NURSERYMAN, FLORIST, and SEEDSMAN, respectfully announces that his CATALOGUE of Dahlias, Chrysanthemums, Fuchsias, Geraniums, Verbenas, Stove and Greenhouse Plants, Vines, Seeds, &c., &c., may be had on application.—Queen's Graperies, and 176, Western Road, Brighton.

SAMUEL FINNEY AND CO.'S DESCRIPTIVE CATALOGUE OF FLOWER AND VEGETABLE SEEDS, with prices, is now ready, and may be had on application. It contains an extensive assortment of Imported German Flower Seeds, the celebrated French Asters, and many splendid novelties.—Gateshead Nursery, January 28.

AMERICAN PLANTS.

JOHN WATERER begs to announce that his NEW CATALOGUE of RHODODENDRONS, AZALEAS, CONIFEROUS PLANTS, &c., is now published, and may be had by enclosing two stamps for postage.
The colours of all the Rhododendrons worthy of cultivation are described in order to facilitate purchasers in making selections, together with a Treatise on their successful management.
☞ The Rhododendrons forming the American Exhibitions in the Royal Botanic Society's Garden, Regent's Park, London, are annually supplied from this establishment.
The American Nursery, Bagshot, Surrey, near the Farnborough Station, South-Western Railway, and 3 miles from Blackwater, South-Eastern Railway.

GEORGE BAKER begs to say that his DESCRIPTIVE CATALOGUE of AMERICAN PLANTS, CONIFERS, ORNAMENTAL SHRUBS, FRUIT and FOREST TREES, &c., may be had by enclosing two postage stamps.
G. B. wishes to call particular attention to his fine Stock of GREEN and WEEPING HOLLIES from 1 to 12 feet high.
G. B. has supplied the American Exhibition in the Royal Botanic Gardens, Regent's Park, from its commencement.
American Nursery, Windlesham, near Bagshot, Surrey, about six miles from Staines Station, Windsor Branch, South-Western Railway, where conveyances may be obtained.

JUDSON'S RICHMOND VILLA BLACK HAMBURGH VINE.

ARTHUR HENDERSON AND CO. have the pleasure of informing their patrons and friends that they have good plants of this valuable and much-esteemed Vine at 5*s*. each; extra strong plants, 7*s*. each.—N.B. For full particulars of the distinguishing characteristics of this Vine, we beg to refer our customers to the *Gardeners' Chronicle* of October 25th, 1851.

MYATT'S VICTORIA RHUBARB.—For Sale, 4000 VICTORIA (true) RHUBARB ROOTS, in lots, to suit purchasers. Price on application.—Address JOHN SCHOFIELD & SON, Seedsmen, &c., Knowsthorpe, near Leeds, Yorkshire.

J. G. WAITE begs to return thanks to his friends and purchasers of the DANIEL O'ROURKE PEAS, and to inform them and the public generally, that on account of the extraordinary demand for this valuable Pea, he will not be able to supply any more this season.
J. G. W. will be ready to supply seed of this year's crop in the months of July and August.—181, High Holborn, London.

BLUE SCIMETAR PEAS (warranted).—May be had of T. K. THEDAM, Little Braxted, near Witham, Essex, at 12*s*. 6*d*. per bushel, carefully drawn, 14*s*.

GEORGE MILLS, Uxbridge Road, Ealing, begs to offer Plants of his best BLACK or WHITE-SPINED CUCUMBER, unpacked, at 1*s*. each; packed, 1*s*. 3*d*. each.
MELON PLANTS of the best kinds raised to order on the same terms.

DOUBLE ITALIAN TUBEROSE ROOTS, 4*s*. per dozen.—The annual importation of the above-named beautiful and fragrant Flower has just been received, and large and well selected Bulbs may be obtained, without disappointment, at A. CORBETT'S Foreign Warehouse, 18, Pall Mall.
N.B. Printed regulations for treatment sent; also, just arrived very moist and open Parmasan Cheeses.

THE FINEST BALSAMS IN EUROPE. in Six Classes; Seed saved by Mr. GLENNY from flowers three inches across: the six, 37 stamps; Mixed Seeds, 13 stamps, in Sealed Packets only, signed and sealed. The finest seeds that can be had procured to order, and all other choice Horticultural subjects.—420, Strand.

TO BE SOLD, a variety of the best kinds of GOOSEBERRY BUSHES (two years' growth), viz., Riflemen, Keene's Seedlings, and Crown Bobs: 25,000 in quantities of not less than 1000. Price per thousand, 5*l*. Terms, cash.—Apply to JAMES N[illegible], Sion Hill, Brentford End.

TALAVERA WHEAT FOR SEED.—MR. OWEN, of Brockly Farm, Lewisham, begs to inform Agriculturists that he has some of the above WHEAT for Sale—a fine sample and true—at 12*s*. 6*d*. per bushel.

LARCHES.

DREGHORN AND AITKEN, NURSERYMEN and SEEDSMEN, Kilmarnock, N.B., beg leave to offer a considerable quantity of FINE THREE YEARS TRANSPLATED LARCHES, 2½ to 3½ feet; which they will deliver carriage free at London, Liverpool, Manchester, or any of the Railway Stations in connection with the Glasgow and South Western, for 15*s*. per 1000, if not less than from 5000 to 10,000 are taken.
Kilmarnock, February, 4.

TO PLANTERS AND OTHERS.

LARCH.—A large quantity of fine, three-year transplanted LARCH (2 to 3 feet, grown on poor land, in high and exposed situations) will be Sold cheap.—Apply to SAMUEL FINNEY & Co., Gateshead, Newcastle-upon-Tyne.

JOHN SCHOLEY, NURSERYMAN, &c., Pontefract, Yorkshire, begs to announce that he has a fine Stock of LARCH, from 1½ to 4 feet, well topped, and fibrous rooted. Also a large quantity of Seedling and Transplanted Berberis aquifolium. Prices moderate, may be had on application.

T. AUSTEN, NURSERYMAN, near the Green Man, Blackheath Hill, Greenwich, begs to announce that he has 55,000 ASH, 4, 6, and 8 years' growth. Also a very large stock of EVERGREENS and other plants, at a very moderate price.

LIME TREES, 12 to 14 feet, 42*s*. per 100.—SPRUCE FIRS, 2 to 3 feet, 6*s*. per 100.—LAURUSTINUS, very fine, 30*s*. per 100.—Apply to BENJAMIN R. CANT, St. John's Street Nursery, Colchester.

CHOICE FRUIT TREES.

JOHN ADAMS, NURSERYMAN AND SEEDSMAN, Brompton Park, Kensington Gore, London, begs to call the attention of the trade, and planters generally, to his extensive Stock of FRUIT TREES, embracing all the best varieties in cultivation, under their correct nomenclature; but more particularly to his Standard Trained Cherries, Plums, Pears, Apricots, Peaches, and Nectarines; Dwarf Trained Cherries, Pears, Plums, Peaches, and Apples; Standard Cherries, Plums, Pears, and fine large Mulberries; Dwarf Pears, Plums, Apples, and Nectarines, of which he has a large stock, all of first-rate quality.

TO POTATO GROWERS.

W. DRUMMOND AND SONS, SEEDSMEN and NURSERYMEN, Stirling, N. B., offer for sale several tons of ROS'S EARLY AMERICAN POTATOES, grown expressly for seed, on reclaimed peat or moor, and without manure. Not a trace of disease could be seen in the crop. The Potato has been well known in Scotland for the last 40 years, as one of the very best for general garden or field crops. It is very productive, full sized, dry, and finely flavoured; and is earlier than the Regent.
Price 22*s*. per sack of 2 cwt., sack included, and delivered carriage free in London, Liverpool, and Hull.
Unknown correspondents will please send a remittance with their orders.
May be had on application, a very useful priced Descriptive CATALOGUE of VEGETABLE SEEDS, containing only such varieties as are really worth cultivating.

CONQUEROR OF THE WEST CUCUMBER.

JAMES LAKE, Nurseryman, &c., Bridgewater, begs once more to offer the above Cucumber. Having tested its merits against many other sorts highly spoken of, can with confidence recommend it as the best for general frame culture. Packets containing 12 good Seeds sent post free on the receipt of 12 postage stamps.

N.B. The Trade supplied with the genuine article.

J. L. also begs to state that he will be prepared to send out, the first week in May, strong Plants of his beautiful Seedling Lobelia St. Clair, so universally admired last summer and autumn, at 12s. per dozen. The usual discount to the Trade. February 3d.

SEED POTATOES.—The importance of cultivating those sorts of Potatoes which, from their vigorous habit of growth and early maturity, are least subject to disease, has induced us for several years (ever since the first general development of the disease), to make many experiments as to the sorts most desirable, and the cultivation most suitable.

Our New Seed List contains the names and prices of the principal kinds, and will be sent post free on receipt of One Penny Stamp.

Address, John Sutton and Sons, Seed Growers, Reading, Berks.

CHOICE FLOWER SEEDS, FOR PRESENT SOWING.

PANSY, saved from 100 of the best vars., by name, 2s. 6d. per pkt.
POLYANTHUS, do. 50 do. „ 2s. 6d. „
VERBENA, do. 50 do. „ 2s. 6d. „
HOLLYHOCK, do. 60 of the most superb kinds, by name ... ... 2s. 6d. „
CALCEOLARIA, do. 24 do., spotted varieties 2s. 6d. „
DAISY, do. 50 of the new Belgian do. do. 1s. 6d. „
ANTIRRHINUM, do. 20 best named varieties ... 1s. 0d. „
ANEMONE, from the most showy and brilliant kinds, 1s. „
FASTOLFF RASPBERRY SEED, for exportation, p. oz., 3s. 6d.
The above, per post, free.—Postage Stamps received in payment.

YOUELL and CO., Royal Nursery, Great Yarmouth.

PAUL'S EARLY DWARF PROLIFIC PEA.—This Pea having proved itself one of the best early dwarf varieties, A. Paul & Son have pleasure in offering it this season at 2s. per quart. May be obtained of them, or from Messrs. Noble & Co., 152, Fleet Street, and from Messrs. Hurst & McMullen, 6, Leadenhall Street, London.

N.B. A general assortment of Agricultural and Horticultural Seeds of the best quality and most approved races, at London prices. Catalogues free by post on application.

Nurseries, Cheshunt, Herts, Feb. 4.

"NORFOLK HERO" CUCUMBER.—Without exception the very best Cucumber for open ground cultivation that has yet been offered. It is a most prolific bearer, as handsome as any frame variety, and is as delicate in point of texture, the fruit measuring from 16 to 20 inches in length. It is in the sole possession of Youell and Co., who will forward per post free on receipt of postage stamps) packets containing six Seeds, 1s; 18 seeds, 2s. 6d.—"To Market Gardeners the above will be found a great acquisition."

Royal Nursery, Great Yarmouth.

AQUILEGIA GLANDULOSA (flowers 4 inches in diameter, blue and white.)—To insure a vigorous display of this, the handsomest of early summer flowers, the Subscribers will, on receipt of a Post-office order for 20s., forward free to London or Edinburgh a dozen strong flowering roots in balls of a congenial soil, plants such as those for which they received the Honorary Premium of the Royal Caledonian Horticultural Society at the Exhibition in Edinburgh in May last. These roots are suitable for the open ground, but they are also well adapted for being forced into bloom early in spring.

Professor Lindley has said, "This plant is perhaps the handsomest hardy perennial in cultivation." Roots of the same sort can be obtained of Messrs. Charlwood & Cummins, Seedsmen, 14, Tavistock Row, Covent Garden.

JOHN GRIGOR and Co., Nurseries, Forres, N.B.

EXOTIC NURSERY, CANTERBURY.

WILLIAM MASTERS, at the commencement of a new season, has the pleasure to tender his very grateful thanks to his numerous Patrons for the very kind support with which they have favoured him during the last thirty-five years, and begs to solicit a continuance of the same on behalf of himself and his Son, with whom he has now entered into PARTNERSHIP, and who has been engaged with him in the practice of Landscape Gardening and the various branches of his business for some years.

WILLIAM MASTERS and SON beg to offer the following Collections of GARDEN SEEDS, in assortments containing a supply for the whole year in proportionate quantities of each.

	£	s.	d.
No. 1 Collection, for a large garden, containing 20 quarts of Peas in 20 best sorts for succession, 10 best sorts of Broccoli, 8 ditto of Lettuce, with all other vegetables in proportion	£2	10	0
No. 2, the best new and other sorts, in smaller quantities	1	10	0
No. 3, ditto ditto	1	0	0
No. 4, a Collection of esteemed kinds for a small garden	0	10	0

Grass Seeds for Lawns, Permanent Pasture or alternate Culture.

FLOWER SEEDS, with printed Directions for their Culture, in Collections of 12 for 2s. 6d.; 25 for 5s.; 50 for 9s.; 100 for 18s.

Their New Seed Catalogue for 1854 will be forwarded on application.—February 4, 1854.

THE PLANTING SEASON.

FRANCIS and ARTHUR DICKSON and SONS respectfully invite the attention of Planters to their very extensive Stock of Forest and Ornamental Trees, Evergreens, and Flowering Shrubs, Fruit Trees, Roses, Herbaceous and Alpine Plants, Stove and Greenhouse Plants, &c., growing at their Upton Nursery Grounds, near Chester. The Nurseries lying high and exposed, the whole of their Plants are hardy and well-grown, and having been regularly transplanted are also well rooted, and cannot fail to give satisfaction.

The following Lists are published, and will be forwarded on application:—Forest and Ornamental Trees and Shrubs, Fruit Trees (Descriptive Catalogue), Roses (Descriptive Catalogue), Herbaceous and Alpine Plants, Stove and Greenhouse Plants, Dahlias, Bedding-out Plants, Florists' Flowers, &c.

☞ It being necessary to clear the plants off certain portions of their Grounds before the end of March, F. & A. D. & Sons will dispose of this part of their Stock at much reduced prices, rather than incur the expense of removing them to other parts of their Nurseries.—Upton Nurseries, Chester, Feb. 4.

NEW AND SUPERIOR SEEDS.

FRANCIS and ARTHUR DICKSON and SONS, respectfully intimate that their CATALOGUE OF VEGETABLE AND FLOWER SEEDS, &c., for the present season is published, and will be forwarded on application. Their Stock of NEW SEEDS is now complete, and as each article has been procured direct from the most particular and careful growers, they feel satisfied that the quality of their Seeds is such as cannot fail to merit the approbation of their customers and friends.

F. & A. D. & Sons further beg to assure their patrons that everything supplied by them shall be of the first quality; and that all orders entrusted to them shall be executed with fidelity and despatch.

Seed Warehouses, 106, Eastgate Street, Chester, and 14, Corporation Street, Manchester.—Feb. 4.

CHOICE SEEDS FOR PRESENT SOWING.

JOSEPH HENRY KNIGHT, Seedsman, Battle, Sussex, begs to offer to the notice of those who wish for real genuine seeds the following:—

ANTIRRHINUM, from 70 kinds, including every shade of colour, striped, spotted, and mottled, 6d.

ASTER GERMAN, 12 varieties separate, many have been grown 5 inches over; 1s. 6d. the collection.

PANSY, from 150 kinds, including the newest sorts, 1s.

SWEET WILLIAM, from 50 kinds, 6d.

HOLLYHOCK, from the best double flowers, 6d.

VERBENA, from 70 kinds, including the newest, 6d.

CARNATION, PICOTEE, PINK, and CALCEOLARIA, from the best show kinds, 1s. each.

CHOICE ANNUAL SEEDS, in collections, including the most popular kinds, with descriptions on each packet, post free, at the following prices:—100 papers, for large establishments, 10s. 6d.; 50 do. do., 6s.; 30 do. do., 3s. 6d. 100 papers for smaller establishments, 7s.: 50 do. do., 4s.; 30 do. do., 2s. 6d.; 12 do. do., 1s. 2d.

Post-office orders payable at Battle, Sussex.

SELECTED GARDEN SEEDS.—We beg to offer the following Collections of Garden Seeds:—

	£	s.	d.
No. 1.—A complete collection, suitable for a large garden	3	0	0
2.—A collection of equally choice varieties, but smaller quantities	1	10	0
3.—A collection suitable for a small garden ...	0	15	0

Nos. 1 and 2 collections will be sent carriage free to any Railway Station in England or Wales.

J. C. WHEELER & SONS, Seed Merchants, Gloucester.

IMPORTED GERMAN FLOWER SEEDS.—

	s.	d.
QUILLED DOUBLE GERMAN ASTER.—Assortment of 24 splendid varieties, containing of each colour 100 seeds	5	0
Ditto 12 splendid varieties	2	6
Packets of the above varieties mixed, each	0	6
DWARF DOUBLE GERMAN ASTER.—Assortment of 16 most splendid varieties, of each colour 100 seeds ...	3	6
Ditto 12 splendid varieties	2	6
Packets of the above varieties, mixed, each	0	6
DWARF GERMAN STOCK.—Assortment of 36 most splendid varieties, each colour separate	7	6
Ditto 24 ditto ditto	5	0
Ditto 12 ditto ditto	2	6
The above beautiful varieties, mixed, per packet	0	6
NEW Largest FLOWERING DWARF TEN-WEEKS' STOCK.—This new acquisition has been greatly admired. The flowers are exceedingly large. The colours are rose, purple, blue, light blue, and white, per packet...	1	0
DWARF GERMAN WALLFLOWER-LEAVED TEN-WEEK STOCK.—Assortment of 12 splendid varieties, containing of each variety 100 seeds...	3	0
The same varieties, mixed, per packet...	0	6
BRANCHING GERMAN TEN-WEEK STOCK.—Assortment of 12 varieties, containing of each variety 100 seeds	3	0
NEW ROSE PURPLE EMPEROR STOCK, per packet	1	0
WALLFLOWERS.—Collection of eight splendid varieties	3	0
DWARF DOUBLE LARKSPUR.—Collection of 10 most splendid varieties, containing of each colour one-eighth of an ounce	5	0
TALL DOUBLE LARKSPUR.—Collection of 8 splendid varieties, containing of each colour one-eighth of an ounce	3	6
ZINNIA ELEGANS. Collection of 6 beautiful varieties	2	6

We can strongly recommend the above as being of first-rate quality. They will be forwarded postage free.

J. C. WHEELER and SONS, Gloucester.

RARE AND HARDY CONIFERS.

Per dozen.—	s.	d.
Abies Douglasi, 4 to 6 in.	12	0
khutrow, or Morinda, 6 to 9 in. ...	9	0
„ 12 to 15 in. ...	12	0
„ 2 to 3 ft. ...	24	0
Menziesi, 9 to 12 in. ...	9	0
„ 1½ to 2 ft. ...	12	0
orientalis, 4 to 6 in., bushy	12	0
„ 6 to 9 in., do. ...	18	0
pumila (Waterer's), very strong ...	24	0
Smithiana, 1 yr., p. 100	15	0
Witmannia	60	0
Araucaria imbricata:—		
4 in.	6	0
1 ft.	30	0
1 ft. to 1½ ft.	42	0
1½ to 2 ft.	60	0
2 to 2½ ft.	80	0
3 ft., fine, each	15	0
Cedrus deodara:—		
4 to 6 in.	6	0
12 to 15 in.	12	0
1½ to 2 ft.	20	0
2 to 2½ ft.	30	0
3 ft.	42	0
3½ to 4 ft.	60	0
Large specimens, each, 15s. to 21s.		
If 100 or more of the above are taken, a considerable reduction will be made.		
Cedrus Atlantica, 9 to 12 in.	20	0
„ Libani, 1½ to 2 ft.	18	0
„ „ 2 to 3 ft.	30	0
Cryptomeria japonica, 3 to 3½ ft., each	3	6
Cupressus Tourneforti:—		
1 year, per 100 ...	5	0
funebris, 4 to 6 in. ...	9	0
„ 6 to 9 in. ...	12	0
Goveniana, 12 to 15 in.	24	0
„ 1½ to 2 ft. ..	42	0
„ 2 to 2½ ft. ..	60	0
Lambertiana, 12 to 15 in.	24	0
„ 18 in. to 2 ft.	42	0
Uhdeana, 9 in... ...	12	0
„ 12 to 18 in...	18	0
„ 18 to 24 in...	24	0
Whitleyi, each ...	5	0
Cupressus Nova sp., from the Himalaya Mountains, forming a magnificent Evergreen Tree, 80 ft. in height, strong 1-year old plants from seed established in single pots	63	0
The above is quite new to Europe, and is not yet named.		

Per dozen.—	s.	d.
Dacrydium Franklini, 4 to 6 in.	24	0
Juniperus Bedfordiana, 6 in.	6	0
„ „ 9 to 12 in.	9	0
„ „ 1 to 1½ ft.	18	0
„ excelsa, 12 to 15 in.	20	0
„ Hibernica, 2 to 3 ft.	24	0
„ squamata, 4 to 6 in.	9	0
„ „ 9 to 15 in.	12	0
Libocedrus chilensis, each 3s. 6d. to	5	0
Picea cephalonica:—		
1½ to 2 ft.	42	0
nobilis, 6 to 9 in., each	7	6
Nordmanniana, 4 to 6-inch cuttings ...	42	0
stout seedlings, 9 in., each	15	0
Pindrow, 9 in.	12	0
Webbiana, 1 year, per 100 ...	25	0
„ 9 in. ...	18	0
Pinsapo, 4 in., bushy...	24	0
„ 6 in., each ...	3	6
„ 2 to 3 ft., fine specimens, each, 15s. to	21	0
Pinus:—		
cembra, 9 in. to 1 ft. ...	6	0
cembroides, 9 in., each	5	0
Edgariana, 1 to 1½ ft. ..	10	6
excelsa, 1 year, per 100	10	0
„ 9 to 12 in., in pots	9	0
„ 1½ to 2 ft. „	12	0
„ 1½ to 2 ft., bedded, per 100	60	0
„ 2 to 2½ ft. „	75	0
Gerardiana, 9 in. to 1 ft., very strong	6	0
insignis, each, 2s. 6d. to	5	0
ponderosa, from seed .	60	0
canariensis	20	0
Hamiltoni	20	0
Podocarpus totara, 2 to 2½ ft.	42	0
Taxus adpressa, 9 to 12 in.	18	0
„ Dovastoni, or weeping, 12 to 15 in.	20	0
„ fastigiata, or Irish, 1½ to 2 ft., per 100 ...	30	0
Larger proportionately cheap.		
„ variegata, each ...	3	6
„ baccata, gold striped, 6 to 9 in. ...	18	0
„ „ silver striped, each	2	6
„ „ elegantissima, 1 to 2 ft., each ...	5	0
„ pyramidalis, 1 to 1½ ft., per dozen	12	0
„ „ 1½ to 2 ft. „	18	0
„ Harringtoni, each ...	3	6

☞ Less quantities than those named above supplied at the same prices. Orders of 2l. and upwards are delivered Carriage Free to London or Hull, or to any Railway Station within 150 miles of the Nursery.

Youell & Co. beg to refer to their Advertisement of a choice and extensive Collection of Plants which appeared in this Paper of October 15, and January 14 and 21. Catalogues will be forwarded free on application.

YOUELL and CO., Royal Nursery, Great Yarmouth.

IMPROVEMENT OF GRASS LANDS.

SUTTON'S RENOVATING GRASS SEEDS FOR IMPROVING OLD PASTURES.—Many Old Upland Pastures, Parks, and Meadows are nearly destitute of Clovers and the finer and more nutritious sorts of Grasses, in which case we are in the practice of furnishing such sorts only as are wanting. If the Seeds are *sown early in the season*, the improvement in the Pasture will be very considerable, and at a small expense.

The following is similar to many other letters received from former purchasers:—

From D. T. Cunynghame, Esq., Wellesbourne, Warwick, Nov. 1852.

"The meadows that were renovated with your Seeds are looking very well. I cut nearly 2 tons of hay to the acre, and three years ago the same land hardly produced half a ton per acre. The Garden Seeds I have had from you exceed by far any that I have bought elsewhere."

Quantity of Seed required, 8 lbs. to 12 lbs. per acre. Price 1s. per lb., Carriage Free.—Address

John Sutton & Sons, Seed Growers, Reading, Berks.

N.B.—We have a very fine Stock of Mangold Wurzel and Carrot Seed.

NEW SEEDS—GROWTH OF 1853.

RENDLE'S COLLECTION of GARDEN SEEDS, FOR ONE YEAR, *will be sent out as usual by the Subscribers.*

The collections have given universal satisfaction, and they will be found sufficient to supply a garden during the whole of the 12 months.

	£	s.	d.
No. 1.—A complete Collection, to supply a large garden for 12 months, including 20 quarts of the newest and most approved Peas, for early, medium, and late crops; 10 quarts of Beans, and full quantities of all other kinds of vegetable seeds	3	0	0
For the detailed quantities contained in the No. 1 Collection, see back page Gardeners' Chronicle, Jan. 7, 1854.			
No. 2.—A complete Collection, in reduced quantities, for a smaller garden	2	0	0
No. 3.—A complete Collection do.	1	5	0
No. 4.—A small and choice Collection	0	15	0

☞ *All orders above 20s. carriage free (see* Price Current), *and all orders above 5l. delivered carriage free to every Railway Station in England and Wales, and to every Steam Port in England, Wales, Ireland, and Scotland.*

William E. Rendle & Co., Seed Merchants,
ESTABLISHED 1786. Plymouth.

The quantities contained in the above Collections will be found in our Price Current and Garden Directory, *just published.*

"FASTOLFF RASPBERRY."—It is with much satisfaction that we announce a third award made by the London Horticultural Society, on 26th of July last, for examples of the above most excellent Raspberry, unequalled by any other variety for the size of its fruit and richness of flavour.

It is reported in the *Gardeners' Chronicle* of July 30th, page 486, as follows:—"Messrs. Youell, of Great Yarmouth, sent a boxful of beautiful fruit of the Fastolff Raspberry; they were unusually fine, and well deserved the certificate of merit awarded them."

Strong well-rooted canes, 15s. per 100; Large White Raspberry, 24s. per 100; New Monthly Fruiting, 24s. per 100.

CHOICE FRUITS. (Warranted true to name.)

APPLES, standard, in best selection, good heads 9s. per dozen.
„ dwarf „ „ 6s. „
„ trained „ „ 30s. „
PEARS, standard „ „ 12s. „
„ dwarf „ „ 8s. „
„ trained „ „ 30s. „
PLUMS, dwarf „ „ 9s. „
„ trained „ „ 36s. „
PEACHES, dwarf trained, in fine strong plants, 36s. to 60s. „
NECTARINES, dwarf trained, „ 36s. to 60s. „
APRICOTS „ „ 36s. to 60s. „
CHERRIES, standard, in fine variety ... ... 12s. „
„ dwarf „ ... ... 9s. „
„ trained „ 36s. to 42s. „

GOOSEBERRIES, 25 of the finest varieties (good bushes) selected for size and flavour, 30s per 100; 4s. per dozen.

CURRANTS, improved large white Dutch, Black Naples, Raby Castle (red), and Large Red Grape, 4s. per dozen; Knight's Sweet Red, 6s. per dozen; these are the most desirable kinds in cultivation, and are highly recommended.

RHUBARB, Myatt's Victoria, 9s per dozen; Royal Albert, 9s. per do.; Linnæus, 9s. per do.; Tobolsk, 6s. per do. (strong).

SEAKALE, extra strong, 2 years, 6s. per 100; 3 years, 8s. per do.

ASPARAGUS, extra strong, for forcing 5s. per 100; 3 years old, 3s. 6d.; 2 years old, 2s. 6d.

Orders of 2l. and upwards are delivered Carriage Free to London or Hull, or to any Railway Station within 150 miles of the Nursery.

YOUELL and CO., Royal Nursery, Great Yarmouth.

PEAS! PEAS! THE BEST VARIETY IN CULTIVATION.

CHAMPION OF ENGLAND, a blue wrinkled Pea, very productive, of quick growth, and of a most delicious flavour. This extraordinary Pea combines in one the merits of all others, and has none of their demerits; for, although a wrinkled Pea, it is both hardy and early, and being of quick growth, it is the best kind to plant throughout the season for each crop. It is highly productive, bearing very long pods of a lively green, which are well filled, and the Peas are generally as large as small horse Beans, of a deep green colour, and beyond all others of a most delicious flavour. Height, 3 ft. to 3½ ft.

Price, in quantities of not less than 1 peck ... Bag included 6s.
„ „ „ 1 bushel ... .. „ 16s.
„ „ „ 1 sack (4 bushels) „ 60s.
„ „ „ 8 bushels (1 qr.) „ 106s.

Delivered, freight paid by Railway to London.

Orders, with remittance or satisfactory reference, will have immediate attention on application to

H. and A. WALLIS, Seedsmen, Ipswich.

CUCUMBERS, MELONS, &c., the best varieties in Cultivation:—

CUCUMBER SEED—Captivation, 2s. 6d. per packet; Phenomenon, 2s. 6d.; Victory of Bath, 1s.; Lord Keynon's Favourite winter Cucumber, 2s. 6d.; Gordon's White Spine, 1s.; Chamberlain's Essex Hero, 2s.; Sunderlandwick, 2s.; Hunter's Prolific, 1s. and numerous others at 1s. per packet.

MELON SEED, at 1s. per packet—Incomparable, Bromham Hall, Golden Ball, Queen, Bowood, Victory of Bath, Cameron Court, Beechwood, Windsor Prize, Emperor, Fleming's Trentham Hybrid, Hampton Court, Blackhall's Green Flesh, Bailey's, and numerous others at 1s. per packet.

A packet of each of the first-named Cucumbers, and two packets of either of the Melons named, sent free for 60 stamps.

SUPERB HOLLYHOCK SEED, 2s. 6d. per packet.—GERMAN ASTER SEED (very fine and double), 1s. per packet.—ANTIRRHINUM SEED (splendid), 1s. per packet.—For further particulars respecting the before-mentioned Seeds see this Paper of the 21st inst.

A remittance must accompany every order by cash, or penny postage stamps, when the whole or any part of the above will be sent immediately, postage and package free.

EDWARD TILEY, Nurseryman, Seedsman, & Florist, 14, Abbey Church Yard, Bath.

EXHIBITIONS IN THE GARDEN OF THE HORTICULTURAL SOCIETY OF LONDON, FOR THE YEAR 1854.

The EXHIBITIONS will take place on the Second Saturdays in May, June, and July; namely, May 13, June 10, and July 8.

The following Medals and Rewards are offered:—

LG 1—First Large Gold Medal ... ... value	15*l.*
LG 2—Second " ... ... "	12*l.*
GK 1—First Gold Knightian Medal ... ... "	10*l.*
GK 2—Second " " ... ... "	8*l.*
GB 1—First Gold Banksian " ... ... "	7*l.*
GB 2—Second " " ... ... "	5*l.*
SG—Silver Gilt " ... ... "	4*l.*
LS—Large Silver " ... ... "	3*l.*
SK—Silver Knightian " ... ... "	2*l.*
SB—Silver Banksian " ... ... "	1*l.*
C 1—First Certificate ... ... "	15*s.*
C 2—Second " ... ... "	10*s.*

ATTENTION IS PARTICULARLY REQUESTED TO THIS NEW SCALE OF REWARDS.

SCHEDULE OF THE PRIZES.

DIVISION I.—ORNAMENTAL PLANTS.

1. Azaleas, greenhouse; in 12 distinct varieties. GK 2—GB 1—GB 2.

2. Greenhouse Azaleas; in 6 distinct varieties in 8-inch pots. SG—LS—SK.

N.B. No one can show in 1 and 2 at the same time.

3. Calosanths; in sixes. SK—SB—C 1. *(In July only.)*

4. Tall Cacti; 6 distinct varieties in flower. LS—SK—SB.

5. Ferns; very distinct hothouse kinds, in twelves. LS—SK—SB. *(In July only.)*

6. Helichrysums; in sixes. SK—SB—C 1.

7. Cape Heaths; in collections of 10 entirely distinct varieties. GB 1—GB 2—SG.

N.B. It is expected that the same plant shall not be exhibited on more than one occasion. The Judges, in making their award, will give, both in this and the next number, a marked preference to plants grown in their natural form without stakes or stays; and will also take distinctness of species into favourable consideration. No duplicate will be allowable. No one can take more than one prize in the two classes of Heaths.

8. Six distinct Cape Heaths. LS—SK—SB.

9. Miscellaneous variegated plants, in collections. SG—LS—SK. *(In June and July only.)*

10. Miscellaneous tender ornamental plants, remarkable for fine foliage, not in flower, in collections. LS—SK—SB. *(In June and July only.)*

11. Miscellaneous single plants. SB—C 1—C 2.

N.B. Exhibitors in this class will not be thereby *entitled* to a pass ticket. Heaths, Cockscombs, Heartsease, Hydrangeas, and bouquets, together with all plants for which separate prizes are offered, are altogether excluded from this number.

12. Newly introduced or extremely rare SPECIES of ornamental plants in flower, not introduced by the Society. SG—LS—SK—SB.

N.B. These Medals will be awarded by the Society's officers and not by the usual judges. Exhibitors will particularly observe that none but new or rare plants can be exhibited under this number. *Nothing will be regarded as new which has been exhibited in the Garden or Regent Street in a previous season.* No prizes will be given to New Plants which have been introduced through the Society.

13. Exotic Orchids; in collections of 20 species of superior cultivation. LG 1—LG 2—GK 1—GK 2—GB 1—GB 2.

14. Exotic Orchids; in collections of 10 species of superior cultivation. GB 1—GB 2—SG—LS.

N.B. Nurserymen cannot show under either No. 13 or 14. No exhibitor can show in more than one of them.

15. Exotic Orchids; in collections of 15 species of superior cultivation. GB 1—GB 2—SG—LS. *Nurserymen only can exhibit under this number.*

16. Pelargoniums; in collections of 12, cultivated with superior skill in 8-inch pots. GB 1—GB 2—SG.

N.B. The collections in which varieties are most distinct *will have the preference.*

17. Six distinct Fancy Pelargoniums; in 8-inch pots. LS—SK—SB.

18. Roses, in pots; in collections of 12 distinct varieties, in 13-inch pots. GB 1—GB 2—SG—LS. *(In May and June only.) Nurserymen and Private Growers exhibit separately.*

N.B. The Judges will disqualify any collection that shall be found to contain a plant which has been recently placed in the pot from the open ground, or that is shown in a pot of any other size than 13 inches.

19. Roses of 50 varieties in loose bunches, each consisting of three trusses as they are gathered, so as to exhibit, as far as possible, the habit of the variety. LS—SK—SB. *(In July only.)*

N.B. No one who exhibits in this number can also compete in the following.

20. Roses exhibited as in No. 19, but in 25 varieties. SK—SB—C 1. *(In June and July only.)*

N.B. Private growers only can exhibit here. If Roses are brought for exhibition without attention to the regulations here explained, they will not be allowed to compete.

21. Stove or Greenhouse plants; in collections of 20 plants. LG 1—LG 2—GK 1—GK 2.

N.B. Calceolarias, Fuchsias, Orchids, and Pelargoniums, are excluded from all the four classes of Stove or Greenhouse plants. Only two species or varieties of the same genus can be allowed, in this and the following number, and no two specimens of the same kind.

22. Stove or Greenhouse plants; in collections of 15 plants. GB 1—GB 2—SG.

23. Stove or Greenhouse plants; in collections of 6 plants, in pots or tubs not less than 20 inches in diameter. GB 1—GB 2—SG.

24. Stove or Greenhouse plants; in collections of 6 plants, in pots not exceeding 13 inches in diameter. SG—LS—SK—SB.

N.B. Not more than one species of the same genus can be allowed in Nos. 23 and 24. No one can show in more than one of the classes of Stove or Greenhouse plants, except No. 23.

25. Single specimens of very superior cultivation, excluding everything which can be shown singly in other numbers, and plants not in flower. SK—SB—C 1.

N.B. No one can take more than one prize in this number.

DIVISION II.—FRUIT.

N.B. All fruit must be ripe enough for market, well coloured, and properly named. Fruiterers cannot exhibit.

Under this head the Council place at the disposal of the Judges the following amount, viz.,

In MAY, a sum not exceeding £50
In JUNE, " 60
In JULY, " 70

The Judges will be at liberty to apportion this sum among the exhibitors in such manner as they may think fit. No classification of fruit is now proposed, it being the desire of the Council to afford gardeners the greatest possible freedom of action—thus enabling those who wish to exhibit collections of any kind to do so, and others with smaller means to produce their Grapes, Pine-apples, Melons, Strawberries, &c., separately, or as may best suit their convenience.

If the whole sum allotted to the May exhibition is, in the opinion of the Judges, not then required, the difference between the amount awarded and the sum allowed will be added to that divisible in June. And if the total sum thus made available for June is not then expended, in that case the surplus will be added to what is offered in July. Should the judges find that the whole sum thus finally made available in July is not required, then the difference is to be carried to the credit of the Society.

ESTABLISHED ABOUT HALF A CENTURY.

SEED AND HORTICULTURAL ESTABLISHMENT, SUDBURY, SUFFOLK.

BASS AND BROWN'S SEED AND PLANT LIST FOR 1854 is now complete, and supplied free for three penny stamps. It contains a considerable number of new and very choice kinds, both of Seeds and Plants, and much useful information.

In offering the 23d Annual Edition of our Seed Catalogue, we would remark that the usual care and attention have been bestowed in the selection and growth of every article which has come under our hands, and as our aim is to render our Stock as select as possible, the most scrupulous care is paid to avoid such as are not really an acquisition and calculated to give perfect satisfaction. Our List of Vegetable Seeds contains many valuable new additions, and in the Flower Seed department are several rich gems of recent introduction.

Owing to the late ungenial season for ripening and harvesting Seeds, which has rendered them very scarce, the prices of many are higher than previous years.

GOODS (not under 20s.) CARRIAGE FREE to all Stations in London.

A Copy of the Autumn Catalogue also supplied for three penny stamps.

ASSORTED COLLECTIONS OF VEGETABLE SEEDS.

The following, comprising the best in cultivation, including several new sorts of first-rate quality:—

No. 1.—COLLECTION FOR A LARGE GARDEN, containing quantities sufficient for one year's supply £3 0 0
No. 2.—COLLECTION IN SMALLER PROPORTION 2 0 0
No. 3.—COLLECTION DITTO 1 5 0
No. 4.—COLLECTION OF CHOICE KINDS FOR A SMALL GARDEN 0 15 0

If any sorts of Vegetables are not wished for, enlarged quantities of others will be sent to make up the amount.

*** *Collections Nos. 1, 2, and 3 are given in the Catalogue.*

FLOWER SEEDS—BEST ASSORTMENTS.

These may be had, pre-paid by post, at the prices affixed.

	s.	d.
100 varieties select showy Annuals, which will include the beautiful new Leptosiphon luteum, Calceolaria chelidonioides, Nemesia bicolor, Helianthus californicus, Lupinus hirsutissimus, fine new varieties of double Convolvulus, splendid Prize Asters, Stocks, Zinnia, &c. ...	15	0
50 varieties, including new, 8*s.* 6*d.*; 30 varieties ditto, 5*s.* 6*d.*; 20 varieties ditto ...	4	0
20 varieties best Dwarf Annuals, in large packets, for filling beds on lawns ...	7	6
12 ditto ditto ...	5	0
20 varieties choice Greenhouse Annuals, including the new Gomphrena aurantiaca, Salpiglossis atrosanguinea, the new Portulaccas, Rhodanthe, Thunbergia, Phlox Drummondi, &c., 7*s.* 6*d.*; 12 varieties, including new ...	5	0
20 varieties choice Greenhouse Perennials, including very fine and new Calceolaria, Cineraria, Fuchsia, Petunia, Verbena, Chorozema, Kennedyas, Calendrinia umbellata, &c. ...	10	6
12 varieties ditto ditto ...	7	6
20 varieties Hardy Biennials and Perennials, including the new white Escholtzia, very choice Antirrhinum, Gladioli, Heartsease, Mimulus, Polyanthus, Dianthus, Brompton and Emperor Stock, &c., 7*s.* 6*d.*; 12 varieties ditto ...	5	0

Also CHOICE IMPORTED FLOWER SEEDS.—See Catalogue.

RANUNCULI.

Strong roots may be had by post pre-paid, and securely packed, without extra charge; except where the prices are under 10*s.* per 100, in which case they will be forwarded pre-paid at 1*s.* per 100 extra, or 8*d.* per 50.

100 Roots in 100 vars., superb seedling, and other best sorts £3 10 0
50 ditto in 50 varieties, 37*s.* 6*d.*; 25 in 25 varieties ... 1 0 0
100 Roots in 100 varieties, very fine £1 15 0
50 ditto in 50 varieties, 18*s.*; 25 in 25 varieties 0 10 0

	Per doz.—s.	d.	Per 100.—s.	d.
Extra choice, mixed, from best named	2	6	18	0
Very fine, mixed	1	6	10	0
Fine border, mixed	0	9	5	0
Early Scarlet Turban	0	6	3	6
Early Yellow Turban	0	8	4	6
" Seraphique, clear yellow	1	0	8	0
" Brown Turban ...	0	8	4	6
" Hercules, white	5	0		
Oel Noir, best black (2*s.* each)	18	0		

GLADIOLI.

Our collection of this splendid tribe comprises upwards of 100 varieties, for Lists of which see our Autumn Catalogue.
Tall varieties of Gandavensis and Floribundus habit.

	Each.—s.	d.
Monsieur Blouet, superb new, rich red, very large ...	3	6
Fanny Rouget, superb new	3	6
Albicus roseus, deep blush, crimson striped ...	0	9
Brenchleyensis, brilliant rich scarlet ...	2	6
Floribundus, white, rose striped, 2*s.* 6*d.* per dozen ...	0	3
Gandavensis, clear orange, 3*s.* 6*d.* per dozen	0	4
Psittacinus, orange and yellow, 1*s.* 6*d.* per dozen	0	6
" sanguineus, rich dark scarlet, and yellow, 5*s.* per doz.	0	6

ANEMONES.

	s.	d.
50 beautiful and distinct named double varieties, 12*s.* 6*d.*; free by post ...	14	0
25 ditto ditto, 7*s.*; free by post ...	8	0
The finest large, mixed, double, per 100, 10*s.* 6*d.*; very fine, mixed, per 100 ...	6	0
Double Scarlet varieties, mixed, fine, per 100 ...	12	0
Beautiful mixed semi-double, 6*s.* per lb.; fine new single, mixed, per lb. ...	4	0
Anemone Hortense, fine red, per dozen, 2*s.* 6*d.*; superb mixed Seedlings, per dozen ...	2	6
12 Roots of each of 14 beautiful double vars., for clumping	32	0
6 Roots of each, 17*s.* 6*d.*; 3 Roots of each ...	9	

ACHIMENES, 12 fine named varieties, strong tubers, free by post ... 6 0

LILIUM LANCIFOLIUM ALBUM, 1*s.* to 2*s.* 6*d.*; Rubrum ... 2*s.* 6*d.* to 10 6

TRITONIA AUREA, splendid new orange Cape Bulb, each ... 2*s.* 6*d.* to 3 6

TIGRIDIA (Tiger Iris) CONCHIFLORA, 5*s.* per dozen; Pavonia, and others, per dozen ... 2 6

RHUBARB—Mitchell's Royal Albert, and Myatt's Linnæus, the earliest and very fine, each, 1*s.*; per doz. 9 0
" Myatt's Victoria Giant, each, 9*d.*; " 7 6

GRAYSON'S GIANT ASPARAGUS, fine 3 year, per 100 3 6

FRUIT TREES of the choicest kinds.

Remittances requested from unknown correspondents.

SEED & HORTICULTURAL ESTABLISHMENT, SUDBURY, SUFFOLK.

SEEDS CARRIAGE FREE.

SUTTON'S COLLECTIONS OF SEEDS

THE BEST YET OFFERED.

KITCHEN GARDEN SEEDS.	£	s.	d.
No. 1.—A complete Collection, for one year's supply ...	3	0	0
No. 2.—A complete Collection, in reduced quantities, of the same sorts ...	2	0	0
No. 3.—Ditto Ditto Ditto	1	5	0
No. 4.—Ditto Ditto Ditto	0	15	0

A List of the sorts and quantities contained in these Collections may be had post free for one penny stamp.

HARDY AND SHOWY FLOWER SEEDS (POST FREE).

No. 5.—A Collection of the best 50 sorts known ... 0 10 6
No. 6.—A Collection of the best 36 sorts known ... 0 7 6
No. 7.—A Collection of the best 24 sorts known ... 0 5 0

Purchasers are at liberty to name any sorts of Flower Seeds they wish included in the above Collections. If left to our selection, the most hardy and showy kinds only will be sent.

SUTTON'S GENERAL PRICED CATALOGUE OF SEEDS AND PLANTS will be sent post free on receipt of one penny stamp.
JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

CORN MARKET, WISBEACH, CAMBRIDGESHIRE.

CHARLES SHARPE begs to call the attention of the nobility, gentry, and trade to the undermentioned choice collection of SEED POTATOES, grown with great care upon marsh land near the sea, which is the most appropriate soil for the culture of the Potato, as it is less affected by the disease, and of finer quality. The undermentioned prices include hampers and package. Smaller quantities can be had if required. The Trade Price can be had on application.

POTATOES (FOR FORCING AND EARLY PLANTING).

Per bushel of 4 stones.

Early Ash-leaf Kidney ... 12*s.*
" " (Jackson's) 12*s.*
" Emperor ... ... 12*s.*
" Fox's Seedling ... 10*s.*
Early Flourball (Rylott's) 12*s.*
" Round Frame ... 12*s.*
" Cockney ... ... 12*s.*
" Oxford (very true) ... 12*s.*

POTATOES (FOR SECOND PLANTING AND LATE CROP).

Per bushel of 4 stones.

American Native ... ... 10*s.*
White Rough ... ... 8*s.*
Yorkshire Regent ... ... 8*s.*
Forty Fold ... ... 10*s.*
Kentish Kidney ... ... 8*s.*
White Kidney ... ... 8*s.*
British Queen (this is the largest producer and best quality in cultivation) ... 12*s.*

PYRAMIDAL PEAR TREES ON THE QUINCE STOCK.

J. AND J. FRASER, NURSERYMEN, Lea Bridge Road, Essex, beg to offer the above in fine strong trees, and such as would fruit the first and second year after planting, at the undernamed prices. These Pears are remarkable for their compact style of growth and prolific bearing; the collection comprises the following fine sorts:—Beurré d'Amanlis, Beurré d'Aremberg, Beurré de Capiaumont, Beurré Diel, Beurré Easter, Beurré Grise d'Hiver, Nouveau, Beurré Rance, Williams's Bon Chretien, Crassane, White Doyenné, Duchesse d'Angoulême, Forelle or Trout Pear, Glout Morceau, Hacon's Incomparable, Jargonelle, Louise Bonne of Jersey, Marie Louise, Napoléon, Winter Nelis, and Pass Colmar.—Price 2*s.* 6*d.* to 3*s.* 6*d.* each.

SEEDS—CARRIAGE FREE.

WILLIAM E. RENDLE AND CO. *have, from the very extensive patronage they have received, been induced this season to offer the following liberal arrangement to all who purchase Seeds from their establishment.*

ALL ORDERS ABOVE £5 WILL BE DELIVERED CARRIAGE FREE TO ANY RAILWAY STATION IN ENGLAND OR WALES, AND TO ANY STEAM PORT IN ENGLAND, WALES, IRELAND, OR SCOTLAND.

Two or three purchasers joining together will therefore have the advantage of having their orders delivered free of any cost for carriage.

RENDLE'S PRICE CURRENT FOR 1854 should be obtained by all who have gardens, or who take an interest in the cultivation of the soil.

The Gardeners' Chronicle.

SATURDAY, FEBRUARY 4, 1854.

PLOUGH *v.* SPADE. Which is the better implement? That is the question. The rhodomontade of GISBORNE and the letter of our good correspondent "SINOPE," have between them brought this cause to trial. We appear for the defendant.

The case of the plaintiff, as we understand it, is that the plough is a reality and the spade a humbug; that the plough is an implement of unknown anti-

quity, the value of which is established by usage beyond the memory of man, while the spade is a poor, insignificant modern contrivance; that the plough always beats the spade, as any country gentleman who grows Potatoes very well knows, because the first is more efficient than the spade; that the plough is wonderful upon "cloddy" land, where the spade is powerless; and, finally, that the spade led to Irish pauperism, leaving the plough to remedy the mischief. Such appears to us to be the plaintiff's case as far as it can be collected from the pleadings in GISBORNE'S *Essays on Agriculture*, edition of 1854, pp. 247 and 248.

To this we answer, that of all the misstatements of which we have knowledge the plaintiff's are the greatest; that there is no truth in any one single allegation; and that the real difference between the respective cases of PLOUGH and SPADE, a difference we are far from denying, was either unknown to him, or not mentioned, and such as in no degree affects the main argument. We say that in reality the plough belongs to the category of barbarous implements, such as hatchets and adzes, while the spade is a distinguished member of the family of saws and planes. As none but a barbarian would place a hatchet above a saw, or an adze above a plane, unless in exceptional cases, so it must still be a barbarian who would think of giving precedence in rank to PLOUGH OVER SPADE.

For what is this plough, this much vaunted implement, really good for? Can it break into the depths of the soil, and continually bring to the surface the unexhausted and inexhaustible elements of fertility? Can it turn up land 2 feet deep? Or having so turned it, can it leave behind, in a loose permeable state, the earth in which roots are to penetrate? These are the results which are attained by the spade, and they are results to which the cultivator, be he farmer, be he gardener, must mainly look for any great improvement in his crops. But the plough can do nothing of the kind. At the worst it scrapes away the surface of the soil; or turns in a little stubble, or pretends to bury weeds; at the best it loosens the staple a few inches deep, but the deeper it goes the more it compresses the soil over which it travels, consolidating on the one hand as much as it loosens on the other.

Deep cultivation is indispensable to complete success in husbandry; the plough is but a shallow operator; therefore complete success in husbandry is unattainable by a plough. That is a fixed principle, the truth of which all good gardeners fully understand. Their whole practice is founded upon it; as is clearly pointed out by Mr. BAILEY, himself one of our most experienced horticulturists, in an excellent article published in our columns a week or two since.

No where are crops so heavy as in good gardens; no where is land so fruitful. People say that this is owing to manure; but many of our readers can tell a very different tale; for they know from experience that the steward or farm-bailiff takes especial care that the gardener is not over supplied with so valuable an article. The reason is that the plough is not a garden implement; the trust of a gardener is in his spade. Not that we deny in any degree whatsoever the importance of manure; it is wanted in a garden much more than in a farm, for without it heavy root crops and succulent vegetables are unattainable; while it is as certain as anything can be that in good land cereal crops do not need manure, provided they have proper tillage. We say this to prevent misapprehension, although it is immaterial to the question now before us, which should be strictly limited to the comparative merits of the plough and the spade as implements for cultivating land.

Mr. GISBORNE says, "Do the roots of esculents wish to penetrate into the earth—at least, to the depth of some feet? We believe that they do. We are sure of the Brassica tribe, Grass, and Clover. All our experience and observation deny the doctrine that roots only ramble when they are stinted of food; that 6 inches well manured is quite enough, better than more. Ask the Jerseyman; he will show you a Parsnip as thick as your thigh, and as long as your leg, and will tell you of the advantages of 14 feet of dry soil. You will hear of Parsnips whose roots descend to unsearchable depths. We will not appeal to the Kentucky Carrot, which was drawn out by its roots at the antipodes; but Mr. MECHI'S, if we remember right, was a dozen feet or more. Three years ago, in a midland county, a field of good land in good cultivation, and richly manured, produced a heavy crop of Cabbages. In November of that year we saw that field broken into in several places, and at the depth of 4 feet the soil (a tenacious marl, fully stiff enough for brick earth), was occupied by the roots of Cabbage, not sparingly—not mere capillæ—but fibres of the size of small packthread."

This is an important admission on the part of the plaintiff in the case before us, although what every gardener knows to be true. Such being the fact, let us ask how far the plough is capable of rendering land fit for the vigorous growth of plants whose roots commonly penetrate the soil even 2 or 3 feet. All the plough can do is to loosen a few inches of earth upon the surface; what lies below it has never been moved from the day when the plough was a crooked stick dragged by an ox. The spade, on the contrary, penetrates the soil to any depth which may be required, mixes the particles thoroughly, and leaves them loose, with free access for the air and water upon which the deep-searching roots are nourished. The depth to which a plough can go is limited by its own nature; the depth to which a spade can operate is limited by expense.

In fact the question is one of cost and of nothing else. It cannot be seriously contended that the plough is in reality so efficient as the spade; all that can be rationally insisted upon is that it is far cheaper. Into that argument we need not enter; we may indeed concede the point without injury to the case of our client, who can afford to be regarded as a costly operator, if his efficiency is unimpeached.

But need the spade be for ever costly? Is mechanical skill so low that no means can be found of impelling it by other hands than those of man? We have seen the flail disappear before a small machine; we have seen the human fingers replaced in a cotton mill by joints of iron obeying the impulse of machinery; we have the hand replaced by a few knives in carving figures out of paper; and can no one discover how to represent the thews and sinews of a peasant by similar contrivances? To say so would be to libel the mechanical skill of the age; and we confidently believe that the immense superiority of the spade over the plough having been once admitted in the abstract, we shall at no distant period find our labourers directing fire and water to execute their will, instead of exhausting their own powers in an eternal struggle with mother earth. Whenever that occurs we shall know how to appreciate the real fertility of our land—and not till then.

THERE are some points in the prize list of the PEEBLESHIRE HORTICULTURAL SOCIETY, a thriving and useful body, upon which we think a few words will not be ill bestowed. We say nothing of the Gardeners' and Amateurs' lists, which we doubt not are suited to the means and wants of the locality; it is to the cottagers' prizes that we would direct attention. In addition to the customary small fruits and ordinary culinary plants, always to be encouraged by such associations, we observe that such flowers as Asters, Pentstemons, hardy herbaceous plants generally, Fuchsias, and even greenhouse plants are included. This leads to the impression that a Peebleshire cottager must be in a better social position than our ordinary English peasants. We also find the following subjects proposed by the neighbouring gentry: 1, for the best bouquet of Roses and Honeysuckles, grown on the front wall or porch of the exhibitor's cottage, to *be continued for five years*—this prize, offered by Lady MONTGOMERY, must have far more effect than a chance prize given to-day and withheld to-morrow; 2, for the neatest kept cottage; and 3, for the best kept cottage doors.

Would it not be as well if prizes of this kind were introduced into the local shows of England, where there is quite as much need of such encouragement as in Scotland. A neat garden, a smart porch, and a tidy cottage are among the most effectual means of promoting the happiness of the labourer; and the time necessarily consumed at home in the attempt to excel his neighbours in such particulars is of itself enough to ensure domestic habits, which, like the acquired habits of all created things, once fixed become all but ineradicable.

VEGETABLE PATHOLOGY.—No. V.

I.—PLANTS IN A STATE OF HEALTH.

4. IN order to appreciate correctly the morbid changes which take place in vegetables, we must first have a distinct notion of their structure and condition in a state of health. The first question then which arises is, what is a vegetable? Now the different divisions of organised beings are so intimately connected that it is almost impossible to frame any set of words which shall in a small compass strictly define any particular division beyond the possibility of dispute. In general, however, we may define plants as organised beings, composed of cells variously combined and modified, by which they are directly or indirectly multiplied, and destitute of voluntary motion.

5. In some of the lower aquatic or subaquatic vegetables the reproductive bodies are clothed with short extremely delicate vibrating threads, whose constant motion produces eddies, in consequence of which a change of place and probably other ends are effected; and in some again, especially though not exclusively in what are called spermatozoides, there are a few terminal flagelliform processes precisely like those which occur in certain lower animals, by means of which the bodies move about from place to place, and seem to exercise

Fig. 1. Zoospore of *Cladophora glomerata*. Fig. 2. Two zoospores of Protococcus pluvialis. Fig. 3. Asci and sporidia of *Peziza aurantia*, in different stages of growth. The outer coat, which is ultimately rough, with projecting points, is quite distinct from the lining membraue, which seems to be analogous to the primordial membrane in ordinary cells.

some choice, to whatever cause it may be due, in the selection of particular spots with a view to their ultimate attachment, as, for instance, the sunny or shaded side of the vessel in which they are contained. There can be no doubt, however, that the most striking characteristic of the vegetable world is the absence of everything like voluntary action. As regards higher powers of sensation and consciousness there can be no question, except in the reveries of poets.

6. It has indeed been suggested that such beings are, during a certain portion of their existence, endowed with animal life, and that when this ceases, on their becoming attached, vegetable life commences; but this is merely saying, in other words, that during a portion of their existence they exhibit phenomena supposed to be peculiar to animals, and during the remainder those which are characteristic of vegetables; for we are utterly ignorant of what animal and vegetable life are, and only judge of them from the phenomena which they exhibit.

7. The simplest form under which vegetables can exist in accordance with our definition (No. 4) is that of cells reproducing the species either by division into similar cells, or the organisation of the matter which they contain. A mere amorphous gelatinous mass giving rise successively to new generations of cells without any reproduction from the cells themselves does not come within our notion of a vegetable, nor do we believe that such beings exist in the vegetable kingdom. The discoveries of Mr. Thwaites and others have shown that some of the lower Algals which might seem to indicate something of the kind are in reality complicated bodies, and the structure of others is at present very imperfectly known, from the great difficulty attending the examination of bodies so flaccid as to make it almost impossible to obtain a thin section. The existence, therefore, of what certain German writers call "urschlein," meaning thereby an amorphous gelatinous matter which is

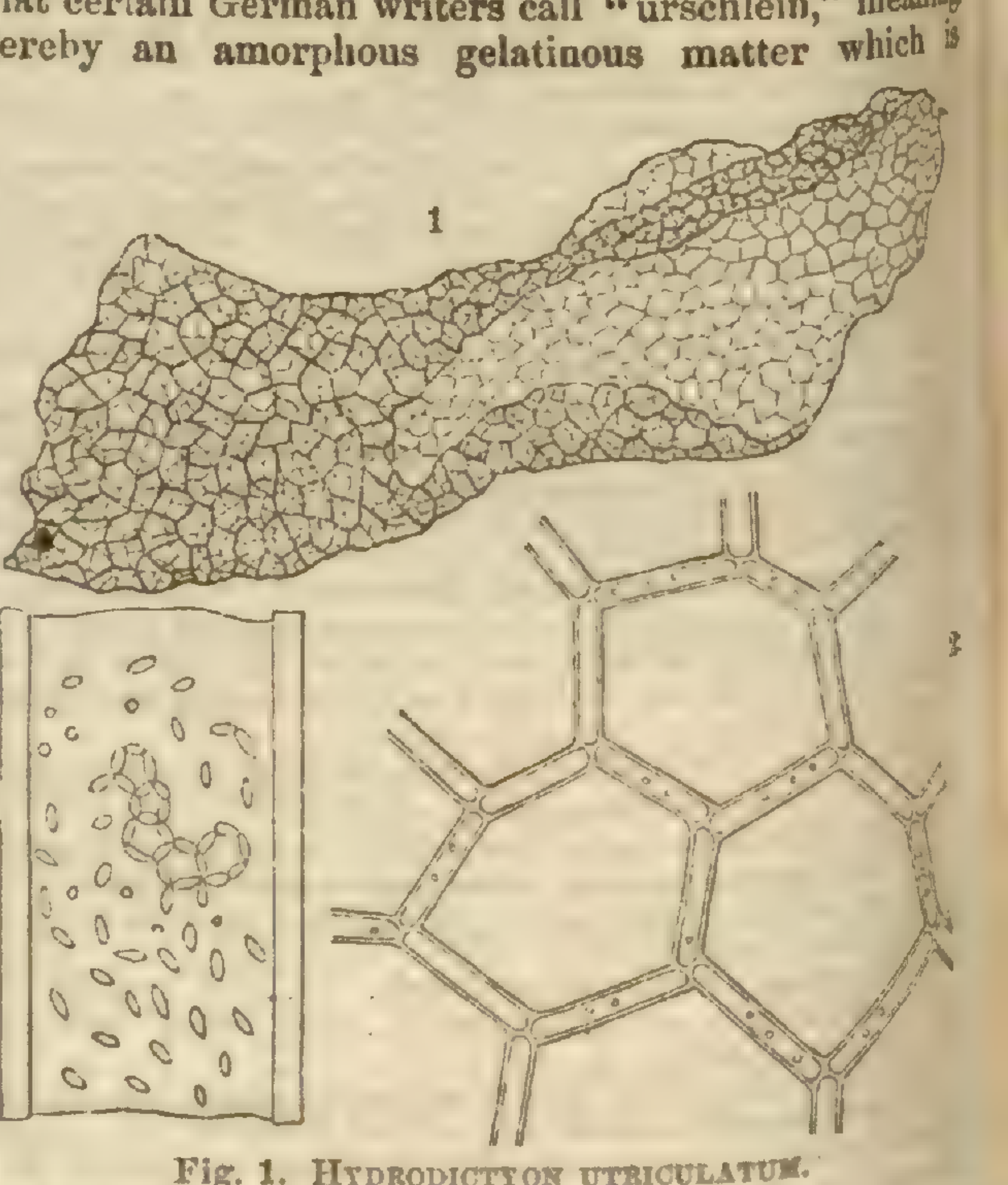


Fig. 1. HYDRODICTYON UTRICULATUM.
Fig. 2. Portion of full-grown plant.
Fig. 3 Portion of a joint in which the spores have commenced to dispose themselves in pentagons, the rudiments of the new plants.

capable of being organised into different vegetables according to the prevalence of certain atmospheric conditions, is inconsistent with this notion, and it is highly gratifying to observe that the cognate doctrine of spontaneous generation is losing ground daily amongst their more enligntened observers, and confined principally to the lecture-rooms of young professors, who for private

ends affect that form of scepticism, which may be supposed attractive to ardent but uninformed students.

8. The cases are comparatively rare in which the contents of an individual cell are organised into a multitude of new cells, without any distinct or definite division, which on the rupture of the parent cell become a multitude of new individuals, exhibiting all the peculiarities of the parent. The number of such instances is daily decreasing under more perfect observation. The structure, for instance, of *Protococcus nivalis*, the red snow of the Arctic voyagers, which has been a favourite example, is now ascertained to be far more complicated, though, in some cases, such a mode of reproduction seems to obtain. There is, however, *à priori*, great probability of the existence of such organisms, from the analogy of the production of cells without division in the asci of Truffles, and many other fungals.* A near approach to it takes place in the reproduction of *Hydrodictyon*, in which the individual cells, generated without division in the grumous contents (protoplasm) of the parent cells, become new plants merely by apposition and extension. *M. J. B.*

BARBAROSSA GRAPES.

The following is from the "Ampelographie Universelle," by Count Odart :—

Family or Tribe—Barbaroux.
(Barbarossa, of the Italians.)

Uva Barbarossa	(Piedmont.)
Rossea	(Of Nice, according to Dr. Fodéré.)
Brizzola	(Vineyards of Liguria.)
Barbaroux	(Provence.)

This Vine, if not the most remarkable, is, at least, one of the most esteemed in the South of France, where it is extensively cultivated, as it is likewise in Italy. Its fruit is valuable as a table Grape, on account of its good flavour, fine colour, and long keeping ; and it is also an excellent wine Grape. The author of the "Cours Complet d'Agriculture" for the South of France, thus expresses the value of the Grape for wine making :—"The Barbaroux gives a light wine, brisk, and of good flavour ; the Vine is also very productive." In the "Pomona Italiana," the merits of this Vine are given in still higher terms :—"It yields a wine which is light, agreeable, refreshing, and is even spirituous in the same year in which it is made ; but in order that it may possess all these qualities it is necessary that the Grapes be well ripened." The author adds :—"It is the king of table Grapes ; in it is combined all that is excellent in the most esteemed Grapes ; for this purpose none can be compared with the Barbarossa, neither the *Uva regina* and the *Santo Colombano* of the Tuscans, nor the *Paradisa* of Bologna, nor the *Pizzutello* and the *Galetta* of the Italians, nor the *Verdepola* of the Genoese, nor the *Cattanalesca* of the Neapolitans, nor the Chasselas of the French." I do not, however, agree on this point with the opinion of the author of the work just quoted ; and he himself has, I believe, stated that the Barbarossa is not equal to the *Vennentino* of the Genoese, and *Vermentino* of Corsica; and with regard to our Chasselas (Royal Muscadine) it is much superior, in Touraine, to the Barbarossa, which does not acquire in our climate that sugary quality which distinguishes the Chasselas.

The leaves of the true Barbarossa are larger than those of the *Grec rouge*, to which the name of Barbaroux is often applied in the south ; they are also woolly beneath, whilst those of the *Grec* have only some hairs on the ribs. The bunches of the Barbarossa are middle-sized, suspended by a long and slender stalk ; the berries are somewhat oblong, becoming almost round at their maturity.

Although Micheli Trinci, an Italian writer on the Vine, has said—"*Acinis roseo colore fulgentibus*," yet the red colour of the Barbarossa is not at all brilliant, for the skin of the berry is covered with a bloom which obscures the brightness of the red.

Cels, in his notes, "Théâtre d'Agriculture," places, erroneously, the Marocain as a synonyme to the Barbarossa; but they are totally different, the Marocain having black oblong berries.

[From the above it is evident that the Grape described as the true Barbarossa by the Count Odart, is not the Black Barbarossa cultivated in this country; the latter is unquestionably a black Grape, whereas the other, according to the description, is decidedly red or rose-coloured.] *R. T.*

WOODS AND PLANTATIONS.—No. I.

The age in which we live is, without doubt, one of great progress as relates generally to those arts upon which our existence depends, and it is still more remarkable for its refinement in all that bears upon the luxuries of life. As the soundest rules have their exceptions, so the art of arboriculture must not be included in this promise, but be regarded as a branch of knowledge which has not advanced in a ratio proportionate to others of a cultural description.

Instead of sylvan nature being assisted by the hand of man, she is too often left to struggle by herself, or her fair works mutilated and marred by the empiricism of those from whom better things might have been expected. While agriculture and horticulture have advanced with gigantic strides, and the altars of Flora, Pomona, and Ceres have not been wanting for offerings or zealous priests, the temple of Sylvanus is deserted ; the incense burns not for him, and ruthless are his ministers. To speak plainly, the management of woods and mixed plantations (as would be testified by a journey in any direction) is of the most unsatisfactory kind, arising partly from the want of information on the part of proprietors, but mainly from deficient knowledge on the part of those who manage for them ; rare is it, indeed, that such persons have any notion of the laws which regulate the development of the vegetable fabric.

We live in days when statistics are very fashionable, and ponderous volumes of information are supplied upon almost every subject; not the least curious and startling would be one which would show in figures the losses sustained by the gentlemen of England in different districts by mismanagement, under the following heads : —Inadaptation of trees to soil and situation, deficient drainage, injury from excess of hares and rabbits, neglect of pruning, untimely and excessive thinning, and total neglect (a heavy item) ; certain it is that by reason of long courses of neglect, the value of wood is so much lessened that gentlemen think it not worth a trifling annual outlay. There has, most unfortunately too, been a dearth of literature bearing on this topic, if we except the valuable compilations of Loudon, in the "Arboretum Britannicum," a work too expensive for general purposes. The best work that I am acquainted with in a popular and practical form is that of Mr. Brown, of Arniston, a first-rate authority on such subjects; his book should be read by every landed proprietor, and well would it be if his advice were to be followed.

As population increases and civilisation progresses, all countries become cleared of their woods, and some of those from which our largest supplies of timber have been drawn in past years are now becoming denuded ; and, with the present ratio of emigration, each new country will, in a few years, become so. When we regard the portentous events which seem to be "looming in the future," it appears to me that this is a fit juncture to endeavour to arouse the gentlemen of this country to a sense of the vastly improvable nature of woodland property under good management. The improvements of agriculture, as exemplified in model farms, have of late years much lessened the quantity of hedge-row timber, which, although injured generally by the lopping of the farmer, afforded at least a large supply for common purposes and fuel—frequently saving timber of greater value. Undoubtedly the removal of large trees from hedge-rows is a great benefit to the fence, and also to the crop, which is much deteriorated by the shade, the drip, and the all-absorbing masses of roots which are emitted from the Ash, Elm, Beech, &c. Whenever a practice, be it a sensible one or otherwise, becomes a fashion, it is too frequently carried to excess. It is perhaps questionable if this has not become too much of a mania, if compensation is not speedily made by forming new plantations, where they may give shelter and produce ornamental effects without being prejudicial.

I would the more urge attention to this compensatory planting, because upon all estates there is some tract of inferior land, be it exposed, bleak, hungry, or wet, which if planted with suitable trees, after being intersected by open drains, might be made to supply the place of the trees removed to improve the fields, and at the same time embellish the landscape, ameliorate the climate, reimburse the proprietor in a few years, and conduce to the general welfare. Let, then, every proprietor remember that it is a duty which he owes to posterity to plant, as well as cut down, for his own advantage.

"Uno avulso non deficiat alter."

That acute observer and far-sighted man, John Evelyn, writing "a discourse on forest trees," in the year 1670, says, "For it has not been the late increase of shipping alone, the multiplication of glass works, iron furnaces, and the like, from which the 'impolitick' diminution of our timber trees has proceeded, but from the disproportionate spreading of tillage, caused through the prodigious havoc made by such as lately professing themselves against root and branch (either to be reimbursed of their holy purchases, or in some other sordid respect) were tempted not only to fell and cut down, but utterly to grub up, demolish, and raze, as it were, all these many goodly woods and forests, which our more prudent ancestors left standing for the ornament and service of their country, and this devastation is now become so epidemical that unless some favourable expedient offer itself, and a way be seriously and speedily resolved upon for the future repair of this intolerable defect, one of the most glorious and considerable bulwarks of this nation will in a short time be totally wanting to it."

If there was cause for Evelyn's alarm, how much more reason is there now two centuries have nearly elapsed, and England's resources for timber are almost annihilated, and still annihilating. Surely it behoves us to think of these things.

Although present proprietors are gainers by the increased value of their cereal crops where their hedge-row timber has been cut down, there is in such cases always a bleak and barren appearance about these tracts of ground which does not harmonise with our notions of the picturesque nature of English home scenery. It is, however, quite possible, I think, to make a compromise between the *utile* of the agriculturist and the *dulce* of the proprietor of taste, by such an arrangement as that suggested by Mr. Barron in his "Winter Garden ;" where he proposes to plant the angles of fields for shelter and landscape effect. Or if the suggestion of introducing masses of wood upon the poorest portions of estates were carried into effect, there would, I think, be less fritter, and the principle of open breadth, contrasted with such woods, would improve the general appearance of a district.

Having thus briefly glanced at the diminution of wood consequent upon the increasing demand of a large population, daily increasing, it remains for me to offer a few remarks upon the different modes of managing woods and mixed plantations, pointing out some of the most popular errors, and suggesting means of timely prevention, rather than prescriptions for what is totally irremediable, viz., early neglect. *Henry Bailey, C.M.H.S., Nuneham, Oxford.*

CYPRIPEDIUM INSIGNE AND VENUSTUM.

Although it is not my intention to meddle much with Orchids, yet these two Lady's Slippers are plants, comparatively speaking, of such a hardy character and easy culture, and withal so interesting when in bloom, that I cannot help introducing them to the notice of your readers, more especially such as have only limited accommodation for growing plants. The soil in which I have found them to succeed best has been three parts good peat and one part good turfy loam, broken up roughly, and mixed liberally with silver sand; potsherds broken small and charcoal dust may also be intermixed with advantage, in order to keep the materials open. In potting, care must be taken to secure good drainage, by means of plenty of potsherds in the bottoms of the pots, covering them with a layer of dry moss.

Propagation is effected by division, *i. e.*, by parting the plant into as many pieces as have roots attached to them. Pot in the first instance in 5-inch pots, and plunge the plants in a pit, where a gentle bottom-heat and a warm moist atmosphere can be kept up ; the temperature may rise to 70° or even 80° with advantage. Shade in bright sunshine, and the plants will soon establish themselves and make rapid progress. Give a shift into 6-inch pots as soon as it is found that the roots have penetrated through the ball of earth. Remove the plants into their former position for a short time, after which they may be removed to some warm part of the greenhouse. Give water as it may be found necessary until the approach of winter, when it should be gradually withheld, in order to induce a state of rest. Soon after they have begun to grow again, flowers will begin to make their appearance. The plants may then be moved to the conservatory or show-house, where, if the atmosphere is congenial as regards heat and moisture, they will bloom in perfection over a period of at least two months.

Should large specimens be wanted, the plants after flowering may be repotted into larger pots, using the same materials for compost as before. Place them again in a gentle bottom-heat, and secure a moderately high atmospheric temperature. In bright weather, shade whenever necessary, and syringe daily to secure a moist growing medium. When growth is again completed, remove them to the greenhouse, and rest them ; fine large plants will now be formed, which will bloom profusely the following season. Pursue this treatment until you have got plants large enough, when the use of pits and bottom-heat may be altogether dispensed with, as C. venustum, with its black blotched leaves, and C. insigne are, as I have said, very hardy, and will succeed and bloom freely in a common greenhouse. *Alpha.*

Home Correspondence.

Rendle's Price Current.—We think it a pity that our friends Messrs. Rendle and Co., after going to so much expense, did not get up a more handy and a more readable catalogue. It is almost as difficult to consult as "Bradshaw's Guide." What ordinary gardener would not get perplexed with 46 varieties (?) of Peas, 30 of Broccoli, 14 of Beet, 34 of Cabbage, 12 of Carrots, 15 of Celery, 38 of Lettuce, 7 of Parsley, 18 of Turnip ? Even the "description" will hardly help one to a selection. Take Turnips, for instance; who is to know which is white and which is yellow ? And what is the difference between "Golden Globe," "Orange Jelly," and "Robertson's Golden Ball ?" And is the country to be bothered with such a new name as "Chirk Castle Black Stone ?" Why, the Black Stone was in seed catalogues years ago. *W. Drummond and Son, Stirling.*

Aëration of Plant Houses.—Permit me to explain somewhat further the principle of the ventilator put in my plant-house, a short account of which appeared at p. 38 of your last Paper. I find by some who have seen it that its mode of action is entirely misunderstood. In Mr. Tomlinson's Treatise on Warming and Ventilating (Weale's series) at pp. 83 and 163; and also in Mr. Hood's book, the matter is fully explained. Mr. T. says : "The same cause which produces the draught in a common chimney, also in the glasses of lamps, will set in motion and discharge the vitiated air of our rooms, at the same time that it brings in the fresh." Now air, by being heated, expands one part in 480 for every degree of heat acquired. The air in a chimney shaft 10 feet high, 20° hotter than the external air, expands $\frac{20}{480}$ = 1-24th part of its bulk — in this case this =6 inches. The weight of the air therein is so far lessened that it will require 10½ feet of this warm air to balance a column of the external air 10 feet high ; the rate of efflux—ascentional force—draught will be equal

* The common Truffle and the large dunghill Peziza (*P. vesiculosa*) are excellent subjects of examination. The formation of the sporidia may be easily traced, in either, from the first appearance of the cytoblasts in the protoplasm of the asci, and the sporidia of the Truffle having a complicated cellular coat, afford additional opportunities of observation. Excellent figures will be found in Tulasne's large work on Truffles, and in Corda's "Icones." In cases where the number of cells produced in the protoplasm, as in *Hydrodictyon*, is very large, and the nuclei indistinct, the formation cannot be traced with the same facility, if at all.

to the velocity of a heavy body falling through the difference of height of the two columns. This velocity converted into terms for 1 minute may be thus written: $\sqrt{480 \times h \times d}$, where h equals height of shaft, and d = degrees of difference of temperature. (In words, the square root of the product of 480 × height × degrees of difference). This velocity multiplied by area of opening will give the number of cubic feet discharged per minute. It is absolutely necessary that the inlet openings should be as large as the outlets. The areas of my inlet and outlet channels are each 3 square feet. The vertical height of the short or outlet side is 1 foot; and applying the above rule for calculating the efflux, the quantity of air let out and admitted is for differences as below:

10° dif.	A rate of efflux and inflow of	69 feet per minute	multiplied by area of openings.	=207	Cubic feet discharged per minute
20° ,,		98		=294	
30° ,,		119.5		=358	
40° ,,		138		=414	

The cubic content of my house being nearly 1800 cubic feet, it follows that the whole air is changed 7, 10, 12 and 14 times per hour respectively. Now a wind at two miles per hour is not very perceptible, but the motion of the air in a house thus ventilated, even at the greatest difference of temperatures likely to occur, would not exceed that; none of these equal it; a difference of 65° would produce such a motion; but whether a gardener wants his house to be at 97° when the external air is 32°, I must leave. I conceive it is this very gentle motion of the air in my house, and its complete independence of all lateral draughts, and the uninterrupted inlet to the dews of night, which has so renovated and freshened my plants. I admit they are of no great value, but they please me, and the same treat I give them would suit their more costly relatives; and I beg to submit that the same kind of attention to our needs would very materially increase our comfort in very many places of public assembly. If the principle be true it will apply as well to the Crystal Palace as to my small greenhouse. *T. P. S., Chesterford, Jan.* 24.

Guano not wholly excrement of Birds.—Seven years ago I put away in a tin box some brown and white Mustard seed which had been pounded in a mortar; the box was lately opened, the contents were decomposed to a reddish brown substance exactly like Peruvian guano, and very strongly impregnated with ammonia; this leads me to think that the guano we get from Peru is not wholly the excrement of birds, but partly decomposed vegetable matter. *T. G., Mile End, Feb.* 1.

Planting Woods.—Next in order to drainage and selection of plants, as spoken of in my last article, comes planting, an operation generally run over and done in a careless manner, and when such is the case it is impossible that good results can be expected. It may be done in less time, and of course at less expense; but the unprofitable returns are never considered, all that is cared for at the time is little outlay. The most modern and best method of planting Oak and Larch on sheltered situations is to have them put in at about 4 feet over all, the Oaks at 10 feet, and the rest filled up with Larch. Pits are made for the former in all cases, and the latter are generally put in with what is termed notches; when the plants are small this may be done, yet when they are comparatively large, pits are necessary, as in most cases when notches are used the soil can never be made so firm as to prevent danger, for it is always a great essential to have the earth made firm and close around their stems. For the notching system an instrument has been invented by an able forester (Mr. M'Corquodale, Perth); the difference between it and the spade commonly used for that purpose is its having a protuberance from its centre of about 3 inches in breadth and 6 inches in length, or in other words, a spade standing at right angles to the breadth of another spade. By this construction only one insertion is required, consequently a saving of time is effected; whereas by the old mode two insertions are required. I gather from the last published Blue-book of the Woods and Forests that the system of planting Oaks and Scotch Pines (the latter tree being excessively used there as a nurse) is to plant the Oaks in lines 8 feet apart line from line, and 4 feet plant from plant in the lines; then Scotch Pines are put between these rows, also 4 feet asunder in the lines, and 4 feet from the Oaks on either side respectively, thus making alternate rows of Oaks and Scotch Pine, and the whole 4 feet over all. Now, the most unassuming forester will at once perceive that such is wholly contrary to the attainment of beneficial results, without the excessive employment of Scotch Pines as nurses, for how can any thinning be made with regularity! When the lines of Oaks are 8 feet apart, and the plants only 4 feet asunder in the lines, how can such thinning be done to perfection, as their future health demands? Or how can the Scotch Pines nurse or be thinned as required, without the risk of undue exposure! Although it would appear that the system adopted in the Royal forests in such cases is to take away the entire lines of Scotch Pines at first, without ever removing an Oak; such practices as these at once point out to what is to be ascribed the comparative inferiority of these woodlands; whereas, with a view to their future health, every other Oak and Scotch Pine should have been removed, afterwards gradually clearing off the latter as they were found to interfere with the permanent crop. *W. B. A.*

Weather in Dorsetshire.—The following is a register of maximum cold for one month at Abbotsbury. You will observe that with the exception of two remarkable nights, December 28 and 29, the general proportion is from 1° to 3° or 4° higher than this place (Melbury). The difference during the day, of which I have no report, is, I know, generally greater in proportion. The lowest degree at each place was on different nights; the lowest here 10°, being the night after that at Abbotsbury 15°. The night of January 3, which seems to have been the coldest in the country, was only 19° and 20° respectively between two comparatively mild nights, which shows it must have been the tail of the great inland depression of temperature. As I have not been to Abbotsbury, I connot tell what the effect on vegetation has been.

	Abbotsbury.	Melbury.		Abbotsbury.	Melbury
December 20	32°	29°	January ... 5	25°	23°
,, 21	33	30	,, 6	22	21
,, 22	32	28	,, 7	34	29
,, 23	29	28	,, 8	38	33
,, 24	28	27	,, 9	36	33
,, 25	26	21	,, 10	33	
,, 26	19	17	,, 11	30	
,, 27	27	23	,, 12	31	
,, 28	19	25	,, 13	25	
,, 29	15	16	,, 14	28	
,, 30	18	10	,, 15	34	
,, 31	24		,, 16	39	
January ... 1	24	21	,, 17	42	
,, 2	29	25	,, 18	43	
,, 3	20	19	,, 19	32	
,, 4	28	26	,, 20	38	

W. F. S., Melbury, Jan. 26, 1854.

Rain at Carlesgill, Westerkirk, Dumfrieshire, in 1853.—

	Inches.	Wet Days.		Inches.	Wet Days.
January	10.05	20	August	2.45	12
February	2.47	22	September	3.58	18
March	1.30	15	October	7.34	21
April	4.46	17	November	5 12	12
May	1.10	7	December	1.00	7
June	4.45	16			
July	7.54	28		50.86	195

Average fall for 11 years, 58.00 inches.

January 10. Missel thrush singing.
,, 20. Nearly 3 inches rain fell in 12 hours!
March 5. Curlew and pewitt returned to their summer haunts.
,, 19. Thermometer 16° at 6 A.M.
,, 26. Thermometer 20° at 6 A.M.
April 20. Swallow seen.
,, 21. Cuckoo heard.
May 8. Distant hills covered with snow.
,, 18. Corn-craik heard.
,, 31. Hoar frost for several mornings past.
December 10. Thermometer 10°.
1854.—January 3. Thermometer 4° during the night; 12° at noon.
,, 21. Short but severe thunder-storm.

J. Little, Carlesgill, near Langholm, N.B.

New Grapes.—I beg to thank Messrs. Warde, Cooper, and "R. T.," for the information they have afforded respecting the Barbarossa Grape, which, although not so explicit as might be desired, has yet added something to our previous knowledge of the origin of this variety. It is much to be regretted, however, that Mr. Warde did not cause his introductions to be fruited, and their quality fairly ascertained by comparison with the best sorts grown in this country; we might then have known whether any and which of them merited cultivation, and also have ascertained which were distinct from and which identical with previously introduced varieties. New kinds of fruit might just as well be suffered to "waste their sweetness" where they grow as to be brought, not without considerable trouble and cost, to this country, and then suffered to perish unknown and uncared for. Some of Mr. Warde's Grapes may have been new, and, possibly, valuable varieties; although, so far as Italy is concerned, I am disposed to think that very few really good table Grapes exist which have not at some time or other found their way to England, and it is not unlikely that those called by Mr. Warde Alicante, Damasco nero, and Zibibbo, are identical with our Black Prince, Black Damascus, and Muscat of Alexandria. Two varieties were brought from Italy a few years since by a gentleman, who considered them the best Grapes he had met with in his travels in that country, and through his liberality I had an opportunity of fruiting them in a Vinery; one proved to be a small oval-berried white sort, not altogether without merit, although certainly inferior to the White Muscadine; the other, a small black kind, was utterly worthless as a dessert Grape. I have also fruited a sort brought by another gentleman from the vicinity of Pompeii, which proved to be a wine Grape of no value whatever for the table; so that the only newly introduced Grapes which have ever come under my notice might, without any loss to this country, have remained in Italy. There may, however, still be in that and other wine-producing countries some few new and first-class table Grapes which it would be desirable to introduce into our Vineries, but a considerable amount of discrimination ought to be exercised in making the selection. Whether the variety now under discussion is distinct from any other known sort, has not yet, I think, been proved beyond the possibility of question. Mr. Cooper considers it new, although I must say that according to his description of the Barbarossa it is ominously like a Grape I knew many years ago under the name of Black Muscadel. Mr. Cooper also speaks positively of four distinct Grapes of this class besides the Barbarossa, namely, the Wortley Hall, Poonah, or Escholata superba, Black Muscadel, and Black Raisin, in which opinion I cannot concur. If this should meet the eye of the present gardener at Bicton Castle, it might induce him to assist in clearing up this point by forwarding a bunch of each of the three latter, together with the respective shoots and leaves, to the office of the Horticultural Society, 21, Regent Street. Possibly also the gardener at Thorp Perrow may be able to throw some light on the subject, if Money's Grape is still in existence there. As to the Black Morocco, it is altogether a different thing. I see the Trebiana is described in Rivers's Fruit Catalogue. Has Mr. R. ever seen the fruit? *J. B. W.*

Libocedrus chilensis.—Admirers of hardy Conifers are certainly much indebted to Messrs. Low, of Clapton, for the valuable information which they have given in their catalogue respecting the natural habits and peculiar characteristics of this particular species. The description just referred to will be found to embody all that is really necessary for the successful treatment of this beautiful plant. That information of this kind is needed, may be gathered from the fact that, without any previous preparation in the way of drainage, amateurs often commit the roots of new Conifers to the ground, planting them as they would common evergreen shrubs. Trees thus treated, however, rarely and indeed can scarcely be expected to succeed; their lower branches soon show traces of premature decay, and the whole plant not unfrequently becomes discoloured. The Cryptomeria, for instance, when in this condition, is so unsightly as to render its presence in the arboretum anything but desirable. The same remarks also apply to other Conifers. Before planting it is always necessary to drain the ground, so as to prevent the trees becoming stunted, and to keep the roots in healthy action; for it is to the roots that the amateur planter must look. Let him make the bottom all right, and all above ground will take care of itself. The different varieties of Conifer, including the Chilian Libocedrus itself, if treated in this way, cannot fail to thrive; and, except these conditions are secured, any and every attempt at cultivating the more valuable varieties, will for all ornamental and useful purposes, be only so much labour lost. These plants will, however, be found to thrive even in the most exposed situations, provided their drainage necessities are properly attended to. *R. Miles, Hassock's Gate Nursery, Sussex, Jan.* 17.

Large Himalayan Conifer.—In 1852, when travelling up the Ganges in the Himalaya Mountains, about two days' march from the junction of the Jhanaire River with the Ganges, on the pass of Cupper Ghati, about 300 feet immediately above the river, I was struck with a species of Pine which I have never heard described till I met with your Wellingtonia gigantea, and I would like to know if my description identifies the same tree. It grew upon the dry rock, a perfect cylinder, from 150 to 200 feet high, 7 feet in diameter at the base, and tapering to the top; it had no large limbs, but was covered with drooping branches, whose leaves were between the cordage of the Himalayan Cypress and the Arbor-vitæ. They were the largest and soundest trees I have ever seen. One of them had fallen, and was lying below in the bed of the river Ganges, having carried many tons of rock with it attached to its roots. Its head extended into the bank on the side on which it had grown, and it enabled me to pace its stem to where its roots lay in the river. My companion and I computed it to be 160 feet long and 7 feet in diameter at the root. There was a group of about seven larger ones standing together on the top of the ghaut. The same species of tree, though an inferior kind, is described by the doctor who accompanied the Prince of Prussia, whose book I read with great interest, hoping to find that in his route he would fall in with my tree, but he unfortunately avoided Cupper Ghati, and missed seeing this magnificent tree, which grew at about 12,000 feet above the level of the sea. *D. H. M'D., Garthland, Lochwinnoch.* [It is superfluous to say that this tree, whatever it was, had nothing in common with Wellingtonia.]

Cottagers. — When coals and bread are scarce and dear, it may be doubted whether it be good policy to furnish the poor with these articles at anything under their market price, or, still worse, gratuitously. Most true it is, that in times of dearth assistance is due to those whose wages will not procure the necessaries of life, as well as to the pauper; yet in measures taken for their relief, it should be borne in mind that a diminution in the consumption of articles that are dear, tends to a reduction of their price. Now, it is well known, that both rich and poor are regardless of waste when things are obtained at little or no cost, and consequently persons who can obtain bread and coals gratuitously are little likely to be sparing in their use; considering this, it would appear to be a wiser measure to assist the poor by other means than that of giving them either bread or coals for nothing, or at a price below that at which these articles are obtainable in the market. In the way of example, it might be suggested to charitable persons that their donations should be—not bread or coals—but of hot boiled Rice; it is an article which the columns of the *Gardeners' Chronicle* truly say is appreciated by the cottager, and it is already considerably used by both rich and poor. The serving of well boiled Rice instead of bread would much diminish the consumption of flour; so coals might be saved by this means, since fewer of them are required for boiling Rice than for baking bread. This mention of Rice in particular is intended merely as a hint—a hint to the benevolently disposed, that they should consider what effects their charity is likely to produce, at the same time that their bounty relieves distress. *B.*

How to make Wood look old.—Many persons, if not all, object to the raw appearance of ornamental buildings in a garden, and for this reason use so much rough

Larch, &c. But rough wood ought never to be in proximity to regular buildings, being unarchitectural and inconsistent; but if any wood is washed with a weak solution of sulphuric acid and water it will take the dusky look and grained appearance of older wood, at the same time it may be squared and wrought to suit any architectural style. Paint never looks rural, still less picturesque, and is always a source of yearly vexation and expense. If the wood is dry at heart this will preserve it longer than paint. *Constant Reader.*

New Patent Application of Gas for Heating Purposes.—I wish to explain that in his plan the atmospheric air is not taken from the building, but that it is obtained from a cold air drain outside, where the gas is also burned. The effect inside the house, pit, or frame, is therefore precisely that of hot water. The air may be either dry or damp, and any degree of heat may be maintained merely by an increase of gas. The general appearance of the fittings is that of hot water without the furnaces, and, the materials being of a lighter character, the first cost is about one-half that of hot-water, and the expense of consumption afterwards about one-fourth. The saving of time, the cleanliness, and certainty of no failure arising from negligence, are also advantages, to which may be added the rapidity with which the heat can be got up in the house. I therefore hope that the contrivance may meet with approval. *R. Restell, 35, High Street, Croydon, Jan. 18.*

Notices of Books.

Adil's Decimal Coinage; with a Proposal for Decimalising our Weights and Measures of Length and Capacity.

This shows, by various explanations and examples, how easily sums of money, expressed in terms of a decimal system, may be added, subtracted, multiplied and divided, compared with the system now in use. This of course is well known to every one acquainted with decimal arithmetic. The work is illustrated with a plate representing the coins which the author proposes should be struck, in order to carry out most conveniently the system. On one side of these the value is distinctly marked with the name and relative values, as has been done in the case of the florin, but more conspicuously. These proposed coins consist of—

Gold......1 pound, value	... ...	1000 mils.
„ ..... 5 florins	„	500 „
Silver ...1 florin	„	100 „
„ ...5 cents.	„	50 „
„ ...2 cents.	„	20 „
„ ...1 cent.	„	10 „
Copper...5 mils.	„	5 „
„ ...1 mil.	„	1 „

In a system purely decimal, the respective denominations in conformity with it must increase or decrease in relative value by tens. In the above proposed coinage, however, it will be observed that such is not the case. It is evidently a mixed system; for we have a piece of the value of 1000 mils and another of *half* that value, or 500 mils; another of 20, its *half* of 10, and its *quarter* of 5 mils. Thus we find ourselves, at the very outset, on the fair way of getting into the old system of halves and quarters instead of proceeding in a decimal ratio; and if such be the case at the beginning what may we expect in the long run? Certainly no strict adhesion to a decimal system; for although this may be enforced so far as regards accounts and government affairs, yet the mass of the people will naturally employ that system which is practically the best and most convenient for them. For proof of this we have only to turn to France, or Belgium, or to the United States of America; in the latter particularly, after half a century, the decimal system is becoming every year more and more a nullity. They have their double eagle, eagle, half eagle, quarter eagle, dollar, half and quarter dollar, dimes and half dimes. Cents appear only to exist on paper; and on this, of course, the decimal system excels all others.

With regard to the proposal for decimal weights and measures, the same tendency to follow the halving system will operate probably still more against it than in the case of money. In practice, the division of quantities by 2 is more required than by any other number. The decimal weights and measures of capacity in France are allowed, by law, to have each its double and its half. We have long been of opinion, in accordance with that of the author, that the foot, as derived from the standard yard, is a measure that cannot be advantageously interfered with; and decimal measures of capacity will not, we think, prove so convenient as many anticipate. We should, however, recommend those interested in the matter to read the little work, and then they will be able to form an opinion of the merits of the proposed innovation.

New Plants.

42. Nycterinia selaginoides. *Bentham; aliàs* Erinus selaginoides, *Thunberg.*

A very pretty greenhouse annual, received from Messrs. Vilmorin & Co., under the erroneous name of N. villosa. It forms a broad spreading patch of pale dull green hairy herbage, arranged in the manner of a Candytuft. The leaves are linear-spathulate, and slightly toothed; the uppermost quite entire and adnate to the tube of the calyx, than which they are much longer. The flowers are arranged much in the same manner as in Iberis, forming a true corymb. They are pure white except the eye, which is a very deep-yellow cup fringed by an exquisitely beautiful coronet of tiny yellow hairs. The tube of the corolla is very slender, an inch long, and nearly smooth; the limb is flat, a little curved backwards, with five two-lobed equal divisions. This may be regarded as one of the prettiest summer annuals introduced for some years. *Journal of Hort. Society; Vol. IX.*

43. Didymocarpus Humboldtiana, *Gardner, B.M.* 4757.

A hothouse or warm greenhouse plant from Ceylon, introduced at the Royal Botanic Garden, Kew, from seeds, communicated by Mr. Thwaites. It is something in the way of Streptocarpus Rexii, or Chirita sinensis, with pale lilac campanulate flowers. It is scarcely handsome enough for general cultivation.

44. Ceropegia Thwaitesi, *W. J. Hooker, B.M.* 4758.

A stove climbing plant from Ceylon, with small ovate leaves, and long curved green flowers spotted with crimson; the latter are singularly like those of some Aristolochias. Of no horticultural interest.

Garden Memoranda.

Horticultural Society's Garden, Turnham Green.—The ill effects of the severe weather we have experienced this winter are already becoming visible. Pinus patula, Russelliana, and Devoniana have had their foliage very much browned, even so much that it is doubtful whether all of them will recover. P. Lindleyana is a little touched on the north side, but scarcely if at all on the south, and trees of it in some places have escaped altogether unhurt. P. macrophylla has had the ends of the leaves browned; Taxodium sempervirens is as green and healthy looking as if it had had no severe weather to contend with, as are also Cryptomeria japonica, and Cupressus thurifera and Uhdeana; Pinus apulcensis has been injured a good deal. Pinus ayacahuite has been hurt a little, leiophylla considerably, and Hartwegi has also suffered to some extent. A. Brunoniana appears to be quite dead, and Saxe-Gothæa conspicua has been injured apparently beyond recovery; Fitzroya patagonica has stood much better and looks as if it would maintain the hardy character it has received.

In the American garden the Sikkim Rhododendrons, Edgeworthi, Dalhousiæ, and glaucum, have all been killed, while ciliatum and the large variety of it called alpinum, have stood well, not a leaf being browned, and they are at present well set with flower-buds. The long hard leaves of the Pampas Grass have lost their colour, and look bleached by the frost. The Californian evergreen Cherry is scarcely at all touched; and the same may be said of Ilex latifolia, which has stood well. The Yucca-like Dracæna indivisa has lost its top, the latter, as far as the leaves were young and tender, having melted as it were away by the frost. Quercus Cooki, Garrya macrophylla, and the Chinese Privet, have all had their leaves browned, while the Chusan Palm has escaped uninjured. The beautiful evergreen Californian Gale (Myrica Californica) has proved itself to be perfectly hardy, not a leaf on it being browned; Escallonia macrantha has been a good deal injured. On the conservative wall Acacia melanoxylon has been killed nearly down to the ground, various Ceanothes have had their leaves browned and some other things have been more or less hurt; but upon the whole less mischief has been done here than might have been expected. Jasminum nudiflorum is now in full blossom on this wall, its bright yellow flowers having a very cheerful effect. The different kinds of Chimonanthus are also in flower at present, and are great favourites, no account of their delicious fragrance.

In the large conservatory Acacia Riccana, quite a tree in size, is now coming beautifully into bloom, as are also the Camellias, more especially the large flowered sort called Elegans, which is just beginning to open multitudes of showy blossoms. The Luculia gratissima has been flowering finely; but its beauty is now nearly over. An early pink Chinese Azalea is at present in full blossom and that without any forcing.

The new brick flue mentioned in our last report as being in course of erection in the early Vinery is now completed. It is 16 inches in width and 13 inches in depth. The top is covered with common flat tiles; but under every joint a bit of thin slate has been introduced, in order the more securely to prevent smoke or other noxious exhalations from escaping. Slate is better than iron, which is sometimes employed for this purpose, as the iron is more easily affected by heat or cold.

The fruit trees in Ewing's glass walls have been pruned and trained; but it has been found necessary to keep them, more especially the Peaches, as much off the galvanised iron wire trainers as possible, for wherever the shoots happen to touch the wires, they are sure to gum and canker. This fact should, therefore, be borne in mind by all who contemplate using this kind of wire for training purposes.

In the orchard and kitchen garden department the trees on the Peach wall have been pruned, and Apples in the belts are also undergoing the same operation. Broccolies have suffered much this winter; even Cox's Late White, usually a most useful sort, has this year been destroyed. Betts' Improved has stood better than some. It very much resembles Knight's Protecting, having the twisted leaves and other peculiarities belonging to that variety.

The alterations in the Arboretum have nearly reached completion.

FLORICULTURE.

Treatment of Tree Carnations.—Few plants have more improved of late years, both in habit of growth, variety and richness of colours, than Tree Carnations, and they amply repay the attention that has been bestowed on them, for they are not only beautiful but very fragrant, and with little care they may be had in flower at almost any season; in fact, if a sufficient quantity of plants is prepared, a succession of bloom may be obtained from them the whole year round; I trust, therefore, that we shall shortly see them very extensively cultivated. They are easily propagated by cuttings, which should be made of half-ripened wood, like the show varieties, cutting them close off below a joint and removing the lower leaves. March or April will be found the best months for putting in a stock for winter blooming, as they will make excellent plants during summer and autumn. Although they strike readily nearly all the year round if placed in a slight bottom-heat, the most healthy of the old plants should be selected and placed in a warm temperature to excite growth prior to the cuttings being taken off. By following this plan they will be found to strike more freely. The pots should be thoroughly drained for their reception, and a portion of rough siftings or moss placed over the crocks. The compost should consist of one-half light sandy soil and one-half leaf-mould and sand run through a fine sieve and well mixed together. With this the pots should be filled to within about half an inch of the top, the remainder being made up with sharp sand pressed firmly and slightly watered before the cuttings are inserted. If placed in a slight bottom-heat they will not require any bell-glasses to cover them, for if only slightly shaded during sunny days they will very speedily take root. If any of the grass should decay it should be removed the moment it is perceived, as it creates damp. As soon as they have become sufficiently rooted, pot them into 4-inch pots, still keeping them in a warm moist atmosphere, and stop them, in order to form them into compact bushes. As soon as they have again filled the pots with roots, give them another liberal shift into 7-inch pots, still keeping them in a warm atmosphere, and using the syringe freely until they have got quite established, when they should be gradually hardened off, and finally placed in a cold frame, where they may remain during the summer months. Except potting, stopping the shoots, which should only be done when the wood is in a half ripe state, neatly tying the shoots as they progress, watering when required, frequently overhead, and occasionally stirring the surface-soil, nothing will be needed during the summer and autumn. I have, however, found green-fly troublesome at times, but if the water-pot is frequently used overhead but little need be feared either from them or red spider; if they happen to be attacked by mildew, apply sulp ur as soon as it is perceived. When cold damp weather sets in, remove them to the greenhouse or conservatory, where they will come into bloom in succession during the whole of the dull winter months; after they have done flowering, select the most healthy cuttings—the old plants should be cut down for another year or thrown away. The stopping should always be regulated by the time when they are wanted to be in blossom,—for instance, for early winter flowering the plants should not be stopped after July, and so on; if the plants are well ripened by autumn, they may, by a little additional heat, be had in flower whenever they are required. The soil best suited for their culture is maiden loam, leaf-mould, rotten cow-dung, and silver-sand, to which may be added a portion of mortar rubbish, in order to keep the soil porous; manure-water, with occasional waterings of soot-water, will be found beneficial during the growing and blooming season. *E. B.*

Carnations and Picotees: *E.* These will now require plenty of air, as it is absolutely necessary that they should be hardened as much as possible previous to their planting out in March. We fear there has been a considerable loss in these plants this season. Amateurs will therefore see the propriety of immediately making good their deficiencies from quarters from which they have been previously well supplied.

Polyanthus: *E. S.* You should inquire for Addis's Kingfisher, a bold, finely formed, and rich red kind. We should be glad to see flowers of this style more patronised, as they contrast so well with the darker varieties.

Potting Carnations: *O E.* Early next month is the time for potting, and of course previously such varieties as are required to replace lost sorts or to add to the present stock should be procured. In selecting plants, the largest are not always the best, but frequently be ome "gouty" and die; a moderate strength, of a good clear colour and free from "spot," is the most likely to give satisfaction. There are two systems of potting practised: one is, to put three plants into a pot; and the other, to put a pair. In the latter plan they are more easily moved about, and in the former they make a greater show, often having three or four blooms open, instead of one; so on this point every one may be safely left to their choice. The soil and mode of potting are important: the soil should be a strong rich loam; the manure should be perfectly reduced to mould, and thoroughly incorporated. If your loam should not be rich enough, a portion of old cow-dung may be well mixed and rubbed into it; and if the loam has had no previous mixture of manure, two parts loam and one of old-cow-dung may be used; before using, it must be thoroughly examined, little by little, to make sure that there are no wire worms in it; for one of these pests, however small, introduced into any of the pots will ensure the destruction of the plant. Drain the pots with about three-fourths or 1 inch of drainage, and fill them with soil sufficiently high to receive the plant, aad press the soil into the pot to make it firm.

Ranunculuses: *A K.* They should be got in as soon as the ground is in a fit state for their reception; 3 inches deep and 4 inches apart in the rows will be found sufficient space for them.

Tulips: *Louisa.* These ought to be covered when there is any appearance of frost.

Miscellaneous.

A Royal Forest; by One who Knows it.—Luckily it was a royal forest, for it would have ruined any one else. It had long been "administered" by Mr. Prettyfat, formerly butler to the great Lord Foliage, when that nobleman was at the head of the Woods and Forests; and 20 years had not diminished the stock of ignorance with which Prettyfat entered upon the duties of his office. He had, however, forgotten all about

"napkins," and was now a most important stately stomached personage, with royal buttons on a bright blue coat. Pinch-me-near Forest being quite a back-slum sort of place, that nobody ever wanted to see, the roads all seemed to shun it, and it was only by very vague conjectures and speculative cuts that our friends managed to steer towards it at all. Not that the forest itself was worse than any of its royal brethren; indeed, it was better than some, for Prettyfat neither stole the wood himself, nor knowingly suffered others to steal it, his being the easy do nothing style of management, that let the trees grow if they liked, or if they didn't like, let them stand still and die, or be blown down and rot at their leisure. He made his reports regularly and fairly, and so long as he got as much money as paid his own salary and the wages of his labourers, he felt he fulfilled all the duties of a faithful servant of the Crown, and did all that a grateful nation could require.——Bump, bump, trot, trot, squash, splash, swosh, they went through the open fields, over the commons and heaths of a wet, sterile, pewtery country, which gradually got worse as they neared the stunted brushwood of the straggling forest At length they came upon a nest of forest squatters, with their wretched mud cabins and rolling fences, by whom they were directed to a smart, well hung green gate, with a cattle gap on either side, as the commencement of Mr. Prettyfat's inattentions. Some well-used horse trods, converging towards a gently rising hill on the right, from whence a curl of clear smoke was now rising, favoured the supposition that the representative of royalty was not far off ——Now our friends' misfortunes commence, for the further they get from the seat of government, the worse the riding becomes. Impervious thickets, through which hounds meuse, but horses can make no way, soon separate them from the pack, whose music falls fainter and fainter on the ear; our anxious master pushes on, through the wet sterile sand, or slobby quagmires, impeded ever and anon by a fallen tree—in hopes that a favourable turn may again land him with the pack.——The forest still continued the same forlorn, unprosperous-looking place; where the wet stood, moss grey, aguish-looking trees were dying by the middle, while higher up, the Oaks battled with the briars and other smothering rubbish. Our master, however, was too busy to observe anything of the sort—all he knew was, that it was werry bad riding. The sound of the horn on the left first caused him to pause and ponder whether he was on the track of Pigg. There were footmarks, but not so fresh as his should be. Another unmistakeable twang, and Mr. Jorrocks determined to alter his course. Where all was so bad, there was nothing to choose. Accordingly he swung Artaxerxes short round, and turned him up another rushy, waterlogged track, that seemed to lead in the direction of the horn. Desperately bad the riding was. The nature of the ground seemed to change, and from hop-pole-like Ash and Alder, to be stocked with nothing but stunted Birch. The soil was black and peaty, with here and there the outline of a long-subsided drain. *Handley Cross: a clever sporting Tale.*

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Let the greatest possible neatness prevail in the conservatory, and substitute plants in bloom from the forcing pit, for such as are becoming unsightly. Be careful to give all plants in flower a proper supply of water; Camellias and many other things will be benefited by an occasional watering with clear, weak, manure water, which, when used, should be about the same temperature as that of the house. Guard against damp by leaving a very little back air on at night, for most flowers are soon injured by moisture, and the light coloured Camellias especially are susceptible of injury from this cause. It will, however, be equally necessary in case of having to use much fire-heat to provide for a regular evaporation, so as to maintain a soft moist atmosphere; for the one extreme is nearly as injurious to the health of plants and the duration of their blossoms as the other, and both must be guarded against. Where forcing pits are used for forwarding the blooming of plants to furnish the conservatory with, see to introducing portions of such kinds as may be wanted at proper intervals, so as to secure a regular and continual supply of bloom.

FORCING DEPARTMENT.

PINERY.—Gradually increase both the temperature and humidity here, and keep up a bottom-heat of at least 80°. Early growth, with a long summer following, is all important for the production of fine fruit. Give liberal treatment to any plants showing or swelling their fruit; this is best effected by watering with weak liquid manure-water. In repotting Pines be sure to secure an open condition of soil by the use of good turfy loam, with a liberal admixture of sand and charcoal dust; for without a proper mechanical condition of soil, no great success need be expected in the production of fine fruit. Be sure to secure good drainage, and with these conditions, and the use of manure water, no fear need be entertained of perfect success with due attention to heat and moisture, points to which we shall advert in future calendars; for the present 60° by night, increased to 80° with sunheat, will be sufficient for fruiting Pines, while for successions and those required to fruit later in the season a night temperature of 56° will be ample, and this may be increased in the day to 70°. VINERIES.—See that the heat in borders of such houses as are being forced is kept steady; should it decline, apply fresh fermenting material immediately, for a check in the root action would be productive of much injury. In the case of old Vines in the earliest house—stop the shoots at two leaves above the fruit, or even three, may be retained, should the Vines be weak—this will give a sufficiency of foliage to mature the Grapes; while, in young vigorous plants, one will be sufficient to effect that purpose. Cease the use of the syringe to Vines showing fruit. The second Vinery will now be breaking. Gradually advance in night temperature from 50° to 55°; the day heat may be allowed to reach 70°, with plenty of air. Syringe the Vines daily, and otherwise keep up a moist atmosphere. Prune successive Vineries, and wash the Vines with sulphur, soft soap, lime, and soot. Wash the glass, wood work, and walls, and have everything in readiness for a start. PEACH HOUSE.—Peaches will not be hurried on with impunity from mischief. Keep a comparatively cool but steady temperature, and have a free circulation of air to facilitate the dispersion of the pollen —a night temperature of 45° will be sufficient. Ants are sometimes very destructive by eating the pistil out of the expanded flower, hence destroying the crop; should they make their appearance, tie cotton wool around the stems of the trees to stop their ascent, and also place about the house treacle, with a liberal admixture of arsenic; this will quickly destroy them.

FLOWER GARDEN AND SHRUBBERIES.

All alterations here should now be pushed forward with the greatest possible despatch, particularly the preparation of ground for planting, and complete the removal of large shrubs, &c., as soon as possible, for besides this kind of work being done with much greater safety now than in spring, it is very desirable to get it out of hand before that busy season arrives. In stiff soils the flower beds will be greatly improved by a liberal dressing of charred vegetable refuse, which should be applied when the surface of the ground is sufficiently crusted, so as to be able to turn it in without treading the soil. The beds should be trenched every second or third year to the depth of at least 2 feet, keeping the under soil, if clay or hungry gravel, in the bottom; this will be of much more importance to the health of the plants at all seasons, and more conducive to the production of blossoms, than heavy dressings of manure, which induce an over-luxuriant growth, and render the plants particularly liable to suffer from drought in summer, or from sudden changes in the weather. In situations where draining is required, it should be effected at once, making the drains at least 4 feet deep wherever that can be effected.

FLORISTS' FLOWERS.

After the very severe weather we have had, most of the stock in frames will doubtless have suffered considerably from damp, owing to the sashes having been kept close. Air should now be admitted freely, removing the lights entirely on fine days, and the entire stock gone over and carefully cleaned. Should aphides make their appearance apply tobacco-smoke without delay, giving a moderate dose, repeating it if necessary. Pinks and Carnations should be kept rather dry, many valuable varieties are lost by over-watering at this season. Auriculas should be carefully examined.

KITCHEN GARDEN AND HARDY FRUIT DEPARTMENT.

Suffer no delay in getting all ground intended for Asparagus, Seakale, and Rhubarb in readiness for planting. Sow Peas in heat to plant out in March; if sown in 60 pots, the roots are but little disturbed in planting out into the open quarters, after being sufficiently hardened off. In the event of frost after planting, protect by Spruce branches. Make a successional sowing also on a sunny border; likewise do not omit to get some early Mazagan Beans in. Look over all Strawberry beds; weed them, and remove all dead leaves and runners that are not wanted; top-dress with well-decayed manure, which may be slightly forked in. Prepare ground for Horse-radish by trenching and putting manure in the bottom of each trench, and also prepare ground on some warm border for early Potatoes. A few Early Horn Carrot and short-top Radish may now be sown in a warm border, covering, in case of frosty weather, with a little litter.

COTTAGERS' GARDEN.

A few early Potatoes may now be planted. Place them in drills about 4 inches deep, and from 15 to 18 inches apart; and if a little leaf-soil, or any other light compost, can be spared with which to cover the sets, it will greatly assist in protecting them from frost, as well as prove beneficial to the crop. Also, if not already done, plant a small breadth of early Mazagan Beans on a bit of strong soil, to furnish an early supply. Plants in pots, in the window or frame, must be very sparingly supplied with water at present; and when any is given let it be done on the morning of a mild day, so as to allow of getting the foliage, &c., dry before evening. Keep the frame well covered up at night, and during frosty days, so as to guard its inmates from injury.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending Feb. 2, 1854, as observed at the Horticultural Gardens.

January and Feb.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind.	Rain.
Friday 27	28	30.487	30.267	46	42	44.0	41	42	S.W.	.03
Satur. 28	●	30.172	30.095	49	29	39.0	41	42	S.W.	.10
Sunday 29	1	29.934	29.808	53	48	50.5	41	42	S.W.	.10
Mon. 30	2	30.141	30.111	52	45	48.5	43	43	S.W.	.00
Tues. 31	3	30.204	30.088	53	40	46.5	44	44	W.	.00
Wed. 1	4	29.960	29.949	53	35	44.0	44	44	S.W.	.42
Thurs. 2	5	30.274	30.119	44	22	33.0	43	43	N.E.	.00
Average		30.167	30.061	50.0	37.3	43.8	42.4	42.8		0.65

Jan. 27—Slightly overcast; much clouded; rain.
— 28—Slight rain; cloudy; very clear.
— 29—Boisterous with rain; overcast.
— 30—Cloudy and mild; clear and fine at night.
— 31—Overcast; cloudy and mild.
Feb. 1—Cloudy; heavy and constant rain at night.
— 2—Overcast; clear, with bright sun; sharp frost at night.

Mean temperature of the week, 5¾ deg. above the average.

STATE OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending Feb. 11, 1854.

February.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 5	44.7	32.6	38.7	11	0.39 in	2	3	2	2	3	7	4	5
Mon. 6	45.6	32.3	39.0	14	0.25	2	2	3	3	4	5	6	3
Tues. 7	46.5	33.5	40.0	16	0.29	2	1	3	—	4	9	6	3
Wed. 8	45.7	33.1	39.4	16	0.67	1	3	2	1	4	11	4	2
Thurs. 9	45.7	32.1	38.9	12	0.40	—	4	2	2	1	12	5	2
Friday 10	44.8	30.7	37.8	11	0.52	3	5	2	2	4	7	3	2
Satur. 11	44.5	30.3	37.4	12	0.34	7	3	1	—	5	6	2	4

The highest temperature during the above period occurred on the 10th, 1831—therm. 65 deg.; and the lowest on the 11th, 1845—therm. 3 deg. below zero.

Notices to Correspondents.

APPLES: *Solidus.* Your seedling Apple is middle sized, of a handsome Pearmain shape; skin of a rich red next the sun, interspersed with slight russet. Flesh firm, but not so brisk and rich in flavour as some others. It may do for kitchen use.||

APPROACHES: *A Reader.* The drains which you intend putting in on either side of your old approach, where the soil is rather retentive, should certainly be filled half full with stones and the rest with gravel, in preference to covering in the tiles with the old soil.‡

AQUILEGIA: *A H.* We really cannot find such a plant. Surely A. californica must be some evanescent garden name.

BEES: *H O M.* What advice can we give you? The season has been *most* unfavourable. Our own have died. The best remedy is patience, and renewed attempts; the best book is probably "Bevan on the Honey Bee."

BOOKS: *J J B.* We fear you have a very imperfect idea of the meaning of the word botany. However, as far as we can comprehend your wants, we advise you to begin with Lindley's "School Botany," which will put your first steps right. A new edition, much enlarged, is just ready.—*J B.* Lindley's "School Botany" is an introduction to the Natural System; and his "Vegetable Kingdom" is a complete account of it. Price can be obtained from any bookseller.

BRIERS: *J B N.* Raising them from seeds will perhaps suit your purpose best. ‡

COTTAGERS' STOVES: *W H W.* Many thanks. We have put the plans into a maker's hands, and wait for his report. Price is everything in such a case.

CLEMATIS AZUREA GRANDIFLORA: *E G P.* Since your gardener fails to strike it from cuttings, let him try layers. Cuttings of it, however, root readily enough, provided they are made of wood in a proper state of ripeness, *i. e.*, not so soft and watery as to damp off, and not so old and hard as to render the emission of roots difficult. The rooting process may also be accelerated by placing them in a gentle bottom heat.‡

FERNS: *O P.* Dry them in Bentall's paper, the best in the world for forming a Hortus siccus. No books are sold for holding botanical specimens. They must be made to order. If Fern leaves are *well* dried they will keep their colour; if they lose it no art can restore it. Of course you would not think of painting the leaves.

FLOWER-POTS: *G S.* We never recommend dealers.‡

GLASS: *S P.* Dab it (don't paint it), with either paint or any well sized whitening. If you paint it you will be too much in the dark.

HORTICULTURAL SOCIETY: *Deodara.* You can become a Fellow by being proposed by any one who is so already. If you will favour us with your name and address we shall probably be able to find some one to do you that small favour. The admission fee is 2*l.* 2*s.*; the annual payment 4*l.* 4*s.* and *retrospective*, that is to say, if you are elected in March or April you do not pay the 4*l.* 4*s.* subscription, which falls due on the 1st of May next ensuing; that is not claimed till the 1st of May in the year succeeding.

MISTLETOE: *R T C.* It will take and grow freely on the Apple or the Thorn. Slit the bark, and insert a seed or two here and there, where you wish it to establish itself, which should be on the under sides of the branches, or the birds will eat the seeds.‡

NAMES OF PLANTS. We have been so often obliged reluctantly to decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*Erzeroum.* Parcel arrived. Capital specimens of fine things. Of what Pinus are the packing boards made? 234, Potentilla bifurca; 215, P. hirta; 1020, Pyrus edulis.—*A Young Gardener.* Billbergia amœna.—*Agnes.* 1, perhaps right; we do not know the plant. 2, Hypnum rutabulum; 3 is right; 4, not an Orthotrichum; probably a Tortula, but too young for determination. You would find Gardner's "Lessons in British Mosses" a very nice book indeed to study such subjects by. It is sold by Messrs. Longmans.—*A S.* 1, Habrothamnus elegans; 2 has no flowers.

POTATOES: *Ditges.* Plant your Potatoes now, if the land is ready; if not, as soon as you can. Ash-leaved Kidneys, Shaws, Oxnobles, York Regents, are among the favourites in the London Market. But it is not in our power to say whether or not your land will suit them. Good middle-sized mealy sorts, which keep well, and have *very shallow eyes*, are what the London markets want. Coarse sorts with deep eyes will never pay you.

RAIN GAUGE: *Sub.* You will find a representation of the one used at Chiswick in our vol. for 1848, p. 56 ‡

ROCK PLANTS: *Sub.* Mr. Turner, Nurseryman, Southgate, Middlesex; and Mr. Wood, Norwood, Surrey.‡

RUSSIAN MEASURES: *Urban.* A Tschetwert = 5 bush., 3 pks., 1⅓ qt.; an archine = 2.3625 feet; a verst = 1167 yards.

SEAKALE: *Ravenswood.* Slow growth is doubtless the cause of its being hard. The plants are possibly old; if so, you had better replace them with young ones. ‡

VINES: *Exonian.* You must first ascertain where the roots of your Vines are before you attempt to renovate the border. The Vines being so old, most likely their principal feeders are far distant from the 8 feet border. Where you find them, there you may encourage them by manure and manure-water; but it will not be advisable to remove and replant them; they are too old. If the subsoil is moist you can probably drain it without touching the roots. It is doubtful whether you will be able to ripen Hamburghs and Frontignans outside a boarded roof. Good crops have been grown under very old sashes, and, with a little repair you may do the same. ||

VIOLETS: *Florence.* Your Russian Violets may be divided and planted out as soon as they have done flowering. Runners make capital plants; remove them in May. A shady but not confined place will suit them perfectly.‡

MISC.: *A Constant Sub.* We know nothing about the association you name. If it is political, mind your own business and have nothing to do with it. Depend upon it your master will not approve of your joining it.

MANURES.—The following Manures are manufactured at Mr. LAWES' Factory, Deptford Creek:—
Turnip Manure ... ... per ton £7 0 0
Superphosphate of Lime ... ... " 7 0 0
Sulphuric Acid and Coprolites... ... " 5 0 0
Office, 69, King William Street, City, London.
N.B.—Peruvian Guano, guaranteed to contain 16 per cent. of Ammonia.—Sulphate of Ammonia, &c.

PERUVIAN GUANO, the guaranteed import of Messrs. ANTONY GIBBS AND SONS, Lobos Island Guano, Superphosphate of Lime, and all Artificial Manures, Linseed and Rape Cakes, &c.—WM. INGLIS CARNE, 10, Mark Lane, London.

THE LONDON MANURE COMPANY'S WHEAT MANURE, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. EDWARD PURSER, Sec.
Bridge Street, Blackfriars.

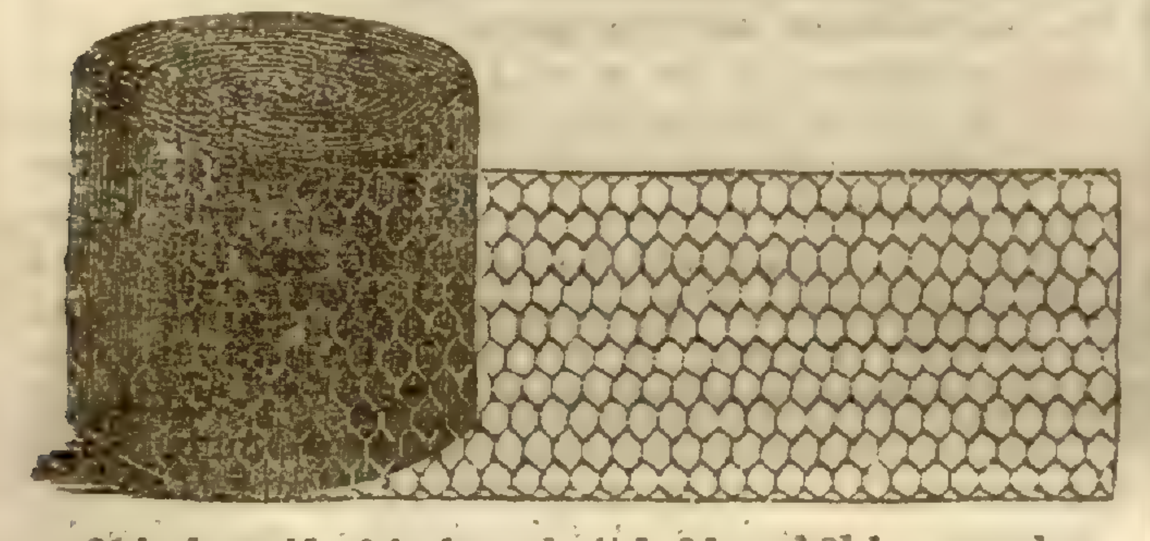
ARTIFICIAL MANURES, &c. — Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and dispatch.
Gentlemen desirous of receiving instructions in Chemical Analysis and Assaying, will find ample facility and accommodation at the College.

PEAT MOSS CHARCOAL, AND OTHER MANURES.—The Undersigned are appointed sole Agents by the Peat Moss Charcoal Company, for the sale of this valuable fixer and distributor of ammoniacal matter.
Also on Sale, Peruvian Guano, Superphosphate of Lime, Gypsum, Nitrate of Soda, Bone-Dust, Sulphuric Acid, and all other Manures of known value.—Apply to MARK FOTHERGILL & Co., 204A, Upper Thames Street, London.

TANNED GARDEN NETTING for protecting Fruit Trees from frost, blight, and birds, or as a fence for fowls, pigeons, Tulips, and seed beds, can be had in any quantity from JOHN KING FARLOW's, Fishing Tackle and Net Manufactory, 4 and 5 Crooked Lane, London Bridge, at 1½d. per yard one yard, 3d. two yards, or 6d. four yards wide. Rabbit, Sheep, and Fishing Nets of every description in stock or made to order.

TANNED NETTING, for the protection of Fruit Trees from frost, blight, and birds, and for the security of fresh sown seeds, either in Gardens or Fields, at 1d. per square yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Scrim Canvass, for Wall Fruit.—At EDGINGTON and Co.'s, 17, Smithfield Bars, City, and Old Kent Road, Southwark, where may be seen erected Emigrant Tents in great varieties, on their latest improved principles, and also at Brunswick Street, Poplar, near the East India Export Dock.

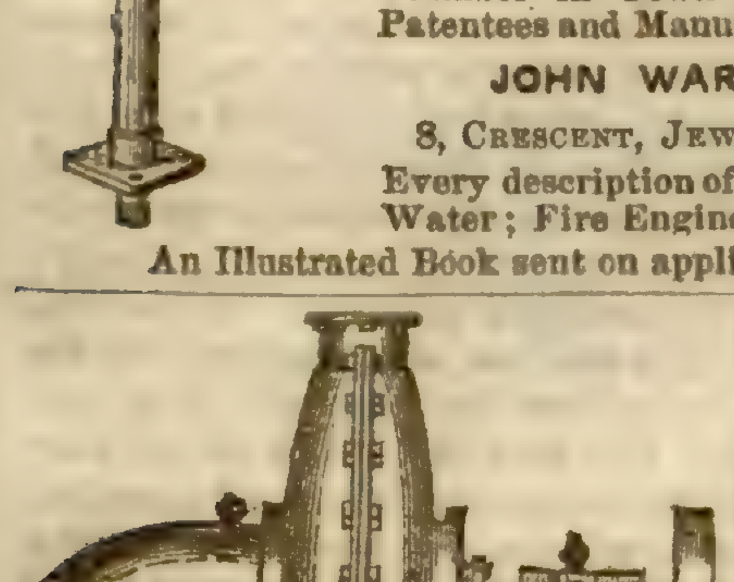
H. J. MORTON AND Co., 2, Basinghall Buildings, Leeds.—GALVANISED GAME AND POULTRY NETTING, very strong and neat, NEVER REQUIRES PAINTING.



24 inches wide, 3-inch mesh, 4½d., 6d., and 8½d. per yard.
24 inches wide, 2-inch mesh, 7d., 9½d., and 1s. per yard.
GALVANISED IRON SPOUTING, for Dwellings, Cottages, Farm Buildings, &c., NEVER REQUIRES PAINTING.
Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalte Roofing Felt, &c.

WARNER'S PATENT FARM AND COTTAGE PUMPS.

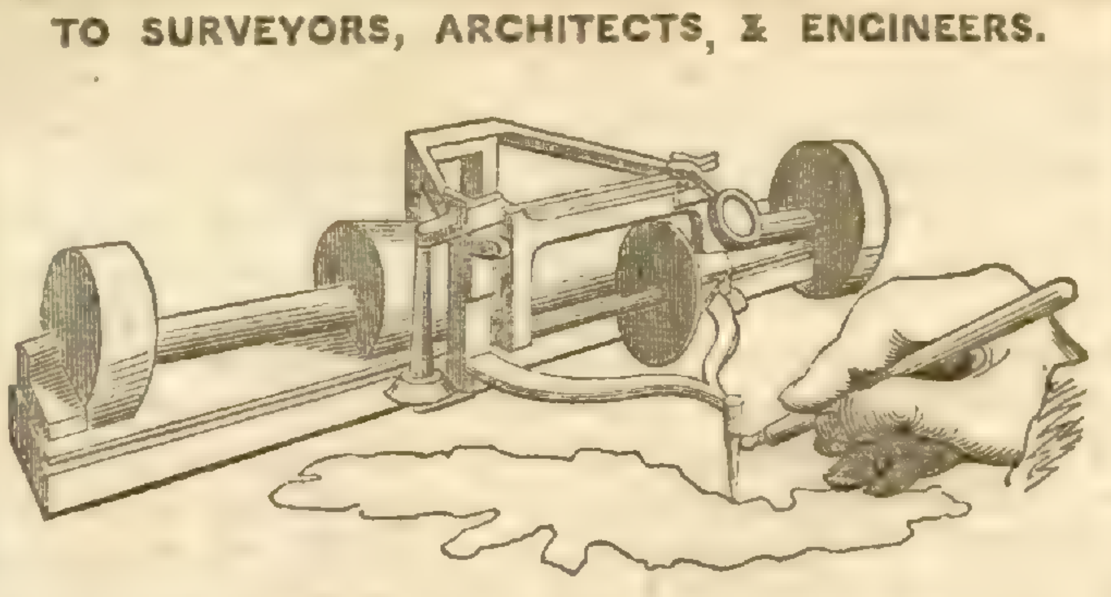
Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells. £ s. d.
Patent Pump 1 16 0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing 3 0 0
Larger sizes if required.
The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.
May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,
JOHN WARNER & SONS,
8, CRESCENT, JEWIN STREET, LONDON.
Every description of Machinery for Raising Water; Fire Engines, &c.
An Illustrated Book sent on application post free.



CENTRIFUGAL PUMPS.
Contractors, Builders, Engineers, Brewers, Paper Makers, Manufacturers, Gardeners, Works of Drainage or Irrigation, and all who may have water at whatever temperature to raise, will find it their *interest to use these Pumps.*
For ECONOMY, EFFICIENCY, DURABILITY, POWER, and SIMPLICITY, *they have no equal.*
Every information can be had on application to GWYNNE & Co., Engineers, Essex Wharf, Strand, London.

STEPHENSON AND PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.
From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

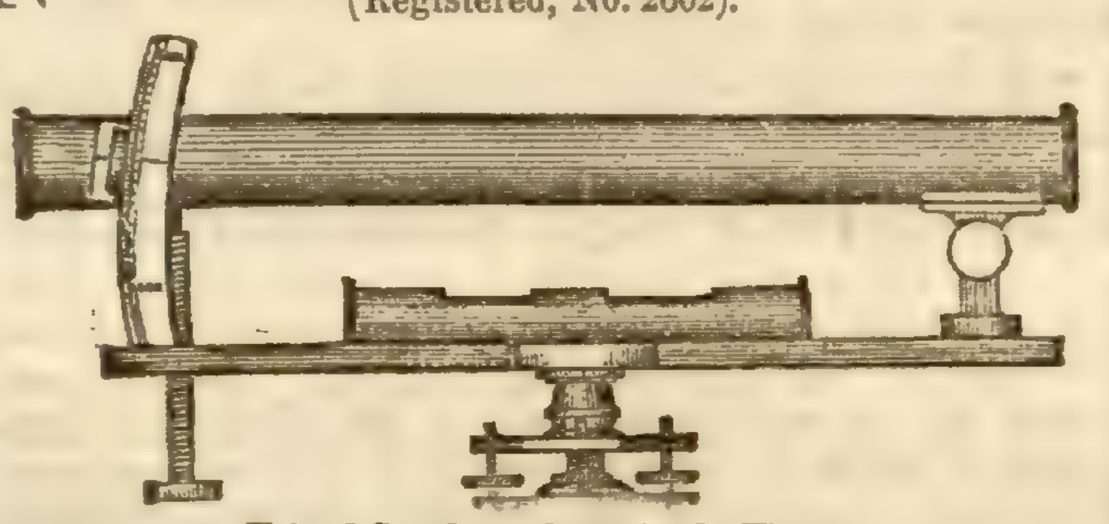
TO SURVEYORS, ARCHITECTS, & ENGINEERS.



SANG'S PLATOMETERS; OR, SELF-ACTING CALCULATORS.—These Instruments tell accurately the contents of figures drawn on Maps. They effect a great saving of time and labour, as in order to find the area it is only necessary to lead a tracer round the outline of the figure, however irregular it may be. Price 10l. each. Sold by JOHN SANG, Kirkaldy; and by Messrs. ELLIOTT & SONS, 56, Strand, London.

DRAINAGE—ROAD-MAKING.

NEW LEVELLING INSTRUMENT.
(Registered, No. 2602).



Tripod Stand not shown in the Figure.
This Print represents the Instrument one-fifth the real size.

THIS is a simple and effective Self-recording Instrument, suitable for Levelling Drains, Sewers, or Roads, or for measuring the Elevations and Depressions of the Ground. It consists of a Telescope, Level, Graduated Arch, and Tripod Stand. The Arch is so divided as to show the rise and fall in feet and inches. The Instrument can be set to any slope, which will enable a workman to cut the ground exactly to the inclination required.
From the *Practical Mechanic's Journal*, Feb. 1, 1851:—"In the hands of even the most unlettered farm servant this little instrument will afford the most correct measurements, as the operator has only to level the plate and bring his sight to bear upon the object, when the elevation or depression is given at once. It will be a most useful contrivance for draining or road-making."
Testimonial.—"I have examined Mr. Gardner's Drainage Level, and have no hesitation in recommending it as a most useful addition to the instruments of the practical surveyor and engineer. It is applicable for all kinds of levelling work, and is perfectly manageable in the hands of the farmer or his labourers, whilst the price is extremely moderate."—DAVID SMITH, C.E., Glasgow.
Price 4l. 4s.
Made only by GARDNER AND Co., Opticians and Mathematical Instrument Makers, 21, Buchanan Street, Glasgow.
A finer modification of the same instrument, much prized by the Civil Engineer, Price 9l.—G. & Co. also supply plainer levelling instruments, at 35s., 30s., 20s., 15s., and 10s. 6d. each.

GARDNER'S IMPROVED INCLINOMETER,
Price 10s. 6d. and 15s.
This Instrument is adapted for the pocket, and will form a most useful accompaniment to the Drainage Level, enabling the workman in laying drain-tiles or pipes, to place them exactly at the inclination which has been shown by the Drainage Level.

LAND DRAINAGE.

MR. BAILEY DENTON'S TABLES OF COST, &c., price 1s. 4d. Sold by METCHIM, Parliament Street.
MR. BAILEY DENTON'S WORKMAN'S A LEVEL, price 1l. 10s. Sold by JONES & Co., High Holborn, London.

LAND DRAINAGE.

MR. JOHNSON begs to inform Landowners, Agents, &c., that he is prepared to undertake the Drainage of Land, either by Contract or by a small charge per acre for planning and setting out the Drains, taking Levels, superintending the Work, &c.
Mr. J. has been for several years constantly employed as a Drainer in most of the Counties in England, and can give numerous satisfactory references. Plans for Tilery Buildings, and every information on Drainage can be obtained at the Office, 12, Abingdon Street, Westminster.

TO LANDOWNERS, SOLICITORS, ESTATE AGENTS, ETC.

THE LANDS IMPROVEMENT COMPANY, incorporated by special Act of Parliament, 1853, having perfected their organisation, are prepared to receive applications for the execution of improvements, under the provisions of their Act.
The Act extends to England, Wales, and Scotland; and empowers persons in the actual possession of lands, or in receipt of the rents, such as tenants for life, trustees, bodies corporate, incumbents of benefices, mortgagees in possession, guardians of infants, &c., to effect substantial improvements on their estates, and to convert the outlay on such improvements into a terminable annuity or rent-charge of from 14 to 25 years, at will.
The Company, acting under the supervision of the Inclosure Commissioners, will undertake and execute improvements, or will supply the capital to landowners preferring to execute improvements themselves, or will grant the powers of their Act to landowners seeking merely to charge the inheritance with the outlay on improvements from their own funds.
The Agricultural Works of Improvement particularly specified in the Company's Act, are:—
1. The Drainage of any Lands by any such means as the Inclosure Commissioners shall approve.
2. Irrigation, and Warping of Lands.
3. Embanking of Land from the Sea, or Tidal Waters, or Rivers, in a permanent manner.
4. Enclosing or Improving the Drains, Streams, or Watercourses of the Land, under the Inclosure Commissioners.
5. Reclamation of Land lying waste.
6. Making Farm-roads to the extent of one-half of the outlay for such roads.
7. Clearing Lands.
8. Erection of Farm-houses, and other Buildings required for farm purposes to the extent of three-fourths of the outlay for such Farm-houses and other Buildings.
In effecting the above Improvements there may be erected any Engines, Machinery, Engine-houses, Mills, Kilns, Sheds, Yards, Shafts, Tanks, and Reservoirs, Pipes, Conduits, and Watercourses for Irrigation, Tram-roads and other ways, Bridges, Weirs, Sluices, Flood-gates, and Hatches.
For Forms of Application and further Information apply to the Hon. W. NAPIER, Managing Director, 2, Old Palace Yard, Westminster, London.

HOSE PIPING.
TO ENGINEERS, AGRICULTURISTS, GARDENERS, SHIP-CHANDLERS, AND FIRE BRIGADES.

WAITHMAN'S PATENT FLAX TUBING (1-inch to 3-inch diameter) will sustain a greater pressure, is lighter, less bulky, will wear longer, and is about 60 per cent cheaper than the leather hose pipe, and about half the price of either the gutta percha or the seamless hose. It is prepared so as to be anti-rot.
Manufactured only by WAITHMAN & Co., 36, High Street, Manchester.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

BAILY'S ROUP AND CONDITION PILLS FOR POULTRY.—This remedy has been extensively tried with uniform success, and is offered to amateurs and the public with the greatest confidence. It will effectually overcome that disease which has hitherto been the bane of the poultry-yard, and destroy that apprehension known to all poultry keepers, when a favourite and valuable fowl is seen to droop. It is inestimable for poultry returning from exhibitions, and greatly facilitates moulting.—Sold, with full instructions for use, in boxes containing 50 pills, by JOHN BAILY, 113, Mount Street, Grosvenor Square, price 3s. per box, or by post 3s. 4d. "Fowls, by Baily," the most useful and plainest treatise of the day; price 2s., by post 2s. 6d.
Baily's Registered Fountains, universally adopted and approved. Drawings and particulars, by post, on application.—113, Mount Street, Grosvenor Square.

PATENT ROOT GRATING MACHINE.

BUSHE & BARTER'S PATENT ROOT GRATING MACHINE, Manufactured and Sold by ALEX. SHANKS & SON, Arbroath, Forfarshire, from whom particulars, with prices, may be had.—Arbroath, Jan. 28.

ANTHONY'S PATENT AMERICAN CHURN.—Extract from the Royal Agricultural Society's Report of the trial of Churns at the Gloucester meeting in July last. "In this trial the American Churn not only maintained its character in producing butter rapidly, but in producing a greater quantity from the like amount of cream." It made from 4 quarts of cream 4 lbs. 6 oz. of butter, being 8 oz. more than any of the other Churns from the same quantity and quality of cream. Price Lists of Churns and Implements by the best makers sent free, and Illustrated Catalogues on receipt of eight postage stamps. BURGESS & KEY, 103, Newgate Street, and 52, Little Britain, London, who have always a large stock of Steam-engines, Ploughs, Harrows, Diggers, Waggons, Carts, Threshing and Dressing Machines, Mills, Oat and Grain Bruisers, Oilcake Breakers, Reaping Machines, Haymakers, Horse-rakes, Turnip Cutters, Liquid Manure Carts, Parkes' celebrated Steel Digging Forks and Draining Tools, Pumps for Manure, Farm Fire Engines, and for Garden Purposes, &c. &c.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.

MESSRS. BURGESS AND KEY, as Mr. PARKES' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.
103, Newgate Street, and 52, Little Britain, London.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.
PATRON—His Royal Highness PRINCE ALBERT.
PRESIDENT OF COUNCIL—Earl BATHURST.
PRINCIPAL—Rev. J. S. HAYGARTH, M.A.
PROFESSORS, &c.
Chemistry—J. A. C. Voelcker, Ph D., F.C.S.
Geology, Zoology, and Botany—James Buckman, F.G.S., F.L.S.
Veterinary Medicine and Surgery—G. T. Brown, M.R.C.V.S.
Surveying, Civil Engineering, and Mathematics—F. Armstrong, C.E.
Manager of Farm—G. Austin.
Assistant to Chemical Professor—A. Williams, M.R.C.S.
The first Session of 1854 will commence early in February. The annual fees for Boarders vary from 45 to 80 guineas, according to age and other circumstances. The Fee for Out-Students is 40l. per annum. The College Course of Lectures and Practical Instruction is complete in one twelvemonth—though a longer time is recommended. There is a department for general as well as for agricultural purposes. Prospectuses and information can be had on application to the Principal.
The GUIDE TO THE ROYAL AGRICULTURAL COLLEGE FARM may be obtained of HAMILTON, ADAMS, & Co., Paternoster Row, London; and EDWIN BAILY, Cirencester. Price 1s.

THE LABORATORY of the ROYAL POLYTECHNIC INSTITUTION is always open for the reception of pupils, under J. H. Pepper, Esq., F.C.S. A.C.E. &c. Careful Analyses and Assays of Soils, Minerals, Waters, Mercantile or Agricultural Products, are performed with despatch, accuracy, and economy.
For terms apply to Mr. R. I. LONGBOTTOM, Secretary.

The Agricultural Gazette.

SATURDAY, FEBRUARY 4, 1854.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY,	Feb.	8—Agricultural Society of England.
THURSDAY,	—	9—Agricultural Imp. Society of Ireland.
WEDNESDAY,	—	15—Agricultural Society of England.
THURSDAY,	—	16—Agricultural Imp. Society of Ireland.

Mr. PUSEY's paper on the action of THE NITRATES AS MANURES, and on their relations to guano, is one of the most suggestive and interesting which has ever been published in the Society's Journal. The interest which would at any time attach to it, as bearing on the practice of the farmer, is enhanced at the present time by the condition in which the guano market just now stands. The current supply of this manure, and the natural store from which it is taken, are both apparently so short that farmers who have hitherto depended on imported manures* may well be anxious on the subject. The evidence which this paper offers of the applicability of nitrate of soda as a substitute for guano, will be read by such men with great interest.

* Take, for instance, Mr. HOPE, of Fenton Barns, East Lothian, who occupies 660 acres, and who states that unless portable manures are applied at the rate of 1l. per acre over the whole farm, he cannot continue to farm at a profit.

The evidence in question seems entirely satisfactory. The assertion is, that the ammonia of the guano is perfectly replaced by the nitrate; and that as to the other ingredients of guano, they could, wanted, be added from other sources easily enough. This assertion is borne out by a large mass of well-selected experiments For instance:—Mr. HOPE, of Fenton Barns, has found 90 lbs. of nitrate and 180 lbs. of guano better for Grass than double the quantity of guano by itself. And on Wheat, 1 cwt. of nitrate of soda with 1 cwt. of common salt did, in 1852, beat 3 cwt. of Peruvian guano per acre. Reports from other quarters testify to the same truth, and thus we may hope that the large supplies of nitrate of soda in Peru may so far supplement the failing supplies of guano from the same country as to hinder that rise in prices which is now threatened.

We prefer the practical portion of Mr. PUSEY's paper to that in which he discusses the theory of the subject. Whatever may be the ultimate fate of the law which he asserts to determine all vegetable growth, we cannot but notice how much less cautious is the process by which this law has been ascertained than that by which the conclusions on the practical question of a substitute for guano have been arrived at. In the case of the latter, experiments are quoted from all parts of the country, and the inferences in every case being alike, justify a confidence in the practical lesson which they all combine to teach. In the former case, a single experiment is quoted—dilute nitric acid is compared with nitrate of soda and with soda by itself, and the fertility consequent upon the application seems to have been in proportion to the nitrogen present in the manure; being nothing at all when the base of the salt alone was employed, and where no nitrogen at all was therefore applied; and "we may now, therefore, assume, with unhesitating certainty, as a great law of Nature, that *substances strengthen vegetation mainly by their contents of nitrogen.*" This is surely far too sweeping a conclusion to be drawn from a single experiment, or from any number of experiments in a single locality. Any reader of this paper who has been previously led by LIEBIG and others to believe in the importance of soluble mineral substances, alkalies, &c., as manures, will consider the experiment in question to be perfectly consistent with what is called the mineral theory, on the assumption that the soil was already rich in alkaline matter. We think that the composition of the soil must be known before the conclusion which Mr. PUSEY draws in reference to vegetation generally can be proved, even of the one case on which a great law of Nature is thus so unhesitatingly built.

We believe now as before that there are many substances to which plants *must* have access—every one of which is essential. It may be a general law of Nature that ample provision is made of nearly all —Mr. SMITH, of Lois Weedon, believes that ample provision is made of absolutely all, at least for the wants of some plants. If, then, there be but one which is generally deficient, then it may be practically true—and yet not in itself a truth—that substances strengthen vegetation mainly by their contents of that one deficient substance. In this way the practice of the farmer, which has long recognised in ammoniacal substances the value of nitrogen as a manure, may be reconciled with Mr. PUSEY's statement; but if that statement be read—and it may be so read—as implying the comparative unimportance of other substances, which are equally essential with nitrogen, then so far from teaching a great law of Nature, it will, we believe, really retard the progress of sound agricultural theory.

THE need of more definite information about the agricultural produce of the country is forcing itself upon the attention of commercial men. The representations which they are making upon the subject will probably exert even greater influence upon Government than those of agricultural societies. It is in its relation to the current value of food that the collection of agricultural statistics properly claims the attention of Parliament. Correct information on the subjects thus embraced would be of great immediate value both to producers and to importers of food, but neither of these classes could properly insist on Government interference simply on its own behalf; it is because through both of them the interests of the people generally are affected that the subject becomes of national importance. We are glad, therefore, that both parties have now joined in the representations which have been made on this subject. A memorial is to be presented to the Earl of ABERDEEN, which has been influentially signed by bankers, merchants, cornfactors, ship-owners, and brokers, of the city of London, in which the relations of the subject to trade, commerce, and shipping are very forcibly set forth. It is stated that—

"The fluctuation in the prices of grain has been nearly 100 per cent. within the last four months, and now, even four months after the harvest has been secured, no certain knowledge has been obtained as to whether it will afford six or ten months' consumption. The consequence of this uncertainty is an equal uncertainty in all the branches of trade and shipping connected with grain, and good authorities vary no less than 5,000,000 quarters in their estimate of the importations of Wheat and flour required during the current season, and a doubt is thus implied to the enormous extent of 1,000,000 of tons as to the quantity of shipping necessary to transport it; and the uncertainty of this particular article of human food creates an uncertainty in every article of commerce and consumption."

The natural tendency of ignorance upon so important a subject as the food produce of the country is here strikingly set forth; and the actual commercial history of the past few months is a striking confirmation of the statement. We are told in the City article of the *Times* that, through the inability of the capitalist

"to get materials for a conclusion, he was prevented in the early part of the season from investing his money in grain wherever he could despatch agents to procure it, while his French rival, in the possession of carefully collected statements, was able to act promptly even in our own markets; the agriculturist finds to his mortification that he sold much of his produce at less than two-thirds of its subsequent value; the shipowner was ignorant where his vessels would be wanted, and sent them out of reach when they might have made fortunes at Odessa or New York; and the manufacturer, whose whole success depends upon whether the value of money will be one per cent. more or less, has not only been without the means of anticipating the efflux of bullion, but is actually at this moment in the dark as to whether we have attained and paid for a sufficient supply to render much further pressure unlikely, or whether our stocks are still so far below what will be requisite as to keep up a constant outflow of specie."

The contrast between English policy and that of other countries in connection with this subject is properly insisted on in the memorial just referred to:—

"Both on the continent and in America, the statistics of agriculture, as they affect the bread of the people, are justly regarded as a first object of national investigation, and early and accurate information is every year obtained, by which the merchant can anticipate the course of exports and imports. This information enables timely arrangements to be made for supplying the deficiency of an unproductive harvest, or for disposing of the surplus of a good one. It provides, as far as human foresight can, against the unavoidable influence of seasons, and the ruinous fluctuation of price and consequent derangement of commerce."

Of course it is in the more strictly agricultural relations of the subject that we are interested—and probably it is to these that the intelligent reader of the American and Canadian statistical reports will look as their most trustworthy feature. The mode in which these reports are compiled cannot result in more than qualitative information on the subjects to which they refer. We may read them with tolerable certainty as to the comparison they present with previous years, which is the indication they give of agricultural progress; but, in reference to actual quantity of produce then ready for market, which is what the commercial man desires to know, they are certainly less to be depended on.

We have before us now the first report of the Secretary of the Board of Registration and Statistics on the Census of the Canadas for 1851-52; and while the results given are quantitative in all the many branches which they embrace, we presume that it is in their comparative character, whether in contrast with the United States, which is very well detailed, or in contrast with the agricultural position of Canada itself in previous years, that they will prove most instructive. Certainly the inferences drawn in the very able report which accompanies the tabular statement are of the highest agricultural importance, and show very strikingly of what immense value to the agricultural interest of a country properly compiled agricultural statistics would be. We shall next week select for remark some information conveyed, in the report before us, whether to agricultural emigrants from this country, on the prospects of the colony, or to those who cannot be tempted from their homes, on the value of the example shown to the old country by this well-arranged review of the agricultural condition of the Canadas.

THE MANAGEMENT OF MANURE.

IN a late Number of the *Agricultural Gazette*, "C. L., Cirencester," after having passed a just and favourable judgment on the merits of Morton's "Cyclopedia of Agriculture," now in course of publication by Blackie and Son, remarks very properly that it could not be expected that a work produced by numerous contributors should exhibit a consistent whole, like the effort of a single mind. With this remark I entirely agree, and believe that one of the advantages which the subscribers of the Cyclopedia will derive from its perusal is just founded on the circumstance that there is not presented to his understanding the effort of a single mind, but the well-digested labours of many, who have showed themselves, by former publications, thoroughly well informed on the particular subjects on which they write. Differences of opinion on agricultural subjects, as on most subjects, perhaps, will always exist in our necessarily imperfect state of knowledge of the mysteries of nature. It certainly cannot be expected that all the contributors to the Cyclopedia should entertain the same opinion on every agricultural subject, and the fact that in the various articles in the Cyclopedia here and there views apparently opposed to each other are candidly discussed, in my opinion, rather adds to the merit of this publication than detracts from it. The reading public, however, may justly demand that an author should be consistent with himself in all he writes, and has a perfect right to expose his inconsistencies, especially if they occur in the writings upon one and the same subject, and if they are not merely of a trifling kind, mere slips of the pen, but inconsistencies which in all charity can only be ascribed to ignorance or unwarrantable carelessness. An inconsistency of the latter description "C. L., Cirencester," believes to have discovered in the article "Manure," in the Cyclopedia, and it is for that reason that I beg to offer a few explanatory remarks, which I trust will clear me of the charge of an apparently flagrant inconsistency. And I would observe at once that the charge of inconsistency arises from the misconception which "C. L." entertains of the experiment, which is mentioned at page 343 in illustration of the loss farm-yard manure undergoes in keeping, under bad management. It is there stated that 100 cwt. of fresh farm-yard manure have been found to become reduced to 80 cwt. when allowed to ferment until the straw became half rotten; on keeping till the straw became quite rotten, and the manure fat and cheesy, the 100 cwt. diminished to 60 cwt.; and when the fermentation was still further carried on until the manure appeared completely decomposed, the original 100 cwt. were reduced to only 40 or 50 cwt. This loss in weight is then explained to be due not merely to the dissipation of water and other less valuable constituents of farm-yard manure, but also to nitrogen, which passes off in the form of volatile ammonia, as the fermentation proceeds. Analysis has shown that 100 cwt. of farm-yard manure contained about 40 lbs. of nitrogen; and that during fermentation in the first period (*i. e.*, when allowed to ferment until the straw became half rotten), 5 lbs. of nitrogen are dissipated in the form of the volatile ammonia; in the second (*i. e.*, fermented until the straw became quite rotten, and the manure fat and cheesy), 10 lbs.; in the third (*i. e.*, fermented until the manure appeared completely decomposed), 20 lbs. Completely decomposed common manure has thus lost about one-half of its most valuable constituent (nitrogen). This passage appears to me sufficiently intelligible. "C. L." however, infers from it that well-fermented and perfectly-decomposed manure cannot contain any nitrogen at all.

He evidently arrives at this strange conclusion by separating the latter part of the paragraph referred to from its connection with the former, and thus does not attach the precise meaning which has been assigned to each of the three periods of fermentation. By leaving unnoticed the details of the experiment, referring to the loss in weight of the manure, he conveys to the reader the erroneous idea that in the second period of fermentation, which period has been accurately defined previously, 10 lbs. of nitrogen are dissipated in the form of ammonia, in addition to the 5 lbs. which have escaped in the first period (*i. e.*, when allowed to ferment until the straw became half-rotten), and that in the third period 20 lbs. of nitrogen are lost in addition to the 15 lbs. dissipated in the first and second periods. However, 20 and 15 only make 35 lbs.; and as the manure originally contained 40 lbs. of nitrogen, the remaining completely decomposed manure would still contain 5 lbs.; and even according to "C. L.'s" own interpretation of the experiment, the conclusion "that well-fermented and perfectly-decomposed manure cannot contain any nitrogen at all, the whole having been disposed of in the three stages of decomposition, in the form of ammonia," is quite untenable. But on reading carefully the whole experiment mentioned in page 343 in the Cyclopedia, it will be found that the manure produced in the first period of fermentation, as well as that obtained in the second and third, are richer in nitrogen than the original fresh manure. For he will find it stated that 100 cwt. of fresh manure, containing 20 lbs. of nitrogen, were reduced to 80 cwt., when allowed to ferment until the straw became half rotten, during which period 5 lbs. of nitrogen were lost. The remaining 80 cwt. will thus contain 35 lbs. of nitrogen, or 100 cwt. of such manure, $43\frac{3}{4}$ lbs. of nitrogen. Further, the 100 cwt. of common manure, when fermented until fat and cheesy, will be reduced to 60 cwt., during which second period of fermentation 10 lbs. of nitrogen were dissipated in the form of ammonia. The 60 cwt. of manure thus produced will consequently contain 30 lbs. of nitrogen; or 100 cwt. of such fat and cheesy manure will contain 50 lbs. of nitrogen. And lastly, that 100 cwt. of manure, fermented until perfectly decomposed, will be reduced to 40 or 50 cwt., and lost, in this third period of fermentation, 20 lbs. of nitrogen. The 40 cwt. of perfectly decomposed manure did thus retain 20 lbs. of nitrogen, or 100 cwt. of such manure will contain 50 lbs. of nitrogen.

It will be observed that the result of this experiment is not inconsistent with the statement in page 338 of the Cyclopedia, namely, that well fermented farm-yard manure contains more nitrogen. Every practical farmer knows that well-fermented farm-yard manure acts more energetically on vegetation than fresh dung; and it would be indeed strange if such manure, containing the essential fertilising substance in a smaller compass than in fresh dung, should not be more valuable than the latter. It does not follow, however, from the fact that well made and well fermented manure is more valuable than fresh, that common manure should always be applied to the land in a perfectly decomposed state. On the contrary, wherever it is admissible, farm-yard manure ought to be brought as fresh as possible on the land, as thereby the unavoidable loss in valuable fertilising substances which attends the fermentation of dung in heaps, is almost altogether prevented.

The experiment referred to shows in a forcible manner the loss which farm-yard manure undergoes in keeping, under bad management, and proves, also, that even completely decomposed dung is richer in nitrogen than fresh. For illustration sake, probably an extreme case has been chosen; but in actual and good practice the loss in nitrogen will be, I have no doubt, less considerable; and well made, though completely fermented manure, I think, will be much richer than the manure obtained in the third period of fermentation in the above experiment. *A. Voelcker, Cirencester.*

SCEINCE AND AGRICULTURE.

[We have been favoured by Dr. Eade with a copy of this paper, read by him before the Blofield and Walsham Farmers' Club, December 12, 1853.]

I SUPPOSE I may take for granted that all are agreed that improvements have been effected to a great extent during the past few years, both in the theory and practice of agriculture; and that none here present are of opinion, that the changes which have taken place in agricultural proceedings are simply alterations but not improvements; or that whilst in every other department of science knowledge has increased, in agriculture alone has the mind of man effected nothing. And we must remember that it is not enough to say, *e.g.*, that 20 or 50 years ago as much corn was raised from the land as now, but in deciding upon such a point it is necessary not only to look at the quantity of corn grown, but to consider the difficulty and expense of so growing it, of threshing, carting, and grinding it; and, in fact, to take into consideration every process connected with its manufacture from the time the seed is sown until it has gone through all its stages, and, in fact, become seed again.

In looking for the signs of improvement in agriculture, as exhibited generally upon the face of the country, we shall see these most marked, not in districts such as some of those in East Norfolk, where husbandry has for a long time been practised on the best known system, but in districts where farming has, until recently, been comparatively neglected; such as some of the Western portions of this county—in speaking of which, in a work upon Norfolk husbandry published by a Mr. Marshall in 1794, the author thus writes:—"The western division is either marshy low land, applied chiefly to the dairy, or open sheep walks and extensive heaths, whose stock are sheep and rabbits." Yet of East Norfolk itself, of which he otherwise speaks in glowing terms, he says:—"The roads are unpardonably bad, narrow, shaded, and never mended. The inclosures, in general, small, and the hedges high and full of trees, giving to the traveller the idea of being ever on the verge of a forest." At the present day, one would in vain try to recognise by such descriptions as these the well cultivated fields, and well stocked lands of large portions of West Norfolk; or the firm macadamised roads, the ample fields and well trimmed hedges of our own division of the county.

Most of the improvements which have been effected in agricultural operations may be classed under the two heads of chemical and mechanical, both perhaps of equal importance. For, on the one hand, what knowledge can be more important to the farmer than that which tells him not only that guano is good for his land, but why it is so; which tells him what time is most suitable for its application, and what soil most adapted for its reception: or what can be more important than that which discerns that some saline manures, as nitrate of soda or others, will produce a good crop of Wheat from a field that hitherto had yielded a very bad one; or, again, that tells the farmer not only the fact (which he might have guessed at previously), but why a clay soil may be safely trusted to take care of that manure which is placed upon it some time before it is wanted, whilst a poor gravelly soil will retain little or none of it, but allow it all to be washed away by the first heavy rain that falls—or, on the other hand, is it not of immense importance to the farmer to be furnished with implements, whereby he can speedily and effectually plant his seed, cultivate his young crops, secure his harvest, thresh his corn, and transport it, if need be, to distant markets; and all this not merely by the multiplication of human or horse labour, but by the application of those principles which science develops, and human ingenuity turns to useful purposes? And let us not forget that the great and, in fact, the only real object of science, is to increase knowledge, to substitute certainty for random proceedings and vague speculation, and to discover by the conjoined light of reason and experiment those truths which it takes ages of experience alone to discover: and in this sense any one may, in his own way, be it ever so humble, be a zealous cultivator of science. Every experiment, however small, if conducted carefully and sensibly, and its results noted and properly weighed, is in so far a contribution to human knowledge, and a portion of that foundation of facts upon which *future* scientific truths may be based. But, perhaps, we are scarcely aware of the great alterations which really have taken place in agricultural processes within some few years, so gradually have these changes been wrought. Now, in various portions of the work above mentioned, we find the following passages:—

"There is not, perhaps, a drill, a horse-hoe, or scarcely a horse-rake in East Norfolk."—"Cow-houses are unknown in a Norfolk farmery."—"Bullock sheds are sometimes, but not generally erected."—"Old hedges abound with Oak, Ash, and Maple stubs, off which the wood is cut every time the hedge is felled; also with pollards"—"Under-draining is a practice which is not of long standing in the district, but may, I make no doubt, be found highly useful to many parts of it."—"Drilling (for Wheat) is almost unknown in Norfolk, notwithstanding the soil is so peculiarly adapted to the practice."

It is therefore since the period at which this book was written that, in this county at least, the important alterations in the treatment of cattle, in the management of hedge-rows, in draining, in growing crops in rows, and in many other points, which have resulted in the improved methods of the present day, have taken place.

I would enumerate some of the most important of these improvements to consist in the introduction of improved machines for drilling, hoeing, scarifying, and clod-crushing, as well as for threshing and reaping, in the more economical application of horse-power to purposes of draught; but most of all, in the application of steam to purposes of draining, threshing, the carriage of corn and cattle, and other general requirements of a farm. I would also mention the improved methods of housing and feeding stock, based upon the knowledge which an acquaintance with the chemistry of the fattening process confers, the application of guano and various saline manures to land; as well as many other processes, which the researches of Prof. Liebig into the mysteries of animal chemistry, of Prof. Way into the properties of soils, and those of other labourers in the fields of botany, geology, and meteorology, have enabled us to adopt.

It would seem indeed that in nearly every department of agriculture, has considerable progress been made towards perfecting the appliances at the command of the British farmer, and that whilst the greatest activity has prevailed in every other branch of industry and science, agriculture has by no means been neglected. Perhaps the first great stimulus was given to it by the high prices obtained for the produce of land during the late war; subsequently the long continuance of peace promoted the cultivation of this in common with other unexplored subjects; and, still more recently, increased competition has compelled those engaged in the tilling of land to neglect no means of increasing their produce or of diminishing the cost of raising it. And accordingly never was there a time when the demand was greater for all the means and appliances which art or science could furnish for the attainment of these objects.

Thus it is within a very few years that we have seen carts exchanged for waggons; greatly improved ploughs introduced; reaping machines invented; steam used for threshing and for draining, and a more general application of artificial manures to land. Whilst even within the last few weeks attention has been called by Mr. Mechi to an improved threshing machine invented by an American, which promises to do as much for the farmer in knocking out his corn as the new reaping machine does in harvesting it.* This machine is called by its inventor "a grain separator," and was lately described in the *Times* as "being very portable, weighing only 14 cwt., threshing easily and without waste at the rate of one bushel in 40 seconds, turning out the grain perfectly clean and ready for market, and as being manufactured in America for 23*l*. It is, therefore, much lighter than the lightest of our present machines; does as much if not more work than the best of them, and with much less power; dresses the grain, which they do not; and costs much less money. And although it has some trifling disadvantages, yet upon the whole it would appear to be a decided improvement upon the machines at present in general use." Still more recently attention has been called to another American invention, which although comparatively unimportant in itself, yet serves to show the perseverance and ingenuity which are at work upon every detail of mechanical art in the New World. It consists of an improved hand-barrow, in which, by placing the wheel beneath the body of the barrow, the greater part of the weight is removed from the hands of the person using it.

But great as have been the improvements in nearly every mechanical appliance, whether applied to agriculture or not, there is no sign of any abatement in the zeal with which those engaged in this branch of industry are pursuing their investigations. There is nothing which might lead us to suppose that we had attained to perfection in any of our departments; on the contrary, everything seems to lead to an opposite conclusion. As railroads have superseded coach travelling, as the electric telegraph has supplanted the ancient modes of communicating intelligence, and as the scythe has superseded the sickle, the threshing-machine the flail, and human and horse labour are rapidly giving way to the influence of steam—so there is reason to suppose that these themselves are destined shortly to give way to more powerful influences, either altogether new or the present ones modified by causes at present not in operation. There seems to be great reason to infer that electricity is yet destined to play a very important part in the history of mechanical inventions. Even now the expense of generating the necessary power is the only obstacle to its successful employment in many processes of the arts; and it seems almost impossible but that such an all-pervading and all-powerful agent should be turned sooner or later to far more general account than is at present the case.

Let no one think, then, that in the present state of the world it is possible for farmers to stand still any more than any other class of mankind. Even M'Cormick's reaping machine, which at its first introduction Mr. Pusey described as "the most important addition to farming machinery that has been invented since the threshing machine took the place of the flail," has been already much altered and improved; and many hands are at work at the attempt to construct a steam plough or cultivator, and it is even said that an American has successfully overcome the difficulties which have hitherto stood in the way of its practical usefulness. But surely each new invention cannot be otherwise than a boon to the farmer if it enable him to produce cheaper or better than he has hitherto been enabled to do; and, therefore, although the future of the farming interest will in all probability be subject to as much change as that of any other interests, yet as these changes will, no doubt, take place gradually and by a process of continuous development, there is no reason to doubt that farmers will willingly and profitably adopt each new improvement as it is brought before their notice.

Many elements bearing upon agricultural prospects besides those which I have yet alluded to, are now at work, which must have an important influence upon the future welfare of this branch of industry. Thus the stimulus which the increase of competition from the opening of our ports to foreign produce has caused, has been everywhere and most usefully felt, the science of farming having advanced more in the last five years than in twice that number of any preceding years. The pressure of want upon the poor, and the superior attractions of gold producing and less thickly inhabited countries, are sensibly thinning our labouring population, and making an increased use of mechanical appliances a matter of absolute necessity. And lastly, the increased knowledge both of our wants, and of the means of supplying these wants, through an acquaintance both with the number of persons to be fed, and the quantity of material at command to supply their requirements, which more accurate statistical information upon agricultural matters will afford, will also be sensibly felt, in increasing our certainty, steadying our markets, and rendering the business of the farmer liable to less violent fluctuations; and leaving it subject to those only which the necessary laws of supply and demand impose upon it, in common with every other branch of producing art.

Judging then of the future by the past, I believe that the results which the further progress of science will develop will eventuate in the determination by chemists of facts, whereby we shall be able more certainly and definitely to apply manures to our crops so as only to use in the right quantity, and at the right season, those which will most conduce to the advantage of the growing plants; whereby also we shall be rendered far more independent of the seasons than we now are. That they will consist in the improvement of machinery, so that our agricultural proceedings will be more and more carried on by mechanical power, as a substitute for animal force, *i. e.*, by machinery instead of nerve and muscle: and that as a necessary consequence of this substitution, that what we lose in quantity of human power we must make up in intensity; that we shall require more and more skill in our farm labourers to direct the more complicated processes they will be called upon to superintend; and that as a further consequence an increase in them of information and intelligence commensurate with these altered circumstances will be imperatively required. And as if foreshadowing this result, we see how rapidly education is progressing, how at the present day every child does receive more or less instruction, and how the more ready interchange of ideas which facility of intercourse by reading, writing, and increased means of locomotion presents, is surely tending to raise the standard of man's intelligence, and render him more fitted for the higher class of duties he will be called upon to perform.

I believe also, that the prospects of farmers are as good now as ever they were; that in all probability the amount of competition with which they may have to contend, may yet be very largely increased; but that the resources of science will come to their aid, so as completely to compensate the increased difficulties with which they have to contend, so that if they steadily, systematically, and wisely avail themselves of each new improvement as its reality becomes assured to them, they may still confidently look forward to the land as a profitable investment, and as still a means of securing an honourable livelihood.

* On this we must refer to a report, from the columns of the "Mechanics' Magazine," in another column. ED. *Agri. Gazette.*

Home Correspondence.

Drainage Report: Cirencester Society.—In your Paper of Saturday last, in the report of the judges for draining at the Cirencester Agricultural Society, there are two or three errors: in speaking of the furrow drains on Lord de Mauley's and Mr. Ponsonby's land,

you call them tile drains instead of till drains, that is, hin stones are placed along the bottom of the drains hus A, and small stones placed at top. In speaking of Mr. Sadler's main drain, it is stated as made "within pipes," it ought to be "with 4 inch pipes;" in the report it was written, "with — in. pipes," intending to fill the space when I had inquired of Mr. Sadler the number and different sizes he had used, but it was neglected to be done. *Thos. Arkell.*

Up-and-Down Draining.—I see by a late *Agricultural Gazette* that another champion for the up-and-down system of draining has come forward in the person of Mr. Hewitt Davis; there be now, therefore, "three Richmonds in the field." I am glad of it, because I feel confident that the more this question is discussed the sooner and more completely will the truth of the principles of draining which I advocate be established. The arguments which Mr. Davis uses are directed, in the first place, to the theory of the question—the reason why drains should be laid along the line of greatest descent under all conditions of soil, subsoil, and substrata. He objects, also, to availing himself of the drains which Nature has laid in the form of subterranean furrows—the existence of which he neither affirms nor denies—because there are some hollows in them which descend below the general level of their bottom. These arguments are only a repetition of those advanced by Mr. Denton, which have been answered by you as well as by myself. Mr. Davis must therefore not consider it want of courtesy on my part if I decline going over that ground again. From arguments founded upon the theory—or rather I should say upon the hypothesis—that all soils are homogeneous, he proceeds to arguments drawn from practice, declaring that he has never seen perfect drainage effected by drains laid across the fall; but at what angle they crossed it, which is a very material point, he does not say. I also would appeal to practice. I would ask why we hear of so many failures of drains laid with the fall. I would say, also, go to Keythorpe, and you will see an example of the failure of such drains, and the success of drains laid obliquely to the fall, so as to cross subterranean furrows or channels, along which water is percolating, although those drains are laid in a retentive soil at distances of 20—aye, and twice 20 yards! I shall conclude by remarking that in travelling through Essex lately, I saw many instances of drains laid obliquely to the fall upon land having a very slight inclination, but crossing it at a much greater angle than is right, whether there are subterranean furrows or not in the land to be drained. I saw also few or no trial holes. This is not the Keythorpe system, and it must not be held responsible for the results. *J. Trimmer.*

Home-made Superphosphate.—There are some farmers so located that they cannot conveniently procure the manufactured superphosphate of lime—others, who could obtain it readily, are fearful of getting a spurious or adulterated article, and many others who would make it themselves if they knew exactly how to set about it. I have seen several directions at various times, and in various publications, but they have lacked precision, and omitted some point or other in the manipulation of more or less importance. Having given the matter some attention, I think I may offer the following directions to those who have not had any experience in this preparation. For drilling 5 acres of Turnips or Swedes, procure 20 bushels of half-inch bones, crushed in a dry state; this quantity will usually weigh about 800 lbs.; get 200 lbs. of the ordinary sulphuric acid of the manufacturer, which would generally be of the specific gravity 1.840.* Add to this acid an equal weight of water, and stir it in an earthen or wooden vessel, pour this very gently over the bones, as equally distributed as may be, delivering it close over the bones, as any splashing will destroy clothes, and may damage the operator. When the mixture has laid about two days, take it out and form it into a conical heap, and cover it with turf ashes, or such as are commonly prepared on the farm for drilling, in which state it may be left for three or four weeks, to break down more effectually any portions of bone which have not been sufficiently done before. Uncover the heap, and add to the ashes first used as many as will make up the quantity the party usually uses in drilling, whether 20, 30, or more bushels per acre, and then mix those and the bone paste very thoroughly together. Form the mixture again into a heap, and cover it with earth, to remain till within a few days of its being required for drilling, when the heap should be again turned over, and every portion of the bone paste then found should be broken down with the spade or fork, in order that the whole should be completely mixed with the ashes. The acid and bones may be mixed in various ways, but as this is an article required every season, I consider the most efficient and economical, because permanent, receptacle is a brick tank formed thus—dig out the earth in some convenient spot near the homestead, and bottom it and line it with brick (one brick laid flat is sufficient) set in coal ash lime mortar, and pointed in the inside with good fresh Portland cement. For mixing 5 quarters of bones with the acid at a time, I have found a tank 6 feet long, 3 feet wide, and 30 inches deep a convenient size. None need exceed this size, for the same mixture may be repeated every two days, until any quantity required is prepared. *C. Lawrence, Cirencester, Jan. 31.*

Profitableness of Cattle-feeding.—To "Y."—I have read your valuable articles on this subject with pleasure and instruction, and as I am a feeder of a large number of cattle, sheep, and pigs during the year, I am anxious to arrive at a remunerative way of doing it. The universal cry of the unprofitableness of cattle-feeding has always struck me as showing a great want of knowledge, either in the management of the cattle, or the want of chemical knowledge to point out to us the quantity of food the stomach of a three-year-old ox can appropriate to advantage; for we either injudiciously feed them, or they are the only exception to the general rule of things; we admit that sheep and pigs pay, and we all know that every description of manufactured articles—in short, every thing that changes hands, bears a profit, except the unfortunate ox. Now, how is this? Can you and I, with the help of Professor Johnston, place him in a more favourable light to the farmer? In the first place, can and will Professor Johnston tell us what amount of hay, Swedes, Mangold, cake, Linseed, or corn meal a three-year-old bullock's stomach can appropriate during the 24 hours, to the advantage of the feeder; and what is the worth of the refuse, both liquid and solid? I have worked out the cost of 10 beasts for a week, as well as I can from your statement, you and Mr. Hope not giving the amount of straw consumed; and I give you the cost of 10 short-horn three-year-old beasts, now feeding; my calculation is made on the following prices:—Hay, 80*s*. per load; Mangold and Swedes, 12*s*. per ton; straw, 36*s*. per load; Linseed, 52*s*. per quarter; Barley, 36*s*. per quarter. I have been in the habit of following the Norfolk system of 12 or 14 lbs. of cake or corn per ox, but this, unless you have a farm much out of condition, will not pay; and my opinion why, is, that the stomach of the ox cannot appropriate so large a quantity. Cost of 10 beasts for a week:—

M'Culloch's:—			
4 tons 13¾ cwt. of roots, at 12*s*.	£2	16	3
13½ trusses of straw, at 36*s*.	0	13	6
	£3	9	9
Hope's:—			
5 tons 11¼ cwt. of roots, at 12*s*.	£3	6	9
6¼ trusses of hay, at 80*s*.	0	13	9½
Straw not known	...		
	£4	0	6½
"Y.'s":—			
1 ton 17½ cwt. of roots, at 12*s*.	£1	2	6
35½ trusses of hay, at 80*s*.	3	18	5
Straw not known	...		
	£5	0	11
Mine, or "Z.'s":—			
2 tons 5 cwt. of roots, at 12*s*.	£1	7	0
8 trusses of hay, at 80*s*.	0	17	5
12 do. straw, at 36*s*.	0	12	4
280 lbs. of Linseed, at 52*s*.	1	12	6
140 do. meal, at 36*s*.	0	11	8
	£5	0	11

Singularly enough yours and mine come to the same amount. Well, there is the cost; my system is to credit the beasts one-third of the whole cost for the manure. Looking to the above table, Mr. M'Culloch's system is the cheapest; but the question to be decided by the above lots is, how long will each lot take coming out, equal value, to the butcher? If they would all come out at the same time there would be no question about it; but I am satisfied they would not. Then which is the best way for the farmer, to take seven or eight months with no cake or corn, or six months with 4 or 5 lbs. of cake or corn, or four or five months with a liberal supply of cake or corn, or both, say from 8 to 10 lbs.? I should much like to have your opinion on this, and also the cost of straw consumed by your 10 beasts per week. I fat about 250 pigs and 250 sheep a year all on grating—the former in summer, and the latter in winter; my pigs, a twelvemonth old, are now going out at from 45*s*. to 50*s*. I have 200 ewes, and at present have 177 lambs from 138 ewes, having lost only one sheep and three lambs. Your's, in great want of information. *Z.* P.S. My farm consists of 400 acres of wet, heavy land.

Covered Stackyards are to be seen in Carnarvonshire, the roof supported on stone pillars, open at the ends and sides, slated in the same manner as a house; the stack of hay made as usual within, saving the straw thatch. In the midland counties brick pillars would be most convenient, stone being the staple commodity of this county. *Respondent.*

Stoppage of Drains by Roots of Trees.—Four inch collar-pipes, 2 inches in bore, were laid at the depth of 4 feet, each joint being made secure, and, as was supposed, impenetrable to roots by tow and red-lead; and yet several of them were completely choked by closely matted fibrous roots of a young Elm, which was growing within a few yards, so that no water would pass through. *J. C. Fordal.*

Does Live Stock Pay?—I have read with interest the communications on this subject by "S." and by "Aliquis." The whole question resolves itself into the price at which a ton of Turnips can be produced. Mr. M'Culloch (in Wigtonshire) is favourably situate for soil, climate, and purchase of lean stock, as compared with the average of the kingdom. I honour his talent and success, but must not conceal his advantages. The losses of "Aliquis" would have been greater but for the use of Rape-cake, which, as I have before stated, is equivalent in its constituents to oilcake, but only costs about half the price. Mr. Lawes's recent paper, in your columns, "On Turnips as Food," throws a clear light on this subject, and is a confirmation of other experiments recorded by him in the Royal Agricultural Society's Journal. He shows that a sheep of 100 lbs. live weight, or 7 stone of 8 lbs. dead weight, consumed of white Turnips, weekly, 155 lbs., or of Swedes, 90 lbs. Or, to sum up, that 10 tons of white Turnips only produced 75 lbs. of live weight, or 40 lbs. net dead weight of mutton, or at present prices 2*s*. 6*d*. per ton; and that 10 tons of Swedish Turnips only produced 54 lbs. live weight, or, at present prices of mutton, 1*s*. 10½*d*. per ton (the latter being diminished in value by an actual loss of weight in some of the sheep). In a general way, in our county, the price paid on Swedish Turnips is 3*d*. per Down sheep per week; and as a sheep will eat, when at liberty, fully a quarter of his net dead weight daily of Swedish Turnips, it follows that you get about 4*s*. to 4*s*. 6*d*. per ton for your Swedes, and about 2*s*. 6*d*. to 3*s*. for your white Turnips. In mild, dry, favourable weather the owner of the sheep may have the advantage; but in wet, cold, and unfavourable times, instead of putting on 3*d*. per head per week, the sheep absolutely lose weight, as has been the case lately, where they depended upon Turnips alone, unsheltered. I repeat that live stock are necessary, in order to keep up the fertility of our soil; but if you keep strict accounts of what they consume at market prices, be it hay, corn, or Linseed-cake (I except Rape-cake), you will find a balance of loss chargeable against their manure, and therefore I am justified in my original calculations and conclusions. *I. J. Mechi, Tiptree, Jan.* 21.

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

A MONTHLY COUNCIL was held last Wednesday, for the report of which unfortunately we have not, at the late hour at which it was received, been able to find room. It was largely attended: 30 new members were elected, and 50 candidates for election were named. Reports were read from the Finance, Veterinary, General Lincoln and Implement Committees. A special committee was appointed to confer with the Finance Committee, on the best means to be adopted for a reduction in the expenditure of the Society, especially in its country meeting department. In reference to the subject of farm poultry, it was resolved that a distinct steward of farm poultry should be appointed. The conditions of the prizes to be offered at Lincoln for cattle, horses, sheep, and pigs, were determined; and an offer of special prizes to the amount of 100*l*., made by J. J. Tweed, Esq., mayor of Lincoln, for the owners of hunters, and to the breeders of improved Lincoln sheep, was accepted. The Council adjourned to the 8th of February.

Poultry.

Spanish Fowls.—I have some black Spanish fowls which were brought from Lancashire last July, and have since been kept in the courtyard with the run of the adjacent shrubberies and park. On the 3d of January last, during the late frost, when the snow had been on the ground about a week, it was observed that the large wing feathers of one of the hens had become partly white. This whiteness has gradually increased, so as to form a broad irregular band on each side; the head is quite white, and a few white feathers are scattered over the body of the hen. She is about two years old, is in good health, and was entirely black, but had not got her feathers quite full grown, after moulting, when the change of colour began. The hen is well fed, and sheltered with several other Spanish fowls, which have not changed in appearance. We should be glad to hear if any of your correspondents have noticed a similar alteration in any of their poultry. *S. P., Gloucestershire.*

POULTRY: *Admirer of Polands.* Nothing can be worse than a brick-paved yard for poultry, and that alone will sufficiently account for any lack of condition they may suffer from. If, however, you have no other place in which to keep them, I would advise you to cover the bricks or part of them with at least 3 inches of gravel. Let the fowls be well provided with wood ashes in which to dust themselves, and supply them daily with sods of Grass. This I believe will restore their condition and amuse them. I think greaves or any other meat very bad food for fowls, and it often gives rise to that craving which makes the fowls appear dissatisfied. Whether for fatting or for condition, there is no better food than oatmeal slaked with water or milk, varied now and then with a little whole corn.—*A Suburban Novice.* Your hen has the roup, and the best thing you can do is to treat her with some of the remedies advertised in this paper.—*C H.* I do not think your Spanish cock's comb will ever become erect. The ulcer you complain of is almost universal among birds of this breed with lopped combs. The only treatment I should adopt would be to keep it clean by washing with warm water; and if by your ingenious process you succeed in making the comb upright, I would advise you to heal it as fast as you can by any process. You will deserve the thanks of all Spanish amateurs if you succeed. I have never known a fowl seriously injured by this ulceration of the comb.

Miscellaneous.

Deodorising Sewage Company.—On Monday last a number of gentlemen assembled at Northumberland Wharf, in the Strand, to witness experiments illustrative of the application of Stothert's patent, in the deodorising of sewage, which is to be put in operation by the above company. Their mode of proceedure at Northumberland Wharf is to pump up the sewage out of the sewer into a cistern sufficiently high to enable the liquid to run into a metal cylinder furnished with a hopper above it, and an agitating apparatus inside. The hopper contains caustic lime, which, by a mechanical arrangement connected with the pumping machinery, is admitted in small quantities into the cylinder and there mixed with the liquid sewage which flows through a short connecting pipe into another cylinder, exactly like the first, except that its hopper contains powdered charcoal mixed with a little sulphate of alumina instead of lime. This deodorises the sewage, which, charged with the contents

* If it be desired to use this manure in a more concentrated state, so that the whole of the bone may be available for the root crop, one part of acid to two parts of bone, by weight, should be employed.

of the two hoppers, is forced through a gutta percha pipe into a cistern in two divisions—one to catch the thick part of the sewage, the other containing a filter of sand and charcoal—which effectually separates the sewage from the water, and out of which the latter flows in a clear state, and quite free from smell. The solid deposit found in the first compartment of the filtering cistern is formed into bricks, which are dried on thin iron plates in a gas stove, and are thus rendered portable, and they are nearly without smell. But in addition to the solid matter, the "supernatant," or clear water which issues from the filter, is also stated to be very valuable as manure. The charcoal employed for deoderising is itself prepared from the dried sewage, in order that all the ingredients used may be of a highly fertilising character.

Calendar of Operations.

JANUARY.

BERWICKSHIRE MERSE FARM, *Jan.* 31.—During the past five weeks we have experienced great vicissitudes of weather. A severe frost set in the day after Christmas; and an east wind brought a fall of snow to the depth of a foot here, and far more in Lammermuir, where a subsequent change of wind to the west soon drifted up nearly all the public roads, and put a stop to all traffic. Though we might have wished our ploughing further advanced, so as to give the land the benefit of frost, yet we were glad to get good hard roads for the carting out of our dung—an operation which was performed under very different auspices last season. Where Turnip stores were insufficient, there was much difficulty in obtaining anything eatable for sheep; for roots were frozen hard before the snow fell. In Lammermuir, stock had to be regularly foddered with hay; but people, profiting by dear-bought experience last spring, have a plentiful supply of that article, so essential in the hills. Our deep streams afforded capital skating; and the rapids were choked by ice gradually accumulating on the bottom, while the weather was clear and calm the first week of the new year. A further fall of snow, however, was followed by a driving east wind and rain for two days; and the streams, swollen beyond all bounds by the sudden thaw of accumulated snows, broke up the thick ice in massive blocks, and, getting gorged up at every obstruction, carried away a large mill weir, besides flooding all haughs and barking the Alder trees to a height of 7 or 8 feet above ordinary water mark. This temporary fresh gave place to more snow and frost, but much less severe than before. But at length the wind shifted to the south, and in a single day all the snow had disappeared quietly under a mild and clear sky. Ploughs resumed operations 10 days ago, after lying idle for fully three weeks, and found the land much opened and improved by the unusually penetrating frosts. A thunder-storm which passed up the water on that day has proved the precursor of a series of gales from the south and west, which increase in violence as the day advances, and appear to reach a climax at midnight. They have been accompanied by heavy clouds, and the fluctuations of the barometer have been uncommonly great. Turnip land is now thoroughly dried; and some small breaks have been ploughed and sown in good order. What is up of winter Wheat looks well. Swedish Turnips are turning out better than was anticipated; and they will probably be sufficient to feed off all the stock, with the assistance of an extra quantity of cake and Beans. Feeding hoggs have been healthy since the new year, though making but little improvement. Turnips command extreme rates, 6*d*. per week being now given for cutting Swedes to bred hoggs. The Wheat market has revived after a temporary dulness. Barley and Oats are rising too, especially the latter, which is likely to be scarce. *J. S.*

Notices to Correspondents.

AGRICULTURAL SOCIETY'S JOURNAL; *A New Subscriber*. No 32 is Part II. of last year's volume, to which members of the present year are not entitled.

ANNUAL AVERAGES OF WHEAT. *Inquirer*. We correct our former reply as follows:—1850, 40*s*. 3*d*.—1851, 38*s*. 6*d*.—1852, 40*s*. 9*d*.—1853, 53*s*. 3*d*.

AVERAGES: *M Saul*. Your report was not published, simply because it stated not the average of a district, but (we presume) the average of a farm; 59 bushels of Wheat per acre is incredible if intended as the return for a district, *i. e.*, if the imperial measures were meant: and, if imperial measures were not meant, it was unintelligible—either way, therefore, it was useless to publish it.—*Mark Lane*. The averages given by us are the latest that can be obtained from the official authorities.

BOOK-KEEPING: *D N C*. Read the article on the subject in Blackie's Cyclopedia. That states the principles sufficiently clearly to guide any one to a sound practice.

EGYPTIAN WHEAT: *Anon*. It cannot be procured at under about 64*s*. per quarter of 448 lbs. You can obtain it at Mark Lane on these terms.

MUD: *C G*. Let it drain and dry, then turn it over and make a lime compost with it before using it on the Grass.

MUSH: *H E S* says, add half a tea-spoonful of salt to half a pint of Indian corn meal, gradually mix with a quart of cold milk, or water, boil for 10 or 12 minutes, eat with sugar, molasses, or jam. Another recipe for porridge: Of a spoonful each of Indian meal and Wheat flour, make thin batter, pour it into a a quart of boiling milk and water, salt to taste, boil 10 minutes.

PEAT-DRAINING PIPES: *H W*. They were used, we believe, by the late Mr. Smith, on the Island of Lewis, and he spoke highly of them; but we are not sure of the ultimate result of his operations there.

ROOFED STACK-YARD. *Derby* can see a roofed stack-yard, which also answers the purpose of a cattle-shed, on Lord Berners' property at Tugby, Leicestershire.

SPADE HUSBANDRY: *Clericus*. We presume that you must apply direct to Mr. Yule.

TOP-DRESSING: *H W W*. The manures applied as top-dressing ought to depend on the character of the soil. If the land is poor, guano, soot, nitrate of soda, and other nitrogenous manures, ought to be applied. If it is rich, salt and lime might be useful. We should prefer the English threshing-machine. The best French flour is, we believe, considered superior to the English; but we do not know the cause. Bushe's root-grater, to which you refer, is manufactured in Ireland; they should advertise for themselves.

ERRATUM. In the article on Cattle Feeding, in lieu of the text as it is (p. 59, col. *a*, line 50), please insert, "If we take 5 lbs. of Linseed-cake to be equal in nutritive property to 1 cwt. of Turnips, valued at 9*l*. per ton, the cost of 100 lbs. will be 8*s*., and will represent the like value per ton of Turnips." The chief object of my former paper was to draw the attention of your readers to the impolicy of giving large supplies of Linseed-cake. I am aware that in some of our principal feeding districts (Norfolk, &c.) it is no uncommon thing to give as much as 12 lbs. per day in the advanced stage of feeding. I am equally opposed to the system of feeding wholly on Turnips, though I have left this more to be inferred by your readers from the data afforded. I am persuaded that if food to fatten be given wholly in Turnips, it will entail a cartage of 6 tons per week more of moisture, or water alone, than is requisite for the wants of the animal; and to those who, like myself, carefully husband the whole of the excrement, solid and liquid, and cart it back by horse to the land, nearly a like additional burden in weight of manure, without any increase in its value. *Y.*

ART UNION OF LONDON (BY ROYAL CHARTER).—Every Subscriber of one Guinea will have an impression of a large plate of deep national and historical interest, "TILBURY FORT: WIND AGAINST TIDE," by J. F. WILLMORE, A.R.A., after C. STANFIELD, R.A. The impression will be ready on the 13th instant. Each Prizeholder will be entitled to SELECT FOR HIMSELF, as heretofore, a work of art from one of the public exhibitions.

GEORGE GODWIN, LEWIS POCOCK, } Hon. Secs.
444, West Strand, Feb. 1.

WESTMINSTER ABBEY OR VICTORY.—NELSON at the BATTLE of ST. VINCENT.—LEGGATT, HAYWARD, and LEGGATT beg to inform their Patrons and Friends that T. Jones Barker's last grand historical PICTURE of NELSON RECEIVING the SWORDS from the vanquished Officers on the Quarter-deck of the SAN JOSEF, on the memorable 14th of February, 1797, at the Battle of St. Vincent, is NOW ON VIEW at their Gallery, 79, Cornhill.

Court Circular, Nov. 24, 1853.—Windsor.—"Messrs. Leggatt had the honour of submitting to Her Majesty and His Royal Highness Prince Albert, Barker's painting of Nelson receiving the swords of the officers on the quarter-deck of the San Josef after the battle of St. Vincent."

In consequence of the unfavourable state of the weather, the picture is exhibited by gas-light, and may be viewed from 10 till 6.

TO NERVOUS SUFFERERS.

A RETIRED CLERGYMAN having been restored to health in a few days, after many years of great nervous suffering, is anxious to make known to others the means of cure. Will, therefore, send (free), on receiving a stamped envelope (properly addressed), a copy of the prescription used.—Direct to the Rev. E. DOUGLAS, 18, Holland Street, Brixton, London.

QUALITY THE TEST OF CHEAPNESS.

BERDOE'S OVERCOATS AND CAPES resist any amount of rain. One of the largest Stocks in London of Superior GARMENTS at Lowest Charges. First-Class DRESS COATS, 3*l*.; BOY'S SUIT, 11*d*. per inch, according to height.—96, New Bond Street, and 69, Cornhill. (Nowhere else.)

NO CHARGE FOR STAMPING ARMS, CRESTS, INITIALS, &c., on paper and envelopes, at LOCKWOOD'S well-known establishment, 75, New Bond Street. Good cream-laid Note-paper, five quires for 9*d*.; Thick ditto, five quires, 1*s*.; Albert and Queen's sizes, five quires for 6*d*., 9*d*., and 1*s*.; Envelopes, 3*d*. to 1*s*. 6*d*. per hundred; Foolscap paper, 7*s*. 6*d*. per ream; Copybooks, 2*s*. 6*d*. per dozen. Card Plate engraved, 2*s*. 6*d*.; 100 Cards printed, 2*s*. 6*d*. Mourning Stationery equally cheap. Wedding Orders promptly executed. A large variety of Writing and Dressing Cases, Envelope Boxes, Blotting Books, Inkstands, Gold Pens, Church Services, &c. Copy address, LOCKWOOD'S, 75, New Bond Street. Country orders for 20*s*. sent carriage free.

WM. HALSE'S FIVE GUINEA APPARATUSES are now ready.—Invalids are solicited to send to Mr. W. HALSE, of 22, Brunswick Square, London, for his Pamphlet on MEDICAL GALVANISM, which will be forwarded free, on receipt of two stamps. In it will be found the particulars of cures in cases of asthma, rheumatism, sciatica, tic doloureux, paralysis, spinal complaints, headache, deficiency of nervous energy, liver complaints, general debility, indigestion, stiff joints, nervous disorders, &c. Mr. HALSE'S method of applying the galvanic fluid is quite free from all unpleasant sensation. Terms: One Guinea per week. The above Pamphlet contains his Letters on Medical Galvanism.

QUANTITY AND QUALITY OF THE HAIR.

NO TOILET can be considered complete without a careful attention to that department which so materially affects the entire contour, viz., the Hair, which, both in quantity and quality, is susceptible of the most material alteration. That which is weak can be strengthened, and be made to receive a most beautiful gloss by artificial applications. It is to its extraordinary and valuable properties in these respects that is due the character of C. AND A. OLDRIDGE'S BALM OF COLUMBIA, for its invigorating, nutritious, and regenerative qualities. OLDRIDGE'S BALM causes Eyebrows to grow, prevents the Hair from turning grey, and the first application causes it to curl beautifully, frees it from scurf, and stops it from falling off. Price 3*s*. 6*d*., 6*s*., and 11*s*. per bottle. No other prices are genuine.—N.B. Ask for OLDRIDGE'S BALM, 13, Wellington Street North, Strand, London.

DO YOU WANT BEAUTIFUL HAIR, WHISKERS, MOUSTACHES, &c.?—ALICE MELVILLE'S PALMAPILLA is the only real remedy ever discovered for preserving and restoring the Hair. In all cases it strengthens weak hair, prevents its falling off, checks greyness, produces a thick and luxuriant growth, dispelling scurf and dandriff, and making it clean, soft, curly, and glossy. For baldness arising from any cause, its operation is certain and effective; and for the production of Whiskers, Moustaches, Eyebrows, &c. in a few weeks, it is the only stimulant that can be depended upon. Price 2*s*. 6*d*. per case. Sent post free to any part of the World, on receipt of 30 penny postage stamps, by Miss MELVILLE, 25, Argyle Square, King's Cross, London. Sold by every Chemist.

Miss MELVILLE'S PURE LIQUID HAIR DYE. Price 2*s*. 6*d*.; post free for 42 postage stamps.

CLOSE OF HOLIDAYS.—The return of Youth to their respective Boarding Schools induces a solicitude from Parents and Guardians for their Personal Comfort and Attraction, and ROWLANDS' MACASSAR OIL, for accelerating the growth and improving and beautifying the hair, ROWLANDS' KALYDOR, for improving the skin and complexion, and removing cutaneous eruptions, and ROWLANDS' ODONTO, or Pearl Dentifrice, for rendering the teeth beautifully white, and preserving the gums, are considered indispensable accompaniments for the attainment of those Personal Advantages so universally sought for and admired. BEWARE OF SPURIOUS IMITATIONS. The only GENUINE of each bears the name of "Rowlands" preceding that of the article on the wrapper or label.—Sold by A. ROWLAND AND SONS, 20, Hatton Garden, London, and by Chemists and Perfumers.

CURE OF CHRONIC COUGH, BY DR. LOCOCK'S PULMONIC WAFERS.—From Mr. J. Smedley, Bookseller, Sleaford, Oct. 22, 1853.—Gentlemen,—I can speak with confidence, particularly of the Pulmonic Wafers, with which I have been not only relieved, but cured, of a Chronic Winter Cough. Hundreds of boxes I have sold, and still the sale is as great as ever. Signed J. Smedley.—Dr. LOCOCK'S Pulmonic Wafers give instant relief and a rapid cure of Asthma, Coughs, and all disorders of the breath and lungs. To singers and public speakers they are invaluable, for clearing and strengthening the voice. They have a most pleasant taste. Price 1*s*. 1½*d*., 2*s*. 9*d*., and 11*s*. per box.—Sold by all Chemists.

PAINS IN THE BACK, GRAVEL, LUMBAGO, RHEUMATISM, GOUT, INDIGESTION, FLATULENCY, NERVOUSNESS, DEBILITY, &c.

DR. DE ROOS' COMPOUND RENAL PILLS, as their name Renal (or the Kidneys) indicates, are a most safe and efficacious remedy for the above dangerous complaints. For depression of spirits, incapacity for society, study, or business, giddiness, drowsiness, nervousness, and insanity itself, when arising from or combined with urinary diseases, they are unequalled. Price 1*s*. 1½*d*., 2*s*. 9*d*., 4*s*. 6*d*., 11*s*., and 33*s*. per Box, through all Medicine Vendors, or sent (free) on receipt of the amount in postage stamps, by Dr. DE ROOS, 35, Ely Place, Holborn, London. At Home for consultation daily from 11 till 1, and 5 till 8, Sunday excepted. Advice and Medicines, 1*l*.

FENDERS, STOVES, AND FIRE-IRONS.—Buyers of the above are requested, before finally deciding, to visit WILLIAM S. BURTON'S SHOW ROOMS, 39, Oxford Street (corner of Newman Street), Nos. 1 and 2, Newman Street, and and 5, Perry's Place. They are the largest in the world, and contain such an assortment of FENDERS, STOVES, RANGES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with bronzed ornaments and two sets of bars, 2*l*. 14*s*. to 5*l*. 10*s*.; ditto with ormolu ornaments and two sets of bars, 5*l*. 10*s*. to 12*l*. 12*s*. Bronzed Fenders complete, with standards, from 7*s*. to 3*l*.; Steel Fenders from 2*l*. 15*s*. to 6*l*.; ditto, with rich ormolu ornaments, from 2*l*. 15*s*. to 7*l*. 7*s*.; Fire-irons from 1*s*. 9*d*. the set to 4*l*. 4*s*. Sylvester and all other Patent Stoves, with radiating hearth plates. All which he is enabled to sell at these very reduced charges,

1st,—From the frequency and extent of his purchases; and,
2dly,—From those purchases being made exclusively for cash.

THE PERFECT SUBSTITUTE for SILVER.—The real NICKEL SILVER, introduced 20 years ago by WILLIAM S. BURTON, when Plated by the patent process of Messrs Elkington & Co., is beyond all comparison the very best article next to sterling silver that can be employed as such, either usefully or ornamentally, as by no possible test can it be distinguished from real silver.

	Fiddle Pattern.	Thread or Brunswick Pattern.	King's Pattern.
Tea Spoons, per dozen	18*s*.	26*s*.	32*s*.
Dessert Forks "	30*s*.	40*s*.	46*s*.
Dessert Spoons "	30*s*.	42*s*.	48*s*.
Table Forks "	40*s*.	56*s*.	64*s*.
Table Spoons "	40*s*.	58*s*.	66*s*.

Tea and Coffee Sets, Waiters, Candlesticks, &c., at proportionate prices. All kinds of replating done by the patent process.

CHEMICALLY PURE NICKEL, NOT PLATED.

	Fiddle.	Thread.	King's
Table Spoons and Forks, full size, per doz.	12*s*.	28*s*.	30*s*.
Desert ditto and ditto	10*s*.	21*s*.	25*s*.
Tea ditto	5*s*.	11*s*.	12*s*.

CUTLERY WARRANTED.—The most varied assortment of TABLE CUTLERY in the world, all warranted, is on Sale at WILLIAM S. BURTON'S, at prices that are remunerative only because of the largeness of the sales 3½-inch ivory-handled table knives, with high shoulders, 11*s* per dozen; desserts to match, 10*s*.; if to balance, 1*s*. per dozen extra; carvers, 4*s*. per pair; larger sizes, from 14*s*. 6*d*. to 26*s*. per dozen; extra fine, ivory, 32*s*.; if with silver ferrules, 37*s*. to 50*s*. white bone table knives, 7*s*. 6*d*. per dozen; desserts, 5*s*. 6*d*. carvers, 2*s*. 3*d*. per pair; black horn table knives, 7*s*. 4*d*. per dozen; desserts, 6*s*.; carvers, 2*s*. 6*d*.; black wood-handled table knives and forks, 6*s*. per dozen; table steels, from 1*s*. each. The largest stock in existence of plated dessert knives and forks, in cases and otherwise, and of the new plated fish carvers. Also a large assortment of Razors, Penknives, Scissors, &c., of the best quality.

THE BEST SHOW OF IRON BEDSTEADS in the Kingdom is WILLIAM S. BURTON'S.—He has two very Large Rooms, which are devoted to the exclusive show of Iron and Brass Bedsteads and Children's Cots, with appropriate Bedding and Mattresses. Common Iron Bedsteads from 15*s*. 6*d*. Portable Folding Bedsteads from 12*s*. 6*d*.; Patent Iron Bedsteads, fitted with dovetail joints and patent sacking, from 21*s*.; and Cots from 21*s*. each; handsome Ornamental Iron and Brass Bedsteads, in great variety, from 2*l*. 19*s*. to 13*l*. 13*s*.

GAS CHANDELIERS AND BRACKETS.—The increased and increasing use of gas in private houses has induced WILLIAM S. BURTON to collect from the various manufacturers all that is new and choice in Brackets, Pendants, and Chandeliers, adapted to offices, passages, and dwelling-rooms, as well as to have some designed expressly for him: these are now ON SHOW in one of his TEN LARGE ROOMS, and present for novelty, variety, and purity of taste, an unequalled assortment. They are marked in plain figures, at prices proportionate with those which have tended to make his Ironmongery Establishment the largest and most remarkable in the kingdom, viz. from 12*s*. 6*d*. (two lights) to 16*l*. 16*s*.

WILLIAM S. BURTON has TEN LARGE SHOW ROOMS (all communicating), exclusive of the shop, devoted solely to the show of GENERAL FURNISHING IRONMONGERY (including Cutlery, Nickel Silver, Plated and Japanned Wares), Iron and Brass Bedsteads, so arranged and classified that purchasers may easily and at once make their selections.

Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of.

No. 39, Oxford Street (corner of Newman Street); Nos. 1 and 2 Newman Street; and 4 and 5, Perry's Place.

HEAL & SON'S ILLUSTRATED CATALOGUE of BEDSTEADS, sent free by post; it contains designs and prices of upwards of 100 different Bedsteads, in iron, brass japanned wood, polished birch, mahogany, rosewood, and walnut tree woods; also of every description of bedding, blankets, and quilts.—HEAL & SON, Bedstead and Bedding Manufacturers, 196 Tottenham Court Road.

THE ROYAL EXHIBITION.—A valuable, newly-invented, very small, powerful, waistcoat-pocket Glass, the size of a Walnut, to discern minute objects at a distance of from 4 to 5 miles, which is found to be invaluable for YACHTING, and to SPORTSMEN, GENTLEMEN, and GAMEKEEPERS.

TELESCOPES.—A new and most important invention in Telescopes, possessing such extraordinary powers that some—3½ inches, with an extra eye-piece—will show distinctly Jupiter's Moons, Saturn's Ring, and the Double Stars. They supersede every other kind, and are of all sizes—for the waistcoat-pocket, Shooting, Military purposes, &c. Opera and Race-course Glasses with wonderful powers; a minute object can be clearly seen from 10 to 12 miles distant. Invaluable Acoustic Instruments for relief of extreme Deafness.

Messrs. S. & B. SOLOMONS, Opticians and Aurists, 39, Albemarle Street, Piccadilly, London, opposite the York Hotel.

METCALFE AND CO.'S PERFUMERY DEPARTMENT.—PROPRIETARY ARTICLES.—METCALFE'S celebrated ALKALINE TOOTH POWDER is acknowledged as the safest and most efficient now in use. Dupuytren's Medicated Pomade is the most certain remedy for preventing the hair prematurely falling off, and for restoring it when baldness has already commenced. Dupuytren's Medicated Balm strengthens, cleanses, and improves the growth, and is generally acknowledged as the best wash for the hair.—Manufacturers of British and Importers of Foreign Soaps, Perfumery, and J. M. Farina's genuine Eau de Cologne, at METCALFE, BINGLEY, & Co.'s only Establishment, 130B and 131, Oxford Street, second and third doors west from Holles Street.

ATKINSON AND BARKER'S ROYAL INFANTS' PRESERVATIVE.—Mothers, call at your Druggist's and purchase a bottle of the above. It is the best medicine in the world for infants and young children for the prevention and cure of those disorders incident to infants; affording instant relief in Convulsions, Flatulency, Affections of the Bowels, Difficult Teething, &c. &c., and may be given with safety immediately after birth. It is no misnomer cordial! no stupefactive, deadly narcotic! but a veritable preservative of infants! Mothers would act wisely in keeping it always in the nursery.—Prepared only by ROBERT BARKER, Bowden, near Manchester (Chemist to Her Most Gracious Majesty Queen Victoria), in bottles at 1*s*. 1½*d*., 2*s*. 9*d*., and 4*s*. 6*d*. each. CAUTION.—Observe the names of "Atkinson & Barker" on the Government Stamp.

GLASS.

THOMAS MILLINGTON, Importer of Foreign Sheet Glass, requests attention to the present Prices of Glass and Stock sizes, which are cheaper and better than those of English manufacture :—

PACKED IN ONE HUNDRED FEET BOXES, THIRDS QUALITY, BOXES INCLUDED.

Inches.	Per 100 ft.	Inches.	Per 100 ft.	Inches.	Per 100 ft	Inches.	Per 100 ft.	Inches.	Per 100 ft.	Inches.	Per 100 ft.
Under 6 by 4,	8s. 6d.	12 by 10		14 by 11		16½ by 12½		18 by 13		18 by 14	
6½ by 4½ ...	12s.	12½ „ 10½		14½ „ 11½		17 „ 12		18½ „ 13½		18½ „ 14½	
7 „ 5		13 „ 10		15 „ 11		17½ „ 12½		19 „ 13		19 „ 14	
7½ „ 5½	13s. 6d.	13½ „ 10½	18s.	15½ „ 11½		18 „ 12		19½ „ 13½		19½ „ 14½	
8 „ 6		14 „ 10		16 „ 11		18½ „ 12½		20 „ 13		20 „ 14	
8½ „ 6½		14½ „ 10½		16½ „ 11½		19 „ 12		20½ „ 13½		20½ „ 14½	
9 „ 7		15 „ 10		17 „ 11	20s.	19½ „ 12½	20s.	21 „ 13	20s.	21 „ 14	20s.
9½ „ 7½		15½ „ 10½		17½ „ 11½		20 „ 12		21½ „ 13½		21½ „ 14½	
10 „ 8		16 „ 10		14 „ 12		20½ „ 12½		22 „ 13		22 „ 14	
10½ „ 8½	18s.	16½ „ 10½		14½ „ 12½		16 „ 13		16 „ 14		22½ „ 14½	
11 „ 9		17 „ 10	20s.	15 „ 12		16½ „ 13½		16½ „ 14½		23 „ 14	
11½ „ 9½		17½ „ 10½		15½ „ 12½		17 „ 13		17 „ 14		23½ „ 14½	
12 „ 9		13 „ 11		16 „ 12		17½ „ 13½		17½ „ 14½		24 „ 14	
12½ „ 9½		13½ „ 11½									

IMPROVED PATENT ROUGH PLATE, PLAIN, FLUTED, AND IN QUARRY PATTERNS.
British Plate, Patent Plate, Sheet, Crown, and Coloured Window Glass. Pure White Shades for Ornaments.
Pumps, Water Closets, and Plumbers' Brass Work. Genuine White Lead, Paint, Colours, Varnishes, Brushes, &c.
Tariffs of the above on application to

T. MILLINGTON, 87, Bishopsgate Street Without, London.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

HETLEY AND CO. are supplying 16-oz. Sheet Glass of British Manufacture, packed in boxes, containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

Sizes.—Inches.	Inches.		Per foot.		Per 100 feet
	Under 6 by 4	at	1½d.	is	£0 12 6
From 6 by 4	„ 7 „ 5	„	2d.	„	0 16 8
7 „ 5	„ 8 „ 6	„	2¼d.	„	0 18 9
8 „ 6	„ 10 „ 8	„	2½d.	„	1 0 10
10 „ 8	„ 12 „ 9	„	2¾d.	„	1 2 11

Larger sizes, not exceeding 40 inches long.
16 oz. from 3d. to 3½d. per square foot, according to size.
21 oz. „ 3½d. to 5d. „ „ „
26 oz. „ 3½d. to 7½d. „ „ „

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

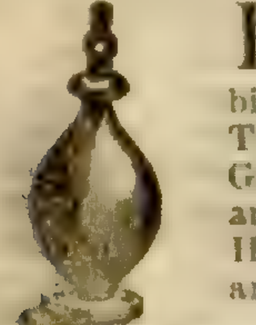
GLASS TILES AND SLATES made to any size or pattern, either in sheet or Rough Plate Glass.

Propagating Glasses, Beehive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in Glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the excise duty, reduced one-half. List of Prices and Estimates forwarded on application to JAMES HETLEY & Co., 35, Soho Square, London.

TO AMATEUR GARDENERS, LOCAL BOARDS OF HEALTH, & SANITARY WORKS.



PATENT GLASS TUBES, Iron Coated with Glass, Gutta Percha, Combinated ditto, Patent Flexible India Rubber Tubing, and every other Hose for Watering Gardens. The Hydraulic Ram, Fire, Garden, and every other kind of Pump, Sluice Cocks, Hydrants, High Pressure Cocks, and all other articles to be had, Wholesale and Retail, of

FREEMAN ROE,
HYDRAULIC ENGINEER,
70, trand, and Bridgefield, Wandsworth.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

FRUIT TREES, POULTRY, RABBIT, SHEEP, and CAT FENCING.—Worsted Netting to protect the Bloom of Peach, Nectarine, and other Trees, Flower, or Seed Beds from Frost, Blight, and Birds, 2 yards wide, 5d. per yard. NEW TWINE NETTING (Tanned if required), 1 yard wide, 1½d. per yard; 2 yards wide, 3d. per yard; 4 yards wide, 6d. per yard: Half-inch Mesh ditto, 2 yards wide, 6d. per yard. TANNED NETTING, 2 or 3 yards wide, 1½d. per yard. ELASTIC HEXAGON GARDEN NET, or Scrim Canvas, 4½d. per square yard. COCOA NUT FIBRE, or Hemp Sheepfolding Net, of superior quality, 4 feet high, 4d. to 6d. per yard. Rabbit Net, 4 feet wide, 1½d. per yard; 6 feet wide, 2½d. per yard; 8 feet wide, 3d. per yard. Each Edge Corded, ½d. per yard extra, suitable for Poultry Fencing. Square Mesh Cricketing Net, fix its full width and length, made of stout cord, 3d. to 4d. per square yard; this is the best article made for fencing, against fowls, cats, &c. Orders by post with post-office order or town reference, punctually attended to. The Trade supplied. Fishing Nets of all kinds in stock. Tents, Marquees, Rick Cloths, Tarpaulin, Lines, Rope, Twine, &c., at W. CULLINGFORD'S, 1, Edmund-terrace, Ball's Pond-road, Islington, London.

CUCUMBER AND MELON BOXES AND LIGHTS.—One hundred 1, 2, and 3-light Boxes and Lights of all sizes, ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom: 2-light Boxes and Lights from 1l. 6s. Garden Lights of every description, Conservatories, Green and Hothouses made and fixed in all parts of the kingdom. References given to the nobility, gentry, and the trade, in most of the counties in England.—JAMES WATTS, Hothouse Builder, Claremont Place, Old Kent Road, London.

THE VINE DISEASE EFFECTUALLY CURED BY WATSON'S BLIGHT EXTERMINATOR AND PREVENTIVE For present application to Grape Vines, Fruit Trees, &c.—Price 2s 6d. per bottle. Sold by H. WATSON, 198, Shoreditch; W. DENYER, 82, Gracechurch Street; and by all Florists and Seedsmen.

WILLIAM MASTERS AND SON, LANDSCAPE GARDENERS, respectfully solicit commissions for the arrangement and improvement of Parks, Plantations, and Gardens. Having an extensive collection of Ornamental Trees, Shrubs, Coniferæ, and Evergreens, among which will be found the newest introductions, they are enabled to treat with Gentlemen on the most liberal terms by contract or otherwise.
Exotic Nursery, Caterbury.

THE COTTAGER'S STOVE.—An economical, compact, and portable COOKING APPARATUS, combining a good sized Oven and Hotplate; may be had with or without a boiler, and will cook sufficient for a dozen persons with the consumption of 1 lb. of coal or coke per hour. It requires no fixing, may be placed in any apartment, and is a great security against accidents from fire. It will burn Coal, Coke, or Wood. They are also specially adapted for Emigrants, and may be seen in operation daily, at the Manufacturers', D. & E. BAILEY, 272, High Holborn, London.—Price 50s., and upwards.

GREAT SAVING OF TIME AND MONEY.

R. RESTELL'S PATENT ECONOMICAL GAS APPARATUS for Forcing Houses, Greenhouses, Conservatories, Pits, Shops, Counting Houses, Warehouses, Drying Rooms, &c. &c., possessing all the advantages of Hot Water at half the expense of fitting, and most trifling cost for Gas, far surpassing any ordinary Gas Stove, requiring no furnace, and allowing of no fumes or evaporation in the Building, or possibility of accidents from negligence or carelessness. It has been tested through the late severe weather, on a variety of Plants, and found most satisfactory. It is very quickly fitted up and requires no night attention.—Apply to the Inventor and Patentee, R. RESTELL, 35, High Street, Croydon, Surrey.

Persons wishing to have Houses fitted will please to send the height and dimensions.

FIRE ANNIHILATOR, OR VAPOUR FIRE ENGINE.—Its practical value proved incontestably by 23 remarkable cases of successful use. See "Bradshaw" of last month, p. 132. Engines for Dwelling-houses, 3l. to 4l.—Office of the Fire Annihilator Company, 105, Leadenhall Street, London.

THE BEST FOOD FOR PIGS.

RICE MEAL is now acknowledged to be the best and cheapest FOOD FOR PIGS. References can be given to the largest feeders in England, and to several who won prizes at the last Smithfield Cattle Show. In order that small consumers may test its merits, 4 cwt. of Rice Meal will be sent for Post-office order of 2l. 2s., including sacks.

RICE MEAL ... ... 9l. per ton.

JAMES MAY & Co., Finsbury Wharf, City Road Basin, London. Delivered to any Railway in London.
1s. 6d. each charged for Sacks.

A BARGAIN TO PERSONS PLANTING.

TO BE SOLD, a quantity of large EVERGREENS; the ground must be cleared:—Cedar of Lebanon, Sweet Bays, Evergreen Oaks, China Arbor-vitæs, Laurestinus. Delivered free within 10 miles of London.—G. C. LEWIS SOLOMONS, Covent Garden Market.

TO BE SOLD, a SEED BUSINESS in one of the principal towns in the North of England. The premises are situated in the best business part of the town, are extensive and calculated for carrying on a large trade.—For further particulars, or to treat, apply, with real name and address, to A. Z., Office of this Paper. N.B. A Nursery Stock may also be had at a valuation, if desired.

DENYER'S NURSERY, celebrated for ROSES, &c., Established 26 years, consisting of Five Acres of Land, House and Seed Shop attached, of which a 14 years' Lease will be granted. The Proprietor being about to retire, is desirous of offering the above, as an opportunity that rarely occurs to the trade, with a first-rate ready-money connexion, and the Stock to be taken at a valuation, two-thirds to be paid on taking possession; time will be given to pay the balance. No Goodwill is expected.—Apply to Messrs. PROTHEROE & MORRIS, Leytonstone, Essex; or Mr. E. DENYER, on the premises, Loughborough Road, Brixton, within three miles of London.

TO BE SOLD, a splendid BLACK PEACOCK, 8 years old; also a pair of common coloured and same age.—Apply to Mr. M. TRUMPER, Tenbury.

CLEAR BUFF COCHIN CHINA FOWLS' EGGS may be had of Mr. GILBERT, Wine Merchant, Grays, Essex, from Hens bred by Thomas Sturgeon, Esq., in 1852, and reserved for stock at 16s. per dozen. They are unequalled for beauty, plumage, short legs, and great weight, with perfect clear golden hackle, and many of them falcon hockled. Also 50 very splendid first-class PULLETS for sale, nearly all clean in hackle. May be seen at any time.

EGGS FROM FIRST PRIZE STOCK.

W. G. K. BREAVINGTON begs to offer EGGS from his Prize Aylesbury Ducks, from the Dorkings which took first Prize at Southampton and Surrey Gardens mixed with some of Mr. Boys' stock, and a set of young Birds with which Capt. Hornby has just taken second Prize at Manchester; first Prize Cockerel, purchased of him regardless of cost; together with the Hen with which W. G. K. B. obtained second Prize (for *the best* hen) at the Baker-street Exhibition, and a few others of the same strain; from his Silver Buff Cochins, very light and beautiful, *commended at Birmingham*. All orders booked and executed in *strict rotation*. The Eggs will be sent out as soon as a sitting of 12 is laid. W. G. K. B. will guarantee the Eggs to be quite *fresh and perfect* when he packs them, which he will do with the utmost care. Price three guineas per dozen. Post-office orders payable to WILLIAM G. K. BREAVINGTON, Sutton, near Hounslow, Middlesex.

A set of Prize White Cochin Bantams, very heavily feathered, and a set of Prize Pencilled Hamburghs for sale, 3l. 3s. each set.

TO AMATEURS.

TO BE SOLD, FANCY FOWLS AND EGGS.—Pure-bred Malays, that took prizes at Great Yarmouth and Norwich; White-faced Spanish, Progeny of Birds advertised in the *Times*, with challenge of 50l. to produce 12 to match them; Cochins, short-legged and well-feathered.—Address, J. C. DOWSING, Great Yarmouth.

CLEAR YELLOW COCHINS.—Eggs may be had from four pullets of "Sturgeon" blood, running with a cock bred by Mr. Fairlie, all pale yellow birds; 10s. per dozen, package included. Eggs from "commended" Spanish birds at the same rate.—E. T. A, Loddon, Norfolk.

GOLDEN SPANGLED HAMBURGH.—Eggs from Prize Birds may be obtained on application to Mr. TAYLOR, Godalming, Sussex.

TO BE SOLD, several first-rate DORKING COCKERELS.—For particulars address (inclosing a prepaid envelope), WILLIAM POPE, Compton Pauncefoot, Castle Carey.

COCHIN CHINA.

TO BE SOLD, a Lemon-coloured Cock, a Prize Bird at Exeter, Honiton, and Torquay. Price Three Guineas. A Cockerel, same colour, a Commended Bird as a Chicken. Price One Guinea.—Apply to Mr. HEAD, The Briars, Alphington, Exeter.—Feb. 4, 1854.

FOWLS.

TO BE SOLD, the EXTRA STOCK of a Gentleman whose Poland Fowls have taken first-class prizes at the Birmingham, Metropolitan, London Summer, Cheltenham, Hitchin, &c., Shows, consisting of white, golden, silver, and black bearded Polands. Cockerels, 30s. each; hens, 2l. 10s.; yellow Polands, 4l. each; white Spanish and frizzled cockerels, 1l. 1s.; hens, 1l. 10s.; buff Cochins, and white silk bantams, 15s. each; prize white guinea fowls, 10s. each.—Apply by letter to G. V., Mr. Ridgway's, 169, Piccadilly, London.

Sales by Auction.

FANCY POULTRY.

MR. J. C. STEVENS will Sell by Auction at his Great Room, 38 King-street, Covent Garden, on TUESDAY, 14th February, at 12 o'clock precisely, a first rate selection of Fancy Poultry, from the yards of Mrs. Hosier Williams, of Eaton Mascott, and the Rev. R. Corbett, of Harnage, Shrewsbury; it includes buff, white, and black Cochins, coloured Dorkings, and fancy Bantams, bred from some of the most celebrated birds in England.—Catalogues by inclosing a stamped directed envelope to Mr. J. C. STEVENS, 38, King-Street, Covent Garden.

FANCY POULTRY.—PERIODICAL SALE.

MR. J. C. STEVENS will Sell by Auction at his Great Room, King-Street, Covent-garden, on TUESDAY, 7th of February, at 12 o'clock precisely, many very choice specimens of Brahma Pootra, Cochin China, Coloured Dorkings, &c., from the yards of the Rev. J. G Hodgson, Croydon; Dr. Cust Gwynne, W. F. Flight, Esq., Mrs Stow, and other well-known successful Amateur Breeders.—May be viewed the morning of sale, and catalogues had by enclosing a stamped directed envelope to Mr. J. G. STEVENS, 38, King-Street, Covent-Garden.

PRIZE POULTRY.

MR. J. C. STEVENS is favoured with instructions to Sell by Auction, at his Great Room, 38, King-street, Covent-garden, on FRIDAY, 10th of February, at Twelve o'clock precisely, FANCY POULTRY of the choicest quality, from the renowned yard of C. Rawson, Esq., the Hurst, Walton-on-Thames, being Prize Birds at the principal Shows in the kingdom, and including Brahma Pootras, Cochins of all colours, Spanish, White and Coloured Dorkings, Gold and Silver-spangled Hamburghs, Gold and Silver Polands, Sebright Bantams, Toulouse Geese, Aylesbury Ducks, Turkeys, &c.—May be viewed on the morning of sale, and Catalogues had by enclosing a stamped directed envelope to Mr. J. C. STEVENS, 38, King-street, Covent-Garden.

SALE OF FANCY POULTRY AND PIGEONS.

MESSRS. KIRKMAN AND ENGLEHEART, King William Street, City, beg to announce that they will Sell by Auction, at the Auction Mart, London, on Monday, the 13th of February, at 12 o'clock, the Entire Stock of FANCY POULTRY and PIGEONS of the well known breeder Mr. Timothy Mason, of King's Cottage, North End, Fulham, in consequence of his removing from King's Cottage, consisting of Andalusian, Cochin China, white-faced Spanish, gold and silver-laced Sebright Bantams and other Fowls, and choice fancy Pigeons.—Catalogues sent on receiving stamp.

NEW FOREST, HANTS.

BY ORDER OF THE COMMISSIONER IN CHARGE OF HER MAJESTY'S WOODS AND ROYAL FORESTS.

MR. CHARLES NORTON will sell by Auction, at Lyndhurst, on THURSDAY, the 9th day of February, at 1 o'clock in the afternoon precisely, about 1400 Loads of ROUND and HEWN OAK TIMBER. The Lots may be viewed, and Catalogues and Conditions of Sale, with further particulars, may be obtained, on application, to Mr. L. H. CUMBERBATCH, Queen's House, Lyndhurst, Hants.

TO NOBLEMEN, GENTLEMEN, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Cutbush, to Sell by Auction, on the premises, Barnet Nurseries, Middlesex, on THURSDAY, Feb. 9th, at 11 o'clock, without reserve, in consequence of a portion of the land being purchased by the Magistrates of the County of Middlesex for the erection of stores for the militia, the whole of the NURSERY STOCK growing on the two acres, consisting of Ornamental Fruit and Forest Trees, Evergreens and Deciduous Shrubs, Standard and Climbing Roses, Box Edging, &c.—May be viewed prior to the Sale. Catalogues may be had on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

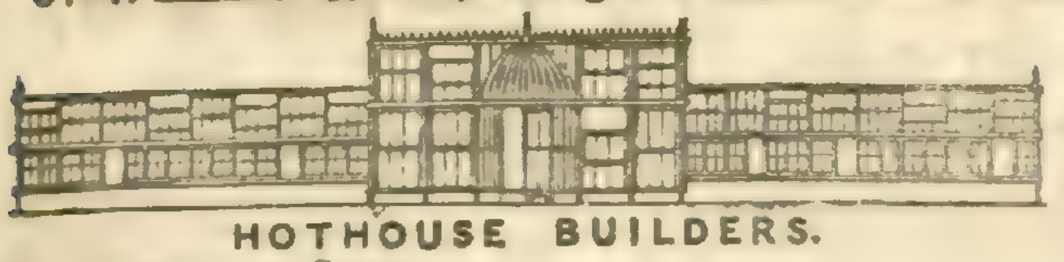
LAMBETH.

TO NOBLEMEN, GENTLEMEN, AND THE TRADE.

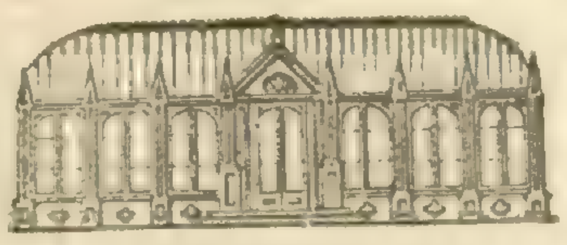
MESSRS. PROTHEROE AND MORRIS are Instructed by Messrs Hay, Sangster and Co. to Sell by Auction, on the Premises, Pleasant Place, West Square, Lambeth, without the least reserve, on MONDAY, February 6th, at 11 o'clock, the whole of the NURSERY STOCK, consisting of Dwarf Trained and Untrained Peach, Nectarine, Apricot, Standard and Dwarf Apple, Pear, Plum, Cherry, China Arbor-vitæs, and Evergreen Oaks, in pots, 2 to 5 feet; Green and Variegated Holly, 3 to 7 feet; Aucuba Japonica, Arbutus, 1 to 3 feet; Cypress, 4 to 6 feet; Common Laurels, 3 feet; Filberts, Gooseberries, Currants, Raspberries, Weeping Elms, Willows, and Ash, Standard and Dwarf Roses, Bedded Pear Stocks, Seakale, and Giant Asparagus, Vines in pots, Box Edging, Sangster's New Early Scarlet Rhubarb (Prince of Wales), which no garden should be without; also the large Stock of thrifty grown Standard Dwarf and Dwarf Trained Mulberries, for which Messrs. H. S. and Co. have been so justly celebrated. A large quantity of rotten Dung, &c.—May be viewed prior to the sale; Catalogues may be had (6d. each, returned to purchasers) on the premises; of the principal seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

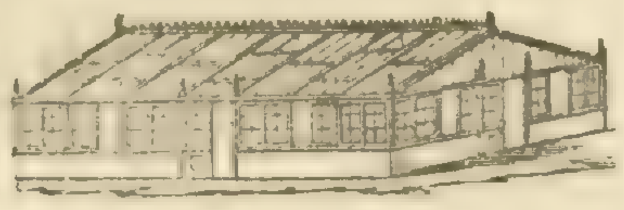
HORTICULTURE IN ALL ITS BRANCHES.

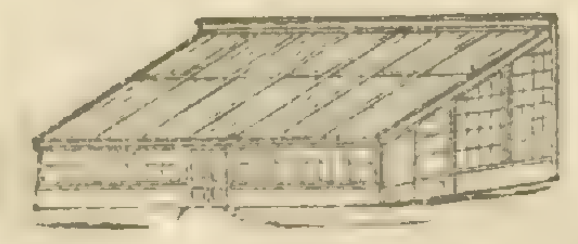
J. WEEKS & Co., King's Road, Chelsea,



HOTHOUSE BUILDERS.







The Nobility and Gentry about to erect Horticultural Buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. WEEKS & Co., King's Road, Chelsea, London.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

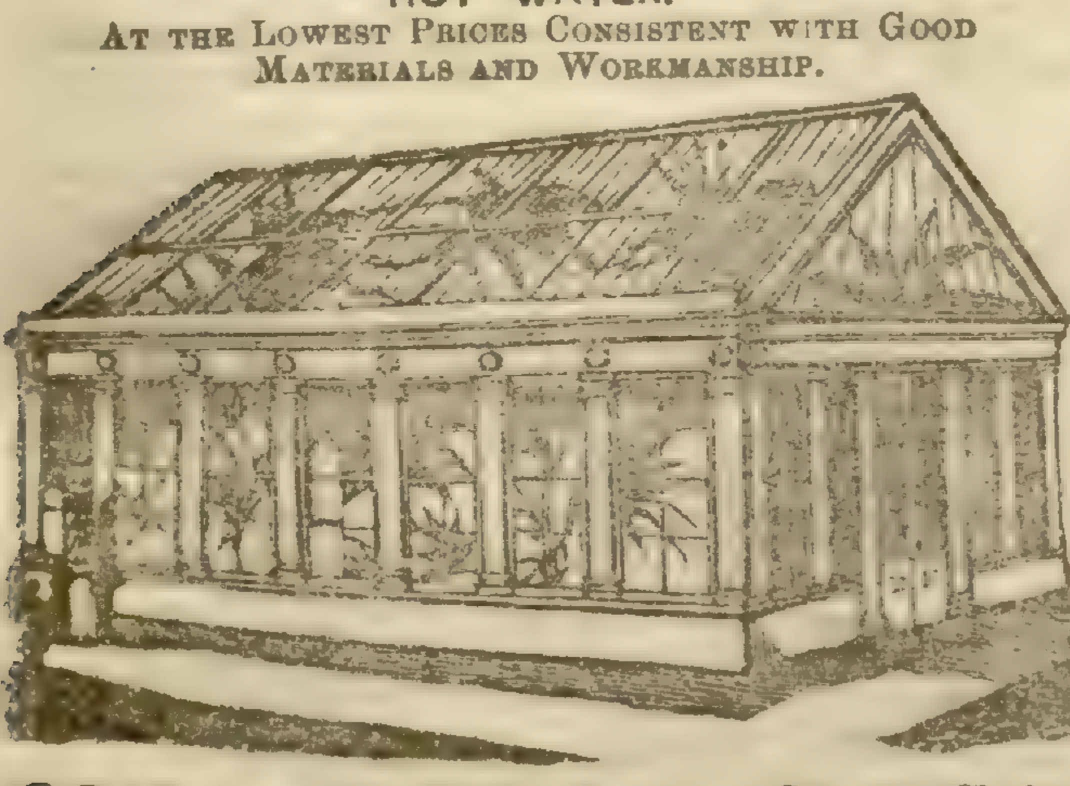
E. DENCH, PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

PATENT HOTHOUSES and excellent Glass at 1s. 3d. per foot super., which are superior to all others for price with quality, and if known would supersede all others. (See Appendix, in "Book of the Garden," by Mr. M'Intosh.) A Range of Houses and Hot Water Apparatus, was erected by E. D. for E. L. Betts, Esq., Preston Hall, Kent. Mr. J. Frost, head gardener, has shown their efficiency by their produce at the Royal Botanic Gardens, Regent's Park, June 8, and Chiswick, June 11. The editor of the *Gardeners' Chronicle* says: "Beautiful examples of Black Hamburgh, large both in bunch and berry, and as black as Sloes, were furnished by Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall, Kent; these well deserved the first prize which was awarded them."—*Gardeners' Chronicle*, June 18th, 1853. The Grapes were considered the best shown at Regent's Park during the season, and the Houses are as superior for the growth of everything else in horticulture, which has been fully proved, and they have been extensively erected for the nobility and gentry in all parts of the kingdom.

GLAZING WITHOUT PUTTY.—Iron and Glass alone. E. D. has Roofed the Public Baths and Washhouses, Endell Street, on this principle, and others are in hand. Patent Sashes for Peach Walls, Pits, &c., 8d. per foot super. Heating by Hot-water, on the most practical principles, and all the best materials used. Printed Price List sent on application.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



GRAY AND ORMSON, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, whereever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard run, of E. T. ARCHER, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

Priced lists of plant tubs and boxes forwarded on application.

HORTICULTURAL BUILDINGS, ROCK AND RUSTIC WORK, ORNAMENTAL WATER, FOUNTAINS AND FALLS, AND LANDSCAPE GARDENING, executed on the best principles; Estates Improved, Land Laid Out for Building, &c., by Mr. GLENNY, Valuer, Estate and Horticultural Agent, 420, Strand.

COLE'S SUPERB CRYSTAL WHITE CELERY.

J. THORNLEY, W. COLE, AND Co., NURSERYMEN, SEEDSMEN, and FLORISTS, Withington, Manchester, beg to announce that they are now prepared to supply this fine Celery at 1s. 6d. per half-ounce packet, or in larger quantities. This variety has given universal satisfaction, and has been proved to possess all the good qualities attributed to it by W. Cole last season. It can also be procured from the following agents:—

Messrs. Hurst and M'Mullen, 6, Leadenhall Street; Messrs. Noble, Cooper, and Bolton, 152, Fleet Street; Messrs. Minier & Co., 60, Strand; Messrs. Charlwood & Cumming, Covent Garden; Mr. Turner, Slough; Mr. Duncan Hairs, St. Martin's Lane; Mr. Denyer, Gracechurch Street; Mr. J. Fairbairn, Clapham; Messrs. A. Henderson & Co., Pine Apple Place; Messrs. Downie and Laird, Edinburgh; Messrs. F. & A. Dickson, Chester; Messrs. F. & A. Dickson, Manchester; Messrs. J. & J. Fraser, Lea Bridge, Essex; Messrs. Little and Ballantyne, Carlisle; Messrs. Veitch & Son, Exeter; Mr J. Veitch, Exotic Nursery, Chelsea; Mr. Clarke, King Street, Covent Garden; Messrs. Finney & Co., Gateshead; Mr. A. Pontey, Plymouth; Mr. E. Rendle, Plymouth; Mr. Cattell, Westerham, Kent; Mr. Smith, Riverhead, Kent; Mr. Epps, Ashford and Maidstone, Kent; Messrs. Lucombe, Pince, & Co., Exeter; Mr. Browne, Norwich; J. Cole, Keyfield Nursery, St. Albans; Garaway & Mayes, Bristol; Drummond & Son, Stirling.

All orders to be addressed as above, instead of to "Dartford" as heretofore.

TRUE HIGHLAND PINE FIR, 1½ to 2 ft., 20s.; 2 to 3 ft., 25s. per 1000. The Seed from Braemar Forest.—Apply to WILLIAM JACKSON & Co., Bedale, Yorkshire.

SELECT FRUIT TREES.—Per dozen.—Apples and Pears, of the most approved kinds, good strong standards, 9s. Ditto, ditto, dwarfs, 8s.; trained, 24s. to 30s.

Cherries and Plums, good strong standards, 12s. Ditto, ditto, dwarfs, 9s.; trained, 36s.

Apricots, Peaches, and Nectarines, trained, of the most approved kinds, 48s.

Linnæus, Royal Albert, Buck's Scarlet, and Victoria Giant Rhubarb, true, 7s. 6d.

The above are first-rate; persons in want should apply as soon as possible to WILLIAM JACKSON & Co., Bedale, Yorkshire.

STRONG EVERGREEN PRIVET, &c., for Fences, 2½ ft., 15s. per 1000. Fine Transplanted Spruce, 2 ft., 15s. per 1000. Limes, 3 to 4 ft., 30s. per 1000; Spanish Chesnut, 2 ft., 25s. per 1000. Horse Chestnut, 3 to 4 ft., 40s. per 100. Ash, 3 ft., 15s. per 1000. Sycamore, 2 ft. 15s. per 1000.

Hardy Herbaceous Plants (each sort by name), purchasers' selection, 35s. per 100. Shrubs, flowering and evergreen, 30s. per 100, purchasers' selection, our selection 25s. each. Vegetable and Flower Seeds of the best quality, see advertisement in the *Gardeners' Chronicle*, January 28.

Address all orders and communications to HENRY MAY, the Hope Nurseries, near Bedale, Yorkshire.

THE CHAMPION PEACH.

THOMAS HUTCHINGS, NURSERYMAN, &c. AXMINSTER, is now sending out this beautiful Seedling Peach, which far surpasses everything of the kind ever offered to the Public, measuring the extraordinary size of from 11 to 13, and sometimes 14 inches—flesh free, rich, and juicy; flavour unequalled—somewhat resembling the Green-gage Plum—an excellent bearer—and in every respect of first-rate quality.

Trained Trees	£1 1s.	0d.
Maiden ditto	0 10s.	6d.

It is respectfully requested that all orders from unknown correspondents be accompanied by a Post-office order, payable at Axminster, Devon.

TESTIMONIAL.

"Sir,—I have fruited the Champion Peach, and have proved it to be *quite equal* to the description, and well worthy the name given it. I am ready to answer any inquiry that any lady or gentleman may wish to make.—I am, Sir, yours respectfully,

"JOHN REYNOLDS,

"To Mr. Hutchings. "Belmont, Lyme Regis, Dorset."

Orders received at the Nursery, or by Messrs. Hurst and MacMullen, 6, Leadenhall-street, London; and by Messrs. Garaway, Mayes, and Co., Durdham Down Nurseries, Bristol. January, 1854.

TO NOBLEMEN, GENTLEMEN, AND COMPANIES PLANTING.

THOMAS JACKSON AND SON respectfully invite an inspection of their extensive and fine collection of ORNAMENTAL SHRUBS and TREES; they are of fine growth, and in excellent condition for planting for immediate effect. To the undernamed T. J. & SON especially desire attention. Prices may be obtained by letter or personal application.

American Arbor-vitæ, 2 to 10 ft.
Chinese do., 2 to 8 feet, fine
Arbutus, 2 to 5 feet
Aucubas, 2 to 4 feet, very bushy
Cedar, Deodar, 2 to 12 feet, fine
Cedar of Lebanon, 2 to 9 ft., fine
Variegated Hollies, 2 to 9 feet
Green do., 2 to 9 feet
Weeping do., 5 feet stems, fine
Berberis aquifolium, 2 to 3 feet, bushy
Taxodium sempervirens, 3 to 12 feet, fine
English Yews, 2 to 9 feet
Irish do., 2 to 8 feet, very fine
Tree Box, 2 to 7 feet
Araucaria imbricata, 1 to 5 feet, fine
Deutzia gracilis, 1 to 2 feet, fine
Pinus excelsa, 3 to 8 feet, fine
Pinus insignis, 3 to 5 feet
Cryptomeria japonica, 2 to 6 ft.
Taxus pyramidalis, 2 to 6 feet, fine
Laurustinus, 1 to 3 feet, very bushy
Evergreen Oaks, 2 to 7 feet, fine
Portugal Laurels, 2 to 5 feet
Magnolia acuminata, 4 to 10 ft.
Do. grandiflora Exmouth, 2 to 5 feet, fine
Tree Pæonies, 1 to 3 ft., bushy
Chinese Junipers, 2 to 8 ft., fine
Upright Cypress, 5 to 8 ft., fine
Forsythia viridissima, 2 to 4 ft.
Red Cedars, 3 to 5 feet, fine

T. J. & Son having added to their previously good stock of American Plants, about one-third of the entire stock of the Norbiton Nursery, so long famed for its collections of Hybrid Rhododendrons, Azaleas, &c., can now offer on most advantageous terms—

Rhododendron ponticum, 1 to 5 ft., in great variety.
Do. aureum, and the varieties of yellows, 1 to 7 ft.
Do. Smithi, tigrinum, and other scarlets, 1 to 9 ft.
Do. campanulatum and light varieties, 1 to 7 ft.
Azaleas, Indian, American, and Ghent varieties, 1 to 6 ft.
Kalmia latifolia, and others, 1 to 4 ft.

T. J. & Son have a splendid healthy stock of the Sikkim Rhododendrons, of which they will furnish the 12 following fine kinds, in pots, for 63s., viz., Thompsoni, fulgens, glaucum, glaucum nanum, niveum, Falconeri, ciliatum, Edgeworthi, lancifolium, cinnabarinum, ferruginosum, and calycatum.

Fine Fruit and Forest Trees; strong Quick for Fences, and all other kinds of Nursery Stock.—Nurseries, Kingston, near London.

CHOICE SEEDS.

BASS AND BROWN'S SPRING CATALOGUE FOR 1854 is now in the Press. The Part containing the SEEDS can be forwarded immediately, on application, for two penny stamps.

PEAS, FINE NEW KINDS, of last and present year's introduction.

Fairbeard's Nonpareil, earlier than Champion of England, and fine rich flavour ...	5s.	0d.	per quart.
Waite's Daniel O'Rourke, very early ...	2	6	„
Sangster's New No. 1, 2½ ft., very early, prolific and fine pods ...	2	0	„
Stuart's Paradise, 4ft., a very fine large long-podded marrow, three weeks before Thurstone's Reliance, or other Peas of the same character ...	2	0	„
Hairs' Defiance, 4 ft., a fine new wrinkled marrow	2	0	„

The three last mentioned were grown last season by ourselves, and we can recommend each as an acquisition. Sangster's No. 1 and Stuart's Paradise will be included in the collections below.

BASS AND BROWN'S ASSORTED COLLECTIONS OF VEGETABLE SEEDS, comprising the best in cultivation, including several new sorts of excellent quality.

	£	s.	d.
No. 1.—Collection for a large garden, containing 20 quarts Peas, in 20 best sorts, and all other vegetable seeds in proportion, for one year's supply ...	3	0	0
No. 2.—Collection in smaller proportions ...	2	0	0
No. 3.—Collection do. do. ...	1	5	0
No. 4.—Collection of good kinds for a small garden ...	0	15	0

Copies of the Autumn Catalogues may still be had for three penny stamps.

Goods (not under 20s.) carriage free to all stations in London.

Seed and Horticultural Establishment, Sudbury, Suffolk.

JOHN CATTELL begs to say that the following priced Catalogues of his Nursery Stock and Seeds may be had on prepaid application, by enclosing a penny stamp for each.

Roses, Fruit Trees, Forest Trees, including Quick, Privet, Briar, Holly, &c., suitable for hedges; Hardy Ornamental Trees and Shrubs, including Coniferæ, American Plants, Climbers, &c. Kitchen Garden Seeds. Flower Seeds, in which are enumerated very superior selections of German Stocks, Asters, &c., genuine as imported, in large or small packets, to suit all purchasers.

The following selections are exceedingly fine:—Cedar of Lebanon, from 2 to 8 feet, splendid upright plants, in first-rate order for removal. Cedrus deodara, fine, from 1 to 8 feet. Azaleas, Ghent and English, of the most showy varieties, loaded with bloom buds. Rhododendrons, of all the leading sorts. Kalmia latifolia, in variety, very fine. Andromeda floribunda, splendid plants. Roses, the standards are particularly straight strong stems, also some extra tall stems from 5 to 6 feet, worked with climbing and other showy sorts; the dwarfs are also fine strong plants. Fruit Trees, consisting of the leading varieties, fine and in good order.—Westerham, Feb. 4, 1854.

WHEELER'S SHORT SELECT SEED LIST.

J. C. WHEELER AND SON'S SEED LIST *is now ready, and will be forwarded free on application. We have tried to make it as short and as select as possible, leaving out the names of all inferior varieties, so that it is really a List of the best Seeds in cultivation. Grasses and other Agricultural Seeds, Garden and Flower Seeds, all described, and prices put to every article. We deliver our Seeds Carriage Free to almost every Railway Station in the kingdom, and take especial care that every sort we send out is true to name, and of the best quality.*

J. C. WHEELER & SONS, Seed Merchants, Gloucester.

"THE CATALOGUE of SEEDS sold by J. C. WHEELER AND SON, of Gloucester, appear to us to deserve notice, because of the stand which its authors make, in common with ourselves and others, against the useless incomprehensible Seed Lists of the day. In this, as in all matters of taste, there will be a difference of opinion as to the relative qualities of varieties; yet the mass of buyers who have no fancies, but who dislike being perplexed, and are satisfied with what is excellent, will greatly prefer a short, select Seed List to an interminable labyrinth of names, which, for the most part, represent non-entities or rubbish. Messrs. WHEELER'S little book will do something to satisfy their expectations."—*Gardeners' Chronicle.*

RENDLE'S PRICE CURRENT.—*Opinion of Mr. James Barnes, the well-known Gardener to the Right Honourable Lady Rolle, Bicton:—*

"Dear Sir,—Your Price Current has just come safe to hand, and I beg to return my best thanks for the same. It contains a great deal of useful information for all classes, more particularly for the Amateur and those who cultivate their own Gardens and Allotments.—Yours, &c. "JAMES BARNES."

RENDLE'S PRICE CURRENT.—*Opinion of Mr. W. Tillery, Gardener to His Grace the Duke of Portland, Welbeck:—*

"My dear Sir,—I beg to return many thanks for the copy of 'Rendle's Price Current and Garden Directory for 1854.' As far as my experience goes, I think your Calendar of Operations excellently planned, and the Directions are judicious and quite up to the mark for the present progressive period. The remarks on the systematic rotation of vegetable cropping are likewise excellent and will do much good if carefully put into force.—Yours truly,

"To Mr. Errington. "W. TILLERY."

RENDLE'S PRICE CURRENT *has been already favourably noticed by the following Newspapers and Magazines:—*

"Mark-Lane Express," "The Lady's Newspaper and Pictorial Times," "The Florist, Fruitist, and Garden Miscellany," "The Gardener's and Farmer's Journal," "The Agricultural Magazine," "The Plough," "Lloyd's Weekly Newspaper," "Plymouth Herald," "Exeter Gazette," "Bristol Mercury," "Western Luminary," "Somerset County Herald," "The Clerical Journal," "Cornish Telegraph," "Plymouth Mail," "Devonport Telegraph," "Somerset Gazette," "Western Courier," "Teignmouth Gazette," "West Briton," "Portsmouth Times," and "Naval Gazette," and several other newspapers and Magazines.

SUPERB LATE WHITE BROCCOLI—"EMPEROR."

EDMUND PHILIP DIXON having purchased the entire stock of the above Broccoli of Messrs. Elletson, Market Gardeners, Thorngumbald, near Hull, begs to announce that he is prepared to send it out in sealed packets at 2s. 6d. each. This Broccoli has been raised by the Messrs. Elletsons, the raisers of the Mammoth, sent out some time ago, which state that the EMPEROR, if sown at the same time, will come into use before it. Is of very dwarf growth, perfectly hardy, with heads from 15 lbs. to 20 lbs. weight; keeps its colour, and stands firm three weeks after it is ready to cut. A noble flower and commands the best price of any other in the Hull market, where it is well known, and will be a great acquisition to the market gardeners around London, as well as those who wish for a first-rate Broccoli.

May be had of Messrs. NOBLE, COOPER, & BOLTON, 152, Fleet Street; and Messrs. HURST & M'MULLEN, 6, Leadenhall Street London. Also of the Advertiser, 57, Queen Street, Hull.

4, Great Russell Street, Covent Garden, 1854.

JOHN KERNAN,

IN OFFERING TO HIS FRIENDS AND THE PUBLIC THE ANNEXED

LIST OF VEGETABLE AND FLOWER SEEDS,

WHICH INCLUDES EVERY NOVELTY INTRODUCED UP TO THE PRESENT SEASON,

Begs to assure his Customers that he has spared no trouble in securing every Article as good as it could possibly be procured.

☞ *From the unfavourable weather in the late harvest, many articles are in short supply.*

PEAS. Per qt.—s. d.
Early Emperor 1 0
Shilling's new early Grotto 1 0
Bishop's new long-podded 1 0
Fairbeard's Champion of England 1 0
Fairbeard's Surprize ... 1 0
British Queen 1 0
Knight's dwarf green and tall 1 0
Scimetar 0 9
Woodford or Nonsuch ... 1 0
Victoria Marrow 1 0
Dwarf green Mammoth ... 1 6
Tall white do. ... 1 6
With all other varieties worth cultivating.

BEANS. Per qt.
Early Mazagan 0 6
Sword Longpod 0 8
Hangdown 0 6
Taylor's Windsor ... 0 8
Johnson's Wonderful ... 0 8
Green Genoa 0 8
Dwarf French, of sorts ... 1 0
Scarlet Runners 1 0
Painted Lady do. 1 0

Per oz.
Beet, fine London Red ... 0 6
„ Silver, or Seakale ... 0 6
„ Whyte's black ... 0 6
Borecole, new heading, per paper 0 6
„ red and white, variegated, for garnishing 0 6
„ dwarf curled, per oz. 0 6
Brussels Sprouts (foreign seed, fine), per oz. 0 9
„ English do. 0 6
Kohl Rabi, per paper ... 0 6
Savoy, green curled, per oz. 0 6

BROCCOLI. Per oz.
Myatt's Early Purple Cape 1 0
Miller's Dwarf 1 0
Chappell's Cream... ... 1 0
Dancer's Early White ... 1 0
Somner's Late White ... 1 0
Willcove White, late ... 1 0
Grange's Early White—from the original raiser 1 0
Invisible White 1 0
Purple Sprouting 1 0
Walcheren 1 0
Imperial Winter 1 0
Dwarf Siberian 1 0
Purple Syrian 1 0

CABBAGE. Per oz.
Nonpareil 0 6
Shilling's New Queen, fine 0 6
Atkin's Matchless ... 0 6
Early Venus 0 6
Knight's Early Dwarf ... 0 6
Early York 0 6
Large York 0 6
Early Battersea 0 6
True Cornish 0 6
Couve Tronchuda, per paper 0 6
Red Dutch 0 6
And all other kinds in cultivation.

CARROT. Per oz.
Early Scarlet Horn ... 0 3
Long Orange 0 3
Fine Surrey 0 3
Altringham, per lb. ... 1 6
White (for Agriculture), per lb. 1 6
Parsnip, Hollow-crown, per oz. 0 3

CAULIFLOWER. Per oz.
Mercer's fine Pearly ... 1 6
London Particular ... 1 6
Large Asiatic 1 6
Walcheren 1 6

CRESS. s. d.
Plain, per pint 0 9
Curled 1 0
American, per oz. ... 0 3
Water, per paper 0 6
Mustard, per pint 0 9

CELERY. Per oz.
Cole's Superb Red ... 0 6
Seymour's Superb White 0 6
„ Superb Red .. 0 6
New Rose, solid 0 6
New Giant 0 6

CUCUMBER. Per paper.
Victory of Bath 0 6
Acme of Perfection ... 1 0
Syon House 1 0
Weedon's Free Bearer ... 0 6
Early Frame 0 3
Kerrison's 1 0
Walker's Rambler ... 0 6
Windsor Prize 0 6
Early Handglass 0 3
Early Ridge 0 3

MELONS.
Seymour's Golden Perfection 0 6
True Syon House... ... 0 6
Snow's Hybrid Green-flesh 0 6
Beechwood 0 6
And all the better sorts grown for this market.

ENDIVE.
New Imperial, per packet 0 6
Batavian, per oz. 0 6
Green curled 0 6
White curled 0 6

Herbs, all the kinds, p. pkt. 0 6

LETTUCE.
Brighton Cos, per oz. ... 1 6
Imperial Cos 1 6
Victoria Cabbage 1 6
Green Paris Cos 1 6
White Summer Cabbage 1 6
Fine London White Cos 1 6
Paris Cos 1 6
Ady's Cos 1 6
Drumhead 1 6
Bath Cos, and others ... 1 6

ONION. Per oz.
James's Long Keeping ... 0 9
Fine White Spanish ... 0 9
Globe 0 9
Strasburgh... ... ... 0 9
Deptford 0 9
Silver-skin 0 9
Tripoli 0 9
Blood-red 0 9
Two-bladed, for pickling 0 9

RADISH. Per oz.
New Scarlet Olive-shaped, a delicious new variety 0 3
New Rose 0 3
Early Frame, per pint ... 1 6
Long Scarlet 1 6
Red and White Turnip ... 1 6
Black Spanish, per oz. ... 0 3

SPINACH.
New Flanders, per pint ... 0 6
Round, or Summer ... 0 6
Lettuce-leaved (new) ... 0 6
New Zealand, per oz. ... 0 3

TURNIPS. Per oz.
Early Snowball 0 3
Red American Stone ... 0 3
Teltow, for stewing ... 0 3
Early Dutch 0 3
Yellow Maltese 0 3
„ Stone 0 3
Early Snowball, per lb. ... 2 0
Early Dutch (earliest), true imported 2 0

AGRICULTURAL TURNIPS.
Yellow Bullock per lb.—1 0
Skirving's Swede... ... 1 6
Laing's ditto 1 6
Ashcroft ditto 1 6
Dale's Hybrid 1 0
Red Round... ... ... 1 0
White Round 1 0
White Globe 1 0
Oxheart 1 0

per lb.
Drumhead Cabbage ... 1 6
Thousand Headed ... 1 6

PARSLEY. Per bush.
Plain, for sheepwalks and early lambs 14 0
Extra curled, per oz. ... 0 3
Furze, per lb., 1s. Broom, 1s.
Coarse Grasses for Game Covers, 8s. per bushel.
Yellow Globe and Long Red Mangold Wurzel, per lb., 1s.
White Silesian or Sugar Beet, per lb., 1s.
Chevalier Barley; Hopetoun, Tartarian, Sandy, and other Oats.
Flax, from Riga seed, one year grown in this country.
A fine collection of all the best Permanent Grasses (hand picked), separate or mixed. If mixed, per bushel, 8s.
Sweet Vernal, the earliest and most suitable Grass for early Lambs, 2s. per lb.
White, 1s. 3d., and Red Clover, 1s.; Lucerne, 1s.; and Trefoil, 6d.
Kohl Rabi, for Agriculture, per lb., 2s.
Italian Rye-grass. Spring and Winter Tares.
A few of the very finest Grasses for Lawns, per lb., 1s. 6d.
Myatt's fine new Strawberries.
Asparagus plants, according to age, per 100, 2s. 6d. to 5s.

Seakale plants, according to age, per 100, 5s.; do. for forcing, 10s.
Dulley's Early Scarlet Admirable Rhubarb, per root, 1s.
Myatt's Victoria do. (the largest in cultivation), 1s.
Mushroom Spawn, per bushel, 5s.
Cornwell's Victoria Raspberry, per dozen, 2s. 6d.
All the fine new Raspberries, 2s. 6d. to 3s. per dozen.
Seeds of all the new Strawberries, Raspberries, Gooseberries, and Currants, per paper, 6d.; with Tree Seeds recommended to Emigrants.

POTATOES.

Per bushel.—s. d.
Soden's Early Oxford ... 10 0
Barnard's Early Frame 10 0
Shilling's Early Prolific 10 0
Kirke's True Ash-leaved Kidney 10 0

Per bushel.—s. d.
Walnut-leaved Kidney... 10 0
Ash-leaved Kidney ... 10 0
Forty-fold 6 0
Early Hen's Nest ... 6 0
Early Shaw 6 0
Prince Regent's 6 0

And many other most productive late kinds; also seed saved from the best varieties, 6d. per packet.
Garlic, per lb., 8d. Shallots, per lb., 8d.
Budding and Pruning Knives.
Russia Mats, 2s. each. Cuba Bass, per lb., 2s.
Buckwheat, Indian Corn, Rape, Hemp, &c., for Aviaries.
The trade supplied on moderate terms, with every article true to its kind. Catalogues may be had on application.

FLOWER SEEDS.

The following are the most recent introduced Flower Seeds:—
Per packet, 1s.

Abronia umbellata
Ageratum albiflora
Calliopsis marmorata
Collinsia Bartsiæfolia
Dianthus Garneriana
Gaura Lindheimani
Linum grandiflorum
„ rubrum verum
Limnanthes rosea
Lupinus monogynia
Lobelia ramosus alba
Lebelia rubra
Lophospermum Jacksoni
Mimulus cæruleus
Nolana grandiflora alba
Œnothera acaulis
Perilla nankinensis
Salpiglossis, scarlet
Saponaria multiflora
Thunbergia Bakeri (white)
Morina elegans

Asters, 24 distinct German varieties, in sealed packets, suitable for exhibition, the collection, 8s.
A mixture, including all the colours of the above, per paper, 6d.
Do. in 12 distinct colours, the collection, 4s.
A mixture of the best varieties of late Asters, 6d.
Superb German and Prussian Stocks, 24 distinct varieties, or exhibition, the collection, 8s.
12 varieties of do., distinct in colours, 4s.
12 autumn flowering do., in distinct colours, 4s.
A mixture of all the finest varieties of Ten-week, per paper, 6d.
12 varieties Brompton Stocks, 4s.
A mixture of Brompton do., per packet, 6d.
12 named varieties of Hollyhocks, 3s.
8 named varieties of Marvel of Peru, 2s. 6d., fine, for the front of Shrubberies.

Per packet.—s. d.
Achimenes, seeds & bulbs of all the varieties.
Anagallis, of sorts ... 0 6
Amethystea cærulea ... 0 3
Anemone, fine mixed ... 0 6
Antirrhinum (all the new kinds) 0 3
Argemone grandiflora ... 0 3
„ Barclayana ... 0 3
„ speciosa ... 0 3
Aquilegia glandulosa, fine 0 6
„ fine mixed German varieties 0 6
Auricula, from fine named flowers ... 1 0
„ alpine 0 6
Brachycome iberidifolia ... 0 6
„ alba, new ... 0 6
Balsams, 12 very fine distinct colours, all double 5 0
„ mixture of above 0 6
Bartonia aurea 0 3
Blumenbachia insignis ... 0 6
Browallia, of sorts ... 0 6
Calceolarias, from a collection of named shrubby kinds 1 0
Calceolarias, from Herbaceous do. 1 0
Calendrinia discolor ... 0 3
„ grandiflora ... 0 3
„ umbellata ... 0 3
Campanula pulcherrima . 0 3
„ Lorei, blue ... 0 3
„ „ white... 0 3
„ stricta ... 0 3
„ sylvatica ... 0 3
Catananche bicolor ... 0 3
Chænostoma fastigiata ... 0 6
Cistus guttatus, very dwf. 0 6
Clintonia pulchella ... 0 6
„ elegans 0 3
Cockscomb, Dwarf Scarlet 0 6
Cuphea, all the kinds ... 0 6
Cineraria, selected from the latest new kinds ... 1 0
Commelina alba 0 3
„ cœlestis ... 0 3
Carnation, from named flowers 1 0
Clarkias, all the varieties 0 3
Coreopsis, new marbled ... 0 6
„ tinctoria ... 0 3
„ Drummondi ... 0 3
„ nigra (new) ... 0 3
Candytuft, new crimson ... 0 3
„ purple 0 3
„ white 0 3
„ sweet-scented . 0 3

Per packet.—s. d.
Convolvulus major ... 0 3
„ minor ... 0 3
„ do. new dark 0 3
„ minor, striped 0 3

CLIMBERS.
Cobœa scandens 0 6
Calampelis scaber ... 0 6
Lophospermum erubescens 0 6
„ Hendersoni 0 6
Loasa aurantiaca 0 6
Maurandya Barclayana ... 0 6
„ new scarlet ... 0 6
Tropæolum peregrinum ... 0 6
„ pentaphyllum 0 6
„ tricolorum grandiflorum 1 0
„ trimaculatum 0 6
„ minor coccineum 0 6
Ipomœa rubra cærulea ... 0 6
„ punctata... ... 0 6
„ nil 0 6
„ rosea 0 6
„ striata and others 0 6
Thunbergia alata... ... 0 6
„ „ alba ... 0 6
„ aurantiaca ... 0 6
„ new yellow... 0 6

Collinsia grandiflora ... 0 3
„ bicolor 0 3
„ „ new dwf. 0 3
Dahlia scabigera, dwf. lilac 0 6
„ fine mixed ... 0 6
Datura fastuosa, purple ... 0 6
„ „ white ... 0 6
Delphinium or Larkspurs, distinct or mixed ... 0 3
Ditto, biennial and perennial varieties 0 3
Digitalis or Foxglove ... 0 3
Dianthus, double white Indian pink 0 6
„ Knight's new hybrid ... 0 6
„ double Indian 0 3
„ latifolia ... 0 3
„ Cherii ... 0 3
And others.
Didiscus cæruleus ... 0 6
Eucharidium grandiflorum 0 3
Eutoca viscida 0 3
Egg plant, white 0 3
„ purple 0 3
„ new, striped ... 0 6
Eschscholtzia, 3 sorts ... 0 3
„ new, white 0 6
Erysimum Perofskianum 0 3
Fuchsias from named sorts 0 6
Gaillardia picta 0 6
„ bicolor... ... 0 3

Per packet.—s. d.
Gaillardia Richardsoni ... 0 3
„ aristata ... 0 3
Globe Amaranthus, of sorts 0 3
Geum splendens 0 6
„ Wicei 0 3
Geranium, from fine sorts 1 0
Gilia, of sorts 0 3
Grahamia aromatica ... 0 6
Gramnanthes gentianoides, new 0 6
Godetia, all the new sorts 0 3
Heartsease, from first-rate prize flowers 0 6
Humea elegans 0 6
Helichrysum macranthum 0 6
„ bracteatum album 0 3
Heliotropium peruvianum 0 6
„ Voltaireanum 0 6
Hibiscus, of sorts ... 0 3
Heliophila araboides ... 0 3
Helianthemum, Rock Cistus 0 3
Hollyhock, Chinese ... 0 6
„ fine mixed ... 0 3
Ipomœa Burridgi... ... 0 6
„ quamoclit ... 0 6
And others ... 0 6
Ipomopsis elegans ... 0 6
Isotoma axillaris 0 6
Jacobæa, double crimson 0 3
„ „ purple ... 0 3
„ new lilac ... 0 3
Kaulfussia amelloides, for edging 0 3

Handsome Ornamental Grasses ....per paper, 6d.

Per packet—s. d.
Larkspurs, 12 distinct German vars. 2 6
„ mixed dwarf Rocket ... 0 3
Leptosiphon densiflores ... 0 3
„ androsaceus 0 3
Loasa aurantiaca 0 6
Lymnanthus grandiflora 0 3
„ Douglasi ... 0 3
Lobelia heterophylla major 0 6
And others ... 0 6
Lotus Jacobæus 0 3
„ nova sp. 0 6
Lupinus Hartwegi ... 0 3
„ nanus 0 3
„ Cruikshanki ... 0 3
„ affinis 0 3
Lychnis, of sorts 0 3
Malope grandiflora ... 0 3
Mallow, new zebra ... 0 3
Malva miniata 0 3
Marvel of Peru 0 3
Marigold, dwarf pigmy French 0 6
Other varieties 0 3
Mesembryanthemum tricolor 0 6
Mignonette, per oz. ... 0 9
„ Reseda odorata grandiflora, new ... 1 0
Mimosa sensitiva (Sensitive plant), per packet 0 6
Mimulus, from 12 distinct named varieties ... 0 6
„ moschatus ... 0 3
Martynia fragrans ... 0 6
Nasturtiums, all the sorts 0 3
Nemesia floribunda ... 0 6
„ vesicolor, new 0 6
Nemophila insignis major 0 3
„ insignis alba (new) 0 6
„ discoidalis ... 0 3
„ maculata 0 3
„ aurita alba (new) 0 6
Neirembergia splendens... 0 6
„ violacea ... 0 3
„ fine mixed 0 6
Nolana atriplicifolia ... 0 3
„ paradoxa 0 3
Nycterinia selaginoides... 0 6

Per packet—s. d.
Nycterinia capensis ... 0 6
Œnothera Sellowi ... 0 3
„ Drummondi ... 0 3
„ densiflora ... 0 6
„ macrocarpa ... 0 6
And others 0 3
Papaver marcelli 0 3
„ nudicaulis ... 0 3
Poppy, carnation, mixed... 0 3
Peas, sweet, all the colours, separate or mixed ... 0 3
Pentstemon, of sorts ... 0 6
Phlox Drummondi, various shades ... 0 6
„ Drummondi, white... 0 6
„ Leopoldi (new) ... 1 0
„ new, scarlet ... 0 6
„ oculata 0 6
Picotee, from named flowers 1 0
Platystemon californicus . 0 3
Potentilla Garnieriana ... 0 3
„ Russelliana ... 0 6
„ Thomasi ... 0 3
Polyanthus, fine mixed ... 0 6
Portulacca splendens ... 0 6
„ Thellusoni ... 0 6
„ grandiflora ... 0 6
„ striata alba ... 0 6
„ Gilliesi ... 0 6
„ yellow 0 6
Primula sinensis (white fringed) ... 1 0
„ lilac 1 0
„ large crimson ... 1 0
„ cortusoides ... 0 6
Rhodanthe Manglesi ... 0 6
Salpiglossis, new scarlet, very fine ... 1 0
„ fine mixed ... 0 6
„ new yellow ... 0 6
Salvia, of sorts 0 6
Sanvitalia procumbens ... 0 3
Saponaria calabrica ... 0 3
„ ocymoides ... 0 3
Schizanthus Hookeri ... 0 6
„ Grahami ... 0 6
„ retusus alba . 0 6
„ humilis ... 0 3
„ Priesti ... 0 3
„ venustus ... 0 3
Schizopetalon Walkeri, very sweet 0 6
Sphænogyne speciosa ... 0 3
Streptocarpus Rexi ... 0 6
Silene Schafta 0 3
„ compacta 0 3
Stock, white pyramidal ... 0 6
„ Buck's Intermediate, 16 out of 20 will come double ... 0 6
„ Chapman's Scarlet Ten-week 0 3
„ Shepherd's White ... 0 3
„ „ Purple ... 0 3
Sedum cæruleum, for rock-work 0 6
Sultan, yellow 0 3
„ white and purple . 0 3
Tagetes signata 0 3
„ lucida 0 3
Thunbergia (*see* Climbers).
Tropæolum (*see* Climbers).
Viscaria oculata 0 3
„ new dwarf ... 0 6
„ white 0 6
Violet, Russian (ever-flowering) 0 6
Verbena, a mixture of best sorts 0 6
Wallflower, blood red ... 0 3
„ Double German 0 6
„ changeable ... 0 6
„ 8 vars. of imported German 2 6
Zinnia elegans coccinea ... 0 6
„ purpurea 0 6
„ aurea 0 6
„ mixed from 20 separate varieties 0 6

Ornamental Trees and Shrubs of all descriptions.
Cedrus Deodara, Cryptomeria japonica, Taxodium sempervirens, 2s. 6d. to 10s. 6d. each; all the new Pinus.
Named Double Anemones and Ranunculuses; Gladiolus Brenchleyensis and gandavensis; Tigridia pavonia and conchiiflora, with many other flowering Bulbs, and Herbaceous Plants, which may be planted out till the middle of May.
Carnations, Picotees, and Pinks, per pair, from 1s. to 3s. 6d.
All the better named Heartsease from 6s. to 30s. per dozen.
Fine named Dahlias, per dozen, 12s.
„ Chrysanthemums, new kinds, 12s.
Standard Dwarf and Climbing Roses, 1s. to 2s. 6d. each.
Rivers' Miniature Fruit Garden, with directions for culture and root-pruning, 2s. Rivers' Orchard House, 2s.
Rivers' new edition of the "Rose Amateur's Guide," 6s.
Rivers' new Fruit Catalogue, 6d. [distribute to cottagers.
Paxton's "Cottage Calendar," 3d., which ladies and gentlemen should
Collections of 24 Annuals, mixed, recommended by Dr. Lindley as suitable for Shrubberies, 5s. [on the most liberal terms.
Seeds for distribution by Gentlemen to their Tenants and Cottagers
24 papers of Hardy Annuals, 5s.
Seeds selected and carefully packed for Australia, North and South America, India, and New Zealand, in the most secure way to arrive safe at any of the above places.

Ladies and Gentlemen relying upon the judgment and experience of John Kernan, instead of being supplied (as is often the case) with what is neither useful nor ornamental, may depend upon having a selection of the most useful and indispensable Vegetables to any amount named, by the parties forwarding him their orders. The same economy will be observed in the choice of Flower Seeds. J. K. feels it almost needless to observe that the liberality of discount will be with the amount.

Printed by William Bradbury, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and Frederick Mullett Evans, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be Addressed to the Editor.—Saturday, February 4, 1854.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 6.—1854.] SATURDAY, FEBRUARY 11. [PRICE 6*d*.

INDEX.

Agri. Soc. of England .... 91 *a*
Ambersia at Ealing Park .... 87 *b*
Beans, manure for .... 93 *a*
Books noticed .... 86 *c*
Botanical Soc. of Edinburgh .. 86 *c*
Broccoli, Bates's .... 86 *b*
Calendar, horticultural .... 88 *a*
Canadian statistics .... 90 *a*
Collodion applied to cuttings .. 84 *b*
Corn averages .... 92 *b*
Cottagers' food .... 86 *a*
Cotton, uses of gun .... 84 *b*
Cuttings and collodion .... 84 *b*
Forests, royal .... 83 *c*
Geyer, the late Mr. .... 86 *a*
Gold fish .... 88 *c*
Grape mildew .... 87 *c*
Guano, Chincha .... 89 *c*
— and nitrate of soda .... 90 *b*
Henderson's (Messrs.) nursery .. 87 *b*
Leek, new .... 88 *a*
Linnean Society .... 86 *c*
London Farmers Club .... 92 *b*
Manure, management of .... 90 *c*
— for Beans .... 93 *a*
Melon, Victoria .... 86 *b*
Mildew, Grape .... 87 *c*
Nelumbium seed .... 85 *a*
Nitrate of soda *v.* guano .... 90 *b*
Orchard houses .... 85 *b*
Pathology, vegetable .... 85 *a*
Pears, east wall .... 88 *c*
Plants, new .... 87 *a*
— new mode of striking .... 84 *b*
Polyanthus, the .... 87 *c*
Potatoes from seed .... 86 *a*
Ranunculus, the .... 87 *b*
Spade husbandry .... 86 *a*
Royal Forests .... 83 *c*
Statistics, Canadian .... 90 *a*
Streptocarpus Rexi .... 85 *c*
Vegetable pathology .... 85 *a*
Vines, to graft .... 88 *c*
Weddell's Bolivia, &c. rev. .... 86 *c*
Woods and Forests .... 83 *c*
— and plantations .... 86 *a*

ERRATUM.—In Messrs. RENDLE's Advertisement last week, p. 33, headed "New Illustrated Catalogue," instead of "New Family," read "New FARMING Price Current and Agricultural Directory."

NOTICE TO EXHIBITORS.

CHELTENHAM GREAT EXHIBITION. To Open June 1st, 1854.—Applications for Space under Sections II. & III., must be made previous to the 25th of March. Official Forms may be obtained of the Secretary, Mr. HENRY J. COCHRANE, 128, High Street, Cheltenham.

CLOVER SEED.

GENUINE NEW CLOVER SEED *may be obtained of the undersigned. Prices (according to market and quantity required) will be forwarded on application.*
JOHN SUTTON & SONS, *Seed Growers, Reading, Berks.*

GERMAN FLOWER SEEDS.

H. HENKEL, 70, Fenchurch Street, London, sole agent in England for Messrs. Moschkowitz & Siegling, of Erfurt, Prussia, begs to inform the Trade that he keeps always on hand a stock of the most choice GERMAN FLOWER SEEDS, in the original sealed packets, a Priced List of which will be forwarded free by post on application. Also a complete Wholesale Price List of Agricultural, Kitchen Garden, and other Seeds.
70, Fenchurch Street, London.

THE BLACK BARBAROSSA,
"A GRAPE THAT DON'T KNOW HOW TO SHANK."

JOHN BUTCHER has fine fruiting plants, 10*s.* 6*d.*; good plants, 5*s.* 6*d.*, may be obtained of the above splendid Late Grape. London Agent, Messrs. DAWE, COTTRELL & BENHAM, 36, Moorgate Street, and JOHN BUTCHER, Nurseryman, Stratford-on-Avon.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER has now ready a fine healthy stock of young plants of all the leading sorts. For price and description see General List, which also contains hints on their culture, with observations on the exhibition of Hollyhocks, &c. &c., and may be had by inclosing a postage stamp.
Saffron Walden Nursery, February 11.

JUDSON'S
RICHMOND VILLA BLACK HAMBURGH VINE.

ARTHUR HENDERSON AND CO. have the pleasure of informing their patrons and friends that they have good plants of this valuable and much-esteemed Vine at 5*s.* each; extra strong plants, 7*s.* each.—N.B. For full particulars of the distinguishing characteristics of this Vine, we beg to refer our customers to the *Gardeners' Chronicle* of October 25th, 1851.

HIGHGATE NURSERIES, NEAR LONDON.

JAMES CUTBUSH, with deep regret, begs to inform his Customers and the Public generally of the sudden and lamented death of his Father (WILLIAM CUTBUSH), and offers his sincere thanks for the kind and extensive Patronage he received for upwards of 33 years. J. C. also acquaints them that the business will be conducted as hitherto under the name of "WM. CUTBUSH & SON" by himself, and humbly solicits a continuance of their esteemed favours; and by unremitting attention hopes to merit their support and recommendation.

SEA-SIDE PLANTING.
THE BLACK AUSTRIAN PINE.

LUCOMBE, PINCE, AND CO., have a fine, healthy, well-rooted Stock of this most serviceable hardy Pine, which, for planting in maritime situations and bleak exposed places generally, entirely supersedes all other trees. In sizes from 9 inches to 2½ feet high.

L. P. & Co. have also an extensive Stock of all sorts of Forest Trees, Hardy Shrubs, Fruit Trees, Coniferæ, &c., which they beg leave to offer on very reasonable terms. For prices and particulars, apply to them at the Exeter Nursery, Exeter.

PELARGONIUMS, SEEDS, ETC.

JOHN DOBSON begs to announce that his Descriptive Catalogues of the following are now ready, and may be had in exchange for one postage stamp each:—A Catalogue of Pelargoniums, containing every good show variety; a Catalogue of Seeds, containing short but select collections in the several classes; a General Catalogue, containing all the best varieties of Fancy Geraniums, Pansies, Fuchsias, Antirrhinums, &c. &c.

Twelve strong Plants of the best show Pelargoniums for 42*s.*, hamper and package included; Antirrhinum Seed, very choice, 6*d.* per packet; and Cockscomb Seed, from flowers 23 inches over, 1*s.* per packet.—Woodlands Nursery, Isleworth, Middlesex.

THE FINEST BALSAMS IN EUROPE, in Six Classes; Seed saved by Mr. GLENNY from flowers three inches across: the six, 37 stamps; Mixed Seeds, 13 stamps, in Sealed Packets only, signed and sealed. The finest seeds that can be had procured to order, and all other choice Horticultural subjects.—420, Strand.

RENDLE'S NEW PRICE CURRENT FOR 1854 *should be obtained by all who have gardens, whether small or large. It will be found to be a correct and useful Guide to the amateur and young gardener; a remembrancer to the more advanced in horticulture, and a source of reference to all.*

Can be obtained from the London Publishing Office, 294, Strand; or from the Proprietors, WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth. ESTABLISHED 1786.

WM. HAMILTON (late of Cheapside), SEEDSMAN and FLORIST, 41, Margaret Street, Cavendish Square (first door from Regent Street), London, begs to announce that his Descriptive and Priced CATALOGUE will be forwarded by post on application. It contains an excellent assortment of VEGETABLE SEEDS, and gives a description of their quality and uses; a select choice of FLOWER SEEDS, and the new varieties, with their English or popular names; a list of the finest ROSES and the best CARNATIONS AND PICOTEES for Exhibition; NEW AND RARE PLANTS, FRUIT TREES, and other articles essential for the Garden. All orders sent to W. H., whether by post or otherwise, are carefully and promptly attended to.

CHARLES ALEXANDER (late of DICKSONS & Co.), SEEDSMAN and FLORIST, 32, West Register Street, Edinburgh. His Descriptive Catalogue of Select Garden and Flower Seeds is just published and will be forwarded free on application.

E. SPARY, NURSERYMAN, FLORIST, and SEEDSMAN, respectfully announces that his CATALOGUE of Dahlias, Chrysanthemums, Fuchsias, Geraniums, Verbenas, Stove and Greenhouse Plants, Vines, Seeds, &c., &c., may be had on application.—Queen's Graperies, and 176, Western Road, Brighton.

SAMUEL FINNEY AND CO.'S DESCRIPTIVE CATALOGUE OF FLOWER AND VEGETABLE SEEDS, with prices, is now ready, and may be had on application. It contains an extensive assortment of Imported German Flower Seeds, the celebrated French Asters, and many splendid novelties.—Gateshead Nursery, February 11.

STANDISH AND NOBLE'S CATALOGUE for the present season is Now Ready, and may be had on application. A selection from it appeared as a detailed advertisement in the *Gardeners' Chronicle*, of Saturday, Sept. 10th, to which they respectfully refer plant buyers. It contains many new and choice plants.—The Nursery, Bagshot, Surrey, Feb. 11.

AMERICAN PLANTS.

JOHN WATERER begs to announce that his NEW CATALOGUE of RHODODENDRONS, AZALEAS, CONIFEROUS PLANTS, &c., is now published, and may be had by enclosing two stamps for postage.

The colours of all the Rhododendrons worthy of cultivation are described in order to facilitate purchasers in making selections, together with a Treatise on their successful management.

☞ The Rhododendrons forming the American Exhibitions in the Royal Botanic Society's Garden, Regent's Park, London, are annually supplied from this establishment.

The American Nursery, Bagshot, Surrey, near the Farnborough Station, South-Western Railway, and 3 miles from Blackwater, South-Eastern Railway.

GEORGE BAKER begs to say that his DESCRIPTIVE CATALOGUE of AMERICAN PLANTS, CONIFERS, ORNAMENTAL SHRUBS, FRUIT and FOREST TREES, &c., may be had by enclosing two postage stamps.

G. B. wishes to call particular attention to his fine Stock of GREEN and WEEPING HOLLIES, from 1 to 12 feet high.

G. B. has supplied the American Exhibition in the Royal Botanic Gardens, Regent's Park, from its commencement.

American Nursery, Windlesham, near Bagshot, Surrey, about six miles from Staines Station, Windsor Branch, South-Western Railway, where conveyances may be obtained.

FUCHSIA "DUKE OF WELLINGTON."—Full description sent on application, or coloured Lithographs for 24 stamps. Plants on April 20th, 10*s.* 6*d.* each. Orders executed in strict rotation.—J. MOORE & SON, Perry Barr Nursery, near Birmingham.

BLACK PRINCE AND PRINCE OF WALES STRAWBERRIES.—The Prince of Wales, per 100, 12*s.*; Black Prince, 5*s.* per 100. Also Cuthill's third thousand of the Belgian Prize Essay on the Potato, with 20 other articles upon the Melon, Cucumber, Strawberry, Asparagus, Seakale, Rhubarb Wine (which makes the finest champagne), Salads, Herbs, &c. Price 2*s.* 4*d.*, post free. Also, Market Gardening round London, Price 1*s.* 8*d.* post free. Cucumber Seed, 1*s.* 1*d.* per packet. A Youth from 17 to 18 wanted.
JAMES CUTHILL, Camberwell, London.

CHOICE FRUIT TREES.

JOHN ADAMS, NURSERYMAN AND SEEDSMAN, Brompton Park, Kensington Gore, London, begs to call the attention of the trade, and planters generally, to his extensive Stock of FRUIT TREES, embracing all the best varieties in cultivation, under their correct nomenclature; but more particularly to his Standard Trained Cherries, Plums, Pears, Apricots, Peaches, and Nectarines; Dwarf Trained Cherries, Pears, Plums, Peaches, and Apples; Standard Cherries, Plums, Pears, and fine large Mulberries; Dwarf Pears, Plums, Apples, and Nectarines, of which he has a large stock, all of first-rate quality.

A LARGE QUANTITY OF ONE AND TWO YEAR SEEDLING LARCH, FIR, AND OTHER SEEDLINGS.

WILLIAM WOOD AND SON have the pleasure of referring their Friends to the above, prices of which may be obtained on application.

SEEDLINGS—Two-year Scots Fir, ditto Pinus Austriaca.

One-year Pinus pinaster, ditto Cherry and Pears, very fine, ditto Ash and Alder, ditto Sycamore and Hornbeam, and two-year Weeping Birch. Also Bedded Larch, very fine, and strong transplanted Spruce and Silver Fir, all on the most moderate terms.

N.B. A large stock of Standard and Pyramid Pears, also Standard Plums and Cherries.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

SEEDS.

W. AND S. GAINES beg to offer to Gardeners, Farmers, and Nurserymen, the following seeds:—WHITE SPANISH ONIONS, 4*s.* 6*d.* per lb.; Deptford do., 4*s.* per lb.; Reading do., 4*s.* 6*d.* per lb.; quantities not less than 1 lb. SCARLET RUNNERS, 21*s.* per bushel; quantities not less than one peck. GOOD RHUBARB PLANTS: Albert, Linnæus, and Victoria, 40*s.* per 100; 6*s.* per dozen. Also collections of ANNUAL FLOWER SEEDS, packets of 60 varieties, 10*s.*; 30 do., 5*s.*; 15 do., 2*s.* 6*d.*—Post-office orders payable to W. & S. GAINES, Covent Garden Market, London.

THE EARLIEST PEA IS "FAIRHEAD'S EARLY CONQUEROR." To be had of CLARKE AND Co., Borough, London; 2*s.* per quart (price per bushel on application).

STANDARD TRAINED MORELLO CHERRIES.

YOUELL AND CO. are commissioned to offer for Sale a few very handsome "fan-trained" trees of the above (seven years trained) in full bearing, and will remove with perfect safety. Stems from 4½ to 6 feet in height, and heads measuring from 10 to 16 feet across, price 15*s.* to 21*s.* each. Those wishing to furnish their walls without loss of time, will seldom meet with a like opportunity.
Royal Nursery, Great Yarmouth.

CAMELLIA STOCKS.

WANTED, good strong CAMELLIA STOCKS for inarching this season. Price per 100.—A. H., Office of this Paper.

WANTED, a few PEACHES and NECTARINES in Pots, for fruiting this season, in the best condition.—Address, with price, to R. H., Messrs. C. & E. Layton, 150, Fleet Street.

IMPORTANT TO NURSERYMEN.

WANTED IMMEDIATELY, 1000 strong healthy YEW PLANTS, 3 feet in height.—Address, JOHN WIGHTMAN, Gardener to Sir R. Peel, Bart., Drayton Manor, Tamworth.

MYATT'S VICTORIA RHUBARB.—For Sale, 4000 VICTORIA (true) RHUBARB ROOTS, in lots, to suit purchasers. Price on application.—Address JOHN SCHOFIELD & SON, Seedsmen, &c., Knowsthorpe, near Leeds, Yorkshire.

SEED POTATOES.—The Subscribers have for Sale from 40 to 50 Bolls of REGENT POTATOES, perfectly sound and free from disease, grown on Moss land. Remittances required from unknown correspondents. Early orders requested. A large stock of all sorts of Agricultural Seeds always on hand.—JAMES DICKSON & SONS, Nursery and Seed Warehouse, 32, South Hanover Street, Edinburgh.

PINE PLANTS.

TO BE SOLD, 100 fine, healthy, PINE PLANTS, in 5, 6, and 7-inch pots, warranted clean, and just in condition to shift into larger pots, or to plant out on the Meudon system, consisting of Ripley and Moscow Queens, and Black Jamaica.—Apply to Mr. GLENDINNING, Chiswick Nursery, London.

TO GENTLEMEN PLANTING.

HANDSOME EVERGREENS, 5 to 8 feet high, will remove safely; viz., Chinese Arbor-vitæ, variegated and Green Hollies, Rhododendrons, Box, Laurels, &c., by the 100, or single plant at very moderate price.
CHANDLER & SONS, Nursery, Wandsworth Road, Surrey.

GREENHOUSE PLANTS.—Healthy Flowering Plants for Greenhouses and Conservatories can be supplied at 20*s.* per dozen, consisting of Camellias, Epacris, Acacias, Chorozemas, Ericas, &c. Camellias 30*s.* per dozen, most of them with flower buds. Chinese Azaleas from 1*s.* 6*d.* each to 7*s.* 6*d.* Packing and delivery at any of the Railway Stations, included in the above prices.—CHANDLER & SONS, Nursery, Wandsworth Road, Surrey.

SCOTCH FIR.

THE Subscribers can supply 2-year Seedling SCOTCH FIR, at a very low rate, if taken in quantity. Price given on application.—FOWLER and WRIGHT, Glasgow, Feb. 11.

TRUE HIGHLAND PINE FIR, 1½ to 2 ft., 20*s.*; 2 to 3 ft., 25*s.* per 1000. The Seed from Braemar Forest.—Apply to WILLIAM JACKSON & Co., Bedale, Yorkshire.

LARCHES.

DREGHORN AND AITKEN, NURSERYMEN and SEEDSMEN, Kilmarnock, N.B., beg leave to offer a considerable quantity of FINE THREE YEARS TRANSPLATED LARCHES, 2½ to 3½ feet; which they will deliver carriage free at London, Liverpool, Manchester, or any of the Railway Stations in connection with the Glasgow and South Western, for 15*s.* per 1000, if not less than from 5000 to 10,000 are taken.
Kilmarnock, February 11.

TO PLANTERS AND OTHERS.

LARCH.—A large quantity of fine, three-year transplanted LARCH (2 to 3 feet, grown on poor land, in high and exposed situations) will be Sold cheap.—Apply to SAMUEL FINNEY & Co., Gateshead, Newcastle-upon-Tyne.

JOHN SCHOLEY, NURSERYMAN, &c., Pontefract, Yorkshire, begs to announce that he has a fine Stock of LARCH, from 1½ to 4 feet, well topped, and fibrous rooted. Also a large quantity of Seedling and Transplanted Berberis aquifolium. Prices moderate, may he had on application.

LIME TREES, 12 to 14 feet, 42*s.* per 100.—SPRUCE FIRS, 2 to 3 feet, 6*s.* per 100.—LAURUSTINUS, very fine, 30*s.* per 100.—Apply to BENJAMIN R. CANT, St. John's Street Nursery, Colchester.

SELECT FRUIT TREES.—Per dozen.—Apples and Pears, of the most approved kinds, good strong standards, 9*s.* Ditto, ditto, dwarfs, 8*s.*; trained, 24*s.* to 30*s.*

Cherries and Plums, good strong standards, 12*s.* Ditto, ditto, dwarfs, 9*s.*; trained, 36*s.*

Apricots, Peaches, and Nectarines, trained, of the most approved kinds, 48*s.*

Linnæus, Royal Albert, Buck's Scarlet, and Victoria Giant Rhubarb, true, 7*s.* 6*d.*

The above are first-rate; persons in want should apply as soon as possible to WILLIAM JACKSON & Co., Bedale, Yorkshire.

GRASS SEEDS, SEPARATE OR MIXED.

GENTLEMEN intending to lay down land to Permanent Pasture, or for one or two years' lay, are recommended to communicate with us, stating the nature of the soil and situation, that we may advise as to sorts of Grass Seeds most suitable. OLD MEADOWS DEFICIENT OF THE MOST NUTRITIVE GRASSES AND CLOVERS may be greatly improved by sowing at this season "SUTTON'S" "Renovating Mixture" of Seeds at the rate of 8 to 12 lbs. per acre, price 1s. per lb.

OUR FINEST LAWN GRASS SEEDS are highly useful to improve Garden Lawns, or to form New Lawns.

N.B. We are extensive growers of Mangold Wurzel, Turnip, and other Agricultural Seeds, of which a separate Catalogue is published.

JOHN SUTTON & SONS, SEED GROWERS, READING, BERKS.

SEEDS—CARRIAGE FREE.

WILLIAM E. RENDLE AND CO. *have, from the very extensive patronage they have received, been induced this season to offer the following liberal arrangement to all who purchase Seeds from their establishment.*

ALL ORDERS ABOVE £5 WILL BE DELIVERED CARRIAGE FREE TO ANY RAILWAY STATION IN ENGLAND OR WALES, AND TO ANY STEAM PORT IN ENGLAND, WALES, IRELAND, OR SCOTLAND.

Two or three purchasers joining together will therefore have the advantage of having their orders delivered free of any cost for carriage.

RENDLE'S PRICE CURRENT FOR 1854 should be obtained by all who have gardens, or who take an interest in the cultivation of the soil.

MESSRS. YOUELL AND CO.

BEG TO OFFER THE FOLLOWING:—

ERICA VENTRICOSA SUPERBA, finely set with flower-buds. We particularly recommend these to the trade at 60s. and 75s. per 100.

ERICAS.—Fine bushy blooming plants, in large 48s, of the following sorts, at 12s. per dozen varieties, viz.:—*Aggregata, Bowei, *Coventryana, *Cavendishi, colorans, *densa, *daphnoides, echiflora, *exsurgens coccinea, *gracilis, *hyacinthoides, intermedia, *Linnæoides nova, lævis alba, mirabilis, mammosa, metulæflora bicolor, *nigrita, *ovata, pyriformis, perspicua nana, *rubens rubracalyx, tressula, transparens nova, Westcoti, *Wilmorea superba, Walkeri, viridiflora, *ventricosa breviflora, *v. Bothwelli, *v. coruscans, v. carnea v. dependens coccinea, *v. fasciculata rosea, *v. f. longiflora, *v. f. superba, *v. hirsuta, *v. perspicuoides, *v. superba, *v. tenuiflora, *v. tumida.

ERICAS, in small and large 60s, nice bushy plants, many of them set for flower. All the above named marked with an asterisk, as well as the following, at 9s. per dozen varieties, viz.:—Denticulata moschata, elata, hyemalis, hybrida, scabriuscula, Sindryana, tressula rubra, umbellata, verticillata, ventricosa, cintra rubra, v. densa carnea.

EPACRIS HYACINTHIFLORA, by far the best of the campanulata varieties, in strong plants, 1s. 6d. each.

" hyacinthiflora candidissima (Storey's). Is a magnificent white variety, individual flowers very large, strong plants, 1s. 6d. each; small, in stores, 9s. per dozen.

EPACRIS.—The following choice varieties, in 48s, well set for bloom, at 12s. per doz. varieties, viz.:—Ardentissima, Atleeana, campanulata alba, c. grandiflora, c. maxima, Copelandica, carnea, coruscans, densiflora incarnata, elegantissima, formosa, grandiflora, impressa, imp. alba, imp. magna, lineatus magnifica, miniata, nivalis, onosmæflora, pulchella major, purpurescens, sanguinea, Tauntoniensis, the Bride, variabilis.

Epacris, flowering plants, our own selection, to the trade, 60s. p. 100.

Abelia uniflora, small, 12s. per dozen.

Abutilon insigne, Linden's fine new species, 2s. 6d. each.

Aphelexis humilis and superbum, strong bushy plants, in large 48s, well set for flower, 12s. per dozen.

CAMELLIAS.—The well known difficulty of inducing the greater part of the choice varieties to bloom in a young state, tempts us to offer the following, in stout plants, without buds, at 21s. per dozen, viz.:—Beali, Monarch, Juliana, Bruceana, Forbesi, Grand Frederic, Ruckeri, Lombardi, Horsfalli, Lefeveriana, Picturata, Lepidata, Fimbriata rubra, Agnesi, Sieboldi, &c.

Cassia corymbosa, a good winter-flowering plant, in 48s, 9s. p. doz.

Ceanothus rigidus and dentatus, in large 60s, 12s. per dozen.

Chorozema Lawrencianum, strong flowering plants of this charming variety, in large 48s, 1s. 6d. each.

CALCEOLARIAS—Crimson King (Henderson), deep crimson, very dark and rich, and does not fade; habit dwarf and robust, flowers large, and shape good.

" Magnificent (Henderson), rich crimson, with yellow crown; a large, fine-formed, and very splendid flower, quite distinct from anything yet out.

" Gold Chain, fine golden yellow of great substance and fine habit, with very stout foot-stalks.

" Gold Cap (Garraway), rich dark maroon, the upper division of the flower deep gold colour, the flowers large and of fine compact habit.

These handsome varieties will be found the gems of the season; for bedding strong plants, 2s. 6d. each, or 21s. per dozen.

CINERARIAS, the choicest of the new varieties; strong flowering plants, in 48s, 12s. per dozen.

Corræa speciosa, major, bicolor, and Cooperi; strong flowering plants, 12s. per dozen.

Daphne collina, 12s. per dozen; Dauphine, 18s. per dozen.

Deutzia gracilis, small, 9s. per dozen.

Diosma ericoides and capitata, nice bushy plants of these sweetly-scented species, 9s. per dozen.

Eutaxia myrtifolia, strong bushy plants of this fine old favourite, in large 48s, 9s. per dozen; floribunda, in 60s, 9s. per dozen.

FUCHSIAS: choicest of the new kinds, including Glory (Banks), England's Glory, King Charming, Dr. Lindley, Duchess of Lancaster, Incomparable, &c., 21s. per dozen.

Fairy Roses, 9s. per dozen.

Kennedya inophylla floribunda, 1s. 6d.; Marryattæ, 1s. 6d.; monophylla, 1s.; alba, 2s. 6d.; and rubicunda maxima, 1s. 6d.

Mandevilla suaveolens, certainly the finest greenhouse or conservatory climber we possess, 9s. to 12s. per dozen.

Mitraria coccinea, strong flowering plants, 2 to 3 feet, 3s. 6d. each; smaller, 1s. 6d.

Olea fragrans, 24s. per dozen.

Passiflora racemosa cærulea, in large 48s, 12s. p. doz.; Bellotti, fine new peach-coloured variety, 1s. 6d. each; Buonaparti, 1s. 6d. each.

Philadelphus mexicanus, an elegant shrub with large white flowers, more fragrant than the Orange, 2s. 6d. each.

Pimelea decussata, 9s. per dozen; hispida, 12s. per dozen.

Pittosporum tobirum, this fine old favourite, 1s. 6d. each.

Sollya Drummondi, strong, 1s. 6d. each; heterophylla, 12s. per dozen; linearis, 12s. per dozen.

Swainsonia Osborniana, new, 12s. per dozen.

Tecoma australis, 1s. 6d. each; jasminoides, 12s. per dozen; rosea, 1s. 6d. each.

Tetratheca ericæfolia, small, 18s. per dozen.

Tree Carnations, of choicest kinds, 18s. per dozen.

Geranium Flower of the Day, 6s. and 9s. per dozen.

" Crimson Ivy-leaf; this fine variety, sent out by Messrs. Standish & Noble, 5s. each (splendid for bedding).

HARDY SHRUBS.

Berberis Darwini, 12s. p. doz.; very strong and bushy, 3s. 6d. each.

" Fortuni, 12s. per dozen; dulcis, strong, 4s. per dozen.

Bays (sweet), fine plants, 2 to 2½ feet, 6s. per doz.; 35s. per 100.

Cerasus illicifolia, a new hardy evergreen Cherry from California, producing purple fruit, 3s. 6d. each.

Chimonanthus fragrans, Seedlings, 4 inches, 12s. per dozen.

Clematis azurea grandiflora, strong, 12s. to 15s. per dozen; Sieboldi, strong, 12s. to 15s. per dozen; Montana, strong, 12s. per dozen; flammula, or sweet scented, in pots, 9s.

Escallonia macrantha; strong plants of this most charming evergreen flowering shrub, 12s. per dozen.

Euonymus fimbriatus, strong plants of this handsome evergreen, 2s. 6d. each; japonicus fol. variegatus, 9s. per dozen.

HARDY SHRUBS.

Ilex Castanifolia, strong, 3s. 6d. each; Cunninghami, 3s. 6d. each; latifolia, strong, 1s. 6d. to 3s. 6d. each; Sheppardi, fine, strong, 1s. 6d. each; tarago, strong, 5s. each.

Jasminum revolutum, strong, 12s. per dozen.

Lardizabala biternata, a fine hardy evergreen creeper, 5s. each.

Ligustrum ovalifolium, new species, 12s. per dozen.

Passiflora cærulea, strong, 9s. to 12s. per dozen.

Quercus Fordi, 2 to 3 feet, 24s. per dozen; Ilex Humei, 2 to 3 feet, 30s. per dozen; ballota, 2s. 6d. each; rotundifolia, 2s. 6d. each.

ROSES.—"Queen Victoria" (Paul's), standard and half standard, 2s. 6d. each; "Prince Albert," strong, in pots, 5s. each; standards and half standards, of best kinds, 15s. to 18s. per dozen; dwarfs on own roots, 6s. and 9s. per dozen.

Wistaria sinensis, strong, 12s. to 24s. per dozen.

Weigela rosea, strong bushes, 2 to 3 feet, 9s. per dozen.

Yucca gloriosa superba, strong, 3s. 6d. to 5s. each.

CHOICE HOLLYHOCKS, PANSIES, AND OTHER HERBACEOUS PLANTS, BULBS, ETC.

HOLLYHOCKS.—The following fine varieties, in strong plants, well established in pots, 12s. per dozen varieties:—Bicolor, Commander-in-Chief, Conspicua, Delicata, Eclipse, Fireball, Formosa Improved, Lilac Perfection, Magniflora, Magnum Bonum, Maiden's Blush, Mr. Charles Baron, Mulberry Superb, Obscura, Princess Alice, Princess Helena, Princess Royal, Queen, Rosea Alba, Rosea Rubra, Snowflake, Venosa Rubra, Walden Gem, Rosy Queen, &c.

PANSIES.—The following choice kinds, at 10s. per dozen varieties:—Alba Superba, Androcles, Blanche, Cæsar, Calysto, Caroline, Commander-in-Chief, Crystal Palace, Drusilla, Duchess of Rutland, Elegant, Emma, Euphemia, Glory, Helen, Heroine, Indian Chief, Isabella, Junius, Lady Carrington, Lady Franklin, Lady Harding, Lord Jeffery, Marchioness of Lothian, Masterpice, Miriam, Miss Talbot, Mrs. Beck, Penelope, Polyphema, Post Captain, Prince Arthur, Princess, Queen of England, Rubens, Sambo, Smolensko, The Rajah, Uttoxeter Hero, Viceroy, Yellow Prince.

Daisies, new Belgian, in 50 fine varieties, 4s. per dozen.

Dielytra spectabilis, 9s. per dozen.

Funkia grandiflora, 2s. 6d. each.

Rockets, double white, 3s. per dozen; purple, 4s. per dozen; crimson, 1s. 6d. each.

Oxalis rosea, one of our prettiest hardy herbaceous plants, and nearly always in flower, 6s. per dozen; floribunda, 6s. per dozen.

Pæonies, herbaceous, in 25 fine varieties, 12s. per dozen.

Phloxes, in numerous fine varieties, 9s. to 12s. per dozen.

Potentilla M'Nabiana, and other choice kinds, 6s. per dozen.

Primrose, double white, 4s. per dozen; double yellow, 4s. per dozen; double purple, 4s. per dozen; double lilac, 3s. per dozen; double crimson, 12s. per dozen.

Silene maritima plena, fine double white, 9s. per dozen.

Statice latifolia, strong, 9s. per dozen; pseudo armeria, 6s. per dozen; maritima rosea, very pretty and distinct, 6s. per dozen.

Choice selection of Herbaceous Plants, 25s. per 100.

Tigridia conchiflora, the yellow spotted tiger flower, a very desirable summer and autumn blooming bulb—it makes beautiful beds, 3s. per dozen.

Gladiolus insignis, one of the handsomest of the genus; the flowers, which are produced freely, are of a glowing scarlet, suffused with purple, 4s. per dozen; Brenchleyensis, a magnificent new variety, 3s. 6d. each.

Lilium colchicum, a magnificent new species, with lemon-coloured flowers, 7s. 6d. each; lancifolium album, flowering bulbs, 9s. per dozen; l. rubrum, flowering bulbs, 18s. per dozen.

Lily of the Valley, strong roots, 5s. per 100.

CARNATIONS AND PICOTEES.—Beautiful selections from their superb and extensive collections, at 18s., 24s., and 30s. per dozen pairs; fine mixed, for borders, 9s. per dozen pairs. True Old Clove Carnation, 12s. per dozen pairs.

PINKS.—Four fine sorts by name, 9s. to 12s. per dozen pairs.

CHRYSANTHEMUMS.—The most choice and showy of the large and pompone flowering varieties, strong plants, 9s. per dozen.

CHOICE FRUITS. (WARRANTED TRUE TO NAME.)

"FASTOLFF RASPBERRY."—It is with much satisfaction that we announce a third award made by the London Horticultural Society, on 26th of July last, for examples of the above most excellent Raspberry, unequalled by any other variety for the size of its fruit and richness of flavour.

It is reported in the *Gardeners' Chronicle* of July 30th, page 486, as follows:—"Messrs. Youell, of Great Yarmouth, sent a boxful of beautiful fruit of the Fastolff Raspberry; they were unusually fine, and well deserved the certificate of merit awarded them."

Strong well-rooted canes, 15s. per 100; Large White Raspberry, 24s. per 100; New Monthly Fruiting, 24s. per 100.

APPLES, standard,	in best selection,	good heads	9s.	per dozen.
" dwarf	"	"	6s.	"
" trained	"	"	30s.	"
PEARS, standard	"	"	12s.	"
" dwarf	"	"	8s.	"
" trained	"	"	30s.	"
PLUMS, dwarf	"	"	9s.	"
" trained	"	"	36s.	"
PEACHES, dwarf trained,	in fine strong plants,		36s. to 60s.	"
NECTARINES, dwarf trained,	"		36s. to 60s.	"
APRICOTS	"	"	36s. to 60s.	"
CHERRIES, standard,	in fine variety	...	12s.	"
" dwarf	"	...	9s.	"
" trained	"		36s. to 42s.	"

GOOSEBERRIES, 25 of the finest varieties (good bushes) selected for size and flavour, 30s. per 100; 4s. per dozen.

CURRANTS, improved large white Dutch, Black Naples, Raby Castle (red), and Large Red Grape, 4s. per dozen; Knight's Sweet Red, 6s. per dozen; these are the most desirable kinds in cultivation, and are highly recommended.

RHUBARB, Myatt's Victoria, 9s. per dozen; Royal Albert, 9s. per do.; Linnæus, 9s. per do.; Tobolsk, 6s. per do. (strong).

SEAKALE, extra strong, 2 years, 6s. per 100.

ASPARAGUS, extra strong, 3 years old, 3s. 6d.; 2 years old, 2s. 6d. per 100.

☞ Less quantities than those named above supplied at the same prices. Orders of 2l. and upwards are delivered Carriage Free to London or Hull, or to any Railway Station within 150 miles of the Nursery.

YOUELL & Co. beg to refer to their Advertisement which appeared in this Paper of last week. Catalogues will be forwarded free on application. ANEMONE SEED, saved from selected roots, 10s. per lb. The usual discount to the trade.

YOUELL & CO., Royal Nursery, Great Yarmouth.

JOHN JEYES, NURSERYMAN and SEED-MERCHANT, Northampton, begs to offer Agricultural Seeds of every kind, and the best quality: Horticultural and Floricultural Seeds in great variety and of the choicest selection; Ornamental Shrubs and Trees of various sizes and immense variety; a Fine Collection of Roses; Fruit Trees carefully selected from the finest proved sorts; a large Stock of Forest Trees; Russian Mats.

Plans and Estimates given for making Pleasure Grounds, Cemeteries, &c. Seeds selected and packed for Exportation. Experienced Gardeners recommended.

HAWKES' CHAMPAGNE RHUBARB.—This most desirable variety is now for the first time offered to the public. It has stood the severest test that can be applied, and has beaten everything in Covent Garden and other London Markets in realising higher prices, from its magnificent colour and size. It has been seen by the very highest authorities and pronounced to be a most valuable introduction. In earliness it equals the Prince Albert, but of a deeper colour, and much greater bearer. It forces remarkably well, and is very hardy out of doors. Mr. HAWKES has placed the entire sale in the hands of Duncan Hairs.

One-year-old plants, strong, 5s. each. A few two years old, very strong, for sale.

LAING'S MAMMOTH RED CELERY.—This is considered the largest yet grown, attaining the extraordinary weight of from 10 to 12 lbs., and at the same time perfectly solid. It is nearly perennial in its habit, as it will not, under any circumstances, run to seed the first season, and it is difficult sometimes the second when planted out for that purpose. In colour it is a bright red. In flavour unsurpassed, if equalled.

It has been seen growing by many practical gardeners, who deem it a new feature in the garden, from the fact that it may be had nearly all the year. Packets 2s. 6d. each.

MITCHELL'S HARDY EARLY CAULIFLOWER.—This is grown precisely as the handglass variety, but when removed from the frame does not require the same protection, and comes in immediately after. This is particularly recommended for gentlemen's establishments. The head is not large, but handsome and compact, and is so firm that you may let them stand from 10 days to a fortnight and they will not get frothy or loose. This is quite a distinct variety. Packets 2s. 6d. each.

DUNCAN HAIRS, Seedsman, 109, St. Martin's Lane. Post Office orders to be made payable at Charing Cross.

CASTLEWOOD GREEN TOP SEED POTATOES.—After much search, the pure and original "Green Top" was found in a remote district of the west of Ireland, by the undersigned. A breadth sufficient to supply the seed largely was planted, and from this source the public may rely on obtaining pure, honest, uncontaminated Seed. The characteristics of this family of tubers are:—

1. Economy as Seed—They will plant twice the quantity of land, weight for weight, that any known variety will, because they can be planted at twice the distance from each other.

2. Productiveness—One small cut seed having produced in one plant, 49 tubers; in many, 34 and 36, in all an average of 15.

3. Flavour and nutritiveness, which are superlative.

4. Resistance of blight, of which power they have proved themselves possessed in the extreme, as in a field of 5½ Irish acres scarcely 5 per cent. exhibited disease.

To each purchaser of seed, however small, plain directions for planting will be given. The public are cautioned against a spurious root, which some individuals are endeavouring to pass off as the genuine "Castlewood" Potato.

FREDERICK BEVERLEY DIXON, Castlewood House, Durrow, Queen's County.

Samples of the Seed may be seen, and orders given, at Mr. FENESSY'S, Seedsman, Kilkenny; and THOMAS EELES & Co., Seedsmen, &c., 22, Mary Street, Dublin.

Price, delivered free on board at Dublin, 25s. per barrel of 20 stone; bags included. Post Office Order to accompany orders from unknown correspondents.

KNAP HILL NURSERY, WOKING, SURREY.

WATERER AND GODFREY, Nephews and Successors to the late HOSEA WATERER, respectfully invite the attention of parties engaged in planting to the following list:—

Araucaria imbricata, 2, 3, 4, 5, and 6 feet high, in the open quarters, regularly removed every year, and as robust and handsome as it is possible to get them. We have a large stock.

Cryptomeria japonica, 2, 3, 4, 5, 6, to 8 feet.

Cedrus Deodara, stout handsome plants from seed, in any quantity, and of all heights from 1 to 7 feet. A few splendid specimens 10 to 15 feet; warranted to transplant with perfect safety.

Cedar of Lebanon, 2, 3, 4, 5, 6, 7 to 10 feet. These large Cedars of Lebanon are also very handsome trees.

Cupressus macrocarpa, or Lambertiana, 2, 3, 4, 5, 6, and 8 feet, all from seed.

" Goveniana, 2 to 3 and 4 feet.

" Funebris, 2 and 3 feet.

" thyoides variegata, 2, 3, and 4 feet.

The Variegated White Cedar, a scarce but most beautiful variegated plant, seldom seen except at Elvaston Castle. We hold a large quantity.

Juniperus Bedfordiana, fine plants, 3, 4, and 5 feet.

" Chinese, 2, 3, 4, 5, 6, 8, and 10 feet.

" repandus, 3, 4, 5, to 8 feet.

" Upright Irish, 3, 4, 5, 6, 7, and 8 feet; perfect columns, and, except at Elvaston, unequalled.

" Virginiana, the Red Cedar, 4, 5, 6, and 8 feet.

Taxodium sempervirens, 2, 3, 4, 5, and 7 feet.

Yew, common, 3, 4, 5, to 8 feet high.

" Irish, 3, 4, 5, to 10 feet. A splendid lot, all being trimmed to one stem; it adds much to their appearance and value.

" Gold striped, 1, 2, and 3 feet.

" do. worked on the Common, with fine heads, 4, 5, 6, and 7 feet high; very handsome.

" elegantissima (new striped) standards. The golden Yews are very ornamental, and we have a large quantity of fine plants.

" Dovaston, or Weeping Yew, fine standards.

Pinus Douglasi, 3, 4, 5 and 7 feet; a few magnificent plants 10 to 12 feet high.

" insignis, 2, 3, 4, 5, 6, and 7 feet; all from seed.

" cembra, 3, 4, to 6 feet.

" Canadensis (Hemlock Spruce), 3, 4, and 6 feet.

" morinda, 3, 4, and 6 feet.

" Menziesii, 3, 4, 6, and 8 feet.

" cephalonica, 3 to 4 feet.

" Pinsapo, large and handsome, 3 and 4 feet.

" Nordmaniana, from seed, 1½ foot; a few larger, 2 feet.

" nobilis, stout plants, with perfect heads, about 1½ foot; a few larger specimens, 3 and 4 feet. We hold a fine stock of this beautiful Fir, none of which are grafted.

Thuja Arbor-vitæ, American, 3 to 6 feet. We recommend this plant for hedges.

" Weareana, 3 to 6 feet, one of the few really hardy and most useful evergreens.

" aurea. This is perhaps one of the prettiest plants of the day; it was first sent out from this Nursery, and our stock, for size and beauty, is unsurpassed.

Libocedrus chilensis, 1½, 2, and 3 feet. This is a very distinct and beautiful plant, of recent introduction. Our stock is large and good.

Independent of the foregoing we are very large holders of the most useful Evergreens, Deciduous and Ornamental Trees, and of large size. Priced Catalogues will be forwarded on application, enclosing two postage stamps, which will also include a Descriptive Priced Catalogue of the celebrated collection of American Plants grown at this Nursery.

The Nursery is near the Woking Station, and about an hour's ride from London. A visit is earnestly solicited from all who intend planting during the forthcoming season.

SEEDS—SELECT AND NEW SORTS.

BASS AND BROWN'S SPRING CATALOGUE OF SEEDS AND PLANTS is now complete, and supplied free for three penny stamps.

The following are a few new and select sorts quoted from the Catalogue.

Those offered by the packet may be had free by post.

*Those marked * have not been offered in the Catalogue.*

	s.	d.
BROCCOLI—Elletson's Emperor, large fine late sorts, per packet ...	2	6
„ Dilcock's Bride, very large and fine, per packet ...	2	6
CABBAGE—Mitchell's Early Dwarf York, Barnes' New Early, Spotsboro', and other choicest, each, per oz....	0	8
„ Couve Tronchuda, an excellent tender sort ...	1	0
CELERY—Cole's New Crystal White, per packet ...	1	0
„ Seymour's Champion White, and Cole's Superb Red, each per oz. ...	0	8
CUCUMBER—*Lord Kenyon's Favourite, Great Britain, Chamberlain's Essex Hero, Cheltenham Surprise, Warwickshire Hero, *Chamberlain's fine Ridge, and *Chamberlain's White Spine, each per packet ...	1	0
„ Cuthill's Black Spine, Manchester Prize, Sion House, Victory of Bath, Victory of England, Phenomenon, Walker's Rambler, Roman Emperor, *Chamberlain's fine Ridge, and *Chamberlain's White Spine, each, per packet ...	0	6
MELON—Fleming's Hybrid, Bromham Hall, Windsor Price ... each per packet	1	0
„ Caboul, Beechwood, and others ... „	0	6
MAMMOTH GOURD AND OHIO SQUASH „	0	6
LETTUCE—Wellington Cos, very fine, large and close, p.oz.	2	0
„ Grand Admiral, Cabbaging, large and fine ... „	2	0
„ Others of the finest sorts, each ... 1s. 6d. to	2	6
PARSLEY—Extra triple Curled, and Myatt's Garnishing, each per oz.	0	6
PARSNIP—Large new Guernsey ... „	0	6
SAVOY—Mitchell's Dark Green Drumhead „	1	0
TURNIP—American New Strapleaf, and Orange Jelly, each per lb. ...	2	0
PEAS—Saugster's New No. 1, very early prolific, and fine pods ... per quart	2	0
„ Waite's New Daniel O'Rourke ... „	2	6
„ Fairbeard's New Nonpareil, earliest wrinkled marrow, delicious flavour, per quart ...	5	0
„ Mien's Paradise, a very fine large long-podded early marrow, per quart ...	2	0
„ Hairs' Defiance, new wrinkled marrow, fine, per quart	2	0

And various others of the choicest Vegetables. See Catalogue.

ASSORTED COLLECTIONS OF VEGETABLE SEEDS, including many of the above, 3*l*., 2*l*., 1*l*., and 15*s*.

The Collections Nos. 1, 2, and 3 are specified in the Catalogue.

FLOWER SEEDS.

Those marked * have not been offered in the Catalogue. Those not priced are 6*d*. per packet. Flower Seeds sent free by post.

GREENHOUSE PERENNIALS.

- *Acacia verticillata
- „ others. See Catalogue
- Bossiæa biloba stenophila, 1*s*.
- „ heterophylla, 1*s*.
- Calceolaria, very choice, 1*s*.
- „ extra superb, from new varieties, 2*s*. 6*d*.
- Calendrinia umbellata
- Chorozema, in vars., each, 1*s*.
- Cineraria, choice, 1*s*.
- „ extra, from new varieties, 2*s*. 6*d*.
- *Coffæa arabica
- Daubentonia tripetiana [1*s*.
- Fuchsia, from new and choice,
- Geranium, choice, 1*s*.
- „ ex. choice new vars., 2*s*. 6*d*.
- „ finest mixed scarlets
- „ from finest fancy varieties, 1*s*. 6*d*.
- Gloxinia, choice mixed
- * „ extra, from alba grandiflora, spectabilis, Maria van Houtte, and others from our superb collection, 2*s*. 6*d*.
- Grevillea robusta, new, 1*s*.
- Ixia mixed, 6*d*.
- Kennedya, in vars., 6*d*. to 1*s*.
- Lisianthus Russellianus
- *Lobelia Limburgensis, ex., 1*s*.
- Lychnis fulgens
- Mandevilla suaveolens
- Nycterinia saleginoides
- Nymphæa cærulea
- Petunia, from new and choice, 1*s*.
- Primula sinensis, mixed
- „ fimbriata, choice mixed, 1*s*.
- Silene orientalis, new, and fine for bedding
- Streptocarpus Rexi
- Verbena, mixed choice, 1*s*.
- „ choicest new, 2*s*. 6*d*.
- Vinca rosea, and alba, separate

HARDY PERENNIALS.

- Antirrhinum, choice mixed
- „ from Hendersoni Primrose Perfection, and other prize varieties, 1*s*.
- Aquilegia formosa
- „ glandulosa, true
- Auricula, from choice vars., 1*s*.
- Campanula carpatica, 6*d*.
- „ carpatica alba, 6*d*.
- Carnation and Picotee, extra, from collection of 400 vars., 2*s*. 6*d*.
- Cistus, Rock, splendid mxd., 1*s*.
- Delphinium alata magna, 6*d*.
- Dianthus nanus, new and fine varieties, 1*s*.
- Digitalis lutea grandiflora, fine
- Gaura Lindheimeria, new
- Gladiolus, fine mixed, early
- „ from choice named, 1*s*.
- Hollyhock, choice, 1*s*.
- Iris, English, splendid variety
- „ from best varieties of our choice and superb collection, 2*s*. 6*d*.
- Mimulus, mixed choice
- Pansy, extra choice, 1*s*.
- Polyanthus, mixed choice

HARDY PERENNIALS.

- Potentilla, splendid mixed, 1*s*.
- „ extra extra, 2*s*. 6*d*.
- Ranunculus, very choice, 2*s*. 6*d*.
- Sweet William, scarlet, fine
- * „ very choice, striped French

GREENHOUSE ANNUALS.

- Balsam, from extra choice, imported
- Gomphrena aurantiaca, 1*s*.
- Ipomœa violacea vera (rubro cærulea), 1*s*.
- „ Martynia fragrans
- Phlox Drummondi alba, Leopoldiana, and alba oculata, 6*d*. each.
- „ Drummondi, fine scarlet, 4*d*.; mixed, 3*d*.
- Portulacca, 6 beautiful varieties, 3*d*. to 6*d*.
- * „ aurantiaca, new orange, 1*s*.
- * „ nova rosea, 1*s*.
- „ fine mixed
- Rhodanthe Manglesi
- Salpiglossis atrosanguinea
- „ new yellow
- Schizanthus retusus alba
- Thunbergia, 6 fine varieties, 6*d*. each
- „ mixed

HALF HARDY ANNUALS.

- Aster, Bishop's Prize, superb
- Calceolaria chelidinoides, ex. ex., clear bright yellow, fine for massing on lawns, the mouth being closed it is not injured by wet, 1*s*.
- Cosmus bipinnatifida grandifl.
- * „ purpureus
- Grammanthus gentianoides
- „ lutea
- Hibiscus calysurus, superb, 4*d*.
- Lobelia ramosus albus, new, 1*s*.
- „ major, extra
- „ rosea, new
- Menulea violacea, new, strong, 4*d*.
- Nemesia versicolor, new, fine, 4*d*.
- „ bicolor, new, white and blue, very strong and beautiful
- Pink, imperial Indian, extra
- Tropæolum trimaculatum coccineum, new, 1*s*.

HARDY ANNUALS.

- Cochlearia acaulis, new
- Calliopsis nana, very dwarf, 3*d*.
- „ new marbled, beautiful, 3*d*.
- Collinsia Bartsiæfolia, new, extra
- „ multicolor, new
- Convolvulus bicolor, double new
- „ tricolor, double new
- Helianthus (Sunflower) Californicus, very fine and double
- Iberis violacea superba, new, 4*d*.
- Leptosiphon luteum, ex ex., very dwarf, and beautiful for massing on lawn beds, 1*s*. to 2*s*. 6*d*.
- *Linum grandiflorum rubrum, 1*s*.
- Nemophila aurita alba oculata, new
- Penisetum villosum, new

For many other superb and new varieties, see Catalogue.

FLOWER SEEDS—BEST ASSORTMENTS.

Including a large number of those enumerated above.—	s.	d.
100 Varieties new and select Showy Annuals	15	0
50 Varieties do., 8*s*. 6*d*.; 30 varieties, 5*s*. 6*d*.; 20 varieties	4	0
20 Varieties best dwarf Annuals, in large packets, for filling beds on lawns, 7*s*. 6*d*.; 12 varieties	5	0
20 Varieties choice Greenhouse Annuals, 7*s*. 6*d*.; 12 vars.	5	0
20 „ „ Perennials, 10*s*. 6*d*.; 12 vars.	7	6
20 Vars. hardy Biennials and Perennials, 7*s*. 6*d*.; 12 vars.	5	0

BASS AND BROWN'S ADVERTISEMENT—*Continued.*

CHOICE IMPORTED SEEDS.

	s.	d.
24 superb varieties Dwarf German Stocks, 4*s*.; 12 varieties	2	6
Mixed, in 40 superb varieties, per packet ... 6*d*. to	1	0
Choice new brimstone, 6*d*.; dwarf carmine	0	6
*Fine new French, straw colour	1	0
10 Superb varieties, new large flowering	2	6
18 „ Wallflower leaved, or Prussian ...	3	6
New white Wallflower leaved, very dwarf and fine, per packet ... ... 6*d*. to	1	0
6 Superb varieties Brompton Stocks	1	6
7 „ Emperor Stocks, lasting more than 4 years, and blooming 2 or 3 times a year	2	0
New White Emperor, very choice, per packet	1	0
12 Superb varieties German Aster	2	0
12 „ Globe-flowering Aster	2	0
12 „ Pyramidal Aster	2	0
12 Very fine French Pæony, flowering varieties; these are extraordinarily fine	5	0
Mixed do., per packet	1	0
6 Superb varieties Zinnia elegans	2	0

And other fine Imported Seeds. See Catalogue.

☞ Goods CARRIAGE FREE with orders of 20*s*. and upwards to London, Ipswich, Norwich, or any Station on the Line.

Remittances are requested with orders from unknown correspondents. Post-office Orders to be made payable to BASS & BROWN, or to STEPHEN BROWN.

The Autumn and Spring Catalogues supplied free by post for three penny stamps each, the cost of which may be deducted from orders sent.

BASS & BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

ESTABLISHED ABOUT HALF A CENTURY.

SEEDS CARRIAGE FREE.

SUTTON'S COLLECTIONS OF SEEDS THE BEST YET OFFERED.

KITCHEN GARDEN SEEDS.	£	s.	d.
No. 1.—A complete Collection, for one year's supply ...	3	0	0
No. 2.—A complete Collection, in reduced quantities, of the same sorts	2	0	0
No. 3.—Ditto Ditto Ditto	1	5	0
No. 4.—Ditto Ditto Ditto	0	15	0

A List of the sorts and quantities contained in these Collections may be had post free for one penny stamp.

HARDY AND SHOWY FLOWER SEEDS (POST FREE).			
No. 5.—A Collection of the best 50 sorts known ...	0	10	6
No. 6.—A Collection of the best 36 sorts known ...	0	7	6
No. 7.—A Collection of the best 24 sorts known ...	0	5	0

Purchasers are at liberty to name any sorts of Flower Seeds they wish included in the above Collections. If left to our selection, the most hardy and showy kinds only will be sent.

SUTTON'S GENERAL PRICED CATALOGUE OF SEEDS AND PLANTS will be sent post free on receipt of one penny stamp.

JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

NEW SEEDS—GROWTH OF 1853.

RENDLE'S COLLECTION OF GARDEN SEEDS, FOR ONE YEAR, *will be sent out as usual by the Subscribers.*

The collections have given universal satisfaction, and they will be found sufficient to supply a garden during the whole of the 12 *months.*

	£	s.	d.
No. 1.—A complete Collection, to supply a large garden for 12 months, including 20 quarts of the newest and most approved Peas, for early, medium, and late crops; 10 quarts of Beans, and full quantities of all other kinds of vegetable seeds	3	0	0

For the detailed quantities contained in the No. 1 Collection, see back page Gardeners' Chronicle, Jan. 7, 1854.

	£	s.	d.
No. 2.—A complete Collection, in reduced quantities, for a smaller garden	2	0	0
No. 3.—A complete Collection do.	1	5	0
No. 4.—A small and choice Collection	0	15	0

☞ *All orders above 20s. carriage free (see* PRICE CURRENT*), and all orders above 5l. delivered carriage free to every Railway Station in England and Wales, and to every Steam Port in England, Wales, Ireland, and Scotland.*

WILLIAM E. RENDLE & CO.,
Seed Merchants,
ESTABLISHED 1786. Plymouth.

The quantities contained in the above Collections will be found in our PRICE CURRENT AND GARDEN DIRECTORY, *just published.*

JOHN CATTELL begs to say that the following priced Catalogues of his Nursery Stock and Seeds may be had on prepaid application, by enclosing a penny stamp for each.

Roses, Fruit Trees, Forest Trees, including Quick, Privet, Briar, Holly, &c., suitable for hedges; Hardy Ornamental Trees and Shrubs, including Coniferæ, American Plants, Climbers, &c. Kitchen Garden Seeds. Flower Seeds, in which are enumerated very superior selections of German Stocks, Asters, &c., genuine as imported, in large or small packets, to suit all purchasers.

The following selections are exceedingly fine:—Cedar of Lebanon, from 2 to 8 feet, splendid upright plants, in first-rate order for removal. Cedrus deodara, fine, from 1 to 8 feet. Azaleas, Ghent and English, of the most showy varieties, loaded with bloom buds. Rhododendrons, of all the leading sorts. Kalmia latifolia, in variety, very fine. Andromeda floribunda, splendid plants. Roses, the standards are particularly straight strong stems, also some extra tall stems from 5 to 6 feet, worked with climbing and other showy sorts; the dwarfs are also fine strong plants. Fruit Trees, consisting of the leading varieties, fine and in good order.—Westerham, Feb. 11, 1854.

COLE'S SUPERB CRYSTAL WHITE CELERY.

J. THORNLEY, W. COLE, AND CO., NURSERYMEN, SEEDSMEN, and FLORISTS, Withington, Manchester, beg to announce that they are now prepared to supply this fine Celery at 1*s*. 6*d*. per half-ounce packet, or in larger quantities. This variety has given universal satisfaction, and has been proved to possess all the good qualities attributed to it by W. Cole last season. It can also be procured from the following agents:—

Messrs. Hurst and M'Mullen, 6, Leadenhall Street; Messrs. Noble, Cooper, and Bolton, 152, Fleet Street; Messrs. Minier & Co., 60, Strand; Messrs. Charlwood & Cumming, Covent Garden; Mr. Turner, Slough; Mr. Duncan Hairs, St. Martin's Lane; Mr. Denyer, Gracechurch Street; Mr. J. Fairbairn, Clapham; Messrs. A. Henderson & Co., Pine Apple Place; Messrs. Downie and Laird, Edinburgh; Messrs. F. & A. Dickson, Chester; Messrs. F. & A. Dickson, Manchester; Messrs. J. & J. Fraser, Lea Bridge, Essex; Messrs. Little and Ballantyne, Carlisle; Messrs. Veitch & Son, Exeter; Mr. J. Veitch, Exotic Nursery, Chelsea; Mr. Clarke, King Street, Covent Garden; Messrs. Finney & Co., Gateshead; Mr. A. Pontey, Plymouth; Mr. E. Rendle, Plymouth; Mr. Cattell, Westerham, Kent; Mr. Smith, Riverhead, Kent; Mr. Epps, Ashford and Maidstone, Kent; Messrs. Lucombe, Pince, & Co., Exeter; Mr. Browne, Norwich; J. Cole, Keyfield Nursery, St. Albans; Garaway & Mayes, Bristol; Drummond & Son, Stirling.

All orders to be addressed as above, instead of to "Dartford" as heretofore.

PYRAMIDAL PEAR TREES ON THE QUINCE STOCK.

J. AND J. FRASER, NURSERYMEN, Lea Bridge Road, Essex, beg to offer the above in fine strong trees, and such as would fruit the first and second year after planting, at the undernamed prices. These Pears are remarkable for their compact style of growth and prolific bearing; the collection comprises the following fine sorts:—Beurré d'Amanlis, Beurré d'Aremberg, Beurré de Capiaumont, Beurré Diel, Beurré Easter, Beurré Grise d'Hiver, Nouveau, Beurré Rance, Williams's Bon Chretien, Crassane, White Doyenné, Duchesse d'Angoulême, Forelle or Trout Pear, Glout Morceau, Hacon's Incomparable, Jargonelle, Louise Bonne of Jersey, Marie Louise, Napoleon, Winter Nelis, and Passe Colmar.—Price 2*s*. 6*d*. to 3*s*. 6*d*. each.

POLYANTHUS SEED.

TO THE LOVERS OF THAT BEAUTIFUL EARLY SPRING PLANT, THE POLYANTHUS.

JAMES WOODS has again to offer a quantity of POLYANTHUS SEED, which he has this year saved with more than ordinary care, from about 80 named and good laced flowers, which he can recommend with confidence; with directions for sowing. Price 1*s*. per packet, or sent free on receipt of 13 postage stamps. J. W. has a quantity of RANUNCULUSES, good old superfine named sorts, in one general mixture, which he will send free by post at 4*s*. per 100, or 35*s*. per 1000, on receipt of Post Office Order or postage stamps, to JAMES WOODS, Florist, Harwich, Essex.

P.S.—Plants of Polyanthus will be sent out in April at exceedingly low prices, with blooms on each plant, as the stock must be reduced, the land being wanted for railroad purposes.

DOUBLE ITALIAN TUBEROSE ROOTS, 4*s*. per dozen.—The annual importation of the above-named beautiful and fragrant Flower has just been received, and large and well selected Bulbs may be obtained, without disappointment, at A. COBBETT'S Foreign Warehouse, 18, Pall Mall.

N.B. Printed regulations for treatment sent; also, just arrived very moist and open Parmasan Cheeses.

WILLIAM NICHOLSON still continues to send out very strong well-rooted Plants of his four new and distinct varieties of STRAWBERRIES, viz., AJAX, dessert Fruit; RUBY, ditto; CAPTAIN COOK, Market Fruit; FILL-BASKET, ditto, at 15*s*. per 100, or 25 each of any two sorts for 10*s*., box included. Post-office orders payable at Yarm, Yorkshire. For a full description, see Advertisement *Gardeners Chronicle* Jan. 28, 1854.—Egglescliffe, near Yarm, Yorkshire.

TO POTATO GROWERS.

W. DRUMMOND AND SONS, SEEDSMEN and NURSERYMEN, Stirling, N. B., offer for sale several tons of ROS'S EARLY AMERICAN POTATOES, grown expressly for seed, on reclaimed peat or moor, and without manure. Not a trace of disease could be seen in the crop. This Potato has been well known in Scotland for the last 40 years, as one of the very best for general garden or field crops. It is very productive, full sized, dry, and finely flavoured; and is earlier than the Regent.

Price 22*s*. per sack of 2 cwt., sack included, and delivered carriage free in London, Liverpool, and Hull.

Unknown correspondents will please send a remittance with their orders.

May be had on application, a very useful priced Descriptive CATALOGUE of VEGETABLE SEEDS, containing only such varieties as are really worth cultivating.

This Advertisement will not be repeated.

PEAS! PEAS! THE BEST VARIETY IN CULTIVATION.

CHAMPION OF ENGLAND, a blue wrinkled Pea, very productive, of quick growth, and of a most delicious flavour. This extraordinary Pea combines in one the merits of all others, and has none of their demerits; for, although a wrinkled Pea, it is both hardy and early, and being of quick growth, it is the best kind to plant throughout the season for each crop. It is highly productive, bearing very long pods of a lively green, which are well filled, and the Peas are generally as large as small horse Beans, of a deep green colour, and beyond all others of a most delicious flavour. Height, 3 ft. to 3½ ft.

Price, in quantities of not less than 1 peck ... Bag included 6*s*.
„ „ „ 1 bushel ... ... „ 16*s*.
„ „ „ 1 sack (4 bushels) „ 60*s*.
„ „ „ 8 bushels (1 qr.) „ 106*s*.

Delivered, freight paid by Railway to London.

Orders, with remittance or satisfactory reference, will have immediate attention on application to

H. AND A. WALLIS, SEEDSMEN, Ipswich.

NEW FUCHSIAS AND DAHLIA PLANTS, AND CUCUMBER SEEDS.

J. BATTEN, FLORIST, will send out, after Feb. 20, strong plants of the following FUCHSIAS:—

GRANDISSIMA—Deep claret corolla, long white tube, good habit.

MR. CHARLES PALMER—Scarlet corolla, white tube, broad inverted sepals, fine habit; first-class certificate at Hackney.

ADMIRAL—Light crimson corolla, light tube, free bloomer.

At 7*s*. 6*d*. per plant, or the set for 20*s*.

BUSHELL'S LONDON DON DAHLIA—Colour scarlet orange, rivalling the Duke of Wellington, at 5*s*. per plant, in May next.

BATTEN'S CUCUMBER SURPRISER—Black spine, fine flavour, and first-rate for exhibition. Sealed packets of six seeds for 2*s*. 6*d*.—Brook Street, Clapton, Feb. 11.

WHEELER AND SON'S PRICED LIST OF FARM SEEDS FOR FEBRUARY. *See last page of this Paper.*

The Gardeners' Chronicle.

SATURDAY, FEBRUARY 11, 1854.

MEETINGS FOR THE ENSUING WEEK.

MONDAY, January	13	Geographical	8½ P.M.
TUESDAY, —	14	Syro Egyptian	7½ P.M.
		Civil Engineers	8 P.M.
		Medical and Chirurgical	8½ P.M.
		Zoological	9 P.M.
WEDNESDAY, —	15	London Institution	7 P.M.
		Microscopical (Anniversary)	8 P.M.
		Society of Arts	8 P.M.
THURSDAY, —	16	Antiquarian	8 P.M.
		Royal	8½ P.M.
FRIDAY, —	17	Geological (Anniversary)	1 P.M.
		Royal Institution	8½ P.M.
SATURDAY, —	18	Asiatic	2 P.M.
		Medical	8 P.M.

WHEN the NEW FOREST was last before our readers (*Gard. Chron., July* 30, 1853) we limited our remarks to its past management, the Parliamentary papers at that time accessible containing no data by which the skill of the present surveyor could be tested. The new blue book supplies the deficiency, and, from the facts stated therein, it would seem that the fitness for his office of the new public officer is of the same kind as that of the gentlemen who have the honour to mismanage the Royal forests in other parts of the kingdom. The Treasury, true to

the principles avowed by a late Commissioner, has regarded a knowledge of the business that he has to conduct the last of all qualifications to be looked to, and nominated as a successor to Col. THORNHILL a Mr. L. H. CUMBERBATCH, concerning whose history we have the following official record.

Mr. KENNEDY describes him as a clever and active young man, having many good habits of business, but as being much too young to have been placed in so difficult and responsible a situation. "*He was bred in Mr.* CLUTTON'S *office.*" Mr. CUMBERBATCH'S own account of himself is that "he was 25 years old on the 1st of March, 1853; that he was then an efficient officer, and had been employed as deputy surveyor for three years and a half." He therefore was *twenty-one years and six months old* when he was appointed to this great charge. We can now understand why it was that the Treasury officers put in action last session every known parliamentary dodge in order to avoid making a return moved for by Mr. AGLIONBY, of whose independent character and well known honesty of purpose they evidently stood in dread. Even official hardihood was unable to face the consequences of an admission that "so great a concern as that of the New Forest," notorious for the deplorable state into which it had fallen, and demanding the utmost skill and practical experience for its restoration, had been entrusted to a lad taken out of Mr. CLUTTON'S office.

Well might Mr. KENNEDY urge upon the Treasury the paramount importance of making the best selection possible of a new surveyor for Dean Forest upon the occasion of the then officer having resigned, more especially since "in the department in London through which he has to administer the affairs of all the forests he has not the advantage of the assistance of any one individual who has the slightest knowledge of rural affairs"! This appeal to the Treasury was made on the 12th February, 1853, but so little did their lordships concur in such views that we cannot find that a successor has even yet been named to take the great Forest of Dean out of the feeble hands of Mr. MACHEN. People will be apt to suppose that the Treasury would not appoint the best man who could be found, and dared not, with the eyes of the public and of Parliament upon them, perpetrate another job. At all events, for an entire year, Dean forest seems to have been left as it was; one of the results of which has been that its net income has been above 6000*l.* less than it should have been. Here we have another glimpse at the mysterious "difficulties and obstructions" of which Mr. KENNEDY complains to Parliament. But to return to the deputy surveyor and the New Forest, and the consequences attendant upon his appointment.

It is to the New Forest more especially that the world supposes that we look for navy timber, whose growth is the only purpose for which the Royal forests are maintained. How great a misapprehension this is we have long since pointed out. The supply has, however, been at last renewed, under the inflexible discipline of the Commissioner, and the surveyor was called upon to furnish his quota. His mode of complying with the order is stated to be as follows:—

It appears that the Admiralty had desired to have from the New Forest 2000 loads of Navy timber from the fall of the year 1852, "of such quality as could be accepted, and was fit to be received into the Royal dockyards," and orders were accordingly given to the deputy surveyor to provide the quantity.

On the 18th of October that young gentleman informed the Commissioner that the arrangements were nearly completed, without intimating that any disappointment was likely to arise. But a week later it came out that the navy timber would fall short, by more than one-half, of the quantity which the surveyor had undertaken to provide. Upon being called upon to explain his conduct, he sends in a doleful letter, attributing the disappointment to "excessive rejections" by the Admiralty purveyor, and to new arrangements made by the Commissioner; the chief object of which appears to have been the prevention of the old trick of foisting upon the dockyards from Royal forests, rubbish unsuitable for naval purposes, in order to swell the forest account of produce sold.

In the words of the Commissioner, "Mr. CUMBERBATCH seemed to think that the timber had been too severely tested, and that if it had not been so severely tested, it might, as on former occasions, have gone into the dockyard without its defects having been previously ascertained. This I thought a most objectionable principle, inasmuch as it seemed to rest on the view that the forest and the dockyards are opposing parties, and the interest of the forest might with propriety be advanced to the detriment of the interests of the dockyard." Of course this led to inquiry, the particulars of which will be found in the Parliamentary papers. We have only space to give the result of the investigation. It was found that there had been no "excessive rejection" whatsoever, although about 58 per cent. out of 3115 trees were refused; and that, moreover, in reducing trees into loads, while rejections in the New Forest amounted to 53·2 per cent. upon the quantity estimated to be available for the navy, the estimated proportion in

Dean Forest was	15·4 rejected.
Whittlewood	28·5 "
Wychwood	13·1 "

Such is the knowledge shown by Mr. CLUTTON'S juvenile nominee in the very important duty of selecting navy timber.

If we turn to the planting operations carried on by the New Forest Surveyor, we continue to find the same incapacity. Upon this subject we have the deputy surveyor's own statement to enlighten us. He reports that, in 1852, the greatest proportion of the trees planted by him on 50 acres of Broadley Heath *died*; that of the trees he planted on 100 acres of Frame Heath the greater portion *failed*; that in another place, where he had planted 60 acres with Scotch Fir, one-third *died*, and the remainder were damaged; and that the *same statement* applies to a belt of Scotch Firs. So that the planting of 210 acres was a failure. The excuse—of course so "clever and active a young man" can have no difficulty in finding excuses for unsuccessful planting, as well as for unskilful timber-falling—the excuse is that the weather was *so* dry. No wonder that, after this exhibition, the Commissioner should have put an end to the doings of so inexperienced an officer by a peremptory order that no further planting should be attempted. We should like to know how much money this sort of apprenticeship costs the country.

That we here meet with another of the Commissioner's difficulties is sufficiently plain. But, as if matters had not been bad enough already, the Treasury resolve to add to the confusion by an obstruction of their own. It appears that Mr. KENNEDY, having no one, as he says, in his department, in the slightest degree acquainted with rural affairs, had presumed to look abroad for the best advice he could find. In doing so he applied to Mr. JAMES BROWN, the well-known successful forester at Arniston, and all who know anything of these matters are aware that he is the best man whose services are obtainable. Mr. BROWN reports upon the New Forest, ably, fairly, and fully, although not in the Cluttonian fashion. This report is sent to the Treasury, and with what result?—why, my lords direct Mr. BROWN'S report to be sent to Mr. CLUTTON for his "opinion"!! This sagacious determination is announced by Mr. JAMES WILSON, one of the Secretaries of the Treasury, on the 29th of March, 1853. So that the way of managing such matters in the Treasury Chambers is this—a Royal forest becomes a public scandal—Mr. A is called upon to report upon it, and suggest how it is to be dealt with—Mr. A recommends his clerk B to be put in charge;—to be sure B knows nothing about forests, but he is well backed, and ready for anything; therefore, at the mature age of 21 years and six months, one of the greatest territorial possessions of the Crown is handed over to him. Of course B breaks down; the Admiralty won't take his timber, and his trees won't grow. Then the officer C, who is really responsible for such results, unless he stops them, direct a very experienced agent D, to examine what has been doing and to advise accordingly. D sees in a moment where the mischief lies, and skilfully indicates the remedy. Delighted at having at last obtained possession of such a document, C, imagining in his simplicity, that "my lords" would see how important it is to the public interest that it should be acted upon, sends it to Treasury Chambers for approval. Instead, however, of supporting the Parliamentary officer in the discharge of his duty, my lords determine to trip up his heels, and direct their secretary to write him a snubbing letter, commanding him to refer the report to A, who nominated B, the young gentleman whose incapacity led to the whole inquiry.

Had we been told that such a line of conduct had been taken in any public department, we should have disbelieved it; and we only credit it now because the circumstances are officially recorded in a report to Parliament. It has however become impossible that inquiry should be evaded, and we have a confident belief that the Committee just moved for by Mr. DRUMMOND will put an end to proceedings which we can only describe as a national disgrace.

WE breathe an atmosphere of marvels. A few years since the world was astonished by the announcement that so harmless a substance as cotton wool could be made to serve the purposes of gunpowder; and gun cotton was patented for the purpose. Shortly afterwards an ingenious apothecary discovered that gun cotton could be employed to heal the wound it caused, a substance called COLLODION, the prince of plaisters, having been made by dissolving this sort of cotton in ether. And now it appears as if Collodion itself were likely to become a new arm in gardening.

Collodion is not merely adhesive, but impenetrable by water, and impervious to air. Taking advantage of these properties it occurred to Mr. LOWE that in the nice act of propagating plants, this substance might be advantageously employed. It would be unjust to this gentleman if we did not give his statement, as officially made public in the Proceedings of the Royal Society, before whom a paper on the subject has been lately read.

It had occurred to him, that if a cutting of a plant were sealed at the base, so as to exclude the moisture of the soil from ascending the stem in injurious quantities, the method of striking cuttings of most species of plants would not be so precarious a process as at present; and accordingly some collodion was obtained in order to make the experiment.

With respect to this new process, he states, that immediately upon the cutting being severed from the parent stem, the collodion was applied to the wound, and then left a few seconds to dry, after which the cuttings were potted in the ordinary manner.

To test the value of this new process more effectually, duplicates of all the species experimented upon were at the same time similarly planted, without the collodion being applied to them.

Experiments were carried on in two different ways; one batch of cuttings being placed on a hot-bed, whilst a second batch was planted in the open ground, without even the protection of glass.

First Batch.—All of which were placed on a hot-bed on the 1st of September, and examined on the 1st of October:—

STOVE PLANTS.

Number of Cuttings with Collodion applied.	Name of Plant.	Number of Cuttings which took root	Number of Cuttings without the Application of Collodion.	Number of Cuttings which took root
1	Ixora coccinea	1	1	0
1	Tacsonia miniata ...	1	1	1
3	Franciscea Hopeana ...	3	3	0
3	Franciscea Pohliana ...	3	3	0
2	Gloxinia Maria Van Houtte ...	0	2	1
2	Begonia incarnata ...	2	2	1
8	Achimenes patens ...	7	8	6
2	Hoya bella...	2	2	1
2	Rondeletia speciosa ...	2	2	1
2	Allamanda neriifolia ...	2	2	1

GREENHOUSE PLANTS.

6	Boronia serrulata ...	5	6	0
3	Polygala Dalmaisiana ...	1	3	0
6	" grandiflora ...	3	6	2
6	Verbena luna	6	6	6
1	Chorozema cordata ...	1	1	0
1	Epacris pallida	0	1	0
2	Leschenaultia formosa ...	2	2	1
1	Swainsonia astragalifolia	1	1	0
1	" galegifolia ...	0	1	0
	Abelia rupestris	2	2	0
4	Plectranthus concolor picta	2	4	2

Second Batch.—Planted in the open ground on the 1st of September, and examined on the 1st of October:—

HARDY PLANTS.

Number of Cuttings with Collodion applied.	Name of Plant.	Number of Cuttings which took root	Number of Cuttings without the Application of Collodion.	Number of Cuttings which took root
12	Garrya elliptica ...	5	12	1
12	Erica vagans	7	12	4
18	Bupleurum longifolium ...	6	18	7
12	Laurus fœtens	10	12	5
6	Rose, Souvenir de la Malmaison ...	4	6	5
12	Taxus baccata, golden-leaved variety ...	8	12	4

	Total Number of Cuttings to which Collodion was applied.	Number of Cuttings which took root.	Total Number of Cuttings without the application of Collodion.	Number of Cuttings which took root.
First batch ...	59	46	59	22
Second batch ...	72	40	72	19

The experiment, the author considers, speaks for itself. Notwithstanding the season being too far advanced for the full benefit of the process to be thoroughly observed, still twice as many cuttings took root treated by the new method as had rooted by the old. The mortality in the open ground was increased by slugs having eaten off above the soil some of the cuttings; those thus damaged were examined after they had been in the ground a month, and it was found that the collodion was quite as sound as when first applied. It would therefore appear that the collodion seals the wound of the cutting, and protects it from the fatal effects of damp, until roots are prepared to force through the cover-

ing of gun-cotton. It is further stated that the application of this solution has been found to be exceedingly beneficial in the pruning of such plants as Euphorbia speciosa, Impatiens latifolia, Impatiens latifolia-alba, Hoya bella, Hoya imperialis, &c., the cut branches being prevented from bleeding.

It is the author's intention next spring to follow out this experiment, in budding and grafting, as he considers that it will also be useful in this branch of horticulture.

Gutta-percha, dissolved in ether, was in some instances substituted to heal the wounds caused by pruning; yet owing to this solution not drying as rapidly as collodion, the first, and sometimes the second application was not sufficient.

The effect of these solutions upon cut flowers was very marked. Two branches were gathered as nearly alike as possible; to the flower-stalks of the one, collodion was applied. These flowers were placed in vases filled with water; those coated over with collodion began to fade in 36 hours, and many were quite dead in three days; whilst the flowers merely placed in water in the ordinary manner remained fresh and healthy. Those that faded soonest were Reseda odorata and Tropæolum majus, and those which were least affected were Tagetes erecta and Senecio erubescens.

Want of space prevents further notice of this curious statement to-day, but we propose to take an early opportunity of returning to it.

The Fellows of the Horticultural Society, who are growers of tender AQUATIC PLANTS, will be glad to know that the Society has received a small parcel of seeds of two or three species of Nelumbium, and that they are now in course of distribution to applicants.

VEGETABLE PATHOLOGY.

No. VI.

9. Though it is not to be denied that there are vegetables, however comparatively few in number, in which multiplication takes place solely by the organisation of the protoplasm without any distinct division of pre-existent membrane, the more general mode of growth is by successive division of cells, or by their ramification, which is in fact merely a modification of the more usual manner of division.

10. In many cases, however, the two modes of growth are combined, especially in the fructifying state of plants, as in all ascigerous fungi, and in the embryo sacs of the higher vegetables; or if Schleiden's views as to the functions of the pollen tubes are admitted, in the organisation of their protoplasm. It is probable also that this is the case sometimes where the cavities of vessels become filled with cellular tissue, and there seems reason to believe that the intercellular spaces are sometimes so filled up, without pullulation from the walls, by organisation of the intercellular substance.* According to Mirbel's views as to the origin of the infant layers of the wood and bark, the organisation of the cambium is a case in point; but without admitting the origination of the young wood from fibres descending from the buds, the matter admits of a much easier explanation by the division of cells, as confirmed by the recent observations of Trécul, and originally propounded by Hartig.

11. In many instances the mass of cells which constitute a plant is protected from the immediate contact of the atmosphere and the matters which it contains by a membrane of greater or less delicacy and strength, but mostly highly extensible, which forms the true cuticle. This membrane exists in some of the lower vegetables, and is due to matter exuded from the walls of the cells. Under vital influence membranous expansions are very readily formed by means of chemical agents, but even where no such action can be supposed, the formation of membrane sometimes takes place as observed by Reissek † in Potatoes submitted to the action of heated water, in which the original cell walls break up entirely, leaving the mass of swollen starch granules covered with a network of coagulated albumen, round one or more of which masses a new distinct cell wall is formed on the further application of heat. The new membrane has precisely the same chemical composition as that which it has replaced.

12. The highest and most complicated vegetables are, therefore, masses of cells variously combined and modified, but all originating in the first instance from a single cell, which by division or organisation of matter derived from it has given rise to various orders of cells, differing often in their essential functions, and to the delicate investing cuticle. According to the observations of Ehrenberg many individual spores concur in the formation of certain fungi. This, however, requires confirmation in those cases, as in *Erysiphe*, where the circumstance would be of much weight. The larger Hymenomycetes may be regarded as compound plants, made up of a multitude of individuals, the tips of whose ramifications bear fruit.* *M. J. B.*

* The fronds of many Ferns under cultivation, as *Asplenium Nidus Avis*, are easily damaged when very young and tender by a very short exposure to the direct rays of the sun. In this condition there appear to be cavities of the frond, which are at a later period filled up with cellular matter, and the fronds are then less susceptible of harm. Mr. J. Henderson, A.L.S., has often pointed out this circumstance to the author, and has suggested the probable mode of organisation.

† Ueber Künstliche Zellbildung in gekochten Kartoffeln von Siegfried Reissek 1851.

* The full consideration of this subject would lead us into details which would be quite out of place here.

THE ORCHARD HOUSE.

This is not necessarily "a house for the cultivation of miniature fruit trees in pots," as "W. C. E." supposes, for, though Mr. Rivers cultivates small trees in pots for the purposes of sale, he is too much a man of the world to wish to confine plants to that system of cultivation, and I have no doubt that he would give "W. C. E." full license to grow the trees as large as he pleases so long as he keeps them in a fruitful state. It must not, however, be forgotten that pot cultivation offers many facilities which could not be obtained with trees permanently planted out, viz., those of retarding or forcing those fruits the season of which it may be desirable to prolong; thus, though we may commence Peach eating in May, I presume there are few persons who would object to the season of the finer kinds being extended to October or November, and the same with regard to Apricots, and this may be attained by growing the plants in pots, and keeping them in a north aspect until they are required for succession, then they may be introduced into the orchard house, and some weeks are added to the season of a delicious fruit.

Glass walls are exceedingly attractive and neat looking, but instead of a narrow glass case, as they necessarily are, we must have a commodious house accessible, and a grateful retreat and promenade at all times, but more especially in weather such as we have lately experienced. A 10 foot 14-inch wall, with good footings and coping, at the present price of materials and labour, could not be built for less than 15*l.* per rod, if for that sum, while I can point to an orchard house 300 feet in length and 17 feet in width, and I think I may say one of the finest ranges of glass in England, which was completed with iron trellises for training the plants, metal roof, and sheet glass, for less than 17*s.* per foot running. Here is no makeshift, every part of the work is executed as well as if one of our great London contractors had had a *carte blanche* to execute the work in the best possible manner. Thus, supposing a square acre of kitchen garden had to be inclosed, I will, for the sake of even numbers, say each of the four sides is 70 yards, giving 60 square yards beyond the acre; the expense of such inclosure at the preceding rate per foot would be considerably under 700*l.*, while it would give nearly 700 feet of glazed promenade, and supposing the trees to be trained, a surface of trellis-work equal to 14,000 feet would be presented, or allowing Mr. Knight's calculation of 1 lb. of fruit to every foot of glass, an acre of ground thus bounded would produce annually, after the trees were established, 8 tons 12½ cwt. of first-rate fruit, which at 6*d.* per lb., a low price for glass produced fruit, would give an annual product of 483*l.*, not bad interest for the expenditure of 700*l.*, or with the trees complete say 1000*l.*

To recur to the house before alluded to: it is erected in the garden of Josh. Martineau, Esq., near Alton, Hants, by the intelligent gardener and bailiff, Mr. Duncan; and though the house had been up only two years when I saw it in September last, the training surface was completely covered with fruit bearing wood, and such a crop of Plums, &c., as did a gardener's heart good to see and taste. Talk of quality! If "W. C. E." and gardeners of the old wall school could only have tasted the Green-gages, Coe's Golden Drop, Downton Imperatrice, Jefferson's, and other Plums, each kind hanging in the greatest profusion, and each fruit "a perfect sweetmeat," they would wish to say "good-bye" for ever to brick walls for fruit trees. A few Apricots also lurked among the leaves, and they fully bore out Col. Mason's estimate of them at p. 38. Peaches and Nectarines were alike delicious; Figs unmistakeably good, and winter Pears were of the finest quality. I think I may safely say that there were bushels of Plums, which at that time in Covent Garden would have brought from 2*s.* to 3*s.* 6*d.* per small punnet, and these, I have no doubt, would be in use until the end of November. The Jefferson Plum here was found, as was expected, superior to the Green-gage, both being ripened side by side; so those who have not planted it should lose no time in procuring it.

But this house yielded something beside fruit, and an abundance of gratification. In the spring, a row of Bishop's New Dwarf Long-podded Peas, 300 feet long, produced an abundant supply some time before the ordinary early kinds came into use; and at the time of my visit, French Beans in pots were just being housed to succeed those already frost-bitten in the open garden; and thousands of pots of Strawberries had been prepared for a similar purpose in the coming spring. I know not whether the house is used for the protection of winter Salads, or for the production of early Rhubarb, Seakale, &c., in spring, but I saw sufficient to convince me that these houses have an applicability scarcely yet dreamt of by their warmest advocates; and visions of early Cauliflowers in pots in hundreds in spring, Walcheren and Snow's Superb Winter in autumn and winter, and salads in bushels throughout the year, flit before my eyes. What a glorious place, too, for the protection of Strawberries and hardy flowering plants for forcing in the winter, and for Violets and Anemones, and many more things for early cutting! But enough of the practicability.

Considered artistically, I cannot raise an objection to them; but I can see how infinitely more elegant, tasteful, and appropriate an acre or two of garden so inclosed would look, compared with the old, heavy, ugly prison walls. So arranged, a kitchen or fruit garden need not be stowed into any out-of-the-way corner, to be out of sight, or be planted round with tall trees for the same purpose which, after a few years become a nuisance, shading with their branches, and robbing the ground with their roots. A garden inclosed by a glazed promenade would be sightly and elegant anywhere, and the flower garden and pleasure ground might surround it with great propriety, and would be a combination such as the most fastidious sticklers in taste could not object to. For the sake of intricacy and variety the system of planting the promenade might be much varied. In one part the walk might pass between the trees, in the second it might be embowered by trellis work and trained trees, in the third the centre could be planted with walks round the sides, and in a fourth a serpentine walk might be attempted; and by continuing such an arrangement round the garden great variety could be obtained. Indeed there is no particular objection to a part being devoted to Camellias, Azaleas, &c., and that would be a conservatory wall in earnest.

Lastly it must not be forgotten that though the expense of erecting a glazed promenade may be something more than a wall, there will be no after expense for hothouses, conservatories, &c., for the whole may be included in the promenade; and as the kitchen and fruit garden need not be larger than is sufficient for the production of the choicest fruits and vegetables, there is no reason why it may not at all times be as neat and trim as the best kept flower garden.

Such an arrangement opens quite a new field in a pecuniary as well as in an artistic and utilitarian point of view, and I shall be glad if the preceding remarks should, in the remotest way, be instrumental in inducing those who are forming new gardens to pause before they commit themselves to bricks and mortar, merely because others had done so before them. Garden walls must now be regarded as the "light of other days," and must give place to structures which will enable us to import the fine climate as well as the fine fruits of more favoured countries. *W. P. Ayres, Blackheath, Jan. 23.*

STREPTOCARPUS REXI.

This interesting little Cape plant is well worthy of cultivation where small plants are wanted, and it is by no means difficult to manage; for if properly ripened and dried off it may be wintered in a greenhouse with perfect safety, but like many other Cape plants it delights in a warm moist temperature while it is growing. The compost in which I have found it to succeed best has been composed of good, rich, well-decayed turfy loam and leaf soil, with a liberal quantity of sharp silver-sand intermixed; and a small quantity of thoroughly-decayed cow-dung is of great service in promoting the vigour of the plants, but this must not be used unless it is thoroughly decayed. Propagation is readily effected either by means of seeds, which are produced freely, or by division; but the latter method is preferable where only a small increase is wanted. The plant should be divided as soon as it has done flowering, and a few plants should be encouraged into growth early in spring so as to be able to break them up and get the young plants well established before winter. Plant each bit in a 4-inch pot, using the same soil as recommended above, with a little more sand in it; and be careful to secure perfect drainage by filling the pots about one-third with crocks, for the plant is impatient of damp. Plunge the pots in a gentle bottom heat where a humid atmosphere of about 75° or 80° can be maintained, and attend to watering and shading in bright sunshine until the plants become established, which will soon be the case. Give a shift into 6-inch pots as soon as it is found that the plants are well established in their first pots; but if this should not be the case until the season is too far advanced to allow of conveniently getting them established in the larger pots, it will be advisable to dry them off and winter them in the small pots. When it is desirable to allow the plants to go to rest, gradually withhold water; and when the foliage decays remove them to a dry place, where the temperature will not be liable to fall under 40°, which will be quite high enough for them during winter; indeed, if the soil is perfectly dry they will not hurt if protected from frost. Towards the beginning place such a portion of the plants as may be wanted for early blooming in a moist warm temperature, and get the soil properly moist, when they will soon begin to grow vigorously; and if larger plants are wanted, these will easily and speedily be obtained by keeping the blossoms picked off for a time as they appear. Other portions of the stock of plants may be introduced into heat at intervals of about a month, which will secure a succession of bloom throughout the spring and summer months. When in flower they may be removed to the conservatory or greenhouse, taking care not to place them in a cold part of the house, or in the way of draughts; where, if they are properly supplied with water, they will continue to throw up a profusion of their beautiful flowers for a long time. The best time for repotting established plants is before starting them into growth in spring, when they should be turned out of their pots, shaking away the old soil and repotting them in the same or a size larger. Be very careful in potting to secure perfect drainage, by placing plenty of

potsherds in the bottom of the pots, and covering these with some rough soil; for, like most Cape plants, this is impatient of stagnant moisture about the roots. *Alpha.*

Home Correspondence.

Cottagers (see p. 70).—Your correspondent "B." recommends boiled Rice being supplied to the poor instead of bread and coals; but surely "B." cannot have studied the evil consequences arising from such a change. Let "B." sit down and have his dinner of boiled Rice on a winter's day in a cold comfortless house, without fire, and see if he would not prefer warm bread and milk with a little fire to warm him and make the house comfortable and conducive to health. Again, would the saving of coals compensate for the diseases which a cold and damp house and unsubstantial food would have a tendency to bring on the poor? "B." says he thinks it would be a wiser plan to give the poor boiled Rice, making his suggestion to the benevolently disposed; but the age we live in admits of nothing but ocular demonstration, not supposition. It is an old byword, but a true one, that "before making a suggestion one should consider the consequences arising from that suggestion if put into operation." If "B." were to consider the consequences of the alteration proposed a little more, he might possibly be led to change his opinion respecting boiled Rice, which is good in its place, but not as a substitute for bread and coals. *R. J.*

The Late Mr. Geyer.—You will be sorry to hear of the death of Mr. Charles A. Geyer, well known as one of the explorers of North America. He died on the 21st of November last year, at Meissen, in Germany, after a severe and protracted illness. Mr. Geyer returned from North America in 1845, when he stayed several months in Kew to arrange his collections of dried plants, an almost complete list of which has appeared in Hooker's "Journal of Botany," published there by the learned editor. Mr. Geyer was so much exhausted from the great hardships he had undergone in crossing over from the eastern to the western States of America, that shortly after his arrival at Kew he had a severe attack of illness, which almost proved fatal to him. Sir W. J. Hooker, Lady North, and other residents at Kew, displayed a lively interest in him on that occasion, and Mr. Geyer was always known to speak in glowing terms of their kindness. Shortly after his recovery he went to Germany, his native country, where he became the editor of a horticultural paper the "Chronik des Gartenwesens," which he conducted with skill and ability, and rendered famous by extremely well written leading articles. Mr. Geyer was a quiet, unpresuming man, liberal in his views, and enthusiastically fond of the profession to which he had devoted his life. *Berthold Seeman, Kew.*

Spade Husbandry.—Your strictures upon the late Mr. Gisborne's essays appear to me to be rather too severe. There can be no doubt that he objected to spade cultivation chiefly on account of its costliness compared with that of the plough—and is not this a reasonable objection? We all know that the spade does its work better than the plough; so does the flail better than the threshing machine, but they are both superseded in their general uses by superior contrivances which are less expensive in their operations, and better adapted to the times we live in. Knowing then that the spade cannot be generally used as a farming implement, what wisdom is there in idolising it, and crying down the plough? The spade is pre-eminently a gardener's implement, yet even a market gardener may use the plough to advantage on certain occasions. Your remarks upon deep cultivation are excellent, but so long as you or any other persons contend that gardening can be conducted successfully without manure you are propagating a delusion. [Who says so?] This question of cultivation in the place of manure may safely be left to the real practical market gardener, but not to the gentleman gardener, who is stinted in the use of manure, and who has, of course, no anxieties about his balance sheet, as to whether he is conducting his business profitably or not. *E. S., Feb.* 8. [We find nothing to alter or explain in the observations referred to by our correspondent, as he will himself see if he reads them attentively.]

Potatoes from Seed v. *the Disease* (see p. 52).—I am sorry you did not give the seven numbered paragraphs as they stood in my paper. If you had, I flatter myself the same conclusions would not have been drawn from them, but your misinterpretation of the fourth paragraph seems to have led to all the rest. It stands thus:—"That all have a certain duration of life according to their time of arriving at maturity, which is generally between four and eight years. The early and most vigorous first, and so on in regular order of their maturation." That is, such as come to maturity in the shortest time, will be soonest to decay, like most organised beings, but I did not mean to say that the duration of the life of the Potato ranged between four and eight years, as you have given it; my opinion is, that after it comes to maturity, it may on this principle, be in perfection between 20 and 40 years, which must be ascertained by the careful observer according to the nature and properties of each variety. *John Anderson, Fermoy.* [It thus appears that Mr. Anderson did not intend to say what his words seem to mean; a misunderstanding now corrected.]

Woods and Plantations.—I have been a planter for some years, and I am much interested in the cultivation of trees; in the article in your last number, by Mr. Bailey, it is truly stated that the gentlemen of England are great losers by the mismanagement of their woods and plantations, and it has always been a matter of surprise to me that the proprietor, who would anxiously inspect his Wheat and watch the growth of his Turnips, seldom looked at his woods but with the eye of a sportsman, calculating the density of cover, and how many hares and rabbits he might kill out of them; and yet the country gentleman has a strong feeling for his pocket, and his bailiff suffers if the profit from the woods is not an annual item in his accounts. In the first place, for one well informed and skilful woodman employed, there are 10 ignorant ones—the greater part cut according to tradition—so and so was always the custom, and if ever so wrong, on they go, custom sanctifies the abuse; and as for giving a reason, that is quite out of the question. This, in old established woods, is exactly the case, and even where the management has been good for a generation or two, at times a young spendthrift comes into possession, and then, with a strong impression that timber was a kindly provision of Providence for the payment of debts, down go the old Oaks which have cost a century of care, with little prospect of ever being replaced. This brings me to the planter again, and when I see numberless bad plantations I believe it is not the planting that has been bad, but that the want of attention afterwards is the great cause of evil. Trees are inclined to grow, especially Oaks, however ill they are treated and crammed carelessly into their holes; but everything in nature must have food, and if you leave 3000 on an acre of land, only capable of feeding the half, and proportionably less every year, for the tree requires more food as it increases in size, you put them through a process of smothering and starvation, under which few can exist and none thrive; and this is the treatment in numberless plantations, and I am forcibly reminded of a very large tract of planting north of the Tweed, where from difficulty of access, and small demand, they were left to nature, the survivors in the struggle to remain possessors of the soil. My impression is that the want of judicious and frequent thinning is the cause of the many unhealthy plantations we see; nor is it an easy matter for the skilful woodman to remedy the evils of a long existing neglect. The unskilful soon makes bad worse. Mr. Bailey proposes to offer a few remarks upon the modes of managing woods and plantations, which I shall be anxious to read. He must, if he looks northward, be resigned to give up all hedgerow timber, the Scotch families will not hear of it, nor do I admire Mr. Barron's plan of planting corners; plant masses, and plant them well. I have no doubt Mr. Bailey may give many useful hints. I have some of my own, which I may trouble you with at some future time; but I have seldom read of a style of planting less promising than that which your correspondent "W. B. A.," states as being adopted by certain royal foresters, as quoted from the Blue Book of the Woods and Forests. I must not trespass longer upon you at present, but that is so wide a field for censure rather than discussion, that it would require another blue book to contain it, instead of a corner in your paper. *Newstede.*

Bates' Broccoli.—I observe that you have noticed my Broccoli in your last report of the Horticultural Society's Garden, but the name is unfortunately misspelt, it should be "Bates'" improved, not "Betts'." *Charles Bates, Molesey.*

The late Storm in Lincolnshire.—Thermometer taken at 9 P.M.:—

January	1—Heavy fall of snow	8°	of frost.
"	2—Slight showers of snow	27	"
"	3—Showers of snow	12	"
"	4—Very stormy, with heavy fall of snow	8	"
"	5—Showers of snow	6	"
"	6—Showers of snow	5	"
"	7—Showers of rain, A.M.	3	"

Vegetables have suffered to a great extent, more especially Broccolies and greens, more than three-fourths of which have been destroyed. Shrubs have also sustained great injury. Laurustinus of 16 years' growth have been killed to the ground; Sweet Bays the same. Deodars have lost their young shoots; young plants of Cupressus lusitanica have been killed, while old plants of the same Cypress have lost their young shoots. Most of the foliage is dropping off common Laurels and Hollies, and Phillyrea ligustrifolia in a sheltered situation is also nearly stripped of leaves, while the points of its young shoots are killed. The garden and grounds here are well sheltered, but rather wet. *D. Lumsden, Bloxholm Hall, Lincoln.*

Royal Victoria Melon.—This appears to me to be the same as the "Victoria Melon" reported on in the *Chronicle*, p. 600, vol. 1852, and said to have been imported by Messrs. Weeks of Chelsea. I had a few seeds of it from that firm in February, 1853, which I sowed along with the Beechwood and Fleming's Hybrid. The Royal Victoria has all the beauty and thinness of skin attributed to it in the report alluded to, and it is early, coming in 10 or 14 days before either of the above-named sorts. It requires an abundance of air, otherwise the Vine is apt to spindle and become weak, in which case good useful-sized fruit need not be expected. In flavour it is superior to the others, causing it to be inquired for in preference to them by the housekeeper here. It was in productiveness, however, that it most excelled, and this, coupled with its other good qualities, cannot fail to cause it to be grown in preference to many other varieties, especially for the purpose of preserving. *John Richardson, Parham Park, near Starrington, Sussex.*

Societies.

LINNEAN, *Feb.* 7.—The President in the chair. Mr. E. Newman exhibited fructified specimens of Ophioglossum lusitanicum, Lin., which had been recently found by Mr. Walsey in the island of Guernsey, as noticed by Mr. Smith at p. 53 of our present volume. The early growth of the plant, which bore perfectly developed fructification at this early period of the year (January), is remarkable. The following papers were read: 1. Note on the Elaters of Trichia; by A. Henfrey, Esq. This paper had reference to the question of the existence of spiral fibres in the filamentous elaters mixed with the spores of Trichia and some allied genera of fungi, noticed by Corda, but recently called in question by two distinguished vegetable anatomists—Schleiden and Schacht. Hedwig, in 1802, was the first to point out the existence of these spiral fibres in three species of Lycoperdon, which Schlechtendal identifies as Trichia rubiformis, Fries, T. chrysosperma, Fries, and a Diderma. Him followed Kaulfuss, who wrote in 1822, "According to my investigations the structure of the so-called capillary tissue of the Trichiaceæ, is exactly the same as that which we find in the elaters of the Hepaticæ. Corda made known his observations to the same effect in 1837. A notice, without figures, but asserting the existence of the spiral fibres was published by Schlechtendal in 1844. On the other hand, Schleiden states, that observations recently repeated have convinced him that the appearance of spiral fibres arises from the twisting of a flat band; and Schacht takes the same view. Mr. Henfrey had examined the elaters of Trichia serotina, Schrad, in some specimens sent from New Zealand by Mr. Ralph, and asserts positively the existence of the disputed spiral fibres, which are, he states, exactly analogous to those of Marchantia polymorpha. The fibres thin off toward the ends of the elaters, and apparently become confluent there as in the Marchantia, but are so fine at the ends that a power of 1000 diameters did not define their terminations. The author had decisively observed the tubular character of the elaters, even before defining the fibres. The spiral structure was clearly distinguishable with a power of 250 diameters, but in order to count the fibres, it was necessary to mount the elaters in the thinnest possible film of liquid, under very thin glass, and apply a magnifying power of 1000, when the individual fibres became sufficiently defined to be drawn with the camera lucida. These elaters, Mr. Henfrey remarks, may be regarded as very good test objects for the defining power of the higher object glasses, and even as tests of the value of observations made on the more difficult tissues. Viewing them in this light, he observes that either the microscopes or observing powers of Schleiden and Schacht must be imperfect; and since it is known that the latter is not the case, it follows that "their observations on very highly magnified bodies must be received with great caution until they provide themselves with better instruments." 2. Notes on the Habits of Medusæ with regard to Small Fishes, by C. W. Peach, Esq. The object was the show, from the observations of the writer, that the young and minute fish find shelter and protection beneath the medusæ, instead of being devoured by them, as is currently stated. 3. On the officinal species of Senna, in a letter from M. J. R. Batka, of Prague, to G. Bentham, Esq. The author separates Senna from the genus Cassia, and recognises four officinal species, of which this letter contained the characters and synonymes. These were as follows:—Senna obovata, which has obovate, or retuse-obovate leaflets, and lanceolate-linear stipules, and is a shrub inhabiting the deserts of Egypt and Tripoli, extending to Syria and Senegal. It forms the commercial Senna of Tripoli and Aleppo, and is frequently mixed with Alexandrian Senna. S. acutifolia, which has oval-lanceolate, acute leaflets, with a hairy costa, and hairy, linear-subulate stipules; it is the Alexandrian Senna of commerce, and is a shrub inhabiting Egypt and Sennaar. S. angustifolia, which has narrowly-lanceolate, smooth leaflets, and subulate stipules, is called Mecca and oriental Senna; it is a shrub growing in Arabia-Lohaya, Mocha, and Yemen, and at Agra, in the East Indies, and is cultivated at Tinevelly and Calcutta. S. tomentosa has ovate, oblong, pubescent leaves, and hastate stipules, and is a shrub found in Arabia and Nubia; the leaves are found mixed with the Mecca Senna, and rarely with that of Alexandria.

BOTANICAL OF EDINBURGH, *Jan.* 12.—The President in the Chair. The following papers were read:—1. On Diatomaceæ found in the Mull Deposit; by Professor Gregory. 2. On the occurrence of Desmarestia Dresnayi on the coast of Ireland; by W. Sawers, Esq., Londonderry. 3. Remarks on the Flora of the Vosges; by Dr. Dubuc. 4. On Carex pediformis and other new Austrian plants; by Dr. Adolph Senoner. 5. Report on the state of the Society's Herbarium; by Dr. Anderson, curator. Several new members were elected.

Notices of Books.

Voyage dans le Nord, &c. (Journey into the North of Bolivia and the adjoining Parts of Peru.) By H. A. Weddell, M.D. 8vo. Bailliere.

Dr. Weddell's important contributions to our knowledge of the Natural History of South Western America have, on several former occasions, been noticed in our columns. His magnificent work on Cinchonas must more especially be familiar to all who are interested in

such subjects. His ready pen has now produced a highly interesting account of the visit paid by him to the gold field of Tipuani in the year 1851. This place is situated on the eastern slope of one of the highest peaks of the Andes. Thence issues a stream whose sands sparkle with scales of gold, rushing down from the snows of the Cordillera till, at 30 leagues from its source, it loses itself in one of the tributaries of the Amazons. It is to this Bolivian Pactolus that the name of Tipuani is given, whose sand is said to yield in no respect to the richest alluvials of California or Australia.

The village of Tipuani is described as a miserable filthy place, rich in fever as in gold; it consists of 50 or 60 houses, chiefly built of Palm tree logs, thatched with Palm tree leaves, and sometimes partit oned with Bamboo; the market place resembles a Grass field; the church is a hovel, and the price of all articles of food exorbitant, compared with the usual run of Bolivian charges. Rice, chocolate, and rum or *resacado*, are cheap enough. In the sands there gold is reported to be abundant, occurring in scales (*lentejuelos*), dust (*oro soplado*), and nuggets, the heaviest of which ever found weighed about 5 ounces. The quantity of go'd is, however, very uncertain. M. Weddell was told that in 1798 12 lbs. 15 oz. had been taken out of one fissure in the rock; that in 1809 a couple of bowls of sand had yielded 29 lbs. 4 oz. of scales; and that in 1819 two square yards of a rock-vein or *venero* had produced 53 lbs. 14 oz. of the precious metal. These, however, seem to be very exceptional cases, for it appears that the whole value of the gold raised at the Quebrada of Tipuani between 1823 and 1842 was 8,046,920 francs, the cost of getting being 6,234,965; so that the profit realised in 20 years was rather more than 72,000*l.*

It must not be supposed from what we have said respecting Tipuani that gold was the only subject which engaged Dr. Weddell's attention. On the contrary his pages, rich in information concerning the customs as well as natural history of the wild regions he traversed —will well repay perusal. We particularly recommend to our dancing friends his account of a ball at La Paz, and of the way in which the gentlemen are fusilladed by the ladies, and how at last the ladies are themselves fusilladed *en masse* by the surviving gentlemen. The account, too, of the Coca, a leaf which in Peru replaces tea, and of which the annual consumption in the province of Yungas alone amounts to 9,600,000 Spanish pounds, is by far the best relation we have seen of the history of that remarkable drug.

The Bon Jardinier for 1854 has now assumed the convenient form of two thick duodecimo volumes, a great improvement upon its former awkward shape. The issue for this year is introduced by 70 pages of novelties, from which we shall occasionally make extracts. The work itself is of the greatest utility to cultivators of every class, and we are quite surprised that it should be so little known in England. As a mere dictionary explaining the meaning of common agricultural and horticultural words, it deserves a place in every good library of reference. All that the reader has to bear in mind is the rather important fact that the observations apply to a French not English climate. The editors are the two Vilmorins, Decaisne, Neumann, Pepin, and Poiteau, all men of European fame.

Gorrie's Illustrations of Scripture from Botanical Science (12mo, Blackwood), is an unpretending attempt to illustrate scriptural texts by explanations derived from vegetable physiology and systematical botany. As the author is not only well read but a man of practice as well as science, the subject is successfully treated in his hands, so that the book is really a useful addition to the class of writings to which it belongs.

White's Selborne Illustrated (small 8vo, Routledge), is a volume richly decorated with figures of the animals and other natural objects on which the celebrated author wrote. The editor (the Rev. J. G. Wood) informs us that it is "intended principally for the use of the young, or the general reader," and to them it will be a charming gift book. We could have wished, however, that the so-called portraits of trees had been omitted, for they have in most cases no resemblance to the originals, and only disfigure the pages in which they are placed. In other respects the cuts, of which there is a great number, are satisfactory and instructive. There is also a good index. We have, therefore, little doubt that this will be one of the favourite editions of one of England's favourite writers.

New Plants.

45. CEROCHILUS RUBENS.

CEROCHILUS. (Neotteæ, Physuridæ.) *Perianthium* galeatum, subglobosum, apice patulum. *Sepala* lateralia dorsalia; omnia basi ima connata. *Petala* unguiculata, obliqua, libera. *Labellum* posticum, ventricosum, carnosum, clausum, apice difformi angusto emarginato, juxta columnam cujus faciei omninò adnascitur ante stigma biauriculatum intùs bicallosum. *Columna* nana reclinata; antherâ intra marginem clinandrii membranaceum semiabditâ; rostello acuto. Pollinia 4 —— *Caulis* foliosus. *Scapus* terminalis. *Habitus* Goodyeræ.

C. RUBENS.

The native country of this is unknown; it has lately flowered with R. Hanbury, Esq., at Poles, where it has been growing for about two years among other imported Orchids; but the history has been lost. In appearance it resembles Goodyera procera, but is no' so tall, and is covered all over the scape and inflorescence with long soft hairs. The leaves are ovate, acute, fleshy, obscurely three-nerved, with a channelled petiole. The spike is about 3 inches long, with membranous acuminate pink bracts, of which the lowest are as long as the ovary. The sepals are dull green and downy, turning back at the upper end, where they are white, except the dorsal, which have a bright rose-coloured middle line. The petals are of the same colour as the anterior sepal—green turned up with white. The lip is bright yellow, of the texture of very firm wax, with a free emarginate apex, but otherwise closed up in consequence of the edges meeting in front, and its whole face being firmly united to the face of the column, except a pair of small free sigmoid ears, which turn inwards just in front of the stigma. In its interior, which is filled with honey, is a pair of rugged fleshy callosities.

From all the race of *Cranichids* this genus differs in its lip and acute rostel. Among the ventricose *Physurids* it is distinguished by its dorsal lip; it is not referable to *Myoda*, because its sepals are neither petaloid nor reflexed; and from both *Hylophila* and *Ætheria* it is separated by the peculiar adhesion of the lip to the column. It is upon the whole more like *Monochilus nervosum* than anything else I am acquainted with; and is therefore in all probability of East Indian origin.

Garden Memoranda.

MESSRS. HENDERSON'S NURSERY, PINE-APPLE PLACE. —The show house here is already gay with Hyacinths, among which Grand Vainqueur, white; Nimrod single, blue; and Mars, red, were conspicuous; also spring-flowering Heaths, Cinerarias, Linum trigynum, which is a really useful plant at this season; Genista racemosa, Chinese Primulas, both single and double; Narcissi, and the Oleander-leaved Eriostemon. The pretty little Cyclamen coum has likewise been in full bloom ever since Christmas. Of this variety too much cannot be said; it is exceedingly beautiful, and no greenhouse should be without it. In a long span-roofed house was a number of plants of the Sikkim Rhododendron ciliatum, well set with flower buds. Though quite hardy this is a neat kind for a pot; it occupies little room, and is therefore very suitable for small houses, in which variety is an object. A degree of elegance was imparted to the flat front shelf of this house by introducing here and there among the small plants which it contained the variegated Aloe-leaved Yucca, whose fine heads of yellow-striped leaves set on thick gnarled trunks, a foot high or so, gave the whole quite an exotic appearance. The stove is becoming gay with Amaryllids. By potting these at different seasons they may be had in succession for a long time, and the display which they make should not be overlooked by those who are fond of showy flowers. Æschynanthus ramosissimus was likewise in blossom, as were various Begonias and Thyrsacanthus rutilans, a scarlet flowered plant which promises to be very useful. The red-leaved Dracæna ferrea and terminalis served to enliven the monotony which too commonly prevails in plant houses during winter and early spring. Some small coloured glass vases suspended from the roof, and filled with Lycopods, Ferns, and plants of that sort, were also objects at once striking and interesting, and we should think their skilful introduction into plant stoves generally would help to break the uniform appearance they too often present. In the Heath house a few of the early varieties were in blossom, and in the specimen house Styphelia tubiflora, Correa picta superba, and one or two other plants, were objects of considerable beauty. In the Orchid house there was little to admire in the way of flowers; but the plants looked healthy and clean. In the open ground very little was in blossom except the bright yellow Jasminum nudiflorum, which was trained against the end wall of one of the stoves, where it has been beautifully in flower for some weeks past.

EALING PARK.—We regret to learn from Mrs. Lawrence that our reporter has been under a misapprehension as to the facts connected with the Amherstia nobilis here. That lady says, "It is a mistake to state that it had lost all its leaves after the house had been smoked with tobacco. It is true that after smoking some time ago it lost a small quantity of young leaves, but it continues to be well covered, and has above 2000 leaves upon it. It has been flowering ever since New Year's day, and will continue to do so some time longer; and the flowers this year have been unusually rich, and of the brightest possible colour. There were scarcely any flowers on it when your reporter saw it, as they had been that morning cut off, and sent with some flowers of Orchidaceous plants to the Queen."

FLORICULTURE.

TREATMENT OF THE RANUNCULUS.—What can be gayer than a bed of well-grown Ranunculuses? Their fine forms, richness, and diversity of colours claim for them universal admiration; and yet singular as it may appear, with all their attractions, they are not half so extensively grown as they deserve to be. If lovers of floral beauty, however, were once to pay a visit to the magnificent collections of Messrs. Tyso, Lightbody, and others, when these are in the height of their bloom, I feel satisfied that they would never rest contented until they had a bed in their own grounds to view at their pleasure. I am aware that the Ranunculus has been termed by many a shy and uncertain flower, which in fact it is, if planted without trouble or care, and afterwards left to chance, but under skilful cultivation it will be found to blossom most profusely. The only difficulty is in getting up the tubers at the proper time, when sufficiently ripe, and preserving them as plump as possible until planting time, which being now close at hand, a few brief remarks as to the best mode of culture may not be out of place. The situation for the beds, which are best prepared in autumn, should be a moist cool place, where they will only be subjected to a few hours' morning sun, bearing in mind that a moist subsoil is required in order to ensure successful cultivation. The place being selected, remove the old soil to the depth of nearly 2 feet and 4 feet in width; sods cut from a rich old loamy pasture to the depth of 3 or 4 inches and about 16 inches wide should then be laid at the bottom to form the foundation of the bed, treading them firmly down. The remainder should be filled up with the same compost collected a few months previously, and turned several times before using it. To this may be added a portion of well decayed cow-dung and leaves, and if the loam is rather stiff a portion of sand may be introduced. This should also be pressed firmly down, and the whole may remain in that condition till planting time, the beds should be little above the level of the surrounding ground, and in order to give them a neat appearance they should be edged round with slate. Fork the soil over lightly previous to planting, but not exceeding 2 inches in depth. Planting should never be deferred after the middle of this month, and the roots will be benefited by being placed in the light a few days before they are put into the bed. Embrace the first opportunity of a fine day to make the beds and get them perfectly level and marked neatly out previous to planting, in order that the roots may be put in at equal distances; they should be placed about 5 inches apart and 6 inches asunder row from row. It is better to give them a little extra room at all times than to overcrowd them. If the collection is small they may be dibbled in with the finger, carefully set with the prongs downwards, and covered over about 1½ inch deep; but if the collection is extensive drills should be drawn at equal distances across the beds, placing the roots at the bottom of them, and covering them with the loose soil; as soon as the plants appear above-ground, which will be about April, the surface soil should be carefully and firmly pressed round about the roots, and if the weather should set in very hot in May the beds should be carefully watered, in order to prevent the soil from cracking; old tan placed over the beds at this stage of growth will also be found very beneficial. In order to prolong their blooming season a temporary shading should be erected over them, just sufficient to protect them from the hot sun and rain, but the beds should nevertheless be kept in a moist state. Wireworms often attack the roots, and therefore they must be guarded against. As soon as the foliage has begun to decay protect the beds from wet, or the roots may be excited to grow again, which would be very injurious to them. The most essential point connected with their cultivation is, as I before observed, taking up the roots and properly storing them away. They should be lifted as soon as the foliage has turned quite yellow, and stored away in a dry airy situation, drying them as gradually as possible, in order to keep them plump. When sufficiently dry they may be placed in drawers, in order that they may be easily looked over, still bearing in mind that a cool but dry atmosphere is the only means of preserving them in a sound state. *E. B.*

THE POLYANTHUS.—It has always been a source of much astonishment to me, that so few really fine Polyanthuses have been raised, considering the very great quantity of seed annually sown. How many of what are considered our best Polyanthuses are eminently faulty! For instance, among our best sorts, Alexander is coarse and uncertain; Bang Europe bleaches on the lace long before the flower fades. Fletcher's Defiance is also similarly defective; in Lord Crew (Lakin's), the yellow or ground-colour is much too large in proportion to the body-colour; Lord John Russell, which I believe to be synonymous with Hufton's Earl Grey, is termed "foxy," that is, a tinge between the body and ground colours, wanting decision of character; Collier's Princess Royal is apt to sport in the number of segments in the corolla, some pips having five, others six—the latter number giving it a frilled and rough appearance; George the Fourth (Buck's), is often very coarse From this may be seen how much we need improvement and I make no doubt each of the sorts I have enumerated has been raised 20 years. Now I would cross good pin-eyed seedlings with one of the best of these, say Buck's George the Fourth; I would by no means use farina from Bang Europe or Defiance. George the Fourth has size, form, and good constitution to recommend it, and with larger and neater flowers would doubtless soon produce some valuable varieties. *M.*

DAHLIAS. Can any of your correspondents inform me of the name and colour of some dwarf Dahlias, not more than 2 feet high, and where they are to be procured? I have Zelinda. *J. Speed, Edmonton.*

Miscellaneous.

Notes on the Grape Mildew.—M. Rivet (*Comptes Rendus*, Nov. 1853), states that in 1847 he was invited by Dr. Loze to examine a sort of wine to which extraordinary properties were attributed. Another invitation to the same effect was received, in 1849, from M. Souleyet, who spoke highly of the efficacy of this wine in curing some diseases. M. Rivet found iodine in the wine; and he learned that the Vines which produced it were not attacked by the Oïdium, and that M. Mouriès had effected remarkable cures among Vines by manure containing iodine. Having made some experiments the following facts were elicited:—1st, Manure produced by the fermentation of marine plants has been employed in some parts of Spain since 1835. The soil which has

received this manure contains, on the average, $\frac{1}{100000}$ part of iodine. The Vines which grow in it have never, up to the present time, been attacked by the Oïdium. 2d, The wine made from these Vines has some peculiar qualities. In commerce, where it is rare, it bears the name of Malaga Rives de Mer. It is of all vegetable productions the richest in iodine, containing, on the average, $\frac{1}{50000}$ part of that principle. 3d. Iodine found naturally in plants or animals possesses an action which, by its nature and intensity, cannot be produced by its chemical preparations. M. Didot pointed out the absence of Oïdium on Vines the wood of which had been smeared over with coal tar. [This, we think, is rather a dangerous application, for some fruit trees have been killed by it.] M. Lapierre-Beaupré stated that according to his observations the mildew does not attack the stem; the Vines which were diseased in 1852 even appear to have for the most part escaped in 1853. It was stated by M. Pascal that acetate of lead prevents the development of Oïdium and other Cryptogams. M. Sourdette proposes a simple and inexpensive preservative, which has proved successful in some experiments made during two years in the neighbourhood of Bordeaux. In order to prevent and arrest the development of the Oïdium it is sufficient, three weeks after pruning the Vine, to smear the stem and shoots with pure liquid tar, applied with a large brush. This operation costs very little, and has proved very successful on all the plants on which it has been performed, even although they were in the midst of infected Vines. *Comptes Rendus, Nov. and Dec.* 1853.

Poireau Jaune de Poitou.—A very large sort of Leek, some of the leaves being more than 6 inches broad and 5 feet long, measuring from the lower part of the stem; they are of a yellowish green colour. The stem blanches yellowish white, and its substance is more tender than that of other varieties. It requires to be planted farther apart than usual, owing to the size of its leaves. As it grows large and is of tender quality, it deserves cultivation. *Journal of Hort. Soc.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Plants in active growth may be repotted, but provision should be made for this without exposing them to the external atmosphere, and there should be a good supply of soil, &c., in a proper state, at about the same temperature as that in which the roots of the plants have been growing, ready for use when wanted. The whole of the repotted stock should be so placed as to be readily examined, and carefully supplied with water for a few weeks after potting, and they will be benefited by a gentle sprinkling with the syringe on the mornings of fine days, but use the syringe sparingly until the weather becomes bright. Any of the Orchids that may have commenced growth should be repotted or top-dressed, as may be required; for if this is deferred long after the commencement of growth, there will be great danger of injuring either the buds or young rootlets. Give a gentle syringing to plants on blocks, but only sufficient to prevent shrivelling; such as may be in growth will require a more liberal supply. See that the foliage of the plants, &c., is perfectly clean, and persevere in trapping and destroying insects. GREENHOUSE.—Attend to shifting Pelargoniums, Calceolarias, Cinerarias, &c., before they get too much pot-bound, or suffer for want of sufficient space for their roots; and if green-fly is perceived upon any of the plants, fumigate at once. Rearrange and turn round specimen plants occasionally, so as to expose all sides equally to the influence of light and air, and keep the surfaces of the balls and pots clean, for nothing tends more to promote damp and mildew than dirty pots, and allowing Lichens, &c., to grow on the soil. An occasional handling of the specimens is also useful in enabling the cultivator to discover if they are all right as regards water. Take advantage of unfavourable weather for out-door work, to wash pots, and provide a good stock of all requisites for potting, so as to have them in readiness when wanted.

FORCING DEPARTMENT.

PINERY.—Where fermenting materials are used for affording bottom heat, watch carefully such beds as may have been recently renewed, and if the heat at the bottom of the pots rises to 90°, the pots should be raised at once, in order to prevent injury to the roots. It is now less usual than it once was to subject the roots of Pines to a temperature of 110°, but it is still too common to allow them to suffer from excessive heat, and thus to throw them prematurely into fruit, or otherwise to greatly injure them. Much of the want of success experienced in the cultivation of these is the result of subjecting their roots to a baking-heat. A steady bottom heat of about 85° should be maintained during the growing season, but depend upon it that any excess over 90° will be highly injurious to the plants. Maintain a moist state of the atmosphere, and see that the soil about the roots of growing plants is not allowed to become too dry, but use the syringe very lightly until we have more sun to dry the hearts of the plants. VINERIES.—Admit a free circulation of fresh air on mild bright forenoons, but be careful to open all the ventilators a little, and not to admit cold air by large apertures, which could hardly fail to injure the tender foliage. Shut up early in the afternoon, allowing the temperature to rise with sunshine to 80°, in houses where the Vines are in bloom and those farther advanced. Maintain a moist atmosphere, but discontinue the use of the syringe as soon as the blossoms begin to expand, and, unless where there is danger of red spider, it should not be used until the berries are ready for thinning, when a gentle washing will be of great service in removing the decayed flowers from amongst the berries. Give Vines in pots a liberal supply of manure water.

FLOWER GARDEN AND SHRUBBERIES.

Every gardener should decide at once upon the arrangement of the flower garden for the coming season, and provide the family with a plan coloured, as nearly as possible, as he intends the masses to be, and obtain their opinion of it, making any alterations which may be suggested until it is as satisfactory as the existing stock of bedding plants will allow of. This done sufficient stock of plants of the colours required may be provided, without occupying space with useless things, and should the arrangement not prove quite satisfactory the blame will not fall altogether on the gardener, and this will compensate for any loss of credit which some may suppose to result from consulting the family in a matter of this kind. But by consulting the family at the proper time there will be little difficulty in making sure of rendering the flower garden satisfactory to them. Keep gravel walks and Grass clean and smooth by sweeping and rolling as frequently as may be necessary. If any slight alterations are purposed let them be proceeded with as expeditiously as possible, and where various trifling alterations have to be effected, concentrate the strength upon one until it is finished, and avoid, as far as possible, rendering the place uncomfortable and untidy by having several jobs, and the consequent litter, &c., about at once.

FLORISTS' FLOWERS.

HOLLYHOCKS, in the open ground, should be looked over, all dead or decaying parts cut away, and some well decomposed manure forked in around them. RANUNCULUS.—Plant the reserve beds of small roots as soon as the ground is sufficiently dry: a few days earlier or later is not of so much importance as the proper condition of the bed. Tulips are remarkably late this season: cover on the appearance of frost, or place a small quantity of sand over the protruding spike. CARNATIONS AND PICOTEES.—These may have a little more water: make every preparation for potting: get the compost under a shed, so that it may be kept dry, and in wet weather it may be carefully turned and examined for wireworms. Both Pinks and Pansies appear to have withstood the frost well in the open ground, and require but little attention just yet; those of the former in pots for blooming early must not be coddled, a system which destroys more florists' flowers than all the weather.

KITCHEN GARDEN AND HARDY FRUIT DEPARTMENT.

The main crop of Potatoes should be got in as soon as the state of the ground will admit. The experience of past years should have taught every person the impropriety of planting these upon fresh manured land; and, although a heavy crop of the early sorts cannot be obtained unless the soil is in good condition, the use of strong manures should be avoided for these. By selecting a piece of ground that was well manured last season for a green crop, and giving this a good dressing of charred refuse, or wood ashes, previous to planting the Potatoes, it will be found greatly preferable to using rich stimulating manures: and, except for the weakly growing early kinds, as the Ash-leaved, ordinary garden soil, in its poorest state, is too rich to produce Potatoes of anything like good quality. Look sharply after recently-planted Peas, and protect them from the depredations of mice. Bring forward Lettuce-plants, Cauliflowers, &c., in a gentle heat, and endeavour to get them strong and well hardened off for planting out by the middle of March. The late severe frosts have made sad havoc with these things in many places; but there is no help for this, except supplying their places with the least possible delay. Finish pruning and nailing, and the root pruning, or lifting of trees, without loss of time.

COTTAGERS' GARDEN.

If not already done, the trees on the cottage wall should be pruned and neatly nailed, for although cottage garden wall trees—especially Apricots—are often remarkably fruitful, they are not always so neat in appearance as they ought to be, and crooked ill-placed shoots can hardly be supposed to contribute much to fruitfulness, and they are very unsightly. Any spare ground which has not yet been dug should be turned over as early as circumstances will admit, so as to get the soil pulverised by the action of the weather before planting time. And, as the cottager cannot always find manure to give his ground an annual dressing, although he requires to crop it heavily, he should trench it every second or third year, which will be more beneficial to many crops than a heavy dressing of manure. But if the subsoil is stiff clay, marl, or hungry gravel it should not be brought to the surface, but turned over in the bottom and allowed to remain there, as bringing it to the surface in the usual way will ruin the ground for years.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending Feb. 9, 1854, as observed at the Horticultural Gardens

February.		Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind.	Rain.
Friday	3	6	30.327	30.241	33	21	27.0	40	42½	N.E.	.00
Satur.	4	7	30.071	29.833	45	35	40.0	39	42	S.E.	.10
Sunday	5	8	29.937	29.869	44	40	42.0	39	42	S.W.	.00
Mon.	6	9	30.081	30.081	56	50	53.0	41	43	W.	.00
Tues.	7	10	30.061	30.031	54	35	44.5	44	44½	S.W.	.00
Wed.	8	11	30.172	30.103	45	38	41.5	41	44	N.W.	.00
Thurs.	9	12	30.129	30.002	45	30	37.5	41½	44	N.W.	.04
Average.			30.111	30.023	46.0	35.6	40.8	40.7	43.1		0.14

Feb. 3—Frosty; with dense fog; foggy throughout.
— 4—Frosty; very fine; uniformly overcast; rain.
— 5—Clear; cloudy; overcast at night.
— 6—Overcast; fine; cloudy.
— 7—Cloudy; clear at night.
— 8—Clear; cold and dry; white clouds; uniformly overcast.
— 9—Cloudy; slight rain and some hail; very clear at night.
Mean temperature of the week, 1¾ deg. above the average.

STATE OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending Feb. 18, 1854.

February.		Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday	12	44.7	29.8	37.3	12	0.28 in	3	3	—	—	5	9	6	2
Mon.	13	44.6	31.0	37.8	10	0.30	2	2	3	1	5	8	5	2
Tues.	14	45.7	32.1	38.9	9	0.50	—	2	3	2	4	8	[illegible]	2
Wed.	15	46.8	31.8	39.3	10	0.25	2	2	2	—	5	[illegible]	[illegible]	3
Thurs.	16	46.1	31.1	38.6	5	0.23	4	3	1	3	—	8	6	3
Friday	17	46.3	32.2	39.3	11	0.32	3	1	2	3	3	5	9	2
Satur.	18	45.2	32.1	38.6	11	0.30	4	1	3	1	4	7	6	2

The highest temperature during the above period occurred on the 12th 1831—therm. 58 deg.; and the lowest on the 12th, 1847 — therm. 9 deg.

Notices to Correspondents.

AQUILEGIAS: *A H.* Several Aquilegias inhabit California; A. canadensis, or what is taken to be it; leptoceras; formosa; all which, or at least the two first, are in cultivation.

BLIGHT: *J P B.* What you call "blight" is ill health, caused by bad cultivation. The few aphides straggling among the leaves cannot, we suppose, have brought your plants to such a pass. If they did, you should have attacked them with tobacco smoke long ago. Look to the roots.

CHURCHYARD: *E G.* The plant is the oriental Arbor-vitæ, a very proper plant for a churchyard. But specimens of the size you describe should be moved in August, not at this time of year.

DISEASES: *Omicron.* Without specimens of the leaves of your Plum trees, it is impossible to speak with certainty of the disease with which they are attacked; it is, however, probable that the rusty appearance arises from the presence of a little Puccinia, respecting which we shall hope to give a more specific answer should your trees be diseased this summer, provided you are so good as to forward some of the infested leaves. In your diseased Laurel leaves we find no parasite; and, since they are similarly attacked at all seasons, the decay is probably due to some peculiarity in the soil, or want of proper drainage. The leaves you have forwarded are particularly flaccid, and appear to have grown too rapidly to admit of a proper solidification of their tissue, as if the soil were too rich. Without personal inspection, however, it is obviously impossible to speak positively as to the cause or to suggest any remedy. *M. J. B.*

FOREST TREES: *J W U, Limerick.* Ivy does no harm unless it obstructs light and air; in that case it should be removed. But if the trees are old enough not to be so affected its presence is of no consequence.

FRUIT TREES: *A B.* For the the back wall of your Vinery the White Marseilles and the Brown Turkey Figs will probably be the most suitable. If you prefer the Guava (Psidium Cattleyanum), you may grow and fruit it very well in the above situation.—*J S.* Not received.‖

GOLD FISH: *Sub.* There can be no difficulty in constructing a small pond for them; but if you have only a few, a plan by which they can be seen perhaps to most advantage is to erect four low brick piers on your lawn, and place a glass cistern with transparent sides and open top on them. They will thrive in this quite as well as in a small pond, provided the water is changed now and then, and they have a little shade in summer. A contrivance of this kind is capable of being made very ornamental.‡

GRAFTING VINES: *D W.* The Black Hamburgh may be grafted on the Muscat, but it would be preferable to have it on its own hardier root. Graft the Vine as you would Apples or Pears, but with the following precaution to prevent bleeding. Presuming that you have cut back the shoot or branch to where you wish to graft, an eye will push on the part left, just below the section; allow the shoot to grow a few inches, and then put on your graft opposite to it; when the latter shall have pushed a few leaves bleeding will not take place, and the shoot of the stock may then be stopped.‖

MUSHROOMS: *Reader.* The most certain plan would be to make a new bed. If, however, you have any means of applying heat, either in the shape of dung linings or otherwise, to the one you have, you may still perhaps succeed.

NAMES OF PLANTS. We have been so often obliged reluctantly to decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*Deodar.* 1, Pinus, perhaps inops, uncertain; 2, Abies cephalonica; 3, Abies Morinda; 4, Juniperus recurva. ¶

NAMES OF FRUITS: *T B.* 1, Hughes's Golden Pippin; 2, Court of Wick; 3, Early Nonpareil; 4, Golden Russet; 5, Wheeler's Russet; 7, King of the Pippins; 8, Nonpareil; 9, Coe's Golden Drop; 11, Blenheim. The Grape is the true Oldaker's St. Peter's. Pear: the Easter Beurré.‖

PAVEMENT: *L J.* We advise you to employ Minton's marl-hexagons. They are not expensive and can be had of different colours. Our personal experience teaches us that they not only wear well, but resist changes in weather so well as to be perfectly suited to out-door paving. Gravel is not a good material for in-door work, even if it is of the most binding kind. Red bricks don't wear well. Walks made of Portland cement are better, and perhaps we ought to recommend that substance, if upon inquiry you find marl-hexagons too dear.

PEARS: *Novice.* On an east wall in your good soil and climate, the Winter Nelis, Van Mons Leon le Clerc, Beurré d'Amanlis, Thompson's and Knight's Monarch, will doubtless succeed well. The Marie Louise and Easter Beurré had been allowed to remain too long on the south aspect, otherwise they ought to have been as good as the others you mention.‖

RENDLE'S PRICE CURRENT. We have received some very long letters from Mr. Rendle, for which we are quite unable to find room. We see no reason either to alter the (not unfavourable) opinion expressed of his list in our columns, or to prevent others giving theirs. Gentlemen who commit themselves to print must be prepared to take criticism as it comes, without the opportunity of reply. Of all that Mr. Rendle is anxious to say, we can only find room for the following words, "If you will refer to our Price Current (p. 5), you will see that Mr. Drummond's arguments have been fully answered;" upon which we must remark that what is called an answer is an excuse.

SPIRITS OF TAR: *Antwerp.* The scientific name of this substance is Oleum Picis Liquidæ.

STRAWBERRIES: *Inquirer.* We are unable to say what is the cause of all the flowers that have opened on your Strawberries being green instead of white, except it be that you have grown the plants too fast, and given them too much manure water.‡

MISC: *William Oliver.* An advertisement the length you mention would be 4*s.* 6*d.* or 5*s.* 6*d.* Post-office order payable to James Matthews.

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

THE FOLLOWING MANURES are manufactured at Mr. Lawes' Factory, Deptford Creek:—Turnip Manure, 7l. per ton; Superphosphate of Lime, 7l.; Sulphuric Acid and Coprolites, 6l.
Office, 69, King William Street, City, London.
N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

PERUVIAN GUANO, the guaranteed import of Messrs. ANTONY GIBBS AND SONS, Lobos Island Guano, Superphosphate of Lime, and all Artificial Manures, Linseed and Rape Cakes, &c.—Wm. Inglis Carne, 10, Mark Lane, London.

SEWAGE CHARCOAL MANURE.—This highly fertilising Manure, which is Peat Charcoal completely saturated with London Sewage, will be found most efficient for every species of crop; more especially for Peas, Beans, Turnips, Mangold Wurzel, and other root crops. It will produce a greater return for the outlay than Guano or any other Manure at an equivalent value: it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained from the SEWAGE MANURE WORKS, Stanley Bridge, Fulham, at 60s. per ton, and in quantities less than half a ton, at 4s. per cwt., for ready money only, and in quantities not less than a ton, will be delivered at the London Termini of the Railroads free of charge for cartage.
It may also be had from Messrs. G. Gibbs & Co., 26, Down Street, Piccadilly, Agricultural Seedsmen, and from all the other Agents of the Company. Recommendations and Testimonials may be seen at the Works.

THE LONDON MANURE COMPANY'S WHEAT MANURE, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. Edward Purser, Sec.
Bridge Street, Blackfriars.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. Nesbit, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and dispatch.
Gentlemen desirous of receiving instructions in Chemical Analysis and Assaying, will find ample facility and accommodation at the College.

PEAT MOSS CHARCOAL, AND OTHER MANURES.—The Undersigned are appointed sole Agents by the Peat Moss Charcoal Company, for the sale of this valuable fixer and distributor of ammoniacal matter.
Also on Sale, Peruvian Guano, Superphosphate of Lime, Gypsum, Nitrate of Soda, Bone-Dust, Sulphuric Acid, and all other Manures of known value.—Apply to Mark Fothergill & Co., 204a, Upper Thames Street, London.

SUPERPHOSPHATE OF LIME MANUFACTURED by Mr. J. C. NESBIT'S IMPROVED STEAM MACHINE. The following is the analysis of an average sample.
"College of Chemistry, Agriculture, and General Science, 38 & 39, Lower Kennington Lane, London.
Analysis of Sample of Superphosphate of Lime from Mr. Jolliffe:—

Moisture ...		13.97
Organic Matter, &c. ...		21.98
Silica ...		6.05
Phosphate of Lime ...		35.27
Soluble ...	16.10	
Insoluble ...	19.17	
Sulphate of Lime, &c. ...		22.73
		100.00
Nitrogen (equal to) ...		1.16
Ammonia ...		1.41

(Signed) J. C. Nesbit."
Delivered free at a Wharf or Railway Station in London at 8l. per ton.—Apply to E. Y. Jolliffe, 70, Mark Lane, or the Works, Lavender Dock Wharf, Rotherhithe.
Agents wanted in all the principal towns.

STEPHENSON AND PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.
From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

TO LANDOWNERS, SOLICITORS, ESTATE AGENTS, ETC.

THE LANDS IMPROVEMENT COMPANY, incorporated by special Act of Parliament, 1853, having perfected their organisation, are prepared to receive applications for the execution of improvements, under the provisions of their Act.
The Act extends to England, Wales, and Scotland; and empowers persons in the actual possession of lands, or in receipt of the rents, such as tenants for life, trustees, bodies corporate, incumbents of benefices, mortgagees in possession, guardians of infants, &c., to effect substantial improvements on their estates, and to convert the outlay on such improvements into a terminable annuity or rent-charge of from 14 to 25 years, at will.
The Company, acting under the supervision of the Inclosure Commissioners, will undertake and execute improvements, or will supply the capital to landowners preferring to execute improvements themselves, or will grant the powers of their Act to landowners seeking merely to charge the inheritance with the outlay on improvements from their own funds.
The Agricultural Works of Improvement particularly specified in the Company's Act, are:—
1. The Drainage of any Lands by any such means as the Inclosure Commissioners shall approve.
2. Irrigation, and Warping of Lands.
3. Embanking of Land from the Sea, or Tidal Waters, or Rivers, in a permanent manner.
4. Enclosing or Improving the Drains, Streams, or Watercourses of the Land, under the Inclosure Commissioners.
5. Reclamation of Land lying waste.
6. Making Farm-roads to the extent of one-half of the outlay for such roads.
7. Clearing Lands.
8. Erection of Farm-houses, and other Buildings required for farm purposes to the extent of three-fourths of the outlay for such Farm-houses and other Buildings.
In effecting the above Improvements there may be erected any Engines, Machinery, Engine-houses, Mills, Kilns, Sheds, Yards, Shafts, Tanks, and Reservoirs, Pipes, Conduits, and Watercourses for Irrigation, Tram-roads and other ways, Bridges, Weirs, Sluices, Flood-gates, and Hatches.
For Forms of Application and further Information apply to the Hon. W. Napier, Managing Director, 2, Old Palace Yard, Westminster, London.

PATENT ROOT GRATING MACHINE.

BUSHE & BARTER'S PATENT ROOT GRATING MACHINE, Manufactured and Sold by Alex. Shanks & Son, Arbroath, Forfarshire, from whom particulars, with prices, may be had.—Arbroath, Feb. 11.

HOSE PIPING.
To Engineers, Agriculturists, Gardeners, Ship-chandlers, and Fire Brigades.

WAITHMAN'S PATENT FLAX TUBING (1-inch to 3-inch diameter) will sustain a greater pressure, is lighter, less bulky, will wear longer, and is about 60 per cent. cheaper than the leather hose pipe, and about half the price of either the gutta percha or the seamless hose. It is prepared so as to be anti-rot.
Manufactured only by Waithman & Co., 36, High Street, Manchester.

TANNED GARDEN NETTING for protecting Fruit Trees from frost, blight, and birds, or as a fence for fowls, pigeons, Tulips, and seed beds, can be had in any quantity from John King Farlow's, Fishing Tackle and Net Manufactory, 4 and 5 Crooked Lane, London Bridge, at 1½d. per yard one yard, 3d. two yards, or 6d. four yards wide. Carriage free on all orders over 20s., accompanied with a Post Office order, or London reference. Rabbit, Sheep, and Fishing Nets of every description in stock or made to order.

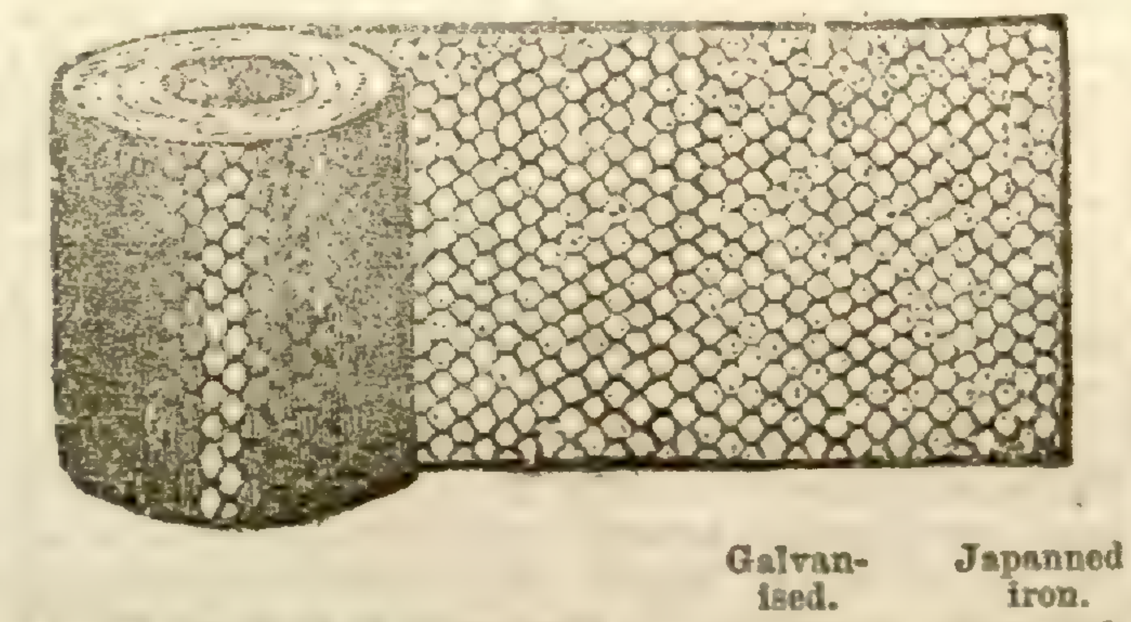
TANNED NETTING, for the protection of Fruit Trees from frost, blight, and birds, and for the security of fresh sown seeds, either in Gardens or Fields, at 1d. per square yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Scrim Canvass, for Wall Fruit.—At EDGINGTON and Co.'s, 17, Smithfield Bars, City, and Old Kent Road, Southwark, where may be seen erected Emigrant Tents in great varieties, on their latest improved principles, and also at Brunswick Street, Poplar, near the East India Export Dock.

WIRE FENCING, 6¾d. per square yard, in various widths, from 6 feet to 15 inches, an effectual Fence against Hares, Rabbits, Cats, Dogs, Sheep, Deer, and for making Inclosures for Pheasants and Fowls; ditto 4-inch Mesh, 4d. per square yard. Numerous testimonials of a favourable character.—R. Richardson, 21, Tonbridge Place, New Road, London.

WORSTED GARDEN NETS, 7d. per square yard, an effectual protection for the blossom from frost, blight, and afterwards from wasps. This article has been approved of by the Horticultural Society. All kinds of Garden Nets, Sheep Nets, and Fishing Nets made by machinery on low terms.—R. Richardson, 21, Tonbridge Place, New Road, London.

FRUIT TREES, POULTRY, RABBIT, SHEEP, and CAT FENCING.—Worsted Netting to protect the Bloom of Peach, Nectarine, and other Trees, Flower, or Seed Beds, from Frost, Blight, and Birds, 2 yards wide, 5d. per yard. NEW TWINE NETTING (Tanned if required), 1 yard wide, 1½d. per yard; 2 yards wide, 3d. per yard; 4 yards wide, 6d. per yard; Half-inch Mesh ditto, 2 yards wide, 6d. per yard. TANNED NETTING, 2 or 3 yards wide, 1½d. per yard. ELASTIC HEXAGON GARDEN NET, or Scrim Canvas, 4½d. per square yard. COCOA NUT FIBRE, or Hemp Sheepfolding Net, of superior quality, 4 feet high, 4d. to 6d. per yard. Rabbit Net, 4 feet wide, 1½d. per yard; 6 feet wide, 2½d. per yard; 8 feet wide, 3d. per yard. Each Edge Corded, ½d. per yard extra, suitable for Poultry Fencing. Square Mesh Cricketing Net, fix its full width and length, made of stout cord, 3d. to 4d. per square yard; this is the best article made for fencing, against fowls, cats, &c. Orders by post with post-office order or town reference, punctually attended to. The Trade supplied. Fishing Nets of all kinds in stock. Tents, Marquees, Rick Cloths, Tarpaulin, Lines, Rope, Twine, &c., at W. Cullingford's, 1, Edmund-terrace, Ball's Pond-road, Islington, London.

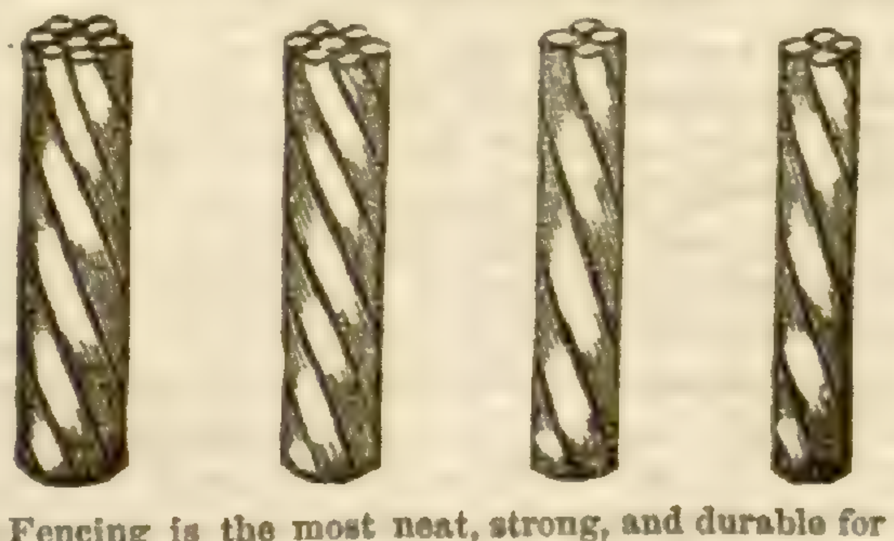
GALVANISED WIRE GAME NETTING.—
7d. per Yard, 2 Feet Wide.



	Galvanised.	Japanned iron.
2-inch mesh, light, 24 inches wide ...	7d. per yd.	5d. per yd.
2-inch „ strong „ ...	9 „	6½ „
2-inch „ extra strong „ ...	12 „	9 „
1½-inch „ light „ ...	8 „	6 „
1½-inch „ strong „ ...	10 „	8 „
1½-inch „ extra strong „ ...	14 „	11 „

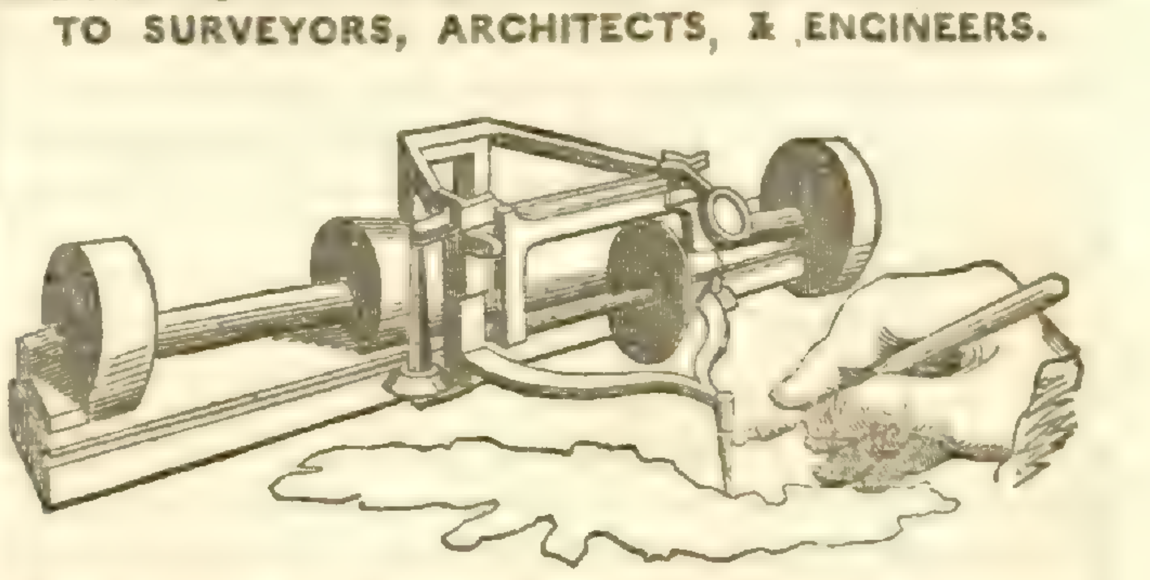
All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasantries, 3d. per square foot. Patterns forwarded post free.
Manufactured by Barnard & Bishop, Market Place, Norwich; and delivered free of expense in London, Peterborough, Hull, or Newcastle.

H. J. MORTON AND Co., Galvanised Iron Roofing Works, 2, Basinghall Buildings, Leeds.
PATENT WIRE STRAND FENCING FOR PARKS, &c.



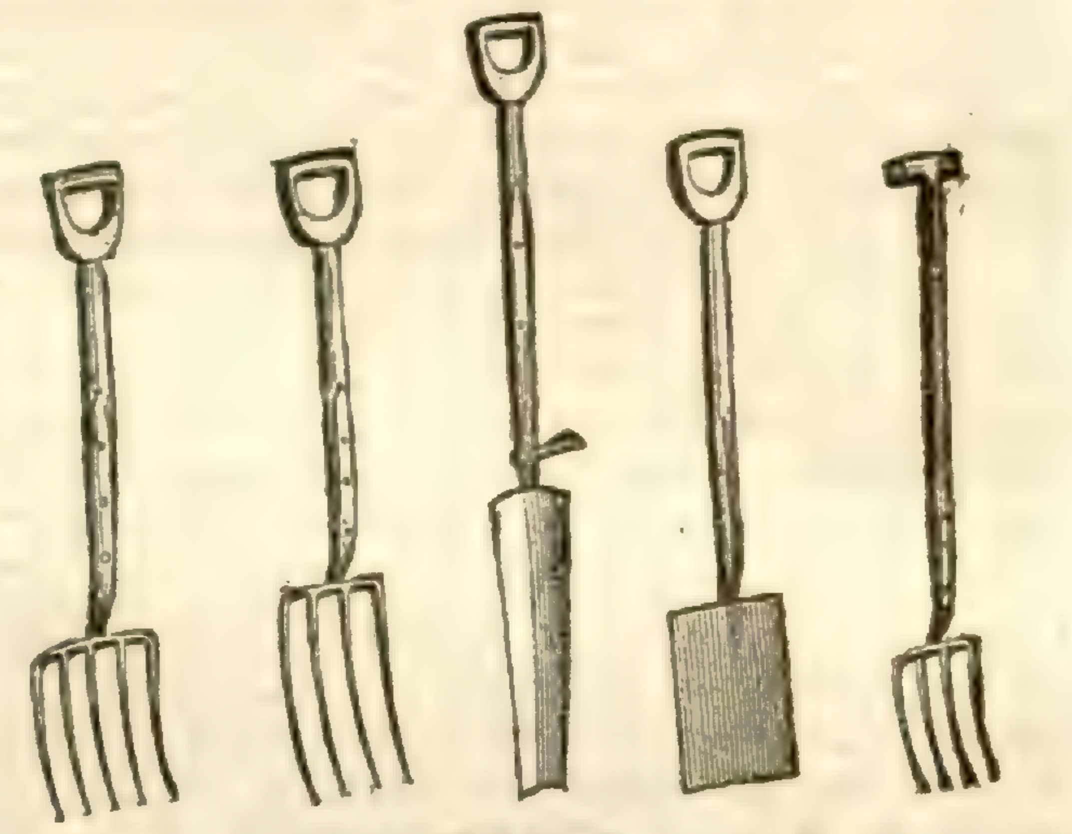
This Fencing is the most neat, strong, and durable for Parks and Agricultural purposes in use. It cannot be bent or put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply as above.
IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

TO SURVEYORS, ARCHITECTS, & ENGINEERS.



SANG'S PLATOMETERS; or, SELF-ACTING CALCULATORS.—These Instruments tell accurately the contents of figures drawn on Maps. They effect a great saving of time and labour, as in order to find the area it is only necessary to lead a tracer round the outline of the figure, however irregular it may be. Price 10l. each. Sold by John Sang, Kirkaldy; and by Messrs. Elliott & Sons, 56, Strand, London.

TO AGRICULTURISTS, GARDENERS, ETC.



BENNETT AND NAYLOR, General Ironmongers, and Factors, Sole West End Agent for PARKES', late WINTON PARKES' CELEBRATED STEEL DIGGING FORKS and TOOLS. Also for the only efficient Stove, with or without a flue, suited particularly for Conservatories and Greenhouses, Patronised by her Majesty. Price 12s., and upwards, at the Great Western General Ironmongery Warehouse, 255, Oxford Street, between Park Street and North Audley Street. Established for the sale of all descriptions of Ironmongery at Wholesale Prices. Sheet, Hoop, Rod, and Bolt Iron; Locksmiths and Bell-hangers. Patent Fuel, to be used with the Stove, 2s. 3d. per bushel.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.

MESSRS. BURGESS and KEY, as Mr. Parkes' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.
103, Newgate Street, and 52, Little Britain, London.

ANTHONY'S PATENT AMERICAN CHURN.—Extract from the Royal Agricultural Society's Report of the trial of Churns at the Gloucester meeting in July last. "In this trial the American Churn not only maintained its character in producing butter rapidly, but in producing a greater quantity from the like amount of cream." It made from 4 quarts of cream 4 lbs. 6 oz. of butter, being 8 oz. more than any of the other Churns from the same quantity and quality of cream. Price Lists of Churns and Implements by the best makers sent free, and Illustrated Catalogues on receipt of eight postage stamps. Burgess & Key, 103, Newgate Street, and 52, Little Britain, London, who have always a large stock of Steam-engines, Ploughs, Harrows, Diggers, Waggons, Carts, Threshing and Dressing Machines, Mills, Oat and Grain Bruisers, Oilcake Breakers, Reaping Machines, Haymakers, Horse-rakers, Turnip Cutters, Liquid Manure Carts, Parkes' celebrated Steel Digging Forks and Draining Tools, Pumps for Manure, Farm Fire Engines, and for Garden Purposes, &c. &c.

IRON AND WOOD HOUSES FOR EMIGRANTS, and for various purposes in this country, from 10l. to 12l. each; also Portable Poultry Houses, Outhouses, Summer Houses for Gardens, large Aviaries, Pheasantries, &c., very cheap. Drawings of Poultry Houses sent free by post; also 21 Drawings of Iron and Wood Houses.—R. Richardson, 21, Tonbridge Place, New Road, London.

THE LABORATORY of the ROYAL POLYTECHNIC INSTITUTION is always open for the reception of pupils, under the direction of J. H. Pepper, Esq., F.C.S. A.C.E., &c. Careful Analyses and Assays of Soils, Minerals, Waters, Mercantile or Agricultural Products, are performed with despatch, accuracy, and economy.
For terms apply to Mr. R. I. Longbottom, Secretary.

PRESENT PRICES OF AGRICULTURAL SEEDS.—See Messrs. SUTTON'S DESCRIPTIVE LIST, on the last page of Gardeners' Chronicle for January 28.

The Agricultural Gazette.

SATURDAY, FEBRUARY 11, 1854.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Wednesday,	Feb. 15	—Agricultural Society of England.
Thursday,	— 16	—Agricultural Imp. Society of Ireland.
Wednesday,	— 22	—Agricultural Society of England.
Thursday,	— 23	—Agricultural Imp. Society of Ireland.

We read in the *Times* of Wednesday last that Mr. C. Faraquet, a French engineer employed by the Peruvian Government, has reported the following quantities of guano as at present existing on the Chincha islands:—

On the northern island	4,189,477 tons.
„ central island	2,505,948 „
„ southern island	5,680,675 „
	12,376,100 „

which is said to correspond to 16,500,000 tons of saleable weight. On this, Mr. Caird remarks that sufficient exists for the requirements of the present

generation. He refers, too, to the present state of the guano market as a proof that no monopoly or agency, however well administered, can equal a perfectly free trade in the provision of supplies for our necessities.

THE Report upon the Canadian census referred to last week is interesting to Englishmen in two respects: 1st, as an example of the uses of a good statistical account of the national agriculture; and, 2d, as containing a most instructive comparison of Canada and the States, which will be studied with advantage by intending agricultural emigrants. On this latter point we make the following extracts:—

"In the United States the growth of Wheat has increased about 48 per cent. during the last 10 years, whilst in all Canada, during the same period, it has increased upwards of 400 per cent.! And taking the article of Indian corn, which is the production that compares most favourably for the United States, the increase on it for the 10 years between 1840 and 1850, has been equal to 56 per cent., viz.: from 377½ millions of bushels to 592½ millions—(see page 60 of Mr. Kennedy's Report),—whilst the increase in Canada for the last nine years has been 163 per cent., the census having been taken in 1842 and not in 1841. During the same period also, the increase in the growth of Oats in the United States has been 17 per cent., whilst in Upper Canada it has been 133 per cent., in Lower Canada 41 per cent., and in both united 70 per cent."

And confining ourselves to the State of Ohio, which furnishes a better standard of comparison—

"The number of cultivated acres in Ohio is one-fourth greater than those of Canada, being 9,800,000 to 7,300,000, or rather more than 10 to 7, yet the bushels of Wheat are one-twelfth less, being in Ohio 14,487,000 to 16,202,272."

"Ohio, in cultivated acres, possesses $\frac{1}{12}$ of all the United States. In uncultivated acres, possesses $\frac{1}{22}$ of the same. She possesses one-fourth more cultivated land per inhabitant than Canada, having five acres to four. All Canada produces one-seventh more bushels of Wheat than Ohio, and 1½ bushel more per individual. Upper Canada, however, produces six bushels more Wheat per individual than Ohio—the latter producing in her staple Indian corn 29 times more than Canada, which produces 77 times more Peas, and 54 per cent. more Oats than Ohio. The land of Ohio is valued at nearly double that of the average of the Union (see the report of Mr. Kennedy, page 49), and has more than three times as many inhabitants to the square mile as the average of the Union—she having $49\frac{53}{100}$ and the average of the states being $15\frac{57}{100}$."

These statements indicate, then, the great activity, energy, and success of arable farming in the Canadas as compared with the State of Ohio. As regards the produce of pasture farming, the comparison is more favourable to the latter:—

"Canada possessed, in 1851, 46,939 more milch cows than Ohio, and yet Ohio produces one-third more butter, and nearly eight times as much cheese as Canada. This is a most important feature in the difference between the two countries—amounting annually to the large sum of 276,122*l.* for butter, and 376,703*l.* for cheese, in favour of Ohio, although Canada, possesses nearly 47,000 more cows. How to account for so great a difference, the prices being taken at the same rate in both countries, is a very difficult matter. The having a more congenial climate than Canada east, shorter winter, and the supply of green food continuing for a larger period, may account for a great deal, but certainly not for such a serious discrepancy. The natural inference is that the breed of cows in Canada must be very inferior to those of Ohio."

Then follows information on other deficiencies of the Canadian agriculture, and inferences drawn from it, which belong rather to the other division of our subject—the advantages of statistical information of the kind here given. The farmer is directed by means of it to those branches of his business in which these deficiencies are most apparent. We select the following from among the lessons which Mr. HUTTON, the author of the report, has most satisfactorily drawn from the tabular statements of the census:—

"1. Canada should attend to the improvements of the breed of milch cows; the value of butter and cheese produced in Ohio from 47,000 fewer cows and calculated at the same price in both places, being about 70 per cent. more than in Canada. 2. Canada should make more cheese. Ohio produces 760 per cent. more than Canada, and 28 per cent. more butter. Canada depends too much on foreign countries for her supply of cheese, and the demand for American cheese in Canada causes its production in such large quantities in Ohio. At present cheese is much the more profitable of the dairy produce. The value of cheese in Ohio, at 5*d.* per lb., is 433,740*l.*, against 57,037*l.*, the value of cheese in Canada at the same price, making a difference in favour of Ohio of 376,703*l.* 3. Canada should grow more Clover seed and Grass seed, for which her climate is quite as well adapted as Ohio. Of these two articles, the latter grows 130 per cent. more than Canada, making a difference of 80,000*l.* against Canada, always bearing in mind that the cultivated land of Ohio is 33 per cent. more than that of Canada. The farmer should not be under the necessity of purchasing Clover seed—the very purchase makes him sparing, and a field of Wheat or Barley should not be sown without seeding it down with 10 or 12 lbs. of red Clover per acre. 4. Canada should keep more sheep—the value of sheep and wool being both 140 per cent. higher in Ohio than in Canada, though the quality of sheep and weight of fleece is rather better in the latter, and the cultivated land of Ohio only 33⅓ per cent. more than in Canada.

In value of sheep, Ohio exceeds Canada	... ...	£879,405
" wool, "	... ...	606,564
		£1,585,969

5. Canada should grow more Indian corn. Ohio produces 2800 per cent. more than Canada, although the difference in the climate in the Upper Province does not warrant anything like so great a difference. The average acreable value is not quite so great as that of Wheat—the average crop of Wheat, 16 bushels at 4*s.* is 3*l.* 4*s.*, and 24 bushels of Indian corn at 2*s.* 6*d.* is 3*l.*; but it should be remembered that Wheat occupies the land two years and Indian corn one, and requires more outlay for seed and labour than Indian corn; and an acre of corn stalks is more valuable than an acre of straw, and the condition of the land after corn is much better than after Wheat. 6. Canada should have fewer acres under Wheat as well as more under corn. There is too large a proportion of the land in Upper Canada under Wheat, nearly one-fifth of the whole cultivated land, say $\frac{3}{16}$. 7. Canada might grow more Tobacco. Ohio produces 850 per cent. more than Canada—and a large portion of Upper Canada is well calculated for its growth. In this article alone, Ohio has 230,000*l.* worth more than Canada."

Now here is trustworthy advice of the most valuable character founded upon information in reference to Canada—of which we, as regards our own country, are wholly destitute. We understand that it has been in the face of considerable opposition that a bureau of agriculture, as a department of the Canadian government, has been established. We are sure that if it shall continue to furnish information and instruction of the kind presented in this report on the census, the opposition which it will encounter in the future will be that of a rapidly diminishing minority. There is nothing of which the most jealous politician can complain—nothing in the least corresponding to mere class legislation—in the official collection and promulgation, at whatever expense, of information for the common good, on a branch of industry of such essential importance as agriculture. The value of such information to agriculturists would be but part of the good that would accrue; all branches of industry, and all classes of consumers—in fact, the people generally—suffer for lack of the knowledge which would thus be taught them.

NITRATE OF SODA A SUBSTITUTE FOR GUANO.

[Some remarks upon the paper by Philip Pusey, Esq., in the last number of the "Agricultural Journal," entitled "On the Natural Law by which Nitrate of Soda or Cubic Saltpetre acts as a Manure, and on its Substitution for Guano."]

As I am not a member of the Royal Agricultural Society, I take the liberty of requesting space in the *Agricultural Gazette* for some critical remarks upon the above paper. Mr. Pusey's paper is upon a subject of the greatest possible importance, and the natural law which he considers he has established affects the very foundation of chemical science, and would, if true, upset the views of all the vegetable physiologists of modern days. I will make no apology, then, for intruding my remarks once more upon the agricultural world.

Mr. Pusey ventures upon the following generalisation, which, in fact, is the law he attempts to establish. "We may now therefore assume, with unhesitating certainty, as a great law of nature, that substances strengthen vegetation mainly by their contents of nitrogen."

The experiments upon which Mr. Pusey attempts to found this law are given in detail. Suspecting that the nitric acid in the nitrate of soda was the true fertiliser when this substance was used as a manure, Mr. Pusey first instituted a comparative experiment, in which he used nitrate of soda in two strengths, and nitric acid in six. The results, taking 10 as perfection, gave 10 and 9 for the nitrate, and 8 for the four strongest applications of nitric acid, and 2 and 0 for the two weakest. Mr. Pusey then performed two other experiments, in which nitrate of soda, nitric acid, carbonates of ammonia, soda, and potash, were used. In Mr. Pusey's words: "In both trials the nitric acid acted decidedly. The alkalies neither of them produced even a trace of effect on the colour or the growth of the Grass. The success, therefore, of the experiment was complete." And Mr. Pusey considers the law as stated above to be established with "unhesitating certainty."

Mr. Pusey will, perhaps, feel surprised when he hears that in the experiments upon which he attempts to found a great natural law, that the conditions he assumes were never fulfilled, and that his plants of Grass never fed at all upon nitric acid. The fact is simply this. The moment nitric acid comes into contact with the soil upon which the Grass is growing, it ceases to exist as nitric acid at all. In the absence of all proof that plants can eliminate free nitric acid, it is certain, beyond all shadow of doubt, that free nitric acid cannot exist in a soil which is capable of growing Grass or corn!

The truth of this will be rendered clear by the slightest reflection. All fertile soils contain lime, soda, potash, magnesia, generally as carbonates—either individually or collectively—and the moment the nitric acid came in contact with the soil it would become a nitrate of one or other of three alkalies. Mr. Pusey's experiment then becomes involved into that of one nitrate against another. A little reflection will show that a strong acid like the nitric, if diluted as to 24 of water, which destroys the Grass, must also destroy the tender spongioles and roots, if it ever reached them. That it never did reach them is perfectly certain, even from the fact that the Grass grew after the leaves had died. But the evidence is much stronger than this, because either from the presence of alkalies or the existence of vegetable matter, nitric acid must, as a law, become decomposed the moment it comes into contact with a fertile soil.

But Mr. Pusey, in his second experiment, attempts to prove that the base of nitrate of soda is inoperative as a manure by the use of carbonate of soda. Surely Mr. Pusey must have known that carbonate of soda was a very different thing from the oxide of sodium or soda with which the nitric acid is combined to form nitrate of soda; and that a comparative experiment with the carbonate must be utterly worthless. Nitrate of soda is much more soluble than the carbonate; and this fact alone would lead to the inference that, if the plant required the alkaline base, it would select it from the same soluble salt.

I do not, however, deny that the plants may make use of the nitrogen in the nitrates, but at present it is quite certain that we have no proof of the fact, or that a plant can eliminate nitrogen from any other substance than ammonia.

But if the fact, which Mr. Pusey's experiments go so little way to prove, were true, that the nitrogen of the nitrates is the fertilising principle of these salts, how does this affect Mr. Pusey's natural law, that "substances strengthen vegetation mainly by their contents of nitrogen?"

I need not I am sure inform Mr. Pusey that nitrogen is not an ingredient at all of vegetable structure, but that it is deposited in their cells in the form of one or other of the proteine compounds, with the beautiful purposes of subserving to the formation of animal organism. It is quite clear then that nitrogen, while it may enrich, can never in any way strengthen vegetation. Nitrogen supplied to the plant may, according to Liebig, enable it to eliminate more carbon and hydrogen; but, as I ventured to argue 10 years ago in your pages, this can only be done to the amount required for the proteine compound. The proper structure of the plant must be developed from its own resources; if it requires an alkali, which all plants do, it seizes from the soil a soluble salt, a nitrate, which contains what it wants. Phosphorus, sulphur, lime, silica, all equally wanted, it obtains from the same source in a soluble form. Nitrate of lime and magnesia are very soluble, and therefore both are readily accepted by the plant, but only to the proportional amount required to form the compound bodies into which they enter.

I wish all agricultural chemists would bear this important fact in mind, that vegetables only require their constituent ingredients in definite proportions. One experimentalist covers his land with nitrate of soda and he gets an excellent crop. The plant takes as much as it requires, and is thus enabled to eliminate more of its other constituents from the soil, and it grows and produces largely. The delighted farmer goes on year after year until some important ingredient, say phosphorus or sulphur, is used out, and then his crop does not grow at all. He throws away his nitrate of soda in disgust; believes his previous crops were good ones from some fortuitous circumstance, disbelieves in agricultural chemistry, and forthwith speaks against it at public dinners and farmers' clubs. What is good of nitrate of soda is equally applicable to other manures, which, on the same ground, obtain a temporary fame. Guano is a compound manure. It has ingredients to strengthen the plant and to enrich it with proteine compounds; but I venture in all humility to predict that nitrate of soda, although it will always be a useful manure, will never supersede guano or (what I have heretofore endeavoured to show would prove its substitute*) urine. I have thus briefly, and I am sure Mr. Pusey will allow in the best possible spirit, endeavoured to point out that the natural law he has thought proven does not in reality exist. That his plants never did take up free nitric acid—that the effect produced was that of a nitrate or nitrates—that he has not added by his experiments to anything already known as to the elimination of nitrogen by plants, and that as they are nourished and enriched by elements analogous to those contained in their own structure in definite proportions, therefore no one ingredient can mainly contribute to this effect, and consequently that Mr. Pusey's induction is not sound. *C. R. Bree, Stricklands, Stowmarket, Jan.* 30.

Home Correspondence.

Management of Manure: Blackie's Cyclopedia.—I have read Dr. Voelcker's reply to some observations of mine in the *Gazette*, on some portion of the article Manure in the "Cyclopedia of Agriculture," which appeared to me to require elucidation. The writer having stated that 100 cwt. of fresh farm manure contained 40 lbs. of nitrogen, which nitrogen was dissipated in the shape of ammonia in certain portions during the progress of decomposition, I was under the impression

* Papers on Agricultural Chemistry in *Agri. Gazette* for 1844.

he had, in those portions, disposed of the whole quantity. I see, however, by the first part of Dr. Voelcker's reply, that 35 lbs. only were so disposed of instead of 40 lbs. The correction therefore amounts to this: that as respects a given weight of fresh manure, seven-eighths of the nitrogen is lost in the progress of it to perfect decomposition. Accuracy in such matters is important; I am therefore obliged by this correction; but, for the purpose of the question under consideration, viz., what is the most economical mode of dealing with our farm manure?—whether the loss by decomposition be 35 lbs. or 40 lbs. in the 100 cwt. is of small moment. Dr. Voelcker's further effort to elucidate the subject of my observations is unsuccessful to my apprehension. He proceeds, "But on reading carefully the whole experiment mentioned in page 343 of the 'Cyclopedia,' it will be found that the manure produced in the first period of fermentation, as well as that obtained in the second and third, is richer in nitrogen than the original fresh manure; for he will find it stated that 100 cwt. of fresh manure, containing 20 lbs. of nitrogen (this is no doubt an error of the press for 40 lbs.), were reduced to 80 cwt., when allowed to ferment until the straw became half rotten, during which period 5 lbs. of nitrogen were lost. The remaining 80 cwt. will thus contain 35 lbs. of nitrogen. Further, the 100 cwt. of common manure when fermented until fat and cheesy, will be reduced to 60 cwt., during which second period of fermentation 10 lbs. of nitrogen were dissipated in the form of ammonia. The 60 cwt. of manure thus produced will consequently contain 30 lbs. of nitrogen; and lastly, that 100 cwt. of manure fermented until perfectly decomposed will be reduced to 40 or 50 cwt., and lost in this third period of fermentation 20 lbs. of nitrogen. The 40 cwt. of perfectly decomposed manure did thus retain 20 lbs. of nitrogen." I should not presume to call in question any purely chemical statement made by so skilful a chemist as Dr. Voelcker; but as he has put it, this really appears to me a mere question of arithmetic, which in figures stands thus:

100 cwt. of fresh manure contains of nitrogen ...	40 lbs.
1st stage of decomposition reduces to 80 cwt., at a loss of nitrogen of	5 "
Remain	35 lbs.
2d stage of decomposition reduces to 60 cwt., at a loss of nitrogen of	10 lbs.
Remain	25 lbs.
3d stage of decomposition reduces to 40 cwt., at a loss of nitrogen of	20 lbs.
Remain	5 lbs.

After the weight of 100 cwt. has been reduced to 60 cwt., at a loss in the two-first stages of decomposition of 15 lbs., and after the further reduction of weight in the third stage to 40 cwt., at a loss of 20 lbs. more of nitrogen, how the 60 cwt. can contain 30 lbs. of nitrogen, and the 40 cwt. retain 20 lbs. of nitrogen, I do not comprehend; and "that the manure produced in the first period of fermentation as well as that obtained in the 2d and 3d are richer in nitrogen than the original fresh manure," which, on the same authority, contained 40 lbs., and has lost 35 lbs. in the progress of decomposition, will, I fear, perplex more farmers' brains than mine. *C. L., Cirencester, Feb. 6.*

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

At the Monthly Council held last week, Lord Berners and J. Rogerson, Esq., Highgate Rise, Middlesex, were elected Governors.

The following new members were elected.

Darell, Rev. Sir Lionel, Bart., Trethorne Rectory, Gloucestersh.
Ridley, Nicholas James, Hollington House, Newbury, Berks.
Fraser, John, Llantarnane, Newport, Monmouthshire
Jones, Charles Gwillim, 23, Craven Hill, Hyde Park
Rhind, Josiah, Wick, Caithness, Scotland
Hubbard, Wm. Egerton, 24, Kensington Palace Gardens
Tichborne, Sir James F. Doughty, Bt., Tichborne Pk., Alresford
Brewer, Jehoida, Newport, Monmouthshire
Smith, Edward, Ratcliffe-on-Trent, Nottinghamshire
Pitcairn, Alexander, Ardmaddy Castle, Oban, Argyleshire
Stokes, Thomas, Chivers Hall, Ongar, Essex
Milford, Thomas, Thorverton, Exeter
Wortley, Edward, Ridlington, Uppingham, Rutlandshire
Dupuis, Rev. Geo. John, Creeting Rectory, Needham-Market
Burgess, Capt. H. W., Fitzroy Park, Highgate, Middlesex
Tidmarsh, Charles, Kemerton, Tewkesbury, Gloucestershire
Mildmay, P. H. St. John, Hazlegrove House, Castle-Carey, Som.
Wood, George, Howrigg, Carlisle
Knatchbull, Rev. H., Elmham Vicarage, Norfolk
Ward, John, Chadlington, Eynsham, Oxfordshire
Ellis, J., Newton St. Cyr, Exeter
Bridge, Thomas, Wynford-Eagle, Dorchester, Dorset
Berry, Kemp, Woodgate, Beckley, Sussex
Neems, Timothy, Frocester, Stroud, Gloucestershire
Thompson, George, 30, Parliament Street, London
Grsswell, Dan, Louth, Lincolnshire
Bright, Henry S., Hull
Strelley, R. S., Oakerthorpe, Alfreton, Derbyshire

For a list of the proceedings of the Council on this occasion, see our last week's Paper.

A Weekly Council was held at the Society's House in Hanover Square, on Wednesday, the 8th of February, Mr. Raymond Barker, V.P., in the chair.

Veterinary Inspection.—The following report from Prof. Simonds, the Veterinary Inspector of the Society, on an official visit paid by him to a portion of the live stock of his Grace the Duke of Richmond, at Goodwood, by direction of the Veterinary Committee of the Society, was received from the monthly council and read at this weekly meeting.

I have to report that in accordance with the instructions of the chairman of the Veterinary Committee, I proceeded on the 30th ult. to Goodwood, the seat of his Grace the Duke of Richmond, to investigate a disease existing among some oxen belonging to his Grace. It appears that the animals in question had been purchased, with some others, since destroyed by the disease, on the 4th September last, at Barnet Fair. At the time of purchase, as also when they arrived at Goodwood four days subsequently, they seemed to be in perfect health. The original lot consisted of 40 bullocks of the Highland breed, varying in age from two to three years; at the time, however, of my visit their number was reduced to 24, by the fatality of the malady. Although there is no direct evidence to prove that the animals were diseased when bought, I have little doubt that such was the case: first, from the chronic nature of the affection; secondly, from the non-existence of any similar disease in the neighbourhood; thirdly, from the non-application of the ordinary exciting causes of such a malady after purchase; and fourthly, from the early occurrence of illness among the animals after arriving at Goodwood. The fatality of the disease, as well as the symptoms presented by the animals, led to the belief, prior to my visit, that they were the subjects of pleuro-pneumonia. By a careful examination, however, I satisfied myself that the affection, although centered in the lungs, was not of the precise nature of the one commonly known as pleuro-pneumonia. From the answers returned to the Society's list of questions, it appears that 16 of the animals had died between the middle of September and the end of December, and that seven others were then ill, the remaining 17 being reported as free from the malady. In inspecting these 17 animals, I discovered that two more had contracted the disease; these I caused to be immediately removed, that they might be placed with the infected and forthwith subjected to medical treatment. To a non-medical observer, these two bullocks gave no evidence of the malady; one of them, however, has since died, and a portion of its lungs, extensively diseased, was forwarded to me at the College a few days since. The emaciated condition of the diseased animals, the nature of their malady, and the length of their illness, afforded but little hope of the speedy cessation of the fatality by the adoption of the best remedial measures. This opinion was expressed to his Grace, and it has since received confirmation by the death of two more of the animals. It is also more than probable that other deaths will yet take place; but still I feel assured that by the measures which are advised, a limit will soon be put to the extension of the disease, and that several lives will be saved which otherwise would have been sacrificed. As is often the case, an immediate good effect appeared to attend upon a change of treatment and management, for at the end of a week from my visit, I received a report from his Grace's bailiff, in which he says, "I am happy to state that the bullocks are going on favourably. They were altered as to feeding and management according to your directions, and from their improved appearance I am in hopes that they will now do well without much further loss." In the former part of this report I have observed that the malady showed itself very soon after purchase; to this has to be added that its progress has not been uniform, and that the deaths have taken place at irregular intervals. Fortunately, from the first, isolation of the diseased was strictly enjoined, so that none of his Grace's other cattle have sustained any injury. Had such a plan not been adopted it is greatly to be feared that the losses, heavy as they now are, would have been much augmented, as most of the affections of the respiratory organs of cattle are contagious in some stage or other of their progress. Removal of the sick and isolation are therefore of the first importance to limit the extension of many maladies affecting cattle. The progress of the disease, and also some of the more prominent lesions it produces in the lungs and chest will be gathered from the following statement of Mr. Arras, the bailiff:—The first case," he says, "of the disease took place ten days after the bullocks reached Goodwood. The animal lingered eight days, when it died. On opening it, the chest contained a large quantity of water, and a thickish mass surrounded the lungs. The second case occurred six days after the first. It was more rapid in its progress, the animal dying in five or six days. One lung was enlarged and gorged with blood, the other was only slightly affected. Two more cases happened after an interval of ten more days. These bullocks are still living, but are reduced to mere skeletons. The next two animals both died. The right lung of each was chiefly diseased. In one of these bullocks the lung was hard and of a slate colour in patches; in the other it was also hard and discoloured, besides containing several tumours filled with matter. The other cases had much the same general character. In one animal the throat and also the air passages were much inflamed, and although the disease did not seem to have affected the lungs, the chest was found to be filled with water." With reference to the most recent death, and which occurred on the 26th inst., Mr. Arras writes, "Another of the bullocks was found dead this morning. It is one of the two which you took from the supposed healthy, when you were at Goodwood. The man who opened it says, that the lungs were firmly grown to the ribs, and that nearly three gallons of water came out of the chest. I have given directions for part of the lung to be sent to you." From these statements, it is very evident that the disease has varied somewhat in the nature of the lesions it has produced in the lungs. In several of the cases it has destroyed the animal by copious effusions of serum into the cavity of the chest, but in others the substance of the lung has been principally diseased. In the specimen received at the College, the lung tissue was destroyed in patches from chronic inflammation, while the pleural surface of the organ was covered with effused lymph, the result of recent and acute inflammation of the pleura. The extension of the inflammatory action from the substance to the surface of the lung is sure to produce effusion, and when large quantities of serum are suddenly thrown out, then death will result and almost immediately from asphyxia. This explains the somewhat unexpected death of the last animal, and it constitutes the main danger which attends upon those now diseased. The prevention of the effusions by combatting the pre-existing disease of the lungs is, therefore, one of the leading principles of the treatment which is being adopted. At the commencement of the malady the animals had not the care of a veterinary surgeon, but of late they have been attended by Mr. Dawtry, of Chichester. On the occasion of my visit I saw Mr. Dawtry, and explained to him the opinion I had formed of the nature of the disease and the principles which should guide him in effecting its cure. I also gave instructions for the management of the animals which seemingly were not diseased, with a view to their preservation. These instructions, slightly modified by circumstances which have since arisen, have been fully carried out, and the results, up to this time, are as favourable as could have been anticipated, when the duration of the malady and the importance of a healthy state of the organs in which it is located are taken into consideration.

Jas. B. Simonds,
Veterinary Inspector.

January 30th.

In reply to the inquiries of Mr. Fisher Hobbs, Mr. Pocock, and Mr. Woodward, Prof. Simonds stated that he considered that the whole of these animals would have died, had not the change of treatment he recommended been adopted. They were not affected with the disease commonly known as pleuro-pneumonia, but with that common inflammation of the substance of the lungs which so often results in the case of animals contaminated at the time of purchase, which are subsequently injured by over-exertion and exposure. The symptoms were loss of appetite, staring coat, coughing, discharge of mucous matter from the nostrils, difficult respiration, effusion of water in the chest ensuing in about eight days. The treatment he had adopted consisted in the administration of saline aperients, followed by diffusible stimulants, aided by tonic medicines, nutritious food, and well-ventilated sheds. In answer to a distinct inquiry by Mr Fisher Hobbs, Professor Simonds added, that under similar circumstances, the same treatment might in general be adopted with the probability of similar beneficial results.

Inoculation for Pleuro-pneumonia.—The Secretary informed the Council that he had received a communication from Turin on inoculation for pleuro-pneumonia, from Dr. Reviglio of that city. Dr. Reviglio's results are given as fully condemnatory of the inoculation proposed by Dr. Willems, of Hasseth.

Oil-Cake.—Professor Simonds took that opportunity of submitting to the Council a specimen of oil-cake, that had been sold as food for cattle, but which had produced on the animals that had partaken of it in sufficient quantity all the effects of a virulent and rapid poison. Prof. Simonds laid before the Council communications on this subject made to him by Mr. Charles Sayles, veterinary surgeon, Tickhill, near Rotherham.

Professor Simonds stated that he had made experiments, at the Royal Veterinary College, on the effects of this mustard-cake on two sheep. He had mixed it with chaff and corn, and presented it to them, but that it was evidently distasteful to them, and they only eat from a quarter to half a pound daily, without producing any decided effect; while oxen had partaken of four or five pounds a day of it, and died in consequence. The local term "drapes" was intended to signify "barren cows."—Mr. Fisher Hobbs thought that the thanks of the Society were due to Professor Simonds for the trouble he had taken on the subject, especially as other oil-cakes, especially adapted for feeding purposes, were now adulterated in a high degree, particularly those of home manufacture, while the foreign cake at present maintained its average good quality. It was not long ago that Mr. Hobbs had known eight or ten beasts poisoned by eating cake adulterated with refuse bitter almond cake, and which was consequently impregnated to a certain amount with the prussic acid that kernel is known to contain. He thought he might make the general remark that "cheap" articles, recommended solely as such, were but too often the dearest the farmer could purchase, the quality of such articles being frequently reduced in a greater proportion than the price. He hoped our English cake makers would take warning in time, and not drive the English farmer to seek his best and most economical cake in the foreign markets.—Mr. Woodward fully concurred with Mr. Hobbs in the superior value of the foreign oil-cake; he would also add, that in the case of manures the cheapest were not by any means always the best.—Mr. Caird suggested that the south-country farmers of Great Britain should adopt the same means of safeguard against adulteration in oil-cake as had been so constantly used by the farmers of the north. In Scotland no farmer ever thought of making a purchase of oil-cake, any more than he would of manure, until he had been furnished with a properly certified analysis of its quality. In consequence of this simple and obvious precaution, no such thing was ever heard of among the northern farmers as adulterated oil-cake, as no unprincipled vendor had the slightest chance of sale for deteriorated compounds. He hoped the farmers of the southern part of Great Britain would lose no time in adopting a similar efficacious mode of security.

Elastic Steel Digging-forks.—Messrs. Burgess and Key, of Newgate Street, having obtained the entire agency of the well-known "Winton-Parkes'" steel digging-forks, manufactured by Mr. Francis Parkes, of Birmingham, transmitted a complete set of these forks to the Society, with the following account of their mode of manufacture:—

December 5, 1853.

Agreeable to your request, I proceed to describe to you the origin of steel forks for digging, manure, and other purposes, and the advantages to the consumer which they possess over every other implement of the kind. I have for many years been tool maker for the majority of the London market gardeners; my first effort to serve them was by improving their spades and hoes; the improvement in the spades consisted of plating the front side, or upper surface of the spade with cast steel, so as to impart to the implement the property of wearing itself to a knife edge, and to a peculiarly bright surface, which scarcely any soil would adhere to; my next effort to improve this article was to shape the iron and steel so as to produce a solid plate or blade gradually increasing in strength from the edge to the centre, and again wedge-like from the edge to the top or shank, which places the weight of the implement so near the hand that although it possesses great weight and force in its downward blow to cut through roots or turf, it does not rise or lift heavily, and there is also a novelty in the mode of joining the wood and iron part of the handle (as you will see by the one which is now exhibited, No. 1) instead of the iron covering the wood, as in the usual mode of construction, the wood covers the iron, and wood being a non-conductor of heat, comparatively with iron, the implement is much pleasanter to handle during the cold of winter; my next attempt was to improve the three-prong dung fork, then in use, having made some to pattern supplied by Messrs. Fitch, of Fulham, good in shape, but the prongs formed of ⅝ round iron tapered a little, and pointed, I was dissatisfied with them as being cumbrous and heavy. I then conceived the idea of making one of steel, sufficiently light and well tempered to be elastic; but being aware that the prong of a fork would be tested far more severely than sword-blade, bayonet, rapier, or anything of the kind, I determined upon selecting a good quality of cast steel, and tempering it as skilfully as my many years of experience would enable me to do, and to make the prongs of such a shape that the end section should be an oblong square, as shown by No. 2, now exhibited, thus offering the greatest resisting power to the strain occasioned by lifting a weight of dung or litter, and giving the more flexible elasticity in the direction that the fork was likely to become wedged or expanded, and was eminently successful, so much so, that Mr. W. Fitch subsequently told me that his man had then a fork in use which he had taken to London with the dung-cart every day for two years, and that it had never cost him one penny in repairs, in contra-distinction to the iron forks, which, when in regular use, cost 3*d.* every fortnight at the blacksmith's shop for pointing; and to use the man's own expression, it was at that time the best fork that ever was stuck into a pit of dung. I next saw the desirability of making a 4-prong fork for decomposed dung, compost, short litter, and various other purposes; here arose the difficulty: I had been

substituting a fork made from 1½ lb. of steel for one made of 3½ lbs. of iron, and to make this good enough to stand its work at such a weight, I had seen the necessity of making the fork from one piece of steel without incurring the risk and uncertainty of welding or joining prongs together, when this difficulty was overcome, and we were able to forge any number of prongs from one piece of steel; subsequent experience has proved that forks of any given number of prongs (as the nature of the land may require) are the most efficient digging instruments, and the most durable; steel being a material susceptible of crystallisation, it necessarily becomes pre-eminently durable by crystallisation, and such durability is impaired to a very trifling extent only by the subsequent tempering which imparts elasticity. The elasticity of the fork proves to be singularly advantageous to the operation upon the soil—where the hardness or adhesiveness of the soil, or the intersection of roots offer more than ordinary resistance, and more pressure has to be applied, as soon as the release takes place the prongs spring forward with sufficient force to disseminate the soil in thousands of particles, or when the workman strikes a clod with the forks in an oblique direction, the prongs possessing all the vibrating powers as seen in the tuning-fork, will disseminate the soil into the minutest particles.

(Signed) "FRANCIS PARKES."

The Council ordered their thanks to Messrs. Burgess and Key for this present and communication.

PERMANENT GRASSES.—Dr. Calvert suggested to the Council the offering of a prize "For the best plot of swarth land, the produce of seeds sown in the spring of 1855; the premium to be awarded in 1860 or 1861: the actual outlay incurred for manures, dressings, &c., as well as quantity and quality of produce, to be taken into account as far as practicable."—Mr. Fisher Hobbs objected to the form of challenge in which Dr. Calvert had put his proposal; at the same time, that he thought the subject of the best Grass-seed known in England as one of the most important that could engage the attention of the Society.—Mr. Pocock suggested that in the mean time Dr. Calvert would render a great service to the Society by putting in the form of a report a detailed statement of his experience on this important subject. Dr. Calvert replied, that he should be happy to do so, should time be allowed him for the completion of such an undertaking.

GUANO DEPOSITS.—The Secretary informed the Council that at their next monthly meeting he should have the pleasure of reporting the communication in which he was then placed with Sir James Graham, in his capacity of First Lord of the Admiralty, in reference to active measures taken by him as the head of that department, for the discovery of new sources of guano by the officers of her Majesty's ships cruising on coasts within the rainless regions of the tropics. The chairman remarked that the society had reason to congratulate itself on the fortunate circumstance, that the distinguished individual who now presided over the naval department of the Government, was not only an excellent farmer himself, but also an office-bearer in the Society's Council, and one of its most active founders and promoters.—Mr. Caird thought that for the last few years the influence of our government had not been sufficiently strong on the Peruvian authorities, as it appeared that while the guano-market in this country was nominally closed, in the United States it was not only open in full vigour, but the subject of successful negotiation of the American Government on the guano supply to that country had been made a point of distinct congratulation by the President, in his Message to the Congress. He therefore hoped that our Government also would not hesitate to consider this question as one of vital importance to the agricultural and shipping interests of the United Kingdom. Mr. Caird concluded his remarks by reading the following passage from the Baltimore Price-Current of the 7th of last month:—

There have been imported into the United States, during the year 1853, in 107 vessels, 70,530 tons of Peruvian guano; of which 50 vessels have arrived at Baltimore, and 57 vessels at other ports.

IMPORTS OF PERUVIAN GUANO AT BALTIMORE FOR THE LAST FIVE YEARS:—

1849	2,700 tons.
1850	6,800 "
1851	25,000 "
1852	25,500 "
1853	32,152 "

The Chairman was surprised to hear that America should have gained these important advantages denied to this country: he hoped, however, that such measures would soon be taken as would secure them also to our own farmers as well as to those in the United States, feeling assured that the Government of this country was fully alive to the importance of the question in all its bearings.—Mr. Fisher Hobbs was glad to find that there was no fear of an immediate failure in the supply of that valuable manure. He hoped the monopoly which had so long injuriously fettered the guano-supply to this country would at once be broken through, and that ere long we should receive them in the way of ordinary importation, and on a friendly footing, through our friends in the United States of America.

SUBSTITUTES FOR GUANO.—At the suggestion of Mr. Bullen and Mr. Caird, the Council arranged that the subject of Fish-refuse and other substances, as substitutes for guano, should be taken into consideration on that day fortnight, Wednesday the 22d of February, at at 12 o'clock.

POTATO CULTIVATION.—A communication was received from Viscount Palmerston, along with a box containing fine samples of Potatoes, the produce of Mr. Franzi, a Tuscan gentleman, who attributes the success of his cultivation to his having dried the sets in autumn and retained them dry during the winter. The crop produced from these dried cuttings was abundant and sound, while the crop from common cuttings soon gave signs of decay.

The Council then adjourned to Wednesday next, the 15th of February.

Farmers' Clubs.

London, Feb. 6.—The Corn Averages.—W. FISHER HOBBS, Esq., in the Chair. The Chairman felt that his station was one of great responsibility. He had had the honour of presiding at these meetings on two former occasions, but he felt, now that they had united with the local farmers' clubs, his duties and those of the committee would be greatly increased. He hoped the Club would now become the central rallying point of the agriculturists of the kingdom, and that they would be able to carry such measures as would be beneficial to the agricultural interest at large. No exertion should be spared to render this the central farmers' club of England.—Mr. W. Pain, of Compton, Winchester, rose to read his paper on the subject for the evening. He observed that the imperfect mode in which the corn averages are taken had long been a subject of complaint with agriculturists throughout the country. It would not be necessary to go back to the origin of taking the corn averages, or the purpose for which they were collected, he should simply point out the way in which they are taken at the present time. The act which regulates them is the 5th and 6th Vic., and is intituled an act to, &c. Its chief purpose was to regulate the price of home-grown corn. The schedule contains the 290 cities and towns in England and Wales, from which the returns are to be made to certain inspectors. These inspectors are appointed in the city of London, by the Lord Mayor, and in the city of Oxford and town of Cambridge, by the officers, masters, and scholars of the Universities; in the other towns the officers of excise are to act as corn inspectors, except where the inspectors appointed by the 9th of George IV. are still holding office. In the City of London, or within five miles of the Royal Exchange, not only all corn dealers, but every person who shall sell any corn in Mark Lane, is required to make a declaration before the Lord Mayor before any sale that the returns made by him shall contain the whole quantity and prices of the corn, to be sold by or for him, with the name of the seller; and every person who in any of the other 290 cities and towns shall bring British corn to sell again, and many other persons as well, are required to make a similar declaration. These returns are to be made by the above parties on the first market-day in every week, and the inspectors are to enter the returns in a book, and transmit to the controller weekly an account of the quantity and prices of corn sold. The inspectors are forbidden to include in such returns any accounts furnished by any person who has not made the necessary declaration. The controller is to add together the total quantities of corn sold during the week in the different towns, and also the total prices for which the same shall appear to have been sold, and divide the amount of such prices by the quantities; the product of six weeks is then to be added together, and divided by six, and the result is deemed the weekly average which is to be published in the *Gazette*. The inspectors are also to affix a copy of the last returns on the market place, on each market-day. All corn dealers in the different markets alluded to are liable to a fine of 20*l.* for each and every month they neglect to make the declaration, and also a further fine of 20*l.* for neglecting to make a return; and any person making a false return is deemed guilty of a misdemeanor. These provisions, observed Mr. Pain, might answer if they were carried into effect, which is not the case. Hundreds never make any return at all, or do it improperly. But when it is considered that these returns are the basis on which corn rents and tithe rents are charged, the evil results of this neglect must be apparent. The present system wants a thorough revision. In support of his argument he would assert that in the market he attended, not one-third of the corn sold was ever returned. On some days only Wheat was returned, although Barley and Oats were sold in large quantities. He read an extract from a local paper corroborating his statements as to the negligence and laxity existing, and suggested that the evil might be in some measure remedied by making the returns imperative on both buyers and sellers, that one might be a check to the other. He thought also that the tithe rent charge of each county should be based upon the average for that county alone. He would appoint the excise or inland revenue officers to collect the returns; compel every grower to make a return of all corn sold or consumed; impose a penalty for refusal, and give half the fine to the informer; and, finally, no person should be allowed to make a return on a second sale. Although not quite in accordance with their general practice, he should submit to them a resolution embodying the views he had expressed. The following is the resolution:—"That it is the opinion of the members of this club that the present mode of taking the corn averages is imperfect in its operation, and injurious to the interests of agriculture; and that weekly returns should be made by the grower of all corn sold by him, verified by the signature of the buyer; such returns to be taken by the officers of excise or inland revenue." He now left the matter in the hands of the meeting, hoping the discussion would go on with spirit, and that they should be able to lay their grievances before the Government in such a manner as to get them rectified.

Mr. Pile, of Winchester, observed that the subject in debate was one in which the farmers had long felt a deep interest. It had been twice discussed in the Winchester club; in fact, the very first discussion they ever held was upon it. This was in 1850. Very recently the subject had been discussed again. He would read the resolutions arrived at on that occasion. 1. That in the opinion of this meeting the present mode of taking the corn averages is imperfect, and most injurious to the farmer. 2. That as at present, the returns are only made on the best qualities of corn, the average price which rules the tithe and rent-charge is calculated on false data. 3. That in the opinion of this meeting the returns should be made compulsory on the grower backed by the signature of the buyer, and that the returns should be collected in every market town in England and Wales by excise. 4. That a correspondence be entered into with the London Farmers' Club and other local clubs with a view of sending a deputation to the Board of Trade on the subject. This was evidence that the farmers had long considered they were labouring under a disadvantage in having to pay a higher rent-charge than they were justified in doing. He believes no tithe-receiver would object to receive his tithes upon the terms of a fair average price of the whole crop of their own growth. He contended that they ought not to be charged with the profits of trade, neither had they anything to do with the profits on foreign produce. The returns ought to be confined to the first sale, both buyer and seller should be compelled to make them, all the corn grown in the country should be returned, and regulate the averages for all purposes. The means by which he proposed to accomplish this, were, for every farmer in the kingdom to make a return monthly of all corn sold by him at market or consumed at home, to the clerk of the board of guardians in his respective union, the buyers to make a similar return; the returns to be made sealed to the clerk of the board of guardians, and by him to be transmitted to the Board of Trade. He justified the plan proposed on the ground of its simplicity and inexpensiveness, upon which he laid considerable stress, because he had had experience enough to know, if they suggested an expensive mode of taking the returns, who would have to bear that expense. After mentioning some instances of the carelessness with which the returns are made at present, he observed that the farmers do not wish to act unfairly toward the tithe-receiver—they only want equity; but in justice to themselves and their families, they should endeavour not to pay more than a fair and equitable average would warrant.—Mr. Baker, after some remarks on the Tithe Commutation Act, and its bearing on the present question, proceeded to show that the mode of taking the averages prescribed by the act of 1842 was intended to be confined to British corn, which it could not be if every buyer in Mark Lane, whether of foreign corn or not, were allowed to make a return of the corn purchased by him as British corn, without any investigation.—Mr. Baker dilated at some length upon the falsification of returns by dealers for their own purposes, and concluded his instructive address by observing that farmers feel it an injustice that they, who are the growers of corn, have no participation in making the returns of what they sell, but that those returns are made by parties who may be induced so to affect them as to impose injury upon them. It is to alter this that we are met, not to oppose any other interest, but to place ourselves as citizens in such a position as to secure that we shall be fairly dealt with on all occasions. The question should be taken up by this club; we should show that we are not asking anything unjust, anything unfair to other parties, but only what is fair and just to ourselves; that if the act was made to ascertain the average price of British corn, the best means of doing so should be adopted. He felt there was an object to be attained, which was an advantage, and not only an advantage but an act of justice to the agricultural interest. He had much pleasure in seconding the resolution.—Mr. Grainger agreed with Mr. Baker that returns should be made by the grower as well as the buyer, that these returns should finish the matter, that corn should never be twice returned. But the practice is to return it frequently twice, thrice, and even four and six times. It is often returned three or four times when it has not been moved. He had to complain of another evil in his own locality. They were in the habit of selling corn by weight, and frequently sold it as weighing a pound or two to the bushel more than it did weigh. (A laugh.) That was one of the greatest evils he knew. He alluded also to the injury sustained by the seller in the valuation of crops before harvest, when the averages are fictitiously made up. He considered that no evil affecting agriculture was so great as the present system of taking the averages, and cordially supported the resolution.—Mr. Lear, of Arundel, observed, as another proof of the interest taken in the subject, that it had been lately discussed in the club which he represented, and which had come to the resolution that the present system is a very unfair one, and the conclusions arrived at are obtained in a very unfair and partial manner.—Another speaker observed that the question became every day of more importance, because, although the tithe-rent charge may be considered as settled, still if we are going on an unsound principle as it respected corn rents, it is becoming every day a greater evil. This speaker mentioned some facts which had come under his own knowledge, showing how buyers evade making the required returns; and particularly an instance in which two samples of Wheat, of 1847 and 1848, and therefore of course differing much in quality and price, were purchased together. He was anxious to see what return, if any, was made. He found the best returned, the inferior left out. The reason was plain. A miller who professed only to make the best flour would not return himself as having purchased a sample of very indifferent Wheat. It was more difficult to show how the manner of taking the averages might be improved. He would not extend the area of the returns, but thought it better that they should be confined to pitched markets, because at these there would always be a clerk to take the returns, and furnish the necessary forms to buyers and sellers; this would do away with the difficulty which many farmers would feel about making a return of the corn sold or consumed at home, which, it might be contended, was a return of the produce of their farm. He could not agree with the suggestion that the returns should be made through the boards of guardians—he thought there would then be more fraud than at present, and, though apparently inexpensive, the plan would, in the end, be more expensive.—Mr. Coote, of Brighton, showed the importance of the subject from the fact that there are now more farmers on the principle of corn rents than there ever were before.—Mr. Cubitt, of Walsingham, found it impossible to keep up with the prices returned from the Norwich market, they were much more than he could make. He had asked a miller about it, and he replied that he had made no return at all for the last two years, and did not think others had done so. They were interested in keeping up the prices. Another gentleman agreed with Mr. Pain that both the producers and the buyers should make returns. He thought Mr. Pile's proposition to make the returns through the clerks of the boards of guardians would not be acceptable to the Poor-law Board. He differed from Mr. Lear as to the propriety of confining the area of the returns to pitched markets; he would rather extend it to every market in the kingdom. He thought it would be very easy for farmers to make such returns, including the corn they might send to their mill or use at home; there would then be a fair account of all the corn in the kingdom.

A conversational discussion followed upon the different points raised, in which Mr. Birt, of Blandford, Mr. Wingate, of Lincolnshire, Mr. Skelton, and other gentlemen took part. After a few remarks from the Chairman, Mr. Pain rose to express his gratification that the subject had been so thoroughly discussed, and observed that opinions were so unanimous on the matter that there was nothing left for him to reply to. The Chairman stated that Mr. Pain had withdrawn his resolution in favour of one proposed by Mr. Baker, but on the matter being put to the meeting, Mr. Pain's resolution, quoted above, was carried by a large majority.—A deputation from the Central Farmers' Club had an interview with Mr. Cardwell at the office of the Board

of Trade in reference to this subject on the following day. The deputation consisted of Sir J. Shelley, M.P., Mr. Fisher Hobbs, the Chairman, Mr. Corbet, the Secretary of the Club, Messrs. Pain, Pile, Reeves, and Spearing, from Hampshire; Messrs. Body, Coote, Davies, and Wood, from Sussex; Messrs. Cressingham, Staining, and Wood, from Surrey; Mr. Ambrose, from Essex; Mr. Burt, of Dorsetshire; and other gentlemen from Cambridge, Lincoln, and Kent.

Notices to Correspondents.

Artificial Manure: *Sub.* For Beans and Peas you should have a calcareous soil—more adhesive for the former crop than for the latter. If the soil is not naturally calcareous, your manure should contain lime. An artificial manure for Beans suggested by Mr. Huxtable contained 10 bushels of lime, 2 cwt. of superphosphate of lime, and 5 bushels of salt and ashes. If your land has been limed, you had better depend upon some nitrogenous substance for a top-dressing. Nothing is better than guano; say 3 cwt. per acre. If you have not got it, apply 20 or 30 bushels of soot, and 3 or 4 bushels of salt per acre.

Dog: *E M H.* Cleanliness, abstinence, and exercise; if these fail to remove the smell or diminish it, we fear there is only one remedy left, rather than adopt which you may probably think "What can't be cured must be endured." *W. C. S.*

Foot Rot: *X.* A full answer next week. Meanwhile, we may mention that a dry lair, and the timely application of a mild caustic, as a dilute acid, to the part affected, after so much of the horny growth has been removed as to lay it bare, are remedies.

Glass: *R L F.* Apply to Hetley & Co., 35, Soho Square.

Italian Rye-grass: *Alpha.* Sow a bushel per acre, along with 10 to 15 lbs. of mixed Clover seeds early in March. You will have a good cut the same summer. If you sow it with a crop, you had better put it in somewhat later, say towards the end of April; and the stubble will furnish a good feed in the autumn. About Cotswold rams, there are many breeders who advertise at the proper season, near Cirencester, North Leach, Cheltenham, Moreton-in-the-Marsh, &c. We know nothing about the Cotswold and Cheviot cross; the Leicester ram is generally employed for crossing with the Cheviot ewe.

Lime: *A Green One.* We should prefer to apply lime some months before the time of vegetable growth. It is for what it does as much as for what it is, that it is useful; and if you apply it in the autumn, it will be usefully at work for you all through the winter. Our plan would be to apply lime compost on the lea just before breaking it up.

Lucerne: *Amateur.* Will any one give his method and experience of the cultivation of this plant. The ordinary plan is to hoe in about 16 lbs. of seed per acre, in shallow trenches 12 to 16 inches apart, on a good loamy soil, somewhere about the end of April.

Mangold Wurzel: *Norfolk Farmer.* We have grown it to some extent thus:—When harvesting the general crop in September, select the best-formed roots, cart them to a field not of very rich soil, and not manured for the purpose, but which had been cleaned and deeply tilled; dig holes 30 inches apart every way, and put one root in each, the leaves having been removed, and the bulb being so deeply buried, that the whole is covered. It will sprout forth in March, flower in July, and ripen in August and September. The flower-stalks are to be cut as they successively become brown, and hung upon lines, or tied loosely in sheaves to dry. As a sort, we recommend the Orange Globe.

Newington's Dibble: *J. Mackensie, M.D.* We did not know their sale had ceased; perhaps this notice of your communication may elicit information. The Suffolk drill, though complicated *looking*, is an efficient implement under a great variety of circumstances; we know instances in use now which are 50 years old. Small drills on that principle were exhibited at Gloucester; we think by Garrett, and Hornsby, and others. Ploughs with seed-boxes to sow one row are common; apply to Mr. Slight, of Edinburgh.

Oatmeal: *O S C.* We are asked where Oatmeal can be had at any reasonable price in London; and where Stafford's Indian meal can be bought wholesale and retail. This column is not intended to supersede the necessity of advertisements, for which the above are proper subjects.

Oatmeal Cakes: *A Distressed Housekeeper.* We have had a great many replies to your question, from which we take the following:—One only should be made at a time, as the mixture dries quickly. Put two or three handfuls of meal in a bowl, moisten with water merely sufficient to form into a cake; knead it round and round with the hands on the paste board, strewing meal under and over it; it may be made as thin as a wafer, or any thickness (generally about half the thickness of a traveller's biscuit). Put it on a hot iron plate called a griddle; bake it till it be a little brown on the under side, then take it off and toast that side before the fire which was uppermost on the griddle. The toaster is such as is commonly used for heating smoothing-irons, having a back to support the cake. To make these cakes soft (when that is required) they must not be toasted before the fire, but both sides be done quickly on the griddle. The griddle is a piece of round iron 1 foot in diameter, which any blacksmith can make, and must be laid on the fire, which should be flat. A trivet does very well for the toaster, putting the cakes on a plate.

Peaty Soil: *A Young Farmer.* We should recommend Rape as a first crop, if you can get some clay incorporated with the soil, and get the whole into tolerable tilth by May. Rape fed off will make a good preparation for Oats and Grass seeds. Pasture for a year or two, and then break up for regular arable culture.

Pig Food: *B.* Bran, grains, the offal from the winnowing machine, malt refuse, &c., must be had resort to, if your stock of home food is out. We are unable to give the cost per head of food under such circumstances. Perhaps some of our readers may help you.

Pigeons: *One Wishing for Information* should have had it most willingly had we possessed it ourselves.

Potatoes: *W Bartlett.* Select early sorts, The so-called "Prolific" Potato, which is to be had in the neighbourhood of Bristol, is a very good sort. Plant about a foot apart in the rows, which should be some 2 feet distant from each other.

Rot: *X.* Give dry food and access to Salt.

Small Farm: *J L* says, "I am an occupier of a very small farm of about 13 acres, 10 of which are in permanent Grass, and the remainder arable, and, as an amateur, I have a desire to cultivate it in the best possible way, looking forward at all times to make it a profitable undertaking. I am at present keeping three milch cows (the produce of which is readily disposed of) and four to five head of young stock (foals and heifers), besides two or three pigs. Now what I wish to know is, whether any of your many readers will kindly put me upon the best Belgian or other plan of cropping and stall-feeding; and whether or not a few sheep could be introduced advantageously amongst my stock: and, in order to make the task as easy as possible, I beg to say the present state of my arable land is now 1 acre of Clover, 1 acre of Wheat, and the remainder Turnip and Potato fallows. Should I have omitted to name anything needful to be known, I shall be glad to supply it on noticing the same in your valuable Journal.

Soap: *O S C* some time ago asked for the receipt used in the Isle of Man for making soap with snow, as mentioned in the life of the Bishop of Sodor and Man, but not given clearly. A reply was not obtained, and is again requested.

Soot: *W E.* It will keep without waste. If you cannot get guano, use nitrate of soda for your Wheat plant.

WESTMINSTER ABBEY OR VICTORY.—NELSON at the BATTLE of ST. VINCENT.—Leggatt, Hayward, and Leggatt beg to inform their Patrons and Friends that T. Jones Barker's last grand historical PICTURE of NELSON RECEIVING the SWORDS from the vanquished Officers on the Quarter-deck of the SAN JOSEF, on the memorable 14th of February, 1797, at the Battle of St. Vincent, is NOW ON VIEW at their Gallery, 79, Cornhill.

Court Circular, Nov. 24, 1853.—Windsor.—"Messrs. Leggatt had the honour of submitting to Her Majesty and His Royal Highness Prince Albert, Barker's painting of Nelson receiving the swords of the officers on the quarter-deck of the San Josef after the battle of St. Vincent."

In consequence of the unfavourable state of the weather, the picture is exhibited by gas-light, and may be viewed from 10 till 6.

READ THE FOLLOWING AND JUDGE FOR YOURSELVES.—"The astonishing effect PARR'S LIFE PILLS have had upon me is such that I can scarcely believe that I am the same man I was a few months ago; I felt then as though my life was nearly ended; now I feel hearty, and able to undertake any description of work and exertion, without feeling that excessive fatigue I did previous to taking them. It is really and truly new life to me: I have given this statement voluntarily, for the benefit of those of my fellow-creatures who know but little of OLD PARR'S WONDERFUL LIFE PILLS."—Charles Foster, Ground Keeper to Henry Shepperd, Esq., Lincoln.—PARR'S LIFE PILLS will prove highly efficacious in bilious complaints, scorbutic eruptions, affections of the nervous system, lowness of spirits, palpitation of the heart, rheumatic pains in the head, limbs, and other parts of the body, oppression of the chest, indigestion, redundancy of bile, dizziness of the eyes, violent pains in the temple and across the forehead, impaired memory, sick headache, tremulous action of the whole frame, restlessness and bad dreams, stuporific dozing, flatulency, costiveness, &c.—Sold by E. Edwards, 67, St. Paul's Churchyard; Barclay and Sons, Farringdon Street; Sutton and Co., Bow Churchyard; Hannay and Co., and Sanger, Oxford Street; and by all respectable Chemists and Medicine Vendors in town and country. In boxes, price 1*s.* 1½*d.*, 2*s.* 9*d.*, and in Family Packets, 11*s.* each.

Pains in the Back, Gravel, Lumbago, Rheumatism, Gout Indigestion, Flatulency, Nervousness, Debility, &c.

DR. DE ROOS' COMPOUND RENAL PILLS, as their name Renal (or the Kidneys) indicates, are a most safe and efficacious remedy for the above dangerous complaints. For depression of spirits, incapacity for society, study, or business, giddiness, drowsiness, nervousness, and insanity itself, when arising from or combined with urinary diseases, they are unequalled. Price 1*s.* 1½*d.*, 2*s.* 9*d.*, 4*s.* 6*d.*, 11*s.*, and 33*s.* per Box, through all Medicine Vendors, or sent (free) on receipt of the amount in postage stamps, by Dr. De Roos, 35, Ely Place, Holborn, London. At Home for consultation daily from 11 till 1, and 5 till 8, Sunday excepted. Advice and Medicines, 1*l.*

METCALFE and CO'S NEW PATTERN TOOTH BRUSH, PENETRATING HAIR BRUSHES, AND SMYRNA SPONGES.—The Tooth Brush performs the highly-important office of searching thoroughly into the divisions and cleansing in the most extraordinary manner—hairs never come loose. Peculiarly penetrating Hair Brushes, with durable unbleached Russian bristles, which will not soften like common hair, and immense stock of genuine unbleached Smyrna Sponge, with every description of British and Foreign Perfumery, at Metcalfe, Bingley, & Co.'s only Establishment, 130 b and 131, Oxford Street, second and third doors west from Holles Street.

Caution.—Beware of the word "from" Metcalfe's, adopted by some houses. Metcalfe's Alkaline Tooth Powder, 2*s.* per box.

COUNTY OF TIPPERARY—BARONY OF LOWER ORMOND.

TO BE LET, from the 25th of March, with immediate possession, the following LANDS:—Ballylina, West Farm, containing 140 acres, Irish; Mathew's Farm (part of Ballylina, W.), 62 acres; Castleview Farm, ditto, 105 acres; Lismalin Farm, 190 acres; Ballynahinch Farm, 82 acres. These Farms are on the estate of Lord Ashtoun, and are situated about eight miles from Portumna, to which there is water-carriage; and the nearest station on the Parsonstown Railway, now in progress, will be at about six miles distance.

The Land is suited for tillage under the 4 or 5-course rotation. There are good slated houses on three of these Farms; and any other buildings, which may be reasonably required, will be erected by the landlord. Mr. James Egan, the Steward, at Sopwell Hall, near Shinrone, will show these Farms.

TO BE SOLD, a SEED BUSINESS in one of the principal towns in the North of England. The premises are situated in the best business part of the town, are extensive and calculated for carrying on a large trade.—For further particulars, or to treat, apply, with real name and address, to A. Z., Office of this Paper. N.B. A Nursery Stock may also be had at a valuation, if desired.

DENYER'S NURSERY, celebrated for ROSES, &c., Established 26 years, consisting of Five Acres of Land, House and Seed Shop attached, of which a 14 years' Lease will be granted. The Proprietor being about to retire, is desirous of offering the above, as an opportunity that rarely occurs to the trade, with a first-rate ready-money connexion, and the Stock to be taken at a valuation, two-thirds to be paid on taking possession; time will be given to pay the balance. No Goodwill is expected.—Apply to Messrs. Protheroe & Morris, Leytonstone, Essex; or Mr. E. Denyer, on the premises, Loughborough Road, Brixton, within three miles of London.

TO AMATEURS.

TO BE SOLD, FANCY FOWLS and EGGS.—Pure-bred Malays, that took prizes at Great Yarmouth and Norwich; White-faced Spanish, Progeny of Birds advertised in the *Times*, with challenge of 50*l.* to produce 12 to match them; Cochins, short-legged and well-feathered.—Address, J. C. Dowing, Great Yarmouth.

TO BE SOLD, FANCY POULTRY EGGS, warranted from the best Birds.—White, Buff, Lemon, Cinnamon, and Silver Cinnamon Cochin China, 2*l.* per dozen; Dorkings, 1*l.* do.; Aylesbury Duck, 30*s.*; Guinea Fowls, 8*s.*; Black Norfolk and White Turkeys, 2*s.* per egg; large Buff and Grey, 5*s.* per egg, only a few of these for sale. Birds of the above named Stock to be had on application to O. E. U. F., Mr. George Lea's, Ashbocking, Needham Market, Suffolk.

TO BE SOLD, BUFF COCHIN CHINA EGGS, from Birds that have taken prizes at the Derby, East Kent, Bristol, Taunton, and Yeovil Poultry Shows, at 1*l.* 1*s.* per dozen; also Partridge Cochin China Eggs, from Birds that have taken prizes at London Summer Meeting, Surrey Gardens' Show in August, Malvern, Yeovil, Honiton, and Torquay Poultry Shows, at 1*l.* 1*s.* per dozen.—Apply to John R. Rodbard, Aldwick Court, Wrington, near Bristol.

CLEAR BUFF COCHIN CHINA FOWLS' EGGS may be had of Mr. Gilbert, Wine Merchant, Grays, Essex, from Hens bred by Thomas Sturgeon, Esq., in 1852, and reserved for stock at 16*s.* per dozen. They are unequalled for beauty, plumage, short legs, and great weight, with perfect clear golden hackle, and many of them falcon hockled. Also 50 very splendid first-class PULLETS for sale, nearly all clean in hackle. May be seen at any time.

GOLDEN SPANGLED HAMBURGH.—Eggs from Prize Birds may be obtained on application to Mr. Taylor, Godalming, Surrey.

PRIZE WHITE SHANGHAES.—An Amateur, who has during the past year been highly successful at our most important Exhibitions with this variety of Fowl, has for disposal a PRIZE COCK BIRD of unusual merit, bred by Mrs. Herbert in March last, which has already gained the First Prizes at the Gloucester, Metropolitan, and Bury Exhibitions, and Second Prize at the Surrey Gardens; he is a perfect model in shape, possessing bright yellow legs, and heavily booted down to his middle toes. Also for sale, a few SPLENDID PULLETS; including some Prize Birds of great merit.—For price, &c., apply to T. B. F., Post-office, Maldon, Essex.

FANCY POULTRY.

EDWARD H. STRANGE, Ampthill, Beds., has for sale a few pairs of the following birds:—Black Spanish, from Captain Hornby's strain; Two Hen Birds obtained 1st, 2d, and 3d prizes at the Bedford Exhibition, 1853; Golden Pencilled Hamburgh and White-bearded Polands, first prizes were awarded to each of these varieties at the Hitchin and Home Counties Exhibition 1853; White and Buff Shanghaes, fine heavy birds; Silver Spangled Hamburgh, these birds gained a prize at the Bedford Exhibition.

E. H. S. will have a few sittings of Eggs from each of the above Fowls to sell, and from the Staffordshire pile Game, from birds that took a prize both at Hitchin and Bedford. Price, and other particulars, sent on receipt of a directed envelope.

COCHIN CHINA FOWLS.

MR. EASON (whose Birds have taken First Prizes at the Metropolitan, Reigate, Hitchin, Yarmouth, Bury St. Edmund's, and other Poultry Exhibitions), has a few pairs of Birds to dispose of, from One Guinea a pair; also, several Cocks, weighing 10, 11, and 12 lbs., from Two to Eight Guineas each; and some short-legged, heavily-feathered Cockerels and Pullets, a pure buff colour, from One to Three Guineas each, all of which are first-rate Stock Birds. Eggs from pure Buff, and pure White Birds, at 12*s.* per dozen, including packing. The Birds may be seen any morning except Sunday, before 11 o'clock, at Montpellier House, South Lambeth, London.

Sales by Auction.

DR. ALLEN'S PRIZE WHITE AND BUFF COCHIN CHINA FOWLS.—PERIODICAL SALE.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, February 21, at 12 o'clock precisely—WHITE COCHINS, being part of the famed Stock of Dr. Allen, whose birds are of the greatest beauty, and have been always successful when exhibited; also some good Buff Birds from well-known breeders, Rouen Ducks, and other Fancy Poultry. Catalogues by enclosing a stamped-directed envelope to Mr. J. C. Stevens, 38, King Street, Covent Garden.

FIRST PRIZE COLOURED DORKINGS.

MR. BRAY will Sell by Auction, on WEDNESDAY, the 15th inst., 20 Lots first-rate DORKINGS, including two Pullets, first prize at Southampton and Surrey Winter Show; also a Cock bred by the Rev. James Boys, second prize at Surrey Gardens; a Pullet from same strain, and some first-rate Cochins, bred from, and being themselves Prize Birds.—Catalogues of Mr. Bray, 259, High Holborn.

KENSINGTON. TO GENTLEMEN, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE and MORRIS are commissioned by Mr. Holland to sell by Auction, on the premises, Kensington Nursery, Gloucester Road, in consequence of the ground being let for building, on MONDAY, February 27, 1854, at 11 o'clock, the whole of the choice and well-selected FRUIT TREES, consisting of Standard and Dwarf trained and untrained Peach, Nectarine, Apricot, Apple, Pear, Plum, Cherry, Damson, Medlar, Mulberries, Gooseberries, and Currants: 3000 Standard budded Muscle Stock, worked with Peach, Nectarine, and Apricot; also Evergreens; a quantity of Rhubarb; Hand Lights, Wheelbarrows, and sundry effects. May be viewed prior to the sale.—Catalogues may be had on the premises; of the principal Seedsmen in London; and of the Auctioneers, Leytonstone, Essex.

WOOLWICH. TO GENTLEMEN, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE and MORRIS are instructed by Mr. Williams, to sell by Auction, on the Premises, Bowater Nursery, Woolwich, on MONDAY, February 20, at 11 o'clock, without reserve, the lease having expired, and a portion of the ground being required for building, the whole of the NURSERY STOCK of Evergreens, Fruit and Ornamental Trees, comprising Aucubas, Bays, Laurustinus, Variegated Hollies, Fan Yews, Portugal Laurels, Standard Apples, Pears, Plums, Cherries, Gooseberries, Currants; Large Fruiting Pears, Apples, Cherries, &c.; Laburnums, Weeping and Common Ash, Walnuts, several beds of Asparagus, Vines, Evergreens in pots, together with a 23-light Pit; the erection of a capital shed, &c.—May be viewed prior to the sale; Catalogues may be obtained on the Premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

BANBURY, OXFORDSHIRE. IMPORTANT AND EXTENSIVE SALE OF VALUABLE NURSERY STOCK.

MESSRS. DANBY and CALESS beg to inform the Nobility, Gentry, and their numerous friends that they have been commissioned by Thomas Perry, Nurseryman, Banbury, to offer for Public Competition, on TUESDAY and WEDNESDAY, 14th and 15th February, about one Million of fine healthy FOREST TREES, of nearly every description, including a very superior Stock of the True English Elms; 200,000 Evergreen and Flowering Shrubs; Fruit Trees, in great variety; a quantity of Thorn Quick-sets; and a large assortment of fine Specimen Plants, well adapted for New Pleasure Grounds. T. P. begs to call particular attention to his unrivalled collection of Roses. The above may be viewed the morning of Sale till 10 o'clock, at which time the Auction will commence. A punctual attendance at the time mentioned is requested, in consequence of the great number of lots and the shortness of the days.

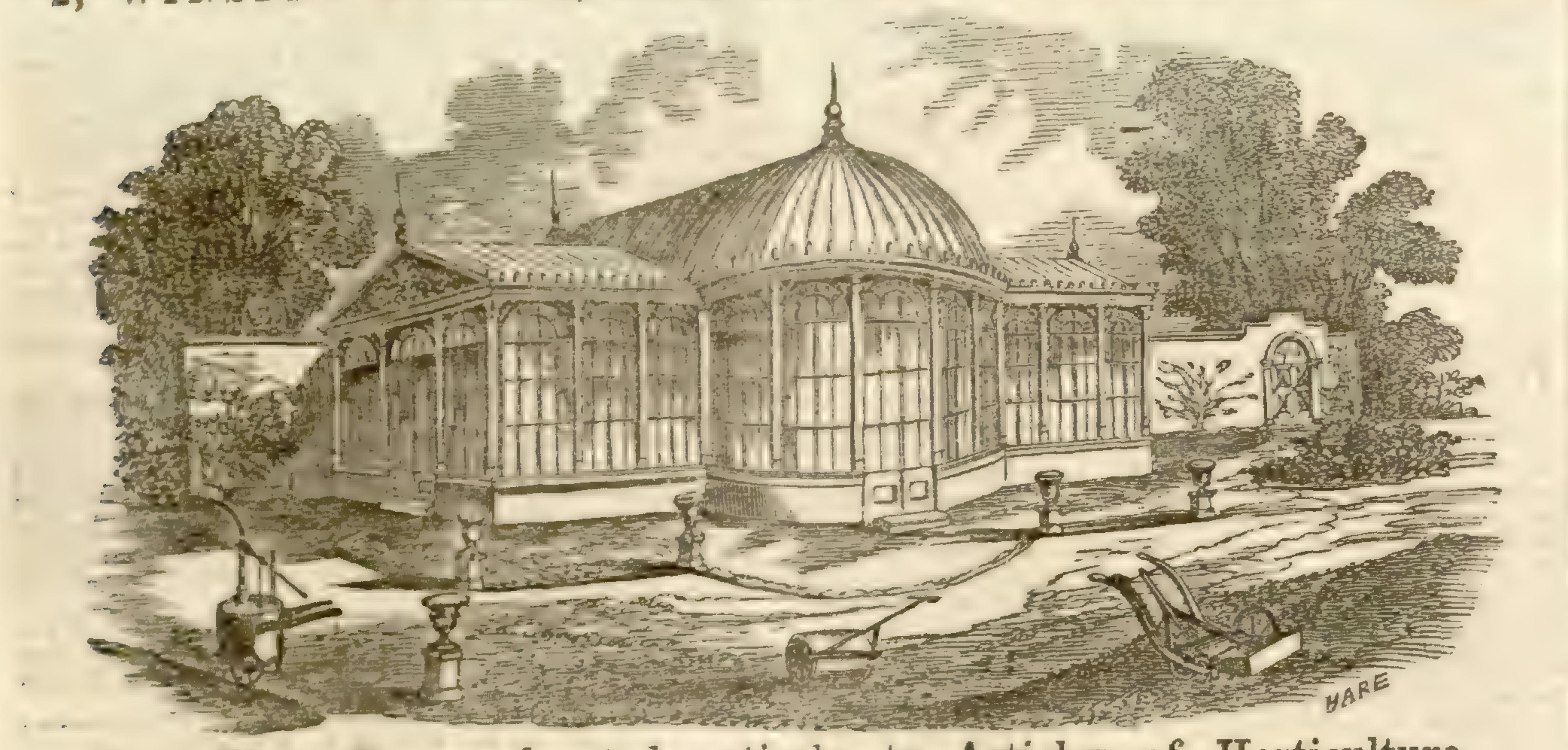
HUNTINGDON. TO NURSERYMEN, PLANTERS, AND OTHERS.

Large and Important Sale of Nursery Stock, in consequence of the Ground being required for Building Purposes.

G. M. FOX respectfully announces that he has received instructions from Messrs. Wood and Ingram to sell by Auction, on the 14th of March, 1854, and following days, the valuable and extensive stock of FRUIT and FOREST TREES, SHRUBS, &c., now growing in the George Lane, Huntingdon, being one of the Nursery Grounds occupied by them, and obliged to be cleared immediately for building purposes.—Catalogues, with full particulars, will be ready 10 days before the sale, and may be had at Messrs. Hurst and M'Mullen, 6, Leadenhall Street; the Office of the Journal of Auctions, 29, Essex Street, Strand; the principal Inns in the neighbourhood, and of the Auctioneer, Huntingdon.

COTTAM AND HALLEN,

2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.



New Show Rooms devoted entirely to Articles of Horticulture.

ILLUSTRATED CATALOGUES UPON APPLICATION.

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Syringes	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.

AGRICULTURAL LIST UPON APPLICATION.

EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

JAMES PHILLIPS AND Co. have the pleasure to hand their present prices of Glass for Cash :—

SHEET SQUARES. In Boxes of 100 feet.	£ s. d.	CROWN SQUARES. In Boxes of 100 feet. s. d.
Under 6 by 4	0 12 6	... ... 8 6
6 by 4, and 6½ by 4½	0 13 0	... ... 12 6
7 „ 5, — 7½ „ 5½ } 8 „ 6, — 8½ „ 6½ }	0 15 0	... ... 14 0
9 „ 7, — 10 „ 8, 12 by 9, 12 by 10, 14 by 10... }	1 0 0	

Larger Sizes, not exceeding 40 inches long.

16 oz. from 3d. to 3½d. per square foot, according to size.

21 oz. „ 3½d. to 5d. „ „ „

26 oz. „ 3½d. to 7½d. „ „ „

SHEET GLASS OF ENGLISH MANUFACTURE FOR ORCHARD HOUSES, THE SAME QUALITY AS WE SUPPLY TO Mr. RIVERS, and of various dimensions, always on hand.

London Agents for the Sale of HARTLEY'S PATENT ROUGH PLATE GLASS.

Cases of Sheet-Glass, about 40 by 30, 16 oz. to the foot, 2l. 2s. per Case of 200 feet.

Milk Pans, Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoys' Milk Syphons, Tiles and Slates, Wasp Traps; Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the trade.

Horticultural Glass Warehouse, 116, Bishopsgate Street Without, London.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES, GREENHOUSES, DWELLINGS, ETC.

ESTABLISHED MORE THAN ONE HUNDRED YEARS.

THOMAS MILLINGTON requests attention to his present prices of SHEET GLASS in 100 feet boxes.

Squares under 6 inches by 4	8s. 6d.
„ 6 by 4 and 6½ by 4½	12 0
„ 7 by 5 and 7½ by 5½ } „ 8 by 6 and 8½ by 6½ }	13 6
„ 9 by 7 and 10 by 8 } „ 12 by 10 to 15 by 10 }	18 0

Orchard House Squares on Mr. Rivers's approved plan, to whom I have sold some thousands of feet :—20 inches by 12, 20 by 13, 20 by 14, 20 by 15, 20½ by 12½, 20½ by 13½, 20½ by 14½, at 20s. per 100 feet.

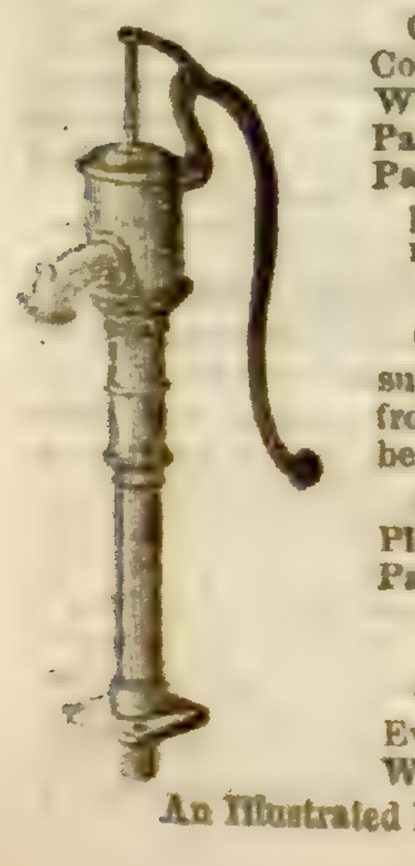
200-feet cases at 42s., and 300 feet case 63s., in large sheets.

Boxes charged 1s. extra per 100 feet, and the same allowed if returned free of all charge.

HARTLEY'S PATENT ROUGH PLATE GLASS, Fern Shades, Striking Glasses, Milk-pans, Bee Glasses, Cucumber Tubes, Sheet and Rough Plate Glass Tiles, Wasp Traps; Plate, Patent Plate, Crown and Sheet Window Glass, in every thickness and quality, and Ornamental Glass, plain and coloured; pure white Shades for Ornaments, Crystal Glass for Pictures.

Warehouse, 87, Bishopsgate Street Without—same side as Eastern Counties Railway.

WARNER'S PATENT FARM AND COTTAGE PUMPS.



Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

	£ s. d
Patent Pump	1 15 0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing	3 0 0

Larger sizes if required.

The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,

8, CRESCENT, JEWIN STREET, LONDON.

Every description of Machinery for Raising Water; Fire Engines, &c.

An Illustrated Book sent on application post free.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

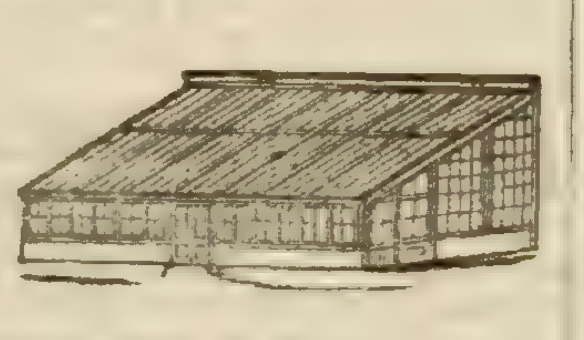
EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

Priced lists of plant tubs and boxes forwarded on application.

HORTICULTURE IN ALL ITS BRANCHES.

J. WEEKS & Co., King's Road, Chelsea,

HOTHOUSE BUILDERS.



The Nobility and Gentry about to erect Horticultural Buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. WEEKS & Co., King's Road, Chelsea, London.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

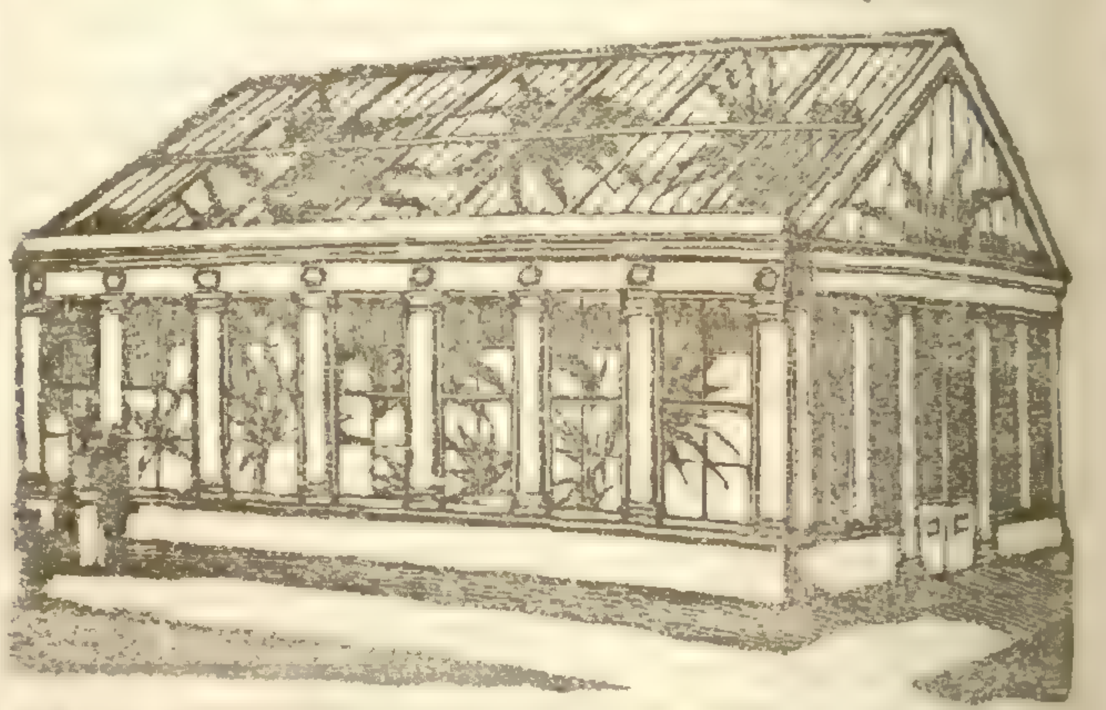
E. DENCH, PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

PATENT HOTHOUSES and excellent Glass at 1s. 3d. per foot super., which are superior to all others for price with quality, and if known would supersede all others. (See Appendix, in "Book of the Garden," by Mr. M'Intosh.) A Range of Houses and Hot Water Apparatus, was erected by E. D. for E. L. Betts, Esq., Preston Hall, Kent. Mr. J. Frost, head gardener, has shown their efficiency by their produce at the Royal Botanic Gardens, Regent's Park, June 8, and Chiswick, June 11. The editor of the *Gardeners' Chronicle* says: "Beautiful examples of Black Hamburgh, large both in bunch and berry, and as black as Sloes, were furnished by Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall, Kent; these well deserved the first prize which was awarded them."—*Gardeners' Chronicle*, June 18th, 1853. The Grapes were considered the best shown at Regent's Park during the season, and the Houses are as superior for the growth of everything else in horticulture, which has been fully proved, and they have been extensively erected for the nobility and gentry in all parts of the kingdom.

GLAZING WITHOUT PUTTY.—Iron and Glass alone. E. D. has Roofed the Public Baths and Washhouses, Endell Street, on this principle, and others are in hand. Patent Sashes for Peach Walls, Pits, &c., 8d. per foot super. Heating by Hot-water, on the most practical principles, and all the best materials used. Printed Price List sent on application.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



GRAY AND ORMSON, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

HORTICULTURAL BUILDINGS, ROCK AND RUSTIC WORK, ORNAMENTAL WATER, FOUNTAINS AND FALLS, AND LANDSCAPE GARDENING, executed on the best principles; Estates Improved, Land Laid Out for Building, &c., by Mr. GLENNY, Valuer, Estate and Horticultural Agent, 420, Strand.

GREEN AND HOTHOUSES made by machinery at J. LEWIS'S HORTICULTURAL WORKS, Stamford Hill, Middlesex. Warranted of best materials; being made by steam-power, they are put together in a superior manner; one trial will prove these Buildings to be the cheapest and best made in England. 1½ in. Greenhouse lights at 3d. per foot; 2 in. at 4d. per foot. Lists of Prices by enclosing two postage stamps.

HOTHOUSES, CONSERVATORIES, &c., made and fixed complete, at a considerable reduction. CUCUMBER and MELON BOXES and LIGHTS of all sizes, made of the best materials, glazed and painted complete, kept ready for immediate use, packed and sent to all parts of the kingdom. Reference may be had to the nobility, gentry, and the trade in most of the counties in England.—JAMES WATTS, Hothouse Builder, Claremont Place, Old Kent Road, London.

GARDEN ENGINES, SYRINGES, &c. &c.—CAUTION.—The well-known reputation of READ'S ENGINES, MACHINES, and SYRINGES has led to the nefarious practice of placing cards in shop windows with the words "Read's Patent" upon Syringes of the very commonest description. R. READ begs to caution the Public against being deceived by such false representations, as many of these instruments, upon trial, will be found defective and useless. READ'S instruments have the Royal Arms, with the address 35, REGENT CIRCUS, LONDON.—*_* Descriptions sent Post free.

SUPERB NOVELTIES IN PAPIER MACHE, at MECHI'S, 4, Leadenhall Street, London.—A Visit to his establishment will prove that there is not in London another such stock of Elegancies. They consist of Tables, Envelope Cases, Netting Boxes, Companions, Cabinets, Jewel Cases, Work Boxes, Dressing Cases, Tea Caddies, Hand and Pole Screens, Card Racks, Table Inkstands, Regency Writing Desks, Portfolios, Playing Cards, and Visiting Card Cases, Cigar and Bottle Cases, Note and Cake Baskets; also an assortment of Needle Cases, in Pearl and Tortoiseshell, Silver and Gold Pencil Cases, Pen Holders, and other Articles suitable for Presents. Inventor of the Patent Castellated Tooth Brush.

HEAL & SON'S ILLUSTRATED CATALOGUE of BEDSTEADS, sent free by post; it contains designs and prices of upwards of 100 different Bedsteads, in iron, brass, japanned wood, polished birch, mahogany, rosewood, and walnut tree woods; also of every description of bedding, blankets, and quilts.—HEAL & SON, Bedstead and Bedding Manufacturers, 196, Tottenham Court Road.

QUALITY THE TEST OF CHEAPNESS.

BERDOE'S LIGHT OVERCOATS AND CAPES resist any amount of rain. One of the largest Stocks in London of Superior GARMENTS at Lowest Charges. First-Class DRESS COATS, 3l.; BOY'S SUIT, 11d. per inch, according to height.—96, New Bond Street, and 69, Cornhill. (Nowhere else.)

FORD'S EUREKA SHIRTS, Plain and Coloured, the latter in cloths of every variety of pattern—stripes, curves, bars, spots, sprigs; in short, every figure that art can describe and taste approve. Six for 27s. Patterns to select from on receipt of six penny stamps. Price lists free on application. —RICHARD FORD, 38, Poultry, London.

NO CHARGE FOR STAMPING ARMS, CRESTS, INITIALS, &c., on paper and envelopes, at LOCKWOOD'S well-known establishment, 75, New Bond Street. Good cream-laid Note-paper, five quires for 9d.; Thick ditto, five quires, 1s.; Albert and Queen's sizes, five quires for 6d., 9d., and 1s.; Envelopes, 3d. to 1s. 6d. per hundred; Foolscap paper, 7s. 6d. per ream; Copybooks, 2s. 6d. per dozen. Card Plate engraved, 2s. 6d.; 100 Cards printed, 2s. 6d. Mourning Stationery equally cheap. Wedding Orders promptly executed. A large variety of Writing and Dressing Cases, Envelope Boxes, Blotting Books, Inkstands, Gold Pens, Church Services, &c. Copy address, LOCKWOOD'S, 75, New Bond Street. Country orders for 20s. sent carriage free.

KNOW THYSELF!—Professor BLENKINSOP continues to receive from individuals of every rank the most flattering testimonials of his success in describing the CHARACTERS of Persons from their HANDWRITING, pointing out their mental and moral qualities, whether good or bad.—Address by letter, stating age, sex, and profession, inclosing 13 uncut postage stamps, to Dr. BLENKINSOP, 344, Strand, London.

WM. HALSE'S FIVE GUINEA APPARATUSES are now ready.—Invalids are solicited to send to Mr. W. HALSE, of 22, Brunswick Square, London, for his Pamphlet on MEDICAL GALVANISM, which will be forwarded free, on receipt of two stamps. In it will be found the particulars of cures in cases of asthma, rheumatism, sciatica, tic doloureux, paralysis, spinal complaints, headache, deficiency of nervous energy, liver complaints, general debility, indigestion, stiff joints, nervous disorders, &c. Mr. HALSE'S method of applying the galvanic fluid is quite free from all unpleasant sensation. Terms: One Guinea per week. The above Pamphlet contains his Letters on Medical Galvanism.

PRIZE MEDAL—1851.
AT A VERY ECONOMICAL RATE.

SAMUEL CUNDY, Mason and Builder, Pimlico Marble and Stone Works, Belgrave Wharf, Lower Belgrave Place, Pimlico, London.

Marble Chimney-pieces manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price. A good Marble Chimney-piece for 40*s*. Marble Work in all its branches at a remarkably cheap rate for Halls, Dairies, Larders, &c. Circulars sent on application.

N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank.

GREAT SAVING OF TIME AND MONEY.

R. RESTELL'S PATENT ECONOMICAL GAS APPARATUS for Forcing Houses, Greenhouses, Conservatories, Pits, Shops, Counting Houses, Warehouses, Drying Rooms, &c. &c., possessing all the advantages of Hot Water at half the expense of fitting, and most trifling cost for Gas, far surpassing any ordinary Gas Stove, requiring no furnace, and allowing of no fumes or evaporation in the Building, or possibility of accidents from negligence or carelessness. It has been tested through the late severe weather, on a variety of Plants, and found most satisfactory. It is very quickly fitted up and requires no night attention.—Apply to the Inventor and Patentee, R. Restell, 35, High Street, Croydon, Surrey.

Persons wishing to have Houses fitted will please to send the height and dimensions.

THE COTTAGER'S STOVE.—An economical, compact, and portable COOKING APPARATUS, combining a good sized Oven and Hotplate; may be had with or without a boiler, and will cook sufficient for a dozen persons with the consumption of 1 lb. of coal or coke per hour. It requires no fixing, may be placed in any apartment, and is a great security against accidents from fire. It will burn Coal, Coke, or Wood. They are also specially adapted for Emigrants, and may be seen in operation daily, at the Manufacturers', D. & E. Bailey, 272, High Holborn, London.—Price 50*s*., and upwards.

FIRE ANNIHILATOR, OR VAPOUR FIRE ENGINE.—Its practical value proved incontestably by 23 remarkable cases of successful use. See "Bradshaw" of last month, p. 132. Engines for Dwelling-houses, 3*l*. to 4*l*.—Office of the Fire Annihilator Company, 105, Leadenhall Street, London.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

BAILY'S ROUP AND CONDITION PILLS FOR POULTRY.—This remedy has been extensively tried with uniform success, and is offered to amateurs and the public with the greatest confidence. It will effectually overcome that disease which has hitherto been the bane of the poultry-yard, and destroy that apprehension known to all poultry keepers, when a favourite and valuable fowl is seen to droop. It is inestimable for poultry returning from exhibitions, and greatly facilitates moulting.—Sold, with full instructions for use, in boxes containing 50 pills, by John Baily, 113, Mount Street, Grosvenor Square, price 3*s*. per box, or by post 3*s*. 4*d*. "Fowls, by Baily," the most useful and plainest treatise of the day; price 2*s*., by post 2*s*. 6*d*.

Baily's Registered Fountains, universally adopted and approved. Drawings and particulars, by post, on application.—113, Mount Street, Grosvenor Square.

CUCUMBER AND MELON BOXES AND LIGHTS.—One hundred 1, 2, and 3-light Boxes and Lights of all sizes, ready for immediate use. Warranted best materials, packed and sent to all parts of the kingdom; 2-light Boxes and Lights from 1*l*. 6*s*. Garden Lights of every description, Conservatories, Green and Hothouses made and fixed in all parts of the kingdom. References given to the nobility, gentry, and the trade, in most of the counties in England.—James Watts, Hothouse Builder, Claremont Place, Old Kent Road, London.

SUBSTITUTE FOR GARDEN MATS.—Transparent Sheeting, nearly 2 yards wide, 1*s*. per yard; thick Canvas do., 1*s*. per square yard; Waterproof Roofing Canvas, 6 feet wide, 2*s*. per yard run, is ready for use, and requires no tarring or other preparation for use.—R. Richardson, 21, Tonbridge Place, New Road, London.

N.B.—Policemen's Capes, 18*s*. and 24*s*. per dozen.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1*s*. 6*d*. per yard run, of E. T. Archer, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement, J. B. White & Brothers, Millbank Street, Westminster.

DILCOCK'S BRIDE BROCCOLI.

BAINBRIDGE AND HEWISON (late Jas. Edward), have the pleasure of again offering to their friends and the public their DILCOCK'S BRIDE BROCCOLI, at 2*s*. 6*d*. per packet; and while returning their thanks to their numerous patrons of last season, they beg to refer them to the following extract, taken from the *Yorkshireman* newspaper of the 30th of April last, when it was exhibited at York, for the fourth time:—"Mr. Dilcock deservedly obtained all the three prizes for Broccoli with his seedling—the 'Bride.' Taking the season into account, these vegetables were really remarkable specimens." It was equally successful the two previous years.

B. & H. are prepared to send out their Catalogues of Kitchen Garden and Flower Seeds, post free, on application, and also their Catalogue of Plants early in March, containing Stove, Greenhouse, &c., including many of the newest and choicest of the season. Their Seeds will be of the very best quality, and in the greatest possible variety.

Sold Wholesale by Noble, Cooper, & Bolton, Fleet Street; Charlwood & Cumming, Covent Garden; and by all respectable Seedsmen in town and country.—York Nurseries, Feb. 11.

IMPROVEMENT OF GRASS LANDS.

SUTTON'S RENOVATING GRASS SEEDS FOR IMPROVING OLD PASTURES.—Many Old Upland Pastures, Parks, and Meadows are nearly destitute of Clovers and the finer and more nutritious sorts of Grasses, in which case we are in the practice of furnishing such sorts only as are wanting. If the Seeds are *sown early in the season*, the improvement in the Pasture will be very considerable, and at a small expense.

The following is similar to many other letters received from former purchasers:—

From D. T. Cunynghame, Esq., Wellesbourne, Warwick, Nov. 1852.

"The meadows that were renovated with your Seeds are looking very well. I cut nearly 2 tons of hay to the acre, and three years ago the same land hardly produced half a ton per acre. The Garden Seeds I have had from you exceed by far any that I have bought elsewhere."

Quantity of Seed required, 8 lbs. to 12 lbs. per acre. Price 1s. per lb., Carriage Free.—Address

John Sutton & Sons, Seed Growers, Reading, Berks.

N.B.—We have a very fine Stock of Mangold Wurzel and Carrot Seed.

A FIRST CLASS CATALOGUE OF GERANIUMS, VERBENAS, FUCHSIAS, DAHLIAS, HOLLYHOCKS, ETC.

GEO. SMITH begs to announce that the above is now ready and will be forwarded in exchange for one postage stamp.—Tollington Nursery, Hornsey Road, Islington.

CORN MARKET, WISBEACH, CAMBRIDGESHIRE.

CHARLES SHARPE begs to call the attention of the nobility, gentry, and trade to the undermentioned choice collection of SEED POTATOES, grown with great care upon marsh land near the sea, which is the most appropriate soil for the culture of the Potato, as it is less affected by the disease, and of finer quality. The undermentioned prices include hampers and package. Smaller quantities can be had if required. The Trade Price can be had on application.

POTATOES (For Forcing and Early Planting).

Per bushel of 4 stones.		Per bushel of 4 stones.	
Early Ash-leaf Kidney ...	12*s*.	Early Flourball (Rylott's)	12*s*.
" " (Jackson's)	12*s*.	" Round Frame ...	12*s*.
" Emperor	12*s*.	" Cockney	12*s*.
" Fox's Seedling ...	10*s*.	" Oxford (very true)...	12*s*.

POTATOES (For Second Planting and Late Crop).

Per bushel of 4 stones.		Per bushel of 4 stones.	
American Native	10*s*.	Kentish Kidney	8*s*.
White Rough	8*s*.	White Kidney	8*s*.
Yorkshire Regent... ...	8*s*.	British Queen (this is the largest producer and best quality in cultivation) ...	12*s*.
Forty Fold	10*s*.		

THE CHAMPION PEACH.

THOMAS HUTCHINGS, Nurseryman, &c. Axminster, is now sending out this beautiful Seedling Peach, which far surpasses everything of the kind ever offered to the Public, measuring the extraordinary size of from 11 to 13, and sometimes 14 inches—flesh free, rich, and juicy; flavour unequalled—somewhat resembling the Green-gage Plum—an excellent bearer—and in every respect of first-rate quality.

Trained Trees .... £1 1*s*. 0*d*.
Maiden ditto .... 0 10*s*. 6*d*.

It is respectfully requested that all orders from unknown correspondents be accompanied by a Post-office order, payable at Axminster, Devon.

TESTIMONIAL.

"Sir,—I have fruited the Champion Peach, and have proved it to be *quite equal* to the description, and well worthy the name given it. I am ready to answer any inquiry that any lady or gentleman may wish to make.—I am, Sir, yours respectfully,

"John Reynolds,
"To Mr. Hutchings. "Belmont, Lyme Regis, Dorset."

Orders received at the Nursery, or by Messrs. Hurst and MacMullen, 6, Leadenhall-street, London; and by Messrs. Garaway, Mayes, and Co., Durdham Down Nurseries, Bristol.
February, 1854.

EXOTIC NURSERY, CANTERBURY.

WILLIAM MASTERS, at the commencement of a new season, has the pleasure to tender his very grateful thanks to his numerous Patrons for the very kind support with which they have favoured him during the last thirty-five years, and begs to solicit a continuance of the same on behalf of himself and his Son, with whom he has now entered into PARTNERSHIP, and who has been engaged with him in the practice of Landscape Gardening and the various branches of his business for some years.

WILLIAM MASTERS AND SON beg to offer the following Collections of GARDEN SEEDS, in assortments containing a supply for the whole year in proportionate quantities of each.

	£	s.	d.
No. 1 Collection, for a large garden, containing 20 quarts of Peas in 20 best sorts for succession, 10 best sorts of Broccoli, 8 ditto of Lettuce, with all other vegetables in proportion	£2	10	0
No. 2, the best new and other sorts, in smaller quantities	1	10	0
No. 3, ditto ditto	1	0	0
No. 4, a Collection of esteemed kinds for a small garden	0	10	0

Grass Seeds for Lawns, Permanent Pasture, or alternate Culture.

FLOWER SEEDS, with printed Directions for their Culture, in Collections of 12 for 2*s*. 6*d*.; 25 for 5*s*.; 50 for 9*s*.; 100 for 18*s*.

Their New Seed Catalogue for 1854 will be forwarded on application.—February 11.

THE PLANTING SEASON.

FRANCIS AND ARTHUR DICKSON AND SONS respectfully invite the attention of Planters to their very extensive Stock of Forest and Ornamental Trees, Evergreens, and Flowering Shrubs, Fruit Trees, Roses, Herbaceous and Alpine Plants, Stove and Greenhouse Plants, &c., growing at their Upton Nursery Grounds, near Chester. The Nurseries lying high and exposed, the whole of their Plants are hardy and well-grown, and having been regularly transplanted are also well rooted, and cannot fail to give satisfaction.

The following Lists are published, and will be forwarded on application:—Forest and Ornamental Trees and Shrubs, Fruit Trees (Descriptive Catalogue), Roses (Descriptive Catalogue), Herbaceous and Alpine Plants, Stove and Greenhouse Plants, Dahlias, Bedding-out Plants, Florists' Flowers, &c.

☞ It being necessary to clear the plants off certain portions of their Grounds before the end of March, F. & A. D. & Sons will dispose of this part of their Stock at much reduced prices, rather than incur the expense of removing them to other parts of their Nurseries.—Upton Nurseries, Chester, Feb. 11.

NEW AND SUPERIOR SEEDS.

FRANCIS AND ARTHUR DICKSON AND SONS, respectfully intimate that their CATALOGUE OF VEGETABLE AND FLOWER SEEDS, &c., for the present season is published, and will be forwarded on application. Their Stock of NEW SEEDS is now complete, and as each article has been procured direct from the most particular and careful growers, they feel satisfied that the quality of their Seeds is such as cannot fail to merit the approbation of their customers and friends.

F. & A. D. & Sons further beg to assure their patrons that everything supplied by them shall be of the first quality; and that all orders entrusted to them shall be executed with fidelity and despatch.

Seed Warehouses, 106, Eastgate Street, Chester, and 14, Corporation Street, Manchester.—Feb. 11.

SUPERB LATE WHITE BROCCOLI—"EMPEROR."

EDMUND PHILIP DIXON having purchased the entire stock of the above Broccoli of Messrs. Elletson, Market Gardeners, Thorngumbald, near Hull, begs to announce that he is prepared to send it out in sealed packets at 2*s*. 6*d* each. This Broccoli has been raised by the Messrs. Elletsons the raisers of the Mammoth, sent out some time ago, who state that the EMPEROR, if sown at the same time, will come into use before it. Is of very dwarf growth, perfectly hardy, with heads from 15 lbs. to 20 lbs. weight; keeps its colour, and stands firm three weeks after it is ready to cut. A noble flower and commands the best price of any other in the Hull market, where it is well known, and will be a great acquisition to the market gardeners around London, as well as those who wish for a first-rate Broccoli.

May be had of Messrs. Noble, Cooper, & Bolton, 152, Fleet Street; and Messrs. Hurst & M'Mullen, 6, Leadenhall Street, London. Also of the Advertiser, 57, Queen Street, Hull.

STRONG EVERGREEN PRIVET, &c., for Fences, 2½ ft, 15*s*. per 1000. Fine Transplanted Spruce, 2 ft., 15*s*. per 1000. Limes, 3 to 4 ft., 30*s*. per 1000; Spanish Chesnut, 2 ft., 25*s*. per 1000. Horse Chestnut, 3 to 4 ft., 40*s*. per 100. Ash, 3 ft., 15*s*. per 1000. Sycamore, 2 ft. 15*s*. per 1000.

Hardy Herbaceous Plants (each sort by name), purchasers' selection, 35*s*. per 100. Shrubs, flowering and evergreen, 30*s*. per 100, purchasers' selection, our selection 25*s*. each. Vegetable and Flower Seeds of the best quality, see advertisement in the *Gardeners' Chronicle*, January 28.

Address all orders and communications to HENRY MAY, the Hope Nurseries, near Bedale, Yorkshire.

CUCUMBERS, MELONS, &c., the best varieties in Cultivation:—

CUCUMBER SEED—Captivation, 2*s*. 6*d*. per packet; Phenomenon, 2*s*. 6*d*.; Victory of Bath, 1*s*.; Lord Keynon's Favourite, winter Cucumber, 2*s*. 6*d*.; Gordon's White Spine, 1*s*.; Chamberlain's Essex Hero, 2*s*.; Sunderlandwick, 2*s*.; Hunter's Prolific, 1*s*.; and numerous others at 1*s*. per packet.

MELON SEED, at 1*s*. per packet—Incomparable, Bromham Hall, Golden Ball, Queen, Bowood, Victory of Bath, Camerton Court, Beechwood, Windsor Prize, Emperor, Fleming's Trentham Hybrid, Hampton Court, Blackhall's Green Flesh, Bailey's, and numerous others at 1*s*. per packet.

A packet of each of the first-named Cucumbers, and two packets of either of the Melons named, sent free for 60 stamps.

SUPERB HOLLYHOCK SEED, 2*s*. 6*d*. per packet.—GERMAN ASTER SEED (very fine and double), 1*s*. per packet.—ANTIRRHINUM SEED (splendid), 1*s*. per packet.—For further particulars respecting the before-mentioned Seeds see this Paper of the 21st inst.

A remittance must accompany every order by cash, or penny postage stamps, when the whole or any part of the above will be sent immediately, postage and package free.

EDWARD TILEY, Nurseryman, Seedsman, & Florist,
14, Abbey Church Yard, Bath.

RENDLE'S PRICE CURRENT.—*Opinion of Mr. James Barnes, the well-known Gardener to the Right Honourable Lady Rolle, Bicton:—*

"Dear Sir,—Your Price Current has just come safe to hand, and I beg to return my best thanks for the same. It contains a great deal of useful information for all classes, more particularly for the Amateur and those who cultivate their own Gardens and Allotments.—Yours, &c. "James Barnes."

RENDLE'S PRICE CURRENT.—*Opinion of Mr. W. Tillery, Gardener to His Grace the Duke of Portland, Welbeck:—*

"My dear Sir,—I beg to return many thanks for the copy of 'Rendle's Price Current and Garden Directory for 1854.' As far as my experience goes, I think your Calendar of Operations excellently planned, and the Directions are judicious and quite up to the mark for the present progressive period. The remarks on the systematic rotation of vegetable cropping are likewise excellent and will do much good if carefully put into force.—Yours truly,

"To Mr. Errington. "W. Tillery."

RENDLE'S PRICE CURRENT *has been already favourably noticed by the following Newspapers and Magazines:—*

"Mark-Lane Express," "The Lady's Newspaper and Pictorial Times," "The Florist, Fruitist, and Garden Miscellany," "The Gardener's and Farmer's Journal," "The Agricultural Magazine," "The Plough," "Lloyd's Weekly Newspaper," "Plymouth Herald," "Exeter Gazette," "Bristol Mercury," "Western Luminary," "Somerset County Herald," "The Clerical Journal," "Cornish Telegraph," "Plymouth Mail," "Devonport Telegraph," "Somerset Gazette," "Western Courier," "Teignmouth Gazette," "West Briton," "Portsmouth Times," and "Naval Gazette," and several other newspapers and Magazines.

NEW POTATO—DEAN'S SEEDLING.

ABRAHAM STANSFIELD, in sending out the above Potato, would particularly recommend it to the attention of all growers of this useful esculent, as being, all properties considered, the best sort yet raised. Like its parent, the Fluke, it is less liable to be diseased than any other variety, remaining vigorous and healthy when all others are cut down. It is about three weeks earlier than the Fluke, much superior in its farinaceous properties, has shallow eyes, a slight roughness of the skin, and is every way a superior variety for the table. It was exhibited at the Hapton and Padiham Exhibitions in 1852 and 1853, at each of which it received the first prize; it was also exhibited at the East Lancashire Horticultural Exhibition, and received a certificate of merit. It also received the following testimonial:— "Burnley, Sept. 22, 1853.

"We, the undersigned, beg to testify to the merits of a seedling Potato raised by James Dean Hapton, as being a very useful table variety, good keeper, and hitherto free from disease."—Signed, H. Walton, Florist, Marsden; R. Taylor, Gardener to Le Gendre Starkie, Esq., Huntroyd, near Burnley; T. Whitham, Gardener to J. Hallam, Esq., Marsden Hall, near Burnley; J. Redman, Gardener to Charles Towpley, Esq., Townley, near Burnley; J. Lewis, Gardener to W. Thursby, Esq., Ormerod House, near Burnley; J. Dean, Gardener to Rev. W. Masters Burnley, and many others.

The *Preston Guardian* of Sept. 24, 1853, in noticing the East Lancashire Exhibition, says, "Amongst the roots shown we particularly noticed a splendid sample of Potatoes—Dean's Seedling—which possessed the recommendation of a rough skin and being free from eyeholes. Several had been boiled, and they appeared all that could be wished in a Potato."—The same paper of Oct. 1st says, "That important desideratum, a Potato free from disease, has been raised by Mr. Dean, near Burnley." Mr. Glenny, in the "Gardeners' Almanack" for 1854, says "We ought to mention a capital and very handsome new sort of Potato, Dean's Seedling, handsome and well flavoured, and moreover an excellent boiler." Mr. Edwards, secretary to the National Floricultural Society, in a private letter, says Dean's Potato is a perfect gem.

A. Stansfield will commence sending out the above Potato the second week in February, at 7*s*. per stone of 14 lbs., sacks and bags included. Early orders are respectfully solicited, as the stock is very limited. Post Office Orders or reference are requested from unknown correspondents.

A. S. can also supply the genuine Fluke Potato, at 9*s*. per bushel of 56 lbs., sacks and bags included.

Vale Gardens, Todmorden, Lancashire.

PRICED LIST OF SEEDS FOR FEBRUARY,

OFFERED BY

J. C. WHEELER & SON, GLOUCESTER,

SEEDSMEN TO THE GLOUCESTERSHIRE AGRICULTURAL SOCIETY.

GRASS SEEDS.—CARRIAGE FREE.

WE have for some time paid considerable attention to GRASS SEEDS, and especially in mixing them in such proportions as the nature of the soil and other local circumstances may require, so as to form fine Pastures. Having had much experience in this branch of our business, and the Grass Lands we have laid down having given great satisfaction, it is with much pleasure that we can recommend a fine mixture of the best Grasses and Clovers, suitable for the formation of a rich Permanent Pasture, at 30s. per acre. For improving the quality of Grasses already laid down, we can supply a good mixture at 1s. per lb. For the information of those gentlemen who would prefer buying the varieties separately, and mixing them themselves, we have given a short description of some of the best sorts. About 2 bushels of Grass Seed, and 12 lbs. of Clover is the quantity usually sown to the acre.

ITALIAN RYE GRASS—Imported Seed ... per bushel 7s. 0d.

Too much cannot be said in favour of this very excellent Rye-grass. Compared with any other of the varieties of common Rye-grass, the Italian affords a stronger braird, arrives sooner at maturity, has a greater abundance of foliage and of a lighter and more lively green colour, grows considerably taller, and is more upright, or less inclined to spread on the ground. Another of its distinguishing characteristics is, that it is much preferred by cattle to any of the common sorts, and is greedily eaten by them, whether green or dry. Imported seed is very much superior to that saved in this country.

PERENNIAL RYE GRASS ... ... per bushel 6s. 0d.

MEADOW CATSTAIL, OR TIMOTHY GRASS (Phleum pratense) ... ... per lb. 0 10

The Timothy Grass possesses the advantage of affording double the quantity of nutriment when its seeds are ripe, that it does if cut when in flower. On strong, tenacious, and rather moist soils, it is entitled to a precedence to almost any other, and should at least form a considerable portion of the mixture employed for sowing down such, either for alternate husbandry or permanent pasture.

MEADOW FOXTAIL GRASS—(Alopecurus pratensis) ... ... per lb. 1s. 6d.

This is one of the earliest and best of Pasture Grasses, but not so well adapted for hay, as it produces but few stalks; its root leaves are very broad, long, soft, slender, and grow rapidly when cut, or when eaten down by live stock. It requires two or three years after sowing to arrive at full maturity.

ROUGH COCKSFOOT—(Dactylis glomerata)... per lb. 1s. 0d.

Is a valuable Grass in cultivation, on account of the great quantity of produce which it yields, and the rapidity with which its leaves grow after being cut. It is well adapted for growing in shady moist places under trees, as in orchards, &c.

MEADOW FESCUE GRASS—(Festuca pratensis) per lb. 1s. 0d.

This is an excellent Grass, either for alternate husbandry or permanent pasture, but more particularly the latter. It is well liked by all kinds of herbivorous animals.

HARD FESCUE GRASS—(Festuca duriuscula) per lb. 1s. 0d.

Will thrive on a great variety of soils, and is found to resist the effect of severe drought in summer, and to retain its verdure during winter, in a remarkable degree. From the fineness of its foliage and greenness in winter, it is well adapted for sowing in Parks, especially for sheep pasture.

SHEEP FESCUE—(Festuca ovina) ... ... per lb. 1s. 0d.

This Grass forms the greater part of the Sheep pasture of the Highlands. In quantity of Grass it is much inferior to the other cultivated Fescues; but, from being well liked by sheep, it should always enter into the composition of mixtures of lands on which they are to be pastured; in fact, on the authority of Linnæus, these animals have no relish for hills and heaths which are destitute of this Grass.

WOOD MEADOW GRASS—(Poa nemoralis) ... per lb. 1s. 3d.

Its habit of growth is delicate, upright, close, and regular. There is no Grass better adapted for Pleasure-grounds, particularly under trees, as it will not only grow in such places, but forms a fine sward where few of the other fine Grasses can exist. It produces a considerable deal of foliage early in spring.

ROUGH-STALKED MEADOW GRASS—(Poa trivialis) ... ... per lb. 1s. 0d.

This is a valuable Grass as a mixture for Grass Lands, particularly on damp soils. Its habit of growth fits it for mixing along with the upright grown sorts, such as the Italian Rye-grass.

SMOOTH-STALKED MEADOW GRASS—(Poa pratensis) ... ... per lb. 1s. 0d.

This Grass yields a large quantity of herbage at a very early period of the season.

SWEET-SCENTED VERNAL GRASS—(Anthoxanthum odoratum) ... ... per lb. 2s. 0d.

This Grass yields but a scanty portion of herbage, yet, on the whole, Permanent Pasture should not be without a mixture of it, particularly in parks and pleasure grounds, were it for no other reason than its pleasant scent, not only when cut for hay, but also when the seeds become nearly ripe.

CRESTED DOGSTAIL GRASS—(Cynosurus cristatus) ... ... per lb. 1s. 6d.

From this Grass forming a close turf, and having rather fine foliage, it may be advantageously sown on lawns and other places to be kept under by the scythe.

LAWN GRASS SEED ... ... per lb. 1s. 0d.

By sowing this Grass a fine sward may be obtained in a short time, at one quarter the expense of laying down turf. It is a selection of the FINEST *Grasses, and is entirely free from weeds. We can strongly recommend it to those about to form lawns or pleasure grounds.*

CLOVER—White Dutch ... ... per lb. 10d. to 1s. 0d.
„ Red or Broad ... ... „ 9d. to 0s. 10d.
„ Trefoil ... ... „ 5d. to 0s. 6d.
„ Cow Grass, or Perennial Red Clover per lb. 1s. 0d.

A vast quantity of Clover Seed is grown in Gloucestershire, more particularly the Perennial Red Clover or Cow Grass. When the selection of the varieties of Grasses and Clovers is left to us, we invariably send a good proportion of this; for Permanent Pasture it is invaluable. It will at all times afford us very great pleasure to give any information in our power on the subject of laying down land for Pasture; the proportions of the different varieties of seed should vary according to the nature of the soil and other local circumstances, and whether the land is intended to be laid down permanently or for a year or two. Any inquiries sent to us shall have an immediate reply, and one to the best of our judgment.

AGRICULTURAL SEEDS.

(NOT BOUND BY THESE PRICES AFTER FEBRUARY.)

	Per lb.—s.	d.
CARROT—Large White Belgian	2	0
„ Large Red Altringham	1	9
FRENCH FURZE OR GORSE	1	6
KOHL RABI	3	6
LUCERNE—Finest imported	1	0
PARSNIP—Large Cattle	2	0
VETCHES OR TARES—Spring		
„ Winter		
SWEDE—True Bronze Top	1	2

It is with the greatest confidence that we can recommend this Swede; the smallness of its neck, and the great weight produced per acre, joined with its excellent quality, render it worthy of being very generally cultivated.

SWEDE—Skirving's ... ... per lb. 1s. 2d.

These varieties are highly esteemed.

„ Laing's ... ... „
„ Matson's ... ... „

TURNIP—Dale's Hybrid ... ... per lb. 1s. 0d.

The distinguishing characteristics of this esteemed variety are—foliage strong and luxuriant, roots of a large size and of a lightish yellow colour, with a light green top, having also a small neck and tap root; compared with any other of the common field sorts, it is found to arrive sooner at maturity, and consequently may be sown at a later period of the season.

TURNIP—Purple-top Yellow Scotch or Aberdeen...per lb. 1s. 0d.

This is an old and very deservedly esteemed variety, and is considered by some to come nearest the Swedes, in hardness and solidity of texture.

TURNIP—Green Globe ... ... per lb. 1s. 0d.

Roots of a fine globular shape, with a small neck and tap-root; very white under and green above the surface of the ground; of the medium size, and hard and firm in texture.

TURNIP—Pomeranian ... ... per lb. 1s. 0d.

This variety was introduced some years since from Pomerania, and may be considered as the most perfect globe Turnip in shape, as well as the most regular or uniform in growth. Its skin is of a smooth white and somewhat shining or transparent appearance; leaves smoothish, of a dark green colour, and whitish nerves.

	Per lb.—s.	d.
TURNIP—White Globe	1	0
„ Early Stone or Stubble	1	6
„ Green Round Norfolk	1	0
„ Red Round Norfolk	1	0
„ White Round Norfolk	1	0
„ Tankards	1	0
MANGOLD WURZEL—Large Yellow Globe		
„ „ Long Red		
„ „ Long Yellow		
„ „ Red Globe		

We can very strongly recommend our large Yellow Globe Mangold. Some very large roots have been exhibited at the Agricultural Show in the City grown from Seeds supplied by us, many of the roots weighing from 30 lbs. to 40 lbs., and the average weight about 30 tons to the acre. Price of the Seed will be forwarded on application.

GARDEN SEEDS.

Our Priced List of Garden Seeds will be forwarded free by post. It is our earnest endeavour to send out all Seeds, whether for the Garden or Farm, of the very best quality, and true to name; and as many of the Seeds are our own growing, and all are proved before sending out, we generally succeed in giving complete satisfaction to our customers. We are in daily receipt of most gratifying letters and renewed orders from those we had the honour of serving last year; and as we deliver our Seeds Carriage Free, we very respectfully solicit the honour of an order from those who have not yet given us a trial. We have the pleasure of subjoining the notice our Seed Catalogue has received :—

"The Catalogue of Seeds sold by J. C. WHEELER & SON, of Gloucester, appears to us to deserve notice, because of the stand which its authors make, in common with ourselves and others, against the useless incomprehensible Seed Lists of the day. In this, as in all matters of taste, there will be a difference of opinion as to the relative qualities of varieties; yet the mass of buyers who have no fancies, but who dislike being perplexed, and are satisfied with what is excellent, will greatly prefer a short, select Seed List to an interminable labyrinth of names, which, for the most part, represent nonentities or rubbish. Messrs. WHEELER's little book will do something to satisfy their expectations."

Gardeners' Chronicle, March 2.

We beg to offer the following Collections of Garden Seeds :—

	£	s.	d.
No. 1.—A COMPLETE COLLECTION, SUITABLE FOR A LARGE GARDEN	3	0	0
No. 2.—A COLLECTION OF EQUALLY CHOICE VARIETIES, BUT SMALLER QUANTITIES	1	10	0
No. 3.—A COLLECTION SUITABLE FOR A SMALL GARDEN	0	15	0

These Collections will be sent Carriage Free to any Railway Station in England or Wales.

FLOWER SEEDS.

We have selected out of our large collection of Flower Seeds the most beautiful and showy varieties, each sort distinct in colour, and calculated to produce a fine effect when planted out in beds or groups in the flower border. We have had each variety distinctly marked with its Botanical and English name, height, time of flowering, colour of the flower, manner of growing, whether erect or trailing, &c., the time it should be sown, and other valuable hints as to its cultivation. In selecting these varieties, we have been careful to exclude all which are shy bloomers or have an insignificant appearance, so that the collections will comprise only those which are really showy and handsome, and which we believe would prove to the entire satisfaction of any lady or gentleman who might be disposed to order them. The German Stocks and Asters especially are most superb. The Collections will be sent free by post to any part of the kingdom at the following prices :—

TWENTY EXTRA FINE VARIETIES, ALL DISTINCT AND BEAUTIFUL ... ... 5s. 0d.
FIFTY DITTO DITTO ... ... 10s. 6d.
ONE HUNDRED DITTO DITTO ... ... 20s. 0d.

IMPORTED GERMAN FLOWER SEEDS.

	s.	d.
QUILLED DOUBLE GERMAN ASTER.—Assortment of 24 splendid varieties, containing of each colour 100 seeds	5	0
Ditto 12 splendid varieties	2	6
Packets of the above varieties mixed, each	0	6
DWARF DOUBLE GERMAN ASTER.—Assortment of 16 most splendid varieties, of each colour 100 seeds ...	3	6
Ditto 12 splendid varieties	2	6
Packets of the above varieties, mixed, each	0	6
DWARF GERMAN STOCK.—Assortment of 36 most splendid varieties, each colour separate	7	6
Ditto 24 ditto ditto	5	0
DWARF GERMAN STOCK.—Assortment of 12 most splendid varieties, each colour separate	2	6
The above beautiful varieties, mixed, per packet	0	6
NEW LARGEST FLOWERING DWARF TEN-WEEKS' STOCK.—This new acquisition has been greatly admired. The flowers are exceedingly large. The colours are rose, purple, blue, light blue, and white, per packet...	1	0
DWARF GERMAN WALLFLOWER-LEAVED TEN-WEEK STOCK.—Assortment of 12 splendid varieties, containing of each variety 100 seeds...	3	0
The same varieties, mixed, per packet...	0	6
BRANCHING GERMAN TEN-WEEK STOCK.—Assortment of 12 vars., containing of each variety 100 seeds	3	0
NEW ROSE PURPLE EMPEROR STOCK, per packet	1	0
WALLFLOWERS.—Collection of eight splendid varieties	3	0
DWARF DOUBLE LARKSPUR.—Collection of 10 most splendid varieties, containing of each colour one-eighth of an ounce	5	6
TALL DOUBLE LARKSPUR.—Collection of 8 splendid varieties, containing of each colour one-eighth of an ounce	3	6
ZINNIA ELEGANS.—Collection of 6 beautiful varieties	2	6

SEED POTATOES.

PRINCE OF WALES.—This is an early and very excellent variety; both for forcing and for a general crop we can strongly recommend it. It is a round white Potato, exceedingly productive. Price, per peck, 2s. 6d.

ALSTONE KIDNEY.—This is a new variety, one of the most productive we have ever seen. Our stock of it is very short. Price, per peck, 3s.

Post-office Orders to be made payable to, and letters addressed

J. C. WHEELER & SON, GLOUCESTER.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be ADDRESSED to THE EDITOR.—SATURDAY, FEBRUARY 11, 1854.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 7.—1854.] SATURDAY, FEBRUARY 18. [PRICE 6*d*.

INDEX.

Agriculture and science	107 *b*	Hort. exhibitions, Russian....	99 *c*
Agri. Soc. of England	108 *a*	— Society's meeting	100 *b*
Almanack, Scottish Agri., rev.	108 *c*	Oilcake	107 *a*
Barns, Dutch	107 *a*	Orchard houses	102 *a*
Botanical Garden, Dublin	103 *a*	Pathology, vegetable..........	100 *b*
Calceolaria, the	103 *c*	Pigeons, Arabian..............	108 *c*
Calendar, horticultural........	104 *a*	Pinuses, effects of the winter on	101 *b*
— agricultural	109 *a*	Plants, new	103 *a*
Cattle, carcase weights of	105 *c*	Platometer, Sang's ....106 *a*—	108 *a*
Clianthus puniceus............	101 *a*	Poor, relief for	100 *a*
Coal Tax, London Corporation, rev.	103 *a*	Potatoes, deep soiling v. disease	101 *b*
Collins on Mangold Wurzel, rev.	108 *c*	Rhododendrons, Sikkim	102 *b*
Corn averages	106 *b*	Rhynchites Betuleti	101 *a*
Cottagers, relieving	100 *a*	Root graters	107 *c*
— food for	101 *c*	Rose Garden, Supplement to, rev.	102 *c*
Drains, stoppage of...........	107 *b*	Russian hort. exhibitions	99 *c*
Dublin Botanic Garden	103 *a*	Seasons, Pictorial Calendar of, rev.	102 *c*
Entomological Society........	102 *b*	Seeding, thick and thin........	103 *b*
Exhibitions, Russian Hort.....	99 *c*	Spiræa callosa	103 *a*
Food, cottage	101 *c*	Strawberry flowers, green	102 *a*
Galvanised wire	104 *c*	Vegetable pathology	100 *b*
Garden walls, cost of	101 *c*	Walls, cost of	101 *c*
Gaudichaud, the late M.......	102 *a*	Weevil, Birch and Vine........	101 *a*
Gorse cover	107 *c*	Weights, cattle carcase........	105 *c*
Grape, Barbarossa, &c.	102 *a*	Winter, effects of.............	101 *c*
Guano, supply of........105 *c*—	105 *c*	Wire, ill effects of galvanised..	104 *c*

NOTICE TO EXHIBITORS.

CHELTENHAM GREAT EXHIBITION. To Open June 1st, 1854.—Applications for Space under Sections II. & III., must be made previous to the 25th of March. Official Forms may be obtained of the Secretary, Mr. HENRY J. COCHRANE, 128, High Street, Cheltenham.

SEEDS DIRECT FROM THE GROWERS BY RETAIL,
IN COLLECTIONS OR OTHERWISE.—(CARRIAGE FREE BY RAILWAY.)

SUTTON'S COMPLETE COLLECTIONS OF KITCHEN GARDEN AND FLOWER SEEDS may still be obtained, and will be found most excellent. All orders faithfully executed in rotation in strict accordance with priority of our receiving the same.
SUTTON & SONS, SEED-GROWERS, Reading, Berks.

GRASS SEEDS, SEPARATE OR MIXED.

GENTLEMEN *intending to lay down land to Permanent Pasture, or for one or two years' lay, are recommended to communicate with us, stating the nature of the soil and situation, that we may advise as to sorts of Grass Seeds most suitable, and quote prices accordingly.*
JOHN SUTTON & SONS, SEED GROWERS, Reading, Berks.

THE BLACK BARBAROSSA,
"A GRAPE THAT DON'T KNOW HOW TO SHANK."

JOHN BUTCHER has fine fruiting plants, 10*s*. 6*d*.; good plants, 5*s*. 6*d*., may be obtained of the above splendid Late Grape. London Agent, Messrs. DAWE, COTTRELL & BENHAM, 36, Moorgate Street; and JOHN BUTCHER, Nurseryman, Stratford-on-Avon.

PINE PLANTS.

JOHN A. WATSON has for Sale a splendid Stock of both Fruiting and Succession Plants at the following prices: Large Fruiting Plants, 12*s*. to 15*s*. each; Successions from 3*s*. to 8*s*. each. Post-office orders payable at Brentford.
Vine Gardens, Ealing, Middlesex.

JOHN COLE begs to inform the lovers of CALCEOLARIAS that he has a few choice Seedlings to dispose of, having succeeded in raising more than he has convenience to grow, and offers them, strong plants, at 4*s*. per dozen, or 25*s*. per 100. J. C. begs to state the seed was saved from choice impregnated spotted and striped varieties. A remittance solicited from unknown correspondents.
Keyfield Nursery, St. Alban's, Herts.

GEORGE CLARKE begs to invite purchasers to inspect his splendid Collection of ROSES, extending over 10 acres of ground. Fine Standards of the leading kinds, 18*s*. per doz.; Dwarf ditto, 12*s*. per doz. Catalogues can be had.
Evergreens, Coniferæ, fine trained Peaches, Nectarines, Apricots, &c., at very moderate charges. Strong Dielytra spectabilis, 5*l*. to 10*l*. per 100. Also 100 fine Specimen Erica depressa, which will be sold at a bargain.
Streatham Place Nursery, Brixton Hill, near London.

CRIMSON BOURSAULT CLIMBING ROSES.—Having a few hundreds remaining of this desirable variety for planting in shrubberies, covering walls, &c, they will be disposed of at the former prices, viz., 25*s*. per 100; extra strong, 30*s*., in quantities of not less than 50.
C. G. WILKINSON, Western Rose Nursery, Ealing.

FIRST CLASS PRIZE VERBENAS.—The set of six, advertised by J. KEYNES in his Catalogue will be ready to send out the 21st of March, in fine well-established Plants, by post, free, for 20*s*.
These are six of the most beautiful Verbenas ever offered, and were much admired in the Surrey Gardens, the only place they were exhibited, and obtained First Class Certificates. Only a few sets left unordered.
JOHN KEYNES, Nurseryman, Salisbury, Feb. 18.

THE EARLIEST PEA IS "FAIRHEAD'S EARLY CONQUEROR." To be had of CLARKE AND CO., Borough, London; 2*s*. per quart (price per bushel on application).

THE ROYAL MOSS-POD PEA.—The attention of horticulturists and of the public in general is called to this new and peculiar PEA, as being surpassed by none in exquisite flavour and colour on table; it is at the same time highly productive. To be had only of Mr. DENNIS, West Court, Detling, Maidstone, at 2*s*. 6*d*. per quart, and will be forwarded in any quantity (not less than a quart), to all parts of the kingdom on receipt of postage stamps or post-office order for the amount.

JOHN JEYES, NURSERYMAN and SEED-MERCHANT, Northampton, begs to offer Agricultural Seeds of every kind, and the best quality: Horticultural and Floricultural Seeds in great variety and of the choicest selection; Ornamental Shrubs and Trees of various sizes and immense variety; a Fine Collection of Roses; Fruit Trees carefully selected from the finest proved sorts; a large Stock of Forest Trees; Russian Mats.
Plans and Estimates given for making Pleasure Grounds, Cemeteries, &c. Seeds selected and packed for Exportation.
Experienced Gardeners recommended.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER has now ready a fine healthy stock of young plants of all the leading sorts. For price and description see General List, which also contains hints on their culture, with observations on the exhibition of Hollyhocks, &c. &c., and may be had by inclosing a postage stamp.
Saffron Walden Nursery, February 18

LOBELIA ST. CLARE.

JAMES LAKE, NURSERYMAN, &c., Bridgewater, begs to inform the Public that his Stock (about 700) of the above beautiful plant is now in bloom, a spike of which will be sent to any one on application, by their paying the carriage thereof. Strong old plants, 3*s*. 6*d*. each; smaller plants, 18*s*. per dozen. Orders taken for next spring at 12*s*. per dozen. The usual allowance to the Trade.—Feb. 18.

WILLIAM NICHOLSON still continues to send out very strong well-rooted Plants of his four new and distinct varieties of STRAWBERRIES, viz., AJAX, dessert Fruit; RUBY, ditto; CAPTAIN COOK, Market Fruit; FILL-BASKET, ditto, at 15*s*. per 100, or 25 each of any two sorts for 10*s*., box included. Post-office orders payable at Yarm, Yorkshire. For a full description, see Advertisement *Gardeners Chronicle* Jan. 28, 1854.—Egglescliffe, near Yarm, Yorkshire.

DOUBLE ITALIAN TUBEROSE ROOTS, 4*s*. per dozen.—The annual importation of the above-named beautiful and fragrant Flower has just been received, and large and well selected Bulbs may be obtained, without disappointment, at A. COBBETT'S Foreign Warehouse, 18, Pall Mall.
N.B. Printed regulations for treatment sent; also, just arrived, very moist and open Parmasan Cheeses.

BLACK PRINCE AND PRINCE OF WALES STRAWBERRIES.—The Prince of Wales, per 100, 12*s*.; Black Prince, 5*s*. per 100. Also Cuthill's third thousand of the Belgian Prize Essay on the Potato, with 20 other articles upon the Melon, Cucumber, Strawberry, Asparagus, Seakale, Rhubarb Wine (which makes the finest champagne), Salads, Herbs, &c. Price 2*s*. 4*d*., post free. Also, Market Gardening round London, Price 1*s*. 8*d*. post free. Cucumber Seed, 1*s*. 1*d*. per packet. A Youth from 17 to 18 wanted.
JAMES CUTHILL, Camberwell, London.

POTATOES.

WANTED, TWO TONS OF EARLY SHAWS, for Seed. Particulars (prepaid) to be addressed to H. G., 8, Cannon-row, Westminster.

WANTED, a quantity of TRUE ASH-LEAF KIDNEY POTATOES.—Address, stating price, &c., to CLARKE & Co., Seedsmen, 86, Borough, London.

TO BE SOLD, A GREAT BARGAIN, as they must be removed before the 25th March, the land being sold.

10,000 transplanted English YEWS, 1 to 2 ft.	...	10*s*. per 100.
10,000 do. BERBERIS AQUIFOLIUM, 1 to 2 ft.	...	3*s*. "
200,000 do. Strong QUICK	... ...	5*s*. per 1000.

THOMAS JACKSON & SON, Nurserymen, Kingston, Surrey.

LIME TREES, 12 to 14 feet, 42*s*. per 100.—SPRUCE FIRS, 2 to 3 feet, 6*s*. per 100.—LAURUSTINUS, very fine, 30*s*. per 100.—Apply to BENJAMIN R. CANT, St. John's Street Nursery, Colchester.

SCOTCH FIR.

THE Subscribers can supply 2-year Seedling SCOTCH FIR, at a very low rate, if taken in quantity. Price given on application.—FOWLER and WRIGHT, Glasgow, Feb. 18.

MESSRS. J. AND H. BROWN offer the following SELECTED PLANTS, FRUIT TREES, &c., which they will forward to any part of the Kingdom or the Continent; and their New Descriptive Catalogues of Plants and Seeds by post.

		s.	*d.*
25	Azaleas, new hardy Belgian varieties, on their own roots, with flower-buds, one of a sort by name ...	20	0
25	American Azaleas, do. do.	15	0
25	Hardy American Plants, one of a sort, by name ...	10	6
12	Hardy Heaths and Kalmias	6	0
12	Rhododendrons, including scarlet, white, and rose—hardy varieties	12	0
	New hardy Yellow Rhododendrons, each 5*s*. 6*d*. to	7	6
	Fine hardy Scarlet Rhododendrons, 2 feet, per dozen...	12	0
	Cedar of Lebanon, 3 feet, well grown in pots, per dozen	12	0
	(Araucaria, Deodara, and Coniferas of all kinds, see List.)		
	Roses, standard and half standards, per dozen ... 12*s*. to	15	0
	Climbing Roses of choice sorts, per dozen	6	0
50	Dwarf Roses, two of a sort, on own roots	15	0
	Wistaria sinensis, extra fine, in pots, 5 to 10 feet, each	3	6
6	Fine hardy Magnolias, one of a sort	10	6
12	Greenhouse Azaleas, one of a sort, blooming plants ...	25	0
12	Choice Camellias, by name, do.	30	0
24	Choice Ericas, one of a sort, by name	16	0
12	Orchidaceous Plants, choice species, and good plants	40	0
50	Choice Greenhouse Plants, one of a sort...	45	0
	Tree Carnations, 6 best sorts	6	0
	Cinerarias, flowering strong plants, per dozen	12	0
	Verbenas and Petunias, newest varieties, per dozen ...	6	0
6	Bulbs of Lilium lancifolium, one of a sort	12	0
12	Pæonias, new white, pink, and blush, of sorts	8	0
25	Hardy Herbaceous, one of a sort	7	6
25	Pinks, choice sorts	10	0

FRUIT TREES.

Fine Dwarf and Standard Peaches, Nectarines, Apricots, Plums, Pears, and Cherries. The best and most approved sorts of these respective kinds, to name, each 2*s*. 6*d*., or, per dozen	24	0
Untrained or maiden do, 1*s*. 6*d*. each, or, per dozen ...	12	0
Apples, dwarfs and standards of best sorts, per doz. 10*s*. to	15	0
Fine Gooseberries, Currants, and Raspberries, per dozen	3	0
Figs, Medlars, Walnuts, and Mulberries, each	2	0
Filberts, new thin shelled and red skinned, per dozen ...	3	0
Strong Vines, from eyes and layers, in pots, per dozen ...	18	0

New Gardens and Greenhouses furnished on moderate terms.
Albion Nursery, Stoke Newington, London Feb. 18.

GRASS SEEDS FOR PERMANENT PASTURE.

WHEELER AND SON'S DESCRIPTIVE LIST of GRASS SEEDS will be forwarded free on application.
J. C. WHEELER AND SON, GLOUCESTER.

PRICED SEED LISTS.—*These Lists will be sent Post free on receipt of one penny stamp for each.*
No. 1. SUTTON'S LIST OF FARM SEEDS.
No. 2. SUTTON'S LIST OF GARDEN SEEDS.
No. 3. LIST OF CONTENTS OF SUTTON'S COMPLETE COLLECTIONS.
All orders faithfully executed in rotation, in strict accordance with priority of our receiving the same.
SUTTON & SONS, SEED GROWERS, Reading, Berks.

RENDLE'S NEW PRICE CURRENT FOR 1854 *should be obtained by all who have gardens, whether small or large. It will be found to be a correct and useful Guide to the amateur and young gardener; a remembrancer to the more advanced in horticulture, and a source of reference to all.*
Can be obtained from the London Publishing Office, 294, Strand; or from the Proprietors, WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth. ESTABLISHED 1786.

A FIRST CLASS CATALOGUE OF GERANIUMS, VERBENAS, FUCHSIAS, DAHLIAS, HOLLYHOCKS, ETC.

GEO. SMITH begs to announce that the above is now ready and will be forwarded in exchange for one postage stamp.—Tollington Nursery, Hornsey Road, Islington.

CHARLES ALEXANDER (late of DICKSONS & Co.), SEEDSMAN and FLORIST, 32, West Register Street, Edinburgh His Descriptive Catalogue of Select Garden and Flower Seeds is just published and will be forwarded free on application.

STANDISH AND NOBLE'S CATALOGUE for the present season is Now Ready, and may be had on application. A selection from it appeared as a detailed advertisement in the *Gardeners' Chronicle*, of Saturday, Sept. 10th, to which they respectfully refer plant buyers. It contains many new and choice plants.—The Nursery, Bagshot, Surrey, Feb. 18.

DENYER'S SHORT AND DESCRIPTIVE LIST OF SEEDS, containing all that is New and Rare—*the inferior sorts are omitted.* Copies of the above forwarded on application, by WILLIAM DENYER, Seedsman and Florist, 82, Gracechurch Street, London.
W. D. begs to intimate he still carries on business as usual at the above address, and that he never had any connexion with the Brixton Nursery.

N. GAINES begs to announce his List of Dahlias and Pelargoniums for 1854 is now ready. It contains a description of his three Seedling Dahlias to be sent out in May, viz., Alba superba, Primrose Perfection, and King of the Yellows Also a Printed List of Fuchsias, Cinerarias, Chrysanthemums, Auriculas, Corræas, Verbenas, Camellias, Azaleas, Rhododendrons, &c. &c., may be had post free on application.
Nursery, Surrey Lane, Battersea.

SAMUEL FINNEY AND CO.'S DESCRIPTIVE CATALOGUE OF FLOWER AND VEGETABLE SEEDS, with prices, is now ready, and may be had on application. It contains an extensive assortment of Imported German Flower Seeds, the celebrated French Asters, and many splendid novelties.—Gateshead Nursery, February 18.

THE BEST DESCRIPTIVE SEED LIST
YET PUBLISHED IS THAT OF

RICHARD SMITH, NURSERYMAN and SEEDSMAN, Worcester, of whom it may be had GRATIS on application; it contains full particulars of his COLLECTIONS of SEEDS.

		£.	*s.*	*d.*
No. 1	Collection contains 20 QUARTS of the best garden PEAS, with full quantities of EVERY OTHER VEGETABLE for a year's supply of a large garden, price	3	0	0
No. 2	a smaller quantity of equally choice sorts ...	2	0	0
No. 3	do. do. in reduced quantities	1	0	0
No. 4	50 sorts of the SHOWIEST HARDY FLOWER SEEDS, with descriptive labels to each, post free	0	10	0
No. 5	36 do. do. do. do. do.	0	7	6
No. 6	24 do. do. do. do. do.	0	5	0

Any alterations of equal value that may be wished in the sorts or quantities intended for these Collections will be willingly made.
A DESCRIPTIVE PRICED LIST OF ROSES for 1854 gratis.
RICHARD SMITH, Nurseryman and Seedsman, Worcester.

THE FINEST BALSAMS IN EUROPE, in Six Classes; Seed saved by Mr. GLENNY from flowers three inches across: the six, 37 stamps; Mixed Seeds, 13 stamps, in Sealed Packets only, signed and sealed. The finest seeds that can be had procured to order, and all other choice Horticultural subjects.—420, Strand.

HIGHGATE NURSERIES, NEAR LONDON.

JAMES CUTBUSH, with deep regret, begs to inform his Customers and the Public generally of the sudden and lamented death of his Father (WILLIAM CUTBUSH), and offers his sincere thanks for the kind and extensive Patronage he received for upwards of 33 years. J. C. also acquaints them that the business will be conducted as hitherto under the name of "WM. CUTBUSH & SON" by himself, and humbly solicits a continuance of their esteemed favours; and by unremitting attention hopes to merit their support and recommendation.

SEEDS.

W. AND S. GAINES beg to offer to Gardeners, Farmers, and Nurserymen, the following seeds:—WHITE SPANISH ONIONS, 4*s*. 6*d*. per lb.; Deptford do., 4*s*. per lb.; Reading do., 4*s* 6*d*. per lb.; quantities not less than 1 lb. SCARLET RUNNERS, 21*s*. per bushel: quantities not less than one peck. GOOD RHUBARB PLANTS: Albert, Linnæus, and Victoria, 40*s*. per 100; 6*s*. per dozen. Also collections of ANNUAL FLOWER SEEDS, packets of 60 varieties, 10*s*.; 30 do., 5*s*.; 15 do., 2*s*. 6*d*.—Post-office orders payable to W. & S. GAINES, Covent Garden Market London.

ESTABLISHED ABOUT HALF A CENTURY.

SEED AND HORTICULTURAL ESTABLISHMENT,

SUDBURY, SUFFOLK.

BASS AND BROWN'S SEED AND PLANT LIST FOR 1854 is now complete, and supplied free for three penny stamps. It contains a considerable number of new and very choice kinds, both of Seeds and Plants, and much useful information.

In offering the 23d Annual Edition of our Seed Catalogue, we would remark that the usual care and attention have been bestowed in the selection and growth of every article which has come under our hands, and as our aim is to render our Stock as select as possible, the most scrupulous care is paid to avoid such as are not really an acquisition and calculated to give perfect satisfaction. Our List of Vegetable Seeds contains many valuable new additions, and in the Flower Seed department are several rich gems of recent introduction.

Owing to the late ungenial season for ripening and harvesting Seeds, which has rendered them very scarce, the prices of many are higher than previous years.

GOODS (not under 20s) CARRIAGE FREE to all Stations in London.

A Copy of the Autumn Catalogue also supplied for three penny stamps.

ASSORTED COLLECTIONS OF VEGETABLE SEEDS.

The following, comprising the best in cultivation, including several new sorts of first-rate quality :—

	£	s.	d.
No. 1.—COLLECTION FOR A LARGE GARDEN, containing quantities sufficient for one year's supply	£3	0	0
No. 2.—COLLECTION IN SMALLER PROPORTION ...	2	0	0
No. 3.—COLLECTION DITTO ...	1	5	0
No. 4.—COLLECTION OF CHOICE KINDS FOR A SMALL GARDEN ...	0	15	0

If any sorts of Vegetables are not wished for, enlarged quantities of others will be sent to make up the amount.

*** *Collections Nos. 1, 2, and 3 are given in the Catalogue.*

FLOWER SEEDS—BEST ASSORTMENTS.

These may be had, pre-paid by post, at the prices affixed.

	s.	d.
100 varieties select showy Annuals, which will include the beautiful new Leptosiphon luteum, Calceolaria chelidonioides Nemesia bicolor, Helianthus californicus, Lupinus hirsutissimus, fine new varieties of double Convolvulus, splendid Prize Asters, Stocks, Zinnia, &c. ...	15	0
50 varieties, including new, 8s. 6d.; 30 varieties ditto, 5s. 6d.; 20 varieties ditto ...	4	0
20 varieties best Dwarf Annuals, in large packets, for filling beds on lawns ...	7	6
12 ditto ditto ...	5	0
20 varieties choice Greenhouse Annuals, including the new Gomphrena aurantiaca, Salpiglossis atrosanguinea, the new Portulaccas, Rhodanthe, Thunbergia, Phlox Drummondi, &c., 7s. 6d.; 12 varieties, including new ...	5	0
20 varieties choice Greenhouse Perennials, including very fine and new Calceolaria, Cineraria, Fuchsia, Petunia, Verbena, Chorozema, Kennedyas, Calendrinia umbellata, &c. ...	10	6
12 varieties ditto ditto ...	7	6
20 varieties Hardy Biennials and Perennials, including the new white Escholtzia, very choice Antirrhinum, Gladioli, Heartsease, Mimulus, Polyanthus, Dianthus, Brompton and Emperor Stock, &c., 7s. 6d.; 12 varieties ditto ...	5	0

Also CHOICE IMPORTED FLOWER SEEDS.—See Catalogue.

RANUNCULI.

Strong roots may be had by post pre-paid, and securely packed, without extra charge; except where the prices are under 10s. per 100, in which case they will be forwarded pre-paid at 1s. per 100 extra, or 8d. per 50.

	£	s.	d.
100 Roots in 100 vars., superb seedling, and other best sorts	£3	10	0
50 ditto in 50 varieties, 37s. 6d.; 25 in 25 varieties ...	1	0	0
100 Roots in 100 varieties, very fine ...	£1	15	0
50 ditto in 50 varieties, 18s.; 25 in 25 varieties ...	0	10	0

	Per doz.—s.	d.	Per 100.—s.	d.
Extra choice, mixed, from best named ...	2	6	18	0
Very fine, mixed ...	1	6	10	0
Fine border, mixed ...	0	9	5	0
Early Scarlet Turban ...	0	6	3	6
Early Yellow Turban ...	0	8	4	6
" Seraphique, clear yellow ...	1	0	8	0
" Brown Turban ...	0	8	4	6
" Hercules, white ...	5	0		
Oel Noir, best black (2s. each) ...	18	0		

GLADIOLI.

Our collection of this splendid tribe comprises upwards of 100 varieties, for Lists of which see our Autumn Catalogue. Tall varieties of Gandavensis and Floribundus habit.

	Each.—s.	d.
Monsieur Blouet, superb new, rich red, very large ...	3	6
Fanny Rouget, superb new ...	3	6
Albicans roseus, deep blush, crimson striped ...	0	9
Brenchleyensis, brilliant rich scarlet ...	2	6
Floribundus, white, rose striped, 2s. 6d. per dozen ...	0	3
Gandavensis, clear orange, 3s. 6d. per dozen ...	0	4
Psittacinus, orange and yellow, 1s. 6d. per dozen ...	0	6
" sanguineus, rich dark scarlet, and yellow, 5s. per doz.	0	6

ANEMONES.

	s.	d.
50 beautiful and distinct named double varieties, 12s. 6d.; free by post ...	14	0
25 ditto ditto, 7s.; free by post ...	8	0
The finest large, mixed, double, per 100, 10s. 6d.; very fine, mixed, per 100 ...	6	0
Double scarlet varieties, mixed, fine, per 100 ...	12	0
Beautiful mixed semi-double, 6s. per lb.; fine new single, mixed, per lb. ...	4	0
Anemone Hortense, fine red, per dozen, 2s. 6d.; superb mixed Seedlings, per dozen ...	2	6
12 Roots of each of 14 beautiful double vars., for clumping	32	0
6 Roots of each, 17s. 6d.; 3 Roots of each ...	9	0

	s.	d.
ACHIMENES, 12 fine named varieties, strong tubers, free by post ...	6	0
LILIUM LANCIFOLIUM ALBUM, 1s. to 2s. 6d.; Rubrum ... 2s. 3d. to	10	6
TRITONIA AUREA, splendid new orange Cape Bulb, each ... 2s. 6d. to	3	6
TIGRIDIA (Tiger Iris) CONCHIFLORA, 5s. per dozen; Pavonia, and others, per dozen ...	2	6
RHUBARB—Mitchell's Royal Albert, and Myatt's Linnæus, the earliest and very fine, each, 1s.; per doz.	9	0
" Myatt's Victoria Giant, each, 9d.; "	7	6
GRAYSON'S GIANT ASPARAGUS, fine 3 year, per 100	3	6

FRUIT TREES of the choicest kinds.

Remittances requested from unknown correspondents.

SEED & HORTICULTURAL ESTABLISHMENT, SUDBURY, SUFFOLK.

NEW POTATO—DEAN'S SEEDLING.

ABRAHAM STANSFIELD, in sending out the above Potato, would particularly recommend it to the attention of all growers of this useful esculent, as being, all properties considered, the best sort yet raised. Like its parent, the Fluke, it is less liable to be diseased than any other variety, remaining vigorous and healthy when all others are cut down. It is about three weeks earlier than the Fluke, much superior in its farinaceous properties, has shallow eyes, a slight roughness of the skin, and is every way a superior variety for the table. It was exhibited at the Hapton and Padiham Exhibitions in 1852 and 1853, at each of which it received the first prize; it was also exhibited at the East Lancashire Horticultural Exhibition, and received a certificate of merit. It also received the following testimonial:— "Burnley, Sept. 22, 1853.

"We, the undersigned, beg to testify to the merits of a seedling Potato raised by James Dean Hapton, as being a very useful table variety, good keeper, and hitherto free from disease."—Signed, H. Walton, Florist, Marsden; R. Taylor, Gardener to Le Gendre Starkie, Esq., Huntroyd, near Burnley; T. Whitham, Gardener to J. Hallam, Esq., Marsden Hall, near Burnley; J. Redman, Gardener to Charles Townley, Esq., Townley, near Burnley; J. Lewis, Gardener to W. Thursby, Esq., Ormerod House, near Burnley; J. Dean, Gardener to Rev. W. Masters, Burnley, and many others.

The *Preston Guardian* of Sept. 24, 1853, in noticing the East Lancashire Exhibition, says, "Amongst the roots shown we particularly noticed a splendid sample of Potatoes—Dean's Seedling—which possessed the recommendation of a rough skin and being free from eyeholes. Several had been boiled, and they appeared all that could be wished in a Potato."—The same paper of Oct. 1st says, "That important desideratum, a Potato free from disease, has been raised by Mr. Dean, near Burnley." Mr. Glenny, in the "Gardeners' Almanack" for 1854, says "We ought to mention a capital and very handsome new sort of Potato, Dean's Seedling, handsome and well flavoured, and moreover an excellent boiler." Mr. Edwards, secretary to the National Floricultural Society, in a private letter, says Dean's Potato is a perfect gem.

A. STANSFIELD will commence sending out the above Potato the second week in February, at 7s. per stone of 14 lbs., sacks and bags included. Early orders are respectfully solicited, as the stock is very limited. Post Office Orders or reference are requested from unknown correspondents.

A. S. can also supply the genuine Fluke Potato, at 9s. per bushel of 56 lbs., sacks and bags included.

Vale Gardens Todmorden, Lancashire.

CORN MARKET, WISBEACH, CAMBRIDGESHIRE.

CHARLES SHARPE begs to call the attention of the nobility, gentry, and trade to the undermentioned choice collection of SEED POTATOES, grown with great care upon marsh land near the sea, which is the most appropriate soil for the culture of the Potato, as it is less affected by the disease, and of finer quality. The undermentioned prices include hampers and package. Smaller quantities can be had if required. The Trade Price can be had on application.

POTATOES (FOR FORCING AND EARLY PLANTING).

Per bushel of 4 stones.		Per bushel of 4 stones.	
Early Ash-leaf Kidney ...	12s.	Early Flourball (Rylott's)	12s.
" " (Jackson's)	12s.	" Round Frame ...	12s.
" Emperor ...	12s.	" Cockney ...	12s.
" Fox's Seedling ...	10s.	" Oxford (very true)...	12s.

POTATOES (FOR SECOND PLANTING AND LATE CROP).

Per bushel of 4 stones.		Per bushel of 4 stones.	
American Native ...	10s.	Kentish Kidney ...	8s.
White Rough ...	8s.	White Kidney ...	8s.
Yorkshire Regent...	8s.	British Queen (this is the largest producer and best quality in cultivation) ...	12s.
Forty Fold ...	10s.		

THE CHAMPION PEACH.

THOMAS HUTCHINGS, NURSERYMAN, &c. AXMINSTER, is now sending out this beautiful Seedling Peach, which far surpasses everything of the kind ever offered to the Public, measuring the extraordinary size of from 11 to 13, and sometimes 14 inches—flesh free, rich, and juicy; flavour unequalled—somewhat resembling the Green-gage Plum—an excellent bearer—and in every respect of first-rate quality.

Trained Trees .... £1 1s. 0d.
Maiden ditto .... 0 10s. 6d.

It is respectfully requested that all orders from unknown correspondents be accompanied by a Post-office order, payable at Axminster, Devon.

TESTIMONIAL.

"Sir,—I have fruited the Champion Peach, and have proved it to be *quite equal* to the description, and well worthy the name given it. I am ready to answer any inquiry that any lady or gentleman may wish to make.—I am, Sir, yours respectfully,

"JOHN REYNOLDS,
"To Mr. Hutchings. "Belmont, Lyme Regis, Dorset."

Orders received at the Nursery, or by Messrs. Hurst and MacMullen, 6, Leadenhall-street, London; and by Messrs. Garaway, Mayes, and Co., Durdham Down Nurseries, Bristol.

February, 1854.

NEW SEEDS—GROWTH OF 1853.

RENDLE'S COLLECTION OF GARDEN SEEDS FOR ONE YEAR, *will be sent out as usual by the Subscribers.*

The collections have given universal satisfaction, and they will be found sufficient to supply a garden during the whole of the 12 months.

	£	s.	d.
No. 1.—A complete Collection, to supply a large garden for 12 months, including 20 quarts of the newest and most approved Peas, for early, medium, and late crops; 10 quarts of Beans, and full quantities of all other kinds of vegetable seeds ...	3	0	0

For the detailed quantities contained in the No. 1 Collection, see back page Gardeners' Chronicle, Jan. 7, 1854.

	£	s.	d.
No. 2.—A complete Collection, in reduced quantities, for a smaller garden ...	2	0	0
No. 3.—A complete Collection do. ...	1	5	0
No. 4.—A small and choice Collection ...	0	15	0

☞ *All orders above 20s. carriage free (see* PRICE CURRENT*), and all orders above 5l. delivered carriage free to every Railway Station in England and Wales, and to every Steam Port in England, Wales, Ireland, and Scotland.*

WILLIAM E. RENDLE & CO., Seed Merchants,
ESTABLISHED 1786. Plymouth.

The quantities contained in the above Collections will be found in our PRICE CURRENT AND GARDEN DIRECTORY, *just published.*

SUTTON'S FINE LAWN GRASS SEEDS for improving Old, or making New, Lawns. The following is an extract of a letter received from DR. LINDLEY :—

"Messrs. Sutton.—We have already made a trial of your Lawn Grass Seeds, and it is but justice to say they have proved the best we have sown for many years. (Signed) JOHN LINDLEY.

"Horticultural Society, 21, Regent Street, London, Nov. 9, 1853."

Messrs. SUTTON are continually receiving similar letters of commendation of their Lawn Grass Seeds. Price of seed, 1s. 3d. per lb., 3s. per gallon, or 21s. per bushel, CARRIAGE FREE, except very small quantities. The quantity required is 40 lbs. per acre, in forming new lawns, or from 10 to 20 lbs. per acre for improving old lawns.—JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

COLE'S SUPERB CRYSTAL WHITE CELERY.

J. THORNLEY, W. COLE, AND CO., NURSERYMEN, SEEDSMEN, and FLORISTS, Withington, Manchester, beg to announce that they are now prepared to supply this fine Celery at 1s. 6d. per half-ounce packet, or in larger quantities. This variety has given universal satisfaction, and has been proved to possess all the good qualities attributed to it by W. Cole last season. It can also be procured from the following agents:—

Messrs. Hurst and M'Mullen, 6, Leadenhall Street; Messrs. Noble, Cooper, and Bolton, 152, Fleet Street; Messrs. Minier & Co., 60, Strand; Messrs. Charlwood & Cumming, Covent Garden; Mr. Turner, Slough; Mr. Duncan Hairs, St. Martin's Lane; Mr. Denyer, Gracechurch Street; Mr. J. Fairbairn, Clapham; Messrs. A. Henderson & Co., Pine Apple Place; Messrs. Downie and Laird, Edinburgh; Messrs. F. & A. Dickson, Chester; Messrs. F. & A. Dickson, Manchester; Messrs. J. & J. Fraser, Lea Bridge, Essex; Messrs. Little and Ballantyne, Carlisle; Messrs. Veitch & Son, Exeter; Mr. J. Veitch, Exotic Nursery, Chelsea; Mr. Clarke, King Street, Covent Garden; Messrs. Finney & Co., Gateshead; Mr. A. Pontey, Plymouth; Mr. E. Rendle, Plymouth; Mr. Cattell, Westerham, Kent; Mr. Smith, Riverhead, Kent; Mr. Epps, Ashford and Maidstone, Kent; Messrs. Lucombe, Pince, & Co., Exeter; Mr. Browne, Norwich; J. Cole, Keyfield Nursery, St. Albans; Garaway & Mayes, Bristol; Drummond & Son, Stirling.

All orders to be addressed as above, instead of to "Dartford" as heretofore.

KNAP HILL NURSERY, WOKING, SURREY.

WATERER AND GODFREY, Nephews and Successors to the late HOSEA WATERER, respectfully invite the attention of parties engaged in planting to the following list:—

Araucaria imbricata, 2, 3, 4, 5, and 6 feet high, in the open quarters, regularly removed every year, and as robust and handsome as it is possible to get them. We have a large stock.

Cryptomeria japonica, 2, 3, 4, 5, 6, to 8 feet.

Cedrus Deodara, stout handsome plants from seed, in any quantity, and of all heights from 1 to 7 feet. A few splendid specimens 10 to 15 feet; warranted to transplant with perfect safety.

Cedar of Lebanon, 2, 3, 4, 5, 6, 7 to 10 feet. These large Cedars of Lebanon are also very handsome trees.

Cupressus macrocarpa, or Lambertiana, 2, 3, 4, 5, 6, and 8 feet, all from seed.
" Goveniana, 2 to 3 and 4 feet.
" Funebris, 2 and 3 feet.
" thyoides variegata, 2, 3, and 4 feet.

The Variegated White Cedar, a scarce but most beautiful variegated plant, seldom seen except at Elvaston Castle. We hold a large quantity.

Juniperus Bedfordiana, fine plants, 3, 4, and 5 feet.
" Chinese, 2, 3, 4, 5, 6, 8, and 10 feet.
" repandus, 3, 4, 5, to 8 feet.
" Upright Irish, 3, 4, 5, 6, 7, and 8 feet; perfect columns and, except at Elvaston, unequalled.
" Virginiana, the Red Cedar, 4, 5, 6, and 8 feet.

Taxodium sempervirens, 2, 3, 4, 5, and 7 feet.

Yew, common, 3, 4, 5, to 8 feet high.
" Irish, 3, 4, 5, to 10 feet. A splendid lot, all being trimmed to one stem; it adds much to their appearance and value.
" Gold striped, 1, 2, and 3 feet.
" do. worked on the Common, with fine heads 4, 5, 6, and 7 feet high; very handsome.
" elegantissima (new striped) standards. The golden Yews are very ornamental, and we have a large quantity of fine plants.
" Dovaston, or Weeping Yew, fine standards.

Pinus Douglasi, 3, 4, 5 and 7 feet; a few magnificent plants 10 to 12 feet high.
" insignis, 2, 3, 4, 5, 6, and 7 feet; all from seed.
" cembra, 3, 4, to 6 feet.
" Canadensis (Hemlock Spruce), 3, 4, and 6 feet.
" morinda, 3, 4, and 6 feet.
" Menziesii, 3, 4, 6, and 8 feet.
" cephalonica, 3 to 4 feet.
" Pinsapo, large and handsome, 3 and 4 feet.
" Nordmaniana, from seed, 1½ foot; a few larger, 2 feet.
" nobilis, stout plants, with perfect heads, about 1½ foot; a few larger specimens, 3 and 4 feet. We hold a fine stock of this beautiful Fir, none of which are grafted.

Thuja Arbor-vitæ, American, 3 to 6 feet. We recommend this plant for hedges.
" Weareana, 3 to 6 feet, one of the few really hardy and most useful evergreens.
" aurea. This is perhaps one of the prettiest plants of the day; it was first sent out from this Nursery, and our stock, for size and beauty, is unsurpassed.

Libocedrus chilensis, 1½, 2, and 3 feet. This is a very distinct and beautiful plant, of recent introduction. Our stock is large and good.

Independent of the foregoing we are very large holders of the most useful Evergreens, Deciduous and Ornamental Trees, and of large size. Priced Catalogues will be forwarded on application, enclosing two postage stamps, which will also include a Descriptive Priced Catalogue of the celebrated collection of American Plants grown at this Nursery.

The Nursery is near the Woking Station, and about an hour's ride from London. A visit is earnestly solicited from all who intend planting during the forthcoming season.

POLYANTHUS SEED.

To the Lovers of that Beautiful early Spring Plant, the Polyanthus.

JAMES WOODS has again to offer a quantity of POLYANTHUS SEED, which he has this year saved with more than ordinary care, from about 80 named and good laced flowers, which he can recommend with confidence; with directions for sowing. Price 1*s.* per packet, or sent free on receipt of 13 postage stamps. J. W. has a quantity of RANUNCULUSES, good old superfine named sorts, in one general mixture, which he will send free by post at 4*s.* per 100, or 35*s.* per 1000, on receipt of Post Office Order or postage stamps, to James Woods, Florist, Harwich, Essex.

P.S.—Plants of Polyanthus will be sent out in April at exceedingly low prices, with blooms on each plant, as the stock must be reduced, the land being wanted for railroad purposes.

SEED TRADE AND OTHERS.

W. J. EPPS begs to offer the following SEEDS, received direct from the Growers. Excellent samples and prices sent on application.

PEAS.

Early Emperor (very true)	Scimetars (true)
Champion of England	British Queen
Knight's Dwarf Green	Longpod Beans.

TURNIPS.

Laing's Swede	Red Tankard
Skirving's Purple Top Scotch	Red round
Green Top Scotch	American Strap-leaved Stone

BROCCOLI.

Early Purple Sprouting	Dwarf Danish
Brimstone	Early White
Miller's Dwarf	Imperial Winter.

Olive-shaped Radish, fine; Prickly Spinach; Long Red and Orange Globe Mangold Wurzel.

Maidstone, February 18.

AMERICAN PLANTS.

JOHN WATERER begs to announce that his NEW CATALOGUE of RHODODENDRONS, AZALEAS, CONIFEROUS PLANTS, &c., is now published, and may be had by enclosing two stamps for postage.

The colours of all the Rhododendrons worthy of cultivation are described in order to facilitate purchasers in making selections, together with a Treatise on their successful management.

☞ The Rhododendrons forming the American Exhibitions in the Royal Botanic Society's Garden, Regent's Park, London, are annually supplied from this establishment.

The American Nursery, Bagshot, Surrey, near the Farnborough Station, South-Western Railway, and 3 miles from Blackwater, South-Eastern Railway

GEORGE BAKER begs to say that his DESCRIPTIVE CATALOGUE of AMERICAN PLANTS, CONIFERS, ORNAMENTAL SHRUBS, FRUIT and FOREST TREES, &c., may be had by enclosing two postage stamps.

G. B. wishes to call particular attention to his fine Stock of GREEN and WEEPING HOLLIES, from 1 to 12 feet high.

G. B. has supplied the American Exhibition in the Royal Botanic Gardens, Regent's Park, from its commencement.

American Nursery, Windlesham, near Bagshot, Surrey, about six miles from Staines Station, Windsor Branch, South-Western Railway, where conveyances may be obtained.

SUPERB FLOWER SEEDS for early sowing, sent post free at the annexed prices:—Antirrhinums, from 50 best striped and spotted kinds, 1*s.*; Aquilegia, from select kinds, 6*d.*; Auricula, fine, 1*s.*; Balsam, extra double, from 30 best varieties, 1*s.*; Cineraria, new kinds, 1*s.*; Calceolaria, choice kinds, 1*s.*; Carnation, fine, 1*s.*; Digitalis, from large spotted kinds, 6*d.*; Delphinium, fine, 6*d.*; Double Daisy, fine, 6*d.*; Gloxinia, from 30 kinds, 1*s.*; Hollyhock, from show flowers, 6*d.*; Mimulus, from 12 kinds, 6*d.*; Petunia, fine, 1*s.*; Phlox Drummondi, from 30 fine kinds, 6*d.*; Potentilla, fine, 6*d.*; Pentstemon, from 12 kinds, 6*d.*; Polyanthus, fine, 6*d.*; Verbena, from 100 best kinds, 1*s.*; Sweet William, fine large, 6*d.*; Zinnia elegans, from 12 fine kinds, 6*d.*; 12 fine varieties hardy Perennials from America, 3*s.*; 50 fine varieties of hardy Annuals, 4*s.*; 30 do., 2*s.* 6*d.*; 12 do., 1*s.*—Wm. Knight, Florist, 53, High Street, Battle, Sussex.

SUPERB LATE WHITE BROCCOLI—"EMPEROR."

EDMUND PHILIP DIXON having purchased the entire stock of the above Broccoli of Messrs. Elletson, Market Gardeners, Thorngumbald, near Hull, begs to announce that he is prepared to send it out in sealed packets at 2*s.* 6*d.* each. This Broccoli has been raised by the Messrs. Elletsons, the raisers of the Mammoth, sent out some time ago, who state that the EMPEROR, if sown at the same time, will come into use before it. Is of very dwarf growth, perfectly hardy, with heads from 15 lbs. to 20 lbs. weight; keeps its colour, and stands firm three weeks after it is ready to cut. A noble flower and commands the best price of any other in the Hull market, where it is well known, and will be a great acquisition to the market gardeners around London, as well as those who wish for a first-rate Broccoli.

May be had of Messrs. Noble, Cooper, & Bolton, 152, Fleet Street; and Messrs. Hurst & M'Mullen, 6, Leadenhall Street, London. Also of the Advertiser, 57, Queen Street, Hull.

PEAS! PEAS! THE BEST VARIETY IN CULTIVATION.

CHAMPION OF ENGLAND, a blue wrinkled Pea, very productive, of quick growth, and of a most delicious flavour. This extraordinary Pea combines in one the merits of all others, and has none of their demerits; for, although a wrinkled Pea, it is both hardy and early, and being of quick growth, it is the best kind to plant throughout the season for each crop. It is highly productive, bearing very long pods of a lively green, which are well filled, and the Peas are generally as large as small horse Beans, of a deep green colour, and beyond all others of a most delicious flavour. Height, 3 ft. to 3½ ft.

Price, in quantities of not less than	1 peck ...	Bag included	6*s.*
,, ,,	,, 1 bushel	,,	16*s.*
,, ,,	,, 1 sack (4 bushels)	,,	60*s.*
,, ,,	,, 8 bushels (1 qr.)	,,	106*s.*

Delivered, freight paid by Railway to London.

Orders, with remittance or satisfactory reference, will have immediate attention on application to

H. and A. WALLIS, Seedsmen, Ipswich.

JOHN CATTELL begs to say that the following priced Catalogues of his Nursery Stock and Seeds may be had on prepaid application, by enclosing a penny stamp for each.

Roses, Fruit Trees, Forest Trees, including Quick, Privet, Briar, Holly, &c., suitable for hedges; Hardy Ornamental Trees and Shrubs, including Coniferæ, American Plants, Climbers, &c. Kitchen Garden Seeds. Flower Seeds, in which are enumerated very superior selections of German Stocks, Asters, &c., genuine as imported, in large or small packets, to suit all purchasers.

The following selections are exceedingly fine:—Cedar of Lebanon, from 2 to 8 feet, splendid upright plants, in first-rate order for removal. Cedrus deodara, fine, from 1 to 8 feet. Azaleas, Ghent and English, of the most showy varieties, loaded with bloom buds. Rhododendrons, of all the leading sorts. Kalmia latifolia, in variety, very fine. Andromeda floribunda, splendid plants. Roses, the standards are particularly straight strong stems, also some extra tall stems from 5 to 6 feet, worked with climbing and other showy sorts; the dwarfs are also fine strong plants. Fruit Trees, consisting of the leading varieties, fine and in good order.—Westerham, Feb. 18. 1854.

JUDSON'S RICHMOND VILLA BLACK HAMBURGH VINE.

ARTHUR HENDERSON and CO. have the pleasure of informing their patrons and friends that they have good plants of this valuable and much-esteemed Vine at 5*s.* each; extra strong plants, 7*s.* each.—N.B. For full particulars of the distinguishing characteristics of this Vine, we beg to refer our customers to the *Gardeners' Chronicle* of October 25th, 1851.

GIANT SAINTFOIN.—*The true Giant Saintfoin may be had genuine of the undersigned, at 12s. per bushel, or cheaper in large quantities.*

For particulars, address JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

THE LAST ADVERTISEMENT this Season of Cheap and Select NURSERY STOCK.—The Subscribers beg to offer the following choice Stock at the annexed very low prices. Goods from their extensive Nurseries have given great satisfaction throughout the kingdom for many years.

	£	s.	d.
12 best Ghent and other hardy Azaleas, 2 feet, very bushy, covered with flower-buds	£0	18	0
12 Abies Morinda, 3 to 4 feet, very fine plants	1	0	0
12 Pinus Cembra, 3 to 4 feet, fine specimens	1	10	0
12 Pinus excelsa, 3 feet do. do.	1	0	0
12 Standard Cratægus or fancy Thorns	0	6	0
12 Handsome Rhododendrons, 2 to 3 feet, all colours, selected from above 100 kinds...	1	0	0
100 Rhododendron campanulatum, very bushy, 1 foot high	4	0	0
100 Flowering and Evergreen Shrubs, two of a sort ...	1	0	0
100 Splendid and very showy Hollyhocks, flowering plants, grown from Chater's seed	1	0	0
50 Standard Roses, splendid prize varieties, with good heads and 3½ feet stems	3	0	0
Grafted English Elms, Limes, Oaks, and other park trees; prices on application.			
Large Yews, Laurels, Hollies, Mahonias, and Privets, for game coverts or hedges; prices on application.			
FRUIT TREES.—Per dozen.			
Apples and Pears of the most approved kinds, good strong standards	0	9	0
Ditto ditto, dwarfs, 8*s.*; trained	1	10	0
Cherries and Plums, good strong standards	0	12	0
Ditto ditto, dwarf, 9*s.*; trained	1	16	0
Apricots, Peaches, and Nectarines, trained, of the most approved kinds	2	8	0

WILLIAM JACKSON and CO., Bedale, Yorkshire.

IMPORTED GERMAN FLOWER SEEDS.—

	s.	d.
QUILLED DOUBLE GERMAN ASTER.—Assortment of 24 splendid varieties, containing of each colour 100 seeds	5	0
Ditto, 12 splendid varieties	2	6
DWARF DOUBLE GERMAN ASTER.—Assortment of 16 most splendid varieties, of each colour 100 seeds ...	3	6
Ditto, 12 splendid varieties	2	6
DWARF GERMAN STOCK.—Assortment of 36 most splendid varieties, each colour separate	7	6
Ditto, 24 ditto ditto	5	0
Ditto, 12 ditto ditto	2	6
NEW Largest FLOWERING DWARF TEN-WEEKS' STOCK.—This new acquisition has been greatly admired. The flowers are exceedingly large. The colours are rose, purple, blue, light blue, and white, per packet ...	1	0
DWARF GERMAN WALLFLOWER-LEAVED TEN-WEEK STOCK.—Assortment of 12 splendid varieties, containing of each variety 100 seeds	3	0
BRANCHING GERMAN TEN-WEEK STOCK.—Assortment of 12 varieties, containing of each variety 100 seeds	3	0
NEW ROSE PURPLE EMPEROR STOCK, per packet	1	0
WALLFLOWERS.—Collection of eight splendid varieties	3	0
DWARF DOUBLE LARKSPUR.—Collection of 10 most splendid varieties, containing of each colour one-eighth of an ounce	5	0
TALL DOUBLE LARKSPUR.—Collection of 8 splendid varieties, containing of each colour one-eighth of an ounce	3	6
ZINNIA ELEGANS.—Collection of 6 beautiful varieties	2	6

We can strongly recommend the above as being of first-rate quality. They will be forwarded postage free.

J. C. WHEELER and SON, Gloucester.

EDWARD GEORGE HENDERSON and SON beg to inform their Patrons and the Public that their Catalogue of Seeds for 1854 is now ready, and will be forwarded post free on application.

E. G. H. & Son take this opportunity of stating that none but the most popular and improved kinds of Vegetable Seeds appear in their List; and among the Flower Seeds only those whose beauty and merit are universally acknowledged, together with a carefully selected stock of the principal new varieties.

E. G. H. & Son beg respectfully to call particular attention to the following choice Seeds of Florist Flowers, which have been saved from a fine collection of named sorts, and also the annexed new Annuals, which they can confidently recommend.

CHOICE FLORIST FLOWERS.

Per packet.—	s.	d.	Per packet.—	s.	d.
Antirrhinum, fine mixed	0	4	Hollyhocks	1	0
Balsam, Camellia-flowered	0	6	Pansy	1	6
Calceolaria ... 2*s.* 6*d.* and	5	0	Petunia	1	0
Cineraria ... 1*s.* 6*d.* and	2	6	Pinks	1	6
Dahlias	1	0	Verbenas	1	0
Geranium, fancy, 2*s.* 6*d.* &	5	0	Mimulus, beautifully spotted		6

NEW AND OTHER CHOICE FLOWERS.

Per packet.—	s.	d.	Per packet.—	s.	d.
Abronia umbellata ...	1	6	Lobelia racemosa (large blue)	0	4
Anagallis azurea grandiflora	1	0	,, ,, alba (new)	0	6
,, rubra	1	0	Mignonette (new large-flowering)	0	3
Arctotis breviscapa ...	0	6	,, Tree	1	0
Aster, new dwarf German Pyramidal, in packets of 12 distinct colours, separate	6	0	Nycterinia capensis (new)	1	0
,, French Pæony-flowered Pyramidal, in packets of 8 distinct colours, separate ...	3	6	,, selaginoides (new)	1	0
Balsam, new pale yellow	1	0	,, villosa (new) ...	1	0
Collinsia bicolor atrorubens (new)	0	6	Nolana grandiflora alba ..	0	4
,, Bartsiæfolia... ...	0	4	Œnothera prostrata (for bedding)	0	4
Clintonia pulchella ...	0	6	Portulacca, new orange (not aurea)	0	6
,, ,, alba ...	0	6	,, rosea	0	6
,, ,, atropurpurea (new)	1	0	Primula sinensis fimbriata alba	2	6
Coreopsis coronata ...	0	4	,, ,, ,, rubra	2	6
,, Pygmæa (new) ...	0	4	Rhodanthe Manglesi ...	0	6
Eucnidia Bartonioides ...	0	6	Schizanthus Grahami carnea (new)	0	6
Erysimum Arkansanum...	1	0	,, retusa	0	4
Grammanthes gentianoides	0	6	,, ,, alba ...	0	4
,, ,, lutea ...	0	6	Stock, Scarlet Intermediate	0	6
,, ,, variegata	0	6	,, Pyramidal Wall-leaved	0	6
Humea elegans	0	6	,, new dwarf German, in collections, extra fine ... 2*s.* 6*d.* and	3	6
Leptosiphon luteum (new)	1	6	Tropæolum Triomph de Gand	0	6
Linum grandiflorum rubrum (new)	1	6	Digitalis, new spotted varieties, extra fine ...	0	6
Maurandya elegans superba	0	6			

Wellington Nursery, St. John's Wood, London, Feb. 18.

IMPROVEMENT OF GRASS LANDS.

SUTTON'S RENOVATING GRASS SEEDS FOR IMPROVING OLD PASTURES.—Many old Pastures, Parks, and Meadows are nearly destitute of Clovers and the finer and more nutritious sorts of Grasses, in which case we are in the practice of furnishing such sorts only as are wanting. If the Seeds are sown early in the season, the improvement in the Pasture will be very considerable, and at a small expense.

The following is similar to many other letters received from former purchasers:—

From D. T. Cunynghame, Esq., Wellesbourne, Warwick, Nov. 1852.

"The meadows that were renovated with your Seeds are looking very well. I cut nearly 2 tons of hay to the acre, and three years ago the same land hardly produced half a ton per acre. The Garden Seeds I have had from you exceed by far any that I have bought elsewhere."

Quantity of Seed required, 8 lbs. to 12 lbs. per acre. Price 1*s.* *per lb.*, Carriage Free.

All orders executed in rotation, in strict accordance with priority of our receiving the same.—Address,

John Sutton & Sons, Seed Growers, Reading, Berks.

N.B.—We have a very fine Stock of Mangold Wurzel and Carrot Seed, and other Agricultural Seeds.

SEEDS—CARRIAGE FREE.

WILLIAM E. RENDLE and CO. *have, from the very extensive patronage they have received, been induced this season to offer the following liberal arrangement to all who purchase Seeds from their establishment.*

All ORDERS ABOVE £5 will be DELIVERED CARRIAGE FREE to any RAILWAY STATION in ENGLAND or WALES, and to any STEAM PORT in ENGLAND, WALES, IRELAND, or SCOTLAND.

Two or three purchasers joining together will therefore have the advantage of having their orders delivered free of any cost for carriage.

RENDLE'S PRICE CURRENT for 1854 should be obtained by all who have gardens, or who take an interest in the cultivation of the soil.

CUCUMBERS, MELONS, &c., the best varieties in Cultivation:—

CUCUMBER SEED—Captivation, 2*s.* 6*d.* per packet; Phenomenon, 2*s.* 6*d.*; Victory of Bath, 1*s.*; Lord Keynon's Favourite, winter Cucumber, 2*s.* 6*d.*; Gordon's White Spine, 1*s.*; Chamberlain's Essex Hero, 2*s.*; Sunderlandwick, 2*s.*; Hunter's Prolific, 1*s.*; and numerous others at 1*s.* per packet.

MELON SEED, at 1*s.* per packet—Incomparable, Fromham Hall, Golden Ball, Queen, Bowood, Victory of Bath, Camerton Court, Beechwood, Windsor Prize, Emperor, Fleming's Trentham Hybrid, Hampton Court, Blackhall's Green Flesh, Bailey's, and numerous others at 1*s.* per packet.

A packet of each of the first-named Cucumbers, and two packets of either of the Melons named, sent free for 60 stamps.

SUPERB HOLLYHOCK SEED, 2*s.* 6*d.* per packet.—GERMAN ASTER SEED (very fine and double), 1*s.* per packet.—ANTIRRHINUM SEED (splendid), 1*s.* per packet.—For further particulars respecting the before-mentioned Seeds see this Paper of the 21st ult.

A remittance must accompany every order by cash, or penny postage stamps, when the whole or any part of the above will be sent immediately, postage and package free.

EDWARD TILEY, Nurseryman, Seedsman, & Florist, 14, Abbey Church Yard, Bath.

The Gardeners' Chronicle.

SATURDAY, FEBRUARY 18, 1854.

MEETINGS FOR THE ENSUING WEEK.

Day	Date	Society	Time
Monday, February	20	Chemical	8 P.M.
		Statistical	8 P.M.
		British Architects	8 P.M.
Tuesday, —	21	Horticultural	2 P.M.
		Linnean	8 P.M.
		Pathological	8 P.M.
		Civil Engineers	8 P.M.
Wednesday, —	22	Society of Arts	8 P.M.
		Geological	8 P.M.
Thursday, —	23	Numismatic	7 P.M.
		Antiquarian	8 P.M.
		Royal	8½ P.M.
Friday, —	24	Philological	8 P.M.
		Royal Institution	8½ P.M.
Saturday, —	25	Royal Botanic	3½ P.M.
		Medical	8 P.M.

That system of holding great public meetings for the purpose of exhibiting horticultural produce, which originated more than 30 years ago with the Horticultural Society of London, after crossing the Atlantic, and spreading through all the more civilised Continental States, has at length reached Russia. It appears that in the year 1850 the first meeting in that country was held at St. Petersburgh by the Imperial Economical Society, under the presidency of the Prince Duke of Oldenburg and Prince Basil Dolgorouky, on which occasion prizes were distributed to the amount of something more than 10,000 roubles (1600*l.*) Since that time these assemblages seem to have become fashionable, for we hear of one at Tiflis formed by Prince Woronzoff; and of another at Moscow, in 1853, an account has been given by M. Masson, from whose report we collect the following interesting facts.

The exhibition in question lasted for a fortnight; on every alternate day it was opened gratuitously, on the others admission was obtained by payment. Each free day witnessed the presence of from 30,000 to 35,000 visitors. The place in which the meeting was held was the Government riding school, a building some hundred yards long. The objects of exhibition were so disposed in the interior that the visitors were able to enter at one door and depart at another, inspecting everything in their passage without ever passing twice over the same ground. The exhibition was classified by the inspector of the Imperial Agricultural School, and each separate division was placed in the charge of one of the pupils of the school.

Two parallel rows of tables extended from end to end of the building, and were occupied by what may be called industrial produce. In the centre was placed a collection of agricultural implements, exhibiting the most rude and primitive by the side of

machines of the newest and most improved construction.

In the middle of the whole stood a "monumental clock" which indicated at the same moment the hour of the day at each of the four extreme points of the vast Russian empire. This *chef d'œuvre* of clockwork was embosomed in a rich collection of exotics of various kinds, skilfully grouped and furnished by M. FINTELMANN, one of the principal horticulturists of Moscow. Adjoining the mass thus produced stood groups of plants from all countries, cleverly set off with Dahlias in pots. Among them were some extraordinary specimens of Strelitzias, Dracænas, Pandanus, Musa, &c., together with finely grown Orange trees, and a Sweet Bay with a single clean stem supporting a head 8 yards round. "Never," says M. MASSON, "in all my travels did I behold such a magnificent specimen as this."

At the four angles of the central square, which was filled with ornamental plants, were placed four large gilt frames, each enclosing about 8 square yards of space. Two of the frames contained, arranged with great taste, the most remarkable specimens of kitchen garden produce then in season; the two other frames were in like manner filled with very fine collections of fruit. Among these fruits were magnificent specimens of the beautiful transparent Apples of the Crimea, and many varieties of Pears, the size of which was surprising when it is considered that, in the climate of Moscow, the Pear tree is a greenhouse plant. These exhibitions of fruits and vegetables were the admiration of everybody; and the plan, M. MASSON thinks, might be advantageously introduced into France. That they were really arranged with great taste we can readily believe, when we call to mind the skill with which the Russian agricultural produce was displayed in our own Great Exhibition in Hyde Park.

The whole exhibition at Moscow was bordered by a line of fruit trees and ornamental plants, such as grow out of doors in France, but must be cased up in a Muscovite winter. Among them were Plum, Pear, and Cherry trees pruned and trained like Orange trees, and most especially Peach and Apricot trees of an extraordinary size for plants whose roots were cramped in wooden boxes. Willows, too, were there of many kinds, clipped into round heads, and a Poplar which M. MASSON, whose botany is more rusty than his gardening, calls Populus Blagovroney.

The reporter speaks in high terms of the excellence and variety of Muscovite vegetables, the size and beauty of which he says did honour to the skill of the Russian market gardeners, who do not suffer by comparison with those of Paris. He was particularly struck with the black and white Radishes from the Caucasus, some of which are a full yard long, and unknown in Europe.

Among the cereal grains there was a most interesting variety; and it was curious to compare the tiny Wheat of Archangel with the magnificent corn from Bessarabia. The oleaginous plants included one called Navet de Derbend, the seeds of which yield an extraordinary quantity of oil. Among textile plants were exhibited a *perennial* Hemp, and a wild Siberian Flax.

The forest-tree exhibition was one of high interest. Everything was there which the Russian territory grows, *even* the trees of Caucasus, sent, as M. MASSON slily hints, by the military Governor of that unconquered country. Each tree seems to have been exhibited in the following manner:—1, its seeds; 2, its timber, carefully polished to bring out what carpenters call the figure; and 3, a dried branch in flower and fruit. Some similar plan was adopted with all the plants belonging to rural economy.

Among miscellaneous matters we find recorded great roots, more than 3 feet long, of the Statice tatarica, used by Tartarian tanners under the name of Kierme, and containing 22 per cent. of its weight of pure tannin; all sorts of objects manufactured out of bark, rushes and straw, among which figured straw head-dresses, and straw boots with leather soles, said to wear very well; and finally preserved fruits, fermented liquors, specimens of earth, both arable and fit for pottery or other purposes, textile materials, wool, and silk, the latter in abundance and of great beauty.

Such is said to have been the great exhibition at Moscow in 1853, from which we English should borrow some useful hints. It is evident that tinsel was not there allowed to displace the more precious metals.

OUR correspondent "R. J." (p. 86) appears to have misconstrued the article (p. 70) which suggested forbearance from giving either BREAD or COALS to the needy, but to substitute in lieu some other mode of relieving them. The drift of "B.'s" communication was the prevention of *waste*—waste of the now dear articles bread and coals, as it was affirmed that "both rich and poor are regardless of waste when things are obtained at little or no cost." It was therefore suggested that donations to the poor should not be either dear bread or dear coals, but of some other form. Were the disposition less prevalent to spend money lightly obtained at the alehouse, possibly charity might be most beneficial when given in cash; but, in the existing state of things, this mode might in too many cases be productive of evil, and therefore some such food as hot boiled Rice was suggested as a substitute for bread. It was also observed that as fewer coals are consumed in boiling Rice than in baking bread, coals might thereby be saved; and it was added that "this mention of Rice in particular is intended merely as a hint," since in point of fact there are many other kinds of food, and preparations of it, that would afford more nourishment to the recipient at less cost to the donor. In one important particular "R. J." seems to have altogether mistaken the article he criticises—namely, that it implied the absence of fire in a cottage; should he again take the trouble to read over "B.'s" suggestions, he would find that not a single line of it implies either a cold cottage or cold food, or abstinence from food of a substantial nature—it does not contain any item against "bread and milk," or any other article a cottager's means will afford him, though *hot* boiled Rice was suggested as a substitute for *cold* bread—bread not baked in the cottage, consequently not contributing in anyway to the warmth of it.

Experience has shown that old habits are rarely overcome but by the introduction of new ones; knowledge of other countries has proved that the English cottager is worse fed, though at greater cost, than the peasantry of any other European nation; a collateral benefit to the poor was therefore in view when hot boiled Rice was mentioned, it was that of inducing the humbler classes to feed in times of dearth on unaccustomed articles of food, especially when bestowed gratuitously, and hence to learn, it was hoped, that other things than dry bread are eatable, and that a hearty, nourishing, hot meal may be procured at even less cost than the customary bread, with at most a shaving of cheese to give it relish.

We have thought it worth while to say thus much, in order to prevent misapprehension. At the same time we must observe that if people would but take the trouble to read as well as look at the contents of our columns, they would save trouble to themselves as well as to us and others.

WE understand that the MEETING OF THE HORTICULTURAL SOCIETY on Tuesday next promises to possess unusual interest. In addition to the casual subjects of exhibition the relative quality of Deodar and Cedar of Lebanon timber will be illustrated by specimens from India and from Lebanon itself, in addition to which Messrs. VEITCH will produce wood, bark, and cones of Wellingtonia gigantea, together with a portrait of one of the trees, as it appeared, when growing a few months since, in Northern California.

VEGETABLE PATHOLOGY.—No. VII.

13. As plants consist entirely of cells variously modified and matters produced by them, it is evident that in order to obtain correct notions of the effects of disease on vegetable structure, we must first have a clear apprehension of the normal condition and constitution of cellular tissue.

14. The simplest form under which a cell can exist is that of a single membranous closed sac, containing gaseous or fluid matter of different degrees of density, and holding more solid substances in suspension. It is, however, doubtful whether cells of this simple structure exist in vegetables, except in a state of infancy.

15. Every cell in a state of active growth contains one or more minute, hyaline, globose, or subglobose bodies, which either take their origin immediately from the protoplasm, or arise from the division of similar parents. They consist themselves of a delicate sac* containing fluid matter, with one or more distinct nuclei. These bodies are called cytoblasts, and their nuclei seem to be their cytoblasts of the second order. They are sometimes attached to the walls of the cells, but whether attached or free they exercise some very important influence on the production of new cells.

16. When the protoplasm of a cell is about to pass into a state of further division, its matter is concentrated in one or more points of the cell cavity round the cytoblasts, and either a delicate membrane is formed round the concentrated masses, or they are embraced and ultimately surrounded in consequence of division by one already present, and that membrane is known by the name of the primordial membrane.†

* Authorities differ on this point. It is, however, impossible to enter into the comparative merits of contending opinions in a treatise like the present. We must content ourselves with stating what we ourselves believe to be the fact as far as we can collect it from recorded investigations, and our own observation.

† In what follows we are greatly indebted to Schacht's "Treatise on the Cells of Plants," which is an inexhaustible mine both of "old things and new."

17. The primordial membrane still remains the innermost, whatever modifications the cell may afterwards undergo, and so long as it is present or in a condition of health, the cell performs its various functions; but when it has been completely absorbed the protoplasm is replaced by air, and the cell is dead. The primordial membrane, however, is so delicate that it is not always possible to ascertain its presence in every condition, even of healthy cells. Though not, however, visible at once under the microscope, because of its delicacy and close attachment, it often becomes visible on the application of sulphuric acid or other chemical agents, sometimes even of pure water, in consequence of its contraction. It is not dissolved like cellulose by sulphuric acid, and is evidently of a very different chemical nature, probably nitrogenous. In our woodcut No. 1 the younger cell of *Protococcus pluvialis* consists merely of the primordial membrane, showing the cytoblast obscurely in the protoplasm; the more perfect spore is surrounded by cellulose. The second membrane in the asci of fungi appears to be the primordial membrane; at least, in the cases which we have examined it resists the action of sulphuric acid, when the outer cell membrane is dissolved. This second membrane is shown very distinctly in woodcut No. 3, fig. 1. It generally projects beyond the broken edge of the ascus, when torn off from the hymenium.

18. After the formation of the primordial membrane, a second sac external to the first is formed, whether from the surrounding protoplasm or from matter oozing through the primordial sac is doubtful, but surrounding it completely on every side. It is found to consist when perfectly cleansed from all foreign matter, whether adherent or penetrating into its substance of pure cellulose, as appears from the investigations of Payen. It does not, however, always exhibit the peculiar chemical reaction of cellulose *in situ*; in fungi, for instance, it does not in general assume a blue tinge with iodine and sulphuric acid. It is curious, however, that in the asci of some fungi where two membranes are always present, attached at the tip, though neither of the membranes assumes a blue tint under the application of iodine and sulphuric acid, which they ought to do if composed of pure cellulose, a shade of blue exists at the very point of attachment, where the protoplasm of the new cell is covered by the already existant primordial membrane; the original cell wall follows the same course, and there is no new formation either of cellulose or primordial membrane, but merely a deduplication of both. At least such appears to be usually the case.*

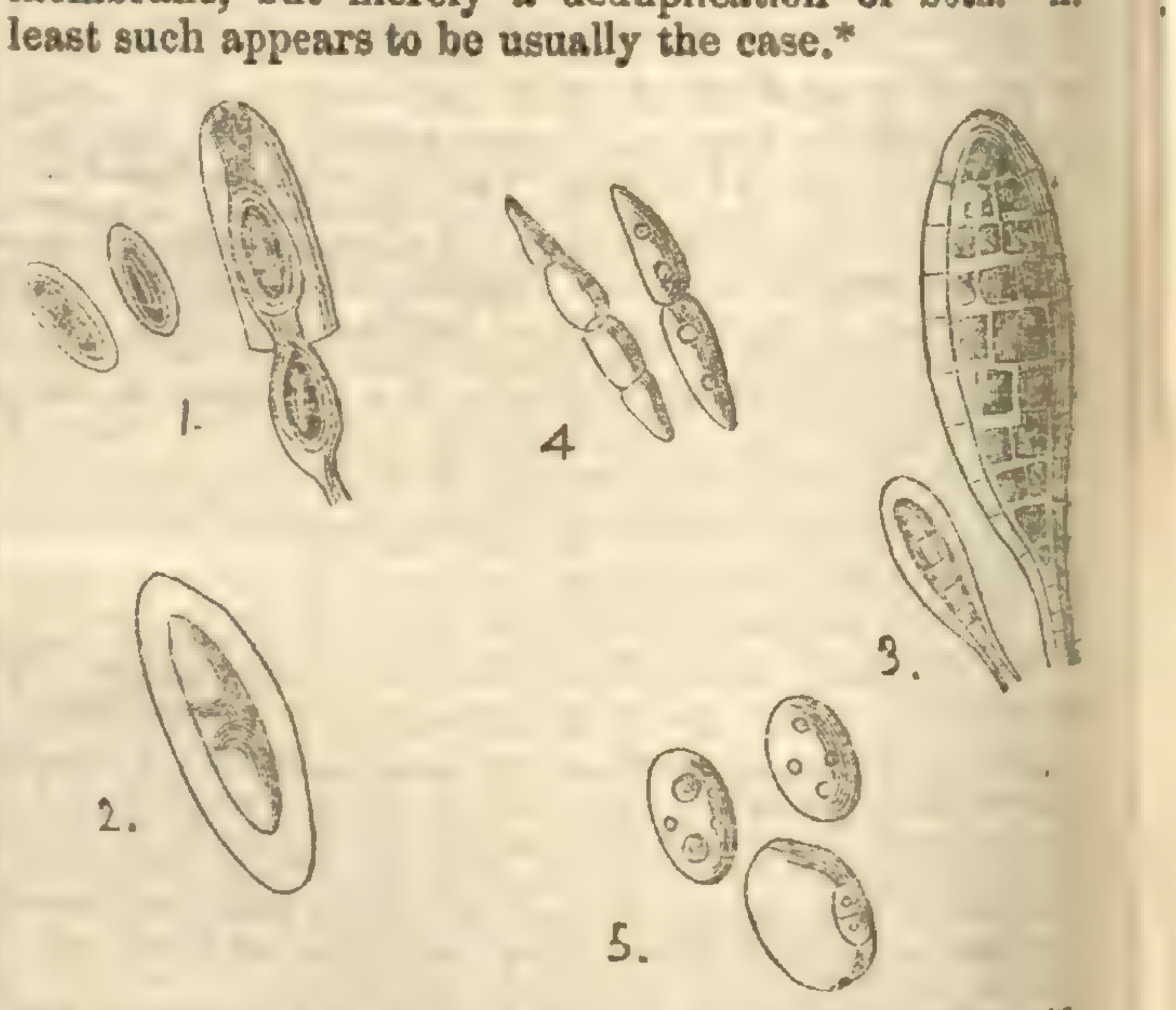


Fig. 1. Ascus and sporidia of *Sphæria pedunculata*, treated with iodine and sulphuric acid. The external membrane remains nearly colourless. The internal or primordial membrane being filled with protoplasm becomes yellow, but at the point of junction of the two membranes the tint is blue. The external gelatinous coat resists sulphuric acid and remains colourless when treated as above.
Fig. 2 Sporidium of *Sphæria siparia*, quite young, with a thick gelatinous coat, and the protoplasm bipartite previous to the first division of the cell.
Fig. 3. Spores of *Hendersonia polycystis*, the larger one showing the annulate outer gelatinous coat.
Fig. 4. Sporidia of *Sphæria macrotricha*, one containing two cytoblasts in either cell, the other with four perfect cells, of which the cytoblasts were the precursors.
Fig. 5. Cells from the embryo sac of *Cynoglossum officinale*, after Schacht, showing different states of the cytoblasts.

19. In the sporidia of many fungi there is a distinct gelatinous coat of greater or less thickness external to the second sac. This is not, however, always persistent, and is probably analogous to the intercellular matter which binds the cells of many plants together, and which sometimes gorges the intercellular passages. This coat is generally absorbed at a later stage of growth, and cannot be considered as entering into the constitution of the cell. Good examples are shown in the foregoing woodcut at figures 2, 3. In some cases of compound spores, as in *Hendersonia polycystis*, fig. 3, the gelatinous coat is divided annularly, conformably to the primary divisions of the spore.†

20. Between the primordial membrane and the outer cell wall numerous strata of fresh matter are frequently deposited, exactly lining the outer cell and exhibiting all its peculiarities of form. This new lining does not consist of pure cellulose, but is often more or less impreg-

* Mr. Henfrey, however, considers the cell-membrane of the new cell even here as secreted by the primordial membrane. That the cellulose of such cells as are produced in the bosom of the protoplasm is secreted by the primordial membrane or deposited from the protoplasm under its peculiar influence has been already stated. See "Annals of Nat. Hist.," Vol. XVIII. p. 364.

† The epispore of the sporidia in Truffles is truly cellular, but in the spores described above the gelatinous coat is probably merely divided into distinct compartments.

nated with nitrogenous matter, or exhibits ternary combinations different from those of cellulose as xylogen. It is in consequence of these new and repeated layers that the ligneous cells acquire their strength and firmness, and from the same cause bony consistence arises in the gritty cells of Pears and in many capsules and galls. *M. J. B.*

CLIANTHUS PUNICEUS.

If hardiness of constitution, easy culture, and brilliant flowers, which remain long in beauty, are recommendations to a plant, then this fine old shrub deserves to be more generally cultivated than it is. It may easily be had in bloom shortly after Christmas, and if placed in a favourable position in the conservatory it will retain its beauty for some two months, and its large crimson flowers contrast well with those of most plants which blossom at that season. In choosing cuttings, select short-jointed pieces of the young wood in a half ripe state, plant them in sandy peaty soil and cover them with a bell glass. Place the pots for a few weeks in a temperature a little higher than that in which the cuttings have been grown; afterwards plunge in a gentle bottom heat of 75° or 80°, when roots will speedily be emitted, if watering and shading from bright sunshine are properly attended to. Pot singly in 5-inch pots, as soon as the cuttings are sufficiently rooted to bear handling, and place them in a close moist situation until they get established, which, with ordinary care, will soon be the case, and the young plants should be removed to a cooler situation as soon as they have got hold of the soil. The plant delights in a cool moist atmosphere during the summer months, and will be found to do exceedingly well in a cold frame, placed where it will be shaded from the midday sun, and which can be kept rather close and moist, and the young plants should be removed to some such situation as soon as they are fairly rooted, for if kept in a warm house they will soon be infested with red spider, and they never make strong vigorous growth in a high temperature. Give a liberal shift as soon as the pots are found to be well filled with roots, which, in the case of cuttings rooted early in spring, will be by the beginning of June. Stop any over-luxuriant shoots, and keep them tied out and rather thin, until a bushy habit of growth is obtained. During summer the plants will require a liberal supply of water at the root, and should be moistened over-head morning and evening in bright weather, and if red spider makes its appearance lose no time in eradicating it. It will be beneficial to the young plants to place them in a shady situation out of doors, towards the middle or end of August, to ripen their growth. On the occurrence of cold wet weather, or frosty nights, remove them to a cool airy part of the greenhouse, and keep them rather sparingly supplied with water during winter. Towards March they may be more liberally watered to induce them to start into growth, and when growth has commenced give a moderate shift. The plants should be afforded a sheltered position in the plant-ground, to which they may be removed as early as the weather will admit, and when the pots are found to be full of roots give another shift, and if all has gone on well this may be into 15-inch pots, in which they will form handsome specimens. If the plants are wanted to flower early keep them rather sparingly supplied with water after about the middle of August, which will check the growth and ripen the wood; and if they can be placed in a close part of the greenhouse when it becomes necessary to remove them in-doors, they will soon show bloom, and with a very little artificial heat will be in flower shortly after Christmas. After blooming the shoots should be cut back, thinning out any weakly ones, and the plants placed where they will receive plenty of light and air, and be safe from frost, treating them in summer as recommended for last season, shifting into 18-inch pots if convenient. The Clianthus will thrive in rich free soil, which may be composed of about equal portions of good firm turfy loam, leaf soil, and fibry peat well intermixed with sharp sand and lumpy bits of charcoal, to ensure perfect drainage. *Alpha.*

ENTOMOLOGY.

Rhynchites Betuleti, Fab. (the Birch and Vine Weevil).

The injury which the vineyards sustain from the attacks of insects, especially in the south of Europe, has been long since well known, and their economy ably discussed by various naturalists; and the malady which is now so widely spread over the wine-growing countries, and from which our own crops of Grapes have not escaped, has attracted the public attention, and inclined many persons to regard the state of the Vines, who before had only thought of the quality of the Grapes. The interest thus excited in the south of France, in Piedmont, and Tuscany, led me to look more especially to the Vines last summer, and in some localities it was not possible to find by the end of July a bunch of Grapes that was not mildewed; and I doubt not the entire crops in many parts of Piedmont were entirely lost. When at Genoa, as early as the first week in June, this malady was well established on the Vines in the Botanic Garden there, and a merchant of that city told me the loss of the vintage was becoming so serious that the proprietors were considering if it would not be advisable to grow Hops for beer, to replace the wine.

Whilst in this beautiful garden I was surprised to see numbers of leaves hanging to the Vines or lying on the ground, rolled up precisely like cigars (fig. 1, reduced to half the natural size). These singular objects I found were the work of an insect called Rhynchites Betuleti, which, by defoliating the trees, very materially injures the crop, as the Grapes become stunted and will not ripen. It seems remarkable that the Vines in England, as far as my knowledge extends, never suffer from this weevil, for it frequently occurs in woods and plantations, where it is contented to feed upon the Birch and Alder.

It was early in June when I observed the leaves thus rolled up; they then contained the eggs of the beetle, which I understand are deposited between the cuticles of the leaf. From the female having nearly cut through the pedicel of the leaf before she lays her egg and rolls it up, the leaf dries and becomes the food

required by the maggot, which usually feeds for four or five weeks, but I found one alive at the end of December; this might be owing to its travelling in a box for several months free from damp; for when the leaves are blown off, the maggots bury themselves in the earth.

This maggot is a dull yellowish white, sparingly clothed with short hairs; the head is pitchy black and shining, and behind it is a horny brownish scale; eight of the spiracles were visible, the abdominal segments were divided by deep grooves, and each one was again transversely cut. It curled itself up like most of such fleshy maggots, and it could walk pretty well (fig. 2, the natural size; 3, magnified).

The beautiful beetles produced from the pupæ of these larvæ I have found around London, and in various parts of England, on the Alder in May, and on the Birch in June and July. It is said the first brood appears in France at the end of August; if such be the case, the weevils must either hibernate or there are two broods in a year. They vary in colour from the most splendid green reflecting golden shades to a deep blue. Fig. 4 (the curved line exhibiting the natural length) will render any minute description of the weevil unnecessary, but it must be observed that one sex alone has the spines on the thorax, and that is the female. Most probably they are serviceable to her in rolling up the leaves in the marvellous way which this little creature accomplishes with such dexterity and sagacity.

Amongst the enemies of the Vine-weevil is a very minute Hymenopterous fly, which Prof. Filippi, of Turin, gave me. The female contrives to lay her eggs in those of the weevil, and eventually the Pteromalus* is hatched from the egg; but its economy is so anomalous and remarkable that I must refer the reader to Dr. Filippi's own history of this parasite, which he has discovered.† *Ruricola.*

Home Correspondence.

Deep Soiling Potatoes v. the Disease.—The following plan of averting the disease was first brought into notice by a carpenter, who occupies a cottage and small plot of ground on this estate. Being desirous of growing some Celery, and having no ground to spare for that purpose, he determined to plant it between some rows of Potatoes which he expected would prove a failure. To effect this he made a trench between the rows, and turning the tops on either side he cast the soil out of the trench on the top of the Potatoes, without regard to that crop, which at that time was in full vigour. The result was that when the Potatoes were taken up the tubers proved all sound, and that nearly all those which had not been so treated were decayed. This induced him to pursue the same practice the five following years, and the same success has attended his labours. Being a witness of the beneficial results of this mode of culture, I determined to follow the same plan, and I can now say, that after trying it both upon early and late varieties, in the open ground and on warm borders, I am satisfied that the discovery is most important. It is true that the tops suffer to some extent, but the tubers, with scarcely an exception, remain sound. I hope, however, that all gardeners will make a trial of the plan by way of experiment. In my case I left a row or two of each variety on the plot of ground not treated as above, and in every instance a third part of them were unsound, whilst those earthed over in the manner I shall presently describe were all sound, both in the field and garden. When my crops were being taken up, several gentlemen, members of the Royal Agricultural Society of England, and of the Horticultural Society of London, were present, and all were fully satisfied that it is a method to be highly recommended and of easy application. My plan is to plant on open quarters well manured; and, as soon as the tubers are full grown, say the last week in June for early sorts, and the 1st of July for later ones, or just before the blight takes the foliage, to turn the latter on one side, and the rows having been previously well earthed up with the hoe, to dig the soil out from between the drills with a spade, and lay it on the ridge so as to form a deep furrow between each row. Thus circumstanced, the tops continue to grow, and the tubers being now full sized, all remain sound in the ridge of soil. The disease was never worse here than it was last season, which indeed was the case generally throughout Norfolk. *Charles Alborough, gardener to G. S. Kett, Esq., Brooke House, Norwich, Norfolk, Feb. 20.*

Effects of the Winter at Poles, in Hertfordshire.—The following report of the effects of the late severe weather upon my Pinuses may not perhaps prove uninteresting:—Pinus macrophylla, pseudo-strobus, leiophylla, Hartwegi, and longifolia, have all been killed; P. patula has had its points injured, and it is very brown; P. Winchesteriana has been so much injured that it is doubtful if it will recover; P. apulcensis is very brown, as is also nobilis. Abies Brunoniana has had its points injured, and has lost many leaves; Libocedrus chilensis is brown on the south side. The variety of Deodar called viridis is likewise brown, and some of its points have been killed; Cupressus Uhdeana is very much browned on the south side, and many of its points have been killed; C. thurifera is also very brown on the south side; Taxodium sempervirens is brown, and many of the tips of the shoots have been killed; Benthamia fragifera has been killed, Garrya elliptica is greatly injured, the leaves of Quercus macrophylla are very much blotched and injured, as are also those of Arbutus Unedo, Laurustinus, and Portugal Laurels. Acacia prostrata has been killed; it had grown and flowered luxuriantly on a south-east wall for several years. Saxe-Gothæa conspicua and Fitzroya patagonica have stood well, not being injured in the least. *R. Hanbury.* [We shall be glad to receive more reports on this interesting subject; but venture to ask our correspondents to delay their returns till May.]

The Food of Working Men is a matter of very great moment. Errors of regimen will bring on disease as scurvy will bring on debility, incompetence for labour, proneness to disease in general, and short-livedness. The form and fashion may vary, but the working man needs food no less substantial, no less sufficient, than the Prince. I would propose no food for the poor man that I would not live upon, if needs were, myself. That great friend of the poor, Count Rumford, considered that he had made a great discovery, when he concocted ever so many pounds of pudding out of a few pounds of Indian corn, and produced soups flavoured with such ingredients as a bit of salt herring, and the like. Soyer has fallen into much the same error as others have done, in respect of Lentils, Rice, and similar matters. Food for working men must be substantial, varied, sufficient, savoury. If the food prove deficient in but one of these respects, the working man must suffer. It is hardly necessary to prove that workmen, their wives and children, just now, are not, in general, sufficiently well fed. In fact, they are not. In trying, however, to multiply their resources, we must take care not to imitate too closely the good Count Rumford. His intentions were most excellent. The intentions of his followers are excellent; but both Count Rumford and his followers have proposed, and propose dishes quite insufficient, *per se*, for human sustenance. A certain amount of fluid or semi-fluid food, if coupled with sufficient solid food, may be taken with advantage, but not otherwise. Rice or Potatoes, or Pulse, or Legumes, boiled into a mash, alone are insufficient for working men, but prove excellent when stewed with a fair proportion of meat, or are consumed with good sound bread, preferably brown bread some eight-and-forty hours old. The richest animal soups even will not keep men alive unless eaten with good bread. Vegetable soups or stews are equally insufficient; milk alone suffices; but in this case Nature provides for its coagulation and comparative solidification when introduced into the human stomach, to say nothing of the stomachs of the inferior animals. If Rice or other similar material be employed as a soup or pottage to eat with bread—we may prepare it with as much fluid, as soup, or milk, or water, as we please.—but if Rice or other grain be intended as exclusive nourishment, it must be boiled firm, or, as the French term it, *croquant*. The boatmen on the Vistula boil the Wheat, which they eat three times daily, firm. The black tribes in Africa, whom I have witnessed, do the same with their Rice. Thirty minutes in boiling water suffice to prepare Rice fit for exclusive nourishment. A similar remark applies to Potatoes, when exclusively used. My countrymen, as is well known, are in the habit of boiling them with "a bone" in them, the object of which, after the preceding observations, will be obvious. *H. M'Cormac, M.D., Belfast.*

Cost of Erecting Garden Walls.—Allow me to inform Mr. Ayres that a 10 feet 14-inch wall, with good coping and footing, can be built at a much less cost than what he states (see p. 85). He says such a wall cannot be put up under 15*l.* or more per rod; but in 1852 I had built at this place a 14-inch wall 8½ feet above ground, and with 18-inch foundation, with good sandstone coping projecting 4 inches on either side (the workmanship

* Curtis's "Guide to an Arrangement of British Insects," Genus 627.

† Translated and published, I believe, in the "Annals of Natural History."

being of the best description), for 7*l.* 15*s.* per rod. *J. Daniels, Woodside House, Frant, Sussex.*

Orchard Houses. — In Mr. Ayres' article on this subject (see p. 65), reference is made to a house recently erected at this place, and a statement given of its size, the description of material used, and the cost of construction, &c., all of which, however, must be taken with the modification I now supply. Thus, the width of the house is stated to be 17 feet, the exact measurement is only 15 feet; the whole of the glazing bars are of wood, the frame-work of the roof only being metal; the trellis and wall having previously existed in their respective positions formed no part of the expense to which allusion has been made; and that sum is altogether irrespective of the appliances for the supply of air and water on the foundation of the front part of the structure. The trees were planted in the last week of March, 1852, the glazing, however, was not completed until late in the autumn of that year. Vegetables, forcing plants, &c., have been very successfully wintered there these last two seasons, and the borders are now filled with many articles of a culinary nature planted experimentally. The construction of the building is in many respects of a novel character, and I had, in consequence, deferred giving any account of it until its merits had been fully tested, and the value of certain experiments undertaken had been properly ascertained. I purpose, however, shortly to prepare a detailed account of the whole, with a view to its publication in some of the horticultural periodicals. *James Duncan, Basing Park, Feb.* 14.

Green Strawberry Flowers.—I imagine the cause of your correspondent's Strawberry blooms coming green, instead of white, is want of light, and to prove this allow me to state my own case. I have a span-roofed pit, 50 feet long by 11 feet wide, furnished with a stage, and filled with Strawberries; the roof faces south-east and north-west. I filled this pit, in Christmas week, with about 500 pots of Strawberries, one half being Cuthill's Black Prince, the other, Keens' Seedling, together with a few British Queens. The whole of the north-west side was filled with the Black Prince, which is now in full bloom, and most of the flowers, although not absolutely green, have a decidedly greenish tint; while those of the same variety that are facing the south-east are beautifully white, as are also such of the Keens' Seedlings as are in flower; those at the end of the pit, where they get a little of the afternoon sun, are also quite white. I do not think that hard forcing has had any influence in my case, as the maximum temperature in the finest days has never exceeded 65°, and 50° at night. They had no fire-heat for the first fortnight, except to exclude frost, and it was applied very gently for some time after. I have used manure water once a week, but I have given it equally to all, so that green flowers may, I think, be safely attributed to a deficiency of light. *J. B. H. G.*

The late M. Gaudichaud.—Death has of late been very busy amongst the members of the French Academy, and has swept off more than one of their most honoured colleagues; within the last few days they have had to deplore the loss of M. Gaudichaud, after five months of suffering, at the comparatively early age of 64. These sad events, however, are always tempered by the opportunity which they give for the reward of other deserving labourers in the same field; and it is with peculiar pleasure that we announce the election of Monsieur E. R. Tulasne, in the place of the lamented Jussieu, to a post which is the great object of ambition to every follower of science in France. His memoir on the embryogeny of plants, and that on the family of Podostemads, "one of the most remarkable memoirs which science knows, alike valuable for minute observation, and the admirable illustrations which accompany it," would alone have given him claims to admission, but it is in Cryptogamic plants, like one or two of his younger *confrères*—younger, that is, as to order of selection—that he has more especially established for himself a reputation which no change of system nor any advance of science can ever overthrow. His treatises on the tribe of subterranean fungi, on the genus Nidularia, on the family of rusts and mildews, and above all on the male organs or their analogues in Lichens and Fungals, not to mention many others, have involved the lovers of science in a debt which can never be fully paid. High, however, as his scientific attainments confessedly are, these do not form by any means his only recommendations amongst a large circle of friends, by whom he is regarded for many social virtues, but more especially for the firmness and consistency of his religious views, where it requires more courage than many of us can well conceive to exhibit a very slight degree of serious earnestness. Our pleasure at the appointment of M. E. R. Tulasne would, however, be much diminished if we did not hope that the merits of his brother, who from the purest motives has of late retired from all public participation in their joint labours, would some day be openly recognised by the Academy. In all these scientific investigations the two brothers have walked together

> ——with open heart and hand,
> Affectionate and true.

And we trust that their equal merit may sooner or later meet with equal reward. Sure we are, at least, that should this desirable consummation be at length attained, the Academy will boast of no brighter ornaments than this *par nobile fratrum. M. J. B.*

The Barbarossa and other Grapes.—In reply to some remarks of "J. B. W.'s," respecting the Barbarossa Grape being "ominously like a Grape he knew many years ago under the name of Black Muscadel," I would state that he may possibly have had the Barbarossa in cultivation under that name; that I do not question for one moment; but I would ask him can he apply my description of Mr. Warde's Barbarossa to the Black Muscadel of the original authority, "Speechley," No. 8, copied by "Lindley," No. 10; and Mogul of some collections, Lindley. This sort I am well acquainted with, and I here subjoin its description from the last mentioned authority. "The bunches of this Grape contain berries of different shapes and sizes; generally they are large and oval, but some of them are very large and long, somewhat compressed and flat at the ends; skin thin, of a black colour, with a delicate juicy flesh; the leaves change in autumn to a bright scarlet." This is rather brief, but it is a correct description, and cannot be applied to Mr. Warde's Barbarossa, particularly as regards the size and shape of the berries on the same bunch, some of which I have seen swelled out to an immense size, and others the size and shape of an ordinary Black Hamburgh. The Wortley Hall Grape I have never seen; for the origin of this I would refer "J. B. W." to the "Horticult. Society's Transactions," Vol. IV., p. 516, and to "Lindley," No. 40, where he will find it stated that it sprang from seed in the stove at Wortley Hall, in 1819. For the Poonah I must again refer "J. B. W." to an original authority,—"Lindley," No. 29. The explicit description given of it there is correct in every particular; the bunches are handsomely formed; but as regards quality, in comparison with the Barbarossa it is worthless; neither can I identify the Barbarossa with the Black Raisin of "Lindley," No. 13, "Speechley," No. 39; Raisin Grape of "Miller," No. 18; "Gard. Dictionary," 1733. This is a true Raisin, with its large oval berries and hard firm flesh. Mr. Lindley's description of this sort is correct, and will not apply to the Barbarossa; these three sorts, viz., the Poonah, the Black Muscadel, and the Black Raisin, I again assert, are three distinct kinds. They were at Picton Castle in 1842, but whether they are now there or not I am unable to say. It appears from Mr. Warde's communication that he is himself doubtful whether or not he attached the right name to the variety in question; but it has recently come to my knowledge that when the Vine was planted at Welcombe, he wrote the name Barbarossa under the rafter himself. This I had from more than one witness, of whose veracity I cannot for one moment doubt. And again I am informed that a person who travelled with Mr. Warde in Italy as courier, when he saw it in fruit at Mr. Butcher's, in Stratford, recognised it as the Barbarossa of the parties it was purchased from; but it now appears from the researches of "R. T.," that our Barbarossa is evidently a misnomer; that we have not got the true Barbarossa or Red Beard; but I suppose we must retain Mr. Warde's nomenclature till we get the correct one. It is just possible, owing to the publicity given to the disputed nomenclature of this Grape, that some gentleman travelling through Lombardy and the other Italian states may reintroduce our old acquaintance the Lombardy or Flame-coloured Tokay, or even the Red Syracuse, as the true and veritable Barbarossa or Red Beard, as it is very likely that these two varieties are placed in Count Odart's family or tribe Barbaroux—the Lombardy especially, from its gross habits of growth and general appearance of bunch. *Wm. Cooper, Charlecote Park, Stratford-on-Avon, Feb.* 6.

Sikkim Rhododendrons.—I received a few seeds of Rhododendrons from the Himalayas about three years ago, labelled "woolly capsule," and no more. One of these plants has now flowered, and a beautiful thing it is; it has a fine, bold flower, pure white, except one or two petals, which are slightly tinged with pink; and it is as fragrant day and night as the wild Honeysuckle, whose scent it exactly resembles. May I ask what species you imagine it to be? The plant has woolly leaves, and looks like one I have seen, but not in flower, called Edgeworthi. *M. A.* [We presume your Rhododendron to be Edgeworthi; but a mere description does not enable us to speak positively.]

Societies.

ENTOMOLOGICAL, *Jan.* 23.—This being the Anniversary Meeting the removal of four members from the Council, and the election of four others in their stead, as proposed at the December general meeting, took place; no change being made in the offices of President, Treasurer, and Secretaries. The President delivered an address, for which a vote of thanks was passed, with a request that it should be published.

February 6.—The President in the Chair. Messrs. Staunton, F. Smith, and W. W. Saunders, were appointed by the President to be Vice-Presidents for the ensuing year. The President exhibited specimens of both sexes of a curious new genus of moth, from Brazil, reared by Mr. Bates, the larvæ of which reside in moveable cases like those of Psyche. The female is winged. The name of Saccophora Batesii was proposed for it. Mr. E. L. Layard exhibited his very fine collection of Lepidoptera, from Ceylon, many of which had been reared from the caterpillar state. The numbers of nocturnal species was very great. Mr. J. Curtis read a series of critical remarks upon the nomenclature of the Elateridæ, describing several new British species, and calling attention to their transformations. Mr. S. Stevens also exhibited a new Scottish species of the same family, Elater impressus of Fabricius, taken at Rannoch, in Perthshire, by Messrs. Weaver and Foxcroft; likewise very striking varieties of the two fritillary butterflies, Argynnis euphrosyne and Paphia, taken by Mr. Johnson, near Ipswich. Mr. Douglas exhibited a specimen of Phigalia pilosaria taken as early as the 24th January, late at night, having been attracted to the light of a gas lamp. Mr. Douglas remarked further that he had on former occasions observed moths fall at night flying about lamps where they had not been observed at an earlier period of the night. He likewise stated that, notwithstanding the severity of the season, he had already found the larvæ of Elachistæ mining on the leaves of Grasses. Mr. G. R. Waterhouse directed attention to the new work on the genera of European Coleoptera, of which the publication is announced by M. Jacquelen Duval, and of which specimens were exhibited. He likewise made some observation on the generic identity of two groups of Curculionidæ, which had been termed Cherrus and Polyphrades. It was announced that the Council had extended the time for the receipt of essays in competition for the prizes on the subject of the mussel scale of the Apple, &c., to the 30th of December, 1854, and that they offer a similar prize of 5*l.* for an essay on the natural history of the coccus producing the lac dye of commerce; Dr. Royle having kindly offered to furnish to applicants the information on the subject in possession of the East India Company, and to procure from the resources of the Company in India any further particulars that may be required. The essays to be delivered on or before the 31st December, 1855.

Notices of Books.

Mr. Paul has published a *Supplement to his Rose Garden* (Piper and Co.), with four good coloured figures of Princess Alice (moss), Vivid (hybrid climbing), General Castellane, and Louise Odier. It is introduced by some sensible observations, which Rose buyers would do well to recollect, and from which we select the following passage:—

"A few years ago Rose cultivators seemed to vie with each other in obtaining the greatest number of varieties. This state of things has happily passed away. A new kind is no longer cared for because new, unless it be also superior to, or distinct from, pre-existing kinds. It would be a fortunate thing for themselves and others if the French nurserymen would follow the example thus wisely set them by English florists and amateurs. But it is not so; for during the past year more than 100 new varieties have been sold, at prices varying from 10 to 25 francs each; and with all our fondness for Roses, we cannot find more than 20 kinds worth purchasing for trial; the remainder are similar but inferior to old kinds, thousands of which are sold here yearly at 1*s.* each. One cultivator offers 28 new varieties in one season, and another swells the number by an additional list of 18! The dishonesty of this will be apparent to those who know how difficult it is to obtain one really new and distinct variety; but we fear the practice will continue so long as English gold flows so readily towards those pretty French terms, 'bien gracieuse,' 'admirable,' 'tres belle,' 'magnifique,' 'odeur d'essence de rose,' and the like, and in answer to the ill-principled practice of seizing upon popular English names wherewith to baptise second-rate or indifferent varieties."

The Manetti stock is condemned, experience not confirming its supposed good qualities, unless perhaps for pot Roses. The descriptive catalogue of novelties, forming the principal part of the supplement, is useful and well done.

Pictorial Calendar of the Seasons. Edited by Mary Howitt. H. Bohn, 8vo, pp. 567, upwards of 100 wood engravings.—To all who are fond of the country this volume will be found as attractive as any which has appeared in the present season. Mrs. Howitt's name is a guarantee of its being cleverly put together; we have little fault to find with it on the score of accuracy; and it is profusely illustrated by skilfully executed woodcuts. The plan of the work may be understood from the following account of the manner in which the month of January is treated. This is proverbially the month of frost and snow; the history of their phenomena is given scientifically, and anecdotes are found abundantly to enliven the science. Then wolves are fierce, and an extract from Thomson's Seasons explains their habits. Foxes prowl about, and a clever moonlight country scene, with Reynard watching a hen-roost, varies the monotony of letter-press. A capital cut of boats swamped in a river by broken ice illustrates the effects of this formidable agent, whose singular action is explained familiarly, yet with philosophical precision. In another page the origin of the word January, and why it was derived from the double-faced Janus, is given historically; and further on we find accounts of New Year's merry-making, Epiphany, St. Distaff's day, Plough Monday, and St. Agnes's day (who, Mrs. Howitt says, ought to be called Hagnes) after the manner of Hone's Every-day Book; the whole concluded by a page of extract from Keats' poem of the "Eve of St. Agnes." Other months are treated in a similar manner, except that natural history becomes more prominent as the season advances. We need not say that the merit of such a compilation as this depends entirely upon the skill and good taste with which the matter is selected, and in these respects Mrs. Howitt is entitled to commendation. We must, however, remark that the

woodcuts representing natural-history objects ought to have been named. Nests of birds for example.

The London Corporation Coal Tax. (Longmans; a pamphlet.)—Those who are smarting just now under the ruinous price of coals—and who smart more than gardeners?—should read Mr. Dickinson's exposure of this iniquity. The Corporation of London have, by means which we shall not ourselves describe, acquired a legal right to fleece the metropolitan districts over a circle having a radius of 20 miles. Everybody living within this circle must pay the Corporation thirteen pence for every ton of coals he consumes, no matter whether sea-borne or land-borne. In the words of Mr. Dickinson—"There never was a system devised so adapted to fetter and cramp trade, and to subject a whole population to the most degrading interference with their private transactions, at the same time that it inflicted a tax of 8 per cent. on a prime and indispensable necessary of life. One instance shall suffice to exemplify this: Suppose a farmer to have a wharf on the canal side, or merely a landing for manure, just outside of the City circle, and that his dwelling-house were situate rather within that elastic boundary, and that the whole intervening space consisted of his own land, and that he were to purchase of a passing coal trader (hitherto a very ordinary occurrence) a boat-load of coals, and cart them in over his own land to his own home, the farmer, the boat trader, and even the mine proprietor who loaded the coals, would each and all become liable to a penalty of 100*l.*! unless the declarations, returns, certificates, &c., were forwarded to the Corporation Custom-house in London within 48 hours, and the duty paid on the quantity of coal landed. Is this law for Englishmen? Does an act of Parliament 'for granting a drawback on coals' warrant this? Or could it be imagined to compass such a thing? But how and wherefore comes this rigorous taxation of the inhabitants of Hertfordshire to be established for the benefit of the Corporation of London? The answer is, by a series of acts obtained under false pretences." We observe that one of the Corporation witnesses had the audacity to declare to the Royal Commissioners that the whole suburban district ought to be thus put under a forced contribution, in order that the City of London may be beautified, *because the people living within the district use the City, choke its ways*, and render what are called City improvements indispensable. Upon that plea Edinburgh, Dublin, John o'Groats, and the Landsend ought to be also put under contribution, for the dwellers there undoubtedly contribute to the using and choking up, on which the Corporation rely for the justification of this act of legal plunder, which Mr. Dickinson shows has during the last 21 years amounted to the enormous sum of more than *three million, one hundred and ninety-six thousand pounds.* A municipal body which can defraud its neighbours thus does not require reform, but demands suppression.

New Plants.

46. Spiræa callosa, *Thunberg*, aliàs *S. Fortunei.* Planchon.

Under this name a very pretty red flowered shrub is becoming common in collections, having been introduced from China by Mr. Fortune. With us it is too apt to form leaves rather than flowers, but the rich ruby tints of such as do appear resemble clusters of gems set in green foliage; in a hot summer we have no doubt the blossoms would be abundant. Such, indeed, would seem to be the case on the continent, if we may trust a figure in the *Flore des Serres*, where M. Planchon has changed the name to S. Fortunei. It is there represented as bearing great corymbose panicles of a blood red colour, producing a far more striking effect than anything we have seen in England. M. Planchon thinks that this is not the *S. callosa* of Thunberg, and, therefore, changes its name, and we say very needlessly. His reasoning upon the subject would be admissible, had Thunberg been a botanist upon the exactness of whose descriptions any reliance could be placed; but as he was just the contrary, his plants, where authentic specimens are unattainable, as is the case here, are so many puzzles, to be identified by probability, rather than by what he says or omits to say. No one, we suppose, can doubt that his plant was some common red flowered Japanese Spiræa; that the present plant undoubtedly is; and it answers to his words as well as plants usually do. M. Planchon has no evidence that the plant was not S. callosa, there is a fair probability that it was; and we cannot perceive the wisdom of perplexing the world with yet another *aliàs*, when the only reason assignable for doing so is mere conjecture. In the absence of direct proof, one conjecture is as much entitled to attention as another. But the mania for changing names seems incurable, and we shall now have nurserymen selling *Sp. Fortunei* as a fine new Japanese shrub to the very persons who already have it growing in their shrubberies under the name of *S. callosa.*

Garden Memoranda.

Royal Botanic Garden, Dublin.—We learn from the Curator's last annual report that there is now every prospect of this garden possessing a proper house to grow and flower the Victoria Regia and other tropical aquatic plants in, and also a museum of economic botany. An iron house, which was erected for a temporary purpose on the ground now occupied by the building of the Great Industrial Exhibition, has been converted into a museum building, and now occupies a suitable position in the garden. It is certainly not the most appropriate structure for this purpose, but it will suit well as a commencement; and "I have," says Mr. Moore, "little doubt that so soon as the Government and the public see the importance of this department, sufficient means will be provided to make it as creditable as the museums attached to the Botanic Gardens of Kew and Edinburgh, which have been constituted at the public expense." Some of the glazed cases to hold the various articles are in course of construction, and a very considerable collection is already in store to furnish them, consisting of vegetable fibres, barks, gums, oils, &c., used in medicine, the arts, and manufactures, besides various preparations of vegetable products used as food, and fine sections of woods, &c., all of which have been purchased from the British Guiana Department of the Industrial Exhibition. Considerable donations have also been made from other departments in the Exhibition. The proceeds of a garden fête, at which nearly 4000 people attended, have enabled the committee of botany to undertake the erection of a fine stove aquarium house, which is now progressing satisfactorily, and will be ready for the reception of plants early next spring. Thus the desiderata pointed out last year have been supplied, and additional interest, in no small degree, afforded to the public. As regards plants, it is stated that during the present year upwards of 800 species have been supplied to various parties, and more than 100 kinds of seeds, besides collections of grafts of fruit-trees, cuttings of Willows for making Osier-beds, &c. Of the former, 340 species were sent to the Queen's College, Galway, where a botanical garden, on a small scale, is being made, and upwards of 100 to the Queen's College, Cork, for a similar object. In a hasty journey made by Mr. Moore to Connemara, during the latter part of September, some rare Irish plants and flowering specimens were collected for exchange, among which may be noticed Nais flexilis and Potamogeton longifolius, which have not hitherto been found in any other part of the British islands. The former was discovered, by Mr. Oliver, of Newcastle, growing near Roundstone, about two years ago, and the latter by J. Ball, Esq., M.P., about the same time.

In the economic department of the garden some experiments of interest have been instituted. At the Evening Sectional Meetings, held last winter at the Royal Dublin Society, some papers were read on the comparative value of thick and thin growing of root crops, both in chemical and remunerative points of view. The discussions which followed on those occasions showed that great diversity of opinion prevailed on the subject, without any well-ascertained data to reason from, particularly on the latter point. In order, therefore, to assist in elucidating this matter, Mr. Moore determined to institute some experiments. Three portions of ground, measuring each 10 perches, were set aside for the cultivation of Mangold Wurzel, and equal quantities of the same kind of manure were put on each compartment. The seed was sown, last week in April, as follows:

1. Drills 18 ins. apart, plants 1 foot apart in drills.
2. Drills 36 ins. apart, plants 18 ins. apart in drills.
3. Drills 24 ins. apart, plants 14 ins. apart in drills.

The crop was raised on the 18th of November, and the roots carefully weighed, when the following results appeared:—

	Ton.	Cwts.	Qrs.		Tons.	Cwts.	
1.	1	15	2	=	28	8	per imperial acre.
2.	1	9	0	=	23	4	per acre.
3.	1	0	0	=	16	0	per acre.

This experiment, as will be seen, turned out in favour of thick planting. The roots which grew on No. 2 compartment, where they were widest apart, though nearly twice the size of the others, did not weigh so heavy in comparison. The deficiency in weight of No. 3 may have been owing, in some measure, to the roots being of the long red kind, whilst the others, Nos. 1 and 2, were the orange globe, which seemed to suit the ground better. In this department of the garden good examples of all the hardy oil-producing plants were grown. Something of their economic importance may be ascertained, by referring to the amount of saving which has been effected by burning rape oil in the lighthouses round the Irish coast alone. The opening of the garden on every week-day during the past summer, in place of Tuesdays and Fridays, as formerly, appears to have been appreciated by the public; for it is stated that upwards of 16,000 persons visited the grounds during the month of August, which equals the number during a whole year, about 17 years ago; and Mr. Moore strongly recommends the plan to be carried out in future, if Government will afford the means to provide the additional assistance and other contingent necessary expenses. It is mentioned that supplies of plants and flowers have been regularly sent to the Government School of Art twice every week during the session. According to the entries made from the 7th October, 1852, to 24th November, 1853, there have been 800 examples from the conservatories, and 2673 from other departments of the garden, furnished. Contributions of both plants and seeds are reported to continue to be steadily received. "In the estimates," says Mr. Moore, "for the forthcoming year I have requested the Committee of Botany to apply for some small additional sums for the special purposes mentioned. The matter will, I hope, be favourably entertained by Government, especially the annual additional sum asked for, without which it will be impossible to carry on this large establishment as it is now constituted." He adds, "I have only farther to call attention to the state of the dwelling-house, which was long since condemned, and recommended to be removed. It is with feelings of regret one can make any suggestion for the removal of a residence connected with so much historical interest—as that in which Tickel lived, and where he entertained his friend Addison—yet this will, I doubt not, become imperative ere long. The nature of the late improvements has rendered it a great obstacle in the way, besides, it is both uncomfortable and unsafe. A small, commodious house could be built in a better position, and, by using part of the old material in the present building, at a very trifling expense."

We learn that the garden and other departments of the Royal Dublin Society have lately been placed under the control of the Board of Trade at Marlborough House.

FLORICULTURE.

Treatment of the Calceolaria.—Perhaps no flower has yielded so readily to the efforts of the hybridiser as this; for, in a comparatively short period, it has been brought to great perfection. From a pinch of seed, flowers of every shade and colour may be obtained, and when tastefully arranged in the greenhouse or conservatory they never fail to attract particular attention. I generally sow the seed about the beginning of August, in order to allow time for the plants to gain sufficient strength to keep comfortably over the winter. I have found them succeed very well when sown early in spring, but they are considerably later in flowering, and do not stand so long in bloom. Let a few 6-inch pots be filled two-thirds full of drainage and turfy pieces of loam, and mix a compost of loam, leaf-mould, and sand in equal quantities; make it fine, and fill up the pots with it, pressing it to a firm, even surface; sow the seeds, and cover them very slightly with a little fine, sifted soil; moisten the soil carefully, so as not to disturb the seeds, and place the pots in a frame, or in any sheltered situation, out of doors, covered with a hand glass; the soil must be kept in a healthy, moist condition, but not saturated, or the seeds will disappear as quickly as they vegetate. After they have made four leaves, prick them off into pots or pans, prepared as above, only the soil may be used a little coarser. Plant them about an inch apart, shade them carefully, and keep them close for about a week, when they may be allowed a little air. As soon as they begin to crowd each other, they may either be planted again in pans or boxes wider apart than at first, or potted singly in 3 inch pots. If the plants are strong, they may be potted singly with safety; the young roots incline to run near the surface of the soil, so this must never be allowed to get dry or hard. About the middle of October, place them in the greenhouse, on shelves near the glass; water them carefully during winter, and fumigate occasionally with tobacco, to keep them clear of insects. About the present time, shift them into their flowering pots, in a soil of equal parts fibrous loam, leaf-mould, and rotted dung; drain these well, and turn out the young plants carefully, without injuring the roots; pot them deep enough to allow the fresh soil to come well up round the neck of the plants, for here they will emit numerous roots. They must now be judiciously supplied with water, and sprinkled overhead every morning, just as the sun reaches them. As they push up their flower-stems, secure them with a small stake, and, when coming into flower, shade them from bright sun, and let them have all the air possible, night and day. Calceolarias are easily propagated in the following manner:—As soon as the blooming season is past, cut down the flower stems, and pick off all withered and decayed leaves. Select a quiet, shady situation out of doors, and plunge the pots well down in the soil, and fill up among the shoots with leaf-mould. Moisten the soil occasionally if the weather be dry; they will now throw out roots at every shoot; these shoots should then be taken off and potted separately, in 3-inch pots, in a mixture of light loam and leaf-mould. Place them under glass, where they can be kept close and shaded, and they will immediately start and grow rapidly; but, if exposed to currents of air, the juices of the plant will be exhausted before the roots are strong and plentiful enough to supply the deficiency. When placed in their winter quarters, be careful, in watering, not to allow a drop of water on the leaves; examine the plants, and if the pots are filled with roots, give them a shift; this will allow the roots to increase, and the plants to strengthen; when the roots are cramped, it has a tendency to throw the plant prematurely into flower, to its great injury at the proper blooming season. Instead of plunging the pots in the soil, place them in a frame and keep them close and moist; water them occasionally with manure water, to get them into a strong growth; and when they have made shoots of two or three inches in length, take them off, and make them into cuttings. Plant them in a well prepared cutting-pot, and place them in a temperature of about 65°. If the pots are plunged into any material heated to this degree, so much the better; keep them close and shaded, and pot singly when they are rooted. By keeping the old plant growing, two or three courses of cuttings may be obtained; but, with any rare or scarce sort, the following method may be adopted to secure a stock:—After the shoots grow a short time, cut them through in the centre between each joint, and then cut each joint down the middle, thus making two cuttings of each of these joints, with a leaf to each; this leaf must not be damaged in the least, for the success of the process depends entirely on it. Plant these in pots well

prepared, as for sowing the seeds, with the addition of half an inch pure sand at top. Let the cut surface be placed perpendicularly against the side of the pot. Put them in a close, warm frame, and in a short time they will be all finely rooted from the cut surface. Thus, a considerable number may be propagated in a short time from one plant. *S.*

Ranunculuses: *Mary.* Beds of these will now require care. We have seen first-rate blooms produced on beds formed by turf, being placed Grass downward 4 inches below the surface. In this solid substratum the fibres struck, and the consequence was they were independent of the vicissitudes of the weather. Again we have seen first-rate blooms from beds which had been saturated with liquid manure during the winter; but the excessive luxuriance of the plants caused a fearful loss amongst them. Our readers will see that the most proper plan to adopt will be the most inexpensive. Stimulants ought in nine cases out of 10 to be avoided, and no one will be far wrong whether it is in Tulips, Carnations, Ranunculuses, Pinks, Pansies, if they treat them with compost whose foundation is decayed vegetable matter.

Polyanthuses: *B.* Should they show any precocious blooms, by all means remove them, at the same time top-dressing the beds with decayed Melon-bed manure; this will greatly aid the main bloom.

Dahlias: *W.* These should be propagated as fast as they afford shoots. We anticipated a great demand; the slaughter amongst dry roots throughout the country has been immense.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Conservatory, &c.—Some of the specimens planted out in the borders, and also some of the twiners, will soon be starting into growth, especially if the weather should be bright; the soil about their roots ought, therefore, to be in a moist healthy state, and if such is not the case, give two or three liberal soakings with soft water, a few degrees warmer than the ordinary temperature of the house. It is advisable, however, to retard the growth of conservatory specimens as long as it can be done without injury to the other inmates of the house, but in conservatories which have been kept at an average temperature of 45° during the winter many things will now be pushing, and every means should be used to encourage healthy vigorous wood. See that every plant is clear of insects before it commences growth, for it is useless to expect success unless insects are kept under, and they are much more easily eradicated, and with less injury to the plant before growth commences than afterwards. Keep the temperature as low as can be done with safety, admitting air freely on fine days, but avoid currents of cold easterly winds. Young plants of such things as Epacrises, Pimeleas, Polygalas, &c., may now be placed in a nice moist temperature of about 45° at night, and from 55° to 60° with sunshine and air. This will induce early growth, secure a long season, and allow of getting the wood well ripened in autumn. When such things, however, are started into growth at this early season they must be kept near the glass, so as to insure their receiving all the light possible; and unless the plants are in prime condition, with well ripened wood, and all necessary care and attention can be afforded them, it will be advisable to let them remain at rest some time longer. The Boronias are exceedingly useful, especially serrulata; they enjoy a comparatively moist warm situation while in growth, and they should now be placed near the glass in a cool end of the stove. Cold Pits.—See that these are properly covered every night, and their inmates carefully protected from frost; for at this season it is very unsafe to calculate upon mild nights.

FORCING DEPARTMENT.

Pinery.—Considerable difficulty is often experienced at this season in getting the plants to show fruit. Plants intended for fruiting early should have been allowed some two months of rest, during which time the soil could hardly have been too dry, but when the object is to induce them to show fruit the soil should be brought into a moist healthy state. Where the plants are grown on the open bed system, considerable attention will be necessary to secure a regular supply of fruit, for where grown in this way it is not so easy to bestow special treatment upon a portion of the stock as when they are in pots. And I very much question whether, except for large establishments, or where a regular succession of fruit is no object, the saving of trouble and the larger fruit obtained by the open bed system, should induce persons with limited accommodation, and who require fruit at all seasons, to give up the old system. Maintain a moist atmosphere, but discontinue syringing those showing fruit until they have done flowering. Succession plants should not be allowed to become pot-bound before repotting, nor to get too dry at the root, as either error would probably cause them to show fruit prematurely. Keep young stock growing slowly, and give air on every favourable opportunity, to secure close sturdy plants. Let the night temperature average from 55° to 60°, shutting up early on the afternoons of bright days, and allowing the thermometer to rise to 80°, for an hour or two after shutting up, and damping the floors, &c., to cause a general moisture. Figs.—Stop the shoots regularly at the fourth or fifth eye, and keep them closely tied in, and sufficiently thin to admit light and air, so as to get the wood matured, in order to secure a second crop. Where the trees incline to grow too luxuriantly, keep the atmosphere rather dry, and give no more water at the root than may be absolutely necessary to prevent injury to the present crop, for unless short-jointed firm wood can be secured, there is little chance of an abundant crop of fruit. Melons and Cucumbers growing in dung beds will require great care and attention to protect them against sudden changes in the weather, and secure strong short-jointed wood; keep the plants within a few inches of the glass from their first appearance above the soil, and see that the glass is perfectly clean, in order to admit every possible ray of light to strengthen and invigorate the plants. Have a sufficient stock of fermenting materials in readiness with which to renew linings, whenever it may be necessary to do so. Aim at maintaining a night temperature of from 65° to 70°, and admit fresh air on bright days, and whenever it may be necessary to prevent scalding, by raising the sashes on the sheltered side; but do this carefully, as the plants are particularly liable to suffer from currents of cold air. It is, however, very questionable policy to attempt to cultivate very early crops of these in pits heated by fermenting materials, for the saving of labour effected through having a small hot-water tank more than compensates for the expense of fuel; and with such a convenience success is within any careful man's reach, and under the old system this is not always the case. Where Cucumbers are grown in pits or frames heated by manure, keep up a good stock of dung and leaves, ready to be applied as linings whenever they may be wanted. It is a great protection against severe weather, and greatly assists in preventing sudden changes, to thatch the linings with straw hurdles, which protect the bed against cold piercing winds, and greatly economise labour. Keep the plants near the glass, and when possible, give a little fresh air daily, but this should pass through a mat. As soon as the Strawberry plants show for fruit let them be liberally supplied with clear manure water. Keep a low temperature until the fruit is fairly set.

FLOWER GARDEN AND SHRUBBERIES.

Those who have to contend with a stiff soil will find it greatly improved by being lightly forked over when the surface is crusted by frost; and this will also expose the hiding places of slugs, as well as pulverise the ground to a greater extent than would otherwise be the case. The hardier kinds of Roses should be planted at once, and the beds prepared for the Tea and other tender sorts. It is useless to expect Roses to grow vigorously and bloom freely late in the season, unless they are afforded a deep rich soil; and where necessary it should be made so before planting, always taking care to secure perfect drainage, for the Teas, &c., are very impatient of stagnant water at the root. But the great thing to be attended to in connection with this department at present is to provide plenty of bedding-out stock. Every cutting should be put in before March, and a small surplus stock of everything should be provided. It is possible to root cuttings of bedding stock, and to have them ready by turning out time, even if they are not got in before the middle of March; but plants hastily got up, and suddenly checked in their growth, as is necessarily the case when propagation is deferred till late in spring, make a poor figure in the beds for a long time after planting, and in unfavourable seasons and situations are hardly got round in time to cover the beds before they are cut off by the autumn frosts. It is of the greatest importance to get the stock rooted early, so as to allow of getting strong plants without growing them in a high moist temperature.

KITCHEN GARDEN AND HARDY FRUIT DEPARTMENT.

Peas that are above ground should have the soil drawn up on each side of them so as to break the wind, and it is a very good practice to apply the stakes, filling up the bottom on the windy side with Spruce or Yew branches, which form a great protection against cutting winds. Attend to keeping up a succession, by making a fresh sowing as soon as the last appears above ground. Of all our summer Peas, Fairbeard's Champion of England is one of the very best in quality, and it should be planted to succeed the early kinds. Parsnips should be sown on deep, rich soil, if not already done; and Jerusalem Artichokes should also be planted as soon as it can be done. On light, dry soil, Onions may now be sown, as may also Brussels Sprouts, Savoys, Leeks, Parsley, Turnips, Early Horn Carrot, Lettuce, &c.; but on stiff, wet soils, the seeds will be better in their papers for another week or fortnight. Do not neglect to introduce proper quantities of Seakale, Rhubarb, and Asparagus into heat at regular intervals so as to provide a constant supply.

COTTAGERS' GARDEN.

It is a too common practice with cottagers to defer pruning the Vine till late in spring, and of all other fruit trees it is the most injured by late pruning, for unless the wounds have time to heal, when the sap begins to flow in spring the Vine bleeds profusely instead of pushing its buds. Those who are fond of flowers should sow a few pots of annuals, which if carefully nursed, keeping them from frost, giving them a sufficient supply of water, and all the light and air possible, will make very pretty objects in May, and will remain a considerable time in beauty. Indeed there are few more suitable plants for a cottage window than the Nemophilas, &c. If the Parsnip bed is not already sown, this should be done the first favourable opportunity. Sow in drills 15 inches apart, on ground that is in good heart, and which has been dug 2 feet deep, but not manured this season. Look over the autumn planted Cabbages and make good any deficiencies, then stir the soil between the rows to the depth of 3 or 4 inches. Clean old Strawberry beds, and sprinkle a little good rotten manure between the rows, forking it slightly in. Fresh plantations of these may now be made, where this was neglected to be done last August, which is the proper season for the operation.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending Feb. 16, 1854, as observed at the Horticultural Gardens

February.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth. 1 foot deep.	Of the Earth. 2 feet deep.	Wind.	Rain.
Friday 10	13	30.263	30.237	42	32	37.0	39	42	N.	.04
Satur. 11	14	30.273	30.185	40	26	33.0	39	42	N.	.00
Sunday 12	15	30.286	20.157	41	26	33.5	38	41	N.E.	.00
Mon. 13	○	30.611	30.502	38	17	27.5	38	41	E.	.00
Tues. 14	17	30.632	30.342	43	30	36.5	37	40½	S.W.	.08
Wed. 15	18	29.980	29.926	44	29	36.5	37½	41	N.E.	.06
Thurs. 16	19	30.025	30.005	42	34	38.0	37	40½	N.	.00
Average.		30.295	30.193	41.4	27.7	34.5	37.9	41.1		0.18

Feb. 10—Clear and frosty; cloudy and cold; very clear at night.
— 11—Overcast; cloudy; fine; hazy.
— 12—Foggy; clear and fine; uniformly overcast.
— 13—Frosty; cold, with dry air; clear and frosty.
— 14—Sharp frost; fine; partially overcast; rain at night.
— 15—Overcast; densely overcast; clear.
— 16—Cloudy; clear and fine; partially overcast.

Mean temperature of the week, 4 deg. below the average.

STATE OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending Feb. 25, 1854.

February.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 19	45.1	31.7	38.4	11	0.64 in	4	1	3	5	1	7	4	1
Mon. 20	45.3	31.7	38.5	15	0.51	3	3	2	4	1	8	4	3
Tues. 21	46.8	33.1	39.9	16	0.20	2	1	3	5	—	7	6	1
Wed. 22	46.1	33.6	39.8	12	0.29	3	5	6	—	2	6	5	1
Thurs. 23	47.1	32.8	40.0	11	0.44	3	4	1	3	—	7	7	3
Friday 24	46.9	34.4	40.6	15	0.29	3	2	2	3	4	4	5	2
Satur. 25	48.0	33.4	40.7	15	0.92	4	1	5	1	4	6	6	1

The highest temperature during the above period occurred on the 24th, 1846—therm. 59 deg.; and the lowest on the 20th, 1852—therm. 15 deg.

Notices to Correspondents.

Back Numbers: Full price will be given for the following Numbers:—1852, No. 45; 1845, No. 24; 1848, No. 46.

Books: *Young Gardener.* If you have thoroughly studied and mastered the little works on perspective drawing published by Chambers, we should think that, as a gardener, you know enough of the subject, and would now advise you to turn your attention to something else.‡—*M J.* We know of no better catalogues of plants than Loudon's "Hortus Britannicus" and Paxton's "Botanical Dictionary." See, however, that you have the last editions of them.‡ — *A B, Petersfield.* There is no modern book so useful to those who have the management of woodlands of any kind as the last edition of "Brown's Forester," which contains all that you can want to know, and which may be followed even blindly.—*J E.* What are called "Herbals," that is to say, books under this name professing to explain the virtues of plants, are all rubbish. Books on Materia Medica, or such works as "Christison on Poisons," or "Lindley's Flora Medica," or "Medical and Œconomical Botany" are the only safe guides.

Botany: *Ambitious.* You cannot dispense with a good magnifying glass. If you attempt to study vegetable anatomy, on which physiology is founded, you ought to employ the dissecting knife and achromatic microscope, unless you are content to see with other men's eyes, in which case you need not have either.

Cantua dependens: *Sub.* It is a native of Peru.

Cedar of Lebanon: *C W S.* Many thanks. A kind correspondent had previously sent us a piece of a limb, full 4 feet long.

Conservatories: *M J.* Excuse our saying that your inquiries should be addressed to an architect or hothouse builder. To reply fully, requires an amount of space not at our command. As a general rule, span-roofed houses are better than lean-to's; and 4-inch pipes are better than any other size. The nursery to supply your conservatory need be nothing more than a range of low pits.

Escallonia macrantha: *R W.* It stands ordinary winters well about London unprotected, but we find that the late severe weather has somewhat injured a plant of it in the Garden of the Horticultural Society. It may, nevertheless, be considered hardy.‡

Fertilising Powders: *Jas Biggar.* We have no faith. The experiments tried here in the south, under our own eye, were not attended by any satisfactory result. As to steeping, &c., you surely do not believe in that. It might as well be said that a man may be fed by rubbing his skin with dough once a year.

Galvanised Iron Trellises: *Diss.* In the case of various fruit trees, and likewise some kinds of ornamental plants, galvanised iron wires have occasioned dead patches, and gum, where young shoots were in contact with them, and such as we have not observed in shoots trained to ungalvanised iron wire. The latter should, however, be painted, otherwise its rust will prove injurious. If galvanised wire were painted, its bad effects might be greatly lessened. When not painted, it supports, by attraction, a large magnet; but when well painted, it loses this power.‖

Glass: *Dido.* By all means use Hartley's rough plate, which, if the right kind, will doubtless be found to answer your purpose.‡

Horticultural Society: *H R M.* The admission fee was reduced from 6*l*. 6*s*. to 2*l*. 2*s*. some years since.

Insects: *Ignoramus.* Your vermin, as you may well call them, are crab-lice (Phthirus inguinalis). *W.*

Oaks: *S W B* will feel obliged by some of our correspondents informing him what will be the best nurses for Oaks in a plantation, in a clay soil, as he fears Larch may not succeed on clay; and at what distances Oaks and nurses should be planted. The spot of ground in view has been for some years left to nature, and on it many straight and vigorous self-sown plants (Oak) have sprung up, nursed by closely growing Hornbeam, also self-produced. The land is just drained.

Names of Fruits: *Iota.* Most probably the Ord Apple. Observe whether the fruit is not peculiarly marked with ferruginous specks.‡—*J R.* Buchanan's Spring Beurré and Catillac, the latter is a stewing Pear.‖

Names of Plants. We have been so often obliged reluctantly to decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*W M.* They are not in a state to be named. One looks like Hippeastrum vittatum.—*J C Atkinson.* Plants in such a state cannot be named. It is some Carex.—*H T.* Plants out of flower *cannot* be named. Yours looks like a bit of Senecio Petasitis, but it may be something else. When plants become so filthy as yours, from neglect, they cannot be cleaned, but ought to be burnt, in order that others may not be infected.—*J A F.* Hoitzia coccinea; how did you manage to get so beautiful a specimem of so shy a plant? Mere leaves cannot be named.

Vines: *J J P.* There is no reason why your Vines should not be planted inside your house, and many why they should be, unless you have a low cold soil, in which case the roots should be in a raised sloping border on the south side. We see no advantage in training the Vines downwards. Do not overdose your border with strong rank manure, and your Vines will not make too much wood. It is essential that the Vine border should be secured against cold; if artificially warmed a *little*, so much the better.

THE LONDON MANURE COMPANY'S WHEAT MANURE, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. EDWARD PURSER, Sec.
Bridge Street, Blackfriars.

PERUVIAN GUANO, the guaranteed import of Messrs. ANTONY GIBBS AND SONS, Lobos Island Guano, Superphosphate of Lime, and all Artificial Manures, Linseed and Rape Cakes, &c.—WM. INGLIS CARNE, 10, Mark Lane, London.

ARTIFICIAL MANURES, &c. — Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and dispatch.

Gentlemen desirous of receiving instructions in Chemical Analysis and Assaying, will find ample facility and accommodation at the College.

PEAT MOSS CHARCOAL, AND OTHER MANURES.—The Undersigned are appointed sole Agents by the Peat Moss Charcoal Company, for the sale of this valuable fixer and distributor of ammoniacal matter.

Also on Sale, Peruvian Guano, Superphosphate of Lime, Gypsum, Nitrate of Soda, Bone-Dust, Sulphuric Acid, and all other Manures of known value.—Apply to MARK FOTHERGILL & Co., 204A, Upper Thames Street, London.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7*l.* per ton; Superphosphate of Lime, 7*l.*; Sulphuric Acid and Coprolites, 6*l.*

Office, 69, King William Street, City, London.

N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

SUPERPHOSPHATE OF LIME MANUFACTURED BY MR. J. C. NESBIT'S IMPROVED STEAM MACHINE. The following is the analysis of an average sample.

"College of Chemistry, Agriculture, and General Science,
38 & 39, Lower Kennington Lane, London.

Analysis of Sample of Superphosphate of Lime from Mr. Jolliffe:

Moisture		13.97
Organic Matter, &c.		21.98
Silica		6.05
Phosphate of Lime		35.27
SOLUBLE	16.10	
INSOLUBLE	19.17	
Sulphate of Lime, &c....		22.73
		100.00
Nitrogen (equal to)		1.16
Ammonia		1.41

(Signed) J. C. NESBIT."

Delivered free at a Wharf or Railway Station in London at 8*l.* per ton.—Apply to E. Y. JOLLIFFE, 70, Mark Lane, or the Works, Lavender Dock Wharf, Rotherhithe.

Agents wanted in all the principal towns.

WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

	£	s.	d
Patent Pump	1	15	0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing	3	0	0

Larger sizes if required.

The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,
8, CRESCENT, JEWIN STREET, LONDON.

Every description of Machinery for Raising Water; Fire Engines, &c.

An Illustrated Book sent on application post free.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.

MESSRS. BURGESS AND KEY, as Mr. PARKES' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.

103, Newgate Street, and 52, Little Britain, London.

ANTHONY'S PATENT AMERICAN CHURN.—Extract from the Royal Agricultural Society's Report of the trial of Churns at the Gloucester meeting in July last. "In this trial the American Churn not only maintained its character in producing butter rapidly, but in producing a greater quantity from the like amount of cream." It made from 4 quarts of cream 4 lbs. 6 oz. of butter, being 8 oz. more than any of the other Churns from the same quantity and quality of cream. Price Lists of Churns and Implements by the best makers sent free, and Illustrated Catalogues on receipt of eight postage stamps. BURGESS & KEY, 103, Newgate Street, and 52, Little Britain, London, who have always a large stock of Steam-engines, Ploughs, Harrows, Diggers, Waggons, Carts, Threshing and Dressing Machines, Mills, Oat and Grain Bruisers, Oilcake Breakers, Reaping Machines, Haymakers, Horse-rakers, Turnip Cutters, Liquid Manure Carts, Parkes' celebrated Steel Digging Forks and Draining Tools, Pumps for Manure, Farm Fire Engines, and for Garden Purposes, &c. &c.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

PATENT ROOT GRATING MACHINE.

BUSHE & BARTER'S PATENT ROOT GRATING MACHINE, Manufactured and Sold by ALEX. SHANKS & SON, Arbroath, Forfarshire, from whom particulars, with prices, may be had.—Arbroath, Feb. 18.

HOSE PIPING.

TO ENGINEERS, AGRICULTURISTS, GARDENERS, SHIP-CHANDLERS, AND FIRE BRIGADES.

WAITHMAN'S PATENT FLAX TUBING (1-inch to 3-inch diameter) will sustain a greater pressure, is lighter, less bulky, will wear longer, and is about 60 per cent. cheaper than the leather hose pipe, and about half the price of either the gutta percha or the seamless hose. It is prepared so as to be anti-rot.

Manufactured only by WAITHMAN & Co., 36, High Street, Manchester.

LAND DRAINAGE.

MR. BAILEY DENTON'S TABLES OF COST, &c.; price 1*s.* 4*d.* Sold by METCHIM, Parliament Street.

MR. BAILEY DENTON'S WORKMAN'S A LEVEL, price 1*l.* 10*s.* Sold by JONES & Co., High Holborn, London.

LAND DRAINAGE.

MR. JOHNSON begs to inform Landowners, Agents, &c., that he is prepared to undertake the Drainage of Land, either by Contract or by a small charge per acre for planning and setting out the Drains, taking Levels, superintending the Work, &c.

Mr. J. has been for several years constantly employed as a Drainer in most of the Counties in England, and can give numerous satisfactory references. Plans for Tilery Buildings, and every information on Drainage can be obtained at the Office, 12, Abingdon Street, Westminster.

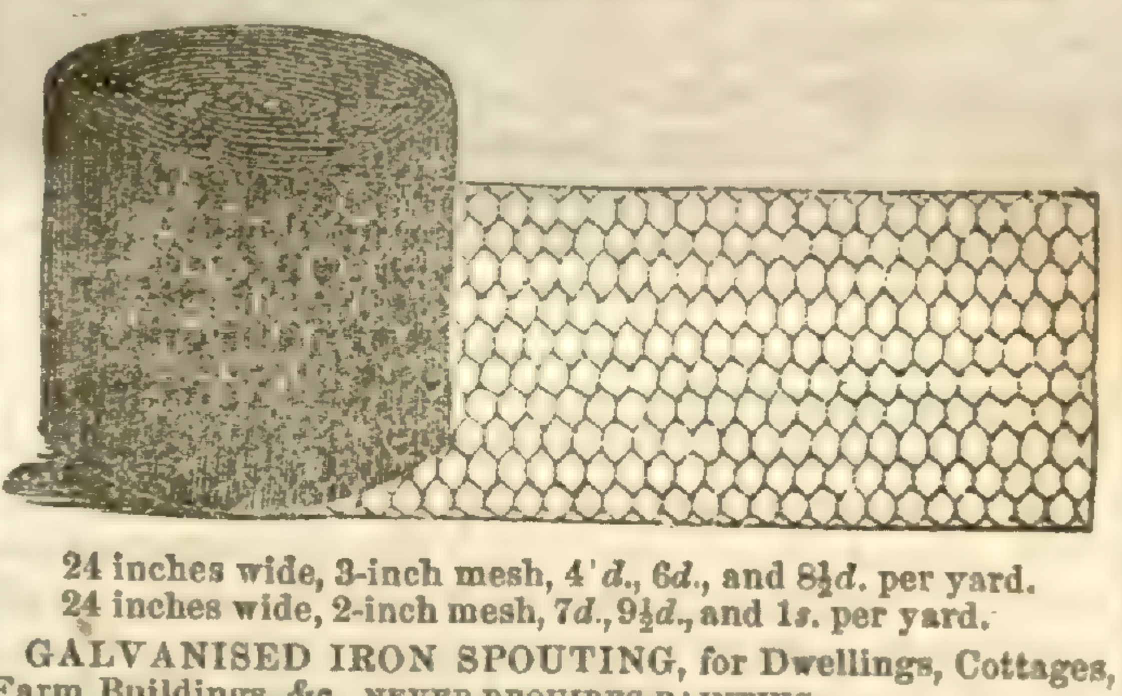
WEIR'S DRAINING LEVEL,
PRICE 30*s.*

These Draining Levels have lately been greatly improved; they have stood the test of five years' use, during which upwards of 1000 of them have been sold. They are so simple that any labourer who can read can use them. They require no graduated staff, the index telling at once the rise and fall in inches without any computation.

EDWARD WEIR, Agricultural Engineer, 16, Bath Place, New Road, (6 Doors West of the Hampstead Road), Removed from Oxford Street.

TANNED NETTING, for the protection of Fruit Trees from frost, blight, and birds, and for the security of fresh sown seeds, either in Gardens or Fields, at 1*d.* per square yard; 200 yards, 14*s.*; 500 yards, 30*s.*; 1000 yards, 50*s.* Scrim Canvass, for Wall Fruit.—At EDGINGTON and Co.'s, 17, Smithfield Bars, City, and Old Kent Road, Southwark, where may be seen erected Emigrant Tents in great varieties, on their latest improved principles, and also at Brunswick Street, Poplar, near the East India Export Dock.

H. J. MORTON AND Co., 2, Basinghall Buildings, Leeds.—GALVANISED GAME AND POULTRY NETTING, very strong and neat, NEVER REQUIRES PAINTING.



24 inches wide, 3-inch mesh, 4½*d.*, 6*d.*, and 8½*d.* per yard.
24 inches wide, 2-inch mesh, 7*d.*, 9½*d.*, and 1*s.* per yard.

GALVANISED IRON SPOUTING, for Dwellings, Cottages, Farm Buildings, &c., NEVER REQUIRES PAINTING.

Galvanised Iron Liquid Manure Pumps, Water Cisterns Troughs, and all kinds of Iron Work, Asphalte Roofing Felt, &c.

TO LANDOWNERS, SOLICITORS, ESTATE AGENTS, ETC.

THE LANDS IMPROVEMENT COMPANY, incorporated by special Act of Parliament, 1853, having perfected their organisation, are prepared to receive applications for the execution of improvements, under the provisions of their Act.

The Act extends to England, Wales, and Scotland; and empowers persons in the actual possession of lands, or in receipt of the rents, such as tenants for life, trustees, bodies corporate, incumbents of benefices, mortgagees in possession, guardians of infants, &c., to effect substantial improvements on their estates, and to convert the outlay on such improvements into a terminable annuity or rent-charge of from 14 to 25 years, at will.

The Company, acting under the supervision of the Inclosure Commissioners, will undertake and execute improvements, or will supply the capital to landowners preferring to execute improvements themselves, or will grant the powers of their Act to landowners seeking merely to charge the inheritance with the outlay on improvements from their own funds.

The Agricultural Works of Improvement particularly specified in the Company's Act, are:—

1. The Drainage of any Lands by any such means as the Inclosure Commissioners shall approve.
2. Irrigation, and Warping of Lands.
3. Embanking of Land from the Sea, or Tidal Waters, or Rivers, in a permanent manner.
4. Enclosing or Improving the Drains, Streams, or Water-courses of the Land, under the Inclosure Commissioners.
5. Reclamation of Land lying waste.
6. Making Farm-roads to the extent of one-half of the outlay for such roads.
7. Clearing Lands.
8. Erection of Farm-houses, and other Buildings required for farm purposes to the extent of three-fourths of the outlay for such Farm-houses and other Buildings.

In effecting the above Improvements there may be erected any Engines, Machinery, Engine-houses, Mills, Kilns, Sheds, Yards, Shafts, Tanks, and Reservoirs, Pipes, Conduits, and Water-courses for Irrigation, Tram-roads and other ways, Bridges, Weirs, Sluices, Flood-gates, and Hatches.

For Forms of Application and further Information apply to the Hon. W. NAPIER, Managing Director, 2, Old Palace Yard, Westminster, London.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

BAILY'S ROUP AND CONDITION PILLS FOR POULTRY.—This remedy has been extensively tried with uniform success, and is offered to amateurs and the public with the greatest confidence. It will effectually overcome that disease which has hitherto been the bane of the poultry-yard, and destroy that apprehension known to all poultry keepers, when a favourite and valuable fowl is seen to droop. It is inestimable for poultry returning from exhibitions, and greatly facilitates moulting.—Sold, with full instructions for use, in boxes containing 50 pills, by JOHN BAILY, 113, Mount Street, Grosvenor Square, price 3*s.* per box, or by post 3*s.* 4*d.* "Fowls, by Baily," the most useful and plainest treatise of the day; price 2*s.*, by post 2*s.* 6*d.*

Baily's Registered Fountains, universally adopted and approved. Drawings and particulars, by post, on application.—113, Mount Street, Grosvenor Square.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1*s.* 6*d.* per yard run, of E. T. ARCHER, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey.

STEPHENSON AND PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

CLOVER SEED.

GENUINE NEW CLOVER SEED *may be obtained of the undersigned. Prices (according to market and quantity required) will be forwarded on application.*
JOHN SUTTON & SONS, *Seed Growers, Reading, Berks.*

The Agricultural Gazette.

SATURDAY, FEBRUARY 18, 1854.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY,	Feb. 22	—Agricultural Society of England.
THURSDAY,	— 23	—Agricultural Imp. Society of Ireland.
WEDNESDAY,	March 1	—Agricultural Society of England.
THURSDAY,	— 2	—Agricultural Imp. Society of Ireland.

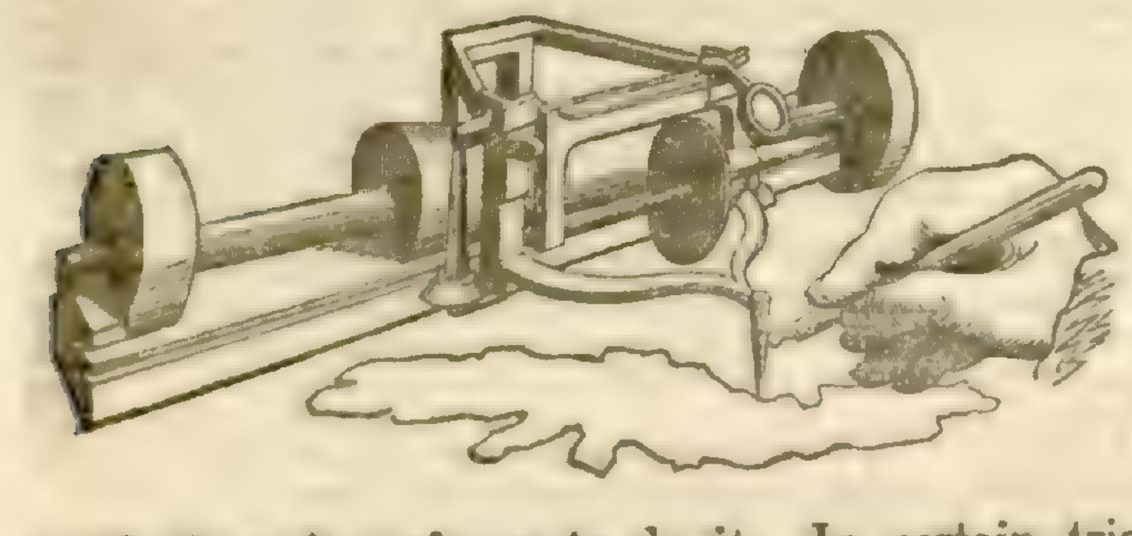
IN reference to the subject of CATTLE VALUATION, we may mention that we have procured the carcase weight of the white short-horn heifer shown by Mr. AMBLER, at the late meeting of the Smithfield Club, at Baker Street. The particulars are as follows:—

No. 75. Age, 3 years 11 months; length, 5 feet 4 inches; girth, 9 feet; weight by CAREY's gauge, 106 stones—by EWART's gauge, 108 stones, 113 stones, and 117 stones, when read as fat, very fat, and extra fat, respectively. The actual weight was 1615 lbs. or 115½ stones. And this result appears to be so corroborative of our former remarks on the merits of EWART's cattle-gauge, that we give it this prominent place in our columns.

THE repeated discussion of THE GUANO QUESTION in Parliament, by our Agricultural Societies, and in the public prints, must, we should think, ultimately open the eyes of the Peruvian Government to its true interests. If that should happily be the case, then the temporary stoppage of supplies will be an inconvenience gladly borne for the benefits derived from the excitement it has produced. On last Tuesday Colonel BLAIR called the attention of the House of Commons to the subject. His speech well deserves a perusal for the evidence it presents on the great and increasing agricultural importance of the subject, and on the careless style in which the Peruvian Government appears to deal with it. This latter aspect of the affair is referred to by Mr. CAIRD in the *Times* of last Thursday. He tells us that the facilities at the islands for loading are no greater than they were seven years ago, when the exportation was about a tenth what it is at present; and upwards of 80 days are now spent in getting a cargo, which under proper arrangements would not occupy a week. "This delay can be no advantage to the Peruvian Government, and an open trade would be immediately followed by arrangements for expediting the loading of ships." It is satisfactory to learn from Mr. CARDWELL and Sir J. GRAHAM that every possible influence which can legitimately be brought to bear upon the Peruvian Government by our own, has been and will continue to be so directed. Among them, of course, is continued effort in the search after supplies elsewhere—and Sir J. GRAHAM referred to instructions in connection with the subject which had been issued to our admiral in the Pacific, and to the prospect of a successful issue to the search which is being conducted in the Eastern seas. To this and to the home manufacture of competing fertilisers, Mr. CAIRD addresses himself in his very interesting letter published in the *Times* of Thursday. He does not however, neglect to urge the propriety of continued remonstrance, addressed to the Peruvian Government, illustrating the probability of its success by the

experience of the United States' Government, for "we know that the effect of American remonstrance somehow or other has given largely increased supplies there, during the very time that ours have diminished. At the meeting of the Royal Agricultural Society yesterday, Mr. Pusey and the Duke of Richmond publicly stated their intention of availing themselves of this, by ordering the purchase of a cargo through American agency, to be delivered in this country."

The subjoined woodcut will have been noticed by many of our readers in the advertisement of Sang's Platometer, which it is intended to represent. The instrument professes to indicate the number of square inches in any plan round the edge of which the pointer has been carried; and this it *does* as



perfectly as it professes to do it. In certain trial cases, quoted in a published account of the instrument, the area of a figure was ascertained successive times by scale and calculation, and by the platometer, and the results given by the latter method varied less among themselves than those given by the former, showing that the accuracy of the instrument exceeds that of the scale.

The instrument itself has immediate relation to a very important department of rural economy, and is besides such a remarkable instance of simple and beautiful design that we must endeavour to bring it more pointedly under the notice of our readers. It consists essentially of a framework on rollers of such breadth and weight that the whole will move to and fro only parallelly to itself. Between these rollers is slung a cone, whose axis of revolution is horizontal, and exactly transverse to the to-and-fro motion of the framework — it is, in fact, the axis of the rollers, and revolves with them. Pressing against the surface of this cone is a small wheel kept close against it by a spring; this wheel is part of an independent portion of the instrument, so connected with it that it and the rest of its parts may be freely moved to and fro between the rollers, always pressing against the conical surface, at whatever part of that surface it may be. When the whole instrument is moved "to" the operator, the revolution of the cone gives a + or *positive* motion to this wheel; when moved "from" him, the wheel suffers what in relation to the other may be called a — or *negative* motion. Now let it be observed that the amount of motion suffered by the wheel either way depends not only on the number of inches to or fro of the whole instrument upon the plan—not only on the *angular* motion of the cone so effected, but also upon the position which it occupies on the conical surface; on the distance, in fact, at which it stands from the apex of the cone in question. For the amount of *surface* of the cone which passes before the wheel depends not only upon the *angular* motion (alike for all parts of the cone together), but upon the thickness of the cone at that particular place; and this, again, is directly proportioned to the distance of that place from the point or apex. It appears, therefore, that the number of degrees on the rim of the wheel, which may have passed any fixed point beside it, depends upon two things—the distance (d) of the wheel from the apex of the cone, and the breadth (b) of the traverse made by the whole instrument on the paper; it is, in fact, therefore, directly proportioned to the product $b\,d$ of these two elements. But the product of these two elements represents the *surface* whose length is d and breadth b; it only needs, therefore, that by a trial process the rim of the wheel be graduated to read square inches, and we shall have in it a contrivance by which, in reference to any rectangular figure (one pair of whose sides are parallel to the axis of the cone, and the other pair placed, one at the apex of the cone and the other anywhere nearer its base), its area in *square* inches may be ascertained by simply drawing the wheel along the edge of this its further transverse side: the wheel, or a pointer connected with it, being run along this further transverse side, the graduations on its rim will indicate the number of square inches on the figure in question. Now it is obvious that all figures, however irregular, may be considered as made up of a series of exceedingly narrow rectangular pieces lying parallelly side by side. And if any figure be placed between two parallel lines, drawn so as that they shall just touch it both at top and bottom, and a third line be drawn at one side of the figure, at right angles to these parallel lines, then the *outline* of figure or plan will be divided into two portions at the points of its contact with the parallel lines, and its *area* may be considered as the difference between two, one larger and the other smaller, both of which have three sides in common—these three rectangular lines which have just been drawn—the fourth side being in the one case the right half of the outline of the figure, and in the other the left half of the outline of the figure. Conceive these three lines so drawn as that the two parallel ones shall be parallel to the axis of the cone of the instrument, and the third transverse one shall be just in the position of the apex of the cone, then we say that on drawing the pointer along the irregular edge of the fourth side of the larger figure, from the place where it touches the upper parallel line to the place where it touches the lower parallel line, you will have in the indications furnished by the graduation of the wheel a record of the area of the *sum* of those narrow rectangular pieces into which the *whole* figure (with its three rectangular sides) may be divided. Now observe the effect of tracing the pointer round the irregular outline of the other half of the plan, which lies *within* this larger figure whose area has been recorded—the motion of the cone is now negative, and a little consideration will convince you that the effect will be to subtract, from the result recorded of the *whole figure*, so much as corresponds to that part of it, confined within the three rectangular lines*, which lies *outside* of the plan whose area is wanted. So that, on reaching the starting point, the rim of the index wheel will indicate just the area of the plan round whose irregular outline the pointer has been carried. These remarks must suffice in reference to the exceedingly beautiful and simple principle on which the successful operation of the instrument depends; we believe they will be intelligible to any careful reader, and we are sure he will agree with us that Mr. Sang has displayed most admirable ingenuity in the contrivance of it. We add in another column his own reference to its construction and operation.

To our report, at p. 92, of the discussion last week before the Central Farmers' Club, on the present method of ascertaining the Corn Averages, we have to add that a deputation from the club has had an interview with Mr. Cardwell, at the office of the Board of Trade, for the purpose of urging the resolution of the club upon his attention. That aspect of it which relates to the injustice of the plan at present adopted was at once admitted. The object being to ascertain the average prices of agricultural produce for the purpose of regulating the money payments due from the farmer, whether in lieu of tithe or rent, it is obviously the prices to the farmer that should be recorded, but this is not the case. The first sale is not the only sale which is registered; the same corn may be resold more than once, and the higher value acquired at each change of ownership thus affects the average; and the payments of the original owner in his dealings with the rector or the landowner are made according to the average of all the prices it has borne, although his receipts were according only to the lowest of them Mr. Skelton, of Lincolnshire, at the interview with Mr. Cardwell, put this very clearly. He knew instances during the past autumn, where cargoes of Wheat had been sold three or four times over, and each time there was an advance of 4*s*., 6*s*., and even 8*s*. a quarter. It is plain that. the profits of these repeated sales not being agricultural profits, they ought not to affect averages on which agricultural payments depend. That they do so arises out of the present imperfect way of taking the averages. The imperial average price of the period is raised by such transactions at the expense of the occupiers of the soil, although not a fraction of the rise in price does, in such instances, go into the pockets of these occupiers.

Not only, however, is it an average of prices which the farmer has not realised that stands for the imperial average price of corn—but it is an average of a very small fraction indeed of all the English corn that is sold in the country. Very often no sales at all are recorded, although many sales have been made, and very often indeed is there nothing more than an inconsiderable fraction of the whole reported. Injustice arises in the first place, then, from reporting much of it more than once; and in the second place, by reporting a great deal not at all. The evil and the injustice were obvious enough; the difficulty was to remedy them, and on this point there was by no means unanimity of opinion. Mr. Pile, of Winchester, suggested the enforcement of a monthly return of sales from all growers of corn, and from them only; this enforcement to be guaranteed by the infliction of a small penalty in the event of non-compliance. This Sir J. Shelley objected to—referring, however, as we understand, rather to the enforcement of general statistical returns than to a mere report of sales. The deputation retired without any agreement having been arrived at on the plan by which their object could be attained; but a great step, we are sure, towards that attainment was taken by them when the injustice and the evil complained of were so fairly stated to the country, and so frankly admitted by the Minister.

The Central Farmers' Club are well fulfilling their duty in discussing points of such practical importance as this, and in urging them upon the attention of Government.

* It is easy to see that the three rectangular lines are merely imaginary ones, and only used for explaining the operation of the instrument.

PERUVIAN GUANO.

In a recent Paper I observe an article signed "T. G.," expressing an opinion that Peruvian guano consists of partly decomposed vegetable matter. "T. G." is a well known initial for "Travelling Gentleman," but your theoretical correspondent is evidently not one of that class, although apparently a man of experiment, and of an inquiring mind. I have therefore much pleasure in setting him right in this particular, having practically studied the question as far back as the year 1840, before a single cargo of this precious manure ever came to England, being one of the first to make a personal and scientific investigation of the matter; examining in fact all the deposits on the west coast of South America previously to "T. G.'s" shutting up his grains of Mustard seed in the box; and, however I may fail in shaking his faith, I have no hesitation in saying that not the least particle of vegetable matter exists in the composition of Peruvian guano in its natural state, although no doubt a good deal of adulteration may take place after it gets out of the hands of legitimate importers. In the first place, upon this extraordinary coast for several hundreds of miles it never rains; all is barren—not a blade of Gra s is to be seen. Not an insect exists, or even a bird, save the sea birds that deposit this rich manure, and which subsist wholly on fish, of which myriads abound along the coast all the year round; these birds continue fishing by day, and return to roost upon the adjacent rocks and islets at night, where they cluster so thickly that the whole surface is densely covered, and their deposits in layers become partly baked by the heat of their bodies, and completely so by the action of the sun during the day time; thus layer on layer is formed, each layer being distinctly visible in section, like the leaves of a book, from the top to the bottom of the cliffs formed by the workmen in the act of removing it for shipment; these cliffs upon the Chincha Islands are upwards of 100 feet in height, bearing a close resemblance to the sand cliff pits at Erith, although of far greater extent.

My attention was first called to this interesting subject in the month of October, 1840, whilst making the first voyage by steam down the coast, from Valparaiso to Callao, in command of the Pacific Steam Navigation Company's steam-ship Peru, when we ran close along shore, and fell in with several vessels laden with guano, bound to Arica and Islay, and ascertained that they had loaded their cargoes at the Pavillon de Pica and the Chincha Islands; the former a remarkable, high, projecting crag, in the form of a sugar-loaf, jutting out from the coast to the southward of Iquique, and the former a group of islands near the port of Pisco. I felt very curious and desirous of examining these places, and to get all the information I could from parties I met with, trading in the article, as to the supply and demand, &c.; but no one seemed to know much about it, either statistically or geologically—some affirming it to be a mineral production, others the dung of sea fowl—so I took the earliest opportunity that presented itself to judge for myself, and from time to time visited these famous guaneros. Upon first landing, and beholding the immense masses of this seemingly inexhaustible material, it was difficult to bring the mind to suppose that the ponderous cliffs of apparently red and grey soil, embracing so many millions of tons in extent, were really the excrement of birds. However, learning from the working men and intelligent foremen that the skeletons and feathers of sea fowl were occasionally dug up at great depths, together with eggs converted into sal ammoniac, and taking into consideration that it never rains on this part of the coast, seeing also the immense shoals of fish and flocks of sea birds that abounded along the shore, I at once concluded that it must be the dung of sea fowl, the accumulation of ages. About this time Mr. Bland, an English merchant, with whom I had the pleasure of becoming acquainted, together with M. Barroliêt, a French gentleman, had obtained permission from the Bolivian Government to send a cargo of guano to England, which was shipped at Pakeke, a headland to the northward of Cobija, the principal seaport of Bolivia, in a vessel called the "Charles Eyes," Captain Moss, and landed in Liverpool in the year 1841. The extraordinary price realised by this cargo stimulated other parties to make application to the Peruvian Government for obtaining a contract. The first party who obtained a contract were not allowed to carry it out, although I believe it was drawn up, signed, sealed, and delivered in due form, as

the Government discovered that they had made a bad bargain, and brought the lever of the old Spanish law of "lesion enorme" to bear upon it, by which it was declared annulled, and a new contract was made with Messrs. Quiros and Allier, on much better terms for the Government. Large quantities were sent from the Chincha Island, and the British farmers not yet being practically aware of its fertilising qualities, the market became overstocked, and the bills drawn against the cargoes were returned to Lima protested. The cargoes were ultimately sold at a great sacrifice, and thus the means of its introduction were brought about, to the ultimate advantage of all parties. In the meantime, before this disastrous intelligence had reached the coast, and when the shipment of the article was going on pretty briskly, the farmers of Ariquipa began to be fearful that their stock of guano might become exhausted, and sent a deputy to Lima to expostulate with the Government, when Señor Villa was sent to survey the Chincha group, and gave in an estimate (as I was informed) of from 40 to 50 millions of tons existing on these islands. I examined this group myself in 1844, and estimated the quantity remaining on the northern island alone at 10 millions of tons, although it had been worked by the Indians from time immemorial, and a large quantity had been shipped to Europe, besides the immense amount that had been used by the Peruvian farmers since the conquest. At this time the cliff of pure guano lying in a north-west and south-east direction, where it had been worked in upon from the north-west edge of the rocky basement towards the middle ridge of the island, I measured to be 85 feet perpendicular; and I made a calculation, according to the declivity of the hill, that by the time the workings reached the highest part of its summit, the "varanca," or cliff of guano, would be 100 feet in depth to the basement. I did not examine the two islands to the southward, merely landing upon them, as their deposits at that time had not been touched; I, however, considered that the supply upon these, and other islands and points of land discovered by me, might be said to be inexhaustible, at least to the present generation; in which opinion Señor Don Francesco de Rivera, the late chargé d'affairs of Peru in London, who was entrusted with my plans and estimates of the new guaneros discovered by me, as I was informed, quite coincided. This gentleman made a regular survey of the Chincha group, and found, by boring, that valleys existed 120 feet in depth in some parts of the islands. I am, therefore, of opinion, with all due deference to Admiral Moresby's report, that Mr. M'Intosh may be mistaken in his calculations; for without a boring rod, and partitioning off the general surface of the islands, bestowing likewise much care and time, aided by proper instruments, in the calculation, it must be very difficult to arrive at correct sections in every part.

However, independent of these immense deposits on the Chincha group, the Lobos, Guanape, Huaura, and other islands upon the north-west coast of Peru, were estimated by me to contain some five millions of tons, whilst the Pavillion de Pica, Chipana, the Huanillos, Punta Lobus, Punta Coles, Santa Rosa, and other known guaneros on the south-west coast, contain some eight or nine millions of tons more; therefore the holders of Peruvian Bonds need be under no apprehension of their guarantee falling short, whilst the demand for this invaluable manure continues, as I firmly believe, with Señores Villa and Rivera, that it is practically inexhaustible to the present generation. I am, sir, your obedient servant, *Geo. Peacock, F.R.G.S., formerly Marine Superintendent of the Pacific Steam Navigation Company in the Pacific.*

Home Correspondence.

Royal Agricultural Society's Meeting, Feb. 8.—I request you will allow me to correct the report in your Paper of an observation made by me at the weekly Council of the Royal Agricultural Society on Feb. 8, as it might otherwise lead the farmers in the north to think that I had made an incorrect statement. I did not say that the farmers of Scotland never purchased oilcake without having had it analysed, which would have been absurd; but, in reference to "cheap" articles, offered for sale by parties in whom they had not implicit confidence, the farmers had the same means of guarding against trickery in oilcake as in guano, viz., chemical analysis, by the aid of which the sale of adulterated guano had been very nearly put an end to in Scotland. *James Caird, 9, Little Ryder Street, St. James's, Feb. 11.*

Dutch Barns.—I happen practically to know that those buildings possess great advantages. In the wet summer of last year (1853), the immense benefit of these barns was fully tested and appreciated by their fortunate possessors. Tons of hay were spoilt in different parts of the country from the want of proper thatching in the rick-yards, indeed it was almost impossible to get hay in good condition this summer; in a good substantial hay barn, built with brick pillars, and a tile roof, you have always at hand the best and most lasting thatch possible. There is no uncovering a half-finished stack, or pulling off wet thatch some doubtful afternoon, to allow another cart-load of hay to be added to the sweating mass below, and often before half the load was "teamed," down came the rain in a torrent; on the other hand, drive your cart up to the side of your Dutch barn, throw a cloth over the top, and when the storm is over, team the load into your barn. I have been accustomed to see the hay off 50 acres housed in this way for upwards of 20 years, and I have no doubt the original expense of the barn has been paid over and over again in the one item of thatch saved, alone. Another great advantage, the hay can be trussed in any weather. *A Tenant Farmer.*

Stoppage of Drains.—The substance which "J. P." found at the outlet of his drain was in all probability an accumulation of the roots of Mangold Wurzel or Turnip, which had found their way into the smaller drains (round the inside of which they form a sort of net-work), and after becoming detached from the side of the pipes were washed down to and stopped by the iron grating which "J. P." had placed at the end of his drain. *R. C.* [We have many other instances corroborating this idea presented us by our correspondents.]

Profitableness of Cattle Feeding.—In reply to the queries of your correspondent "Z.," I beg to suggest that he again peruse my statement of the 24th Dec. I then attempted, and I think succeeded in showing that it was not advantageous to supply more than a moderate quantity of extra food for fattening. In one experiment 4 lbs. of Rape-cake and 2 lbs. of Bean-meal were supplied during October, November, and to the 20th December; from this time to the close of January, 3 lbs. in addition of Rape-cake, rich in nitrogen and in oil, were given, without any perceptible increase in the gain of weight, but with a marked effect on the richness of the manure, as shown by analysis also. I now beg to correct a gross mistake "Z." has made, in introducing 35½ trusses of hay at a cost of 80*s.* per ton into my materials. My fattening cattle are not supplied with a single pound of valuable hay. On referring to my tabular statement, it will be observed that for bulky food, besides Turnips, shells of Oats or rough seeds (of which I purchase a sack of 80 lbs., at from 4*d.* to 6*d.*, from the miller in my neighbourhood), and 7 lbs. of inferior hay were used. This consists of the gathering at hay time of the discoloured and inferior portions of hay from 15 acres of meadow, together with what is collected from amongst trees, &c. I cannot better define my estimate of its value than by stating I prefer, and use to a much greater extent, the like weight of Oat straw, which I purchase at 1*s.* 8*d.* to 1*s.* 9*d.* per cwt., equal to 33*s.* 4*d.* to 35*s.* per ton. In place of "Z.'s" item for hay, 3*l.* 18*s.* 5*d.*, I beg to substitute for rough seeds and inferior hay supplied for 10 beasts during one week, the very different sum of 10*s.* 2½*d.* Taking "Z.'s" estimate of Turnips at 12*s.* per ton, and his other calculations, the comparison will be for—

	£	s.	d.		
Mr. M'Culloch's treatment					£3 9 9
Mr. Hope's do.					£4 0 6
"Y.'s, on his own Turnips ...	1	2	6	together	£2 13 1½
Seeds and straw	0	10	2½		
4 lbs. Rape-cake, & 2 lbs. Bean-meal	1	0	5		
"Z.'s," according to his own showing					£5 0 11

Now Mr. M'Culloch estimates the value of Turnips at 6*s.* per ton, whilst "Z." computes them at double the price, namely, 12*s.* per ton; a difference which will materially affect the comparison. As Mr. M'Culloch's treatment has been so prominently noticed, I beg to offer a few remarks on it. From the statement published, it appears that the gain per week on the whole 65 under treatment, is only 6 lbs. each of beef, equal to 10½ lbs. gross. Now, I have no hesitation in saying, that since I began the practice of weighing my fattening stock—a practice which I strongly recommend once per month, early in the morning before meal-time—I cannot call to mind, or find in my note-book, an instance of any lot of cattle when once fairly started, and under regular treatment for fattening, not having shown a decidedly greater gain in some instances; and for a length of time I have reached 15 lbs. gross per week on the average, and I do not feel satisfied if I do not average nearly 14 lbs. per week each. Mr. Hope, with an additional quantity of Turnips as compared with Mr. M'Culloch, shows a gain of 13¾ lbs. each per week. *Y.*

What has Science done for Agriculture?—All the letters of the alphabet, birds of prey, and numerous other signatures, real and assumed, are ready, doubtless, at a moment's warning, to rush into print and give crushing answers in the columns of the *Agricultural Gazette.* A storm of ridicule, inuendo, and invective will howl round the head of the unhappy wight who has the hardihood to put this question to the enlightened agricultural mind of 1854. Fairly and softly, good gentlemen all. I know, right well, everything that you are ready to advance, and I entirely agree with you. There is, however, something more besides. Pray tell also, all that *that which men call science* has done for agriculture. How often she has misled her erring, ignorant, and somewhat stolid sister; how often she has acted the part of the blind leader of the blind; and how often science and agriculture may have been found floundering in the ditch together. A full, fair, and complete, answer should embrace everything. I am not, however, about to answer the question. Let bygones be bygones. Not but what science is often somewhat overbearing and dogmatic in her teaching, but let us peaceably take the kicks along with the half-pence and be thankful. I have ever meekly sate at the feet of the scientific Gamaliels. I have pledged myself to Parkes, I have sworn by Liebig, I have listened to Way, I have abided by Morton, I have followed Johnson, Stephens, and others in many matters. How often I have had to modify my borrowed views; how often practice has confuted theory; how often my guides said there was light when I found none, it boots not here to tell. No doubt I have been often wrong; but then I have been sometimes right; and, upon the whole, advancing. On some matters I entertained wholesome doubts, perhaps; but of one thing, at least, I was absolutely certain. It seemed so simply beautifully true, that manure should be so managed that it should retain its ammonia, that I guarded my ammonia as jealously as an Australian gold-digger watches his nuggets. I read, I learned, I practised; I roofed in my manure heap. So far I did well; but I did more. In humble deference to my scientific preceptors, I most carefully prevented all contact of lime with muck. I should as soon have let the burglar into my pantry, as have trusted "the mother of meal" to the solicitations of this busy spoiler. Some weeks ago, my bailiff (a Scotchman) had thrown some lime upon the muck heap; I ordered it to be removed forthwith. Some months ago I found a tenant absolutely in the act of mixing (*horribile dictu*) a quantity of lime with some capital fresh dung. On each occasion, big with science, I lectured learnedly. I said that lime and ammonia were two great incompatibles; that their antipathy for each other was so great that if lime even touched dung, its ammonia would at once be dispelled into empty air. I talked about "tea and tea leaves," and all that sort of thing, in the most approved fashion. The Scotchman said that he had seen the practice followed in his own country, and always with advantage. The Yorkshireman scratched his head and grinned, and replied that he had done so "mony a time afore and it had answered weel." Of course I believed neither, and on each occasion walked away filled with comfortable thoughts about my own enlightened superiority. The result of it all was that the bailiff removed the erring lime, and the farmer doubled his heap of the abominably unscientific mixture. Now who was right, the men of practice or the man of books? A few days ago I received the last number (xxxii.) of the "Journal of the Royal Agricultural Society of England," I find that science and I have been together in the ditch again. The thing that I had myself so carefully avoided, and so majestically reproved in others, is the right thing after all. It is clear that I must shut up, as people say; how can I ever face my bailiff or my tenant again? It seems now that we ought to mix lime with dung. Though the practice has been hitherto "decidedly blamed"—none more so; it had all along been "forgotten that in fresh dung the ammonia is not yet formed," and that "the undeveloped nitrogenous matter may be most effectually fixed by lime." This is told us by the president himself in an article on nitrate of soda as manure, p. 381. "It was forgotten," says Mr. Pusey. Forgotten (!!) what else has been or is "forgotten?" When men of science forget a fact like this, the very basis too of a dogmatic assertion, who can trust their teaching? I believe Mr. Pusey is right. His whole article is most valuable. It has solved many difficulties, which I could not understand, in practice. I never should have arrived at their solution. Science—false science rather let me call it, I have the greatest reverence for the true—had blinded me. I had eyes, yet I could not see. Hundreds now, perhaps, have been similarly blinded. Let us at all events have no more of such careless blunders of forgetfulness; and let scientific men treasure in their memories the warning with which Mr. Pusey follows up the announcement of the "forgotten" fact. "So cautious must we be in drawing chemical inferences for farmers without careful and direct experiment." *A Farming Landowner.* [It is well to be as "cautious" in correcting inferences as in "drawing" them.]

Root Graters.—Having seen some inquiries in the *Agri. Gazette* about a machine professing to reduce Turnips, &c., to pulp, I beg to state that I have received printed particulars of such a machine, accompanied by an account of some experiments showing the economical results of its application, by some person in Ireland. I have for years considered a machine that would reduce roots to a pulp a great desideratum, and I have often mentioned this to the implement-makers. I wrote immediately to an implement-maker who had this machine for sale to order one, if he considered it thoroughly accomplished what it professed. He wrote in reply that he had a favourable opinion of the machine, of which he had sold several, and that it cut Turnips into ribands. I wrote in reply that I had long used Moody's machine, now made by Carson, of Warminster, which cut roots most successfully into thin ribands, which was a great improvement on the old cutters, as admitting of a more thorough incorporation with chaff; and that, as the Irish machine was put forward as a pulping implement, I had assumed that it performed that operation, but that if it merely cut ribands, he need not send one, as Moody's accomplished that to perfection. None has been sent. I send this notice, therefore, for the benefit of inquirers in the *Agri. Gazette,* that they who really want that which I do (a pulping-machine) should not lay out their money on a riband cutter; and that, if they desire the latter, it is but fair that Mr. Carson should have the advantage of the prior invention, which answers the professed end, and is sold at a moderate price. *An Advocate for Pulp.*

Gorse Cover.—Your correspondent "Venator" would, I have no doubt, make a good cover by the plan he suggests; but as I have been very successful with much less trouble, I am glad to give "Fox" the benefit of my experience. Early in May 1847, I determined to make a Gorse cover. The field was then growing Wheat, had not been fallowed for five or six years, tolerably strong clay, some twitch in it, and not well drained. I merely sowed about 10 lb. per acre of Gorse seed among the growing Wheat, harrowed and rolled it. The Wheat was cut with the sickle, and the stubble left tolerably high. In two years it held a fox; in three years hounds

were in it an hour before finding, although four foxes afterwards went away, and the quantity of ground less than seven acres. *Richard Milward, Thurgarton Priory, Notts.*

Sang's Platometer.—After the surveyor has drawn out a map, there still remains the labour of discovering the contents of the enclosures, which involves a good deal of tedious calculation, requiring some skill, and in order to insure accuracy, great attention. A simple machine invented by Mr. SANG, of Kirkaldy, which reduces this work to the mechanical process of leading a pen round the boundaries of the figures on the map, was shown in the Great Exhibition. Although wearing into use, this invention is perhaps unknown to many of our readers interested in this department of rural affairs, and a description of it may not be uninteresting. The instrument consists of a cone about 7 inches long, attached by an axle to two rollers. The rollers serve as wheels on which the instrument moves forwards or backwards over the map; their pivots carry a frame which allows a small index wheel to slide along the surface of the cone from end to end. A tracing point is attached to the frame of the index wheel and forms the handle, by means of which the instrument is guided over the map. When the machine is pushed forward the revolving motion of the rollers is imparted to the index wheel, but the extent of the motion depends on the diameter of that part of the cone with which the index wheel happens to be in contact. The motion is smaller when the wheel is near the small end, and greater when it is near the great end, and is always exactly in proportion to its distance from the small end of the cone. The sliding of the wheel along the cone has thus the effect of the arithmetical process of multiplication. When the tracer is moved forward, the revolving motion communicated to the index wheel is forward or additive; when it is drawn backward, the motion communicated to the index wheel is backward or subtractive; so that in effect, by the simple machinery of the cone and index wheel, the tracer as it is led along by the hand, is effecting the arithmetical processes of multiplication, addition, and subtraction. It is not difficult to understand, by reference to the woodcut, how this process has the effect of telling the area of a figure, if we would imagine it to be covered by a multitude of hairs stretched across it like the parallel lines representing the sky in an engraving, and consider the action of the machine as the tracer crosses one of them. As the tracer passes over one end, the index wheel is moved forward a space equal to the breadth of the hair multiplied by its distance from the apex of the cone; when, in the course of its journey round the outline of the figure, it passes over the opposite end, the index wheel is moved backwards a space equal to the breadth of the hair multiplied by its distance from the apex of the cone; so that with regard to that minute part of the figure, the effective motion of the index is just the difference of the two spaces, that is to say, the real space which the air would have occupied on the figure; and as the same thing would happen with regard to all the hair-breadths into which we have imagined the figure to be divided, the result when the tracer is completely carried round the boundary is exactly the total area of the figure, no matter how many curves or irregularities the boundary may have. The tracer is attached to the frame by a universal joint, so that it is managed by the hand with the same freedom as a common writing pen, and the complicated work of calculating the area of even the most irregular figure is thus reduced to the simple operation of leading a pen along the boundary line, which may be done very accurately and quickly. By means of a reading glass attached to the instrument, and always ready in focus, the indications are read off on the graduated silver ring forming the rim of the index wheel. The divisions may be made so as to give acres to any given scale; in practice it has, however, been found most convenient to arrange the graduations so that they give square inches, tenths and hundredth parts of inches, as by this means the instrument may be applied to all maps alike. The square inches are converted into acres in the usual way, by reference to the scale on which the map is constructed.

Societies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

February 15. — WEEKLY COUNCIL. — Mr. PUSEY, President, in the chair.

GUANO DEPUTATION.—The President reported to the Council the result of an interview which the Earl of Clarendon granted, on the 10th December last, to a deputation from the Council. His lordship had given every assurance to the deputation on that occasion that no effort should be spared by her Majesty's Government, either in effecting if possible a reduction in price or on the other hand of increasing the supply by the discovery of further deposits of that valuable manure in different parts of the world, or of the nitrate of soda along the coast of Peru, Bolivia, and Mexico, ascertaining in each case the quality as well as the amount of such deposits. The President stated that Admiral Moresby, in his survey of the guano beds, had taken the quality of the deposit into account in stating the amount of guano suitable for export to England, while the Peruvian surveyor had not drawn this distinction; a circumstance that might explain satisfactorily the different estimates they had given of the amount of guano still remaining on hand and at the disposal of the Peruvian Government. There was a great difference in the quality of the different guanos, in reference to their respective proportions of ammonia on the one hand, and of the phosphates on the other; and their different market values were affected accordingly. He concluded that the farmers of this country would not be put off their guard by the recent manifesto of the Peruvian Government. — The Duke of Richmond fully concurred with the observation made by Mr. Fisher Hobbs at a recent meeting of the Council, that it would be advantageous for the farmers of this country to purchase their guano of the Americans. They, it appeared, knew how to buy guano, and could get from the Peruvian Government any quantity of guano they pleased.—The President considered that there was nothing in law to prevent the importation of guano into this country from America. Both he and the Duke of Richmond were fully prepared to try the question by purchasing jointly a cargo of guano at New York, which should be consigned to them at some British port.—Mr. Caird referred to the result of American negotiation with the Peruvian Government. He stated that the discovery of bird-manure, made a short time ago on the eastern coast of Africa, had been previously made by a Government surveyor 10 years ago, but the fact had lain neglected till the recent re-discovery of the very same deposit. He then referred to that other valuable manure, the nitrate of soda, of which the nature and mode of action had been so well expounded by Mr. Pusey. He concluded by hoping that the Society would lose no opportunity of pressing upon the Government the importance of decided measures on the guano question.—The Duke of Richmond asked why the second discoverers of the guano on the eastern coast of Africa had not gone at once to the merchants rather than to the Government.—Mr. Caird replied, that such had been the case on the discovery of guano on the Ichaboe island, and the consequence was that the merchants who undertook the speculation were ruined by it, in consequence of the immense outlay of their preparations for the trade, which were rendered nugatory by the simultaneous efforts of rival merchants. —The Duke of Richmond thought the farmers of this country had now a strong claim; they wished to buy guano; there was only one house in this country that had the privilege of supplying it, and that house announced that the supply, for an indefinite term, had ceased.—Mr. Slaney had no doubt that the time was gradually approaching when such a substitute for guano would be found within our own resources, as to render us independent of the necessity of a foreign importation.—The President agreed with Mr. Slaney, but thought we had better first get the guano.—Mr. F. Hobbs gave notice that he should move at the next monthly Council that the Guano Committee of the Society be requested to meet for the purpose of deliberating on the interesting position of the quano question at that moment; he should also at that time move that Mr. Caird should allow his name to be added to the list of the committee.

ECONOMICAL BREAD.—The Hon. H. Fitzroy, M.P., transmitted, by direction of Viscount Palmerston, a communication addressed to his lordship by an anonymous correspondent at Calais, on the subject of the economical preparation of bread. This communication contained two modes of effecting this object:—1. By using bran-water instead of plain water in mixing the dough. 2. By mixing with the dough a certain proportion of mashed white Turnips.*

SOIL-TESTER.—Mr. Fisher Hobbs exhibited to the Council a light steel auger, adapted for the double purpose of drawing up with ease at various depths specimens of the soil, and of serving as a light strong walking-staff. It had been made for Mr. Hobbs by Messrs. Burgess and Key, from the original one brought over to this country by Captain Edman, from Sweden, where it was in common use. Its peculiar point and its concavity of shaft, enabled it by a single turn on its axis, after insertion in the land, to bring up the soil, at given distances within its range, as marked by divisions on its stem, in an unmixed state.

A SPECIAL COUNCIL was then held.

IMPLEMENTS.—Colonel Challoner, chairman of the Implement Committee, having submitted to the Council the report of that committee, the Council decided to offer the following prizes for agricultural implements and machinery at the Lincoln meeting:

Plough for general purposes	£5	Portable threshing machine, 8-horse	£20
Plough for not less than 10 inches deep	5	Fixed threshing machine, 8-horse (to prepare for market)	20
Drain pipe and tile machine	5	Reaping machine	20
Cultivator, grubber, and scarifier	5	Corn dressing machine	5
Drill for general purposes	10	Grinding mill (to meal)	5
Corn and seed drill	10	Linseed and corn-crusher	5
Drill for small occupations	5	Chaff-cutter, horse or steam power	5
Seed and manure drill for small occupations	5	Chaff-cutter, hand-power	3
Turnip drill on the flat, with manure	5	Turnip-cutter	3
Turnip drill on the ridge, with manure	5	Machine to reduce roots to a pulp	3
Liquid manure or water drill	5	Oilcake breaker	5
Manure distributor	10	Bone mill	5
Horse-hoe on the flat	5	Churn	3
Horse-hoe for setting out and thinning Turnips	5	Essential improvements (Medals)	21
Portable steam-engine, 8-ho.	20	Invention of any new Implement (such sum as the Council may decide)	
Second-best do. do.	10	Mr. Slaney's offer of a prize for plough to fill-in the soil cast out of drains	10
Fixed steam-engine, 10-horse	20		
Second-best do. do.	10		
Portable threshing machine, 6-horse	10		

The Council adopted the suggestion of Mr. Evelyn Denison, M.P., to offer a prize to encourage the application of steam power to the cultivation of the soil; and they agreed to the following terms of such prize:—

"That the Society offer a prize of 200*l.* for the steam-cultivator which shall in the most efficient manner turn the soil, and be an economical substitute for the plough or the spade. This prize to be competed for on or after the year 1855."

The Council also resolved that at the Lincoln meeting the public should be admitted, under special regulations, to view the trials in the implement yard, commencing on and after the Thursday in the week preceding that of the show.

The Council then decided on the conditions of the prizes for implements, and the general regulations of that department, at the Lincoln meeting, and ordered the completion and publication of the prize-sheet accordingly. Special clauses were introduced:—1, for the purpose of rendering the trial of the steam-engines more complete and satisfactory to all parties; 2, for enforcing the regulation requiring exhibitors to execute all orders given them in the yard at the selling price stated in their certificates, which lowest selling price has a just weight with the judges in determining the relative claims of nearly-balanced competing implements; 3, for requiring the consent of the stewards to be obtained by the judges in awarding medals for essential improvements; and 4, for requiring that all certificates, either for live stock or implements, must be properly filled up and lodged at the Secretary's office in Hanover Square, by the last day allowed in each case for the reception, otherwise they cannot under any circumstances be received.

* We must postpone a reference to this subject till next week.

WOOL.—The Council having accepted the offer of prizes to the amount of 35*l.* for long wool, made to the Society by the Local Committee at Lincoln, the following arrangements for such prizes was adopted:—

Prizes of 10*l.*, 6*l.*, and 4*l.*, for wool of hogget sheep; prizes of 7*l.*, 5*l.*, and 3*l.*, for wool of sheep of greater age; five fleeces of wool in each case to be shown, being the produce of one flock, and grown by the respective exhibitors; quality and quantity being taken into consideration. The Council adopted the suggestion of the general Lincoln Committee, that it would be desirable, if found convenient, that a wool-sorter should be requested to select from one of the prize fleeces the several samples that would show its different qualities.

FARM-POULTRY.—The Council adopted the report of the Farm-Poultry Committee on the prizes amounting to 110*l.*, and directed that the live-stock prize-sheet of the Society for the Lincoln Meeting should then be completed, and published in the usual course.

Adjourned to the 22d inst., when substitutes for guano would form the subject of consideration.

Notices of Books.

The Culture of the Mangold Wurzel or Field Beet. E. F. Collins, *Advertiser* Office, Hull.—A very satisfactory and seasonable tract on the subject to which it relates. Mangold Wurzel is every year being more generally grown; it is more easy to obtain 30 tons per acre of it in south and central England, than it is to get 20 tons of Swedes. And though a ton of good Swedes may be more valuable in winter than a ton of good Mangold, it is not so valuable in spring and early summer, up till which time the latter keeps good, when the former is worthless. *At any time* too, 30 tons of Mangold are better than 20 of Swedes; and as the crop is thus rapidly extending, we are glad to have it in our power to refer to a simple and sufficient account of its cultivation.

The Scottish Agriculturist's Almanac. By J. L. Morton. A. and C. Black, Edinburgh.

IT seems very well adapted for the instruction and use of agriculturists in England and Ireland as well as Scotland. Beside the usual features of an almanac, it contains calendarial notices of an agricultural character—and extracts from journals and publications on agriculture which keep its reader pretty well satisfied with the truthfulness of its second title "Year Book of Farm Progress." And besides the usual feature of an agricultural almanac, it possesses, interleaved with its monthly portions, blank and ruled pages adapted for use as a market and memorandum book: and to fit it for pocket use in this way, it is bound in a stiff covering.

Poultry.

Arabian Pigeons.—In a late number of your Paper, in answer to your correspondent "Durham," you say that you do not know the Arabian pigeon. I a few months ago had a pair given to me; they were brought from Aden, in Arabia, by a Captain Morrison. They are larger than our tumbler pigeon, a clear white, feathered legs even to the end of the toes, with the feathers on the back of the head turned up, similar to our English turn-caps, and of a beautiful form and carriage. *J. E.*

POULTRY: *C P.* In judging Cochin China Fowls, the outer colour is the point with which the judges have to do. If a case arose where every other point was equal, which of late never happens, I hardly think, even then, the judges would be justified in making the under colour a point of decision, as they have to judge the birds on their present merits, and not looking into the future for their probable produce. If I wished to breed light birds, I would prefer those without dark under-feathers; but it is undeniable that all have more or less of dark blood in them, and also that the old fashioned dark birds were heavier and more symmetrical than the light ones now in favour. The ridiculous stickling for uniform colour, and clear hackle, has robbed this year's birds of the qualities formerly found in them, as regards weight and shape, and has been the cause of so many prizes being withheld.—*Maidstone.* Clean-legged game bantams are the best for gold pheasants' eggs, as they are light, and the shells of the eggs are delicate; an ordinary game hen is the best for silver eggs, as they are stronger in the shell and a larger egg.—*White Abbey.* The twist in the tail of a fowl is generally the result of a curve or deformity in the back bone; but it is sometimes the case where no apparent cause accounts for it. I have known it to proceed from long confinement in a small basket or coop, which would not admit of the tail being properly carried; a very slight injury will cause it.—*Amateur.* Moonies are famous layers and average sitters, but not very good mothers. They lay a great many eggs before they sit, indeed, laying is their *forte*. Oatmeal is the best food for fowls. I do not think the gold Polands hardy; they are very good layers, but, like the Moonies, only average sitters. *J. Baily,* 113, *Mount Street.*

Calendar of Operations.

FEBRUARY.

CHESHIRE, *Feb.* 8.—The last fortnight of fine weather has in a great measure relieved the minds of the farmers as to their late sown Wheats. From the severity of the weather about Christmas, and the consequent tardiness of the young plant in making its appearance above ground, many were apprehensive that it had been seriously injured, and that it would prove very thin. In some few cases these fears may have been realised, but generally speaking the young Wheats are doing well, and some farmers are now sowing their Turnip land in the finest condition. The frost has left the land in a nice friable state, and if we have not too much wet this month, it may yet do very well. Ploughing is progressing very rapidly, so that it is probable we may have an early spring seed time. Turnips, generally speaking, are keeping well, but the bulbs being small, and Mangold Wurzel also being very light, it is to be feared these root crops will be exhausted at an earlier period than usual; indeed, there is a strong indication of it from the fact that most of the annual sales of fat stock are

fixed for a month earlier than the last and previous years. The Green Melon Turnip, sown late in the season, has kept fresh and nutritious in the ground throughout the winter, thus proving it is valuable both for cattle and culinary purposes. Potatoes are very scarce and dear, and many families do not introduce them at table; this deprivation is severely felt by the poor. Some farmers intend adopting the old system of planting their Potatoes on "butts" or ridges of 4 feet wide, instead of in drills, it being supposed that they are less liable to disease when planted on high "butts" or ridges, and kept dry. The pleuro-pneumonia is not so prevalent as last year, and, generally speaking, the dairy stocks continue healthy, and (as the calving season is at hand), are beginning to be fed on hay with a few Turnips or Mangold Wurzel. It is to be regretted that the latter root is not more cultivated for milking cows, and more attention paid to its cultivation, in order to procure good crops and perfect health, which, in some measure, may be attained by paying a little more regard to the selection of the seed. The Mangold is decidedly the most useful root we have for general purposes, for not only cattle but pigs, sheep, poultry, and even horses are fond of and thrive well upon it. Sheep are doing better than they did the last month, from a favourable change in the weather, but in some instances they have a slight eruption of the skin, which causes an itching and consequent plucking of their wool. We have found the following recipe very efficacious. The quantity of dressing for eight sheep is as follows:—Dissolve 1 lb. of soft soap in 1 gallon of good tobacco water, which is done by boiling; then measure out a pint of it, and put a small wine-glassful of spirits of tar in it, after which stir it well and it is fit for use. So in this proportion, 5 lbs. of soap, 5 gallons of tobacco water, and the wine-glassful of spirits of tar to each pint, will dress 40 sheep. The last ingredient should not be mixed in large quantities like the tobacco water and soft soap, but only used just as it is wanted. A pint is considered quite sufficient for one sheep. The wool should be opened in ridges along the sides, about the head and underneath the body of the animal, and while one person is doing this another should pour the dressing in. *W. P.*

Wester Ross.—As one of the effects of the severity of the winter, late-sown Wheat had scarcely got above ground in January. I had 20 acres sown about the 26th Nov., and after lying full two months in the ground, the probability is that a proportion of the seed will have perished, and consequently the braird will be deficient. A favourable spring, however, would make up this deficiency. Whilst agriculturists in the south are busying themselves testing the capabilities of implements, which profess themselves to be highly advantageous supplanters of our old friend the plough, the farmers in the north are advertising their ploughing-matches, and holding out to farm-servants, as encouragements to proficiency in the art of ploughing, small prizes and high fame. Notwithstanding our affection for the plough, when a more speedy and a more effective implement will be found, and an implement that will do its work more cheaply, we will hesitate not to put the old lady on the "baulks." A large number of ships are being loaded with Potatoes in the northern ports just now. Agricultural distress would be no more heard of in this quarter, should that mysterious disease operate in coming years as it did in the bygone one—damaging the Potatoes in all quarters more or less, save those of the Highlands.

West Sussex, *Feb.* 11.—The land is now getting dry, and admits of the harrows working. The sowing of Peas and Beans has commenced, and under the most favourable circumstances. Where we used the skim coulter in ploughing, the benefit has been very perceptible; and where it was not used, the land has got so close upon top, by the action of the frost, that it is more difficult than usual to work. But, upon the whole, the season has been greatly in its favour, and it was in great need of some pulverising influence. The winter Wheat generally looks well, and is quite thick enough upon the ground—perhaps too much so; and there is no doubt but those who seed thin will have things a little their own way, and have again to expatiate upon the evils of thick sowing. The young Clovers have stood the winter well, and promise to come to hand in good time, which will be a great convenience, as Turnips are not plentiful. The lambing has gone on well, and the lambs look strong. Down couples are now in the market, and sell at prices from 48*s.* to 60*s.* per couple. The ewes do not in general appear in high condition, which may be accounted for by the bad hay and scarcity of Turnips, and they have not had many of them before lambing; and to this perhaps is owing the good luck that has attended them. The work will now be the getting in of the remainder of the Peas and Beans; and then Oat sowing will follow, on the heavier lands after Turnips. *G. S.*

Notices to Correspondents.

Cream: *Farmer's Wife.* It is not the weather directly, but its indirect influence on the quality of the milk that makes cream thin in cold weather. The cows have poorer food, and more of it, probably, is consumed in respiration. The remedy, we suppose, will consist in improving the quality of the food.

Eggs: *R Bosworth.* The directions were given at p. 301, 1853.

Gypsum: *P M.* Ground plaster of Paris is gypsum, and will serve all the purposes *agriculturally*, which are served by gypsum.

Hemp Seed: *A Nine Years' Sub* would be glad to learn the experience of any one who has used crushed Hemp seed for cattle.

Refuse Fish: *Tonbridgensis.* We do not know where it is converted into manure. The process hitherto has been rather one of experiment than actual manufacture for sale.

Rot in Sheep: *Tenant Farmer.* The probability is your sheep, like many others, are affected with the rot, or cothe. If so you will find *flukes* or *plaice* in the biliary ducts of the liver. The best course to pursue will be to give nutritious food, such as Linseed cake, freely, and a little salt daily with roots and good hay, so as to get them forward for the butcher. *W. C. S.*

Small Homesteads: *T M H.* You will find some plans in some of the earlier volumes of the "Edinburgh Quarterly Journal of Agriculture."

Sow: *Erith.* The destruction of her young, which the sow will sometimes eat, is a phenomenon connected with temper rather than with food. She has been excited or disturbed; it is not owing to any deficiency of food.

Wind Power: *S J.* If you can "always" command wind, there is no objection to its use. But where it used to be much employed it has now long since been abandoned, and we should, in every case of which we have any knowledge, greatly prefer to spend an equal sum on any other kind of power. Perhaps any one who has had experience on the subject may give it to us. The subject is—the cost and merits of wind power for farm-yard purposes.

Winter Tares, &c.: *W P.* Seed sown last November and not yet up, is not likely to appear, but you can look for it and see.—Sow Italian Rye-grass in moist weather early in April. —Milk of lime is a term employed to designate a mixture of fresh slaked lime and water, of about the consistency of cream. —Phosphoric poison kills the rats; we understand it drives them in search of water before it kills them.—We understand the term "round timber" to apply to the felled trees in an unhewn state.

Errata. Owing to a mistake we did not last week receive Mr. Bree's corrected proof; the following corrections are necessary. In the 5th line from top, page 90, col. *c*, for "three" read "*these* alkalies," and in the following line for "involved" read "resolved." Three lines lower fill up the space with as "1" to 24. At the end of the next paragraph for "same" read "most" soluble salt; and in the last paragraph but one, third line, for "their" cells read "its" cells.

INSTRUCTION IN ART, General and Special, as afforded at the CENTRAL SCHOOL of the DEPARTMENT of SCIENCE and ART, at MARLBOROUGH HOUSE, Pall Mall, London. The School consists of

I. A NORMAL SCHOOL FOR TRAINING TEACHERS.
II. SPECIAL CLASSES for TECHNICAL INSTRUCTION.

Art-Superintendent—RICHARD REDGRAVE, R.A.

The SPRING SESSION will commence on March 1, and end July 31; and the Fees are for that period.

1. The Courses of Instruction are intended to impart systematically a knowledge of the scientific principles of Art, especially in its relation to the useful purposes of life. A limited application of those principles is demonstrated with the view of preparing Students to enter upon the future practice of the Decorative Arts in Manufactories and Workshops, either as Masters, Overseers, or skilled Workmen. At the same time, instruction is afforded to all who may desire to pursue these studies without reference to a preparation for any Special Branch of Industry. Special Courses are arranged in order to train persons to become Masters of Schools of Art, and to enable Schoolmasters of Parochial and other Schools to teach Elementary Drawing as a part of general Education concurrently with Writing.

2. The Lectures and Courses of Instruction are as follows:—

GENERAL COURSE FOR MALE STUDENTS ONLY.

A. Freehand, Model, and Elementary Mechanical Drawing, Practical Geometry and Perspective, Painting in Oil, Tempera, and Water Colours. Modelling. The Classes for Drawing, Painting, and Modelling, include the Figure from the Antique and the Life; and Artistic Anatomy. Lectures, Teaching and Practice, in the Morning and Evening. Fee, 4*l.* the Session.—Head Master, Mr. Burchett; Assistants, Messrs. Herman, Welsh, Danby, Wills, and Hancock.

B. The Evening Instruction is limited to advanced Drawing, Painting, and Modelling, including the Figure. Fee, 2*l.*

TECHNICAL COURSES.*

C. Practical Construction, including Architecture, Building, and the various processes of Plastic Decoration, Furniture, and Metal Working. Lectures, Teaching, and Practice, Morning and Evening. Fee, 4*l.* Evening Course only. Fee, 2*l.* for Male Students only. Superintendent, Professor Semper.

D. Mechanical and Machine Drawing, Class Lectures with Evening Teaching and Morning Practice. For Male Students only. Fee, 2*l.* Superintendent, Mr. W. Binns.

E. Surface Decoration, as applied to Woven Fabrics of all kinds, Lace, Paper Hangings, &c. Lectures, Teaching and Practice, Morning and Evening. Fee, 4*l.* An Afternoon Class for Females only. Fee, 2*l.* An Evening Class for Male Students only. Fee, 2*l.* Superintendent, Mr. Octavius Hudson.

F. Porcelain Painting, daily Teaching and Practice for Male and Female Students. Fee, 4*l.* Superintendents, Mr. Simpson and Mr. Hudson.

G. Wood Engraving, Lectures, Daily Teaching and Practice for Female Students only. Fee, 2*l.* Superintendents, Mr. Thompson and Miss Waterhouse.

H. Lithography, Chalk, Pen, and Colour. Daily Teaching and Practice for Female Students only. Fee, 4*l.* Superintendents, Mr. Brooks and Miss Channon.

PUBLIC LECTURES.

On the Forms and Colours of the Animal and Vegetable Kingdoms, by Professor E. Forbes; on the Human Form, by Mr. J. Marshall, F.R.C.S.; on the History of Ornamental Art, by Mr. Wornum, &c. Admission to each Lecture, 6*d.*

3. The Instruction for the general Students is carried on daily, except on Saturdays.

4. Students may matriculate for a period of three years upon paying 20*l.* in one sum on entrance, or three annual payments of 10*l.* They are entitled to attend all Public and Class Lectures, the general and technical Courses, to receive personal instruction, and to practise in the School at all times; they have also access to the Museum and Library. At the end of the Session they may pass an Examination, and have the privilege of competing for Scholarships, varying from 10*l.* to 30*l.* a year in value.

5. Occasional Students are at liberty to attend only the particular Courses for which they enter, and have admission to the Museum, Library, and Public Lectures.

6. A CLASS FOR SCHOOLMASTERS AND PUPIL TEACHERS will meet every Tuesday and Thursday Evenings, and on Saturdays. Fee, 5*s.* Superintendent of the Training Teaching, and Elementary Instruction, Mr. Burchett; Assistant, Mr. Bowler; also at Gore House, Kensington, on Mondays and Thursdays.

7. A Register of the Students' attendances is kept, and may be consulted by Parents and Guardians.

8. THE SCHOOL FOR THE FEMALE STUDENTS passing through the General Course is at 37, Gower Street. Superintendent, Mrs. M'Ian; Assistants, Miss Gann and Miss West.

Fees, Advanced Classes, 2*l.* and 4*l.*; Elementary Class, 20*s.*; Evening Class, 10*s.*

A Class meets at Gore House, Kensington, on Mondays, Wednesdays, and Fridays.

9. DISTRICT SCHOOLS OF ART, in connection with the Department, are now established in the following places. Open every Evening (except Saturday) from 7 to 9.30. Entrance Fee, 2*s.* Admission 2*s.* and 3*s.* per month. The instruction comprises Practical Geometry and Perspective, Free-hand and Mechanical Drawing, and Elementary Colour:—

1. Spitalfields, Crispin Street.
2. North London, High Street, Camden Town.
3. Finsbury, William Street, Wilmington Square.
4. Westminster, Mechanics' Institute, Great Smith Street.
5. St. Thomas, Charterhouse, Goswell Street
6. Rotherhithe, Grammar School.
7. St. Martin's-in-the-Fields, Long Acre.

At 1, 2, and 5 Schools there are Female Classes. Application for admission to be made at the Offices in each locality.

For further information, apply at Marlborough House, Pall Mall, London.

Henry Cole, Lyon Playfair, } Joint Secretaries.

ANOTHER CURE OF FIFTEEN YEARS' ASTHMA BY DR. LOCOCK'S PULMONIC WAFERS.

"Garden Place, Cheetham Hill.

"Gentlemen,—For the last 15 years my wife has been afflicted with severe asthma, and during that time has never been able to obtain more than temporary and partial relief. Since she has taken two boxes of the wafers her cough has left her, and her breathing is now as free as she could wish."—Dr. Locock's Wafers give instant relief and a rapid cure of asthma, cough, and all disorders of the breath and lungs. They have a most pleasant taste. Price 1*s.* 1½*d.*, 2*s.* 9*d.*, and 11*s.* per box. Sold by all druggists.

HOLLOWAY'S PILLS THE GREATEST WONDER OF MODERN TIMES.—They correct bile, prevent flatulency, cleanse the liver, purify the system, renovate the debilitated, strengthen the stomach, increase the appetite, invigorate the nerves, promote health and reinstate the weak to an ardour of feeling never before experienced. The extraordinary daily sales of these invaluable Pills in all parts of the globe astonish everybody, convincing them that there is no other medicine in existence equal to Holloway's Pills for removing the complaints which are incidental to the human race; they are indeed a blessing to the afflicted—a boon to those who suffer from any disorder, internal or external.—Sold by all Druggists, and at Professor Holloway's Establishment, 244, Strand, London.

FENDERS, STOVES, AND FIRE-IRONS.—Buyers of the above are requested, before finally deciding, to visit William S. Burton's SHOW ROOMS, 39, Oxford Street (corner of Newman Street), Nos. 1 and 2, Newman Street, and 4 and 5, Perry's Place. They are the largest in the world, and contain such an assortment of FENDERS, STOVES, RANGES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with bronzed ornaments and two sets of bars, 2*l.* 14*s.* to 5*l.* 10*s.*; ditto with ormolu ornaments and two sets of bars, 5*l.* 10*s.* to 12*l.* 12*s.* Bronzed Fenders complete, with standards, from 7*s.* to 3*l.*; Steel Fenders from 2*l.* 15*s.* to 6*l.*; ditto, with rich ormolu ornaments from 2*l.* 15*s.* to 7*l.* 7*s.*; Fire-irons from 1*s.* 9*d.* the set to 4*l.* 4*s.* Sylvester and all other Patent Stoves, with radiating hearth plates. All which he is enabled to sell at these very reduced charges,

1st,—From the frequency and extent of his purchases; and,
2dly,—From those purchases being made exclusively for cash.

THE PERFECT SUBSTITUTE for SILVER.—The real NICKEL SILVER, introduced 20 years ago by William S. Burton, when Plated by the patent process of Messrs Elkington & Co., is beyond all comparison the very best article next to sterling silver that can be employed as such, either usefully or ornamentally, as by no possible test can it be distinguished from real silver.

	Fiddle Pattern.	Thread or Brunswick Pattern.	King's Pattern.
Tea Spoons, per dozen	18*s.*	26*s.*	32*s.*
Dessert Forks ,,	30*s.*	40*s.*	46*s.*
Dessert Spoons ,,	30*s.*	42*s.*	48*s.*
Table Forks ,,	40*s.*	56*s.*	64*s.*
Table Spoons ,,	40*s.*	58*s.*	66*s.*

Tea and Coffee Sets, Waiters, Candlesticks, &c., at proportionate prices. All kinds of replating done by the patent process.

CHEMICALLY PURE NICKEL, NOT PLATED.

	Fiddle.	Thread.	King's
Table Spoons and Forks, full size, per doz.	12*s.*	28*s.*	30*s.*
Desert ditto and ditto	10*s.*	21*s.*	25*s.*
Tea ditto	5*s.*	11*s.*	12*s.*

CUTLERY WARRANTED.—The most varied assortment of TABLE CUTLERY in the world, all warranted, is on Sale at William S. Burton's, at prices that are remunerative only because of the largeness of the sales 3½-inch ivory-handled table knives, with high shoulders, 11*s.* per dozen; desserts to match, 10*s.*; if to balance, 1*s.* per dozen extra; carvers, 4*s.* per pair; larger sizes, from 14*s.* 6*d.* to 26*s.* per dozen; extra fine, ivory, 32*s.*; if with silver ferrules, 37*s.* to 50*s.*; white bone table knives, 7*s.* 6*d.* per dozen; desserts, 5*s.* 6*d.*; carvers, 2*s.* 3*d.* per pair; black horn table knives, 7*s.* 4*d.* per dozen; desserts, 6*s.*; carvers, 2*s.* 6*d.*; black wood-handled table knives and forks, 6*s.* per dozen; table steels, from 1*s.* each. The largest stock in existence of plated dessert knives and forks, in cases and otherwise, and of the new plated fish carvers. Also a large assortment of Razors, Penknives, Scissors, &c., of the best quality.

William S. Burton has TEN LARGE SHOW ROOMS (all communicating), exclusive of the shop, devoted solely to the show of GENERAL FURNISHING IRONMONGERY (including Cutlery, Nickel Silver, Plated and Japanned Wares), Iron and Brass Bedsteads, so arranged and classified that purchasers may easily and at once make their selections.

Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of.

No. 39, Oxford Street (corner of Newman Street); Nos. 1 and 2 Newman Street; and 4 and 5, Perry's Place.

THE COTTAGER'S STOVE.—An economical, compact, and portable COOKING APPARATUS, combining a good sized Oven and Hotplate; may be had with or without a boiler, and will cook sufficient for a dozen persons with the consumption of 1 lb. of coal or coke per hour. It requires no fixing, may be placed in any apartment, and is a great security against accidents from fire. It will burn Coal, Coke, or Wood. They are also specially adapted for Emigrants, and may be seen in operation daily, at the Manufacturers', D. & E. Bailey, 272, High Holborn, London.—Price 50*s.*, and upwards.

GREAT SAVING OF TIME AND MONEY.

R. RESTELL'S PATENT ECONOMICAL GAS APPARATUS for Forcing Houses, Greenhouses, Conservatories, Pits, Shops, Counting Houses, Warehouses, Drying Rooms, &c. &c., possessing all the advantages of Hot Water at half the expense of fitting, and most trifling cost for Gas, far surpassing any ordinary Gas Stove, requiring no furnace, and allowing of no fumes or evaporation in the Building, or possibility of accidents from negligence or carelessness. It has been tested through the late severe weather, on a variety of Plants, and found most satisfactory. It is very quickly fitted up and requires no night attention.—Apply to the Inventor and Patentee, R. Restell, 35, High Street, Croydon, Surrey.

Persons wishing to have Houses fitted will please to send the height and dimensions.

NO CHARGE FOR STAMPING ARMS, CRESTS, INITIALS, &c., on paper and envelopes, at LOCKWOOD's well-known establishment, 75, New Bond Street. Good cream-laid Note-paper, five quires for 9*d.*; Thick ditto, five quires, 1*s.*; Albert and Queen's sizes, five quires for 6*d.*, 9*d.*, and 1*s.*; Envelopes, 3*d.* to 1*s.* 6*d.* per hundred; Foolscap paper, 7*s.* 6*d.* per ream; Copybooks, 2*s.* 6*d.* per dozen. Card Plate engraved, 2*s.* 6*d.*; 100 Cards printed, 2*s.* 6*d.* Mourning Stationery equally cheap. Wedding Orders promptly executed. A large variety of Writing and Dressing Cases, Envelope Boxes, Blotting Books, Inkstands, Gold Pens, Church Services, &c. Copy address, Lockwood's, 75, New Bond Street. Country orders for 20*s.* sent carriage free.

METCALFE and CO.'S PERFUMERY DEPARTMENT.—PROPRIETARY ARTICLES.—Metcalfe's celebrated ALKALINE TOOTH POWDER is acknowledged as the safest and most efficient now in use. Dupuytren's Medicated Pomade is the most certain remedy for preventing the hair prematurely falling off, and for restoring it when baldness has already commenced. Dupuytren's Medicated Balm strengthens, cleanses, and improves the growth, and is generally acknowledged as the best wash for the hair.—Manufacturers of British and Importers of Foreign Soaps, Perfumery, and J. M. Farina's genuine Eau de Cologne, at Metcalfe, Bingley, & Co.'s only Establishment, 130B and 131, Oxford Street, second and third doors west from Holles Street.

PARR'S LIFE PILLS are now, from their many virtues, the established Family Medicine throughout the British Empire. PARR'S LIFE PILLS will be found speedily to reanimate the spirits, improve the digestive powers, and restore the whole nervous system to a happy and natural state; the balsamic powers of this medicine produce that delightful feeling of good spirits so very desirable, and disposes both mind and body to healthy exercise—everything under its influence soon wears a joyous aspect, and the varied duties of life are performed with pleasure; and, instead of long and weary nights, gives sound and refreshing sleep. If the stomach and bowels require it, PARR'S LIFE PILLS act as the mildest and most agreeable purgative, and by their cleansing powers totally eradicate a redundancy of bile.—Sold by E. Edwards, 67, St. Paul's Churchyard; Barclay and Sons, Farringdon Street; Sutton and Co., Bow Church-yard; Hannay and Co., and Sanger, Oxford Street, London; and by all respectable Chemists and Medicine Vendors in Town and Country. In boxes, price 1*s.* 1½*d.*, 2*s.* 9*d.*; and in Family Packets, 11*s.* each.—*** None are genuine without the English Government stamp fixed round the sides of each box.

QUANTITY AND QUALITY OF THE HAIR.

NO TOILET can be considered complete without a careful attention to that department which so materially affects the entire contour, viz., the Hair, which, both in quantity and quality, is susceptible of the most material alteration. That which is weak can be strengthened, and be made to receive a most beautiful gloss by artificial applications. It is to its extraordinary and valuable properties in these respects that is due the character of C. and A. OLDRIDGE'S BALM OF COLUMBIA, for its invigorating, nutritious, and regenerative qualities. Oldridge's Balm causes Eyebrows to grow, prevents the Hair from turning grey, and the first application causes it to curl beautifully, frees it from scurf, and stops it from falling off. Price 3s. 6d., 6s., and 11s. per bottle. No other prices are genuine. — N.B. Ask for Oldridge's Balm, 13, Wellington Street North, Strand, London.

The Successful Results of the last Half Century have proved beyond Question that

ROWLAND'S MACASSAR OIL possesses singularly nourishing powers in the growth, restoration, and improvement of the human Hair, and when every other specific has failed. This celebrated Oil is now universally acknowledged to be the cheapest, and superior to all other preparations for the hair. It prevents it from falling off or turning grey, strengthens weak hair, cleanses it from scurf and dandriff, and makes it beautifully soft, curly, and glossy. Its operation in cases of baldness is peculiarly active; and in the growth of the Beard, Whiskers, Eyebrows, and Moustachios, it is unfailing in its stimulating operation. For children it is especially recommended, as forming the basis of a beautiful head of hair. Price 3s. 6d. and 7s; Family Bottles (equal to four small), 10s. 6d.; and double that size, 21s. Caution.—On the wrapper of each bottle are the words, Rowland's Macassar Oil, in two lines. The same are engraven on the back of the wrapper nearly 1500 times, containing 29,028 letters.—Sold by A. Rowland & Sons, 20, Hatton Garden, London, and by Chemists and Perfumers.

Pains in the Back, Gravel, Lumbago, Rheumatism, Gout, Indigestion, Flatulency, Nervousness, Debility, &c.

DR. DE ROOS' COMPOUND RENAL PILLS, as their name Renal (or the Kidneys) indicates, are a most safe and efficacious remedy for the above dangerous complaints. For depression of spirits, incapacity for society, study, or business, giddiness, drowsiness, nervousness, and insanity itself, when arising from or combined with urinary diseases, they are unequalled. Price 1s. 1½d., 2s. 9d., 4s. 6d., 11s., and 33s. per Box, through all Medicine Vendors, or sent (free) on receipt of the amount in postage stamps, by Dr. De Roos, 35, Ely Place, Holborn, London. At Home for consultation daily from 11 till 1, and 5 till 8, Sunday excepted. Advice and Medicines, 1l.

DINNEFORD'S PURE FLUID MAGNESIA has been for many years sanctioned by the most eminent of the Medical Profession, as an excellent remedy for Acidities, Heartburn, Headache, Gout, and Indigestion. As a mild aperient, it is admirably adapted for delicate females, particularly during pregnancy; and it prevents the food of infants from turning sour during digestion. Combined with the Acidulated Lemon Syrup, it forms an Effervescing Aperient Draught, which is highly agreeable and efficacious.—Prepared by Dinneford & Co., Dispensing Chemists (and General Agents for the Improved Horse-Hair Gloves and Belts), 172, New Bond Street, London, and Sold by all respectable Chemists throughout the Empire.

WM. HALSE'S FIVE GUINEA APPARATUSES are now ready.—Invalids are solicited to send to Mr. W. Halse, of 22, Brunswick Square, London, for his Pamphlet on MEDICAL GALVANISM, which will be forwarded free, on receipt of two stamps. In it will be found the particulars of cures in cases of asthma, rheumatism, sciatica, tic doloureux, paralysis, spinal complaints, headache, deficiency of nervous energy, liver complaints, general debility, indigestion, stiff joints, nervous disorders, &c. Mr. Halse's method of applying the galvanic fluid is quite free from all unpleasant sensation. Terms: One Guinea per week. The above Pamphlet contains his Letters on Medical Galvanism.

ASTROLOGY. — Persons residing in London, or elsewhere, can send any Address, Christian and Surname, and Age, in a letter containing 13 postage stamps, to Professor Melville, Princes Road, Lambeth, London (the only Acrostic Astrologer in the universe), and they will receive by return of post, special poems on their names, in which their destinies will be revealed.

KNOW THYSELF!—Professor Blenkinsop continues to receive from individuals of every rank the most flattering testimonials of his success in describing the CHARACTERS of Persons from their HANDWRITING, pointing out their mental and moral qualities, whether good or bad.—Address by letter, stating age, sex, and profession, inclosing 13 uncut postage stamps, to Dr. Blenkinsop, 344, Strand, London.

QUALITY THE TEST OF CHEAPNESS.

BERDOE'S LIGHT OVERCOATS and CAPES resist any amount of rain. One of the largest Stocks in London of Superior GARMENTS at Lowest Charges. First-Class DRESS COATS, 3l.; BOY'S SUIT, 11d. per inch, according to height.—96, New Bond Street, and 69, Cornhill. (Nowhere else.)

TO GENTLEMEN BOARDERS.—The Advertiser has a vacancy for one or two young gentlemen desirous of acquiring a knowledge of Agriculture in all its branches, the Breeding and Feeding of Stock, &c., &c., in one of the best cultivated districts in the kingdom, where they would have the advantage of an experienced neighbourhood, and a comfortable home.—For particulars, apply to A. Y., Office of this Paper.

BONES.—Any quantity of Boiled Bones may be had at Hazlehead Farm, near Penistone, Yorkshire.—For price and particulars, apply to Mr. Robert Gartside, on the premises.

WANTED, A FARM.—To rent, from Michaelmas next, or Lady Day, 1855, a Farm of from 100 to 200 acres, with a good House fit for the residence of a gentleman with a small family; within six hours of London by railway, and near a station and town.—Apply by letter, with fullest particulars, to C. C., 66, Mark Lane, London.

GREENHOUSES AND PUBLIC-HOUSE.

To Gardeners, Florists, and Others.

TO BE LET, in the immediate neighbourhood of Gravesend, a large Greenhouse, Propagating-house, and a Range of Brick Pits; also a PUBLIC-HOUSE adjoining the same. The Stock of Plants to be taken at a valuation.—Particulars may be obtained of Mr. J. Gould, 38, Windmill Street, Gravesend, Kent.

TO BE LET, a powerful WATER CORN MILL, in the parish of Brimpton, near Newbury, Berks, with an abundant supply of water, driving six pairs of stones, 4 feet diameter, with flour machine, two bolters, smut machine, &c., and a good Dwelling-house, with Garden, Yards, Stable, and other suitable buildings in substantial repair, and the machinery in good order and condition. A railway and canal both pass close by the Mill, and there is every convenience for carrying on a large business. The Mill is the property of Lord Viscount Falmouth, and is about two miles from the Woolhampton Station on the Hungerford Branch of the Great Western Railway, about 5 miles from Newbury and 13 miles from Reading.

Mr. Thomas Reynolds, of Brimpton, will show the Mill, and further particulars may be obtained from Mr. Sinclair, 28, Southampton Row, Russell Square, London.

TO GARDENERS AND NURSERYMEN.

TO BE SOLD, by Private Contract, and the Premises LET, with immediate Possession, by order of the executors of the late Mrs. Mary Potts, the STOCK IN TRADE on the old established Nursery Gardens, Nantwich, Cheshire—Coming-in about 250l. The above Gardens comprise about 5 acres statute measure, and are well situate for doing a capital business, being within four miles of the populous town of Crewe, and about 10 miles from any other nursery gardens. There is a comfortable Residence and a greenhouse on the Premises, and 12 acres of good Pasture Land may be held therewith if required. Part of the purchase money may remain on the Stock. — For further particulars apply to Mr. W. Fowles, Wall Fields Farm, Nantwich, Cheshire.—Nantwich, Feb. 18.

COUNTY OF TIPPERARY—BARONY OF LOWER ORMOND.

TO BE LET, from the 25th of March, with immediate possession, the following LANDS:—Ballylina, West Farm, containing 140 acres, Irish; Mathew's Farm (part of Ballylina, W.), 62 acres; Castleview Farm, ditto, 105 acres; Lismalin Farm, 190 acres; Ballynabinch Farm, 82 acres. These Farms are on the estate of Lord Ashtoun, and are situated about eight miles from Portumna, to which there is water-carriage; and the nearest station on the Parsonstown Railway, now in progress, will be at about six miles distance.

The Land is suited for tillage under the 4 or 5-course rotation. There are good slated houses on three of these Farms; and any other buildings, which may be reasonably required, will be erected by the landlord. Mr. James Egan, the Steward, at Sopwell Hall, near Shinrone, will show these Farms.

TO BE LET, partially furnished, the MANSION HOUSE OF WEDDERBURN, in the Parish of Dunse, and County of Berwick, containing a number of Public Rooms and Bed Rooms, suitable for a large family. There is a Park of above 300 acres, divided into Fields (let from year to year), most of which are in permanent pasture, the whole being surrounded by a high wall. A small Stream runs through the Park, which affords Trout Fishing; and the right of Shooting would be given, if required, over several arable farms. There are both Foxhounds and Harriers in the immediate neighbourhood. The Dunse Railway Station is about two miles distant. A Lease could be given for five years, from Whitsunday 1854.

For rent and other particulars, apply to Sang & Adam, No. 61, Great King Street, Edinburgh; or to Andrew Dunlop, Parliamentary Agent, 2, Broad Sanctuary, Westminster, London.

TO BE SOLD, a SEED BUSINESS in one of the principal towns in the North of England. The premises are situated in the best business part of the town, are extensive and calculated for carrying on a large trade.—For further particulars, or to treat, apply, with real name and address, to A. Z., Office of this Paper. N.B. A Nursery Stock may also be had at a valuation, if desired.

TO BE SOLD, a GREENHOUSE, 16 feet 6 inches, by 10 feet, including about 3000 Bricks, for 16l. In first-rate condition.—Apply at 1, Myrtle Villas, North Street, Wandsworth.

TO BE SOLD, BUFF COCHIN CHINA EGGS, from Birds that have taken prizes at the Derby, East Kent, Bristol, Taunton, and Yeovil Poultry Shows, at 1l. 1s. per dozen; also Partridge Cochin China Eggs, from Birds that have taken prizes at London Summer Meeting, Surrey Gardens' Show in August, Malvern, Yeovil, Honiton, and Torquay Poultry Shows, at 1l. 1s. per dozen.—Apply to John R. Rodbard, Aldwick Court, Wrington, near Bristol.

LIGHT BUFF COCHIN CHINA FOWLS' EGGS.—An Amateur having a first-rate stock of Light Buff Cochin China Fowls from Prize Birds, and more eggs than he requires for his own use, is willing to part with a few sittings at a reasonable price—5s. 6d. per doz., box included.—Address "Chanticleer," Post-office, Farnham, Surrey.

CLEAR YELLOW COCHINS.—Eggs may be had from four pullets of "Sturgeon" blood, running with a cock bred by Mr. Fairlie, all pale yellow birds; 10s. per dozen, package included. Eggs from "commended" Spanish birds at the same rate.—E. T. A., Loddon, Norfolk.

SPANISH FOWLS.—Eggs from Birds which took Prizes at Southampton and Salisbury, themselves bred from Birds which carried off Prizes at Hitchin, Surrey Zoological, and Metropolitan Shows, crossed with one of Poole's best Cocks, may now be had at 2s. 6d. each, including Package, by inclosing a Post Office order, payable at Hartford Bridge, addressed to Mr. John Clarke, Shrub Cottage, Hartley Row.

AYLESBURY DUCKS' EGGS.

TO BE SOLD, EGGS warranted from the best selected White Ducks, good shape, bill and legs fine and a good colour, 6s. per dozen, including packing. Early application to secure them at the above price is necessary.—Apply to W. H. Green, Builder, Walton Street, Aylesbury.

TO BE SOLD, AYLESBURY WHITE DUCKS, 21s. each; Eggs, 21s. per dozen. Pure White Cochin Eggs, 12s.; Dorking Eggs, 8s. White Guinea Fowls' Eggs, 10s. 6d. Guinea Fowls' Eggs, 7s.—Apply to Mr. John Margesson, New Road, Aylesbury, Bucks.

WHITE-FACED SPANISH FOWLS.

TO BE SOLD, at reasonable prices, a few COCKERELS and PULLETS of the above excellent Fowls, from Prize Hens and a Cock bred by Capt. Hornby. — Apply to Mr. John Read, Church-yard, Boston.

TO BE SOLD, PRIZE PARTRIDGE SHANGHAES.—Two Cockerels and Two Pullets, birds which took first prizes at Surrey Winter Show, first prize at Bedford, also prizes at Norwich and Great Metropolitan Show. The Cockerels are Black-breasted, the Pullets beautifully marked. Price on application.—Also EGGS from Partridge Coloured Prize Birds at 20s. per dozen.—J. F. Chater, Haverhill, Suffolk.

MR. GILBERT, of Grays, Essex, having entered into an arrangement with Thomas Sturgeon, Esq., for the Purchase of the whole of his remaining Stock of COCHIN CHINA Fowls, bred by him in 1853. Gentlemen and Amateurs are informed the Birds are now on Sale. Eggs may be had from the above birds at 20s. per dozen.

FANCY POULTRY.

EDWARD H. STRANGE, Ampthill, Beds., has for sale a few pairs of the following birds:—Black Spanish, from Captain Hornby's strain; Two Hen Birds obtained 1st, 2d, and 3d prizes at the Bedford Exhibition, 1853; Golden Pencilled Hamburgh and White-bearded Polands, first prizes were awarded to each of these varieties at the Hitchin and Home Counties Exhibition 1853; White and Buff Shanghaes, fine heavy birds; Silver Spangled Hamburgh, these birds gained a prize at the Bedford Exhibition.

E. H. S. will have a few sittings of Eggs from each of the above Fowls to sell, and from the Staffordshire pile Game, from birds that took a prize both at Hitchin and Bedford. Price, and other particulars, sent on receipt of a directed envelope.

Sales by Auction.

MRS. LYDIA C. STOW'S SPANISH, BUFF & BLACK COCHIN CHINA, & COLOURED DORKING FOWLS.

MR. J. C. STEVENS has received instructions to Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, Feb. 28th, at 12 o'clock, precisely, upwards of 150 LOTS of CHICKENS of 1853, including many prize and commended Birds of the above varieties, all bred by Mrs. Stow. The SPANISH FOWLS, consisting of about 40 Lots, include Birds which took 1st Prizes at Malvern, Southampton, and Birmingham, and are the progeny of her noted Bird Champion, the winner of the 1st Prize at the summer Surrey Zoological Show, and will be the first she has parted with this season. The COCHIN CHINA CHICKENS were bred from Birds which have lately taken Prizes at Liverpool and Manchester. Aylesbury Ducks from 1st Prize Birds, &c.—Catalogues by enclosing a stamped directed envelope to Mr. J. C. Stevens, 38, King Street, Covent Garden.

KENSINGTON.

TO GENTLEMEN, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE and MORRIS are commissioned by Mr. Holland to sell by Auction, on the premises, Kensington Nursery, Gloucester Road, in consequence of the ground being let for building, on MONDAY, February 27, 1854, at 11 o'clock, the whole of the choice and well-selected FRUIT TREES, consisting of Standard and Dwarf trained and untrained Peach, Nectarine, Apricot, Apple, Pear, Plum, Cherry, Damson, Medlar, Mulberries, Gooseberries, and Currants: 3000 Standard budded Muscle Stock, worked with Peach, Nectarine, and Apricot; also Evergreens; a quantity of Rhubarb; Hand Lights, Wheelbarrows, and sundry effects.—May be viewed prior to the sale. Catalogues may be had on the premises; of the principal Seedsmen in London; and of the Auctioneers, Leytonstone, Essex.

WOOLWICH.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE and MORRIS are directed by the Widow of the late Mr. Henry Ward, to offer to public competition, by Auction, on the Premises, Bull Fields, Woolwich, on MONDAY, March 6, at 11 o'clock, the whole of his costly and justly celebrated STOCK of CARNATIONS and PICOTEES, comprising all the first flowers in cultivation.—May be viewed prior to the Sale. Catalogues may be had on the Premises; of the principal Seedsmen in London and of the Auctioneers, American Nursery, Leytonstone, Essex.

WOOLWICH.

TO GENTLEMEN, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE and MORRIS are instructed by Mr. Williams to sell by Auction, on the Premises, Bowater Nursery, Woolwich, on WEDNESDAY, February 22, at 11 o'clock, without reserve, the lease having expired, and a portion of the ground being required for building, the whole of the NURSERY STOCK of Evergreens, Fruit and Ornamental Trees, comprising Aucubas, Bays, Laurustinus, Variegated Hollies, Fan Yews, Portugal Laurels, Standard Apples, Pears, Plums, Cherries, Gooseberries, Currants; Large Fruiting Pears, Apples, Cherries, &c.; Laburnums, Weeping and Common Ash, Walnuts, several beds of Asparagus, Vines, Evergreens in pots, together with a 23-light Pit; the erection of a capital shed, &c.—May be viewed prior to the sale; Catalogues may be obtained on the Premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

IMPORTANT AND ABSOLUTE SALE OF MAGNIFICENT SPECIMEN PLANTS.

MESSRS. PROTHEROE and MORRIS are instructed by J. M. Yeeles, Esq., of Bathford, near Bath, to submit to public competition, by Auction, without reserve, on the premises, on WEDNESDAY, March 22d, at 11 o'clock, in consequence of his declining their cultivation, the whole of his unrivalled collection of SPECIMEN PLANTS, many of which are not equalled in this country as splendid examples of superior culture, and just in condition for the coming season's exhibitions. They comprise the best kinds of Ericas, Azaleas, Ixoras, Leschenaultias, Boronias, Pimeleas, Aphelexes, Eriostemons, and almost every kind of exotic plant worth culture for exhibition.—May be viewed the day previous to and morning of Sale. Catalogues to be had (6d. each, returnable to purchasers), of Mr. Glendinning, Chiswick Nursery; the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

SLOUGH.

To Gentlemen, Nurserymen, Florists, and Others.

MESSRS. PROTHEROE and MORRIS have received instructions from Mr. Bragg to submit to unreserved sale by Auction, on the Premises, Star Nursery, Slough, on WEDNESDAY, March 8, at 11 o'clock, his entire collection of CARNATIONS and PICOTEES, consisting of all the leading sorts; also collections of Pinks, Pansies, Hollyhocks, specimen and other Pelargoniums, Cinerarias, Tree Carnations, &c., Standard and other Roses, together with a quantity of Pot and Ground Roots of Dahlias, which will include all the new and most approved varieties.—May be viewed prior to the sale; Catalogues may be had (6d. each, returnable to purchasers), on the Premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

N. B. The above Nursery, with the established Business, to be Let, at a moderate rent, apply to Mr. W. Bragg, on the premises.

WANDSWORTH COMMON.

To Gentlemen, Nurserymen, Builders, and Others.

MR. J. WILLMER is instructed by Mr. Robert Neal to Sell by Auction on the Premises near the New Prison, on MONDAY, February the 27th, and Five following days, at 12 o'clock each day, a portion of the NURSERY STOCK, comprising Common and Portugal Laurels, Green and Striped Hollies, Evergreen Privet, Aucuba, Striped Box, Brooms of sorts, Cedrus Deodara, Pinus cembra, Laurustinus, Arbutus, Arbor-vitæ, Cotoneasters, Cedar of Lebanon, Evergreen Oak, Weeping Willows, Weeping Ash, Standard and Dwarf Roses, Elm, Beech, Lime, Chestnut, Hornbeam, Strong Quick, Standard Dwarf and Trained Fruit Trees, Gooseberries and Currants, Box Edging, &c. &c.—May be viewed till the time of Sale, and Catalogues had, on the Premises, and of the Auctioneer, Sunbury, Middlesex, by enclosing four postage stamps.

EDMONTON.

TO GENTLEMEN, NURSERYMEN, AND OTHERS.

MR. RICHARDS will sell by Auction, on the premises, Long Hedge Nursery, Upper Edmonton, on MONDAY, Feb. 27, at 11 o'clock, the Stock of Mr. C. Woolven, comprising a large quantity of Standard and Trained Apples, Pears, Plums, Cherry, Nectarine, Apricot, and Peach Trees; Gooseberries, Currants, Quince, Filberts, &c. Evergreens, consisting of large Portugal and common Laurels, Yew, Fir, Alaternus, Red Cedar, Green and Variegated Box, Aucuba, Phillyreas, Arbor-vitæ, Berberis, Chinese Privet, Holly, Box Edging, &c.; Ornamental Trees and Shrubs, including fine Thorns of various kinds, Weeping Willows, Elms and Ash, Oak, Sycamore, Chestnuts, Beech, Laburnum, Lime, Lilac, Acacia, Standard and Dwarf Roses, and a variety of Trees, &c.—May be viewed the Saturday preceding and morning of sale, and Catalogues obtained on the premises; at the Flower-pot, Bishopsgate Street; and of the Auctioneer, Tottenham.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES, GREENHOUSES, DWELLINGS, ETC.

ESTABLISHED MORE THAN ONE HUNDRED YEARS.

THOMAS MILLINGTON requests attention to his present prices of SHEET GLASS in 100 feet boxes.

Squares	6 by 4 and $6\frac{1}{2}$ by $4\frac{1}{2}$ } 7 by 5 and $7\frac{1}{2}$ by $5\frac{1}{2}$ } 8 by 6 and $8\frac{1}{2}$ by $6\frac{1}{2}$ }	... ... 13 6
"	9 by 7 and $9\frac{1}{2}$ by $7\frac{1}{2}$ } 10 by 8 to $12\frac{1}{2}$ by $9\frac{1}{2}$ }	... ... 16 3
"	12 by 10 to 21 by 14 ...	... ... 19 0

Orchard House Squares on Mr. Rivers's approved plan, to whom I have sold some thousands of feet:—20 inches by 12, 20 by 13, 20 by 14, 20 by 15, $20\frac{1}{2}$ by $12\frac{1}{2}$, $20\frac{1}{2}$ by $13\frac{1}{2}$, $20\frac{1}{2}$ by $14\frac{1}{2}$, at 19*s.* per 100 feet.

200 feet cases at 42*s.*, and 300 feet case 63*s.*, in large sheets.

Boxes charged 1*s.* extra per 100 feet, and the same allowed if returned free of all charge.

HARTLEY'S PATENT ROUGH PLATE GLASS, Fern Shades, Striking Glasses, Milk-pans, Bee Glasses, Cucumber Tubes, Sheet and Rough Plate Glass Tiles, Wasp Traps; Plate, Patent Plate, Crown and Sheet Window Glass, in every thickness and quality, and Ornamental Glass, plain and coloured; pure white Shades for Ornaments, Crystal Glass for Pictures.

Warehouse, 87, Bishopsgate Street Without—same side as Eastern Counties Railway.

HARTLEY'S PATENT ROUGH PLATE GLASS, 1-8th thick, or 2 lbs. to the foot; 3-16ths, or 3 lbs.; and 1-4th, or 4 lbs. to the foot, for Ridge and Furrow Roofs, Greenhouses, Railway Stations, Engine Sheds, Mills, Market Halls, and Public Buildings generally.

For further information apply to JAMES PHILLIPS & CO., London Agents, 116, Bishopsgate Street Without.

"ROUGH PLATE GLASS.—I have given the rough plate 12 months' trial, and I find it answer better than any other glass I have in use; the plants keep more dwarf, and the foliage is of a better green. I do not find it to collect more dirt, and the condensed vapour runs down it quite as freely as on other glass. If I build more new houses, I shall certainly use HARTLEY'S Rough Plate. I purchased what I have had of Messrs. Phillips and Co. I have two houses glazed with it, which can at any time be seen at my nursery."—*N. Gaines, Surrey Lane, Battersea.*

BY HER MAJESTY'S ROYAL LETTERS PATENT.

ALFRED KENT'S PATENT WEATHER-PROOF GLAZING WITHOUT PUTTY.—For Horticultural Buildings in Wood or Metal.

HORTICULTURAL BUILDING WORKS, CHICHESTER.

Illustrated Books describing inventions, containing prices and particulars relating to the different designs, sent on receipt of four postage stamps. Nurserymen and others appointed agents on application.

Horticultural Buildings upon this plan having been erected in many different parts of the country, and having stood the trial of all weathers, and more especially the severest of all, viz., frost, A. KENT, with full confidence, strengthened by the many flattering testimonials he has received, can safely guarantee the proper working of his Patent System of Glazing. Estimates and Plans sent, including Heating by Hot Water.

LACE GLASS.

IMPORTANT ANNOUNCEMENT TO HORTICULTURISTS AND FLORISTS.

R. AND W. SWINBURN AND Co.'s PATENT LACE GLASS.

ALFRED KENT, HORTICULTURAL BUILDER, Chichester, having called the attention of the Manufacturers of this article to its great value in Horticultural Buildings in general, begs leave to place before the Public the advantages which will be found in the use of this Glass in the place of Rough Plate and other obscured glass. 1st. It is only partially obscure, the sun's rays being admitted freely through the transparent parts, whilst the obscured parts sufficiently divide the sun's rays to prevent burning. 2d. From its being of an even surface and regular thickness, it is as well adapted for first-class buildings as for commoner purposes, no sun-shade or network covering being required, and the constant gloomy appearance of obscured glass will be avoided.

For Tariff List of Crates and Squares, address ALFRED KENT, Horticultural Builder, Chichester, who is appointed Sole Agent for the sale of this Glass.

TO AMATEUR GARDENERS, LOCAL BOARDS OF HEALTH, & SANITARY WORKS.

PATENT GLASS TUBES, Iron Coated with Glass, Gutta Percha, Combinated ditto, Patent Flexible India Rubber Tubing, and every other Hose for Watering Gardens. The Hydraulic Ram, Fire, Garden, and every other kind of Pump, Sluice Cocks, Hydrants, High Pressure Cocks, and all other articles to be had, Wholesale and Retail, of

FREEMAN ROE,
HYDRAULIC ENGINEER,
70, Strand, and Bridgefield, Wandsworth.

CURE FOR MILDEW ON GRAPES.—In consequence of the increased prevalence of mildew on the Vine during the last few seasons, GEORGE TABER, of Rose Cottage Rivenhall, near Witham, Essex, practical Gardener and Florist has directed particular attention to the best mode of preventing it, or for curing the Vines that have been attacked, and he now begs to announce that he has succeeded in preparing a composition known as TABER'S ANTI-MILDEW COMPOSITION, which will effectually prevent or cure the disease without doing the slightest injury to the Vines; and any person, by aid of the printed instructions given, may use it without risk. Mr. TABER has in his possession testimonials from several gentlemen whose Vines have been cured, and he has completely protected his own Vines for several seasons. Sold in packets containing 3 lbs. 2*s.* 6*d.*, or 7 lb. packets, 5 .; delivered free to the Witham or Kelvedon Stations on the Eastern Counties line. Post Office orders to be made payable to GEORGE TABER, drawn upon the Witham Post Office. Postage stamps received in payment of small orders. The trade supplied on the usual terms.—Address GEORGE TABER, Rose Cottage, Rivenhall, near Witham.

HEAL & SON'S ILLUSTRATED CATALOGUE of BEDSTEADS, sent free by post; it contains designs and prices of upwards of 100 different Bedsteads, in iron, brass, japanned wood, polished birch, mahogany, rosewood, and walnut tree woods; also of every description of bedding, blankets, and quilts.—HEAL & SON, Bedstead and Bedding Manufacturers, 196, Tottenham Court Road.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

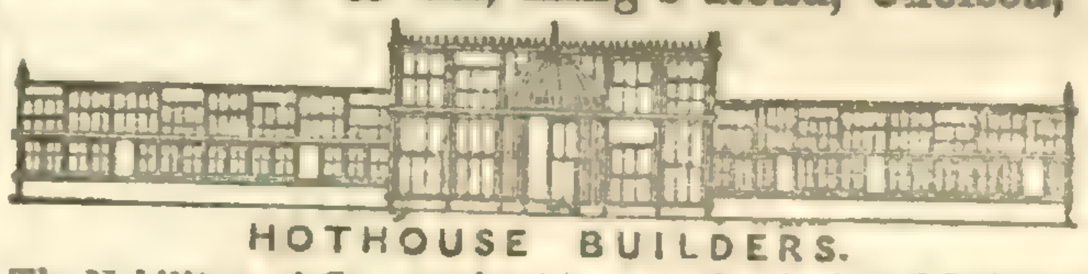
Priced lists of plant tubs and boxes forwarded on application.

HORTICULTURAL BUILDINGS, ROCK AND RUSTIC WORK, ORNAMENTAL WATER, FOUNTAINS AND FALLS, AND LANDSCAPE GARDENING, executed on the best principles; Estates Improved, Land Laid Out for Building, &c., by Mr. GLENNY, Valuer, Estate and Horticultural Agent, 420, Strand.

GREEN AND HOTHOUSES made by machinery at J. LEWIS'S HORTICULTURAL WORKS, Stamford Hill, Middlesex. Warranted of best materials; being made by steam-power, they are put together in a superior manner; one trial will prove these Buildings to be the cheapest and best made in England. 1 in. Greenhouse lights at 3*d.* per foot; 2 in. at $4\frac{1}{2}$*d.* per foot. Lists of Prices by enclosing two postage stamps.

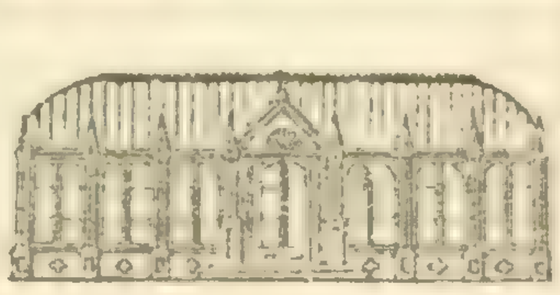
HORTICULTURE IN ALL ITS BRANCHES.

J. WEEKS & Co., King's Road, Chelsea,

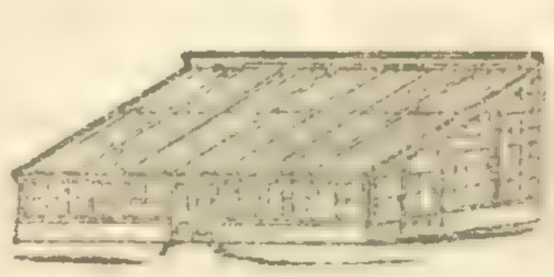


HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.



The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.



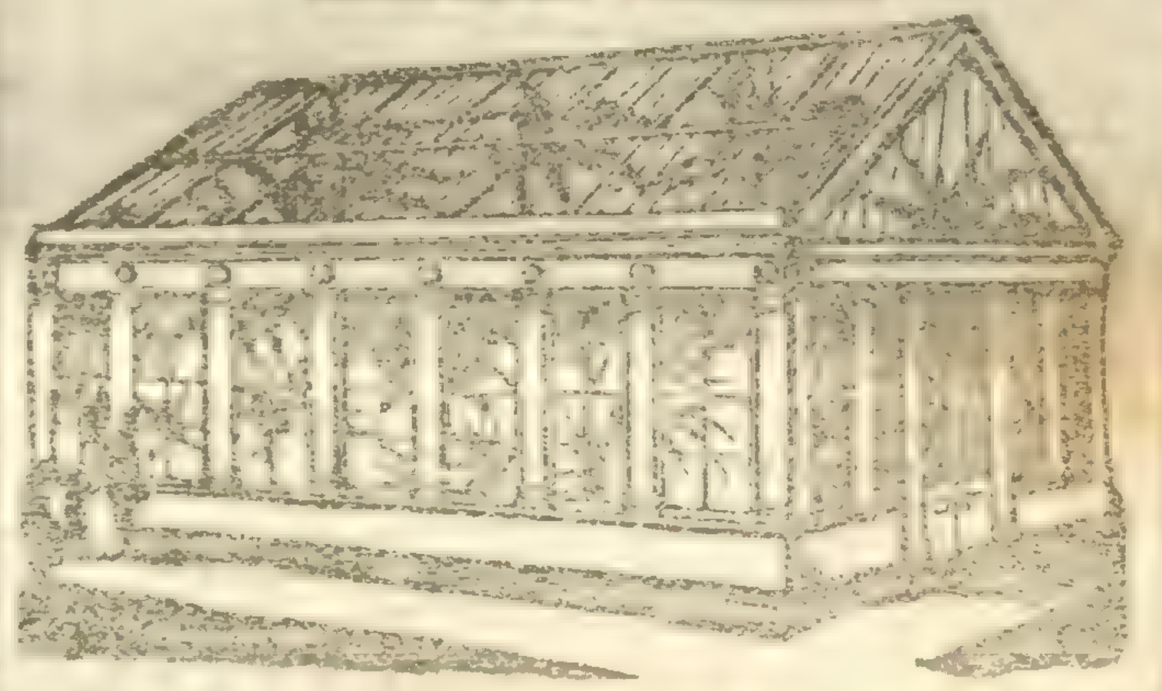
The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. WEEKS & Co., King's Road, Chelsea, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



GRAY AND ORMSON, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

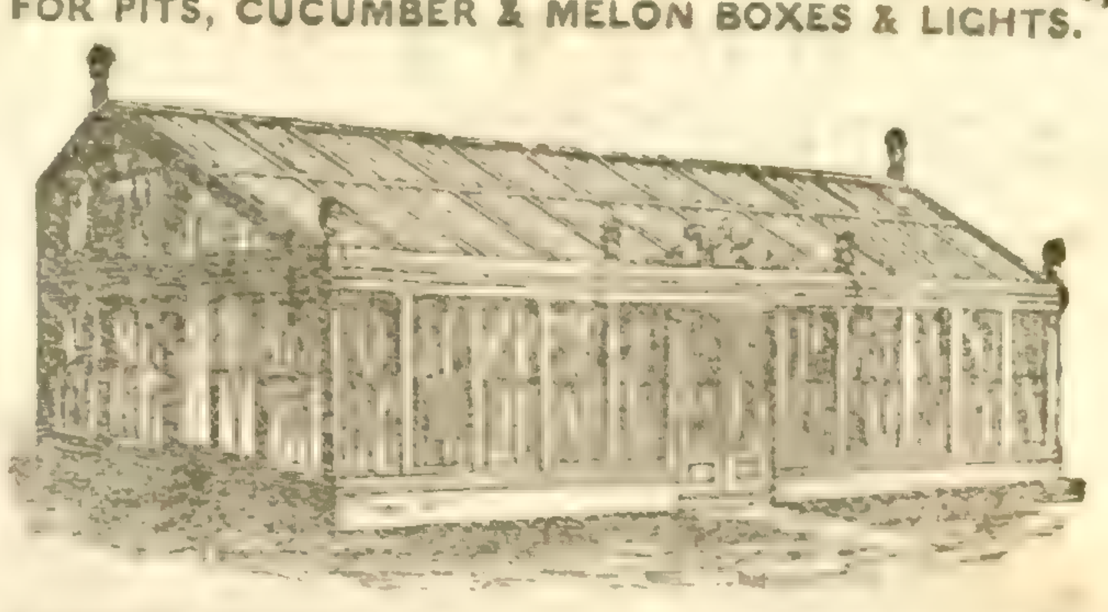
BY HER MAJESTY'S ROYAL LETTERS PATENT

E. DENCH, PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

PATENT HOTHOUSES and excellent Glass at 1*s.* 3*d.* per foot super., which are superior to all others for price with quality, and if known would supersede all others. (See Appendix, in "Book of the Garden," by Mr. M'Intosh.) A Range of Houses and Hot Water Apparatus, was erected by E. D. for E. L. Betts, Esq., Preston Hall, Kent. Mr. J. Frost, head gardener, has shown their efficiency by their produce at the Royal Botanic Gardens, Regent's Park, June 8, and Chiswick, June 11. The editor of the *Gardeners' Chronicle* says: "Beautiful examples of Black Hamburgh, large both in bunch and berry, and as black as Sloes, were furnished by Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall, Kent; these well deserved the first prize which was awarded them."—*Gardeners' Chronicle*, June 18th, 1853. The Grapes were considered the best shown at Regent's Park during the season, and the Houses are as superior for the growth of everything else in horticulture, which has been fully proved, and they have been extensively erected for the nobility and gentry in all parts of the kingdom.

GLAZING WITHOUT PUTTY.—Iron and Glass alone. E. D. has Roofed the Public Baths and Washhouses, Endell Street, on this principle, and others are in hand. Patent Sashes for Peach Walls, Pits, &c., 8*d.* per foot super. Heating by Hot-water, on the most practical principles, and all the best materials used. Printed Price List sent on application.

HOTHOUSES, CONSERVATORIES, FRAMES & LIGHTS, FOR PITS, CUCUMBER & MELON BOXES & LIGHTS.



JAMES WATTS, HOTHOUSE BUILDER, 8, Claremont Place, Old Kent Road, London.

Green and Hothouses, 9, 10, 11, 12, 13, and 14 feet wide, any length, from 16 to 100 feet. Frames and Lights for Pits, 6 ft. 6 in. 7 ft., 7 ft. 6 in., 8 ft., and 8 ft. 6 in. wide, any length, from 12 to 100 feet. Upwards of 200 Cucumber and Melon Boxes and Lights, from 4 ft. by 3 to 10 ft. 6 in. by 5 ft. 6 in., kept ready glazed with stout sheet glass, painted four times, complete, ready for immediate use, all made of best material, packed and sent to all parts of the kingdom.—Reference may be had to the Nobility, Gentry, and the Trade, in most of the counties in England.

TANNED GARDEN NETTING for protecting Fruit Trees from frost, blight, and birds, or as a fence for fowls, pigeons, Tulips, and seed beds, can be had in any quantity from JOHN KING FARLOW'S, Fishing Tackle and Net Manufactory, 4 and 5 Crooked Lane, London Bridge, at $1\frac{1}{2}$*d.* per yard one yard, 3*d.* two yards, or 6*d.* four yards wide. Carriage free on all orders over 20*s.*, accompanied by a Post Office order, or London reference. Rabbit, Sheep, and Fishing Nets of every description in stock or made to order.

FRUIT TREES, POULTRY, RABBIT, SHEEP, and CAT FENCING.—Worsted Netting to protect the Bloom of Peach, Nectarine, and other Trees, Flower, or Seed Beds, from Frost, Blight, and Birds, 2 yards wide, 5*d.* per yard. NEW TWINE NETTING (Tanned if required), 1 yard wide, $1\frac{1}{2}$*d.* per yard; 2 yards wide, 3*d.* per yard; 4 yards wide, 6*d.* per yard; Half-inch Mesh ditto, 2 yards wide, 6*d.* per yard. TANNED NETTING, 2 or 3 yards wide, $1\frac{1}{2}$*d.* per yard; 4 or 6 yards wide, 3*d.* per yard; or 5*s.* per 100 yards, 1 yard; 10*s.* per 100 yards, 2 yards; and 20*s.* per 100 yards, 4 yards wide. ELASTIC HEXAGON GARDEN NET, or Scrim Canvas, $4\frac{1}{2}$*d.* per square yard. COCOA NUT FIBRE, or Hemp Sheepfolding Net, of superior quality, 4 feet high, 4*d.* to 6*d.* per yard. Rabbit Net, 4 feet wide, $1\frac{1}{2}$*d.* per yard; 6 feet wide, $2\frac{1}{4}$*d.* per yard; 8 feet wide, 3*d.* per yard. Each Edge Corded, $\frac{1}{2}$*d.* per yard extra, suitable for Poultry Fencing. Square Mesh Cricketing Net, fix its full width and length, made of stout cord, 3*d.* to 4*d.* per square yard; this is the best article made for fencing, against fowls, cats, &c., at W. CULLINGFORD'S. Orders by post with post-office order or town reference, punctually attended to. The Trade supplied. Fishing Nets of all kinds in stock. Nets made to order Tents, Marquees, Rick Cloths, Tarpaulin, Lines, Rope, Twine, &c., made to order.—1, Edmund-terrace, Ball's Pond Road, Islington, London.

FORD'S EUREKA SHIRTS, Plain and Coloured, the latter in cloths of every variety of pattern—stripes, curves, bars, spots, sprigs; in short, every figure that art can describe and taste approve. Six for 27*s.* Patterns to select from on receipt of six penny stamps. Price lists free on application. —RICHARD FORD, 38, Poultry, London.

A LARGE QUANTITY OF TWO YEAR SEEDLING LARCH, FIR, AND OTHER SEEDLINGS.

WILLIAM WOOD AND SON have the pleasure of referring their Friends to the above, prices of which may be obtained on application.

SEEDLINGS—Two-year Scots Fir, ditto Pinus Austriaca.

One-year Pinus pinaster, ditto Pears, very fine, ditto Ash and Alder, ditto Sycamore and Hornbeam, and two-year Weeping Birch. Also Bedded Larch, very fine, and strong transplanted Spruce and Silver Fir, all on the most moderate terms.

N.B. A large stock of Standard and Pyramid Pears, also Standard Plums and Cherries.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

UNBLOOMED SEEDLING CALCEOLARIAS.

C. KIMBERLEY has several hundred of the above to dispose of. Nice healthy plants at 6*s.* per dozen, or three dozen for 15*s.*; post free for 1*s.* extra. The Seed was saved from that well known favourite Kinghorn's Masterpiece and other splendid kinds carefully impregnated. Catalogue of Select Dahlias, &c., may be had on application.

Pinley and Stoke Nurseries, near Coventry.

MELON SEED.—All the newest and best varieties warranted true to name, at 1*s.* per packet, including MATCHLESS, a superb scarlet flesh (new); GOLDEN PRINCE unequalled, green flesh (new); LONDON IMPROVED green flesh Melon (new); and all the leading kinds in cultivation, at J. BURLEY and Co.'s, Acacia Nursery, Acacia Road, St. John's Wood, London.

NEW FUCHSIAS AND DAHLIA PLANTS, AND CUCUMBER SEEDS.

J. BATTEN, FLORIST, will send out, after Feb. 20, strong plants of the following FUCHSIAS:—

GRANDISSIMA—Deep claret corolla, long white tube, good habit.

MR. CHARLES PALMER—Scarlet corolla, white tube, broad inverted sepals, fine habit; first-class certificate at Hackney.

ADMIRAL—Light crimson corolla, light tube, free bloomer. At 7*s.* 6*d.* per plant, or the set for 20*s.*

BUSHELL'S LONDON DON DAHLIA—Colour scarlet orange, rivalling the Duke of Wellington, at 5*s.* per plant, in May next.

BATTEN'S CUCUMBER SURPRISER—Black spine, fine flavour, and first-rate for exhibition. Sealed packets of six seeds for 2*s.* 6*d.*—Brook Street, Clapton, Feb. 18.

FANCY PELARGONIUMS WORTH GROWING.

WM. P. AYRES being about to remove to fresh premises has several thousands of the following kinds which he wishes to dispose of at very reduced prices. Purchaser's selection of 12 varieties, 31*s.* 6*d.*; his own selection 12*s.*, 18*s.*, and 21*s.* per dozen. Those in italics are Seedlings of his own, sent out in 1852-53:—*Advancer*, *Argus*, *Autumnum*, Anais Perfection, Alboni, Antagonist, Berrier, *Beauty of Blackheath*, *Blanda*, *Cleopatra*, *Conqueror*, *Cassandra*, *Caliban*, *Celestial*, *Conspicuum*, *Charles Dickens*, Cabrera, Delicatum, Erubescens, *Formosissimum*, Fairy Queen, Gaiety, *Marco Polo*, *Mirandum*, *Macranthum*, Mulberry, Madame Rosatte, *Punctatum odoratum*, Perfection, Prince Albert, Princess Maria, Galitzen, Queen Superb, Richard Cobden, Roland Cashel, Triumphant, *Victoria Magna*, *Wizard*, *Gipsy Queen*, Itolinskii, John Bull. The collection of 40 varieties 63*s.* Post-office Orders on the Greenwich Office indispensable from unknown correspondents.—Blackheath, Feb. 18.

COTTAM AND HALLEN,

2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.

New Show Rooms devoted entirely to Articles of Horticulture.

ILLUSTRATED CATALOGUES UPON APPLICATION.

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Syringes	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.

AGRICULTURAL LIST UPON APPLICATION.

EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

READ'S GARDEN ENGINES, SYRINGES, &c.

WHEN an article of real utility attracts public attention, IMITATORS start into the field to snatch from the inventor the just reward of his labours. It has now become a daily practice of exhibiting in the windows of ironmongers and others, Syringes of the VERY COMMONEST DESCRIPTION, with the words "READ'S PATENT," as an inducement to purchasers. This, as an eminent writer on Horticulture has recently remarked on the subject, is indeed "living upon another man's fame."

READ'S Instruments have the ROYAL ARMS, with the Address—**35, REGENT CIRCUS, LONDON.**

*** A liberal discount allowed to Nurserymen, Seedsmen, &c., &c.—Descriptions sent Post Free.

WHEELER'S SHORT SELECT SEED LIST.

J. C. WHEELER AND SON'S SEED LIST *is now ready, and will be forwarded free on application. We have tried to make it as short and as select as possible, leaving out all inferior varieties, so that it is really a List of the best Seeds in cultivation. Grasses and other Agricultural Seeds, Garden and Flower Seeds, all described, and prices put to every article. We deliver our Seeds Carriage Free to almost every Railway Station in the kingdom, and take especial care that every sort we send out is true to name, and of the best quality.*

J. C. WHEELER & SON, Seed Merchants, Gloucester.

NEW ILLUSTRATED CATALOGUE,

WITH NEWSPAPER STAMP, POST FREE.

AGRICULTURAL SEEDS.

RENDLE'S NEW FARMING PRICE CURRENT, and AGRICULTURAL DIRECTORY for 1854, *Illustrated with several Engravings, is now in the Press, and will be Published shortly.*

It will be the same size as the "Garden Directory," containing 62 pages crown quarto.

This will be a good Farm Almanac and List of Fairs and Great Markets held during the year in the Western Counties.

Descriptions will be given of all the best varieties of SEEDS USED IN AGRICULTURE, and the prices of every article will be fixed, so as to be a Price Current in the true sense of the word.

It will contain a Descriptive Catalogue of all the best NATURAL AND ARTIFICIAL MANURES, with several useful remarks relating thereto.

It will also contain an Original Article, written by J. B. LAWES, Esq., of ROTHAMSTED, HERTS; and another by J. C. NESBIT, Esq., F.G.S., the celebrated Agricultural Chemist.

Also the reprint of a Lecture on Guano, by PROFESSOR WAY, the Consulting Chemist to the Royal Agricultural Society.

The Directory will be embellished with several illustrations of some of the best Agricultural Implements of the day, with letter-press descriptions of the same.

In a few words the proprietors have endeavoured to make it a useful companion to all engaged in Farming operations, and those who take an interest in the cultivation of the soil.

The "FARMING PRICE CURRENT AND AGRICULTURAL DIRECTORY," is now in the press, and will be ready shortly, and can be ordered from any bookseller, price 6*d.*; through the London Publishing Office, 294, Strand; or from the Proprietors, WM. E. RENDLE & Co., Seed Merchants, Plymouth.

RENDLE'S PRICE CURRENT.—*Opinion of Mr. James Barnes, the well-known Gardener to the Right Honourable Lady Rolle, Bicton:—*

"Dear Sir,—Your Price Current has just come safe to hand, and I beg to return my best thanks for the same. It contains a great deal of useful information for all classes, more particularly for the Amateur and those who cultivate their own Gardens and Allotments.—Yours, &c. "JAMES BARNES."

RENDLE'S PRICE CURRENT.—*Opinion of Mr. W. Tillery, Gardener to His Grace the Duke of Portland, Welbeck:—*

"My dear Sir,—I beg to return many thanks for the copy of Rendle's Price Current and Garden Directory for 1854. As far as my experience goes, I think your Calendar of Operations excellently planned, and the Directions are judicious and quite up to the mark for the present progressive period. The remarks on the systematic rotation of vegetable cropping are likewise excellent, and will do much good if carefully put into force.—Yours truly,

"To Mr. Errington. "W. TILLERY."

RENDLE'S PRICE CURRENT.—*Opinion of the Editor of the "Midland Florist and Suburban Horticulturist:"—*

"We had last year to praise the very excellent Descriptive Catalogue of Seeds issued by Messrs. W. E. RENDLE & Co., of Plymouth. We have had the one for the present year just sent us. It certainly is the best of the kind which has ever come under our notice, and to proprietors of gardens, whether large or small, must prove eminently useful. Under the head of each Vegetable are enumerated the best varieties, with its native country, proper mode of cultivation, &c., combining the most improved systems up to the present time; added to which are Lists of Flower Seeds, proper modes and hints on sowing, with a very complete Calendar of Operations by Mr. Robert Errington, gardener to Sir P. Egerton, a sufficient guarantee of its excellence."

RENDLE'S PRICE CURRENT.—*Opinion of the Editor of the* Mark Lane Express:—

"An annual publication or Trade Catalogue of Horticultural Seeds, with lists and prices of sorted collections proper for large, moderate-sized, and small gardens; containing also various excellent hints and practical observations on the best modes to be pursued in the proper cultivation of general garden productions."

RENDLE'S PRICE CURRENT.—*Opinion of Mr. George Glenny, the Editor of many of the leading Horticultural publications of the day:—*

"THE TRADE CATALOGUE.—No documents are more interesting to the gardener than the catalogues of the trade, when such documents are original. They have ceased to be plain lists like each other, and already assume more important forms.

"RENDLE'S Price Current is a complete work, containing, independently of the lists and prices of everything, a history of the leading subjects, with directions for Culture, a general Calendar of Operations for the year, and a mass of information appertaining to the garden. The Seed Catalogue is on a plan of selection, giving assortments at various prices for large and small establishments, and there are many pages of Advertisements. It is a great improvement on the one last year."

RENDLE'S PRICE CURRENT.—*Opinion of the Editor of the* Ladies' Newspaper and Pictorial Times:—

"RENDLE'S PRICE CURRENT FOR 1854.—This is one of those publications which, from their practical utility, are sure to recommend themselves among the large class to which they appeal. Their usefulness is their great recommendation, and no one connected with gardening or horticultural operations can do without such works. The proprietors of RENDLE'S Price Current have received so much encouragement from the great success of their publication in former years, that it has stimulated them to make the present in every way worthy of the distinguished patronage enjoyed, as well as to support the high position they have gained in connection with it. Messrs. RENDLE not only give a complete catalogue of prices of the various seeds, but much useful and practical information connected with gardening. Generally, and in practice also, we may refer to the operations of the month; the present one (January) we extract in another portion of our paper, as a sample of the useful matter contained in the work, which is heartily recommended to all our fair readers who take a pleasure in the pursuits of gardening."

RENDLE'S PRICE CURRENT.—*Opinion of the Editor of the "Florist" for February* 1854:—

"RENDLE'S Price Current and Garden Directory for 1854 contains elaborate descriptive lists of vegetable and flower seeds, in addition to much other useful matter, not the least of which is a Calendar of Operations by Mr. Errington. We can only hope the information Mr. RENDLE puts before his customers may meet with a hearty response."

RENDLE'S PRICE CURRENT.—*Opinion of Mr. Wm. Ogston, Brentwood, Essex:—*

"I received your Price Current and Garden Directory for 1854. I beg to return you my most sincere thanks for the same. In looking over its contents, I find, as usual, it contains a great deal of useful, judicious directions and rotations of vegetable cropping for every person who cultivates a garden."

RENDLE'S PRICE CURRENT.—*Opinion of Mr. Hamilton, the well-known Author of the "Hamiltonian System of Pine Culture," &c.:—*

"Your descriptive remarks in RENDLE'S Price Current, together with the mode of handling the subject, eclipses everything of the kind ever published to the gardening world in that form. It will be invaluable to the young gardener and the amateur, and every practical gardener should have it as a reference. My opinion is that it will be exceedingly useful to seedsmen, and I believe that when it is known, almost every seedsman in the kingdom will purchase it."

RENDLE'S PRICE CURRENT.—*Opinion of Mr. Jennings, Head Gardener to Earl of Derby, Knowsley Hall, Prescot:—*

"Your arrangement of the Calendar reflects great credit on you, and must have proved a heavy task. The remarks about rotations, preparers, &c., will lead to much good. You really deserve the best wishes of all gardeners for the task you have performed in so masterly a manner."

RENDLE'S PRICE CURRENT.—*Opinion of Mr. D. Beaton, Surbiton, Kingston, Surrey, one of the most popular Horticultural writers of the day:—*

"I have a copy of Mr. RENDLE'S Price Current for this year, and I can tell you at once that it is the most useful Catalogue and Calendar that was ever sent out from any house of business in our line, and I do not see what more you could add to it by way of usefulness. How different from the bare-bone lists to which you and I had access, when we first took to the spade on our own account!"

RENDLE'S PRICE CURRENT.—*Opinion of Mr. Charles M'Intosh, Dalkeith Park, the Editor of the "Book of the Garden," the most sterling work on gardening extant:—*

"I am much obliged to you for your attention in sending me your nicely arranged Price Current, which is well got up, and must be of much use to your customers and purchasers generally."

RENDLE'S PRICE CURRENT.—*Opinion of the Editor of the "Southern Florist," February,* 1854.

"This work or pamphlet, as the title indicates, constitutes a Descriptive Catalogue of Vegetable and Flower Seeds offered by the Firm of RENDLE & Co., of Plymouth; but while it contains all the useful matter found in a Catalogue, copious descriptions of the newest and most approved Seeds are given, together with a mass of sound and useful information, which cannot but be valuable to the Amateur as well as the practical Gardener. It contains an Almanack for the year, a copious Calendar of Operations for each month, directions for Rotation, Cropping, &c. &c., and is stamped to go post free to any part of the United Kingdom—forming a complete newspaper of over 50 pages of useful matter."

RENDLE'S PRICE CURRENT *has been already favourably noticed by the following Newspapers and Magazines:—*

"Mark-Lane Express," "The Lady's Newspaper and Pictorial Times," "The Florist, Fruitist, and Garden Miscellany," "The Gardener's and Farmer's Journal," "The Agricultural Magazine," "The Plough," "Lloyd's Weekly Newspaper," "Plymouth Herald," "Exeter Gazette," "Bristol Mercury," "Western Luminary," "Somerset County Herald," "The Clerical Journal," "Cornish Telegraph," "Plymouth Mail," "Devonport Telegraph," "Somerset Gazette," "Western Courier," "Teignmouth Gazette," "West Briton," "Portsmouth Times," "Naval Gazette," "Southern Florist," "Midland Florist," "Stockport Advertiser," "Liverpool Advertiser," and several other Newspapers and Magazines.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be ADDRESSED to THE EDITOR.—SATURDAY, FEBRUARY 18, 1854.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 8.—1854.] SATURDAY, FEBRUARY 25. [PRICE 6*d*.

INDEX.

Agriculture and science	123 *a*	Mammillaria senilis	120 *a*
Agri. Soc. of England	124 *b*	Manure, management of, 122 *a*,	123 *a*
America a field for gardeners	117 *b*	— British	122 *c*
Apples in sawdust	117 *c*	Orchard houses	117 *b*
Aroideæ, hardy	120 *a*	Pathology vegetable	116 *c*
Bread, cheap	122 *b*—123 *b*	Payen on Food, rev.	119 *a*
Broccoli, wintering	117 *c*	Pelargoniums fancy	119 *c*
Calceolarias, specimen	119 *c*	Plantations, forming	118 *a*
Calendar, horticultural	120 *a*	Plants, new	119 *b*
— agricultural	125 *a*	Pyrola rotundifolia	120 *a*
Cattle feeding	123 *b*	Railways and plant packages	117 *c*
Cedar of Lebanon wood	116 *a*—118 *c*	Reaping Machine Patents, rev.	124 *c*
Clay, burnt	117 *b*	Rose Manetti	117 *c*
College, (Agri.) diploma	123 *c*	Sawdust, Apples in	117 *c*
Corn salad	117 *c*	Science and agriculture	123 *a*
Deodar wood	115 *c*—118 *c*	Seakale, forcing	117 *a*
Drains, stoppage of	123 *a*	Sewage	124 *a*
— direction of	124 *a*	Stackyards, covered	123 *b*
Draining, pasture	123 *b*	Swainsonias	117 *a*
Fences, young	123 *c*	Timber, Deodar	115 *c*—118 *c*
Food, Payen on, rev.	119 *a*	— Cedar of Lebanon	116 *a*—118 *c*
Fuel, cheap	117 *c*	Tree lifter, M'Glashen's	118 *c*
Galls, remarks on	116 *b*	Vallota miniata	119 *a*
Gardeners, America a field for	117 *b*	Vegetable pathology	116 *c*
Garden walls	117 *c*	Veitch's (Messrs.) nursery	119 *b*
Gulf Stream	123 *c*	Walks, burnt clay for	117 *b*
Guano substitutes	121 *c*	Walls, cost of	117 *c*
Guano water	120 *c*	Wellingtonia	118 *c*
Heating, cheap fuel for	117 *c*	Wood, Deodar	115 *c*—118 *c*
Horticultural Society	118 *b*	— Cedar of Lebanon	116 *a*—118 *c*

BRIGHTON FLORICULTURAL AND HORTICULTURAL SOCIETY.—ROYAL PAVILION.—The Annual Summer Exhibition of Plants, Flowers, Fruit, &c., will be held at the above place on WEDNESDAY and THURSDAY the 28th and 29th of June next. The Autumn Exhibition September 13th and 14th.

By order of the Committee,

Brighton, Feb. 24. EDW. CARPENTER, Sec.

E. SPARY, NURSERYMAN, FLORIST, and SEEDSMAN, respectfully announces that his CATALOGUE of Dahlias, Chrysanthemums, Fuchsias, Geraniums, Verbenas, Stove and Greenhouse Plants, Vines, Seeds, &c., &c., may be had on application.—Queen's Graperies, and 176, Western Road, Brighton.

PRICED SEED LISTS.—*These Lists will be sent Post free on receipt of one penny stamp for each.*

No. 1. SUTTON'S LIST OF FARM SEEDS.
No. 2. SUTTON'S LIST OF GARDEN SEEDS.
No. 3. LIST OF CONTENTS OF SUTTON'S COMPLETE COLLECTIONS OF GARDEN SEEDS.

All orders faithfully executed in rotation, in strict accordance with priority of our receiving the same.

SUTTON & SONS, SEED GROWERS, Reading, Berks.

GRASS SEEDS FOR PERMANENT PASTURE.

WHEELER AND SON'S DESCRIPTIVE LIST of GRASS SEEDS will be forwarded free on application.
J. C. WHEELER AND SON, GLOUCESTER.

STANDISH AND NOBLE'S CATALOGUE for the present season is now ready, and may be had on application. A selection from it appeared as a detailed advertisement in the *Gardeners' Chronicle*, of Saturday, Sept. 10th, to which they respectfully refer plant buyers. It contains many new and choice plants.—The Nursery, Bagshot, Surrey, Feb. 25.

A FIRST CLASS CATALOGUE OF GERANIUMS, VERBENAS, FUCHSIAS, DAHLIAS, HOLLYHOCKS, ETC.

GEO. SMITH begs to announce that the above is now ready and will be forwarded in exchange for one postage stamp.—Tollington Nursery, Hornsey Road, Islington.

SPLENDID NEW SHRUBBY CALCEOLARIAS.

MR. HENRY MAJOR, Knosthorpe, near Leeds, begs to announce that his Descriptive List of Beautiful New Seedling Shrubby Calceolarias is now ready, and may be had on pre-paid application. Very choice Calceolaria Seed, 2*s*. 6*d*. per Packet.—Feb. 25.

JOHN SCHOFIELD AND SON have now ready their Descriptive CATALOGUE of first class FLORISTS' FLOWERS. The contents are Lists of the best Dahlias, Carnations, Picotees, Pinks, Pansies, Fuchsias, Calceolarias, &c.

A few packets of Calceolaria and Pansy Seed, selected from the best named sorts, 2*s*. 6*d*. each.

Knosthorpe, near Leeds, Yorkshire.

AMERICAN PLANTS.

JOHN WATERER begs to announce that his NEW CATALOGUE of RHODODENDRONS, AZALEAS, CONIFEROUS PLANTS, &c., is now published, and may be had by enclosing two stamps for postage.

The colours of all the Rhododendrons worthy of cultivation are described in order to facilitate purchasers in making selections, together with a Treatise on their successful management.

☞ The Rhododendrons forming the American Exhibitions in the Royal Botanic Society's Garden, Regent's Park, London, are annually supplied from this establishment.

The American Nursery, Bagshot, Surrey, near the Farnborough Station, South-Western Railway, and 3 miles from Blackwater, South-Eastern Railway.

GEORGE BAKER begs to say that his DESCRIPTIVE CATALOGUE of AMERICAN PLANTS, CONIFERS, ORNAMENTAL SHRUBS, FRUIT and FOREST TREES, &c., may be had by enclosing two postage stamps.

G. B. wishes to call particular attention to his fine Stock of GREEN and WEEPING HOLLIES, from 1 to 12 feet high.

G. B. has supplied the American Exhibition in the Royal Botanic Gardens, Regent's Park, from its commencement.

American Nursery, Windlesham, near Bagshot, Surrey, about six miles from Staines Station, Windsor Branch, South-Western Railway, where conveyances may be obtained.

JUDSON'S RICHMOND VILLA BLACK HAMBURGH VINE.

ARTHUR HENDERSON AND CO. have the pleasure of informing their patrons and friends that they have good plants of this valuable and much-esteemed Vine at 5*s*. each; extra strong plants, 7*s*. each.—N.B. For full particulars of the distinguishing characteristics of this Vine, we beg to refer our customers to the *Gardeners' Chronicle* of October 25th, 1851.

GRASS SEEDS, SEPARATE OR MIXED.

GENTLEMEN *intending to lay down land to Permanent Pasture, or for one or two years' lay, are recommended to communicate with us, stating the nature of the soil and situation, that we may advise as to sorts of Grass Seeds most suitable.* Price 21*s*. to 32*s*. per acre.

JOHN SUTTON & SONS, SEED GROWERS, Reading, Berks.

CLOVER SEED.

GENUINE NEW CLOVER SEED *may be obtained of the undersigned. Prices (according to market and quantity required) will be forwarded on application.*

JOHN SUTTON & SONS, *Seed Growers, Reading, Berks.*

FOR NEW AND VERY CHOICE PLANTS

YOUELL AND Co. beg to refer to their advertisement of the above, which was inserted in the *Gardeners' Chronicle* of the 11th February.—Royal Nursery, Great Yarmouth.

THE LAST ADVERTISEMENT THIS SEASON OF CHEAP AND SELECT NURSERY STOCK.

THE SUBSCRIBERS beg to refer all who are interested in PLANTING to their advertisement in this Paper of 18th February, page 99.

WILLIAM JACKSON & Co., Bedale, Yorkshire.

PELARGONIUMS.

GEORGE CLARKE begs to offer 12 of the newest and best Pelargoniums for exhibition, in strong healthy plants, for 18*s*.; Fancy do. do., 15*s*. per doz., hampers included. Streatham Place Nursery, Brixton Hill, Surrey.

"TRENTHAM" FUCHSIA.

MESSRS. COLE AND SHARP have pleasure in announcing that they purpose sending out the above admirable Fuchsia, which has received the highest encomiums from the most competent judges. For descriptions see future advertisements. Price 10*s*. 6*d*. each. The usual allowance to the Trade.—Aston Lane Nursery, near Birmingham.

JOHN JEYES, NURSERYMAN, Northampton, has to offer fine dwarf-trained trees of the following fruits:—

MORELLO, and other Cherries; MOOR PARK APRICOTS; GREENGAGE, and other Plums.

ROSA MANETTII FOR STOCKS.

H. LANE AND SON, Nurseries, Great Berkhamstead, have to offer a large quantity of the above, price 2*s*. per dozen, or 10*s*. 6*d*. per 100. The trade can also be supplied. They also possess a fine stock of tall Weeping Roses, 6 to 8 feet high, of Boursaults, Ayrshires, &c. Catalogues of which may be had by enclosing two postage stamps.

FRUIT TREES IN POTS.—The above established in Pots, fit for immediate forcing, and well furnished with bloom buds, can now be had at H. LANE & SON'S Nurseries, Great Berkhamstead. They consist of Apricots, Peaches, Plums, Cherries, &c. The Nurseries are within an easy distance, and an Omnibus from the station passes by them.

LIME TREES, 12 to 14 feet, 42*s*. per 100.—SPRUCE FIRS, 2 to 3 feet, 6*s*. per 100.—LAURUSTINUS, very fine, 30*s*. per 100.—Apply to BENJAMIN R. CANT, St. John's Street Nursery, Colchester.

SCOTCH FIR.

THE Subscribers can supply 2-year Seedling SCOTCH FIR, at a very low rate, if taken in quantity. Price given on application.—FOWLER & WRIGHT, Glasgow, Feb. 25.

CHOICE FLOWER SEEDS, FOR PRESENT SOWING.

PANSY, saved from 100 of the best vars., by name, 2*s*. 6*d*. per pkt.
POLYANTHUS, do. 50 do. „ 2*s*. 6*d*. „
VERBENA, do. 50 do. „ 2*s*. 6*d*. „
HOLLYHOCK, do. 60 of the most superb kinds, by name ... 2*s*. 6*d*. „
GLOXINIA, from 24 fine varieties by name ... 2*s*. 6*d*. „
ASTERS, saved from 50 of the most beautiful vars. 1*s*. 0*d*. „
CALCEOLARIA, do. 24 do., spotted varieties 2*s*. 6*d*. „
DAISY, do. 50 of the new Belgian do. do. 1*s*. 6*d*. „
ANTIRRHINUM, do. 20 best named varieties ... 1*s*. 0*d*. „
ANEMONE, from the most showy and brilliant kinds, 1*s*. „
FASTOLFF RASPBERRY SEED, for exportation, p. oz., 3*s*. 6*d*.

30 packets of Choice Flower Seeds per post free for 5*s*.

The above, per post, free.—Postage Stamps received in payment.

YOUELL AND CO., Royal Nursery, Great Yarmouth.

JOHN CATTELL has to offer strong well-rooted Plants of the undernamed at the prices annexed:—

RASPBERRIES.	Per doz.	Per 100.
Large Red	1*s*. 6*d*.	10*s*. 6*d*.
Turk's Cap, fine red	1 6	10 6
Large Fruited Monthly	2 6	17 6
Large White, very fine	2 0	15 0
GOOSEBERRIES.		
Mixed, strong	2 0	15 0
Ditto ditto, extra	2 6	17 6
Ditto, of large varieties	3 0	21 0
Fine named varieties	4 0	
CURRANTS.		
Red, White, Black, and Champagne, strong	2 0	15 0
Ditto ditto, extra strong	2 6	17 6
New Black Naples	3 6	
New large red Grape	5 0	

A remittance or reference is expected from unknown correspondents. Post-office orders made payable at Westerham.

Nurseries, Westerham, Kent.

JOHN COLE begs to inform the lovers of CALCEOLARIAS that he has a few choice Seedlings to dispose of, having succeeded in raising more than he has convenience to grow, and offers them, strong plants, at 4*s*. per dozen, or 25*s*. per 100. J. C. begs to state the seed was saved from choice impregnated spotted and striped varieties. A remittance solicited from unknown correspondents.

Keyfield Nursery, St. Alban's, Herts.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER has now ready a fine healthy stock of young plants of all the leading sorts. For price and description see General List, which also contains hints on their culture, with observations on the exhibition of Hollyhocks, &c. &c., and may be had by inclosing a postage stamp.

Saffron Walden Nursery, February 25.

"WELLINGTONIA GIGANTEA."

MESSRS. VEITCH, of EXETER and CHELSEA, have much pleasure in stating that their Seeds of the above magnificent Tree are vegetating satisfactorily. They therefore hope to be able to send out well established seedling plants during the ensuing summer and autumn. They are now taking orders for them at the following prices:—

For a Single Plant	2 guineas	For 8 Plants	10 guineas
For 4 Plants	6 guineas	For 12 Plants	12 guineas

And all orders will be executed strictly in the rotation in which they are received.—Feb. 25.

DOUBLE ITALIAN TUBEROSE ROOTS, 4*s*. per dozen.—The annual importation of the above-named beautiful and fragrant Flower has just been received, and large and well selected Bulbs may be obtained, without disappointment, at A. COBBETT'S Foreign Warehouse, 18, Pall Mall.

N.B. Printed regulations for treatment sent; also, just arrived, very moist and open Parmasan Cheeses.

WILLIAM NICHOLSON still continues to send out very strong well-rooted Plants of his four new and distinct varieties of STRAWBERRIES, viz., AJAX, dessert Fruit; RUBY, ditto; CAPTAIN COOK, Market Fruit; FILL-BASKET, ditto, at 15*s*. per 100, or 25 each of any two sorts for 10*s*., box included. Post-office orders payable at Yarm, Yorkshire. For a full description, see Advertisement *Gardeners' Chronicle* Jan. 28, 1854.—Egglescliffe, near Yarm, Yorkshire.

THE BLACK BARBAROSSA, "A GRAPE THAT DON'T KNOW HOW TO SHANK."

JOHN BUTCHER begs to state that a Certificate of Merit was awarded to this Grape at the Horticultural Society's Meeting last Tuesday, as a mark of its excellent qualities, one of which was stated to be that "it will hang longer in a ripe state without shrivelling than any other black Grape in cultivation."

Fine Fruiting Plants, 10*s*. 6*d*; good plants, 5*s*. 6*d*., may be obtained of the above splendid Late Grape. London Agent, Messrs. DAWE, COTTRELL & BENHAM, 36, Moorgate Street; and JOHN BUTCHER, Nurseryman, Stratford-on-Avon.

THE EARLIEST PEA IS "FAIRHEAD'S EARLY CONQUEROR." To be had of CLARKE AND Co., Borough, London; 2*s*. per quart (price per bushel on application).

SEEDS.

W. AND S. GAINES beg to offer to Gardeners, Farmers, and Nurserymen, the following seeds:—WHITE SPANISH ONIONS, 4*s*. 6*d*. per lb.; Deptford do., 4*s*. per lb.; Reading do., 4*s*. 6*d*. per lb.; quantities not less than 1 lb. SCARLET RUNNERS, 21*s*. per bushel; quantities not less than one peck. GOOD RHUBARB PLANTS: Albert, Linnæus, and Victoria, 40*s*. per 100; 6*s*. per dozen. Also collections of ANNUAL FLOWER SEEDS, packets of 60 varieties, 10*s*.; 30 do., 5*s*.; 15 do., 2*s*. 6*d*.—Post-office orders payable to W. & S. GAINES, Covent Garden Market London.

FIRST CLASS PRIZE VERBENAS.—The set of six, advertised by J. KEYNES in his Catalogue will be ready to send out the 21st of March, in fine well-established Plants, by post, free, for 20*s*.

These are six of the most beautiful Verbenas ever offered, and were much admired in the Surrey Gardens, the only place they were exhibited, and obtained First Class Certificates. Only a few sets left unordered.

JOHN KEYNES, Nurseryman, Salisbury, Feb. 18.

CONQUEROR OF THE WEST CUCUMBER.

JAMES LAKE, NURSERYMAN, &c., Bridgewater, begs once more to offer the above Cucumber. Having tested its merits against many other sorts highly spoken of, can with confidence recommend it as the best for general frame culture. Packets containing 12 good Seeds sent post free on the receipt of 12 postage stamps.

N.B. The Trade supplied with the genuine article.

J. L. also begs to state that he will be prepared to send out, the first week in May, strong Plants of his beautiful Seedling LOBELIA ST. CLAIR, so universally admired last summer and autumn, at 12*s*. per dozen. The usual discount to the Trade.

"NORFOLK HERO" CUCUMBER.—Without exception the very best Cucumber for open ground cultivation that has yet been offered. It is a most prolific bearer, as handsome as any frame variety, and is as delicate in point of texture, the fruit measuring from 16 to 20 inches in length. It is in the sole possession of YOUELL & Co., who will forward per post free (on receipt of postage stamps) packets containing six Seeds, 1*s*.; 18 Seeds, 2*s*. 6*d*.—"To Market Gardeners the above will be found a great acquisition."

Royal Nursery, Great Yarmouth.

THE FINEST BALSAMS IN EUROPE, in Six Classes; Seed saved by Mr. GLENNY from flowers three inches across: the six, 37 stamps; Mixed Seeds, 13 stamps, in Sealed Packets only, signed and sealed. The finest seeds that can be had procured to order, and all other choice Horticultural subjects.—420, Strand.

MANGOLD WURZEL SEED.—Purchasers of large quantities of Mangold Wurzel liberally supplied for cash price.—Apply (stating quantity required) to SUTTON and SONS, Seed Growers, Reading, Berks.

JOHN JEYES, NURSERYMAN and SEED-MERCHANT, Northampton, begs to offer Agricultural Seeds of every kind, and the best quality: Horticultural and Floricultural Seeds in great variety and of the choicest selection; Ornamental Shrubs and Trees of various sizes and immense variety; a Fine Collection of Roses; Fruit Trees carefully selected from the finest proved sorts; a large Stock of Forest Trees; Russian Mats.

Plans and Estimates given for making Pleasure Grounds, Cemeteries, &c. Seeds selected and packed for Exportation.

Experienced Gardeners recommended.

SEEDS—SELECT AND NEW SORTS.

BASS AND BROWN'S SPRING CATALOGUE OF SEEDS AND PLANTS is now complete, and supplied free for three penny stamps.

The following are a few new and select sorts quoted from the Catalogue.

Those offered by the packet may be had free by post.

*Those marked * have not been offered in the Catalogue.*

	s.	d.
BROCCOLI—Elletson's Emperor, large fine late sorts, per packet ...	2	6
,, Dilcock's Bride, very large and fine, per packet ...	2	6
CABBAGE—Mitchell's Early Dwarf York, Barnes' New Early Spotsbury, and other choicest, each, per oz. ...	0	8
,, Couve Tronchuda, an excellent tender sort ...	1	0
CELERY—Cole's New Crystal White, per packet ...	1	0
,, Seymour's Champion White, and Cole's Superb Red, each per oz. ...	0	8
CUCUMBER—*Lord Kenyon's Favourite, Great Britain, Chamberlain's Essex Hero, Cheltenham Surprise, Warwickshire Hero, *Chamberlain's fine Ridge, and *Chamberlain's White Spine, each per packet ...	1	0
,, Cuthill's Black Spine, Manchester Prize, Sion House, Victory of Bath, Victory of England, Phenomenon, Walker's Rambler, Roman Emperor, *Chamberlain's fine Ridge, and *Chamberlain's White Spine, each, per packet ...	0	6
MELON—Fleming's Hybrid, Bromham Hall, Windsor Prize ... each per packet	1	0
,, Caboul, Beechwood, and others ... ,,	0	6
MAMMOTH GOURD AND OHIO SQUASH ,,	0	6
LETTUCE—Wellington Cos, very fine, large and close, p. oz.	2	0
,, Grand Admiral, Cabbaging, large and fine ... ,,	2	0
,, Others of the finest sorts, each ... 1s. 6d. to	2	6
PARSLEY—Extra triple Curled, and Myatt's Garnishing, each per oz.	0	6
PARSNIP—Large new Guernsey ... ,,	0	6
SAVOY—Mitchell's Dark Green Drumhead ,,	1	0
TURNIP—American New Strapleaf, and Orange Jelly, each per lb. ...	2	0
PEAS—Sangster's New No. 1, very early prolific, and fine pods ... per quart	2	0
,, Warner's New Daniel O'Rourke ... ,,	2	6
,, Fairbeard's New Nonpareil, earliest wrinkled marrow, delicious flavour, per quart ...	5	0
,, Miles's Paradise, a very fine large long-podded early marrow, per quart ...	2	0
,, Hair's Defiance, new wrinkled marrow, fine, per quart	2	0

And various others of the choicest Vegetables. See Catalogue.

ASSORTED COLLECTIONS OF VEGETABLE SEEDS, including many of the above, 3l., 2l., 1l., and 15s.

The Collections Nos. 1, 2, and 3 are specified in the Catalogue.

FLOWER SEEDS.

Those marked * have not been offered in the Catalogue. Those not priced are 6d. per packet. Flower Seeds sent free by post.

GREENHOUSE PERENNIALS.

*Acacia verticillata
,, others. See Catalogue
Bossiaea biloba stenophylla, 1s.
,, heterophylla, 1s.
Calceolaria, very choice, 1s.
,, extra superb, from new varieties, 2s. 6d.
Calendrinia umbellata
Chorozema, in vars., each, 1s.
Cineraria, choice, 1s.
,, extra, from new varieties, 2s. 6d.
*Coffea arabica
Daubentonia tripetiana
Fuchsia, from new and choice, 1s.
Geranium, choice, 1s.
,, ex. choice new vars., 2s. 6d.
,, finest mixed scarlets
,, from finest fancy varieties, 1s. 6d.
Gloxinia, choice mixed
* ,, extra, from alba grandiflora, spectabilis, Maria van Houtte, and others from our superb collection, 2s. 6d.
Grevillea robusta, new, 1s.
Ixia mixed, 6d.
Kennedya, in vars., 6d. to 1s.
Lisianthus Russellianus
*Lobelia Limburgensis, ex., 1s.
Lychnis fulgens
Mandevilla suaveolens
Nycterinia selaginoides
Nymphaea cærulea
Petunia, from new and choice, 1s.
Primula sinensis, mixed
,, fimbriata, choice mixed, 1s.
Silene orientalis, new, and fine for bedding
Streptocarpus Rexi
Verbena, mixed choice, 1s.
,, choicest new, 2s. 6d.
Vinca rosea, and alba, separate

HARDY PERENNIALS.

Antirrhinum, choice mixed
,, from Hendersoni Primrose Perfection, and other prize varieties, 1s.
Aquilegia formosa
,, glandulosa, true
Auricula, from choice vars., 1s.
Campanula carpatica, 6d.
,, carpatica alba, 6d.
Carnation and Picotee, extra, from collection of 100 vars., 2s. 6d.
Cistus, Rock, splendid mxd., 1s.
Delphinium alata magna, 6d.
Dianthus nanus, new and fine varieties, 1s.
Digitalis lutea grandiflora, fine
Gaura Lindheimeria, new
Gladiolus, fine mixed, early
,, from choice named, 1s.
Hollyhock, choice, 1s.
Iris, English, splendid variety
,, from best varieties of our choice and superb collection, 2s. 6d.
Mimulus, mixed choice
Pansy, extra choice, 1s.
Polyanthus, mixed choice

HARDY PERENNIALS.

Potentilla, splendid mixed, 1s.
,, extra extra, 2s. 6d.
Ranunculus, very choice, 2s. 6d.
Sweet William, scarlet, fine
* ,, very choice, striped French

GREENHOUSE ANNUALS.

Balsam, from extra choice, imported
Gomphrena aurantiaca, 1s.
Ipomœa violacea vera (rubro cærulea), 1s.
,, Martynia fragrans
Phlox Drummondi alba, Leopoldiana, and alba oculata, 6d. each.
,, Drummondi, fine scarlet, 4d.; mixed, 3d.
Portulacca, 6 beautiful varieties, 3d. to 6d.
* ,, aurantiaca, new orange, 1s.
* ,, nova rosea, 1s.
,, fine mixed
Rhodanthe Manglesi
Salpiglossis atrosanguinea
,, new yellow
Schizanthus retusus alba
Thunbergia, 6 fine varieties, 6d. each
,, mixed

HALF HARDY ANNUALS.

Aster, Bishop's Prize, superb
Calceolaria chelidinoides, ex. ex., clear bright yellow, fine for massing on lawns, the mouth being closed it is not injured by wet, 1s.
Cosmus bipinnatifida grandifl.
* ,, purpureus
Grammanthus gentianoides
,, lutea
Hibiscus calysurus, superb, 4d.
Lobelia ramosus albus, new, 1s.
,, major, extra
,, rosea, new
Menulea violacea, new, showy, 4d.
Nemesia versicolor, new, fine, 4d.
,, bicolor, new, white and blue, very showy and beautiful
Pink, imperial Indian, extra
Tropæolum trimaculatum coccineum, new, 1s.

HARDY ANNUALS.

Cochlearia acaulis, new
Calliopsis nana, very dwarf, 3d.
,, new marbled, beautiful, 3d.
Collinsia Bartsiæfolia, new, extra
,, multicolor, new
Convolvulus bicolor, double new
,, tricolor, double new
Helianthus (Sunflower) Californicus, very fine and double
Iberis violacea superba, new, 4d.
Leptosiphon luteum, ex ex., very dwarf, and beautiful for massing on lawn beds, 1s. to 2s. 6d.
*Linum grandiflorum rubrum, 1s.
Nemophila aurita alba oculata, new
Penisetum villosum, new

For many other superb and new varieties, see Catalogue.

FLOWER SEEDS—BEST ASSORTMENTS.

Including a large number of those enumerated above.—

	s.	d.
100 Varieties new and select Showy Annuals	15	0
50 Varieties do., 8s. 6d.; 30 varieties, 5s. 6d.; 20 varieties	4	0
20 Varieties best dwarf Annuals, in large packets, for filling beds on lawns, 7s. 6d.; 12 varieties ...	5	0
20 Varieties choice Greenhouse Annuals, 7s. 6d.; 12 vars.	5	0
20 ,, ,, Perennials, 10s. 6d.; 12 vars.	7	6
20 Vars. hardy Biennials and Perennials, 7s. 6d.; 12 vars.	5	0

BASS AND BROWN'S ADVERTISEMENT—*Continued.*

CHOICE IMPORTED SEEDS.

	s.	d.
24 superb varieties Dwarf German Stocks, 4s.; 12 varieties	2	6
Mixed, in 40 superb varieties, per packet ... 6d. to	1	0
Choice new brimstone, 6d.; dwarf carmine ...	0	6
*Fine new French, straw colour ...	1	0
10 Superb varieties, new large flowering ...	2	6
18 ,, Wallflower leaved, or Prussian ...	3	6
New white Wallflower leaved, very dwarf and fine, per packet ... 6d. to	1	0
6 Superb varieties Brompton Stocks ...	1	6
7 ,, Emperor Stocks, lasting more than 4 years, and blooming 2 or 3 times a year	2	0
New White Emperor, very choice, per packet ...	1	0
12 Superb varieties German Aster ...	2	0
12 ,, Globe-flowering Aster ...	2	0
12 ,, Pyramidal Aster ...	2	0
12 Very fine French Pæony, flowering varieties; these are extraordinarily fine ...	5	0
Mixed do., per packet ...	1	0
6 Superb varieties Zinnia elegans ...	2	0

And other fine Imported Seeds. See Catalogue.

☞ Goods CARRIAGE FREE with orders of 20s. and upwards to London, Ipswich, Norwich, or any Station on the Line.

Remittances are requested with orders from unknown correspondents. Post-office Orders to be made payable to BASS & BROWN, or to STEPHEN BROWN.

The Autumn and Spring Catalogues supplied free by post for three penny stamps each, the cost of which may be deducted from orders sent.

BASS & BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

ESTABLISHED ABOUT HALF A CENTURY.

HIGHGATE NURSERIES, NEAR LONDON.

JAMES CUTBUSH, with deep regret, begs to inform his Customers and the Public generally of the sudden and lamented death of his Father (WILLIAM CUTBUSH), and offers his sincere thanks for the kind and extensive Patronage he received for upwards of 33 years. J. C. also acquaints them that the business will be conducted as hitherto under the name of "WM. CUTBUSH & SON" by himself, and humbly solicits a continuance of their esteemed favours; and by unremitting attention hopes to merit their support and recommendation.

EDWARD GEORGE HENDERSON AND SON beg to inform their Patrons and the Public that their Catalogue of Seeds for 1854 is now ready, and will be forwarded post free on application.

E. G. H. & SON take this opportunity of stating that none but the most popular and improved kinds of Vegetable Seeds appear in their List; and among the Flower Seeds only those whose beauty and merit are universally acknowledged, together with a carefully selected stock of the principal new varieties.

E. G. H. & SON beg respectfully to call particular attention to the following choice Seeds of Florist Flowers, which have been saved from a fine collection of named sorts, and also the annexed new Annuals, which they can confidently recommend.

CHOICE FLORIST FLOWERS.

Per packet.—	s.	d.	Per packet.—	s.	d.
Antirrhinum, fine mixed	0	4	Hollyhocks	1	0
Balsam, Camellia-flowered	0	6	Pansy	1	6
Calceolaria ... 2s. 6d. and	5	0	Petunia	1	0
Cineraria ... 1s. 6d. and	2	6	Pinks	1	6
Dahlias	1	0	Verbenas	1	0
Geranium, fancy, 2s. 6d. &	5	0	Mimulus, beautifully spotted		6

NEW AND OTHER CHOICE FLOWERS.

Per packet.—	s.	d.	Per packet.—	s.	d.
Abronia umbellata ...	1	6	Lobelia racemosa (large blue)	0	4
Anagallis azurea grandiflora	1	0	,, ,, alba (new)	0	6
,, rubra	1	0	Mignonette (new large-flowering)	0	3
Arctotis breviscapa ...	0	6	,, Tree	1	0
Aster, new dwarf German Pyramidal, in packets of 12 distinct colours, separate	6	0	Nycterinia capensis (new)	1	0
			,, selaginoides (new)	1	0
			,, villosa (new) ...	1	0
			Nolana grandiflora alba...	0	4
,, French Pæony-flowered Pyramidal, in packets of 8 distinct colours, separate ...	3	6	Œnothera prostrata (for bedding)	0	4
Balsam, new pale yellow	1	0	Portulacca, new orange (not aurea)	0	6
Collinsia bicolor atrorubens (new)	0	6	,, rosea	0	6
,, Bartsiæfolia... ...	0	4	Primula sinensis fimbriata alba	2	6
Clintonia pulchella ...	0	6	,, ,, ,, rubra	2	6
,, ,, alba ...	0	6	Rhodanthe Manglesi ...	0	6
,, ,, atropurpurea (new)	1	0	Schizanthus Grahami carnea (new)	0	6
Coreopsis coronata ...	0	4	,, retusa	0	4
,, Pygmæ (new) ...	0	4	,, ,, alba ...	0	4
Eucnidia Bartonioides ...	0	6	Stock, Scarlet Intermediate	0	6
Erysimum Arkansanum...	1	0			
Grammanthes gentianoides	0	6	,, Pyramidal Wall-leaved	0	6
,, ,, lutea ...	0	6			
,, ,, variegata	0	6	,, new dwarf German, in collections, extra fine ... 2s. 6d. and	3	6
Humea elegans	0	6			
Leptosiphon luteum (new)	1	6			
Linum grandiflorum rubrum (new)	1	6	Tropæolum Triomph de Gand	0	6
Maurandya elegans superba	0	6	Digitalis, new spotted varieties, extra fine ...	0	6

Wellington Nursery, St. John's Wood, London, Feb. 25.

EDWARD GEORGE HENDERSON AND SON, Wellington Nursery, St. John's Wood, London, begs to inform their Patrons that they have purchased the stock of that beautiful HYBRID CYCLAMEN, exhibited at the Horticultural Society's Rooms, Regent Street, in 1852, and again last Tuesday, a Certificate on each occasion being awarded. The Plants can now be seen at the Nursery in bloom, and orders booked for the following season, when flowering plants will be supplied at 10s. 6d. each.—February 25.

PRIMULA SINENSIS MAGNUM BONUM.—Was raised by Mr. Hayes, of Edmonton, by whom it was named and exhibited at the Horticultural Society's Rooms in Regent Street, the entire stock of which we purchased. The colour is far superior to the finest fimbriated purple variety; indeed, it has the richest shading of purplish crimson one can imagine. The eye is large and very conspicuous, of a beautiful yellow. The fimbriation of the flower is so fine that it has more the appearance of a double flower. The habit of the Plant is very robust and vigorous; the leaves have a remarkably stout footstalk with thick leathery foliage, and instead of the plant degenerating after the first season's flowering the fimbriation of the flower is much improved and the foliage of a handsome formation. One surprising feature of this plant is, that the Seedlings have all flowered correctly for three generations. Young Plants are now ready for delivery, price 10s. 6d. each.

N.B. On account of the seed being sown late, the plants are too small to be allowed to flower this season, as the consequence would be a very poor flower, not distinguishable from the ordinary varieties, but the plants should now be potted and grown on freely from this time for the ensuing winter, by which time they will produce splendid specimens of the most gorgeous coloured flowers in cultivation.

E. G. HENDERSON & SON, Wellington Nursery, St. John's Wood.—Feb. 25, 1854.

NEW PLUMS.

HENRY DOWLING, FRUIT-GROWER, Woolston Lawn, Southampton, most respectfully begs to return his sincere thanks to the Nobility, Gentry, and Public generally, for the most liberal patronage he has received, and informs them that he has none of the Standard of England, but can supply good strong plants of the Angelina Burdett and Black Gage, which can be obtained at Mr. C. TURNER's, Royal Nursery, Slough, or from the Grower. See the *Florist* for December, or *Gardeners' Chronicle* of November 5th or 12th for testimonials and particulars.

Woolston Lawn, February 25, 1854.

THE ROYAL MOSS-POD PEA.—The attention of horticulturists and of the public in general is called to this new and peculiar PEA, as being surpassed by none in exquisite flavour and colour on table; it is at the same time highly productive. To be had only of Mr. DENNIS, West Court, Detling, Maidstone, at 2s. 6d. per quart, and will be forwarded in any quantity (not less than a quart), to all parts of the kingdom, on receipt of postage stamps or post-office order for the amount.

SEED TRADE AND OTHERS.

W. J. EPPS begs to offer the following SEEDS, received direct from the Growers. Excellent samples and prices sent on application.

PEAS.

Early Emperor (very true)	Scimetars (true)
Champion of England	British Queen
Knight's Dwarf Green	Longpod Beans.

TURNIPS.

Laing's Swede	Red Tankard
Skirving's Purple Top Scotch	Red round
Green Top Scotch	American Strap-leaved Stone

BROCCOLI.

Early Purple Sprouting	Dwarf Danish
Brimstone	Early White
Miller's Dwarf	Imperial Winter.

Olive-shaped Radish, fine; Prickly Spinach; Long Red and Orange Globe Mangold Wurzel.

Maidstone, February 25.

MELON SEED.—All the newest and best varieties warranted true to name, at 1s. per packet, including MATCHLESS, a superb scarlet flesh (new); GOLDEN PRINCE, unequalled, green flesh (new); LONDON IMPROVED green flesh Melon (new); and all the leading kinds in cultivation, at J. BURLEY and Co.'s, Acacia Nursery, Acacia Road, St. John's Wood, London.

NURSERY, BANBURY.

THOMAS PERRY begs most respectfully to inform the Nobility, Gentry, and those who are in want of unusually fine Evergreens, of a size that will produce immediate effect, and yet transplant with perfect safety, that he has a fine stock of the best kinds. He has also a large quantity of well transplanted Forest trees suitable for planting where profit is an object. His Rose trees, of the most beautiful and select new kinds, are, as usual, very fine. His general Nursery Stock is of such a character as he flatters himself would well repay the trouble of inspection; he therefore solicits that honour of all those who, having to plant or form new gardens, are desirous of taking advantage of the present suitable weather for the purpose. He begs to add that he has made such important reductions in his scale of charges as he trusts will completely meet the views of his patrons.

CHARLES ALEXANDER (late of DICKSONS & Co.), SEEDSMAN and FLORIST, 32, West Register Street, Edinburgh. His Descriptive Catalogue of Select Garden and Flower Seeds is just published, and will be forwarded free on application.

SUTTON'S GRASS SEEDS.—

EXTRACT OF A LETTER FROM DR. LINDLEY:—

"Messrs. SUTTON,—*We have already made a trial of your Lawn Grass Seeds, and it is but justice to say they have proved the best we have sown for many years.*

(*Signed*) "JOHN LINDLEY.

"*Horticultural Society, 21, Regent Street, London, Nov. 9, 1853.*"

Messrs. SUTTON are continually receiving similar letters of commendation of their Lawn Grass Seeds. Price of seed, 1s. 3d. per lb., 3s. per gallon, or 21s. per bushel, CARRIAGE FREE, except very small quantities. The quantity required is 40 lbs. per acre in forming new lawns, or from 10 to 20 lbs. per acre for improving old lawns.—JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

WHEELER'S SHORT SELECT SEED LIST.

J. C. WHEELER AND SON'S SEED LIST *is now ready, and will be forwarded free on application. We have tried to make it as short and as select as possible, leaving out all inferior varieties, so that it is really a List of the best Seeds in cultivation. Grasses and other Agricultural Seeds, Garden and Flower Seeds, all described, and prices put to every article. We deliver our Seeds Carriage Free to almost every Railway Station in the kingdom, and take especial care that every sort we send out is true to name, and of the best quality.*

J. C. WHEELER & SON, Seed Merchants, Gloucester.

RENDLE'S PRICE CURRENT AND GARDEN DIRECTORY FOR 1854.—*The opinions of the following gentlemen, well known in the Horticultural world, will be found in the back page of the* GARDENERS' CHRONICLE *of February* 18:—

Mr. JAMES BARNES, the well-known Gardener to the Right Honourable Lady Rolle, Bicton.

Mr. W. TILLERY, Gardener to his Grace the Duke of Portland, Welbeck.

The Editor of the "Midland Florist and Suburban Horticulturist."

The Editor of the "Mark Lane Express."

Mr. GEORGE GLENNY, the Editor of the "Quarterly Review of Horticulture," the Gardening department of *Lloyd's Weekly Newspaper*, and several other periodicals.

The Editor of the *Lady's Newspaper and Pictorial Times.*

The Editor of the "Florist, Fruitist, and Garden Miscellany."

Mr. WILLIAM OGSTON, Brentwood, Essex.

Mr. HAMILTON, the well-known Author of the "Hamiltonian System of Pine Culture."

Mr. JENNINGS, Head Gardener to the Right Honourable the Earl of Derby, Knowsley Hall, Prescot.

Mr. D. BEATON, Surbiton, Kingston, Surrey, one of the most popular Horticultural writers of the day.

Mr. CHARLES M'INTOSH, Dalkeith Park, Editor of the "Book of the Garden," the most sterling work on gardening extant.

The Editor of the "Southern Florist."

It has also been favourably noticed by the following Newspapers and Magazines:—"The Cottage Gardener," "The Gardener's and Farmer's Journal," "The Agricultural Magazine," "The Plough," "Plymouth Herald," "Exeter Gazette," "Bristol Mercury," "Western Luminary," "Somerset County Herald," "The Clerical Journal," "Cornish Telegraph," "Plymouth Mail," "Devonport Telegraph," "Somerset Gazette," "Western Courier," "Teignmouth Gazette," "West Briton," "Portsmouth Times," "Naval Gazette," "Stockport Advertiser," "Liverpool Advertiser," and several other Newspapers and Magazines.

DILCOCK'S BRIDE BROCCOLI.

BAINBRIDGE AND HEWISON (late Jas. Edward), have the pleasure of again offering to their friends and the public their DILCOCK'S BRIDE BROCCOLI, at 2*s*. 6*d*. per packet; and while returning their thanks to their numerous patrons of last season, they beg to refer them to the following extract, taken from the *Yorkshireman* newspaper of the 30th of April last, when it was exhibited at York, for the fourth time:—"Mr. Dilcock deservedly obtained all the three prizes for Broccoli with his seedling—the 'Bride.' Taking the season into account, these vegetables were really remarkable specimens." It was equally successful the two previous years.

B. & H. are prepared to send out their Catalogues of Kitchen Garden and Flower Seeds, post free, on application, and also their Catalogue of Plants early in March, containing Stove, Greenhouse, &c., including many of the newest and choicest of the season. Their Seeds will be of the very best quality, and in the greatest possible variety.

Sold Wholesale by NOBLE, COOPER, & BOLTON, Fleet Street; CHARLWOOD & CUMMING, Covent Garden; and by all respectable Seedsmen in town and country.—York Nurseries, Feb. 25.

SUPERB LATE WHITE BROCCOLI—"EMPEROR."

EDMUND PHILIP DIXON having purchased the entire stock of the above Broccoli of Messrs. Elletson, Market Gardeners, Thorngumbald, near Hull, begs to announce that he is prepared to send it out in sealed packets at 2*s*. 6*d*. each. This Broccoli has been raised by the Messrs. Elletsons, the raisers of the Mammoth, sent out some time ago, who state that the EMPEROR, if sown at the same time, will come into use before it. Is of very dwarf growth, perfectly hardy, with heads from 15 lbs. to 20 lbs. weight: keeps its colour, and stands firm three weeks after it is ready to cut. A noble flower and commands the best price of any other in the Hull market, where it is well known, and will be a great acquisition to the market gardeners around London, as well as those who wish for a first-rate Broccoli.

May be had of Messrs. NOBLE, COOPER, & BOLTON, 152, Fleet Street; and Messrs. HURST & M'MULLEN, 6, Leadenhall Street, London. Also of the Advertiser, 57, Queen Street, Hull.

PEAS! PEAS! THE BEST VARIETY IN CULTIVATION.

CHAMPION OF ENGLAND, a blue wrinkled Pea, very productive, of quick growth, and of a most delicious flavour. This extraordinary Pea combines in one the merits of all others, and has none of their demerits; for, although a wrinkled Pea, it is both hardy and early, and being of quick growth, it is the best kind to plant throughout the season for each crop. It is highly productive, bearing very long pods of a lively green, which are well filled, and the Peas are generally as large as small horse Beans, of a deep green colour, and beyond all others of a most delicious flavour. Height, 3 ft. to 3½ ft.

Price, in quantities of not less than 1 peck ... Bag included 6*s*.
" " " 1 bushel ... ... " 16*s*.
" " " 1 sack (4 bushels) " 60*s*.
" " " 8 bushels (1 qr.) " 106*s*.

Delivered, freight paid by Railway to London.

Orders, with remittance or satisfactory reference, will have immediate attention on application to

H. AND A. WALLIS, SEEDSMEN, Ipswich.

HAWKES' CHAMPAGNE RHUBARB. — This most desirable variety is now for the first time offered to the public. It has stood the severest test that can be applied, and has beaten everything in Covent Garden and other London Markets in realising higher prices, from its magnificent colour and size. It has been seen by the very highest authorities and pronounced to be a most valuable introduction. In earliness it equals the Prince Albert, but of a deeper colour, and much greater bearer. It forces remarkably well, and is very hardy out of doors. Mr. HAWKES has placed the entire sale in the hands of Duncan Hairs.

One-year-old plants, strong, 5*s*. each. A few two years old, very strong, for sale.

LAING'S MAMMOTH RED CELERY. — This is considered the largest yet grown, attaining the extraordinary weight of from 10 to 12 lbs., and at the same time perfectly solid. It is nearly perennial in its habit, as it will not, under any circumstances, run to seed the first season, and it is difficult sometimes the second when planted out for that purpose. In colour it is a bright red. In flavour unsurpassed, if equalled.

It has been seen growing by many practical gardeners, who deem it a new feature in the garden, from the fact that it may be had nearly all the year. Packets 2*s*. 6*d*. each.

MITCHELL'S HARDY EARLY CAULIFLOWER.—This is grown precisely as the handglass variety, but when removed from the frame does not require the same protection, and comes in immediately after. This is particularly recommended for gentlemen's establishments. The head is not large, but handsome and compact, and is so firm that you may let them stand from 10 days to a fortnight and they will not get frothy or loose. This is quite a distinct variety. Packets 2*s*. 6*d*. each.

DUNCAN HAIRS, Seedsman, 109, St. Martin's Lane. Post Office orders to be made payable at Charing Cross.

NEW POTATO—DEAN'S SEEDLING.

ABRAHAM STANSFIELD, in sending out the above Potato, would particularly recommend it to the attention of all growers of this useful esculent, as being, all properties considered, the best sort yet raised. Like its parent, the Fluke, it is less liable to be diseased than any other variety, remaining vigorous and healthy when all others are cut down. It is about three weeks earlier than the Fluke, much superior in its farinaceous properties, has shallow eyes, a slight roughness of the skin, and is every way a superior variety for the table. It was exhibited at the Hapton and Padiham Exhibitions in 1852 and 1853, at each of which it received the first prize; it was also exhibited at the East Lancashire Horticultural Exhibition, and received a certificate of merit. It also received the following testimonial:— "Burnley, Sept. 22, 1853.

"We, the undersigned, beg to testify to the merits of a seedling Potato raised by James Dean Hapton, as being a very useful table variety, good keeper, and hitherto free from disease."—Signed, H. Walton, Florist, Marsden; R. Taylor, Gardener to Le Gendre Starkie, Esq., Huntroyd, near Burnley; T. Whitham, Gardener to J. Hallam, Esq., Marsden Hall, near Burnley; J. Redman, Gardener to Charles Townley, Esq., Townley, near Burnley; J. Lewis, Gardener to W. Thursby, Esq., Ormerod House, near Burnley; J. Dean, Gardener to Rev. W. Masters, Burnley, and many others.

The *Preston Guardian* of Sept. 24, 1853, in noticing the East Lancashire Exhibition, says, "Amongst the roots shown we particularly noticed a splendid sample of Potatoes—Dean's Seedling—which possessed the recommendation of a rough skin and being free from eyeholes. Several had been boiled, and they appeared all that could be wished in a Potato."—The same paper of Oct. 1st says, "That important desideratum, a Potato free from disease, has been raised by Mr. Dean, near Burnley." Mr. Glenny, in the "Gardeners' Almanack" for 1854, says "We ought to mention a capital and very handsome new sort of Potato, Dean's Seedling, handsome and well flavoured, and moreover an excellent boiler." Mr. Edwards, secretary to the National Floricultural Society, in a private letter, says Dean's Potato is a perfect gem.

A. STANSFIELD will commence sending out the above Potato the second week in February, at 7*s*. per stone of 14 lbs., sacks and bags included. Early orders are respectfully solicited, as the stock is very limited. Post Office Orders or reference are requested from unknown correspondents.

A. S. can also supply the genuine Fluke Potato, at 9*s*. per bushel of 56 lbs., sacks and bags included.

Vale Gardens Todmorden, Lancashire.

NEW FUCHSIAS AND DAHLIA PLANTS, AND CUCUMBER SEEDS.

J. BATTEN, FLORIST, will send out, after Feb. 20, strong plants of the following FUCHSIAS:—

GRANDISSIMA—Deep claret corolla, long white tube, good habit.

MR. CHARLES PALMER—Scarlet corolla, white tube, broad inverted sepals, fine habit; first-class certificate at Hackney.

ADMIRAL—Light crimson corolla, light tube, free bloomer.

At 7*s*. 6*d*. per plant, or the set for 20*s*.

BUSHELL'S LONDON DON DAHLIA—Colour scarlet orange, rivalling the Duke of Wellington, at 5*s*. per plant, in May next.

BATTEN'S CUCUMBER SURPRISER—Black spine, fine flavour, and first-rate for exhibition. Sealed packets of six seeds for 2*s*. 6*d*.—Brook Street, Clapton, Feb. 18.

RARE AND CHOICE FLOWER SEEDS.

WM. P. AYRES begs to recommend the following as of first-rate quality.

	Per packet.—*s*.	*d*.
Fancy Pelargoniums, from the choicest impregnated varieties ...	2*s*. 6*d*. to 5	0
Sweet-scented Pelargonium, impregnated with fancy kinds ...	2*s*. 6*d*. to 5	0
Fuchsia, from the best varieties ...	1*s*. to 2	0
Tigridia, four varieties, mixed ...	1	0
Forget-me-Not, pure white, a splendid bedding plant ...	2	0
Forget-me-Not, from Russia, splendid blue bedding plant, for spring ...	2	6
Intermediate Stock, true scarlet ...	1	0
Dwarf Late White Celery, the finest in existence ...	1	0
Cole's Crystal White ...	1	0
" Dwarf Red ...	0	6
Broccolies, six proved kinds for succession ...	4	0
Cox's Prolific Cucumber, the finest flavoured kind grown, and very hardy ...	1	6

A Post-office order payable at Greenwich, or postage stamps, indispensable from unknown correspondents.

*** See Advertisement of Fancy Pelargoniums in last week's *Chronicle*.

IMPORTED GERMAN FLOWER SEEDS.—

	s.	*d*.
QUILLED DOUBLE GERMAN ASTER.—Assortment of 24 splendid varieties, containing of each colour 100 seeds	5	0
Ditto, 12 splendid varieties ...	2	6
DWARF DOUBLE GERMAN ASTER.—Assortment of 16 most splendid varieties, of each colour 100 seeds ...	3	6
Ditto, 12 splendid varieties ...	2	6
DWARF GERMAN STOCK.—Assortment of 36 most splendid varieties, each colour separate ...	7	6
Ditto, 24 ditto ditto ...	5	0
Ditto, 12 ditto ditto ...	2	6
NEW LARGEST FLOWERING DWARF TEN-WEEKS' STOCK.—This new acquisition has been greatly admired. The flowers are exceedingly large. The colours are rose, purple, blue, light blue, and white, per packet ...	1	0
DWARF GERMAN WALLFLOWER-LEAVED TEN-WEEK STOCK.—Assortment of 12 splendid varieties, containing of each variety 100 seeds ...	3	0
BRANCHING GERMAN TEN-WEEK STOCK.—Assortment of 12 varieties, containing of each variety 100 seeds ...	3	0
NEW ROSE PURPLE EMPEROR STOCK, per packet	1	0
WALLFLOWERS.—Collection of eight splendid varieties	3	0
DWARF DOUBLE LARKSPUR.—Collection of 10 most splendid varieties, containing of each colour one-eighth of an ounce ...	5	0
TALL DOUBLE LARKSPUR.—Collection of 8 splendid varieties, containing of each colour one-eighth of an ounce	3	6
ZINNIA ELEGANS.—Collection of 6 beautiful varieties	2	6

We can strongly recommend the above as being of first-rate quality. They will be forwarded postage free.

J. C. WHEELER AND SON, GLOUCESTER.

CORN MARKET, WISBEACH, CAMBRIDGESHIRE.

CHARLES SHARPE begs to call the attention of the nobility, gentry, and trade to the undermentioned choice collection of SEED POTATOES, grown with great care upon marsh land near the sea, which is the most appropriate soil for the culture of the Potato, as it is less affected by the disease, and of finer quality. The undermentioned prices include hampers and package. Smaller quantities can be had if required. The Trade Price can be had on application.

POTATOES (FOR FORCING AND EARLY PLANTING).

Per bushel of 4 stones.		Per bushel of 4 stones.	
Early Ash-leaf Kidney ...	12*s*.	Early Flourball (Rylott's)	12*s*.
" " (Jackson's)	12*s*.	" Round Frame ...	12*s*.
" Emperor ...	12*s*.	" Cockney ...	12*s*.
" Fox's Seedling ...	10*s*.	" Oxford (very true) ...	12*s*.

POTATOES (FOR SECOND PLANTING AND LATE CROP).

Per bushel of 4 stones.		Per bushel of 4 stones.	
American Native ...	10*s*.	Kentish Kidney ...	8*s*.
White Rough ...	8*s*.	White Kidney ...	8*s*.
Yorkshire Regent ...	8*s*.	British Queen (this is the largest producer and best quality in cultivation) ...	12*s*.
Forty Fold ...	10*s*.		

SUPERB FLOWER SEEDS for early sowing, sent post free at the annexed prices:—Antirrhinums, from 50 best striped and spotted kinds, 1*s*.; Aquilegia, from select kinds, 6*d*.; Auricula, fine, 1*s*.; Balsam, extra double, from 30 best varieties, 1*s*.; Cineraria, new kinds, 1*s*.; Calceolaria, choice kinds, 1*s*.; Carnation, fine, 1*s*.; Digitalis, from large spotted kinds, 6*d*.; Delphinium, fine, 6*d*.; Double Daisy, fine, 6*d*.; Gloxinia, from 30 kinds, 1*s*.; Hollyhock, from show flowers, 6*d*.; Mimulus, from 12 kinds, 6*d*.; Petunia, fine, 1*s*.; Phlox Drummondi, from 30 fine kinds, 6*d*.; Potentilla, fine, 6*d*.; Pentstemon, from 12 kinds, 6*d*.; Polyanthus, fine, 6*d*.; Verbena, from 100 best kinds, 1*s*.; Sweet William, fine large, 6*d*.; Zinnia elegans, from 12 fine kinds, 6*d*.; 12 fine varieties hardy Perennials from America, 3*s*.; 50 fine varieties of hardy Annuals, 4*s*.; 30 do., 2*s*. 6*d*.; 12 do., 1*s*.—WM. KNIGHT, Florist, 53, High Street, Battle, Sussex.

NEW VARIEGATED PLANT—DAHLIA MACULATIFOLIA.—This magnificent Hybrid was raised by Mr. J. Cordery, Florist, Parma Place, Kent, and is pronounced by all growers who have seen it to be a grand acquisition to the section of plants employed for ornamental purposes; its height is from 3 to 4 feet, with dark green foliage, thickly blotched with a creamy white; lively rose coloured flowers, with the petals striated with deep red, which gives it a very striking and handsome appearance, and whose merits will not fail in obtaining the admiration of all who are lovers of the beautiful tribe of variegated plants (for opinion, see Harrison's "Cabinet," for Dec. 1852 and Dec. 1853), will be offered to the public, the 1st May next. Strong plants, 7*s*. 6*d*. each.—All orders addressed to Mr. J. COURCHA, Florist, Wellington Row, Hart's Lane, Bethnal Green Road, London.

*** Orders from unknown correspondents will not be attended to unless accompanied by a Post-office Order, made payable at the Post-office, Shoreditch.

KNAP HILL NURSERY, WOKING, SURREY.

WATERER AND GODFREY, Nephews and Successors to the late HOSEA WATERER, respectfully invite the attention of parties engaged in planting to the following list:—

Araucaria imbricata, 2, 3, 4, 5, and 6 feet high, in the open quarters, regularly removed every year, and as robust and handsome as it is possible to get them. We have a large stock.

Cryptomeria japonica, 2, 3, 4, 5, 6, to 8 feet.

Cedrus Deodara, stout handsome plants from seed, in any quantity, and of all heights from 1 to 7 feet. A few splendid specimens 10 to 15 feet; warranted to transplant with perfect safety.

Cedar of Lebanon, 2, 3, 4, 5, 6, 7 to 10 feet. These large Cedars of Lebanon are also very handsome trees.

Cupressus macrocarpa, or Lambertiana, 2, 3, 4, 5, 6, and 8 feet, all from seed.
" Goveniana, 2 to 3 and 4 feet.
" Funebris, 2 and 3 feet.
" thyoides variegata, 2, 3, and 4 feet.

The Variegated White Cedar, a scarce but most beautiful variegated plant, seldom seen except at Elvaston Castle. We hold a large quantity.

Juniperus Bedfordiana, fine plants, 3, 4, and 5 feet.
" Chinese, 2, 3, 4, 5, 6, 8, and 10 feet.
" repandus, 3, 4, 5, to 8 feet.
" Upright Irish, 3, 4, 5, 6, 7, and 8 feet; perfect columns, and, except at Elvaston, unequalled.
" Virginiana, the Red Cedar, 4, 5, 6, and 8 feet.

Taxodium sempervirens, 2, 3, 4, 5, and 7 feet.

Yew, common, 3, 4, 5, to 8 feet high.
" Irish, 3, 4, 5, to 10 feet. A splendid lot, all being trimmed to one stem; it adds much to their appearance and value.
" Gold striped, 1, 2, and 3 feet.
" do. worked on the Common, with fine heads, 4, 5, 6, and 7 feet high; very handsome.
" elegantissima (new striped) standards. The golden Yews are very ornamental, and we have a large quantity of fine plants.
" Dovaston, or Weeping Yew, fine standards.

Pinus Douglasi, 3, 4, 5 and 7 feet; a few magnificent plants, 10 to 12 feet high.
" insignis, 2, 3, 4, 5, 6, and 7 feet; all from seed.
" cembra, 3, 4, to 6 feet.
" Canadensis (Hemlock Spruce), 3, 4, and 6 feet.
" morinda, 3, 4, and 6 feet.
" Menziesii, 3, 4, 6, and 8 feet.
" cephalonica, 3 to 4 feet.
" Pinsapo, large and handsome, 3 and 4 feet.
" Nordmaniana, from seed, 1½ foot; a few larger, 2 feet.
" nobilis, stout plants, with perfect heads, about 1½ foot; a few larger specimens, 3 and 4 feet. We hold a fine stock of this beautiful Fir, none of which are grafted.

Thuja Arbor-vitæ, American, 3 to 6 feet. We recommend this plant for hedges.
" Weareana, 3 to 6 feet, one of the few really hardy and most useful evergreens.
" aurea. This is perhaps one of the prettiest plants of the day; it was first sent out from this Nursery, and our stock, for size and beauty, is unsurpassed.

Libocedrus chilensis, 1½, 2, and 3 feet. This is a very distinct and beautiful plant, of recent introduction. Our stock is large and good.

Independent of the foregoing we are very large holders of the most useful Evergreens, Deciduous and Ornamental Trees, and of large size. Priced Catalogues will be forwarded on application, enclosing two postage stamps, which will also include a Descriptive Priced Catalogue of the celebrated collection of American Plants grown at this Nursery.

The Nursery is near the Woking Station, and about an hour's ride from London. A visit is earnestly solicited from all who intend planting during the forthcoming season.

NEW AMERICAN WHITE-FLOWERED FLAX.

FREDK. AD. HAAGE, JUN., NURSERYMAN and SEEDSMAN, Erfurt, Prussia, offers Seed of the above at 3*s*. per lb. This species was discovered by Sir Robert Schomburgk, at the source of the Orinoco. It supersedes the common cultivated Flax in size of growth, fineness and whiteness of fibre, which is extremely strong and silk-like. Its great importance cannot too strongly be recommended. Specimens of the plant fibres may be had on application. Orders will be received by Mr. JAMES CARTER, Seedsman, High Holborn, London.

Erfurt, February 25.

The Gardeners' Chronicle.

SATURDAY, FEBRUARY 25, 1854.

MEETINGS FOR THE ENSUING WEEK.

MONDAY, February 27	Institution of Actuaries	7 P.M.
	Geographical	8½ P.M.
TUESDAY, — 28	Meteorological	7 P.M.
	Civil Engineers	8 P.M.
	Medical and Chirurgical	8½ P.M.
	Zoological	9 P.M.
THURSDAY, March 2	National Floricultural	2 P.M.
	Photographic	7 P.M.
	Antiquarian	8 P.M.
	Royal	8½ P.M.
FRIDAY, — 3	Botanical	8 P.M.
	Royal Institution	8½ P.M.
SATURDAY, — 4	Asiatic	2 P.M.
	Medical (Annual Election)	7 P.M.

AT the meeting of the Horticultural Society last Tuesday, there were some highly interesting illustrations of the quality of the timber of DEODAR and CEDAR OF LEBANON. Now, for the first time, has some really good evidence been produced in Europe concerning a most important question, hitherto involved in doubt, or elucidated only by testimony upon which it has not been found difficult to throw distrust. The beauty of the Deodar or Indian Cedar has rendered it so universal a favourite, and has led to such extensive plantations of it in this country, that everybody is desirous of knowing whether its quality as a timber tree at all corresponds with its value as an ornamental object.

That Deodar wood is of high value in India, we know from a great variety of evidence, which we need not now repeat. Such of our readers as are uninformed upon the subject will find it fully stated in Dr. ROYLE's able report to the Woods and Forests, which was lately transferred to our own columns (see p. 20). But it has been suggested that in the first place, its value may be over estimated in India, in consequence of the inferiority of the other kinds of timber with which the natives have to compare it. This idea was shown on Tuesday by Dr. ROYLE to be founded upon misapprehension, the districts where Deodar is largely used abounding in other kinds of wood of great excellence. It was also still

more effectually disposed of by the exhibition of a slab of this timber, 18 feet 6 inches long, 4 feet 6 inches wide, and 4 inches thick, recently imported by the East India Company for the express purpose of submitting it to European criticism. Four such slabs have arrived from India at the cost of the Court of Directors, to whose princely liberality the country has been indebted, year after year during many years, for an ample and gratuitous supply of the seeds of this invaluable tree. No one conversant with such subjects could look at the huge specimen without recognising in it a description of timber ranking among the highest of its class, that is to say among Firs or Deals. Clean from end to end, massive, free from knots, towards the outside so close grained that it was difficult to count its rings of growth, and fragrant as sandal wood, it completely realised in appearance all that had been expected from the tree. But what was much more important, Dr. ROYLE produced a report from Mr. WILSON SAUNDERS, and other gentlemen of LLOYD'S, pronouncing it to be admirably adapted to shipbuilding. In their estimation it ranked between the best kind of Larch and hard woods. Some of the fastest clipper ships now afloat are constructed of Hackmatack or American Larch, and the Deodar timber was, in their opinion, superior to Hackmatack itself.

It has also been urged upon those disposed to plant Deodar for profit in this country that, although its timber possesses high value in India, it is not likely to be good in the North of Europe, because of the unfavourable nature of the latter climate. Of this Dr. ROYLE disposed by pointing out that there is in reality no such difference between the climate of the Indian Mountains upon which the finest Deodar is produced, and that of our own islands, as can justify such an hypothesis; and he showed that more especially in dampness, coldness, or mere exposure, the Deodar districts of India are essentially the same as Great Britain.

Another great hypothetical argument against growing Deodar in this country for profit has been drawn from the supposed difference between the wood of the Cedar of Lebanon on Lebanon, and that produced in England. It has been said that though the Cedar of Lebanon may be of great excellence on the Syrian mountains, yet it is perishable and comparatively valueless with us. And hence it has been inferred that Deodar, however good it may be on the north-western mountains of India, must not be expected to possess any importance with us. There is no doubt, however, that this is merely begging the question. It is not certain that Cedar of Lebanon is of much value when wild; on the contrary, travellers assert that it is no better than coarse Deal; nor has a particle of proof been hitherto produced of its quality being affected by cultivation. The general use of it in ancient days in constructing oriental palaces and temples, if indeed it really was as generally employed as is alleged, might only serve to show that in the interior of buildings, in a very dry climate, where wood has little tendency to decay, Cedar of Lebanon could be advantageously employed. But the name Cedar is believed by the best authorities to have been applied by the ancients just as loosely as it is in our own days, when it is given to such different woods as those of various Junipers, Deodar, Taxodium, and even Cedrela itself. We understand, too, that some of the wood found at Nimroud by Mr. LAYARD has been ascertained to be Yew. In the next place, it was demonstrated at the meeting in Regent Street that there is no appreciable difference between the quality of Cedar from Lebanon and from Middlesex. The means of proving this were supplied by N. B. ACWORTH, Esq., of the Hook, near Barnet, who was on Lebanon eight years ago, and who brought thence a part of a limb of one of those remains of the primæval forest which must have been ancient trees in the days of St. JEROME. This gentleman had with great liberality forwarded the specimen, in order that it might form a part of the day's exhibition; and by its side was placed a similar portion of another branch taken from an old tree in the Duke of DEVONSHIRE's grounds at Chiswick House. The first was about 80 the second about 40 years old, and it was impossible to point out any difference whatever in their quality, or in the appearance of their sections. It being now, therefore, certain that the quality of the Cedar of Lebanon is in no degree affected by English climate, as has been supposed, we are justified in concluding that neither will Deodar Cedar be so affected.

One of the advantages which planters may look to in the Deodar is the rapidity of its growth. The Indian slab produced on Tuesday, although 4 feet 6 inches in diameter, was not more than 190 years old. Its rate of growth had been somewhat as shown in the following table, as far as could be ascertained from an imperfect uncleaned section:—

Age, as indicated by Concentric Circles.	Diameter.	Increase in Diameter every Ten Years.
Years.	Inches.	Inches.
30	26	—
40	29½	3½
60	35	5½
80	38½	3½
100	42	3½
150	48½	6½
190	54	6

Supposing, then, that Deodar wood grows as fast in England as in the north-west of India, the trees will be fit to fell in 30 years, at which time they would be 26 inches in diameter. According to the tables of Mr. BROWN, of Arniston, Larch in Scotland, on favourable soil and site, is only 9½ inches in diameter, on an average, at the same age.

The subject before us cannot be concluded without a word as to the distinction between Cedar of Lebanon and Deodar. A strong belief is entertained by gentlemen whose opinion commands respect, that the one is a mere variety of the other. This point has already been so fully discussed (*Gard. Chron.* pp. 99, 117, 131, 1853) that we need not again go into the argument. But it is important to state that the timber of the Deodar is in one most essential particular distinct from Cedar of Lebanon. The latter is not only soft but very slightly scented, not much more so than some kinds of Deal; on the other hand, the fragrance of Deodar is so powerful that while the workmen were planing it in the meeting room in Regent Street, not only was the house filled with its sweet odour, but the smell was distinctly perceptible in the street when the door was left open. The shavings of it torch and flare with a great flame, but those of the Cedar of Lebanon, whether English or Syrian, burn with no more fierceness than shavings of Pine wood—in fact, they are as dry to the touch; while, on the contrary, those of Deodar are remarkably unctuous. Here, at least, is a great practical distinction, which is of itself sufficient to account for the different quality of the two woods, and strongly indicates a real specific difference. We learn, too, from Mr. ACWORTH, that the old trees he saw on Lebanon were gnarled like our own old forest trees, while the forests of Deodar which he had visited in India reminded him of a mass of gigantic Larches.

In these remarks we have wished to avoid all speculative questions, confining ourselves to what is not only certain, but has a practical bearing. For ourselves, the only conclusion which we can draw is that the Deodar deserves all that has been reported of it, and has a higher claim upon the attention of the planter for mere profit than any Coniferous tree yet discovered. As a nurse, it will probably ere long entirely supersede the Larch.

FEW queries are more frequently made by our correspondents than such as relate to the several GALLS which occur on the leaves, twigs, or even on the roots of Oak trees, as will be seen in our answers to correspondents, where several of them have been illustrated with figures. Some of these are remarkable for their resemblance to different fungi; and indeed, on superficial examination, have been figured as autonomous vegetables, as, for example, in the "Flora Danica;" while others are very generally known either for their beauty or singularity, as Oak Apples, or for their economical importance, as Nutgalls. These have been made very lately the subject of a particular memoir by Dr. LACAZE-DUTHIERS in the "Annales des Sciences Naturelles," though not to the complete neglect of such galls as occur on other plants.

In all the kinds of gall examined by this naturalist, several orders of cells succeed each other with a few vessels occasionally intermixed, and with slight variations according to the particular kind of gall, communicating with a stratum of indurated thick-walled strongly punctate cells, and succeeded by a mass of parenchym whose cells are, more or less, richly filled with fecula. In the midst of this soft tissue protected by the hard layer just mentioned, the larva nestles surrounded by the nutriment which is requisite for its transition into the pupa stage, and from thence to the perfect insect.

Dr. LACAZE-DUTHIERS has not, however, confined his researches to mere structure, but in conjunction with M. RICHE, has taken occasion to illustrate the interesting question as to the origin of fat in animals, whether this is formed in the animals themselves, or is merely a deposit from matter taken up with the food. In the solution of this question, it is manifestly necessary to take into account the composition of the whole animal, which is obviously impossible in the case of large animals. Bees have been examined with this view, and clearly indicate the fact, that fatty matters are formed in the animal which do not exist in their food; but no animal could afford better conditions for the solution of the question than the little tenants of galls, which live solely at the expense of a mass of starch and its containing cells, with which they are in immediate contact. The eggs are extremely small when deposited, so that the quantity of fatty matter originally present bears no appreciable proportion to that of the full-grown larvæ, and may safely be neglected, and the whole considered as derived directly or indirectly from the nutriment supplied. The little animals, moreover, are placed under conditions which experience has shown to be most conducive to the deposit of fat in animals raised for the supply of food, viz., complete quietude, abundant nutriment, and isolation from external influences. It is well known that infants fed on starch will grow very fat, though at the expense of muscular development, and the natural inference would be that the fat is secreted in the human frame, since it does not exist in the starch. The analysis of the little larvæ from the galls is completely confirmatory of this view, and opposed to those of BOUSSINGAULT and others, who from the examination of higher animals, have come to a contrary conclusion.

There are very much stranger matters in physiology than are dreamt of in modern philosophy, and convincing proofs arise daily, indicating how unwise it is to consider organisms, endued with life, as mere chemical laboratories, if we wish to arrive at sound and satisfactory results. *M. J. B.*

VEGETABLE PATHOLOGY.—No. VIII.

21. As in many cases it is requisite that vegetable cells should maintain their peculiar functions in perfect activity for a considerable time, and the tendency of the accession of new layers of matter within the original cell-wall, and the gradual solidification of those already deposited, is to hinder the ingress and egress of fluid matter and the reciprocation between contiguous cells, the additional layers in those parts which rest upon neighbouring cells are very generally perforated with tubular cavities leading to the original cell-wall, or more or less funnel-shaped pits communicating with an orbicular or oblong disc, which corresponds with a similar disc in the neighbouring cell, except in the case of the medullary rays and some other instances. Between the two contiguous discs, there is a peculiar cavity, which in some stages of growth contains fluid.

22. As it is only where the cells are in contact that the layers are perforated, it frequently happens that the two sides of a cell present a very different appearance, the one being perfectly continuous, while the other is perforated.

23. As all plants, even the largest, consist in their very earliest condition of a single cell, the whole of the cells, whatever be their structure, functions, or denominations, are modifications of one form. Such being the case, though it is necessary for the purposes of science to classify the different cells, it is clear that such classification cannot always be very definite, and that doubts must occasionally arise as to the nature of particular modifications.

24. The species of ordinary cellular tissue differ from each other principally in their form being more or less globose or elongated, and the degree or mode of incrassation of their walls. Some plants consist entirely of subglobose tissue, and in some entirely or nearly so of elongated cells. In some moulds and Algæ (*Vaucheria*) the whole plant before fructification consists of a single cell, variously branched and elongated, without any septa, and in *Caulerpa*, where the fruit arises in the protoplasm, however large or complicated the plant may be, and though exhibiting forms which simulate higher productions, but one cell branched and anastomosing in every direction. In general, however, several forms of tissue are combined, and in phænogamous plants, which are more especially in view, these may be reduced to a few principal divisions.

25. The parenchym of which some plants are entirely composed is in all a most important element. The cells vary extremely in size and thickness, their walls being sometimes extremely thin, sometimes, on the contrary, as in the albumen of certain seeds, of considerable thickness, and in such cases their internal coats are traversed by tubular canals, but not communicating with a distinct disc or intercellular cavity. The parenchym secretes those matters which are most important for the purposes of continued nourishment and reproduction, such as gum, starch, chlorophyl, &c., and forms a considerable part of the tissue of the leaves, pith, bark, &c., and is in fact the parent of all organs, however different. Particular names have been given to the different forms which it assumes, but it is not necessary to specify them here.

26. The woody tissue consists of elongated cells, generally ending acutely and sometimes branched, with the walls for the most part highly incrassated, and exhibiting canals communicating with a disc and intercellular cavity. They do not form new cells, and do not contain nutritive matter except in a very early stage of development. A variety of this tissue, which is called woody parenchym, is distinguished by its shorter obtuse cells, and by its containing nutritious matter, and in some cases resin. Both these tissues have a vertical

direction, but in exogens the vertical woody cells are separated by radiating plates consisting of horizontal cells, which are known by the name of the medullary rays. They retain their activity longer than the neighbouring woody cells, and frequently contain nutritive matter. In neither of these forms of tissue are new cells produced. New woody tissue is formed by the division of the external cells only, and in the direction of the bark. What is called cambium is not a distinct tissue, but merely the nascent woody tissue; or, in its most extended sense, includes the younger tissue of the bark. *M. J. B.*

SWAINSONIAS.

THE different species of this genus are all well worthy of a place in every greenhouse, producing, as they do, under proper treatment, a profusion of pretty blossoms for some two or three months in succession.

As regards propagation, this is readily effected, either by means of seeds, which are produced in abundance, or by cuttings of the half-ripe wood. The shortest-jointed firmest bits which can be obtained should be selected, and planted in a light sandy, peaty soil, covered with a glass, and placed in a shady part of a cool house for three weeks or so, and then removed to a slight bottom heat, where they will soon emit roots. It will be found however, that the cuttings are impatient of too much damp, hence water should be applied carefully, leaving the glass off until the foliage gets dry, and removing it occasionally, to wipe out damp. As soon as the cuttings are sufficiently rooted to bear handling, pot them singly in 4-inch pots, and place them in a nice moist growing atmosphere, till well established in their pots. Supposing the cuttings to be potted off and established by the end of May, which, if a plant is started early in spring to supply cuttings, may easily be the case, remove them to a cold frame, which can be kept rather close and moist and shaded from the mid-day sun. Attend to watering as may be required, and sprinkle the plants over-head on the afternoons of bright days, shutting up the frame rather early in the afternoon with a moist atmosphere, but give air before night. When the pots are found to be moderately well filled with roots, give a liberal shift, say into 7-inch pots, and water cautiously until the roots get hold of the fresh soil. Tie out the shoots, and stop any over-luxuriant ones, so as to keep the plants dwarf and well furnished, for they are of a somewhat straggling habit, and unless stopping and tying out are persevered in, compact specimens will not be obtained. Expose the plants freely to sunshine and air, after the middle of August, in order to get the wood well ripened before winter, and if this cannot be conveniently done in the frame, remove the plants to a sheltered sunny situation out of doors. During winter they will require merely protection from frost, and a very spare supply of water, provided the wood has been well ripened, and they may be placed in any cold frame where they can be guarded from frost. As soon as they show signs of growth in spring remove them to a close part of the greenhouse, and cut back the shoots rather freely, in order to cause them to break close; and when free growth commences shift into 12-inch pots, and maintain as close and moist an atmosphere as can be conveniently done, until the roots lay hold of the fresh soil. When this is the case the plants will grow vigorously, and will require attention to train the shoots so as to secure handsome specimens. Persevere in bending down strong shoots, and tie them so as to equalise the flow of the sap, and preserve compact specimens. Expose the plants freely to light and air, giving a liberal supply of water at the root, and syringing over-head on the evenings of fine days. By the middle of July the plants should be nice-sized specimens, and covered with blossoms, and they may now be removed to any light airy part of the greenhouse or conservatory, where they will be objects of considerable beauty till late in the autumn. After their beauty for the season is over, cut the shoots back to the well ripened wood, thinning them out pretty severely, and water very sparingly during winter. In spring, when they show indications of growth, turn them out of their pots and reduce the ball, taking care to injure the roots as little as possible, and repot in the same sized pots. By annual disrooting, and a free use of the knife to keep them dwarf, the specimens will last many years. Manure water in a weak state, given two or three times a week, when the pots are full of roots, will be of service.

Good sandy, turfy loam, and rich, fibry peat, broken up into small pieces, adding a liberal quantity of sharp clean sand, and some small lumpy charcoal or potsherds, will be found the most suitable compost in which to grow Swainsonias. *Alpha.*

FORCING SEAKALE.

THIS plant I need scarcely say is indigenous to many of our sea-shores, where it grows in fine drifted sands, and is sometimes partially covered with small stones and gravel. Few esculents are more improved by cultivation than Seakale. When forced at mid-winter it is far superior to any other vegetable that can be obtained at that season. Possessing such merits it is not astonishing that various methods have been tried to bring it to its uttermost possible perfection. The following will be found a very excellent mode of forcing it, provided the plan is judiciously carried out.

Dig a hole about 3 feet deep, the breadth and width of your intended frame; fill it up with well prepared dung and leaves, upon that place your frame; put in 6 or 8 inches of soil. Then proceed to lay in your roots. With this plan it is necessary to cut away all superfluous large roots, and to leave only such as have buds at their extremity. If each piece having a bud is separated from the rest of the mass of roots, and is 8 or 10 inches in length, it will be found under good management to produce as good a crop as if all the mass of roots was left undisturbed. By thus reducing the roots, a greater number can be got into the frame. And each of these parts will be found to contain sufficient organisable matter to perfect the crop. Lay them in tolerably thick, and cover them up to their crowns with soil; then place your lights on, which will require a thick covering of mats or straw, in order to bleach the Kale; if lights are scarce, wooden shutters will answer the purpose well enough. By this method the roots of course are of no more use after the crop is gathered, therefore sow annually sufficient seed to produce the quantity of plants you require, these will make fine plants for forcing at two years old.

Very good plants may be obtained by taking up old roots, and by dividing them into several pieces, and planting every piece that is from 3 to 6 inches in length; each piece will form a crown, and if this is done in March, these will make very good plants for forcing the following winter; therefore, by sowing a little seed and planting a few roots yearly, a very good supply may be kept for forcing; but I prefer the former plan.

Much of the well doing of Seakale, however, depends upon the treatment it receives during the summer months. If it is allowed to flower and exhaust itself in a useless way, the winter produce must not be expected to be good, for the flower uses up that nutriment which otherwise would have been stored in embryo for the succeeding crop; therefore, let no plants seed, except a few to produce the quantity you require for sowing the following spring. *A. Bundy.*

Home Correspondence.

My Orchard House.—I have now (Feb. 16) finished top-dressing my trees, and have made a station for each pot by taking out two or three shovelsful of the earth from the border, and replacing it with some of the compost used for the top-dressing, and placing the pot upon it so that each potted tree stands upon a little mound; this will soon sink to the level of the border. They have been kept perfectly dry all winter; I shall not give them water till the end of the month. The blossom buds have swelled rapidly lately, so that I have been able to discern the triple buds and prune back to them without any difficulty. Many short shoots or spurs are full of single blossom buds with a terminal leaf bud; some of these spurs I have thinned out, but have not shortened any. And now I cannot help looking over my trees with much pleasure; every shoot is full of promise in the shape of blossom-buds, and no gum or canker is to be seen. My orchard house is a little more than 60 feet by 20, and contains something over 100 trees, placed about 3 feet apart stem from stem. Some of my trees have been six years in pots, and they seem to become more sturdy, healthy, and prolific every year. All this is really very nice and gratifying, and agreeably disappointing; for I remember about three years ago a clever self-sufficient gardener—some are apt to be so till a very mature age—telling me "that it was all nonsense to think of keeping fruit trees in a healthy state in pots." But it seems that in Russia Proper, according to M. Masson's report, all fruit trees are grown in pots and tubs, and "most especially Peach and Apricot trees (were exhibited) of an extraordinary size for plants whose roots were cramped in wooden boxes." Why is it that our nurserymen and gardeners are so prone to condemn, often without trial, any practice or thing at all novel in its character. This should not be, and is much to be regretted. Reverting to orchard houses, I was told when I first commenced operations that my fruit would have no flavour, and that a first-rate gardener, who had filled a house with trees, was ordered by his employer to sell them all, as the fruit they produced was deficient in flavour; but I was firm (what some folks call obstinate) and persevered; I am richly rewarded, for my orchard house is an inexhaustible source of gratification. A near neighbour has a house in which he cultivates from 30 to 40 trees—last season was the second; he gathered nearly 500 fine Peaches and Nectarines, all well ripened, and from the trees on his walls—not a dozen. *Hortulanus.*

Burnt Clay a Material for Walks.—Will you allow me to ask whether any one has employed burnt clay for the purpose of making roads or garden paths, and what is the process of burning it and probable expense per load of 24 bushels? I have heard of it being so employed, and should think where stones are difficult to obtain it might be advantageously used in the construction of roads, &c.; the expense of stones where I am situated is 9*d.* per load, and 2*s.* 6*d.* the carting them. Being now about to make some length of road and several garden paths, I should feel much obliged to any of your correspondents if they would kindly give me some information on the subject. *A. F. B.* [This kind of material is largely employed in the formation of walks in the park belonging to the new Crystal Palace at Sydenham, where great quantities of clay are burned for the purpose; but we know nothing of the expense attending the process.]

America a Field for Gardeners.—I observed in your columns some time ago that young gardeners imagined they could get plenty of work by going to America. I felt at the time inclined to state that, amongst others from this neighbourhood who have returned to England in disgust, the brother of my gardener went, and he was months before he got a good place, and then had to work long hours. * *Birmingham.*

Broccoli and Corn Salad.—Permit me to ask your counsel in distress about my Broccoli. Under the rude assaults of the snow and frost at the beginning of the year, out of some 300 all but three dozen have perished. Of some the heart rotted out; others rotted through the stalk, about half-way up. As to their situation in the garden, it is neither much exposed nor specially protected; and my soil is heavy clay, well drained. What would you advise in the case? whether for the preservation this season of the few survivors, for which the return to-day of severe weather makes me tremble, or as a safeguard for future years? [Endeavour to procure hardy sorts.] I never have so suffered before all the 12 years I have been in this district. Have you, from other quarters, similar complaints this year? [More than in any year since 1838.] In Belgium, some years ago, in the month of April, I met with, in the hotels, a very nice salad made of what they designated to me as Corn Salad plant. I should like to grow it if I knew anything about it. Please instruct me as to its cultivation; *i. e.*, when should the seed be sown, whether in ground richly manured; and if the plants are afterwards to be transplanted; and at what age is it ready for use? *Olitor.* [Sow in rich garden soil, broadcast, or in drills 9 inches apart, at any time; but chiefly at intervals from the end of August till the end of October. The leaves are used when nearly full grown, but still tender.]

Storing Apples in dry Sawdust.—I have a dark closet in my house, or rather I live in a row with windows back and front. The house is four stories high, and the length from front to back is so great, that we have three rooms on a floor, the centre one dark. On the third story the floors are plaster, and I find the temperature so even that I use it for a wine store in preference to the cellar, and have it fitted with binns. In this room I put some hampers of Apples (like Pearmain). I wanted one of the hampers, and turned the Apples on one of the binns, amongst the dry sawdust (Pine sawdust). A fortnight ago we looked at them, having used up the others gathered at the same time and from the same tree, all of which were much wrinkled, but on taking those off and from amongst the sawdust, I found them in a most beautiful condition; those covered with sawdust were as plump and fresh as when gathered, while those partially buried were only so to the extent covered with the sawdust, the upper portions being wrinkled. I am so pleased with the discovery that I shall pack them in binns next year, for I have no doubt they will keep in this way until next Christmas. *Anon.*

Cost of Garden Walls.—If Mr. Daniels will consider the difference in the price of both materials and labour in 1852 and 1854, and if he will also allow for labour, at London prices, as compared with Sussex, he will find that my calculations, for using the best materials and the best workmanship, are not much beyond the mark. At the present time the materials alone could not be purchased for the sum he quotes, in this neighbourhood. *W. P. Ayres, Blackheath.*

The Manetti Rose Stock.—"This Rose stock is condemned." I read this (see p. 102), with some surprise, but it appears to be the sentence passed on it by Mr. W. Paul. I am very glad, however to be able to raise my voice in its favour; for, happening to live in a district where sand is predominant, I was at my wits' end to grow my favourite—the Rose, until some 10 or 12 years ago I received this stock. Roses budded on the Dog Rose would not grow. In two years at most they were all dead and dying. Now, to my great delight, my Hybrid Perpetuals, in particular, seem not to know when to leave off growing and blooming, and one of my neighbours, who has just enclosed a piece of ground from the heathy waste of Surrey, is in like manner delighted with his success in the cultivation of Roses budded on this stock. I have seen it growing with the same success in the sandy districts of Kent, Sussex, and Hampshire; and in the north I remember seeing Roses growing with remarkable vigour at Darlington, which were stated to be budded on this stock, so that it seems to me to be very valuable for light soils. I have never seen it at Mr. Paul's nursery, so I presume his soil is too deep and rich for it. Nevertheless, in my opinion, it is a very valuable stock. *An Old Rose Amateur.*

Cheap Fuel.—In connection with food, firing is, of course, a first consideration. Now, at every pit's mouth, breeze or small coal is to be had for nothing, or very little; if this were mixed with clay, as is done in Wales, it would, of course, make it go much further. I cannot see why (where a clay "pug" is to be had) saw-dust and clay, barky refuse and clay, or coarse litter and clay, should not be much used; the coals and clay do not, however, require a "pug," being mixed in Wales with a shovel. *Somerset,* 1, *Hyde Park Street.*

Orchard Houses.—I am obliged by Mr. Duncan's corrections. It appears that I had mistaken the length of rafter for width of building, but at the same time I must remark that my calculations of cost and produce were calculated for a promenade such as I should build, and which even at the present time could be erected for what I have stated. In Mr. Duncan's case he has covered very elegantly and substantially a garden wall; my calculations are for a promenade, without a wall at all. *W. P. Ayres, Blackheath.*

Railways.—I beg to call attention to the necessity of having some legislative measure prepared to compel

railway companies to forward perishable plants as quickly as possible; and whilst baskets containing stove and greenhouse plants are under their charge, to keep them under cover, also when on their journey to protect them from the frost by coverings, &c. It would surprise the public to hear of the immense losses sustained by individuals, and the great injury done to trade generally by the delays and destruction of plants, which might be prevented with common prudence and care. *A Nurseryman.* [Why don't you bring an action against the directors ?]

Woods and Plantations.—In your paper of the 14th of January there appeared an article headed "Advantage of Draining Woodlands before Planting," in which the writer, "W. R. A.," constituting himself an instructor of foresters, states a few very good reasons in support of his text, and immediately digresses from the all-important subject in hand, which forms what he very appropriately terms "the keystone of future success," in all "arboricultural operations," to the advantages attendant on the use of small sized trees, and the preference due to the Larch as a nurse for Oak. From a perusal of this article, as well as that which followed it (see p. 70), it is evident "W. R. A." has got the idea into his head that foresters are a profoundly ignorant class—ignorant of the most common-place and self-evident facts; and that they will swallow anything or everything that anybody professing to write for their improvement may be pleased to place before them. I shall not venture to say that "W. R. A.'s" abilities are unequal to the task he has undertaken; at the same time, judging from the two articles in question, I must confess that, if he is equal to the task, their ignorance is assuredly notorious, and that "as ignorant as a forester" may with propriety be added to the adages of our country. "Thirty years ago it was," he says, "thought sufficient to drain only the decidedly wet portions of land at about 50 feet apart," whereas, so far as I have observed, the fallacy of "that time" did not consist so much in the distance apart, as in the dimensions and direction of the drains—often being as close as 12 feet, and not above as many inches in depth and width. To remedy the defect of "that time," "W. R. A." "would urge on all foresters" the "necessity for thorough drainage at about 35 feet apart, and 30 inches deep;" but, seeing that he anticipates his readers to be so devoid of common sense as to require to be told they must have "a proper outlet" for their drain, I think he ought to have given, at least, a hint as to the requirements of the different soils with respect to the depth, the distance apart, and the direction of the drains—for he acknowledges that efficiency in this department "forms the keystone of future success;" and there is no doubt that, as there is a difference in soil, so also should there be a corresponding difference in the distance and depth of drains. As to planting, it is true that Oaks 2½ or 3 feet high, on exposed situations are not so apt to suffer from high winds as those of 5 feet; still I cannot agree with him that "it is a long time before they (the 5 feet ones) begin to grow, and that they never afterwards make such vigorous growths as they formerly did:" who that has had the management of forest trees in a nursery has not observed, on the same quarter, plants 5 feet high, and perhaps the very next plant not more than 18 inches; and I would ask any practical man whether he would not prefer those 5 feet high—that height evidently being the result of a more vigorous state of health—every organ being in the best possible condition for the change, and for enabling the tree to adapt itself perfectly to its new site. Let me not be misunderstood; I am no advocate for tall trees, but the contrary; what I mean to assert is that some other criterion than height—age—is necessary to guide inexperienced persons in the selection of their plants, so as to secure "a future healthy crop" rather than "a sickly and unpromising one." In his second article "W. R. A." proceeds with his instructions, stating that "next in order to drainage and selection of plants," and of course getting them to the spot, "comes planting." What an original idea!—showing in what estimation he holds the intelligence of foresters, and the meagre opinion he has of their judgment. I shall not question that the "best method of planting Oak and Larch on sheltered situations is to have them put in at 4 feet over all;" but how this is to be done after the Oaks have been put in at 10 feet I cannot comprehend; for who cannot perceive that 10 is no multiple of 4; even the labourer with spade in hand would find the execution of the work at more distance an impossibility. I admit the propriety of making pits in all cases for Oak, on account of their generally having large roots; but, attaching as your correspondent does so much importance to the size of trees, it is a very vague mode of stating a fact to say, with reference to the nurses, that "when the plants are small" they may "be put in with what are termed notches;" and that, "when they are comparatively large, pits are necessary." "W. R. A." is doubtless aware that it is the custom in many parts of our island to plant no Larches permanently till they have been transplanted three or four years in the public nursery, and are from 3 to to 5 feet in height, while in other parts they would be considered large enough after standing one, or at most, two years in nursery lines, and not more than 2 feet high. From this it is clear that the small trees of one district will be the large ones of the other, and that inexperienced planters (unhappily a too numerous class) in their respective localities, who might be inclined to follow the advice of "W. R. A.," would, from his mis-stated fact, misapply the practice he recommends. As I have never seen the instrument invented for the "notching system," I cannot speak decidedly as to its merits; but from the explanation given, I could imagine it to be a very efficient tool on level, clean, Grass land, but on stony, hilly, or on that sort of land which prevails on many of our hills, I think it must be disadvantageous rather than otherwise. Though the mismanagement of the Woods and Forests of the Crown, and the inexperience of the surveyors exemplified by the "deaths" and "failures" on "210 acres" planted in the New Forest in 1852, are notorious, almost proverbial, yet I opine that "W. R. A.'s" remarks upon them will neither tend to their improvement nor merited exposure. I can agree with him in condemning their system of planting alternate rows of Oak and Scotch Pine as a practice "wholly contrary to the attainment of beneficial results," but not on the ground that no "thinning can be done to perfection, as their future health demands;" for grant that the future health of wood demands the execution of this operation in perfection, and we soon arrive at the conclusion, that the want of this corner-stone is the grand cause of the unhealthy aspect of so many of them. Relative to his criticisms on the Woods and Forests, I would ask "W. R. A." one question, viz.:—How the removal "of every other Oak and Scotch Pine" can be done with a hope of, or "view to their future health" seeing that to attain this desirable object the "thinning must be done in perfection" and "with regularity" in woodlands, when the disposition of the plants over the ground is "wholly contrary to the attainment of beneficial results?" I shall postpone further strictures on "Planting Woods," in the hope that the writer will, in his next article, improve his position, show himself worthy the confidence of a discerning public, and deserving the thanks of those for whose benefit he writes; in fact I would not have entered upon the subject at all but to protest against the assumed ignorance of foresters, and at the same time advise "W. R. A." that unless he has confidence in his own ability to instruct he would do well not to occupy the pages of your Paper with valueless matter, but leave an open field for men like Mr. Bailey, whose "No. 1" on "Woods and Plantations" is, we have reason to hope, the beginning of a series which will prove "strong drink for men and milk for babes." A few articles like that just mentioned would edify the young, and interest, if they did not instruct, the old; but your correspondent's remarks are not calculated to do either the one or the other. *J.*

Societies.

HORTICULTURAL, *Feb.* 21.—Dr. ROYLE, Secretary, in the chair. S. Dickenson, H. Pouncey, and W. Wilson, Esqrs., were elected Fellows. The great interest belonging to several of the subjects exhibited on this occasion drew together an unusually large number of Fellows and their friends. Of Pears there was a very fine collection from Mr. Snow, gr. to Earl de Grey at Wrest Park, Beds, consisting of Chaumontel, Easter Beurré, Beurré Rance, Glout Morceau, Old Colmar, and Ne Plus Meuris. These were all perfectly sound, and in every way as fine specimens as could possibly have been ripened even in the best of seasons. A Banksian Medal was awarded.—J. Abell, Esq., sent from Limerick examples of Easter Beurré, Beurré Rance, Spring Beurré, Fortunée Parmentier, both from Pear and Quince stocks; Susette de Bavay, Rouse Lench, Crassane d'Hiver Brunneau, Catillac, and some Royal Russet Apples; the latter, though not very fine specimens, were in good condition, but the Pears had begun to spoil.—Some very fine Pears of foreign growth were furnished by Mr. Lewis Solomon, of Covent Garden. They consisted of Easter Beurré, Belle Angevine, St. Germain, Winter Nelis, Passe Colmar, and Bon Chrétien; and along with them were the following kinds of Apples, viz., the White Calville, Reinette du Canada, and the pretty little Lady Apple, or Pomme d'Api of the French. These were all beautiful fruit, more especially the two first named Apples, which possessed a transparency and brightness of colour such as they never attain in the climate of Britain. Of foreign vegetables, the same exhibitor produced some very fine white Asparagus and "green sprew," French Beans, very good Early Horn Carrots, Globe Artichokes, large white Cauliflowers, and young Spinach. A Banksian Medal was awarded for the vegetables, and Mr. Solomon also received another medal of the same kind, for the following salad vegetables of French growth, viz., Cos and Cabbage Lettuces, Batavian and curled Endive, Radishes, Taragon, and Chervil—all fresh and in excellent condition.—From Mr. Freeman, gr. to W. O. Hunt, Esq., came Royal Nonpareil, Hunt's William Shakspeare, and Hunt's Duke of Gloucester Apples. Of these, the latter very much resembled the Sturmer Pippin. Of other fruit, Mr. Ingram sent from the Royal Gardens, Frogmore, two beautifully grown specimens of smooth-leaved Cayenne Pine-apples, forming perfect cones in shape, and weighing respectively 6 lbs. 4 oz. These were stated to have been ripened on suckers planted on a bed of leaves last March. It was mentioned that this kind of Pine-apple is a much more valuable sort for winter use than the Enville. A Banksian Medal was awarded.—Of Grapes, Mr. Butcher furnished bunches of Black Barbarossa, so plump and sound as to be easily mistaken for new Grapes. One point of the greatest importance connected with this variety is that it will hang longer in a ripe state without shrivelling than any other black Grape with which we are acquainted, West's St. Peter's not excepted. A Certificate of Merit was awarded.—Of Plants, Messrs. Veitch showed a new Cypripedium from Moulmein, for which a Knightian Medal was awarded. In some respects it resembled the common C. insigne; but it was, nevertheless, materially different from that species, and altogether much handsomer.—From Messrs. Jackson, of Kingston, came Barkeria elegans and Skinneri, both remarkable, but more especially the latter, for the length of time they continue in bloom.—Messrs. Lee furnished a new and very handsome species of Vallota, which certainly must be regarded as a very great acquisition. The plant just exhibited had a flower-scape about a foot high, crowned with numerous vermilion flowers, in form like those of Vallota purpurea. A Banksian Medal was awarded.—Of Cyclamens there was an interesting group from Messrs. E. G. Henderson, of Wellington Road. They were essentially all varieties of C. persicum, but they differed very much from that species in colour, varying as they did from deep purple to pure white. A Banksian Medal was awarded.—Mr. Atkins, of Painswick, Gloucestershire, produced two large masses of a very dwarf, pale-coloured hybrid called Cyclamen Atkinsi. It was stated to have been the result of crossing C. coum with persicum. It is certainly a most profuse flowerer, and very pretty. The specimens shown were reported to have been bloomed in a cold frame where they were frozen hard during the late storm; but from which they apparently sustained no injury; for they were said to push and grow vigorously as soon as the weather had become milder. Of seedlings raised, it may be mentioned that about two-thirds had the pale lilac flowers of C. Atkinsi, whilst the remainder had the dark purple blossoms of coum. A Certificate of Merit was awarded.—From Mr. Buck came a well bloomed specimen in a small pot of Cyclamen persicum.—From the garden of the Society came a very showy striped Crocus called Sir Walter Scott, the handsome scarlet Thyrsacanthus rutilans, a very free flowering hybrid Begonia raised between B. manicata and B. hydrocotylifolia, and a variety of the lilac Azalea squamata, which was stated to differ in several respects from the race of Indian Azaleas now in cultivation; with one or two other plants.—Of vegetables, the garden furnished Laitue Romaine Verte Maraichère, the sort of Cos Lettuce grown by the French in winter; Laitue Chou de Naples, one of the sorts of Lettuces distributed by the Society, and which is esteemed the best Cabbage Lettuce in cultivation; Marshall's Black Spine Cucumber, which answers well for early forcing, requiring plenty of heat; Persil à grosses racines, a kind of Parsley, whose long Carrot-shaped roots are cooked; it resembles the Hamburgh Parsley, but differs in the leaves, which are more curled than those of the Hamburgh, or broad-leaved. The flavour of Parsley can be obtained from this just as that of Celery is from the roots of Celeriac, in climates and under circumstances where the stalks and leaves could not exist. The plants are easily grown, and the roots might form part of the vegetable stores of shipping.

In adverting to subjects of a different kind, the Vice-Secretary observed that a great deal of interest had lately been excited respecting the Deodar and the Cedar of Lebanon, and the quality of their timber. No one had ever yet seen Deodar timber produced in this country, and therefore it was uncertain whether it would have the qualities ascribed to it in India, or remain merely as a tree of very great beauty, but of very little use. With a view to extend a knowledge of the real quality of the Deodar wood, the East India Company had caused some enormous planks of it to be imported, one of which was placed in the room for the inspection of the meeting.

Dr. Royle, referring to the magnificent specimen just alluded to, stated its dimensions to be about 4 feet 6 ins. in diameter, and 18 feet in length. Much interest, he observed, had lately been felt, and much inquiry raised about the quality of this kind of timber. He would endeavour, from his own knowledge of the native country of the tree, to answer this inquiry. The Deodar grows at an elevation of from 5000 to 12,000 feet, in a climate very changeable and often very cold. The natives of the Himalayas, he said, have a great variety of timber to choose from, but they invariably prefer the Deodar for all purposes. The Himalaya climate is very variable from March to June, and very fine and dry from the middle of June to the middle of September. The winter is very cold, and the mountains are for a considerable time covered with snow; so that there is as much variety as in a northern climate. If Deodar wood, he remarked, was used only in covered places, there would be no test of its durability, but it is used in the construction of temples, houses, and bridges, in damp and exposed situations; and by the peculiar mode of building adopted, it is as much exposed to the action of the weather as the stone which it is employed as an outside framework to support; and some of these erections have stood for centuries. It had been doubted whether the timber would be as good in this climate as in that of India; it was his (Dr. Royle's) opinion that it would. On this subject he read a letter from Mr. Wilson Saunders, of Lloyds, confirming his belief. That gentleman had examined the timber along with two other experienced gentlemen, who coincided with him in giving a favourable report. Mr. Saunders had no hesitation in stating that it appeared to be superior to American Larch, or any other coniferous tree, and would be very useful for naval purposes. But if only as useful as the Larch and its allies, it must still be considered an article of great value. As a proof of the estimation in which American Larch is held, he mentioned that 20,000 tons of shipping are now building in North America of that wood alone. The Larch may be considered as intermediate between the hard woods and the soft woods, and he thought the Deodar should rank higher than the Larch. Dr. Royle thought this testimony highly satisfactory. As it regarded the question whether the timber would be equally good grown in this country as in India, he said an argument to the contrary had been based on the fact, that while great excellence was always accorded in ancient times to the wood of the Cedar of Lebanon, that wood appeared, as grown in England, to be destitute of such good qualities. The argument is founded, however, on an error, inasmuch as ancient descriptions of the excellence of Cedar wood did not necessarily refer to the Cedar of Lebanon, but might have been applied to Junipers and other trees. The conditions essential to the growth of the Deodar in this country, he remarked, are free drainage, free ventilation, a low temperature, and considerable moisture. The mechanical condition of the soil did not appear to be very essential, but along with free drainage, a slow supply of nutriment is necessary to prevent the tree growing too rapidly. He considered that the Deodar was a valuable addition to our timber trees, and that every encouragement should be given to its culture in situations adapted to it.

Some observations were made by the Vice-Secretary on the recent statements that the Deodar and Cedar of Lebanon are the same species, as well as on the arguments against the goodness of Deodar wood grown in England, founded on the alleged fact that the Cedar of Lebanon wood grown in England is inferior to what it is in its native climate.

The attention of the meeting was next directed to representations of Wellingtonia gigantea (see p. 819, 1853), from Messrs. Veitch, and to portions of bark and wood, and a cone of that gigantic tree, which were also supplied by the same eminent firm. The cone was very small for a tree of the dimensions of the Wellingtonia, being scarcely larger than a hen's egg, and bearing considerable resemblance to that of a Cupressus. The wood was clean, light, and the colour of Red Cedar.

Roots illustrative of the effects of lifting large trees by Mr. M'Glashen's machine were again exhibited. They belonged to a Sycamore, more than 50 feet high, which had been transplanted by this contrivance at Cramond House, near Edinburgh. It was stated that, on care-

fully removing the earth from one side of the old ball, the cut roots were found to have thrown out a mass of young fibres fully equal to the task of supplying the demands made on them by the top. Thus it is finally shown that large trees, as well as small ones, may be safely lifted by this machine.

The following cuttings of fruit trees were distributed to Fellows, viz.:—Cerise Reine Hortense, a juicy, sweet Cherry, whose synonyms are Cerise Monstrueuse de Bavay, Hybride ou Belle de Lacken, Louis XVIII., Morestru, Rouvroy, Guigne de Petit Brie, and Reine des Cerises. Donna Maria, said to be a large Cherry, of first-rate quality, ripening in Belgium, in the end of July. Bigarreau d'Octobre: fruit not large, but very late; it is the latest sweet Cherry. Josephine de Malines Pear: middle sized, turbinate, brownish red next the sun. Flesh melting, buttery and sugary, with a flavour somewhat resembling that of the Passe Colmar. Ripens, January—March. A valuable late Pear.

Notices of Books.

Des Substances Alimentaires, &c. (on the Varieties of Food; and the Methods of Improving and Preserving it, or Recognising the Changes it Undergoes.) By A. Payen. 12mo. Paris: Hachette. Pp. 403. Bibl. des Chemins de Fer.

A more experienced man than M. Payen, or one who to high scientific rank adds more sound practical knowledge of subjects of this kind, is not to be found in the brilliant corps of modern chemists. We therefore, knowing for how long a time the properties of food have been his especial study, opened the little volume before us in full expectation of finding in it all that sound science can say with certainty upon this all important subject; nor have we been disappointed. Brevity was a necessary condition in providing a railway book; but perspicuous arrangement, methodical treatment, and the power of condensing without reducing facts to a bundle of dry bones, has enabled the author to prepare one of those little manuals which the world infinitely, and wisely, prefers to formal learned disquisitions.

M. Payen includes within his limit the general principles to be taken as guides to wholesome or unwholesome feeding, and thence proceeds in a logical sequence to consider their application to meats of all kinds, under all the varied forms in which such food is presented to the cook; then follow chapters on skin, tendons, milk, eggs, and caviare; butter, lard, oil, and other fatty matters; sugar and honey; farinaceous substances, such as arrowroot, tapioca, sago, and all the varieties of flour; rice, maize, potatoes, and the races of leguminous seeds; bread and its many peculiar forms, not forgetting the frauds of bakers; fruits; esculent vegetables; chocolate, coffee and tea; wine, cider, beer, and spirits; the series being finally closed by an exposure of some of the quackeries which simple people are persuaded to accept as substitutes for cheaper food.

M. Payen strongly insists upon the absolute necessity of a varied diet, if man is to enjoy good health; he regards meat, fruit, vegetables, and the wholesome forms of fermented liquors to be essential, in due proportion, to maintain animal force; and therefore he is by no means a friend to vegetarian habits. It is England, he says, a country whose eccentricities are universally known, and whose civilisation, of a high order, moves in almost all directions attended by a train of barbarisms —it is this England which has produced a numerous sect, excluding animal food from the diet of man, and even succeeding in making converts to such a doctrine. These good people are unable to perceive the final tendency of their faith and practice. They cannot see that if the world were of their mind, many species of animals would cease to be reared, especially those which are carnivorous, and that this must tend directly to the extinction of breeds, to say nothing of the gradual reduction of the strength of man, and the consequent degeneracy of his species. Such a revolt against all laws, divine and natural, could only lead to the ruin of the human race. M. Payen, however, does us the justice to admit that he does not think such absurdities likely to lead to much mischief in Great Britain, or to make us other than what we are, the greatest consumers of meat in the world.

It is a capital book, and should be immediately translated; but it requires to be rendered into English by a man of science, not by a mere linguist. We therefore rejoice to see that the French publishers have done their best to secure that object, by reserving the right of translation to themselves.

Black's Library Edition of the Waverley Novels has reached the 22d volume, and continues to deserve the commendation which we bestowed upon the commencement of this beautiful issue.

New Plants.

47. Vallota ? miniata.

V. tubo brevissimo, laciniis perianthii sepalinis angustioribus et paulò brevioribus, staminibus subdeclinatis.

A beautiful greenhouse bulbous plant, with fleshy narrow pale green leaves, resembling those of Clivia (*Imatophyllum*), and the inflorescence of Vallota purpurea, from which it differs in the flowers being much smaller, of a clear delicate brilliant vermilion colour, passing into Indian yellow in their lower half, and in the tube not exceeding 4 lines in length. The sepaline divisions of the perianth are about one-third narrower, and slightly shorter than the others. The stamens are somewhat declinate, and nearly as long as the perianth, in which respect this differs from the previously known species of Vallota, as it also does in the want of a membrane connecting the segments for full half their length. The ovules are six, attached to the axis of each cell. These circumstances would perhaps justify the creation of a new genus; but in the absence of information concerning the fruit, and considering moreover the great resemblance of the plant in habit to Vallota, it seems better to leave it for the present in that genus. Messrs. Lee received a Banksian Medal for a specimen of it exhibited on the 21st inst. to the Horticultural Society, and it richly deserved that mark of value. It was purchased some years ago from Messrs. Backhouse, of York, who are said to have received its bulbs from Caffraria.

Garden Memoranda.

Messrs. Veitch's Nursery, King's Road, Chelsea. —Several important alterations have been effected here since our last visit. The show house at the entrance has been entirely remodelled. The dead flat roof with which it was previously covered has been removed, and in its stead a neat triple span of glass has been erected, supported by trellised uprights, to which are to be added wire arches for tender climbers. On either side of the centre walk is a low stage for flowering plants, among which we remarked Ghent and Indian Azaleas, the pretty little Deutzia gracilis, Chinese Primulas, and the beautiful little Himalayan P. denticulata, which, although perfectly hardy, makes an interesting greenhouse plant at this season of the year; together with various Hyacinths and some well flowered specimens of the showy Rhododendron Nobleanum. It may be mentioned that this is one of the best of all the Rhododendrons for purposes of early decoration, as it requires very little heat to bring it into flower, and then it lasts a long time in beauty. The flowers on the plants we noticed here varied from crimson to a pale pink, according to the rate at which they had been forced into bloom; those brought forward most slowly being the deepest coloured. For the stone platforms which were wont to run up either side of this house, for plants to stand on, beds of earth have been substituted, in which are planted large Camellias, with a view to cover the back walls, and in front of them are various Araucarias, fine plants of Libocedrus Doniana, and Chilensis; Fitz-Roya patagonica, and Saxe-Gothæa conspicua, both of which have been found to stand the severe frost of last winter in some places uninjured; Dracæna indivisa, Berberis Nepalensis, and other plants, forming altogether an extremely interesting and agreeable glass covered promenade, of some 70 feet in length, which it is intended to keep gay with flowering plants both winter and summer. The adjoining central house has been cleared of the tall plants of different kinds which it contained, and is now occupied with Aphelexis, specimen Azaleas, which are well set with bloom buds, and numerous very fine standard and pyramidal Portugal Laurels, which of late years have been so much sought after as a substitute for Orange trees. The new beds in the small open square here, surrounded by the glass houses, are finished and ready to receive the American plants, with which they are soon to be planted. The two long houses on the east and west sides of this square have been new roofed and heated with hot water in 4-inch iron pipes. Both are filled with Orchids, which are kept here in three different houses, viz., the East Indian, South American, and show-houses. In the latter compartment are brought together all plants in flower, which are kept in a temperature sufficiently cool to enable visitors to inspect them without inconvenience. Among others which were blooming nicely here, at present, was a recently imported plant of Saccolabium Blumei, with no fewer than 20 spikes of flower on it. A compartment at the other side of the square just alluded to is filled with Pitcher-plants, of which, we need scarcely say, Messrs. Veitch have a very fine collection, and we must not forget to mention the beautiful species of Anæctochilus which occupied an end of one of the Orchid-houses. They comprised fine specimens of all the kinds in cultivation. In the stove were examples of Medinilla, Rhodoleia, Hexacentris, Ixoras, and Hoyas; but of plants in flower by far the most striking was Conoclinium ianthemum, which is found to be extremely useful for winter and early spring decoration. In what is called the New Holland house were some well grown specimens, among which we remarked the charming Jasmine-flowered Rhododendron, Pleroma elegans, Tropæolums, the beautiful Veronica variegata which was exhibited at Chiswick in June last, various Epacrises, Erios emons, and Boronias, together with a fine stock of Lilium giganteum, and other interesting plants, among which must not be forgotten the new and beautiful Philesia buxifolia. In the stove aquarium, on either side of whose entrance is to be formed a bed of Yuccas intermixed with the handsome Dracæna indivisa, we observed, standing over the water, a fine example of the tree Fern Dicksonia squarrosa, and several other plants of a striking character, so arranged as to give a varied and good effect to the house. The tank is well stocked with Nymphæas, among which were numbers of N. Devoniana and preparations are being made in it for the reception, of the Victoria regia. In the propagating house were several seedling plants of Wellingtonia gigantea, the enormous Californian tree which is now everywhere occupying so much attention, and also an example of the Rice-paper plant from China. Out of doors, a broad border the whole length of the grounds has been planted with specimen Conifers; new walls have been put up, to block out from view the packing sheds and other unsightly objects; and altogether this nursery has of late been very greatly improved.

FLORICULTURE.

Specimen Calceolarias.—In order to grow large specimens, when the plants are done blooming and cut down, place them in any sheltered situation out of doors, and water sparingly. About the end of August, turn them out of the pots, and shake away all the old soil from their roots. Prune and regulate these a little, and repot in as small pots as can conveniently be done, in a light, rich soil. Place them in a close, warm situation afterwards, admitting air by degrees, as they begin to grow. When taken into the greenhouse, let them have a situation near the glass; they will keep growing less or more all winter, and if the pots fill with roots, give them a shift to keep them on, and, about the middle of February, give them a final shift into the flowering pots, in a compost of two parts good, turfy loam, one of leaf-mould, and one of well-rotted dung; to this add another part of sand and broken charcoal. These must be well mixed, but not made fine, for the roots delight to ramify in rough, lumpy material. Use 9-inch pots for large plants; these must be perfectly clean, and properly drained; pick off a leaf or two from the neck of the plant, and keep it well down in the pot; make the soil moderately firm, and leave plenty of room for supplying water to the plant; keep them near the light, and draw a syringeful or two of water over them occasionally; this will keep them fresh and clean; and, by having the surface of the soil always a little moist, they will grow vigorously and send numerous roots out of the sides of the stem, and from underneath the leaves; at the same time, see that the mass of soil does not get too dry, for, although the surface of the earth may be thus kept moist, the interior part may be quite dry, and the plants consequently receive a check. A practised ear will know when a plant requires water by giving a rap on the pot. As the flower-stems lengthen, gradually widen and arrange them, so as to allow full benefit of light and air, keeping them in place, by tying neatly to small stakes. While in flower, they must be kept shaded, cool, and airy. The dry weather of May and June will soon rob them of their beauty, if attention is not paid to shading from bright sun, and the atmosphere kept moist by now and then watering the paths, under the stages, and all vacant places; if this is properly attended to, they will flower for six or eight weeks in the warmest of seasons, and display beautiful masses of their variously mottled, purse-like flowers. Plants intended for hybridising should be placed by themselves; any two flowers of different colours, when crossed, will produce innumerable intermediate varieties. With a small piece of wood, sharpened thin, scrape the pollen from the anther of the one, and apply it to the stigma of the other; and, when several crosses are effected on one plant, distinguish them by threads of different colours, carefully noting down the same, so that there may be no confusion when the seed is ripe. Assist the plants with frequent waterings of liquid manure, while the seed is ripening; this will ensure fine, plump seed, and gather it before the pods are fully ripe, as they are then liable to burst, and the seeds to disperse. *S.*

Pelargoniums for Exhibition.—As specimens for exhibition in some respects require different management from small plants for the home stage, inasmuch as they must be had in bloom at a given time, I take this opportunity of recording the proper course of treatment to ensure a good head of bloom in May. To manage this nicely requires some forethought and experience. In addition to a judicious selection of plants for early work, they should have had their last shift not later than the beginning of October; and by the present time the pots should be becoming full of roots, and the plants have made strong growth. They will now require encouragement, by putting on a little fire early in the afternoon, just sufficient to raise the temperature of the house; when warm, syringe the flues if the weather is open. The steam excites the plants to make growth. Increase this as the season advances. Tie out the shoots singly, so as to admit light and air to every part of the plant. Water more freely; but care must be observed not to make them too wet, and so induce a weak, sappy growth; give air on all possible opportunities, but avoid cold draughts. The general stock and specimen plants intended to flower in June and July should not be excited at present; they should have received their final shift, and should be growing gently on; use heat only on special occasions, as, for instance, to exclude frost and dry the house, giving air at the same time. These plants may now be tied into shape, as the old wood, as well as young, can at this stage be twisted with less danger than later in the season, when it is full of sap. As I have already stated, great care must be taken not to water too freely, as it is not quick growth that is wanted, so much as short strong shoots, which will ensure fine flowers, as well as a good head of bloom. *W.*

Carnations: *F.* The soil which some of the best florists use for these flowers is the top spit of a meadow taken off long before it is wanted, and frequently turned, in order to clear it of wireworms: it is by no means heavy soil; the only addition it receives is about one barrowful of good decayed stable-manure to three of loam. Sufficient material for the following year

is mixed every August, and, as we have stated, the loam is always in store some time before it is wanted. Rather a plentiful supply of weak manure is given the plants during June, if the weather is hot, with a view to assist them in throwing up their blossom-shoots.

Miscellaneous.

Flowering of Mammillaria senilis.—The specimen of Mammillaria senilis which produced four flowers last year and which has again flowered, is nearly round in form, $4\frac{3}{10}$ inches high, and about the same in diameter. It has three hooked inner spines, $\frac{8}{10}$ of an inch in length. The flower springs from between the bosses, at about an inch from the centre of the plant. Tube, 1 inch in height, $\frac{4}{10}$ in breadth at the base, and $\frac{6}{10}$ at its other extremity, of a beautiful satin-like appearance, orange red, and formed of imbricated sepals. Petals spreading, 14 in number, forming a surface about $2\frac{3}{10}$ inches in diameter; they are inserted at right angles with the axis of the tube, are narrower at the base than at the top (width $\frac{2}{10}$ to $\frac{3}{10}$ of an inch), distinctly denticulate, orange-red, like the Phyllocactus Ackermani, marked along the middle with a dark red line, margin nearly transparent. Filaments extremely numerous, strong, white, or somewhat orange, extending about three-fourths of an inch beyond the tube; anthers as well as pollen of a dingy orange. Style slightly exceeding the length of the stamens, and terminating in a stigma having six rather deep divisions, but which do not open. The flower lasts about seven days; it opened on the 8th of May, and withered on the 15th of that month. It remains always open, contrary to the habit of nearly all the flowers of Mammillariæ and Echinocacti. *Schlumberger, in Revue Horticole.*

Hardy Aroideæ.—The following list may be useful to those who wish to cultivate these curious things. All the species here enumerated are procurable; but several are more likely to be had in South of Europe gardens than in our own:—Arum maculatum, italicum, do. variegatum, corsicum, Dracunculus, crinitum, Dracontium, triphyllum, do. zebrinum, virginicum, Arisarum, proboscideum, tenuifolium; Calla palustris, æthiopica; Pothos fœtida; Ambrosinia Bassi, reticulata, maculata; Rohdea japonica; Houttuynia cordifolia.

Pyrola rotundifolia.—Abundant evidence was still visible of the ruin occasioned by the storm of the previous day in the loose earth, broken fragments of rocks that were scattered around, and in the marks of terrible concussions that had taken place between the projecting rocks and the larger fragments in their descent, the point of contact being surrounded by a stratum of smoke-like dust, where the smell of fire was still apparent. I had penetrated to a considerable distance among the cliffs near the summit, at a place where one of the masses had descended, breaking off pieces of rock and tearing up and grinding the vegetation in its progress. I had just pulled myself up and secured my footing on a green shelf, which had been partly torn from its moorings on the rock; on getting hold of the shelf above and raising myself upon it, my astonishment and delight may be better conceived than expressed, on perceiving the whole shelf covered with a dense mass of Pyrola rotundifolia, flowering profusely, and literally loading the air with its delightful fragrance. No one who has not witnessed such a scene can form an idea of the beauty of this lovely alpine gem; and the pleasure was no doubt considerably enhanced by the reflection that on this spot, perhaps, the foot of man had never stood, that no sacrilegious hand had ever culled these floral gems before. *Croall, in Hooker's Journal of Botany.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Conservatory, &c.—Luculias and other winter blooming plants in beds or borders, should be cut back, after flowering, as freely as may be necessary to keep them close and well furnished, and this should not be deferred so as to permit the energies of the plants to be wasted in the production of useless wood. The small-leaved weaker growing varieties of Citrus are invaluable for winter flowering, and considering that they are plants of very easy culture, it is surprising that more of them are not grown for this purpose. If a batch of healthy young plants can be placed in a moist growing situation at once, and allowed to remain until the young wood becomes rather firm, then removed to a shady place out of doors for the summer months, and fully exposed to the sun after about the middle of August, they will flower profusely during the winter months, if placed in a temperature of about 45° or even 40°. The Mandarin, Myrtle-leaved, and Otaheitan, are the most suitable kinds; the last of these flowers and fruits in a very small state. Get Camellias and Azaleas for early flowering next season started into growth without loss of time. Securing early growth, and allowing the plants a full period of rest, is the way to secure a good display of blossom without either loss of time or injury to the health of the plants arising from forcing them when the blossoms are required. Camellias may be had in bloom early in September by placing them in heat in February so as to get the buds set early, and when once the plants acquire an early habit of starting into growth they make as fine wood as those grown in summer, but, unless plants with prominent wood buds can be selected, there may be some little difficulty in getting them to make free growth the first season. Let the temperature range about 45° at night, and give air freely on fine days, which will tend to make the permanent specimens in the house break their buds slowly and secure close strong growth. Lose no time in repairing the drainage of any specimens which require it, and endeavour to secure a healthy vigorous root action, which is of great importance, especially in the case of hard-wooded plants. Admit air freely on every favourable occasion to greenhouse plants generally, and persevere in the destruction of insects immediately they are perceived. Shift and tie out Pelargoniums as may be required, and allow them plenty of space after this time, with all the light possible and a free circulation of air whenever the weather will permit, but avoid cold north-easterly winds, which are very injurious to plants in active growth. Do not allow Calceolarias to suffer for want of pot room, as any check at the present season will throw them prematurely into flower. Never allow aphides to gain a footing on them, but fumigate whenever one is perceived. Stove.—Attend carefully to plants in active growth, stopping any over luxuriant shoot, in order to equalise the circulation of the sap, and keep them as near the glass as convenient. Persevere in shifting such as require more pot room, as fast as possible. Keep early Gloxinias and Achimenes growing freely; they enjoy a gentle bottom heat, but the Achimenes should be kept near the glass; they make better specimens when they can be afforded a free circulation of air on mild days. Proceed with the potting and rearranging, &c., of Orchids, and be careful to have every plant clear of insects, and the foliage clean before it is passed through hands. Those in flower should be placed in groups in the most conspicuous positions, and where their beauty will be most advantageously seen. Maintain a moist healthy atmosphere, by sprinkling the passages, &c., frequently, and see that specimens on blocks and in baskets commencing growth are kept properly moist.

FORCING DEPARTMENT.

Pinery.—Recently potted stock will not require much water at the root for a few weeks, and it should not be heavily syringed until the plants get hold of the fresh soil, and start into free growth. Keep the atmosphere soft and moist by gentle syringing on the mornings of bright days, and sprinkle the passages, &c., frequently. Plants swelling their fruit will be greatly benefited by manure water, in a clear state, which may be given as often as the soil requires watering. With plenty of moisture in the atmosphere a night temperature averaging from 70° to 75°, allowing it to rise to 85° with sunshine, and a gentle circulation of air, will be beneficial to these. Vineries.—As soon as the berries are fairly set, cut off all superfluous bunches at once, and get those left thinned as speedily as possible. It is a very common practice with young gardeners to over-crop Vines, and the result is small, ill-coloured, ill-flavoured fruit, and disappointment. Aim at securing fruit of first-rate quality, which will be more satisfactory than any quantity of inferior stuff. But depend upon it, that the way to do this is to thin early and severely. The quantity proper to be left must be regulated by the strength and vigour of the Vines, &c., but it should be remembered that it is quite possible to over-crop the most promising Vine. If the border is covered with fermenting materials, see that the heat is not allowed to decline. The buds will now be breaking in the succession house, and when this is the case, the night temperature may range from 55° to 60°. Take advantage of bright days to shut up early in the afternoon with a moist atmosphere, allowing the glass to rise to 75° for about two hours. Figs.—Watch carefully for any indications of red spider or brown scale, both being terrible pests when allowed to gain a footing on the foliage. See that the borders are in a moist healthy state, and attend to stopping the shoots before the fourth or fifth leaf, so as to get the wood matured, in order to secure a second crop. Peaches.—If there is the least apprehension of red spider play the syringe freely on trees where the fruit is fairly set, and commence the process of disbudding. If greenfly makes its appearance fumigate at once. See that the inside borders are properly supplied with water. After the fruit is set let the temperature range about 60° at night, but rather under than above this on cold nights, and with sunshine and a circulation of air it should range about 75° during the day.

FLOWER GARDEN AND SHRUBBERIES.

Give lawns a good rolling after wet, and if it may be necessary to take up any of the turf for the purpose of levelling the ground this should be done as soon as possible. Proceed with edging the walks, and keep these clean and roll frequently to make them firm for walking upon, and also to prevent the growth of weeds. Where it may be necessary to increase the stock of any of the varieties of Dahlias these should be placed in heat at once, in order to secure cuttings. Look to Crocus bulbs, &c., planted in the beds, and protect them from the depredations of mice.

HARDY FRUIT DEPARTMENT & KITCHEN GARDEN.

Prune and nail Peaches and Nectarines, and as soon as this is done, if it is intended to apply a covering for the protection of the blossoms, bring it into use at once, to shade them from the exciting influence of the sun. If the covering can be so arranged as to be easily let down on sunny days, and the trees exposed at other times, it will considerably retard their flowering, and thus will probably be of more service than any protection which can be afforded after the blossoms expand. Where the early crops of Peas have been injured by frost or mice, get some planted in turves with which to make good the deficiencies in the lines. The turves should be cut in widths of about 5 inches, and 3 or 4 inches deep, cutting out a shallow channel about 3 inches wide, and on the under side, in which to place the seed. The turves should then be laid, with the green side under, in a moderately warm house, planting the Peas, and covering them with light soil, where they will soon vegetate. As soon as they are fairly in leaf, remove them to a cool place, and gradually prepare them for planting out. Managed in this way, the Peas will not sustain the slightest check, and will root through the turf into the soil, and grow away freely. If not already done, clean and dress Strawberry beds. A moderate dressing of good rotten manure applied between the rows, and lightly forked in will be of great service to two year old plants; see to keeping up a supply of French Beans, and give those bearing in pots a liberal supply of manure water, and endeavour to keep them in vigorous health, so as to avoid having them infested with red spider.

COTTAGERS' GARDEN.

Where not already done, the main crop of Potatoes should be planted as soon as ever the state of the ground will admit. In the present uncertain state of this crop, the cottager should not plant a great breadth, and should use only early sorts. For, notwithstanding that the Potato is to the cottager the most useful of all vegetables, yet when the third or fourth of a crop cannot be depended upon, the ground may be more profitably occupied. By planting early, and only early kinds, and this on light, and not over-rich soil, there will be a good chance of the crop being pretty well matured before the period when disease has usually commenced its ravages. See that a bed is prepared for Onions, and also that every spare bit of ground is manured and turned over.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending Feb. 23, 1854, as observed at the Horticultural Gardens

February.	Moon's Age.	Barometer.		Temperature.					Wind.	Rain.
				Of the Air.			Of the Earth			
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Friday 17	20	29.769	29.404	48	26	37.0	38	41	S.W.	.00
Satur. 18	21	29.735	29.485	40	27	33.5	38	40	N.W.	.08
Sunday 19	22	29.959	29.894	40	25	32.5	37	40	N.	.00
Mon. 20	[illegible]	30.296	29.908	52	28	40.0	37	40	W.	.02
Tues. 21	24	30.263	29.722	49	25	37.0	39	41	N.E.	.00
Wed. 22	25	30.247	29.947	47	33	40.0	39	41	S.W.	.06
Thurs. 23	26	30.612	30.307	49	24	36.5	40	42	N.	.00
Average.		30.127	29.808	46.4	26.8	36.6	38.2	40.7		0.16

Feb. 17—Cloudy; uniformly overcast at night.
— 18—Sudden fall of snow, early A.M. to the depth of an inch: clear; boisterous.
— 19—Very clear; bright sun; overcast.
— 20—Uniformly overcast; rain at night.
— 21—Clear and fine; slight frost at night.
— 22—Fine; cloudy; overcast; rain.
— 23—Fine; clear; very clear at night; frosty.
Mean temperature of the week, $2\frac{1}{2}$ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending March 4, 1854.

Feb. and March.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 26	47.2	33.6	40.4	16	0.48 in.	4	2	3	4	1	8	4	2
Mon. 27	47.6	34.3	41.0	15	0.40	3	5	3	2	5	6	3	1
Tues. 28	48.6	34.6	41.6	11	0.84	—	6	5	—	2	5	3	7
Wed. 1	47.1	35.0	41.1	12	0.62	—	5	2	—	5	7	6	3
Thurs. 2	48.8	36.6	42.7	10	0.45	3	3	3	—	2	9	6	2
Friday 3	49.3	33.6	41.5	13	0.28	2	5	2	1	3	7	6	2
Satur. 4	49.1	32.1	40.6	10	0.48	3	8	—	3	3	5	5	1

The highest temperature during the above period occurred on the 28th, 1846—therm. 64 deg.; and the lowest on the 4th, 1852—therm. 15 deg.

Notices to Correspondents.

Fruit Trees: *S G.* The soil in which the very large Jersey Chaumontels are grown is a deep rich loam; but a fine climate and excessive thinning of the fruit has much to do with its large size. Quince stocks are much employed in Jersey.

Galvanised Iron Wire: *D. Manchester.* The Peach tree has been affected injuriously by contact with the above. The wire should certainly be painted.

Guano: *An Old S.* The liquid made from this substance should be very weak, and frequently applied. Put a double handful into a pail filled with water. Stir it well two or three times at intervals of not less than two hours. Then let it stand till clear, and pour off the fluid. The solid remainder may be used as ordinary weak manure. Give a quart of the fluid to a Rose tree when it is first beginning to leaf; and repeat the dose occasionally while growth continues. You may apply the clear fluid in the same manner as water. No exacter rules can be given, or, indeed, are needed.

Kitchen Garden: *Grateful.* An acre of kitchen garden is not sufficient for a full supply of vegetables for a large family, together with 20 or 30 servants. There ought, at least, to be two acres allotted; and in that case general crops of Potatoes and Peas should be grown outside.

Names of Fruits: *Roaldus.* The Apple purchased in Covent Garden Market is the Court-pendu Plat, and a very good specimen of the sort, most probably a foreign one.

Names of Plants. We have been so often obliged reluctantly to decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*Erzeroum.* 198, Ranunculus illyricus; 1206, Adonis vernalis; 1252, Adonis dentata; 1009, 1023, Rhus Cotinus; 467, Peganum Harmala; 1009, 1023, Rhus Cotinus.—*G O.* Some Catasetum, and probably the common C. tridentatum.—*F.* Zygopetalum Mackaii.—*C F.* It is the Lycopodium involvens, *alias* lepidophyllum, one of the same hygrometrical race as the Rose of Jericho.—*A G.* Begonia dipetala.

The Calendar: *Lucubratory's* letter is sent to the author of the Calendar. It was very ingeniously directed to "Charles Street, Middlesex;" and as there are some dozen Charles Streets, he has given a great deal of unnecessary trouble to the Post-office.

The Vine: *Vitis* and *J H B.* There are plenty of modern treatises on the cultivation of this tree. Hoare, Sandars, Roberts, and many more, can be had through any bookseller.

Misc.: *A Constant Sub.* We do not know the address of Mr. Laing, whose Mammoth Red Celery is advertised by Mr. Duncan Hairs.—*A R*, in the long run will, we hope, find the change a convenient one.

SEWAGE CHARCOAL MANURE.—This highly fertilising Manure, which is Peat Charcoal completely saturated with London Sewage, will be found most efficient for every species of crop; more especially for Peas, Beans, Turnips, Mangold Wurzel, and other root crops. It will produce a greater return for the outlay than Guano or any other Manure at an equivalent value: it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained from the SEWAGE MANURE WORKS, Stanley Bridge, Fulham, at 60s. per ton, and in quantities less than half a ton, at 4s. per cwt., for ready money only, and in quantities not less than a ton, will be delivered at the London Termini of the Railroads free of charge for cartage.

It may also be had from Messrs. G. GIBBS & Co., 26, Down Street, Piccadilly, Agricultural Seedsmen, and from all the other Agents of the Company. Recommendations and Testimonials may be seen at the Works.

PERUVIAN GUANO, the guaranteed import of Messrs. ANTONY GIBBS AND SONS, Lobos Island Guano, Superphosphate of Lime, and all Artificial Manures, Linseed and Rape Cakes, &c.—WM. INGLIS CARNE, 10, Mark Lane, London.

THE LONDON MANURE COMPANY'S WHEAT MANURE, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. EDWARD PURSER, Sec. Bridge Street, Blackfriars.

ARTIFICIAL MANURES, &c. — Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and dispatch.

Gentlemen desirous of receiving instructions in Chemical Analysis and Assaying, will find ample facility and accommodation at the College.

PEAT MOSS CHARCOAL, AND OTHER MANURES.—The Undersigned are appointed sole Agents by the Peat Moss Charcoal Company, for the sale of this valuable fixer and distributor of ammoniacal matter.

Also on Sale, Peruvian Guano, Superphosphate of Lime, Gypsum, Nitrate of Soda, Bone-Dust, Sulphuric Acid, and all other Manures of known value.—Apply to MARK FOTHERGILL & Co., 204A, Upper Thames Street, London.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7l. per ton; Superphosphate of Lime, 7l.; Sulphuric Acid and Coprolites, 6l.

Office, 69, King William Street, City, London.

N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

SUPERPHOSPHATE OF LIME MANUFACTURED BY MR. J. C. NESBIT'S IMPROVED STEAM MACHINE. The following is the analysis of an average sample.

"College of Chemistry, Agriculture, and General Science, 38 & 39, Lower Kennington Lane, London.

Analysis of Sample of Superphosphate of Lime from Mr. Jolliffe:

Moisture ...		13.97
Organic Matter, &c. ...		21.98
Silica ...		6.05
Phosphate of Lime ...		35.27
SOLUBLE ...	16.10	
INSOLUBLE ...	19.17	
Sulphate of Lime, &c....		22.73
		100.00
Nitrogen (equal to) ...		1.16
Ammonia ...		1.41

(Signed) J. C. NESBIT."

Delivered free at a Wharf or Railway Station in London at 6l. per ton.—Apply to E. Y. JOLLIFFE, 70, Mark Lane, or the Works, Lavender Dock Wharf, Rotherhithe.

Agents wanted in all the principal towns.

STEPHENSON AND PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

TO LANDOWNERS, SOLICITORS, ESTATE AGENTS, ETC.

THE LANDS IMPROVEMENT COMPANY, incorporated by special Act of Parliament, 1853, having perfected their organisation, are prepared to receive applications for the execution of improvements, under the provisions of their Act.

The Act extends to England, Wales, and Scotland; and empowers persons in the actual possession of lands, or in receipt of the rents, such as tenants for life, trustees, bodies corporate, incumbents of benefices, mortgagees in possession, guardians of infants, &c., to effect substantial improvements on their estates, and to convert the outlay on such improvements into a terminable annuity or rent-charge of from 14 to 25 years, at will.

The Company, acting under the supervision of the Inclosure Commissioners, will undertake and execute improvements, or will supply the capital to landowners preferring to execute improvements themselves, or will grant the powers of their Act to landowners seeking merely to charge the inheritance with the outlay on improvements from their own funds.

The Agricultural Works of Improvement particularly specified in the Company's Act, are:—

1. The Drainage of any Lands by any such means as the Inclosure Commissioners shall approve.
2. Irrigation, and Warping of Lands.
3. Embanking of Land from the Sea, or Tidal Waters, or Rivers, in a permanent manner.
4. Enclosing or Improving the Drains, Streams, or Water-courses of the Land, under the Inclosure Commissioners.
5. Reclamation of Land lying waste.
6. Making Farm-roads to the extent of one-half of the outlay for such roads.
7. Clearing Lands.
8. Erection of Farm-houses, and other Buildings required for farm purposes to the extent of three-fourths of the outlay for such Farm-houses and other Buildings.

In effecting the above Improvements there may be erected any Engines, Machinery, Engine-houses, Mills, Kilns, Sheds, Yards, Shafts, Tanks, and Reservoirs, Pipes, Conduits, and Water-courses for Irrigation, Tram-roads and other ways, Bridges, Weirs, Sluices, Flood-gates, and Hatches.

For Forms of Application and further Information apply to the Hon. W. NAPIER, Managing Director, 2, Old Palace Yard, Westminster London.

MORNING FROSTS.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for the Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard run, of E. T. ARCHER, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey.

PATENT ROOT GRATING MACHINE.

BUSHE & BARTER'S PATENT ROOT GRATING MACHINE, Manufactured and Sold by ALEX. SHANKS & SON, Arbroath, Forfarshire, from whom particulars, with prices, may be had.—Arbroath, Feb. 18.

WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

	£	s.	d.
Patent Pump ...	1	15	0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing ...	3	0	0

Larger sizes if required.

The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,
8, CRESCENT, JEWIN STREET, LONDON.

Every description of Machinery for Raising Water; Fire Engines, &c.

An Illustrated Book sent on application post free.

REDUCTION IN PRICE.

WEIR'S IMPROVED GALVANISED WROUGHT IRON LIQUID MANURE PUMP.

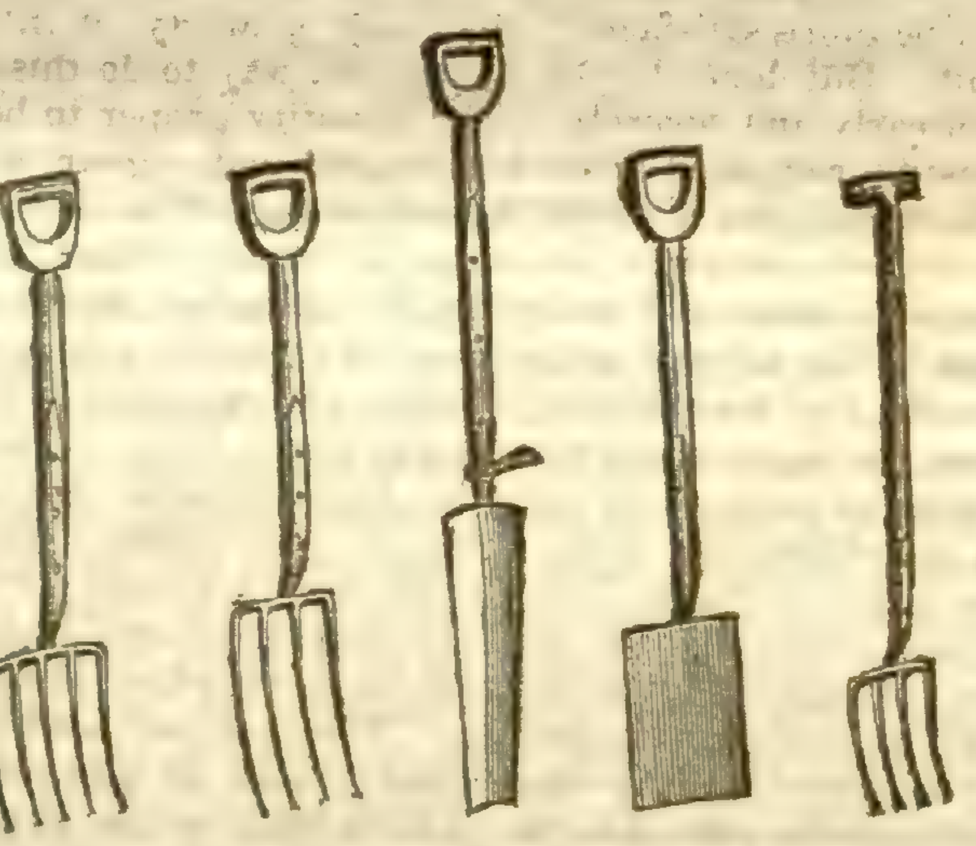
The Fittings of these Pumps are wholly of Brass, and there is no leather or other matter which can be affected by the manure.

Price, complete, with 10 feet of Flexible Suction Pipe, 4l. 15s. Terms, cash on delivery.

EDWARD WEIR, Agricultural Engineer, 16, Bath Place, New Road, London. Removed from Oxford Street.

Catalogues, with Illustrations, sent free by post.

TO AGRICULTURISTS, GARDENERS, ETC.



BENNETT AND NAYLOR, GENERAL IRONMONGERS, and FACTORS, Sole West End Agent for PARKES', late WINTON PARKES' CELEBRATED STEEL DIGGING FORKS and TOOLS. Also for the only efficient Stove, with or without a flue, suited particularly for Conservatories and Greenhouses, Patronised by her Majesty. Price 12s., and upwards, at the Great Western General Ironmongery Warehouse, 255, Oxford Street, between Park Street and North Audley Street. Established for the sale of all descriptions of Ironmongery at Wholesale Prices. Sheet, Hoop, Rod, and Bolt Iron; Locksmiths and Bell-hangers. Patent Fuel, to be used with the Stove, 2s. 3d. per bushel.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.

MESSRS. BURGESS AND KEY, as Mr. PARKES' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.

103, Newgate Street, and 52, Little Britain, London.

ANTHONY'S PATENT AMERICAN CHURN.—Extract from the Royal Agricultural Society's Report of the trial of Churns at the Gloucester meeting in July last. "In this trial the American Churn not only maintained its character in producing butter rapidly, but in producing a greater quantity from the like amount of cream." It made from 4 quarts of cream 4 lbs. 6 oz. of butter, being 8 oz. more than any of the other Churns from the same quantity and quality of cream. Price Lists of Churns and Implements by the best makers sent free, and Illustrated Catalogues on receipt of eight postage stamps. BURGESS & KEY, 103, Newgate Street, and 52, Little Britain, London, who have always a large stock of Steam-engines, Ploughs, Harrows, Diggers, Waggons, Carts, Threshing and Dressing Machines, Mills, Oat and Grain Bruisers, Oilcake Breakers, Reaping Machines, Haymakers, Horse-rakers, Turnip Cutters, Liquid Manure Carts, Parkes' celebrated Steel Digging Forks and Draining Tools, Pumps for Manure, Farm Fire Engines, and for Garden Purposes, &c. &c.

HOSE PIPING.

To ENGINEERS, AGRICULTURISTS, GARDENERS, SHIP-CHANDLERS, AND FIRE BRIGADES.

WAITHMAN'S PATENT FLAX TUBING (1-inch to 3-inch diameter) will sustain a greater pressure, is lighter, less bulky, will wear longer, and is about 60 per cent. cheaper than the leather hose pipe, and about half the price of either the gutta percha or the seamless hose. It is prepared so as to be anti-rot.

Manufactured only by WAITHMAN & Co., 36, High Street, Manchester.

HOSE PIPING.

GREAT REDUCTION IN PRICE.

WAITHMAN'S PATENT FLAX TUBING, (1 inch to 3 inches diameter).—London Agents: BURGESS and KEY, 103, Newgate Street, and 52, Little Britain, London, who, on application, will forward List of Prices.

IMPROVEMENT OF GRASS LANDS.

SUTTON'S RENOVATING GRASS SEEDS FOR IMPROVING OLD PASTURES, CLOVERS, and the finer and more nutritious sorts of GRASSES.

Quantity of Seed required, 8 lbs. to 12 lbs. per acre. Price 1s. per lb., Carriage Free.

All orders executed in rotation, in strict accordance with priority of our receiving the same.—Address,

JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

GIANT SAINTFOIN.—*The true Giant Saintfoin may be had genuine of the undersigned, at 12s. per bushel, or cheaper in large quantities.*

For particulars, address JOHN SUTTON & SONS, SEED GROWERS, Reading, Berks.

RENDLE'S AGRICULTURAL PRICE CURRENT AND FARM DIRECTORY FOR 1854 *is now published, and can be obtained in exchange for six postage stamps, from* WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

THE LABORATORY OF THE ROYAL POLYTECHNIC INSTITUTION is always open for the reception of Pupils under the direction of J. H. Pepper, Esq., F.C.S.A.C.E., &c. Careful Analyses and Assays of Soils, Minerals, Waters, Mercantile or Agricultural Products, are performed with despatch, accuracy, and economy.

For terms apply to R. I. LONGBOTTOM, Secretary.

BATH AND WEST OF ENGLAND AGRICULTURAL SOCIETY, for the Encouragement of Agriculture, Arts, Manufactures, and Commerce. Established 1777.

The next Annual Meeting of the above Society will be held at the City of Bath, on the 7th, 8th, and 9th days of June next, when Prizes to the amount of 702l. will be awarded for Cattle, Sheep, Horses, Pigs, Agricultural Implements, Models, and Essays on Agriculture, and 114l. for Poultry and Pigeons.

The Trial of Implements will take place on the 5th and 6th days of June next. There will be a Public Dinner on Thursday, the 8th, President WILLIAM MILES, Esq., M.P., in the Chair.

Further particulars will be announced in the Programme, which may be obtained after the 1st of May from Mr. H. St. JOHN MAULE, Secretary, Bath; or of Mr. J. D. BUSH, Secretary to the Exhibition Committee, 10, Fountain Buildings, Bath.

The Agricultural Gazette.

SATURDAY, FEBRUARY 25, 1854.

MEETINGS FOR THE TWO FOLLOWING WEEKS

WEDNESDAY,	March 1	Agricultural Society of England.
THURSDAY,	— 2	Agricultural Imp. Society of Ireland.
MONDAY,	— 6	Central Farmers' Club.
WEDNESDAY,	— 8	Agricultural Society of England.
THURSDAY,	— 9	Agricultural Imp. Society of Ireland.

A VERY interesting discussion took place last Wednesday before the Royal Agricultural Society on SUBSTITUTES FOR GUANO. Mr. BULLEN referred to the waste of the Newfoundland fisheries as a source whence either by simple desiccation, or by PETIT's patent process, large quantities of fertilising material might be profitably drawn. Mr. SLANEY laid before the meeting facts drawn from his own experience, as a commissioner under the Health of Towns Act, illustrative of the great value of sewage matter as manure. Mr. WAY referred to blood, as a source, now disregarded, from which considerable quantities of a manure, equal in value to Peruvian guano, might be derived; and Mr. CAIRD referred to the waste of our sugar refineries, as a source also nearly disregarded, from which 50 tons per week in London alone of a soluble manure might be obtained.

On the availability of fish refuse for agricultural purposes we regret to say that this discussion did not present any very encouraging prospect. Mr. BULLEN considered that unless the waste could be had for nothing, no profit would arise from its conversion. If it were to cost from 30s. to 2l. a ton, as it was expected to do on the west coast of Ireland, that would be fatal to its use in agriculture; for, according to Mr. WAY, 3 tons, and according to other speakers, 4 or 5 tons of the raw material, were needed to make 1 ton of the dry manure, which would thus cost from 5l. to 8l. in raw material only. In Newfoundland it was stated that very large quantities of refuse fish, and of the refuse portions of the useful fish, are thrown away, and *could*, therefore, be had for nothing; and Mr. BULLEN therefore looks there with greater hopefulness than to the Irish coast as the source of our artificial guano. Mr. WAY, however, pointed out that in Newfoundland wages are very high, and that, supposing hands could be got in that locality, they would be more profitably employed in curing edible fish for the unlimited market which exists for them, than in converting waste fish into manure, even though it were to be had for nothing. Besides, though nominally valueless at the places where it is now wasted, a considerable cost would be incurred in carrying it to the localities where the manure manufactories would

have to be established. And if Mr. Caird was correctly informed, on the occasion of a previous meeting of the Society, we may well ask, if, below the depth of improbability that we shall ever find our guano in fish, to which Mr. Bullen reduces us by his admission that the fish must be had for nothing for the purpose, there be not a lower deep still at which the truth of the matter really stands. For Mr. Caird stated that the original importers of Ichaboe guano were ruined by the speculation, though the article for which they went really too, to be had for nothing—the article in that case, *was* being not merely the raw material of a manure—but the manure itself ready made, and in the condition in which the farmer applies it to the soil. The utilisation of waste fish, except in the immediate localities of the waste, is, we fear, still an unsolved problem, and likely to remain so; and that not merely owing to imperfections in the process of manufacture—though these, according to Mr. Caird, are still considerable—but also owing to the existing relations between the cost of raw material and the value of the manufactured article.

On the subject of sewage manure, the difficulties were wholly of the former class—for the raw material was in this case to be had for nothing; but these difficulties had been sufficient, nevertheless, to spoil almost every plan which had hitherto been adopted for rendering it agriculturally useful. To some of them we shall hereafter refer; meanwhile, we make one remark on that particular scheme about to be tried at Glasgow to which Mr. Caird referred as so successful in abstracting both the suspended and the dissolved substances contained in sewage, that gold fish would live in the clear water running to waste. The process consists in successive filtrations through burned clay and peat charcoal.

Now, a very interesting paper was read by Dr. Stenhouse at the meeting, on the same day, of the Society of Arts, in which the disinfecting properties of charcoal were explained. But here it was as a filter of air, not as a filter of water, that it was treated; and while its powers in the former capacity were most ably discussed and illustrated, those which it possesses as a filter of water seem still to stand in need of explanation. We were informed that charcoal is not an antiseptic, as it is generally called. In fact, it greatly *facilitates* those processes of decomposition in which the oxygen of the air exhibits its influence on organic matter. All that it does in the way of purifying the substances to which it is applied is, by the condensed oxygen which it holds in its pores, to complete that process of oxidation; so that, instead of the offensive and unwholesome intermediate products of imperfect oxidation, we have only the comparatively harmless and inoffensive carbonic acid, water, and nitric acid, resulting from perfect combustion; just, in fact, as in some of the smoke consuming processes, the object is attained by the mixture of pure atmospheric air with the heated smoke, so that a supplementary process of combustion is effected, by which all the smoky products of imperfect combustion are converted into clear gas.

Charcoal thus becomes an admirable filter for air, and Dr. Stenhouse brought under our notice a respirator in which the substance was well applied as a defence for medical men, to disinfect the often fatal air of hospitals, more especially in the West Indies, New Orleans, &c., during the continuance of fevers. That it also possesses powers as a filter for water has long been known; but though its use in this way, whether in farm-yards or in towns (see the paper on the Manchester Sewage Company's operations in another column) has long been understood, how far it is able to detach the soluble as well as the mechanically suspended foreign matters there present in the water, we are unable to state. We believe chemists do not think so highly of its powers in this respect, and we should be very glad if these remarks should elicit from any one who may have studied the subject information on a matter which is likely to be of such agricultural importance.

We have received a note from Dr. Voelcker in reply to the second letter of our correspondent "C. L.," on the Management of Manure—the substance of which we shall state in this place, as the misunderstanding (for that is all that it amounts to) may thus be more satisfactorily removed, at the same time that the important subject to which it relates may be more prominently brought under the notice of our readers.

It appears that two statements occur in the article "Manure," in the "Cyclopedia of Agriculture" now publishing by Messrs. Blackie & Son, which at first seem irreconcileable—the one asserting (page 338) that "well-fermented or perfectly-decomposed manure contains much more nitrogen than fresh;" and the other detailing the losses of ammonia during the fermentation of manure in a manner which, it is said, leads one to an entirely different conclusion. For, three periods are spoken of in the process of fermentation, and "chemical analysis," it is said, "has shown that 100 cwt. of common farm-yard manure contain about 40 lbs. of nitrogen; and that during fermentation in the first period 5 lbs. of nitrogen are dissipated in the form of the volatile ammonia; in the second, 10 lbs.; and in the third, 20 lbs." Our correspondent "C. L." concludes from this, that 35 lbs. out of the 40 have been lost; and that although during these periods the manure may have become reduced in substance to the extent of 50 per cent. by the loss of other things, yet, as it retains only one-eighth or 12½ per cent. of its nitrogen, it must now be greatly poorer proportionally in that element than it was originally—a conclusion directly the reverse of that intimated in the extract from p. 338. That the writer himself did not admit this conclusion is plain from the words which follow this statement of the losses sustained respectively during these three periods. He does not gather from it that 35 lbs. of nitrogen out of the original 40 have been lost, for he says:—"Completely decomposed common manure has thus lost about *one-half* (only 20 lbs.) of its most valuable constituents." And though there were no other indication of the author's meaning, this, one would think, might have sufficed to show that the periods referred to were not consecutive periods, but periods commencing all at the same point of time; the third, therefore, including the others.

The meaning, if we assume actual dates, would therefore be to this effect:—that 100 cwt. of common farm-yard manure, fresh on the 1st of March, contained 40 lbs. of nitrogen; that during the first period (March 1 till April 1) it lost 5 lbs. of nitrogen; in the second (March 1 till June 1), 10 lbs. of nitrogen; in the third (March 1 till October 1), 20 lbs.; this being the total loss since the commencement, and corresponding, as the writer estimates, to "one-half of the most valuable part of the manure." "First," "second," and "third" are, no doubt, consecutive numbers, and if taken apart from the concluding sentence, the passage might have led the reader to the conclusion which "C. L." had gathered from it, were it not that the "periods" named are not indefinite portions of time mentioned for the first time in this place: they are not "periods" merely, but "*the*" periods referred to in an immediately preceding passage, where it is said:—"Direct experiments have shown that 100 cwt. of fresh farm-yard manure are reduced to 80 cwt. if allowed to lie till the straw is half rotten; 100 cwt. of fresh farm-yard manure are reduced to 60 cwt. if allowed to ferment until it becomes fat or cheesy; 100 cwt. of fresh farm-yard manure are reduced to 40—50 cwt. if completely decomposed;" and then follows the remark about the loss of nitrogen during *these* periods. The meaning obviously is, as we have now explained in detail, and as we think it plainly appears in the passages quoted, that the losses of nitrogen must be referred to the very times which are mentioned here as witnessing these great losses of weight; so that 20 cwt. of the latter disappear with 5 lbs. of the former, 40 cwt. of the latter with 10 lb. of the former, 50 to 60 cwt. of the latter with 20 lbs. of the former; the rapidly diminishing nitrogen in each case (at least if the 60 cwt. in the last be taken) being present with a still more rapidly diminishing gross weight of manure, so that the truth of the original passage as to the increasing proportional quantity of nitrogen as fermentation proceeds is made out, and Dr. Voelcker's consistency throughout is maintained.

Of course this, in the case of a teacher of such high reputation, is matter of sufficient importance to have made "C. L." anxious for the explanation which has been now, we submit to him, satisfactorily given—but the facts of the matter in their bearing on farm practice are more important still, and we are therefore glad that we next week shall be able to direct the reader to one fruit of this discussion in an excellent practical article on the subject of it by our valued correspondent "S."

While food for man, as well as food for plants, is so scarce and dear—economy in the manufacture of bread, and economy in the manufacture of manure, are both subjects well claiming the attention of our agricultural societies. We regret, therefore, that we were not able last week to give in detail the information elicited at the meeting of the English Agricultural Society on the important subject of cheap bread. The communication from Calais, transmitted to the Society on this subject by Viscount Palmerston, contained the following recipe:—

1. Economical Wheaten Bread.—Only the coarsest of the bran is to be taken from the Wheat; and the second coat, or what is called pollard, ground with the meal, as is usual for wheaten bread. Five pounds of this bran are to be boiled in somewhat more than four gallons of water, in order that three gallons and three quarts of clear bran water may be poured into and kneaded up with 46 lbs. of the brown flour; adding salt as well as yeast, in the same way as for other bread. When the dough is ready to bake, the loaves are to be made up and baked two hours and a half in a pretty brisk heat. As flour when thus made up will imbibe three quarts more of this bran liquor than of common water, it evidently produces not only a more nutritious and substantial food, but augments it to one-fifth part of the usual quantity of bread; consequently, it is a saving of at least one day's consumption in every week. If this bread were in general use it could be proved to be a saving to the nation of near ten millions per annum. This bread, too, has the following peculiar property: if put into the oven and baked for 20 minutes, after it is ten days old, it will appear again like new bread.

2. Economical Bread.—In times of scarcity, or when flour is very dear, the price may be reduced by the substitution of a quantity of Turnips. Wash, clean, pare, and afterwards boil, a number of Turnips till they become soft enough to mash. Dress them dry, mix them with an equal quantity of Wheat-meal, and make the dough in the usual manner with yeast. It will rise well in the trough, and after being well kneaded, may be formed into loaves, and baked. Bread prepared in this manner will have a sweet taste, which is by no means disagreeable. It is as light and as white as the wheaten, and should be kept 12 hours before it is cut, when the smell and the taste of the Turnips will scarcely be perceptible, but which can be got rid of altogether by using a little carbonate of soda.

In the report on this subject by the Secretary of the Society, the following references to works where the subject has been already treated, are given:—

1. Parmentier's Essay, which in 1769, the year of general famine, gained the prize of the French Academy for the best account of substitutes for bread.

2. Mrs. Rundell, in her Cookery, gives almost the identical recipe for making what she calls "The Rev. Mr. Haggett's Economical Bread;" her proportions, however, of flour being 56 lbs., instead of 46 lbs., as recommended in the Calais communication.

3. Mrs. Smith, in her "Female Economist," remarks: "Economical bread is made in the same manner as other bread, only the water is boiled with a quantity of fine bran in it; when strained off mix the water with the yeast, and make the dough with it."

4. In the "Magazine of Domestic Economy," Vol. II., p. 368, it is stated:—"We think that a highly flavoured brown bread should be attempted from 24 lbs. of the finest flour, with the addition of one-fourth (6 lbs.) of second toppings, and made up with bran-water; that is, with water in which as much bran has been boiled as will allow of its boiling freely for five minutes, and yet to yield the full quantity of fluid required, after separating the bran by a hair sieve."

5. In James's patent for the manufacture of a very absorbent but good bread, a portion of the flour is in the first instance boiled with the whole of the water, which is intended to form dough with the remaining flour.

6. Dr. Otto, of Brunswick, and Prof. Weppen, Markoldendorf, concur in their opinion of the value of bran, on account of the glutinous and, therefore, nourishing matter which it contains.

7. The original communication on Turnip bread, published in the "Museum Rusticum et Commerciale," and given at length in the "Encyclopædia Britannica," Art. Bread, is evidently the one from which the Calais recipe has been extracted; the latter, however, recommending the addition of carbonate of soda, for the purpose of removing the Turnip flavour from the bread.

BRITISH MANURES.

Referring to the various communications which have from time to time appeared in the *Agricultural Gazette* on the subject of British manures, and the preparation of fertilisers to compete with or supersede foreign guano, I venture to request the favour of your insertion of this communication as a contribution of the results of many years' practical experience in the deodorisation and treatment of sewage and other refuse matters in the preparation of manures. The Manchester Sewage Guano Company commenced operations in the year 1850, in the preparation of manures which they called "sewage guano." The company under the superintendence of two of the directors, one a practical chemist and the other a practical engineer, prepared and sold manures manufactured by the following and other processes, viz.:—1. The filtration of sewage through animal and vegetable charcoal; 2. The precipitation of the solid matters of sewage by lime, lime water, &c.; 3. The evaporation of the water in urine, night-soil, ammonia, water, &c.; 4. The desiccation and deodorisation of fish, blood, flesh, and other animal matters; and, 5. The mixture of these concentrated products and other chemical materials with animal and vegetable charcoal, which absorbs to an extraordinary extent the concentrated liquid thus prepared, and which, when mixed with the solid parts of the fish, flesh, bones, blood, &c., in the manner which experience has pointed out as the best, forms the Manchester sewage guano. Dead horses, sheep, &c., diseased flesh meat, and fish seized as unfit for human food by the City authorities, have been worked up without causing any nuisance by the process. Various chemical analyses have been made of this manure, which is found to contain a larger proportion of ammonia, phosphates, urates, and other fertilising properties, than an equal amount in value of foreign guano. The company have recently erected new works, at a large expense, with the requisite conveniences of steam power, tanks, drying stoves, evaporating pans, retorts, sheds, &c.; and although they have not yet had the gratification of receiving any return in the shape of profit, they feel confident from the fact of the demand for their manures having last year been greater than they could supply, that a reasonable profit may be fairly expected from their future operations.

The company have never taken out a patent; and although they naturally refrain from publishing the particulars of the various processes adopted, they would gladly see a host of competitors arising for the manufacture of a British manure from waste materials, which are now the cause of nuisance, sickness, and excessive mortality. Numerous patents have been taken out for processes which the Manchester Sewage Guano Company have used for some time. Several of the directors of the company have been engaged in

experiments in disinfecting and deodorising sewage and other waste materials of towns for upwards of 14 years, and the company's operations have had the benefit of this extensive and varied experience. The subject is one of considerable difficulty; and to successfully carry out requires the aid of capital, chemical and engineering knowledge, agricultural experience, business habits, and patience. The experience of the Manchester Sewage Guano Company may be valuable in exciting more vigorous efforts in the right direction for the attainment of the desirable object in view, which may with truth be considered the great agricultural and sanitary question of the day, viz., the preparation of a valuable fertiliser from the refuse and injurious waste materials of our towns. There is abundant room for every well directed effort, and I heartily wish success to all who earnestly set about the accomplishment of the desired object, and thank you for the aid you have given to the cause. *John Thompson, Secretary to the Manchester Sewage Guano Company, 3, Watling Street, Manchester.*

Home Correspondence.

Management of Manure.—In reply to "C. L., Cirencester's" rejoinder to my note on the management of manure, I will only say that his calculations are based on entirely erroneous premises. If "C. L." will take the trouble to read carefully my explanations, he will find it distinctly stated that 100 cwt. of fresh manure in keeping until the straw has become half rotten will be reduced to 80 cwt., and will have lost 5 lbs. of nitrogen. That in keeping until it has become "fat and cheesy," 100 cwt. will be reduced to 60 cwt., during which time they will have lost 10 lbs. of nitrogen absolutely, and not as "C. L." presumes, 10 lbs. in addition to 5 lbs. And lastly, that in keeping until it has become perfectly decomposed, the original 100 cwt. will be reduced to 40 cwt., during which time they will have lost 20 lbs., and not as "C. L." represents me to say, 20 lbs. in addition to 10 lbs. and 5 lbs. If fresh manure contains 40 lbs. of nitrogen in a perfectly decomposed state, the 40 remaining cwt. will thus contain 20 lbs. of nitrogen, and not 5 lbs., as indeed "C. L.'s" calculations, but not mine, show. *Aug. Voelcker, Cirencester.*

What has Science done for Agriculture? (see p. 107.)—Your correspondent, who signs himself a "Farming Landowner," ought to be reminded of the distinction between the chemical action of quicklime and of its carbonate. It is the latter which is introduced into the formation of artificial nitre beds, and which is found so useful in fixing the nitric acid generated by the decomposition of the animal matter present. This, therefore, being the object of its application, it would seem a safer practice to mix with our dung-heaps the carbonate than the earth in its caustic condition. In the latter state, indeed, it may accelerate those processes of animal decomposition by which nitrogen is evolved; but until we know more fully by what conditions the generation in our climate at one time of nitric acid and at another of ammonia, is determined, it would be rash to infer, from the apparently successful practice of certain west country farmers, who have been in the habit of mixing quicklime with their stable dung, that the objections to this method of proceeding, founded upon chemical considerations, are to be in all cases set aside. When nitric acid only is produced, the presence of caustic lime cannot be supposed to be prejudicial; but when ammonia is generated, it must favour the disengagement of this latter product; although even here the evil would be counteracted by the addition of a sufficient quantity of some absorbing substance, by which the escape of the disengaged ammonia may be arrested. The practical farmer, therefore, instead of appealing to this apparent discrepancy between theory and practice, as an argument against the use of science in agriculture, should rather consider that this very discrepancy has arisen from the imperfection of our scientific knowledge, and may therefore be best corrected by a more thorough investigation of the principles upon which the success of the practice depends than has hitherto been undertaken. *Charles Daubeny, Oxford, Feb. 21.*

Land Drainage, Stoppage of Drains, &c.—A correspondent in your paper of the 21st of January last asks for some information as to the stoppage of drain outfalls from rootlets, which he has found hanging to the grates of such outfalls. I regret to say, as a practical man, that I am during every flood teased and annoyed with the same incorrigible enemy; in fact, for the last six weeks I have daily found drains stopped near to the outfall, choked up, and the water making its exit, as your correspondent describes, through the masonry, the whole of the drains being at least 4 feet, and the same enemy even where drains are 11 feet deep. With regard to the trouble your correspondent is in, and how to prevent it hanging upon the grate, I can say that the remedy is easy, viz., by hanging the grate loose instead of having it fixed in the masonry of the outfall, so that in a flood, should the bars become clogged, and so prevent the water from freely escaping through the cavities, the grate will open by the pressure of the water, and so make its escape; and as soon as the flood subsides the grate will shut, and so prevent the entrance of vermin. This plan I have adopted, and find it answer exceedingly well. I feel quite convinced the roots spoken of do not proceed from the mouth of the drain; on the contrary, I always find them most at the higher part of each lateral drain (very seldom any in the main). This I account for by the superior pressure of water at the low end of the drains flushing and driving out the oots and sediment before they gain strength to offer much resistance. As to what the root is, or where it originates, I cannot give the least information. It enters the pipes in a small thread, and increases in thickness as it proceeds in distance up the pipes, always growing against the stream. I have not much fear of stoppage if the outfall is attended to and the grate hung in the way I have described. *John Howell, Myddelton, Otley, Yorkshire.*

Stoppage of Drains.—Three years ago I drained a field of 4 acres with 1½-inch pipes and collars, 5½ feet deep. Two or three weeks since, I observed symptoms of failure in the drains, and last week I had two or three of them opened; I found a growth of roots in many of the tiles, and in one place in particular the drain for several feet in length was thoroughly stopped by a complete felt of rootlets (I enclose a portion), and the particles of sand and earth they had intercepted. These rootlets appear to resemble, at least when wet, coarse human hair as much as anything. The field in question was in Grass when drained and is so still. It is somewhat remarkable, too, that these rootlets have not only penetrated through the collars, but have thriven in the pipes, notwithstanding an impregnation of the drainage water with iron, so strong as to have formed a crust or coating on the interior of every tile. I enclose also a specimen of the plant which I believe to be guilty of the mischief. *A.* [We received the root but not the plant.]

Cost and Returns of Pasture Draining.—I beg to say, for the information of "C. P.," that I have drained permanent Grass land, in Sussex, to great advantage, at 1*l.* 13*s.* 4*d.* per acre; distance 4 poles from drain to drain, depth 3 feet, soil sandy loam; no main drains were required. I consider the increase of hay and aftermath equal to 12*s.* 6*d.* the first year. *W. H. R., Tunbridge Wells.*

Cattle Feeding.—I would recommend gentlemen who are desirous of really benefiting agricultural science to imitate the careful and painstaking methods pursued by Mr. Lawes, of Rothamsted, in all his valuable experiments, and if they rely upon calculations, to see that they are correct before giving them to the public. I have been led into making these remarks by the publication in the *Agricultural Gazette* of a letter from a gentleman signing himself "Aliquis," who, after handsomely acknowledging the correction of his calculations by another writer, and being apparently convinced against his will, tries to re-establish his favourite theory by the following,—the point under discussion being the profitable gain of certain beasts whose live weight was—

At the conclusion of the experiment	4911¼ st.
At the commencement	4193½ „
Or total gain during experiment	717¾ st.

But "Aliquis," in order to carry his point as to proving the profitable feeding of the beasts, misapplies Mr. Ewart's tables for calculating the dead from the live weight in the following singular manner. The tables he quotes as follows:—

Condition.	Per cent. of beef of live weight.
Half fat	50 to 55
Moderately fat	56 to 60
Prime to very fat	61 to 63

And then, assuming the beasts under discussion to yield 50 per cent. of their live weight at the commencement, and 60 per cent. at the termination of the experiment, instead of, as Mr. M'Culloch the reporter himself reckons, 55 per cent. in each case, he triumphantly makes out his calculation thus:

	Live weight.	Dead weight.
At conclusion of experiment	4911¼ × .6	= 2946.7 st.
At commencement	4193½ × .5	= 2096.7 st.
Increase		850 st.

But the whole gain of the beasts is but 717¾ stones, and a portion of this must be deducted for increase of offal. Where, then, can be the 850 stones? This is a good specimen of the *reductio ad absurdum. H. C.*

Covered Rick-yards in Midland Counties.—About three years since I erected a covered homestall at a farm near Stratford-on-Avon, according to a plan furnished me by Mr. Beadel, of Chelmsford; to this I have since added a covered rick-shed 48 feet square and 22 feet high, into which I put the produce of 50 acres of Wheat the last harvest, being not less than 1500 bushels. It is very useful during harvest, and also as a straw-shed after the corn is threshed; it is built on red Pine supporters, and slated. I have a fixed steam-engine, and also a pair of stones, which are found very useful during the feeding season. *Richard Greaves, Cliff House, Warwick.*

Whole Meal.—Under the present high price of Wheat and prospect of scarcity before the next harvest, it is of the utmost importance to every one that the best possible application should be made of the cereals which are used for family consumption. Every experienced family housekeeper knows that a much larger amount of material for the table arises from Wheat simply ground into bread-meal (that is, the full produce of whatever grain, previous to the bran being extracted therefrom) than from finely dressed flour arising from the same quantity of grain; and there are many of our intelligent people who know that, for the promotion of the health of a family, the loaf made from bread-meal is a better and more healthy diet than the loaf made from flour; and also that the fermented loaf, made either from flour or bread-meal, is a decidedly more economical and digestible article of domestic consumption than the cake so common in the cottages of the labouring population of our country. By the term "cake," I mean the produce of flour kneaded in milk or water with a little butter, and without fermentation. *B.*

The Gulf Stream.—It appears to me that in the article in your Paper, of the 21st ult., you have as much underrated the effect of the Gulf Stream on the climate of England as others have been disposed to over-rate it. I willingly admit that the Gulf Stream would have little effect on our climate were our prevailing wind in winter from the east; but is not the natural temperature of the south-west wind much raised, and the quantity of aqueous vapour contained in it increased by its blowing almost entirely over the large body of comparatively warm water contained in the Gulf Stream? You refer to the remarkable dip of the Isothermal line that passes through the South of England as it approaches the American coast. Surely this dip is increased by the cold current from the Arctic Seas which skirts that coast, first as a divided and important current to about lat. 40°, and thence as a cold counter current between the land and the heated waters of the Gulf Stream (see "Johnson's Physical Atlas" 4to edition, plate 6). While, therefore, the effect of wind upon our climate is doubtless great, I think that it is much increased or modified near the coast by oceanic currents. *A Kentish Landowner.*

On Planting Young Fences.—As this is the season generally chosen for planting young fences, and making alterations in old ones, I thought a few remarks on the subject would not be out of place on a theme which interests most of those engaged in agricultural pursuits; in the first place, the land intended for the fence should be thoroughly cleaned and manured, and if in a wet situation, it ought to be a little raised above the surrounding surface, as quickwood, which most fences are composed of, is not fond of a wet situation. Every person who plants a fence wishes it to become strong and thick in the shortest possible time, and for this object most people require strong Quicks; some plant it and let it remain all the length; others, as soon as planted, cut it down, or do so before planting—this is quite a mistaken idea of making a thick fence in the shortest time; and leaving the plants their whole length is almost as bad, as the energies of the one are destroyed, and in the other the fence is always open at the bottom, and has to be cut and carved all ways to make it anything like a fence. The best way is to thoroughly clean the land, and trench it two spits deep, adding plenty of well-decayed manure; plant at an open season in February, or early in March, leave the plants their whole length the first season, and cut them down to 6 inches above the surface in February of the succeeding season, when they will have got thoroughly hold of the soil, which it is impossible for them to do when planted; the shoots they will produce will be strong and healthy, which is not the case when cut down the first season. When the shoots are of sufficient length they may be stopped with the shears or bill-hook, and by going over them every season the fence will be always thick and strong, and kept so at the least expense. Privet is a capital plant for thickening fences, and will thrive on any soil, and will bear clipping and cutting the same as Thorn. Intermixed with Thorn, say one to every four plants, the hedge will be greatly improved; as it retains its foliage during the winter, it makes a better shelter for stock. *Henry May, The Hope Nurseries, Bedale, February 3.*

The College Agricultural Diploma.—It gives me great pleasure to observe in a late leading article, that the diploma of the Royal Agricultural college is beginning to be estimated at its proper value. As long ago as April, 1850, I opened the subject in the columns of your journal, and I then endeavoured to impress upon landlords the importance it would be to them that some standard of qualification should exist, by which they might judge of the competency of those whom they entrusted with the care and management of their estates. To the commonest understanding it must be apparent that a diploma honourably obtained by punctuality in attendance on the lectures and practice of the college, and by passing such an examination as is there required, is not only the best guarantee to the landlord of the capability of the possessor for an office of trust either as steward or tenant; but it is the surest indication that he is also desirous of raising himself to such a *status* in society as will obtain for him a respect commensurate with his acknowledged acquirements. In the Royal Agricultural College, to a magnificent edifice is attached all the appurtenances necessary to make it a model establishment, and it is presided over by a gentleman qualified in every respect for the post. A brilliant corps of professors superintend instruction in the different departments; and in an extensive farm and farm-buildings the more practical work is carried on, on a scale and in a style which calls for our warmest admiration. But do the students for whose benefit these things are provided, leave the college after the expiration of their terms duly fitted for the important and responsible duties that are to devolve on them? It cannot be denied that some do, and honourably have they acquitted themselves in after life; but simply from the circumstance (and it must operate against real progress in scientific farming), that the possession of the college diploma is optional, and that places of trust can be obtained without it, the great majority of them depart and embark in life with but a very slender acquaintance with those principles on a correct knowledge of which their future success depends. I refer in confirmation of this statement to your own article, which mentions six only in three years who have received the diploma. Assuming the average number of students to be 70 annually; this would be, say 3 per cent. Now, considering the enormous amount of agricultural property annually changing hands, the

responsible nature of the duties attached to its possession, and, besides, the singularly anomalous relation which exists between landlord and tenant (witness the tiresome and ridiculous conditions of many leases of tenure, evincing the low opinion of the landlord for the tenant's judgment and intelligence), I cannot but believe that some plan might be devised that would make it necessary to obtain a certificate of qualification before a tenant occupies the land, or a steward steps into office. And I throw it out as a suggestion worthy the consideration of the patrons and governors of the Royal Agricultural College, whether by setting an example in their own estates when a vacancy occurs, by installing in preference a candidate who possesses the college diploma, they would not be furthering an object of the highest importance to themselves, and to the agricultural interest generally. *Iota, Cirencester.*

What shall we do with our drainage? is a question that excites great general attention, and it involves another equally important to the farming interest, namely, if the sewage of towns be a nuisance which ought to be removed, and may be made so available as a fertiliser as even almost to rival the famed but costly guano, how and in what state could it be used upon the farm with the greatest advantage, *i. e.*, as a liquid, entire as it flows from the drain; or in a solid dry state, and deprived of its water by filtration, or by chemical precipitants? If the reader consider the report of one analysis of a specimen taken from a London sewer as a trust-worthy evidence, he may without difficulty be able to arrive at something like a rational opinion of the chemical state of the question :—"Sewer water from Barrett's Court, an imperial gallon contained of substances in solution 243.30 grains; insoluble substances, 248.96 grains." The soluble substances, which comprise nearly 37 grains of ammonia, and at least 79 grains of salts, pass away, and are lost by the acts of common filtration or of subsidence. And matters remain not much better if peat charcoal be employed as a filter. As to the 248 plus grains of insoluble substances, they comprise only 4 56 grains of ammonia, much flint and lime, and very little phosphoric acid. Having no adequate space for enlargement, it must suffice to direct attention to the vast returns of rich herbage about Edinburgh, produced by the entire sewage of the drains, in order to establish the one leading fact, and thus prove that, by straining off the liquids, the solid matters are rendered little better than an effete, intractable mass of rubbish. *J. T.*

Direction of Drains.—In your Number of Oct. 29 Mr. Bailey Denton observes, "Now that the question of direction of drains is fairly afloat, let it be fully discussed, that the reading of the *Gazette* may have a practical effect." From that time to this, with a slight *hiatus*, the subject has been under discussion, and very interesting, certainly, have several of the communications been. But, from too much of that which I have previously commented upon, we seem to be as far from the "practical effect" as we were before the discussion commenced. The advocate of each "system" still pertinaciously adheres to his pet theories, and fails to be convinced, even by very stubborn facts, that other rules are sometimes most correct. Mr. Hewitt Davis states in your Number for Jan. 7, "Every attempt that I have ever known to drain out of the line of greatest fall has been imperfect." Now, this is such a bold statement on the part of a member of the profession to which I have the honour to belong, that, feeling it demands some notice from those whose practice convinces them that there are instances to which the remarks would not apply, I cannot refrain from again troubling you with a few observations. I presume, from the general tenour of Mr. Davis's communication that his remarks are to be understood as furnishing a practical confirmation of the correctness of the theory in all cases; indeed, his quotation of Mr. Denton's words as a *because*, seem to justify my impression. The communications of Mr. Trimmer are of such recent date, that I need do no more than refer your readers to them, for a proof of strata of soils so conformed as to require for their most efficient and economical drainage, that the drains should be laid obliquely to the line of greatest inclination of surface. A more detailed description of the same will be found in the last Number [Part I.] of the "Agricultural Society's Journal," in which is an excellent paper upon the subject, from Mr. Trimmer's pen. My own practice enables me to confirm the existence of deposits so conformed as Mr. Trimmer describes them, and I could cite other peculiarities of soil and substratum, which demand the same treatment. But it appears to me to be unnecessary, because any one whose practice is tolerably extensive, and whose judgment is not fettered in its action by very pretty certainly, and feasible withal, but still mere theories, will know that such instances are sometimes met with; and it would really be useless to attempt to convince those who appear to write rather to support the theories they have adopted, than to assist in arriving at practical correctness, by admitting to fair consideration the result of others' experience. My chief object is to protest against the dogmatical application of any unbending theory, or system, to all cases. Mr. Davis may not have met with any instance of successful draining obliquely to the line of fall, though such are numerous enough to make it matter of surprise that they have escaped his attention, and Mr. Denton may remain convinced that water will only pass through the soil, even if it meets with a drain, in the direction of the steepest line of fall; but practice tells me that there are soils I cannot drain cheaply and thoroughly, without running the minor drains obliquely. I would ask Messrs. Davis and Denton it they have ever met with a soil and substratum of the following character, namely, about 18 inches of stiff loam overlying a stratum consisting of slate, or indurated clay, in laminæ, lying at a considerable angle with the horizontal line, but with their upper edges in the direction of the line of fall; similar to the leaves of a book on its back, as if to be opened. The simile will be almost complete if we suppose the book still closed, but leaning a little on one side, and the top of it slightly elevated, so as to give the face formed by the front edges of the pages the slope of a hill side, with the leaves in the direction of the line of greatest fall. If they can drain such a soil efficiently and economically by laying the drains in the direction of the steepest line of fall, I should be glad to be informed how it is done, and to acknowledge my own error. Mr. Denton is unquestionably right, abstractly, as to the course of water being regulated by the law of gravity, but that natural course is altered by 50 causes in its percolation through soils. If it were not so, the water which lies between the lines of minor drains, when laid up the steepest inclination, would never reach them, but go on till it met with the main drain running across. This beautiful theory, therefore, is defeated when tested practically. Imagine the water lying midway between two drains laid straight down the slope; surely this finds its way across the slope, even through the soil, or else the drains are comparatively useless. In fact it does so notoriously, and therefore proves that it does not always take the line of greatest inclination. As to water escaping in the lower side of oblique drains: with a proper fall this will not be the case, because, with a few exceptions, drains of proper depth run through earth in that state of moisture that renders it more disposed to yield than to absorb water; independent of which it would never leave the easy cylindrical passage it had once obtained, for one through a material it has just left, more difficult of passage, certainly, than the drain itself. There is only one kind of subsoil on which this would occur, and in that the upright would be as subject to it as the oblique drain, namely, where the drains cross deep porous strata, and then, perhaps, the water would be lost altogether, as I have known it to be. I have tested oblique drains in many soils, but I have never found the water to ooze out again on the lower side; nor do I think it will, unless such drains are laid too much across the slope, and in a soil in which oblique drains should not be; and here I may explain, that I seldom lay them at an angle greater than from 10° to 15° from the line of steepest fall. In the foregoing remarks, I must not be misunderstood as advocating oblique drains always; on the contrary, I believe my experience justifies me in stating that in the majority of cases, the plan of pursuing the greatest line of fall should prevail; but this does not prevent me seeing the error of doing so in all cases, without discrimination. *A Draining Engineer.*

Societies.

ROYAL AGRICULTURAL SOCIETY.

A Weekly Council was held on Wednesday, the 22d of February: Mr. Pusey, President, in the Chair.

Nitrate of Soda.—The President read to the meeting the following extract from a letter addressed to him by Mr. Stevenson of Edinburgh:—

February 16, 1854.

Yesterday, Mr. A. Howden, Lawhead, East Lothian, informed me that he had tested his experiment of last crop with nitrate of soda, 1 cwt. of nitrate and 2 cwt. of salt, per imp. acre. The increase of produce was 9 bushels of Wheat per imp. acre. It is onlyby pressing such experimental results upon the attention of farmers, that will produce a general feeling in favour of this valuable fertiliser.

Mr. Bullen read to the Council the followiug notes on the subject of offal from the cod fishery at Newfoundland.

Fish Offal as Manure.—It appears that about two-thirds say one-half, the cod fish caught is thrown away as waste or offal, so that out of 100 tons of fresh fish you have 50 tons for curing, reduced to 25 tons when dried, and 50 tons of offal. In 1853 there were upwards of 595,000 quintals of dried fish exported from Newfoundland (equal, at 20 quintals to a ton, to about 30,000 tons of cured fish, the produce of 60,000 tons of fresh fish), and 120,000 tons of offal. This offal, at the calculation of one ton to five, ought to give about 25,000 tons of fish manure in a perfectly dried state from cod refuse alone, at present available. As little or no value is set upon it at present, it may be estimated at little more than the price of collection, which, however, would be considerable.

Seal Offal at Newfoundland.—It appears from Governor Hamilton's last report, that there are no less than 367 vessels of from 70 to 180 tons, amounting to 35,760 tons, and carrying 13,000 men engaged in the seal oil and skin trade alone at Newfoundland. About the 1st March this fleet proceeds to sea, and falls in with what is called the "sealing or whelping ice," where the seals breed and rear their young, sometimes on the coast of Labrador, and at others on the shores of Newfoundland itself; and after killing the seals, they strip off the skins, and blubber under the skin, and abandoning the carcases, they stow them in the hold. The voyage lasts about a month or six weeks, on an average, according to the locality where they fall in with the seals, and sometimes ships return fully loaded in a week or a fortnight, while at others the voyage is a total failure. "Last season, which was considered a most disastrous one to the shipping, there were 550,000 seals killed, from which 7334 tons of oil were extracted, amounting to 237,957*l.* sterling, or near 30*l.* per ton, and seal skins to the value of 76,790*l.* sterling also exported." The bodies of these seals, which constitute their chief bulk, must have given 50,000 tons, at least, of animal matter. In addition to these sources of the raw material the seas and bays round Newfoundland abound with fish of every kind, particularly the capelin, as it is called, a species of small sprat, upon which the cod fish live, together with the dog fish, and others which are peculiarly rich in oil, and can be taken in great quantities by the slightest exertion, or the adoption of improved machinery and system. The chief difficulty to a successful manufacture is the want of labour, which is dearer at certain seasons in Newfoundland, and more scarce than anywhere else, as there are only 120,000 inhabitants in the island, and they are so exclusively occupied in the fishing and sealing seasons, in summer and spring, that they cannot attend to anything else. But Governor Hamilton, in his excellent report, most judiciously remarks, that "unfortunately in that colony there is little or no employment for the labouring population during the long period which intervenes between the close of the cod fishery in summer, and the commencement of the seal fishery in spring," and that in the mode and processes of conducting the fisheries themselves, there is a great want of economy and a disregard for improvements which the application of modern science would suggest, and which might be rendered available in advancing the industrial pursuits of the colony." In conclusion, he says "that there are few parts of the world where the process of converting labour into capital is so speedy, or, for the extent of it, so efficacious as at Newfoundland. If the catch of seals alone be an average one, upwards of 300,000*l.* is raised off these 'sealing meadows,' as they are called, in a few weeks. The sea in this brief season yields a harvest more profitable than the plain, and without the labours of a seed time, too." He also remarks that, "since the abandonment of the deep sea fishery on the banks, the cod fishery is now confined to small boats on the coast and in the bays and harbours, and could hardly be carried on without the aid of the seal fishery;" but how vastly would the whole community be benefited by utilising the entire of the produce of both fisheries, in the combined manufactures in question. It is evident that the manufacture cannot be carried on effectively and profitably either at Newfoundland or elsewhere, except by commanding the raw material to an indefinite amount, and at a nominal price, or the price of collecting it. In the cases mentioned, large quantities are now procured for other objects, and wasted, and it is well worthy of consideration how far the increased demand for the article, and the enterprising spirit combined with the science and machinery of the present day, might not have the effect of establishing a new and profitable trade in this colony, and of utilising the whole animal supply, and of combining the present curing of cod fish, and the cod liver and other oil trades, directly with the manufacture of manure from the refuse. But to effect this, it is evident that the capital, machinery, and skill must be chiefly supplied from this country. Suggestion,—That a series of experiments should be instituted in this city under the immediate superintendence of the Society and at their expense, for the purpose of ascertaining the best modes of manufacturing the manure. For that purpose that a couple of tons of ordinary fish offal should be procured at Billingsgate or elsewhere to experiment on, and to ascertain the exact and relative proportions and prices of the oils, and manure, &c., whether made by simple desiccation or by the action of acids, so as to become thoroughly acquainted with the process, and to suggest such alterations as may be advisable for establishing the system elsewhere.

The reading of this communication was followed by an interesting discussion on this and some other proposed substitutes for guano, in which the President, Mr. Raymond Barker, Mr. Fisher Hobbs, Mr. Cuthbert Johnson, Dr. Calvert, Mr. Caird, Professor Way, Mr. Mainwaring Paine, Mr. Nicol, Mr. Slaney, Mr. Bullen, and Mr. Pocock took part.

Mr. Harkness, Secretary to the Royal Agricultural Improvement Society of Ireland, favoured the Council with a supply of several copies of the last Journal of that Society, containing the papers of Dr. Apjohn on the subject of fish manures, recently read before its members.

Sheep-Shearing.—Mr. Caird submitted to the inspection of the Council one of the new instruments for shearing sheep, invented by Mr. Henry Francis, of West Strand, London; along with testimonials of its value. Professor Simonds expressed his approval of the instrument in question.

The Council having ordered their usual acknowledgments for the communications then made to them, adjourned to their monthly meeting, on Wednesday next, the 1st of March.

Notices of Books.

Appendix to the Specification of English Patents for Reaping Machines. By Bennet Woodcroft. Eyre & Spottiswoode.

Probably there is no single field implement whose history is a more accurate counterpart to that of agriculture itself than the reaping-machine. Both its early history, commencing long enough ago, and its later history, displaying sufficient rapidity and energy of progress, attest the truth of this remark. Just as in the writings of Pliny and Palladius we find agricultural maxims and instructions which are still quoted by the agricultural teachers of the 19th century; so there, also, we find notices of a reaping-machine, which it was proposed in 1785 should be revived in competition for the prize then offered by the Society of Arts in connection with the subject. And as to the more recent course of English farming, we find that, with the ebb and flow of agricultural excitement, there has all along been a corresponding amount of attention devoted to this particular means of cheapening the cost of agricultural production.

The work of Mr. Woodcroft just published under the sanction of the Commissioners of Patents is a most interesting illustration of this point. It appears from it that since 1849 no fewer than 32 patents have been taken out either for original machines or for improvements upon Bell, Hussey, and M'Cormick; of these, one is for a cutter worked by hand, one for a simply advancing edge, one on the sidelong and advancing principle, 16 on the reciprocating and advancing principle, and 14 on the principle of circular motion. Thus within 4 years of agriculturally the most active portion of English history, more than one half of all the patents in connection with the subject have been taken out, although the list commences with the year 1786.

This corresponds to our general knowledge of the excitement which has prevailed upon the subject ever since the exhibition of American reapers in the Crystal Palace. And the particulars which may be gathered in detail from the perusal of Mr. Woodcroft's work furnish a sufficiently precise succession of illustrations

of the point. We have not room at present to give anything like even a mere epitome of the history here furnished us, and must be, therefore, satisfied with commending the work, along with the article on his own invention by Mr. Bell, of Carmylie, in the current number of the "Edinburgh Quarterly Journal of Agriculture," to the attention of all who may be interested in this now important branch of agricultural history.

Poultry.

POULTRY: *A Z.* The hen is suffering either from an injury in the back, or from a stoppage; in either case, the best possible treatment will be a tablespoonful of castor oil. It may arise from a difficulty in laying; if so, I would advise the introduction of a feather, saturated with oil, into the egg passage; the relief will be immediate. The more oil introduced in this manner the more speedy and effectual the cure will be.—*C H.* I would advise the removal of the lump from the ear-lobe of the Spanish cock, if other means have been tried; if they have not, wash it well, and foment with warm water, and rub with compound sulphur ointment. Should this fail, remove it carefully. As it often happens that any injury to the white skin of the Spanish fowl leaves a red mark, and thereby injures the bird for exhibition purposes, the incision for the removal should be as small as possible, and made underneath, so that the white skin may be brought down to cover it.—*O.* Perhaps your old Cochin cock is merely suffering from old age; if so, I cannot offer a remedy; if, however, it is not so, I would advise you to give him a tablespoonful of castor oil, and after feed on stimulants, as bread, ale, &c. Should these fail, try some of the many medicines now advertised for poultry, and extensively used. *J. Baily,* 113, *Mount Street.*

Calendar of Operations.

FEBRUARY.

RHINS OF GALLOWAY, *Feb.* 21.—After the rough winter we have had, we may look for an early and genial spring, which will be much needed, as the fodder and Turnips for stock will, in many cases, be prematurely exhausted. The autumn and winter sown Wheat has been much retarded in its growth by the severe frost; still it seems to be well planted, and with favourable weather it may not be much the worse for the check it has received. The spring sowing of Wheat has been proceeded with when the weather has suited; there is still a considerable breadth to sow, as some farmers in different localities of the district prefer spring to autumn sowing. Our experience has been the reverse of this, as we have generally one-third more in quantity, and of far better quality sown in autumn than spring. This year our produce was 36 bushels per Scotch acre, all sown in November, December, and beginning of January; whereas, for the two previous years our average per acre of that sown in spring on fully as good land, was only 25 bushels. Grain has been freely threshed out, owing to the high prices, and consequently there is less in the farm-yard than usual at this time of year, which will tell on our further home supplies. There has been a considerable reaction in the grain market during the last three weeks Feeding cattle have been thriving and paying well, though prices have been of late tending downwards. This has been a very unfavourable season for sheep on Turnips, still wethers have been selling at high prices, leaving fair remuneration for keep, wether mutton being now worth *8d.* per lb. in the Glasgow market. Farm labour is pretty well advanced, despite the rough winter; labourers are well employed at good wages, and there need be no idle hands where there is a willingness to give a fair day's work for a fair day's pay.

THE LAMMERMUIRS.—Black weather and frequently very hard frosts. This month and next are the most severe months in all the year on hill stock, even although the weather remain open, because the pastures are now thoroughly dead and withered up. The storm with which this year set in lasted with considerable severity for three weeks, when the hay reserves were largely drawn upon, so much so that many stock farms had not more than another week's provision left when the storm gave way. Last summer was a particularly bad Grass season, so that much less hay was attained than is usually deemed sufficient to face the winter with, and any accumulation of former years was completely swept away by the severe storm of last year. Should another storm set in, and be of any continuance, very heavy losses may be expected. As yet the stock in this district have stood the winter so far as it has gone much better than last year. In this district the shepherds are usually engaged for another year on or before Candlemas-day; their wages are paid partly in sheep and partly in corn or meal, also a cow's Grass and Potatoes are allowed them. *Lammermuir.*

Notices to Correspondents.

DR. NEWINGTON'S DIBBLE, &c.: *A Sub.* Dr. Mackenzie can apply to Mr. H. Ben, of Lamberhurst, Sussex, who makes them.

GYPSUM: *Hy.* It should be applied now. All easily soluble manures are as well or better applied during the time of growth, but difficultly soluble substances may be applied earlier.

IODINE: *A Sub.* Will you point out the paragraph to which you allude?

ITALIAN RYE-GRASS: *Old Subscriber.* At least 3 bushels per acre. This will be from 45 to 50 lbs., and you should not sow less.

MANGOLD WURZEL, &c.: *Cliviger.* A doubly-trenched loam in a moist climate will do very well for growing prize roots. You had better incorporate 10 or 12 tons of farm-yard manure per acre, and then apply 3 cwt. of guano and 2 cwt. of common salt over the land before ribbing it for the reception of the seed. In the case of Swedish Turnips, 2 or 3 cwt. of superphosphate should be applied per acre in addition.

NITRATE OF SODA: *M H.* Both it and salt may be dissolved in liquid manure, and carefully applied as a top-dressng to Wheat and pasture in spring.

PASTURE: *Hy.* A compost of vegetable matter with gypsum and guano applied in such quantity as to contain 2 cwt. apiece of the two substances per acre, will be as good a dressing as you can give.

POTATOES: *J S F.* We hardly know what kind and condition of soil you have to deal with; but if it be a mass of well-rotten turf, we should fear the application of nitrogenous manure as likely to induce excessive luxuriance of growth. If any nitrogenous manure be adopted, soot (20 to 30 bushels per acre) would probably be as good as any. If you apply bones and nitrate of soda—2 cwt. of the former, with $\frac{1}{2}$ cwt. of sulphuric acid (see page 76), and 1 cwt. of nitrate of soda, will make a good dressing per acre.—*Rus.* The district growing Potatoes of the best quality we know, has a calcareous soil. We do not acquiesce in the statement that "lime is injurious to Potatoes."

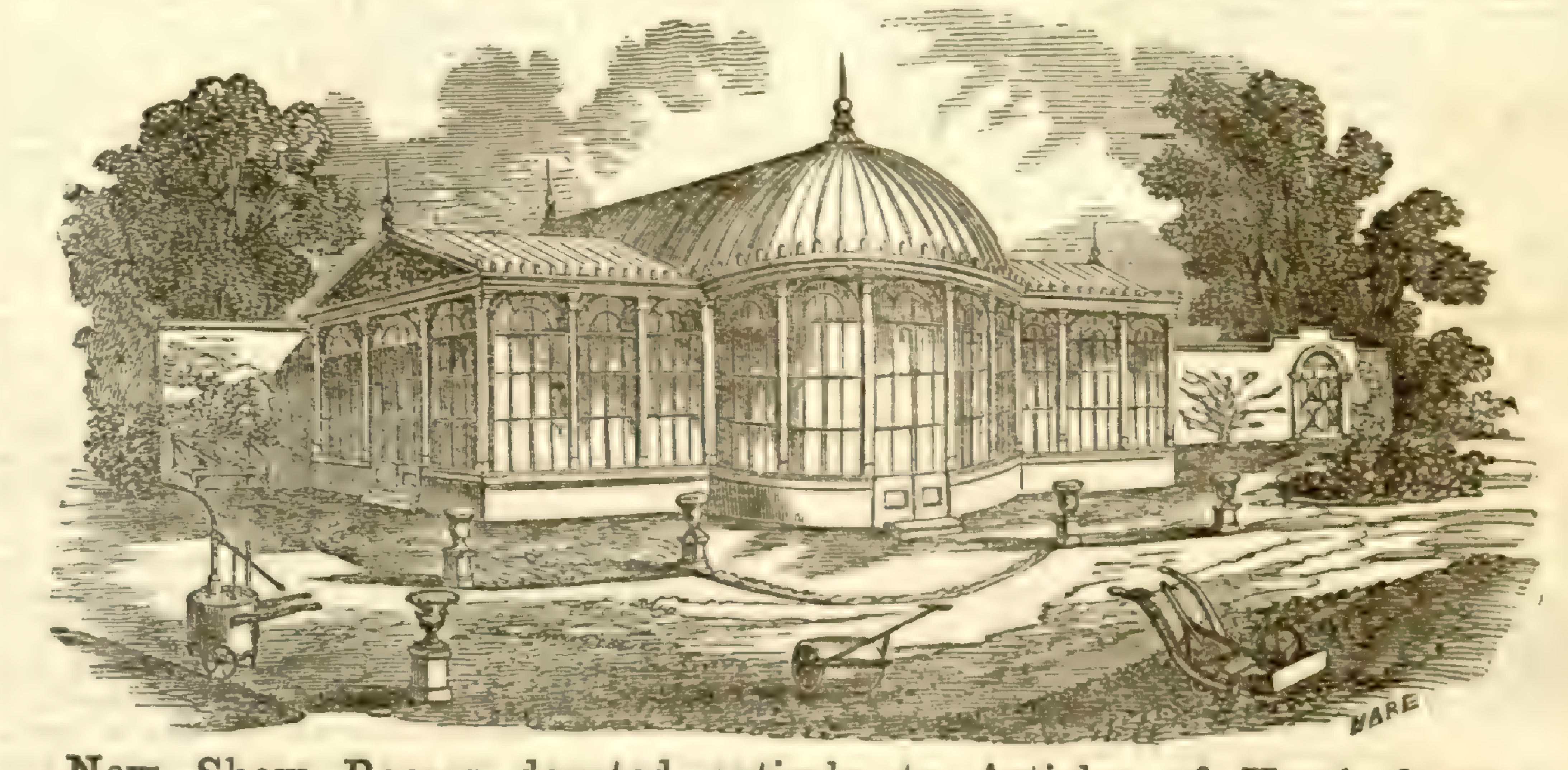
REFUSE FROM ALKALI WORKS: *G P.* We do not know what it is, and therefore cannot say what it will do. If you would state of what particular process it is the refuse, it might be possible to give an opinion.

ROOKS: *R A H.* You can drive them away with powder and shot; and as to their nests, though you cannot climb to remove them, a little ingenuity will lodge a string by which they may be pulled away.

WATER-POWER: *W H C.* We remember not only receiving your letter, but also writing a reply, which, however, we do not find in any of the past numbers. The answer gave an unhesitating preference to water-power, as at once the cheapest and most manageable of any at the farmer's command.

COTTAM AND HALLEN,

2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.



New Show Rooms devoted entirely to Articles of Horticulture.

ILLUSTRATED CATALOGUES UPON APPLICATION.

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Syringes	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

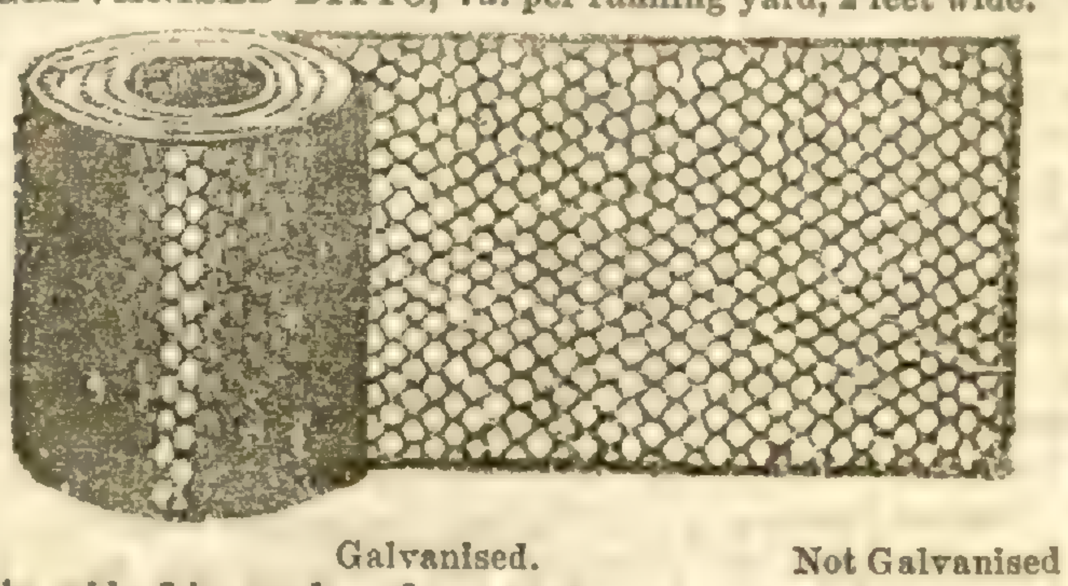
IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.

AGRICULTURAL LIST UPON APPLICATION.

EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

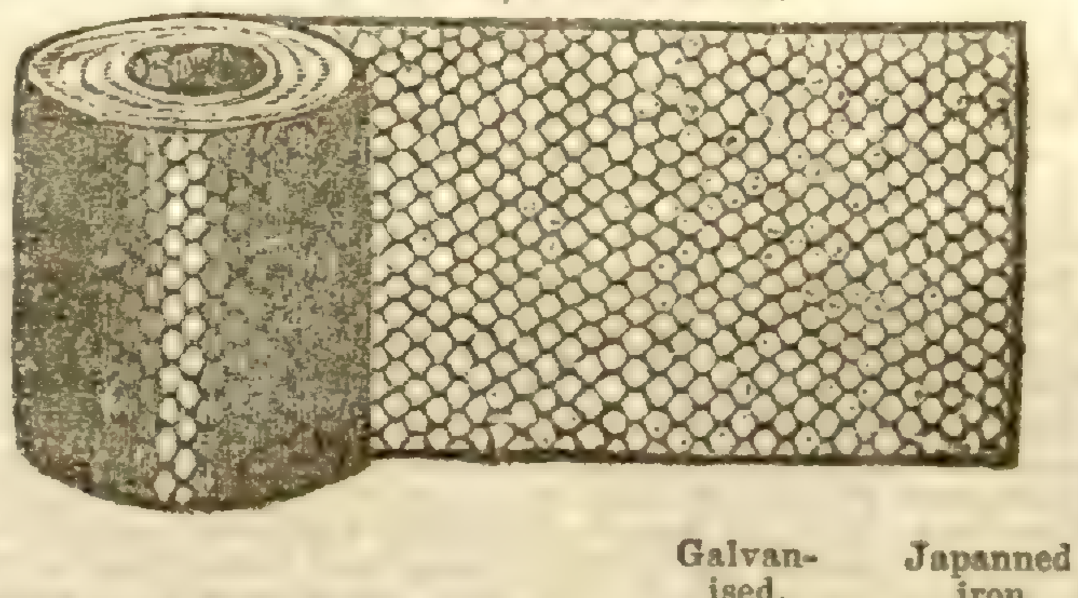
CHEAP WIRE GAME & POULTRY NETTING, 5*d.* per running yard.
GALVANISED DITTO, 7*d.* per running yard, 2 feet wide.



	Galvanised.	Not Galvanised
24 in. wide, 2 in. mesh,	*d.* per yard.	5*d.* per yard
30 in. " 2 in. "	9*d.* "	$6\frac{1}{4}$*d.* "
36 in. " 2 in. "	$10\frac{1}{2}$*d.* "	$7\frac{1}{2}$*d.* "
48 in. " 2 in. "	1*s.* 2*d.* "	10*d.* "

Sparrow Proof Netting, Galvanised, 3*d.* per square foot, made to any size for the same proportionate price. This article was shown at the Great Exhibition, where it was so much admired for its light and durable appearance, and acknowledged to be the cheapest and best article of the kind ever offered. Extra strong Wire Sheep Netting, 3 feet high, 1*s.* 6*d.* and 2*s.* 3*d.* per yard. Also every description of Flower Trainers, Dahlia Rods, Garden Arches, Bordering, Flower Stands, Tying Wire, Trellis Work, Invisible Wire Fencing, Hurdles, and every description of Wire Work for Horticultural purposes.—Illustrated Catalogues of Patterns forwarded, post free, on application to T. H. FOX, City of London Wire Work and Iron Fence Manufactory, 44, Skinner Street, and 6 and 8, Snow Hill, London.

GALVANISED WIRE GAME NETTING.—
7*d.* PER YARD, 2 FEET WIDE.

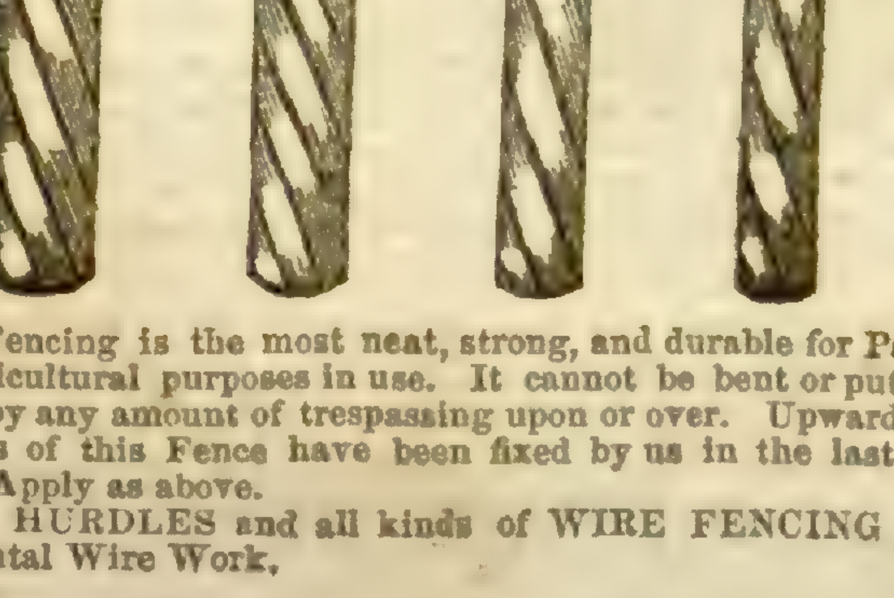


	Galvanised.	Japanned iron.
2-inch mesh, light, 24 inches wide ...	7*d.* per yd.	5*d.* per yd.
2-inch " strong " ...	9 "	$6\frac{1}{2}$ "
2-inch " extra strong " ...	12 "	9 "
$1\frac{5}{8}$-inch " light " ...	8 "	6 "
$1\frac{5}{8}$-inch " strong " ...	10 "	8 "
$1\frac{5}{8}$-inch " extra strong " ...	14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasantries, 3*d.* per square foot. Patterns forwarded post free.

Manufactured by BARNARD & BISHOP, Market Place, Norwich; and delivered free of expense in London, Peterborough, Hull, or Newcastle.

H. J. MORTON AND Co., Galvanised Iron Roofing Works, 2, Basinghall Buildings, Leeds.
PATENT WIRE STRAND FENCING FOR PARKS, &c.



This Fencing is the most neat, strong, and durable for Parks and Agricultural purposes in use. It cannot be bent or put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply as above.

IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

TANNED GARDEN NETTING for protecting Fruit Trees from frost, blight, and birds, or as a fence for fowls, pigeons, Tulips, and seed beds, can be had in any quantity from JOHN KING FARLOW'S, Fishing Tackle and Net Manufactory, 4 and 5 Crooked Lane, London Bridge, at $1\frac{1}{2}$*d.* per yard one yard, 3*d.* two yards, or 6*d.* four yards wide. Carriage free on all orders over 20*s.*, accompanied by a Post Office order, or London reference. Rabbit, Sheep, and Fishing Nets of every description in stock or made to order.

TANNED NETTING, for the protection of Fruit Trees from frost, blight, and birds, and for the security of fresh sown seeds, either in Gardens or Fields, at 1*d.* per square yard; 200 yards, 14*s.*; 500 yards, 30*s.*; 1000 yards, 50*s.* Scrim Canvass, for Wall Fruit.—At EDGINGTON and Co.'s, 17, Smithfield Bars, City, and Old Kent Road, Southwark, where may be seen erected Emigrant Tents in great varieties, on their latest improved principles, and also at Brunswick Street, Poplar near the East India Export Dock.

WIRE FENCING, $6\frac{3}{4}$*d.* per Square Yard, in various widths from 6 feet to 15 inches, mesh less than 2 inches. An effectual fence against Hares, Rabbits, Sheep, Deer, &c., and for the enclosure of Poultry, Pheasants, &c.; 4 inch mesh, 4*d.* per square yard.—R. RICHARDSON, 21, Tonbridge Place, New Road, London.

BLOSSOM OF FRUIT TREES.—WORSTED NET to effectually protect the blossom of wall fruit trees from frost and blight, and the ripe fruit afterwards from wasps and flies, 7*d.* per square yard, in various widths. All kinds of garden, fishing, and sheep nets, made by machinery, and at very low prices. —R. RICHARDSON, 21, Tonbridge Place, New Road, King's Cross.

FRUIT TREES, POULTRY, RABBIT, SHEEP, and CAT FENCING.—Worsted Netting to protect the Bloom of Peach, Nectarine, and other Trees, Flower, or Seed Beds, from Frost, Blight, and Birds, 2 yards wide, 5*d.* per yard NEW TWINE NETTING (Tanned if required), 1 yard wide, $1\frac{1}{2}$*d.* per yard; 2 yards wide, 3*d.* per yard; 4 yards wide, 6*d.* per yard; Half-inch Mesh ditto, 2 yards wide, 6*d.* per yard. TANNED NETTING, 2 or 3 yards wide, $1\frac{1}{2}$*d.* per yard; 4 or 6 yards wide, 3*d.* per yard; or 5*s.* per 100 yards, 1 yard; 10*s.* per 100 yards, 2 yards; and 20*s.* per 100 yards, 4 yards wide. ELASTIC HEXAGON GARDEN NET, or Scrim Canvas, $4\frac{1}{2}$*d.* per square yard. COCOA NUT FIBRE, or Hemp Sheepfolding Net, of superior quality, 4 feet high, 4*d.* to 6*d.* per yard. Rabbit Net, 4 feet wide, $1\frac{1}{2}$*d.* per yard; 6 feet wide, $2\frac{1}{4}$*d.* per yard; 8 feet wide, 3*d.* per yard. Each Edge Corded, $\frac{1}{2}$*d.* per yard extra, suitable for Poultry Fencing. Square Mesh Cricketing Net, fix its full width and length, made of stout cord, 3*d.* to 4*d.* per square yard; this is the best article made for fencing, against fowls, cats, &c., at W. CULLINGFORD'S. Orders by post with post-office order or town reference, punctually attended to. The Trade supplied. Fishing Nets of all kinds in stock. Nets made to order. Tents, Marquees, Rick Cloths, Tarpaulin, Lines, Rope, Twine, &c., made to order.—1, Edmund-terrace, Ball's Pond Road, Islington, London.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

PRIZE MEDAL—1851.
AT A VERY ECONOMICAL RATE.

SAMUEL CUNDY, MASON and BUILDER, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Lower Belgrave Place, Pimlico, London.

Marble Chimney-pieces manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price. A good Marble Chimney-piece for 40*s.* Marble Work in all its branches at a remarkably cheap rate for Halls, Dairies, Larders, &c. Circulars sent on application.

N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank.

FENDERS, STOVES, AND FIRE-IRONS.—Buyers of the above are requested, before finally deciding, to visit WILLIAM S. BURTON'S SHOW ROOMS, 39, Oxford Street (corner of Newman Street), Nos. 1 and 2, Newman Street, and 4 and 5, Perry's Place. They are the largest in the world, and contain such an assortment of FENDERS, STOVES, RANGES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with bronzed ornaments and two sets of bars, 2*l*. 14*s*. to 5*l*. 10*s*.; ditto, with ormolu ornaments and two sets of bars, 5*l*. 10*s*. to 12*l*. 12*s*; Bronzed Fenders complete, with standards, from 7*s*. to 3*l*.; Steel Fenders from 2*l*. 15*s*. to 6*l*.; ditto, with rich ormolu ornaments, from 2*l*. 15*s*. to 7*l*. 7*s*.; Fire-irons from 1*s*. 9*d*. the set to 4*l*. 4*s*. Sylvester and all other Patent Stoves, with radiating hearth plates. All which he is enabled to sell at these very reduced charges,

1st.—From the frequency and extent of his purchases; and,

2dly,—From those purchases being made exclusively for cash.

THE PERFECT SUBSTITUTE for SILVER.—The real NICKEL SILVER, introduced 20 years ago by WILLIAM S. BURTON, when Plated by the patent process of Messrs. Elkington & Co., is beyond all comparison the very best article next to sterling silver that can be employed as such, either usefully or ornamentally, as by no possible test can it be distinguished from real silver.

	Fiddle Pattern.	Thread or Brunswick Pattern.	King's Pattern.
Tea Spoons, per dozen	18*s*.	26*s*.	32*s*.
Dessert Forks „	30*s*.	40*s*.	46*s*.
Dessert Spoons „	30*s*.	42*s*.	48*s*.
Table Forks „	40*s*.	56*s*.	64*s*.
Table Spoons „	40*s*.	58*s*.	66*s*.

Tea and Coffee Sets, Waiters, Candlesticks, &c., at proportionate prices. All kinds of replating done by the patent process.

CHEMICALLY PURE NICKEL, NOT PLATED.

	Fiddle.	Thread.	King's
Table Spoons and Forks, full size, per doz.	12*s*.	28*s*.	30*s*.
Desert ditto and ditto	10*s*.	21*s*.	25*s*.
Tea ditto	5*s*.	11*s*.	12*s*.

CUTLERY WARRANTED.—The most varied assortment of TABLE CUTLERY in the world, all warranted, is on Sale at WILLIAM S. BURTON'S, at prices that are remunerative only because of the largeness of the sales; 3½-inch ivory handled table knives, with high shoulders, 11*s*. der dozen; desserts to match, 10*s*.; if to balance, 1*s*. per dozen extra; carvers, 4*s*. per pair; larger sizes, from 14*s*. 6*d*. to 26*s*. per dozen; extra fine, ivory, 32*s*.; if with silver ferrules, 37*s*. to 50*s*.; white bone table knives, 7*s*. 6*d*. per dozen; desserts, 5*s*. 6*d*.; carvers, 2*s*. 3*d*. per pair; black horn table knives, 7*s*. 4*d*. per dozen; desserts, 6*s*.; carvers, 2*s*. 6*d*.; black wood-handled table knives and forks, 6*s*. per dozen; table steels, from 1*s*. each. The largest stock in existence of plated dessert knives and forks, in cases and otherwise, and of the new plated fish carvers. Also a large assortment of Razors, Penknives, Scissors, &c, of the best quality.

WILLIAM S. BURTON has TEN LARGE SHOW ROOMS (all communicating), exclusive of the shop, devoted solely to the show of GENERAL FURNISHING IRONMONGERY (including Cutlery, Nickel Silver, Plated and Japanned Wares), Iron and Brass Bedsteads, so arranged and classified that purchasers may easily and at once make their selections.

Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of.

No. 39, Oxford Street (corner of Newman Street); Nos. 1 and 2, Newman Street; and 4 and 5, Perry's Place.

WANTED, A FARM.—To rent, from Michaelmas next, or Lady Day, 1855, a Farm of from 100 to 200 acres, with a good House fit for the residence of a gentleman with a small family; within six hours of London by railway, and near a station and town.—Apply by letter, with fullest particulars, to C. C., 66, Mark Lane, London.

TO BE LET, for a Term of 3, 7, or 14 years, Two GREENHOUSES, one large and one small, heated with hot water, well stocked with young Vines, with one or two acres of Ground, if required, suited for Flower-roots.—Apply at Ebenezer Cottage, Sherwood Farm, Mitcham Common, Surrey, nine miles from the markets.

GREENHOUSES AND PUBLIC-HOUSE.

TO GARDENERS, FLORISTS, AND OTHERS.

TO BE LET, in the immediate neighbourhood of Gravesend, a large Greenhouse, Propagating-house, and a Range of Brick Pits; also a PUBLIC-HOUSE adjoining the same. The Stock of Plants to be taken at a valuation.—Particulars may be obtained of Mr. J. GOULD, 38, Windmill Street, Gravesend, Kent.

TO BE SOLD, at Chapel Farm, Eltham, ASH-LEAF KIDNEY and FORTY-FOLD POTATOES for Seed.—H. J. HAMMOND.

PHEASANTS.

TO BE SOLD, in one or more lots, Thirty HENS, Six COCKS, and one Brace of White ones, the property of a gentleman, 80 miles from town.—C. C., Office of this Paper.

FANCY POULTRY.

J. R. FORD, Ampthill, Beds, has a few EGGS from his White Game Fowls for Sale, at 12*s*. the dozen. His birds are from a first-rate strain.

AYLESBURY DUCKS' EGGS.

TO BE SOLD, EGGS warranted from the best selected White Ducks, good shape, bill and legs fine and a good colour, 6*s*. per dozen, including packing. Early application to secure them at the above price is necessary.—Apply to WILLIAM HENRY GREEN, Builder, Walton Street, Aylesbury.

EGGS.

MR. PEARSON will supply a sitting of 13 Eggs of the Spotted Dorkings, Gold Pencilled Hamburghs, Gold Spangled do., Silver Pencilled Hamburghs, Silver Spangled do., for 5*s*. each sitting, including package. His Gold Pencilled Hamburghs won the 1st Prize at Birmingham in 1852, and 2d Prize in 1853; the Silver Pencilled won the 1st Prize in 1853 at Birmingham. The Gold Spangled Hamburghs being out at walk, letters for them must be addressed Mr. W. HETLEY, Orton, Peterborough.

The other varieties are kept at Chilwell, near Nottingham.

TO BE SOLD, BUFF COCHIN CHINA EGGS, from Birds that have taken prizes at the Derby, East Kent, Bristol, Taunton, and Yeovil Poultry Shows, at 1*l*. 1*s*. per dozen; also Partridge Cochin China Eggs, from Birds that have taken prizes at London Summer Meeting, Surrey Gardens' Show in August, Malvern, Yeovil, Honiton, and Torquay Poultry Shows, at 1*l*. 1*s*. per dozen.—Apply to JOHN R. RODBARD, Aldwick Court, Wrington, near Bristol.

EGGS FROM PURE BRAHMA POOTRA AND WHITE-FACED BLACK SPANISH FOWLS.—A few sittings from the first-named splendid birds can be engaged. The hens are from an importation of Dr. Bennett's celebrated stock, and the cockerels from her Majesty's aviary; all very heavy, and beautifully marked. Price per dozen, 2*l*. 2*s*. The Spanish are most choice birds, from the first stock in the world, no expense having been spared to procure the best blood. Price per dozen, 12*s*. All the birds may be viewed upon application. Orders will be attended to according to priority, and will be packed with all possible care.—Address to A. B., The Grove, Catton, Norfolk.

FANCY POULTRY AND EGGS.

HOLME COTTAGE, LOUTH.

GEORGE BOOTHBY offers for the season every variety of the above, of qualities not to be surpassed. He has taken prizes at every show at which he has recently exhibited, including Hitchin, Leeds, Doncaster, Manchester, &c. A few very choice Buff Cochins, at 5 Guineas the pair; good ones, from 1 Guinea; Black and White do., 4 Guineas; good useful ones, 2 and 3 Guineas; Gold, Silver, and White Polands, from 2 to 4 Guineas; White-faced Spanish, from 3 to 5 Guineas; a few Dorkings, 7*s*. 6*d*. each. Eggs of Spanish, also of Black, White, and Buff Cochins, from prize birds, at 1 Guinea the dozen; Dorking Eggs, 7*s*. 6*d*. the dozen; a few eggs from Buff, Black, and White Cochins, crossed by Black, White, and Brahma Pootra Cockerels, 10*s*. 6*d*. the dozen; these will produce some very fine birds. A few pairs of real Chinese Silver Pheasants, on sale.

FANCY POULTRY.

EDWARD H. STRANGE, Ampthill, Beds., has for sale a few pairs of the following birds:—Black Spanish, from Captain Hornby's strain; Two Hen Birds obtained 1st, 2d, and 3d prizes at the Bedford Exhibition, 1853; Golden Pencilled Hamburgh and White-bearded Polands, first prizes were awarded to each of these varieties at the Hitchin and Home Counties Exhibition 1853; White and Buff Shanghaes, fine heavy birds; Silver Spangled Hamburgh, these birds gained a prize at the Bedford Exhibition.

E. H. S. will have a few sittings of Eggs from each of the above Fowls to sell, and from the Staffordshire pile Game, from birds that took a prize both at Hitchin and Bedford. Price, and other particulars, sent on receipt of a directed envelope.

LIGHT BUFF COCHIN CHINA FOWLS' EGGS.—An Amateur having a first-rate stock of Light Buff Cochin China Fowls from Prize Birds, and more eggs than he requires for his own use, is willing to part with a few sittings at a reasonable price—5*s*. 6*d*. per doz., box included.—Address "Chanticleer," Post-office, Farnham, Surrey.

TO POULTRY FANCIERS.—Gentlemen wishing to improve their stock of Buff Cochin Chinas have an opportunity rarely offered of purchasing some truly splendid Birds. Bred exclusively from a pair of Thos. Sturgeon, Esq's., best Birds, the Hen weighing nearly 10 lbs., and remarkably heavily feathered. All the Birds now offered are of great weight, and exceedingly heavily feathered, and short thick legs.—May be viewed on application to A. HORNCASTLE, Grays, Essex. Eggs at 20*s*. per dozen. All communications to enclose a stamped envelope.

TO BE SOLD, PRIZE PARTRIDGE SHANGHAES.—Two Cockerels and Two Pullets, birds which took first prizes at Surrey Winter Show, first prize at Bedford, also prizes at Norwich and Great Metropolitan Show. The Cockerels are Black-breasted, the Pullets beautifully marked. Price on application.—Also EGGS from Partridge Coloured Prize Birds at 20*s*. per dozen.—J. F. CHATER, Haverhill, Suffolk.

MR. GILBERT, of Grays, Essex, having entered into an arrangement with THOMAS STURGEON, Esq., for the Purchase of the whole of his remaining Stock of COCHIN CHINA Fowls, bred by him in 1853, Gentlemen and Amateurs are informed the Birds are now on Sale. Eggs may be had from the above birds at 20*s*. per dozen.

Sales by Auction.

FANCY POULTRY.

MR. J. C. STEVENS'S next periodical Sale by Auction will take place on TUESDAY, 7th March, at 12 o'clock precisely, at his Great Room, 38, King Street, Covent Garden. The BRAHMA POOTRAS are many of them very choice, and include a Hen, first prize Metropolitan last January. The COCHINS and COLOURED are also well deserving attention, the contributors being H. Gilbert, Esq., Rev. Mr. Papillon, Mr. Gibbs, Mr. Collinson, and several other first-class breeders.—Catalogues by enclosing a stamped directed envelope to Mr. J. C. STEVENS, 38, King Street, Covent Garden.

MR. CYRUS CLARK'S CHOICE FANCY POULTRY.

EXTRA SALE.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, March 14, at 12 o'clock precisely, a selection from the yard of Mr. Cyrus Clark, of Street, Glastonbury; it includes COCHINS, chiefly light pure Sturgeon and Andrews. The Whites, from Mrs. Herbert's stock. Spanish, Silver Polands, and coloured Dorkings, many of which are prize birds at Dorchester, Yeovil, Bristol, Taunton, Torquay, Honiton, and the Surrey Zoological. —Catalogues, by enclosing a stamped directed envelope to Mr. J. C. STEVENS, 38, King Street, Covent Garden, London.

MRS. LYDIA C. STOW'S SPANISH, BUFF & BLACK COCHIN CHINA, & COLOURED DORKING FOWLS.

MR. J. C. STEVENS has received instructions to Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, Feb. 28th, at 12 o'clock precisely, upwards of 150 LOTS of CHICKENS of 1853, including many prize and commended Birds of the above varieties, all bred by Mrs. Stow. The SPANISH FOWLS, consisting of about 40 Lots, include Birds which took 1st Prizes at Malvern, Southampton, and Birmingham, and are the progeny of her noted Bird CHAMPION, the winner of the 1st Prize at the summer Surrey Zoological Show, and will be the first she has parted with this season. The COCHIN CHINA CHICKENS were bred from Birds which have lately taken Prizes at Liverpool and Manchester. Aylesbury Ducks from 1st Prize Birds, &c.—Catalogues by enclosing a stamped directed envelope to Mr. J. C. STEVENS, 38, King Street, Covent Garden.

HILL'S COURT, EXETER.

UNRESERVED SALE.

MR. G. A. MOORE has been favoured with instructions to Sell by Auction, on WEDNESDAY, March 1, the whole of the valuable GREENHOUSE PLANTS, Indian Azaleas, Roses, Greenhouse, Pit and Box Frames, Garden Engine, Flower Stands, &c.; also, Six very fine COCHIN FOWLS, the property of F. HERNAMAN, Esq., who has left Exeter. The taste and skill with which Mr. Hernaman has collected and cultivated his plants is so well known that it is almost needless to allude to it; it is sufficient to say that amongst the Greenhouse Plants will be found many splendid specimens. Sale to commence at 11 o'clock precisely.—Catalogues may be had at 6*d*. each, to be returned to purchasers, on Friday and Saturday previous to the Sale, of Messrs. LUCOMBE, PINCE, & Co., Exeter Nursery; and of the Auctioneer, Defender Fire and Life Insurance Office, 71, Paris Street, Exeter.—Feb. 25.

VALUABLE NURSERY STOCK OF FOREST AND FRUIT TREES, EVERGREENS, ETC.

MR. T. BAXTER will sell by Auction, on FRIDAY, March 3, 1854, at 10 o'clock, on the premises, Derry Down Nursery, Saint Mary Cray, Kent, in consequence of the land being sold, the following valuable NURSERY STOCK, comprising a quantity of Scotch Spruce, Silver, and other Firs, Larches, Chestnuts, Oaks, Poplars, Walnuts, Laburnums, Spanish Elms, Beech; Gold Bark and other Limes, Maples, Sycamore, Weeping Willows and Ash, Acacias, &c.; 1200 Apples, Pears, Cherries, and Plums, of the best sorts; Mulberries; Quinces; 500 fine Yews, of sizes; quantity of Hollies; Arbor-vitæs; Portugal and other Laurels; Scarlet Thorns; 150 Standard Roses, &c.—May be viewed preceding the Sale, and Catalogues had at the Inns in the neighbourhood of the place of Sale, and of the Auctioneer, &c., Bromley, Kent.

KENSINGTON.

TO GENTLEMEN, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are commissioned by Mr. Holland to sell by Auction, on the premises, Kensington Nursery, Gloucester Road, in consequence of the ground being let for building, on MONDAY, February 27, 1854, at 11 o'clock, the whole of the choice and well-selected FRUIT TREES, consisting of Standard and Dwarf trained and untrained Peach, Nectarine, Apricot, Apple, Pear, Plum, Cherry, Damson, Medlar, Mulberries, Gooseberries, and Currants: 3000 Standard budded Muscle Stock, worked with Peach, Nectarine, and Apricot; also Evergreens; a quantity of Rhubarb; Hand Lights, Wheelbarrows, and sundry effects.—May be viewed prior to the sale. Catalogues may be had on the premises; of the principal Seedsmen in London; and of the Auctioneers, Leytonstone, Essex.

SLOUGH.

TO GENTLEMEN, NURSERYMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. Bragg to submit to unreserved sale by Auction, on the Premises, Star Nursery, Slough, on WEDNESDAY, March 8, at 11 o'clock, his entire collection of CARNATIONS and PICOTEES, consisting of all the leading sorts; also collections of Pinks, Pansies, Hollyhocks, specimen and other Pelargoniums, Cinerarias, Tree Carnations, &c., Standard and other Roses, together with a quantity of Pot and Ground Roots of Dahlias, which will include all the new and most approved varieties.—May be viewed prior to the sale; Catalogues may be had (6*d*. each, returnable to purchasers), on the Premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

N. B. The above Nursery, with the established Business, to be Let, at a moderate rent, apply to Mr. W. BRAGG, on the premises.

WOOLWICH.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are directed by the Widow of the late Mr. Henry Ward, to offer to public competition, by Auction, on the Premises, Bull Fields, Woolwich, on MONDAY, March 6, at 11 o'clock, the whole of his costly and justly celebrated STOCK of CARNATIONS and PICOTEES, comprising all the first flowers in cultivation.—May be viewed prior to the Sale. Catalogues may be had on the Premises; of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

IMPORTANT AND ABSOLUTE SALE OF MAGNIFICENT SPECIMEN PLANTS.

MESSRS. PROTHEROE AND MORRIS are instructed by J. M. Yeeles, Esq., of Bathford, near Bath, to submit to public competition, by Auction, without reserve, on the premises, on WEDNESDAY, March 22d, at 11 o'clock, in consequence of his declining their cultivation, the whole of his unrivalled collection of SPECIMEN PLANTS, many of which are not equalled in this country as splendid examples of superior culture, and just in condition for the coming season's exhibitions. They comprise the best kinds of Ericas, Azaleas, Ixoras, Leschenaultias, Boronias, Pimeleas, Aphelexes, Eriostemons, and almost every kind of exotic plant worth culture for exhibition.—May be viewed the day previous to and morning of Sale. Catalogues to be had (6*d*. each, returnable to purchasers), of Mr. Glendinning, Chiswick Nursery; the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will submit to public competition by Auction, at the Mart, Bartholomew Lane, on THURSDAY, March 9, at 12 o'clock, about 200 choice DOUBLE CAMELLIAS, from 18 inches to 5 feet, comprising all the approved kinds, beautifully furnished with bloom buds; 100 very strong Camellia Stocks; also a choice assortment of Standard and Dwarf Roses, consisting of Noisettes, Hybrids, Bourbons, Perpetuals, Chinas, &c.; a fine collection of American Plants, choice Dahlias in dry roots, Pæonias, Verbenas, Fuchsias, &c.—May be viewed the morning of Sale. Catalogues may be had at the Mart; and of the Auctioneers, American Nursery, Leytonstone, Essex.

BRIXTON, SURREY.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, BUILDERS, AND OTHERS.

MESSRS. PROTHEROE & MORRIS are directed by Mr. Denyer to Sell by Auction on the premises, Loughborough Nursery, Loughborough Road, Brixton, on MONDAY, March 13, 1854, and following days, at 11 o'clock each day, in consequence of the lease expiring at Lady-day next (unless previously disposed of by private contract), the whole of the valuable NURSERY STOCK of Evergreens, Deciduous Shrubs, and Fruit Trees, comprising Fine Variegated and Green Holly, Box, Yew, Chinese Arbor-vitæ, Aucuba, Portugal and Common Laurels, Sweet Bay, Laurestinus, Arbutus, Rhododendrons, Standard and Dwarf Roses, Jasminum, Pyrus japonica, Clematis, Honeysuckle, Magnolia grandiflora, Gum Cistus, &c., in pots; quantity of Box Edging, Standard and Dwarf Trained Apples, Pears, Peach, Nectarine, Cherry, Plums, Vines. Also, GREENHOUSE PLANTS, consisting of a fine Collection of Roses, Camellias, several Thousands of Bedding Plants, Intermediate Stocks, Cloves, &c.; together with five newly erected Greenhouses, several 2 and 3-light Boxes, Hot-water Pipe, two Conical Boilers, quantity of Bricks, Paving Tiles, excellent Tumbril, and two Light Carts; six Nests of Seed Drawers, Shop Fixtures, Scales and Weights, Rotten Manure, Mould, Garden Pots, and other sundry effects.—May be viewed prior to the Sale. Catalogues had (6*d*. each, returnable to purchasers) on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

WANDSWORTH COMMON.

TO GENTLEMEN, NURSERYMEN, BUILDERS, AND OTHERS.

MR. J. WILLMER is instructed by Mr. Robert Neal to Sell by Auction on the Premises near the New Prison, on MONDAY, February the 27th, and Five following days, at 12 o'clock each day, a portion of the NURSERY STOCK, comprising Common and Portugal Laurels, Green and Striped Hollies, Evergreen Privet, Aucuba, Striped Box, Brooms of sorts, Cedrus Deodara, Pinus cembra, Laurustinus, Arbutus, Arbor-vitæ, Cotoneasters, Cedar of Lebanon, Evergreen Oak, Weeping Willows, Weeping Ash, Standard and Dwarf Roses, Elm, Beech, Lime, Chestnut, Hornbeam, Strong Quick, Standard Dwarf and Trained Fruit Trees, Gooseberries and Currants, Box Edging, &c. &c.—May be viewed till the time of Sale, and Catalogues had, on the Premises, and of the Auctioneer, Sunbury, Middlesex, by enclosing four postage stamps.

EDMONTON.

TO GENTLEMEN, NURSERYMEN, AND OTHERS.

MR. RICHARDS will sell by Auction, on the premises, Long Hedge Nursery, Upper Edmonton, on MONDAY, Feb. 27, at 11 o'clock, the Stock of Mr. C. Woolven, comprising a large quantity of Standard and Trained Apples, Pears, Plums, Cherry, Nectarine, Apricot, and Peach Trees; Gooseberries, Currants, Quince, Filberts, &c. Evergreens, consisting of large Portugal and common Laurels, Yew, Fir, Alaternus, Red Cedar, Green and Variegated Box, Aucuba, Phillyreas, Arbor-vitæ, Berberis, Chinese Privet, Holly, Box Edging, &c.; Ornamental Trees and Shrubs, including fine Thorns of various kinds, Weeping Willows, Elms and Ash, Oak, Sycamore, Chestnuts, Beech, Laburnum, Lime, Lilac, Acacia, Standard and Dwarf Roses, and a variety of Trees, &c.—May be viewed the Saturday preceding and morning of sale, and Catalogues obtained on the premises; at the Flower-pot, Bishopsgate Street; and of the Auctioneer, Tottenham.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES, GREENHOUSES, DWELLINGS, ETC.

ESTABLISHED MORE THAN ONE HUNDRED YEARS.

THOMAS MILLINGTON requests attention to his present prices of SHEET GLASS in 100 feet boxes.

Squares	6 by 4 and 6½ by 4½		
„	7 by 5 and 7½ by 5½	 13	6
„	8 by 6 and 8½ by 6½		
„	9 by 7 and 9¼ by 7¼		
„	10 by 8 to 12½ by 9¼	 16	3
„	12 by 10 to 24 by 14 ...	 19	0

Orchard House Squares on Mr. Rivers's approved plan, to whom I have sold some thousands of feet:—20 inches by 12, 20 by 13, 20 by 14, 20 by 15, 20½ by 12½, 20½ by 13½, 20½ by 14½, at 19s. per 100 feet.

200 feet cases at 42s., and 300 feet case 63s., in large sheets.

Boxes charged 1s. extra per 100 feet, and the same allowed if returned free of all charge.

HARTLEY'S PATENT ROUGH PLATE GLASS, Fern Shades, Striking Glasses, Milk-pans, Bee Glasses, Cucumber Tubes, Sheet and Rough Plate Glass Tiles, Wasp Traps; Plate, Patent Plate, Crown and Sheet Window Glass, in every thickness and quality, and Ornamental Glass, plain and coloured; pure white Shades for Ornaments, Crystal Glass for Pictures.

Warehouse, 87, Bishopsgate Street Without—same side as Eastern Counties Railway.

FOREIGN GLASS, 16 ounces to the foot, of good quality, in boxes of 100 feet each, suitable for Horticultural purposes. Boxes included.

15s. per box.	16s. per box.	17s. per box.
12 ins. by 10 ins.	18 ins. by 14 ins.	24 ins. by 18 ins.
14 ins. „ 10 ins.	19 ins. „ 15 ins.	23 ins. „ 19 ins.
15 ins. „ 11 ins.	18 ins. „ 16 ins.	24 ins. „ 20 ins.
14 ins. „ 12 ins.	20 ins. „ 16 ins.	25 ins. „ 21 ins.
16 ins. „ 12 ins.	21 ins. „ 17 ins.	26 ins. „ 22 ins.
17 ins. „ 13 ins.	20 ins. „ 18 ins.	27 ins. „ 22 ins.
16 ins. „ 14 ins.	22 ins. „ 18 ins.	

Good 3ds, 16 ounce, Foreign, in 200 feet cases, average size, 40 inches by 30 inches ... ... Per case 42s.
Good 4ths do. do. ... ... „ 36s.
Common 4ths do. do. ... ... „ 34s.
¼ in Rough Plate Glass Tiles... ... ... Per dozen 12s.

White Lead, Oils, Turps, Colours, &c.

G. FARMILOE & SON, 118, St. John Street, West Smithfield.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

ALFRED KENT'S PATENT WEATHER-PROOF GLAZING WITHOUT PUTTY.—For Horticultural Buildings in Wood or Metal.

HORTICULTURAL BUILDING WORKS, CHICHESTER.

Illustrated Books describing inventions, containing prices and particulars relating to the different designs, sent on receipt of four postage stamps. Nurserymen and others appointed agents on application.

Horticultural Buildings upon this plan having been erected in many different parts of the country, and having stood the trial of all weathers, and more especially the severest of all, viz., frost, A. KENT, with full confidence, strengthened by the many flattering testimonials he has received, can safely guarantee the proper working of his Patent System of Glazing. Estimates and Plans sent, including Heating by Hot Water.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

Priced lists of plant tubs and boxes forwarded on application.

HORTICULTURAL BUILDINGS, ROCK AND RUSTIC WORK, ORNAMENTAL WATER, FOUNTAINS AND FALLS, AND LANDSCAPE GARDENING, executed on the best principles; Estates Improved, Land Laid Out for Building, &c., by Mr. GLENNY, Valuer, Estate and Horticultural Agent, 420, Strand.

GREEN AND HOTHOUSES made by machinery at J. LEWIS'S HORTICULTURAL WORKS, Stamford Hill, Middlesex. Warranted of best materials; being made by steam-power, they are put together in a superior manner; one trial will prove these Buildings to be the cheapest and best made in England. 1½ in. Greenhouse lights at 3d. per foot; 2 in. at 4½d. per foot. Lists of Prices by enclosing two postage stamps.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.

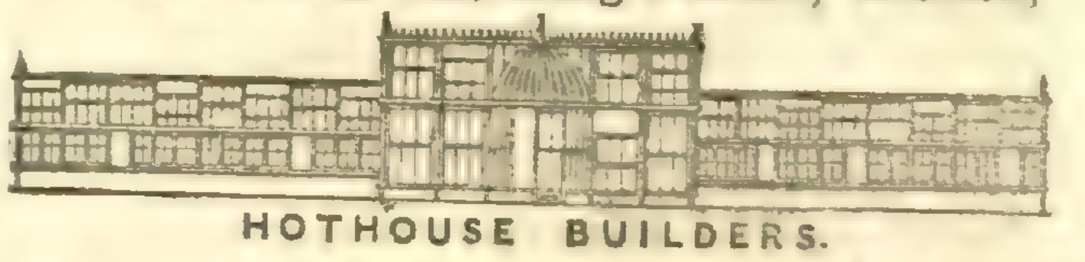
GRAY AND ORMSON, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

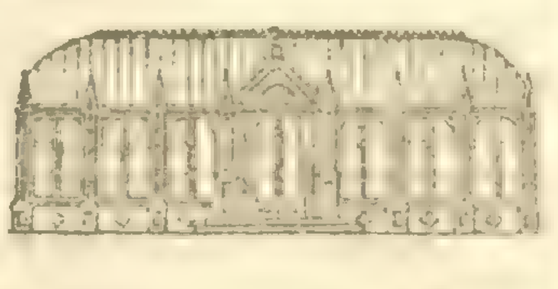
HORTICULTURE IN ALL ITS BRANCHES.

J. WEEKS & Co., King's Road, Chelsea.

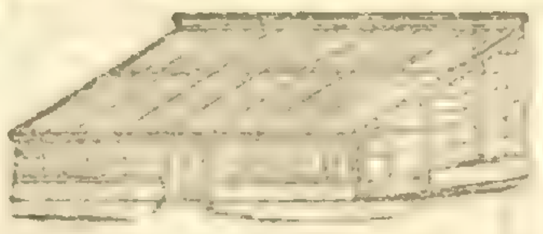


HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Buildings, or fix Hot-water Apparatus, will find at their Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.



The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.



The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. WEEKS & Co., King's Road, Chelsea, London.

HOTHOUSES, CONSERVATORIES, FRAMES & LIGHTS FOR PITS, CUCUMBER & MELON BOXES & LIGHTS.

JAMES WATTS, HOTHOUSE BUILDER, 8, Claremont Place, Old Kent Road, London.

Green and Hothouses, 9, 10, 11, 12, 13, and 14 feet wide, any length, from 16 to 100 feet. Frames and Lights for Pits, 6 ft. 6 in. 7 ft., 7 ft. 6 in., 8 ft., and 8 ft. 6 in. wide, any length, from 12 to 100 feet. Upwards of 200 Cucumber and Melon Boxes and Lights, from 4 ft. by 3 to 10 ft. 6 in. by 5 ft. 6 in., kept ready glazed with stout sheet glass, painted four times, complete, ready for immediate use, all made of best material, packed and sent to all parts of the kingdom.—Reference may be had to the Nobility, Gentry, and the Trade, in most of the counties in England.

BY HER MAJESTY'S ROYAL LETTERS PATENT

E. DENCH, PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

PATENT HOTHOUSES and excellent Glass at 1s. 3d. per foot super., which are superior to all others for price with quality, and if known would supersede all others. (See Appendix, in "Book of the Garden," by Mr. M'Intosh.) A Range of Houses and Hot Water Apparatus, was erected by E. D. for E. L. Betts, Esq., Preston Hall, Kent. Mr. J. Frost, head gardener, has shown their efficiency by their produce at the Royal Botanic Gardens, Regent's Park, June 8, and Chiswick, June 11. The editor of the *Gardeners' Chronicle* says: "Beautiful examples of Black Hamburgh, large both in bunch and berry, and as black as Sloes, were furnished by Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall, Kent; these well deserved the first prize which was awarded them."—*Gardeners' Chronicle*, June 18th, 1853. The Grapes were considered the best shown at Regent's Park during the season, and the Houses are as superior for the growth of everything else in horticulture, which has been fully proved, and they have been extensively erected for the nobility and gentry in all parts of the kingdom.

GLAZING WITHOUT PUTTY.—Iron and Glass alone. E. D. has Roofed the Public Baths and Washhouses, Endell Street, on this principle, and others are in hand. Patent Sashes for Peach Walls, Pits, &c., 8d. per foot super. Heating by Hot-water, on the most practical principles, and all the best materials used. Printed Price List sent on application.

SUBSTITUTE FOR GARDEN MATS.—Waxed Sheeting nearly 2 yards wide, 1s. per yard run—admits light and excludes cold; Thick Canvass Tarpauling, 1s. per square yard; Thick Canvass Waxed Sheeting, 1s. per square yard, may be had various widths; these Canvasses are excellent for Roofing Sheds and Outhouses, as they are quite Waterproof.

R. RICHARDSON, 21, Tonbridge Place, Judd Street, New Road, London.

EMIGRANTS' IRON AND WOOD HOUSES from 10*l*. each; Drawings of 21 Houses sent free. Also maker of Iron and Wood Summer Houses for Gardens. Portable Poultry Houses, Pheasantries, &c.—R. RICHARDSON, 21, Tonbridge Place, New Road, near King's Cross, London.

KNOW THYSELF!—Professor BLENKINSOP continues to receive from individuals of every rank the most flattering testimonials of his success in describing the CHARACTERS of Persons from their HANDWRITING, pointing out their mental and moral qualities, whether good or bad.—Address by letter, stating age, sex, and profession, inclosing 13 uncut postage stamps, to Dr. BLENKINSOP, 344, Strand, London.

THE POTATO DISEASE.

FRESSON'S "ANTI-POTATO BLIGHT" is a certain and sure remedy for the above. To insure a sound and healthy crop, dress your "SEED POTATOES," before sowing them, with the above.—Sent free (on receipt of 13 uncut postage stamps) with easy directions for use. Also, remarks upon the best soils for Potatoes; by FRESSON, Agricultural Chemist, Stevenage, Herts.

CURE FOR MILDEW ON GRAPES, &c.—In consequence of the increased prevalence of mildew on the Vines, &c., during the last few seasons, G. TABER, of Rose Cottage, Rivenhall, practical Gardener, Seedsman, and Florist, has directed particular attention to the best mode of preventing it, or for curing the Vines that have been attacked, and he now begs to announce that he has succeeded in preparing a composition known as TABER'S ANTI-MILDEW COMPOSITION, which will effectually prevent or cure the disease without doing the slightest injury to the Vines; and any person, by the aid of the printed instructions, may use it without risk. It is also an invaluable remedy for preventing Mildew on Wall Trees, Roses, &c. Sold in packets containing 1 lb., 1s. 3d.; 3 lbs., 3s.; 6 lbs. 5s. 6d., with directions for use. By enclosing two postage stamps, G. T. will send a circular with full particulars as to quantity required for a house for the season, and also testimonials of the success he has met with.

G. T. will personally attend gentlemen, and give instructions to their gardeners at a reasonable remuneration for time and travelling expenses. The trade supplied at the usual discount. Post Office orders to be made payable to GEORGE TABER, and drawn upon the Witham Post Office. Postage stamps received in payment of small orders. Packets delivered free to the Witham Station of the Eastern Counties line.—Address GEORGE TABER, Rose Cottage, Rivenhall, near Witham.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

BAILY'S ROUP AND CONDITION PILLS FOR POULTRY.—This remedy has been extensively tried with uniform success, and is offered to amateurs and the public with the greatest confidence. It will effectually overcome that disease which has hitherto been the bane of the poultry-yard, and destroy that apprehension known to all poultry keepers, when a favourite and valuable fowl is seen to droop. It is inestimable for poultry returning from exhibitions, and greatly facilitates moulting.—Sold, with full instructions for use, in boxes containing 50 pills, by JOHN BAILY, 113, Mount Street, Grosvenor Square, price 3s. per box, or by post 3s. 4d. "Fowls, by Baily," the most useful and plainest treatise of the day; price 2s., by post 2s. 6d.

Baily's Registered Fountains, universally adopted and approved. Drawings and particulars, by post, on application.—113, Mount Street, Grosvenor Square.

GREAT SAVING OF TIME AND MONEY.

R. RESTELL'S PATENT ECONOMICAL GAS APPARATUS for Forcing Houses, Greenhouses, Conservatories, Pits, Shops, Counting Houses, Warehouses, Drying Rooms, &c. &c., possessing all the advantages of Hot Water at half the expense of fitting, and most trifling cost for Gas, far surpassing any ordinary Gas Stove, requiring no furnace, and allowing of no fumes or evaporation in the Building, or possibility of accidents from negligence or carelessness. It has been tested through the late severe weather, on a variety of Plants, and found most satisfactory. It is very quickly fitted up and requires no night attention.—Apply to the Inventor and Patentee, R. RESTELL, 35, High Street, Croydon, Surrey.

Persons wishing to have Houses fitted will please to send the height and dimensions.

THE COTTAGER'S STOVE.—An economical, compact, and portable COOKING APPARATUS, combining a good sized Oven and Hotplate; may be had with or without a boiler, and will cook sufficient for a dozen persons with the consumption of 1 lb. of coal or coke per hour. It requires no fixing, may be placed in any apartment, and is a great security against accidents from fire. It will burn Coal, Coke, or Wood. They are also specially adapted for Emigrants, and may be seen in operation daily, at the Manufacturers', D. & E. BAILEY, 272, High Holborn, London.—Price 50s., and upwards.

WM. HALSE'S FIVE GUINEA APPARATUSES are now ready.—Invalids are solicited to send to Mr. W. HALSE, of 22, Brunswick Square, London, for his Pamphlet on MEDICAL GALVANISM, which will be forwarded free, on receipt of two stamps. In it will be found the particulars of cures in cases of asthma, rheumatism, sciatica, tic doloureux, paralysis, spinal complaints, headache, deficiency of nervous energy, liver complaints, general debility, indigestion, stiff joints, nervous disorders, &c. Mr. HALSE'S method of applying the galvanic fluid is quite free from all unpleasant sensation. Terms: One Guinea per week. The above Pamphlet contains his Letters on Medical Galvanism.

HOLLOWAY'S OINTMENT, A SOVEREIGN REMEDY FOR THE AFFLICTED.—The number of years this invaluable Ointment has stood the test of public opinion, and the longer known the better appreciated, is a testimony of itself more powerful than anything that could be written in praise of the curative properties which it possesses. For Ringworms, Scald Heads, and all diseases of the Skin it is unequalled; recent tumours or old ulcers may very shortly be healed by its use. For Tumours, Bad Breasts, Scrofula, and Sore Legs, there is no remedy to be compared with it; and in conjunction, as a purifier of the blood and to effect certain cures, HOLLOWAY'S PILLS should be taken.—Sold by all Druggists; and at Professor HOLLOWAY'S Establishment, 244, Strand, London.

PAINS IN THE BACK, GRAVEL, LUMBAGO, RHEUMATISM, GOUT, INDIGESTION, FLATULENCY, NERVOUSNESS, DEBILITY, &c.

DR. DE ROOS' COMPOUND RENAL PILLS, as their name Renal (or the Kidneys) indicates, are a most safe and efficacious remedy for the above dangerous complaints. For depression of spirits, incapacity for society, study, or business, giddiness, drowsiness, nervousness, and insanity itself, when arising from or combined with urinary diseases, they are unequalled. Price 1s. 1½d., 2s. 9d., 4s. 6d., 11s., and 33s. per Box, through all Medicine Vendors, or sent (free) on receipt of the amount in postage stamps, by Dr. DE ROOS, 35, Ely Place, Holborn, London. At Home for consultation daily from 11 till 1, and 5 till 8, Sunday excepted. Advice and Medicines, 1*l*.

PARR'S LIFE PILLS correct disorganisation of the stomach, and restore a healthy action of the liver, bowels, and kidneys, and remove all obstructions of the urinary passages, without the least griping or inconvenience. Persons who are suffering from headache or indigestion, whether arising from constitutional inaction, biliary disarrangement, or over-indulgence at the table, are particularly recommended to try PARR'S PILLS. They have never been known to fail in affording immediate relief. PARR'S LIFE PILLS will prove highly efficacious in bilious complaints, scorbutic complaints, affections of the nervous system, lowness of spirits, palpitation of the heart, rheumatic pains in the head, limbs, and other parts of the body, oppression of the chest, indigestion, redundancy of bile, dizziness of the eyes, violent pains in the temple and across the forehead, impaired memory, sick headache, tremulous action of the whole frame, restlessness and bad dreams, stuporific dozing, flatulency, costiveness, &c.—Sole proprietors and preparers, T. ROBERTS & Co., Crane Court, Fleet Street, London. Ask for PARR'S LIFE PILLS.—Sold by all Chemists and Medicine Vendors, in boxes price 1s. 1½d., 2s. 9d., or family packets, 11s. each. Directions with each box. Protected and guaranteed in all countries by the English Government Stamp fixed round the sides of each box.

WELLINGTONIA GIGANTEA.—Beautiful Lithographed Plates (from a drawing taken in California) of this wonderful Tree may be had, at 7s. 6d. each, of Messrs. VEITCH & SON, Exeter, and Mr. JAMES VEITCH, jun., Exotic Nursery, Chelsea.

The Bark, Wood, Cones and Foliage, which were exhibited on Tuesday last at 21, Regent Street, may be seen at the Exotic Nursery, Chelsea.—Feb. 25.

GERMAN DOUBLE DAISIES.—A fine healthy stock of the above unique Flower is now offered to the Public. It is very novel and distinct, and such as will give all purchasers satisfaction. Out of the 100 imported varieties, 50 of the most striking and best flowers have been selected, and can be sent out from one dozen plants, and upwards. These Daisies surpass everything for making edgings to flower beds, &c., and are quite a novelty of their kind; price 3s. 6d. per dozen, postage and package free; or 1l. 1s. per hundred, hamper and package free.

Also a fine stock of MYOSOTIS VANGLEEKI, or the new improved Forget-me-Not, well adapted for rock-work or making single beds; 2s. 6d. per dozen, postage free; 15s. per hundred, package free.

SWEET WILLIAMS.—A fine stock of very select and striking varieties 2s. per dozen, or 10s. per hundred, package free.

CHOICE HOLLYHOCK SEED saved from all the best and latest varieties yet sent out; 1s. 6d. per packet.

SEEDLING ANTIRRHINUM SEED, all from striped and spotted flowers, and will give every one satisfaction; 1s. per packet.

GERMAN ASTER SEED, saved from all first prize flowers; 1s. per packet.

STRAWBERRY PLANTS.—This is an excellent opportunity for those to plant who may have neglected to do so last autumn. Victoria, 5s. per 100; Prolific, 3s. 6d. per 100; Eleanor, 3s. 6d. per 100; Surprise, 3s. 6d. per 100; Cremont's Perpetual, 5s. per 100; and many other leading varieties, package free. The above named will be sufficient to give a supply of fruit the whole of the Strawberry season, being the earliest and latest varieties.

CUCUMBER and MELON SEEDS can be still supplied in varieties, and price, as advertised on the 18th inst. On receipt of a money order, or penny postage stamps, the whole, or any part of the above, will be immediately forwarded.

EDWARD TILEY, Nurseryman and Seedsman, No. 14, Abbey Churchyard, Bath, Somerset.

Just published, price 2d., free by post 3d.,

COMPARATIVE TABLES OF FRENCH AND ENGLISH MEASURES, WEIGHTS, &c., Reprinted from the *Gardeners' Chronicle and Agricultural Gazette.*

CONTAINING—

Measures of Length	Old French Measures of Capacity for Liquids
Square Measure	Do. for Dry Substances
Cubic Measure	Old French Weights reduced to English Avoirdupois
Measures of Capacity for Liquid and Dry Substances	Thermometers
Weights	Various Conversion Tables.

JAMES MATTHEWS, 5, Upper Wellington Street, Covent Garden.

Price 2s. 6d.,

FOLIA ORCHIDACEA.—Part V. By Professor LINDLEY. Containing MILTONIA, BRASSIA, ADA, POLYCHILOS, CORYMBIS, SOBRALIA, CŒLOGYNE, PANISEA.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden, London.

SOWERBY'S ENGLISH BOTANY, Vol. VII., price 2l. 6s. 6d., cloth boards, completing the re-issue of the Flowering Plants, will be ready on March 1.

JOHN E. SOWERBY, 3, Mead Place, Lambeth.

Now ready, price 21s., with 15 highly finished coloured Plates and numerous Wood Engravings (or with Supplement and four additional plates, 5s. extra),

THE ROSE GARDEN. By WILLIAM PAUL, of the Nurseries, Cheshunt, Herts.

"Infinitely the best work ever written on the culture of the Rose."—*Botanic Garden.*

By the same Author, price 1s.,
AN HOUR WITH THE HOLLYHOCK.
London: PIPER, BROTHERS, & Co., 23, Paternoster-row; and all Booksellers.

On March 1, Nos. 59 and 60, price only 1s. 6d. each,

ORNAMENTAL FLOWER-GARDEN AND SHRUBBERY. The cheapest and most beautiful coloured Periodical of the day, comprising the works of the first writers, including Professor Don, R. Sweet, &c.; also all the most recent Practical Hints on Culture, Propagation, &c., by the Editor. Published monthly. Each number contains four large and beautifully-coloured engravings. Also, now ready, Vols. I., II., and III., each containing 72 coloured plates, price 1l. 8s. per vol. cloth.

London: G. WILLIS, Great Piazza, Covent Garden.

On March 1, Nos. 36 and 37, price 2s. each,

MEYER'S BRITISH BIRDS and their EGGS, A History and Description of. This is the most complete and beautiful work of the kind ever published. Each number contains four accurately coloured plates, with descriptions. Also, now ready, Vols. 1 and 2, with 45 and 60 coloured plates, price 1l. 11s. 6d. each, in cloth.

G. WILLIS, Great Piazza, Govent Garden.

Now publishing, price 3s. 6d., Part IV., containing the Genus VANDA, of

COLOURED ILLUSTRATIONS OF ORCHIDACEOUS PLANTS, comprising Figures of the most interesting and beautiful Genera, with Directions for their Cultivation. Edited by T. MOORE, F.L.S., Curator of the Botanic Garden, Chelsea.

Part I. The Genus STANHOPEA, with 5 Coloured Plates. Price 3s. 6d.

Part II. The Genus ODONTOGLOSSUM, with 6 Coloured Plates. Price 3s. 6d.

Part III. The Genera CORYANTHES and SARCOPODIUM, with 5 Coloured Plates. Price 3s. 6d.

G. WILLIS, Great Piazza, Covent Garden, and all Booksellers.

ON NERVOUS DEBILITY AND INDIGESTION.

Just published, New Edition, price 1s.; or, by post, for 1s. 6d.

THE SCIENCE OF LIFE; OR, HOW TO LIVE, AND WHAT TO LIVE FOR. With ample Rules for Diet, Regimen, and Self-Management; together with Instructions for securing perfect health, longevity, and that sterling state of happiness only attainable through the judicious observance of a well-regulated course of life. By a PHYSICIAN.

Also, by the same Author, price 2s. 6d.; by post, 3s. 6d.,

A MEDICAL TREATISE ON NERVOUS DEBILITY AND CONSTITUTIONAL WEAKNESS, with Practical Observations, illustrated with Anatomical Plates, on Health and Disease.

This work, emanating from a qualified Member of the medical profession, the result of many years' practical experience, is addressed to the numerous classes of persons who suffer from the various disorders acquired in early life. In its pages will be found the causes which lead to their occurrence, the symptoms which indicate their presence, and the means to be adopted for their removal.

London: JAMES GILBERT, 49, Paternoster Row; HANNAY, 63 Oxford Street; MANN, 39, Cornhill; and all Booksellers.

THE COTTAGE GARDENER AND COUNTRY GENTLEMAN'S COMPANION.

EDITED BY G. W. JOHNSON, ESQ.

Number 282, *now publishing, price Threepence, contains:—*

POTATO CULTURE—SUGGESTIONS.
GARDEN PEAS.
MODES OF MAKING CHEAP BREAD.
PLANTS OF THE ARCTIC REGIONS.
TREES AND SHRUBS.
THE TOBACCO PLANT.
THE ANTIRRHINUM.
HARDY BORDER PLANTS.
STOVE FERNS.
GARDEN FENCES.

FATTING OF SHEEP.
ALLOTMENT FARMING FOR MARCH.
BEE-KEEPER'S CALENDAR FOR MARCH.
FLOWER-GARDEN " "
FRUIT-FORCING " "
GREENHOUSE " "
ORCHIDS " "
POULTRY MATTERS, and Valuable Information to Correspondents, &c.

A Stamped Edition is issued, a Specimen Number of which will be forwarded, free per post, on receipt of four postage stamps.

LONDON: WILLIAM S. ORR & CO., AMEN CORNER, PATERNOSTER ROW.

On the 28th inst. will be published, price 21s., a new edition of

THE FOREIGN TOUR OF MESSRS. BROWN, JONES, AND ROBINSON, being the History of what they saw and did in Belgium, Germany, Switzerland, and Italy, By RICHARD DOYLE.

London: BRADBURY & EVANS, 11, Bouverie Street.

BY THE AUTHOR OF "VANITY FAIR."

On the 28th inst. will be published, price One Shilling, No. VI. of

"THE NEWCOMES." By W. M. THACKERAY. With Illustrations by RICHARD DOYLE.

BRADBURY & EVANS, 11, Bouverie Street.

On 28th February will be published, price 2s.

THE ENGLISH CYCLOPÆDIA, PART X., extending in the NATURAL HISTORY DIVISON from CORALLINES to CYPRÆIDÆ, and in the GEOGRAPHICAL DIVISION from BRISTOL to CANADA, including articles on Britannia (Roman), Brussels, Buenos Ayres, Bulgaria, Caffristan, Calabria, Calcutta, California, Cambridge, Canada, &c., &c.

BRADBURY & EVANS, 11, Bouverie Street.

This day is published, price 5s. 6d. in cloth,

THE EIGHTH VOLUME OF HOUSEHOLD WORDS. A Weekly Journal. Conducted by CHARLES DICKENS. Designed for the Instruction and Amusement of all classes of R-aders, and to assist in the Discussion of the Social Questions of the Time.

*** Volumes 1 to 8 may be had by order of all Booksellers and Newsvendors.

Office, 16, Wellington Street North, Strand, and sold by all Booksellers and Newsvendors.

In a few days will be published, in Two Volumes, demy 8vo,

THE LIFE AND TIMES OF OLIVER GOLDSMITH. By JOHN FORSTER, of the Inner Temple, Barrister-at-Law.

Containing many facts not hitherto included in any Life of Goldsmith; and all the original authorities.

Printed uniformly with, and forming companion volumes to, "MURRAY'S LIBRARY EDITION OF GOLDSMITH'S WORKS."

London: BRADBURY & EVANS, 11, Bouverie Street.

WORKS ON GARDENING AND BOTANY.

PAXTON'S BOTANICAL DICTIONARY. Comprising the Names, History, and Culture of all Plants known in Britain, with a full Explanation of Technical Terms. Crown 8vo. 16s.

HOW TO LAY OUT A SMALL GARDEN. Intended as a Guide to Amateurs in Choosing, Forming, or Improving a Place (from a Quarter of an Acre to Thirty Acres in extent), with reference to both Design and Execution. By EDWARD KEMP, Landscape Gardener, Birkenhead Park. Price 3s. 6d. cloth.

THE LADIES' COMPANION TO THE FLOWER-GARDEN. By Mrs. LOUDON. The Sixth Edition. Price 7s. cloth.

THE HAND-BOOK OF GARDENING. For the use of all persons who possess a Garden of limited extent. By EDWARD KEMP, Landscape Gardener, Birkenhead Park. The Tenth Edition. Price 2s. in cloth.

BRADBURY & EVANS, 11, Bouverie Street.

DR. HOOKER'S HIMALAYAN JOURNALS.

This day, with Maps, Plates, and Woodcuts, 2 vols. 8vo, 36s.,

NOTES OF A NATURALIST, in BENGAL, the SIKHIM and NEPAL HIMALAYAS, the KHASIA MOUNTAINS, &c. By JOSEPH DALTON HOOKER, M.D., R.N., F.R.S.

JOHN MURRAY, Albemarle Street.

Fourth edition, price 5s. 6d.,

CONSUMPTION, BRONCHITIS, ASTHMA, &c., Successfully Treated. By ALFRED B. MADDOCK, M.D.

"The facts in question are so consoling, so important, and what is yet more to the purpose, carry with them such marks of candour and authenticity, as to present eminent claims to the patient attention of the profession and the public."—*Literary Review.*

SIMPKIN, MARSHALL, & Co., Stationer's Hall Court, and through any Bookseller.

Just published,

NEW ILLUSTRATED CATALOGUE, WITH NEWSPAPER STAMP, POST FREE.

AGRICULTURAL SEEDS.

RENDLE'S NEW FARMING PRICE CURRENT, and AGRICULTURAL DIRECTORY for 1854, *Illustrated with several Engravings, is just published.*

It is the same size as the "Garden Directory," containing 52 pages crown quarto.

It contains a good Farm Almanac and List of Fairs and Great Markets held during the year in the Western Counties.

Descriptions are given of all the best varieties of SEEDS USED IN AGRICULTURE, and the prices of every article are fixed, so as to be a Price Current in the true sense of the word.

It contains a Descriptive Catalogue of all the best NATURAL AND ARTIFICIAL MANURES, with several useful remarks relating thereto.

It also contains an Original Article, written by J. B. LAWES, Esq., of ROTHAMSTED, HERTS; and another by J. C. NESBIT, Esq., F.G.S., the celebrated Agricultural Chemist.

Also the reprint of a Lecture on Guano, by PROFESSOR WAY, the Consulting Chemist to the Royal Agricultural Society.

The Directory is embellished with several illustrations of some of the best Agricultural Implements of the day, with letter-press descriptions of the same.

In a few words the proprietors have endeavoured to make it a useful companion to all engaged in Farming operations, and those who take an interest in the cultivation of the soil.

The "FARMING PRICE CURRENT AND AGRICULTURAL DIRECTORY," is now published, and can be ordered from any bookseller, price 6d.; through the London Publishing Office, 294, Strand; or from the Proprietors, WM. E. RENDLE & Co., Seed Merchants, Plymouth.

PEOPLE'S EDITION OF MR. MACAULAY'S ESSAYS.

On Tuesday next, will be published, in crown 8vo, Part I., price One Shilling, and No. 1, price 1½d.

MR. MACAULAY'S CRITICAL AND HISTORICAL ESSAYS. PEOPLE'S EDITION. To be published in Seven Monthly Parts, at One Shilling; and Weekly, in Numbers, price Three Half-pence each.

*** The Prospectus and Specimen may be had of all Booksellers in Town and Country.

London: LONGMAN, BROWN, GREEN, & LONGMANS.

THE LAW OF SETTLEMENT.

On Tuesday next, in 8vo, price 1s.,

OBSERVATIONS ON THE GOVERNMENT BILL FOR ABOLISHING THE REMOVAL OF THE POOR AND RE-DISTRIBUTING THE BURDEN OF POOR-RATE, with a Proposal for more Equitably Re-distributing that Burden. By ROBERT PASHLEY, Q.C., Author of "Pauperism and Poor-Laws."

London: LONGMAN, BROWN, GREEN, & LONGMANS.

A Corrected Edition, with a Supplement, in One thick Volume, 8vo, with 2000 Wood Engravings, price 3 Guineas,

LOUDON'S ENCYCLOPÆDIA OF COTTAGE, FARM, AND VILLA ARCHITECTURE AND FURNITURE. Edited by Mrs. LOUDON.

By the same Author,
AN ENCYCLOPÆDIA OF TREES AND SHRUBS. 50s.
HORTUS BRITANNICUS. New Edition. 31s. 6d.
AN ENCYCLOPÆDIA OF PLANTS. New Edition in the press.
AN ENCYCLOPÆDIA OF GARDENING. 50s.
AN ENCYCLOPÆDIA OF AGRICULTURE. 50s.

London: LONGMAN, BROWN, GREEN, & LONGMANS.

In post 8vo, with coloured Plates, price 14s.

A NATURALIST'S SOJOURN IN JAMAICA. By P. H. GOSSE, Esq., Author of "A Naturalist's Ramble on the Devonshire Coast," &c.

"In these pages we follow him from day to day amidst the beautiful scenery and new world of animal and vegetable life that Jamaica presents to the European eye. Everything which he sees and hears differs from what we are accustomed to in this country; and keenly alive to the peculiarities of all around him, he imparts the same interest to his reader."—*Athenæum.*

London: LONGMAN, BROWN, GREEN, & LONGMANS.

In fcp. 8vo, price 5s. 6d.,

THE SUBJECT-MATTER OF A COURSE OF SIX

LECTURES ON THE NON-METALLIC ELEMENTS, delivered before the Members of the Royal Institution, in the Spring and Summer of 1852, by Professor FARADAY, D.C.L., F.R.S., &c. Arranged by permission from the Lecturer's Notes, by J. SCOFFERN, M.B., late Professor of Chemistry in the Aldersgate College of Medicine.

London: LONGMAN, BROWN, GREEN, & LONGMANS.

Third Edition, revised and enlarged, in fcap 8vo, price 5s.,

THE MATERNAL MANAGEMENT OF CHILDREN IN HEALTH AND DISEASE. By THOMAS BULL, M.D.

By the same Author, 6th Edition, in fcap 8vo, price 5s.,

HINTS TO MOTHERS for the Management of their Health during PREGNANCY and in the LYING-IN ROOM; with Hints on Nursing, &c.

London: LONGMAN, BROWN, GREEN, & LONGMANS.

This day is published, price 5s.,

THE JOURNAL OF THE BATH AND WEST OF ENGLAND AGRICULTURAL SOCIETY, Vol. II.

CONTENTS.

Root Crops. By W. C. Spooner, V.S. (Prize Essay.)—Root Crops. By J. Tanner Davy.—Root Crops. By J. Webb King.—Wheat. By the President, W. Miles, M.P.—Drainage of Somerset Levels. By J. Aubrey Clark. (Prize Essay.)—Weeds. By Barnett Blake.—Hereditary Diseases of Horses and Cattle. By W. F. Karkeek, V.S.—Report of the Exhibition of Live Stock at Plymouth. By Robert Smith, of Exmoor.—Report on the Exhibition of Implements at Plymouth. By T. D. Acland, S. Pitman, and J. E. Knollys.—Plan of Cottages, &c. By George Arnold. (Prize.)—FARMER'S NOTE BOOK: Coathe or Rot in Sheep. By Lord Portman.—Appold's Pump on Whittlesea Mere. By E. B. Watts.—Cockey's Cheesemaking Apparatus. By Rev. S. Homer.—On Feeding Mountain Sheep. By G. W. Fowler.—Lime and Guano. By H. J. N. Bawden.—Autumn Potato Planting. By Rev. Lundy Foot.—Wild Plants of the West. By J. H. Cotterell and N. Whitley.—Cold Clays of North Devon. By J. E. Knollys.—Diseases of Farm Horses. By Robert Smith.—Farm Servants. By Thomas Hussey.—The Use of Lime in Cider-making. By James Sawyer and Professor Way.—Meteorology. By Nicholas Whitley.—Notices of New Publications.—Statistics.—Awards of Prizes at Plymouth, 1853.—Prizes offered for Exhibition at Bath, 1854.

London: RIDGWAY, 169, Piccadilly; PEACH, Bath; BRAGG & SON, Taunton; ROBERTS, Exeter; and LIDSTONE, Plymouth.

Eighth Thousand, price 1s.

COBDENIC POLICY THE INTERNAL ENEMY OF ENGLAND.—The Peace Society—its Combativeness. Mr. Cobden—his Secretiveness. A Narrative of Historical Incidents. By ALEXANDER SOMERVILLE, "One who has Whistled at the Plough."

"A more dreadful, a more withering exposure was never made public."—*Manchester Courier.*

London: ROBERT HARDWICKE, 38, Carey Street; and all Booksellers.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said Country, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, FEBRUARY 25, 1-54.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 9.—1854.] SATURDAY, MARCH 4. [PRICE 6*d*.

INDEX.

Agri. Soc. of England .... 139 *c*
— statistics .... 137 *c*
Ammonia, use of .... 139 *a*
Ants, to exterminate .... 133 *c*
Ardisia crenulata .... 132 *c*
Auricula, the .... 135 *c*
Bees .... 134 *b*
Botany, Dr. Lindley's School.. 135 *a*
Botanical Garden, Palermo .. 134 *b*
Bread, price of .... 139 *a*
Brown's (Mr.) appointment to Forest of Dean .... 132 *a*
Calendar, horticultural........ 136 *a*
— agricultural .... 141 *a*
Clay, to burn .... 134 *a*
Clovers and Vetches .... 138 *b*
Collodion, application of........ 131 *c*
Cupressus funebris .... 134 *a*
Cuttings, collodionised .... 131 *c*
Cypripedium villosum .... 135 *b*
Dove on Heat, rev........ 140 *a*
Farms, small........ 139 *c*
Flour, price of .... 139 *a*
Fungi on lawns .... 133 *b*
Heat, Dove on, rev. .... 140 *a*
Heating, Irish .... 134 *a*
Hoitzia coccinea........ 134 *a*
Horticultural Society's garden 135 *b*
Larches, thinning .... 136 *c*
Lawns, fungi on .... 133 *b*
Leguminosæ, age........ 138 *b*
Lily of the Valley .... 133 *c*
Linnean Society .... 135 *a*
Machines, pulping .... 138 *a*
Mush, to make........ 139 *c*
Oaks, to plant .... 133 *c*
Palermo Botanical Garden .... 134 *b*
Pansies in pots........ 135 *c*
Pathology, vegetable........ 132 *b*
Pinus Pinaster var. maritima.. 133 *c*
Plants, collodionised cuttings of 131 *c*
— potting .... 134 *a*
— new .... 135 *b*
Polyanthuses in pots........ 135 *a*
Potato sets, autumn dried .... 133 *a*
Pots, shallowness of .... 134 *a*
Radishes at Constantinople .. 134 *a*
Rain in Devon .... 133 *b*
Boilers, improved .... 141 *a*
Rose, yellow........ 134 *c*
Rose stocks, Manetti .... 133 *b*
Root graters .... 138 *a*
Saintfoin........ 138 *c*
School Botany, rev. .... 135 *a*
Seakale, to force .... 133 *a*
Seats, rustic........ 133 *c*
Spade, Walter's open .... 134 *c*
Statistics, agricultural........ 137 *c*
Summer houses .... 133 *c*
Sydney, wages at .... 136 *a*
Tally pins .... 133 *b*
Timber not profitable .... 131 *b*
— sale of .... 136 *a*
Turnip graters .... 138 *a*
Trade memoranda .... 133 *a*
Vegetable pathology .... 132 *b*
Vetches and Clovers .... 138 *b*
Wages at Sydney .... 136 *a*
Walks, burnt clay for .... 134 *a*
Wellingtonia .... 134 *c*
Woods and Forests, Mr. Brown's appointment .... 132 *a*

ISLEWORTH HORTICULTURAL SOCIETY.—The next Exhibition of the above Society will take place on the 7th September next, when Prizes, open to all England, will be awarded for Flowers, Fruit, and Vegetables.—Further particulars, with Rules and Regulations, may be obtained on application to
HICKSON BRIGGS, Hon. Sec.
Holland House, Isleworth, 4th March.

LILIUM LANCIFOLIUM, PELARGONIUMS, RANUNCULUSES, ANEMONES, AND GLADIOLUS.
HENRY GROOM, Clapham Rise, near London, by Appointment FLORIST TO HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to say that his SPRING CATALOGUE is ready, and will be forwarded by post on application.

EXETER NURSERY, EXETER.
LUCOMBE, PINCE, AND CO. respectfully beg leave to say that the Plants in their celebrated large Camellia House, and also those in their new Show House, are *now Finely in Flower*, and are quite unrivalled.—March 4.

THE LAST ADVERTISEMENT THIS SEASON OF CHEAP AND SELECT NURSERY STOCK.
THE SUBSCRIBERS beg to refer all who are interested in PLANTING to their advertisement in this Paper of 18th February, page 99.
WILLIAM JACKSON & Co., Bedale, Yorkshire.

N. GAINES begs to announce his List of Dahlias and Pelargoniums for 1854 is now ready. It contains a description of his three Seedling Dahlias to be sent out in May, viz., Alba superba, Primrose Perfection, and King of the Yellows. Also a Printed List of Fuchsias, Cinerarias, Chrysanthemums, Auriculas, Correas, Verbenas, Camellias, Azaleas, Rhododendrons, &c., &c., may be had post free on application.
Nursery, Surrey Lane, Battersea.

SUPERB DOUBLE HOLLYHOCKS.
WILLIAM CHATER has now ready a fine healthy stock of young plants of all the leading sorts. For price and description see General List, which also contains hints on their culture, with observations on the exhibition of Hollyhocks, &c. &c., and may be had by inclosing a postage stamp.
Saffron Walden Nursery, March 4.

JUDSON'S
RICHMOND VILLA BLACK HAMBURGH VINE.
ARTHUR HENDERSON AND CO. have the pleasure of informing their patrons and friends that they have good plants of this valuable and much-esteemed Vine at 5*s*. each; extra strong plants, 7*s*. each.—N.B. For full particulars of the distinguishing characteristics of this Vine, we beg to refer our customers to the *Gardeners' Chronicle* of October 25th, 1851.

HEPATICAS, ETC.
WILLIAM FIELD, FLORIST, Flookersbrook, Chester, begs to offer the following in strong plants, viz.:—
HEPATICAS (single blue), 25*s*. per 100.
DOUBLE WHITE PRIMROSES, 25*s*. per 100.
DOUBLE POLYANTHUS, 25*s*. per 100.
CHEIRANTHUS MARSHALLI, 6*s*. per doz., in pots.
CHOICE PANSIES to name, 4*s*. per doz., packing included, and plants added for carriage.
N.B. A remittance or reference from unknown correspondents.
Flookersbrook, March 1.

TO POTATO GROWERS.
THE Subscribers beg to intimate that the Seed Potatoes lately advertised by them in the *Gardeners' Chronicle* are all disposed of, but they have still for Sale a few tons of very superior American Early, of a large size, manured with guano only, and grown on an exposed moorland farm. This is one of the best Potatoes in cultivation. Price 22*s*. per sack of 2 cwt., including sack and carriage paid to London, Liverpool, and Hull.—W. DRUMMOND & SONS, Seedsmen, Stirling, N.B.
This advertisement will not be repeated.

PERMANENT PASTURE.
R. H. SMITHE, of Eastling, Faversham, Kent, is now prepared to send out his Mixtures of the NATURAL GRASSES, PERENNIAL CLOVERS, &c., to lay down Land to Permanent Pasture, at 25*s*. per acre, allowing 3 bushels to the acre, carriage free. Mixtures for Lawn, or any other purpose, or the sorts separate. Most of the species of Grass are collected by the Advertiser, and he will bestow the greatest attention in selecting such as shall constitute mixtures specifical to the soil, purpose, &c., of each buyer.

TO FARMERS.
IN ACCORDANCE with the wishes of Farmers, Millers, and others interested in the Corn Trade, an Edition of the AGRICULTURAL GAZETTE AND GARDENERS' CHRONICLE will be published every Monday Afternoon, in time for post. The Monday's Edition will, in addition to the usual markets, contain a full report of the Mark Lane, Smithfield, and Newgate Markets of the day.—May be ordered of any News Agent. Price 6*d*.

GRASS SEEDS FOR PERMANENT PASTURE.
WHEELER AND SON'S DESCRIPTIVE LIST of GRASS SEEDS will be forwarded free on application.
J. C. WHEELER AND SON, GLOUCESTER.

RENDLE'S AGRICULTURAL PRICE CURRENT AND FARM DIRECTORY FOR 1854 *is now published, and can be obtained in exchange for six postage stamps, from* WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

A FIRST CLASS CATALOGUE OF GERANIUMS, VERBENAS, FUCHSIAS, DAHLIAS, HOLLYHOCKS, ETC.
GEO. SMITH begs to announce that the above is now ready and will be forwarded in exchange for one postage stamp.—Tollington Nursery, Hornsey Road, Islington.

CHARLES ALEXANDER (late of DICKSONS & Co.), SEEDSMAN and FLORIST, 32, West Register Street, Edinburgh. His Descriptive Catalogue of Select Garden and Flower Seeds is just published, and will be forwarded free on application.

JOHN SCHOFIELD AND SON have now ready their Descriptive CATALOGUE of first class FLORISTS' FLOWERS. The contents are Lists of the best Dahlias, Carnations, Picotees, Pinks, Pansies, Fuchsias, Calceolarias, &c.
A few packets of Calceolaria and Pansy Seed, selected from the best named sorts, 2*s*. 6*d*. each.
Knosthorpe, near Leeds, Yorkshire.

CEDRUS DEODARA.—Beautiful Specimens can be had at H. LANE AND SON'S Nursery, Great Berkhampstead, Herts, price 7*s*. 6*d*. to 21*s* each; some few 42*s*. and 63*s*. each.

GEORGE MILLS, Uxbridge Road, Ealing, begs to offer Plants of his best BLACK or WHITE-SPINED CUCUMBER, unpacked, at 1*s*. each; packed, 1*s*. 3*d*. each.
MELON PLANTS of the best kinds raised to order on the same terms.

DOUBLE ITALIAN TUBEROSE ROOTS, 4*s*. per dozen.—The annual importation of the above-named beautiful and fragrant Flower has just been received, and large and well selected Bulbs may be obtained, without disappointment, at A. COBBETT'S Foreign Warehouse, 18, Pall Mall.
N.B. Printed regulations for treatment sent; also, just arrived, very moist and open Parmasan Cheeses.

CLOVER SEED.
GENUINE NEW CLOVER SEED *may be obtained of the undersigned, at the annexed moderate prices for cash.*

FINE NEW RED CLOVER ...	...	8*d*. to 9*d*. per lb.
" WHITE CLOVER	...	9½*d*. to 10½*d*. "
" YELLOW CLOVER	...	5*d*. to 6*d*. "
" PERENNIAL RED ...	...	1*s*. "
" COW GRASS ...	...	10½*d*. to 1*s*. "

Large quantities, carriage free, to all parts.
JOHN SUTTON & SONS, *Seed Growers, Reading, Berks.*

CHOICE FRUITS AND VEGETABLES, ETC.
NOTICE TO GROWERS.—I wish to inform you that my present Prices for the undermentioned Goods are as herein stated; therefore should you have such to dispose of, you may forward them immediately.
PINES, from 2 lbs. to 3 lbs., 5*s*. 6*d*., 5*s*., and 4*s*. 6*d*. per lb.
CUCUMBERS, 2*s*. 6*d*., 2*s*., 1*s*. 6*d*., and 1*s*. each.
MUSHROOMS, 2*s*., 1*s*. 6*d*., and 1*s*. per lb.
FRENCH BEANS, 2*s*., 2*s*. 6*d*., and 3*s*. per 100.
CHOICE FLOWERS, according to quantity.
GEORGE TAYLOR, JUN., FRUIT-SALESMAN, St. John's Market, Liverpool.—Terms Cash on receipt of Goods.

A. NEILSON, Ayr Nursery, will be glad to supply Gentlemen, Nurserymen (with discount), or Florists, with One, Two, and Three times (3 to 4 feet fine) transplanted LARCHES, TREES, SHRUBS, &c., ROSES, HEPATICAS, double-blue and others, PRIMROSES, &c., at very low prices.

PINE PLANTS.
TO BE SOLD, 100 Fruiting and Succession Plants, mostly Queens, perfectly clean and healthy.—For particulars, apply to T. PERKINS, Nurseryman, Atherstone, Warwickshire.

SCOTCH FIR.
THE Subscribers can supply 2-year Seedling SCOTCH FIR, at a very low rate, if taken in quantity. Price given on application.—FOWLER & WRIGHT, Glasgow, March 4.

SILVER FIR FOR SALE.
JOSIAH HILL begs to inform Noblemen and Planters generally, that he has a large assortment from 1½ to 3 feet (twice transplanted), very healthy and good rooted.
Briston Nursery, Norfolk.

LIME TREES, 12 to 14 feet, 42*s*. per 100.—SPRUCE FIRS, 2 to 3 feet, 6*s*. per 100.—LAURUSTINUS, very fine, 30*s*. per 100.—Apply to BENJAMIN R. CANT, St. John's Street Nursery, Colchester.

TO RAILWAY CONTRACTORS, FARMERS, & OTHERS.
J. SELFE begs to announce that he has a stock of 100,000 very fine transplanted 5 years old WHITE-THORN QUICK, at 8*s*. per 1000. If more than 5000 are taken, 7*s*. 6*d*. per 1000. He has also a large collection of Spruce Fir, Laurel, Privet, &c., in fine condition, from 3 to 5 feet high. At moderate prices.—Surbiton Hill, Kingston, Surrey, March 4.

"WELLINGTONIA GIGANTEA."
MESSRS. VEITCH, of EXETER and CHELSEA, have much pleasure in stating that their Seeds of the above magnificent Tree are vegetating satisfactorily. They therefore hope to be able to send out well established seedling plants during the ensuing summer and autumn. They are now taking orders for them at the following prices:—

For a Single Plant ... 2 guineas	For 8 Plants ... 10 guineas
For 4 Plants .. ... 6 guineas	For 12 Plants ... 12 guineas

And all orders will be executed strictly in the rotation in which they are received.—March 4.

WELLINGTONIA GIGANTEA.—Beautiful Lithographed Plates (from a drawing taken in California) of this wonderful Tree may be had, at 7*s*. 6*d*. each, of Messrs. VEITCH & SON, Exeter, and Mr. JAMES VEITCH, jun., Exotic Nursery, Chelsea.
The Bark, Wood, Cones and Foliage, which were exhibited on Tuesday week at 21, Regent Street, may be seen at the Exotic Nursery, Chelsea.—March 4.

NEW CUCUMBER.
MARSHALL'S "IMPROVED JEWESS," a hybrid between the Brewston and Mills's Jewess. It is a good bearer, dark green, black spine, a first-rate variety for early forcing and general crop. Seeds may be obtained of Mr. MARSHALL, Gardener to John Sick, Esq., Chiswick, Middlesex. A packet of five seeds, 2*s*. 6*d*.

IPOMŒA RUBRA CÆRULEA.
MR. GEORGE ROBERTS begs to make known to the Seed Trade that he can supply the above-named scarce Seed.—For prices apply to him at 32, Moorgate Street, London, where dried Specimens of the Flowers and Leaves may be seen. Purchasers of a small number of Seeds will please obtain them from the principal London Seedsmen.

JOHN JEYES, NURSERYMAN, Northampton, has to offer fine dwarf-trained trees of the following fruits:—
MORELLO, and other Cherries; MOOR PARK APRICOTS; GREENGAGE, and other Plums.

DOUBLE FRENCH MARIGOLD AND CAPE STOCK SEEDS. A packet of beautiful DOUBLE FRENCH MARIGOLD SEEDS forwarded on receipt of Seven Penny Postage Stamps. Ditto, SCARLET CAPE STOCK, ditto. EDWARD SANG & SONS, Nursery and Seedsmen, Kirkaldy, N.B.

JOHN COLE begs to inform the lovers of CALCEOLARIAS that he has a few choice Seedlings to dispose of, having succeeded in raising more than he has convenience to grow, and offers them, strong plants, at 4*s*. per dozen, or 25*s*. per 100. J. C. begs to state the seed was saved from choice impregnated spotted and striped varieties. A remittance solicited from unknown correspondents.
Keyfield Nursery, St. Alban's, Herts.

CORNWELL'S VICTORIA RASPBERRY; unequalled for size, flavour, and brightness of colour—containing more juice than any other, and an abundant bearer. The certificate of merit has been awarded to them at all the principal metropolitan shows; the fruit also sells for more than any other at Covent Garden Market. Canes of the above to be had of GEORGE CORNWELL, Market Gardener, Barnet, at 15*s*. per 100. Also White and Rivers's Autumn Trailed, 15*s*. per 100; strong Red, Black, and White Currants, 2*s*. to 3*s*. per doz.; Double Lilac Primroses, large Laurustinus. The usual allowance to the trade.

GEORGE CLARKE begs to invite purchasers to inspect his splendid Collection of ROSES, extending over 10 acres of ground. Fine Standards of the leading kinds, 18*s*. per doz.; Dwarf ditto, 12*s*. per doz. Catalogues can be had.
Evergreens, Coniferæ, fine trained Peaches, Nectarines, Apricots, &c., at very moderate charges. Strong Dielytra spectabilis, 5*l*. to 10*l*. per 100. Also 100 fine Specimen Erica depressa, which will be sold at a bargain.
Streatham Place Nursery, Brixton Hill, near London.

THE ROYAL MOSS-POD PEA.—The attention of horticulturists and of the public in general is called to this new and peculiar PEA, as being surpassed by none in exquisite flavour and colour on table; it is at the same time highly productive. To be had only of Mr. DENNIS, West Court, Detling, Maidstone, at 2*s*. 6*d*. per quart, and will be forwarded in any quantity (not less than a quart), to all parts of the kingdom, on receipt of postage stamps or post-office order for the amount.

FIRST CLASS PRIZE VERBENAS.—The set of six, advertised by J. KEYNES in his Catalogue will be ready to send out the 21st of March, in fine well-established Plants, by post, free, for 20*s*.
These are six of the most beautiful Verbenas ever offered, and were much admired in the Surrey Gardens, the only place they were exhibited, and obtained First Class Certificates. Only a few sets left unordered.
JOHN KEYNES, Nurseryman, Salisbury, March 4.

CONQUEROR OF THE WEST CUCUMBER.
JAMES LAKE, NURSERYMAN, &c., Bridgewater, begs once more to offer the above Cucumber. Having tested its merits against many other sorts highly spoken of, can with confidence recommend it as the best for general frame culture. Packets containing 12 good Seeds sent post free on the receipt of 12 postage stamps.
N.B. The Trade supplied with the genuine article.
J. L. also begs to state that he will be prepared to send out, the first week in May, strong Plants of his beautiful Seedling LOBELIA ST. CLAIR, so universally admired last summer and autumn, at 12*s*. per dozen. The usual discount to the Trade.

EARLY SEED POTATOES.
EARLY ASH-LEAF KIDNEYS, 10*s*. per bushel.
EARLY SHAWS, 7*s* per bushel.
The Advertiser, in calling the attention of Growers to the above, would state that they have been carefully selected for Seed purposes, and they are entirely free from disease; for quality and yield they cannot be excelled. Bags not charged extra. A sample bushel will be sent to any part of the country on receipt of a Post-office order, made payable to JOSEPH WILSON, St. Helen's Street, Ipswich, Suffolk.

MESSRS. YOUELL AND CO.

BEG TO OFFER THE FOLLOWING:—

ERICA VENTRICOSA SUPERBA, finely set with flower-buds. We particularly recommend these to the trade at 60s. and 75s. per 100.

ERICAS.—Fine bushy blooming plants, in large 48s, of the following sorts, at 12s. per dozen varieties, viz.:—*Aggregata, Bowei, *Coventryana, *Cavendishi, colorans, *densa, *daphnoidea, echiflora, *exsurgens coccinea, *gracilis, *hyacinthoides, intermedia, *Linnæoides nova, lævis alba, mirabilis, mammosa, metulæflora bicolor, *nigrita, *ovata, pyriformis, perspicua nana, *rubens, rubra calyx, trossula, transparens nova, Westcoti, *Wilmorea superba, Walkeri, viridiflora, *ventricosa breviflora, *v. Bothwelli, *v. coruscans, v. carnea, v. dependens coccinea, *v. fasciculata rosea, *v. f. longiflora, *v. f. superba, *v. hirsuta, *v. perspicuoides, *v. superba, *v. tenuiflora, *v. tumida.

ERICAS, in small and large 60s, nice bushy plants, many of them set for flower. All the above named marked with an asterisk, as well as the following, at 9s. per dozen varieties, viz.:—Denticulata moschata, elata, hyemalis, hybrida, scabriuscula, Sindryana, trossula rubra, umbellata, verticillata, ventricosa, cintra rubra, v. densa carnea.

EPACRIS HYACINTHIFLORA, by far the best of the campanulata varieties, in strong plants, 1s. 6d. each.

„ hyacinthiflora candidissima (Storey's).—Is a magnificent white variety, individual flowers very large, 1s. 6d. each; small, in stores, 9s. per dozen.

EPACRIS.—The following choice varieties, in 48s, well set for bloom, at 12s. per doz. varieties, viz.:—Ardentissima, Atleeana, campanulata alba, c. grandiflora, c. maxima, Copelandica, carnea, coruscans, densiflora incarnata, elegantissima, formosa, grandiflora, impressa, imp. alba, imp. magna, lineatus magnifica, miniata, nivalis, onosmæflora, pulchella major, purpurescens, sanguinea, Tauntoniensis, the Bride, variabilis.

Epacris, flowering plants, our own selection, to the trade, 60s. p. 100.

Abelia uniflora, small, 12s. per dozen.

Abutilon insigne, Linden's fine new species, 2s. 6d. each.

Aphelexis humilis and superbum, strong bushy plants, in large 48s, well set for flower, 12s. per dozen.

Burchellia capensis nana. This fine old favourite, 12s. per dozen.

CAMELLIAS.—The well known difficulty of inducing the greater part of the choice varieties to bloom in a young state, tempts us to offer the following, in stout plants, without buds, at 21s. per dozen, viz.:—Beali, Monarch, Juliana, Bruceana, Forbesi, Grand Frederic, Ruckeri, Lombardi, Horsfalli, Lefeveriana, Picturata, Lepidata, Fimbriata rubra, Agnesi, Sieboldi, &c.

Cassia corymbosa, a good winter-flowering plant, in 48s, 9s. p. doz.

Ceanothus rigidus and dentatus, in large 60s, 12s. per dozen.

Chorozema Lawrencianum, strong flowering plants of this charming variety, in large 48s, 1s. 6d. each.

CALCEOLARIAS—Crimson King (Henderson), deep crimson, very dark and rich, and does not fade; habit dwarf and robust, flowers large, and shape good.

„ Magnificent (Henderson), rich crimson, with yellow crown: a large, fine-formed, and very splendid flower, quite distinct from anything yet out.

„ Gold Chain, fine golden yellow, of great substance and fine habit, with very stout foot-stalks.

„ Gold Cap (Garraway), rich dark maroon, the upper division of the flower deep gold colour, the flowers large and of fine compact habit.

These handsome varieties will be found the gems of the season, for bedding; strong plants, 2s. 6d. each, or 21s. per dozen.

CINERARIAS, the choicest of the new varieties; strong flowering plants, in 48s, 12s. per dozen.

Correa speciosa, major, bicolor, and Cooperi: strong flowering plants, 12s. per dozen.

Daphne collina, 12s. per dozen; Dauphine, 18s. per dozen.

Deutzia gracilis, small, 9s. per dozen.

Diosma ericoides and capitata, nice bushy plants of these sweetly-scented species, 9s. per dozen.

Eutaxia myrtifolia, strong bushy plants of this fine old favourite, in large 48s, 9s. per dozen; floribunda, in 60s, 9s. per dozen.

FUCHSIAS: choicest of the new kinds, including Glory (Banks), England's Glory, King Charming, Dr. Lindley, Duchess of Lancaster, Incomparable, &c., 21s. per dozen.

Fairy Roses, 9s. per dozen.

Kennedya Marryattæ, 1s. 6d.; monophylla, 1s.; alba, 2s. 6d.; and rubicunda maxima, 1s. 6d.

Mandevilla suaveolens, certainly the finest greenhouse or conservatory climber we possess, 9s. to 12s. per dozen.

Mimulus variegata. This very beautiful variety produces large white flowers, handsomely spotted with rich crimson, 1s. each.

Mimulus, 6 handsomest varieties, including the foregoing, for 4s. 6d. the set.

Mitraria coccinea, strong flowering plants, 2 feet, 3s. 6d. each; smaller, 1s. 6d.

Olea fragrans, 24s. per dozen.

Passiflora racemosa cærulea, in large 48s, 12s. p. doz.: Bellotti, fine new peach-coloured variety, 1s. 6d. each; Buonaparti, 1s. 6d. each.

Philadelphus mexicanus, an elegant shrub with large white flowers, more fragrant than the Orange, 2s. 6d. each.

Pimelea decussata, 9s. per dozen.

Pittosporum tobirum, this fine old favourite, 1s. 6d. each.

Sollya Drummondi, strong, 1s. 6d. each; heterophylla, 12s. per dozen; linearis, 12s. per dozen.

Swainsonia Osborniana, new, 12s. per dozen.

Tecoma australis, 1s. 6d. each; jasminoides, 12s. per dozen; rosea, 1s. 6d. each.

Tetratheca ericæfolia, small, 18s. per dozen.

Tree Carnations, of choicest kinds, 18s. per dozen.

Geranium Flower of the Day, 6s. and 9s. per dozen.

„ Crimson Ivy-leaf; this fine variety, sent out by Messrs. Standish & Noble, 5s. each (splendid for bedding).

HARDY SHRUBS.

Berberis Darwini, 12s. p. doz.; very strong and bushy, 3s. 6d. each.

„ Fortuni, 12s. per dozen; dulcis, strong, 4s. per dozen.

Bays (sweet), fine plants, 2 to 2½ feet, 6s. per doz.; 35s. per 100.

Cerasus illicifolia, a new hardy evergreen Cherry from California, producing purple fruit, 3s. 6d. each.

Chimonanthus fragrans, strong, 12s. per dozen.

Clematis azurea grandiflora, strong, 12s. to 15s. per dozen; Sieboldi, strong, 12s. to 15s. per dozen; Montana, strong, 12s. per dozen; flammula, or sweet scented, in pots, 9s.

Escallonia macrantha; strong plants of this most charming evergreen flowering shrub, 12s. per dozen.

Euonymus fimbriatus, strong plants of this handsome evergreen, 2s. 6d. each; japonicus fol. variegatus, 9s. per dozen.

HARDY SHRUBS.

Ilex Castanifolia, strong, 3s. 6d. each; Cunninghami, 3s. 6d. each; latifolia, strong, 1s. 6d. to 3s. 6d. each; Sheppardi, fine, strong, 1s. 6d. each.

Jasminum revolutum, strong, 12s. per dozen.

Lardizabala biternata, a fine hardy evergreen creeper, 5s. each.

Ligustrum ovalifolium, new species, 12s. per dozen.

Passiflora cærulea, strong, 9s. to 12s. per dozen.

Quercus Fordi, 2 to 3 feet, 24s. per dozen; Ilex Humei, 2 to 3 feet, 30s. per dozen; ballota, 2s. 6d. each; rotundifolia, 2s. 6d. each.

ROSES.—"Queen Victoria" (Paul's), standard and half standard, 2s. 6d. each; "Prince Albert," strong, in pots, 5s. each; standards and half standards, of best kinds, 15s. to 18s. per dozen; dwarfs on own roots, 6s. and 9s. per dozen.

Wistaria sinensis, strong, 12s. to 24s. per dozen.

Weigela rosea, strong bushes, 2 to 3 feet, 9s. per dozen.

Yucca gloriosa superba, strong, 3s. 6d. to 5s. each.

CHOICE HOLLYHOCKS, PANSIES, AND OTHER HERBACEOUS PLANTS, BULBS, ETC.

HOLLYHOCKS.—The following fine varieties, in strong plants, well established in pots, 12s. per dozen varieties:—Bicolor, Commander-in-Chief, Conspicua, Delicata, Eclipse, Fireball, Formosa Improved, Lilac Perfection, Magniflora, Magnum Bonum, Maiden's Blush, Mr. Charles Baron, Mulberry Superb, Obscura, Princess Alice, Princess Helena, Princess Royal, Queen, Rosea Alba, Rosea Rubra, Snowflake, Venosa Rubra, Walden Gem, Rosy Queen, &c.

PANSIES.—The following choice kinds, at 10s. per dozen varieties:—Alba Superba, Androcles, Blanche, Cæsar, Calysto, Caroline, Commander-in-Chief, Crystal Palace, Drusilla, Duchess of Rutland, Elegant, Emma, Euphemia, Glory, Helen, Heroine, Indian Chief, Isabella, Junius, Lady Carrington, Lady Franklin, Lady Harding, Lord Jeffery, Marchioness of Lothian, Masterpice, Miriam, Miss Talbot, Mrs. Beck, Penelope, Polyphema, Post Captain, Prince Arthur, Princess, Queen of England, Rubens, Sambo, Smolensko, The Rajah, Uttoxeter Hero, Viceroy, Yellow Prince.

CHRYSANTHEMUMS, comprising the very best of the new kinds of large flowering and Pompon varieties, in strong plants, 6s. to 9s. per dozen.

Delphinium Mooreanum.—This beautiful new variety is unequalled for the richness of its "blue," and its general good habit, and must be grown in every flower garden, 18s. p. dozen.

Delphinium Barlowi, fine, 9s. per dozen.

Daisies, new Belgian, in 50 fine varieties, 4s. per dozen.

Dielytra spectabilis, 9s. per dozen.

Funkia grandiflora, 2s. 6d. each.

Rockets, double white, 3s. per dozen; purple, 4s. per dozen; crimson, 1s. 6d. each.

Oxalis rosea, one of our prettiest hardy herbaceous plants, and nearly always in flower, 6s. per dozen; floribunda, 6s. per dozen.

Pæonies, herbaceous, in 25 fine varieties, 12s. per dozen.

Phloxes, in numerous fine varieties, 9s. to 12s. per dozen.

Potentilla M'Nabiana, and other choice kinds, 6s. per dozen.

Primrose, double white, 4s. per dozen; double yellow, 4s. per dozen; double purple, 4s. per dozen; double lilac, 3s. per dozen; double crimson, 12s. per dozen.

Silene maritima plena, fine double white, 9s. per dozen.

Statice latifolia, strong, 9s. per dozen; pseudo armeria, 6s. per dozen; maritima rosea, very pretty and distinct, 6s. per dozen.

Choice selection of Herbaceous Plants, 25s. per 100.

Tigridia conchiflora, the yellow spotted tiger flower, a very desirable summer and autumn blooming bulb—it makes beautiful beds, 3s. per dozen.

Gladiolus insignis, one of the handsomest of the genus; the flowers, which are produced freely, are of a glowing scarlet, suffused with purple, 4s. per dozen; Brenchleyensis, a magnificent new variety, 3s. 6d. each.

Lilium colchicum, a magnificent new species, with lemon-coloured flowers, 7s. 6d. each; lancifolium album, flowering bulbs, 9s. per dozen; l. rubrum, flowering bulbs, 18s. per dozen.

Lily of the Valley, strong roots, 5s. per 100.

CARNATIONS AND PICOTEES.—Beautiful selections from their superb and extensive collections, at 18s., 24s., and 30s. per dozen pairs; fine mixed, for borders, 9s. per dozen pairs. True Old Clove Carnation, 12s. per dozen pairs.

PINKS.—Four fine sorts by name, 9s. to 12s. per dozen pairs.

CHOICE FRUITS. (WARRANTED TRUE TO NAME.)

"FASTOLFF RASPBERRY."—It is with much satisfaction that we announce a third award made by the London Horticultural Society, on 26th of July last, for examples of the above most excellent Raspberry, unequalled by any other variety for the size of its fruit and richness of flavour.

It is reported in the *Gardeners' Chronicle* of July 30th, page 486, as follows:—"Messrs. Youell, of Great Yarmouth, sent a boxful of beautiful fruit of the Fastolff Raspberry; they were unusually fine, and well deserved the certificate of merit awarded them."

Strong well-rooted canes, 15s. per 100; Large White Raspberry, 24s. per 100; New Monthly Fruiting, 24s. per 100.

APPLES, standard, in best selection, good heads		9s.	per dozen.
„ dwarf	„ „	6s.	„
„ trained	„ „	30s.	„
PEARS, standard	„ „	12s.	„
„ dwarf	„ „	8s.	„
„ trained	„ „	30s.	„
PLUMS, dwarf	„ „	9s.	„
„ trained	„ „	36s.	„
PEACHES, dwarf trained, in fine strong plants,		36s. to 60s.	„
NECTARINES, dwarf trained,	„	36s. to 60s.	„
APRICOTS	„	36s. to 60s.	„
CHERRIES, standard, in fine variety	... ...	12s.	„
„ dwarf	„	9s.	„
„ trained	„	36s. to 42s.	„

GOOSEBERRIES, 25 of the finest varieties (good bushes) selected for size and flavour, 30s. per 100; 4s. per dozen.

CURRANTS, improved large white Dutch, Black Naples, Raby Castle (red), and Large Red Grape, 4s. per dozen; Knight's Sweet Red, 6s. per dozen; these are the most desirable kinds in cultivation, and are highly recommended.

RHUBARB, Myatt's Victoria, 9s. per dozen; Royal Albert, 9s. per do.; Linnæus, 9s. per do.; Tobolsk, 6s. per do. (strong).

SEAKALE, strong, 2 years, 6s. per 100.

ASPARAGUS, extra strong, 3 years old, 3s. 6d.; 2 years old, 2s. 6d. per 100.

EVERGREEN PRIVET, fine Bushy cut back Plants,

2½ to 3 feet, 5s. per 100, or 35s. per 1000.

☞ Less quantities than those named above supplied at the same prices. Orders of 2l. and upwards are delivered Carriage Free to London or Hull, or to any Railway Station within 150 miles of the Nursery.

YOUELL & Co. beg to refer to their Advertisement which appeared in this Paper of Feb. 4. Catalogues will be forwarded free on application. ANEMONE SEED, saved from selected roots, 10s. per lb. The usual discount to the trade.

YOUELL & CO., Royal Nursery, Great Yarmouth.

NEW AMERICAN WHITE-FLOWERED FLAX.

FREDK. AD. HAAGE, JUN., NURSERYMAN and SEEDSMAN, Erfurt, Prussia, offers Seed of the above at 3s. per lb. This species was discovered by Sir Robert Schomburgk at the source of the Orinoco. It supersedes the common cultivated Flax in size of growth, fineness and whiteness of fibre, which is extremely strong and silk-like. Its great importance cannot too strongly be recommended. Specimens of the plant fibres may be had on application. Orders will be received by Mr. JAMES CARTER, Seedsman, High Holborn, London.

Erfurt, March 4.

IMPORTED GERMAN FLOWER SEEDS.—

	s.	d.
QUILLED DOUBLE GERMAN ASTER.—Assortment of 24 splendid varieties, containing of each colour 100 seeds	5	0
Ditto, 12 splendid varieties	2	6
DWARF DOUBLE GERMAN ASTER.—Assortment of 16 most splendid varieties, of each colour 100 seeds ...	3	6
Ditto, 12 splendid varieties	2	6
DWARF GERMAN STOCK.—Assortment of 36 most splendid varieties, each colour separate	7	6
Ditto, 24 ditto ditto	5	0
Ditto, 12 ditto ditto	2	6
NEW LARGEST FLOWERING DWARF TEN-WEEKS' STOCK.—This new acquisition has been greatly admired. The flowers are exceedingly large. The colours are rose, purple, blue, light blue, and white, per packet ...	1	0
DWARF GERMAN WALLFLOWER-LEAVED TEN-WEEK STOCK.—Assortment of 12 splendid varieties, containing of each variety 100 seeds	3	0
BRANCHING GERMAN TEN-WEEK STOCK.—Assortment of 12 vars., containing of each variety 100 seeds	3	0
NEW ROSE PURPLE EMPEROR STOCK, per packet	1	0
WALLFLOWERS.—Collection of eight splendid varieties	3	0
DWARF DOUBLE LARKSPUR.—Collection of 10 most splendid varieties, containing of each colour one-eighth of an ounce	5	0
TALL DOUBLE LARKSPUR.—Collection of 8 splendid varieties, containing of each colour one-eighth of an ounce	3	6
ZINNIA ELEGANS.—Collection of 6 beautiful varieties	2	6

We can strongly recommend the above as being of first-rate quality. They will be forwarded postage free.

J. C. WHEELER AND SON, GLOUCESTER.

STANDISH AND NOBLE, NURSERYMEN, SEEDSMEN, AND LANDSCAPE GARDENERS, Bagshot, Surrey, have now on sale the undermentioned rare and beautiful Hardy Shrubs, which are entirely new to English gardens, having been recently introduced by them from the north of China.

BERBERIS JAPONICA is undoubtedly the finest evergreen shrub in cultivation. Its leaves are from 15 to 18 inches long, having a terminal leaflet 3 inches long by 3 or 4 broad, and the lateral ones, of which there are many pairs, are nearly as large. They are of a very thick leathery texture, and are armed with strong spiny teeth. The flowers, which are of a lemon yellow colour, are produced in terminal racemes: and they are delightfully fragrant, with the odour of a Tea Rose. Dr. LINDLEY says of it, in the "Flower Garden," that "it will be the noblest evergreen bush in Europe." Each 5l. 5s.

BERBERIS BEALII.—A worthy rival of the preceding, from which, however, it differs much in general appearance. Its leaflets are narrower, more pointed, and have fewer spines; and they are more distant on the leaf-stalk; a greater number of pairs are also comprised in each individual leaf. On the whole, we believe these two plants to be the finest hardy evergreen shrubs that have been introduced for many years. Each 5l. 5s.

EMBOTHERIUM LANCEOLATUM; a large evergreen flowering shrub, growing 12 or 15 feet high, with the habit of a Portugal Laurel, but having lanceolate leaves a foot long. the flowers are of the richest scarlet, in spikes 12 to 18 ins. long which are raised well above the foliage. The appearance of a plant in flower is in the highest degree attractive. For a conservatory it cannot be surpassed. If it should prove hardy (and the advertisers hope that it will), it will be impossible to overrate its value as a flowering shrub. Each 21s. to 42s.

The advertisers also beg to offer the following rare and desirable plants; the whole of which they have themselves introduced, and of which they consequently hold the entire stock:

AZALEA AMŒNA.—A Chinese species, perfectly distinct from any other known Azalea; each flower appears like two corollas, one within the other, like a hose-in-hose Polyanthus. They are bright rosy purple, and are produced in great profusion. For forcing, for decorating the conservatory, or for cutting for bouquets, no plant can excel it; and it is perfectly hardy, as hardy as Rhododendron dauricum. 3s. 6d. to 21s.

AZALEA NARCISSIFLORA, a variety having double white flowers, like those of the plant whence it takes its name. It is very handsome, blossoms freely, and will be found a great novelty. Each 10s. 6d.

AZALEA VITTATA. Each 2s. 6d.

„ „ PUNCTATA. Each 2s. 6d.

„ „ ROSEA. Each 3s. 6d.

The last three named very handsome striped varieties are now well known, and we need not enter upon a description here. But we are now enabled to state that they are perfectly hardy, which quality will render them very useful in the open borders, as no plants can produce their flowers in greater abundance.

CALCEOLARIA HYSSOPIFOLIA, a very interesting plant from the Andes of South America, with bright golden yellow and white flowers. Habit neat, with good foliage. It is an excellent bedding plant, being a most profuse bloomer: and, the lip of the corolla being entirely closed, the flowers are not liable to be damaged by rain. 10s. 6d.

PODOCARPUS CHILINA.—This fine plant is one of the few long-leaved species of Podocarpus that has proved quite hardy. The leaves of this are from 4 to 5 inches long, and in every respect it is a fine Conifer. 21s. each.

PODOCARPUS NUBIGENA, a new species from Patagonia, forming an upright compact growing tree of great beauty, quite hardy and distinct. 31s. 6d. to 63s. each.

SKIMMIA JAPONICA, a fine, hardy, compact-growing shrub from the north of China. The leaves are thick and fleshy, of a deep green, smooth on both sides, 5 or 6 inches long by 1½ inch broad, of an oblong shape. In May it is covered with dense heads of greenish-yellow flowers, which emit a very strong and agreeable odour, resembling that of Daphne indica. These are followed by bunches of bright scarlet oval berries, which remain upon the plant all the following winter. It produces both flowers and fruit when but 5 or 6 inches high. As an ornamental shrub for the lawn, or for the winter decoration of the conservatory, it has scarcely a rival. No degree of cold seems to injure it." The foregoing, which we extract from our "Practical Hints," is what we expressed of this plant when first offering it for sale; and subsequent experience confirms all that is there stated. Our plants in the open borders received no injury during the late severe winter. The berries that were ripened last year are still upon them, and will no doubt remain till they are in bloom again in spring. Each 10s. 6d. to 15s.

SAXE-GOTHÆA GRACILIS.—A very interesting plant. In habit it is peculiarly graceful and distinct, and it grows very much more rapid than *S. conspicua*. Each 21s. to 36s. 6d.

VIBURNUM MACROCEPHALUM.—A fine, hardy, evergreen shrub, bearing globular heads of Hydrangea-like flowers, 10 inches in diameter, of the purest white. It is a very free bloomer, and forms a noble shrubbery plant. Each 10s. 6d. to 21s.

VIBURNUM PLICATUM.—A deciduous species, wholly distinct from the preceding; a very fine shrub, with handsome foliage, covered in spring with snowy white flowers, and is perfectly hardy. Each 5s. to 7s. 6d.

*** Catalogues may be had by enclosing a stamp for postage.

GRASS SEEDS, SEPARATE OR MIXED,
CARRIAGE FREE.

SUTTON AND SONS *having for many years paid especial attention to the laying down Land to Permanent Pasture, are well acquainted with the various soils of most parts of the United Kingdom, and the Natural Grasses suitable for each locality.*

The following sorts may be had separate or mixed, at lowest market prices. All the best and most suitable of them are contained in our Mixtures for the several purposes described below.

Alopecurus pratensis	Festuca tennifolia	Poa trivialis
Anthoxanthum odoratum	Festuca hordeformis	Poa nemoralis
Agrostis stolonifera	Glyceria fluitans	Poa angustifolius
Avena flavescens	Glyceria aquatica	Poa fertilis
Achillea millefolium	Holcus lanatus	Poa sempervirens
Cynosurus cristatus	Holcus avenaceus	Phleum pratense major [minor
Dactylis glomerata	Lolium Italicum	Phleum pratense
Festuca duriuscula	Lolium perenne tenue	Petroselinum sativum
Festuca elatior	Lolium perenne Paceyanum	Trifolium repens
Festuca gigantea	Lolium perenne sempervirens [major	Trifolium pratense perenne
Festuca heterophylla	Lotus corniculatus	Trifolium minus
Festuca pratensis	Medicago Lupulina	Trifolium hybridum
Festuca ovina	Poa pratensis	
Festuca rubra		

SUTTON'S MIXTURES FOR LAYING DOWN LAND TO PERMANENT MEADOW OR PASTURE.

Mixed expressly to suit the soil, according to whether it is heavy, light, or medium. The sorts contained in these Mixtures are grown in different localities, and gathered separately by the hand, expressly for this purpose, by which means all noxious weeds are excluded. They consist of the most nutritive kinds of Fescues, Poas, Sweet Vernal, Perennial Clovers, Lolium, &c., and each sort being kept separate, they are subsequently mixed in such sorts and proportions as are most suitable to the soil to be laid down. *These Seeds can now be supplied for* **24s. to 30s.** *per acre, according to the sorts which the soil may require.* The quantity we usually supply is 2 bushels of light Seeds and 12 lbs. heavy Seeds per acre; *but if coarser Grasses, which have larger Seeds, 3 bushels or more would be necessary.*

MIXTURE FOR RECLAIMED PASTURES AND HEATH LANDS.

Many acres of land of this description have been successfully laid down to Permanent Pasture by us, with Seeds which we have found invariably to thrive on such soil. The cost for this purpose is **16s. to 21s.** per acre, according to circumstances.

MIXTURES FOR LAYING DOWN CHALKY OR GRAVELLY UPLANDS AND SHEEP DOWNS.

For this purpose Grass Seeds are annually collected from dry and hilly districts, where they are found growing spontaneously; and, after many years' experience, we can confidently assure our friends that a good and permanent sward may be obtained on any upland from this mixture. Price **30s.** per acre.

SUTTON'S
MIXTURES FOR LAYING DOWN WATER MEADOWS.

In this department also we have been very successful, many customers having expressed their great gratification at the effect of these Seeds. Cost of Seeds for this purpose, **24s.** per acre.

MIXTURES TO LAY DOWN NEW PARK LAWNS, **18s.** per bushel.

RENOVATING MIXTURES FOR IMPROVING OLD PASTURES, **1s.** per lb.

There are now but few Counties in England wherein Pastures may not be seen which have been formed with our Mixtures of Grass Seeds; it may therefore appear superfluous that we should publish anything in the way of testimonials. **We will, however, quote the following from among many other letters recently received, now before us:—**

From Sir Willoughby Jones, Bart., Cranmer Hall, Fakenham, Norfolk.—January 31, 1854.

The Grass Seeds you supplied me with last year have produced an admirable set, far better than any seeds I have procured elsewhere.

From Mr. Dowdeswell, Steward to R. B. Sheridan, Esq., Frampton Court.—October 23, 1853.

The Grass Seeds have turned out uncommonly well this season, and we have some very fine crops of Turnips, Swedes, and Mangold Wurzel.

From the Rev. Joshua Bennett, Cowersham Parsonage.—Feb. 1, 1853.

Messrs. SUTTON & SON'S Permanent Grass Seeds, in less than three months, has presented a most luxuriant herbage, forming a striking contrast to the self-sown turf around it.

From N. Manby Power, Esq., the Hill Court, Ross, Herefordshire.—April 2, 1853.

The Grass Seed sent has answered very well, and is almost a sward already.

From Rev. J. W. Knife, Woodford Rectory, Dorset.—Feb. 16, 1853.

The Grass Seed I had in the spring has given very great satisfaction.

From Rev. Robert Hawthorn, Stapleford Lodge, near Cambridge.—October 31, 1853.

I was very much pleased with the Grass Seeds which you sent me; the Grass sprang up quickly and covered the field well.

In several of the above instances the land laid down was heavy clay, and others so poor and gravelly as to be quite unprofitable as arable land. Our present prices are from **24s. to 30s.** *per acre, as see above.*

We have also a superior Stock of Turnip Seeds, Mangold Wurzel, Carrot, and other Agricultural Seeds, Catalogues of which will be forwarded on receipt of one penny stamp.

JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

Goods Delivered Carriage Free.

EDWARD GEORGE HENDERSON AND SON, Wellington Nursery, St. John's Wood, begs to recommend the following:—

GLOXINIA DUKE OF WELLINGTON.—A rich velvety scarlet, of stout substance, the throat shaded with violet, and slightly spotted with white; flowers very large and conspicuous. Price 7*s.* 6*d.*

GLOXINIA LADY FRANKLIN is a plant of stout robust habit: flower extra large; rose, shading to pink, slightly spotted with white in the throat. Price 7*s.* 6*d.*

GLOXINIA LEONIE VAN HOUTTE.—Can be highly recommended as the most distinct variety that has been introduced for the last two years; the colour is of a delicate pink or peach, with a white centre, the white extending all round the throat from the base of the flower to the margin of the tube. Price 5*s.* and 7*s.* 6*d.* each.

ACHIMENES CHERITA.—A new species from Mexico, distinct, of a dwarf, spreading, free habit of growth, good foliage, and a Campanula-shaped flower of a light blue. It is a plant possessing great merits, very attractive, and should be introduced into every collection. Price 5*s.* and 10*s.* 6*d.* each.

ACHIMENES SIR TRECHERNE THOMAS.—A large rich coloured flower, fimbriated (some will say it is a carmine, others a crimson or rosy purple; we do not, however, know ourselves what colour to call it, but it is the best Achimenes we possess); habit excellent, robust, and dwarf, a free abundant flowerer, and one that will supersede a dozen other varieties that have hitherto been cultivated.

N.B. Any or all of the above forwarded post free, and the usual discount to the trade.—March 4.

MAY'S PARAGON CABBAGE, AND
MAY'S MAGNUM BONUM LETTUCE.

THE Subscriber, in offering the above for the first time, guarantees it to be the finest Cabbage in existence; of dwarf habit; has never been known to run; attains a large size (having been grown to the great weight of 28lbs.); of a most beautiful green, and boils tender as Asparagus, which it continues to do throughout the season; in flavour is as far superior to the ordinary Cabbages of the day as they are to the old Drumhead Scotch. In ¼ oz. packets, 1*s.* each, free by post. The usual allowance to the trade.

MAGNUM BONUM LETTUCE.—This incomparable summer Lettuce is also offered for the first time for sale, and in consequence of the impossibility of seeding it in the open air, the whole having been grown in pots under glass, the stock is exceedingly limited. In form it resembles the Maltese, only a little more upright; as crisp as the Paris Cos, never runs to seed, and has been grown to the amazing size of 4 feet in circumference. In packets, 1*s.* each, free by post.

Vegetable and Flower Seeds of the best quality. See Advertisement in the *Gardeners' Chronicle* of January 28.

Address all orders and communications to HENRY MAY, the Hope Nurseries, near Bedale, Yorkshire.

BASS AND BROWN'S SEED AND PLANT LIST free by post for three penny stamps.

COLLECTIONS OF VEGETABLE SEEDS.

The following comprise the best in cultivation, including several new sorts of first-rate quality:—

	£	s.	d.
No. 1, Collection for a large garden, for one year's supply	3	0	0
No. 2, Collection in smaller proportions	2	0	0
No, 3, Collection, ditto	1	5	0
No. 4, Collection of choice kinds for a small garden ...	0	15	0

If any sorts of Vegetables are not wished for, enlarged quantities of others will be sent to make up the amount.

The list of quantities of each sort supplied in the No. 1, 2, and 3 Collections are contained in the General Spring Catalogue.

For a few choice new Vegetables, see *Gardeners' Chronicle* of Feb. 13th and 27th, advertised.

FLOWER SEEDS—BEST ASSORTMENTS, free by post.

The Catalogue gives colours, heights, months of flowering, hardiness, duration, and much descriptive information of time of sowing, and other treatment.

	s.	d.
100 varieties select showy Annuals, which will include the beautiful new Leptosiphon luteum, Calceolaria chelidonioides, Nemesia bicolor, fine new varieties, splendid Prize Asters, Stocks, Zinnia, &c. &c.	15	0
50 varieties, including new, 8*s.* 6*d.*; 30 varieties ditto, 5*s.* 6*d.*; 20 varieties ditto	4	0
20 varieties best Dwarf Annuals, in large packets, for filling beds on lawns, 7*s.* 6*d.*; 12 do.	5	0
20 vars. choice Greenhouse Annuals, including the new Gomphrena aurantiaca, Salpiglossis atrosanguinea, new Portulaccas, Rhodanthe, Thunbergia, Phlox Drummondi, &c., 7*s.* 6*d.*; 12 varieties, including new...	5	0
20 vars. choice Greenhouse Perennials, including very fine and new Calceolaria, Cineraria, Fuchsia, Petunia, Verbena, Chorozema, Calendrinia umbellata, &c. ...	10	6
12 varieties ditto ditto	7	6
20 vars. Hardy Biennials and Perennials, including very choice Antirrhinum, Gladioli, Heartsease, Mimulus, Dianthus, Brompton and Emperor Stock, &c., 7*s.* 6*d.*; 12 varieties ditto	5	0

The following we beg strongly to recommend as saved from collections of first-class flowers, in packets as follows:—

	s.	d.
Calceolaria, very choice, 1*s.*; extra superb, from fine selected flowers	2	6
Cineraria, very choice, 1*s.*; extra new and choice from our superb collection	2	6
Fuchsia, new and choice, from our superb collection ...	1	0
Geranium, extra choice and new, from our superb collection	2	6
„ Scarlet, from our choice collection	0	6
„ Fancies, from our beautiful collection of best varieties	1	6
Gloxinia, choice, 6*d.*; extra, from our superb collection ...	2	6
Petunia, new and choice, from our superb collection ...	1	0
Verbena, very choice, 1*s.*; extra, from our superb collection of new varieties	2	6
Antirrhinum, choice, 6*d.*; from new of our superb collection	1	0
Carnation and Picotee, from collection of 400 vars	2	6
Gladiolus, fine mixed early, 6*d.*; from choice named of our superb collection	1	0
Iris, English vars, fine, 6*d.*; best of our superb collection...	2	6
Pansy, extra choice, from a first-rate collection	1	0
Potentilla, very choice, 1*s.*; extra, from our very beautiful collection	2	6
Ranunculus, from our superior collection	2	6
Auricula, from a first-rate collection	1	0

A FEW VERY CHOICE NEW FLOWER SEEDS.

	s.	d.
Leptosiphon luteum, fine orange colour; this very beautiful annual we would recommend, from its dwarf habit and novelty of colour, as a most attractive object for massing, packets, 1*s.* and	2	6
Linum grandiflorum rubrum, new crimson Flax	1	6
Nemesia bicolor, white and blue, very showy and attractive half-hardy annual, height 9 inches, beautiful for massing	0	6
Calceolaria chelidinoides, ex., clear bright yellow, fine for massing on lawns; the mouth being closed, it is not injured by wet	1	0
Lobelia Limburgensis, a new perennial variety from Prussia, extra	1	0
Portulacca aurantiaca, new orange, 1*s.*; nova rosea ...	1	0
Sweet William, very choice striped French	0	6

For a large number of new Flower Seeds, see advertisement in the *Gardeners' Chronicle* of Feb. 13th and 27th.

CHOICE IMPORTED SEEDS.

	s.	d.
24 superb varieties Dwarf German Stocks, 4*s.*; 12 varieties	2	6
Mixed, in 40 superb varieties, per packet ... 6*d.* to	1	0
Choice new brimstone, 6*d.*; dwarf carmine	0	6
*Fine new French, straw colour	1	0
10 Superb varieties, new large flowering	2	6
18 „ Wallflower leaved, or Prussian ...	3	6
New white Wallflower leaved, very dwarf and fine, per packet ... ... 6*d.* to	1	0
6 Superb varieties Brompton Stocks	1	6
7 „ Emperor Stocks, lasting more than 4 years, and blooming 2 or 3 times a year	2	0
New White Emperor, very choice, per packet	1	0
12 Superb varieties German Aster	2	0
12 „ Globe-flowering Aster	2	0
12 „ Pyramidal Aster	2	0
12 Very fine French Pæony, flowering varieties; these are extraordinarily fine	5	0
Mixed do., per packet	1	0
6 Superb varieties Zinnia elegans	2	0

And other fine Imported Seeds. See Catalogue.

☞ Goods CARRIAGE FREE with orders of 20*s.* and upwards to London, Ipswich, Norwich, or any Station on the Line.

Remittances are requested with orders from unknown correspondents. Post-office Orders to be made payable to BASS & BROWN, or to STEPHEN BROWN.

The Autumn and Spring Catalogues supplied free by post for three penny stamps each, the cost of which may be deducted from orders sent.

BASS & BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

ESTABLISHED ABOUT HALF A CENTURY.

PINUS SABINIANA,
THE GREAT HOOKED CONE PINE OF CALIFORNIA.

PETER LAWSON AND SON, Edinburgh, have just received from San Francisco a small consignment of Seeds of this fine Hardy Pine. Price 2*l.* 2*s.* for 100 selected Seeds, free by post. They were gathered last autumn, and are in excellent condition and well grown—the seeds measuring about 1 inch in length. Being perfectly hardy, they may be sown in a dry sheltered situation in the open air.—Edinburgh, March 4.

PRIMULA SINENSIS MAGNUM BONUM.—Was raised by Mr. Hayes, of Edmonton, by whom it was named and exhibited at the Horticultural Society's Rooms in Regent Street, the entire stock of which we purchased. The colour is far superior to the finest fimbriated purple variety; indeed, it has the richest shading of purplish crimson one can imagine. The eye is large and very conspicuous, of a beautiful yellow. The fimbriation of the flower is so fine that it has more the appearance of a double flower. The habit of the Plant is very robust and vigorous; the leaves have a remarkably stout footstalk with thick leathery foliage, and instead of the plant degenerating after the first season's flowering the fimbriation of the flower is much improved and the foliage of a handsome formation. One surprising feature of this plant is, that the Seedlings have all flowered correctly for three generations. Young Plants are now ready for delivery, price 10*s.* 6*d.* each.

N.B. On account of the seed being sown late, the plants are too small to be allowed to flower this season, as the consequence would be a very poor flower, not distinguishable from the ordinary varieties, but the plants should now be potted and grown on freely from this time for the ensuing winter, by which time they will produce splendid specimens of the most gorgeous coloured flowers in cultivation.

E. G. HENDERSON & SON, Wellington Nursery, St. John's Wood.—March 4.

GERMAN DOUBLE DAISIES.—A fine healthy stock of the above unique Flower is now offered to the Public. It is very novel and distinct, and such as will give all purchasers satisfaction. Out of the 100 imported varieties, 50 of the most striking and best flowers have been selected, and can be sent out from one dozen plants, and upwards. These Daisies surpass everything for making edgings to flower beds, &c., and are quite a novelty of their kind; price 3*s.* 6*d.* per dozen, postage and package free; or 1*l.* 1*s.* per hundred, hamper and package free.

Also a fine stock of MYOSOTIS VANGLEEKI, or the new improved Forget-me-Not, well adapted for rock-work or making single beds; 2*s.* 6*d.* per dozen, postage free; 15*s.* per hundred, package free.

SWEET WILLIAMS.—A fine stock of very select and striking varieties 2*s.* per dozen, or 10*s.* per hundred, package free.

CHOICE HOLLYHOCK SEED saved from all the best and latest varieties yet sent out; 1*s.* 6*d.* per packet.

SEEDLING ANTIRRHINUM SEED, all from striped and spotted flowers, and will give every one satisfaction; 1*s.* per packet.

GERMAN ASTER SEED, saved from all first prize flowers 1*s.* per packet.

STRAWBERRY PLANTS.—This is an excellent opportunity for those to plant who may have neglected to do so last autumn. Victoria, 5*s.* per 100; Prolific, 3*s.* 6*d.* per 100; Eleanor, 3*s.* 6*d.* per 100; Surprise, 3*s.* 6*d.* per 100; Cremont's Perpetual, 5*s.* per 100; and many other leading varieties, package free. The above named will be sufficient to give a supply of fruit the whole of the Strawberry season, being the earliest and latest varieties.

CUCUMBER and MELON SEEDS can be still supplied in varieties, and price, as advertised on the 18th inst. On receipt of a money order, or penny postage stamps, the whole, or any part of the above, will be immediately forwarded.

EDWARD TILEY, Nurseryman and Seedsman, No. 14, Abbey Churchyard, Bath, Somerset.

CEDRUS DEODARA AND ARAUCARIA IMBRICATA.—The beauty and unique character of the above hardy and most ornamental of all Evergreen Trees are too well known to admit of any comment. Our plants are grown within 500 yards of the wash of the Sea, in this the most eastern point of England, and consequently fully exposed to the gales of the North Sea and German Ocean, which they stand with impunity; it is, therefore, obvious to noblemen and gentlemen who purpose planting their Marine Villas and other exposed situations, that they will not meet with that disappointment so frequently attending plants reared in milder counties. We submit the following scale of prices for robust, handsome, and well-formed plants, either in or out of pots:—

CEDRUS DEODARA.

	Per dozen.—s.	d.		Per dozen.—s.	d.
4 to 6 inches	6	0	2 to 2½ feet	30	0
12 to 15 inches	12	0	3 feet	42	0
1½ to 2 feet	20	0	3½ to 4 feet	60	0

Large specimens, 15*s.* to 21*s.* each.

If 100 or more of the above be taken, a considerable reduction will be made.

ARAUCARIA IMBRICATA.

4 inches	Per doz. 6*s.* 0*d.*	1½ to 2 feet	Per doz. 60*s.* 0*d.*
1 foot	„ 30 0	2 to 2½ feet	„ 80 0
1 to 1½ foot ...	„ 42 0	Large specimens up to 4 feet.	

For particulars of their Collection of Conifers, see Advertisement of October 22.

Catalogues will be forwarded free on application. Orders of 2*l.* and upwards are delivered Carriage Free to London or Hull, or to any Railway Station within 150 miles of the Nursery.

YOUELL AND CO., Royal Nursery, Great Yarmouth.

The Gardeners' Chronicle.

SATURDAY, MARCH 4, 1854.

MEETINGS FOR THE ENSUING WEEK.

MONDAY, March 6	Entomological	8 P.M.
	British Architects	8 P.M.
	Chemical	8 P.M.
TUESDAY, — 7	Horticultural	3 P.M.
	Linnean	8 P.M.
	Civil Engineers	8 P.M.
	Pathological	8 P.M.
WEDNESDAY, — 8	Literary Fund (Anniversary)	2 P.M.
	Medical (ditto)	5 P.M.
	Society of Arts	8 P.M.
	Geological	8 P.M.
	Graphic	8 P.M.
	Pharmaceutical	8½ P.M.
	Royal Soc. of Literature	8½ P.M.
THURSDAY, — 9	Antiquarian	8 P.M.
	Royal	8½ P.M.
FRIDAY, — 10	Astronomical	8 P.M.
	Philological	8 P.M.
	Royal Institution	8½ P.M.
SATURDAY, — 11	Royal Botanic	3½ P.M.
	Medical	8 P.M.

MR. LOWE'S ingenious application of COLLODION to horticulture (see p. 84) is one which may lead to more important results than even its author anticipates; for it is a substance easy to prepare, and applicable under circumstances in which no other known substance is available. Its properties are wholly innocuous, so that living tissues are in no degree affected by it injuriously. It dries with such

rapidity that parts treated with it may be secured while held in the hand of the operator. It is practically indestructible, as is shown by the fact that on cuttings being taken out of the ground at the end of a month the collodion was quite as sound as when first applied. It is impenetrable by water. Moreover, while it forms an impermeable layer, or a tough firm adhesive plaister, it is in its nature so yielding as to offer no impediment to the distension of tissue or the penetration of roots. No other known substance, applicable to horticultural purposes, possesses the same qualities. If the discovery of caoutchouc furnished a new arm to surgery, so in like manner collodion promises to give the gardener a new power which any man may wield.

Mr. LOWE's experiments were chiefly directed towards propagation. Believing that the great difficulty attendant upon the multiplication of plants by cuttings arises from the tissues rotting by the excessive introduction of water, which the cuttings cannot decompose, or throw off as vapour, it occurred to him that if the fresh end of a cutting were smeared with collodion the injurious access of water would be cut off, and the risk much diminished. The result of his experiment confirmed his anticipations. Out of 26 collodionised cuttings of stove plants 23 grew, while only 12 out of 26 grew when the collodion was omitted. In like manner, of 33 collodionised cuttings of greenhouse plants 23 grew, but only 11 out of the same number took in the absence of the collodion. Similar results attended other trials. It is probable that the failures in the process were ascribable to what seems to be an imperfection in his process. If instead of merely covering the cut *end* of the cutting with collodion, he had in some cases covered the cutting itself, as far as it was plunged in the soil, he would perhaps have had still greater success. There are two kinds of cuttings which are likely to demand this treatment—the one succulent or very *soft* plants, which absorb abundantly through their skin; and the other *hard-wooded* plants, of little substance, which become exhausted by the drying-up of their organizable matter, before roots can be formed. And upon looking to the details of Mr. LOWE's experiments this supposition seems to be confirmed, for the only three failures among his stove cuttings were 2 Gloxinias and 1 Achimenes, both very *soft* plants; and the ten failures among greenhouse plants were 1 Boronia, 5 Polygalas, 1 Epacris, *hard*—with 1 Swainsona and 2 Plectranthus, *soft*. We do not insist upon this theory, but it seems to deserve examination.

The other application of collodion was to stop bleeding, which was readily effected by smearing wounds, immediately, with the substance. To this operation, the difficulties attending which all gardeners well know, the new substance seems admirably adapted, by reason of its adhesiveness, its impenetrability, and its excessive toughness. Whether it will stop the bleeding of Vines, Walnuts, and similar trees requires to be ascertained, and we trust will this year be made the subject of experiment.

For grafting delicate subjects it will probably be found more valuable than even for cuttings, inasmuch as it renders a ligature unnecessary. Instead of tying a piece of bast round a scion to hold it in its place, it seems to be only necessary to paint the junction with collodion two or three times, in order to ensure the immobility of the scion; and if a good part of the surface of the latter is also so protected, the chance of success must be greatly increased. Herbaceous grafting may be expected to be rendered far more easy of execution by this method.

It is also a question whether it may not be advisable to paint with collodion valuable cuttings sent to the Colonies. The great difficulty with them is to prevent their drying, against which damp Moss, liable on the one hand itself to dry and on the other to become mouldy, or India-rubber, are now employed as preservatives. They, however, answer imperfectly, and it is worth ascertaining whether a good coat of collodion would not be far better.

Intelligent cultivators will not fail to perceive other means of applying this substance with a chance of success, and we hope to hear, in the course of the coming season, of many trials of it having been made under various circumstances. Any chemist or surgeon can supply ether and gun cotton, the materials from which collodion is prepared, and, we have no doubt, would willingly explain how the latter is to be made; for made it must be as it is wanted, the rapid evaporation of the ether rendering it impossible to keep it prepared for use.

IT is reported, upon what we believe to be good authority, that the deputy surveyorship of the FOREST OF DEAN, which has so long been vacant, is at last filled up by the appointment of Mr. JAMES BROWN, the successful manager of Mr. DUNDAS's woodland property at Arniston. Should this rumour prove to be well founded, and if Mr. BROWN is indeed placed in charge of this forest, with such support and authority as he has a right to expect, and as he must have if it is to be reformed, we may then hope to see a rational system of management introduced into the rest of the Royal woods, and a respectable income permanently derived from them, in return for the vast sums they have cost the country.

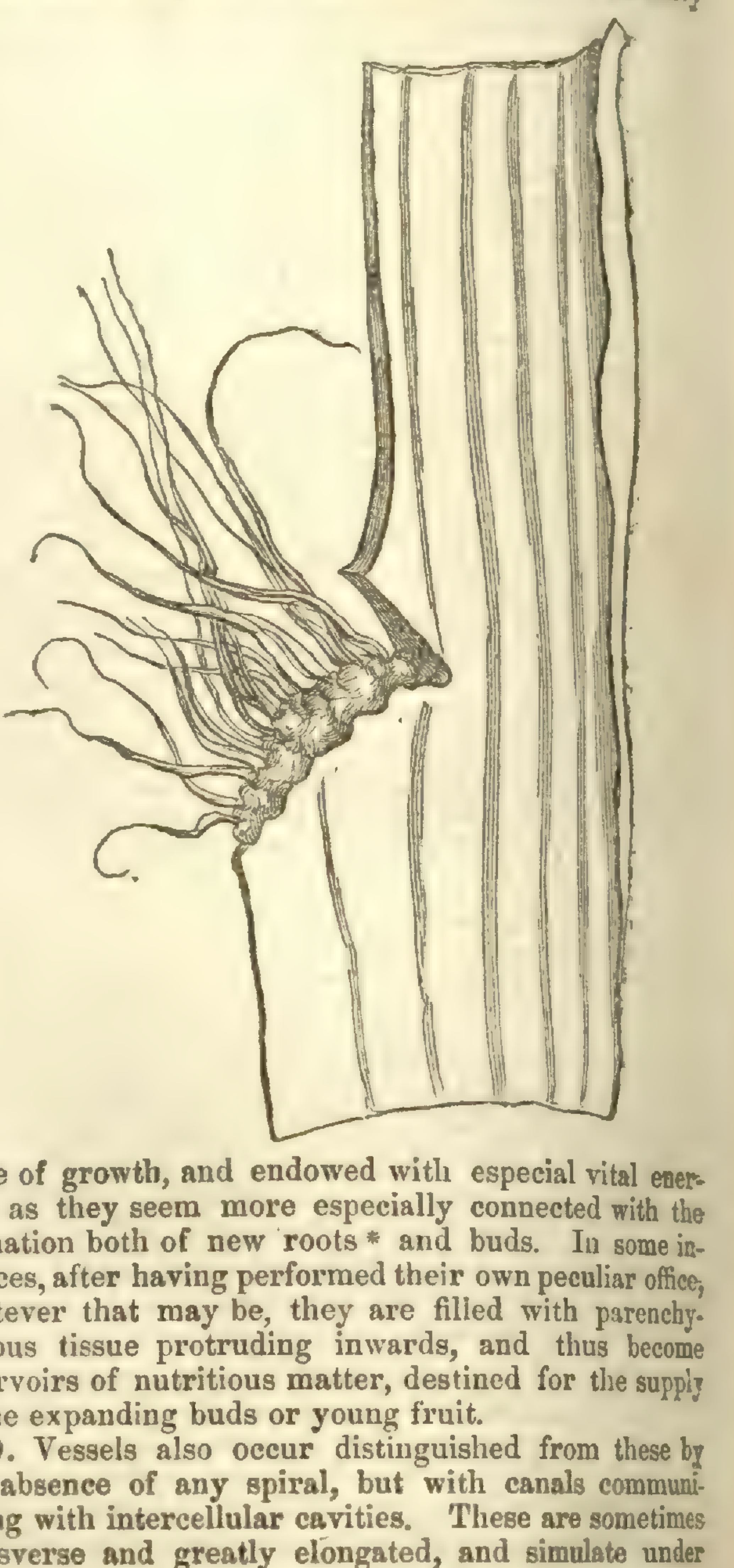
But while we receive with satisfaction this admission on the part of the Treasury that the previous system of placing public property in the most incompetent hands they could discover, is no longer to be persevered in, we must not conceal our conviction that the deputy surveyors in charge of other forests will never be able to fulfil the expectations entertained by those who are familiar with the management of woodlands. All that we have read or heard of them, with one exception, leads irresistibly to the conviction that, even supposing them to be animated by the best spirit, they do not understand the duties with which they are charged. They had no acquaintance with forestry when appointed; they have become accustomed to a miserable routine, out of which inveterate habit forbids their escape; and we fear there is, we will not say no hope, but, no possibility of their amendment. We wish them no harm. They are to be pitied as much as blamed, for they have been placed in a position of insurmountable difficulty by injudicious patronage. But such considerations must not shut our eyes to the injury the public sustains from their remaining in employment. Surely it would be better to allow them to retire upon full pay than to continue in their present offices. Their trifling salaries are of no moment, for the Crown loses infinitely more by retaining their services; and it is only by their removal, to be replaced by efficient men, that the Royal Woods and Forests can be regenerated.

A correspondent tells us that Mr. EDWARD MACHEN, formerly deputy surveyor of Dean Forest, has printed a vindication of his management, while in office. Such a document would be interesting, and for Mr. MACHEN's own sake ought to be placed in the hands of those who have expressed their dissatisfaction upon this subject. For ourselves we are not a little curious to know in what way the writer contrives to explain away the official revelations which we formerly described, and which immediately led to his resignation.

VEGETABLE PATHOLOGY.—No. IX.

27. THE bast-cells consist of extremely elongated and occasionally branched tissue, forming distinct bundles, in the bosom of which arises the peculiar tissue known by the name of vascular. They form when of sufficient length the threads which give the economic value to flax and hemp. They elongate with the growth of the part in which they are developed without forming new cells. Their walls are often greatly thickened, and exhibit simple tubular punctures. They often contain coloured milky fluid, and occasionally more solid matters in suspension.

28. Besides the layers of additional matter of which we have spoken, there is another kind of deposit by which the cell walls are greatly modified. It is very probable, indeed, that a spiral deposition takes place in the construction of the layers of which cell walls in general are composed, as is very visible in the bast cells of many plants in which spiral folds or lines are exhibited crossing each other so as to make a network from the contrary direction of the arrangement in two consecutive layers.* But besides these layers, there is a peculiar deposit, often of a green hue, and of a different chemical nature, which in many cases assumes the form of a continuous spiral thread, either simple or compound. By easy gradations, which it is not necessary to enter upon here, the volutions of the spiral form perfect rings, or, by the confluence and anastomosing of two or more threads, reticulated tissue. These cells, placed end to end, ultimately form, by the more or less complete † absorption of their dissepiments (whether horizontal or oblique), a continuous tube, in which state they constitute true vessels. Cells, however, occur in other and exposed situations containing perfect spirals, as in the seeds of *Maurandya* and *Collomia*. When young, they can scarcely be distinguished from the immediately surrounding cells; but soon after the formation of the spiral deposit, their protoplasm entirely vanishes, and they contain merely air. There is little doubt that they are peculiarly active in an early



stage of growth, and endowed with especial vital energies, as they seem more especially connected with the formation both of new roots * and buds. In some instances, after having performed their own peculiar office, whatever that may be, they are filled with parenchymatous tissue protruding inwards, and thus become reservoirs of nutritious matter, destined for the supply of the expanding buds or young fruit.

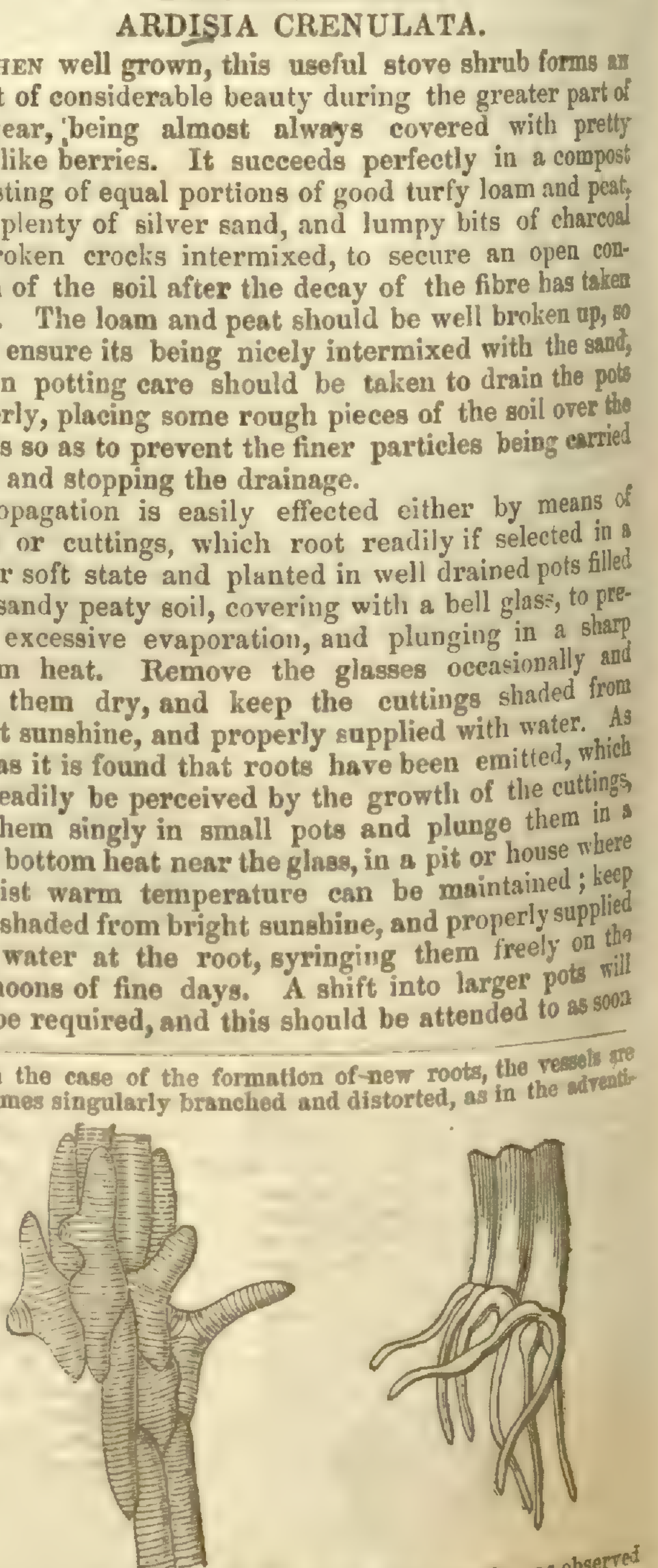
29. Vessels also occur distinguished from these by the absence of any spiral, but with canals communicating with intercellular cavities. These are sometimes transverse and greatly elongated, and simulate under superficial observation some modification of spiral vessels. These are often distinguished from spiral vessels by the name of ducts.

30. True pores penetrating the cell walls are very rare. They exist, however, in the spiral cells of *Sphagnum*, and in the dissepiments of vessels, as mentioned above. In either case they arise from partial absorption of the membrane. *M. J. B.*

* In a piece of drift wood belonging to some Conifer picked up by Capt. Inglefield, R.N., at Lake Laura, on the western side of the upper portion of Wellington Channel, many of the bleached woody cells exhibit a spiral structure, exactly like that of bast cells. In some cases there is only a single spiral, in others the spirals decussate each other. In one case the spiral arrangement consists of mere folds in the membranous wall. It may not be uninteresting to remark that spiral marks may sometimes arise from mere accident. In proof of this it may be mentioned that we have seen the surface of a roll of cotton, in consequence of a sudden fall, divided into the most regular diamonds by a double spiral line, so as to resemble closely the model of some fossil plant. Dr. Caspary has lately published in the "Botanische Zeitung" some remarks on the folds which sometimes occur in the walls of cells.

† The dissepiments, especially when horizontal, are frequently perforated with one or more orbicular pores, and sometimes with oblong fissures simulating scalariform tissue.

* In the case of the formation of new roots, the vessels are sometimes singularly branched and distorted, as in the adventi-



tious roots of the yellow Water-Lily where abortive as observed by Trécul, and in the production of roots from the fractured leaves of Celery.

ARDISIA CRENULATA.

WHEN well grown, this useful stove shrub forms an object of considerable beauty during the greater part of the year, being almost always covered with pretty coral-like berries. It succeeds perfectly in a compost consisting of equal portions of good turfy loam and peat, with plenty of silver sand, and lumpy bits of charcoal or broken crocks intermixed, to secure an open condition of the soil after the decay of the fibre has taken place. The loam and peat should be well broken up, so as to ensure its being nicely intermixed with the sand, and in potting care should be taken to drain the pots properly, placing some rough pieces of the soil over the crocks so as to prevent the finer particles being carried down and stopping the drainage.

Propagation is easily effected either by means of seeds or cuttings, which root readily if selected in a rather soft state and planted in well drained pots filled with sandy peaty soil, covering with a bell glass, to prevent excessive evaporation, and plunging in a sharp bottom heat. Remove the glasses occasionally and wipe them dry, and keep the cuttings shaded from bright sunshine, and properly supplied with water. As soon as it is found that roots have been emitted, which will readily be perceived by the growth of the cuttings, pot them singly in small pots and plunge them in a brisk bottom heat near the glass, in a pit or house where a moist warm temperature can be maintained; keep them shaded from bright sunshine, and properly supplied with water at the root, syringing them freely on the afternoons of fine days. A shift into larger pots will soon be required, and this should be attended to as soon

as it is found that the roots have reached the sides of the pots. Replace the plants in their former position, and continue the same treatment till towards October, when the atmosphere should be kept cooler and less humid, and a freer circulation of air afforded, to ripen the wood and induce a state of rest. Be careful not to overwater during the winter months, and place the plants in an airy part of the stove; or any situation near the glass, where a temperature of from 45° to 50° is maintained, will do very well. Towards March, place the plants in growing circumstances, and as soon as they show indications of starting into growth, examine the state of the roots, and if these are active give a liberal shift, clearing away sodden soil from the balls. If the plants can be plunged in a gentle bottom heat, this will greatly assist in inducing a vigorous root action, but be careful to keep them near the glass, in order to secure strong robust growth. Beyond a stake to keep the leading shoot straight, very little attention will be required in the way of training, but if any of the side branches should incline to grow too rapidly for the others, these should be stopped. Keep the plants properly supplied with water, afford them a moist humid warm atmosphere, with a slight shade from the midday sun on bright days, and attend to potting as may be necessary, and they will make rapid progress during the season. If very large specimens are desired, it will be advisable to remove the flowers as they appear during the first and second seasons' growth; but with good management they will be nice sized specimens, and may be allowed to flower the second season. When the berries get coloured the plants may be removed to a close corner in the conservatory, where they will contrast well with other plants; and if the temperature averages from 45° to 50°, they will remain in beauty during the winter and spring months; for such is the tenacity with which the berries hang upon the plants, that those of the current year follow close upon those of the preceding, and thus the plant is an object of interest the year round. It will be necessary to annually grow the plants in a warm moist situation, for which purpose they should be removed from the conservatory about April, and care must be taken to keep the foliage free from scars, clean and healthy. By occasionally repotting and supplying the specimens with weak clear manure water, they will grow to a great size, and last for many years. Few plants are more suitable for the amateur cultivator than this, for with a very little attention it may be grown in the greatest perfection, and it is at all times extremely ornamental, for even when no fruit is to be found on it, the deep green healthy appearance of its leaves will always command attention. *Alpha.*

TRADE MEMORANDA.

What is J. Swift of Nottingham? We know that a gentleman of this name lives in a cottage at 4, Leuton Square, Leuton Street, a very mean court; and that he favours booksellers, grocers, stationers, and nurserymen with extensive orders. What, then, is the real nature of his business?

Home Correspondence.

Forcing Seakale.—There are two points in Mr. Bundy's remarks on this subject (see p. 117), so much at variance with the principles and practice of good gardening, that I think they should not be allowed to pass unnoticed. He recommends 6 or 8 inches of soil to be put on the dung; and before laying in the plants, to cut away all large roots, &c.; thus removing the chief source from whence the organisable matter is to be drawn, and at the same time only providing 6 or 8 inches of mould for any new fibres which the exhausted roots may throw out. I have frequently found the new fibres upwards of 2 feet down, in beds made up, and the dung placed at the sides, the produce being as large and heavy as that grown from unremoved plants in the natural way. The plan recommended is largely adopted by the market gardeners who grow Seakale for the London markets, but with this important difference, they are very careful to take up the plants with as much root as possible, and to provide two or three times as much soil for their reception as recommended by your correspondent. *S. S., Deptford, Kent.*

Autumn Dried Potato Sets, v. the Disease.—The Italian method of preparing Potato sets (see p. 92), communicated to the Royal Agricultural Society by Lord Palmerston is no new idea. Several of your correspondents (and myself amongst them) have tried the plan with success, and the results have appeared in your columns. As it is possible there may be something new in my method of treating the sets, I send a couple of them as samples, and a few words of explanation. As soon as the Potatoes require skinning before use, I have, after washing, a portion of the head of each cut off, an inch from the long kinds, and seven-tenths of an inch from the others. These are laid for about a week, with the cut side downward, on a board, to allow the new cuticle, which Nature creates, to be formed before their subsequent exposure. They are then strung with a large darning needle, and the two-coloured packthread used in shops, in lengths of about 3 feet, and suspended in an airy, dry, hot, light place, and left until it may be necessary to place them elsewhere to secure them from the frost. I have found a greenhouse, hot enough for the Oleander to flower in, to answer the best. These of course require no removal in the winter. When the frost is past, they may be suspended in a warm room of the dwelling-house to give them additional forwardness. The result is, that what is called the "rest" is over, and the short, dark, leafy shoots are ready to start forth into growth. No great heat is required for this. I placed some heads of the Walnut-leaf Kidney, thus treated, in earth in a cool place, and the roots shot forth at once. The tubers of plants from sets thus treated are formed and nearly ripened before the malady attacks the leaves and stem. The two samples are portions of Regents, the most backward I could find, to prevent the buds being rubbed off by hard usage in their journey. If you will examine the lower eyes of the larger one, you will perceive that three or more small shoots are bursting from each. This is not desirable, one strong shoot being wanted. The portion cut off, therefore, is unnecessarily large. A thickness of five-eighths, or of seven-tenths, of an inch would have sufficed. *L. S.*

The Manetti Rose Stock.—Your correspondent "An Old Rose Amateur," is mistaken in supposing that the soil of our nurseries is "too deep and rich" for this stock. Happily it is deep, and vegetation flourishes nearly alike in all seasons; but it is hungry rather than rich, and I may say, almost destitute of organic matter. I have certainly had no experience with this stock on a "heathy waste," concerning which your correspondent's testimony may be valuable. But I should hope that few Roses are destined to bear and suffer on such a soil. As regards the "remarkable vigour" witnessed at Darlington, if your correspondent will refer to my evidence against his favourite, he will find this "remarkable vigour" to be the strongest point against it. It would really be a service to the Rose-loving community, if such of your correspondents who have tried this stock would furnish the results of their experience, with names and residences attached. It can be no interest to a nurseryman to decry it, as it is produced easier and at less cost than the Dog Rose. Truth is what we should aim at, and surely it should not be difficult to establish the matter beyond controversy, when we consider the length of time this stock has been cultivated, and the numbers who have grown it. *William Paul, Nurseries, Cheshunt, Herts.*

Fungi on Lawns.—Would you kindly favour me with your opinion in the following case:—Three years ago I filled up an old reservoir (which had been previously drained) with spent dyewood, loppings of trees, and all sorts of rubbish, to the depth of 6 or 8 feet; upon these I laid 3 or 4 feet of sand mixed with clay, and then a few inches of soil, on which I sowed Grass seeds. In the autumn of the first year some fungus appeared, which has increased every year, particularly at that season. I should mention that part of the lawn is on a slope, and the lower part on a dead level, which is generally damp; the fungus is seldom seen except on the lower part, and that part is also mossy. I thought this spring of taking up all the sods, bringing in a quantity of sand and clay, and making the slope regular throughout. My idea is, after the slope is formed, to lay on about 6 inches of cinder, then 1 or 2 inches of soil, and then to relay the present sods, for I cannot procure any fresh. Do you think this plan would answer? I hope that by laying the lawn dry I may get rid of the fungus; at present the Grass is quite spoiled, for the fungi come in thousands, from the size of a Pea to that of a saucer, some are even as large as a boy's head; the former a light yellowish fawn colour and the latter a deep purple. Will the sods contain seeds that will germinate? *J. M., Prestwich.* [We will not undertake for your plan answering. A better way, since the old wood which breeds the fungus is so far off the surface, would be to uncallow the wood and kill the fungus by drenching it with a solution of corrosive sublimate in water.]

Rain at Castle Hill, Devon, in 1853.—

	Inches.		Inches.
January	4.15	October	3.30
February	3.26	November	2.87
March	1.77	December	1.28
April	3.61		
May	1.91		38.93
June	5.30	For 1852	50.50
July	5.13		
August	3.07	Difference	11.57
September	3.28		

The greatest quantity which fell in any 24 hours was 1.17 inch, on the 3d Feb. and preceding night. The greatest amount in 12 hours was 0.94 inch, which also happened on the 3d of February. The next largest quantity in 12 hours was 0.72 inch, on the 24th of April. The greatest amount of cold was on the night of the 29th of December, when the thermometer fell to 9°, or indicating 23° of frost. We had also 15° of frost on the 22d of November. *A. Saul.*

Tally Pins.—Though the decimal mode of notching number-sticks has long been recommended, it has not yet driven out of use the primitive system of our forefathers. This doubtless arises partly from the inexpediency of altering a custom already established in a garden, but it is also partly caused by a want of simplicity and a liability to mistakes in most of the plans proposed. Noticing in another place ("Turner's Florist" for Jan., 1854) a system offered, which though certainly an improvement on Seton's, is still open to objection on the score of the similarity of the characters, I venture to recommend the accompanying method as much simpler and more legible. Twenty years' constant use have satisfied me that there is very little chance of mis-reading it, and as the characters have a (rude) resemblance to written numerals, they are easily remembered;—thus in writing, 8 is formed of two O's, 6 of an upright stroke and O, &c. This matter is of more importance to gardeners than might at first be supposed; for, for real every-day use, there is no tally-pin so convenient and so durable as a notched piece of Larch or Oak. *Walter Sang, Kirkaldy.* [We do not publish a cut of this, because we are of opinion that Seton's well-known plan is quite as good as Mr. Sang's, or that in the "Florist," and we abhor needless reform.]

Covering for Rustic Seats or Summer Houses.—However neat and appropriate a covering of Heath, Reed, or straw may appear to be for the roofs of rustic buildings, of the kinds just named, every one knows that there are many inconveniences attending the adoption of each of these materials. Birds, rats, and insects colonise in all of them; and when decay begins they are exceedingly difficult to repair. Larch bark, put on in sheets, is excellent for the purpose. It has many qualities to recommend it; it can readily be procured in large pieces, it is rustic in appearance, quiet in the tone of its colours, by no means rapid in decay, and a roof so covered may, when necessary, be easily repaired without leaving an unseemly patch. I have not entered into an explanation of the mechanical operations required in procuring and adopting it; those, I presume, are obvious enough. *Crayon.*

Planting Oaks.—Your correspondent, "W. B. A's." statement (see p. 70) is incorrect;—he says, "The most modern and best method of planting Oak and Larch on sheltered situations, is to have them put in at about 4 feet over all, the Oaks at 10 feet and the rest filled up with Larch. Now, it will require no learned arithmetician to tell that 4 and 4 make 8—that 8 and 4 make 12; and that, consequently, by planting Oaks, or any other trees, at 10 feet apart, and then filling up the space between with other plants, set at regular distances, the distance from plant to plant would not be 4 feet; by planting Oaks, however, at 12 feet apart, which is quite close enough, the intermediate spaces can be filled up with other plants at 4 feet apart. Might I ask some of your correspondents who have had opportunities of observing minutely the various systems of tree management practised in the royal forests, to favour the foresters of Britain with some account of the peculiarities belonging to those systems which have been found so baneful in their effects upon the forests in question. By exhibiting the errors committed in our Crown woods, foresters in general would be enabled to steer clear of mistakes of a similar nature. Woodmen of extensive practical experience, perhaps, might not be greatly benefited by statements of this kind; but as a considerable extent of private woodland property is entrusted to the management of persons almost wholly unacquainted with the science of arboriculture, such statements would be of great service to them, and of still greater benefit to their employers. *A. P.*

Lily of the Valley.—It may not be generally known that this may be successfully cultivated in pots for forcing year after year. It must have kind treatment; but to have it in flower in the greenhouse or conservatory from the month of January until its usual time of flowering in the open air well repays the little attention it requires. This may be effected by attending to the following system of management:—The roots should be taken up for potting as soon as the leaves have decayed, in order to allow time for the formation of roots previously to starting them into growth. The middle of December is a good time to begin forcing this Lily, and a succession of flowers may be kept up by taking a few pots into the forcing pit every three or four weeks, as they remain a long time in perfection. When the plants have done flowering, they should be removed from the greenhouse to a cold pit or frame, where they can have plenty of light and air; and as soon as they have completed their growth, they should be set on a partially shaded border, protected from cutting winds. They may remain there until the end of October or beginning of November, when they should again be placed in the cold pit until they are required for forcing. When the plants are taken into the forcing pit they should be plunged in a mild bottom heat, and entirely covered with loose leaves, to exclude light until the roots shall have become active, after which they should be fully exposed to light, and given plenty of air. Plants treated in this way will not require to be repotted until the second season after they have been removed from the ground. And when it is necessary to do so the soil should be carefully shaken from the roots, and the plants re-potted into pots of the same size as those they came out of, or larger, as may be found requisite. Five-inch pots will be found to be a very convenient size in which to grow the Lily of the Valley, and the soil most suited to its wants is composed of turfy loam, leaf-mould, and sand. *G. F.*

Exterminating Ants.—I have a Grass lawn of about three-quarters to one acre, which is so infested with ants that to cross it is unpleasant, and to stand or sit upon the sod is out of the question. With the hope of banishing them I have had it broken up, and it is at present planted with early Potatoes, on digging out which I wish to lay it down at once if possible. Can any of your correspondents tell me how I may dispose of these little invaders. Would ammoniacal liquor have any injurious effect upon them? I had hoped that breaking the ground would have destroyed them; but this is the second crop I have had in it, and to all appearance they are as numerous as ever. *S. B., Dublin.*

Pinus Pinaster var. maritima.—When it is generally known that this Pine thrives well on the sea-coast, how is it that kinds wholly unfit for the situation are continually planted there? On a recent visit to Hastings I was struck with the vigour, freshness, and beauty of a small group of this variety in a plantation on the new

London road, high above and fully exposed to the sea. There were at the same elevation, and similarly exposed, the Spruce Fir, the Scotch and Austrian Pines, and the common Pinaster, whose condition would move the most stoical to pity—stunted, moss-grown, and so brown that one might almost think they had been singed with flame —they presented a striking contrast with the former. For the sake of beauty, I could not help wishing these maritimas had been more abundant; and surely as a question of profit it would be a good speculation to make them so, as the value of land by the sea-coast would be considerably increased by efficient shelter. *William Paul, Nurseries, Cheshunt, Herts.*

Burnt Clay a Material for Walks (see p. 117.)—The expense of burning must necessarily be regulated by the high or low price of coal, and the abundance or scarcity of clay. I have had 500 loads or square yards burnt within these last three months, and they have cost upon an average 1*s.* 8*d.* per load. I paid 1*s.* per load for digging and burning the clay; and I found 10 tons of small coal for every 100 yards of clay: let it be remembered that the coal must be very fine, with the exception of 1 ton of large to start the fire with. The coal cost 7*s.* per ton, so that fuel and labour put together will amount to something like the above sum. When known, the process of burning is very simple, although there is a little secret belonging to it of which every one is not aware, for if the heap (like that of burning charcoal) is allowed to blaze, the clay is consumed and reduced to ashes, which are not better than common burnt earth. On the other hand, if once too much stifled success is at an end, for it is very seldom that the fire can be restored to a good burning state; therefore, should you be unfortunate in this way it will be advisable to light another fire. *Gomer, Redland, Bristol.*

Hoitzia coccinea (see p. 104).—I regret that I cannot give you a correct statement respecting the management of the Hoitzia, from which I sent you a specimen, as I have only been in my present situation about six weeks. Six plants of it were growing in the stove here when I came—three of them were old ones, which had been cut back; the best had at least 30 spikes of bloom on it, all quite as good as the one sent. The plants were at least 3½ feet high; they had been grown in 8-inch pots, in a mixture of loam, peat charcoal, and red pit sand. The plant from which the flowering specimen sent was cut had only three spikes on it; it had been grown in a 3-inch pot, and was about 18 inches high. I think, from the habit of the plant, that it might be very much improved by being stopped once or twice in the early part of its growth, which had not been done in this case. They are now all cut down, and are breaking at almost every eye. *J. A. F.*

Cypresses.—May not the "weeping Cypress," mentioned in the following extract from the journal of the late Captain Trower, of the Indian army, which was lately lent to me in MS., be the same as the Cupressus funebris discovered at a later period in China by Mr. Fortune?—"Neemla, October 19th, 1842:—We passed the day under the beautiful plane trees planted by the Emperor Baber. The garden boasts of a tree that I never saw or heard of before, a weeping Cypress, a most elegant tree; I brought away many cones from it. 21st October:—At Balabagh is another of the imperial gardens, in which are many trees planted by Baber himself. In it are two enormous Cypresses of peculiar beauty, and planted so close together that their branches entwine and most lovingly embrace each other. They are called from this circumstance by the natives 'Leila' and 'Mujnoon,' the names of the celebrated Eastern lovers." *W. C. T.*—[We are unable to answer this inquiry. Dr. Hooker, in one of his charming woodcuts, has figured a weeping Cypress at Doobdi, in Sikkim (I. 337), which we understand to be a portrait of a Cupressus funebris—not, however, wild here, but introduced into Sikkim from Tibet; p. 316.]

Irish Heating.—Mr. M'Sherry has set in my Vinery a single-cased heating apparatus, similar to that which was exhibited at the Crystal Palace in 1851, and approved of by you of late; he forms the upper cover of the flue, over the air case, of a plate-iron evaporating pan for water, 5 feet by 3, which, according to the fire, emits vapour or steam more or less. I shall be obliged by your informing me whether it would be proper to use the moisture the whole, or only a portion of the day, when the Vines are not flowering. When the water is out the pan gives off heat, and it is made so that a portion only can be covered with water; besides, there is in the warm air drain a long water pan, so that the air passing out may be recharged with moisture for what it lost in the heating process. Do you approve of the evaporating pan? *John Abell, Limerick.* [It is always desirable to have the command of water in the form of vapour, provided means exist of discontinuing it at will. So far as we can understand the plan described, it seems a good one, provided always that the evaporating pan is secure against splitting. Keep Vines moist by night, and leave them to themselves by day.]

Radishes from Constantinople.—We have had a letter from a friend of ours who has just been over to Constantinople and Varna, in which he states:—"When at Constantinople I saw some Radishes almost as large as Carrots. They were crisp, mild, and delicious. I tried to get some of the seed, but found the price was 1*s.* 3*d.* per drachm, or 20*s.* per ounce." Query. What sort could this be? *William E. Rendle and Co., Plymouth.*

Potting Plants.—I am of opinion that the depth of the generality of pots is not enough compared with their width; they are too shallow to allow of sufficient drainage being put in them, without which neither proper compost, caution in watering, nor any other attention will secure for the plant that healthy and vigorous appearance in which its beauty consists when not in flower. Now, in measuring a number of pots, I find upon an average that the depth is rather less than the width; for instance, a pot 12 inches deep is full that in diameter; now, after 4 inches are taken for drainage, over which there should be one inch of leaves or moss, 2 inches of coarse compost, and 1 inch more at least of a little finer soil, leaving 1 inch at the top of the pot for watering, it will be found that we have got just 3 inches to insert the ball in, and this leads us into two other errors, which are the result of the first, viz., the reducing the ball to 3 inches, which is mutilating the roots, or being compelled to give too large a shift, which does not suit many plants, more especially Heaths, Leschenaultias, Gomphlobiums, and other delicate growing plants. It will be found in large shifts that before the roots have half penetrated through the soil the latter gets stagnant and sour, the roots become sickly, disease soon makes its appearance in the collar of the plant, and that death is next to certainty. I have lost several valuable plants in this way, and on examining the ball I have found the lower part of it very dry, while the upper portion was quite saturated with wet. Now the reason is that the greatest portions of the fibry roots proceed downwards, and are found over the crocks starved to death, while on the other hand comparatively few are at the top, and consequently are not numerous enough to absorb the moisture. I therefore trust that in future potters will make their pots a little deeper. *Gomer, Redland, Bristol.*

Bees.—I have just lost a hive, not from cold—as they were alive and about lately, but from exposure to damp. At the time of the late gale the hive was blown over; the bottom got wet, so that the bees who descended to feed were unable to ascend; the "sealing" round the bottom of the hive was also broken up. Am I to clear away the bees lying at the bottom, dead (?), or leave them the chance of reviving? As they are offensive many must be dead; but those which remain high up between the combs may be alive, and if so the effluvia will kill them. Will some of your correspondents help a neoapiarian in difficulty? *Somerset, Feb. 28.*

Timber not a Profitable Crop.—Your leading article of the 28th Jan. will, doubtless, be so copiously replied to by correspondents confirming your denunciations of the manner in which the royal forests have been managed, that I fear any one taking up the cause of the forest officers will be liable to the charge of vindicating their mismanagement from personal motives alone. Be that as it may, I hope that those who charge them with a wasteful expenditure of the public money, or what is the same thing, neglecting to make the most of their trusts, will have the kindness to tell us what income woodland, in a general way, produces? I mean land that is producing timber. It would appear from your remarks that, as little timber fit for the royal navy has been supplied from the royal forests, their management must be bad. Now this statement requires some qualification; the great distance several of the forests are from the royal dockyards, or sea-ports from which the produce could be conveyed thither, acts as a barrier to deriving much profit from them; and the fact of the navy officers complaining of the quality of such timber as has been supplied to them, is a tolerable proof that the forests have been cut as severely as they could prudently be. But I do not regard that much. What I want to know is, "Has woodland in a general way proved itself to be a profitable investment for capital?" And have crops of Oak and other trees been as remunerating as those of corn and Grass? Until this is proved, we should withhold our censure from the forest officers. I have been many years connected with woodlands in several counties, and I have always found such a bulky commodity regulated in price by the local demand for it, but even in the districts where there was most demand, the return was never in proportion to what the same land would have commanded under agricultural crops. Observe, I allude to timber, and not coppice. Now, I ask, how is it possible for the Government officers to present a better balance-sheet? Doubtless, some neglectful manager may have deteriorated some part of the forests; and it is possible that some corrupt practices may have operated against the income being larger; but still I inquire, can woodland be made to pay, and where and when has it done so? I fancy our small landed proprietors would plant more if they were convinced of its being a profitable investment; and as many of them are tolerably shrewd observers of such matters, and generally well versed in cultivation of other things, crops of timber would be as common as crops of grain were they equally productive of a certain pecuniary return. If no one replies to your inquiries, I will, with your permission, add a little more hereafter, in confirmation of my views of woodland being only profitable under peculiar circumstances, such as on inaccessible places, &c. *L. M. N.* [If you will inquire of the agent of Mr. Dundas, of Arniston, you will learn that forests pay well—a clear profit of 40*s.* an acre, for instance. Nobody imputes corrupt practices to the surveyors, we merely complain of their utter incapacity. If you have read the remarks we formerly made with ordinary attention, you will find that your suggestions are not at all to the purpose.]

Botanical Garden at Palermo.—There is a beautiful building at the entrance with circular lecture room, in which there were students. The situation is lovely, but all situations are lovely here. Professor Tenore told me that the climate enabled him to grow everything; the Mespilus japonica he says is the most delicious fruit, except that which is the triumph of the garden, the Custard Apple, which ripens in it, and so do the Bananas. The Psidium they do not like. He introduced the Tangerine Orange (here called Mandarine) and now it brings in 20,000 ducats; he hopes to naturalise Bananas and Custard Apples. The Mespilus is sold in the markets in the season; they send Peas and Artichokes now as far as Genoa. There is a so-called stove, but there is never any fire in it, and all the doors and windows were open yesterday, though, for this country, it was not a warm day. He has several small greenhouses, and is going to fit up a place for Orchids. I find that it is in April that the burst of vegetation and flowers is to be. The Professor showed me a Stapelia found here, but he says that, and several other plants found here, are, in fact, African. He is busy hybridising his newly found Scillas, and promises to send you these, which are, he says, magnificent, finer than Peruviana, and with them the Orchids of Sicily, Crocuses, hybrid Amaryllis, and hybrid Crinums. He is lord paramount in the garden, for there is no one here who cares to interfere. The Bougainvillea had climbed over the immense house, and he tells me he has two others—one golden, the other red—probably that one which Humboldt mentions. *Extract from a Letter from Palermo.*

Wellingtonia.—Should not the scientific men of Europe entreat the Government of the United States to protect from destruction the few specimens that remain of their wonder of the vegetable world? It would be a sad thing if these giants, trees which have been (if the calculations are correct) thousands of years in attaining their present growth, should be at the mercy of any money-making speculator. If the ground on which they stand is not national property it should be purchased for the nation, in order to preserve them, and to form the nucleus of an arboretum worthy of the Union. *W. C. T., Wallington.*

Walters' Open Spade.—About three years ago I took a large piece of heavy land, and on going to it at various times to see the men digging it up, it struck me that the tool they used, the old common flat spade, might be improved in such a manner as to lessen the strength required to force it, clodded with mud, into the soil; and the time taken up in cleaning appeared to me of much importance. This caused me to invent an open spade. The first I had made differed from that I now use; thus the plate or pit at the point was only 1 inch deep, which gave way and broke at the corners. I had another made with the plate 2 inches deep, which answered better, but in this one I could see room for improvement. I had another made with round bars at the sides, instead of square bars; this answered to my entire satisfaction, and now I feel much pleasure in recommending to the gardening world an improved spade, of such construction as may be used in moist weather, or in the most tenacious soil; from morning until evening, without any cleaning; and it is well adapted for bringing up portions of subsoil, which is so essential to good cultivation. My contrivance is fast becoming a favourite tool in my locality; some of them have been taken from here to America, Ireland, and Wales, where I have no doubt their value will be recognised. The labourer looks with pleasure on his new spade, which relieves him from much of his hardest labour; and, in addition to its ease of working, I think that this spade will effect a saving of something like ten per cent. Their cost is from 2*s.* 6*d.* to 3*s.* each, and they can be made by almost any common smith.—*S. Walters, Hilperton, near Trowbridge, Wilts.*—[This spade appears to be nothing more than an open square frame, three sides of which are made of five-eighths of an inch iron bar, and the fourth side, or that which enters the ground, consists of a steel plate, 2½ inches in width, all the rest of the plate of the spade being absent. As to size, that is left to taste; but a spade 12 in. by 7 in. is stated to be a full-sized one. The bends in the handle and plate are about the same as those in the ordinary spade.]

Yellow Rose.—A paragraph about a yellow Rose in the *Gardeners' Chronicle* of the 26th November last has recalled to my recollection that I had gathered the plant in India, and I have the pleasure to enclose you a specimen for your herbarium, by means of which you will probably be able to ascertain to what species it belongs. The specimen sent was gathered in the district of Kishtwar, in the interior of the Punjaub Himalaya, in the valley of the Chenab river, at an elevation of about 8000 feet, apparently wild, but so near a village that I had some doubts on the subject, especially as I saw it once only, and afterwards met with the same species cultivated and double in Ladakh. A yellow Rose has, however, long been known as indigenous in the Thibetan district of Lahul, higher up the Chenab river than the spot where I got the specimen sent. I first heard of it from my fellow traveller, Major Cunningham, who was the first after Moorcroft to traverse that wild region, and it attracted the attention of every traveller who passes through that province at its flowering time. My specimens, if not wild, were doubtless imported from the upper parts of the valley. The species seems the same with one already in English gardens. There is also, in the Hookerian Herbarium, a specimen undoubtedly of the same species, from the Bakhtyari mountains, Persia, collected by Mr. Loftus. *Thomas Thomson, Kew.* [This is one of the Rubiginosa section; but we are unacquainted with it.]

Societies.

Linnean, *Feb.* 21.—The President in the chair. Specimens were presented of Ophioglossum lusitanicum, from the island of Guernsey, by the discoverer, Mr. G. Wolsey; and a small collection of Ferns from Moreton Bay, by R. Wakefield, Esq. Mr. Joseph Robson, of Whitehaven, was elected an associate. The following papers were read:—1. "Notes on some Ferns in the Wallichian Herbarium," by Mr. Thomas Moore. The Wallichian species to which this paper referred were the Prionopteris Farquhariana (Wall. Cat. 184), Sphæropteris Hookeriana (Wall. Cat. 775), and Davallia stipellata (Wall. Cat. 260). The first of these, which appeared to be unknown both to Presl and Fée, was stated to be the Matonia pectinata (R. Brown in Wallich's "Plantæ Asiaticæ Rariores"). In enquiring which of these names had precedence, the author referred to Sphæropteris barbata, as an analogous case, which also occurs in the "Plantæ Asiaticæ," where precedence is claimed for the herbarium name of Dr. Wallich, dating 1823, and catalogued in M.S., in 1828, over the name Peranema, of Don, legitimately published in 1825. This claim, strengthened as it is by the general adoption by botanists of Dr. Wallich's names, led the author to the conclusion that they were entitled to precedence; and according to this view, Prionopteris must supersede Matonia. Sphæropteris Hookeriana, Wall., was stated to be undoubtedly the Diacalpe aspidioides, Blume, distinguishable from true Sphæropteris by having sessile not stipitate sori. Restoring the Wallichian specific name, this was called Diacalpe Hookeriana. The Davallia stipellata, Wall., was identified with the Aspidium nodosum, Blume, the Acrophorus nodosus, Presl, and doubtfully with the Monachosorum davallioides, Kze. The fructification of this Fern, consisting of small heaps of spore cases at the apices of simple venules within the margin, and covered by roundish scale-like indusia attached by the base only, it was argued that it could not properly be associated with the Davallieæ, but should rank along with Cystopteris in a subsection of Aspidieæ, connecting that group with the Davallieæ through the genus Microlepia. The genera Acrophorus and Leucostegia of Presl, of the latter of which Presl himself says "Acrophoro affinissimum est," were held to be too closely allied to be kept apart, and the author therefore proposed to combine them, applying to the united group Presl's prior name of Acrophorus. The following species were communicated:—Acr. stipellatus (A. nodosus, Presl); Acr. immersus (Leucostegia, Presl); Acr. chærophyllus (Davallia, Wall., D. pulchra, Don); Acr. membranulosus (Davallia, Wall.); Acr. affinis (Leucostegia, J. Sm.); Acr. hispidus (Davallia, Heward); Acr. parvulus (Davallia, Wall.); Acr. jamaicensis (Davallia, Hook.). The attention of the author had been directed to the instance above referred to while prosecuting an attempt to arrange the genera of Ferns, so as to avoid alike the modern extreme of needless subdivision and the antiquated one of inconvenient aggregation. 2. "Note on the genus Ancistrocladus of Wallich," by G. H. K. Thwaites, Esq. Mr. Thwaites observed, that having had opportunities of examining the structure of the flowers of Ancistrocladus Vahli, as well as its fruit in various stages of development, he had been enabled to arrive at a more correct knowledge of their structure than appears to have been previously within the reach of botanists. The circumstance of the fruit in this genus being surmounted by the enlarged segments of the calyx had led to its being referred to the several families, Combretaceæ, Malpighiaceæ, and Dipteraceæ, from all which he stated it to be essentially different in its albuminous seeds; and he pointed out the Symploceæ as a group with which it seemed to associate better, agreeing therewith in its undivided exstipulate leaves, in the character of its inflorescence, in its persistent calyx, in its imbricated calyx and corolla, in the stamens being adherent to the base of the corolla, in its inferior ovary, albuminous seeds, and cylindrical [? clavate] embryo. From the Symploceæ, however, it was stated to differ in its scandent habit, in its calycine segments becoming enlarged, in its solitary erect ovule, and in the peculiar cerebriform structure of its copious albumen. With the Myristicaceæ and Anonaceæ Ancistrocladus seemed also to have some affinity, its young ovule recalling to mind that of Myristica, and the embryo not being very dissimilar in the two genera; whilst the scandent habit and uncinate ramuli give to it a considerable resemblance to Artabotrys. Mr. Thwaites concluded with a detailed generic character, partly drawn up from fresh specimens of A. Vahli, a plant which was stated to be abundant in the warmer districts of Ceylon, and owing to its abundant increase, by its roots, forming a very troublesome weed. Its Cingalese name is Gonawel or Gonapittanwel. The paper was accompanied by drawings illustrating the structure of the flowers and fruit of A. Vahli.

Notices of Books.

School Botany and Vegetable Physiology; or, the Rudiments of Botanical Science. By John Lindley, Ph.D., F.R.S. A new edition, 8vo. Bradbury and Evans. Pp. 162.

The favourable reception given to this work by the public has enabled the proprietors to increase largely the matter contained in the present edition, without augmenting the price. Between 60 and 70 woodcuts of common plants, and about the same number of new pages, have been added, among the latter of which will be found a chapter entitled "Physiological Aphorisms, or the Rudiments of Practical Physiology." The former editions were confined to Systematical Botany, physiology finding no place in them. That deficiency is now supplied. The foundation of the aphorisms was the author's "Outlines of the First Principles of Horticulture," a little work which has been out of print for many years; but they have been curtailed, much corrected, and adapted to the purposes of general students, who wish to become acquainted with the common phenomena of vegetable life, rather than with their special application. The additions to the systematical part of the work consist of the distinctive characters of a certain number of common plants, to be met with everywhere, either in gardens or cultivated fields.

New Plants.

48. Cypripedium villosum.

C. acaule, foliis immaculatis scapo villoso longioribus, spathâ carinatâ, petalis inæquilateris spathulatis undulatis ciliatis politis apice excisis, sepalo supremo emarginato antico oblongo apiculato, stamine sterili cuneato mucronulato dorso tuberculato pubescente, columnâ petalisque basi barbatis, ovario crinito.

This fine addition to an interesting genus was lately exhibited to the Horticultural Society, when it received a Silver Knightian medal. Mr. T. Lobb found it wild in the province of Moulmein, at an elevation of 5000 feet above the sea, and sent it to Messrs. Veitch, who, we believe, are its sole possessors. It most resembles *C. insigne*, differing more especially in the following particulars:—The scape is shorter than the leaves, and shaggy, with long purple hairs; the petals are singularly unequal sided, the posterior half being twice as broad as the anterior, and much undulated; they are, moreover, notched at the point, as if a piece had been struck out by a circular punch; the lower sepal is apiculate, and not merely obtuse. There is a general resemblance in colour, but the upper sepal, instead of being decorated with dark circular spots, has merely a deeply discoloured set of veins along the middle, and the petals, which look as if varnished, are a rich warm brown on the upper or posterior half, but green on the lower half, with a deep rich brown line of separation.

Garden Memoranda.

Horticultural Society's Garden, Turnham Green.—The fine specimen of Dendrobium speciosum, which this garden possesses, is now in flower; but not nearly so profusely as it was last year. Nevertheless, owing to the large size and rude health of the plant, together with the great beauty of the few fine spikes of flowers that at present ornament it, it must be regarded as an object of unusual interest. Among the more conspicuous of other Orchids in bloom were Cœlogyne cristata literally covered with handsome white blossoms, stained in the lip with yellow; the White Butterfly Plant (Phalænopsis amabilis); and the well-known Phaius grandifolius, which when well flowered, as this was, is still one of the most striking and useful plants we possess.

In the greenhouse adjoining the Orchid-house were some charming potfuls of Crocuses, more especially those filled with Queen Victoria and Sir Walter Scott. The latter is a very fine flower, white striped and feathered with lilac, and about as large as a small Tulip. Well-bloomed masses of the finer kinds of Crocuses, we need scarcely say, are extremely showy at this season of the year, and they are easily obtained by potting them in autumn, and wintering them in a cold frame, merely placing them in a little heat a short time previously to their being wanted in flower.

The Acacia trees, for so they have now become, in the great conservatory, are beginning to be very gay. A. cyanophylla is now in full beauty, and several others are ready to succeed it; A. Riceana is getting past. These are large-growing kinds, which are suitable only for a house like this. For pots, A. linearis, a specimen of which was in full flower, is very suitable. The scarlet and white Brugmansias, which have recently been cut "hard in" and cleaned, are again loaded with blossoms, and Habrothamnus fasciculatus, and Polygala gracilis, are also both in full flower, together with the fine group of Camellias near the east end of the house. Among the latter, C. elegans is by far the most striking, the multitudes of large blossoms with which it is furnished being just in perfection. The little scarlet Azalea obtusa makes a handsome plant for a shelf, and it forms a good succession to the variety of A. squamata, mentioned at p. 118, whose distinguishing characteristics are the delicacy and transparency of its blossoms and its habit of flowering naturally, *i. e.* without forcing, several weeks before any other Indian Azalea. On this account, therefore, it must be looked upon as an acquisition.

The Rose trees have all been moved out of the Rose house, and transplanted in Messrs. Hartley's conservatory, in which beds have been prepared for them, and where they are expected to succeed much better than they have hitherto done. Climbing sorts have been placed against the pillars, which, together with the roof, may thus be rendered ornamental. The Rose house, we understand, is to be converted into an orchard-house, which is to be devoted in part to proving of Vines and Figs in pots.

The alterations in the Arboretum are now completed; the Grass is being mown and the borders dug and put in order for summer. The Rhododendron beds, which have been altered, have not been wholly replanted with the same kinds of Rhododendrons they formerly contained; they have received some important additions in the shape of some of the newer and higher coloured varieties, into which has been infused, by means of skilful cross-breeding, a habit of flowering sufficiently late to be out of the reach of early frosts, which, we need not say, spoil the blossoms. Many of these, we learn, have been kindly presented to the Society by Messrs. Dancer, of Fulham, and Mr. John Waterer.

In the orchard department, pruning forms the principal occupation at present. Another sash has been added to the length of Cottam and Hallen's Peach frame, and its hitherto open ends, we believe, are also to be shut up. Close ends formed no part of the original design; but owing to the short length of the frame in the present case allowing cold winds to sweep through it, they will doubtless be found to be an improvement.

The effects of the late frosts have been severely felt in the kitchen garden. Even Brussels Sprouts in some instances have been injured. Those that had not been topped have been found to stand best. Among Broccolies, Snow's Spring White has, upon the whole, stood best. Hammond's White has been all killed, and of Cock's only a plant here and there remains. Spring cropping is now being proceeded with. Some Potatoes have been planted according to the plan mentioned in our Number for Feb. 18, p. 101, with a view to further test its value as a preventive of disease. Little ridges of earth have been left between the rows for the purpose of covering them when the time stated for performing that operation shall have arrived, and every pains will be taken to give the plan a fair trial.

FLORICULTURE.

Pansies in Pots.—My three-light box is again becoming gay with these delightful spring flowers. Duke of Norfolk, Sir Philip Sidney, Disraeli, Ophir, Robert Burns, Euphemia, France Cycole, Mrs. Beck, Duke of Perth, Climax, and others, already arrest the attention of all who visit my little garden. Those who have never tried to cultivate the Pansy in this way have little idea what a profusion of really gay flowers is produced by this plant during the whole of the early months; and with proper attention they will blossom in good character till the latter part of May. As regards cultivation, little need be said; for the Pansy is not difficult to manage. Plants for early flowering should be potted up from the open ground in October. If the weather is open in the last week in January, or the first week in February, begin to repot generally, using soil consisting of good decomposed turfy loam, rotten manure, a little leaf-mould, and coarse sand, the latter in proportion to the nature of the loam. The soil should not be pressed hard with the hand; no water should be given for a day or two after potting. Before, as well as after this operation, the plants must be kept well up to the glass. They should have from two to six shoots, or strong leaders; and to keep them to these chosen shoots, a number of small ones must from time to time be removed. These cuttings answer the double purpose of strengthening the main shoots, and producing a stock of young plants, which will supply the place of the old ones when worn out. Keep the frames in which they are placed open whenever the weather is favourable, pulling the lights back, or tilting them up; maintain the plants in a growing state by watering them as often as they require it, going over them for this purpose every day. Plants that have several shoots should be tied into shape, placing the centre-branch upright in the middle, and the remainder at equal distances all round; but the plant must be shaped according to the number of shoots: three leading branches are sufficient if cut blooms only are required. Another advantage is, that the same plants, from the succession of bloom they produce, will answer the double purpose of exhibiting in pots or stands of cut flowers. After the potting, as above recommended, has taken place, take the earliest opportunity at which the ground is in a fit state, to plant out any stock not required to bloom under glass, or plants that have been wintered in stores, &c., which will bloom through May or June, and produce a stock of good healthy cuttings. By following the simple and inexpensive treatment just recommended, I am sure that those who take the little trouble that it entails will not fail to be gratified by a fine display of bloom, which, from its long continuance, will most certainly afford much gratification. *E. B.*

The Auricula.—About the middle of this month, if the weather continue as fine as it is at present, the trusses will be sufficiently forward to select those intended for exhibition. Seven pips are the lowest number allowed by our metropolitan societies; therefore select the most promising, containing that number and upwards. Those with round buds, as nearly of a size as possible, the truss also round and compact, should be particularly selected, and if there are any monster pips among them with large oblong tubes or other deformities, remove them while young. At this stage of their growth, care must be taken in watering that none be allowed to fall into the tubes or pipe, if it happen to be exposed, as is the case with some varieties; for although the buds be so young, the meal of the eye may be formed, and if so the water will run the meal over the ground-colour, and when the blossom is expanded it will be found dull and unfit for exhibition. The meally-grass varieties require a little extra attention, for their beauty is much increased by preserving

the white powder on their foliage. To obtain this object without drawing the plants more than possible, I nail a strip of wood on each side the centre bar of the frame, of sufficient width to shelter them from rain, and place the plants beneath it. By this means they enjoy a free circulation of air and light till in a proper state of forwardness to remove under the hand-glasses, or on the stage. *L.*

POLYANTHUSES IN POTS.—The Polyanthus under pot-culture does best in a western aspect from the present time to the end of its blooming. Give as much air as possible during the day, unless strong cold winds are blowing; then keep the lights on. If the frame is in a western aspect, give air at back, by lifting the lights about three inches; but if in a southern one, lift the lights at the front. Protect them at night: a mat or two thrown over the frame will be advisable. Top-dress as early as in the month as you can, if the atmosphere is not frosty. Polyanthuses thrive best in a cool soil, rather strong in quality than otherwise. One measure of decomposed cow-manure, two of leaf-mould, and two of strong loam (top spit), are suitable for them; but for top-dressing only, the compost given for the Auricula will answer. Water them moderately, increasing the quantity as the plants increase in growth; and allow them to receive light showers during the month when the weather is open. *B. W.*

TULIPS: *S.* We fear the severe frost has affected Tulips, for several collections which we have seen, appear above ground with the foliage considerably cankered. In these cases the soil should be removed from the affected part, which should be carefully cut away with a sharp knife, and some coarse river sand placed round that which is sound.

CARNATION COMPOST: *E.* Pass it carefully through the hands before you use it, in order that no wireworms may escape detection.

Miscellaneous.

Sale of Timber, Wimbledon.—Last week an auction was held at Wandsworth, by Messrs. Chinnock and Galsworthy, of timber, underwood, &c., growing upon the Wimbledon Park Estate, which called together a large attendance of timber-merchants and dealers. The sale comprised 130 lots. The prices realised were higher than those of former sales, owing to the great demand for timber for ship-building purposes. The small class Oak, for which there was the greatest demand, realised 3*s.* 4*d.* per foot; the largest Wych Elm, 2*s.* 4*d.*, being the price of Oak of former sales; and the best quality Lime as much as 1*s.* 10*d.* per foot. The total result of the day's sale was nearly 2200*l.*

Wages at Sydney.—The following, from a Sydney paper, the *Empire*, shows the rate of wages there in November last:—Stonemasons, last week 22*s.*, this week, 25*s.* per day; plasterers, 21*s.* per day; bricklayers, 20*s.* per day; quarry labourers, 10*s.* to 15*s.* per day; bricklayers' labourers, 14*s.* to 16*s.* per day; plasterers' labourers, 12*s.* per day; other labourers, 10*s.* per day; carters, 10*s.* per day. *Builder.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Orange trees in tubs or pots should be carefully examined, in order to ascertain whether or not their roots are in a healthy state, and those requiring more space should be shifted at once; but, in many instances, it may not be possible to afford large specimens a shift. In this case remove as much of the surface soil as can be done without greatly injuring the roots, and replace it with a mixture of good loamy turf, broken bones, decayed cow-dung, and sand, and see that the balls of the plants are in a moist healthy condition. Strong manure water is of great service to these, and may be applied freely at all seasons, particularly now, when the trees will be starting into growth. It is quite impossible to use the syringe to advantage in many conservatories, and under such circumstances the flowering plants should be removed to one end of the house, and the twiners, &c., given a liberal washing with the engine, which will also greatly assist in keeping the glass, &c., clean. This should be done before the twiners start into growth, as there will be no danger of injuring the tender foliage while they are in a dormant state. Be satisfied with a rather low temperature for the present, and give air freely on fine days, endeavouring to avoid cold, drying currents, as much as possible. Attend to keeping up a supply of Roses, Azaleas, and other things requiring to be brought forward in a gentle heat, and persevere in the destruction of insects. STOVE.—Plants in active growth will require much attention, in order to properly direct their energies, and keep them perfectly clear of insects, &c. Give a little weak manure water to such things as Allamandas, Clerodendrons, &c., if in free growth; and multitudes of stove plants will be benefited by the same treatment. Do not neglect the old, but beautiful and useful Lisianthus. Keep the plants growing as freely as a moist, high temperature, plenty of pot-room, manure water, a rich open compost, and all the light possible, will effect, and get in seed at once, so as to insure a supply of plants for next season. Keep up a free circulation of air on any favourable opportunity, in order to induce a sturdy habit of growth. Water freely, but cautiously, especially in the case of recently potted specimens.

FORCING DEPARTMENT.

PINERY.—Succession plants should not be allowed to get too dry at the root at this season, as this would probably throw them prematurely into fruit. In repotting these, if a plant is found too dry, it should be set aside and well watered, so as to get the soil into a moist healthy state before shifting. And where the plants are growing in the open bed the soil should be carefully examined to a sufficient depth, and if it is found to be over dry, water as often as may be necessary, with tepid water, to thoroughly moisten the mass, allowing two or three days between each application. Maintain a moist atmosphere, and shut up early in the afternoon, allowing the glass to rise to 80°, but do not exceed 60° at night. VINERIES.—Proceed with thinning the berries wherever the crop is sufficiently advanced to allow of this being down. Stop laterals, tie in young shoots, &c, and keep everything neat and orderly. Maintain a steady night temperature as near 65° as possible; give air freely on fine days, taking care to open all the ventilators a little, and endeavour to avoid cold currents. See that the buds in the late house are not excited by the present bright weather; keep the house cool. Watch narrowly for red spider in the early Vinery, and in the forcing houses generally, and should it be detected anywhere, lose no time in washing the infested leaves and those around them, using a soft sponge, and clean water with a little soap. This may appear a tedious process, but if the enemy is taken in time it will be more easily eradicated by these means than any other. FIGS.—Keep the shoot thin, so as to expose the foliage to light and air, and persevere in the use of the syringe to prevent red spider. Give air freely on bright days, shutting early in the afternoon after syringing the house. PEACHES.—Proceed gradually with the disbudding of the early house, and where the fruit is very thick a portion of these should be removed as soon as they are fairly; set but the Peach is liable to drop until after stoning, and this must be borne in mind, and plenty left to allow of a few falling. Maintain a steady heat to Cucumbers of 65° or 70° at night, and allow it to rise 10° or 15° with sun heat. Give air on every possible opportunity, but be very careful of cold draughts, which would ruin the tender foliage. Stop the Vines, and keep them thin and regularly disposed over the trellis, so as to expose them to light and air. Attend carefully to the early Melon plants, and regulate the temperature according to the amount of sunshine, taking care not to get the Vines weak and long jointed, through a high close temperature; for if this state is induced, it will be difficult to secure either an early or abundant crop. Do not omit putting in seeds of some of the finer kinds for succession crops. The Bromham Hall is an excellent variety, probably not surpassed as a hardy, fruitful, high flavoured kind.

FLOWER GARDEN AND SHRUBBERIES.

Finish removing shrubs where not already done as soon as possible, and lose no time in getting alterations involving the relaying or putting down of fresh turf completed, for it is a great saving of after attention and labour to get this kind of work finished before the drying winds set in. If not previously done, get pillar Roses trimmed and tied, and where wood stakes are used examine these carefully, and let none be left that are not likely to last the season, for they are not conveniently replaced after the plants begin to ramble about. It is an excellent practice to give pillar Roses a liberal dressing with strong manure water; or, where it can be obtained, night-soil mixed with water, so as to reduce it to the consistence of thick paint. The surface soil should be removed for about 18 inches or 2 feet from the stem of the plant, and placed so as to form a basin, then apply 4 to 8 gallons, according to the strength of the plant, and replace the soil. This will be of great service towards inducing strong vigorous growth, and a fine display of late flowers, in the case of the autumn blooming sorts.

HARDY FRUIT DEPARTMENT & KITCHEN GARDEN.

Get the pruning and nailing of all fruit trees finished with the least possible delay; and if any planting still remains to be done, this should be completed without any unnecessary loss of time. It may appear like an attempt to act the part of an antiquarian to refer to the old, and I hope now universally condemned practice of digging a deep pit, of about the same compass as the roots of the tree to be planted, and filling it with the richest compost which could be produced. I believe that I have assisted to put as much as a good cart-load of rotten dung under a Peach tree, but I am not sure that a modified form of this is not still practised, by way of securing a vigorous start. It is a great mistake, however, to induce the production of gross, long-jointed wood, in any stage of the existence of a fruit tree, for wood of this character is never properly ripened, and in the case of stone fruits, gum, canker, and the premature loss of the tree is the result, and in the case of Pears and Apples, anything deserving the name of a crop of fruit is never obtained until the gross habit induced by planting in over rich soils is overcome. Ground intended for fruit trees should first be drained; and this should be efficiently done, regardless of expense, and then trenched to the depth of two feet. And if the natural soil is found to be too poor for the health and growth of the trees, a sufficient quantity of fresh turfy loam should be added, but rich stimulating manures should not be used, for they are soon exhausted, and the trees are left to depend upon the natural soil for their support, and when treated in this way never give satisfaction. Trees infested with moss or lichen should have their stems, &c., scraped, and be painted with a composition of lime, soot, and cow-dung, mixed with soapsuds to the consistence of thick paint, carefully working the mixture into the crevices of the bark, in order to bury American blight, or other insects which may be lurking there. Take advantage of the first fine day, with the ground in working order, to get in the main crop of Onions. The old practice of sowing broadcast must be given up as being too expensive to clean and thin the crop. Select a piece of deep land in good condition, and if the surface is not naturally firm, render it so before sowing by treading, or rolling.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending March 2, 1854, as observed at the Horticultural Gardens.

Feb. and March.	Moon's Age.	Barometer.		Temperature.					Wind.	Rain.
				Of the Air.			Of the Earth			
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Friday 24	27	30.502	30.291	47	35	41.0	39	41	S.W.	.00
Satur. 25	28	30.470	30.395	51	25	38.0	40	43	N.W.	.00
Sunday 26	29	30.543	30.475	50	23	36.5	40	42	N.	.00
Mon. 27	[illegible]	30.415	30.321	53	32	42.5	40½	42½	W.	.00
Tues. 28	1	30.517	30.285	53	19	36.0	40½	43	N.W.	.00
Wed. 1	2	30.702	30.677	54	18	36.0	40	42	S.W.	.00
Thurs. 2	3	30.668	30.627	55	18	36.5	39½	41	S.	.00
Average		30.573	30.438	51.8	24.3	38.1	39.9	41.8		0.0

Feb. 24—Fine; cloudy throughout.
— 25—Clear; fine with bright sun; clear; frosty.
— 26—Clear and fine throughout; frosty.
— 27—Uniformly overcast; clear and fine; partially overcast.
— 28—Fine throughout; clear; sharp frost at night.
March 1—Frosty; very fine, clear and frosty.
— 2—Frosty; very fine; hazy at night; sharp frost.
Mean temperature of the week, 3 deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending March 11, 1854.

March.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 5	48.1	31.9	40.0	9	0.40 in.	2	6	3	—	4	7	4	2
Mon. 6	48.0	32.6	40.3	10	0.26	1	7	2	1	2	5	4	6
Tues. 7	49.2	32.4	40.8	11	0.11	3	5	3	1	4	7	3	2
Wed. 8	49.7	32.6	41.1	10	0.17	3	6	3	—	5	4	2	5
Thurs. 9	50.5	32.2	41.4	8	0.47	2	4	2	2	4	7	3	4
Friday 10	50.6	32.1	41.4	11	0.69	3	4	1	3	3	6	3	5
Satur. 11	50.2	33.1	41.6	9	0.20	1	4	2	5	3	9	2	2

The highest temperature during the above period occurred on the 9th, 1826—therm. 68 deg.; and the lowest on the 10th, 1847—therm. 7 deg.

Notices to Correspondents.

BACK NUMBERS. Full price will be given for the following Numbers:—1845, No. 24; 1848, No. 46.

CELERY SEED: *W Luff.* No. 1 is bad and unripe; No. 2 is what it should be. But why continue to deal with those who treat you ill? Remember, however, that the last was a very bad season for ripening seeds, and that your seedsman cannot sell you what the season would not produce.

COLOURS OF FLOWERS: *W H B.* You will find full information on the grouping and management of colours in former volumes, more especially in that for 1850, pp 4, 36, 116, 165, and 181. ‡

CUT FLOWERS: *Thursday.* Place them in a vessel of water; put the vessel in a dish containing a little water, and cover the whole with a bell-glass.

CYPRESSES: *Devoniensis.* That must be, indeed, a favoured climate in this country which will enable the common upright Cypress to succeed as an avenue plant. It is much too tender, and demands a roasting summer. Nor is its stature large enough, even if it manages to grow. The Cupressus macrocarpa would indeed succeed; for that plant is hardy and forms a great tree. We are not at all surprised at your common Cypresses having perished during the present winter.

FALL OF RAIN: *Old Sub.* We are unable to furnish the information you seek. Will the register kept at Chiswick, and given every week in our columns, not answer your purpose?‡

FENCES: *Rainhill.* Robinia ferox fit for fencing? Yes, if you can make it grow, and are willing to pay for a hobby—about 20 times as much as it is worth.

HARTLEY'S ROUGH PLATE: *P with S.* The opinion you have heard expressed is not only unfounded but ridiculous. The formation of foci is precisely what this kind of glass renders impossible.

HEATING: *Dido.* You will never succeed in getting a good circulation with descending pipes, even if you succeed in getting a circulation at all. No doubt the siphon principle may be applied, but it will not continue to answer. You *must* alter your house. Can you make water flow up hill?

INSECTS: *W G.* Your scale is the Coccus Persicæ; it is not common; it is also occasionally found on the Apricots. Warm water (to 145°), or brushing the trees over with an oily matter of any kind, will destroy them; but these remedies, or even careful examination and removal of the insects by hand, ought to be at once adopted, or the young will soon escape from the eggs now lying beneath the scale. *W.*

IVY: *McArthur.* We are unable to assist you; but doubtless the golden blotched Ivy can be obtained through the trade, if you make it worth while to inquire for it. We believe it is not often kept, because it is no favourite, and is seldom wanted.

LARCH: *A M.* It is considered by the most skilful foresters that, as a general rule, Larches should be left at about one-third of their height apart. They should be gradually thinned as their increasing height demands it.

NAMES OF PLANTS. We have been so often obliged reluctantly to decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*H H.* Your Baccella violacea is the beautiful Phytolacca icosandra, a not uncommon plant.—*Suecio.* Lavandula multifida. Rindera lævigata is probably not in this country. If procurable, it will be from some botanic garden in the north-east of Europe.—*J M.* Juniperus recurva.

PINUS LARICIO: *W H. and another Correspondent* shall be answered next week. Wood of Pinus Laricio will be produced at the meeting of the Horticultural Society next Tuesday.

POTATOES: *Amateur Gardener.* Soaking Potatoes before planting them in salt and water is no preventive of disease whatever; rather the reverse.

RAGGED ROBIN: *Sub.* This is Lychnis Flos Cuculi—a weed. You doubtless mean the now much neglected variegated Kale, sometimes called Ragged Jack. Its treatment need not be different from that of other Kale, except that if you wish to keep it true it must be perpetuated by means of sprouts or cuttings of its stem.‡

TYPE FOR STAMPING LEAD: *B Andworth.* Apply to the first ironmonger who has a decent trade.

WILLOWS: *W.* How many species? A hundred, fifty, twenty, a dozen, half-a-dozen. All depends upon what you mean by species. The males and females are not distinguishable in foliage. Mules among them swarm.

WORMS: *R E X.* They may be effectually got rid of by watering once or twice with lime-water, which will not injure your roots or bulbs.‡

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made.

THE LONDON MANURE COMPANY'S WHEAT MANURE, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. EDWARD PURSER, Sec.
Bridge Street, Blackfriars.

PERUVIAN GUANO, the guaranteed import of Messrs. ANTONY GIBBS AND SONS, Lobos Island Guano, Superphosphate of Lime, and all Artificial Manures, Linseed and Rape Cakes, &c.—WM. INGLIS CARNE, 10, Mark Lane, London.

ARTIFICIAL MANURES, &c. — Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and dispatch.

Gentlemen desirous of receiving instructions in Chemical Analysis and Assaying, will find ample facility and accommodation at the College.

PEAT MOSS CHARCOAL, AND OTHER MANURES.—The Undersigned are appointed sole Agents by the Peat Moss Charcoal Company, for the sale of this valuable fixer and distributor of ammoniacal matter.

Also on Sale, Peruvian Guano, Superphosphate of Lime, Gypsum, Nitrate of Soda, Bone-Dust, Sulphuric Acid, and all other Manures of known value.—Apply to MARK FOTHERGILL & Co., 204A, Upper Thames Street, London.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7*l.* per ton; Superphosphate of Lime, 7*l.*; Sulphuric Acid and Coprolites, 6*l.*

Office, 69, King William Street, City, London.

N B. Genuine Peruvian Guano, guaranteed to contain 16 per cent of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

SUPERPHOSPHATE OF LIME MANUFAC- TURED BY MR. J. C. NESBIT'S IMPROVED STEAM MACHINE. The following is the analysis of an average sample.

"College of Chemistry, Agriculture, and General Science, 38 & 39, Lower Kennington Lane, London.

Analysis of Sample of Superphosphate of Lime from Mr. Jolliffe:

Moisture ...		13.97
Organic Matter, &c. ...		21.98
Silica ...		6.05
Phosphate of Lime ...		35.27
SOLUBLE ...	16.10	
INSOLUBLE ...	19.17	
Sulphate of Lime, &c....		22.73
		100.00
Nitrogen (equal to) ...		1.16
Ammonia ...		1.41

(Signed) J. C. NESBIT."

Delivered free at a Wharf or Railway Station in London at 6*l.* per ton.—Apply to E. Y. JOLLIFFE, 70, Mark Lane, or the Works, Lavender Dock Wharf, Rotherhithe.

Agents wanted in all the principal towns.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.

MESSRS. BURGESS AND KEY, as Mr. PARKES' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.
103, Newgate Street, and 52, Little Britain, London.

ANTHONY'S PATENT AMERICAN CHURN.— Extract from the Royal Agricultural Society's Report of the trial of Churns at the Gloucester meeting in July last. "In this trial the American Churn not only maintained its character in producing butter rapidly, but in producing a greater quantity from the like amount of cream." It made from 4 quarts of cream 4 lbs. 6 oz. of butter, being 8 oz. more than any of the other Churns from the same quantity and quality of cream. Price Lists of Churns and Implements by the best makers sent free, and Illustrated Catalogues on receipt of eight postage stamps. BURGESS & KEY, 103, Newgate Street, and 52, Little Britain, London, who have always a large stock of Steam-engines, Ploughs, Harrows, Diggers, Waggons, Carts, Threshing and Dressing Machines, Mills, Oat and Grain Bruisers, Oilcake Breakers, Reaping Machines, Haymakers, Horse-rakers, Turnip Cutters, Liquid Manure Carts, Parkes' celebrated Steel Digging Forks and Draining Tools, Pumps for Manure, Farm Fire Engines, and for Garden Purposes, &c. &c.

TO LANDOWNERS, SOLICITORS, ESTATE AGENTS, ETC.

THE LANDS IMPROVEMENT COMPANY, incorporated by special Act of Parliament, 1853, having perfected their organisation, are prepared to receive applications for the execution of improvements, under the provisions of their Act.

The Act extends to England, Wales, and Scotland; and empowers persons in the actual possession of lands, or in receipt of the rents, such as tenants for life, trustees, bodies corporate, incumbents of benefices, mortgagees in possession, guardians of infants, &c., to effect substantial improvements on their estates, and to convert the outlay on such improvements into a terminable annuity or rent-charge of from 14 to 25 years, at will.

The Company, acting under the supervision of the Inclosure Commissioners, will undertake and execute improvements, or will supply the capital to landowners preferring to execute improvements themselves, or will grant the powers of their Act to landowners seeking merely to charge the inheritance with the outlay on improvements from their own funds.

The Agricultural Works of Improvement particularly specified in the Company's Act, are:—

1. The Drainage of any Lands by any such means as the Inclosure Commissioners shall approve.
2. Irrigation, and Warping of Lands.
3. Embanking of Land from the Sea, or Tidal Waters, or Rivers, in a permanent manner.
4. Enclosing or Improving the Drains, Streams, or Water-courses of the Land, under the Inclosure Commissioners.
5. Reclamation of Land lying waste.
6. Making Farm-roads to the extent of one-half of the outlay for such roads.
7. Clearing Lands.
8. Erection of Farm-houses, and other Buildings required for farm purposes to the extent of three-fourths of the outlay for such Farm-houses and other Buildings.

In effecting the above Improvements there may be erected any Engines, Machinery, Engine-houses, Mills, Kilns, Sheds, Yards, Shafts, Tanks, and Reservoirs, Pipes, Conduits, and Water-courses for Irrigation, Tram-roads and other ways, Bridges, Weirs, Sluices, Flood-gates, and Hatches.

For Forms of Application and further Information apply to the Hon. W. NAPIER, Managing Director, 2, Old Palace Yard, Westminster, London.

ESTABLISHED ABOUT HALF A CENTURY.

AGRICULTURAL SEEDS,

OF THE FINEST SELECTED STOCKS, OFFERED BY

BASS AND BROWN,

SEED GROWERS AND MERCHANTS, SUDBURY, SUFFOLK.

HAVING been established about half a century, which has secured to us an extensive knowledge of the best growers in this important Agricultural Neighbourhood, and being situated in the vicinity of a large Seed growing district, we are enabled to offer our Seeds with confidence, being either of our own growth, or selected from the most approved growers with the strictest care, and our prices will be found as low as the markets and quality of the stock will admit.

SUDBURY AGRICULTURAL ASSOCIATION.—In the report of the Exhibition of Oct. 21st, the following remarks appeared in the *Essex Standard* of the following week:—

"On the opposite side of the Exchange Messrs. BASS & BROWN had a capital stand of Agricultural Roots, comprising 20 samples of Long and Globe Mangold Wurzel; 17 of White and Swede Turnips; and 17 of Belgian Carrots. A label upon them modestly explained that they 'were not shown as specimens of extraordinary growth, but as samples of the stock from which the seed of last season was sold,' it being the practice of the firm to reserve a portion of each bulk of seed purchased, for sowing on their own ground, by way of testing its purity of stock, and as a reference in case of complaints by customers. Although not pretending to gigantic size, the roots needed no apology on the score of growth, being all of full average weight, and remarkably clear and short to the cut or bite."

In the *Essex Standard* of Nov. 11th the following remarks also appear:—

"At Sudbury market, on the 3d inst., some very fine specimens of Yellow Globe Mangold Wurzel, Red Tankard, White Globe, White Round, and Green Round Turnips, were exhibited on the stand of Messrs. Bass and Brown, grown by S. Viall, Esq., of Foxearth, from seed purchased of that firm. So fine were they that several farmers remarked that Mr. Viall must have grown them on a dunghill."

		Per. lb.—s.	d.
MANGOLD WURZEL—Long Red ...		1	0
" " Long Yellow ...		1	0
" " Yellow Globe ...		1	0
" " Red Globe...		1	0
" " White Silesian, or Sugar Beet		0	9
CARROT—Green Top White Belgian ...		1	8
" Large Yellow Belgian, or New Intermediate ...		2	0
" Long Red Altringham ...		1	0
PARSNIP—Long Hollow Crown ...		1	0
" Large Guernsey ...		1	6
TURNIPS—Laing's Purple Top Swede	Per bush. 45*s.*	1	2
" Skirving's Liverpool do.	" 45	1	2
" Fine Selected Purple Top do.	" 45	1	2
" River's Stubble Swede ...	" 45	1	2
" Purple Top Bullock, or Scotch—Per peck	9	1	0
" Norfolk White Round ...	12	1	2

	Per peck.	—Per lb.
TURNIPS—Norfolk Green Round ...	12*s.* 0*d*	1*s.* 2*d*
" White Tankard ...	12 0	1 2
" Red Tankard ...	10 6	1 2
" Yellow Tankard or Scotch Pudding	15 0	1 8
" White Stubble Stone ...	12 0	1 2
Chiva's New Orange Jelly ...		1 9
New American Strapleaf Stone ...		2 0
Cabbage—Fine large Drumhead ...		2 6
Lucerne ...		1 0
Alsike Clover ...		2
Bokhara Clover ...		2 6
White, Red, and Cow-grass Clover ...		0 10
Prices per cwt., on application.		
Giant Saintfoin ...	Per bush.	12*s.* 0*d*
Linseed, fine sowing quality ...		10 0

For various other Seeds, see Catalogue.

The above prices may vary with the markets.

☞ For large quantities of Mangold Wurzel, Carrot, &c., prices furnished on application.

GRASSES.

We have for a number of years bestowed considerable attention and care in the selection of Grass Seeds for Permanent Pasture, and have annually supplied large quantities, which have given the highest satisfaction. These Grasses are assorted and mixed of proportionate quantities proper for the various descriptions of soils, and consist of sorts grown in different localities and gathered separately, thereby rendering them entirely free from obnoxious weeds. Persons ordering seeds should state the nature of the soil required to be sown, and if with or without a corn crop. The quantity we usually supply per acre is 3 bushels of Light Grasses, and 9 lbs. of Clovers and Heavy Grasses, comprising varieties of Poas, Fescues, Meadow Foxtail, Sweet Vernal, and other nutritious and useful kinds, but the quantity per acre is varied for soils of peculiar character. We give a scale of charges for the various purposes stated as under:—

PERMANENT PASTURE, MEADOW, AND LAWN GRASSES.

PRINTED INSTRUCTIONS FOR LAYING DOWN WILL BE SENT WITH THE SEEDS.

	Per acre—s.	d.
Mixtures for Permanent Pasture on Light Lands ...	24	0
Mixtures for ditto on Heavy Lands ...	27	0
Mixtures for Parks, or Permanent Lawn Pasture ...	28*s.* to 32	0
Mixtures for Fine Lawns, Bowling Greens, &c. ...	34*s.* to 38	0
Mixtures for Orchards, &c., much overshaded by trees	24*s.* to 30	0
Mixtures for Marshy Grounds, or Meadows subject to flood ...	24*s.* to 28	0
Mixtures for Renovating Old Pastures ...	10*d.* per lb.	
Finest Lawn Mixtures for Flower Gardens, &c., 1*s.* per lb., or 4*s.* 6*d.* per peck.		

For prices of the various species of Grasses separately, see our General Spring Catalogue.

RYE-GRASSES.

TRUE ITALIAN, fine ... Per bushel	5*s.* 6*d.*
PERENNIAL RYE-GRASS, per bushel	4*s.* 6*d.* to 5*s.* 6*d.*
FINE IMPORTED ... Per bushel	6*s.* 6*d.*
FINE PACEY'S RYE-GRASS ... "	5*s.* *d.*

The New Agricultural Grey Pea, "Bishop's Last and Best."

This Pea is remarkably early; grows 2 ft. high, of most robust growth, branching, produce large; as much as 7 qrs. per acre has been got where only 6 pecks of seed was sown. The seed weighs heavy, 64 lbs. per bushel being the general average. Price 12*s.* per bushel.

Prices of Agricultural and other Seeds to the Trade on application.

GOODS (not under 20s.) FREE to all the Stations in London.

BASS AND BROWN, SEED ESTABLISHMENT, SUDBURY, SUFFOLK.

RENDLE'S NEW FARMING PRICE CURRENT AND AGRICULTURAL DIRECTORY FOR 1854.

OPINION OF THE EDITOR OF THE "MARK LANE EXPRESS:"—

"We have just seen a copy of this excellent Price Current, and consider it a most valuable companion to the Agriculturist. It is the same size as the garden edition, lately reviewed in this paper. It contains an excellent Almanack, with the University Terms, Eclipses, &c., and a List of Fairs and great Markets held in the four Western Counties. The descriptive lists of Grasses are excellent; they give all the best varieties for permanent pasture, ornamental parks and lawns, sheep walks, heathy and moory lands, &c. Then comes the list of Clover and Turnips, all described in a concise and useful manner. Then follows descriptions of the best Mangold Wurzel, Carrots, and other vegetables used in agriculture; then we have a Price Current of all the best Natural and Artificial Manures, with much useful information relative to Peruvian Guano, Lawes' Patent Superphosphate, Nitrate of Soda, Bone Dust, Bolivian Guano, &c.; then are found some very good advice relative to the purchase of so-called Wheat Manures; but the best Paper is one contributed by J. B. Lawes, Esq., of Rothamsted, 'On the Cultivation of one Green Crop after another on Heavy Land.' This should be read by all engaged in agricultural pursuits. There are some valuable tests for discovering adulterations in manures, by J. C. Nesbit, Esq., the celebrated agricultural chemist; and the report of a lecture by Professor Way on the same subject; then follow the Advertisements, comprising some illustrations of the best implements of the day. It is very well got up, and comprises 52 closely-printed pages, crown quarto size, and we strongly recommend it for the perusal of all engaged in the healthy pursuit of agriculture."

THE BIRMINGHAM CATTLE SHOW.—POST- PONEMENT OF THE PROPOSED SHOW OF STORE STOCK AND AGRICULTURAL IMPLEMENTS—At a Meeting of the General Purposes Committee of the Council, held on Thursday, February 23d, the subjoined Resolution was unanimously adopted:—

"That, as from unavoidable circumstances, the plans for holding the Show of Store Stock and Agricultural Implements in June next cannot be sufficiently matured, it is resolved that the Show be postponed until 1855; and that the proper notice be given to the Public without delay."

(By order.) JOHN MORGAN, Jun., Secretary.
Offices, 38, Bennett's Hill, Birmingham, March 4.

THE BIRMINGHAM CATTLE AND POULTRY SHOW, 1854.—The Sixth Great Annual Exhibition of Stock and Domestic Poultry will be held in Bingley Hall, on the 12th, 13th, 14th, and 15th of December next. The Prize Lists, and any further information, may be obtained from
JOHN MORGAN, Jun., Secretary.
Offices, 38, Bennett's Hill, Birmingham.

PRICES AT MARK LANE.

IN ACCORDANCE with the wishes of Farmers, Millers, and others interested in the Corn Trade, an Edition of the AGRICULTURAL GAZETTE AND GARDENERS' CHRONICLE will be published every Monday Afternoon, in time for post. The Monday's Edition will, in addition to the usual markets, contain a full report of the Mark Lane, Smithfield, and Newgate Markets of the day.—May be ordered of any News Agent. Price 6*d.*

The Agricultural Gazette.

SATURDAY, MARCH 4, 1854.

MEETINGS FOR THE TWO FOLLOWING WEEKS

MONDAY,	March	6—Central Farmers' Club.
WEDNESDAY,	—	8—Agricultural Society of England.
THURSDAY,	—	9—Agricultural Imp. Society of Ireland.
WEDNESDAY,	—	15—Agricultural Society of England.
THURSDAY,	—	16—Agricultural Imp. Society of Ireland.

THE memorial on the commercial aspect of the question of AGRICULTURAL STATISTICS, which we referred to at p. 74, was last Saturday presented to Lord ABERDEEN by a deputation from the merchants of London. It is believed to be one of the most influential in regard to signatures which has ever emanated from the City of London. Mr. MASTERMAN, in presenting it, stated the great importance of its object to the commercial interests of the country. He trusted that his lordship and the Government would be enabled to effect such arrangements as would secure the object sought by the memorialists—the collection of accurate returns of the agricultural produce of the country.

Lord ABERDEEN briefly explained what had been done by Government to effect the object sought by the deputation. He said it was desirable to avoid measures which might appear compulsory, but he was happy to say that now there is every prospect of the experiment being attended with perfect success. Enough had been done to prove that a

system may be extended generally throughout the country, though he was not prepared to say by what machinery. The importance of the object is fully admitted, and its practicability proved. The time and the mode of inquiry are, therefore, now the only points to be determined.

We are, therefore, at length likely to obtain what has been long felt by all intelligent men, both in the agricultural and in the commercial world, of the greatest importance, not only to the business and to the art of farming, but to the commercial well-being of the country. The immediate publication of the main facts regarding the produce of the country will benefit no one more than the producers; and we hope that this aspect of the subject, which is to be discussed before the Central Farmers' Club next Monday, will be plainly brought out, for the information and guidance of farmers' clubs throughout the country. That even the more general and less immediate results of such an inquiry are of agricultural value is evident from the useful lessons derived from our Irish agricultural statistics, which being published a year after collection, and therefore not made known till the food to which they relate is consumed, can be of no commercial value whatever.

We have received several letters on the subject of Turnip Graters and Pulping Machines. One of them is published in another page, and to another we shall refer in this place.

The first attempt to produce such a machine was made by Mr. Moody, of Wiltshire, who exhibited his implement, we think, at the Oxford meeting of the English Agricultural Society. It consisted essentially of a metallic conical hopper for the roots, in which there slowly revolved, driven by horse-power, a vertical radial valve or piston, curved in such a form that in carrying the roots round with it they were pressed and scraped along the inner surface of the cone. This inner surface presented edges by which the roots were squeezed and scraped, and cut through the hopper, and fell into a receptacle below. The idea was that the pressure and the mode of cutting or grating together would result in the formation of a pulp; but our correspondent, at p. 107, tells us that its performance results merely in the reduction of the root to ribands and thin slices. Mr. Carson, the present maker of these machines, assures us that another machine of Mr. Moody's invention exists by which Turnips really are *pulped*; and a correspondent, "Inventor," informs us that he has perfected a machine, not a riband cutter, but a perfect grater, which he is to exhibit at Lincoln. He has sent us a sample of its performance, in which, though not pulped, the substance of the root was so far reduced, that the whole arrived in an offensive state, owing to the rapid fermentation which had ensued. "Inventor" states the reason of his attention to this subject, and as we believe that he takes the right view of it, we make the following extract from his letter:—

"Like your correspondent 'An Advocate for Pulp,' I had been looking and inquiring a long time in vain for a machine that would reduce Turnips and other roots to such a state of comminution as that they might be so intimately mixed with meal, bran, or chaff, that the animals feeding on them could not select them from the meal, &c., with which they were mixed. As I am a cultivator of two very large farms, and knew how valuable such a machine would be, as I could not otherwise supply my urgent want, I set to work to invent, and make such an one myself."

This is, we believe, the principal service to the farmer which comminution and reduction of food performs. There is, to a certain extent, an advantage common to all animals derived from saving a portion of the labour of mastication, and as this is sometimes, especially by horses, imperfectly performed, there is, in the case of animals which do not chew the cud, the advantage of this artificial performance of a necessary process, which would otherwise in a measure be neglected; but for sheep and cattle this is probably a less important aspect of the subject, and for them the main use of chaff cutters and root graters, &c., is to enable the perfect commixture of different sorts of food, so that the less savoury portions may be consumed along with what is mixed with them.

In the case of Messrs. Bushe and Baxter's root-grater, which has excited a great deal of attention in Ireland, but which our correspondent "An Advocate for Pulp" tells us does no more than previous implements for cutting Turnips into ribands—the great advantage derived from its use is said to depend upon the fermentation which is set up in roots so treated.

The fermentation set up in meal and other vegetable substances stored away for pigs is an acid fermentation, and, as far as our experience goes, is of no use whatever in increasing the nutritiveness of food. Even the saccharine fermentation, as undergone in the malting of Barley, is a process of doubtful expediency, and our belief is that even here the waste of substance incurred in the fermentative process more than balances any advantage derived from the greater solubility, or the better taste of the food so treated. The process of fermentation too in such watery material as pulped Turnips rapidly becomes offensive, so that to avoid all risk we believe that, as with ordinary cut Turnips, so with those more thoroughly reduced, the best plan is to use them as soon as possible after their reduction, taking advantage of their pulped condition to mix them with chaffed hay or straw, with meal, &c., in any way that is desired, and so ensuring that all the food grown on the farm shall be consumed, about which there would otherwise be difficulty, if not impossibility.

We must not forget, however, that no strictly *pulping* machine has yet appeared. And we believe that the process, when it shall be effected, will require such an expenditure of power as to render it inapplicable in ordinary farm practice. These graters or riband cutters do, however, so far reduce the substance of the root as to enable its very perfect mixture with the other kinds of food, which it is desired to consume, and so far serve a useful purpose.

NOTES ON EXPERIMENTS
IN THE
BOTANICAL GARDEN OF THE ROYAL AGRICULTURAL COLLEGE.—No. II.

By Professor J. Buckman, F.G.S., F.L.S.

Among the list of agricultural leguminosæ, there is none of greater interest for hay or green crops than the Trifolium; at the same time, considering the number of native species and the exotic forms which might easily be introduced, it is surprising how few are met with in common cultivation.

My experiments were conducted with six kinds, namely, Trifolium pratense, red Clover (two varieties); T. hybridum, Alsike Clover; T. repens, Dutch Clover; T. filiforme, Suckling Clover; and T. incarnatum, Honeysuckle Clover. The T. pratense (variety one) was evidently a cultivated form of the red Clover, which appears to be native in most good pastures, and more especially in lowland districts, in which, however, it never attains the size of the sown plant—its leaflets are broad with a semilunar white spot to each, the heads of flowers dense, their base resting in the expanded stipules of the upper pair of opposite leaves. The other form is distinguished by the name of T. pratense perenne, and, as far as I can at present make out, is larger in its growth than the former; the head of flowers is slightly stalked, and the lower part of the stems hollow. This sometimes receives the common name of Cow-grass. Now, my object in being thus particular in describing these two plants is to point out the confusion in which this matter seems at present involved, inasmuch as in agricultural works we find the T. medium, zigzag Trefoil, as the Cow-grass, and there is no doubt that it is a valuable species, as being capable of yielding a much larger crop on light soils; this can be distinguished from the O. pratense by its narrower, longer, and more pointed leaflets, in which the white spot is absent, and a more lax stipitate head of darker reddish purple flowers.

From these remarks it would appear that there are at least two forms of Clover in the market which have got the name of Cow-grass, though I must confess that the true form, namely the T. medium, is seldom met with in cultivation in this part; and as two varieties of T. pratense are distinguished as broad Clover and Cow-grass, it is no wonder that farmers hereabouts should constantly find it difficult to distinguish them; indeed this is a subject in great confusion, and from the samples which have from time to time been sent to me as the one or the other, I freely confess it will require another season of observations to enable me fully to make out the true market Cow-grass.

The T. hybridum succeeded admirably in our plot, and as the soil has been described as of very inferior quality, I am induced to recommend a further trial. It has an upright method of growth, is of a truly herbaceous habit, with abundant leafage, and is good either for green food or hay. I shall this year try its behaviour in mixed "seeds." I am informed that it is a general plant in Belgium, and, if on a larger scale it does as well as its promise in my small experiment, it may become a valuable addition to our Clover list; and in this matter we should be disposed to welcome all good new comers, as experience shows that older kinds lose much of their good characteristics by constant repetition.

The Trifolium repens keeps the best hold of the soil; its scions spread year after year, lusty and strong as the parents. Could a variety of this plant be obtained that would yield a larger quantity, it would be invaluable; as it is, on our light thin soils, it is of great use for seed mixtures, as it fills up the bottom with a green delicious herbage, which would often in seasons of drought become dry and cracked, and the Rye-grasses resolve themselves into mere calms or, as our farmers term them, bents.

The T. filiforme is of very little importance, its habit of growth is so small as to render it not worth cultivating as a self crop, nor is it of service even in mixtures; however, it increases instead of diminishing in my plot, now three years old.

The T. incarnatum is an introduced annual Clover, and certainly yields a large crop in very poor soils; our patch was sown in 1852, since when it has not been resown; but year after year it comes up well from seeds, and with but little change.

I know little of its feeding properties, but I am inclined to think, from its appearance and mode of growth, that it is worth trying as an occasional crop, as it wants but little preparation, and seems to get on anything but badly in very poor soil.

The group of Leguminosæ next in importance to the Trefoils as fodder, is perhaps the Vetches. Of these, my plots contained four forms, namely, Vicia angustifolia, narrow leaved Vetch; V. sativa, common Vetch; V. sepium, bush Vetch; and V. cracca, cow Vetch.

The first of these, V. angustifolia, was planted with seed collected by myself in Earl Bathurst's Park; and as I was much interested in its cultivation, I was very careful in the choice of the seed, and in observing the result. It was drilled in rows about 15 inches apart, and came up very regularly and flourished well; however, when in flower, there was a marked difference in some of the plants, inasmuch as they were more robust and presented broader leaves than the others; and as they progressed to seeding, the difference became still more apparent, as the larger examples bore broader pods, which contained larger seeds than those presented by the more delicate plants of the typical V. angustifolia. In fact, there was no getting rid of the conclusion that from the same seed was obtained in one year two types of a plant which have been referred, when growing in wild nature, to two distinct species; and as this is no less interesting as an agricultural than a botanical subject, I shall give, in brief, in opposite columns the characteristics of the two forms.

V. angustifolia (Narrow-leaved Vetch)	V. angustifolia, var. *Sativa* (Common Vetch.)
Flowers mostly solitary, of a fine crimson colour.	*Flowers* more frequently in pairs, colour not so vivid.
Leaflets long and narrow; length 6, width 1.	*Leaflets* of the proportions of 4 in length to 1 in width.
Pods long, narrow, of the same relative proportions as the leaves. Seeds small. Whole plant very delicate, and of elegant proportions.	*Pods* of the same proportions as the leaves. Seeds nearly twice the size of *V. angustifolia.* Whole plant more robust.

The V. sativa here obtained was in reality that species as it is found wild, and there is no doubt that another season of sowing will produce the still larger form in general cultivation. As a botanical question it may be doubted whether, as some authors now admit, that V. angustifolia is a variety of V. sativa. I am inclined to think that the former is the true species, and that the latter is the result of change from cultivation, the smaller form being always found in the wildest districts, whilst the larger mostly occurs in the best agricultural districts.

The V. sepium was introduced into my garden as a trial plant, on account of its flowering so early in the spring. I find that it bears the winter tolerably well, and the first summer yields a tolerable cutting of herbage: the second year, for it is perennial, increasing by stolons. This is much increased, so that at present I am inclined to the belief that this may become a valuable species, and more especially if we could succeed in getting a variety that would come to earlier maturity.

Vicia cracca is also perennial, but it does not succeed so well as the former when removed from the vicinity of bushes or some such support; besides which, its seeds are shy of germinating. However, my specimens planted in 1851 increase yearly; both these latter are readily eaten by cattle; and if found to promise well for cultivation, I have reason to hope that they will be analysed in the college laboratory with a view to determine their feeding properties.

I would now mention some facts connected with two varieties of Saintfoin—Onobrychis sativa, and common sativa var. bifera, Giant Saintfoin. The common Saintfoin is universally cultivated on the stone brashes of the Cotswolds, and where grown for the first time, generally produces a tolerable crop; but many years must always intervene before a second attempt can be made on the same land. If cut for hay, it dies out first in proportion to the advancement it has made in seeding; if, therefore, from wet or other causes, Saintfoin hay may be made late, the crop fails the next year, and this from two causes, first, seeding takes a great deal of the soil—secondly, and still more important, it seems to be a law of nature that herbaceous plants when once seeded, lose a large degree of vitality, so that on this principle Clovers and Saintfoin, when cut for hay, for the most part die out at once, when depasturing might continue the integrity of each individual root for an indefinite period.

The O. sativa var. bifera is certainly larger than the common form in my plots. It is earlier, and on cutting the first crop it yields a good second growth. Both my plots were sown in 1849; but as it is usually left to seed, in order to procure examples for lectures, it is curious to mark how gradually, yet surely, it is continually lessening. From what I have seen of the Giant Saintfoin, I am led to conclude that a trial on a larger scale would be advisable, inasmuch as the result in my plot of poor soil shows it to be a plant of extraordinary productiveness.

The Ulex europæus, common Furze, is a plant that seems to choose the poorest of soils for its habitat, though it mostly affects sandy in preference to districts of stiffer soil, so much so, indeed, that in this district the

sandy hills of the age of the Kelloway rock, which dot a line of country to the south and south-east of Cirencester, are in most cases covered with Furze, and the truly silicious beds of the old and the new red sandstone, with the tertiary sands, are always, more or less, covered with Furze. Now as these soils are in general unproductive, it becomes a matter of importance to decide whether the plant, so natural to them, can be mixed to profitable account. That Furze is readily eaten by cattle, when properly prepared, there can be no doubt, and I believe it to be a settled question that young stock do tolerably well with it; however, in order to render it fit food, it must be used when very young, otherwise it should be crushed between heavy iron rollers—a process attended with trouble and expense. I have known the plant used extensively on one Cotswold farm, in which it was prepared by crushing; here it was tried for some years, but ultimately given up as not being equal to the expense—in short it was not found to pay.

Home Correspondence.

Bread and Flour.—In reply to "John Hall," Brentwood, we do not understand why bakers charge so much for the quartern or half-gallon loaf; it has a long time been beyond the market price for Wheat, besides a very inferior flour is charged the same as for the best. As to the proper or usual charges, and again as to the yield of flour per bushel, &c., I will reply to these consecutively. 1st. If Wheat be 100*s*. a quarter, or five pounds, and five quarters make a load of Wheat, *i.e.* ten sacks, worth 25*l*., we consider the baker's price should be 1*d*. to each pound for a gallon loaf, that is 25 pence, or 2*s*. 1*d*.—if 18*l*. a load, 1*s*. 6*d*., and so on; but when Wheat was 17*l*. the load, the bakers were charging 1*s*. 6*d*. and 1*s*. 7*d*. per gallon loaf. The baker's reply in the village was, "The millers, sir, will only allow us a penny a gallon profit on the flour." A baker's profit on a gallon loaf is 4*d*., which the labourer saves by baking at home, a very important fact in the economy of a cottage. The millers have made large sums of money on the sale of flour, and much very inferior stuff has been sold as best. 2dly. As to yield of flour, out of every bushel of Wheat—last year was a bad season, the yield being five gallons—ours yielded six gallons (Spalding's Wheat), which would make eight gallon loaves out of the bushel of Wheat; and we have no doubt our Wheat of this last season will yield better than six gallons of flour per bushel. There is no question the yield of flour was very much smaller last year than on average years, but the quality was not bad. If the harvest is ripe, and much rain ensues, much of the saccharine matter is washed out, and consequently the bread is not so sweet. Some deny this fact, but only "fancy" farmers I apprehend. I should say that Wheat weighing 62 lbs. to 64 lbs. a bushel, will yield in average seasons 7 to 7¼ gallons of flour per bushel; but "John Hall" must remember one thing, and that is that the Wheats of last year were very light, and the yield of flour as a consequence small. We cannot conclude these remarks, however, without saying there is great blame due to millers; in times like these, Bean meal, very fine, is added to the flour, and sometimes Barley meal, &c. Then the baker, too, puts in alum (an odious ingredient) and Potatoes, which bread, when toasted, has a leathery consistency. We all know what Pharaoh did to his chief baker—it would be wrong to write it; but the tricks played upon the rich are one thing, but when they are practised upon the poor and needy in times like the present, they ought to be religiously denounced. *X. Y. Z., Hants.*

Root Graters.—"An Advocate for Pulp," in your journal of the 18th ult., remarks, "I have for years considered a machine that would reduce roots to a pulp a great desideratum, and I have often mentioned this to implement-makers." He has, however, as his letter informs us, lately received particulars of a machine of the very kind he has so long been desirous of obtaining; but, on further inquiry, it turns out to be only a "slicer," and similar in its results to Moody's patent, as manufactured by myself, which reduces the roots into thin strips: and your correspondent therefore kindly remarks that as Moody's answers the purpose well—has the advantage of being a prior invention, and is moderate in price —he would recommend it to those who require a machine upon that principle. My object therefore in writing to you is to state, for the benefit of your correspondent and those gentlemen who wish to procure "pulpers," that I manufacture a very good machine (also an invention of Moody's) which grates the root into a pulp on a principle quite distinct from the slicer, and which may be worked by a pony, reducing from 60 to 80 bushels of roots per hour. They are used by many practical agriculturists, and amongst others I may be allowed to name J. H. Langston, Esq., M.P., Sarsden, Oxford; J. J. Farquharson, Esq., Langton House, Blandford; and W. Melsome, Esq., Norton Bavant, Wilts. *W. H. Carson, Warminster.*

The Primary Use of Ammonia.—When Mr. Prideaux says (*Gardeners' Chronicle*, Jan. 14), that I seem to go to the opposite extreme, in my communication at p. 11 of the *Agricultural Gazette*, Jan. 7, I suppose he must refer to the theory of Liebig, that the carbon of plants is derived exclusively from the carbonic acid of the atmosphere. My observations, properly speaking, had nothing to do with that subject, but were directed to showing, as it appears to me, that the primary use and purpose of ammonia, in vegetable economy, is to supply hydrogen, for the formation of vegetable substance in conjunction with carbon. The course of reasoning, however, which I pursued, led me, in explanation of my views, to make use of the hypothesis, that plants derive carbon from the carbonic acid of the atmosphere, which I believe to be founded in truth; but I was far from supposing, in accordance with Liebig's theory, that the atmosphere is the only source whence plants obtain their carbon, as my remarks themselves show, wherein I observe "Apart from whatever carbon may exist in the ground, in a state fit for the use of plants, there is, &c." The entire truth probably lies between the two extreme hypotheses, which would derive the carbon of plants exclusively from the carbonic acid of the atmosphere on the one hand, and from the ground in the form of humates, &c., on the other; each having a substratum of truth to rest on. At least, this is the common-sense view which facts and appearances are calculated to suggest. Knowing the requirements of plants for carbon, and that there is a constant generation of carbonic acid going on, from animal respiration, and from the combustion and decomposition of vegetable and other carbonaceous matter, what more natural inference than that plants, which respire oxygen, are the appointed means in the economy of nature for preventing the undue accumulation of carbonic acid in the atmosphere, and for restoring to it its just proportion of oxygen, abstracted from it in the above-mentioned processes. On the other hand, again, when the gardener, from the decomposition of a heap of leaves and other vegetable refuse, has obtained a compost in which his plants flourish in the greatest health and beauty, it would be difficult to convince him that the elements of vegetable growth and development are not contained in the compost he has prepared for them. But I am unable to perceive the same foundation in truth and fact of the hypothesis which refers the composition of vegetable substance to the chemical union of water and carbon, resting, as it seems to do, only on the fact, that in certain substances, as sugar and wood, oxygen and hydrogen are found in the atomic proportions in which they constitute water. To support such a view, should it not be shown that vegetable substance generally, and not in a few isolated instances only, is so composed? But as observed by "M. J. B." in a leading article of the 7th inst., a multitude of instances may be given in which no such proportions exist. When Mr. Prideaux asks me, if I have borne in mind the above fact respecting the composition of wood and sugar, I would observe in reply, that the circumstance of two of the elements of a tertiary compound existing in proportions in which, taken by themselves, they constitute a separate compound substance, does not convey to my mind any satisfactory proof that the larger compound is a chemical union of the minor with its third element, or has in any way derived its origin from it. In the vast variety of substances, composed of three or four simple elements, may not the same fact be often observed, of two of their elements existing in proportions in which, taken by themselves, they constitute some other substance, without conveying the inference which is sought to be deduced from the composition of wood, &c. Plants certainly imbibe water in large quantity; but the phenomena observed in connexion with this fact are its existence in the sap and juices of the plant, holding in solution matters from which its substance is elaborated, similar to the blood of animals; and its exhalation by the leaves in an unaltered state, which, as observed by "M. J. B." in a recent Number, points to water as the vehicle or solvent of those substances which constitute the food of plants, and not as forming the nutriment itself from which their substance and products are eliminated. The term hydrated carbons, as applied to vegetable substances, and the special view expressed by it, give us to understand that vegetable matter is nothing but water in chemical union with a third substance, carbon; and of consequence it follows that a stronger affinity or relation must subsist between the two elements of the compound, water, than between the carbon and either of the other two elements singly. But the affinities, so far as they are cognizable from observed phenomena, appear to lie quite the other way. Take for instance wood, in which oxygen and hydrogen exist in the proportions that constituted water, and subject it to combustion; the result is the exhibition, in flame, of a gas composed of carbon and hydrogen. The igniting of the wood severs the union of the carbon and hydrogen, and it is then only, *i.e.*, on the dissolution of this union, and by the power of the same high temperature which effected it, that the hydrogen is enabled to unite with oxygen and form water. I submit, then, whatever be the proportions in which oxygen exists in vegetable substances, they are properly and truly a combination of carbon and hydrogen. Mr. Prideaux, with reference to my views respecting the purposes of ammonia in vegetable economy, directs my attention to the fact that nitrate of soda produces luxuriance of vegetation as well as ammonia. The inference intended to be drawn from this, I presume, is, that the effect is due to the avidity of plants for nitrogen; and I am willing to admit that if it were true of plants generally, it would militate against the correctness of my views. But is it so? or is it only in some special instances capable of being explained by the peculiar requirements of certain plants for nitrogen to form nitrogenous matter, that they exhibit as great luxuriance from nitrate of soda as from ammonia? In that case the effect produced by the nitrate of soda in these partial instances, so far from weakening, would help to strengthen and confirm my observations, by showing that ammonia causing a luxuriance of growth in the generality of plants, which nitrate of soda does not, it must be due, not to the nitrogen, but to the hydrogen contained in the ammonia. *J. H. H.*

Mush from Maize, Boiled Rice, Formation of Ammonia.—Mush from Indian Corn (see p. 61), is made in different ways; the simplest like flour paste. Put 5 pints of water over the fire, in a pot or skillet, then take 1 lb. of Indian meal, well sifted from the bran, and mix with a little cold water, so as to make a thick batter; add salt. As soon as the water boils, add the batter, stir it well, and keep it stirred and boiling for at least 20 minutes. It should be about the consistence of hasty pudding, porridge, or stir-about; and may indeed, be made in the same way. Take it up, and eat it with milk, butter, sugar, or treacle. In this form it can easily be made, and distributed to the poor from soup houses. Benevolent individuals, too, might prepare the mush, in their own kitchens, and give it to the hungry and destitute. This is the most manageable and convenient of all the preparations of Maize; it is used daily in a large number of American families, and considered a most wholesome diet. What is not used at one meal is cut into slices, and fried or heated upon the gridiron, at the next meal, and eaten with butter or treacle (Bartlett on Maize).—To rice, the principal objection, in passenger ships (1853, p. 810), is the long boiling it requires; for it should be thoroughly dressed, to render it most easily digestible (p. 530), and though the water may add nothing to its nutritive matter, it is an error to suppose it does not improve its nutritive quality. Beef and other flesh contain three-quarters its weight of water diffused through its entire texture, and fitting it for the action of its stomach; and it is easy to dry this water away, at a gentle heat, and leave the meat as hard as rice. But eaten in that state it will not produce half the nourishing effect it does when properly cooked. And our aliments generally, in their most digestible and nourishing state, contain from 40 to 60 or more per cent. of water (butter, cheese, sugar, &c., excepted).—"J. H. H.," on the formation of ammonia from hydrogen, says (p. 59) that a heap of vegetable matter, containing no appreciable nitrogen, emits a pungent odour of ammonia, in properly managed fermentation. With due deference, let me ask if this is not a mistake? it is contrary to my experience, as well as reading; in both which, non-nitrogenous matters generally ferment acid. If his statement is drawn from actual experiment, the details may be of considerable value to your readers. *J. Prideaux.*

Management of a Small Farm.—At page 93 "J. L." asks advice on the management of his small farm. I have had a little experience in spade husbandry in a small way, and so venture to give him my opinion. "J. L." has 13 acres of land; 10 pasture, 3 arable. The plan which I should adopt, were I in his place, would be to break up 2 more acres of the pasture, and introduce the following rotation:—1 acre Wheat followed, on three parts of it, by Vetches, Rye, and Trifolium, one part turned up rough; 1 acre roots, as Mangold, Swedes, &c.; 1 acre Barley, 1 acre Clover, 1 acre Potatoes. There will thus be 3¾ acres to be dug yearly. Hacking will do for putting in the Vetches, &c., after the Wheat. Supposing he keeps three cows and one breeding sow, and a few poultry,—the cows will require the Vetches, &c., and second cutting of Clover during the summer; and the hay made from the first cut of Clover, with that from 1 acre of pasture, with ½ an acre of the roots, will be sufficient for the winter. The Barley, with small Potatoes and roots, will supply the pigs and fowls. The Wheat for home consumption, also the Potatoes, with several sacks for sale. There will thus be left 7 acres of pasture, on which, if no other stock were kept, he might keep some sheep, but how many I cannot say. I estimate the labour required at one man and one woman constant. A man can dig an acre in 20 days; supposing that 80 days are consumed in digging, 80 more, with the help of a woman, would be sufficient for the cultivation of the crops. Thus there would be a wide margin for wet days, feeding and milking. I should recommend "J. L." to dig his land with the steel forks, which do their work well. *Clericus.*

Societies.

ROYAL AGRICULTURAL SOCIETY.

MONTHLY COUNCIL, *March* 1.—Mr. PUSEY, President, in the chair.

The following new members were elected:

Cust, Captain Henry, Cockayne-Hatley, Biggleswade
Severn, Frederick, Lullington, Burton-on-Trent
Cresswell, R. Ward, Ravenstone, Ashby-de-la-Zouch
Hetherington, Robert, Manor House, Ropley, Alresford
Clarke, Edward, Glentworth, Lincolnshire
Bailey, William, Oaken, Wolverhampton
Rotton, Richard, Watford, Hertfordshire
Horwood, Matthew, 2, Hatton Court, Threadneedle St., London
Worsley, Lord, Brocklesby Park, Ulceby, Lincolnshire
Butler, Major, Liphook, Hampshire
Edwards, Frederick, Frood Farm, Carmarthen
Simpson, John, High Street, Lincoln
Thackeray, Captain, Faubourg St. Honoré, Paris
Parry, Thomas A., Bitham House, Banbury, Oxon
Bloodworth, Charles, Kimbolton, Huntingdonshire
Spenser, Edwin, Leominster, Herefordshire
Banfield, Thomas C., 18, Queen Square, Westminster
Griffin, Frederick C., Methwold, Brandon, Norfolk
Harrison, John, jun., Heaton-Norris, Stockport, Cheshire
Widdecombe, John, 7, Old Palace Yard, Westminster
Crossley, Robert, Holland Street, Newton, Manchester
Budd, William, Aston-le-Walls, Daventry, Northampton
Parton, John, Cow Lane, Newton, Manchester
Chaffer, Benjamin, Burnley, Lancashire
Llewellyn, L., Trispenllwch, Swansea, Glamorgan
Keyworth, Thomas M., Cottesford Place, Lincoln
Kitson, William, Torquay, Devonshire

Morris, George, Kirmond, Market-Rasen, Lincolnshire
Richardson, Robert, Appleby Castle, Westmoreland
Bourton Thomas, Baunton, Cirencester, Gloucester
Donne, Rev. Stephen, Oswestry, Salop
Bond, Robert, Thorington, Saxmundham, Suffolk
Biddell, Manfred, Playford, Ipswich, Suffolk
Reeve, James, Randall's Farm, Leatherhead, Surrey
Holborow, Daniel, Knockdown, Tetbury, Gloucestershire
Ewens, John Samuel, 4, Arthur Street West, London Bridge
Roscoe, W., Ensbury, Wimborne, Dorset
Ellison, Lt.-Colonel, Boultham Hall, Lincoln
Voelcker, Augustus, Phil. D., R. A. College, Cirencester
Iles, Daniel, Fairford, Gloucestershire
Freeman, Thomas, Henham, Wangford, Suffolk
Daniell, Thomas, West Bergholt, Colchester, Essex
Tovey, Robert, jun., Fairford, Gloucestershire
Biggs, Joseph, Barden House, Tonbridge, Kent
Prescott, Francis, Castle Farm, Dover, Kent
Allen, Ralph, Bathampton, Bath, Somerset
Dudding, Richard, Panton, Wragby, Lincolnshire
Brewster, James, 1, Granville Square, Pentonville
Ruddock, Joshua, The Terrace, Putney, Surrey
Frost, Charles, Wherstead, Ipswich, Suffolk.

The names of 34 candidates for election at the next monthly meeting were then read.

FINANCES.—Mr. Raymond Barker, chairman of the Finance Committee, read the report on the accounts of the Society; from which it appeared that the current cash-balance then in the hands of the bankers (including the Lincoln subscription) was 1599*l*.

REDUCTION OF EXPENDITURE.—Col. Challoner reported progress, on the part of the Reduction of Expenditure Committee, and obtained further time for the sitting of the committee.

LINCOLN MEETING.—The Hon. Leslie Melville, Vice-Chairman of the General Lincoln Committee, presented the report of that committee, which was postponed for further consideration.

PROTESTS.—On the motion of Mr. Thompson, seconded by Mr. Milward, the following resolution was passed: "That it be an instruction to the stewards to endeavour if possible to decide all protests against the awards of the judges, at the country meeting, before the conclusion of the meeting; that such protests shall be delivered to the stewards, at the directors' office, in the show-yard, before 6 o'clock on the Thursday evening of the show-week; and that no protest shall be *subsequently* received, unless satisfactory reasons be assigned for the delay."

TRUSTEE.—On the motion of Mr. Fisher Hobbs, seconded by Mr. Thompson, Sir John Villiers Shelley, Bart., M.P., was elected one of the Trustees of the Society, in the vacancy created by the decease of the Hon. R. H. Clive.

GUANO SUPPLY.—On the motion of Mr. Fisher Hobbs, seconded by Mr. Woodward, the following special committee was appointed, for the purpose of taking into consideration the present position of the guano supply, and of offering to the Council any recommendation of measures to be taken by them in reference to that question: namely, the President, Duke of Richmond, Earl of March, Lord Berners, Sir John Shelley, Sir John Johnstone, Mr. Bramston, M.P., Mr. E. Denison, M.P., Mr. Barrow, M.P., Col. Challoner, Mr. Raymond Barker, Mr. Thompson, Mr. Woodward, Mr. Lawrence, Mr. Caird, and Mr. Fisher Hobbs. The Council directed the committee to be summoned for Wednesday next, and requested Mr. Fisher Hobbs to act as its Chairman.

IN-CALF HEIFERS, intended for exhibition at the Lincoln meeting, must be bulled before the 31st of March, and will only receive prizes that may be awarded to them in the event of their producing live calves before the 31st of January next.

The Council adjourned to the 8th of March.

Reviews.

The Distribution of Heat over the Surface of the Globe. Taylor and Francis. London, 1853.

THE beautiful maps, presented by Professor Dove, of Berlin, to the British Association for the advancement of Science, representing the temperatures in the different months of the year over the globe, are most important contributions to the science of meteorology, and they bespeak the industry of their distinguished author; we wish to make a few remarks in regard to his views on the atmospheric currents of our northern latitudes with reference to the remarkable snow-storms of this winter.

Professor Dove has been led to consider that there are just two atmospheric currents, which flow side by side, in the northern latitudes; one current being directed towards the poles, the other towards the equator. In his view, when a south-west wind is blowing in our latitude, a north-east wind must also be blowing somewhere else to maintain the equilibrium of atmospheric pressure. In many instances which have come under our observation very opposite climatic conditions are sometimes existing in two different stations, and at no great distances from each other, and the views of Dove give us a very satisfactory explanation. He has been further led to believe that storms are formed, of a rotatory character, when the north-east and south-west winds come in contact with each other. It should be borne in mind, however, that this view is quite opposed to the theory of rotation which has been advocated by Mr. Redfield, and adopted by many others, although those two theories are often confounded; he says:—

"It is evident from the researches that I have already published on the non-periodic variations of temperature, that opposite conditions of weather usually prevail simultaneously in the same parallels under different meridians; and that in particular, America and Europe usually present such an opposition, so that a severe winter here corresponds to a mild one there, and *vice versa*. On these phenomena is grounded the assumption on which the explanation of the law of rotation rests, viz., that there are, properly speaking, only two atmospheric currents on which our relations of weather depend—a polar and an equatorial current—which within the tropics flow one over the other, but beyond the tropics flow beside each other in variable channels.

"As colder air occupies less space than warmer air, it follows that the polar are narrower than the equatorial currents. Therefore, the existing atmospheric equilibrium necessarily implies a preponderance of southerly winds (in the northern hemisphere); which from the earth's rotation become south-westerly ones." (Page 20.)

It would appear that the east winds which prevailed in December last, and gave us such cold weather, continued their course right across the Atlantic. A Canadian gentleman who left New York that month, informed us the other day that the wind "cut the steamer's masts all the way," and that it was four days later than usual in reaching Liverpool. The winter also in Canada had been longer in setting in than had been the case for many years. This is a good illustration of the truth of Dove's remark.

The predominance of south-west winds in our latitude is too great to be accounted for on the supposition that the colder and less frequent north winds which blow at the surface of the ground can afford the necessary compensation for maintaining the barometer at a medium pressure. And besides, as Dove has fully admitted that the prevalence of north-west winds on the east coast of the United States, and also in Canada and Greenland, is the cause of the severe winters, it may be asked what becomes of this current which flows into the Atlantic from the American continent? This current does not reach the European coast—if it did so our winter would be much more severe, as it is well known the thermometer rapidly sinks when the wind goes to the north-west; and also if there was truth in the law that the earth rotating on its axis converts a south wind into a westerly one, we should also expect that the north-west wind which flows into the Atlantic from America should be converted, first into a north one and afterwards to an east wind. That this does not happen is seen in the predominance of south-west winds in the Eastern Atlantic.

The solution of this matter appears to be, that part of this north-west American current reaches Europe by flowing as an upper current. This is a very common phenomena, although it has not been much taken notice of. The lower portions are converted into south-west winds as they cross the Atlantic, by the lower strata becoming heated, which overturns the connection, encouraging the mixture of the air of different specific gravities through vertical gyrations. This is one of the forces that propel the south-west winds in furious gales.

We do not doubt that a north wind is sometimes converted into an east one as the effect of the earth's rotation. There is evidently a great sympathy or connection between the north and east winds, such as those of December last. But instead of the polar current being in general easterly, as this physical law would lead us to expect, it is commonly from the north-west. Humboldt made this observation many years ago, on comparing the logs of vessels navigating the Atlantic. It appears that the polar current, instead of always flowing side by side with the equatorial, more commonly flows as an upper wind from the north-west. This relation of the two currents is very common in our latitude, our mild winters also result from this action; but we cannot enter further on this subject at present.

The severe storm of snow which occurred in Aberdeenshire in the end of December last (from the 26th to 31st) seems to have been a mere modification of what is seen in those storms which veer from south-west to north-west. Previous to this storm the wind had been northerly for some days, but the surface wind changed to a more westerly direction, and brought more moisture with it; on the north upper current asserting its sway at the surface of the ground snow was precipitated, and the quantity was greater as the country was more elevated over which the currents rise. Nearly 20 inches of snow seem to have fallen with the north wind in Aberdeenshire, while the Lowlands of Scotland were visited with a hard black frost.

Throughout the greater part of December the winds were easterly or northerly in Britain. The warming influence of the south-west winds was little felt. The weather, however, was very wet about the 19th in Devonshire. The rains in that county were evidently caused by the equatorial current setting in as an upper wind, while the east wind still prevailed below, and at last drove back the south-west wind above, and restored the cold weather. The east wind, indeed, seems to have maintained its supremacy till the beginning of January, when a severe conflict took place between the east wind as an under current and the south-west wind as an upper, resulting in the latter gaining the ascendancy, and at length freely flowing over the whole island, and causing a great rise in temperature. Before this was brought about, an immense quantity of snow fell, and was driven about by severe gales, of which we shall shortly notice their mode of action.

At the end of last year the frost was very intense over our island; the south-west wind, however, was flowing as a surface wind in Jersey as early as the 2d of last month, and a thaw was established. On the 3d and 4th the wind there backed to the east, and an inch and a half of rain fell on these days, but the rapid fall of the barometer probably indicated that the south-west wind was still flowing as an upper current. From the 5th to the 9th the south-west wind was again established in Jersey.

The wind seems to have set in very briskly from the north-east over the south of England on the 3d, and continued in the same direction on the 4th and 5th. The east wind, instead of producing rain, as in Jersey, through its inosculation with the relatively warmer current from the south-west, brought about a remarkable fall of snow over the greater part of England, during the days we have just mentioned. At Bath, our correspondent informs us the weather had moderated by the 6th, and the south-west upper current had so far tempered the east wind that a sudden thaw with rain set in by the afternoon. On the 7th the wind still lingered in the east, but changed to south-west by afternoon, and continued from this quarter all the 8th, when the day was fine. On the 9th the weather was misty, and the wind was turning its face to almost every point of the compass.

As we proceed further north, we find the struggle between the two antagonistic currents—the south-west upper, and the north-east under—a little later in commencing, but much longer in terminating.

In the middle districts of Scotland, the weather was clear and calm on the 3d. The thermometer in the morning at one station had been down to 12°, little symptoms of change were visible, people were only wondering at the low and falling barometer. Slight cirrus clouds, however, were stealing over the zenith from the west. Another night of hard frost succeeded. On the 4th, the thermometer rose somewhat rapidly to 34°, and continued at this point for more than 36 hours. A strong gale had set in from the east. The east coast of Scotland and north coast of England on the 4th and 5th were "vexed" by one of the strongest eastern gales that has occurred for years; very little snow fell there on these days, but more on the 6th, when the temperature had again fallen to 30°, with little wind. On the 7th, the temperature was 11° at 8 o'clock A.M., but by noon the thermometer rose to 36° with rain. This rapid rise of temperature was caused by a strong upper current from the south-west, although the north-east wind again blew furiously below, and it swept all the snow off at a temperature of 36°. The wind continued from this quarter until it drove back the south-west currents; the temperature gradually fell, and on the 10th the country was again covered with 4 inches of snow.

It is worthy of observation, that while little snow fell on the 4th and 5th of January on the east coast of Scotland, more fell in the south-west of Scotland, and in the north of Ireland. In Belfast there was a considerable fall of snow on the 4th, with a strong wind from the north-east; and in various localities not far from that town, the snow was several feet deep. The north-east wind was comparatively dry on the Scottish coast, but it was precipitating snow in immense quantities over England and Ireland from the south-west upper current, which was affording the materials. It is very generally supposed that it seldom rains on the west coast of Britain, as in Ireland, when the wind is east; this storm, however, is a good instance out of many which might be cited for a contrary opinion. In fact, we believe that quite as much rain falls on the west coast of Britain, and also in Ireland, with east winds, as on the east coast, but the excess of moisture in the former localities arises from the greater quantity which falls with west winds. A rather curious and tantalising example of the dryness of east winds on the east coast, while they were raining in the more inland parts of the country, occurred last season in Scotland. For a few miles inland, along the coast of East Lothian, Fife, Forfar, and also over a great part of the county of Aberdeenshire, the summer was the driest which has occurred since 1826; in some localities there was not enough moisture to braird the late-sown Barley and the Turnips, while a few miles to the westward the rains were in great excess, although the wind was mostly from the eastward, with an upper current from south-west. It is only under such conditions that great falls of rain or snow occur in Britain with east winds. But how delicately are the conditions of precipitation often balanced, and how nicely are their limits prescribed to confound those who ignorantly pretend to foretell the nature of the weather in particular localities!

After the snow-storm in the south of England on the 3d, 4th, and 5th of January, the temperature rose considerably, and the wind went to the south-west. In the north of Scotland there was a much greater store of dry cold air, which kept the south-west wind much longer in check, although it is very probable that it existed in the higher strata of the air as early as the 3d of January. We give a few particulars of the weather at a station 35 miles from the sea, and 600 feet above its level, in Strathdon, in Aberdeenshire, for the purpose of comparison.

Jan. 3. Intense frost, 5° below zero; barometer falling.
Jan. 4. Intense frost, 6° below zero at night; 12° at noon.
Jan. 5. Minimum temperature 12°; cirrus from the south-west; wind below south-east with dry hail showers; barometer still falling.
Jan. 6. Wind east-south-east; frequent showers of snow; barometer 28.42; minimum temperature 10°.
Jan. 7. Cirrus still passing from the south-west; wind below east; thick snow falling all night; temperature 33°.
Jan. 8. Dense fall of snow; gale from east-north-east; upper current south-west; barometer rising.
Jan. 9. Steady fall of dry snow, with cumulo stratus from the east; gale abating; cirrus in masses from a westerly point; temperature 28°.
Jan. 10. Minimum temperature 6°; clear and nearly calm; snow now lying 32 inches in depth where not removed by the wind.

In Strathdon the frost continued until the 16th. The Don was closely frozen over, the general thickness of the ice being from 10 to 18 inches. The warm south-west winds were at length sweeping over Grampian and Lowland by the 17th, and this Polar scene soon began to dissolve. On the 19th "the whole ice on the river was in motion;" here and there a bridge dammed back the torrent for a time, till it gained strength to sweep the

frail barriers before it. "In the space of 20 miles of the upper part of the Don, some 10 or 12 bridges have been entirely destroyed."

Many of the particular phenomena of the storm at which we have very cursorily glanced, are very suggestive of remark, but here it would be entirely out of place to enter upon. We would, however, direct the attention of meteorological observers to mark the different currents in the atmosphere, as the only means by which the laws which regulate the aerial disturbances can well be traced. We are thoroughly persuaded that little advancement will be made in this department of meteorology until this subject is more attended to by observers.

We would only remark, in conclusion, that it is altogether out of the question to explain the action of the storm of 3d, 4th, and 5th Jan., either upon Mr. Dove's theory of horizontal rotation, or that proposed by Mr. Redfield, as insuperable difficulties meet us at every step, and the same may be said of all the storms of our high latitudes. The centripetal theory of storms, which was proposed by Mr. Espy, is really nearer the truth than either of the other two, and accounts for the bearings of the wind quite as well. We are convinced that all the secondary phenomena of British storms will admit of being satisfactorily explained through the action of the different strata being unequally heated. If there is any rotation it is vertical and not horizontal. Mr. Redfield's theory has been very generally received by scientific men, but there is very little harmony in their expressed views, which are often entirely opposed to the laws of that science which the sagacity of Dalton traced out, when the actual phenomena are investigated. *R.*

Miscellaneous.

Improvements in Agricultural Implements employed in Crushing and Rolling Land, and in frames for the same. By G. Harriott, Islingham, Frindsbury, Kent. Patent granted May 28, 1853. (No. 1314.)—*Claims:* 1. The constructing of implements for crushing and rolling land from a cylinder or cylinders with a screw thread on the outer surface, as described. 2. The constructing of compensating spring-frames for rollers employed in the rolling and crushing of land. *Mechanics' Magazine.*

Calendar of Operations.

FEBRUARY.

South Devon, *Feb.* 28.—We have had one of the finest months of February known for years past, and everything is progressing accordingly. During the past fortnight the sowing of Oats has been the principal farming operation. Preparations are also being made for Potato culture; and notwithstanding the numerous reverses Potato-growers have met with, it appears likely that there will be a large breadth again planted. The orchards are now claiming their share of attention, and old trees are being removed, to be replaced by younger ones; this, unfortunately in too many instances, is regarded as a trifling operation, whereas, to an orchard estate it forms one of the most essential features; the selection of young trees, both as regards sorts and quality of plants, as well as preparing the pits for them, cannot be too forcibly impressed on the minds of those who hold orchards. The young Wheats are now getting in good order for rolling and crushing, and on the whole look very favourable. The lambing season has generally been a fortunate one, and many fine lambs may now be seen about the country. Prices of farm produce still continue good. Wheat, 80*s.*, Barley, 38*s.*, and Oats, 28*s.* per quarter; beef, 58*s.* per cwt., mutton, 6*d.* to 7*d.* per lb.

Wester Ross, *Feb.* 28.—Notwithstanding the wetness of the weather and the dampness of the soil, the ploughs are again busy turning over the ground, preparatory to sowing in the spring seeds. Wheat sowing, that was not overtaken in autumn, is now proceeded with; and by the time the whole is accomplished there will be more than an average breadth sown. Later autumn-sown Wheat has, at last, come well above ground, and presents a thicker braird than, from the severity of the winter, might have been expected. Cattle in open courts and sheep exposed to the vicissitudes of this inclement season, have scarcely thriven so well as in ordinary winters; but, as Turnips are yet abundant, and with a genial spring, much progress may be made. Grain, after having fallen somewhat in price, is again firmer, and tending upwards. Potatoes, fortunately for the Highlands, have lately increased in value. Farmers in this quarter have been in the habit of giving ground to the poor people in which to plant Potatoes, and all that the farmer received in return was the benefit derived by the land from their manure, after having grown their crop of Potatoes. From the increased value of Potatoes, the habit bids fair to be done away with, as it is now greatly more advantageous to the farmer to grow Potatoes for himself. There will, very likely, be a larger quantity of Potatoes planted this season, in this quarter, than there ever was in any former year. Horses now sell uncommonly high; and we look forward to a brisk demand at remunerating prices for both cattle and sheep. The farmer, in the midst of this unlooked-for prosperity, rejoices exceedingly, and anxiously desires many returns of such a season.

Notices to Correspondents.

Bantams: *Constant Reader.* We do not know of any publication likely to meet your demands. Were the "Poultry Book" a less expensive work, we should recommend that as likely to give the required information.

Carbonate of Soda: *Constant Reader.* Certainly; other manure ought to be added. We have looked through the records of numerous experiments without finding results of the kind you desire, viz., the effects of carbonate of soda *alone* on Mangold Wurzel, Potatoes, and Turnips. Perhaps some of our readers may help you.

Guano: *J H Guano.* It deteriorates wherever and whenever it makes its presence known by smell; but if kept in bags in a dry and close cellar, it may be considered practically safe.

Meadow Land: *A Reader.* If soot and gypsum are both easily to be had near, we should be inclined to mix 20 bushels of the former with 2 cwt. of the latter per acre, and spread them broadcast over the field.

Milk: *E G.* Milk contains butter, curd, sugar, water, and mineral matter—chiefly phosphate of lime.

Wireworm: *J L H.* There is no remedy except constant stirring of the land and exposure to frost. Pressure, too, which acts on an altogether different principle, has been said to check its ravages; and Crosskill's clod-crusher was highly praised for its services in that respect. When the land is occupied by a crop which you wish to save, the latter is the only remedy left you.

Erratum. For "too," in the 11th line from the top of col. *a*, p. 122, read "*was*;" and for "*was*," immediately below it, read "too."

GLASS.

THOMAS MILLINGTON, Importer of Foreign Sheet Glass, requests attention to the present Prices of Glass and Stock sizes, which are cheaper and better than those of English manufacture:—

PACKED IN ONE HUNDRED FEET BOXES, THIRDS QUALITY, BOXES INCLUDED.

Inches.	Per 100 ft.	Inches.	Per 100 ft.	Inches.	Per 100 ft.	Inches.	Per 100 ft.	Inches.	Per 100 ft.	Inches.	Per 100 ft
6 by 4	12*s.*	12 by 10		14 by 11		16½ by 12½		18 by 13		18 by 14	
6½ „ 4½		12½ „ 10½		14½ „ 11½		17 „ 12		18½ „ 13½		18½ „ 14½	
7 „ 5	14*s.* 6*d.*	13 „ 10		15 „ 11		17½ „ 12½		19 „ 13		19 „ 14	
7½ „ 5½		13½ „ 10½		15½ „ 11½		18 „ 12		19½ „ 13½		19½ „ 14½	
8 „ 6		14 „ 10		16 „ 11		18½ „ 12½		20 „ 13		20 „ 14	
8½ „ 6½		14½ „ 10½		16½ „ 11½		19 „ 12		20½ „ 13½		20½ „ 14½	
9 „ 7	17*s.* 3*d.*	15 „ 10	20*s.*	17 „ 11	20*s.*	19½ „ 12½	20*s.*	21 „ 13	20*s.*	21 „ 14	20*s.*
9½ „ 7½		15½ „ 10½		17½ „ 11½		20 „ 12		21½ „ 13½		21½ „ 14½	
10 „ 8		16 „ 10		14 „ 12		20½ „ 12½		22 „ 13		22 „ 14	
10½ „ 8½		16½ „ 10½		14½ „ 12½		16 „ 13		16 „ 14		22½ „ 14½	
11 „ 9		17 „ 10		15 „ 12		16½ „ 13½		16½ „ 14½		23 „ 14	
11½ „ 9½		17½ „ 10½		15½ „ 12½		17 „ 13		17 „ 14		23½ „ 14½	
12 „ 9		13 „ 11		16 „ 12		17½ „ 13½		17½ „ 14½		24 „ 14	
12½ „ 9½		13½ „ 11½									

IMPROVED PATENT ROUGH PLATE, PLAIN, FLUTED, AND IN QUARRY PATTERNS.

British Plate, Patent Plate, Sheet, Crown, and Coloured Window Glass. Pure White Shades for Ornaments. Pumps, Water Closets, and Plumbers' Brass Work. Genuine White Lead, Paint, Colours, Varnishes, Brushes, &c.

Tariffs of the above on application to

T. MILLINGTON, 87, Bishopsgate Street Without, London.

HARTLEY'S PATENT ROUGH PLATE GLASS, 1-8th thick, or 2 lbs. to the foot; 3-16ths, or 3 lbs.; and 1-4th, or 4 lbs. to the foot, for Ridge and Furrow Roofs, Greenhouses, Railway Stations, Engine Sheds, Mills, Market Halls, and Public Buildings generally.

For further information apply to JAMES PHILLIPS & CO., London Agents, 116, Bishopsgate Street Without.

"Rough Plate has never been, and never can be, prejudicial to the colouring of Grapes; though we can easily believe that it has been charged with such a fault by persons who have not skill enough to manage Grapes under glass."—*Gardeners' Chronicle.*

"There *can be no question now* that Rough Plate Glass is the most beautiful, as well as the most useful, kind of glass that can be employed in horticulture. It is free from all the faults of transparent glass, and has many advantages peculiar to itself, *without a single disadvantage as a set-off.*"—*Gardeners' Chronicle.*

"ROUGH PLATE GLASS.—We should have no hesitation in using this for a Vinery—INDEED WE SHOULD SELECT IT."—*Cottage Gardener.*

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

HETLEY AND CO. are supplying 16-oz. Sheet Glass of British Manufacture, packed in boxes, containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

Sizes.—Inches.	Inches.		Per foot.		Per 100 feet
	Under 6 by 4	at	1½*d.*	is	£0 12 6
From 6 by 4	„ 7 „ 5	„	2*d.*	„	0 16 8
7 „ 5	„ 8 „ 6	„	2¼*d.*	„	0 18 9
8 „ 6	„ 10 „ 8	„	2½*d.*	„	1 0 10
10 „ 8	„ 12 „ 9	„	2¾*d.*	„	1 2 11

Larger sizes, not exceeding 40 inches long.

16 oz. from 3*d.* to 3½*d.* per square foot, according to size.
21 oz. „ 3½*d.* to 5*d.* „ „ „
26 oz. „ 3½*d.* to 7½*d.* „ „ „

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern, either in sheet or Rough Plate Glass.

Propagating Glasses, Beehive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in Glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the excise duty, reduced one-half. List of Prices and Estimates forwarded on application to JAMES HETLEY & Co., 35, Soho Square, London.

FOREIGN GLASS, 16 ounces to the foot, of good quality, in boxes of 100 feet each, suitable for Horticultural purposes. Boxes included.

15*s.* per box.	16*s.* per box.	17*s.* per box.
12 ins. by 10 ins.	18 ins. by 14 ins.	24 ins. by 18 ins.
14 ins. „ 10 ins.	19 ins. „ 15 ins.	23 ins. „ 19 ins.
15 ins. „ 11 ins.	18 ins. „ 16 ins.	24 ins. „ 20 ins.
14 ins. „ 12 ins.	20 ins. „ 16 ins.	25 ins. „ 21 ins.
16 ins. „ 12 ins.	21 ins. „ 17 ins.	26 ins. „ 22 ins.
17 ins. „ 13 ins.	20 ins. „ 18 ins.	27 ins. „ 22 ins.
16 ins. „ 14 ins.	22 ins. „ 18 ins.	

White Lead, Oils, Turps, Colours, &c.

G. FARMILOE & SON, 118, St. John Street, West Smithfield.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

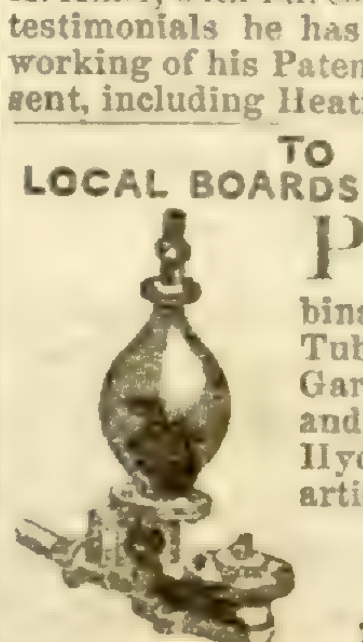
ALFRED KENT'S PATENT WEATHER-PROOF GLAZING WITHOUT PUTTY.—For Horticultural Buildings in Wood or Metal.

Horticultural Building Works, Chichester.

Illustrated Books describing inventions, containing prices and particulars relating to the different designs, sent on receipt of four postage stamps. Nurserymen and others appointed agents on application.

Horticultural Buildings upon this plan having been erected in many different parts of the country, and having stood the trial of all weathers, and more especially the severest of all, viz., frost, A. Kent, with full confidence, strengthened by the many flattering testimonials he has received, can safely guarantee the proper working of his Patent System of Glazing. Estimates and Plans sent, including Heating by Hot Water.

TO AMATEUR GARDENERS, LOCAL BOARDS OF HEALTH, & SANITARY WORKS.



PATENT GLASS TUBES, Iron Coated with Glass, Gutta Percha, Combinated ditto, Patent Flexible India Rubber Tubing, and every other Hose for Watering Gardens. The Hydraulic Ram, Fire, Garden, and every other kind of Pump, Sluice Cocks, Hydrants, High Pressure Cocks, and all other articles to be had, Wholesale and Retail, of

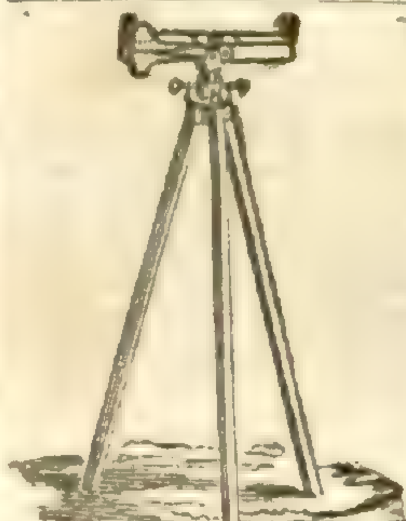
FREEMAN ROE,
Hydraulic Engineer,
70, Strand, and Bridgefield, Wandsworth.

CHAFF-CUTTERS, of the best workmanship, 25*s.*; Two-Knifed Chaff Engines, from 63*s.*; Mills for Bruising Oats and Beans, from 45*s.*

WILLIAM DRAY AND CO., Agricultural Implement Manufacturers, Swan Lane, Upper Thames Street, City.

PATENT ROOT GRATING MACHINE.

BUSHE & BARTER'S PATENT ROOT GRATING MACHINE, Manufactured and Sold by Alex. Shanks & Son, Arbroath, Forfarshire, from whom particulars, with prices, may be had.—Arbroath, March 4.



WEIR'S DRAINING LEVEL. Price 30*s.*

These Draining Levels have lately been greatly improved; they have stood the test of five years' use, during which upwards of 1000 of them have been sold. They are so simple that any labourer who can read can use them. They require no graduated staff, the index telling at once the rise and fall in inches without any computation.

Edward Weir, Agricultural Engineer, 16, Bath Place, New Road, (6 Doors West of the Hampstead Road), Removed from Oxford Street.

WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

	£ s. d
Patent Pump	1 15 0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing	3 0 0

Larger sizes if required.

The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,
8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water; Fire Engines, &c.

An Illustrated Book sent on application post free.

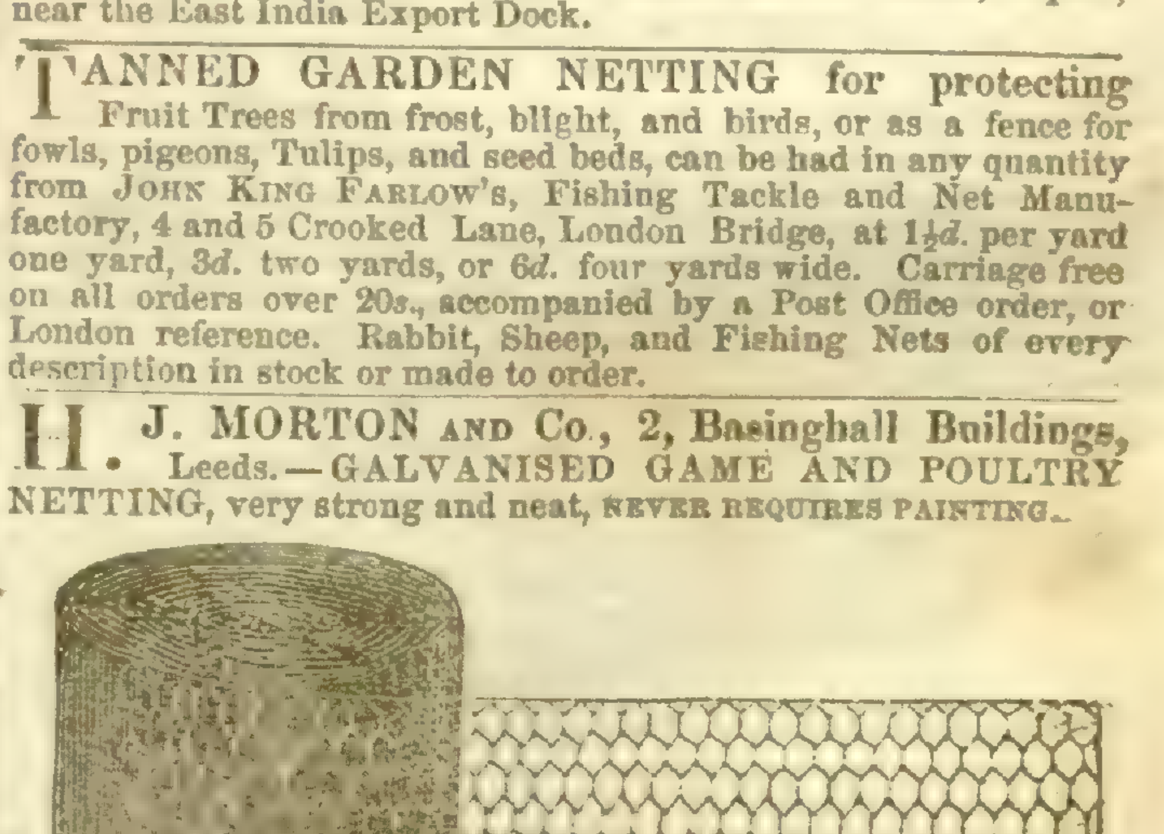
WIRE FENCING, 6¾*d.* per Square Yard, in various widths from 6 feet to 15 inches, mesh less than 2 inches. An effectual fence against Hares, Rabbits, Sheep, Deer, &c., and for the enclosure of Poultry, Pheasants, &c.; 4 inch mesh, 4*d.* per square yard.—R. Richardson, 21, Tonbridge Place, New Road, London.

BLOSSOM OF FRUIT TREES.—WORSTED NET to effectually protect the blossom of wall fruit trees from frost and blight, and the ripe fruit afterwards from wasps and flies, 7*d.* per square yard, in various widths. All kinds of garden, fishing, and sheep nets, made by machinery, and at very low prices. —R. Richardson, 21, Tonbridge Place, New Road, King's Cross.

TANNED NETTING, for the protection of Fruit Trees from frost, blight, and birds, and for the security o fresh sown seeds, either in Gardens or Fields, at 1*d.* per square yard; 200 yards, 14*s.*; 500 yards, 30*s.*; 1000 yards, 50*s.* Scrim Canvass, for Wall Fruit.—At EDGINGTON and Co.'s, 17, Smithfield Bars, City, and Old Kent Road, Southwark, where may be seen erected Emigrant Tents in great varieties, on their latest improved principles, and also at Brunswick Street, Poplar, near the East India Export Dock.

TANNED GARDEN NETTING for protecting Fruit Trees from frost, blight, and birds, or as a fence for fowls, pigeons, Tulips, and seed beds, can be had in any quantity from John King Farlow's, Fishing Tackle and Net Manufactory, 4 and 5 Crooked Lane, London Bridge, at 1½*d.* per yard one yard, 3*d.* two yards, or 6*d.* four yards wide. Carriage free on all orders over 20*s.*, accompanied by a Post Office order, or London reference. Rabbit, Sheep, and Fishing Nets of every description in stock or made to order.

H. J. MORTON AND Co., 2, Basinghall Buildings, Leeds.—GALVANISED GAME AND POULTRY NETTING, very strong and neat, NEVER REQUIRES PAINTING.



24 inches wide, 3-inch mesh, 4½*d.*, 6*d.*, and 8½*d.* per yard.
24 inches wide, 2-inch mesh, 7*d.*, 9½*d.*, and 1*s.* per yard.

GALVANISED IRON SPOUTING, for Dwellings, Cottages, Farm Buildings, &c., NEVER REQUIRES PAINTING.

Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalte Roofing Felt, &c.

COTTAM AND HALLEN,

2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.

New Show Rooms devoted entirely to Articles of Horticulture.

ILLUSTRATED CATALOGUES UPON APPLICATION.

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Syringes	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.
AGRICULTURAL LIST UPON APPLICATION.
EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.
EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

HORTICULTURAL BUILDINGS, ROCK AND RUSTIC WORK, ORNAMENTAL WATER, FOUNTAINS AND FALLS, AND LANDSCAPE GARDENING, executed on the best principles; Estates Improved, Land Laid Out for Building, &c., by Mr. GLENNY, Valuer, Estate and Horticultural Agent, 420, Strand.

HORTICULTURE IN ALL ITS BRANCHES.

J. WEEKS & Co., King's Road, Chelsea.

HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

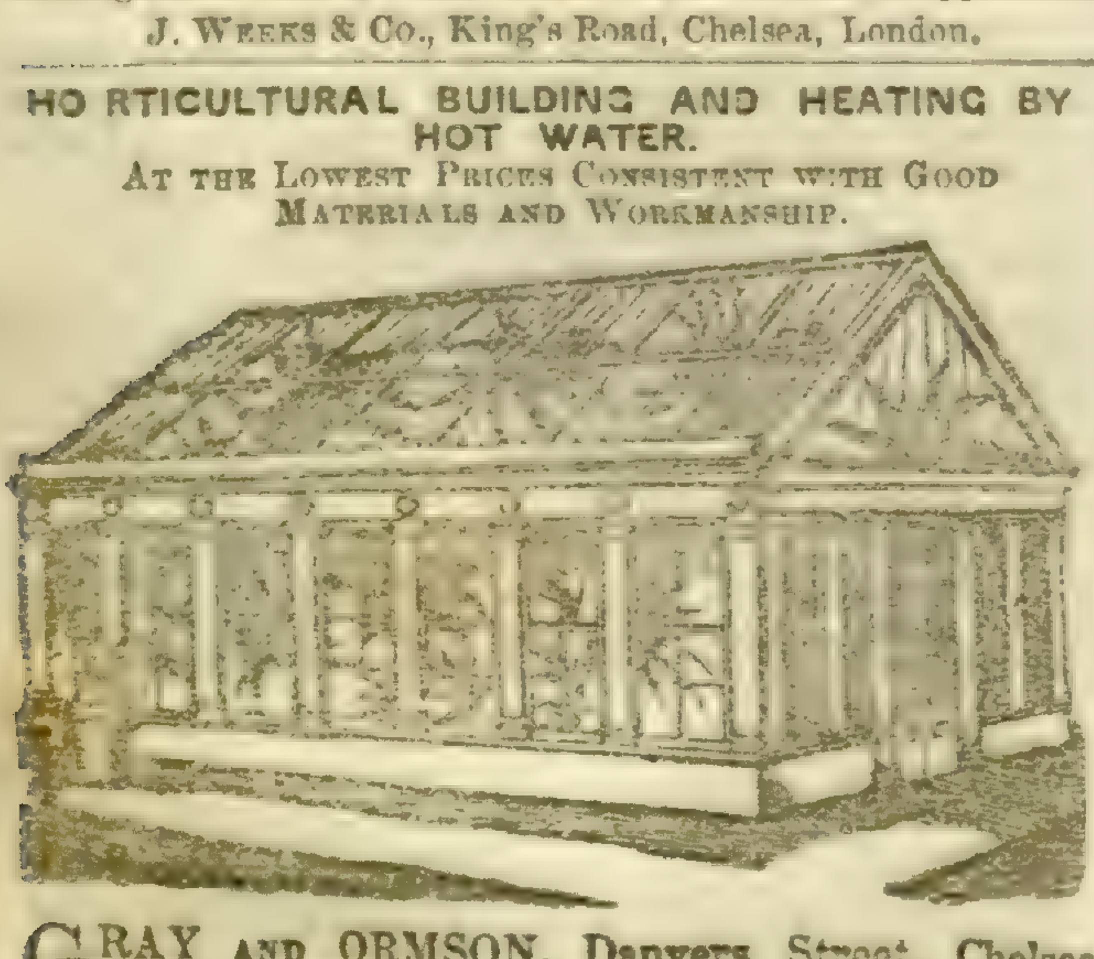
The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. WEEKS & Co., King's Road, Chelsea, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



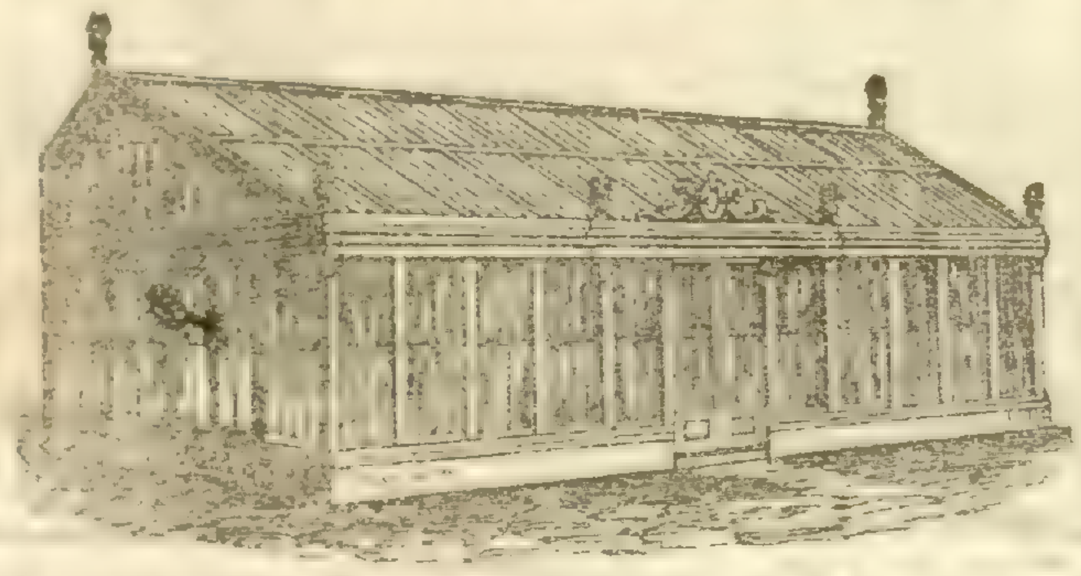
GRAY AND ORMSON, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

GREEN AND HOTHOUSES made by machinery at J. LEWIS'S HORTICULTURAL WORKS, Stamford Hill, Middlesex. Warranted of best materials; being made by steam-power, they are put together in a superior manner; one trial will prove these Buildings to be the cheapest and best made in England. 1½ in. Greenhouse lights at 3*d*. per foot; 2 in. at 4½*d*. per foot. Lists of Prices by enclosing two postage stamps.

HOTHOUSES, CONSERVATORIES, FRAMES & LIGHTS FOR PITS, CUCUMBER & MELON BOXES & LIGHTS.



JAMES WATTS, HOTHOUSE BUILDER, 8, Claremont Place, Old Kent Road, London.

Green and Hothouses, 9, 10, 11, 12, 13, and 14 feet wide, any length, from 16 to 100 feet. Frames and Lights for Pits, 6 ft. 6 in. 7 ft., 7 ft. 6 in., 8 ft., and 8 ft. 6 in. wide, any length, from 12 to 100 feet. Upwards of 200 Cucumber and Melon Boxes and Lights, from 4 ft. by 3 to 10 ft. 6 in. by 5 ft. 6 in., kept ready glazed with stout sheet glass, painted four times, complete, ready for immediate use, all made of best material, packed and sent to all parts of the kingdom.—Reference may be had to the Nobility, Gentry, and the Trade, in most of the counties in England.

BY HER MAJESTY'S

ROYAL LETTERS PATENT

E. DENCH, PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

PATENT HOTHOUSES and excellent Glass at 1*s*. 3*d*. per foot super., which are superior to all others for price with quality, and if known would supersede all others. (See Appendix, in "Book of the Garden," by Mr. M'Intosh.) A Range of Houses and Hot Water Apparatus, was erected by E. D. for E. L. Betts, Esq., Preston Hall, Kent. Mr. J. Frost, head gardener, has shown their efficiency by their produce at the Royal Botanic Gardens, Regent's Park, June 8, and Chiswick, June 11. The editor of the *Gardeners' Chronicle* says: "Beautiful examples of Black Hamburgh, large both in bunch and berry, and as black as Sloes, were furnished by Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall, Kent; these well deserved the first prize which was awarded them."—*Gardeners' Chronicle*, June 18th, 1853. The Grapes were considered the best shown at Regent's Park during the season, and the Houses are as superior for the growth of everything else in horticulture, which has been fully proved, and they have been extensively erected for the nobility and gentry in all parts of the kingdom.

GLAZING WITHOUT PUTTY.—Iron and Glass alone. E. D. has Roofed the Public Baths and Washhouses, Endell Street, on this principle, and others are in hand. Patent Sashes for Peach Walls, Pits, &c., 8*d*. per foot super. Heating by Hot-water, on the most practical principles, and all the best materials used. Printed Price List sent on application.

MORNING FROSTS.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1*s*. 6*d*. per yard run, of E. T. ARCHER, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey. (Removing in May next to 112, Regent Street, London.)

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

Priced lists of plant tubs and boxes forwarded on application.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

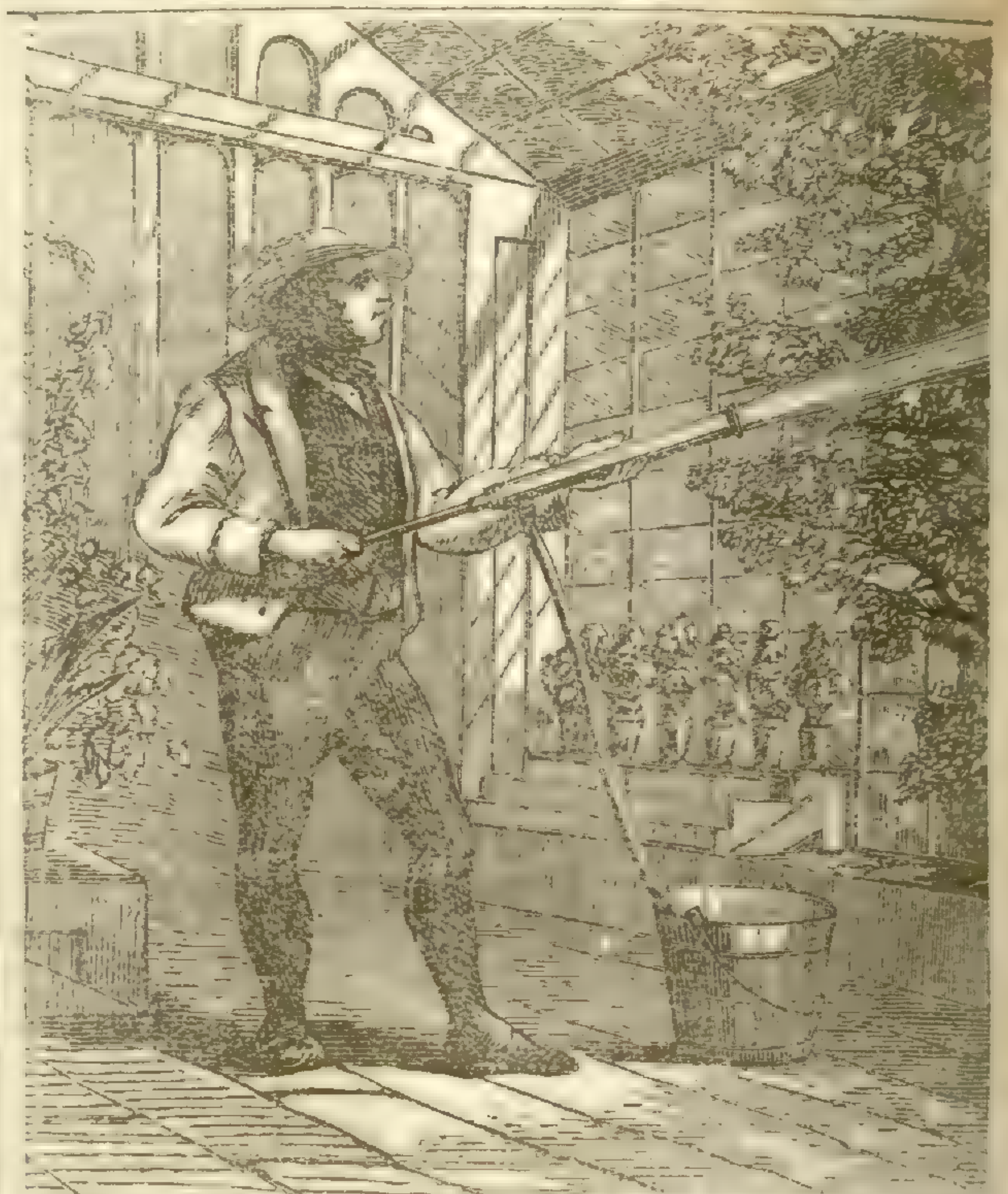
THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

ADAMSON'S REGISTERED ORNAMENTAL GARDEN EDGING, a cheap, durable, and perfect substitute for all other Edgings, for Conservatories, Terrace Walks, or Garden Borders, being of an agreeable colour, a thorough drain for the walks, applicable to borders of any form or size, and does not harbour vermin. To be obtained only of the Inventor and Manufacturer, T. H. ADAMSON, Jun., Builder, High Street, Putney, where Prospectuses may be obtained on application.

May be seen laid down in the Horticultural Society's Gardens, Chiswick, where it has withstood the late severe winter.



J. TYLOR AND SON'S REGISTERED GARDEN SYRINGE.—By a simple arrangement this Syringe is rendered more effective than any portable Conservatory or Garden Pump ever offered to the public. It is equally adapted for Garden or Conservatory use, and is capable of discharging twice as much water in a given time as any other Syringe now in use. The arrangement consists in attaching a small flexible suction tube to the barrel of the Syringe, through which it is filled with water at every discharge of the previous contents. By this means the Syringe is always charged, and the pull-up stroke of the piston rendered perfectly easy, it having, indeed, no work to do, the barrel being previously full of water. Being thus made self-supplying, a great saving of labour is effected; and the necessity of stooping to fill the Syringe at every discharge being done away with, the direction of the water can be maintained for any length of time. It is perfectly cleanly in its action, as it is not possible for any water to get on the outside of the barrel, which is a well-known inconvenience attendant on the use of every other Syringe. Its construction is perfectly simple, and cannot get out of order; the ground-in ball valves and fittings used for filling all other patent Syringes being entirely superseded. Price complete, with vulcanised India-rubber suction tube, with galvanised spiral inside, and covered with cotton outside, 25*s*. each. To be had of any respectable Ironmonger or Seedsman in town or country.

J. TYLOR & SONS, Manufacturers of Horticultural Apparatus, Warwick Lane, Newgate Street, London.

STEPHENSON AND PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

THE POTATO DISEASE.

FRESSON'S "ANTI-POTATO BLIGHT" is a certain remedy for the above. To insure a sound and healthy crop, dress your "SEED POTATOES," before sowing them, with the above.—Sent free (on receipt of 13 uncut postage stamps) with easy directions for use. Also, A Treatise on the Cause of the Potato Blight, with the means of eradicating it; by FRESSON, Agricultural Chemist, Stevenage, Herts.

TOBACCO PAPER! TOBACCO PAPER!—The cheapest and most effectual article for smoking Greenhouses and destroying the Fly on Plants, is Genuine Tobacco Paper, which JOSEPH BAKER, of 73, Fleet Street, can supply in large quantities, at 1*s*. per lb.; and if under 7 lbs. at 1*s*. 2*d*. per lb. Post-office Orders payable at the Strand Office.—JOSEPH BAKER, 73, Fleet Street, London (opposite the *Dispatch* newspaper).

EVERY THING FOR THE TOILET AT MECHI'S MANUFACTORY, 4, LEADENHALL STREET.—Superior Hair, Nail, Tooth, Shaving, and Flesh Brushes, Clothes and Hat Brushes, Combs, Washing and Shaving Soaps; various Nail and Corn instruments, Razors, Razor Strops and Paste, and Shaving Powder. Ladies' and Gentlemen's Dressing Cases, with or without fittings, in Russia Leather, Mahogany, Rosewood, and Japan-ware; Ladies' Companions and Pocket Books elegantly fitted, also Knitting Boxes, Envelope Cases, Card Cases, Note and Cake Baskets, Beautiful Inkstands, and an infinity of *récherché* articles not to be equalled.

TO CAPITALISTS.

THE ADVERTISER, who has secured portions of several valuable Mineral Properties at prices much below their value, wishes to meet with a Capitalist, who will join him in the purchase, and provide the requisite amount for a short period. The highest Testimonials to the value of these properties will be produced, and are confirmed by actual results. They will pay a large interest on the amount invested, and involve no risk or liability. The fullest information will be given to *bonâ fide* applications from Principals or their Solicitors.—Address Post-free, Mr. SCOTT, Messrs. Gogin and Co., 320, Regent Street.

A GENTLEMAN, about to leave for Australia, and who has had considerable professional practice in Ornamental Gardening, is desirous of Disposing of his Plans and Specifications. Rural Architecture could be very advantageously combined.—A. B., 50, Office of this Paper.

TO GENTLEMEN BOARDERS.—The Advertiser has a vacancy for one or two young gentlemen desirous of acquiring a knowledge of Agriculture in all its branches, the Breeding and Feeding of Stock, &c., &c., in one of the best cultivated districts in the kingdom, where they would have the advantage of an experienced neighbourhood, and a comfortable home.—For particulars, apply to A. Y., Office of this Paper.

QUALITY THE TEST OF CHEAPNESS.

BERDOE'S LIGHT OVERCOATS AND CAPES resist any amount of rain. One of the largest Stocks in London of Superior GARMENTS at Lowest Charges. First-Class DRESS COATS, 3*l.*; BOY'S SUIT, 11*d.* per inch, according to height.—96, New Bond Street, and 69, Cornhill. (Nowhere else.)

FORD'S EUREKA SHIRTS, Plain and Coloured, the latter in cloths of every variety of pattern—stripes, curves, bars, spots, sprigs; in short, every figure that art can describe and taste approve. Six for 27*s.* Patterns to select from on receipt of six penny stamps. Price lists free on application. —RICHARD FORD, 38, Poultry, London.

HEAL & SON'S ILLUSTRATED CATALOGUE of BEDSTEADS, sent free by post; it contains designs and prices of upwards of 100 different Bedsteads, in iron, brass, japanned wood, polished birch, mahogany, rosewood, and walnut tree woods; also of every description of bedding, blankets, and quilts.—HEAL & SON, Bedstead and Bedding Manufacturers, 196, Tottenham Court Road.

METCALFE AND CO.'S PERFUMERY DEPARTMENT.—PROPRIETARY ARTICLES.—METCALFE'S celebrated ALKALINE TOOTH POWDER is acknowledged as the safest and most efficient now in use. Dupuytren's Medicated Pomade is the most certain remedy for preventing the hair prematurely falling off, and for restoring it when baldness has already commenced. Dupuytren's Medicated Balm strengthens, cleanses, and improves the growth, and is generally acknowledged as the best wash for the hair.—Manufacturers of British and Importers of Foreign Soaps, Perfumery, and J. M. Farina's genuine Eau de Cologne, at METCALFE, BINGLEY, & Co.'s only Establishment, 130B and 131, Oxford Street, second and third doors west from Holles Street.

QUANTITY AND QUALITY OF THE HAIR.

NO TOILET can be considered complete without a careful attention to that department which so materially affects the entire contour, viz., the Hair, which, both in quantity and quality, is susceptible of the most material alteration. That which is weak can be strengthened, and be made to receive a most beautiful gloss by artificial applications. It is to its extraordinary and valuable properties in these respects that is due the character of C. AND A. OLDRIDGE'S BALM OF COLUMBIA, for its invigorating, nutritious, and regenerative qualities. OLDRIDGE'S BALM causes Eyebrows to grow, prevents the Hair from turning grey, and the first application causes it to curl beautifully, frees it from scurf, and stops it from falling off. Price 3*s.* 6*d.*, 6*s.*, and 11*s.* per bottle. No other prices are genuine.—N.B. Ask for OLDRIDGE'S BALM, 13, Wellington Street North, Strand, London.

THE SUCCESSFUL RESULTS OF THE LAST HALF CENTURY HAVE PROVED BEYOND QUESTION THAT

ROWLAND'S MACASSAR OIL possesses singularly nourishing powers in the growth, restoration, and improvement of the human Hair, and when every other specific has failed. This celebrated Oil is now universally acknowledged to be the cheapest, and superior to all other preparations for the hair. It prevents it from falling off or turning grey, strengthens weak hair, cleanses it from scurf and dandriff, and makes it beautifully soft, curly, and glossy. Its operation in cases of baldness is peculiarly active; and in the growth of the Beard, Whiskers, Eyebrows, and Moustachios, it is unfailing in its stimulating operation. For children it is especially recommended, as forming the basis of a beautiful head of hair. Price 3*s.* 6*d.* and 7*s.*; Family Bottles (equal to four small), 10*s.* 6*d.*; and double that size, 21*s.* CAUTION.—On the wrapper of each bottle are the words, Rowland's Macassar Oil, in two lines. The same are engraven on the back of the wrapper nearly 1500 times, containing 29,028 letters.—Sold by A. ROWLAND & SONS, 20, Hatton Garden, London, and by Chemists and Perfumers.

HOLLOWAY'S PILLS PRODUCE THE MOST BENEFICIAL EFFECTS IN ALL COMPLAINTS OF THE LIVER, INDIGESTION, &c.—Officers in the Army and Navy, before proceeding abroad, should provide themselves with a supply of HOLLOWAY'S Pills, as change of climate frequently causes an alteration in the system, producing Bile, Indigestion, Flatulency, Liver complaints, and such like disorders. These Pills may be taken without danger, requiring no restraint from business or pleasure; they act mildly on the Bowels, causing neither pain, nor griping, and thus remove the complaints; at the same time they strengthen the Stomach, give a healthy action to the Liver, brace the nerves, and invigorate the constitution.—Sold by all Druggists; and at Professor HOLLOWAY'S Establishment, 244, Strand, London.

KNOW THYSELF!—Professor BLENKINSOP continues to receive from individuals of every rank the most flattering testimonials of his success in describing the CHARACTERS of Persons from their HANDWRITING, pointing out their mental and moral qualities, whether good or bad.—Address by letter, stating age, sex, and profession, inclosing 13 uncut postage stamps, to Dr. BLENKINSOP, 344, Strand, London.

WANTED TO PURCHASE, 10 brace of LIVE HARES and 10 brace of LIVE PHEASANTS.—Address A. B., Post Office, Kelvedon, Essex.

WANTED, to Rent, a FARM, within 10 miles of London, of about 200 acres, 150 to consist of Arable, and 50 Grass Land.—Address Mr. LAURENCE, Seedsman, 18, Piccadilly, London.

IRELAND, COUNTY OF KILDARE.

TO BE LET, a FARM, containing 191 acres, statute measure, within two miles of the town of Athy; there are excellent Offices on the Farm, and a Bullock House for feeding 25 head of cattle. The Land is well adapted for tillage, especially Green Crops. There are now about 20 acres prepared for Turnips and Potatoes. The manure will be given at a valuation, as also about 200 barrels of Oats. The railroad from Dublin to Carlow runs through the centre of the land, the station being about one mile from the farm, and the river Banow, which is navigable to Dublin and Ross, about half a mile.—For particulars apply to Mr. G. H. KENNY, 7, Upper Ormond Quay, Dublin.

COUNTY OF TIPPERARY.—BARONY OF LOWER ORMOND.

TO BE LET, from the 25th of March, with immediate possession, the following LANDS:—Ballylina, West Farm, containing 140 acres, Irish; Mathew's Farm (part of Ballylina, W.), 62 acres; Castleview Farm, ditto, 105 acres; Lismalin Farm, 190 acres; Ballynahinch Farm, 82 acres. These Farms are on the Estate of Lord Ashtown, and are situated about eight miles from Portumna, to which there is water-carriage; and the nearest station on the Parsonstown Railway, now in progress, will be at about six miles distance.

The Land is suited for tillage under the 4 or 5-course rotation. There are good slated houses on three of these Farms; and any other buildings, which may be reasonably required, will be erected by the landlord. Mr. JAMES EGAN, the Steward, at Sopwell Hall, near Shinrone, will show these Farms.

MARKET GARDEN GROUND.

TO BE LET, within 12 miles of London, adjoining the Great Western Railway and Grand Junction Canal, 16 acres of excellent, well-stocked ground, situate as above, with half a mile of brick wall, 14 feet high, and of south-west aspect, are to be had on lease for such terms as may be agreed on.—Apply to Messrs. BUNTING, St. James's Street; to Mr. TOLLETT, West Drayton; or to Mr. MEEKINS, Dawley Court, Uxbridge. Several promising young Fruit and Currant Trees for sale, on very low terms.

TO NURSERYMEN AND FLORISTS. KILBURN, MIDDLESEX.

TO BE LET OR SOLD, a very eligible piece of GARDEN GROUND, situate at Kilburn, with three excellent Greenhouses standing thereon, containing respectively a Stove and Hot Water Apparatus. Also, two Brick Pits, with 100 Lights and Frames, and 300 dozen Flower Pots and Plants.—For further particulars apply to OCTAVIUS LEEFE, Esq., Solicitor, 90, New Bond Street; or to Mr. SPENCER, House Agent, 13 and 14, Melton Street, Euston Square, London.

GREENHOUSES AND PUBLIC-HOUSE.

To GARDENERS, FLORISTS, AND OTHERS.

TO BE LET, in the immediate neighbourhood of Gravesend, a large Greenhouse, Propagating-house, and a Range of Brick Pits; also a PUBLIC-HOUSE adjoining the same. The Stock of Plants to be taken at a valuation.—Particulars may be obtained of Mr. J. GOULD, 38, Windmill Street, Gravesend, Kent.

A FORTUNE TO BE MADE IN A SHORT TIME.

TO BE SOLD, Three GREENHOUSES and PLANTS (to be taken at a valuation or private contract), with sundry other useful things, Frames, a Pit, a quantity of Stocks, Tools, Mould, Manure; together with House and Fixtures at a low rental. With immediate possession, if required.—For further particulars, apply at No. 6, Alpha Road, Regent's Park.

TO BE SOLD, at Chapel Farm, Eltham, ASH-LEAF KIDNEY and FORTY-FOLD POTATOES for Seed.—H. J. HAMMOND.

PEACOCKS.

TO BE SOLD, a pair of very handsome old Birds, with 4 young ones about six months old, together or separately, at a reasonable rate.—Apply to HENRY DIPNALL, Esq., Greenhill Owslebury, Bishop's Waltham, Hants.

AYLESBURY DUCKS' EGGS.

TO BE SOLD, EGGS warranted from the best selected White Ducks, good shape, bill and legs fine and a good colour, 6*s.* per dozen, including packing. Early application to secure them at the above price is necessary.—Apply to WILLIAM HENRY GREEN, Builder, Walton Street, Aylesbury.

EGGS FOR HATCHING, from Prize Birds of the following varieties:—Buff Cochin China and Coloured Dorking, 9*s.* 6*d.* per doz.; Golden Spangled, Silver Spangled, and Silver Pencilled Hamburghs, 7*s.* 6*d.* per doz., package included. Warranted perfect when packed, which will be carefully executed. Also for sale, price 30*s.*, a well feathered Buff Cochin China Cockerel (Mr. Andrews's celebrated strain), colour and plumage very rich; his sire won first prizes at the late exhibitions at Dorchester, Yeovil, and Salisbury. —Apply to RICHARD GEORGE, Waterson, Dorchester.

EGGS FROM PURE WHITE-FACED SPANISH FOWLS, at 10*s.* per set of 13.—Letters and Post-office orders to be addressed to Mr. JOHN COMPTON, Portchester, Fareham, Hants.

LIGHT BUFF COCHIN CHINA FOWLS' EGGS.—An Amateur having a first-rate stock of Light Buff Cochin China Fowls from Prize Birds, and more eggs than he requires for his own use, is willing to part with a few sittings at a reasonable price—5*s.* 6*d.* per doz., box included.—Address "Chanticleer," Post-office, Farnham, Surrey.

CLEAR YELLOW COCHINS.—Eggs may be had from four pullets of "Sturgeon" blood, running with a cock bred by Mr. Fairlie, all pale yellow birds; 10*s.* per dozen, package included. Eggs from "commended" Spanish birds at the same rate.—E. T. A., Loddon, Norfolk.

TO BE SOLD, BUFF COCHIN CHINA EGGS, from Birds that have taken prizes at the Derby, East Kent, Bristol, Taunton, and Yeovil Poultry Shows, at 1*l.* 1*s.* per dozen; also Partridge Cochin China Eggs, from Birds that have taken prizes at London Summer Meeting, Surrey Gardens' Show in August, Malvern, Yeovil, Honiton, and Torquay Poultry Shows, at 1*l.* 1*s.* per dozen.—Apply to JOHN R. RODBARD, Aldwick Court, Wrington, near Bristol.

COCHIN CHINA POULTRY, ETC. EGGS FROM PRIZE BIRDS.

MR. JOHN FAIRLIE, of Cheveley Park, Newmarket, in reply to the very urgent applications from numerous amateurs, is now prepared to dispose of a limited number of Eggs, from his celebrated prize Cochins, Brahma Pootras, Scotch Bakies, Dorkings, &c., according to the dates of the orders received.

MR. GILBERT, of Grays, Essex, having entered into an arrangement with THOMAS STURGEON, Esq., for the Purchase of the whole of his remaining Stock of COCHIN CHINA Fowls, bred by him in 1853, Gentlemen and Amateurs are informed the Birds are now on Sale. Eggs may be had from the above birds at 20*s.* per dozen.

BROWN-BREASTED RED GAME FOWLS.

TO BE SOLD, a few Eggs from first-rate two-year-old Birds; also two Walks of splendid young Birds, from the first strain in the country.—For price, &c., apply to Jos. ALLEN, Ampthill, Beds.

TO POULTRY FANCIERS.—Gentlemen wishing to improve their stock of Buff Cochin Chinas have an opportunity rarely offered of purchasing some truly splendid Birds. Bred exclusively from a pair of Thos. Sturgeon, Esq's., best Birds, the Hen weighing nearly 10 lbs., and remarkably heavily feathered. All the Birds now offered are of great weight, and exceedingly heavily feathered, and short thick legs.—May be viewed on application to A. HORNCASTLE, Grays, Essex. Eggs at 20*s.* per dozen. All communications to enclose a stamped envelope.

Sales by Auction.

FANCY POULTRY.

MR. J. C. STEVENS'S next periodical Sale by Auction will take place on TUESDAY, 7th March, at 12 o'clock precisely, at his Great Room, 38, King Street, Covent Garden. The BRAHMA POOTRAS are many of them very choice, and include a Hen, first prize Metropolitan last January. The COCHINS and COLOURED DORKINGS are also well deserving attention, the contributors being H. Gilbert, Esq. Rev. Mr. Papillon, Mr. Gibbs, Mr. Collinson, and several othe first-class breeders.—Catalogues by enclosing a stamped directed envelope to Mr. J. C. STEVENS, 38, King Street, Covent Garden.

MR. CYRUS CLARK'S CHOICE FANCY POULTRY. EXTRA SALE.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, March 14, at 12 o'clock precisely, a selection from the yard of Mr. Cyrus Clark, of Street, Glastonbury; it includes COCHINS, chiefly light pure Sturgeon and Andrews. The Whites, from Mrs. Herbert's stock. Spanish, Silver Polands, and coloured Dorkings, many of which are prize birds at Dorchester, Yeovil, Bristol, Taunton, Torquay, Honiton, and the Surrey Zoological. —Catalogues, by enclosing a stamped directed envelope to Mr. J. C. STEVENS, 38, King Street, Covent Garden, London.

WOOLWICH.

MESSRS. PROTHEROE AND MORRIS are directed by the Widow of the late Mr. Henry Ward, to offer to public competition, by Auction, on the Premises, Bull Fields, Woolwich, on MONDAY, March 6, at 11 o'clock, the whole of his costly and justly celebrated STOCK of CARNATIONS and PICOTEES, comprising all the first flowers in cultivation.—May be viewed prior to the Sale. Catalogues may be had on the Premises; of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will submit to public competition by Auction, at the Mart, Bartholomew Lane, on THURSDAY, March 9, at 12 o'clock, about 200 choice DOUBLE CAMELLIAS, from 18 inches to 5 feet, comprising all the approved kinds, beautifully furnished with bloom buds; 100 very strong Camellia Stocks; also a choice assortment of Standard and Dwarf Roses, consisting of Noisettes, Hybrids, Bourbons, Perpetuals, Chinas, &c.; a fine collection of American Plants, choice Dahlias in dry roots, Pæonias, Verbenas, Fuchsias, &c.—May be viewed the morning of Sale. Catalogues may be had at the Mart; and of the Auctioneers, American Nursery, Leytonstone, Essex.

SLOUGH.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. Bragg to submit to unreserved sale by Auction, on the Premises, Star Nursery, Slough, on WEDNESDAY, March 8, at 11 o'clock, his entire collection of CARNATIONS and PICOTEES, consisting of all the leading sorts; also collections of Pinks, Pansies, Hollyhocks, specimen and other Pelargoniums, Cinerarias, Tree Carnations, &c., Standard and other Roses, together with a quantity of Pot and Ground Roots of Dahlias, which will include all the new and most approved varieties.—May be viewed prior to the sale; Catalogues may be had (6*d.* each, returnable to purchasers), on the Premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

N. B. The above Nursery, with the established Business, to be Let, at a moderate rent, apply to Mr. W. BRAGG, on the premises.

MPORTANT AND ABSOLUTE SALE OF MAGNIFICENT SPECIMEN PLANTS.

MESSRS. PROTHEROE AND MORRIS are instructed by J. M. Yeeles, Esq., of Bathford, near Bath, to submit to public competition by Auction, without reserve, on the premises, on WEDNESDAY, March 22d, at 11 o'clock, in consequence of his declining their cultivation, the whole of his unrivalled collection of SPECIMEN, ORCHID, STOVE, and GREENHOUSE PLANTS, many of which are not equalled in this country as splendid examples of superior culture, and just in condition for the coming season's exhibitions. They comprise Saccolabium, Dendrobium, Ixora, Gardenia, Franciscea, Allamanda, Echites, the best kinds of Ericas, Azaleas, Ixoras, Leschenaultias, Boronias, Pimeleas, Aphelexes, Eriostemons, and almost every kind of exotic plant worth culture for exhibition.—May be viewed two days prior to the Sale; Catalogues may be had 6*d.* each, returnable to purchasers, on the premises; the Castle and Ball, the Greyhound, of the principal Seedsmen in Bath; Messrs. Garraway and Mayes, Nurserymen, Bristol; of Mr. Glendinning, Chiswick Nursery, Turnham Green; the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

BRIXTON, SURREY.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, BUILDERS, AND OTHERS.

MESSRS. PROTHEROE & MORRIS are directed by Mr. Denyer to Sell by Auction on the premises, Loughborough Nursery, Loughborough Road, Brixton, on MONDAY, March 13, 1854, and following days, at 11 o'clock each day, in consequence of the lease expiring at Lady-day next (unless previously disposed of by private contract), the whole of the valuable NURSERY STOCK of Evergreens, Deciduous Shrubs, and Fruit Trees, comprising Fine Variegated and Green Holly, Box, Yew, Chinese Arbor-vitæ, Aucuba, Portugal and Common Laurels, Sweet Bay, Laurestinus, Arbutus, Rhododendrons, Standard and Dwarf Roses, Jasminum, Pyrus japonica, Clematis, Honeysuckle, Magnolia grandiflora, Gum Cistus, &c., in pots; quantity of Box Edging, Standard and Dwarf Trained Apples, Pears, Peach, Nectarine, Cherry, Plums, Vines. Also, GREENHOUSE PLANTS, consisting of a fine Collection of Roses, Camellias, several Thousands of Bedding Plants, Intermediate Stocks, Cloves, &c.: together with five newly erected Greenhouses, several 2 and 3-light Boxes, Hot-water Pipe, two Conical Boilers, quantity of Bricks, Paving Tiles, excellent Tumbril, and two Light Carts; six Nests of Seed Drawers, Shop Fixtures, Scales and Weights, Rotten Manure, Mould, Garden Pots, and other sundry effects.—May be viewed prior to the Sale. Catalogues had (6*d.* each, returnable to purchasers) on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

HUNTINGDON.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND OTHERS.

IMPORTANT SALE OF NURSERY STOCK.

G. M. FOX will Sell by Auction on TUESDAY, March 14, and following days, 10,000 FRUIT TREES (now growing in the George Lane Nursery, Huntingdon, being one of the Nursery Grounds occupied by Messrs. Wood & Ingram, which is obliged to be cleared immediately, the land being required for building purposes), consisting of choice sorts of Apples, Pears, Plums, Cherries, Peaches, Nectarines, and Apricots; 8000 choice GOOSEBERRIES and CURRANTS, 7000 English and Huntingdon ELMS, 2000 ROSES, and a large quantity of Forest and Ornamental Trees, Evergreens, and Flowering Shrubs. The Nursery Ground is within five minutes' walk of the Great Northern and Eastern Counties Railway Stations.—Catalogues, with full particulars, will be ready 10 days before the Sale, and may be had of Messrs. HURST & M'MULLEN, 6, Leadenhall Street; the Office of the Journal of Auctions, 29, Essex Street, Strand, London; the principal Inns in the neighbourhood, and of the Auctioneer, Huntingdon; or will be forwarded on the receipt of four postage stamps.

Messrs. Wood & Ingram's business will be conducted as usual, at their other Nursery Grounds in Huntingdon.

AGRICULTURAL SEEDS.

(CARRIAGE FREE.)

SUTTON AND SONS, SEED GROWERS, Reading, Berks, *have a large Stock of Home Grown Seeds of all the best varieties of Turnips, Magnold Wurzel, Carrot, Clovers, Natural Grasses, &c., which they are now sending out at the lowest market prices.*

In consequence of an unusual press of business at this season, we have been unable to present our friends with a full descriptive catalogue of our Agricultural Seeds, but a *priced* list of the leading kinds were published by us *in the last page of the Gardeners' Chronicle of January 28, all of which articles can still be supplied, as also all other approved kinds of Agricultural Seeds. We shall also be happy to make special contracts for extra large quantities.*

All orders faithfully executed in strict rotation, according to priority of our receiving them.

SUTTON & SONS, Seed Growers, Reading, Berks.

ITALIAN RYE GRASS, Imported Seed.

Per Bushel, 7s.

"Too much cannot be said in favour of this very excellent Rye-grass. Compared with any other of the varieties of common Rye-grass, the Italian affords a stronger braird, arrives sooner at maturity, has a greater abundance of foliage and of a lighter, and more lively green colour, grows considerably taller, and is more upright, or less inclined to spread on the ground. Another of its distinguishing characteristics is, that it is much preferred by cattle to any of the common sorts, and is greedily eaten by them, whether green or dry." Imported seed is very much superior to that saved in this country. Three bushels is the quantity usually sown to the acre. We have a good stock of imported seed, and can recommend it as being of excellent quality.—J. C. WHEELER and SON, Nurserymen, Gloucester Seedsmen to the Gloucestershire Agricultural Society.

FLOWER SEEDS.—We have selected out of our large collection of Flower Seeds the most beautiful and showy varieties, each sort distinct in colour, and calculated to produce a fine effect when planted out in beds or groups in the flower border; and we have had each variety distinctly marked with its Botanical and English name, height, time of flowering, colour of the flower, manner of growing whether erect or trailing, &c., the time it should be sown, and other valuable hints as to its cultivation. In selecting these varieties, we have been careful to exclude all which are shy bloomers, or have an insignificant appearance, so that the collections will comprise only those which are really showy and handsome, and which we believe would prove to the entire satisfaction of any lady or gentleman who might be disposed to order them. The German Stocks and Asters especially are most superb. The Collections will be sent free by post to any part of the kingdom at the following prices:—

Twenty extra fine varieties, all distinct and beautiful, 5s.
Fifty ditto ditto 10s. 6d.

Payment can be made either by Postage Stamps or Post Office Order, made payable to J. C. WHEELER & SON, Nurserymen, Gloucester.

WILLIAM NICHOLSON still continues to send out very strong well-rooted Plants of his four new and distinct varieties of STRAWBERRIES, viz., AJAX, dessert Fruit; RUBY, ditto; CAPTAIN COOK, Market Fruit; FILL-BASKET, ditto, at 15s. per 100, or 25 each of any two sorts for 10s., box included. Post-office orders payable at Yarm, Yorkshire. For a full description, see Advertisement *Gardeners' Chronicle* Jan 28, 1854.—Egglescliffe, near Yarm, Yorkshire.

HIGHGATE NURSERIES, NEAR LONDON.

JAMES CUTBUSH, with deep regret, begs to inform his Customers and the Public generally of the sudden and lamented death of his Father, WILLIAM CUTBUSH, and offers his sincere thanks for the kind and extensive Patronage he received for upwards of 63 years. J. C. also acquaints them that the business will be conducted as hitherto under the name of "WM. CUTBUSH & SON" by himself, and humbly solicits a continuance of their esteemed favours: and by unremitting attention hopes to merit their support and recommendation.

AMERICAN PLANTS.

JOHN WATERER begs to announce that his NEW CATALOGUE of RHODODENDRONS, AZALEAS, CONIFEROUS PLANTS, &c., is now published, and may be had by enclosing two stamps for postage.

The colours of all the Rhododendrons worthy of cultivation are described in order to facilitate purchasers in making selections, together with a Treatise on their successful management.

☞ The Rhododendrons forming the American Exhibitions in the Royal Botanic Society's Garden, Regent's Park, London, are annually supplied from this establishment.

The American Nursery, Bagshot, Surrey, near the Farnborough Station, South-Western Railway, and 3 miles from Blackwater, South-Eastern Railway.

GEORGE BAKER begs to say that his DESCRIPTIVE CATALOGUE of AMERICAN PLANTS, CONIFERS, ORNAMENTAL SHRUBS, FRUIT and FOREST TREES, &c., may be had by enclosing two postage stamps.

G. B. wishes to call particular attention to his fine Stock of GREEN and WEEPING HOLLIES from 1 to 12 feet high.

G. B. has supplied the American Exhibition in the Royal Botanic Gardens, Regent's Park, from its commencement.

American Nursery, Windlesham, near Bagshot, Surrey, about six miles from Staines Station, Windsor Branch, South-Western Railway, where conveyances may be obtained.

CAPE HEATHS.

W. J. EPPS begs to call attention to his extensive and rare Collection of Heaths, which are in the finest condition possible; very bushy and well formed for specimens in No. 3, 4, and 6-inch pots, consisting of all the best varieties, such as Aristata ampullacea, tricolor, jasminiflora, ventricosa, Massoni, Webbiana, obbata, &c., &c., 12s., 18s. and 21s. per doz. A Collection of 100 varieties, 5l., carriage paid to London. A liberal allowance to the Trade, provided a quantity be taken. All the new and best kinds of Azaleas, Stove and Greenhouse Plants, Fuchsias, Dahlias, Verbenas, and Roses, equally moderate.

W. J. E. has about 200 young specimens of Heath, &c., to part with in No. 8, 11, and 20-inch pots. Also a Collection of very beautiful Orchids. Lists sent on application.

Nurseries, Maidstone and Ashford.

STANDISH AND NOBLE, NURSERYMEN, SEEDSMEN, &c., Bagshot, Surrey, are now prepared to receive orders for the following new and beautiful varieties of AZALEAS, which will be ready for delivery in June next. The Advertisers can recommend them with the greatest confidence, as superior to any others of their kind.

AZALEA BEALII.—This very distinct variety was introduced by them from China. The flowers, which are of first-rate shape, are quite unique, being striped, like a Carnation, with rich vermilion on a pure white ground. It is of good habit, fine in foliage, and a most abundant bloomer; and although decidedly in the first rank as a greenhouse plant, it is quite hardy enough for the open border. Each, 21s.

AZALEA CRISPIFLORA, a species differing much from any other known Azalea, having a character entirely its own. No other kind approaches it in compactness of habit, and its foliage is very fine, abundant, and evergreen. The flowers are very large, and the edges of the petals have the appearance of being irregularly *gaufred*, like a lady's frill; the colour is a rich rose lake. From the fact of its blooming very late—much later than any other Azalea—it will be doubly valuable for many purposes. Each 21s.

HIMALAYA CEDAR.

MAULE AND SONS beg to intimate to Noblemen and Gentlemen engaged in Forest or Ornamental Planting that they still hold large supplies of this universally admired and fine timber tree, which they are sending out at the below quotations.

CEDRUS DEODARA, 2 years, fine, 25s. per 100, 10l. per 1000
„ „ *1 foot ... 5l. „
„ „ *1 to 2 feet ... 7l. 10s. „
„ „ *2 to 3 feet ... 42s. per doz., 15l. per 100
„ „ **3½ to 4 feet .. 60s. „ 25l. „
„ „ **4 to 4½ ft., extra fine, for Avenues and single planting } 80s. „ 30l. „

☞ Those marked * are grown in suitable sized pots; those marked ** may be had either in pots or from the open ground.

Large supplies of Taxodiums, Cryptomerias, Pinus excelsa, Abies Smithiana, Cupressus Goveniana, Lambertiana, &c. &c., offered at such prices as will admit of their introduction into mixed forest and other plantations. Terms sent on application.

The Nurseries, Bristol, March 4.

PERUVIAN SKINLESS BARLEY.—SEED of this valuable variety, weighing 60 lbs. per bushel, may now be obtained of Messrs. CASH & Co., Oil and Seed Merchants, Coventry. Price 7s. 6d. per bushel. Orders must be accompanied by a remittance. The quantity on hand being small, immediate application will be necessary.

THE BEST DESCRIPTIVE SEED LIST

YET PUBLISHED IS THAT OF

RICHARD SMITH, NURSERYMAN and SEEDSMAN, Worcester, *of whom it may be had Gratis on application; it contains full particulars of his COLLECTIONS of SEEDS.*

		£.	s.	d.
No. 1	Collection contains 20 QUARTS of the best garden PEAS, with full quantities of EVERY OTHER VEGETABLE for a year's supply of a large garden, price ...	3	0	0
No. 2	a smaller quantity of equally choice sorts ...	2	0	0
No. 3	do. do. in reduced quantities	1	0	3
No. 4	50 sorts of the SHOWIEST HARDY FLOWER SEEDS, with descriptive labels to each, post free	0	10	0
No. 5	36 do. do. do. do. do.	0	7	6
No. 6	24 do. do. do. do. do.	0	5	0

Any alterations of equal value that may be wished in the sorts or quantities intended for these Collections will be willingly made.

A DESCRIPTIVE PRICED LIST of ROSES for 1854 gratis.

WHEELER'S SHORT SELECT SEED LIST.

J. C. WHEELER AND SON'S SEED LIST *is now ready, and will be forwarded free on application. We have tried to make it as short and as select as possible, leaving out all inferior varieties, so that it is really a List of the best Seeds in cultivation. Grasses and other Agricultural Seeds, Garden and Flower Seeds, all described, and prices put to every article. We deliver our Seeds Carriage Free to almost every Railway Station in the kingdom, and take especial care that every sort we send out is true to name, and of the best quality.*

J. C. WHEELER & SON, Seed Merchants, Gloucester.

RENDLE'S PRICE CURRENT AND GARDEN DIRECTORY FOR 1854.—*The opinions of the following gentlemen, well known in the Horticultural world, will be found in the back page of the* GARDENERS' CHRONICLE *of February* 18:—

Mr. JAMES BARNES, the well-known Gardener to the Right Honourable Lady Rolle, Bicton.

Mr. W. TILLERY, Gardener to his Grace the Duke of Portland, Welbeck.

The Editor of the "Midland Florist and Suburban Horticulturist."

The Editor of the "Mark Lane Express."

Mr GEORGE GLENNY, the Editor of the "Quarterly Review of Horticulture," the Gardening department of *Lloyd's Weekly Newspaper*, and several other periodicals.

The Editor of the *Lady's Newspaper and Pictorial Times.*

The Editor of the "Florist, Fruitist, and Garden Miscellany."

Mr. WILLIAM OGSTON, Brentwood, Essex.

Mr. HAMILTON, the well-known Author of the "Hamiltonian System of Pine Culture."

Mr. JENNINGS, Head Gardener to the Right Honourable the Earl of Derby, Knowsley Hall, Prescot.

Mr. D. BEATON, Surbiton, Kingston, Surrey, one of the most popular Horticultural writers of the day.

Mr. CHARLES M'INTOSH, Dalkeith Park, Editor of the "Book of the Garden," the most sterling work on gardening extant.

The Editor of the "Southern Florist."

It has also been favourably noticed by the following Newspapers and Magazines: "The Cottage Gardener," "The Gardener's and Farmer's Journal," "The Agricultural Magazine," "The Plough," "Plymouth Herald," "Exeter Gazette," "Bristol Mercury," "Western Luminary," "Somerset County Herald," "The Clerical Journal," "Cornish Telegraph," "Plymouth Mail," "Devonport Telegraph," "Somerset Gazette," "Western Courier," "Teignmouth Gazette," "West Briton," "Portsmouth Times," "Naval Gazette," "Stockport Advertiser," "Liverpool Advertiser," and several other Newspapers and Magazines.

RENDLE'S PRICE CURRENT.—*The following has been received to-day from a Clergyman in Buckinghamshire, dated March* 1st, 1854:

"Thinking I might be of service to you, I have distributed the several Garden Catalogues you sent me. I should be obliged to you to send me some for my own use. Nothing can be more convenient to refer to in *every way.* The trouble and care in getting it up must have been very great, and it is to be hoped the reward will be commensurate. *Nothing is so easy as to find fault.* Please send me the 'Farm Directory,' which I see is just published."

RENDLE'S PRICE CURRENT.—In addition to the large number of testimonials in favour of this publication already announced in this Paper, the Proprietors have also the pleasure of announcing several more—from Ben. Maund, Esq., of Bromsgrove; from Dr. Brindley, of Chester; from the Editor of the *Derby Mercury*, from the Editor of the *Farmers' Journal*, from Mr. Lynch, Head Gardener to the Lord-Lieutenant of Ireland; from Mr. Snow, Head Gardener to the Earl of Morley; from Mr. Millray, Head Gardener to the Baroness de Sternberg, &c. &c.

SUTTON'S GRASS SEEDS.—

EXTRACT OF A LETTER FROM DR. LINDLEY:—

"MESSRS. SUTTON,—*We have already made a trial of your Lawn Grass Seeds, and it is but justice to say they have proved the best we have sown for many years.*

(*Signed*) "JOHN LINDLEY.

"*Horticultural Society, 21, Regent Street, London, Nov. 9, 1853.*"

Messrs. SUTTON are continually receiving similar letters of commendation of their Lawn Grass Seeds. Price of seed, 1s. 3d. per lb., 3s. per gallon, or 21s. per bushel, CARRIAGE FREE, except very small quantities. The quantity required is 40 lbs. per acre, in forming new lawns, or from 10 to 20 lbs. per acre for improving old lawns.

SUTTON'S Grass Seeds for forming Permanent Pasture, 24s. to 30s. per acre; SUTTON'S Renovating Mixture for Improving Old Pastures, 1s. per lb.

JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

SPLENDID NEW SHRUBBY CALCEOLARIAS.

MR. HENRY MAJOR, Knosthorpe, near Leeds, begs to announce that his Descriptive List of Beautiful New Seedling Shrubby Calceolarias is now ready, and may be had on pre-paid application. Very choice Calceolaria Seed, 2s. 6d. per Packet.—March 4.

BEAUTIFUL FLOWERS.

50 Varieties of Flower Seeds ... ... 6d. per oz.
30 Varieties of Beautiful Sorts ... ... 1s. „
50 Varieties in half-quarter ounce packets ... 4s. „
30 Varieties in packets... ... ... 3s.

Any kind, in 1d. and 2d. packets sent free by post upon receipt of a stamped directed envelope. Vegetable Seeds of all kinds, Shrubs, Flowers, &c., at Mr. CULLINGFORD'S, 1, Edmund Terrace, Ball's-pond Road, Islington, London.

EDWARD GEORGE HENDERSON AND SON beg to inform their Patrons and the Public that their Catalogue of Seeds for 1854 is now ready, and will be forwarded post free on application.

E. G. H. & SON take this opportunity of stating that none but the most popular and improved kinds of Vegetable Seeds appear in their List; and among the Flower Seeds only those whose beauty and merit are universally acknowledged, together with a carefully selected stock of the principal new varieties.

E. G. H. & SON beg respectfully to call particular attention to the following choice Seeds of Florist Flowers, which have been saved from a fine collection of named sorts, and also the annexed new Annuals, which they can confidently recommend.

CHOICE FLORIST FLOWERS.

Per packet.—	s.	d.	Per packet.—	s.	d.
Antirrhinum, fine mixed	0	4	Hollyhocks	1	0
Balsam, Camellia-flowered	0	6	Pansy	1	6
Calceolaria ... 2s. 6d. and	5	0	Petunia	1	0
Cineraria ... 1s. 6d. and	2	6	Pinks	1	6
Dahlias	1	0	Verbenas	1	0
Geranium, fancy, 2s. 6d. &	5	0	Mimulus, beautifully spotted		6

NEW AND OTHER CHOICE FLOWERS.

Per packet.—	s.	d.
Abronia umbellata ...	1	6
Anagallis azurea grandiflora	1	0
„ rubra	1	0
Arctotis breviscapa ...	0	6
Aster, new dwarf German Pyramidal, in packets of 12 distinct colours, separate	6	0
„ French Pæony-flowered Pyramidal, in packets of 8 distinct colours, separate ...	3	6
Balsam, new pale yellow	1	0
Collinsia bicolor atrorubens (new)	0	6
„ Bartsiæfolia... ...	0	4
Clintonia pulchella ...	0	6
„ „ alba ...	0	6
„ „ atropurpurea (new)	1	0
Coreopsis coronata ...	0	4
„ Pygmæ (new) ...	0	4
Eucnidia Bartonioides ...	0	6
Erysimum Arkansanum...	1	0
Grammanthes gentianoides	0	6
„ „ [illegible]tea ...	0	6
„ [illegible]ariegata	0	6
I[illegible] ele[illegible]	0	6
Leptosip[illegible]m (new)	1	6
Linum grandiflorum rubrum (new)	1	6
Maurandya elegans superba	0	6

Per packet.—	s.	d.
Lobelia racemosa (large blue)	0	4
„ „ alba (new)	0	6
Mignonette (new large-flowering)	0	3
„ Tree	1	0
Nycterinia capensis (new)	1	0
„ selaginoides (new)	1	0
„ villosa (new) ...	1	0
Nolana grandiflora alba...	0	4
Œnothera prostrata (for bedding)	0	4
Portulacca, new orange (not aurea)	0	6
„ rosea	0	6
Primula sinensis fimbriata alba	2	6
„ „ „ rubra	2	6
Rhodanthe Manglesi ...	0	6
Schizanthus Grahami carnea (new)	0	6
„ retusa	0	4
„ „ alba ...	0	4
Stock, Scarlet Intermediate	0	6
„ Pyramidal Wall-leaved	0	6
„ new dwarf German, in collections, extra fine ... 2s. 6d. and	3	6
Tropæolum Triomph de Gand	0	
Digitalis, new spotted varieties, extra fine ...	0	6

Wellington Nursery, St. John's Wood, London, March 4.

GUTTA PERCHA HORTICULTURAL LABELS—These Labels are admirably adapted for Roses, Shrubs, Trees, and Herbaceous Plants. They are of sheet Gutta Percha, 3¼ inches wide and 1 inch deep, the name indented in bold letter, and surrounded by a neat border. Being of a dark brown colour, they are an advantageous substitute for the unsightly labels of parchment, painted wood, or zinc, over which they possess the advantage of showing the name distinctly and of being imperishable.

"What is wanted in a Garden Label is durability, legibility, and cheapness; and this (the Gutta Percha Label) seems to approach such requisites nearer than any we have yet seen."—*Gardeners' Chronicle.*

Price 8d. per dozen. By post, free, 1s. per dozen.—Sold by E. TAYLOR, Gutta Percha Warehouse, Colchester.

EMIGRANTS' IRON AND WOOD HOUSES from 10l. each; Drawings of 21 Houses sent free. Also maker of Iron and Wood Summer Houses for Gardens. Portable Poultry Houses, Pheasantries, &c.—R. RICHARDSON, 21, Tonbridge Place, New Road, near King's Cross, London.

SUBSTITUTE FOR GARDEN MATS.—Waxed Sheeting nearly 2 yards wide, 1s. per yard run—admits light and excludes cold; Thick Canvass Tarpauling, 1s. per square yard; Thick Canvass Waxed Sheeting, 1s. per square yard, may be had various widths; these Canvasses are excellent for Roofing Sheds and Outhouses, as they are quite Waterproof.

R. RICHARDSON, 21, Tonbridge Place, Judd Street, New Road, London.

LAND DRAINAGE.

MR. JOHNSON begs to inform Landowners, Agents, &c., that he is prepared to undertake the Drainage of Land, either by Contract or by a small charge per acre for planning and setting out the Drains, taking Levels, superintending the Work, &c.

Mr. J. has been for several years constantly employed as a Drainer in most of the Counties in England, and can give numerous satisfactory references. Plans for Tilery Buildings, and every information on Drainage can be obtained at the Office, 12, Abingdon Street, Westminster.

LAND DRAINAGE.

MR. BAILEY DENTON'S TABLES OF COST, &c., price 1s. 4d. Sold by METCHIM, Parliament Street. MR. BAILEY DENTON'S WORKMAN'S A LEVEL, price 1l. 10s. Sold by JONES & Co., High Holborn, London.

PLAN OF DRAINS.—It being essential in all cases after Draining to preserve a correct Plan and Record of the work, J. JOHNSON begs to intimate that he is prepared to make Surveys and accurate Plans (to any scale) of Field Drainage, for a charge varying from 6d. to 18d. per acre.—Address, 12, Abingdon Street, Westminster, London.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, MARCH 4, 1854.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 10.—1854.] SATURDAY, MARCH 11. [PRICE 6*d.*

INDEX.

Agri. Soc. of England	156 *b*	Land agents	155 *c*
— statistics	153 *c*	Machines, stacking	156 *c*
Anemone japonica	149 *c*	Manure, management of	155 *a*
Ants, to exterminate	150 *a*	— blood as	155 *b*
Apples for west walls	152 *c*	— sewage	156 *a*
Beetle trap	152 *c*	Meteorology	155 *b*
Birds, British	156 *b*	Pathology, vegetable	148 *c*
Botanical Soc. of Edinburgh	150 *b*	Plant buyers, caution to	150 *a*
Calendar, horticultural	152 *a*	— supports, to fix	149 *b*
— agricultural	156 *c*	Potato sets, dried	149 *c*
Cedar wood of the ancients	148 *b*	Poultry, Ptarmagan	156 *c*
Clay, burning	150 *a*	Ranunculuses, to plant	151 *c*
Deodar timber	149 *b*	Royal Botanic Garden, Kew	151 *b*
Drains, plans of	156 *b*	Sericographis Ghiesbreghtiana	149 *a*
Espaliers, iron	152 *c*	Slugs, to kill	157 *a*
Ewes, management of	155 *c*	Statistics, agricultural	153 *c*
Glass, burning by	149 *a*	Timber, ancient Cedar	148 *b*
— rough plate	150 *a*	— Deodar	149 *b*
Guano, fish	155 *b*	Trellises for walls	152 *c*
Heat, distribution of	155 *b*	Turnips, best kinds of	154 *b*
Hexacentris lutea	151 *b*	Vegetable pathology	148 *c*
Hooker's (Dr.) Himalayan Journals, rev.	150 *c*	Vallota (?) miniata	149 *b*
Horticultural Society	150 *a*	Walls, trellises for	152 *c*
— schedule	147 *c*	— Apples for west	152 *c*
Kew Gardens	151 *b*	Wood, ancient Cedar	148 *b*
		— Deodar	149 *b*

21, REGENT STREET.

HORTICULTURAL SOCIETY OF LONDON.
PRIVILEGED TICKETS.
The Exhibitions will take place on the Second Saturdays in May, June, and July, namely—

MAY 13, JUNE 10, JULY 8.

All Fellows who shall apply, on or before Tuesday the 25th of April, may obtain, at the rate of Three Shillings and Sixpence each, any number of Tickets NOT EXCEEDING THIRTY-SIX; but no application for such tickets will be received after that day. *Fellows of the Society subscribing for tickets at this price will be allowed a clear week from the 25th of April during which they may claim them.* AFTER THAT PERIOD ALL THE 3*s.* 6*d.* TICKETS SUBSCRIBED FOR, BUT NOT ISSUED, MAY BE CANCELLED.

After the 25th of April, any further number of tickets will be delivered to Fellows on their personal application or written order, at the price of *Five Shillings* each ticket.

SPECIAL PRIVILEGE OF FELLOWS.—Fellows of the Society enter free at half-past 12, and can introduce two friends WITH TICKETS; or the Fellow's privilege may be transferred to a brother, sister, son, daughter, father, mother, or wife, residing in the Fellow's house, provided the person to whom the transfer is made be also furnished with a ticket signed by that Fellow. That is to say, the privilege of entering early may be transferred, but not the privilege of FREE admission.

ROYAL BOTANIC SOCIETY, REGENT'S PARK.—The days appointed for the EXHIBITIONS of PLANTS, FLOWERS, and FRUIT this year are WEDNESDAYS, May 24, June 21, and July 5; and AMERICAN PLANTS, MONDAYS, June 12 and 19.

Tickets of Admission are now being issued, and can be obtained at the Gardens by orders from Fellows of the Society. Price on or before May 13, 4*s.*; after that day, 5*s.* each. The Plants will be arranged on a new plan, similar in form to the American Garden.

SOUTH LONDON SOCIETY OF AMATEUR FLORISTS.—The EXHIBITIONS for the present season will take place at the HORNS TAVERN, KENNINGTON, on WEDNESDAY, April 26th, 1854, for Auriculas, Polyanthuses, Heartsease, &c.; THURSDAY, May 25th, for Tulips, &c.; THURSDAY, June 22d, for Pinks, Roses, Ranunculuses, &c.; WEDNESDAY, July 26th, for Carnations, Picotees, Verbenas, Fuchsias, &c.; FRIDAY, September 15th, for Dahlias, Hollyhocks, &c.; and WEDNESDAY, November 22d, for Chrysanthemums, &c. Amateurs and others wishing to subscribe to this Society, are requested to send immediate notice to one of the undersigned Secretaries, WM. TRAHAR, Esq., 5, Kensington Gore; JOHN BUSHELL, Esq., Lower Kennington Lane; or to the "Horns Tavern," Kennington.

COUNTY of GLOUCESTER and CHELTENHAM ROYAL HORTICULTURAL SOCIETY.—The Committee of Management of the above Society, finding that their funds are in a more prosperous condition than they had anticipated, have determined to increase the amount of Prizes to be given at their Shows on the 3d May and 30th August next. The amended Schedule may be had on application at the offices of the Society. HENRY J. COCHRANE, Secretary.
Committee Room, 128, High Street, Cheltenham.

JOSEPH FAIRBAIRN deceased.—All persons having CLAIMS upon the ESTATE of Mr. JOSEPH FAIRBAIRN, late of Clapham, Nurseryman and Seedsman, deceased, are requested to forward full particulars thereof forthwith to EDWARDS & FRANKISH, Solicitors, 11, New Palace Yard, London.

JOHN JEYES, NURSERYMAN, Northampton, has to offer fine dwarf-trained trees of the following fruits:—
MORELLO, and other Cherries; MOOR PARK APRICOTS; GREENGAGE, and other Plums.

NEW CUCUMBER.
MARSHALL'S "IMPROVED JEWESS," a hybrid between the Brewston and Mills's Jewess. It is a good bearer, dark green, black spine, a first-rate variety for early forcing and general crop. Seeds may be obtained of Mr. MARSHALL, Gardener to John Sick, Esq., Chiswick, Middlesex. A packet of five seeds, 2*s.* 6*d.*

NEW PLUMS.
HENRY DOWLING, FRUIT-GROWER, Woolston Lawn, Southampton, most respectfully begs to return his sincere thanks to the Nobility, Gentry, and Public generally, for the most liberal patronage he has received, and informs them that he has none of the Standard of England, but can supply good strong plants of the Angelina Burdett and Black Gage, which can be obtained at Mr. C. TURNER'S, Royal Nursery, Slough, or from the Grower. See the *Florist* for December, or *Gardeners' Chronicle* of November 5th or 12th for testimonials and particulars.
Woolston Lawn, March 11 1854.

GRASS SEEDS FOR PERMANENT PASTURE.
WHEELER AND SON'S DESCRIPTIVE LIST of GRASS SEEDS will be forwarded free on application.
J. C. WHEELER AND SON, GLOUCESTER.

A FIRST CLASS CATALOGUE OF GERANIUMS, VERBENAS, FUCHSIAS, DAHLIAS, HOLLYHOCKS, ETC.
GEO. SMITH begs to announce that the above is now ready and will be forwarded in exchange for one postage stamp.—Tollington Nursery, Hornsey Road, Islington.

N. GAINES begs to announce his List of Dahlias and Pelargoniums for 1854 is now ready. It contains a description of his three Seedling Dahlias to be sent out in May, viz., Alba superba, Primrose Perfection, and King of the Yellows. Also a Printed List of Fuchsias, Cinerarias, Chrysanthemums, Auriculas, Corræas, Verbenas, Camellias, Azaleas, Rhododendrons, &c., &c., may be had post free on application.
Nursery, Surrey Lane, Battersea.

GRASS SEEDS, SEPARATE OR MIXED.
GENTLEMEN *intending to lay down land to Permanent Pasture, or for one or two years' lay, are recommended to communicate with us, stating the nature of the soil and situation, that we may advise as to sorts of Grass Seeds most suitable.* Price 24*s.* to 32*s.* per acre.
JOHN SUTTON & SONS, SEED GROWERS, Reading, Berks.

CLOVER SEED.
GENUINE NEW CLOVER SEED *may be obtained of the undersigned, at the annexed moderate prices for cash.*
FINE NEW RED CLOVER ... ... 8*d.* to 9*d.* per lb.
" WHITE CLOVER ... 9½*d.* to 10½*d.* "
" YELLOW CLOVER ... 5*d.* to 6*d.* "
" PERENNIAL RED ... ... 1*s.* "
" COW GRASS ... ... 10½*d.* to 1*s.* "
Large quantities, carriage free, to all parts.
JOHN SUTTON & SONS, *Seed Growers, Reading, Berks.*

BEAUTIFUL FLOWERS.
50 Varieties of Flower Seeds ... ... 6*d.* per oz.
30 Varieties of Beautiful Sorts ... ... 1*s.* "
50 Varieties in half-quarter ounce packets ... 4*s.*
30 Varieties in packets... ... ... 3*s.*
Any kind, in 1*d.* and 2*d.* packets sent free by post upon receipt of a stamped directed envelope. Vegetable Seeds of all kinds, Shrubs, Flowers, &c., at Mr. CULLINGFORD'S, 1, Edmund Terrace, Ball's-pond Road, Islington, London.

EDWARD GEORGE HENDERSON AND SON, Wellington Nursery, St. John's Wood, London, beg to recommend the following (for description see this Paper of the 4th of March):—

	s.	d.
GLOXINIA DUKE OF WELLINGTON	7	6
" LADY FRANKLIN	7	6
" LEONIE VAN HOUTTE, ... 5*s.* and	7	6
ACHIMENES CHERITA, beautiful new sp., 5*s.* and	10	6
" SIR TRECHERNE THOMAS, splendid ... ... 3*s.* 6*d.* and	5	0

Any or all the above forwarded free by post.
Seed Catalogue forwarded post free, containing a description of the best known new Annuals, excluding the new Californian and other varieties that have not sufficient merits for our recommendation.—March 11.

SCOTCH FIR.
THE Subscribers can supply 2-year Seedling SCOTCH FIR, at a very low rate, if taken in quantity. Price given on application.—FOWLER & WRIGHT, Glasgow, March 11.

SILVER FIRS FOR SALE.
JOSIAH HILL begs to inform Noblemen and Planters generally that he has a large assortment, from 1½ to 3 feet (twice transplanted); very healthy and well rooted.
Briston Nursery, Norfolk.

PINE PLANTS.
TO BE SOLD, 100 Fruiting and Succession Plants, mostly Queens, perfectly clean and healthy.—For particulars, apply to T. PERKINS, Nurseryman, Atherstone, Warwickshire.

TO SEEDSMEN AND GARDENERS.
TO BE SOLD, 50 lbs. of good CAULIFLOWER SEED, saved in 1853, at 7*s.* per lb.; also some ASPARAGUS PLANTS, at 5*s.* per rod.—Apply to JAMES BROWN, Gardener, Deptford, Kent.

TO BE SOLD, Three large Red and White Double CAMELLIA PLANTS; one do. of ROSEA SASANQUA, well set with bloom buds; height 7 feet; three large AZALEAS INDICA, price 10*l.*—D. WOOD, Nurseryman and Seedsman, Wandsworth Road, Surrey.

ACACIA INERMIS.
WANTED, by a Gentleman, a few good standard trees of ACACIA INERMIS. Any person having the same to dispose of may apply, by letter, stating price, &c., to J. K., 7, Bedford Road, Acre Lane, Brixton, London.

WANTED, Two-year-old SEAKALE PLANTS.—Apply, stating price, to C. C., Office of this Paper.

TO BE SOLD, at Chapel Farm, Eltham, ASH-LEAF KIDNEY and FORTY-FOLD POTATOES for Seed.—H. J. HAMMOND.

JOHN BELL, POTATO SALESMAN, Covent Garden, begs to offer the following:—Ashleaf Kidneys, 10*s.* per bushel; Forty Folds, 6*s.* Warranted true. Allowance to the trade. Country orders made payable at Charing Cross.

PERMANENT PASTURE.
R. H. SMITHE, of Eastling, Faversham, Kent, is now prepared to send out his Mixtures of the NATURAL GRASSES, PERENNIAL CLOVERS, &c., to lay down Land to Permanent Pasture, at 25*s.* per acre, allowing 3 bushels to the acre, carriage free. Mixtures for Lawn, or any other purpose, or the sorts separate. Most of the species of Grass are collected by the Advertiser, and he will bestow the greatest attention in selecting such as shall constitute mixtures specifical to the soil, purpose, &c., of each buyer.

LILIUM LANCIFOLIUM, PELARGONIUMS, RANUNCULUSES, ANEMONES, AND GLADIOLUS.
HENRY GROOM, Clapham Rise, near London, by Appointment FLORIST TO HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to say that his SPRING CATALOGUE is ready, and will be forwarded by post on application.

NEW ROSES FOR 1854.
BENJAMIN R. CANT has now ready for sale, strong plants in pots of all the NEW ROSES, some of which have never before been offered to the public, descriptive Catalogues of which can be had on application.
St. John's Street Nursery, Colchester.

PELARGONIUMS.
GEORGE CLARKE begs to offer 12 of the newest and best Pelargoniums for exhibition, in strong healthy plants, for 18*s.*; Fancy do. do., 15*s.* per doz., hampers included.
Streatham Place Nursery, Brixton Hill, Surrey.

IPOMŒA RUBRA CÆRULEA.
MR. GEORGE ROBERTS begs to make known to the Seed Trade that he can supply the above-named scarce Seed.—For prices apply to him at 32, Moorgate Street, London, where dried Specimens of the Flowers and Leaves may be seen. Purchasers of a small number of Seeds will please obtain them from the principal London Seedsmen.

"WELLINGTONIA GIGANTEA."
MESSRS. VEITCH, of EXETER and CHELSEA, have much pleasure in stating that their Seeds of the above magnificent Tree are vegetating satisfactorily. They therefore hope to be able to send out well established seedling plants during the ensuing summer and autumn. They are now taking orders for them at the following prices:—
For a Single Plant ... 2 guineas | For 8 Plants ... 10 guineas
For 4 Plants... ... 6 guineas | For 12 Plants ... 12 guineas
And all orders will be executed strictly in the rotation in which they are received.—March 11.

WELLINGTONIA GIGANTEA.—Beautiful Lithographed Plates (from a drawing taken in California) of this wonderful Tree may be had, at 7*s.* 6*d.* each, of Messrs. VEITCH & SON, Exeter, and Mr. JAMES VEITCH, jun., Exotic Nursery, Chelsea.
The Bark, Wood, Cones and Foliage, which were exhibited on Tuesday week at 21, Regent Street, may be seen at the Exotic Nursery, Chelsea.—March 11.

GAINES' Hybrid Rhododendron "PRINCESS ALICE" is now in full bloom, also the new Camellias "WILDERI" and "MRS. ABBY WILDER," can be seen at the Nursery, Surrey Lane, Battersea, any day, Sundays excepted.

DOUBLE FRENCH MARIGOLD AND CAPE STOCK SEEDS. A packet of beautiful DOUBLE FRENCH MARIGOLD SEEDS forwarded on receipt of Seven Penny Postage Stamps. Ditto, SCARLET CAPE STOCK, ditto.
EDWARD SANG & SONS, Nursery and Seedsmen, Kirkaldy, N.B.

BLACK PRINCE AND PRINCE OF WALES STRAWBERRIES.—The Prince of Wales, per 100, 12*s.*; Black Prince, 5*s.* per 100. Also Cuthill's third thousand of the Belgian Prize Essay on the Potato, with 20 other articles upon the Melon, Cucumber, Strawberry, Asparagus, Seakale, Rhubarb Wine (which makes the finest champagne), Salads, Herbs, &c. Price 2*s.* 4*d.* post free. Also, Market Gardening round London. Price 1*s.* 8*d.* post free. Cucumber Seed, 1*s.* 1*d.* per packet.
JAMES CUTHILL, Camberwell, London.

PERUVIAN SKINLESS BARLEY.—SEED of this valuable variety, weighing 60 lbs. per bushel, may now be obtained of Messrs. ASTLEY & Co., Oil and Seed Merchants, Coventry. Price 7*s.* 6*d.* per bushel. Orders must be accompanied by a remittance. The quantity on hand being small, immediate application will be necessary.

THE ROYAL MOSS-POD PEA.—The attention of horticulturists and of the public in general is called to this new and peculiar PEA, as being surpassed by none in exquisite flavour and colour on table; it is at the same time highly productive. To be had only of Mr. DENNIS, West Court, Detling, Maidstone, at 2*s.* 6*d.* per quart, and will be forwarded in any quantity (not less than a quart), to all parts of the kingdom, on receipt of postage stamps or post-office order for the amount.

DOUBLE ITALIAN TUBEROSE ROOTS, 4*s.* per dozen.—The annual importation of the above-named beautiful and fragrant Flower has just been received, and large and well selected Bulbs may be obtained, without disappointment, at A. CORBETT'S Foreign Warehouse, 18, Pall Mall.
N.B. Printed regulations for treatment sent; also, just arrived, very moist and open Parmasan Cheeses.

THE FINEST BALSAMS IN EUROPE, in Six Classes; Seed saved by Mr. GLENNY from flowers three inches across: the six, 37 stamps; Mixed Seeds, 13 stamps, in Sealed Packets only, signed and sealed. The finest seeds that can be had procured to order, and all other choice Horticultural subjects.—420, Strand.

SUTTON'S GRASS SEEDS.—
EXTRACT OF A LETTER FROM DR. LINDLEY:—
"Messrs. SUTTON,—*We have already made a trial of your Lawn Grass Seeds, and it is but justice to say they have proved the best we have sown for many years.*
(*Signed*) "JOHN LINDLEY.
"*Horticultural Society, 21, Regent Street, London, Nov. 9, 1853.*"
Messrs. SUTTON are continually receiving similar letters of commendation of their Lawn Grass Seeds. Price of seed, 1*s.* 3*d.* per lb., 3*s.* per gallon, or 21*s.* per bushel, CARRIAGE FREE, except very small quantities. The quantity required is 40 lbs. per acre, in forming new lawns, or from 10 to 20 lbs. per acre for improving old lawns.
SUTTON'S Grass Seeds for forming Permanent Pasture, 24*s.* to 30*s.* per acre; SUTTON'S Renovating Mixture for Improving Old Pastures, 1*s.* per lb.
JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

SUPERB SEEDLING POTENTILLAS
RAISED BY BASS AND BROWN.

"This fine Perennial is not grown a tithe of what it should be."—*G. Glenny.*

We have the pleasure to offer the following very beautiful Potentillas, which we have selected from a large and much admired batch of Seedlings. We intend to send them out in May, and all orders are recommended to be forwarded early, as the stock of some of them may run short. We quote as under several authorities to whom they have been submitted for opinion:—

"All are very handsome kinds, and well worthy of cultivation."—*Gardeners' Chronicle*, July 3, 1852.

"We see no reason to alter our opinion formerly given of your Seedlings, they are certainly all very fine."—*Gardeners' Chronicle*, July 16, 1853.

"The whole appear bright, and many of them novel. They would make a pretty collection of a very pretty perennial, which from this batch of Seedlings seems to be going a-head."—*G. Glenny*, July 17, 1853.

"A very interesting collection of this useful hardy plant in great variety of colours, many of them being quite new and beautifully varied."—*Turner's Florist*, Sept. 1, 1853.

"We were not aware until we received specimens of these that there were so many beautiful varieties at the command of the gardener. All very rich and fine."—*Cottage Gardener*, July 28, 1853.

A letter from Mr. C. Turner, of July 29, states, "Your Potentillas are exceedingly fine and beautiful."

KING OF CRIMSONS, rich bright blood red, very large, and of dwarf habit ... ... 10s. 6d.

"Decidedly the most striking is No. 21, a deep scarlet crimson."—*Gardeners' Chronicle*, July 3, 1852.

"All very fine, more especially No. 21, which measures about 2 inches in diameter."—*Gardeners' Chronicle*, July 16, 1853.

"Deep blood, very large."—*Cottage Gardener*, July 28, 1853.

"Immensely large, bright blood, rich in texture, and above the average form."—*G. Glenny*, July 2, 1853.

THEODORE, a fine yellow, richly spotted, and shaded with bright red ... ... 7s. 6d.

"A good orange yellow, tipped."—*Gardeners' Chronicle*, July 16, 1853.

George Glenny, in selecting it as one of the finest, describes it as "yellow, shaded with bright red."

JULIA, a fine large primrose yellow ... ... 7s. 6d.

The Editor of the "Cottage Gardener" in selecting this from many others as one of the finest, describes it as "a very pale clear yellow."—July 28, 1853.

SUDBURY GEM, a rich orange yellow, deeply shaded and spotted with bright red ... ... 10s. 6d.

"A very beautiful variety, orange, veined upwards from the base with crimson."—*Cottage Gardener*, July 28, 1853.

SHYLOCK, a very rich dark velvet maroon, large, fine, and attractive ... ... 10s. 6d.

"Rich and dark."—*George Glenny*, July 17, 1853.

The set for 42s. The usual allowance to the trade by taking two or more sets.

The following SEEDLINGS are also very fine, rich, and showy:

FLORAL BEAUTY, a rich scarlet, dark centre ...	3s.	6d.
NAPOLEON, blood red, dark centre	2	0
DEFIANCE, rich dark crimson	2	0
NEGRESS, rich dark velvet maroon	3	6
SCARLET GEM, bright scarlet, black centre ...	3	6
PRIMROSE, a fine large clear yellow...	2	0
ARGO, a fine bright yellow	2	0

This set for 16s.

Seed and Horticultural Establishment, Sudbury, Suffolk.

KNAP HILL NURSERY, WOKING, SURREY.

WATERER AND GODFREY, Nephews and Successors to the late HOSEA WATERER, respectfully invite the attention of parties engaged in planting to the following list:—

Araucaria imbricata, 2, 3, 4, 5, and 6 feet high, in the open quarters, regularly removed every year, and as robust and handsome as it is possible to get them. We have a large stock.

Cryptomeria japonica, 2, 3, 4, 5, 6 to 8 feet.

Cedrus Deodara, stout handsome plants from seed, in any quantity, and of all heights from 1 to 7 feet. A few splendid specimens 10 to 15 feet; warranted to transplant with perfect safety.

Cedar of Lebanon, 2, 3, 4, 5, 6, 7 to 10 feet. These large Cedars of Lebanon are also very handsome trees.

Cupressus macrocarpa, or Lambertiana, 2, 3, 4, 5, 6, and 8 feet, all from seed.
" Goveniana, 2 to 3 and 4 feet.
" Funebris, 2 and 3 feet.
" thyoides variegata, 2, 3, and 4 feet.

The Variegated White Cedar, a scarce but most beautiful variegated plant, seldom seen except at Elvaston Castle. We hold a large quantity.

Juniperus Bedfordiana, fine plants, 3, 4, and 5 feet.
" Chinese, 2, 3, 4, 5, 6, 8, and 10 feet.
" repandus, 3, 4, 5, to 8 feet.
" Upright Irish, 3, 4, 5, 6, 7, and 8 feet; perfect columns, and, except at Elvaston, unequalled.
" Virginiana, the Red Cedar, 4, 5, 6, and 8 feet.

Taxodium sempervirens, 2, 3, 4, 5, and 7 feet.

Yew, common, 3, 4, 5, to 8 feet high.
" Irish, 3, 4, 5, to 10 feet. A splendid lot, all being trimmed to one stem; it adds much to their appearance and value.
" Gold striped, 1, 2, and 3 feet.
" do. worked on the Common, with fine heads, 4, 5, 6, and 7 feet high; very handsome.
" elegantissima (new striped) standards. The golden Yews are very ornamental, and we have a large quantity of fine plants.
" Dovaston, or Weeping Yew, fine standards.

Pinus Douglasi, 3, 4, 5 and 7 feet; a few magnificent plants, 10 to 12 feet high.
" insignis, 2, 3, 4, 5, 6, and 7 feet; all from seed.
" cembra, 3, 4, to 6 feet.
" (Canadensis (Hemlock Spruce), 3, 4, and 6 feet.
" morinda, 3, 4, and 6 feet.
" Menziesi, 3, 4, 6, and 8 feet.
" cephalonica, 3 to 4 feet.
" Pinsapo, large and handsome, 3 and 4 feet.
" Nordmaniana, from seed, 1½ foot; a few larger, 2 feet.
" nobilis, stout plants, with perfect heads, about 1½ foot; a few larger specimens, 3 and 4 feet. We hold a fine stock of this beautiful Fir, none of which are grafted.

Thuja Arbor-vitæ, American, 3 to 6 feet. We recommend this plant for hedges.
" Weareana, 3 to 6 feet, one of the few really hardy and most useful evergreens.
" aurea. This is perhaps one of the prettiest plants of the day; it was first sent out from this Nursery, and our stock, for size and beauty, is unsurpassed.

Libocedrus chilensis, 1½, 2, and 3 feet. This is a very distinct and beautiful plant, of recent introduction. Our stock is large and good.

Independent of the foregoing we are very large holders of the most useful Evergreens, Deciduous and Ornamental Trees, and of large size. Priced Catalogues will be forwarded on application, enclosing two postage stamps, which will also include a Descriptive Priced Catalogue of the celebrated collection of American Plants grown at this Nursery.

The Nursery is near the Woking Station, and about an hour's ride from London. A visit is earnestly solicited from all who intend planting during the forthcoming season.

NEW AGRICULTURAL ROOT.
SUTTON'S CRUICKSFIELD HYBRID SWEDE.

This is very distinct from the Swede and the Kohl Rabi, but partakes of the nature of each of those valuable roots, from which indeed it has proceeded. It is of the shape and size of Skirving's Swede, but is much hardier, and has the flesh of the Kohl Rabi. Cattle, and especially Sheep, eat it with great avidity, preferring it to Swedes, when both are presented to them. It *may be sown* earlier than Swedes for feeding off early in the Autumn; or it may be sown much later than the Swedes with certainty of success, as it will thrive while young during greater drought than Swedes, and is also found to stand severe frosts, and produce an invaluable crop of early Spring food.

Messrs. SUTTON & SONS, Seed Growers, Reading, Berks, have the honour of introducing the above valuable new root to their Agricultural friends, having purchased the stock of a gentleman in Scotland, who raised it by hybridising, as above stated, and on whose testimony as an Agriculturist they can place the most implicit reliance; and they avail themselves of this early medium of advertising, not so much for the purpose of effecting a large sale, as that it may be distributed in small quantities throughout the kingdom, from which they hope to receive an extensive sale next year. It should be drilled at same distance, and in other respects cultivated as Swedes; but it may also be transplanted if required, to mend a field of Swedes which has partially failed. Quantity of seed required per acre, 3 lbs. to 4 lbs., price 5s. per pound. The stock of seed being limited, it will be necessary to send orders early.

Address, JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

N.B. We have an excellent Stock of Swede and other Turnip Seeds, Mangold Wurzel, and White Belgian Carrot Seed, &c.

BASS AND BROWN'S SEED AND PLANT LIST
free by post for three penny stamps.

COLLECTIONS OF VEGETABLE SEEDS.

The following comprise the best in cultivation, including several new sorts of first-rate quality:—

	£	s.	d.
No. 1, Collection for a large garden, for one year's supply	£3	0	0
No. 2, Collection in smaller proportions	2	0	0
No. 3, Collection, ditto	1	5	0
No. 4, Collection of choice kinds for a small garden ...	0	15	0

If any sorts of Vegetables are not wished for, enlarged quantities of others will be sent to make up the amount.

The list of quantities of each sort supplied in the No. 1, 2, and 3 Collections are contained in the General Spring Catalogue.

For a few choice new Vegetables, see *Gardeners' Chronicle* of Feb. 13th and 27th, advertised.

FLOWER SEEDS—BEST ASSORTMENTS, free by post.

The Catalogue gives colours, heights, months of flowering, hardiness, duration, and much descriptive information of time of sowing, and other treatment.

	s.	d.
100 varieties select showy Annuals, which will include the beautiful new Leptosiphon luteum, Calceolaria chelidonioides, Nemesia bicolor, fine new varieties, splendid Prize Asters, Stocks, Zinnia, &c. &c.	15	0
50 varieties, including new, 8s. 6d.; 30 varieties ditto, 5s. 6d.; 20 varieties ditto	4	0
20 varieties best Dwarf Annuals, in large packets, for filling beds on lawns, 7s. 6d.; 12 do.	5	0
20 vars. choice Greenhouse Annuals, including the new Gomphrena aurantiaca, Salpiglossis atrosanguinea, new Portulaccas, Rhodanthe, Thunbergia, Phlox Drummondi, &c., 7s. 6d.; 12 varieties, including new...	5	0
20 vars. choice Greenhouse Perennials, including very fine and new Calceolaria, Cineraria, Fuchsia, Petunia, Verbena, Chorozema, Calendrinia umbellata, &c. ...	10	6
12 varieties ditto ditto	7	6
20 vars. Hardy Biennials and Perennials, including very choice Antirrhinum, Gladioli, Heartsease, Mimulus, Dianthus, Brompton and Emperor Stock, &c., 7s. 6d.; 12 varieties ditto	5	0

The following we beg strongly to recommend as saved from collections of first-class flowers, in packets as follows:—

	s.	d.
Calceolaria, very choice, 1s.; extra superb, from fine selected flowers	2	6
Cineraria, very choice, 1s.; extra new and choice from our superb collection	2	6
Fuchsia, new and choice, from our superb collection ...	1	0
Geranium, extra choice and new, from our superb collection	2	6
" Scarlet, from our choice collection	0	6
" Fancies, from our beautiful collection of best vars.	1	6
Gloxinia, choice, 6d.; extra, from our superb collection ...	2	6
Petunia, new and choice, from our superb collection ...	1	0
Verbena, very choice, 1s.; extra, from our superb collection of new varieties	2	6
Antirrhinum, choice, 6d.; from new of our superb collection	1	0
Carnation and Picotee, from collection of 400 vars	2	6
Gladiolus, fine mixed early, 6d.; from choice named of our superb collection	1	0
Iris, English vars, fine, 6d.; best of our superb collection...	2	6
Pansy, extra choice, from a first-rate collection	1	0
Potentilla, very choice, 1s.; extra, from our very beautiful collection	2	6
Ranunculus, from our superior collection	2	6
Auricula, from a first-rate collection	1	0

A FEW VERY CHOICE NEW FLOWER SEEDS.

	s.	d.
Leptosiphon luteum, fine orange colour; this very beautiful annual we would recommend, from its dwarf habit and novelty of colour, as a most attractive object for massing, packets, 1s. and	2	6
Linum grandiflorum rubrum, new crimson Flax	1	0
Nemesia bicolor, white and blue, very showy and attractive half-hardy annual, height 9 inches, beautiful for massing	0	6
Calceolaria chelidinoides, ex., clear bright yellow, fine for massing on lawns; the mouth being closed, it is not injured by wet	1	0
Lobelia Limburgensis, a new perennial variety from Prussia, extra	1	0
Portulacca aurantiaca, new orange, 1s.; nova rosea ...	1	0
Sweet William, very choice striped French	0	6

For a large number of new Flower Seeds, see advertisement in the *Gardeners' Chronicle* of Feb. 13th and 27th.

CHOICE IMPORTED SEEDS.

	s.	d.
24 superb varieties Dwarf German Stocks, 4s.; 12 varieties	2	6
Mixed, in 40 superb varieties, per packet ... 6d. to	1	0
Choice new brimstone, 6d.; dwarf carmine	0	6
*Fine new French, straw colour	1	0
10 Superb varieties, new large flowering	2	6
18 " Wallflower leaved, or Prussian ...	3	6
New white Wallflower leaved, very dwarf and fine, per packet ... ... 6d. to	1	0
6 Superb varieties Brompton Stocks	1	6
7 " Emperor Stocks, lasting more than 4 years, and blooming 2 or 3 times a year	2	0
New White Emperor, very choice, per packet	1	0
12 Superb varieties German Aster	2	0
12 " Globe-flowering Aster	2	0
12 " Pyramidal Aster	2	0
12 Very fine French Pæony, flowering varieties; these are extraordinarily fine	5	0
Mixed do., per packet	1	0
6 Superb varieties Zinnia elegans	2	0

And other fine Imported Seeds. See Catalogue.

☞ Goods CARRIAGE FREE with orders of 20s. and upwards to London, Ipswich, Norwich, or any Station on the Line.

Remittances are requested with orders from unknown correspondents. Post-office Orders to be made payable to BASS & BROWN, or to STEPHEN BROWN.—The Autumn and Spring Catalogues supplied free by post for three penny stamps each, the cost of which may be deducted from orders sent.

BASS & BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk. ESTABLISHED ABOUT HALF A CENTURY.

WHEELER'S SHORT SELECT SEED LIST.

J. C. WHEELER AND SON'S SEED LIST is now ready, and will be forwarded free on application. *We have tried to make it as short and as select as possible, leaving out all inferior varieties, so that it is really a List of the best Seeds in cultivation. Grasses and other Agricultural Seeds, Garden and Flower Seeds, all described, and prices put to every article. We deliver our Seeds Carriage Free to almost every Railway Station in the kingdom, and take especial care that every sort we send out is true to name, and of the best quality.*

J. C. WHEELER & SON, Seed Merchants, Gloucester.

RENDLE'S NEW FARMING PRICE CURRENT AND AGRICULTURAL DIRECTORY FOR 1854.

OPINION OF THE EDITOR OF THE "MARK LANE EXPRESS:"—

"We have just seen a copy of this excellent Price Current, and consider it a most valuable companion to the Agriculturist. It is the same size as the garden edition, lately reviewed in this paper. It contains an excellent Almanack, with the University Terms, Eclipses, &c., and a List of Fairs and great Markets held in the four Western Counties. The descriptive lists of Grasses are excellent; they give all the best varieties for permanent pasture, ornamental parks and lawns, sheep walks, heathy and moory lands, &c. Then comes the list of Clover and Turnips, all described in a concise and useful manner. Then follows descriptions of the best Mangold Wurzel, Carrots, and other vegetables used in agriculture; then we have a Price Current of all the best Natural and Artificial Manures, with much useful information relative to Peruvian Guano, Lawes' Patent Superphosphate, Nitrate of Soda, Bone Dust, Bolivian Guano, &c.; then are found some very good advice relative to the purchase of so-called Wheat Manures; but the best Paper is one contributed by J. B. Lawes, Esq., of Rothamsted, 'On the Cultivation of one Green Crop after another on Heavy Land.' This should be read by all engaged in agricultural pursuits. There are some valuable tests for discovering adulterations in manures, by J. C. Nesbit, Esq., the celebrated agricultural chemist; and the report of a lecture by Professor Way on the same subject; then follow the Advertisements, comprising some illustrations of the best implements of the day. It is very well got up, and comprises 52 closely-printed pages, crown quarto size, and we strongly recommend it for the perusal of all engaged in the healthy pursuit of agriculture."

CHARLES ALEXANDER (late of DICKSONS & Co.), SEEDSMAN and FLORIST, 32, West Register Street, Edinburgh. His Descriptive Catalogue of Select Garden and Flower Seeds is just published, and will be forwarded free on application.

PAGE AND CO., SEED MERCHANTS TO THE AGRI-HORTICULTURAL SOCIETY OF BOMBAY.

SEEDS FOR EXPORTATION (free on board) AND HOME USE (carriage paid).

				£	s.	d.
No. 1.	A choice collection of Vegetable Seeds, suited to the climate (case included)			£5	0	0
No. 2.	Do.	Do.	in smaller proportions	2	10	0
No. 3.	Do.	Do.	Do.	1	0	0
No. 1.	A selection of the most beautiful and showy Annuals (case included)			1	5	0
No. 2.	Do.	Do.	Do. ...	0	15	0
No. 3.	Do.	Do.	Do. ...	0	10	6

General Priced Catalogues free upon application.

In addition to our great experience, the port of Southampton affords us unrivalled facility for the almost daily shipment of SEEDS to all parts of the world; and as no greater test of genuineness and vitality than a long transit by sea can be applied to Seeds, we yield priority to none in supplying such for home growth as cannot fail to prove most satisfactory.

All parties desirous of taking or sending Seeds to the Peninsula, Mediterranean, East and West Indies, Australia, Brazil, Cape of Good Hope, China, America, &c., are particularly requested to state their wishes to us, whereby the annoyance and disappointment which too frequently happens by placing their orders in the hands of inexperienced persons will be prevented. We are continually receiving the warmest thanks of our consignees; only a few days since, a gentleman writes from Melbourne, "Your Seeds have proved excellent. The selection of Peas has afforded us the greatest delicacy in Australia." From Capt. H. J. Barr, Secretary to the Horticultural Society of Bombay: "Gentlemen,—In acknowledging the receipt of your last supply of Vegetable and Flower Seeds, which reached me on the 8th June by the overland route, I have the honour to inform you that they have all turned out so fresh and good that the demands on our Society have *increased so much* that I must now cancel my former order, and beg you to supply me according to the list now furnished."

PAGE & CO.'S BLIGHT COMPOSITION should be in the hands of all Plant and Fruit Cultivators. For testimonials see back leaf of this day's Paper.

Oxford Street (adjoining Radley's Hotel, 20 yards from the Railway and Docks), Southampton.

ADAMSON'S REGISTERED ORNAMENTAL GARDEN EDGING, a cheap, durable, and perfect substitute for all other Edgings, for Conservatories, Terrace Walks, or Garden Borders, being of an agreeable colour, a thorough drain for the walks, applicable to borders of any form or size, and does not harbour vermin. To be obtained only of the Inventor and Manufacturer, T. H. ADAMSON, Jun., Builder, High Street, Putney, where Prospectuses may be obtained on application.

May be seen laid down in the Horticultural Society's Gardens, Chiswick, where it has withstood the late severe winter.

GUTTA PERCHA HORTICULTURAL LABELS.—These Labels are admirably adapted for Roses, Shrubs, Trees, and Herbaceous Plants. They are of sheet Gutta Percha, 3¼ inches wide and 1 inch deep, the name indented in bold letter, and surrounded by a neat border. Being of a dark brown colour, they are an advantageous substitute for the unsightly labels of parchment, painted wood, or zinc, over which they possess the advantage of showing the name distinctly and of being imperishable.

"What is wanted in a Garden Label is durability, legibility, and cheapness; and this (the Gutta Percha Label) seems to approach such requisites nearer than any we have yet seen."—*Gardeners' Chronicle.*

Price 8d. per dozen. By post, free, 1s. per dozen.—Sold by E. TAYLOR, Gutta Percha Warehouse, Colchester.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

Priced lists of plant tubs and boxes forwarded on application.

PRIZE MEDAL—1851.
AT A VERY ECONOMICAL RATE.

SAMUEL CUNDY, MASON and BUILDER, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Lower Belgrave Place, Pimlico, London.

Marble Chimney-pieces manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price. A good Marble Chimney-piece for 40s. Marble Work in all its branches at a remarkably cheap rate for Halls, Dairies, Larders, &c. Circulars sent on application.

N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank.

DILCOCK'S BRIDE BROCCOLI.

BAINBRIDGE AND HEWISON (late Jas. Edward), have the pleasure of again offering to their friends and the public their DILCOCK'S BRIDE BROCCOLI, at 2s. 6d. per packet; and while returning their thanks to their numerous patrons of last season, they beg to refer them to the following extract, taken from the *Yorkshireman* newspaper of the 3rd of April last, when it was exhibited at York for the Society's time:—"Mr. Dilcock deservedly obtained all the three prizes for Broccoli with his seedling—the 'Bride.' Taking the season into account, these vegetables were really remarkable specimens." It was equally successful the two previous years.

B. & H. are prepared to send out their Catalogues of Kitchen Garden and Flower Seeds, post free, on application, and also their Catalogue of Plants early in March, containing Stove, Greenhouse, &c., including many of the newest and choicest of the season. Their Seeds will be of the very best quality, and in the greatest possible variety.

Sold Wholesale by NOBLE, COOPER, & BOLTON, Fleet Street; CHARLWOOD & CUMMING, Covent Garden; and by all respectable Seedsmen in town and country.—York Nurseries, March 11.

ITALIAN RYE GRASS, Imported Seed. Per Bushel, 7s.

"Too much cannot be said in favour of this very excellent Rye-grass. Compared with any other of the varieties of common Rye-grass, the Italian affords a stronger braird, arrives sooner at maturity, has a greater abundance of foliage and of a lighter, and more lively green colour, grows considerably taller, and is more upright, or less inclined to spread on the ground. Another of its distinguishing characteristics is, that it is much preferred by cattle to any of the common sorts, and is greedily eaten by them, whether green or dry." Imported seed is very much superior to that saved in this country. Three bushels is the quantity usually sown to the acre. We have a good stock of imported Seed, and can recommend it as being of excellent quality.—J. C. WHEELER and SON, Nurserymen, Gloucester, Seedsmen to the Gloucestershire Agricultural Society.

FLOWER SEEDS.—We have selected out of our large collection of Flower Seeds the most beautiful and showy varieties, each sort distinct in colour, and calculated to produce a fine effect when planted out in beds or groups in the flower border; and we have had each variety distinctly marked with its Botanical and English name, height, time of flowering, colour of the flower, manner of growing, whether erect or trailing, &c., the time it should be sown, and other valuable hints as to its cultivation. In selecting these varieties, we have been careful to exclude all which are shy bloomers, or have an insignificant appearance, so that the collections will comprise only those which are really showy and handsome, and which we believe would prove to the entire satisfaction of any lady or gentleman who might be disposed to order them. The German Stocks and Asters especially are most superb. The Collections will be sent free by post to any part of the kingdom at the following prices:—

Twenty extra fine varieties, all distinct and beautiful, 5s.
Fifty ditto ditto 10s. 6d.

Payment can be made either by Postage Stamps or Post Office Order, made payable to J. C. WHEELER & SON, Nurserymen, Gloucester.

MESSRS J. AND H. BROWN offer the following SELECTED PLANTS, FRUIT TREES, &c., which they will forward to any part of the Kingdom or the Continent; and their New Descriptive Catalogues of Plants and Seeds by post.

		s.	d.
25	Azaleas, new hardy Belgian varieties, on their own roots, with flower-buds, one of a sort by name ...	20	0
25	American Azaleas, do. do.	15	0
25	Hardy American Plants, one of a sort, by name ...	10	6
12	Hardy Heaths and Kalmias	6	0
12	Rhododendrons, including scarlet, white, and rose—hardy varieties	12	0
	New hardy Yellow Rhododendrons, each 5s. 6d. to	7	6
	Fine hardy Scarlet Rhododendrons, 2 feet, per dozen...	12	0
	Cedar of Lebanon, 3 feet, well grown in pots, per dozen	12	0
	(Araucaria, Deodara, and Coniferas of all kinds, see List.)		
	Roses, standard and half standards, per dozen ... 12s. to	15	0
	Climbing Roses of choice sorts, per dozen	6	0
50	Dwarf Roses, two of a sort, on own roots	15	0
	Wistaria sinensis, extra fine, in pots, 5 to 10 feet, each	3	6
6	Fine hardy Magnolias, one of a sort	10	6
12	Greenhouse Azaleas, one of a sort, blooming plants ...	25	0
12	Choice Camellias, by name, do.	30	0
24	Choice Ericas, one of a sort, by name	16	0
12	Orchidaceous Plants, choice species, and good plants	40	0
50	Choice Greenhouse Plants, one of a sort...	45	0
	Tree Carnations, 6 best sorts	6	0
	Cinerarias, flowering strong plants, per dozen... ...	12	0
	Verbenas and Petunias, newest varieties, per dozen ...	6	0
6	Bulbs of Lilium lancifolium, one of a sort	12	0
12	Pæonias, new white, pink, and blush, of sorts	8	0
25	Hardy Herbaceous, one of a sort	7	6
25	Pinks, choice sorts	10	0

FRUIT TREES.

	s.	d.
Fine Dwarf and Standard Peaches, Nectarines, Apricots, Plums, Pears, and Cherries. The best and most approved sorts of these respective kinds, to name, each 2s. 6d., or, per dozen	24	0
Untrained or maiden do., 1s. 6d. each, or, per dozen ...	12	0
Apples, dwarfs and standards of best sorts, per doz. 10s. to	15	0
Fine Gooseberries, Currants, and Raspberries, per dozen	3	0
Figs, Medlars, Walnuts, and Mulberries, each	2	0
Filberts, new thin shelled and red skinned, per dozen ...	3	0
Strong Vines, from eyes and layers, in pots, per dozen ...	18	0

New Gardens and Greenhouses furnished on moderate terms.
Albion Nursery, Stoke Newington, London.—March 11.

FIRST-RATE NEW FUCHSIAS, VERBENAS, CINERARIAS, PANSIES, GERANIUMS, PETUNIAS, ETC.

WILLIAM RUMLEY AND SONS have to offer the under-named, in fine strong plants, hamper included, or free by post for prepayment, viz.:—

FUCHSIAS.—The following best new varieties of 1853, 10s. 6d. per dozen, 6 for 6s., or 1s. 6d. each, viz.:—Brilliant, Duchess of Lancaster, England's Glory, Glory (Banks'), Incomparable, King Charming, Lady Emily Cavendish, Lady Franklin, Mrs. Patterson, Premier, Perfection, Sir J. Paxton, the Queen, Vesta, Vauban, &c.

VERBENAS.—The following first-rate new varieties of 1853, 6s. per dozen, viz.:—Dane Croft Beauty, Elizabeth, Fulgorie, Garland, Glory, Lady Franklin, Madame Boucharlat, Madame Ivery, Madame Lemonier, Madame Rougier, Madame Pommery, Mrs. Kirkpatrick, Orestes, Princesse Marianne, Grandeur Lyonnaise, Vesta, &c.

CINERARIAS.—The following first-rate new varieties, 12s. per dozen, 6 for 7s., or 1s. 6d. each, or smaller plants, 9s. per dozen, viz.:—Agnes Wakefield, Admiration, Charles Dickens, Charlotte, Conspicua, Duke of Wellington, Enchantress, Hebe, Kate Kearney, Loveliness, Marguerite d'Anjou, Prince Arthur, Rosalind, and Tyrian Prince.

PANSIES.—The following extra fine varieties, 6s. per dozen, viz.:—Adela, Duke of Perth, Blanche, Robert Burns, Sir Philip Sidney, Queen of England, Commander-in-Chief, Diadem, Sir J. Paxton, Euphemia, Mr. Beck, Mrs. Beck, Loveliness, Ophir, Pompey, Blue Perfection, Miss Caroline Bouverie, Fair Flora, Prince of Orange, Lucy Ashton, Yellow Standard, Victory, Nelson, Negro, Wellington, &c.

GERANIUMS.—Choice varieties, 9s. to 18s. per dozen.

PETUNIAS.—The best new varieties of 1853, 7s. 6d. per dozen.

The above will be forwarded immediately on receipt of a post-office order payable at Richmond.

Gilling, near Richmond, Yorkshire.

JUDSON'S
RICHMOND VILLA BLACK HAMBURGH VINE.

ARTHUR HENDERSON AND CO. have the pleasure of informing their patrons and friends that they have good plants of this valuable and much-esteemed Vine at 5s. each; extra strong plants, 7s. each.—N.B. For full particulars of the distinguishing characteristics of this Vine, we beg to refer our customers to the *Gardeners' Chronicle* of October 25th, 1851.

HIMALAYA CEDAR.

MAULE AND SONS beg to intimate to Noblemen and Gentlemen engaged in Forest or Ornamental Planting that they still hold large supplies of this universally admired and fine timber tree, which they are sending out at the below quotations.

CEDRUS DEODARA, 2 years,	fine,	25s. per 100,	10l. per 1000	
" "	*1 foot ...	5l.	"	
" "	*1 to 2 feet ...	7l. 10s.	"	
" "	*2 to 3 feet ...	42s. per doz.,	15l. per 100	
" "	**3½ to 4 feet...	60s. "	25l. "	
" "	**4 to 4½ ft., extra fine, for Avenues and single planting	80s. "	30l. "	

☞ Those marked * are grown in suitable sized pots; those marked ** may be had either in pots or from the open ground.

Large supplies of Taxodiums, Cryptomerias, Pinus excelsa, Abies Smithiana, Cupressus Goveniana, Lambertiana, &c. &c., offered at such prices as will admit of their introduction into mixed forest and other plantations. Terms sent on application.

The Nurseries, Bristol, March 11.

NEW VERBENAS FOR 1854:—

	s.	d.
ORION, dark scarlet, with a light eye	3	6
ROBIN HOOD, fine puce self	3	6
MARIE ANTOINETTE, large lavender self, distinct ...	3	6
MATCHLESS, fine purple self, excellent bedder... ...	3	6
BEAUTY, white, rosy purple eye, splendid flower, extra	5	0
MADONNA, white, distinct rose eye, fine habit and free flowerer, a splendid bedder	5	0
ATTRACTION, lavender puce, large white eye	3	6
DIADEM, orange scarlet, very attractive	3	6
NE PLUS ULTRA, splendid blue, one of the best of the colour for bedding	5	0
ARIOSTO, mulberry self, fine habit.		
BEAUTY OF THE GARDEN, excellent trusser, colour pink, with light eye, surrounded with a large circle of bright crimson, a very conspicuous and distinct variety	5	0
The stock of this variety we purchased from Mr. Fozard, of Hall Park.		
SULPHUR MODEL, fine stout habit, with splendid large trusses of excellent formed flowers; colour nankeen or pale sulphur yellow, quite distinct and new in colour	5	0
The stock of this variety we purchased of Mr. Stewart, of Salt Hill.		

All the above have been proved the second season, consequently can with confidence be the more highly recommended; and, with the exception of "Sulphur Model" and "Beauty of the Garden," were all raised by E. Banks, Esq. The collection of the above 12 distinct varieties, 42s.

E. G. HENDERSON & SON, Wellington Nursery, St. John's Wood. March 11, 1854.

MAY'S PARAGON CABBAGE, AND
MAY'S MAGNUM BONUM LETTUCE.

THE Subscriber, in offering the above for the first time, guarantees it to be the finest Cabbage in existence; of dwarf habit; has never been known to run; attains a large size (having been grown to the great weight of 28lbs.); of a most beautiful green, and boils tender as Asparagus, which it continues to do throughout the season; in flavour is as far superior to the ordinary Cabbages of the day as they are to the old Drumhead Scotch. In ½ oz. packets, 1s. each, free by post. The usual allowance to the trade.

MAGNUM BONUM LETTUCE.—This incomparable summer Lettuce is also offered for the first time for sale, and in consequence of the impossibility of seeding it in the open air, the whole having been grown in pots under glass, the stock is exceedingly limited. In form it resembles the Maltese, only a little more upright; as crisp as the Paris Cos, never runs to seed, and has been grown to the amazing size of 4 feet in circumference. In packets, 1s. each, free by post.

Vegetable and Flower Seeds of the best quality. See Advertisement in the *Gardeners' Chronicle* of January 28.

Address all orders and communications to HENRY MAY, the Hope Nurseries, near Bedale, Yorkshire.

STANDISH AND NOBLE, NURSERYMEN, SEEDSMEN, &c., Bagshot, Surrey, are now prepared to receive orders for the following new and beautiful varieties of AZALEAS, which will be ready for delivery in June next. The Advertisers can recommend them with the greatest confidence, as superior to any others of their kind.

AZALEA BEALII.—This very distinct variety was introduced by them from China. The flowers, which are of first-rate shape, are quite unique, being striped, like a Carnation, with rich vermilion on a pure white ground. It is of good habit, fine in foliage, and a most abundant bloomer; and although decidedly in the first rank as a greenhouse plant, it is quite hardy enough for the open border. Each, 21s.

AZALEA CRISPIFLORA, a species differing much from any other known Azalea, having a character entirely its own. No other kind approaches it in compactness of habit, and its foliage is very fine, abundant, and evergreen. The flowers are very large, and the edges of the petals have the appearance of being irregularly *gaufred*, like a lady's frill; the colour is a rich rose lake. From the fact of its blooming very late—much later than any other Azalea—it will be doubly valuable for many purposes. Each 21s.

HAWKES' CHAMPAGNE RHUBARB.—This most desirable variety is now for the first time offered to the public. It has stood the severest test that can be applied, and has beaten everything in Covent Garden and other London Markets in realising higher prices, from its magnificent colour and size. It has been seen by the very highest authorities and pronounced to be a most valuable introduction. In earliness it equals the Prince Albert, but of a deeper colour, and much greater bearer. It forces remarkably well, and is very hardy out of doors. Mr. HAWKES has placed the entire sale in the hands of Duncan Hairs.

One-year-old plants, strong, 5s. each. A few two years old, very strong, for sale.

LAING'S MAMMOTH RED CELERY.—This is considered the largest yet grown, attaining the extraordinary weight of from 10 to 12 lbs., and at the same time perfectly solid. It is nearly perennial in its habit, as it will not, under any circumstances, run to seed the first season, and it is difficult sometimes the second when planted out for that purpose. In colour it is a bright red. In flavour unsurpassed, if equalled.

It has been seen growing by many practical gardeners, who deem it a new feature in the garden, from the fact that it may be had nearly all the year. Packets 2s. 6d. each.

MITCHELL'S HARDY EARLY CAULIFLOWER.—This is grown precisely as the handglass variety, but when removed from the frame does not require the same protection, and comes in immediately after. This is particularly recommended for gentlemen's establishments. The head is not large, but handsome and compact, and is so firm that you may let them stand from 10 days to a fortnight and they will not get frothy or loose. This is quite a distinct variety. Packets 2s. 6d. each.

DUNCAN HAIRS, Seedsman, 109, St. Martin's Lane. Post Office orders to be made payable at Charing Cross.

IMPROVEMENT OF GRASS LANDS.

SUTTON'S RENOVATING GRASS SEEDS FOR IMPROVING OLD PASTURES, CLOVERS, and the finer and more nutritious sorts of GRASSES.

Quantity of Seed required, 8 lbs. to 12 lbs. per acre. Price 1s. per lb., Carriage Free.

All orders executed in rotation, in strict accordance with priority of our receiving the same.—Address,

JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

HOLLYHOCKS.

A. PAUL AND SON have now ready for Sale a very large and healthy stock of HOLLYHOCKS, suited to bloom well next autumn; Border Flowers, 4s., 6s., and 9s. per dozen; fine named kinds, 12s., 18s., 24s., and 30s. per dozen. A fresh supply of their new and unrivalled seedlings, which obtained first prizes at the leading exhibitions last year, and were never once beaten, will be sent out the end of the month, strong, healthy plants. A priced descriptive Catalogue free by post on application.

Recently published, free by post, price 1s., AN HOUR WITH THE HOLLYHOCK.

N.B. Post-office orders may be drawn on Waltham Cross or London.—Nurseries, Cheshunt, Herts.

GEORGE BAKER begs to say that his DESCRIPTIVE CATALOGUE of AMERICAN PLANTS, CONIFERS, ORNAMENTAL SHRUBS, FRUIT and FOREST TREES, &c., may be had by enclosing two postage stamps.

G. B. wishes to call particular attention to his fine Stock of GREEN and WEEPING HOLLIES from 1 to 12 feet high.

G. B. has supplied the American Exhibition in the Royal Botanic Gardens, Regent's Park, from its commencement.

American Nursery, Windlesham, near Bagshot, Surrey, about six miles from Staines Station, Windsor Branch, South-Western Railway, where conveyances may be obtained.

WILLIAM NICHOLSON still continues to send out very strong well-rooted Plants of his four new and distinct varieties of STRAWBERRIES, viz., AJAX, dessert Fruit; RUBY, ditto; CAPTAIN COOK, Market Fruit; FILL-BASKET, ditto, at 15s. per 100, or 25 each of any two sorts for 10s., box included. Post-office orders payable at Yarm, Yorkshire. For a full description, see Advertisement *Gardeners' Chronicle* Jan. 28, 1854.—Egglescliffe, near Yarm, Yorkshire.

FIRST CLASS PRIZE VERBENAS.—The set of six, advertised by J. KEYNES in his Catalogue will be ready to send out the 21st of March, in fine well-established Plants, by post, free, for 20s.

These are six of the most beautiful Verbenas ever offered, and were much admired in the Surrey Gardens, the only place they were exhibited, and obtained First Class Certificates. Only a few sets left unordered.

JOHN KEYNES, Nurseryman, Salisbury, March 11.

GERMAN DOUBLE DAISIES.—A fine healthy stock of the above unique Flower is now offered to the Public. It is very novel and distinct, and such as will give all purchasers satisfaction. Out of the 100 imported varieties, 50 of the most striking and best flowers have been selected, and can be sent out from one dozen plants, and upwards. These Daisies surpass everything for making edgings to flower beds, &c., and are quite a novelty of their kind; price 3s. 6d. per dozen, postage and package free; or 1l. 1s. per hundred, hamper and package free.

Also a fine stock of MYOSOTIS VANGLEEKI, or the new improved Forget-me-Not, well adapted for rock-work or making single beds; 2s. 6d. per dozen, postage free; 15s. per hundred, package free.

SWEET WILLIAMS.—A fine stock of very select and striking varieties 2s. per dozen, or 10s. per hundred, package free.

CHOICE HOLLYHOCK SEED saved from all the best and latest varieties yet sent out; 1s. 6d. per packet.

SEEDLING ANTIRRHINUM SEED, all from striped and spotted flowers, and will give every one satisfaction: 1s. per packet.

GERMAN ASTER SEED, saved from all first prize flowers 1s. per packet.

STRAWBERRY PLANTS.—This is an excellent opportunity for those to plant who may have neglected to do so last autumn. Victoria, 5s. per 100; Prolific, 3s. 6d. per 100; Eleanor, 3s. 6d. per 100; Surprise, 3s. 6d. per 100; Cremont's Perpetual, 5s. per 100; and many other leading varieties, package free. The above named will be sufficient to give a supply of fruit the whole of the Strawberry season, being the earliest and latest varieties.

CUCUMBER and MELON SEEDS can be still supplied in varieties, and price, as advertised on the 18th inst. On receipt of a money order, or penny postage stamps, the whole, or any part of the above, will be immediately forwarded.

EDWARD TILEY, Nurseryman and Seedsman, No. 14, Abbey Churchyard, Bath, Somerset.

CONQUEROR OF THE WEST CUCUMBER.

JAMES LAKE, NURSERYMAN, &c., Bridgewater, begs once more to offer the above Cucumber. Having tested its merits against many other sorts highly spoken of, can with confidence recommend it as the best for general frame culture. Packets containing 12 good Seeds sent post free on the receipt of 12 postage stamps.

N.B. The Trade supplied with the genuine article.

J. L. also begs to state that he will be prepared to send out, the first week in May, strong Plants of his beautiful Seedling LOBELIA ST. CLAIR, so universally admired last summer and autumn, at 12s. per dozen. The usual discount to the Trade.

The Gardeners' Chronicle.

SATURDAY, MARCH 11, 1854.

THE writer of an article called "Gossip," in the "Florist" of this month, in speaking of the new schedule of prizes issued by the HORTICULTURAL SOCIETY, has made some remarks which indicate such a misapprehension of facts as to call for a few words of comment.

It is insinuated that the prizes for fruit are diminished, and asserted that the exhibitors must trust to chance, having nothing to guide them. To the insinuation we answer that the amount offered under the new system is something more, not less, than has ever been awarded before. The complaint that in making the awards all is left to chance is incomprehensible. The judges will exercise their judgment; they will place the exhibitors as they believe they ought in justice to be placed, and it will be their duty to distribute all the money at their disposal, provided there are subjects to which it can be given. Everybody having experience of exhibitions must be aware that with trustworthy judges it is always better to rely upon their dis-

cretion than to embarrass them with rules; but plants are so varied, and susceptible of such endless modifications of arrangement, that growers would be unable to ascertain how to class their productions in the absence of such regulations as a schedule furnishes. With fruit it is different; the combinations of which it is susceptible are few, the articles producible are few also, and *nothing is excluded*. Judges are therefore not placed in difficulty; but the contrary. To gardeners the alteration is full of advantages, as may be seen from an instance or two. A has good Grapes, good Strawberries, good Cherries; he can produce perhaps a collection of these better than all his neighbours; but if compelled to show Grapes, Strawberries, and Cherries each separately, he is very likely to be beaten at every point. Or he may have the best Strawberries in the county, and it is a great convenience to him to be allowed to show them by themselves. Exhibition tables thus made up can be classified by the judges themselves, who will compare what is susceptible of comparison; and, when no comparison can be instituted, can form an opinion concerning the value of each separate matter exhibited. So again with regard to the relative value of the prizes given to each particular class; let a Society offer SK and SB and C for Grapes; it may and very often will happen that five or six exhibitions of Grapes are as nearly as possible equal in merit. Nevertheless the judges must distinguish them, and pick out three; for which purpose they are driven to have recourse to minute peculiarities, which have very little to do with the exhibitor's real merit; the result is, that A receives 30*s.*, B 20*s.*, C 10*s.*, and D and E nothing at all; although, under other circumstances, each would have been treated alike, as strict justice demanded. But this is cured by the present arrangement, which, we venture to predict, will be attended by very great advantage to all concerned. Let it be observed too, that if, owing to a bad season or other causes, all the money devoted to the service of May cannot be then apportioned among the exhibitors, the surplus is not withdrawn from the exhibitions for the whole season. On the contrary, it forms an augmentation of the prizes obtainable in June; thus, if it should prove that in May only 30*l.* are required for prizes, 50*l.* being offered, then 20*l.*, the difference, goes to the prize fund of June, which is thus increased from 60*l.* to 80*l.* The same may take place in June, in favour of July. We confess ourselves at a loss to understand how a better arrangement can be proposed, and we are happy to know that many fruit growers entirely concur in opinion with ourselves. It may not suit everybody, for reasons which it is needless to explain, but it cannot be otherwise than acceptable to those who exhibit for the sake of showing the skill they possess as fruit gardeners.

It is said by the writer in question that the Society shows a great want of liberality. If he will take the trouble to compare the schedules of 1853 and 1854, he will find that the sum now offered in prizes is as nearly as may be the same as was offered in 1853; in some important cases the increase has been remarkable, as, for instance, with Orchids, for which 261*l.* are now offered instead of 157*l.* 16*s.*; with stove and greenhouse plants, which are to have 258*l.* instead of 213*l.* 15*s.*; and with Azaleas, for which 60*l.* are now given instead of 43*l.* 10*s.* Nor is this all; for it must be plain to any one who compares the two schedules, that the scale of prizes is not only increased 50 per cent., but graduated very much better. We are at a loss to understand where want of liberality is shown in changes like these.

It is, indeed, evident that the real ground of complaint on the part of the "Florist" is the discontinuance of prizes for florists' flowers; this is indicated by the stress he lays upon the omission of "seedlings!" meaning, as he afterwards explains, Cinerarias, Pelargoniums, &c. Surely he has forgotten the existence of the National Floricultural Society, and similar metropolitan associations, formed for the express purpose of doing that which he blames the Horticultural Society for not doing. In reality, the encouragement of mere florists' flowers is no affair of the Horticultural Society; the system of doing so is of recent adoption, and has now become superfluous, in consequence of the formation of the associations above alluded to. The Council of the Society seem to have been of opinion that it would conduce far more to the real interests of horticulture (the only interests which they can recognise), if the money hitherto expended upon florists' flowers were applied to augment the value of the prizes divisible among the exhibitors of more important subjects; and they are right.

It is also pretended that dissatisfaction is caused by professional growers, meaning nurserymen, being classed with amateurs, their customers. The fact is, that nurserymen and amateurs are to exhibit separately in Orchids and Roses as before. The change is limited to Pelargoniums, for doubling the prizes in which there is really no pretence. Private growers can and do beat the nurserymen in this class of plants.

After this explanation, we leave the public to form its own opinion of the assertion, that in the new schedule there are "great changes and considerable reductions." Had it been said that there were great changes, and a large augmentation of prizes, which is the fact, we should not have thought it necessary to occupy space with these remarks.

VARIOUS inferences having been drawn from, and many doubts being entertained respecting the CEDAR WOOD OF THE ANCIENTS, it seems desirable to bring together the few points which have been ascertained in identifying the plant or plants which yielded this very celebrated wood. The name Cedar, derived from the *kedros* of the Greeks, is used in the present day in as general a way as the latter seems to have been among the ancients, for it is applied specially to the wood of Juniperus virginiana—the Red or Pencil Cedar, and to that of J. Bermudiana—the Bermuda Cedar, as well as to others which were certainly unknown to the ancients, and likewise to the Cedar of Lebanon, which may or may not have been known to the ancient Greeks. The only method we have of identifying the exact meaning of many of these names of material substances, is by comparing the passages in classical authors in which they are mentioned, ascertaining the properties ascribed to them, tracing their history through the works of succeeding authors, and then by our more accurate knowledge of the natural history of the countries with which the ancients were acquainted, determining the mineral, plant, or animal to which they must have referred. Following this course, we find the word *kedros* in the most ancient authors, but to ascertain its meaning it is necessary to refer to those who have treated expressly of plants and their products, such, for instance, as THEOPHRASTUS, who lived 300 years before the Christian era, and was acquainted with different kinds of Pine trees, with the Cypress, Juniper, and Yew; he expressly mentions different kinds of Cedar—one Lycian the other Phœnician—not unlike the Juniper; one with hard sharp-pointed thorny leaves, fruit fragrant, sweet in taste, and not falling off until the new fruit is being produced.

PLINY, who brings together whatever had been written on such subjects by his predecessors, has copied the above, and says, "The Phœnicians have a tree similar to the Juniper, which is called the Lesser Cedar. There were two sorts of it—the one Lycian, the other Phœnician—which differ from each other in their leaves. For one, which is called Oxycedrus, has its leaves hard, sharp, and thorny; it is much branched and knotty. The other is conspicuous for its odour. Both produce fruit, which is about the size of that of the Myrtle, and sweet in taste." He adds, from some other source or from his own knowledge, that there are also two kinds of the larger Cedar, one which flowers but does not bear fruit, and the other which bears fruit but no flowers, the new fruit appearing before the old is ripe. This fruit resembles that of the Cypress. Some call it the Cedrelate. It produces the finest resin—its wood is everlasting; hence statues of the Gods used to be made of it, as that of APOLLO SOSIANUS, brought from Seleucia. In Arcadia there is a kind of Cedar, but which in Phrygia is called a shrub; "some commentators say, we ought to add of Syria."

It is evident from these quotations, which we might easily multiply, that the lesser Cedars of THEOPHRASTUS were species of Juniper, and modern botanists think that both Juniperus lycia and J. phœnicea are included under one head, while the Juniperus oxycedrus of botanists is the Cedar with the sharp thorny leaves. But it is difficult to determine what tree is intended by the Greater Cedar, as it is said to be of two kinds, one being fruitful and the other barren, as we know to be with diœcious trees, while the Cedar of Lebanon is monœcious. The fruit, moreover, is said to be like that of the Cypress; whether this means in size, or, not being a berry-like fruit, as in the Juniper, does not appear; but the cones of the Cedar of Lebanon we know are much larger than those of any Cypress. From what we have seen, however, it is evident that the term Cedar was applied to different plants, and probably to the woods which they produced. But we have been unable to find any proof that the tree now called Cedar of Lebanon was known to the Greeks and Romans, and any wood which was imported by them from Syria may, or may not, have been produced by it. For both the Juniperus oxycedrus and the J. phœnicea are produced in Syria, and the former on Mount Lebanon, growing to a height of 10 or 12 and even 20 feet high, while the latter, called also Great Juniper, grows to the height of 20 or 30 feet. But the ancients no doubt applied the term of Cedar wood to others of the Coniferæ, for VIRGIL mentions the odoratam Cedrum being frequently burnt, and distinguishes the uses to which these several woods were applied in the lines:—

"—— Dant utile lignum
Navigiis pinos, domibus cedrumque cupressosque."

F. R.

VEGETABLE PATHOLOGY.—No. X.

31. It was mentioned previously (No. 11.) that the mass of cells, even in the lower plants, is frequently bound together by an external membrane of greater or less strength, called the cuticle; and this holds good almost universally in the higher plants, all vegetating parts, such as the leaves, young shoots, &c., being clothed with it; those only being excepted which, like the spongioles of the roots or the stigmatic surface, require more immediate contact with the bodies or fluids to which they have a definite relation.

32. On the leaves, especially their under surface, and on other parts where it is requisite that there should be a direct communication with the outward air, the cuticle is perforated with little apertures, variously formed, which are known by the name of stomates. By means of these also evaporation takes place, and moisture is imbibed from the air according to existing circumstances, and perfect health can only be sustained so long as the passage is free and pervious. If, then, they be blocked up by excessive exudation of intercellular substances, or by the dense growth of external parasites, more or less injurious consequences must ensue, according to the extent of the particular agent.

33. In such plants as have a long duration, or in some of short duration where the growth is rapid and vigorous, the cuticle, and the immediately subjacent cells, frequently perish, while the succeeding cells, for a time, retain their vitality. In such cases the cell walls are frequently thickened with a peculiar deposit, in consequence of which they exhibit the chemical characters of cork.

34. In exogenous plants, in which the stem is divided into two distinct systems, the wood and bark, the increase of the former of which is centrifugal, and that of the latter centripetal, the inner cells of the wood gradually become thickened and indurated, and to a greater or less extent lose their vitality, without, however, entirely perishing (except in consequence of lesion, or the decomposition which all organised substances undergo after a greater or less extent of time), as there is no necessity for their dispersion to admit of the accession of additional layers; in the bark, on the contrary, where the new layers are deposited on the concave surface, while the diameter of the cylinder continually increases, this can only be effected by the cracking of the first formed layers, and the gradual decomposition of those which are the oldest. In a few cases only the bark is so vivacious or elastic as to admit of the increase of the wood without being ruptured.

35. The cork cells, mentioned above, soon arrive at their full development, and in consequence the protoplasm is exhausted and they contain air only; where a new layer of cork cells is deposited, with each successive layer of bark, there is in each layer a set of cells endowed with less enduring vitality than those with which they are in contact, and it is probable that this circumstance has a connection, as we shall see hereafter, with the important subject of the fall of the leaf, as it has with the scaling of the bark.

36. The foregoing observations, both as regards the component tissues and the particular phenomena of growth, apply especially to exogenous plants; but in those which are endogenous, the same forms of tissue prevail, though there are no distinct circles of growth, and after a certain time, varying according to circumstances, no increase in diameter, except occasionally, as in Dracæna. In these cases, however, cork cells are often formed, though in others the peculiar exigencies of the individual are supplied by copious deposits of silex. As there are no medullary rays in the wood of endogens, there can, of course, be none in the bark; whereas, in exogens there is a constant and immediate connection with the medullary rays, and the horizontal system in the bark continued from them.

37. The bark in many cases attains a thickness of some inches, and the dead layers are by no means entirely useless; but, in consequence of their being comparatively bad conductors, they serve as a very efficient protection to the tender cambial cells, on the health and vigour of which the continued growth of the tree depends.

38. Many modifications occur in the structure of bark, which it is not requisite to enter upon here, and upon these depend the different modes in which the bark falls off, sometimes in scales, sometimes in long strips, stringy fragments, or concentric layers.

39. As the growth of the stems in exogens is conducted at the point which separates the wood and bark, it is clear that the bark cannot be removed to any great extent without serious or even fatal injury. The denuded surface of the wood will, however, under favourable circumstances, give rise to a new layer of bark, which in a short time will not visibly differ from that originally derived from the young shoot. The mode of growth will come more conveniently under some future head. In succulent plants or organs, wounded surfaces

are soon covered by a layer of cork cells, but the cuticle, when once destroyed, is rarely, if ever, reproduced. A good example is afforded by the disease in Potatoes, known by the name of scab. *M. J. B.*

SERICOGRAPHIS GHIESBREGHTIANA.

This is one of the most useful plants which we possess for winter decoration, producing its bright scarlet flowers in great profusion. To grow and flower it successfully it must be afforded the temperature of an intermediate house, but it will be quite at home during the summer months in a pit which can be kept close and moist, and when in flower it will do very well in a temperature of about 45°.

If young plants of it are procured at once, the present is just the season for starting them into growth. Place them as soon as received in a warm moist situation, taking care to afford them all the light possible; and if the pots are full of healthy roots give a moderate shift, using prime rich turfy peat and sandy loam, well intermixed with a liberal quantity of sharp sand, to ensure the free percolation of water through the mass. If the plants have two or three shoots each, these should be pegged down, in order to induce the lower buds to start into growth; for the plant rather inclines to be of a straggling habit, and without care the specimens will be leggy and thin at the bottom. When the roots have taken to the fresh soil, the points of the shoots may be removed; and these, if planted in light sandy soil, covered with a bell-glass, and afforded a brisk bottom-heat, will strike in a short time; and by potting them three in a pot, and keeping them in bottom-heat till well established, and afterwards growing them in a moist close place, affording them plenty of pot room, and stopping the leading shoots as may be required, they will make nice useful small specimens for late flowering. But stopping must not be practised too late in the season, as this would prevent the plants from blooming in winter. Care must be exercised with the old plants to get them well furnished at the bottom, and they should be kept near the glass, where they will receive all the light possible, merely shading them slightly from the mid-day sun on the forenoons of bright, hot days. If they are got into free growth by the middle or end of May, they may be removed to a pit that can be kept close and moist, which, with a little management, will be a very suitable situation for them during the summer months; or they may be retained in a light place in the stove, where they will probably make freer growth than in a pit. Discontinue stopping about the beginning or middle of August, and keep the plants growing freely until the shoots are some length, and the specimens well filled up, when they may be kept rather cool and dry at the root for a few weeks; after which, place them in a growing temperature, where they will soon be covered with their handsome flowers, and may be removed to a close corner in the conservatory, where they will remain long in beauty. After flowering, cut the old plants back rather closely, and give very little water to the soil for a few weeks, after which they may be turned out of their pots, clearing away all unkind soil, slightly reducing the balls, and repotted in the same sized or smaller pots as may be proper. The plants should now be placed in a close moist temperature, kept near the glass, and carefully supplied with water, where they will soon start into free growth, and if properly attended to, with pot-room, &c., will make fine large handsome specimens in course of the season. By stopping a portion of the plants a month later than the others, the blooming season will be so much prolonged, and a portion of the stock might be grown on, stopping but once, and this not later than the middle of June, to come into flower early in autumn.

For soil, use good turfy peat and sandy turfy loam in about equal proportions, with a liberal allowance of sharp sand carefully intermixed, and be careful to secure good drainage. A little cow-dung in a thoroughly decayed state might be added, but this may be omitted, and manure-water given instead when the plants are in free growth. *Alpha.*

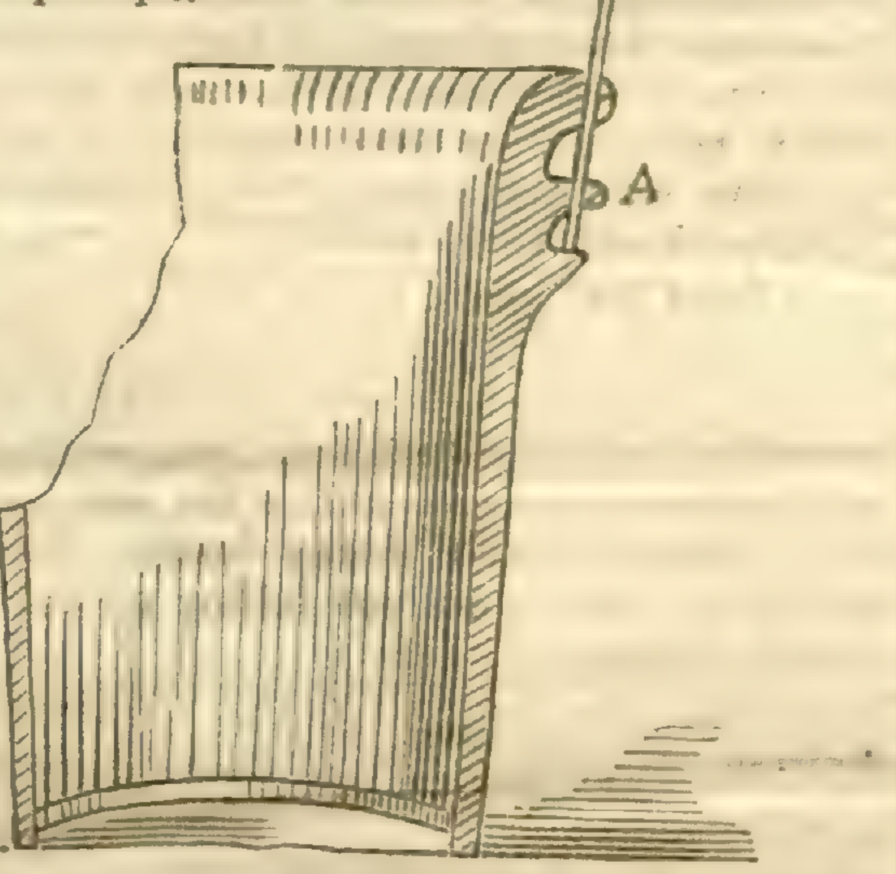
Home Correspondence.

Leaf Burning under Hartley's Rough Plate Glass.—I do not know whether this kind of glass forms foci or not, but as I have got a large house erected, and do not know what kind of glass to put on the roof for the best, I called at Mr. Rivers' nursery the other day, to see his houses, knowing he had some glazed with several sorts of glass; one was glazed with Hartley's rough plate, supplied by Messrs. Phillips, of Bishopsgate Street, and the Camellias, &c., under it were very much scorched; Mr. Phillips was spoken to about it—he said that it was the wrong sort, and it was taken out and returned; more was sent down, which is supposed to be the right kind, but even now it scorches Camellias, &c., as badly as ever. This house, I have no doubt, can be seen at any time by applying to Mr. Rivers, at the Nursery, Sawbridgeworth. He has one house glazed with extra thick crown glass, which seems to answer very well. One of the clerks at Mr. Millington's, of Bishopsgate Street, informed me that rough plate does burn; he had visited a Vinery last year, in which a very great many of the leaves were quite brown from having been scorched by this glass. Now this is very perplexing and doubtful to one who wants to glaze a house, and does not wish to be put to the extra expense of having the glass taken out after paying, say for rough plate at $5\frac{1}{2}d.$ per foot, and $5d.$ for the extra thick crown. *Juke.*—[We have long ago explained that leaves *may* be *burnt* under any kind of glass. The difference between Hartley's rough plate and sheet glass we take to be this—under the one they *may* be, and under the other they *must* be burnt. To what sort of burning do you allude? Mr. Rivers, whose name you use, will probably give us his experience in the matter.]

Vallota (?) miniata.—We noticed your remarks on this plant, and we think your apprehension that it is not a Vallota will be confirmed on further examination. The seeds are allied to those of Crinum, and are about as large as horse-beans; the capsules turn reddish brown when they are ripe: few are matured. We have succeeded in getting three perfected, so as to vegetate. The plant is of slow increase, but it has flowered three times a year with us for the last two years. It is not bulbous, but produces strong fibres from the base, as in Clivia! We received it from the Cape of Good Hope, from Andrew Steedman, marked Imatophyllum sp., from Natal (not Caffraria). We have a fine plant coming into flower, which, however, was not sufficiently forward to be shown at the Horticultural Society's rooms on Tuesday last. We have sent it to but few persons, and we have now a few young plants, chiefly from suckers. Messrs. Lee's plant is, so far as we know, the first of its increase which has flowered. *Jas. Backhouse, York.*

Plant Support.—The practice of fixing wire trellises and similar supports for climbing plants, which are grown in pots, by thrusting them into the soil, is by no means to be recommended. Independent of the mechanical injury which the roots, bulbs, or tubers (as the case may be) of numerous plants, often sustain, the chemical action, if the trellis is of iron, is exceedingly injurious to most plants; for a portion of the water in the soil, combining with the iron of the trellis, forms an

A., a perforated rim, through which the iron supports are thrust, the ends of which rest on the ledge below. Of course any kind of trellis can be adopted on the same principle.



oxide, under the influence of which few roots can exist. The accompanying is a rough sketch, illustrating a neat and effectual mode of obviating the evil. It is taken from a specimen which I lately observed in a dilapidated old greenhouse, the general keeping of the plants in which was, however, by no means worthy of imitation. The example is, therefore, not new, but it may, nevertheless, be useful. *Crayon.*

Deodar Timber.—Will you allow me to make a few remarks respecting the quality of the Deodar Cedar grown in England, to give my reasons for thinking that it has not yet been shown either that it will or will not produce valuable timber here, or, in fact, that we have any evidence of what its quality will be, sufficient to induce us to plant it extensively in the place of Firs whose qualities are known. Of all trees, the Pines and Firs are the most dependant on climate, or soil, or situation, for the quality of their timber, and the manner in which they make heart-wood. It would be easy to find two Scotch Firs of the same age, both 18 inches in diameter, one of which had 12 inches of heart-wood, and the other not 4 inches; and when we look at a fine Petersburgh or Archangel red Deal, we may fancy the disappointment of a planter, who should have planted 100 acres of Scotch Fir with the expectation that he was going to produce anything like them; yet that is just what we shall be doing if we plant the Deodar with the expectation that in any given number of years we are to grow a forest of timber of the quality which the board shown the other day is described to be. I may just mention, as other instances of great difference in trees in their own country and in England, the Hackmatack, which you mention as so very superior for ship-building in America, as it undoubtedly is; but which I have found very inferior to the common Larch when grown in England; and as an instance of extreme difference of habit, another American tree, the Hemlock Spruce, which is almost as different in appearance when grown in England, from what it is in America, as a Yew tree is from a Silver Fir. The statement respecting the habit of the old Cedars on Lebanon is calculated to produce an erroneous impression; it is true, as Mr. Acworth said, that the old trees (there may be 10 or a dozen of them) have the spreading habit common in Cedars grown in England, but these stand scattered in a grove of 300 or 400, which are mostly tall and straight, and somewhat resembling a fine Silver Fir in England; one which we measured as well as we could, was about 120 feet high, and 3 feet in diameter. Close to this one stood the largest of the old trees, and the only one of them which was not a mere wreck; this tree we measured as well as the uneven nature of the ground would allow us to do. We found it to be between 15 and 17 feet in diameter, at 4 or 5 feet from the ground, which was, in fact, the smallest part of the tree; immediately above that it divided into many large stems: now the largest Cedar I ever measured in England was not much above 17 feet in circumference, with the same spreading habit. The comparison of a branch from Mount Lebanon with one grown in England, and with a plank cut out of the heart of a very old tree of the Deodar, can afford no means of judging of the qualities of the two kinds of timber. The yearly rings towards the outside of the tree, from which the Deodar plank was cut, were so close that they could not be counted. None of us have ever seen a piece of the heart-wood of a Cedar of Lebanon of this age or character; we do not in the least know what it would be like. And again, I can assure you that it is an erroneous idea that the wood of the Cedar of Lebanon has but little smell; half a dozen little chips of the size of that which I sent to you, have perfumed most strongly for several years not only the cupboard they were in, but the whole room; the cupboard was partly made of red Cedar, but the peculiar scent of the Cedar of Lebanon wood quite overpowered the other; it is, in fact, the strongest smelling wood I have ever yet seen (never having seen any Deodar wood), unless it be, perhaps, the wood called camphor wood, which retains its peculiar strong scent for so long a time. I have a few words to say as to the notion that the Cedar beams and pillars in the temple at Jerusalem and elsewhere were probably some kind of Juniper, one of which (the Juniperus Lycia, I think) grows to a small tree on Lebanon, and also in various places among the hills to the east of Palestine, down into Arabia. I have always thought that this theory rested on but slight foundation. The only reason I have ever seen given for it has been the inferior quality of the wood of Cedar of Lebanon, as judged from English specimens. Whatever this may be worth, it is rather arguing in a circle to say now that, because the best authorities thought that the Cedar of the old temples was the wood of Juniper, we had, therefore, no reason to think, from its use in old times, that it had any good qualities as timber. But there are many good reasons, I think, for supposing that the Cedar mentioned in the building of Solomon's temple must have been Cedar of Lebanon. The wood brought from Nineveh seems, as you say, not to be the wood of any kind of Cedar, but Yew. On the whole, then, I think that we have very little from which we can judge of the quality of the wood of the Cedar of Lebanon grown on Lebanon; but my belief respecting the timber of the old trees still is, that it is a wood of very great durability, as it certainly is a wood very full of resin, and with a very strong perfume. Of the real quality of Cedar wood grown in England, I do not think that we know much. It has always shown itself a bad thriver in England, otherwise than as a single tree; grown thus, its growth is extremely rapid, and its wood generally of inferior quality; but I have seen specimens from which I am inclined to think that, if it could be grown in masses together, and to a greater age than it usually reaches, its timber would be very different. The habit of the Deodar is more like a plantation tree; I hope that it will answer as such, and turn out valuable timber in a few years; but, until it is shown by experience that it will do so, I think it would be the height of folly to plant it extensively in the place of Larch, whose value is well known from the time that it is large enough to make a rail. *C. W. Strickland, Hildenley.*

Anemone japonica.—This plant has succeeded so well in my garden, and has multiplied to such an extent, that I am tempted to try it alongside the hedges of pasture fields, but before I do so I am desirous of knowing whether the leaves, flowers, or seeds are likely to prove injurious to cattle, horses, or sheep which may chance to browze thereon. *X. M. N.* [It is not more acrid than a Ranunculus, and probably much less so. We apprehend no danger.]

Autumn-dried Potato Sets v. *the Disease.*—I wish to add a few words of caution and additional advice on the subject of my communication (p. 133), to those who intend to give the plan a trial. If the sets are to be hung up in a dwelling house, whole tubers should be used. There would be a risk of the cut portions being deprived of too much of their moisture, by the excessive dryness of the air. A few might be put to the test for experiment; but I think it would be imprudent to try a large quantity. The only advantages of separating the heads from the whole Potatoes are, that the growth is earlier, and you have more eyes from a given portion of the tuber. I advise, therefore, cottagers to string some washed whole Potatoes, as soon as they begin to use them, and suspend them from the tops of their sleeping or sitting rooms, where they will be out of the reach of mice and the mischievous finger ends of children. Doubts have been raised whether the largest or smaller Potatoes should be used in planting. For this particular method I recommend the middle-sized or rather less. They afford single shoots from the individual eyes, whilst from the lower eyes of a large Regent thus treated I have counted as many as five weak shoots budding forth. Had it been planted in the usual way perhaps only one stem would have grown. But by many who do not deny the propriety of shortening the period of the Potato's "sleep" I may be asked, "What are the particular advantages of this stringing invention of your's? Why not stick to the old plan of boxes and hampers?" My reply is, that in masses Potatoes heat spontaneously.

This implies a certain degree of decomposition, and consequent loss of vitality. The shoots also, as experience shows, are few, long, and tender. But if strung and suspended there is none of this spontaneous fermentation; all the eyes possessing vitality, being placed under the same circumstances, germinate, causing a very considerable saving of seed; the shoots are short, wiry, tough, and not so liable to be broken when planted; the juice being inspissated, through loss by evaporation, of a large portion of the water, the growing vigour of the plant is increased; the expense is insignificant, whilst boxes and hampers cost something; the suspended sets are in nobody's way, and do not prevent cleanliness, nor lumber up the rooms, like boxes, &c.; the Potatoes soon attain so rank a taste that there is no danger of the wife's boiling, in an hour of need, what ought to be saved for the seed of the next year's crop. There are innumerable places, such as the hot dry rooms of manufactories, where Potatoes may be thus prepared, and, judging by my own experience, all who try the method will adhere to it until a better is invented. They who adopt Mr. Cuthill's method of growing the sets in shallow soil, under cover, before planting, might by cutting single eyes, with a small portion of the tuber, raise at least 200 stems per square foot. To effect this a layer of such small sets, eyes upward, should be placed not touching one another (for the dried tuber swells very much when surrounded by soil), and between and above them a second layer should be put. They should be watered at first, but when planted the soil should be quite dry. *L. S.*

Hartley's Rough Plate Glass.—Last year I had a grand Cucumber frame made. It was first chop as to size, two lights, and each fitted up with two glorious squares of Hartley's rough glass. I beat down all opposition by the length of my Cucumbers; the delicate light, and the tender heat; and my gardener has made approaches to the build of a second. But the night before last we had a sharp frost, and there is a diagonal fissure throughout one of the panes. I account for it thus—the glass is thick; the internal heat expanding, and the external cold contracting the glass, a difference arose between those who were without and those who were within. Is this so? [Perhaps.] If so, what protection have the rough plate glass men? [Mats or canvas, or Frigi Domo.] Should it be fixed in the panel in grooves, or how? [In the usual way, but not tight in the rebates.] Be good enough to reply before I put my second into the stocks. *Xprmntatr, Essex, March 7.*

Cost of Burning Clay for Roads and Paths.—I pay the labourers 6*d.* per cube yard for digging and burning. The coal, which is of the smallest description, and known as slack, costs about 5*d.* more, viz., 1 cwt. or 1¼ cwt., at about 7*s.* per ton. Spreading costs about 2*d.*, making a total of about 1*s.* 1*d.* per cube yard when deposited in the road or path. For footways it answers very well, but it is not hard enough for roads, where the traffic is heavy. In such a case as that described by your correspondent "A. F. B.," I would recommend 9 inches of burnt clay for the foundation, and 3 inches of stone for the top of the road, but great care must be taken to fill in the ruts before they get deep, as the road will soon be destroyed if the wheels cut through the stone top. *Richard Varden, Seaford Grange, near Pershore.*

Extermination of Ants (p. 133).—Your correspondent "S. B.," Dublin, would find no difficulty in exterminating the ants from his lawn if, in digging up the early Potatoes, care were taken to discover the nests, which should either have sulphur burnt over them, or rags dipped in turpentine thrust into them, and covered over with sods. At a later period, also, when the winged ants swarm, they should be destroyed as soon as they make their appearance in the winged state. By disturbing the nest at the latter period they come forth in great numbers, and are easily killed by a few pats with the spade. *W.*

Caution.—Some 40 years ago a few Frenchmen opened a shop in St. James's Street for the sale of miscellaneous plants, and amongst other "nouveautes" sold a baronet a "yellow moss" Rose at five guineas a plant. Between that time and the spring of 1852 I heard nothing of a similar swindle; but in March of the year just mentioned (in Bond Street) two of these scamps sold a friend of mine a collection of new Roses "vary sheep," as they "most go avay," not one of which was otherwise than the veriest rubbish,—a plant or two of common Moss and red Provins worked on dwarf stocks being the cream of the purchase. This year, in Regent Street, another "Horticulteur et Fleuriste" has recently commenced victimising the public, an amateur of some standing having bought there last week "Mousseuse Jaune," at the low price of one guinea a plant. I need say no more to convince your readers of the manner in which their pockets will be picked should they venture into this magazine. *C. G. Wilkinson, Western Rose Nursery, Ealing.* [We print this. But such warnings are perfectly useless. The crop of fools is inexhaustible.]

Societies.

HORTICULTURAL, *March* 7.—The Right Hon. LAWRENCE SULIVAN in the chair. The Earl of Ducie was elected a Fellow. Messrs. Veitch received a Certificate of Merit for Acacia Drummondi, a very pretty species from Swan River, and a similar award for Boronia Drummondi, a charming little bush, ornamented with perhaps the brightest rosy flowers of any of the genus. This was also stated to have been sent from Swan River by Mr. Drummond. From the same eminent firm, also, came the well known Sarracenia purpurea, in flower; the latter consisting of two round rather compact heads or little bundles of purplish brown leaves elevated on long slender flower-stems that shoot up from among the singular pitcher-like appendages of which this plant is composed. In its native country the pitchers were described as forming excellent fly-traps, the hairs with which their insides are furnished, pointing as they do downwards, permitting the flies to enter with facility; but, when once in, effectually preventing their escape. Messrs. Henderson, of Pine-apple Place, sent a large specimen of the useful winter flowering Conoclinium ianthemum, together with Franciscea confertiflora, one of the best of the genus, two examples of Acacia longifolia, and one or two other plants. A Banksian Medal was awarded. —From Mr. Hume, gr. to R. Hanbury, Esq., came a flowering specimen of the rare Cymbidium eburneum, for which a Certificate of Merit was awarded.—Messrs. Rollisson produced Lycaste brevispatha, a species probably not distinct, except in colour, from L. leucantha.—Mr. Butcher, gr. to W. Leaf, Esq., sent three good bunches of Muscat of Alexandria Grapes; but so much shrivelled as to approach the condition of raisins. A Certificate of Merit was awarded.—Of Strawberries, Mr. Bennett, gr. to J. Smith, Esq., of Dulwich, furnished 6 pots of Cuthill's Black Prince; and a punnet of the same variety of Strawberry, mixed with a few berries of Keens' Seedling, came from Mr. Lewis Solomon, of Covent Garden.—"Majolica" vases, and flower-pots and stands of various devices and colours, were produced by Mr. Good, of South Audley Street, Grosvenor Square.—From the Garden of the Society came Trymalium odoratissimum, Azalea ramentacea, a pretty little white kind, which appears to hold its leaves on well in winter, which the common white sort does not; the useful Azalea obtusa, a handsome plant of Dielytra spectabilis, the Darwin Berberry, a perfectly hardy evergreen species, but nevertheless well worth a place in a greenhouse, owing to the multitudes of charming orange yellow flowers with which, every spring, it is studded. Associated with these were also a large Genista, some Acacias, and Epacrises, Echeveria retusa, a hardy greenhouse succulent, very suitable for window decoration; together with a collection of double white and fringed purple and white single Chinese Primulas, and one or two other plants.

Cuttings of the following Pears were distributed, viz.: Louise d'Orleans: fruit middle-sized, oblong, melting, and said to be of first-rate quality; ripening in November. Délices de Jodoigne: tree vigorous, said to be very productive; fruit large, melting, and rich; season October. Zezamuri from Tiflis: sent to the Society by Messrs. Baumann, of Bolwiller, but has not yet fruited in the garden. And the following Plum: Corse's Dictator: large, purple, and rich; an American variety.

Specimens of the wood of Abies Douglasi, Pinus Laricio, Abies (Larix) Americana, Callitris quadrivalvis, Cupressus torulosa, and other Coniferous trees were laid before the meeting, of which special notice will be taken in our columns next week.

BOTANICAL OF EDINBURGH, *Feb.* 9.—The President in the Chair Dr. Balfour exhibited a dissecting microscope, made by Nachez, Paris, the price of which was stated to be 51 francs. He also exhibited a box for holding 24 slides of microscopical objects, made by Mr. Bryson, 24, Princes Street, according to a plan by Dr. Greville. At one side of the box there is room for a series of numbers, which are printed so as to correspond to the grooves for receiving the slides. The following papers were read:—1. On the occurrence of Anacharis Alsinastrum in Ireland. By Dr. Dickie. In a letter to Dr. Balfour, Dr. D. observed—"The accompanying are, I suppose, specimens of Anacharis. If so, we have in Ireland the earliest known record of its presence in the United Kingdom, if I mistake not. I have thought, at all events, it might be a point of interest to you, and worthy of notice at your Society." The specimens were accompanied by the following note by Mr. J. New, gardener:—"About 18 years ago the pond at Waringstown was cleared of overhanging trees, when the Anacharis was immediately observed after the planting of some aquatics, making it necessary several times during the summer to clear it out. It is not known whether it existed in the pond previously to the above date, or was introduced with the aquatics at that time. For many years its name was not known to any person in the neighbourhood."—2. Notes of a Botanical Trip to the Tents Muir, in the north of Fife. By Mr. G. Lawson.—3. Notices of Localities for Rare Plants in the neighbourhood of Edinburgh. By G. R. Tate, Esq.—4. On the Nightshade Family. By P. Fairbairn, Esq.—5. Illustrations of the value of Botanical Histology to the Medical Student and Practitioner. By Dr. Lindsay, Assistant Physician to the Crichton Royal Institution, Dumfries. In conclusion of this communication, the author said—"It appears to me that natural history, botany, and chemistry ought, *inter alia*, to be compulsory branches of general education, with which every medical student ought to be acquainted before he enters upon the more purely medical department of his curriculum. Have examinations on these subjects prior to the first *annus medicus* if you will. This is merely a matter of arrangement and convenience to be adjusted between the professors and the students. The thorough knowledge of these subjects furnishes an admirable training for the mind of every gentleman who has any pretensions to education; and so far from reducing the number of such collateral and accessory branches of the curriculum (or rather, as I think, they ought to be of the general preliminary education), or rendering more lenient the graduation examinations, I hope the tendency will be found to be greatly to increase the former in extent and the latter in strictness, and thus endeavour to raise the standard of attainment.—Dr. Balfour was satisfied that natural history and botany ought to form part of the study of every general student, and that they ought not to be confined to the medical curriculum. No student should enter on the practical study of medicine without having undergone a preliminary examination on these subjects. The degree of M.D. he stated was not merely an evidence of medical knowledge, but a university honour, implying general knowledge and a good university education. Medical students often attempted to do too much within a short period, and hence the aversion which some of them displayed to the study of natural science as taking up too much of the time required for other studies. He was satisfied that the study of natural history was a most important means of preparation for the pursuit of other departments of medicine, inasmuch as it called forth powers of observation and of diagnosis which were eminently required by the medical practitioner. The present day, he thought, was one for enlarging the acquirements of the physician and not for reducing them. There must be something more than a minimum of study for one who is to appear with advantage in society. The attention now paid by all classes to natural science must tend to raise the studies of those who enter learned professions. In concluding his remarks, Dr. Balfour alluded to a paper in the "North British Review," in which it is observed—"We have never been able to discover any satisfactory reason why mineralogy, geology, botany, and zoology should be considered requisite to form a physician more than a divine or a lawyer. Nor should it be concealed, that in consequence of those branches of science being attached to the medical faculty, parents are too frequently prevented from directing their youth-head to the study of those important departments of knowledge with which every one laying claim to a 'liberal education' should be acquainted. Let the patrons of the university remove these chairs from the medical faculty, and place them, together with chemistry, in their proper position along with the usual classes in the faculty of arts. The demand for attendance on such classes by the medical faculty need not be altered, while a new and important element would be introduced in reference to the degree of 'Master of Arts.'"—6. List of Plants in flower in the open air in the R. Bot. Garden, Edin., from January 15 to February 9, 1854. By Mr. M'Nab. When the snow disappeared on 15th January, the following plants were found in flower:—Helleborus niger, odorus, nivalis, olympicus, viridis, and atrorubens. Jan. 20, Tussilago Farfara; Jan. 23, Hepatica triloba; Jan. 24, Galanthus nivalis, Primula vulgaris; Jan. 26, Eranthis hyemalis; Feb. 3, Corylus Avellana, Aubrietia grandiflora; Feb. 4, Crocus sativus. The following gentlemen were elected:—I. As Ordinary Resident Fellows:—R. Daw, W. T. Smith, T. J. Walker, and J. Ross, Esq. II.—As Ordinary Non-Resident Fellow:—T. Barclay, Esq.

Reviews.

Himalayan Journals; or, Notes of a Naturalist in Bengal, the Sikkim and Nepal Himalayas, the Khasia Mountains, &c. By J. D. Hooker, M.D. 2 vols. 8vo, with numerous woodcuts, coloured plates and maps. Murray.

DR. HOOKER is among the few naturalists to whom it has occurred to be personally familiar with the dreariest and richest Floras in the world. His Antarctic voyage brought him acquainted with the southernmost limits of vegetation, where plants can scarcely maintain a miserable existence; his visit to the Himalayas introduced him to scenes where the forms of plants are among the grandest and most varied, and where the unchecked exuberance of their growth ensures them the highest development of which the vegetable world is susceptible; and thence ascending 19,500 feet above the level of the ocean, he once more found himself in presence of another Flora not less degraded than that which struggles amidst Antarctic wastes. No one, therefore, is more able to describe the natural features of such countries, to seize upon the peculiarities of each, and to treat in the spirit of true science the multifarious phenomena that surround the traveller. more especially when it is added that Dr. Hooker is not merely an eminent naturalist but also an accomplished natural philosopher. Such being the qualifications of our author for the task he has here undertaken, it was to be expected that the journal of his proceedings in India would possess the highest interest; and we shall not be charged with exaggeration when we say that the volumes before us are among the most important which have yet appeared upon our great Asiatic possessions. Moreover, they are among the most entertaining, for they are written in a very agreeable style, and the personal narrative is not interrupted by the dry formalities of mere science, all which are collected into an appendix of some 120 pages, where philosophical enquirers can consult them advantageously, while the more general reader may pass them by.

Dr. Hooker left England for India, with the suite of Lord Dalhousie, having obtained a Treasury allowance of 400*l.* a year for two years, to which was afterwards

added 300*l.* for a third year—an allowance so munificent that he was not above a thousand pounds out of pocket when he returned. After visiting Calcutta, and spending some time in Western Bengal, he proceeded to the Sikkim Himalaya, a country then scarcely known by name in Europe, although since made famous among horticulturists by its singular richness in beautiful Rhododendrons. After residing two years in that wild district, during which he succeeded in crossing into Thibet, and in eventually reaching the elevation of between 19,000 and 20,000 feet on Donkia, a mountain some 40 miles distant from Kinchinjunga, the "monarch of mountains," which, although 10,000 feet higher than that position, "looked quite small and low!" Dr. Hooker examined the rich vegetation of Khasia, in company with Dr. Thomas Thomson, of whose excellent account of north-western India some mention was made in these columns in the year 1852. During all this time the author was diligently occupied in collecting objects of natural history, in studying the physical conditions of soil and climate, and in amassing a rich store of barometrical, thermometrical and other observations, of the amount of labour in reducing which some idea may be formed from the single fact that those relating to decrement of temperature in ascending alone amount to more than 4000.

To others we leave the agreeable task of selecting from Dr. Hooker's varied pages such statements as bear upon general subjects. The limited space at our command compels us to limit our extracts to some of the more striking facts connected with the vegetation of these distant regions.

In Behar, Confervæ were found growing in hot springs, wherein the temperature is cooled down to 168°, and as low as 90°.

The bottom heat of a district in the Soane valley, where the Date Palm was abundant, was found to be constantly 71½°, at 3 feet 4 inches underground, that of the air varying from 77½° at 3 P.M. to 62° at daylight the following morning. On the other hand, the sand in which Calotropis grew was found to be heated by day to between 90° and 104°; yet such was the cooling effect of evaporation from the surface of the plant that its own temperature was only 72°. The rate, however, at which bottom heat diminished at night is what our forcing gardeners little calculate upon. It was found that in the Soane valley, at the depth of 2 feet, the temperature fell from 93½° at noon to 58° during the night. Such a difference as 35½° between the bottom heat at noon and at night has never entered into the practice of horticulture, nor could it under existing arrangements.

What a description is this of the summit of a low Indian mountain :—

"The top of Sinchul is a favourite excursion from Dorjiling, being very easy of access, and the path abounding in rare and beautiful plants, and passing through magnificent forests of Oak, Magnolia and Rhododendron; while the summit, besides embracing this splendid view of the snowy range over the Dorjiling spur in the foreground, commands also the plains of India, with the courses of the Teesta, Mahanuddee, Balasun, and Mechi rivers. In the months of April and May, when the Magnolias and Rhododendrons are in blossom, the gorgeous vegetation is, in some respects, not to be surpassed by anything in the tropics; but the effect is much marred by the prevailing gloom of the weather. The white-flowered Magnolia (M. excelsa, Wall), forms a predominant tree at 7000 to 8000 feet; and in 1848 it blossomed so profusely that the forests on the broad flanks of Sinchul, and other mountains of that elevation, appeared as if sprinkled with snow. The purple-flowered kind again (M. Campbelli), hardly occurs below 8000 feet, and forms an immense but very ugly, black-barked, sparingly-branched tree, leafless in winter and also during the flowering season, when it puts forth from the ends of its branches great rose-purple cup-shaped flowers, whose fleshy petals strew the ground. On its branches, and on those of Oaks and Laurels, Rhododendron Dalhousiæ grows epiphytically, a slender shrub, bearing from three to six white lemon-scented bells, 4½ inches long and as many broad, at the end of each branch. In the same woods the scarlet Rhododendron (R. arboreum), is very scarce, and is outvied by the great R. argenteum, which grows as a tree 40 feet high, with magnificent leaves 12 to 15 inches long, deep green, wrinkled above and silvery below, while the flowers are as large as those of R. Dalhousiæ, and grow more in a cluster. I know nothing of the kind that exceeds in beauty the flowering branch of R. argenteum, with its wide-spreading foliage and glorious mass of flowers.

"Oaks, Laurels, Maples, Birch, Chestnut, Hydrangea, a species of Fig (which is found on the very summit), and three Chinese and Japanese genera, are the principal features of the forest; the common bushes being Aucuba, Skimmia, and the curious Helwingia, which bears little clusters of flowers on the centre of the leaf, like Butcher's-broom. In spring, immense broad-leaved Arums spring up, with green or purple-striped hoods, that end in tail-like threads, 18 inches long, which lie along the ground; and there are various kinds of Convallaria, Paris Begonia, and other beautiful flowering herbs. Nearly 30 Ferns may be gathered on this excursion, including many of great beauty and rarity, but the tree Fern does not ascend so high. Grasses are very rare in these woods, excepting the dwarf Bamboo, now cultivated in the open air in England."

At p. 164 of vol. i., we have a clever woodcut representing the manner in which trees in tropical climates struggle for existence. It shows how Wightia strangles its neighbours, and graphically reminds the reader of the well-known name given in some West India islands, where such a case is said to represent a "Scotchman hugging a Creole." Dr. Hooker's remark is this :—

"At this elevation we found great scandent trees twisting around the trunks of others, and strangling them; the latter gradually decay, leaving the sheath of climbers as one of the most remarkable vegetable phenomena of these mountains. These climbers belong to several orders, and may be roughly classified in two groups :—1. Those whose stems merely twine, and by constricting certain parts of their support, induce death. 2. Those which form a net-work round the trunk, by the coalescence of their lateral branches and aerial roots, &c. These wholly envelop and often conceal the tree they enclose, whose branches appear rising far above those of its destroyer. To the first of these groups belong many natural orders, of which the most prominent are, Leguminosæ, Ivies, Hydrangea, Vines, Pothos, &c. The innosculating ones are almost all Figs and Wightia; the latter is the most remarkable, and I add a cut of its grasping roots, sketched at our encampment."

Of *Abies Brunoniana* we learn that it occurs in East Nepal, at 8000 feet, and is a beautiful species "which forms a stately blunt pyramid, with branches spreading like the Cedar, but not so stiff, and drooping gracefully on all sides. . . . I measured one, 20 feet in girth." It appears, however, that this species is unknown on the outer ranges of Sikkim, and in the interior occupies a belt about 1000 feet lower than *Abies Webbiana.*

The Chinese *Cupressus funebris* was found cultivated in Sikkim, and some excellent sketches of its appearance are given. *Juniperus recurva* is said to yield beautiful wood, and to reach a height of 60 feet; of *Pinus excelsa*, the wood is admirable, durable, close-grained, and resinous; that of the Sikkim Larch, or Sah (*Abies Griffithii*), splits well and is the most durable of any; *A. Smithiana* and *Brunoniana* have indifferent wood. In the Zemu valley, cradled in storms, along with Cowslips, Primroses, Gentians, and perennial Poppies, occurred a gigantic Rhubarb, forming pale pyramidal towers a yard high. It is the handsomest herbaceous plant in Sikkim, but of no medical value.

But we must pause. Dr. Hooker's pages swarm with similar interesting facts, and we hope to have frequent occasion to recur hereafter to his charming volumes, of which it is not the least merit that they are profusely illustrated with views of scenery, beautifully printed by Messrs. Bradbury and Evans, and are furnished with a good index.

New Plants.

49. HEXACENTRIS LUTEA.

H. foliis oblongis obtusè apiculatis obsoletè dentatis, racemo pendulo laxo multifloro, bracteolis oblongis acutis, annulo hypogyno hinc dente magno acuto.

The beauty of the H. mysorensis, with its large crimson and yellow drooping flowers, exhibited of late years by Messrs. Veitch, will not be easily forgotten by those who saw it in the Chiswick Gardens. Another species, also a tender stove shrub, with the habit of H. mysorensis, but with pure yellow blossoms, has just flowered with the same extensive firm. At first sight it might indeed appear to be a mere variety in colour: but the bractlets that replace the calyx in this genus are narrowly oblong, not exactly ovate, as in *H. mysorensis*; and, moreover, the hypogynous ring is furnished on the side next the fifth lobe of the corolla, with a great fleshy tooth, which is wholly absent in *H. mysorensis.* Twined together these two would present a most beautiful mass of harmonious colouring, when fully in flower. Introduced from India by Mr. T. Lobb.

Garden Memoranda.

ROYAL BOTANIC GARDEN, KEW.—Here as elsewhere the effects of the late cold weather are severely felt. The young wood and succulent leaves of Laurels, common Bays, Laurustinuses, and indeed of nearly all evergreens, have been more or less injured. Numbers of New Holland and New Zealand shrubs that have stood out for years unharmed are this season cut down to the ground, and in many cases completely killed. Several species of Acacia against walls, including large specimens of A. affinis, which have stood well for several years past, are now quite destroyed. Eucalyptus pulvigera and E. amygdalina are killed, and many other species of this genus are more or less injured. Benthamia fragifera, where it was exposed, is dead; but against a wall it will only lose its leaves. Evergreen Oaks and the Chinese Privet will lose a great portion of their foliage, being scalded, as it were, in appearance, and fast falling off. Arbutus procera, against a wall, is scarcely hurt; but where it has been planted as a standard, nearly all its leaves are injured. The Chinese Fan Palm (Chamærops humilis) has not been injured in the least, though it has only had the slight protection of a little loose Fern round its stem. A fine bush of Duvaua dependens, which has been growing on the lawn near the houses for more than 50 years, has never been so much browned as it is this season. Andromedas generally have suffered much, and some of the more tender kinds have been killed outright. Of Dr. Hooker's Sikkim Rhododendrons that have been planted out, cinnabarinum, Thomsoni, glaucum, Falconeri, and ciliatum, have not been injured. The last-named species, indeed, is full of flower buds, which are unfortunately found to expand too early here to escape being spoiled by late frosts. This is, however, the less to be regretted, as when potted and in flower in a greenhouse, this pretty little species forms one of its brightest ornaments, well deserving the little care its cultivation in this way requires. Many plants of it are at present in full bloom in a cool house here, and nothing could possibly look handsomer or prove a greater acquisition at this season. Berberis Wallichi appears to be perfectly hardy, having stood the winter well. Escallonia macrantha has been injured; but not so much so as E. montevidensis, which has been cut back to the root, as is also the Sikkim Lardizabala. Among Conifers, all the Mexican species have suffered more or less, and even Pinus insignis is not free from injury, and the leaves of the Deodar are browned. Cupressus torulosa has been hurt considerably.

It is not out of doors, however, that all the ill effects of the winter are felt; the plants in the large Palm-house have unfortunately also experienced some injury. It will be remembered that during the winter before last the stoke-holes of this house, owing to their being very low, filled with water, which was only kept from extinguishing the fires by pumping it out at great expense. It was, therefore, proposed to remedy this evil by raising the furnaces, which the engineer employed, guaranteed would "draw" on a higher level than that on which they were placed. This, however, they did not do, and consequently during the late stormy and subsequent cold weather, the temperature of the house fell much below what it should have been kept at, causing many of the leafy plants to shed a portion of their foliage, and otherwise sustain injury. They are, however, now, we are glad to state, beginning to recover. Fortunately the Palms received little or no harm. The magnificent tree Fern, Cyathea elegans, which was wont to stand below the gallery stair, has, however, had all its beautiful fronds so much injured that they had to be cut back, and now it is doubtful whether the trunk will push again or not.

As regards Orchids, of which there is a good collection here, all the finer kinds have been moved from the large house which they have hitherto occupied, and have been placed in a smaller stove, which is thought to suit them better. The house they were in is now filled chiefly with Ferns, Pothos, Pitcher Plants, and a few Stanhopeas and Oncids. In order to afford these what shade they require during summer, and at the same time obviate the use of blinds, which on large houses become expensive, the outside of the glass has been painted all over with common green paint, which looks as if it would answer the purpose perfectly. The shade is neither too little nor too great; and this colour is preferred to that of whitewash, with which the glass of this house was coated last year.

It will be remembered that the path round the inside of the old aquarium was inconveniently low, compared with the tank and shelves. This has lately been so much raised as to render inspection agreeable, and the tank and house have been altogether so much altered and improved that plants may be expected to succeed in them. A little hill of fibrous loam has just been made in the centre of the tank for the reception of the Victoria regia, of which several young plants have been raised in another house, and are ready to plant out. The tank in the new Victoria house near the great Palm stove is also being prepared to receive a plant of this Queen of Water-Lilies.

In what is called the New Zealand house Podocarpus neriifolia is now in fruit, the latter being round and green, and seated on the top of a red, fleshy, succulent stalk. We also remarked here two thriving plants of Dacrydium Franklini, the famous Huon Pine.

In a tropical stove Amherstia nobilis is in flower, as are also Napoleona imperialis, and the Lacebark tree (Lagetta lintearia). There is also here a plant of the double Cocoa-nut, which, though apparently very reluctant to start into growth, is nevertheless beginning to push a little, giving hopes that we may yet see it growing and thriving in this country as well as in the Seychelles Island, from which it is said to be disappearing.

Among recent importations were some bulbs, with plants of the Doom Palm from Natal, as well as what has been called Stangeria paradoxa. The latter is described as being half a Zamia, half a Fern, its fronds having the venation of those of the last named tribe, while the stem or trunk has the structure of Zamia. A paper on the subject has been published by Mr. Smith, in the last number of "Hooker's Journal of Botany."

Out of doors vegetation is as yet backward, the cold nights preventing plants and trees from pushing. Clumps and borders are being cleaned and put in order for summer. Some new walks have been made since our last visit, and others, where they required it, are being fresh gravelled.

FLORICULTURE.

PLANTING RANUNCULUSES.—The last fortnight in February, and the first fortnight in March, make the month within which the Ranunculus should be planted. Florists, as a class, are distinguished for forethought, and hence it may be assumed that not only the locality for this floral gem has been allotted in the garden, but the necessary compost prepared. The formation of beds is properly the work of autumn, and the soil should not be disturbed at this season more than about two inches deep; but if in any case this operation has been

neglected, loam of tenacious, but not clayey texture, should be procured, and mixed with half the quantity of decomposed cow or horse-manure; and with this the beds should be made up one foot in depth. The top layer, of two inches thickness, should be free from fresh manure. Vegetable is to be preferred to animal manure for this stratum, if added just previous to planting. The beds should be level, not rising more than an inch above the path, unless the soil be heavy, and the subsoil cold, in which case a greater elevation is admissible. Three feet to three feet four inches will be found a convenient width. For planting varieties under name on a small scale, margin-boards, of three-quarters of an inch in width, painted lead-colour, and numbered progressively with white paint, will be found the most *secure*, and at the same time a neat arrangement, laths of any kind being more liable to disturbance, accidents, or loss. A scale of the bed must, of course, be made and registered. The making of *two* copies will commend itself to the judgment of the prudent, as the loss of one, when the only one, has often been the source of irremediable and protracted annoyance to the connoisseur. Ranunculus roots (or, more properly, tubers), may be planted in drills, one inch and a half in depth, drawn longitudinally in the bed for mixtures, and transversely for named varieties. The rows should be arranged to allow the tubers to be about five inches asunder each way, or six inches by five may be preferable, as an increase of width from row to row one way of the bed, either transversely or from end to end, will have the advantage of room for applying a top-dressing or water, in subsequent stages of culture. The tubers should be placed rather firmly (claws downwards) in the soil; and a knowledge of this fact has led to the origination of many contrivances in the shape of dibbles; but drilling possesses some advantages over dibbling, as, with proper attention, the required firmness of compost around the roots may be obtained, and greater facility be afforded in a drill for placing the tubers correctly, and without danger of injuring or fracturing the claws. After depositing the tubers, rake the beds quite level; and if drying winds prevail, so that the fine surface become very dry, a gentle pressure of the soil will be useful. Prepare a compost for future top-dressing. Good loam, the top-spit of a fat pasture, and decayed stable-manure, or, if the soil be light, old cow-dung, in equal parts, will be suitable for the purpose. *T.*

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

CONSERVATORY, &c. — Look very carefully to the watering at this most critical season, and avoid as much as possible giving too much to recently potted plants. Keep close and syringe frequently, so as to maintain a rather humid atmosphere; and until the growth of the plant indicates that it has taken to the fresh soil, apply water very sparingly at the root. Luculias in pots should be encouraged to make free growth, in order to get the wood well ripened, and the plants in flower before those planted in the conservatory border; for it is desirable to prolong the blooming season of this lovely plant as much as possible. Some of the Orchids will probably require shading; at all events, see that the material is ready for use, but do without it as long as possible; and with a little care in removing plants likely to be injured to shady positions, it will not be necessary, at least in most cases, to apply it just yet. A considerable increase in the night temperature of the stoves may be allowed while the present bright weather continues, but this should be obtained not by the use of an extra quantity of coal, but by shutting up early in the afternoon. Maintain a moist atmosphere, and give no quarter to insects of any kind.

FORCING DEPARTMENT.

PINERY.—The delightfully bright weather which we have experienced will have been highly beneficial to Pines, especially to such as are swelling their fruit. Give the latter as much tepid manure water as the state of the soil will permit, and afford them a thoroughly moist atmosphere day and night. Admit fresh air when the thermometer rises to 80° or 85°, but do this by opening the ventilators on one side of the house only, and by no means allow currents to blow through the house and rob the atmosphere of its moisture. See that a steady bottom-heat of from 80° to 90° is maintained, but do not exceed the latter. Let succession plants start slowly into growth, which will induce a compact sturdy habit. Do not exceed 60° by night here, and give a little air when the glass rises to 75°; keep the atmosphere moist, also attend to the bottom-heat, and see that the soil is not allowed to become too dry, or to get sodden, which is apt to be the case from syringing heavily, which, however, is a very bad practice. The syringe should be used merely to dew the plants, and when the soil requires water, a good soaking of clear weak manure water should be given. VINERIES. — As the berries swell in the early house look at the bunches carefully with the view of ascertaining whether they have been sufficiently thinned, and go over any bunches at once which may require a second thinning, for it is great injustice to leave the berries to be cut out after they are stoned; which is by no means an uncommon practice. PEACHES.—Keep the young shoots neatly and regularly tied in, so as to admit light and air freely to the foliage, and keep green-fly and red spider at a distance; also apply sulphur immediately if mildew is perceived. Look at previous Calendars, and be careful not to push succession-houses too fast; keep the atmosphere moist but avoid using the syringe on trees in blossom.

FLOWER GARDEN AND SHRUBBERIES.

Bourbon, Tea, and other tender Roses may now be pruned, and the beds manured and lightly forked. Roses do not object, however, to a rather firm soil, and care should be taken not to injure their roots by forking or digging. The best manure for these is diluted night-soil, which should be applied after loosening the surface soil, and an inch or two of fresh soil sprinkled over the surface to prevent any unpleasant smell, &c. Get walks edged, gravel-rolled, &c., and everything put into the neatest order. Also see that a sufficient quantity of plants for "bedding" are in a fair way to be ready when wanted in May. Sow seeds of tender annuals on a gentle hotbed where they can be freely exposed to air when up, to keep them dwarf and stocky; hardy annuals may also be sown out of doors where they are intended to bloom.

FLORISTS' FLOWERS.

Sow Auricula, Polyanthus, Ranunculus, and Pansy seeds. Make up any deficiency which may occur in beds of the latter from the reserve plants which have been kept in pots during the winter. Auriculas in pots, and Polyanthus also, may have some liquid manure made from sheep-dung; it must not be strong, but used when clear; once a week will be sufficient. Take care that the frames are well covered on frosty nights, and the frame in which the offsets are, that have been lately taken from the mother plants, should be kept usually close till they have freshened up, giving them air only occasionally; a very little attention is requisite to ensure their success. Plant out Hollyhocks; these have a most splendid effect when arranged, with the tallest behind, and when contrast of colours has been carefully studied. Pot Carnations and Picotees in their blooming pots, placing oyster shells on the surface of the soil; this prevents too rapid evaporation.

HARDY FRUIT DEPARTMENT & KITCHEN GARDEN.

While favourable weather continues, push forward operations here with the least possible delay. If not already done, get the nailing finished, the borders dug, and the paths struck out, &c., so as to give an appearance of neatness, and be prepared with covering for the protection of the blossoms, which are being rapidly excited by the bright sunshine. See to keeping up a succession of Peas and Beans, also plant out winter Lettuce on a rich warm piece of ground; and provide a succession of Radish and other small Salads. Manure and dress Asparagus beds. Get Cauliflower plants raised under glass hardened off, and pay every attention to those under the hand-glass, in order to get them in as early as possible, for the destruction of the Broccoli will render these unusually valuable this season. Spinach, Early Horn Carrot, and Stone Turnip, should be sown at once, on a warm rich border, if not yet done; also Leeks, Brussels Sprouts, Savoys, German Greens, Snow's and early sprouting Broccoli, and the main crop of Potatoes should be planted without delay.

COTTAGERS' GARDEN.

If the cottager has neglected to prune his fruit trees, or small fruit bushes, this should not be put off any longer, for vegetation is now fairly on the move, and pruning should be done before this is the case. Also get the ground among bush fruit manured and lightly dug, where not already done. In digging be careful to injure the surface roots just as little as possible. Look sharply after the early Peas, and see that they are not injured by mice or birds. Where they are above ground draw the soil to their stems, raising it on the windy side, so as to form a slight shelter. Plant Fairbeard's Champion of England for succession; and if a few of Fairbeard's Surprise are planted at the same time, they will come in about a week earlier than the Champion.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending March 9, 1854, as observed at the Horticultural Gardens.

March.		Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind.	Rain.
Friday	3	4	30.628	30.509	54	18	36.0	39	40½	E.	.00
Satur.	4	5	30.752	30.705	50	33	41.5	38½	40½	E.	.00
Sunday	5	6	30.714	30.570	45	20	32.5	39	41	S.E.	.00
Mon..	6	7	30.636	30.437	44	24	34.0	38½	42	E.	.00
Tues.	7	8	30.424	30.377	50	44	47.0	38½	41½	S.W.	.00
Wed.	8	9	30.332	30.285	55	46	50.5	41	43	S.W.	.00
Thurs.	9	10	30.258	30.195	62	47	54.5	43	44	S.W.	.00
Average.			30.535	30.439	51.4	33.1	42.3	39.6	41.7		0.0

March 3—Very dense fog; faint sunshine; partially overcast; frosty.
— 4—Frosty, with slight fog; hazy; uniformly overcast; barometer unusually high.
— 5—Overcast; clear; dense fog; frosty.
— 6—Frosty, with dense fog; foggy; dense fog; frosty.
— 7—Foggy; fine; overcast.
— 8—Cloudy; overcast; clear at night.
— 9—Overcast; very fine; overcast at night.

Mean temperature of the week, 1½ deg. above the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending March 18, 1854.

March.		Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday	12	51.0	32.4	41.7	12	0.23 in.	5	3	3	3	2	7	4	1
Mon.	13	50.9	34.6	42.7	10	0.36	3	4	4	1	5	6	3	2
Tues.	14	51.1	35.4	43.3	11	0.70	—	5	3	—	4	10	4	2
Wed.	15	50.8	34.1	42.4	13	0.37	4	5	—	3	3	6	3	4
Thurs.	16	51.0	34.9	42.9	10	0.26	—	8	4	—	4	7	3	2
Friday	17	49.6	33.4	41.5	12	0.36	3	6	3	—	3	5	5	3
Satur.	18	49.5	33.1	41.3	5	0.10	3	8	1	1	2	4	7	2

The highest temperature during the above period occurred on the 15th, 1823, and the 12th, 1841—therm. 67 deg.; and the lowest on the 13th, 1845—therm. 13 deg.

Notices to Correspondents.

ASPARAGUS: *J A.* Apply the salt and soot as soon as the roots begin to form their new shoots—not before.

BACK NUMBERS. Full price will be given for the following Numbers:—1845, No. 24; 1846, No. 7; 1848, No. 46; 1853, Nos. 20 and 49.

BLACK BEETLES: *Lucy Gray.* Sink basins in the floor, till the rim is level with it. Fill them half full of water, and empty them every morning, scalding the beetles which fall in. This method will clear your house if you have patience.

BOOKS: *Sub.* Roberts on the Vine (with the exception of what relates to carrion, which should never be used in Vine borders) will possibly suit you.‡

DAISIES: *Florence.* The Hen and Chickens must be sought in cottage gardens, or small nurseries. It is occasionally offered for sale in Covent Garden. It is propagated by offsets—not by seed.

FRUIT TREES: *A S.* Apples for a west wall may be the Scarlet Nonpareil, Ribston Pippin, Court of Wick, Boston Russet, Blenheim Pippin, Early Harvest, Pitmaston Nonpareil, and Claygate Pearmain. These ought to succeed in your climate, if you do not train their branches too thickly on the wall, so as to prevent its being heated by the sun. The Royal George, Noblesse, and Bellegarde Peaches, and the Violette Hative and Balgowan Nectarines, are probably the best sorts for your situation.‖—*C E J.* Any substance which keeps off cold, and admits air and insects freely, answers the purpose. The inverted shoots of Spruce Firs tied to the branches, straw-bands, canvas blinds, Birch twigs interwoven among the branches, are the materials most commonly in use.—*C F C.* The canker on the shoots of your Pear trees is similar to that which has become very prevalent, even near London, within these few years. It is supposed to result from unfavourable seasons, for many sorts are now affected that were quite clear when the springs and summers were much warmer than they have been of late years. All you can do is to prune out dead wood now; shorten the branches well back in autumn, and under favourable circumstances new and healthy wood will be formed. You must protect your Apricot trees when in blossom. For want of this they have most probably failed in bearing. Partially uncover Figs now.‖

GLASS: *A B.* The kind of glass you mention is described in our Volume for 1851, p. 695. Any of the great dealers can doubtless supply it.‡

INSECTS: *J P.* The grubs which are destroying your young Wheat are the larvæ of one of the many species of Tipula (daddy long-legs), probably T. maculosa They are very difficult to destroy, as they burrow out of reach of the proposed remedies. Gas-tar water, strong brine, or nitrate of soda, will probably be found efficacious, at least in driving them from the roots of the Wheat. *W.*

IRON ESPALIERS: *W J.* Wood being a slower conductor of heat than metals are, is considered to be more favourable to vegetation; but it is apt to warp and decay when employed for espalier rails. On this account iron is to be preferred, but it should be kept well coated with paint.‖

LARICIO: *W H.* This was exhibited at the last meeting of the Horticultural Society. Its wood is very heavy and full of turpentine. It will be the subject of some separate remarks next week. The tree is one of the best for standing the sea air.

LETTUCES: *J Jones.* No.

LIME: *J A.* We suppose you allude to gas-lime. This substance is useful as a manure, on soils where lime is wanted; and to crops, like Cabbages, &c., which require sulphur. But it must be used cautiously or it will burn. Your mode of mixing it seems to be unobjectionable.

MOWING MACHINES: *An Old Sub.* These are of various kinds, in price from 7*l.* or 8*l.* upwards. A machine-maker will give you particulars. Apply to any person who supplies the farmers with their implements.

MUSHROOMS: *Sub.* Too much moisture either in the atmosphere or bed is doubtless the cause of your Mushrooms rotting off soon after they appear above the surface. As to woodlice, a toad or two kept in your house will help greatly to lessen their numbers.‡

NAMES OF PLANTS. We have been so often obliged reluctantly to decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*Abbotsbury.* Next week.—*E W M.* We cannot undertake to name plants not in flower. The bulbous-rooted plant is some Grass.—*H H.* It appears to be the fastigiate variety of Quercus pedunculata.

ORCHIDS: *A B.* A north house may answer in summer, but we fear you will find it very unsuitable at other seasons, unless you can maintain in it some rapid circulation of *warm* air.

PINUS NIGRICANS: *T B.* This is the P. austriaca of some; a species common in the Austrian dominions. Endlicher's "Synopsis Coniferarum," together with the list of Conifers published in vol. v. of the "Journal of the Horticultural Society" to correct its errors, will furnish you with the most recent information respecting species.

STORING APPLES. *R V* will feel obliged by our correspondent who reported the successful storing of Apples in sawdust, kindly stating whether the Pine wood communicated any disagreeable flavour to them.

TERMINATIONS OF NAMES: *Tyro.* There is no rule; it is all fancy, and determined by the ear. The plan now is to give the termination ii to names ending with a vowel, and i to those ending with a consonant. But it is not much, if at all, attended to.

THE BRINJAL: *Ignoramus.* This is the Aubergine, Solanum Melongena, a cultivated variety of the Egg-plant. If well *ripened* and *well cooked*, it makes a dish of great excellence.

VINES: *J C.* Your house being 34 feet by 20 feet wide, and span-roofed, you will not be able to mature shoots to reach the top in one season from the time they break naturally outside. Therefore you had better make sure of filling your house by planting 10 Vines on each side, adopting the spur system of pruning. You should substitute the Royal Muscadine for the Grove-End Sweetwater.‖

VINE MILDEW: *R M.* If you will reduce to figures, put in a tabular form, the results you have obtained, we will willingly publish them; but we cannot ourselves undertake the labour of such reduction. The test papers afford good evidence of the state of the atmosphere, and the inquiry seems worth prosecuting further. The little book is left for you at the office of this Paper.

WIRE TRELLIS FOR WALLS: *S P P.* The French cultivators of the Peach were long in the habit of training on trellis work, either of wood or iron, but generally wood, whilst in England the trees have been usually nailed close to the wall. This mode the French are now adopting, and on the other hand trellises are coming into use in this country, although it is colder than France. It is necessary in the case you mention, as the stucco will not hold the nails.‖

MISC.: *J S.* By pure liquid tar may be understood a tar which is not of a thick consistence, nor adulterated with coal tar; it is the same as thin Stockholm tar.‖

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

NOTICE.

THE SEWAGE MANURE COMPANY beg to state that the higher price of PEAT CHARCOAL, and the increased expense of making the Manure in its present improved state, have compelled them to advance the price of the Manure to 4*l.* per ton; but at this price it still is the cheapest, and one of the best Manures that can be used, yielding a greater return for the outlay than Guano or any other Manure.

N.B.—No charge will be made for sacks; and in quantities of a ton, or upwards, it will be delivered at the Railway Stations in London free of charge for cartage.—March 11.

SEWAGE CHARCOAL MANURE.—This highly fertilising Manure, which is Peat Charcoal completely saturated with London Sewage, will be found most efficient for every species of crop; more especially for Peas, Beans, Turnips, Mangold Wurzel, and other root crops. It will produce a greater return for the outlay than Guano or any other Manure at an equivalent value: it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained at the SEWAGE MANURE WORKS, Stanley Bridge, Fulham, at 4*l.* per ton, and in quantities less than half a ton, at 5*s.* per cwt., for ready money only; and in quantities not less than a ton, will be delivered at the London Termini of the Railroads free of charge for cartage. No charge for sacks.

It may also be had from Messrs. G. Gibbs & Co., 26, Down Street, Piccadilly, Agricultural Seedsmen, Agents for London: and from all the other Agents of the Company.

PERUVIAN GUANO, the guaranteed import of Messrs. ANTONY GIBBS and SONS, Lobos Island Guano, Superphosphate of Lime, and all Artificial Manures, Linseed and Rape Cakes, &c.—Wm. Inglis Carns, 10, Mark Lane, London.

SEWAGE GUANO, 5*l.* 5*s.* per ton (bags included). Circulars and Testimonials forwarded on application.

DEODORIZING CHARCOAL, 1*l.* 10*s.* per ton (bags to be returned). Terms: Cash on delivery.
The Manchester Sewage Guano Company, 3, Watling Street, Shudehill, Manchester. E. Ramsbottom, Agent.
John Thompson, Secretary.

ARTIFICIAL MANURES, &c. — Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. Nesbit, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and dispatch.

Gentlemen desirous of receiving instructions in Chemical Analysis and Assaying, will find ample facility and accommodation at the College.

PEAT MOSS CHARCOAL, AND OTHER MANURES.—The Undersigned are appointed sole Agents by the Peat Moss Charcoal Company, for the sale of this valuable fixer and distributor of ammoniacal matter.

Also on Sale, Peruvian Guano, Superphosphate of Lime, Gypsum, Nitrate of Soda, Bone-Dust, Sulphuric Acid, and all other Manures of known value.—Apply to Mark Fothergill & Co., 204a, Upper Thames Street, London.

THE FOLLOWING MANURES are manufactured at Mr. Lawes' Factory, Deptford Creek:—Turnip Manure, 7*l.* per ton; Superphosphate of Lime, 7*l.*; Sulphuric Acid and Coprolites, 6*l.*

Office, 69, King William Street, City, London.

N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

SUPERPHOSPHATE OF LIME MANUFACTURED by Mr. J. C. NESBIT'S IMPROVED STEAM MACHINE. The following is the analysis of an average sample.

"College of Chemistry, Agriculture, and General Science, 38 & 39, Lower Kennington Lane, London.

Analysis of Sample of Superphosphate of Lime from Mr. Jolliffe:

Moisture		13.97
Organic Matter, &c.		21.98
Silica		6.05
Phosphate of Lime		35.27
Soluble	16.10	
Insoluble	19.17	
Sulphate of Lime, &c....		22.73
		100.00
Nitrogen (equal to)		1.16
Ammonia		1.41

(Signed) J. C. Nesbit."

Delivered free at a Wharf or Railway Station in London at 6*l.* per ton.—Apply to E. Y. Jolliffe, 70, Mark Lane, or the Works, Lavender Dock Wharf, Rotherhithe.

Agents wanted in all the principal towns.

REDUCTION IN PRICE.

WEIR'S Improved GALVANISED WROUGHT IRON LIQUID MANURE PUMP.

The Fittings of these Pumps are wholly of Brass, and there is no leather or other matter which can be affected by the manure.

Price, complete, with 10 feet of Flexible Suction Pipe, 4*l.* 15*s.* Terms, cash on delivery.

Edward Weir, Agricultural Engineer, 16, Bath Place, New Road, London. Removed from Oxford Street.

Catalogues, with Illustrations, sent free by post.

WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

	£	s.	d.
Patent Pump	1	15	0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing	3	0	0

Larger sizes if required.

The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,

8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water; Fire Engines, &c.

An Illustrated Book sent on application post free.

CHAFF-CUTTERS, of the best workmanship, 25*s.*; Two-Knifed Chaff Engines, from 63*s.*; Mills for Bruising Oats and Beans, from 45*s.*

WILLIAM DRAY and CO., Agricultural Implement Manufacturers, Swan Lane, Upper Thames Street, City.

SAMUELSON'S PRIZE FORKING or DIGGING MACHINE, as applied to Spring Cultivation, serves to thoroughly pulverise land which has been trodden by sheep or autumn ploughed, deepening the staple, leaving no pan, dragging up the Couch Grass, and preparing a finely divided seed-bed.

Extracts of Testimonials from persons using it.

"Answers thoroughly; brings everything to the surface."—*E. W. Wilmot, Congleton.*

"The very best a man can have upon a mixed or stiff soil, it so thoroughly pulverises it."—*Joseph Cooper, Acton Burnel, Salop.*

"I inform you, with the greatest satisfaction, of its success."—*Francis Hamilton, Friars Place, Middlesex.*

"Attached horses at half-past 8, on 5½ acres, finished at a quarter past 3, making first-rate work."—*J. Kirby, Bodicott, Oxon.*

"Has been working every day."—*T. Cardus, Barwell, Surrey.*

"Will do a given amount of labour, not only cheaper but better than the plough."—*J. J. Mechi, Tiptree, Essex.*

"Let me have one at your earliest convenience."—*Earl of Essex, Cassiobury, Herts.*

"Send to Exton Park one of Samuelson's Forking Machines for *Earl of Gainsborough, Oakham.*"

"Besides improved tillage, economises ploughmen."—*P. Gener, Cuba.*

Price 24*l.* 10*s.*, the general purpose size; and 27*l.* 10*s.* large size Cash; at the Works, Banbury.

TO AGRICULTURISTS, GARDENERS, ETC.

BENNETT and NAYLOR, General Ironmongers, and Factors, Sole West End Agent for PARKES', late WINTON PARKES' CELEBRATED STEEL DIGGING FORKS and TOOLS. Also for the only efficient Stove, with or without a flue, suited particularly for Conservatories and Green-houses, Patronised by her Majesty. Price 12*s.*, and upwards, at the Great Western General Ironmongery Warehouse, 255, Oxford Street, between Park Street and North Audley Street. Established for the sale of all descriptions of Ironmongery at Wholesale Prices. Sheet, Hoop, Rod, and Bolt Iron; Locksmiths and Bell-hangers. Patent Fuel, to be used with the Stove, 2*s.* 3*d.* per bushel.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.

MESSRS. BURGESS and KEY, as Mr. Parkes' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.

103, Newgate Street, and 52, Little Britain, London.

ANTHONY'S PATENT AMERICAN CHURN.—Extract from the Royal Agricultural Society's Report of the trial of Churns at the Gloucester meeting in July last. "In this trial the American Churn not only maintained its character in producing butter rapidly, but in producing a greater quantity from the like amount of cream." It made from 4 quarts of cream 4 lbs. 6 oz. of butter, being 8 oz. more than any of the other Churns from the same quantity and quality of cream. Price Lists of Churns and Implements by the best makers sent free, and Illustrated Catalogues on receipt of eight postage stamps. Burgess & Key, 103, Newgate Street, and 52, Little Britain, London, who have always a large stock of Steam-engines, Ploughs, Harrows, Diggers, Waggons, Carts, Threshing and Dressing Machines, Mills, Oat and Grain Bruisers, Oilcake Breakers, Reaping Machines, Haymakers, Horse-rakes, Turnip Cutters, Liquid Manure Carts, Parkes' celebrated Steel Digging Forks and Draining Tools, Pumps for Manure, Farm Fire Engines, and for Garden Purposes, &c. &c.

TO LANDOWNERS, SOLICITORS, ESTATE AGENTS, ETC.

THE LANDS IMPROVEMENT COMPANY, incorporated by special Act of Parliament, 1853, having perfected their organisation, are prepared to receive applications for the execution of improvements, under the provisions of their Act.

The Act extends to England, Wales, and Scotland; and empowers persons in the actual possession of lands, or in receipt of the rents, such as tenants for life, trustees, bodies corporate, incumbents of benefices, mortgagees in possession, guardians of infants, &c., to effect substantial improvements on their estates, and to convert the outlay on such improvements into a terminable annuity or rent-charge of from 14 to 25 years, at will.

The Company, acting under the supervision of the Inclosure Commissioners, will undertake and execute improvements, or will supply the capital to landowners preferring to execute improvements themselves, or will grant the powers of their Act to landowners seeking merely to charge the inheritance with the outlay on improvements from their own funds.

The Agricultural Works of Improvement particularly specified in the Company's Act, are:—

1. The Drainage of any Lands by any such means as the Inclosure Commissioners shall approve.
2. Irrigation, and Warping of Lands.
3. Embanking of Land from the Sea, or Tidal Waters, or Rivers, in a permanent manner.
4. Enclosing or Improving the Drains, Streams, or Water-courses of the Land, under the Inclosure Commissioners.
5. Reclamation of Land lying waste.
6. Making Farm-roads to the extent of one-half of the outlay for such roads.
7. Clearing Lands.
8. Erection of Farm-houses, and other Buildings required for farm purposes to the extent of three-fourths of the outlay for such Farm-houses and other Buildings.

In effecting the above Improvements there may be erected any Engines, Machinery, Engine-houses, Mills, Kilns, Sheds, Yards, Shafts, Tanks, and Reservoirs, Pipes, Conduits, and Water-courses for Irrigation, Tram-roads and other ways, Bridges, Weirs, Sluices, Flood-gates, and Hatches.

For Forms of Application and further Information apply to the Hon. W. Napier, Managing Director, 2, Old Palace Yard, Westminster, London.

PATENT ROOT GRATING MACHINE.

BUSHE & BARTER'S PATENT ROOT GRATING MACHINE, Manufactured and Sold by Alex. Shanks & Son, Arbroath, Forfarshire, from whom particulars, with prices, may be had.—Arbroath, March 11.

PURVEYORS OF LIVE BIRDS

BY SPECIAL APPOINTMENT TO HER MAJESTY AND H.R.H. PRINCE ALBERT.

BAKER'S POULTRY RESTORATIVE.—Ten years' experience of its success, in all Diseases of Poultry, justifies them in recommending it with the greatest confidence; one among its many advantages being the facility with which (in its liquid form) it is administered, obviating the troublesome necessity of handling the birds, and speedily imparting such vigour and high condition that can be acquired by no other means. Price 2*s.* 6*d.*, either in Liquid or in Pills, with directions for Roup, &c. By all Chemists.

BAKER'S REGISTERED FOUNTAINS, for Poultry, Pheasants, and Pigeons, supplant all others. Four quarts, 6*s.* 6*d.*; nine quarts, 8*s.* 6*d.*—Messrs. Baker, City; and the Pheasantry, Beaufort Street, Chelsea.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

BAILY'S ROUP and CONDITION PILLS for POULTRY.—This remedy has been extensively tried with uniform success, and is offered to amateurs and the public with the greatest confidence. It will effectually overcome that disease which has hitherto been the bane of the poultry-yard, and destroy that apprehension known to all poultry keepers, when a favourite and valuable fowl is seen to droop. It is inestimable for poultry returning from exhibitions, and greatly facilitates moulting.—Sold, with full instructions for use, in boxes containing 50 pills, by John Baily, 113, Mount Street, Grosvenor Square, price 3*s.* per box, or by post 3*s.* 4*d.* "Fowls, by Baily," the most useful and plainest treatise of the day; price 2*s.*, by post 2*s.* 6*d.*

Baily's Registered Fountains, universally adopted and approved. Drawings and particulars, by post, on application.—113, Mount Street, Grosvenor Square.

AGRICULTURAL SEEDS.

(Carriage free.)

SUTTON and SONS, Seed Growers, Reading, Berks, *have a large Stock of Home Grown Seeds of all the best varieties of Turnips, Mangold Wurzel, Carrot, Clovers, Natural Grasses, &c., which they are now sending out at the lowest market prices.*

In consequence of an unusual press of business at this season, we have been unable to present our friends with a full descriptive Catalogue of our Agricultural Seeds, but a *priced* list of the leading kinds were published by us *in the last page of the Gardeners' Chronicle of January 28, all of which articles can still be supplied, as also all other approved kinds of Agricultural Seeds. We shall also be happy to make special contracts for extra large quantities.*

All orders faithfully executed in strict rotation, according to priority of our receiving them.

Sutton & Sons, Seed Growers, Reading, Berks.

RENDLE'S AGRICULTURAL PRICE CURRENT AND FARM DIRECTORY FOR 1854 *is now published, and can be obtained in exchange for six postage stamps, from* William E. Rendle & Co., Seed Merchants, Plymouth.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—LINCOLN MEETING.

The Society is desirous of Contracting with parties for the following Supplies for its ensuing Country Meeting at Lincoln:

1. One small Stack of Wheat (not exceeding 40 or 50 quarters), for the Trial of Threshing Machines.
2. One small Stack of Barley (not exceeding 60 or 70 quarters).
3. Straw for the Show-yard, and the rate per ton.
4. Hay for the Show-yard, and the rate per ton.
5. Green Food (either Vetches or Green Clover), and the rate per acre or per ton.

Forms of Tender for these Supplies, and particulars as to the delivery, to be obtained of the Secretary of the Society, No. 12, Hanover Square, London.

By order of the Council,

London, March 4. James Hudson, Secretary.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

PRIZE SHEETS *for the* LINCOLN MEETING *may be had on application to the Secretary of the Society, No. 12, Hanover Square, London.*

The Agricultural Gazette.

SATURDAY, MARCH 11, 1854.

MEETINGS FOR THE TWO FOLLOWING WEEKS

Wednesday, March 15	—Agricultural Society of England.
Thursday, — 16	—Agricultural Imp. Society of Ireland.
Wednesday, — 22	—Agricultural Society of England.
Thursday, — 23	—Agricultural Imp. Society of Ireland.

As we have not room for a report of the discussion which took place before the Central Farmers' Club last Monday, on the subject of Agricultural Statistics, we must be satisfied with stating in this place the resolution that was adopted, and the mode in which it was arrived at. There was considerable difficulty in drawing one which should satisfy a majority of the members present; and the one drawn by Mr. Bennett, which was ultimately carried, was altered after an amendment to it had been put to the meeting, so that the latter hardly had fair play done to it. Mr. Bennett's original resolution affirmed the public advantage of statistical information, immediately after harvest, on the quantities of the main article of human food, whether in the hands of farmers, millers, or importers—and it stated that if the facts were collected judiciously, they would be useful rather than injurious to the agricultural interest The chairman's amendment affirmed the desirability, on public grounds, of statistical information regard-

ing the products of *all* industrial occupations, but stated that *it would be of no use to farmers.* The differences between the two were—first and mainly the opinion of the former, that farmers would benefit by the information obtained; and secondly, the opinion of the latter, that *all* classes of producers ought to be called upon for it. The first of these differences was of much greater importance than the second, and yet after the amendment (inferior to the resolution only in respect to the first of these differences between them) had been put, the original resolution was modified, so that the second of these differences alone remained: and it goes out to the local farmers' clubs of this country, that the central body, to whom they are to look for guidance, especially in their relations to Government, believe that farmers are not themselves at all interested in the publication of agricultural statistics; while, to those who may read a full report of the discussion, the opinion will appear to have been very generally expressed, that farmers really run considerable risk of injury by such publication.

It will appear on a comparison of the resolutions arrived at on this subject, when it was discussed by the club in 1847, with that which was passed last Monday, that the London Farmers' Club has very materially altered its opinion on the subject. *Then* it was resolved that both landlord and tenant were personally interested in having correct knowledge of the prices and quantities of agricultural produce, and that agriculturists generally were interested in knowing how fast and in what direction agricultural progress tended; *now* it is resolved that farmers cannot benefit by a knowledge of the facts which correct agricultural statistics would furnish. And we are particular in describing how such a remarkable conclusion was arrived at, in order that justice may be done to those members of the club who were thus accidentally, and, as it appeared to us, *irregularly* deprived of all opportunity of representation in the decision that was arrived at: who would have gone farther even than Mr. BENNETT's original motion, both as to the subjects of the statistical inquiry, and as to the opinion expressed of its value; but who, after opposing the amendment, unexpectedly found themselves quite as unable to vote for the resolution.

The debate embraced the following points:—Mr. BENNETT's opening address stated that (1) the subject had been previously discussed in that and other clubs, and farmers had been alive to its importance; (2), the object of agriculture was, *first*, the provision of food, and *secondly*, its provision without fluctuation in the supply; (3), this fluctuation could not be wholly hindered, but, if to know the nature of a disease was half-way to the cure of it, then the knowledge of our wants and resources would go far to cure this evil of fluctuation; (4), no adequate means of such knowledge exists, and ignorance on this point, as it had proved injurious and even destructive in 1847, so it might again in 1854—a year of nearly equal excitement; (5), those, however, who suppose that farmers will submit to any inquisitorial examination into every detail of his business, reckon without their host; (6), one great cause of his reluctance is distrust of Government, who ought to have obtained all the information which they now deem so desirable before they changed their policy towards the agriculturists of this country; (7), patriotic feeling will, however, overcome this reluctance; and Mr. BENNETT then proceeded to detail his plan of procuring the information required, which, he contended, ought to be given by *all* holders of food as well as farmers.

Mr. CUTHBERT JOHNSON stated what was doing in other trades, and contended that too much knowledge could not be had, and that the more opinion coincided with fact, the safer the guidance it offered for conduct in the market and elsewhere.

Mr. BAKER, of Writtle, replied to Mr. JOHNSON's remarks on the ground that manufacturers regulated the extent of their manufacture by information of produce elsewhere; but that the farmer always aimed at producing a maximum, and such knowledge would thus be of no use to him. It would, however, be useful to the country; and he stated his plan for collecting and publishing it.

Mr. WALTON asserted the usefulness of the proposed information, and would have the club to sanction the Government plan. He did not see the need of employing valuers in the estimation of the crops—the farmers could do that for themselves. Other gentlemen followed on the other side, arguing against the inquiry, as inquisitorial, as a mere scheme for reducing prices, as an instrument by which farmers may criminate themselves, and so come under the operation of the penal clauses in their leases—and so on.

Mr. SIDNEY, in reply to the charge of an inquisitorial examination into the business of the farmer, showed how society necessarily involved the surrender, to a certain extent, of personal liberty, and how from birth upwards we were the subject of official inquiry and registration; he showed, too, that the terms of the alternative were not—correct information on the one side, and the absence of information on the other—but, correct information and *incorrect;* that Government *would* obtain and publish a statement of the subject such as it could get, and it was for the interest of all parties to make it as nearly correspondent with the truth as possible. Of all policies for the agriculturist, the policy of suspicion was the worst.

We do not pursue the discussion further; or referat present to the details of the various plans for collecting the information that the several speakers suggested. The main fact of the matter is, that the Central Farmers' Club of England has passed a resolution which amounts in effect—*i. e.*, in comparison with what was expected from them—to a condemnation of the movement towards the collection of the agricultural statistics of the country. Probably the most important influence of such a resolution is that which it must ultimately exert upon the reputation of the body from whom it has proceeded.

OUR advertising columns indicate the advent of seed time, and the weather of the past fortnight has brought both purchasers and salesmen earlier into the seed market than they would otherwise have come. The Highland and Agricultural Society have thus most admirably timed the interesting discussion which took place before them last week, on "*The varieties of Turnips most suitable for different localities and purposes, and the best means of obtaining good seed.*" We have not room for a full report of the valuable papers on this subject which were read on that occasion, and must therefore be satisfied with a condensed statement of the information and experience they recorded.

Mr. GIBSON, of Woolmet, East Lothian, referred to the White Globe, the Hardy Green Globe, the Purple and Green-top Yellow, DALE's Hybrid, and Swedes, as the varieties grown near Edinburgh. Of these, the first, the most valuable of all for early use, is now sown to a very limited extent, *owing to the spurious varieties sent out by many of the seedsmen.* The second is esteemed for crop and hardiness, and for leaving the land in better condition than some other varieties. The Purple-top Yellow is esteemed more highly by the dairymen than any other sort, and this is attributed to the careful way in which the variety has for many years been selected and cultivated by Mr. SKIRVING, of Liverpool. The Green-top Yellow is also spoken of as a valuable variety. DALE's Hybrid, it is said, has not had that attention paid generally to its selection for seed which hybrids, from their inclination to sport, require; consequently the Turnip grower is often disappointed with its unshapely form and coarse roots; it produces a good crop, is well adapted for poor soils, and worthy of every attention being paid to its proper selection for seed.

These are the sorts mostly used by the dairyman. The selection of a variety of Swedish Turnip is a matter more for the consideration of those concerned in the manufacture of beef and mutton. On this Mr. GIBSON says:—

"It is now 15 years since I got SKIRVING's Liverpool Improved Purple-top Swede from himself. I was so bigoted in opinion as to the superiority of what was generally called East Lothian Swede, and some other varieties grown there and elsewhere, that I continued to grow them alongside of SKIRVING's Swede, year after year, but always with the same result. When sold by public roup, the SKIRVING variety generally brought 4*l.* to 6*l.* per acre more price than any other. I have been told that this arises from their showing more bulb above ground than some other varieties; but I have often tested their weight, and generally found an excess of weight in their favour to justify the difference of price."

In reference to the further remarks of Mr. GIBSON on the feeding quality of Turnips, we must remark that this depends not only on its seed, but on the circumstances under which it has been grown. And we doubt if Swedes and Turnips grown in the south of England can ever yield results in feeding like those which are within the ordinary experience of the Scotch farmer. On this subject Mr. GIBSON says:—"I am satisfied the varieties most suitable for cattle feeding in this district are Globe and Yellow for the months of September and October, and SKIRVING's Swede thereafter. I have generally found cattle feed better after the two first months on Swedes alone than they do upon the other varieties, even with the addition of 5 lbs. per day of oil-cake. When the Turnips are to be eaten on the ground by sheep, the varieties I sow are, Purple-top Yellow, Hardy Green-top Globe, DALE's Hybrid, and SKIRVING's Swede, consuming the Swedes last, and the earliest sown of the other varieties first."

Mr. GIBSON's remarks on the seed trade, in so far at least as regards the provision of Turnip seed, deserve serious consideration. The general complaint on this head is that Turnips now-a-days run more to neck, are smaller in the bulb, and coarser on the top and root than they used to be; and he attributes this to the changed character of the seed trade of late years. "Instead of carefully grown seed being eagerly inquired after, at prices which would remunerate the grower for his selection, he has been told that, unless he can offer his seed at the London wholesale prices, his seed must remain unsold. Growers, therefore, have been forced either to give up the growing of carefully selected seed for sale, or take some other mode of meeting the requirements of the trade, and the system now general is to prepare the land for a crop of Turnip for seed after some other crop has been reaped, and the seed sown so late as to leave no chance of the Turnip bulbing. To this system of growing Turnip seed may be traced the evils generally complained of by Turnip growers. The wholesale prices paid of late years to the Turnip seed grower have varied from 11*s.* to 20*s.* per bushel, weighing about 50 lbs. Parties purchasing this seed afterwards in retail, from the seedsmen, will generally find the price charged to be sufficient to yield a handsome profit; and no Turnip grower would grudge paying even a double price to secure carefully selected genuine seed, the difference to him in cost of seed would only be a few shillings per acre, whereas the crop produced might be doubled. From the price charged for the Turnip seed, the Turnip grower is entitled to have a genuine article delivered to him, but in too many instances this is not the case; before the Turnip seed reaches the farmer it is adulterated, often to the extent of from 20 to 30 per cent.; the Globe and Yellow being mixed with wild Mustard seed, the Swede and other round seeds with a sort of wild Rape seed, imported largely from the continent, and worth only from 4*s.* to 5*s.* per bushel. A regular trade is made of destroying the vegetative powers of these spurious articles by chemically killing or kiln-drying; this is generally done in London, is made no secret of, and the article sold "warranted not to grow."

Mr. GIBSON goes on to speak of an attempt, apparently unsuccessful, which has been made in Scotland by an association of seedsmen to check these nefarious practices.

The remedy offered by the next speaker, Mr. ELLIOT, of Hardgrave, Dumfriesshire, was that farmers should grow their own seed. He says:—

"I have no hesitation in saying that farmers err greatly who either do not transplant their own Turnips annually, selecting the best bulbs, of whatever variety they intend sowing, or join together in different localities and get one of their number, in whom they have confidence, to do so, and buy from him. Every breeder of stock knows that to be successful, careful and attentive selection is absolutely necessary; and rest assured that equal care is necessary to secure perfection in the vegetable as in the animal kingdom. To be convinced that at present this is not even attempted by many of our seedsmen, it is only necessary in passing through the country during spring, when the Turnip fields intended for seed are in full flower, to go into some of them and inspect the description of Turnips from which the seed is raised, to feel perfectly satisfied, as I have long done, that we are in error in buying from seedsmen in the indiscriminate manner we have been doing; because on inspection you will find, instead of seed being raised from selected bulbs, or even from Turnips arrived at full maturity, that in nine cases out of ten, or at least in the great majority, the seed is raised from late sown Turnips, scarcely even thinned, and the bulbs in consequence often little larger than pigeons' eggs. So long as this state of things continues, be not surprised that the average weight of Turnips in one of our best Turnip growing counties in Scotland does not exceed the low quantity of 15½ tons per acre."

We conclude with the following statement by Mr. MAKINS, of Auchincraw, Berwickshire, of the plan to be adopted by any one who would raise his own seed, and so escape the risk which all buyers of seed now-a-days more or less undergo. We abridge the statement made by Mr. MAKINS as follows:—

"I have raised my own Turnip seed for about 20 years with success. To preserve the bulbs uniform, and the seed pure, I originate my stock from one bulb of the shape I wish, with a smooth skin. This is transplanted in the garden, and covered with a net. As well shaped bulbs often prove mongrels, it is proper to transplant two or three besides the selected one, in order to secure the possession of one genuine plant. When the seed of this (my stock Turnip plant) is ripe, I cut off the entire seed stem and hang it up in the granary until it is nearly dry, when I clip off the pods and keep them in paper bags until the season of sowing the seed arrives, when it is rubbed out of the pods; and if of Swedes, it is mixed with about a pound of White Globe seed, and

sown in the drills in the field in the ordinary way, and the quantity will extend over about an acre of ground. The plants should be carefully thinned, picking out the globe plants, and leaving the Swedes single. The reason for mixing Globe seed is that the small quantity of Swede seed may go over a large space of ground, that their produce may afford the greatest number of bulbs possible for future transplantation. When I raise Globe seed, I mix Swedish seed in like manner. The crop thus obtained will amount to 5 or 6 tons of bulbs, which are selected and transplanted in November with plenty of dung below them; when the stems have shot about a foot in height in spring, I apply a little guano around the bulbs. The growing crop is carefully weeded of spurious plants, and the seed is as carefully protected from the birds. The stems are cut down when the seed is ripe and put into a stack, until the period of sowing the seed arrives. Turnip seed keeps best in the straw, and may be used when three or four years old, provided it be only threshed out just before it is sown. I only sow from 1 lb. to 1½ lb. of this seed to the acre, because it facilitates the operation of thinning, prevents the spindling of the plants, and secures them from becoming puny. It is of the utmost importance to have Turnip seed well harvested, and well preserved afterwards, whether in the pod or stack, or after being threshed out and cleaned. Turnip seed damaged in the harvesting will either not germinate at all, or the plants will be long of brairding, or they will be always puny and unthriving."

ON THE MANAGEMENT OF MANURE.

Your correspondents "C. L.," Cirencester, and Dr. Voelcker (dating, singularly enough, from the same place) have been engaged in the discussion of what once was a question much canvassed by agricultural men, namely, the loss of ammonia sustained in the decomposition by fermentation of farm-yard manure.

I am not going to enter on the arena as bottle-holder to either party; I am rather to suggest that this is a question which, once of interest and importance, is now narrowed to a very small compass indeed, inasmuch as, under any circumstances, there is but a very small proportion of the manure made on a farm which there is any cause (or rather any excuse) for subjecting to the fermenting process. The different plans adopted by those skilled in the science and practice of agriculture for the restoration to and incorporation with the soil, without waste, of the residuum of the vegetable substances consumed by live stock, and of the straw used as litter, are these:—

1st, The plan now general over the better-farmed counties of England and Scotland, of ploughing in fresh manure on the autumn stubble, in preparation for the succeeding green crop. 2d, The Myer Mill plan, which is also, if not general, at any rate now practised by one or more in every district, of liquefying the whole exuviæ for distribution by steam power and iron pipage over the land. 3d, The plan explained by Lord Kinnaird in last number of the "Royal Agricultural Society's Journal," supported by most conclusive evidence of its being a profitable one, of having the manure made in covered court-yards. I use the word "made" advisedly, because his lordship's experience shows that it can be at once carted to the field, and spread in drills even for Potatoes.

I can testify to a similar result attained in my own practice. The droppings and solid litter of stall fed cattle, and the same from the work-horse stable, are daily thrown into a walled and covered pit, care being taken that they are intermixed. A dozen feeding pigs are kept in the pit; any loose litter there may be found lying about, together with road scrapings, and odds and ends of animal and vegetable refuse, are thrown in; the pigs mix and incorporate the whole well together. From time to time liquid from the manure-tank is pumped in; and thus we have generally a deposit of a considerable quantity of well-made manure at hand, to supplement the dung-heaps when they are exhausted. These (the dung-heaps) are managed on a system which is simple and efficacious, but which I have not seen described in any agricultural publication. I must premise that not having attained to that plethora of muck and fertility when the spring and summer manure can be reserved, to be ploughed into the stubble for the succeeding green crop, I find that my summer and autumn collection is required for the Wheat brake, which I am fond of having large. My winter and spring collections are drawn upon for Potatoes and Beans, while my Turnip crop is raised almost entirely by portable manures. Thus, while there is no reserve on which interest is lost, there is a necessity for preparing the box-made manure for speedy use. This I effect by carting out the manure as the boxes become full, throwing it out of the carts into a heap of 5 feet in height by 12 feet broad. As we advance in this building we follow with a cover to the top and sides of clayey mould. This cover is at first about 6 inches thick. The still open side, to which we are adding, admits a small degree of atmospheric action, which induces a gentle heat. When this has gone on for three or four days, we add 3 to 6 inches more clay or soil, over which we pour dilute urine. This keeps the fermentation going on in the heap, the gases from which have to permeate the clay ere they can reach the atmosphere, and the now well-known absorption of ammonia by aluminal earth prevents any waste. Indeed, with manure taken from covered boxes, there will not be any escape of vapour from the clayey covering till the dilute urine is plentifully applied; even with manure made in courts, exposed to rain, there will be an escape of nothing but of watery vapour, a loss which is a gain, as there is less weight afterwards to cart on the ground.

In ten days after the heap has been made, it will, if it has been properly attended to as above, be fit for using in Bean or Potato drills, being soft and unctuous; it is cooked in its own steam. Should it not be required for a month or longer, all that is necessary is to give it a coat of 6 inches more clay or mould, and it stands ready to be cut up when wanted. I find this system to work exceedingly well. I am satisfied that from 70 loads of manure, carted out and covered with 30 loads clay, I have a larger store of fertilising elements than I should have from 100 loads of similar manure carted out and trenched up in the old mode to ferment. In this estimate I reckon only upon the elements over which I had a *quasi* control in the manure, little or none of which I lose; but I am inclined to believe that together with this great advantage I obtain another of no less magnitude, in this, that I have set agoing a process by which I obtain an unbought store of nitric acid. This process is somewhat obscurely adverted to in Mr. Nesbit's letter, appended to Mr. Pusey's paper on "the Nitrates," in last number of the Royal Agricultural Society's Journal; it was thus elucidated, 10 years ago, by a writer then almost a pioneer, still holding a foremost rank in agricultural chemistry. "The quantity of nitric acid which is formed (in the artificial nitre beds of France) is much greater than could be produced by the oxidation of the whole of the nitrogen contained in the organic matter present in the mixture. Organic matters are in our climate necessary to cause the formation of nitric acid to commence, but after it has begun it will proceed in the same heap for an indefinite period, and at the expense apparently of the nitrogen of the air only." (Johnston's Lectures on Agricultural Chemistry, pp. 242, 243.)

These last words afford the clue to the mode in which a plant, alike gluttonous and wasteful of nitrogen (it uses much and wastes more, see Rothamsted Experiences) as the Wheat, has been made to flourish without the application of manure, on the Lois-Weedon system. The 3 feet interval, uncropped and much cultivated, forms, so to speak, a trap, in which the ammonia and nitric acid, ever present in the air, are caught, and held at the service of the growing plant.

I purpose, hereafter, to inquire, by the light of Professor Anderson's very complete series of Analyses, published in the "Highland Society's Journal," how far some of our cultivated green crops serve as abstractors from the atmosphere, and safe custodiers of aërial nitrogenous matters. *S.*

Home Correspondence.

Blood as a Manure.—As Mr. Way observes, "this manure is disregarded." This is true in point of practice, but not so in the knowledge of the scientific farmer; the fact is, we cannot obtain it; it is a most invaluable manure, and we know by the application of blood absorbed by ashes, and road scrapings, soot, &c., drilled with Turnips and for Wheat, the yield of the latter was 40 bushels an acre, and the Turnip crops magnificent. If slaughter houses were provided with large tanks to receive the blood and ashes, soot, &c., mixed with it, any farmer would be glad to give 10*s.* a cart-load, if not more, for so valuable a manure, much of which finds its way into our rivers. All gardeners know the value of blood when applied to the roots of the Vine. *Alexander Falconer, Hants.*

Fish Guano.—In a late *Gazette* I regret to see such a prominent place given to that most nonsensical of all nonsensical nostrums, fish guano. So long as this "fish broth" palaver was confined to agricultural *savans* of Dublin, I did not think it worth while to raise my humble voice against it, but now that you have thought proper to treat us in your last leader to a re-hash of this Irish (fish) stew, I must protest against any more of your space being occupied with the subject. Only think for a moment of such folly as going to sea to catch fish, the best and most nutritious food in the world, and then to throw away the "bird in the hand" to raise Turnips, or other green crops, to feed bullocks for beef, which beef, I maintain, is not one whit better for food than the fish. Let us hope, then, that for the future you will leave the poor fishes to feed the poor people, for which there cannot be a shadow of a doubt they are and were created; and I need not tell you the consequence of violating any fundamental law of nature. *J. Walker, Rockingham, Boyle.* [We have heard of no proposal for the conversion of *edible* fish.]

Meteorology.—I have read with much interest "R.'s" review of Professor Dove's maps of "The Distribution of Heat over the Surface of the Globe." Having for some years paid much attention to the subject of meteorology, and to the connection between the fluctuations of the barometer and the veerings of the wind, I become more and more strengthened in the conviction of the universal application of the truth of Mr. Redfield's "Rotatory Theory." I can say most confidently, that all the facts that have come under my notice are consistent with this theory, and that even those which at first sight have puzzled me the most, on inquiry support the truth of it. In reference, for instance, to R.'s snow storm of January last, I should like to see the barometrical observations taken by him four times a-day at Strathdon. To judge from R.'s outline, it might be supposed they were not taken between the 3d January and the 5th; nor again between the 6th and the 8th. The wind, however, veered pretty regularly from S.E. to E.S.E., E. and E.N.E. This coincides with a rotatory storm passing up the British Channel, over Ushant, Kent, and Heligoland. The S.W. current, simultaneously noticed by "R.," would be the exterior of the rotatory storm at that time prevailing to the westward of Ireland; but as I have no materials for proving such actually to have been the case, I content myself with saying, that whenever I have had the opportunity of testing a southerly wind with a falling barometer on the coast of Ireland, there has been a northerly wind blowing on the Atlantic, 20, 30, or 40 degrees off, with a rising barometer. *F. P. B. M., Oxford and Cambridge Club, London.*

Management of Ewes.—I noticed in the *Gazette* for March 19, 1853, page 187, a prescription for an application for ewes after hard labour, and consequent inflammation of the womb, which I took care to copy, and have used this season with such success that I feel it a duty to my brother-farmers to add my emphatic testimony to its value. I feel very thankful to Mr. Summers for giving the results of his experience to the public. The treatment consists in a copious bleeding, and the administration of a dose composed of 2 ounces Epsom salts, two drachms ginger, and two drachms laudanum. We give this to all ewes which have to be handled in delivery, and my shepherd has told me to-day that it is his settled opinion that it has been the means of saving seven or eight ewes, which under the old system of treatment must have died, as well as tending very materially to the speedy recovery of others which, though not in danger, were considerably exhausted. My plea for troubling you with this communication must rest on my conviction that each should contribute his quota of useful information to the given stock. *T. R. Ellis, Oxnead Hall, Norfolk, March 6.*

Land Agents.—As this subject forms a prominent feature in the *Gazette* of January 28, I am induced to hazard a few remarks on it, feeling with your correspondent "B." that it is of the greatest importance both to the progress of agriculture and the welfare of a large portion of the community, namely, those connected with the soil. That it has been always abused no one can for a moment deny, and unless the attention of landlords be drawn to it through the medium of your valuable Paper, I am afraid it will still continue so. The first question in treating on the subject which naturally suggests itself is, What is a land agent? To this I would reply, he is one who stands as a medium between landlord and tenant, who is supposed to act as the mouth-piece of his employer, one whose duty it is to hold the welfare of the tenants as much at heart as the interests of his employer, and who should be thoroughly acquainted with all the minutiæ of his office. Judging from the number of applicants when such a situation is vacant, the duties of the office are easily acquired; to dispel this, we must look at the different candidates, and as "B." justly remarks, we shall find some deserving in the highest degree, others who deem themselves deserving, and others again who have not the slightest pretensions but covet the appendages; and oftentimes it happens that through interest or some unknown influence, the one who is the least capable of filling the office gets the appointment. Is it a wonder then that we find such discontent manifested amongst the agricultural classes in different parts of the country? Let any person who lives in a discontented neighbourhood, look about him and see if he cannot trace the origin; let him first see whether the farmers are directly under the eye of their landlord or his agent, then let him see if either the landlord or his agent is a practical man. I would venture to say that in most cases the discontent arises from one of the following causes; either the landlord or his agent are not practical men, or the agent is a practical man, but has not sufficient power granted him by his employer; the latter I hold to be as injurious as the former, and in such a case the agent deserves the pity of every one, for he only has to bear the blame, the public of course looking to him for the remedy. Go into any district where there is a practical agent and see the difference—there the tenant goes on contentedly; he has confidence in his landlord, he feels the agent has his interest at heart as well as his landlord's, and remains at home attending to his business, and reaping benefit from so doing. Having said this much, I will now draw attention to the agents themselves, and see what qualifications they ought to possess—they should be gentlemen thoroughly conversant with accounts, also with the valuation of land, farming, management of woods, and valuation of timber, draining, and building. It would be useless for me to say that all these qualifications are held by agents generally, for perfection seldom falls to the lot of mortal man, but these are a standard to go by, and should be considered before an appointment is filled up. In your leading article you draw attention to the diploma given by the Royal Agricultural College, and advocate it as a mark to denote proficiency as an agent, this in my humble opinion is all very well as a mark of general knowledge, but I much doubt if it ought to be held as a criterion of thorough practical knowledge. Theory is absolutely necessary, but if it is not combined with practice, little good results from it, hence arises oftentimes those enormous displays of outlay in farming from which no real good can arise, but in reality injury, since they tend to frighten by their failures those who would otherwise be disposed to take the medium course. Not only should all the subjects of these different classes at the college be studied by the practical man, but he should move about and see and judge for himself before he is intrusted with the management of

property. I believe that a man who has been brought up beyond the reach of these great agricultural schools may make just as efficient an agent as one who has studied at them, provided he has practically followed up the different requisites I have alluded to before as being necessary for an agent to possess. Before concluding, an allusion to one great error which landlords often fall into may not be out of place, that of intrusting the management of their property to lawyers; what can they know of management of land or anything belonging to it, except drawing up leases or agreements? It is nothing more than an infringement on the rights of others for an attorney to become a land agent, he is taking away the bread from a class of men who cannot retaliate; he must employ men to superintend the different works, and hence arises often, as "B." remarks, distrust on the part of the tenants and sundry disputes which must in the end prove detrimental to the property; and how often for these causes does a landlord, himself as good a man as ever need be, sink down into a mere nonentity, and be looked upon as one to be avoided by farmers on the look-out for estates. *M.*

Sewerage as Manure.—At a weekly council of the Royal Agricultural Society, held at its house in Hanover Square, on the 29th of June last, an interesting discussion on this subject took place. Professor Way stated his views on the management of the sewage matter of towns, and its agricultural application, and he was followed by several other gentlemen, whose remarks, though conflicting and somewhat opposed, possess much interest, and may lead to discoveries of practical utility. It will be curious to notice the bearings of each line of argument, on a subject as yet theoretical, but which ought to be susceptible of absolute proof, if analytic chemistry has indeed attained that degree of refined acumen to which the science of the day lays claim. The point now at issue is the condition—liquid or solid—in which sewage ought to be applied to land, in order to produce its utmost fertilising effect at the lowest expenditure of money. Professor Way said that, "at present he was aware of no method to convert sewage into solid manure that would pay." He then detailed the various substances proposed for the filtration of sewage, and the various precipitants to effect the subsidence of its grosser matters; and referred to the plans of Higgs, Moffatt, Wicksteed, Herapath, and others; to the peat-charcoal filter of the Sewage Manufactory Company at Fulham; and to the other numerous appliances recommended. The mention of Higgs and Wicksteed becomes interesting to an inhabitant of Croydon, where each of these gentlemen has been consulted in order to effect something which may at least tend to sooth the public mind, rendered sensitive by the results of certain measures carried through with too much haste. In respect to the lime process, or an attempt to clarify the liquid sewage by "a milk of lime, which is made by putting into a cistern a certain quantity of lime, and adding thereto a definite quantity of water," it is only needful to observe that, since Mr. Rowlandson made public his experiments with lime, it has been proved to demonstration that manure-water, the drainage of dunghills, and the like, are deprived of colour, odour, and, to some extent, of taste, by a very small addition of slaked lime, milk of lime, or even of strong clear lime-water, which, by attracting and fixing the humic matter (called acid), carries it down in the condition of dingy grey flocks. Mr. Wicksteed's processes are partially described in a small pamphlet published in 1851, and headed "Patent Solid Sewage Manure." "The milk of lime in Higg's process," Mr. Way said, "clears the sewage from colour, but leaves in it nearly all the organic matter. He would prefer separating the sewage matter by itself, but even that would only contain from 2¼ to 3 per cent. of ammonia, and would not pay. Generally speaking, the distribution of liquid manure, to be fully available, should be effected on an extensive system; it was ridiculous for a place like Edinburgh to supply liquid manure for only a few thousand acres; such matter ought to suffice for hundreds of thousands of acres." I am constrained to abbreviate, and therefore can only just glance at the opinions of Messrs. Chadwick and Mechi. Mr. Chadwick was of opinion that where there were means to apply liquid manure in that form, it was mere waste of expense in labour and material—of the materials used in the process as well as of the manure itself—to reduce it to the solid form, from which it must again be liquefied; in that state of merely mechanical suspension, chemical experiment had proved that the fertilising matter would be confined and safely stowed in nature's own laboratory—the soil. Mr. Mechi, referring to Professor Way's paper on this very subject—the power of soils to fix ammonia—stated that, "in strong clay soils, he had, whilst irrigating, caused the drains at 5 feet depth to discharge manure-water having colour, smell, and fertilising properties, although he had hoped that all these things might have been arrested in the soil." Here, in this last part, we observe an instance of over saturation. Ground cannot be made to absorb beyond its capacity. In Croydon there still exists a lamentable example of this sad truth. As to the precipitation of sewage matters by lime, or by other agents, its profitable attempt remains to be proved. So far, all experiments on a broad scale have been unpromising. How far great improvement in our barren commons (like Banstead Downs, for instance) might be effected by floating with sewage, is a question that was recently proposed in my hearing. Who can solve it? Yet matters of deeper moment, and quite as improbable, have been satisfactorily carried through. *J. T., Croydon.*

M'Gillivray's "British Birds."—At p. 143, vol. i., is a long quotation from an old author, who writes in Latin an account of the birds of Scotland. Amongst the rarer sorts he describes the cock-of-the-wood, and the "grouse, which feeds upon Broom-tops, and the black-cock, which eats corn." "This," says Mr. M'G., "is a lame account of the matter. If the very learned man had possessed a tithe of the knowledge of one of our modern rustics, he might have known that the black-cock no more feeds upon corn than the muir-fowl upon Broom-tops." Before we are severely critical, we ought to be sure that we are strictly correct. Now, any modern rustic, any cowherd laddie, in this county (Dumfries), can tell you that the black-cock is one of the greatest corn-destroying pests of the muirland farmer, who suffers ten times as much from the grouse and black-cocks as from rooks and wood-pigeons. Last harvest, which was unusually late and protracted upon many farms situated in the high-lying districts of Annandale, Eskdale, Liddesdale, and Teviotdale, the grouse (black and red) destroyed fully one-fifth, some said one-fourth, of the Oat crop. To protect their crops, many farmers employed "herds," who were kept on the trot—"from morn till noon, from noon till dewy eve"—driving off these privileged marauders, who when driven from one row of stooks would alight on another, not 100 yards off! In one field I have counted 40 black-cocks, and twice as many muir-fowl. A friend of mine, located near the head waters of the Esk, whose fields cover a considerable space, last harvest had three herds—two callants and a lassie, the last the best of the party, whilst possessing all the activity of the boys, she "gave tongue" much more freely. *Missel Thrush.*—The old and generally received opinion that seeds are distributed by means of birds is disputed—the author upon dissection never, excepting upon two occasions, having found undigested grains in the intestines of birds, and which he conjectures may have been occasioned through disease. "The gizzard of the thrush is sufficiently powerful to grind into paste the seeds of any fruit which it may eat." Hardish work, one would think, when the fruit happens to be Cherries, Geans, and Haws. Why object to the bird method of distributing seeds? though a less direct, it is an equally natural mode. The Elm, Ash, Birch, Alder, Plane, the Thistle, and Dandelion, are furnished with wings to their seeds, by which they are carried to soils and situations fitted for them. The seeds of the Cherry, Gean, and Haw are conveyed to situations fitted for them by the wings of the bird which eats their fruit, but cannot grind to paste the hard stones which protect the seeds, and thus pass through undigested. One fact, is worth a bushel of arguments, from analogy; I send you two. Packet No. 1 contains the droppings of a black-cock, in which you will find *in situ*, as a geologist would say, sundry seeds of the Haw; No. 2 contains the droppings of a thrush, blackbird, or fieldfare (I cannot say which, as all three sorts were feeding upon the Haws of the tall hedge, at the bottom of which I picked up these). The droppings of the thrush, being less consistent, does not make so satisfactory a specimen as the former. The superior polish upon the stones of No. 1 proves, as might be expected, the gastric juice of the grouse to be much more powerful than that of the thrush. *Rooks*, p. 541, are acquitted of digging "sets" out of Potato drills; and the failure of the crop attributed by the author to "the stupidity of the farmers," who will cut the seed instead of planting the Potato whole! I have 50 times seen the rooks carrying off the Potatoes in their bills, both at planting time and when the sets were beginning to braird. From the time the young Potatoes are of the size of a pigeon's egg until the crop is taken up, I employ a crow-herd every season. Upon one occasion, three years since, when that functionary happened to be from his post for part of a forenoon, the rooks observed his absence, and so well plied their time that, next morning, besides what had been eaten and carried away, 5 bushels of Potatoes were gathered from the drills, which had been dug out by the gentlemen in black! *J. L.* [The specimens sent perfectly bear out what is said of them above.]

Plans of Drains.—Permit me to call your attention to the necessity of advocating in the columns of the *Agricultural Gazette*, "the great utility of preserving in all cases plans of land drainage," recording thereby the exact position of the drains, in order that any defects in the work, which frequently occur, may be easily and cheaply rectified. I am convinced, however, that this has seldom been adopted, and it is generally impossible after a very few years to gain any correct information as to the direction of the drains, and frequently the outlets are choked up and cannot be discovered, thereby causing the drainage to be of little or no effect. *John Johnson.*

Societies.

ROYAL AGRICULTURAL SOCIETY.

WEEKLY COUNCIL, *March* 8.—Mr. PUSEY, President, in the chair.

OIL-CAKE.—Mr. Hudson, of Castleacre, transmitted to the Council the following communication, dated the 6th instant:—

I regret very much that I cannot attend the Council Meeting next Wednesday, in consequence of a business engagement, as I feel greatly interested in the discussion which I understand is to take place that day upon the subject of the adulteration of Linseed-oil cakes by the English crushers. Having myself an oil mill, and having made as much as 100 tons of cake in a season for my own use, I know something of cake making; and I beg to differ with those gentlemen who stated, at the Council Meeting of the 8th of February, that the English cake was more adulterated than the foreign. As far as my experience goes, the contrary is the fact. I purchase my Linseed of Messrs. Webber and Hedge, of Lowestoft, who have a very extensive oil-mill there, with most beautiful machinery for cleaning the Linseed, and taking out almost every seed as well as dirt from it. This I cannot do in my small mill, not having the machinery for that purpose; therefore I prefer purchasing my Linseed of them, because I get it perfectly clean and free from wild Mustard and other bad seeds. I also purchase a considerable quantity of Linseed cakes of them, knowing their cake to be pure, and free from noxious seeds; whereas, a great deal of the foreign cake is foul, and of very inferior quality.

Professor Simonds laid before the Council a variety of specimens furnished to him by Messrs. Webber and Hedge, of oil-cake manufactured by them, as well as samples of the seed from which the oil was expressed, and of the oil itself.—Mr. Capel Cure transmitted a specimen of oil-cake of very heterogeneous appearance, purchased by him as Ground-nut cake.—A discussion then ensued, in which the President, Mr. Fisher Hobbs, Mr. Woodward, Mr. Raymond Barker, Col. Hall, Prof. Simonds, Mr. Cuthbert Johnson, and Mr. Wrench took part, on the excellence of English oil-cake of high price, but of the inferiority of that of lower price, and the increasing adulterations taking place in these articles; on the evil arising from the practice of giving names to oil-cakes, which their composition and quality did not justify; on the competition among oil-pressers, leading to the employment of inferior seeds for crushing; on the pureness of the Linseed kept in France and America, for the expression of Linseed-oil, and the inferiority of seeds and husk-refuse sent over to this country for purchase by oil-cake makers; on the numerous instances that occurred of the death of animals feeding on these deleterious compounds (though termed "Linseed-cake" and "Rape-cake" in the market where purchased); on the detection of these heterogeneous ingredients by means of microscopical investigation; on the President's continued successful use of Rape-cake (of pure quality) for sheep.

FOREIGN BARLEY.—Mr. Barnet, of Stratton Park, transmitted specimens of a foreign Barley, grown on his estate in Bedfordshire, along with the following memorandum:—

Barley grown by Mr. Winters, Stratton Farm, Biggleswade, picked from a field sown with foreign Barley; yield greater than English Barley; but its best quality is that it decidedly is of superior weight and quality on clay land compared with different sorts of Barley that have been tried on the same land. Of course on real Barley land the quality is the best. Only a few ears were found in a field of many acres first sown with the foreign Barley, strong in the straw, and does not fall, requires to be cut before it is dead ripe; has been malted, and proves of very good quality; not known where the foreign Barley came from.

Adjourned to March 15th.

Poultry.

Ptarmigan Fowls.—As I have of late both seen and heard a great deal about the Ptarmigan fowls, I shall be exceedingly glad if any of their admirers will now come forward and inform me what are the chief merits of this breed. I confess that I have yet to learn that it is so great an acquisition to our poultry yard as many state it to be, in which opinion I am confirmed by observing how small a share of notice it has obtained at several of our exhibitions; and before anything is said relative to its excelling (as some have been bold enough to assert), I think we have yet to learn why it can even be placed on terms of equality with by far the major part of our different breeds. Is it so good a nurse as the Cochin China? Does it present so noble a breast as the Dorking? Will its plumage suit the smoke of a town as well as that of the Spanish? Is its carriage as noble as that of the game cock? or is it so good a layer or so pretty a bird as can be found amongst either of the varieties of Hamburgh or Poland fowls? When it has been proved that it can equal any one of the above-mentioned varieties, then, and not until then, is it entitled to be considered an acquisition. I know many of the readers of "Poultry" in your Paper will be equally glad to learn whence these birds were first derived, and to hear it proved that they are a distinct species; as at present many entertain the idea that they are merely a degenerate variety of Polands. *Proof Seeker.*

POULTRY: *An Amateur Poultry Fancier.* If the nests be kept fresh and clean, we cannot imagine why the eggs are in the state you describe.

Miscellaneous.

Improved Machinery for Raising and Stacking Straw, Hay, Corn, and other Agricultural Produce. By J. Hayes, of Elton, Huntingdon. Patent granted June 3, 1853. (No. 1369).—The inventor describes and claims apparatus composed of a travelling endless strap, which carries a series of plates placed at right angles to its surface, and which travels over suitable rollers, fixed in a light frame, which is capable of being elevated as the height of the stack increases. The strap is driven by a handle or handles, or in any other suitable manner. When the apparatus is in use, the hay or other substance is placed on each plate as it passes upwards, and being carried up by the plate to the top of the frame, is thrown upon the stack, as the strap carrying the blade passes round the upper roller, in order to descend down the back of the frame. *Mechanics' Magazine.*

Calendar of Operations.

MARCH.

BORDER OF THE FENS, *March* 7.—Last year we were surrounded by all the obstacles of winter, no spring operations in progress; hose who had delayed their Wheat seeding, unable to get upon he land; Beans, Oats, Barley, and Potatoes, alike suspended, and

nothing done, with rare exceptions, but hedging and manure carting. What a contrast to the present season, for nearly two months we have now had uninterrupted fine weather, with frosts enough to mellow a brick yard, and with drying winds and sunny days superior for fallowing land to any ordinary summer; field after field has been completed, and those who have taken care not to sow their seed until the bed is in a proper state to receive it, may look forward with confidence to a successful issue: but we have noticed some persons who have been too eager, sowing Oats the first week in February, not because their land worked well, or because it was clean, but because the weather was fine. We foresee in such cases much additional trouble provided, when the mild growing showers of spring come, from the rivalry of weeds. Here we are in the first week of March hardly knowing how to distribute a full complement of horses and men, so as to take the utmost advantage of such wondrous facilities as the late glorious sunshine has afforded for ameliorating the heavy soils, cleaning the foul, and getting in Oats and Barley unusually early, and all the while, as far as we can ascertain, the Wheat plant accustoming itself to cold nights, assuming a strong and healthy aspect, promising a vigorous youth, which we hope may end in an early and fruitful maturity. A few pieces of Wheat have suffered in low situations, or where shaded by trees, or exposed to a northern aspect, from the great length of time the snow lay on the ground, as well as by the slow disappearance of it from places not accessible to sun or southerly winds, but the Wheat plant generally is strong and healthy. Next to the preparation of land the lambing season takes a prominent place, and, as far as we can ascertain, also proceeds favourably; the fall of lambs among the Lincolns and Leicesters commences about the 1st of March, and has hitherto been remarkably good, plenty of couples, and few fatalities. Turnips are getting short for the lamb hogs, which, however, appear to be doing well. Store beasts are somewhat lower in price, as well owing to the scarcity of hay as to the remarkably high price of good Linseed-cake. If our differences with Russia are likely to continue, some of our fellow-labourers should sow Linseed, or a premium be offered for a wholesome substitute for cake; as unless Linseed and Linseed-cake should be obtainable in tolerable quantities at some price, farewell to the lamentations of political economists as to the unwieldiness of bullocks; fat will be at a premium, and those who make fat will indeed make it to their own cost. Invention seems to have spread among agricultural commodities, not only in efforts to supersede manual labour and old machinery, but to run a race with guano till we are likely to be inundated with nitrates and phosphates, and combinations of lime and ammonia, with a long tail of chemical cognomens that attract the eye and tax the credulity of the wondering "experimentalist." In the meantime, the value of land rises and wages advance, so that it behoves the careful husbandman to look well to the necessities of his situation before he ventures too far into the specious schemes of such a crowd of ingenious projectors, land doctors, and soil distributors. *J. W., Peterborough.*

South Hants, *March* 3.—Farmers have been making vast strides in out-door work—much land has been run back which the present frosts will benefit. Peas and Beans have been sown in large quantities, but we object to the large breadths sown, unless the land be clean. The last state of the land after this crop is miserably dirty; besides, slugs are very prevalent in the land after leguminous crops, and the consequence is, there is but half a crop of Wheat: this remark does not apply to superiorly managed as well as manured farms. The Bean crops have been ploughed in and drilled; the former plan the best, even better than the dibble. Sheep have improved much during the late dry weather; and Turnips are disappearing fast, and yet there is a hard time coming. The Wheats are much improved, but the later sown do not resist the late frosts so well. Much of the Wheat plant has been rolled; the land is actually dusty on the surface. *R. T.*

West Sussex, *March* 6.—We have now for a long time had the weather the very thing that we could have desired, and all our care has been to make the most of it. For a great part of February we have had the dust flying behind the harrows. The land—even the most stubborn—has been well pulverised upon the top by the winter frosts; but yet when we plough across that which looks so well upon top, we find it is still very raw below; and if it were possible to get all the land intended for Turnips turned up soon, it would be much the better for it. For if it is not turned up to get a little sun it will be far from healthy, as the bad effects of the past year's heavy rains have by no means been yet rectified. Wheat does not at present appear so vigorous as we might have expected from its previous appearance; but we may account for this by the cold and frosty nights we have had, and when we have it warmer we shall soon find an agreeable change. Grass begins to look a little fresh, but from the causes above described is not far advanced. Our crops of spring Beans, Peas, and Oats are all in, and have required far less labour than we can generally count on at this time of the year. There has been a little Barley sown, but there is yet some extent of Turnips to cut off before it can be finished. The ewes and lambs have generally done well and are going over the Turnips without working them, as is the case in a wet season. But the Turnips which have been but a poor crop will be done sooner than usual, and may throw some of them on the market sooner than is convenient, while those who keep longest are likely to get best paid. Wheat, Clovers, &c., are now claiming our attention, especially as the land was previously so wet, it is more likely to crack with rapid drought; but if the dry surface is well pressed down, it will prevent the too sudden action of the sun, and thus let it dry gradually. *G. S.*

Notices to Correspondents.

Barley for Pigs: *Woodside.* One of the best plans is to strew the meal over steamed roots, and mash and knead the whole up together. For cattle, it may be strewed over chaff on which plenty of hot and salt Linseed soup has been previously thrown.

Irish Moss: *J B H.* Can any of our correspondents say, from experience, what quantity of Irish Moss may be given "a horse rather touched in the wind, and if it should be mixed with Linseed or what?"

Oats: *E Townend.* It is not necessary to kiln dry them before crushing. A good corn-bruiser will sufficiently reduce them, although they be not perfectly dry.

Stoppage of Drains: *J C C.* Will our correspondent "A.," of February 27, say whether there is a perennial run of water through the drains which he found stopped by rootlets in Grass land, or whether the drains only run after rain falls?

Slugs: *R R.* If you can apply hot slaked lime on a dewy evening when the slugs are out, it may be efficacious. Sow it with a tin scoop, out of a seed "skep;" at least 10 bushels per acre.

Sulphate of Ammonia: *X Y.* We have applied it both to Wheat and Grass with good effect, using it at the rate of 1 cwt. per acre in wet weather in April, during the season of most vigorous growth. Dr. Newington has a hand manure-distributor adapted especially for powdered manures. Garrett's Blyth's broadcast manure-distributor is the best of its class. You must not sow seed and guano at the same time; the former would be injured, if not destroyed, by contact with the latter.

Top-dressing: *J B F.* In the absence of guano, mix 1 cwt. of nitrate of soda, 1 cwt. of superphosphate of lime, and 2 cwt. of common salt together, for application per acre, broadcast in wet weather. The same for Barley.

Turnips: *R R.* If the weather suits, you can get Turnips after Rape in one year—the former being sown in August, after the latter, sown now, has been eaten off. But unless the weather enables you to reduce the hard surface of the folded Rape soil, you are not likely to get much of a Turnip crop after it so late in the season.—Trifolium incarnatum may be sown now. It should have been sown in autumn; and the present loose and dry state of the soil is against it.

READ'S GARDEN ENGINES, SYRINGES, &c.

WHEN an article of real utility attracts public attention, Imitators start into the field to snatch from the inventor the just reward of his labours. It has now become a daily practice of exhibiting in the windows of ironmongers and others, Syringes of the very commonest description, with the words "READ'S PATENT," as an inducement to purchasers. This, as an eminent writer on Horticulture has recently remarked on the subject, is indeed "living upon another man's fame."

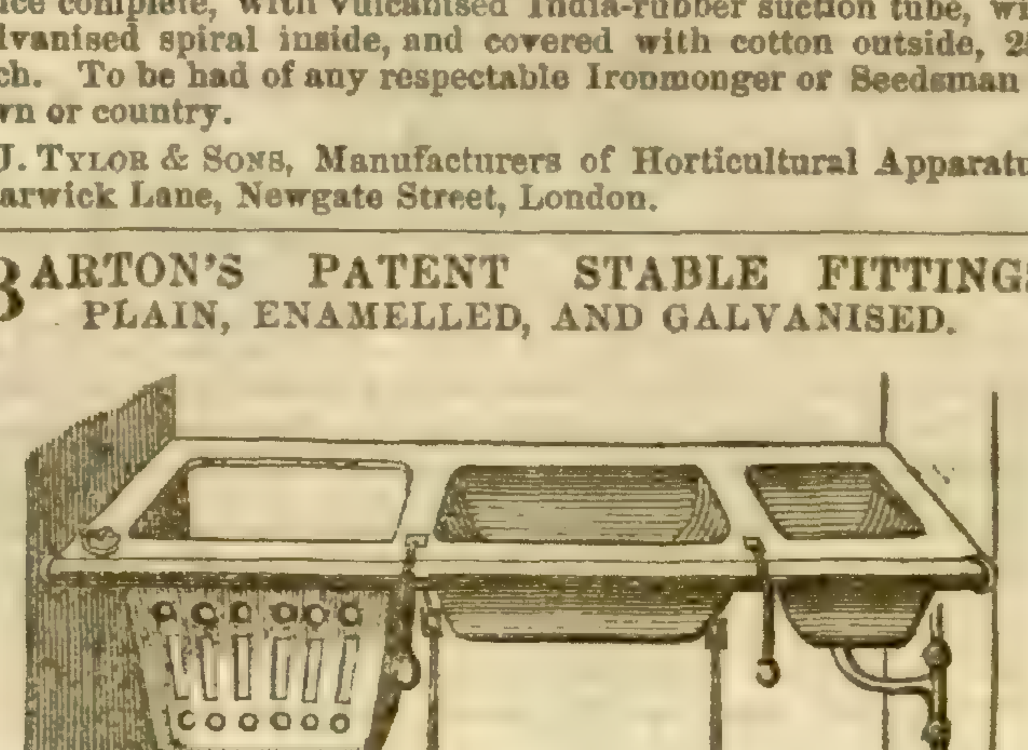
Read's Instruments have the Royal Arms, with the Address—35, REGENT CIRCUS, LONDON.

*** A liberal discount allowed to Nurserymen, Seedsmen, &c., &c.—Descriptions sent Post Free.

J. TYLOR and SON'S REGISTERED GARDEN SYRINGE.—By a simple arrangement this Syringe is rendered more effective than any portable Conservatory or Garden Pump ever offered to the public. It is equally adapted for Garden or Conservatory use, and is capable of discharging twice as much water in a given time as any other Syringe now in use. The arrangement consists in attaching a small flexible suction tube to the barrel of the Syringe, through which it is filled with water at every discharge of the previous contents. By this means the Syringe is always charged, and the pull-up stroke of the piston rendered perfectly easy, it having, indeed, no work to do, the barrel being previously full of water. Being thus made self-supplying, a great saving of labour is effected; and the necessity of stooping to fill the Syringe at every discharge being done away with, the direction of the water can be maintained for any length of time. It is perfectly cleanly in its action, as it is not possible for any water to get on the outside of the barrel, which is a well-known inconvenience attendant on the use of every other Syringe. Its construction is perfectly simple, and cannot get out of order; the ground-in ball valves and fittings used for filling all other patent Syringes being entirely superseded. Price complete, with vulcanised India-rubber suction tube, with galvanised spiral inside, and covered with cotton outside, 25s. each. To be had of any respectable Ironmonger or Seedsman in town or country.

J. Tylor & Sons, Manufacturers of Horticultural Apparatus, Warwick Lane, Newgate Street, London.

BARTON'S PATENT STABLE FITTINGS, PLAIN, ENAMELLED, AND GALVANISED.



These fittings will be found to possess improvements in safety, economy, cleanliness, and convenience, and are highly recommended for their compactness and great durability. Stable Furniture of every description—Iron Gates, Railing, Strained, Wire Fencing, Hurdles, Sheep, Poultry, and Game Wire Netting, Registered Poultry Fountains, Feeders, &c.—James Barton, Ironmonger, &c., Warehouse and Manufactory, 370, Oxford Street, a few doors east of the Pantheon.

STEPHENSON and PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

THE IMPROVED LAWN MOWING MACHINE,
MANUFACTURED BY
J. and H. FERRABEE, Phœnix Iron Works, near Stroud, Gloucestershire.

The well-known BUDDING'S PATENT LAWN MOWING MACHINES were originally introduced by J. & H. Ferrabee, who have from time to time materially improved their construction, and can refer to a sale of between 4000 and 5000 of them as the best proof of their utility and the general satisfaction which they have given.

The Machines offered this year by J. & H. Ferrabee are superior to any yet produced, being perfectly adapted for cutting the Grass on Lawns and Verges, and between flower beds; while their strength and durability have been increased and their management simplified. Any person can use them effectually without the least practice. They can be adjusted to cut various lengths of Grass, and will produce a more even and uniform surface than the most skilful mower. The Grass is cut best when dry, so that a machine can be employed at the most convenient time to the workman, and more than double the work may be done with the same manual labour that is requisite with a scythe.

Sizes and Prices.

			£	s.	d.
Hand Machine, for One Man, cutting	16 inches wide		5	15	0
Ditto for Two Men,	„	22 ditto ...	6	10	0
Pony Machine,	„	28 ditto ...	10	0	0
Horse ditto	„	36 ditto ...	16	0	0

The Horse Machine will cut the longest and coarsest Grass usually met with on Lawns and Pleasure Grounds.

London Agents:—Messrs. Boulnois & Son, Baker Street Bazaar, Portman Square.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement, J. B. White & Brothers, Millbank Street, Westminster.

MORNING FROSTS.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard run, of E. T. Archer, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey. (Removing in May next to 112, Regent Street, London.)

GREAT SAVING OF TIME AND MONEY.

R. RESTELL'S PATENT ECONOMICAL GAS APPARATUS for Forcing Houses, Greenhouses, Conservatories, Pits, Shops, Counting Houses, Warehouses, Drying Rooms, &c. &c., possessing all the advantages of Hot Water at half the expense of fitting, and most trifling cost for Gas, far surpassing any ordinary Gas Stove, requiring no furnace, and allowing of no fumes or evaporation in the Building, or possibility of accidents from negligence or carelessness. It has been tested through the late severe weather, on a variety of Plants, and found most satisfactory. It is very quickly fitted up and requires no night attention.—Apply to the Inventor and Patentee, R. Restell, 35, High Street, Croydon, Surrey.

Persons wishing to have Houses fitted will please to send the height and dimensions.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

FOREIGN GLASS, 16 ounces to the foot, of good quality, in boxes of 100 feet each, suitable for Horticultural purposes. Boxes included.

12 ins. by 10 ins.	15s. per box.	18 ins. by 14 ins.	16s. per box.	24 ins. by 18 ins.	17s. per box.
14 ins. „ 10 ins.		19 ins. „ 15 ins.		23 ins. „ 19 ins.	
15 ins. „ 11 ins.		18 ins. „ 16 ins.		24 ins. „ 20 ins.	
14 ins. „ 12 ins.		20 ins. „ 16 ins.		25 ins. „ 21 ins.	
16 ins. „ 12 ins.		21 ins. „ 17 ins.		26 ins. „ 22 ins.	
16 ins. „ 13 ins.		20 ins. „ 18 ins.		27 ins. „ 22 ins.	
17 ins. „ 14 ins.		22 ins. „ 18 ins.			

Also other descriptions of Glass at proportionate prices.
White Lead, Oils, Turps, Colours, &c.
G. FARMILOE & SON, 118, St. John Street, West Smithfield.

GLASS FOR CONSERVATORIES, GREENHOUSES, DWELLINGS, ETC.

ESTABLISHED MORE THAN ONE HUNDRED YEARS.

THOMAS MILLINGTON requests attention to his present prices of SHEET GLASS in 100 feet boxes.

Squares 6 by 4 and 6¼ by 4½ / „ 7 by 5 and 7½ by 5½ / „ 8 by 6 and 8½ by 6½	... ...	13 6
„ 9 by 7 and 9½ by 7½ / „ 10 by 8 to 12½ by 9½	... ...	16 3
„ 12 by 10 to 24 by 14 ...	... ...	19 0

Orchard House Squares on Mr. Rivers's approved plan, to whom I have sold some thousands of feet:—20 inches by 12, 20 by 13, 20 by 14, 20 by 15, 20½ by 12½, 20½ by 13½, 20½ by 14½, at 19*s.* per 100 feet.

200 feet cases at 42*s.*, and 300 feet case 63*s.*, in large sheets.

Boxes charged 1*s.* extra per 100 feet, and the same allowed if returned free of all charge.

HARTLEY'S PATENT ROUGH PLATE GLASS, Fern Shades, Striking Glasses, Milk-pans, Bee Glasses, Cucumber Tubes, Sheet and Rough Plate Glass Tiles, Wasp Traps; Plate, Patent Plate, Crown and Sheet Window Glass, in every thickness and quality, and Ornamental Glass, plain and coloured; pure white Shades for Ornaments, Crystal Glass for Pictures.

Warehouse, 87, Bishopsgate Street Without—same side as Eastern Counties Railway.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

JAMES PHILLIPS AND Co. have the pleasure to hand their present prices of Glass for Cash:—

	SHEET SQUARES. In Boxes of 100 feet. £ s. d.		CROWN SQUARES In Boxes of 100 feet. s. d.
Under 6 by 4	0 12 6	...	8 6
6 by 4, and 6¼ by 4½	0 13 0	...	12 6
7 „ 5, — 7½ „ 5½ / 8 „ 6, — 8½ „ 6½	0 15 0	...	14 0
9 „ 7, — 10 „ 8, 12 by 9, 12 by 10, 14 by 10	1 0 0		

Larger Sizes, not exceeding 40 Inches long.
16 oz. from 3*d.* to 3½*d.* per square foot, according to size.
21 oz. „ 4½*d.* to 5*d.* „ „ „
26 oz. „ 6*d.* to 7½*d.* „ „ „

SHEET GLASS OF ENGLISH MANUFACTURE FOR ORCHARD HOUSES, THE SAME QUALITY AS WE SUPPLY TO Mr. RIVERS, and of various dimensions, always on hand.

London Agents for the Sale of HARTLEY'S PATENT ROUGH PLATE GLASS.

Glass Tiles, ¼ of an inch thick, packed in cases, containing 50, at 1*l.* 17*s.* 6*d.* per case. Packages 2*s.* each extra, but allowed for when returned.

Glass Milk Pans, 21*s.* per dozen; Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoys' Milk Syphons, Wasp Traps; Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the trade.

Horticultural Glass Warehouse, 116, Bishopsgate Street Without, London.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

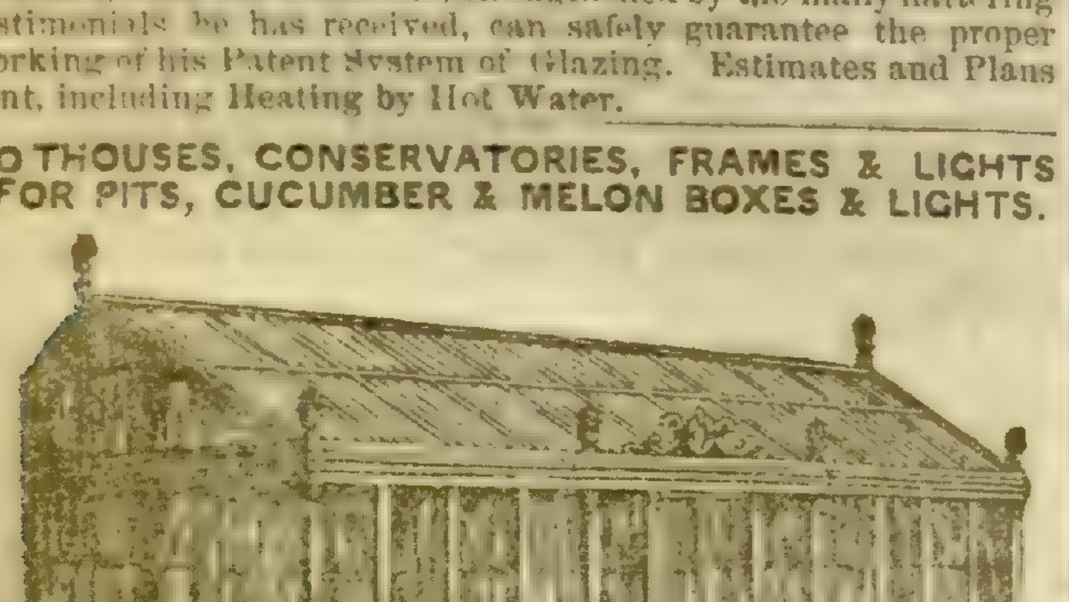
ALFRED KENT'S PATENT WEATHER-PROOF GLAZING WITHOUT PUTTY.—For Horticultural Buildings in Wood or Metal.

HORTICULTURAL BUILDING WORKS, CHICHESTER.

Illustrated Books describing inventions, containing prices and particulars relating to the different designs, sent on receipt of four postage stamps. Nurserymen and others appointed agents on application.

Horticultural Buildings upon this plan having been erected in many different parts of the country, and having stood the trial of all weathers, and more especially the severest of all, viz., frost, A. KENT, with full confidence, strengthened by the many flattering testimonials he has received, can safely guarantee the proper working of his Patent System of Glazing. Estimates and Plans sent, including Heating by Hot Water.

HOTHOUSES, CONSERVATORIES, FRAMES & LIGHTS FOR PITS, CUCUMBER & MELON BOXES & LIGHTS.

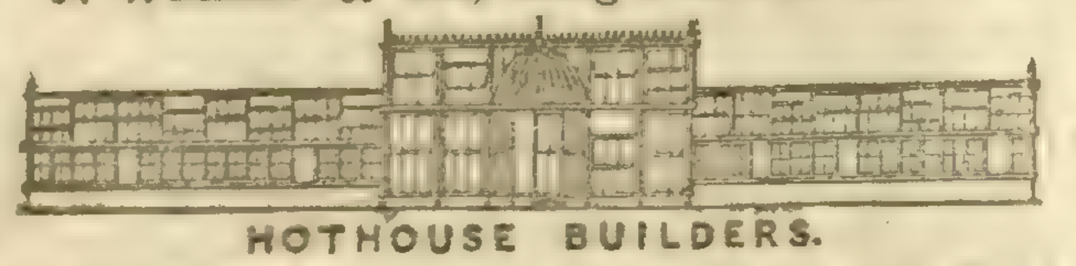


JAMES WATTS, HOTHOUSE BUILDER, 8, Claremont Place, Old Kent Road, London.

Green and Hothouses, 9, 10, 11, 12, 13, and 14 feet wide, any length, from 16 to 100 feet. Frames and Lights for Pits, 6 ft. 6 in. 7 ft., 7 ft. 6 in., 8 ft., and 8 ft. 6 in. wide, any length, from 12 to 100 feet. Upwards of 200 Cucumber and Melon Boxes and Lights, from 4 ft. by 3 to 10 ft. 6 in. by 5 ft. 6 in., kept ready glazed with stout sheet glass, painted four times, complete, ready for immediate use, all made of best material, packed and sent to all parts of the kingdom.—Reference may be had to the Nobility, Gentry, and the Trade, in most of the counties in England.

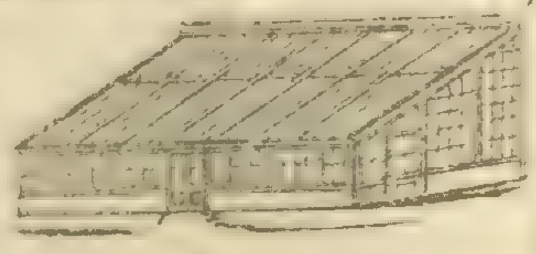
HORTICULTURE IN ALL ITS BRANCHES.

J. WEEKS & Co., King's Road, Chelsea,



HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.



The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

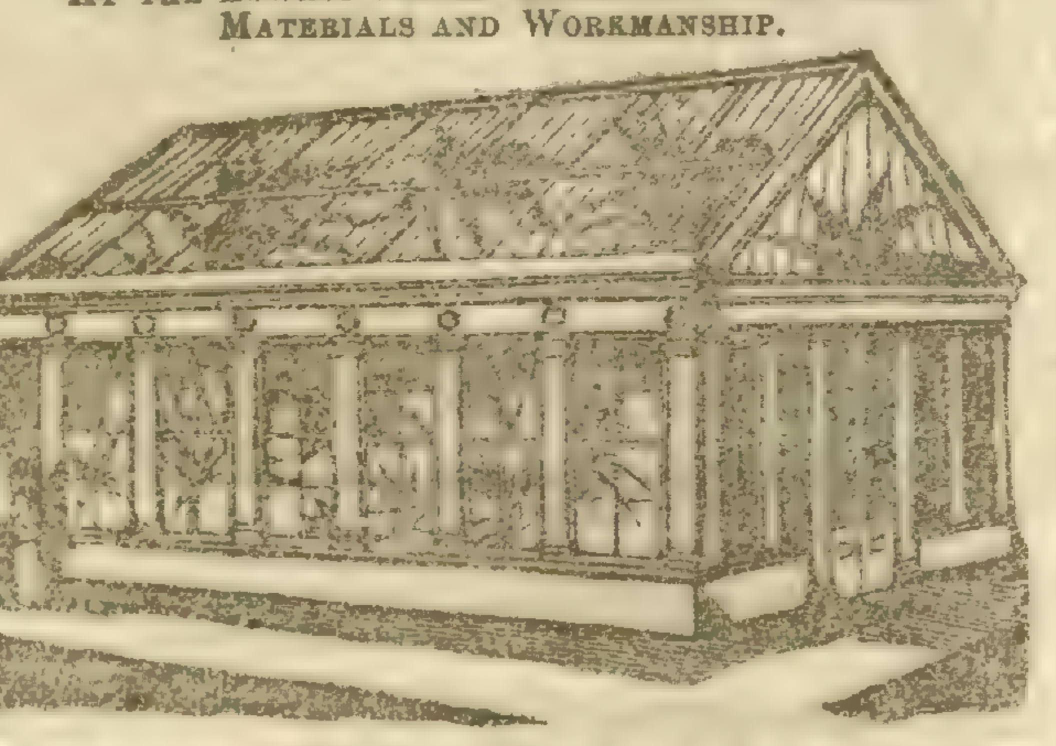
The splendid collections of Stove and Greenhouse Plant are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. WEEKS & Co., King's Road, Chelsea, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



GRAY AND ORMSON, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

GREEN AND HOTHOUSES made by machinery at J. LEWIS'S HORTICULTURAL WORKS, Stamford Hill, Middlesex. Warranted of best materials; being made by steam-power, they are put together in a superior manner; one trial will prove these Buildings to be the cheapest and best made in England. 1½ in. Greenhouse lights at 3*d.* per foot; 2 in. at 4½*d.* per foot. Lists of Prices by enclosing two postage stamps.

BY HER MAJESTY'S ROYAL LETTERS PATENT

E. DENCH, PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

PATENT HOTHOUSES and excellent Glass at 1*s.* 3*d.* per foot super., which are superior to all others for price with quality, and if known would supersede all others. (See Appendix, in "Book of the Garden," by Mr. M'Intosh.) A Range of Houses and Hot Water Apparatus, was erected by E. D. for E. L. Betts, Esq., Preston Hall, Kent. Mr. J. Frost, head gardener, has shown their efficiency by their produce at the Royal Botanic Gardens, Regent's Park, June 8, and Chiswick, June 11. The editor of the *Gardeners' Chronicle* says: "Beautiful examples of Black Hamburgh, large both in bunch and berry, and as black as Sloes, were furnished by Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall, Kent; these well deserved the first prize which was awarded them."—*Gardeners' Chronicle*, June 18th, 1853. The Grapes were considered the best shown at Regent's Park during the season, and the Houses are as superior for the growth of everything else in horticulture, which has been fully proved, and they have been extensively erected for the nobility and gentry in all parts of the kingdom.

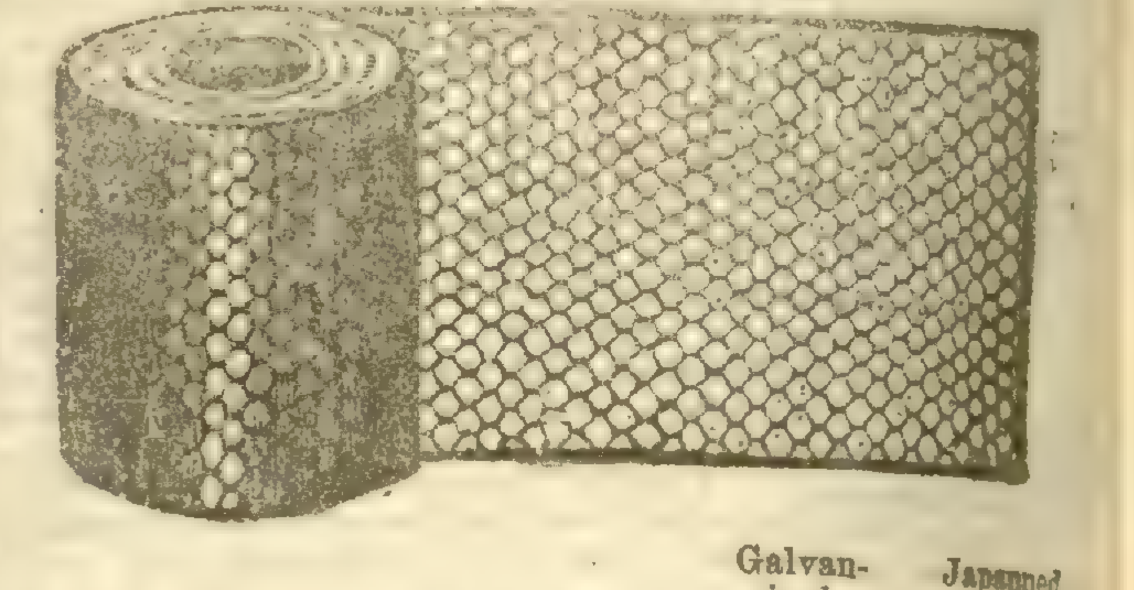
GLAZING WITHOUT PUTTY.—Iron and Glass alone. E. D. has Roofed the Public Baths and Washhouses, Endell Street, on this principle, and others are in hand. Patent Sashes for Peach Walls, Pits, &c., 8*d.* per foot super. Heating by Hot-water, on the most practical principles, and all the best materials used. Printed Price List sent on application.

THE COTTAGER'S STOVE.—An economical, compact, and portable COOKING APPARATUS, combining a good sized Oven and Hotplate; may be had with or without a boiler, and will cook sufficient for a dozen persons with the consumption of 1 lb. of coal or coke per hour. It requires no fixing, may be placed in any apartment, and is a great security against accidents from fire. It will burn Coal, Coke, or Wood. They are also specially adapted for Emigrants, and may be seen in operation daily, at the Manufacturers', D. & E. BAILEY, 272, High Holborn, London.—Price 50*s.*, and upwards.

NETTING AND BUNTING FOR FRUIT-TREES, RICK CLOTHS, MARQUEES, TENTS, &c., NEW OR SECOND-HAND, FOR SALE OR HIRE.—BENJAMIN EDGINGTON has prepared for the ensuing season an extensive assortment of Marquees, &c., for Horticultural Societies, Fêtes, Cricket Clubs, &c. Rick Cloths, with poles, pulleys, and lines complete. A great variety of Emigration Tents erected on the premises, 2, Duke Street, Southwark. Warehouse, 32, Charing Cross.—Address, by post, 2, Duke Street, Southwark, London.

TANNED NETTING, for the protection of Fruit Trees from frost, blight, and birds, and for the security of fresh sown seeds, either in Gardens or Fields, at 1*d.* per square yard; 200 yards, 14*s.*; 500 yards, 30*s.*; 1000 yards, 50*s.* Scrim Canvass, for Wall Fruit.—At EDGINGTON and Co.'s, 17, Smithfield Bars, City, and Old Kent Road, Southwark, where may be seen erected Emigrant Tents in great varieties, on their latest improved principles, and also at Brunswick Street, Poplar, near the East India Export Dock.

GALVANISED WIRE GAME NETTING.—7*d.* PER YARD, 2 FEET WIDE.



		Galvanised.	Japanned iron.
2-inch mesh, light, 24 inches wide	...	7*d.* per yd.	5*d.* per yd.
2-inch „ strong „	...	9 „	6½ „
2-inch „ extra strong „	...	12 „	9 „
1⅝-inch „ light „	...	8 „	6 „
1⅝-inch „ strong „	...	10 „	8 „
1⅝-inch „ extra strong „	...	14 „	11 „

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasantries, 3*d.* per square foot. Patterns forwarded post free.

Manufactured by BARNARD & BISHOP, Market Place, Norwich; and delivered free of expense in London, Peterborough, Hull, or Newcastle.

H. J. MORTON AND Co., Galvanised Iron Roofing Works, 2, Basinghall Buildings, Leeds.

PATENT WIRE STRAND FENCING FOR PARKS, &c.

This Fencing is the most neat, strong, and durable for Parks and Agricultural purposes in use. It cannot be bent or put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply as above.

IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

GIDNEY'S PRUSSIAN HOES.—Gardeners and Amateurs are informed that this useful Tool is now becoming a general favourite in the garden, and only needs a trial to be appreciated. Price 1*s.* 6*d.* handled. To be had of every Ironmonger and Seedsman. Manufactured only by GIDNEY & SON, East Dereham, Norfolk.

THE POTATO DISEASE.

FRESSON'S "ANTI-POTATO BLIGHT" is a certain remedy for the above. To insure a sound and healthy crop, dress your "SEED POTATOES," before sowing them, with the above.—Sent free (on receipt of 13 uncut postage stamps) with easy directions for use. Also, A Treatise on the Cause of the Potato Blight, with the means of eradicating it; by FRESSON, Agricultural Chemist, Stevenage, Herts.

TOBACCO PAPER! TOBACCO PAPER!

THE Cheapest and most effectual article for Smoking Greenhouses, and destroying the Fly on Plants, is Genuine Tobacco Paper, which JOSEPH BAKER, of 73, Fleet Street, can supply in large quantities, at 1*s.* per lb.; and if under 7 lbs. at 1*s.* 2*d.* per lb. Post-office Orders payable at the Strand Office.

JOSEPH BAKER, 73, Fleet Street, London (opposite the *Dispatch* newspaper).

THE VINE DISEASE effectually CURED by WATSON'S BLIGHT EXTERMINATOR and PREVENTIVE, for external application to Grape Vines, Fruit Trees, &c. Price 2*s.* 6*d.* per bottle. To be had of H. WATSON, 198, Shoreditch; and W. DENYER, 82, Gracechurch Street; and of all Florists and Seedsmen.

KNOW THYSELF!—Professor BLENKINSOP continues to receive from individuals of every rank the most flattering testimonials of his success in describing the CHARACTERS of Persons from their HANDWRITING, pointing out their mental and moral qualities, whether good or bad.—Address by letter, stating age, sex, and profession, inclosing 13 uncut postage stamps, to Dr. BLENKINSOP, 344, Strand, London.

READ THE FOLLOWING AND JUDGE FOR YOURSELVES.—"The astonishing effect PARR'S LIFE PILLS have had upon me is such that I can scarcely believe that I am the same man I was a few months ago; I felt then as though my life was nearly ended; now I feel hearty, and able to undertake any description of work and exertion, without feeling that excessive fatigue I did previous to taking them. It is really and truly new life to me: I have given this statement voluntarily, for the benefit of those of my fellow-creatures who know but little of OLD PARR'S WONDERFUL LIFE PILLS."—CHARLES FOSTER, Ground Keeper to Henry Shepperd, Esq., Lincoln.—PARR'S LIFE PILLS will prove highly efficacious in bilious complaints, scorbutic eruptions, affections of the nervous system, lowness of spirits, palpitation of the heart, rheumatic pains in the head, limbs, and other parts of the body, oppression of the chest, indigestion, redundancy of bile, dizziness of the eyes, violent pains in the temple and across the forehead, impaired memory, sick headache, tremulous action of the whole frame, restlessness and bad dreams, stuporific dozing, flatulency, costiveness, &c.—Sold by E. Edwards, 67, St. Paul's Churchyard; Barclay and Sons, Farringdon Street; Sutton and Co., Bow Churchyard; Hannay and Co., and Sanger, Oxford Street; and by all respectable Chemists and Medicine Vendors in town and country, in boxes, price 1*s.* 1½*d.*, 2*s.* 9*d.*, and in Family Packets, 11*s.* each.

MATHEMATICAL CLASSES at the ROYAL POLYTECHNIC INSTITUTION now in operation. At the close of each course a Voluntary Examination will take place for Pupils who may desire to obtain Certificates of Proficiency. Fee, One Guinea per Month. For particulars apply to the Secretary.

ROYAL PANOPTICON OF SCIENCE AND ART, Leicester Square. The Public are informed that this Institution will be opened on Saturday, March 18th. Hours of exhibition—Morning, 11 to 4; Evening, 7 to 10. Admission, 1*s.* Saturdays, 2*s.* 6*d.*

ENGRAVING ON WOOD AND METAL FOR FEMALE STUDENTS ONLY.—The instruction given in this Class by Mr. THOMPSON and Miss WATERHOUSE, consists in the practice of Drawing and Engraving on Wood; also Ornamental Engraving on Metal. No students are admissible until they have acquired the power of drawing from the round. The Class meets every Morning, except Saturday, from 10 to 4. Fee for the Session, commencing on the 1st of March and ending the 31st July, 4*l.*—Prospectuses and further information may be obtained at the Offices of the Department of Science and Art, Marlborough House.

INSTRUCTION IN ART to FEMALE STUDENTS afforded by the DEPARTMENT of SCIENCE and ART.

The Spring Session commenced on the 1st of March, and will terminate on the 31st of July.

The School for the Female Students passing through the General Course is at No. 37, Gower Street, Bedford Square. Superintendent, Mrs. M'Ian; Assistants, Miss Gann and Miss West.

Fees:—Advanced Classes, 2*l.* and 4*l.*; Elementary Class, 20*s.*; Evening Class, 10*s.*

A Class meets at Gore House, Kensington, on Mondays, Wednesdays, and Fridays.

TECHNICAL COURSES, carried on at Marlborough House.

Porcelain Painting, daily Teaching and Practice, with Studies from the Living Draped Model. Fee 4*l.* Superintendents, Mr. Simpson and Mr. Hudson.

Engraving on Wood and Metal for Ornamental Purposes, daily Teaching and Practice, and Lectures. Fee 2*l.* Superintendents, Mr. Thompson and Miss Waterhouse.

Lithographic, Chalk, Pen, and Colour, daily Teaching and Practice. Fee 4*l.* Superintendents, Mr. Brooks and Miss Channon.

Marlborough House, Pall Mall.

THE LATEST DISCOVERY IN ELECTRICITY.

ELECTRICITY IS VITALITY, and when communicated in mild but continuous currents by wearing MEINIG'S patent portable GALVANIC ELECTRO GENERATOR, for personal use. All Nervous, Functional, or Rheumatic Diseases (where no organic change has taken place) disappear with a safety, certainty, and speed, which is as marvellous as it is demonstrable beyond the possibility of a doubt; for the prospectus contains the names and addresses of more than 400 persons cured within the last 18 months by this extraordinary agent, which is moreover adopted in all the Hospitals in this country and in France, and by the first men of the day. The effects being instantaneously perceptible, may be tested freely and beforehand. Price from 5*s.* upwards, according to power. A full description of this extraordinary discovery may be had (by post for two stamps) of C. MEINIG, 103, Leadenhall Street, London; or from the Agents for Liverpool, A. Abraham & Co., Opticians, 20, Lord Street.

N.B. In this new Apparatus durability is secured, and all metallic or wet contact with the body entirely obviated.

It weighs two ounces, and can be worn with the greatest comfort. MEINIG'S ELECTRO GENERATOR, when worn on the Liver, has been found a never-failing preventive of Cholera, supplying the central and hepatic system with vital energy, to resist and counteract all miasmatic influences.

ELECTRICITY FOR NERVOUS, FUNCTIONAL, AND RHEUMATIC DISEASES.

MR. MEINIG'S new and greatly improved GALVANIC ELECTRO REGENERATOR, for supplying vito-functional energy to any organ in want of the same, and to the system generally, may now be had at the Establishment, 103, Leadenhall Street. All wet and metallic contact with the body is entirely obviated; it works with water alone, without acid, the action lasts more than 24 hours after each damping, and can be renewed and regulated without undressing, the Generator, enclosed in an envelope, being carried in the pocket or suspended from the neck. The extraordinary curative virtues of these mild currents of Electricity are now fully established by experience: the Prospectus (to be had gratis, or by post for two stamps) contains the names of more than 600 persons cured within the last 18 months, and this remedy is now adopted in nearly all the hospitals, and by the most eminent practitioners. Sold at 5*s.* upwards, according to power, at C. MEINIG'S, 103, Leadenhall Street. N.B.—It is impossible, when wearing a Generator, to be attacked by Cholera.

FARMS IN SURREY.

TO BE LET, about 200 acres of ARABLE and MEADOW LAND, with extensive rights of Pasture, in two Farms, with good premises, near the Gomshall Station, London, Reigate, and Reading Railway.—Apply to Mr. RAMSAY, Netley, Shere, Guildford, Surrey.

TO BE LET, a superior FARM, on the Bunny Estate, in the County of and 7 miles from Nottingham, and about the same distance from Loughborough, consisting of 387 acres, or thereabouts, with a handsome and commodious House, suitable in every respect as a residence for a gentleman's family, and comprising Entrance Hall, Breakfast Room, Dining Room, Drawing Room, five Bed Rooms, five ditto for servants, one Dressing Room, Housekeeper's Room, Butler's Pantry, Kitchen and Scullery, Larder and Dairy, Water-closet, &c., Cellars both ample and excellent. Also, a good Garden, Orchard, and agreeable Pleasure-grounds, all conveniently attached. The Farm Buildings, too, are both capacious and complete. The whole may be entered upon at Lady Day (first), and any further information, meanwhile, will be furnished upon application to Mr. JAMES ANDERSON, Farm-Bailiff, Bunny Park, near Nottingham.

COUNTY OF TIPPERARY.—BARONY OF LOWER ORMOND.

TO BE LET, from the 25th of March, with immediate possession, the following LANDS:—Ballylina, West Farm, containing 140 acres, Irish; Mathew's Farm (part of Ballylina, W.), 62 acres; Castleview Farm, ditto, 105 acres; Lismalin Farm, 190 acres; Ballynahinch Farm, 82 acres. These Farms are on the Estate of Lord Ashtown, and are situated about eight miles from Portumna, to which there is water-carriage; and the nearest station on the Parsonstown Railway, now in progress, will be at about six miles distance.

The Land is suited for tillage under the 4 or 5-course rotation. There are good slated houses on three of these Farms; and any other buildings, which may be reasonably required, will be erected by the landlord. Mr. JAMES EGAN, the Steward, at Sopwell Hall, near Shinrone, will show these Farms.

TO NURSERYMEN AND OTHERS.

TO BE LET, about 45 Acres of GARDEN and NURSERY GROUNDS, planted with Fruit Trees and Plants, with two Residences thereon, containing several rooms, with barn, stable, and other outbuildings, in Essex, about 45 miles from London and 24 miles from the Braintree Railway Station, and near to Witham, on the Eastern Counties Railway, at the very low rent of 100*l.* a year.—Apply to Mr. AMBROSE, Solicitor, 7, Manchester Square, London.

TO BE LET, at Lewisham, Kent, a Six-roomed HOUSE. Rent 21*l.* per annum. Enquire personally or by letter, of Mr. PALMER, 3, Exchequer Place, Lewisham.

TO NURSERYMEN, GARDENERS, AND OTHERS.

TO BE SOLD, a NURSERY and FLORIST BUSINESS in the Neighbourhood of London (with a good connexion of jobbing). To a person acquainted with Plant-growing, this would be a good opportunity to commence business. Terms moderate.—Apply (by letter only) to Mr. HENRY MITCHENER, Printer, 3, Edward Street, Hampstead Road, London.

A FORTUNE TO BE MADE IN A SHORT TIME.

TO BE SOLD, Three GREENHOUSES and PLANTS, or to be taken at a valuation or private contract, with sundry other useful things, Frames, a Pit, a quantity of Stocks, Tools, Mould, Manure: together with House and Fixtures, or without the house, at a low rental, with immediate possession if required.—For further particulars, apply at 6, Alpha Road, Regent's Park, London.

TO BE SOLD CHEAP, under very particular circumstances, an ELEGANT FOUNTAIN, and two pair of large GRECIAN VASES, on Rustic pedestals.—Apply at the Artificial Stone Works, Clayton Place, Kennington Oval.

AYLESBURY DUCKS' EGGS.

TO BE SOLD, EGGS warranted from the best selected White Ducks, good shape, bill and legs fine and a good colour, 6*s.* per dozen, including packing. Early application to secure them at the above price is necessary.—Apply to WILLIAM HENRY GREEN, Builder, Walton Street, Aylesbury.

COCHIN CHINA POULTRY, ETC.
EGGS FROM PRIZE BIRDS.

MR. JOHN FAIRLIE, of Cheveley Park, Newmarket, in reply to the very urgent applications from numerous amateurs, is now prepared to dispose of a limited number of Eggs, from his celebrated prize Cochins, Brahma Pootras, Scotch Bakies, Dorkings, &c., according to the dates of the orders received.

TO BE SOLD, EGGS and FOWLS of the following sorts, all warranted:—Brahma Pootra Eggs, Black Cochin Eggs, Buff and White Cochin Eggs, all first prize birds. Three Gold Bantams, 25*s.*; three Buff do., 25*s.*; two silk do., 15*s.*; two beautiful lop-eared Does, 10*s.* each, from prize stock. Fowls, Pigeons, and Rabbits sold and exchanged. Black Spanish Eggs and Birds for sale, beautifully white faced.—Apply to WM. WOODHOUSE, 15, Mansfield Street, Kingsland Road, London.

PURE BUFF COCHIN CHINA EGGS.

TO BE SOLD, a few EGGS of the above kind, at 10*s.* a sitting, carriage not included. More Eggs will be sent out as soon as a sitting of 13 is laid. All orders booked and executed in strict rotation.—Y. S. T., Post Office, Thirsk.

TO BE SOLD, BUFF COCHIN CHINA EGGS, from Birds that have taken prizes at the Derby, East Kent, Bristol, Taunton, and Yeovil Poultry Shows, at 1*l.* 1*s.* per dozen; also Partridge Cochin China Eggs, from Birds that have taken prizes at London Summer Meeting, Surrey Gardens' Show in August, Malvern, Yeovil, Honiton, and Torquay Poultry Shows, at 1*l.* 1*s.* per dozen.—Apply to JOHN R. RODBARD, Aldwick Court, Wrington, near Bristol.

LIGHT BUFF COCHIN CHINA FOWLS' EGGS. —An Amateur having a first-rate stock of Light Buff Cochin China Fowls from Prize Birds, and more eggs than he requires for his own use, is willing to part with a few sittings at a reasonable price—5*s.* 6*d.* per doz., box included.—Address "Chanticleer," Post-office, Farnham, Surrey.

BRAHMA POOTRA FOWLS.

TO BE SOLD, a few Sittings of EGGS of this breed (according to priority of application), from the prize and selected birds of a gentleman—Brahmas of whose breeding have, during the past year, taken prizes at the following important Poultry Shows: the Royal Agricultural, Great Metropolitan, Birmingham, Great Yarmouth, Doncaster, Winchester, Norwich, and Manchester.—W. C. G., Post-office, Sandbach, Cheshire.

POLAND FOWLS.—The extra stock of a Gentleman, whose birds took first prizes at the Birmingham, Baker Street, Surrey, and other Shows in the past year. White, Golden, and Silver Cockerels, 1*l.* 1*s.*; Pullets, 2*l.* 2*s.*; Eggs, 2*l.* per dozen. Yellow Polands, 4*l.* each; Eggs, 3*l.* 3*s.* per doz. White Spanish, 2*l.* 2*s.* per pair; Eggs, 18*s.* per doz. Black Spanish, 30*s.* per pair. Pure Buff Cochins, 15*s.* each. Jacobin Pigeons, 10*s.* per pair.

Apply by letter to G. V., Mr. Ridgway's, 169, Piccadilly.

COCHIN CHINA FOWLS.

MR. EASON, whose Birds have taken first Prizes at the Metropolitan, Reigate, Hitchin, Yarmouth, Bury St. Edmunds, and other Poultry Exhibitions, has a few pairs to dispose of from 21*s.* to 30*s.* per pair; also a few choice COCKERELS, weighing from 8 to 11 lbs., well feathered, short in the leg, and of a beautiful buff colour, from 1 to 2 guineas each; PULLETS, of the same class, 21*s.* each; EGGS, 12*s.* per dozen; from prize Birds, 21*s.*, including packing. The Birds may be seen any morning, except Sunday, before 11 A.M., at Montpellier House, South Lambeth, London.

MR. GILBERT, of Grays, Essex, having entered into an arrangement with THOMAS STURGEON, Esq., for the Purchase of the whole of his remaining Stock of COCHIN CHINA Fowls, bred by him in 1853, Gentlemen and Amateurs are informed the Birds are now on Sale. Eggs may be had from the above birds at 20*s.* per dozen.

Sales by Auction.

FANCY POULTRY—PERIODICAL SALE.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, 21st March, at 12 o'clock precisely, a very choice selection, including BRAHMA POOTRAS, COCHINS, &c., from the yards of J. Fletcher, Esq., Rev. J. Hutchinson, J. Nightingale, and others, many being 1st class birds. Also a few pure PTARMAGANS, bred by Dr. Burney, and other Fancy Stock.—Catalogues, by enclosing a stamped directed envelope to Mr. J. C. STEVENS, 38, King Street, Covent Garden.

MR. CYRUS CLARK'S CHOICE FANCY POULTRY.
EXTRA SALE.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, March 14, at 12 o'clock precisely, a selection from the yard of Mr. Cyrus Clark, of Street, Glastonbury; it includes COCHINS, chiefly light pure Sturgeon and Andrews. The Whites, from Mrs. Herbert's stock. Spanish, Silver Polands, and coloured Dorkings, many of which are prize birds at Dorchester, Yeovil, Bristol, Taunton, Torquay, Honiton, and the Surrey Zoological. —Catalogues, by enclosing a stamped directed envelope to Mr. J. C. STEVENS, 38, King Street, Covent Garden, London.

ROSE TREES.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King Street, Covent Garden, on WEDNESDAY, March 15, at 1 o'clock precisely, 1000 STANDARDS and DWARF STANDARDS, principally Perpetuals of the best sorts, all of which were removed last autumn.—May be viewed on the morning of sale, and catalogues had.

PLANTS, FRUIT TREES, BULBS, AND SEEDS.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King Street, Covent Garden, on FRIDAY, March 17, at 12 for 1 o'clock, an importation from France, of MISCELLANEOUS PLANTS, FRUIT TREES, BULBS, and SEEDS, including Magnolias, Orange Trees, Camellias, Rhododendrons, Azaleas, Kalmias, 300 Roses, &c., &c., all for absolute sale.—May be viewed the morning of sale, and catalogues had.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction, at the Mart, Bartholomew Lane, on FRIDAY, March 17, at 12 o'clock, about 200 choice DOUBLE CAMELLIAS, from 18 inches to 5 feet, comprising all the most approved kinds, well set with bloom buds; also a choice assortment of STANDARD and DWARF ROSES, consisting of Noisettes, Hybrids, Bourbons, Perpetuals, Chinas, &c. A fine collection of American Plants, choice Dahlias in dry roots, Pæonies, Fuchsias, and Verbenas.—May be viewed the morning of Sale. Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

FULHAM ROAD, CHELSEA.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, BUILDERS, & OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. D. Smith to submit to public competition by Auction, on the premises, Stewart's Grove Nursery, Fulham Road, Chelsea (late in the occupation of Mr. Westmacot), on MONDAY, March 20, without reserve, in consequence of the land being required for building purposes, 7 newly erected Greenhouses, several Pits and 2-Light Boxes, about 1300 feet 2, 3, and 4-inch Hot-water Pipe, 3 capital Saddle Boilers, and excellent Shop Front; useful Light Cart Horse, Iron Posts, Stages, &c. May be viewed prior to the sale; Catalogues had (6*d.* each, returnable to purchasers), of Mr. D. SMITH, 4, Upper Queen's Buildings, Brompton; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO MARKET GARDENERS AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will submit to public competition, by Auction, on the premises, Burnfield, Old Ford, Bow, on SATURDAY, March 18, 1854, at 11 o'clock, the whole of the Stock in Trade of a Market Gardener, consisting of 24 Lights of London White Cos Lettuce; 50 Lights of capital Cauliflower Plants; a quantity of Horse-radish, Celery, Parsnips, Rhubarb, Leeks; 19 rod of Sweet William, Thyme, Mint, Sage, Marjoram, Lavender, Southernwood; 2000 Moss Rose Stools and Layers, 30 three-light Boxes with Glazed Sashes, about 400 loads of capital rotten Dung, two Market Carts, Harness, Chaff Box and Bin, Barrows, Wooden Roller, Ladders, Grindstone, Tubs, Harrows, Baskets, and sundry utensils; together with the Home-saved Vegetable Seeds, viz., White Cos Lettuce, Cape Broccoli, Cauliflower, Borecole, Radish, &c.—May be viewed prior to the Sale: Catalogues had on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

BRIXTON, SURREY.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, BUILDERS & OTHERS.

MESSRS. PROTHEROE AND MORRIS are directed by Mr. E. DENYER, to sell by Auction, on the Premises, Loughborough Nursery, Loughborough Road, Brixton, on MONDAY, March 13, and following day, at 11 o'clock each day, in consequence of the lease expiring at Lady-day, the whole of the valuable NURSERY STOCK of Evergreens, Deciduous Shrubs, and Fruit Trees; also Greenhouse Plants, consisting of a fine collection of Roses, Camellias, several thousands of Bedding Plants, Intermediate Stocks, Cloves, &c.; together with five newly erected Greenhouses, several two and three-light Boxes, Hot-water Pipe, two Conical Boilers, a quantity of Bricks, Paving Tiles, excellent Tumbril and two Light Carts, six Nests of Seed Drawers, Shop Fixtures, Scales and Weights, Rotten Manure Mould, Garden Pots, and other sundry effects.—May be viewed prior to the sale: Catalogues had (6*d.* each, returnable to purchasers), on the Premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone.

IMPORTANT AND ABSOLUTE SALE OF MAGNIFICENT SPECIMEN PLANTS.

MESSRS. PROTHEROE AND MORRIS are instructed by J. M. Yeeles, Esq., of Bathford, near Bath, to submit to public competition by Auction, without reserve, on the premises, on WEDNESDAY, March 22d, at 11 o'clock, in consequence of his declining their cultivation, the whole of his unrivalled collection of SPECIMEN, ORCHID, STOVE, and GREENHOUSE PLANTS, many of which are not equalled in this country as splendid examples of superior culture, and just in condition for the coming season's exhibitions. They comprise Saccolabium, Dendrobium, Ixora, Gardenia, Franciscea, Allamanda, Echites, the best kinds of Ericas, Azaleas, Ixoras, Leschenaultias, Boronias, Pimeleas, Aphelexes, Eriostemons, and almost every kind of exotic plant worth culture for exhibition.—May be viewed two days prior to the Sale. Catalogues may be had 6*d.* each, returnable to purchasers, on the premises; the Castle and Ball, the Greyhound, of the principal Seedsmen in Bath; Messrs. Garraway and Mayes, Nurserymen, Bristol; of Mr. Glendinning, Chiswick Nursery, Turnham Green; the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

FIGURES, FOUNTAINS, VASES, ETC.

TO PRIVATE GENTLEMEN, BUILDERS, & OTHERS.

MR. PEAKE is directed to Sell by Auction, on the Premises, 74, Borough Road, Newington Causeway, on TUESDAY, March 21st, 1854, at 12 o'clock, without reserve, the Genuine Stock in Trade of the Artificial Stone Works, comprising a great and pleasing variety of Figures, Fountains, Vases, Ornaments, and other elaborate works of Art, suitable for embellishing Gardens and Pleasure Grounds, well worthy the attention of private Gentlemen and others. Also a variety of Curbing, Closet Pans, &c. Likewise the Lease, Goodwill, and Implements in Trade of the old established business which has been successfully carried on there for the last 15 years.

May be viewed prior to the Sale, and further information, with Catalogues, had on the Premises, and at Mr. PEAKE'S Offices, 44, Tooley Street, and 4, Fair Street, Southwark.

HUNTINGDON.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND OTHERS.
IMPORTANT SALE OF NURSERY STOCK.

G. M. FOX will Sell by Auction on TUESDAY, March 14, and following days, 10,000 FRUIT TREES (now growing in the George Lane Nursery, Huntingdon, being one of the Nursery Grounds occupied by Messrs. Wood & Ingram, which is obliged to be cleared immediately, the land being required for building purposes), consisting of choice sorts of Apples, Pears, Plums, Cherries, Peaches, Nectarines, and Apricots; 8000 choice GOOSEBERRIES and CURRANTS, 7000 English and Huntingdon ELMS, 2000 ROSES, and a large quantity of Forest and Ornamental Trees, Evergreens, and Flowering Shrubs. The Nursery Ground is within five minutes' walk of the Great Northern and Eastern Counties Railway Stations.—Catalogues, with full particulars, will be ready 10 days before the Sale, and may be had of Messrs. HURST & M'MULLEN, 6, Leadenhall Street; the Office of the Journal of Auctions, 29, Essex Street, Strand, London; the principal Inns in the neighbourhood, and of the Auctioneer, Huntingdon; or will be forwarded on the receipt of four postage stamps.

Messrs. Wood & Ingram's business will be conducted as usual, at their other Nursery Grounds in Huntingdon.

PAGE AND CO.'S

COMPOSITION FOR THE DESTRUCTION OF BLIGHT

UPON

Roses, Wall-fruit Trees, Cucumbers, Melons, Vines, and Stove and Greenhouse Plants.

Extra Strong, 4s. per gallon, sufficient to make four (Jars and Barrels extra).
In Bottles, 1s. 3d. and 2s. 6d. each. Directions for application forwarded.
10 Gallons and Upwards CARRIAGE FREE TO LONDON.

THE superiority of B. PAGE AND CO.'S BLIGHT COMPOSITION being established beyond question, it is scarcely necessary to mention that great improvements have been made in its manufacture during the last season, both in point of strength and clearness, and that it not only possesses the power of destroying every pest to which plant and fruit-growers are alike subject (without injuring the most delicate flowers or foliage), but promotes a vigorous growth. The accompanying testimonials are proof positive:—

From Andrew Toward, Esq., Royal Gardens, Osborne Place.

Dear Sir,—In reply to your letter of the 2d inst., I have great pleasure to add my testimony to the efficacy of your Composition for the destruction of Blight, which has been used here with great success on Rose trees much affected with Green-fly.—Nov. 5, 1852.

From W. Stride, Esq., Redbridge.

Knowing as you do my attachment to my garden, and the interest I feel in everything connected with both fruit and flowers, I am a little astonished at your never having sought my opinion of your new Composition for the destruction of the Aphis, and of the Tree Blight generally; especially when I sent to your store for a second supply. I am sure you will be pleased when I tell you I have found it completely effective, when mixed with an equal part of water, in destroying at a single application every kind of enemy which attacks the Peach, the Fly on the Rose, and better than all, so far as I am individually concerned, a black Fly or small shiny Beetle which appears on the tender shoots of young Cherries about Midsummer, and which on Espaliers I never could annihilate till last summer, when one application effectually removed the whole community and enabled the trees to make satisfactory progress to the end of the season. I feel assured it will prove a substitute for the expensive mixture with which gardeners generally dress the Peach-walls after spring pruning, but my communication on this point you must wait for till next year.—Nov. 5, 1852.

From the Rev. E. T. Richard, Farlington Rectory.

As the season is now drawing to a close, I can assert that the Blight Composition I had from you in the summer has been of the greatest benefit to my trees; it seems to have perfectly stopped the spread of a parasitic fungus which had infested a large Vine for six or seven years; the infested leaves, although marked by the fungus, have become perfectly healthy; in short, the Vine presents a very different appearance from that of last year at this season. I have some Plum trees which were greatly infested with Aphides, but the Composition has restored their luxuriance.—Oct. 11, 1852.

From J. Staples, Esq., Belmont House, Salisbury.

I have tried your Composition, and am very much pleased with the result, my fruit trees having quite recovered the excessive blight that affected them early in the season.—August 11, 1852.

From Mr. A. Dowling, Hollyhill, Gardener to the Right Honourable Lord Henry Cholmondeley, M.P.

Your Composition is most destructive to all Blight. My wall trees must have died had I not availed myself of it. I consider it applicable to all cases, as it is not the least injurious to the foliage of the most tender plants.—May 17, 1851.

From Mr. J. Dummer, Gardener to the Very Rev. The Dean of Winchester, Bishopstoke.

I have used your Composition upon Cucumbers, Melons, Roses, Pot Plants, and Wall Trees, with perfect success in every instance, and consider it the most safe, speedy, and effectual remedy ever introduced.—Oct. 22, 1852.

From Mr. Wilkins, Gardener to H. F. K. Holloway, Esq., Marchwood Lodge.

I highly approve of your Composition, as it answers admirably, saving my wall trees from an untimely death, and quite recovering my Roses, killing every insect it touches in an instant. I intend to have a quantity of it this season for all my plants.—May 20, 1851.

From Mr. W. Farthing, Gardener to the Right Honourable Lord Ashburton, The Grange Park.

I consider your Composition valuable for the destruction of Insects of all kinds.—Nov. 3, 1852.

From Mr. J. Allen, Gardener to the Right Hon. Sir Francis Thornhill Baring, Bart., Stratton Park.

No doubt you will recollect I had your Blight Composition late last spring. My Peaches and Nectarines were then sadly infected with blight, but after syringing them according to your directions, it quite disappeared, nor have they had a blighty leaf upon them since. I tried it on two large Orange trees which had the Green-fly very bad, and it destroyed it immediately, nor has it been seen on them since, and the trees are now in a healthy flourishing state. I shall continue to be a customer, as I believe it to be a never-failing remedy.—Oct. 12, 1852.

From Mr J. Thorn, Gardener to Sir Charles Taylor, Bart., Hollybrook.

I am satisfied of the efficacy of your Blight Composition.—Aug. 11, 1852.

From Mr. D. Forbes, Gardener to G. E. Eyres, Esq., Warrens.

I am happy to bear testimony to the great utility of your Blight Composition in the destruction of Brown Scale and Red Spider, in the hothouses and upon the open wall.—Oct. 6, 1852.

From Mr. W. Wilson, Nurseryman, Wimborne.

The gentlemen for whom I procured the Blight Composition have told me that it effectually killed the blight.—Aug. 9, 1852.

From Mr. F. Haslar, Gr. to the Rev. W. Fitzhugh, Bannister Lodge.

I beg to recommend your Composition for killing Insects and Blight on Wall Trees; I have used it on the Peach and Nectarine, and found it of great service, as my trees had the blight last spring, but recovered and made some excellent wood.—Nov. 2, 1852.

From Mr. W. Robbins, Gardener to W. Beach, Esq., Oakley Hall.

I have used your Composition with one-third water, and it killed Green-fly, and without water it destroyed Thrip.—Nov. 4. 1852.

From Mr. J. Menzies, Gardener to J. Groves, Esq., Ferne Park.

I highly approve of your Composition, which is most destructive to all sorts of Aphis. With one application I perfectly cleared my Cherry trees, and intend in future to avail myself of it.—Oct. 12, 1852.

From Mr. A. Hibbard, Gardener to T. Hill, Esq., Fir-grove.

Your Composition has completely killed the "Mealy Bug," which was very strong upon some imported Orchids, &c., without the least injuring flowers or leaves.—Feb. 10, 1853.

From Mr. Smith, Gardener to the late Mrs. Preston Hulton, Barnfield.

Your Composition has been tried by me, and I am glad it has proved so good for killing all insects, and making the trees healthy for bearing, which is a great point; it is excellent as well for Cucumbers.—Nov. 5, 1852.

From Mr. A. Menmuir, Gr. to Spencer Smith, Esq., Brooklands.

I have given your Blight Composition a trial, having had it applied to the Fruit Trees here (which were very much blighted), and I am happy to say with very good success, for although some of the trees are very old, they are very much improved by its application.—Nov. 8, 1852.

From Mr. J. E. Froud, Gardener to General Blunt, Barnfield.

After the first application of your valuable Composition to my Peach and Nectarine Trees, I found every insect dead, and in a week the trees were healthy and growing vigorously. I also tried it upon Pelargoniums and Cactus in blossom, covered with Green-fly, which were all killed instantly, and the blossoms remained as fresh as ever.—Oct. 19, 1852.

From Mr. Pullinger, Gardener to Mrs. Watson, Brookfield Lodge.

I have given your Composition a fair trial upon Roses, Fruit Trees, and Greenhouse Plants, and am much pleased with the results: my Fruit Trees are perfect pictures.—Oct. 21, 1852.

From Mr. W. Hocking, Gardener to J. J. Briscoe, Esq., Fox Hills.

I have great pleasure in bearing testimony to the efficacy of your Blight Composition; it has killed the blight in every instance, and the Wall Trees quickly regained a fine healthy foliage. For Roses and Greenhouse Plants it is equally efficacious, killing the blight without injuring the foliage.—Oct. 18, 1852.

From Mr. J. Bowen, Gr. to C. C. Codrington, Esq., Dean House.

My Wall-fruit Trees were dying from excessive Blight, but after two syringings with your Composition they quite recovered, and made some excellent wood. For my Roses also it did the same, or I should not have had a blossom open; it is both a cheap and an effectual remedy, which no gardener should be without, and it is equally adapted for pot plants.—Oct. 22, 1852.

From Mr. J. Ratty, Gardener to G. L Baker, Hartley Grange.

I have used your Blight Composition on Wall Trees, and find it an invaluable specific against Blight.—Nov. 14, 1852.

From Mr. G. Lush, Gardener to W. Betts, Esq., Bevois Mount.

My Peach Trees were attacked with Brown Scale, after the fruit was gathered, for which I applied your Composition, which perfectly destroyed it; I also tried it on some Stove Plants with the same effect.—Nov. 25, 1852.

From Mr. Thomas Bundey, Gardener to the Rev. F. Beadon, North Stoneham.

Your Composition is most destructive to all the insect tribe. With me it has proved itself very valuable, instantly removing all insects without the least injury to the plants.—Dec. 2, 1852.

From Major Munday, Hollybank.

Major Munday encloses Messrs. PAGE & Co. postage stamps in payment of a jar of Composition, which he has found highly efficacious.—May 26, 1853.

From Mr. E. Minnett, Gardener to General Gilbert, Tweed.

Your Composition has proved very effective upon Cucumbers, Melons, and Peaches. I consider its merits will bring it into general use.—Aug. 17, 1853.

From Mr. J. Taylor, late Gardener to Chas. Twynam, Esq., Portswood.

I am glad to bear testimony to the great utility of your Blight Composition for the destruction of Mealy Bug, Brown Scale, and Red Spider.—Aug. 19, 1853.

From Mr. Chas. Gosling, Gr. to W. Iremonger, Esq., Wherwell Priory.

I have found your Composition have great effect upon Red Spider, Green-fly, &c.; it also produces a luxuriant growth. For eight years I have suffered from blight, which could not be got rid of until this season, when one application of the Composition entirely destroyed it. For the future I hope to use it in all cases.—Aug. 21, 1853.

From Mr. H. Cull, Gardener to the Rev. H. Brine, Boldre.

I have this season made use of your Blight Composition, and found it effective in extirpating Green-fly from Cucumber Vines, without injury to the plants.—Sept. 13, 1853.

From Mr. G. Mitchell, Gardener to W. W. Whitmore, Esq., Dudmaston Hall.

I am very happy to inform you that your Composition has turned out quite satisfactory. I tried it on the Peach trees in the houses, and wherever it touched, every leaf became clean and healthy. You will please send me two gallons in the spring.—Sept. 17, 1853.

From Mr. F. Moore, Gardener to the Right Hon. Earl Grey, Hawick Hall.

After giving your Blight Composition a fair and impartial trial, I am glad to bear testimony to its efficacy in destroying those worst of all pests, the Thrip and Red Spider, two parts water to one composition; but the Green-fly quickly disappears if double that quantity of water be used. I have not found it to injure the most delicate plants.—Sept. 17, 1853.

From Mr. W. White, Gr. to W. Hans Sloane Stanley, Esq., Paultons.

I consider your Composition valuable for the destruction of insects of all kinds.—Sept. 20, 1853.

From Mr. E. Spivey, Gr. to W. Hobloun, Esq., Hallingbury Gardens.

I was much pleased with your Blight Composition; I applied it to my Cucumbers for the Thrip, and glad I am to say that it drove them completely out of the house, and the plants did well afterwards.—Sept. 24, 1853.

From Mr. G. Gaiger, Gardener to J. Corrie, Esq., Southington House.

The Blight Composition effectually destroyed the Bug. Should my Vines be again attacked, I should use your Composition above anything.—Sept. 27, 1853.

From Mr. James Moore, Gardener to Miss Garnier, Wickham.

I found your Composition answer perfectly well for the destruction of Green-fly upon Roses, &c.; better than the strongest tobacco-water, and much more economical. I shall thank you to send me another supply in the spring.—Oct. 8, 1853.

From Mr. B. Smith, Gr. to R. Gosling, Esq., Borbys Park, Chertsey.

I have given your Composition a fair trial, and am perfectly satisfied of its efficacy.—Oct. 12, 1853.

From Mr. Lucas, Gr. to the Right Hon. Lord Palmerston, Broadlands.

I have used your Composition according to your directions, and consider it valuable for the destruction of Insects, &c. I am confident it will be much used when gardeners give it a trial.—Jan. 5, 1854.

From Mr. Atkins, Gardener to John Jenkyns, Esq., Borley Hill.

I used your Composition on young Peach and Nectarine trees, and found it of great service.—Jan. 5, 1854.

From Mr. A. Barnes, late Gardener to the Rev. Mr. Rasleigh, Hamber Rectory.

I highly approve of your Composition for destroying Mealy Bug and Thrip on stove and greenhouse plants; for the bug I applied it three times before it was totally killed.—Jan. 1, 1854.

From Mr. G. Jones, late Gardener to Charles Seagrim, Esq., Southgate House.

Having used your Composition on Peach, Cherry, and Rose Trees, Greenhouse Plants, Cucumbers and Melons, it speedily effected the desired purpose, without the least injury to the plants; it is the cheapest and best remedy ever offered to the public.—Jan. 11. 1854.

From Mr. S. Wraight, Gardener to J. Lake, Esq., Green Street, Sittingbourne.

It is with pleasure that I state your Composition has proved valuable to me, in the destruction of Green-fly, Red Spider, &c., during the past season.—Jan. 12, 1854.

From Mr. Harris, Gr. to the Rev. E. Timson, Tatchbury Mount.

I have used your Composition must successfully upon Peach and Nectarine trees, and have seen it succeed equally well with my friends, and consider it is the remedy we must all have recourse to.—Jan. 18, 1854.

From Mr. Smithers, Gardener to Sir W. Milner, Bart., New Appleton, Tadcaster.

Your Blight Composition answered perfectly well.—Jan. 23, 1854.

From Mr. J. Daniels, Gardener to the Rev. C. E. Rucks Kerne, Sivycombe House.

The Blight Composition I found most efficacious in the destruction of all kinds of insects, more particularly that troublesome pest the Cucumber Thrip, which has hitherto resisted every means that have ever been recommended for its destruction. I find on being touched by the Composition it instantly dies, and I found it much more destructive to all the Aphis family than tobacco water, without doing the least injury to the most tender plants.—Jan. 24, 1854.

From Mr. Jno. Page, Gardener to A. Dixon, Esq., Birches Green.

I used your Composition upon Vines infested with mildew, which it instantly arrested; also on Cherries and Peaches, for the Aphis and Spider, with beneficial results; it also produces a fine, dark, healthy foliage wherever it is applied.—Jan. 31, 1854.

From Mr. Jones, Gardener to J. M. Elwes, Esq., Bossington House.

My Vines were very much infested with Scale and Red Spider, berries as well as leaves, and seeing the many testimonials by experienced men of the good effects produced by your Composition, I gave them two syringes all over, which effectually destroyed both pests. I think it the best remedy for Green-fly, &c., that can be produced.—Feb. 28, 1854.

GENERAL PRICED CATALOGUE OF SEEDS to be had upon application.

Fine Long Red Mangold Wurzel	per lb. 1s. 0d.	Annual and Perennial Rye-grass, per quarter	30s. to 40s. 6d.
Do. Yellow Globe do.	,, 1 0	Red or Broad Clover } Best samples	per lb. 7d. to 8
Do. Long Yellow do.	,, 1 0	White or English do. } Best samples	9d. to 10
Do. Red Globe do.	,, 1 0	Hop or Trefoil do. } Best samples	,, 4½d. to 5
Skirving's Swede, splendid stock	,, 1 0	Summer Vetches, per bushel	9s. 6d. to 10s. 0
White Belgian Carrot, grows well	,, 1 8	Giant Saintfoin, per bushel	10 0
Italian Rye-Grass, per quarter	36s. to 44 0		

Every variety of Turnip at lowest market prices.

Finest Mixed Permanent, Pasture, and Lawn Grass, equal to any house in the trade, may be procured of

B. PAGE & CO., SEED MERCHANTS, OXFORD STREET, SOUTHAMPTON

(ADJOINING RADLEY'S HOTEL, AND TWENTY YARDS FROM THE RAILWAY AND DOCKS).

Fine DOUBLE TUBEROSES, just imported, 4s. per dozen.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, MARCH 11, 1854.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 11.—1854.] SATURDAY, MARCH 18. [PRICE 6d.

INDEX.

Abies Douglasi, timber of .... 163 c
Agriculture and commerce.... 171 b
Agri. Soc. of England .... 172 a
— Imp. Soc. of Ireland .... 172 b
Ants, to exterminate.......... 165 c
Ash trees in water .... 165 c
Bath Agri Society's Journal.. 173 a
Books noticed .... 167 b
Calendar, horticultural........ 168 a
— agricultural .... 173 b
Cattle, weights of .... 171 a
Cedar wood .... 164 a
Clerodendron splendens ...... 165 b
Collodion .... 166 a
Coniferous timber .... 163 c
Cupressus torulosa, wood of .. 164 a
Cypresses, Eastern............ 166 c
Dacrydium Franklini .... 165 c
Deodar timber .... 164 a
Drains, stoppage of............ 171 a
Entomological Society........ 167 a
Fences .... 171 b
Fettercairn Farmers' Club ... 172 c
Food, labourers' .... 166 c
Geology and agriculture ...... 171 a
Glass, Hartley's plate ..165 c—166 a
Grain statistics, French ...... 170 b
Harvest returns .... 171 a
Irises .... 165 a
Labourers, agricultural ...... 171 c
Lawns, Grasses for............ 168 c
Linnean Society .... 167 a
London squares .... 166 c
Manure, sewage .... 173 b
Meteorology .... 170 c
Pathology, vegetable.......... 164 b
Pinus Laricio, wood of........ 163 c
Poor-law bill.................. 170 a
Potatoes, deep soiling .... 166 b
Primulas, Chinese .... 167 c
Psammisia penduliflora ...... 167 b
Rucker's (Mr.) garden........ 167 b
Seakale, to force .... 166 b
Seed sowing, early............ 169 c
Sheep feeding .... 173 a
Soap, snow.................... 171 b
Spade, open .... 166 a
Statistics, French grain ...... 170 b
Storms, theory of .... 170 c
Strawberry, Meudon .... 166 b
Timber, Coniferous .... 163 c
Vegetable pathology ....164 b
Ventilation .... 172 c
Vine disease .... 164 b
Weights of cattle .... 171 a
Wood, Coniferous .... 163 c

21, REGENT STREET.

HORTICULTURAL SOCIETY OF LONDON.
PRIVILEGED TICKETS.

The Exhibitions will take place on the Second Saturdays in May, une, and July, namely—

MAY 13, JUNE 10, JULY 8.

All Fellows who shall apply, on or before Tuesday the 25th of April, may obtain, at the rate of Three Shillings and Sixpence each, any number of Tickets NOT EXCEEDING THIRTY-SIX; but no application for such tickets will be received after that day. *Fellows of the Society subscribing for tickets at this price will be allowed a clear week from the 25th of April during which they may claim them.* AFTER THAT PERIOD ALL THE 3s. 6d. TICKETS SUBSCRIBED FOR, BUT NOT ISSUED, MAY BE CANCELLED.

After the 25th of April, any further number of tickets will be delivered to Fellows on their personal application or written order, at the price of *Five Shillings* each ticket.

SPECIAL PRIVILEGE OF FELLOWS.—Fellows of the Society enter free at half-past 12, and can introduce TWO friends WITH TICKETS; or the Fellow's privilege may be transferred to a brother, sister, son, daughter, father, mother, or wife, residing in the Fellow's house, provided the person to whom the transfer is made be also furnished with a ticket signed by that Fellow. That is to say, the privilege of entering early may be transferred, but not the privilege of FREE admission.

ROYAL SURREY ZOOLOGICAL GARDENS.—FLOWER SHOWS, open to all England, will take place in June, July, and September.

Arrangements are also making for a GRAND EXHIBITION OF HOLLYHOCKS in August.—No Entrance Fees.

ISLEWORTH HORTICULTURAL SOCIETY.—The next Exhibition will take place on the 8th day of August next, instead of the 7th of September, as previously advertised, in the Grounds of Gordon House, on the Banks of the Thames, by kind permission of Hamilton Cooke, Esq., when Prizes, open to all England, will be awarded for Flowers, Fruit, and Vegetables.—Further particulars, with Rules and Regulations, may be obtained on application to HICKSON BRIGGS, Hon. Sec.
Holland House, Isleworth, 18th March.

CAMELLIAS.

CHANDLER AND SONS beg to inform the Nobility and Gentry that their CAMELLIAS are now in flower. Also, a variety of Plants for the Conservatory and Drawing-room.
Wandsworth Road, Surrey.

LILIUM LANCIFOLIUM, PELARGONIUMS, RANUNCULUSES, ANEMONES, AND GLADIOLUS.

HENRY GROOM, Clapham Rise, near London, by Appointment FLORIST TO HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to say that his SPRING CATALOGUE is ready, and will be forwarded by post on application.

MANETTI ROSE STOCKS.

THOMAS CRIPPS respectfully informs the Trade he has a few thousands of the above to dispose of, at 60s. per 1000, or 7s. per 100. A remittance, or reference to a London house, accompanying an order, will meet with prompt attention.
Tunbridge Wells Nursery.

"WELLINGTONIA GIGANTEA."

MESSRS. VEITCH, of EXETER and CHELSEA, have much pleasure in stating that their Seeds of the above magnificent Tree are vegetating satisfactorily. They therefore hope to be able to send out well established seedling plants during the ensuing summer and autumn. They are now taking orders for them at the following prices:—

For a Single Plant ... 2 guineas	For 8 Plants ... 10 guineas
For 4 Plants ... ... 6 guineas	For 12 Plants ... 12 guineas

And all orders will be executed strictly in the rotation in which they are received.—March 18.

WELLINGTONIA GIGANTEA.—Beautiful Lithographed Plates (from a drawing taken in California) of this wonderful Tree may be had, at 7s. 6d. each, of Messrs. VEITCH & SON, Exeter, and Mr. JAMES VEITCH, jun., Exotic Nursery, Chelsea.

The Bark, Wood, Cones and Foliage, which were exhibited on Tuesday week at 21, Regent Street, may be seen at the Exotic Nursery, Chelsea.—March 18.

TO FLORISTS.

THE SUBSCRIBER begs to intimate that he will send out early in April the under-noted FLOWERS, which he is confident will be useful additions to any collection.

PANSY.—TELEGRAPH (STUART'S).—A fine dark plum-coloured self, of great substance—was a conspicuous flower in stands which gained 10 First Prizes last season. Price 5s. each.

VERBENA.—LEUCOSTEMMA (MEIN'S).—Pure white, very large compact truss—Certificate of Merit from Caledonian Hort. Soc. in 1853. Price 5s. each.

Edgehill Nursery, Dean, Edinburgh, March 18.

PERMANENT PASTURE.

R. H. SMITHE, of Eastling, Faversham, Kent, is now prepared to send out his Mixtures of the NATURAL GRASSES, PERENNIAL CLOVERS, &c., to lay down Land to Permanent Pasture, at 25s. per acre, allowing 3 bushels to the acre, carriage free. Mixtures for Lawn, or any other purpose, or the sorts separate. Most of the species of Grass are collected by the Advertiser, and he will bestow the greatest attention in selecting such as shall constitute mixtures specifical to the soil, purpose, &c., of each buyer.

TO THE SEED TRADE AND OTHERS.—

Champion of England Pea	Green-top Scotch Turnip
Early Emperor	Red Tankard
Scimitar	White Globe
British Queen	Red do.
	Orange Globe Mangold Wurzel
Knight's Dwarf Green Marrow	Long Red do.

The above stocks warranted true, and at very moderate prices.
EPPS, SEED GROWER and MERCHANT, Maidstone.

NEW AND CHOICE PANSIES.

France Cycole	Adela (Turner)
Duke of Norfolk	Hero (Thomson)
Sir J. Paxton (Turner's)	Almanzor (do.)
National (do.)	Criterion (do.)
Marchioness of Bath (do.)	Caroline (do.)
Alfred the Great (do.)	Queen of England
Mr. Beck (do.)	Sultan (Hooper)
Sir P. Sydney (do.)	Lucidum (do.)
Mrs. Beck (do.)	Commander-in-Chief
Ophir (Widnal)	Lady Walsingham (Thomson)
Elegant (Thomson)	Elegantissimum (do.)
Eva (do.)	Blanche (do.)

The above set 20s. Post-office orders payable at Guildford.
HART AND NICKLIN, 132, High Street, Guildford, Surrey.

EDWARD GEORGE HENDERSON AND SON, Wellington Nursery, St. John's Wood, London, beg to recommend the following (for description see this Paper of the 4th of March):—

	s.	d.
GLOXINIA DUKE OF WELLINGTON	7	6
" LADY FRANKLIN	7	6
" LEONIE VAN HOUTTE, ... 5s. and	7	6
ACHIMENES CHERITA, beautiful new sp., 5s. and	10	6
" SIR TRECHERNE THOMAS, splendid ... ... 3s. 6d. and	5	0

Any or all the above forwarded free by post.

In May the following 12 new Verbenas, raised by Messrs. Banks, Stewart, and Fozard, will be ready for sending out at 42s. the set, viz., Orion, Robin Hood, Marie Antoinette, Matchless, Beauty, Madonna, Attraction, Diadem, Ne Plus Ultra, Ariosto, Beauty of the Garden, and Sulphur Model. For the descriptions see this Paper of the 11th of March.

Seed Catalogue forwarded post free, containing a description of the best known new Annuals, excluding the new Californian and other varieties that have not sufficient merits for our recommendation.—March 18.

CELERY SEED.—A small quantity of SEYMOUR'S SUPERB WHITE, pronounced by the Editor of the *Gardeners' Chronicle* to be "what it should be," can be had in Half-ounce Packets, by enclosing four postage stamps to Mr. LUFF, Wiston, Steyning, Sussex.

NEW ALSIKE CLOVER, Price Ten Guineas per cwt., or in small quantities at 2s. per lb., may be had on application to Mr. H. RAYNBIRD, Basingstoke, Hants. Also New Home-grown ITALIAN RYE-GRASS, of good and genuine Stock, at 30s. to 35s. per quarter.

SUPERIOR LARGE BROAD-LEAVED SCOTCH VETCHES (or TARES), at 42s. 6d. per sack of 4 bushels, sack included, and carriage paid to London, Liverpool, and Hull. The supply is limited.

TRUE ALSIKE CLOVER, 2s. per lb.

₊ Unknown correspondents will please send a remittance with their order.

W. DRUMMOND and SONS, Seedsmen, Stirling, N. B.
This Advertisement will not be repeated.

WANTED, Fifty Strong Plants of the ROUGH-LEAVED BEARSFOOT (ACANTHUS SPINOSUS).—Address, with particulars of price, to D. M., 11, Hanover Square.

TO SEEDSMEN AND GARDENERS.

TO BE SOLD, 50 lbs. of good CAULIFLOWER SEED, saved in 1853, at 7s. per lb.; also some ASPARAGUS PLANTS, at 5s. per rod.—Apply to JAMES BROWN, Gardener, Deptford, Kent.

SILVER FIRS FOR SALE.

JOSIAH HILL begs to inform Noblemen and Planters generally that he has a large assortment, from 1½ to 3 feet (twice transplanted); very healthy and well rooted.
Briston Nursery, Norfolk.

IMPORTANT TO SEEDSMEN AND OTHERS.

EARLY SEED POTATOES.—Thirty-six Sacks EARLY ASH-LEAF KIDNEY POTATOES, 10s. per bushel. Ten Sacks JACKSON'S IMPROVED ditto, 12s. per bushel. A sample bushel will be sent to any part of the country on the receipt of an order for the amount.—An early application is requested to THOMAS WILD, Horticultural Agent, Ipswich.

PINK KIDNEY POTATOES.—These Potatoes possess a most delicate flavour, and when cooked they rival finest flour in whiteness and appearance; they are celebrated for their lasting properties, and if kept dry are quite as good in the month of May for domestic purposes as when first taken up. They are a healthy, hardy, and extraordinary prolific stock. The advertiser can with confidence recommend them, as he has seen them tested for the last three seasons. The sample now offered (about 50 sacks) is entirely free from disease and a good size. Growers about to change their seed will find it answer their purpose to give them a trial. They will be sent out in not less quantities than 2 bushels, price 14s., including bag; and no communications unless accompanied with a remittance, will be attended to.—Apply to JOSEPH WILSON, St. Helen's Street, Ipswich, Suffolk.

GRASS SEEDS FOR PERMANENT PASTUE.

WHEELER AND SON'S DESCRIPTIVE LIST of GRASS SEEDS will be forwarded free on appliation.
J. C. WHEELER AND SON, GLOUCESTER.

A FIRST CLASS CATALOGUE OF GERANIUMS, VERBENAS, FUCHSIAS, DAHLIAS, HOLLYHOCKS, ETC.

GEO. SMITH begs to announce that the above is now ready and will be forwarded in exchange fo one postage stamp.—Tollington Nursery, Hornsey Road, Islington.

ROBERT M. STARK begs to intimate that his Spring Catalogue of FLORISTS' FLOWERS, BEDDING PLANTS, &c., for the season, is now ready and may be hd on application.

Very superior assortment of Imported GERMAN FLOWER-SEEDS, NEW ANNUALS, &c., of which separate Lists my be had.—Edinburgh: Edgehill Nursery, and 145, Princes Stree.

CHARLES ALEXANDER (late of DICKSONS & Co.), SEEDSMAN and FLORIST, 32, West Register Street, Edinburgh. His Descriptive Catalogue of Select Garden and Flower Seds is just published, and will be forwarded free on application.

A DESCRIPTIVE LIST of DAHLIAS will be forwarded by T. LOCKHART, FLORIST, Fulham near London, on receipt of one postage stamp.

Finest CALCEOLARIA SEED, 2s. 6d. per packet; and LOCKHART'S celebrated ROSETTE COLLARD, for sowing in May, 3s. per ounce, free by post.

GEORGE BAKER begs to say that his DESCRIPTIVE CATALOGUE of AMERICAN PLANTS, CONIFERS, ORNAMENTAL SHRUBS, FRUIT and FOREST TREES, &c., may be had by enclosing two postage stamps.

G. B. wishes to call particular attention to his fine Stock of GREEN and WEEPING HOLLIES, from 1 to 12 feet high.

G. B. has supplied the American Exhibition in the Royal Botanic Gardens, Regent's Park, from its commencement.

American Nursery, Windlesham, near Bagshot, Surrey, about six miles from Staines Station, Windsor Branch, South-Western Railway, where conveyances may be obtained.

N. GAINES begs to announce his List of Dahlias and Pelargoniums for 1854 is now ready. It contains a description of his three Seedling Dahlias to be sent out in May, viz., Alba superba, Primrose Perfection, and King of the Yellows. Also a Printed List of Fuchsias, Cinerarias, Chrysanthemums, Auriculas, Corræas, Verbenas, Camellias, Azaleas, Rhododendrons, &c., &c., may be had post free on application.
Nursery, Surrey Lane, Battersea.

PINUS SABINIANA,
THE GREAT HOOKED CONE PINE OF CALIFORNIA.

PETER LAWSON AND SON, Edinburgh, have just received from San Francisco a small consignment of Seeds of this fine Hardy Pine. Price 2l. 2s. for 100 selected Seeds, free by post. They were gathered last autumn, and are in excellent condition and well grown—the seeds measuring about 1 inch in length. Being perfectly hardy, they may be sown in a dry sheltered situation in the open air.—Edinburgh, March 18.

DOUBLE FRENCH MARIGOLD AND CAPE STOCK SEEDS. A packet of beautiful DOUBLE FRENCH MARIGOLD SEEDS forwarded on receipt of Seven Penny Postage Stamps. Ditto, SCARLET CAPE STOCK, ditto.
EDWARD SANG & SONS, Nursery and Seedsmen, Kirkaldy, N.B.

DOUBLE ITALIAN TUBEROSE ROOTS, 4s. per dozen.—The annual importation of the above-named beautiful and fragrant Flower has just been received, and large and well selected Bulbs may be obtained, without disappointment, at A. COBBETT'S Foreign Warehouse, 18, Pall Mall.

N.B. Printed regulations for treatment sent; also, just arrived very moist and open Parmasan Cheeses.

WILLIAM NICHOLSON still continues to send out very strong well-rooted Plants of his four new and distinct varieties of STRAWBERRIES, viz., AJAX, dessert Fruit; RUBY, ditto; CAPTAIN COOK, Market Fruit; FILL-BASKET, ditto, at 15s. per 100, or 25 each of any two sorts for 10s., box included. Post-office orders payable at Yarm, Yorkshire. For a full description, see Advertisement *Gardeners' Chronicle* Jan. 28, 1854.—Egglescliffe, near Yarm, Yorkshire.

THE FINEST BALSAMS IN EUROPE, in Six Classes; Seed saved by Mr. GLENNY from flowers three inches across: the six, 37 stamps; Mixed Seeds, 13 stamps, in Sealed Packets only, signed and sealed. The finest seeds that can be had procured to order, and all other choice Horticultural subjects.—420, Strand.

HOLLYHOCKS.

A. PAUL AND SON have now ready for Sale a very large and healthy stock of HOLLYHOCKS, suited to bloom well next autumn; Border Flowers, 4s., 6s., and 9s. per dozen; fine named kinds, 12s., 18s., 24s., and 30s. per dozen. A fresh supply of their new and unrivalled seedlings, which obtained first prizes at the leading exhibitions last year, and were never once beaten, will be sent out the end of the month, strong, healthy plants. A priced descriptive Catalogue free by post on application.

Recently published, free by post, price 1s., AN HOUR WITH THE HOLLYHOCK.

N.B. Post-office orders may be drawn on Waltham Cross or London.—Nurseries, Cheshunt, Herts.

MAY'S PARAGON CABBAGE.

THE Subscriber, in offering the above for the first time, guarantees it to be the finest Cabbage in existence; of dwarf habit; has never been known to run; attains a large size (having been grown to the great weight of 28 lbs.); of a most beautiful green, and boils tender as Asparagus, which it continues to do throughout the season; in flavour is as far superior to the ordinary Cabbages of the day as they are to the old Drumhead Scotch. In ¼ oz. packets, 1s. each, free by post. The usual allowance to the trade.

H. M. begs to inform the public that he is unable to supply any more of his MAGNUM BONUM LETTUCE, as the stock was only small and is completely sold out.

Address all orders and communications to HENRY MAY the Hope Nurseries, near Bedale, Yorkshire.

CHOICE NEW GERANIUMS, ETC.

HENRY WALTON, Florist, &c., Edge End, Marsden, Burnley, Lancashire, begs to offer the following at the reduced prices annexed:—

GERANIUMS.—Optimum, Queen of May, National, Eleanor, Rachael, Heroine, Astrea, Leonora, Zaria, Lagoma, Cordelia, Kulla's Rivalry, Spot, Vulcan, Commander, Harriet, Jupiter, Purpurea and Basilisk. Purchasers' selection of 12 of the above for 36s., the set of 20 for 3l., Hamper, &c., included.

GERANIUMS.—Ambassador, Bride of Abydos, Chloe, Commissioner, Cristine, Enchantress, Exactum, Elise, Flying Dutchman, Ganymede, Jullien, Lablache, Lavinia, Lord Mayor, Lord Gough, Lancashire Witch, Pulchra, Painter Improved, Rosa, Brown, and Surprise. Purchasers' selection of the above, 20s. per dozen; H. W.'s selection, 17s. per dozen; or the set of 21 for 2l., with a plant of Henderson's Extravaganza included.

GERANIUMS, older show varieties, 9s. to 12s. per dozen.
 " Fancy varieties, 12s. to 24s. per dozen.

FUCHSIAS, new varieties of last Season.—Beauty, Brilliant, Colleen, Dr. Lindley, Duchess of Lancaster, England's Glory, Glory of Banks, Incomparable, King Charming, Lady Emily Cavendish, Lady Montague, Lady Franklin, Mrs. Patterson, Perfection, Princeps, Premier, Purple Perfection, Vesta, Beauty of Devonshire, and Roi des Fuchsias. The above 1s. 6d. each, or 10s. 6d. to 15s. per dozen.

CINERARIAS.—British Queen, Uttoxeter Pet, Dagobert, Lady of the Lake, Brilliant, Enchantress, Hebe, Tyrian Prince, and Prima Donna. The above 9 for 14s.

CINERARIAS.—Catherine Seaton, Clara Mowbray, Gustavus, Iago, Mrs. Sidney Herbert, Mr. Sidney Herbert, Mrs. Charles Kean, Marianne, Magnum Bonum, Nonsuch, Rosy Morn, St. Clair of the Isles, and Surprise. 12s. per dozen, package included; older varieties, 6s. and 9s. per dozen.

VERBENAS, choice varieties of last year, 1s. each, or 7s. 6d. per dozen.

PETUNIAS, new varieties of last season, 1s. each.

The above selections are all strong, healthy, and well-established plants, and cannot fail to give satisfaction to parties purchasing.

PANSIES in great variety, of which H. W. possesses more than 2000 extra strong healthy plants of the best leading show varieties out, 4s. 6d., 6s., 9s., 12s., and 18s. per dozen.

H. W. has also a good collection of Hollyhocks, Dahlias, and a great variety of Bedding Plants, &c. &c., catalogues of which will be ready, and may be had for one postage stamp, in the course of a few days.

It is respectfully requested that all orders from unknown parties (unless reference is given) be accompanied with a Post-office Order, payable at Marsden, Lancashire.

CHRYSANTHEMUM "ANNIE HENDERSON."

This is a Plant in its class such as we have seldom had the good fortune to meet with. It exactly resembles the form and colour of the well known favourite "Annie Salter," which has never yet been surpassed, but of a much dwarfer habit. The present variety will be the forerunner of a new race in this increasing favourite autumn flower; but hitherto, from the lateness of their flowering season, the pleasure derived from it as a garden plant is but small compared to what it would be if the season for its flowering commenced earlier; this desideratum, however, we have obtained for the variety we have now the pleasure of introducing, as a plant that will become popular, from its bedding properties being so well adapted for that purpose, flowering, as it does, in the month of August with the German Aster in the open garden; and this will be the means of introducing a variety of colours among bedding plants not before obtained. No doubt, from the earliness of its flowering, seed will be easily obtained in this country, and a variety of colours will immediately follow, so that the Dahlia and Chrysanthemum Exhibitions may some day be blended.

Orders can now be taken for the above, which will be forwarded this Season when ready. Price 7s. 6d. each.

E. G. Henderson & Son, Wellington Nursery, St John's Wood.

KNAP HILL NURSERY, WOKING, SURREY.

WATERER and GODFREY, Nephews and Successors to the late Hosea Waterer, respectfully invite the attention of parties engaged in planting to the following list:—

Araucaria imbricata, 2, 3, 4, 5, and 6 feet high, in the open quarters, regularly removed every year, and as robust and handsome as it is possible to get them. We have a large stock.

Cryptomeria japonica, 2, 3, 4, 5, 6 to 8 feet.

Cedrus Deodara, stout handsome plants from seed, in any quantity, and of all heights from 1 to 7 feet. A few splendid specimens 10 to 15 feet; warranted to transplant with perfect safety.

Cedar of Lebanon, 2, 3, 4, 5, 6, 7 to 10 feet. These large Cedars of Lebanon are also very handsome trees.

Cupressus macrocarpa, or Lambertiana, 2, 3, 4, 5, 6, and 8 feet, all from seed.
 " Goveniana, 2 to 3 and 4 feet.
 " Funebris, 2 and 3 feet.
 " thyoides variegata, 2, 3, and 4 feet.

The Variegated White Cedar, a scarce but most beautiful variegated plant, seldom seen except at Elvaston Castle. We hold a large quantity.

Juniperus Bedfordiana, fine plants, 3, 4, and 5 feet.
 " Chinese, 2, 3, 4, 5, 6, 8, and 10 feet.
 " repandus, 3, 4, 5, to 8 feet.
 " Upright Irish, 3, 4, 5, 6, 7, and 8 feet; perfect columns, and, except at Elvaston, unequalled.
 " Virginiana, the Red Cedar, 4, 5, 6, and 8 feet.

Taxodium sempervirens, 2, 3, 4, 5, and 7 feet.

Yew, common, 3, 4, 5, to 8 feet high.
 " Irish, 3, 4, 5, to 10 feet. A splendid lot, all being trimmed to one stem; it adds much to their appearance and value.
 " Gold striped, 1, 2, and 3 feet.
 " do. worked on the Common, with fine heads, 4, 5, 6, and 7 feet high; very handsome.
 " elegantissima (new striped) standards. The golden Yews are very ornamental, and we have a large quantity of fine plants.
 " Dovaston, or Weeping Yew, fine standards.

Pinus Douglasi, 3, 4, 5 and 7 feet; a few magnificent plants, 10 to 12 feet high.
 " insignis, 2, 3, 4, 5, 6, and 7 feet; all from seed.
 " cembra, 3, 4, to 6 feet.
 " Canadensis (Hemlock Spruce), 3, 4, and 6 feet.
 " morinda, 3, 4, and 6 feet.
 " Menziesi, 3, 4, 6, and 8 feet.
 " cephalonica, 3 to 4 feet.
 " Pinsapo, large and handsome, 3 and 4 feet.
 " Nordmaniana, from seed, 1½ foot; a few larger, 2 feet.
 " nobilis, stout plants, with perfect heads, about 1½ foot; a few larger specimens, 3 and 4 feet. We hold a fine stock of this beautiful Fir, none of which are grafted.

Thuja Arbor-vitæ, American, 3 to 6 feet. We recommend this plant for hedges.
 " Weareana, 3 to 6 feet, one of the few really hardy and most useful evergreens.
 " aurea. This is perhaps one of the prettiest plants of the day; it was first sent out from this Nursery, and our stock, for size and beauty, is unsurpassed.

Libocedrus chilensis, 1½, 2, and 3 feet. This is a very distinct and beautiful plant, of recent introduction. Our stock is large and good.

Independent of the foregoing we are very large holders of the most useful Evergreens, Deciduous and Ornamental Trees, and of large size. Priced Catalogues will be forwarded on application, enclosing two postage stamps, which will also include a Descriptive Priced Catalogue of the celebrated collection of American Plants grown at this Nursery.

The Nursery is near the Woking Station, and about an hour's ride from London. A visit is earnestly solicited from all who intend planting during the forthcoming season.

WHITE MULBERRY TREES,

Expressly Cultivated for the Rearing of the Silkworm.

GEORGE BALCHIN is now sending out fine healthy White Mulberry Trees at the following low prices: 10s., 15s., 20s. and 25s. per 100. Also Silkworms' Eggs, of a superior quality, white and yellow, 1s. 6d. per 1000.

Orders containing Post Office order punctually attended to.

Address, John Richard Evans, Cork Street, Bond Street London; or, George Balchin, Spring Place, Godalming, Surrey.

HIMALAYA CEDAR.

MAULE and SONS beg to intimate to Noblemen and Gentlemen engaged in Forest or Ornamental Planting that they still hold large supplies of this universally admired and fine timber tree, which they are sending out at the below quotations.

CEDRUS DEODARA, 2 years, fine,		25s. per 100,	10l. per 1000
" "	*1 foot ...	5l.	"
" "	*1 to 2 feet ...	7l. 10s.	"
" "	*2 to 3 feet ...	42s. per doz.,	15l. per 100
" "	**3½ to 4 feet...	60s. "	25l. "
" "	**4 to 4½ ft., extra fine, for Avenues and single planting	80s. "	30l. "

☞ Those marked * are grown in suitable sized pots; those marked ** may be had either in pots or from the open ground.

Large supplies of Taxodiums, Cryptomerias, Pinus excelsa, Abies Smithiana, Cupressus Goveniana, Lambertiana, &c. &c., offered at such prices as will admit of their introduction into mixed forest and other plantations. Terms sent on application.

The Nurseries, Bristol, March 18.

BASS and BROWN'S SEED AND PLANT LIST

free by post for three penny stamps.

COLLECTIONS OF VEGETABLE SEEDS.

The following comprise the best in cultivation, including several new sorts of first-rate quality:—

No. 1, Collection for a large garden, for one year's supply	£3	0	0
No. 2, Collection in smaller proportions	2	0	0
No. 3, Collection, ditto	1	5	0
No. 4, Collection of choice kinds for a small garden ...	0	15	0

If any sorts of Vegetables are not wished for, enlarged quantities of others will be sent to make up the amount.

The list of quantities of each sort supplied in the No. 1, 2, and 3 Collections are contained in the General Spring Catalogue.

For a few choice new Vegetables, see *Gardeners' Chronicle* of Feb. 13th and 27th, advertised.

FLOWER SEEDS—BEST ASSORTMENTS, free by post.

The Catalogue gives colours, heights, months of flowering, hardiness, duration, and much descriptive information of time of sowing, and other treatment.

	s.	d.
100 varieties select showy Annuals, which will include the beautiful new Leptosiphon luteum, Calceolaria chelidonioides, Nemesia bicolor, fine new varieties, splendid Prize Asters, Stocks, Zinnia, &c. &c. ...	15	0
50 varieties, including new, 8s. 6d.; 30 varieties ditto, 5s. 6d.; 20 varieties ditto	4	0
20 varieties best Dwarf Annuals, in large packets, for filling beds on lawns, 7s. 6d.; 12 do.	5	0
20 vars. choice Greenhouse Annuals, including the new Gomphrena aurantiaca, Salpiglossis atrosanguinea, new Portulaccas, Rhodanthe, Thunbergia, Phlox Drummondi, &c., 7s. 6d.; 12 varieties, including new...	5	0
20 vars. choice Greenhouse Perennials, including very fine and new Calceolaria, Cineraria, Fuchsia, Petunia, Verbena, Chorozema, Calendrinia umbellata, &c. ...	10	6
12 varieties ditto ditto	7	6
20 vars. Hardy Biennials and Perennials, including very choice Antirrhinum, Gladioli, Heartsease, Mimulus, Dianthus, Brompton and Emperor Stock, &c., 7s. 6d.; 12 varieties ditto	5	0

The following we beg strongly to recommend as saved from collections of first-class flowers, in packets as follows:—

	s.	d.
Calceolaria, very choice, 1s.; extra superb, from fine selected flowers	2	6
Cineraria, very choice, 1s.; extra new and choice from our superb collection	2	6
Fuchsia, new and choice, from our superb collection ...	1	0
Geranium, extra choice and new, from our superb collection	2	6
" Scarlet, from our choice collection	0	6
" Fancies, from our beautiful collection of best vars.	1	6
Gloxinia, choice, 6d.; extra, from our superb collection ...	2	6
Petunia, new and choice, from our superb collection ...	1	0
Verbena, very choice, 1s.; extra, from our superb collection of new varieties	2	6
Antirrhinum, choice, 6d.; from new of our superb collection	1	0
Carnation and Picotee, from collection of 400 vars. ...	2	6
Gladiolus, fine mixed early, 6d.; from choice named of our superb collection	1	0
Iris, English vars, fine, 6d.; best of our superb collection...	2	6
Pansy, extra choice, from a first-rate collection	1	0
Potentilla, very choice, 1s.; extra, from our very beautiful collection	2	6
Ranunculus, from our superior collection	2	6
Auricula, from a first-rate collection	1	0

A FEW VERY CHOICE NEW FLOWER SEEDS.

Leptosiphon luteum, fine orange colour; this very beautiful annual we would recommend, from its dwarf habit and novelty of colour, as a most attractive object for massing, packets, 1s. and	2	6
Linum grandiflorum rubrum, new crimson Flax	1	0
Nemesia bicolor, white and blue, very showy and attractive half-hardy annual, height 9 inches, beautiful for massing	0	6
Calceolaria chelidinoides, ex., clear bright yellow, fine for massing on lawns; the mouth being closed, it is not injured by wet	1	0
Lobelia Limburgensis, a new perennial variety from Prussia, extra	1	0
Portulacca aurantiaca, new orange, 1s.; nova rosea ...	1	0
Sweet William, very choice striped French	0	6

For a large number of new Flower Seeds, see advertisement in the *Gardeners' Chronicle* of Feb. 13th and 27th.

CHOICE IMPORTED SEEDS.

	s	d.
24 superb varieties Dwarf German Stocks, 4s.; 12 varieties	2	6
Mixed, in 40 superb varieties, per packet ... 6d. to	1	0
Choice new brimstone, 6d.; dwarf carmine	0	6
*Fine new French, straw colour	1	0
10 Superb varieties, new large flowering	2	6
18 " Wallflower leaved, or Prussian ...	3	6
New white Wallflower leaved, very dwarf and fine, per packet ... ... 6d. to	1	0
6 Superb varieties Brompton Stocks	1	6
7 " Emperor Stocks, lasting more than 4 years, and blooming 2 or 3 times a year	2	0
New White Emperor, very choice, per packet	1	0
12 Superb varieties German Aster	2	0
12 " Globe-flowering Aster	2	0
12 " Pyramidal Aster	2	0
12 Very fine French Pæony, flowering varieties; these are extraordinarily fine	5	0
Mixed do., per packet	1	0
6 Superb varieties Zinnia elegans	2	0

And other fine Imported Seeds. See Catalogue.

☞ Goods CARRIAGE FREE with orders of 20s. and upwards to London, Ipswich, Norwich, or any Station on the Line.

Remittances are requested with orders from unknown correspondents. Post-office Orders to be made payable to Bass & Brown, or to Stephen Brown.—The Autumn and Spring Catalogues supplied free by post for three penny stamps each, the cost of which may be deducted from orders sent.

Bass & Brown, Seed and Horticultural Establishment, Sudbury, Suffolk. Established about Half a Century.

FUCHSIA "TRENTHAM."

COLE and SHARP, Aston Lane Nursery, near Birmingham, have the satisfaction to announce that they are preparing to send out the above noble seedling Fuchsia, which they feel confident, from its colour, habit, and fine character, will be generally regarded as a desideratum, both in the Conservatory and for Exhibition purposes. The following critical remarks upon its merits will show the high estimation in which it is held by competent judges.

"Your Fuchsia is a bold and distinct variety, with remarkably broad scarlet sepals, and a fine purple corolla, of good substance and brilliant colour. It may not reflex sufficiently for some parties, but its bold properties will doubtless render it a great favourite."—*Mr. Charles Turner, Royal Nursery, Slough.*

"Your bloom has good broad sepals, and is a stout and well reflexed flower; the foliage is fine. It will prove an addition to its class, or we are mistaken."—*The Midland Florist, October* 1853.

The Censors of the Birmingham and Midland Society for the Promotion of Floriculture, who awarded this Fuchsia a first-class certificate:—"The blooms are unusually large, well proportioned, and of good substance, the sepals being of a brilliant scarlet colour, very broad, and gracefully reflexed. The corolla is of a purplish mazarine blue, smooth, and velvety. The foliage is fleshy, large, and handsome."

Plants 10s. 6d., with the usual allowance to the trade. Coloured engravings (mounted) forwarded on receipt of address, accompanied by six postage stamps.

WM. HAMILTON, Seedsman & Florist, &c., 41, Margaret Street, Cavendish Square, London, offers the following NEW SEEDS, free by post, for 5s.:—

Arctotis breviscapa	Ipomœa luteum
Centranthus macrosiphon	Linum grandifl. var. rubrum
Ethulya corymbosa	Maurandya Barclayana coccinea
Gamolepis tagetis	Portulacca aurantiaca
Gaura Lindheimera	Perilla Nankinensis
Gomphrena aurantiaca	Vittadenia lobata

The following Seeds, which he imports annually from the Continent, have always proved very superior, and he particularly recommends them:—

	s. d.		s. d.
12 vars. Hamburgh 10-week Stocks	3 6	12 varieties Double Dwarf Rocket Larkspur ...	2 6
12 " autumn flowering do.	3 0	12 vars. finest Zinnias ...	2 6
12 " fine Brompton do.	3 0	10 " Camellia Balsam ..	5 0
12 " China Asters ...	3 0	9 " distinct Wallflower	3 6

The above sent free by post, 20s. Bedding Plants of all sorts, well established, at moderate prices. These Catalogues will be forwarded on application; they are all priced and descriptive.

SELECT FLOWER SEEDS.—Post Free.

Marigolds, finest double dark French.	Aster, Reine Marguerite (the best variety in cultivation).
Do. do. striped Unique French.	Saponaria calabrica, var. multiflora.
Do. do. true dwarf French.	
Do. do. new dark Pigmy.	Eschscholtzia californica alba.
Do. do. new yellow Pigmy.	Nemesia versicolor.
Do. do. double orange African.	Cenia turbinata.
Do. do. double lemon African.	Mignonette, new large variety.

The above MARIGOLDS are well known in the locality, having obtained First Class Awards at several Provincial Exhibitions; all own saved from carefully selected double flowers, and can be recommended with confidence. In packets of about 1000 seeds each. The Marigolds separately, 3s.; the whole collection of 13 packets, 5s.

Collections of all the most approved Annuals (own growth) 60 packets, 10s.; 30 do. 5s.; 15 do. 2s. 6d., in descriptive and cultural labels. Catalogues may be had on application.

John Slater, The Nurseries, Malton, Yorkshire.

A GENTLEMAN about to leave for Australia, and who has had considerable professional practice in Ornamental Gardening, is desirous of Disposing of his Plans and Specifications. Rural Architecture could be very advantageously combined.—A. B., 50, Office of this Paper.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

Priced lists of plant tubs and boxes forwarded on application.

GUTTA PERCHA HORTICULTURAL LABELS FOR ROSES, SHRUBS, TREES, &c., are easily read, very elegant, and extremely durable. Price 8d. per dozen, INCLUDING every NAME, printed on the Gutta Percha in bold letters.

"What is wanted in a Garden Label is durability, legibility, and cheapness; and this (the Gutta Percha Label) seems to approach such requisites nearer than any we have yet seen."—*Gardeners' Chronicle.*

Sample dozens sent post free on receipt of 12 postage stamps. Sold by E. Taylor, Gutta Percha Warehouse, Colchester.

PAGE AND CO.'S

BLIGHT COMPOSITION should be in the hands of all Plant and Fruit Cultivators. 4s. per gallon, sufficient to make four. For testimonials see back leaf *Gardeners' Chronicle*, March 11, 1854.

GARDEN AND AGRICULTURAL SEEDS, first quality and lowest market price.

Oxford Street (adjoining Radley's Hotel, 20 yards from the Railway and Docks), Southampton.

TOBACCO PAPER! TOBACCO PAPER!

THE Cheapest and most effectual article for Smoking Greenhouses, and destroying the Fly on Plants, is Genuine Tobacco Paper, which Joseph Baker, of 73, Fleet Street, can supply in large quantities, at 1s. per lb.; and if under 7 lbs. at 1s. 2d. per lb. Post-office Orders payable at the Strand Office.

Joseph Baker, 73, Fleet Street, London (opposite the *Dispatch* newspaper).

CURE for MILDEW on GRAPES, &c.—In consequence of the increased prevalence of mildew on the Vines, &c., during the last few seasons, G. Taber, of Rose Cottage, Rivenhall, practical Gardener, Seedsman, and Florist, has directed particular attention to the best mode of preventing it, or for curing the Vines that have been attacked, and he now begs to announce that he has succeeded in preparing a composition known as TABER'S ANTI-MILDEW COMPOSITION, which will effectually prevent or cure the disease without doing the slightest injury to the Vines; and any person, by the aid of the printed instructions, may use it without risk. It is also an invaluable remedy for preventing Mildew on Wall Trees, Roses, &c. Sold in packets containing 1 lb., 1s. 3d.; 3 lbs., 3s.; 6 lbs. 5s. 6d., with directions for use. By enclosing two postage stamps, G. T. will send a circular with full particulars as to quantity required for a house for the season, and also testimonials of the success he has met with.

G. T. will personally attend gentlemen, and give instructions to their gardeners at a reasonable remuneration for time and travelling expenses. The trade supplied at the usual discount. Post Office orders to be made payable to George Taber, and drawn upon the Witham Post Office. Postage stamps received in payment of small orders. Packets delivered free to the Witham Station of the Eastern Counties line.—Address George Taber, Rose Cottage, Rivenhall, near Witham.

EMIGRANTS' IRON and WOOD HOUSES from 10l. each; Drawings of 21 Houses sent free. Also maker of Iron and Wood Summer Houses for Gardens. Portable Poultry Houses, Pheasantries, &c.—R. Richardson, 21, Tonbridge Place, New Road, near King's Cross, London.

GREAT WESTERN, GREAT NORTHERN, SOUTH-WESTERN, AND SOUTH-EASTERN

SEED ESTABLISHMENT, READING, BERKS,

For Supplying SUTTON'S HOME-GROWN SEEDS to all parts of the United Kingdom.

IN consequence of an unusual press of business at this season, we have been unable to present our friends with a full Descriptive Catalogue of our Agricultural Seeds but we have a large Stock of Home Grown Seeds of all the best varieties of Turnips, Mangold Wurzel, Carrot, Clovers, Natural Grasses, &c., which we are now sending out at the undermentioned prices; also EVERY OTHER APPROVED KIND OF AGRICULTURA SEEDS.

PRESENT PRICES OF AGRICULTURAL SEEDS.

N.B.—FOR ANY LARGE QUANTITIES WE SHALL BE HAPPY TO MAKE A SPECIAL CONTRACT.

CARROT.

	Per lb.—s. d.
WHITE BELGIAN	2 0
ORANGE BELGIAN	2 6
YELLOW BELGIAN	2 0
LARGE RED ALTRINGHAM; large and nutritious	1 6
JAMES'S SHORT ORANGE	2 0

MANGOLD WURZEL.

FROM SELECTED ROOTS.

YELLOW GLOBE (or Orange Globe)	1 4
RED GLOBE	1 4
LONG RED	0 10
LONG YELLOW; very similar to the preceding in shape	1 4
SUTTON'S ELVETHAM LONG RED; a very superior new variety	2 6

We take great pains in selecting the best kinds of Mangold Wurzel.

Mangold Wurzel Seed may be had cheaper in quantities of a Cwt. and upwards, if ordered immediately, except "The Elvetham."

CLOVERS.

Prices moderate but fluctuating.

RYE-GRASSES.

	Per bush.—s. d.
TRUE ITALIAN, fresh imported	6 6
TRUE ITALIAN, English seed	5 6
— (SUTTON'S IMPROVED) ITALIAN	6 6
— (DICKENSON'S) ITALIAN	6 6
PACEY'S PERENNIAL RYE-GRASS	5s. 6d. to 6 6
ANNUAL RYE-GRASS, OR COMMON RAY	3s. 6d. to 5 0
EVERGREEN RYE-GRASS, excellent	6 6

TURNIP SEEDS.

A GALLON OF TURNIP SEED WEIGHS 6½ LBS.

	Gall. s. d.	lb. s. d.
GREEN-TOPPED YELLOW SWEDE	6 0	1 0
ASHCROFT SWEDE, very large, hardy	9 0	1 6
SKIRVING'S LIVERPOOL SWEDE	7 0	1 3
PURPLE-TOPPED YELLOW SWEDE (SUTTON'S fine stock), a heavy cropper, good form, hardy, and stores well	8 0	1 4
RIVERS' STUBBLE SWEDE; a large and first-rate sort in every respect, especially for late sowing	9 0	1 6
DALE'S HYBRID green-topped yellow	6 0	1 0

TURNIP SEEDS.—*Continued.*

	Gall. s. d.	lb. s. d.
SUTTON'S PURPLE-TOPPED YELLOW HYBRID, the hardiest, largest, and most nutritious of all hybrid Turnips	8 0	1 4
SUTTON'S GREEN-TOPPED YELLOW HYBRID possessing same good properties as our Purple-topped Hybrid, but is of quicker growth, and more suitable for poor soils	8 0	1 4
GLOBE, Red, Green, or White	6 0	1 0
LINCOLNSHIRE RED GLOBE, a superior variety, *presented to us by Philip Pusey, Esq., M.P.*, being more solid and larger than any other. (See remarks by reporter of *Gardeners' Chronicle*)	9 0	1 6
SUTTON'S IMPERIAL GREEN GLOBE, *shape of Matson's, but much larger, and quite hardy*	7 0	1 3
YORKSHIRE PARAGON; a fine new White Globe Turnip, as solid and nearly as large as Lincolnshire Red	7 0	1 3
POMERANIAN, White	8 0	1 4
NORFOLK WHITE ROUND	6 0	1 0
NORFOLK RED ROUND	4 6	0 9
HARDY GREEN ROUND; a good old sort	6 0	1 0
STUBBLE STONE	6 0	1 0
TANKARD; Red, White, or Green	6 0	1 0
YELLOW TANKARD (or Tankard Swede)	7 0	1 3
SUTTON'S EARLY SIX WEEKS	7 0	1 3
GREEN-TOPPED AND PURPLE-TOPPED YELLOW ABERDEEN BULLOCK	6 0	1 0
ORANGE JELLY, grown from seed received from Mr. Chivas		2 0
SUTTON'S CRUICKFIELD HYBRID SWEDE a valuable new Hybrid, between Kohl Rabi and Skirving's Swede		5 0

PARSNIPS.

COMMON CATTLE	1 6
NEW LARGE GUERNSEY, altogether a superior kind, some of the roots weighing 7 lbs. each	2 6

MISCELLANEOUS.

	Per lb.—s. d.		Per lb.—s. d.
Lucerne (fresh imported)	1 0	Dwarf Rape, or Cole	0 5
Furze, for fence and cover	1 0	White Mustard	0 5
Broom	1 0	Giant Saintfoin, per bushel, 12s.	

PERMANENT PASTURE GRASSES. See separate catalogues.

Sacks and Bags charged at cost price only, and the full amount allowed if returned.

SUTTON & SONS, SEED GROWERS, READING, BERKS.

STANDISH AND NOBLE, NURSERYMEN, SEEDSMEN, &c., Bagshot, Surrey, are now prepared to receive orders for the following new and beautiful varieties of AZALEAS, which will be ready for delivery in June next. The Advertisers can recommend them with the greatest confidence, as superior to any others of their kind.

AZALEA BEALII.—This very distinct variety was introduced by them from China. The flowers, which are of first-rate shape, are quite unique, being striped, like a Carnation, with rich vermilion on a pure white ground. It is of good habit, fine in foliage, and a most abundant bloomer; and although decidedly in the first rank as a greenhouse plant, it is quite hardy enough for the open border. Each, 21s.

AZALEA CRISPIFLORA, a species differing much from any other known Azalea, having a character entirely its own. No other kind approaches it in compactness of habit, and its foliage is very fine, abundant, and evergreen. The flowers are very large, and the edges of the petals have the appearance of being irregularly *gaufred*, like a lady's frill; the colour is a rich rose lake. From the fact of its blooming very late—much later than any other Azalea—it will be doubly valuable for many purposes. Each 21s.

FIRST CLASS NEW VERBENAS.

GEORGE SMITH, in offering the following, warrants them to give entire satisfaction; having this season raised three times the usual number from seed, and with greater success than usual, has been able to select twelve distinct and beautiful varieties, which G. S. flatters himself cannot fail to please.

CALIBAN—Rosy purple crimson, extra large, smooth on the edge and of fine form, has taken First-class Certificates at the National, Brighton, and North London Floricultural Societies.

CLIMAX—Rosy purple, eye shaded with crimson maroon, extra large, of fine form and extra fine show flower.

ANGELINA—Rosy purple, primrose eye, very large, of fine shape. First-class at the Royal Surrey Gardens.

ELECTRA—Bright lilac, fine conspicuous eye, large, of exquisite form. First-class at the Royal South London and the North London Societies.

ISLINGTON RIVAL—Bright scarlet, eye white, flower large and smooth, a free bloomer. First-class Certificate at the National, Brighton, Royal South London and North London.

NOBLISSIMA—Rosy peach, with conspicuous white eye, truss large, of exquisite form. First-class at the Royal South London, also the North London.

FORGET-ME-NOT—Lavender, with large crimson purple eye, a most conspicuous variety, of fine form, extra large and a profuse bloomer. First-class at the Royal South London, Brighton, and the North London.

TRIUMPH—Scarlet crimson, eye white, surrounded with maroon, form exquisite. First-class at the Royal South London, National, and North London.

QUEEN—Pure white, the eye surrounded with bright cherry, pip extra large and smooth. First-class at the Royal South London and North London.

SCARLET KING Deep scarlet with white eye, fine habit, a free bloomer, flowers large, extra fine bedder.

MAGNIFICENT—A brilliant puce, of fine form, truss large, very free, surpassing all of its class, either a show or bedding var.

ZARIA—Rich lilac, dark eye, large, of fine form, an extra fine variety.

The Set of 12 for 2l. 5s., or 6 for 25s., in strong plants, about the 20th of April.

FUCHSIA "TELEGRAPH."

This splendid variety will be found an acquisition. The Plant is of fine growth and habit; the contrast is greater than in any other dark Fuchsia; the tube and sepals are smooth, the latter thick and broad, of brilliant coral red, well reflexed; corolla deep violet, of good size, and circular; quite equal to and distinct from Glory and Nil Desperandum. Strong Plants about the 20th of April, at 10s. 6d.; with all the leading varieties of Florists' Flowers. Catalogues forwarded in exchange for one postage stamp.

Tollington Nursery, Hornsey Road, Islington, London.

NEW ROSES FOR 1854.

BENJAMIN R. CANT has now ready for sale, strong plants in pots of all the NEW ROSES, some of which have never before been offered to the public, descriptive Catalogues of which can be had on application.

St. John's Street Nursery, Colchester.

WHEELER'S SHORT SELECT SEED LIST.

J. C. WHEELER AND SON'S SEED LIST *is now ready, and will be forwarded free on application. We have tried to make it as short and as select as possible, leaving out all inferior varieties, so that it is really a List of the best Seeds in cultivation. Grasses and other Agricultural Seeds, Garden and Flower Seeds, all described, and prices put to every article. We deliver our Seeds Carriage Free to almost every Railway Station in the kingdom, and take especial care that every sort we send out is true to name, and of the best quality.*

J. C. WHEELER & SON, Seed Merchants, Gloucester.

SUTTON'S GRASS SEEDS.—

EXTRACT OF A LETTER FROM DR. LINDLEY:—

"Messrs. SUTTON,—*We have already made a trial of your Lawn Grass Seeds, and it is but justice to say they have proved the best we have sown for many years.*

(*Signed*) "JOHN LINDLEY.

"*Horticultural Society, 21, Regent Street, London, Nov. 9, 1853.*"

Messrs. SUTTON are continually receiving similar letters of commendation of their Lawn Grass Seeds. Price of seed, 1s. 3d. per lb., 3s. per gallon, or 21s. per bushel, CARRIAGE FREE, except very small quantities. The quantity required is 40 lbs. per acre, in forming new lawns, or from 10 to 20 lbs. per acre for improving old lawns.

SUTTON'S GRASS SEEDS *for forming Permanent Pasture*, 24s. *to* 30s. *per acre;* SUTTON'S RENOVATING MIXTURE *for Improving Old Pastures*, 1s. *per lb.*

JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

RENDLE'S NEW FARMING PRICE CURRENT AND AGRICULTURAL DIRECTORY FOR 1854.

OPINION OF THE EDITOR OF THE "MARK LANE EXPRESS:"—

"We have just seen a copy of this excellent Price Current, and consider it a most valuable companion to the Agriculturist. It is the same size as the garden edition, lately reviewed in this paper. It contains an excellent Almanack, with the University Terms, Eclipses, &c., and a List of Fairs and great Markets held in the four Western Counties. The descriptive lists of Grasses are excellent; they give all the best varieties for permanent pasture, ornamental parks and lawns, sheep walks, heathy and moory lands, &c. Then comes the list of Clover and Turnips, all described in a concise and useful manner. Then follows descriptions of the best Mangold Wurzel, Carrots, and other vegetables used in agriculture: then we have a Price Current of all the best Natural and Artificial Manures, with much useful information relative to Peruvian Guano, Lawes' Patent Superphosphate, Nitrate of Soda, Bone Dust, Bolivian Guano, &c.; then are found some very good advice relative to the purchase of so-called Wheat Manures: but the best Paper is one contributed by J. B. Lawes, Esq., of Rothamsted, 'On the Cultivation of one Green Crop after another on Heavy Land.' This should be read by all engaged in agricultural pursuits. There are some valuable tests for discovering adulterations in manures, by J. C. Nesbit, Esq., the celebrated agricultural chemist; and the report of a lecture by Professor Way on the same subject; then follow the Advertisements, comprising some illustrations of the best implements of the day. It is very well got up, and comprises 52 closely-printed pages, crown quarto size, and we strongly recommend it for the perusal of all engaged in the healthy pursuit of agriculture."

CAPE HEATHS.

W. J. EPPS begs to call attention to his extensive and rare Collection of Heaths, which are in the finest condition possible; very bushy and well formed for specimens in 3, 4, and 6-inch pots, consisting of all the best varieties, such as Aristata ampullacea, tricolor, jasminiflora, ventricosa, Massoni, Webbiana, obbata, &c., &c., 12s., 18s., and 21s. per doz. A Collection of 100 varieties, 5l., carriage paid to London. A liberal allowance to the Trade, provided a quantity be taken. All the new and best kinds of Azaleas, Stove and Greenhouse Plants, Fuchsias, Dahlias, Verbenas, and Roses, equally moderate.

W. J. E. has about 200 young specimens of Heath, &c., to part with in 8, 11, and 20-inch pots. Also a Collection of very beautiful Orchids. Lists sent on application.

Nurseries, Maidstone and Ashford.

GEORGE CLARKE begs to invite purchasers to inspect his splendid Collection of ROSES, extending over 10 acres of ground. Fine Standards of the leading kinds, 18s. per doz.; Dwarf ditto, 12s. per doz. Catalogues can be had.

Evergreens, Coniferæ, fine trained Peaches, Nectarines, Apricots, &c., at very moderate charges. Strong Dielytra spectabilis, 5l. to 10l. per 100. Also 100 fine Specimen Erica depressa, which will be sold at a bargain.

Streatham Place Nursery, Brixton Hill, near London.

H. BIGLAND AND Co., in returning their best thanks for the liberal support they have received during the twelve years they have been in business, beg to state that they have disposed of their SEED BUSINESS to Mr. T. F. WINSTANLEY, whom they confidently recommend to their friends, and respectfully solicit for him a continuance of the kind support they have received.

H. B. & Co. will carry on the NURSERY BUSINESS as usual until the stock is disposed of, to effect which, as quickly as possible (their lease having nearly expired) they are prepared to treat with customers on the most liberal terms, and respectfully invite an inspection of their stock at the Nursery Grounds, Whalley Range, where all letters to them should in future be addressed.

T. F. WINSTANLEY, in succeeding to the SEED BUSINESS of Messrs. H. BIGLAND & Co., begs to assure his friends and the public that no exertions shall be wanting, on his part, to keep up the well-earned name of the late firm for supplying their customers with the best and truest Seeds that can be procured, and hope, by strict attention to business, to merit a continuance of the support they have hitherto enjoyed.

Seed Warehouse, 28, Market Place, Manchester.

FLOWER SEEDS.—We have selected out of our large collection of Flower Seeds the most beautiful and showy varieties, each sort distinct in colour, and calculated to produce a fine effect when planted out in beds or groups in the flower border; and we have had each variety distinctly marked with its Botanical and English name, height, time of flowering, colour of the flower, manner of growing, whether erect or trailing, &c., the time it should be sown, and other valuable hints as to its cultivation. In selecting these varieties, we have been careful to exclude all which are shy bloomers, or have an insignificant appearance, so that the collections will comprise only those which are really showy and handsome, and which we believe would prove to the entire satisfaction of any lady or gentleman who might be disposed to order them. The German Stocks and Asters especially are most superb. The Collections will be sent free by post to any part of the kingdom at the following prices:—

Twenty extra fine varieties, all distinct and beautiful, 5s.
Fifty ditto ditto 10s. 6d.

Payment can be made either by Postage Stamps or Post Office Order, made payable to J. C. WHEELER & SON, Nurserymen, Gloucester.

The Gardeners' Chronicle.

SATURDAY, MARCH 18, 1854.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY,	March	21	Horticultural	3 P.M.
			Linnean	8 P.M.
THURSDAY,	—	23	National Floricultural	3 P.M.
SATURDAY,	—	25	Royal Botanic	3½ P.M.

WE must now advert to the further evidence concerning the quality of little known CONIFEROUS TIMBER, which was brought before the last meeting of the Horticultural Society.

Abies Douglasi is one of the hardiest and finest of its order. A native of the vast forests of Oregon, where it forms the common timber of the lowlands, and rises upon the Rocky Mountains till arborescent vegetation becomes impossible, and trees dwindle into bushes, it is peculiarly adapted to this climate. For some years past our cultivated trees have been producing cones, and the plant will become plentiful in the nurseries. No specimen of British-grown timber has been seen; but a native plank was exhibited, which showed its quality to be of the first class among its family. As hard, as firm, as clean as the finest European Larch, bright brown when polished, apparently elastic as the best quality of Spruce, and with little tendency to warp or "cast," it will be found unsurpassed for purposes of strength or ornament, if it is as good here as in Oregon.

Another tree, concerning which no information had been previously gained, was the Corsican Pine. This stately species, unrivalled among Pines for its rapid growth and graceful habit, whence its name *Laricio*, or Larch Pine, has been derived, is reported to produce in the Mediterranean a kind of deal of great excellence, strong, elastic, and well suited for the masts of ships. A correspondent speaks of one in his plantations, 20 years planted, which is not less than 45 feet high, and 3 feet 4 inches in circumference at 6 feet above the ground. A specimen, 23 years old, and 9½ inches in diameter, was produced from a tree which had been just felled in the Society's garden. It proved to be as heavy as Oak, very clean, white, full of turpentine, apparently of great strength, but coarse, and not well suited for joiners' work. In fact, it quite corresponded with what is said of it by writers upon French forestry. Considering that, in addition to its other good qualities, it is a

tree which perfectly resists the action of the sea spray, it seems to be deserving of attention, at least as a shelter for plantations on the coast.

A slice of *Pinus insignis*, 10 inches in diameter, and not more than 11 years old, grown by Mr. T. Wrey Harding, of Upcott, near Barnstaple, appeared to possess no good quality, and to be only fit for firewood.

Cupressus torulosa, a tree called *Soorui* and *Gulla* in the Himalayas, grows on these mountains at an elevation of from 5000 to 9000 feet, in any kind of soil. We learn from Dr. Royle that trees of it have been measured frequently 12 to 14 feet, and in some cases 27 feet, in circumference. Although not so hardy as the Deodar, it nevertheless proves to be adapted to the milder parts of these islands. Native specimens of the wood, produced by Dr. Royle, showed it to be of good quality, very clean, resembling some kinds of Cedar, and well suited for cabinet work, or for veneering.

In our judgment these specimens possessed much interest with those who in planting desire to know what the ultimate value of their trees is likely to become. Doubtless home grown timber would afford more conclusive evidence; but, in its absence, proof of this kind, the best that is procurable, is surely of great importance. Nevertheless, it would seem from some remarks by Mr. Strickland, which appeared in our last Number (p. 149), that it is wholly insufficient. This gentleman continues to believe that Deodar timber, although excellent in India, will be worthless here. We do not know that much can be added to what we have already said upon that subject. Undoubtedly till old Deodar timber shall have been felled in England, there is no absolute *certainty* that its quality will be equal to that of India. We must, however, persist in thinking that the balance of evidence is entirely in favour of the affirmative; nor can we attach any weight to the arguments which Mr. Strickland now relies upon in support of the opposite conclusion. He has been so kind as to send us a fragment of Cedar of Lebanon wood, brought by himself from Syria, and it is now before us. It is like that of the branch formerly mentioned as having been obtained at Chiswick, but is certainly more fragrant; by no means, however, so much so as the Deodar. And we think we can perfectly match it with wood of the same kind now before us, from good Cedar land, both at Highclere and Bowood. We therefore do not regard the Mount Lebanon Cedar as a proof that the quality of this tree deteriorates in *suitable soils* in England. Why, then, should the Deodar? Mr. Strickland imagines that the fragrant unctuous planks of Deodar wood imported by the East India Company "were cut out of the heart of very old trees." We assure him that such is not the case; they are complete sections of the entire trunk, sapwood as well as heartwood, excepting the bark, which had come off. He also infers that, because American Larch forms inferior wood in England, though so good in the United States, therefore no inference is to be drawn from similarity of climate. We never saw, but should much like to see, English specimens of this Hackmatack; the tree is rare in England, but we should be surprised if its quality *were* good. As far as we know anything of it, our climate does not agree with it any more than it does with many other trees from the United States. We want their burning summers, as much as their savage winters; and hence the unwillingness of many trees to assume with us their natural character. But we may illustrate the question before us in a different, and, we believe, a more satisfactory manner. The common Walnut tree is Himalayan; it grows in Asia in a climate like our own. Can it be shown that Himalayan Walnut wood is better than English? Or, if better, in any degree of practical importance? Probably some of our readers may be able to answer the inquiry.

We really are not anxious to get up a case in favour of the Deodar; we are only desirous that due weight should be given to ascertained facts, and that the public should not be led to undervalue what, as far as our personal experience goes, is good presumptive evidence. We see that, *cæteris paribus*, English Cedar is as good as Syrian, that English Laricio is as good as that of Corsica, we believe that English Walnut wood is as good as that of Cashmere; and such being the case, we are unable to believe that English Deodar or Douglas Fir timber will be inferior to that of Oregon or North-Western India.

Mr. Gassiott, an eminent importer of Portuguese wines, to whom we have before been indebted for very interesting information, for the acquisition of which (from his connections at Oporto) he has peculiar facilities, has just favoured us with some drawings and notes illustrative of the present state of many of the Vines in that district. The roots emit a strong putrescent smell, showing unquestionable symptoms of disease; the pith below the "knots" is pulpy, and in a state of decay, though that above the "knots" is healthy, and the ducts which in sound shoots are nearly colourless assume gradually a deep vinous tinge, commencing in isolated spots, but soon running all round, and at length investing the whole course of the cavity, while a few fainter lines cross the medullary rays themselves.

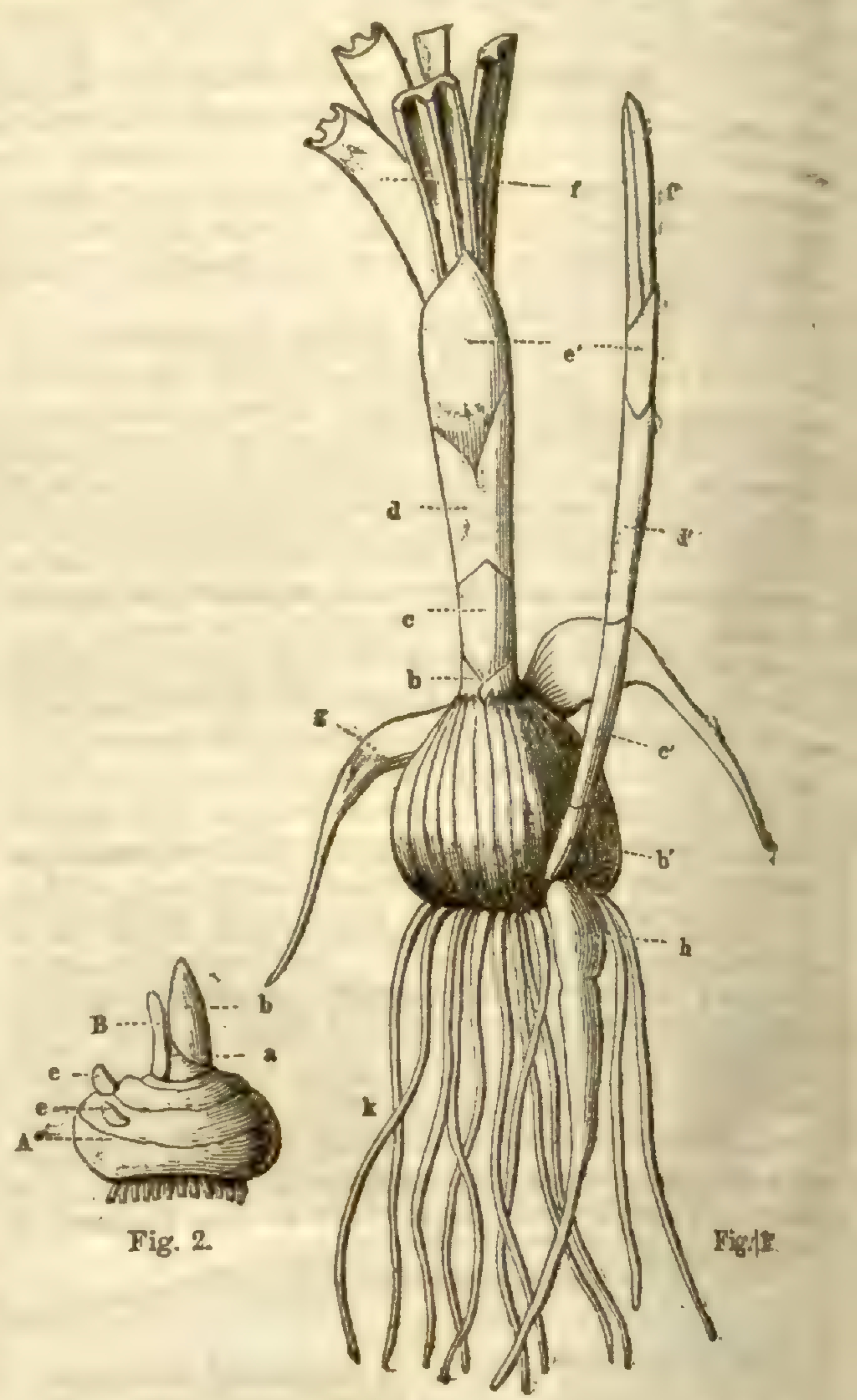
Unfortunately, for the present, we are without specimens, and may therefore run the risk of committing some error, in our deductions from the facts before us; but judging from the known history of other plants which have suffered from fungals, we are far from being surprised at the information. In the Turnip, for instance, or Potato, under the influence of *Botrytis parasitica* and *Botrytis infestans*, the ducts and spiral vessels are constantly more or less discoloured, the discolouration often running down for a considerable distance amongst tissue which is otherwise uninjured. As the change of colour is due to a chemical change of the cell walls and their lining threads, or membranes, from their ordinary healthy condition to humates and ulmates, it is not very easy at first to see why cavities which, when arrived at their full growth, in consequence of the absorption of the protoplasm, contain gaseous matter only, and from the dryness of the walls apparently less obnoxious to any putrifying agent, should be amongst the first to suffer, except possibly from the circumstance of their individual length being so much greater, or even where the original constituent cells are short — the canal being virtually one from the actual perforation of their diaphragms, whether oblique or horizontal. As regards the condition of the pith, it must be regarded as indicative of deep-seated mischief; for though the new bud does not depend for its support upon last year's pith, the cells of which in spring are effete and almost void of any nutritive matter, except a few scattered grains of starch—a state of actual decay, in consequence of which the portion nearest to the new bud is in a pulpy condition, must inevitably prove injurious to the young surrounding tissue with which the bud is in connection, and from which it is mainly supported. It is scarcely possible that such branches should produce healthy shoots; and even should the hopeful anticipations of the Vine grower, from the severity of the past winter, be happily realised, it will be some time before the Vineyards can recover their former health and luxuriance. *M. J. B.*

VEGETABLE PATHOLOGY.—No. XI.

40. In all phænogamous plants there are two opposite systems of growth—the one ascending, the other descending. To the former belongs the root, with all its ramifications, and to the latter the stem, with its appendages. In many cases the directions of growth are strictly vertical, deviations depending upon circumstances accidental to particular species.* It is curious, however, that in the embryo the original direction of the point, by a prolongation of which the root is formed, is exactly contrary.

41. In speaking of the descending system, we must be careful not to confound very different organs with true roots, merely from the circumstance of their being developed under-ground, some of which are mere underground shoots, which run for a distance beneath the soil, and then break through, by means of their pointed tip, which gives rise to a new plant, as in the common Couch Grass; in other cases swellings take place in such shoots, and become reservoirs of nutriment (tubers), intended to serve for the propagation of the plant in the following season, as in the Potato or Jerusalem Artichoke; in others, again, the lower part of the axis of the plant swells out, forming what is called a corm, as in the Crocus, or the bases of the leaves, as in bulbous plants, but none of these are true roots. The primary office of the latter is to absorb moisture from the earth by means of the spongy mass at their apex, and in an early stage of growth from their surface also, which not only is capable of absorbing a certain quantity of fluid, but, in order to increase the points of absorption, is frequently clothed with extremely delicate hairs, which may be found in most plants, especially where the exigencies are increased by more than usual want of moisture. The swollen roots of many terrestrial Orchids † present good examples of this sort of clothing, as they do of their capability of being converted into reservoirs of nutritive matter for the supply of the next year's growth.

The large swollen threads in the genus Crocus, especially in Crocus Imperati, which occur amongst the ordinary fibres, are also direct examples of the same formation. The following illustration, borrowed from the "Journal of the Horticultural Society," explains this statement.



Crocus vernus.

Fig. 1. Base of plant in spring.
b. Lowest sheath.
c, d, e. Second, third, and fourth sheaths.
f. Leaves.
g, h, i. Tuberiform roots.
k. Filiform roots.
b′, c′, d′, e′, f′. Analogous organs in lateral accessory bud.

Fig. 2. Corm deprived of its coats in autumn.
A. Corm.
B. Remains of old peduncle.
a. Lowest sheath of principal bud.
b. Second do.
e, e. Accessory buds in axils of lower leaves of last year.

42. A vascular bundle, surrounded by or embosomed in bast cells, occupies the centre of the first root and stem, if not at least at the first moment of their growth, a short time afterwards; and all roots produced at a later period spring from this bundle, from some of its ramifications, or from new vascular tissue formed in the alburnum —at first, in the form of a little papillæform projection, which gradually penetrates the superincumbent cellular matter, and is elongated when free into a true root. As the vascular tissue is formed by a transformation of the bast cells, it is not visible at first, but there is always at length a direct contact, though not always a direct communication between that of the root and the parent bundle. The vessels of the root are frequently of a different character from those of the parent bundle. The first, for instance, may be truly spiral, annular, or scalariform tissue, while that of the latter is only scalariform or otherwise. In many cases, however, the vessels of the parent bundle actually branch into the bundle of the root, as may be seen very clearly in the roots of the common Leek. In those cases where roots are produced under anomalous circumstances, as from the broken petioles of Celery leaves, they arise equally from vascular bundles, and in this case also, as mentioned above, we have observed the spiral vessels to be much distorted and branched (see No. 28, in note). Indeed, it is probable that true roots are never produced where there are not pre-existent vascular fibres; and if so, it is clear that it is hopeless to attempt to raise plants from cellular tissue merely, and that Turpin's notion of the possibility of raising a phænogamous plant from a single cell is wrong, both theoretically and practically.*

43. In the roots of Exogens, as in the stems, there is an Exogenous mode of growth, and the tissues, consequently, of the bark and wood of the roots are subject to the same laws. As, however, the active part of the root is confined after a short period to the tip, it is clear that, in many instances, even where there is a tap root, the point of the first root will not be produced indefinitely, as is the case with many Endogens, but that the exigencies of the plant will be supplied by laterals, and the greater the number of these the more active will be the imbibition of nutritive matter, other things being equal.

44. As the roots equally with the stem are threaded

---

* In the Celery leaf figured under No. 28, the roots spring from the lower lip of the fracture, and are consequently directed upwards; but this may have arisen from some accidental deflection of the leaf, as the plants had been injured by the fall of a branch.

† It is true that Schleiden and some others consider these roots as parts of the axis, but this view, however ingeniously supported by arguments, is so clearly wrong, that we have no hesitation in considering the matter as a fact which does not require discussion. The new bud arises from the same vascular bundle, but that is very far from being a proof that the organs in question are not roots.

* In those cases where on a vertical section there is no apparent connection between the vascular tissue of the root and that of the alburnum, if a section be made parallel to the alburnum a lateral connection may be traced. A good illustration of this will be found in Trécul's memoir on adventitious roots, in the third series of "Annales des Sciences Naturelles," vol. vi. We are unable to say whether adventitious roots ever arise from vascular tissue when present in the bark; but as buds do occasionally under such circumstances, it is probable that the same may be true of the roots.

with ramifications of the main vascular bundle, or of the new vascular bundles of the alburnum, from which not only roots and buds but appendicular organs derive their origin, as is evidenced by the extension of their ramifications into those organs; under certain circumstances, as when the stem is injured or cut off, or even without any injury in plants peculiarly subject to produce buds, roots are capable of sending up shoots to multiply or replace the parent. In the few phænogamous plants where vascular tissue does not exist, or is very rare, the central tissue must be supposed to take its place. In cases where root-like appendages are mere prolongations of the external cells, or evidently are generated by them, as in many cryptogamous plants, and the hair-like threads which clothe the roots of phænogams, there is of course no question of any such connection.

45. As the root under certain circumstances is capable of giving rise to the buds, so does the stem on the contrary frequently produce roots, instances of which must be familiar to everybody, as at the base of Grasses, in Vines, on the stems of climbing parts, such as Ivy, &c. The most striking instances, however, are those of many Figs and Mangroves, where stout aerial roots descend from the stem and support the plants.* It should seem, however, that root-like organs produced under the influence of disease are not always true roots. At least, such appears to be the case with a sort of gall produced in the stems of Grasses, the structure of the root-like processes differing from that of the true roots of the mother plant. The subject has been lately investigated by M. Prilleux, and the results published in the "Annales des Science;" but the relation of the vascular bundles of the stem is not indicated so as to leave the matter entirely free from doubt. The root-like processes on the stems of our native climbers are small and of little importance; not so those of many exotic plants, in which, as in Wightia, a large arboreous climbing Figwort, they are very strong, and clasp the stem on which they grow, till they at last completely destroy it. A beautiful illustration of this is given by Dr. Hooker, at vol. i., p. 164. *M. J. B.*

* An interesting account will be found in Dr. Hooker's Himalayan Journals of the manner in which the great Banyan tree of the Calcutta Botanic Garden, of which it is the pride and ornament, has been improved by Dr. Falconer. "The props are induced to sprout by wet clay and moss tied to the branches, beneath which a little pot of water is hung, and after they have made some progress they are inclosed in bamboo tubes, and so coaxed down to the ground. They are mere slender whipcords before reaching the earth, where they root, remaining very lax for several months, but gradually as they grow and swell to the size of cables they tighten, and eventually become very tense. This is a curious phenomenon, and so rapid that it appears to be due to the rooting part gradually dragging down the aerial. The branch meanwhile continues to grow outwards, and being supplied by its new support thickens beyond it, whence the props always slant outwards from the ground towards the circumference of the tree." In some species of Fig, these roots are so strong and abundant, and at the same time pliable, that bridges are formed over rivers by connecting the roots of trees situated on the opposite banks. A very pretty figure of such a bridge, in Khasia, is given by Dr. Hooker in his second volume, p. 269.

IRISES.

As these form one of the most interesting and beautiful groups of hardy perennial herbaceous plants we have for the ornament of shrubberies and flower gardens during the spring and early-summer months, I have ventured to direct attention to a few of the best of them. The brilliant tints and graceful disposition of the individual blossoms, in connexion with their adaptation to almost any aspect and quality of garden soil, bespeak them worthy of more extended notice than they have hitherto received. The characters, &c., of the kinds now enumerated are drawn from specimens growing in a rather retentive loam, upon a dry substratum.

1. *Iris acuta.*—This is a neat, slender-stemmed species, which grows from 2½ to 3 feet high, with narrow lanceolate-acuminate leaves, from 12 to 16 inches long, and numerous terminal panicle-like clusters of conspicuous, medium-sized, rich blue blossoms (borne on erect slender flower-stems), having the lower decurved sepals or flower petals banded or striped with bright blue lines upon a pale white ground, and terminating at the extremities with entire blue, the central disk of each being prominently margined with brownish yellow.

2. *I. pallida odorata* is a fine species, of robust habit, attaining the height of from 2 to 3 feet, with broad sword-shaped leaves, and remarkably large and conspicuous broad-petalled porcelain-blue blossoms, from 4 to 6 inches in diameter, the lower decurved interior sepals having a very beautifully bearded crest along the central disk, coloured with rich orange towards the extremities, and margined with pale-green streaks. The flowers being often borne on successive tiers or clusters upon the elevated flower scapes, produce a stately and elegant effect.

3. *I. prismatica.*—This is a remarkably neat, slender, erect species, from 1½ to 2 feet in height; it approaches to I. graminea in habit, but it is readily distinguished from most other species by its very compact and bushy, yet erect growth, dark green, somewhat rigid lanceolate leaves, and a profusion of conspicuously bright, sky-blue flowers, the lower sepals being elegantly banded with transverse blue lines upon a pale ground.

4. *I. amœna.*—This compactly growing species attains a height of from 1½ to 2 feet, with broadly-lanceolate leaves, suffused with purple at the base, and racemes of comparatively large blossoms; the upper incurved petals being pale white, contrast well with the dark blueish-purple on the extremities of the lower ones, which are elegantly streaked with purple on a pale ground towards the base, and picturesquely marked with a longitudinal pale yellow bearded crest along the central disk.

5. *I. spuria, var. ochroleuca* is a robust and stately growing variety, varying from 3 to 4 feet in height, with broadish lanceolate leaves, tall erect flower stems, and extremely beautiful large clear white blossoms from 6 to 8 inches broad, the lower decurved sepals marked with a very rich lemon-coloured blotch. The singularly elegant and conspicuous blossoms of this ornamental plant, terminating the summits of the tall flower-scapes, are seen to great advantage, when contrasted with the darker background of select evergreens.

6. *I. sub-biflora.*—This is perhaps the finest of the dark-flowered species hitherto introduced. It is a luxuriant growing kind, of rather diffuse habit, reaching from 1½ to 2 feet in height, with broad sword-shaped leaves, and large rich deep purple blossoms, nearly 6 inches in diameter.

7. *I. florentina.*—Of similar habit to the last, to which it offers a very striking contrast in its large and conspicuous creamy-white blossoms.

8. *I. germanica* is an ornamental species, growing 1½ foot in height, with broad lanceolate leaves, and numerous large, conspicuous, pale azure-blue flowers, from 4 to 6 inches in diameter, forming an elegant object in the medium foreground of select shrubberies or flower-borders.

9. *I. pumila*; 10. *I. cristata.*—These rank amongst the dwarfest of the genus, being from 4 to 6 inches in height, and producing comparatively large and conspicuous blueish-purple blossoms in the early spring months; they are well adapted for front effect in smaller compartments or parterres.

I. pumila alba is also a desirable early spring-flowering variety, of dwarf habit, forming a pleasing contrast with the last-named species, its creamy-white blossoms, marked with pale purple on the lower decurved sepals, being very pretty. *William Wood, the York Nurseries.*

CLERODENDRON SPLENDENS.

There is hardly a more beautiful or useful plant in cultivation than this Clerodendron; for, under good management, its large clusters of brilliant scarlet blossoms are produced in great profusion, and they last a long time in perfection. Unfortunately it can never be everybody's plant, for it cannot be grown with advantage except where it can be furnished with plenty of heat and moisture during its growing season. Where there is convenience, however, it is well worth attention, and will be found to amply repay any amount of trouble which may be bestowed on it.

It may be readily propagated by cuttings made of short-jointed young shoots, selected in a rather firm state, inserted in sandy, peaty soil, covered with a bell glass, and afforded a brisk bottom heat. It may also be increased by grafting it on any of the stronger growing varieties; but, although this plan was at one time much recommended, it has now, I believe, fallen into disrepute, the plant having been found to do quite as well on its own roots. The young plants should be potted singly in small pots, as soon as they are sufficiently rooted to bear handling, and replaced in bottom heat, in a moist, warm situation. When well established, shift into other pots, two sizes larger, and keep them as near the glass as is convenient, in order to induce the production of strong, short-jointed wood. And during the growing season, continue to afford them a brisk bottom heat of 85° or 90°, with a warm, moist atmosphere, and all the light possible, merely guarding them from the direct rays of the sun on the forenoons of bright, warm days. Do not keep them growing too late in autumn, however; rather endeavour to have the cuttings rooted early in the season, so as to get strong, well-furnished plants by autumn, when they should be removed to a drier atmosphere, gradually withholding water from the soil, with a view to get the wood well ripened. And I may observe that upon this, and the plant being allowed a period of rest, future success greatly depends; for unless the wood is properly ripened, and the natural season of rest afforded, there will be no possibility of getting them to break strongly or grow vigorously; but if these particulars have been properly attended to, they will grow equally well whether started in June or March, and form splendid plants for blooming in a warm house during winter. If, however, your young plants are intended for blooming in summer, water should be gradually withheld towards the middle of October, and they may be removed to their winter quarters by the middle of November, which may be a corner of the stove, or to any dry situation where the temperature may average from 50° to 55°, and no water should be given to the soil during the resting season. About March turn them out of their pots and shake away as much of the soil as can be done without injuring the stronger roots, and repot in not over-large pots, using good fresh turfy loam, rich fibry peat, and leaf soil in about equal proportions, well intermixed with plenty of sharp sand to secure rapid drainage, cutting the shoots well back to strong prominent eyes. After potting plunge in a sharp bottom-heat, and maintain a moist atmosphere by frequent syringing, but carefully avoid overwatering the soil, until the plants fairly start into growth.

The shoots may be loosely trained to stakes until the plants can be shifted into their flowering pots, when light wire trellises may be applied, so as to enable them to be kept neatly and regularly tied. There is no danger of overpotting a plant like this, for with good management, plenty of light and the command of heat and moisture, it will fill a 20-inch pot, and form an immense specimen in the course of a few months, or it will bloom nicely in a 12-inch pot, forming a handsome moderate sized plant. Therefore, the size of the flowering pots may be regulated by circumstances, the only difference being that the plants will bloom earlier and their beauty will be shorter lived in small pots, and *vice versa*. If a large shift is given, however, be very careful not to give too much water to the soil, until the roots reach the sides of the pot, and when this is the case a liberal supply of clear manure water should be administered. Keep the shoots regularly trained to the trellis, and continue to keep up a brisk bottom heat, with a warm moist humid atmosphere, until they are fairly in bloom, when they may be gradually prepared for removal to the show-house; and if this is done carefully, and they are afforded a close corner not exposed to draughts, they will continue to unfold their brilliant flowers for a very long period. By taking care to get the wood well ripened, affording the plants a period of rest, and disrooting, &c., as recommended above, the specimens will last for any number of years. *Alpha.*

Home Correspondence.

Dacrydium Franklini.—It is stated at page 151 that two thriving plants of the "famous Huon Pine" of Van Diemen's Land are growing in the New Zealand house at Kew. It may, therefore, be interesting to know that at this place (which is by no means favourable for acclimatising plants) a tolerable specimen of this singular plant—growing on the open lawn, in a situation of much exposure to the northerly and easterly winds, and having only had the advantage of a slight protection of Spruce Fir branches during the intensity of the frost—has stood the winter comparatively uninjured, a few of the extreme tips of the branches only being destroyed, and even this may in some measure be attributable to the circumstance of a late growth having taken place, induced by the functions of the plant having been deranged during the process of planting in early summer, and the continued wetness of the season. *James Duncan, Basing Park, Alton, Hants, March* 15.

Water about the Roots of Ash Trees.—I have a fine Ash in a conspicuous place, ornamented with Ivy. During rainy seasons, the surface of the soil is covered, to the depth of 1 or 2 feet, by a stream of water. Shall I be in danger of injuring either the Ash or the Ivy by making such an alteration in the stream as to raise the water constantly to this depth? *Charles Fox, Wellington.* [You will no doubt kill both.]

Exterminating Ants.—If "S. B.," Dublin, waters his ground well with gas-water, he will soon rid it of the little pests he complains so much of; for gas-water destroys all vermin wherever it is used. Let it be fresh, and apply 3 gallons of it to 24 square feet of ground, through a medium-sized rose watering-pot. Turf may be laid down two weeks after the water has been applied; but if the ground is to be sown with Grass seed, four weeks should be allowed to elapse after the application. By no means use gas-water on turf, for it will be sure to kill the Grass. *J. H. T.* [No.]

Hartley's Rough Plate Glass.—As my name has been introduced on the subject of the above description of glass, I feel called upon, as a matter of justice to all parties, to give my experience as to its qualifications, which I will do in as few words as possible. About the autumn of the year 1850, I was induced, from the high character given to it, to have a Camellia-house glazed with it, thinking that it would want no shading, and be all that was required for Camellias and Rhododendrons. At the end of the summer of 1851, in spite of frequent shading, I found the Camellias much marked, not burnt in spots as with sheet glass, but rather delicately roasted like, but more brown than the few leaves which I enclose for your inspection. I was disappointed, but I did not complain, for I thought it might be owing to something peculiar in the weather, or the angle of the roof; in short, I did not know what to think. The summer of 1852 came, and had nearly passed, and my Camellias were still being roasted, although in very sunny days the house was regularly shaded, so that at the end of the summer I was quite disgusted; but I did not publish my complaints, for I am not a young hand, and well know how many good things and good practices in gardening have been too hastily complained of and written down. I made known my complaints, however, to Messrs. Phillips and Co, from whom I procured the glass; they immediately paid me a visit, and pronounced the glass of inferior manufacture, offering at once to replace it with good glass from Messrs. Hartley. They did so in the autumn of 1852 with a nice even sample, with small flutes, very regular and good. Last summer (1853), as is well known, was a continual autumn; there were many more cloudy days than sunny ones, still the roasting continued, but not by any means "as bad as ever," to quote the words of your correspondent (if these words were used here recently, they were expressed incautiously, but I cannot find, on inquiry, that any person here remembers having used them). I certainly thought when the rough plate glass was introduced, that for Camellias it would require no shading, and would, indeed, be perfection. I have been disappointed in not being able to grow Camellias without shading; but I cannot disbelieve the reports of many of our first-rate gardeners as to its eligibility for forcing houses. Permit me now to express my opinion on the different descriptions of glass. For orchard-houses, and structures of that de-

scription, where abundant ventilation is secured, no better glass than good 16 oz. sheet glass, such as can be purchased at 2d. or 2½d. per foot, need be wished for; for early forcing houses, which in early spring cannot be ventilated, so as to prevent scorching, Hartley's rough plate or double crown should be employed, for 16-oz. sheet glass is very apt to burn. I believe it almost impossible to prevent 21-oz. sheet from scorching terribly, as I think Mr. Roberts, of Raby Castle gardens, can testify; we may therefore reckon the rough plate and double crown as the two descriptions of glass the best adapted for all houses in which forcing is commenced in November, December, or January. When forcing is commenced later, so that plenty of air can be admitted, 16-oz. sheet answers well, as I can testify, for I have four houses glazed with it full of Roses just coming into flower; their foliage is beautiful, and not a leaf has a speck. For ornamental plant-houses the double crown glass (unless the luxury of plate glass can be indulged in) is, in my opinion, the best of all; it is about the thickness of rough plate, and as nearly as possible the same price. I have one house, 60 feet by 10, which was glazed with it about five years ago, and I have never yet had a scorched leaf in it, and not a square has been fractured by frost. I procured it from Messrs. Phillips, I think on their recommendation, and I cannot help saying that the clear light given by this glass in winter, spring, and autumn, when greenhouses and conservatories are mostly resorted to, is much more agreeable than the subdued railway-waiting-room light given by rough plate glass. The double crown glass is particularly clear; and when I am in my greenhouse I like to be able to look out and around, and to see the clouds and the sky, in preference to having my sphere of vision confined to the interior. This is, however, only a matter of individual taste. It may, perhaps, be useful to point out to your readers the most eligible purposes to which the different descriptions of glass may be applied. Hartley's rough plate for early forcing houses, forcing pits, frames, and Orchid houses, unless as a matter of taste the clear light given by double crown is preferred. Sixteen ounce sheet for orchard houses and others where late gentle forcing only is employed. Double crown for ornamental plant houses, crown for the same purposes; if the price for double crown be an object, both the descriptions of crown glass are perfectly clear, and (ought to be) free from foci. It must be recollected that rough plate and double crown are very strong, and can be used in pieces 20 inches by 12 or 15. Where the sash bars or rafters are 20 inches apart, 16 oz. sheet may be used of the same dimensions without fear of breakage by snow. Crown will not bear more than 8-inch sash bars. *Thomas Rivers.*

The "Open Spade," described by Mr. Walters, at p. 134, as a new invention, has been in use in this place for half a century. There is a person here, now verging on 90 years of age, who has used it ever since he could dig, and I have it myself in constant use. It is in every respect such as is described by Mr. Walters, and is here known by the name of "digger." It is considered to possess the advantages pointed out by Mr. Walters, being more easily used in heavy lands than the ordinary spade, though less so than the fork, which has also long been in common use here. It is, however, preferred to the fork in one respect, namely, that it cuts the roots, &c., which elude the fork. I do not write for the purpose of depriving Mr. Walters of the credit of his invention, but only to show that others had thought of the same plan very long ago, and to attest the real usefulness of it. *T. B., Selborne, Hants.* ——The open garden spade, described by Mr. Walters, is nearly as common in some parts of Sussex and Kent as the common garden spade. I can confirm all that has been said of its utility in stiff soils, and in the "drawing" of forest trees and large shrubs. Its price is, however, quite double that given by Mr. Walters. It has been known here and in Sussex for generations by the name of mule. We have here and in Sussex an implement which I have not seen in general use anywhere else. I think it the most useful implement for drilled crops on a small scale I ever saw. Every cottager who has but a pole of land has one. It resembles the lower part of an Asparagus fork, and has a handle like that of a hoe. It is used for chopping between crops of all descriptions, both on the farm and garden; it is called the Canterbury or spud hoe. *W. H. R., Tunbridge Wells.*

Collodion (see p. 132).—In answer to the question as to whether or not this will stop the bleeding of Vines, I beg to state that I have used it most effectually for that purpose, on our late pruned Vines here since 1852, and I am at present trying what effect it will have in curing the canker of fruit trees. My attention was called to it by Dr. Dalziel, of Penpont, who has used it for years before the date just mentioned, when pruning his fruit trees. Dr. Dalziel prunes his wall trees at any time that is most convenient, and immediately applies collodion to the wounds. His trees are in good health, and annually bear fine crops of fruit. He was also among the first (if not the first) in this part of the country, who employed collodion in his own profession. *James M'Intosh, Drumlanrig Gardens, March 7.*

Hartley's Rough Plate Glass.—My employer having resolved on building two Vineries in the spring of 1852, Hartley's rough plate was chosen for the roofs, in sizes of 36 inches long by 7 inches broad, and well-selected, sheet of the same sizes for the ends and fronts giving the houses a clean, neat, and substantial appearance, as soon as they were finished, which was in the beginning of May. The young Vines were planted; they made excellent wood the same season, some of the shoots measuring from 12 to 15 feet long; and, with the exception of a few leaves together under one sash (which at first I thought was the result of airing having been too long delayed some morning), all the rest continued perfectly healthy and vigorous throughout the season. In autumn the rods were cut well back; and last spring, when the young shoot on which the leaves were scorched the former season had advanced the same distance up the rafter, viz., about 6 feet, its foliage there was again affected; while, as before, all the other leaves continued healthy. This scorching at the same spot a second season caused me to examine the glass minutely in that part of the house, when I discovered that one piece differed considerably from the rest, in having many hundreds of very minute spots or blisters, the largest of which did not exceed 1-16th of an inch in size, and which individually I do not think could form foci, but from so many hundreds of them being together they do so. On examining the roofs of both houses, however, I only found another piece which I could suppose might cause burning. After the first year's trial I was so well satisfied with the result of Hartley's rough plate that I extended it to pits under which I had Melons, Cucumbers, and Strawberries, and last season all of them gave the greatest satisfaction; so that by means of a little care on the part of the workmen while glazing, to lay aside such pieces as I have described, rough plate will be found to merit all that has been said of it. Owing to its thickness it retains heat longer, requires less air, and is not liable to break with frost in winter. Living in a very cold northern part of the country has given me ample experience on this latter point. During the past winter, when on the 3d of January the thermometer was 3° below zero, not a pane of Hartley was broken, while in a greenhouse which had originally been glazed with crown glass, upwards of 50 squares were broken; in sheet glass the damage has been considerably less. *R. Farquhar, Fynie, Aberdeenshire.*

Deep Soiling Potatoes.—Among the various methods suggested for the prevention of disease, none appears more worthy of attention than that proposed by your correspondent, Mr. Aldborough, at p. 107. It consists of two operations—first, digging out a trench between the rows, and secondly, laying the earth upon the top of the plants. More attention, however, appears to be directed to covering over the Potatoes with the soil (perhaps with the view of protecting them from atmospheric influence) than to trenching between the rows, which would have the opposite tendency of allowing access to the air, and promoting the dryness of the bed in which the tubers rest. In the absence therefore of any experiments upon the effects of either of the above operations performed singly, I would submit that the efficacy of the process is due to the trenching rather than to "earthing over" the plants, the effects of the former being more agreeable to those conditions which are known to be favourable to the production of healthy tubers. *G. P. S.*

Forcing Seakale.—Your correspondent, "S. S.," (see p. 133), is of opinion that the quantity of soil I recommend for growing this plant in is insufficient, and that reducing the roots injures the coming crop. "S. S." has, however, mistaken the depth of soil recommended. In the first place, it is to be spread over the fermenting material, to the depth of 6 or 8 inches, upon which the roots are to be placed perpendicularly, and, as before directed, filled up to their crowns with the same compost. "S. S." will thus see that the soil first placed on the bed is 6 or 8 inches, and that the remainder is the same depth as the root, which is advised to be 8 or 10 inches in length; therefore, instead of there being only 6 or 8 inches provided for the young fibres to ramble in, there are 16 or 18 inches. The next point is that of cutting away all superfluous large roots, forcing none which have not a crown at their extremity. "S. S." says correctly that the London market gardeners are very careful to preserve the roots. But it is well known that our market gardeners are not so famous in the production of this delicious esculent as they are in that of most other vegetables, or forced Seakale would be in reach of the middle classes of society, which it cannot be said to be in January or February at present. Not every tradesman will choose to give half-a-crown for a dish of Kale, and there is no reason why good Kale should not be obtained at 1*s.* 6*d.* at such periods; but, by managing it as I direct, it may be, and with profit to the grower. "S. S." considers that cutting away the roots, as described, deprives the plant of its chief maintenance, but I can assure him there is sufficient left to perfect the crop. This is my experience, or I would not make the statement. We tried a frame of one light, with the roots pruned, and a frame of two lights, with them untouched; the one-light produced much more in proportion than the other, being capable of holding more crowns, and they were not half so much drawn. *A. Bundy.*

Meudon Strawberry.—My gardener induced me, last November, to let him advertise this valuable fruit in his own name, for the benefit of the school in which he was brought up; but as there is often much charlatanry in use on such occasions, people are chary of giving confidence where pretensions to merit are not well authenticated. I feel strongly the advantage the gardening public would derive from the cultivation of this Strawberry, and herewith beg to give you its history. Meudon, as you know, is one of the Royal Palaces near Paris. Its garden, at the time I speak of it, was occupied by a horticulturist, who gained much celebrity in the *Chronicle* by his successful mode of growing Pine-apples in peat. Being curious to witness the fact, I visited Meudon, and found all that had been stated realised. But I at the same time saw what France heretofore did not possess of its own, viz., a splendid-looking Strawberry, which was being forced on shelves at the back of the Pine pits. The gardener told me it was one of his own raising, and seeing how abundantly it bore in small 6-inch pots, and how beautiful it looked, I induced him to let me have one plant out of the small stock he possessed. I brought it home with me to England, and the stock I now have of what I call the Meudon Strawberry is derived from this single plant. The fruit is as large as that of Keens', but conical and of a light red—solid, juicy, and sweet, with a quick flavour; excellent for dessert or preserving, and an abundant bearer under all treatments. My gardener has a considerable stock of this Strawberry left for disposal in small quantities, in order to its more general dispersion, as I should be heartily glad to see it become one of the staple plants for general cultivation, and I thus willingly lend the good man my advocacy, accordingly. *Wm. Mason, Necton, Norfolk.*

London Squares.—The chief use of the London squares is for ladies and children to take the air in, free from annoyance. They should be, therefore, at all possible times, dry and airy; they are the nuclei of the dampest fogs in town, worse than the streets; everyone knows that trees and shrubs especially attract moisture. A town square should be a formal Italian garden of the simplest kind, Grass, gravel, and a few very large vases at the intersections of the wide rectangular walks. In the heat of summer no one is in town, and therefore does not require shade to exist there. Instead of railings, which are always an eyesore, a simple 6-foot wall, with Grass slopes towards the centre of the square, is what is wanted. *Somerset.*

Eastern Cypresses.—The Cypress of Affghanistan, regarding which I observe an inquiry in your Paper of March 4, is the common cultivated Cypress (C. sempervirens), which is a favourite tree in all parts of the East. The trees in the garden at Neemla (between Jellalabad and Cabul) are well known for their size. No other Cypress grows in Affghanistan, which is much too dry for the Weeping Cypress of China and Sikkim. *Thomas Thomson, Kew.*

Food for Working Men.—The allowance of Rice to the Crewmen in British employ at Sierra Leone was just one quart, full measure, daily. The Crewmen formed messes or gangs, and one of their number, generally a youth, full of humour and comicality, shelled the grain of the mess in a hard-wooded mortar, aided by a heavy pestle of the same material. The shell was close and compact, and the loss in shelling was very small. The Crewmen boiled the Rice in a large iron pot, "to a turn," then poured off the water, and steamed the grain for a minute or so, dry, over the fire. The Rice was then poured, the grains tumbling over one another, into a large calabash, when the happy group seated round, each man on his hams, formed the Rice into balls, rolled it in Palm oil, then dipped it in a mixture of salt and red pepper, and swallowed it with a gusto indeed. Each grain was perfectly cooked, *croquant* and firm, and not in the least mashy. When the Crewmen had a little fish or game, or a bit of meat, which happened often, they ate it with their Rice. It was quite as pleasant, and far more novel, to see these joyous fellows eat, as to witness a lord mayor's feast. The Crewmen do not bring their women with them, but the other tribes, Mandingoes and the rest, also pound their Rice, usually allotting the cheery task to the young girls. Many a time I have gazed at these ebon Hebes, with their graceful, elastic forms, their rounded shoulders, thanks to the Anglo-Irish rule which shielded them, undefaced by the cruel lash, as they shelled the snowy Rice, keeping time as the measured stroke came round, with some wild chaunt. These negroes, it must be confessed, are vastly better cooks than our English, Irish, or Scottish peasantry; or than the latter, short of sustained systematic teaching, can become. Their Rice, as I have already said, is done to a turn; and when the curry of fowl, or fish, or meat is poured on the hot, smoking, fragrant, snowy mass, the food is fit for a king. The whimsical notion of mashing Rice in a huge quantity of water, and calling it food, has never entered their noddles. They would not eat such wishy-wash if it were offered them! English, Irish, and Scottish cooks rarely boil Rice properly. It is mere chance medley with them. Either it is half raw or it is mashed. Educated people, even, under the influence of the best of motives, advise Rice to be boiled for hours, whole hours! Now, by careful experiment, I have reduced the matter to a perfect certainty. It is a thing well worth knowing to those who eat Rice, or would have others to eat it. Thirty minutes in boiling water, just one half hour, tied loosely in a napkin or otherwise, serves to prepare Rice for eating with butter, or treacle, or sugar, or milk, or the curry. Rice and curry is served at most tables, and yet it is rarely eaten or fit to eat. Yet it is a capital dish, and most easy to prepare. I should like to see it twice or three times a week on every poor man's table. I have a predilection for Rice, having eaten of it three times daily, I believe, for some eight or nine months. It is a noble grain, but cruelly murdered by English, Irish, and Scottish cooks, and would-be instructors of the poor in its use. I shall give, in half a minute, a receipt for a Rice and curry, which I am sure would be equally relished by Prince Albert or Prince Albert's hind. Provided always, Prince Albert and his hind were hungry, and provided also the Rice, and other materials, were sweet, clean, duly prepared, in clean vessels, free from smoke, and promptly served up. *Imprimis.* Good, clean Rice, whatever may prove sufficient, is to be boiled for half an hour, no more and no less, in boiling water. The water is poured off, and the Rice is transferred into a dish. The curry is now poured over it, or the two can be helped separately. The curry is made thus. Take of fowl, or flesh, or fish, cut in small pieces, what may prove sufficient; season with salt and red pepper to taste. If the meat be lean, add a little butter. If it be dry, add a little water or any kind of "*jus.*" Stew in an iron, copper, brass, silver, or earthen vessel, closely covered up, as many hours as you please, with a very gentle heat. It is supposed in England that nobody out of Ireland knows how to boil Potatoes. This is a mere notion. It requires a little attention no doubt. People in England boil Potatoes perfectly well, but then the Irish eat them hot and hot. Unless this be done, the Potato deteriorates. And as people in England do not eat them the moment they are boiled, they fancy they do not know how to cook a Potato. It is how to eat them they do not know. It is quite a picture to see an Irish woman, poor dear soul, cook a pot of Potatoes. She looks curiously at them, and once the water begins to boil, keeps it boiling. She knows, she does, by a sort of intuition, when the Potatoes are about done. But to make sure, she picks one out of the boiling water, with her naked fingers as likely as not, clasps it in her hands, perhaps aided by the pressure of her knees

If the Potato crush readily, it is enough. With lightning speed, she flings a cloth of some kind over the lid of the pot, which is left a little open, securing the ends with her thumbs. The pot itself is clasped on each side, though she never heard of Bontigny, with the naked hands. The water is quickly poured off, and the pot as quickly replaced upon the fire. After a brief pause, during which the family who are to share the meal are summoned, the Potatoes are rolled into a shallow basket, and after being daintily peeled, are eaten in the fulness of their first warmth and flavour. I may observe that Potatoes boiled this way are capital to eat with curry, but Patrick's wife knows nothing of the simple confection of a curry, though the poor Hindoo could teach her. Various meats are wasted by awkward modes of cooking. And I have seen excellent fish given to swine or left to rot upon the strand, fish that with a very little pepper and butter would have made a glorious stew or curry, for perhaps a week. Of all our working men, sailors, men-of-war's men in particular, are best fed. Soldiers are not nearly so well provided for. The allowance of meat, fresh or salt, 1 lb. per man daily, might, however, with much propriety, be diminished, and 1 lb. of salt or stack fish, during one or even two days, in the week, substituted. This excellent fare, however, is the result of intelligent, liberal supervision. Gladly, gladly would I see all our working men fed as well as the mariners on board our ships of war are fed. Our working classes, however, will never be fed properly till they shall be better educated, and therewithal learned to be more provident, and also more temperate. Even among the middle classes the mode of cooking is often insanely absurd and extravagant. I certainly did not contemplate passing these few and imperfect remarks on the *rationale* of food-preparing, had I not been prompted to do so by the exceedingly superficial and confident directions which were thrust forward by persons who, however zealous, had certainly never taken the slightest pains to obtain even the most elementary information on the subject. *Henry M'Cormac, M.D.*

Societies.

Linnean, *March* 7.—The President in the chair. C. Darwin, Esq., and S. Anderson, Esq., were elected Fellows. N. B. Ward, Esq., exhibited specimens of Thuretia quercifolia, Hemitrema elegans, and Claudea elegans, together with two new species of reticulated Algæ discovered in November, 1853, in Belligam Bay, Ceylon, by Dr. Harvey. Of the latter, one was a new species of Claudea (C. multifida, Harv.); the other a new genus most worthily dedicated by Dr. Harvey to the well-known natural history publisher under the name of Vanvoorstia spectabilis. Mr. Ward also exhibited a specimen of a new British Alga, Desmarestia pinnatinervia, Montagne, discovered by Mr. Sawers at Loch Foyle, about 20 miles below Londonderry, Ireland; and two species of Trichomanes lately discovered in Alabama, United States, by T. M. Peters, Esq., the one identical with T. radicans, the other a new muscoid species, dedicated to the discoverer under the name of T. Petersi, by Dr. Asa Gray, who has recorded the discovery, and given characters of the new species in the "American Journal of Science and Art," (vol. xv. 2nd ser. 1853). Mr. Layard laid before the meeting a list of numerous woods of Ceylon, and made some observations on their value and uses in building and other constructive arts. Mr. Adam White exhibited a portion of the Coleopterous insects collected in the Himalayas by Dr. Hooker, as well as others from the collection of Mr. Turner, of Manchester, and offered to the meeting some observations respecting them. Other insects, collected in northern China by Mr. Fortune, and in Natal by Mr. Guenzius, were exhibited by Mr. S. Stevens. This business occupying the whole time of the meeting, no papers could be read.

Entomological, *March* 6.—The President in the chair. The President announced that the annual excursions of the Society would take place on June 10, to Pembry *viâ* Tunbridge, and on July 8 to Mickleham. Mr. Curtis exhibited various interesting larvæ of different Coleopterous insects, namely, one supposed to be that of an Ophonus, and others supposed to be those of Stenolophus vaporariorum, those of Cistela atra, Prostomis mandibularis, Helophorus sp., and also of one of the Pyralidæ, which is very destructive on the continent in boxes of insects, spinning its web over, and devouring the specimens. He likewise, in allusion to the remarkable varieties of Fritillary butterflies exhibited at the last meeting, observed that the neighbourhood of Ipswich and Colchester seemed peculiar for producing such varieties, of which he mentioned some additional examples. Mr. S. Stevens had also obtained a curious variety of Limenitis sibilla, from the neighbourhood of Colchester. He also exhibited specimens of Anthrocera minos, a new Burnet moth, taken in Galway by Mr. Milner, and a fine series of Lepidoptera, sent from China by Mr. Fortune, and from Port Natal by Mr. Guenzius; also a splendid specimen of Morpho Cypris, which he had restored to its pristine brilliancy (having been previously saturated with grease) by immersing it for three days in camphine, and then powdering it over with magnesia. Mr. F. Moore exhibited the cells of a mason bee or wasp from India, in which one of the beautiful parasitic Chrysidæ has been found, as well as the pupa of a wasp, the parent of which had probably taken possession of the previously formed cells for the deposition of her own eggs. Mr. Desvignes exhibited a fine variety of Melitæa Dictynna, and Mr. Foxcroft a quantity of whalebone shavings, infested by the cased larvæ of one of the Tineidæ, probably Tinea pellionella; also specimens of the larvæ and perfect beetle of Boletophagus crenatus, a species first found by himself in Perthshire. The larvæ feed upon a Boletus growing on Beech trees.—A note was read from J. C. Dale, Esq., announcing the capture of Hemerobius dipterus, a species new to this country, at Langport, in Dorsetshire. A communication from Sir W. Jardine was read, requesting notices for the forthcoming volume on Zoological Bibliography commenced by the late Mr. Strickland; also a note from Mr. W. H. Rawnsley, of Moreton Bay, New Holland, offering to collect objects of natural history on reasonable terms. A notice was also read of Dr. Reinhardt's intended voyage to Brazil for natural history researches, and to collect insects, &c. A translation by Dr. Wallich of a paper by the latter gentleman on a luminous larva observed at Lagoa Santa was communicated by Mr. Spence. The larva emitted a greenish light from two patches on the dorsal surface of each segment of the body, whilst the head glowed with a red light like burning coal; it was supposed to be allied to the glow-worm. A notice was also read on the introduction of the Indian silk moth to Malta by Sir W. Reid; and a paper by Mr. Newport on the priority of discovery by himself of the larva of Monodontomerus nitidus.

Notices of Books.

A Visit to Belgrade (Chapman's Reading for Travellers) is a very slight sketch of Servian manners. It may serve to occupy an idle hour, but is of no further moment. Carlyle's article on *Burns*, another number of the same series, reprinted from the "Edinburgh Review," is, like all the author's writings, original and instructive, though exaggerated.

Lance's Considerations upon Life and Marine Assurance (Longmans) are full of interesting details. It is estimated that the amount of Life Assurances has now reached nearly 210 millions, although the system is not a century old; that about seven millions and a half are contributed to them annually by the public, of which about five millions are paid back on account of deaths. The annual income from marine insurances is laid at about five millions. But for this and other facts we must refer to the work itself, which is drawn up with ability.

Of *Johnson's Chemistry of Common Life* (Blackwoods), No. II. refers to the "Soil we Cultivate and the Plant we Rear;" No. III. to the "Bread we Eat and the Beef we Cook." The last is similar in purpose to the work by M. Payen, lately noticed in these columns.

Mr. Macaulay's Critical and Historical Essays are now appearing in well printed shilling numbers, each consisting of 128 pages in double columns. The publishers are Messrs. Longmans.

The Colonist's and Emigrant's Handbook of Mechanical Arts—by R. S. Burn. 8vo. Blackwood—is a well written, well arranged, and well illustrated treatise, showing emigrants, who must do their work themselves, if it is to be done at all, how they best can build, join, and furnish their houses, make their roads, fence their lands, and sink their wells. It goes into as much detail as 130 pages can contain, and will, we doubt not, be a welcome guide in every new colony.

New Plants.

50. Psammisia penduliflora *Decaisne; aliàs* Thibaudia penduliflora *De Candolle.*

The genus Psammisia has been formed out of Thibaudia; it consists of branching shrubs, with coriaceous leaves, each having from 3 to 7 nervures, and bearing in their axil clusters of flowers furnished with very small bracts; in Thibaudia, on the contrary, the leaves have pinnated netted veins, and the peduncles bear large coloured bracts.

The present plant forms a little bush, a yard or so high, with a thin brownish bark. The young wood is smooth and cylindrical, tinted with violet on the sunny side. The leaves are oval, heart-shaped, with long points, 3-5-nerved, bright green above, paler, and marked with little black glandular points beneath. The flowers have a fleshy 5-toothed calyx, changing from green to reddish brown. The corolla is fleshy, cylindrical, distended at the base, vermilion red in the lower half, yellowish green in the upper. Found on the mountains of Venezuela, at the elevation of 5500 feet, by Mr. Linden. Requires the same cultivation as Thibaudias.—*Decaisne in the Rev. Hort. ser.* 4, III., 5, *with a plate; much abridged.* This appears to be a very handsome greenhouse shrub, with good foliage, and most brilliant flowers.

Garden Memoranda.

S. Rucker's, Esq., West Hill, Wandsworth.—It may be interesting to know that the magnificent collection of Orchids, for which this establishment is so justly celebrated, is at present in as fine condition as ever we remember to have seen it. It is true there have been times when we have found in it more plants in flower; but as regards luxuriance of growth or deep green healthy colour, they never have been better. Foremost among such as are in bloom must be mentioned a glorious example of the still somewhat scarce Cymbidium eburneum, bearing 13 flower-spikes, each furnished with two large ivory-white blossoms, and all in the greatest possible perfection. This is of itself a specimen worth travelling miles to see. Phalænopsis amabilis is also now, as it nearly always is, finely in flower, as are likewise Vanda tricolor and one or two Dendrobes, &c. Vanda Lowi has grown well here; but, as yet, it has shown no symptoms of flowering. In a small stove we found one side almost wholly filled with Cattleyas, which, having pushed freely last year, and ripened their growths well, may be expected to blossom in great perfection this season. They have all been fresh potted in Exeter peat, mixed with chopped moss, and have been wintered on the cool and dry system. In the "stove aquarium" were some thriving Nepenthes, which, having lately received a shift, were beginning to grow vigorously, and produce pitchers in profusion. In the same house was a specimen of Cypripedium caudatum, with 6 flower spikes, each bearing 4 flower-buds, which, if all expand well, must have a striking effect. Cypripedium Lowi had only one flower bud on it. Of Dendrobiums, what was called a pendulous variety of D. nobile was finely in flower, and some others hung up in baskets above the water were covered with bloom buds. Vanda Batemanni had shot up, in the moist heat of this house, to a height of 5 feet, and Dendrobium anosmum had made shoots of great length and thickness. In the tank were various kinds of Nymphæas; on the back wall Ficus barbata (sticking to the wall like Ivy), the Vanilla, and other plants; and scattered about the shelves were numerous Ferns, whose varied and interesting fronds contrasted well with the other forms of vegetation with which they were associated. In the warm division of the show house (for it is divided into two compartments by a central transept or wide span-roofed passage, at one end of which is an aviary), was an example of Lycaste Skinneri, which was stated to have had 40 flowers on it; but several have been cut off for bouquets. When we mention that this is one of the largest-flowered varieties of the species, some idea may be gleaned of the kind of display it produced. In this compartment the plants in the centre bed are plunged in tan, a kind of treatment which appeared to agree with them, for all of them were unusually fresh and healthy. On the rafters Clerodendron splendens was in bloom; this was what is called Henderson's variety, which is said to be a freer flowerer than the common sort. The cooler compartment was gay with Rhododendrons, Camellias, Azaleas, Acacias, Pelargoniums, Roses, Tree Carnations, Narcissi, and Early Tulips. Of the Azaleas, coronata is found to be one of the best for forcing; Statices, such as arborea and macrophylla, are also favourites for winter decoration, as are Deutzia gracilis, Habrothamnus elegans, and Pelargonium Parson's Perpetual, a high coloured kind, which stands forcing well. On the north side of the lawn has been erected a glass covered promenade, which offers an agreeable retreat on a wet day. It is some 70 feet in length, 8 feet wide, and about 10 feet high; a stone path passes along its whole length, and on either side are 2-foot borders, which are kept constantly gay with flowering plants, such as Camellias, &c., with a few Conifers and shrubs, remarkable for the beauty of their foliage. Out of doors everything is remarkably trim and neat. The fruit tree department has been remodelled and planted with pyramidal trees with bush fruit between them. A stock of miniature hardy fruit trees, such as Peaches and Nectarines, Apricots, Cherries, Plums, Figs, &c., is kept in pots for fruiting under glass; they are found to require little care, to be easily accommodated as regards house room, and to produce good crops.

FLORICULTURE.

Chinese Primulas.—As nothing in their way could possibly be finer than my specimens of these at the present time, I have thought that some account of my mode of cultivating them might be useful. The single white and pink varieties ripen seeds in abundance, which afford a ready means of increasing them; and as the fringed sorts are the most beautiful, seeds of them should be preferred. The double varieties are multiplied from cuttings. The best plants are raised from seeds sown every year; they should never be kept beyond the second season. Two sowings, one this month the other in May, will supply the greenhouse with flowering plants from October till May, and even later. The produce of the first sowing must be prevented from flowering till the end of September, by nipping off the flower-buds as they appear. They should then (September) be well established in their pots, and they will require no care beyond ordinary attention, and keeping them from frost, to flower them well. The second sowing, the produce of which is intended to keep up gaiety in spring, should receive the final shift in September, and every blossom, as it appears, should be picked off till the beginning of January. I have said nothing about watering and shifting, but these operations must, of course, be attended to. The plants should be placed a little deeper in the pots at every shift; care must be taken to keep them from damping off in winter. As a preventive of this, feeders under the pots are recommended to be used, for the plants are very impatient of water administered to the soil. These feeders should be liberally supplied with water when the plants are in bloom. The Chinese Primrose, like the rest of its race, delights in soil composed of leaf-mould, loam, peat, sand, and a little charcoal. The above is a mode by which these may be grown successfully in pots; but they may be cultivated with equal facility, and better chances of success, planted out in summer in pits. As in the former mode of culture, sow at the same time, and forward the plants in pots in the greenhouse till the end of May, when they should be turned out of their pots, and planted in prepared compost in a frame under a north wall. Keep them close for a few days after planting, then remove all covering, and leave them freely exposed to the weather, night and day, till the time comes about for lifting them and potting them, which should be about the middle of September. After they are potted, replace them in the same frame, and shade them for a day or two, to keep them from flagging.

In about a fortnight, remove them to the greenhouse, where they will bloom well throughout autumn. Seeds for specimens for spring-work should be sown about the middle of April, and treated as the autumn flowers, taking care to keep them free from frost and from damping off in winter. After they have done blooming, they may be planted out as before, and will flower well next autumn. I have seen plants not excited by fire-heat, or allowed to flower in the previous winter or spring, blossom well in the flower garden during summer; and, not over-luxuriant, but strong old plants, put out in a west aspect in September, on an elevated dry border, under the shade of neighbouring Laurel-boughs, have been known to survive the winter near London, and to put forth flowers with the Crocus, Polyanthus, and other fair harbingers of summer. They did not suffer so much from frost as from the cold winds of March, "while winter still lingers on the verge of spring." *B.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Now is the time to set about ascertaining whether or not there is a sufficient quantity of plants for the decoration of the conservatory during the summer and autumn. If this is attended to at once, very much may yet be done towards making good any deficiencies which may happen to be discovered; for it is not yet too late to provide multitudes of showy plants for blooming early in autumn. Young plants of Allamandas, Clerodendrons, Torenias, &c., and many other things, if encouraged with a brisk bottom-heat, and other favourable circumstances, will form nice sized specimens in a few months; and large masses of Statices, than which few plants are more useful, will under kind treatment, be obtained in a very short time. The old Cassia corymbosa is a useful plant, and should not be overlooked where better things are scarce, as it grows very rapidly, and produces a long succession of bright yellow flowers. Those also who possess the Balsamina Jerdoniæ should encourage it by every possible means to make wood, and propagate it as quickly and freely as possible, for it is just the plant that is wanted for autumn decoration. Then there are quantities of useful things which may be raised from seeds, as Thunbergias, Ipomœas, Cockscombs, Globe Amaranths, Balsams, Lobelias, &c., and cuttings of Fuchsias made of young wood will root in warm sand in little more than a week, and may be grown into nice sized specimens by July. The pretty dwarf variety of Heliotropium Voltaireanum, although too delicate for the flower garden, will be found very useful for blooming under glass where sweet scented flowers are in request. In fact, where the stock in hand is deficient, not a day should be lost in making every possible effort to provide considerably more than is likely to be wanted, so as to be prepared against any accident or extra demand, should such happen to occur. Push on Camellias that have fairly started their buds with a warm moist atmosphere, and plenty of weak manure-water. Also get a portion of the Epacrises into a gentle heat as soon as they have sufficiently recruited their energies after flowering. These are exceedingly useful plants for winter flowering; and by starting them into growth about this time, and getting their wood ripened early, they will be in full blossom in November, at which season their flowers retain their beauty much longer than after the sun becomes powerful in spring. Proceed as diligently as possible with the repotting of such of the hard-wooded greenhouse plants as require it, so as to afford them every chance to make a vigorous growth. Be careful, however, before potting to have the ball in a nice, moist state, and avoid giving large shifts to weakly growers. Endeavour to keep newly-potted specimens together as much as possible, keeping the house rather closer, and the atmosphere moister than usual. See that soft-wooded plants, as Pelargoniums, Cinerarias, &c., are allowed plenty of space, and that they are properly supplied with clear, weak, manure water, and kept perfectly clear of insects. Give air freely to these on every favourable opportunity, but do not allow cold, winds to blow over them, and disfigure their foliage.

FORCING DEPARTMENT.

PINERY.—Attend carefully to the bottom heat, particularly where this is produced by fermenting materials, as tan, &c., and see that it is not allowed to rise too high, which it is exceedingly apt to do during bright weather, especially if fresh materials have been recently added. It requires some practice and attention to keep the soil in a properly moist healthy state, but this must be attended to if success is to be ensured. Maintain a thoroughly moist atmosphere, but do not push young plants too rapidly until the days get longer, when there will be no danger of inducing weakly growth. Avoid allowing water to lodge in the hearts of plants showing fruit; also spare the flowers of those in bloom with the syringe. VINERIES.—See that the houses in which the Vines are not yet started are properly cleaned—the Vines painted with the usual composition of soft soap sulphur, &c., and everything put into good working order; also get the rods bent in time, so as to cause them to push their buds regularly. Attend to disbudding and stopping, &c., as may be necessary in the succession houses, and see that the inside borders are in a properly moist state, giving tepid manure water when necessary, and do not be afraid of giving too much of this to Vines fruiting in pots. Be careful of coal, and husband the sun's influence as much as possible, by shutting up early in the afternoon; for, depend upon it, there is no heat so congenial to vegetation as that derived from the sun's invigorating rays. Where plants are grown under Vines keep a sharp eye upon these for black thrips, and use every means to keep them clear of this pest, which, if once allowed to get upon the Vines, will spread with amazing rapidity, and will soon ruin the foliage. This is not only the most destructive, but the most difficult of insects to extirpate, and should therefore be kept under by every possible means. Frost is the only effectual means of destroying this troublesome pest, but tobacco smoke and a liberal use of the engine will keep it in check. Azaleas are exceedingly subject to it, and young plants of these can hardly be obtained from the nurseries clear of it, and should never be grown in Vineries. FIGS.—Attend to preserving a proper degree of moisture in the borders or pots, and guard against red spider by maintaining a moist healthy atmosphere and a liberal use of the syringe. It is not very usual to thin the crop of this fruit, but, in cases where the crop is very heavy, timely thinning may prevent this being done by natural means at a later period, and to too great an extent, and will also be of much service to the general health of the trees, and towards securing a good second crop. CHERRIES.—In the treatment of these aim at imitating nature during a very favourable spring as nearly as possible, until the fruit is stoned, when they may be pushed on by a warm moist atmosphere. Here, as elsewhere, insects will have to be contended with and must be eradicated immediately they are perceived. STRAWBERRIES. — Bring on succession plants very gradually, and afford those in bloom a rather dry atmosphere, with a free circulation of air, as they set their fruit badly in a moist close atmosphere. Plants swelling their fruit must be liberally supplied with clear, rather strong, manure-water, and if fine large fruit is expected thinning must be resorted to immediately the fruit is fairly set.

FLOWER GARDEN AND SHRUBBERIES.

Sweep and thoroughly clean lawns, and give them a double rolling with a heavy roller, to render the turf smooth and solid. This is sometimes put off until dry weather sets in, after which the roller makes comparatively little impression, whereas, if done at once, while the turf is in a wet spongy state, it will be greatly consolidated and improved for the season. If any alterations or planting still remain unfinished every available hand should be concentrated on this work, so as to get it completed as soon as possible. Planting done after this time will require much attention in watering, and this at the very busiest season of the year, especially if large plants are removed, and it is too common a practice to put off such work to the last. Look over the beds planted with bulbs, and where necessary stir the surface soil, so as to keep it open and friable, and also to give it a clean, neat, fresh appearance. If the stock of bedding out plants is still deficient, get in cuttings in the most favourable position without loss of time. See to the propagation of Dahlias and Hollyhocks; the latter are now so greatly improved by the efforts of the florist that they are almost superior to the Dahlia in their effect, and ought to be extensively planted in every garden. Cuttings slipped off the old plants with a heel, planted in very sandy soil, and afforded a gentle bottom-heat, keeping the leaves as cool as possible, will be found to root perhaps more freely at this than any other season. Get Calceolarias hardened off by removing them to a cold frame and exposing them freely to air, preparatory to planting them in turf pits to make room under glass for more tender things.

FLORISTS' FLOWERS.

Carnations and Picotees have suffered much this past winter; those that escaped should be potted forthwith. We know of nothing better to grow them in than two parts sound virgin loam, one part rotten horse manure, and one part sharp river sand; in this simple compost, with occasional doses of weak liquid manure during the growing season, we have seen them grown in first-rate style. Seedling Pansies in beds should be gone over carefully, the surface soil stirred, and a dressing of manure put on. We like flowers of this description to bloom in their best character on their first appearance. Too often it is the case, that seedling flowers are begrudged a little trouble of this kind, but it is bad policy. Place the sticks to Pinks, and if not previously top-dressed do so now. Where the amateur has the convenience, we would advise him to grow a few of these flowers in half-peck pots, three plants in each; they would, we are sure, give much gratification. Ranunculuses have not yet made their appearance; they must be watched, as they are apt to displace the soil about the crown of the plant, which is prejudicial.

HARDY FRUIT DEPARTMENT & KITCHEN GARDEN.

Plant out Cauliflowers that have been wintered under protection on a deep rich piece of soil. Where the ground will admit, it will be found a very good practice in transplanting these at this uncertain season to throw out shallow trenches, placing the removed soil on the north side, and placing the plants in the trenches, which will be thus sheltered from the north winds. Stir the soil among growing crops, as Lettuce, Spinach, &c., and prevent weeds from making their appearance anywhere. Forward Celery plants for a very early supply, by pricking out on a slight hotbed, and sow on the same for succession crops. Where it is intended to head down old trees for grafting, this should be done at once, and young stock should be grafted as speedily as circumstances will admit. Attend to providing for a regular and plentiful succession of Peas, Beans, &c., by sowing quantities proportionate to the demand at short intervals. See that those in the ground are not injured.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending March 16, 1854, as observed at the Horticultural Gardens.

March.	Moon's Age.	Barometer.		Temperature.					Wind.	Rain.
				Of the Air.			Of the Earth			
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Friday 10	11	30.101	29.991	56	40	48.0	45	45½	S.W.	[illegible]
Satur. 11	12	30.140	30.101	61	27	44.0	45½	46	S.W.	[illegible]
Sunday 12	13	30.061	29.924	63	27	45.0	44	45	S.	[illegible]
Mon.. 13	14	29.960	29.881	64	43	53.5	44	45	S.W.	[illegible]
Tues. 14	☾	30.019	29.851	64	27	45.5	45	45	S.W.	[illegible]
Wed. 15	16	30.157	30.128	57	44	50.5	44	46	S.	[illegible]
Thurs. 16	17	30.231	30.070	58	25	41.5	45	46	S.W.	[illegible]
Average.		30.095	29.992	60.4	33.3	46.8	44.6	45.5		.05

March 10—Cloudy; slight rain; clear at night.
— 11—Fine throughout; clear at night.
— 12—Slight fog; very fine; clear.
— 13—Clear and fine; very fine; clear.
— 14—Overcast; rain; cloudy; fine; overcast.
— 15—Foggy; cloudy; sunshine at intervals; overcast.
— 16—Overcast; cloudy and fine; clear; frosty.

Mean temperature of the week, 4½ deg. above the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending March 25, 1854.

March.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 19	50.7	33.4	42.0	7	0.33 in.	3	3	5	—	2	8	5	2
Mon. 20	51.7	34.0	42.8	10	0.36	1	2	4	1	—	11	3	6
Tues. 21	51.8	34.6	43.2	13	0.21	6	1	1	3	4	6	5	2
Wed. 22	51.1	35.7	43.4	14	0.44	5	1	3	2	6	6	4	1
Thurs. 23	50.4	34.8	42.6	14	0.60	5	5	2	1	4	7	3	1
Friday 24	50.0	31.4	40.7	10	0.11	4	4	3	—	4	2	5	6
Satur. 25	50.4	32.7	41.6	11	0.50	3	7	4	—	3	2	6	3

The highest temperature during the above period occurred on the 19th and 20th, 1836—therm. 69 deg.; and the lowest on the 25th, 1850—therm. 14 deg.

Notices to Correspondents.

BEES: *A F T.* If you are troubled with slugs in your hive it is because it is in too damp a situation and condition; you must, therefore endeavour to improve it in these respects. You may easily discover if there are any now in it, by turning it up and examining it.‡

BOOKS: *A Young Gardener.* Phillips's "Guide to Geology," mentioned at p. 54; Orr's "Circle of the Sciences." Lindley's "Theory of Horticulture" is out of print. A new edition is in preparation. —*J Mc M.* You do not state what kind of Vine culture your gardener wishes to be instructed in, and therefore we have no means of judging what particular book will suit him best. If, however, he wishes to grow Grapes in pots, Sandars on that subject will be most useful to him; if in a Vinery, Roberts, with the exception of what he says about carrion, which should not be used; and if on open walls, Hoare.‡—*Quercus.* We recommend the 2d edition of Brown's "Forester" as the best work we have upon planting.

CANVAS: *J D.* Tan it; but if kept in a dry ventilated place, and put by only when quite dry, it requires no preparation.

CLOCHES: *G G.* The remarks are a piece of impertinence. Had the writer taken the trouble to read, or if that were too fatiguing, to think, he would have seen that we neither forgot nor were ignorant of the wonderful fact that bell-glasses were formerly as much in use here as cloches in France. We wished to revive their use, which was stopped by the Excise on glass, now happily repealed.

COLLODION: *A Lady.* It is made by dissolving gun cotton in ether. We venture to believe that there is not a regular medical practitioner in England who cannot prepare it. If applied properly, as if to any gash, it holds with great force.

EALING PARK: *R. p.* We regret to say that your information is correct. The plants are to be sold in consequence of the ill-health of Mrs. Lawrence.

GROTTO: *Anon.* The design is in the very worst Cockney style.

HEATING: *W.* We much regret our inability to understand the question. Flues are usually built with angles. Near what door is the proposed angle to be made? Perhaps you would be so good as send us a sketch. We should be very thankful for the section you mention.

HYBRID CABBAGE, &c.: *W M D.* It is firm hearted, has a slight tinge of purple on the tips of the leaves, and appears to be very hardy. The Variegated Greens are finely curled and very handsome, and will, doubtless, be found extremely useful for many purposes; but especially for that of garnishing.‡

LAWN GRASSES: *W. Smith.* Alopecurus pratensis, 1 lb.; Avena flavescens, ½ lb.; Sweet Vernal, ½ lb.; 7 or 8 lbs. of the various Fescues; Rye-Grass, 10 lbs.; Phleum pratense, 1¼ lb.; Poa trivialis, 2 or 3 lbs.; Lotus corniculatus, ½ lb.; White Clover, 4 lbs.; Black Medick, 1 lb.; *per acre.*

NAMES OF FRUITS: *G A.* Nos. 1 and 2 appear to be the Court-pendu Gris.‖—*S N.* The three Apples are good keepers, somewhat resembling the Sturmer Pippin; doubtless, good for kitchen use.‖

NAMES OF PLANTS. We have been so often obliged reluctantly to decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*Car.* Scilla bifolia—*F B.* Cornus Mascula—the Cornelian Cherry. St. Ignatius's Bean is produced by a Strychnos, and is very poisonous.—*A H.* Anemone patens, palmata and lutea, are wholly different plants. The last is an alias of A. ranunculoides.—*A D.* One of the best varieties of Dendrobium nobile.—*W P.* It appears to be Dendrobium transparens.—*A L.* Anthyllis onobrychoides.—*W K.* Your specimens appear to be dead fragments of some Equisetum. If so, the plants will die as soon as the drainage acts efficiently. They are not to be feared.—*E G.* Acacia alata.—*Flora.* Lasiopetalum solanaceum.

SPORTS: *D T.* M. Fabre obtained his first sport in 1838; his experiments have been continued till now; the tendency to form Wheat was immediate, and it has continued to change more or less till now. He lives at Agde near Cette; the title of his experiments is "Courte Introduction au Travail de M. Esprit Fabre sur la Métamorphose de deux Ægylops." It was published in the Transactions of the Agricultural Society of the Herault. We are obliged to make it a rule not to enter into private correspondence.

TEMPERATURE TABLES: *M J B.* In those for Chiswick, against the day of the month is placed the maximum temperature which occurs on that day, and also the minimum in the following night, together with the rain, if any, between 8 A.M. and 8 A.M. the following morning.‖

WINTER GARDENING: *W D.* You will find the information you seek at p. 792 of our Volume for 1843.‡

WOODS AND FORESTS: *Chester.* Perhaps you are not aware that Mr. Henry Drummond has given notice of his intention to move for further inquiry. That is all that can be desired, and it is not our wish to anticipate the result of his motion. The truth of certain statements, published in the Blue Books is denied; and in fairness to all parties, we must await the further examination of those statements. The case of the New Forest rests however upon the admissions of the deputy-surveyor himself and upon other indisputable facts, so that there can be no misapprehension respecting that part of the Crown property.

THE LONDON MANURE COMPANY'S WHEAT MANURE, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. EDWARD PURSER, Sec.
Bridge Street, Blackfriars.

PERUVIAN GUANO, the guaranteed import of Messrs. ANTONY GIBBS AND SONS, Lobos Island Guano, Superphosphate of Lime, and all Artificial Manures, Linseed and Rape Cakes, &c.—WM. INGLIS CARNE, 10, Mark Lane, London.

ARTIFICIAL MANURES, &c. — Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and despatch.

Gentlemen desirous of receiving instructions in Chemical Analysis and Assaying, will find ample facility and accommodation at the College.

PEAT MOSS CHARCOAL, AND OTHER MANURES.—The Undersigned are appointed sole Agents by the Peat Moss Charcoal Company, for the sale of this valuable fixer and distributor of ammoniacal matter.

Also on Sale, Peruvian Guano, Superphosphate of Lime, Gypsum, Nitrate of Soda, Bone-Dust, Sulphuric Acid, and all other Manures of known value.—Apply to MARK FOTHERGILL & Co., 204A, Upper Thames Street, London.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7l. per ton; Superphosphate of Lime, 7l.; Sulphuric Acid and Coprolites, 6l.

Office, 69, King William Street, City, London.

N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

SUPERPHOSPHATE OF LIME MANUFACTURED BY MR. J. C. NESBIT'S IMPROVED STEAM MACHINE. The following is the analysis of an average sample.

"College of Chemistry, Agriculture, and General Science, 38 & 39, Lower Kennington Lane, London.

Analysis of Sample of Superphosphate of Lime from Mr. Jolliffe:

Moisture		13.97
Organic Matter, &c.		21.98
Silica		6.05
Phosphate of Lime		35.27
SOLUBLE	16.10	
INSOLUBLE	19.17	
Sulphate of Lime, &c.		22.73
		100.00
Nitrogen (equal to)		1.16
Ammonia		1.41

(Signed) J. C. NESBIT."

Delivered free at a Wharf or Railway Station in London at 6l. per ton.—Apply to E. Y. JOLLIFFE, 70, Mark Lane, or the Works, Lavender Dock Wharf, Rotherhithe.

Agents wanted in all the principal towns.

SEWAGE GUANO, 5l. 5s. per ton (bags included). Circulars and Testimonials forwarded on application.

DEODORIZING CHARCOAL, 1l. 10s. per ton (bags to be returned). Terms: Cash on delivery.

The Manchester Sewage Guano Company, 3, Watling Street, Shudehill, Manchester. E. RANSBOTTOM, Agent.
JOHN THOMPSON, Secretary.

THE BRITISH ECONOMICAL MANURE COMPANY supplies in any quantity the "Economical Manure," a complete and by far the cheapest substitute for Guano. 1¼ to 1½ cwt. per acre of this powerful Manure, costing 15s. to 18s., is ample (more must not be used), and equals 3 cwt. of the best Peruvian Guano, thus saving at least 50 per cent., besides carriage, &c.

The agricultural world is respectfully urged to read the hundreds of Testimonials from all parts of England, Scotland, and Wales, France, Belgium, and Spain, to be convinced that this Manure warrants especial and immediate attention. They prove that it gave most wonderful results last year on every soil and crop, far surpassing the expectations of the purchasers, the dampness of this climate and the coldness of the soil peculiarly favouring its action on the vegetation.

No one reading the Company's pamphlet can doubt its being by far the cheapest of all manures. In fair comparative trials on every kind of soil and crop with guano, dung, and other long recognised fertilisers, it will be seen the "Economical" was superior; that it proved most valuable for fruit trees, shrubs, and garden purposes, and produced the most astonishing effects upon manure heaps, applied in solution, decomposing in 15 days all vegetable matter, peat included; and that it is a perfect deodoriser for liquid manure, besides enhancing its fertilising properties.

It is the result of many years' labour of an eminent Foreign Agriculturist, the Director of the Government Schools of Agriculture in his own country, and of high reputation as a chemist. It is patented, and is one of the most useful and greatest discoveries of the day.

Price 12s. per cwt., packages included, and delivered free on rail or wharf in London.

The Company's pamphlet containing the Testimonials, directions for use, and all particulars, also samples, to be had at the Offices, 10, Mark Lane, London, or sent on applying to
BENJAMIN COVENEY, Manager.
Good Agents wanted. An allowance to the Trade.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.

MESSRS. BURGESS AND KEY, as Mr. PARKES' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.
103, Newgate Street, and 52, Little Britain, London.

ANTHONY'S PATENT AMERICAN CHURN.—Extract from the Royal Agricultural Society's Report of the trial of Churns at the Gloucester meeting in July last. "In this trial the American Churn not only maintained its character in producing butter rapidly, but in producing a greater quantity from the like amount of cream." It made from 4 quarts of cream 4 lbs. 6 oz. of butter, being 8 oz. more than any of the other Churns from the same quantity and quality of cream. Price Lists of Churns and Implements by the best makers sent free, and Illustrated Catalogues on receipt of eight postage stamps. BURGESS & KEY, 103, Newgate Street, and 52, Little Britain, London, who have always a large stock of Steam-engines, Ploughs, Harrows, Diggers, Waggons, Carts, Threshing and Dressing Machines, Mills, Oat and Grain Bruisers, Oilcake Breakers, Reaping Machines, Haymakers, Horse-rakers, Turnip Cutters, Liquid Manure Carts, Parkes' celebrated Steel Digging Forks and Draining Tools, Pumps for Manure, Farm Fire Engines, and for Garden Purposes, &c. &c.

PATENT ROOT GRATING MACHINE.

BUSHE & BARTER'S PATENT ROOT GRATING MACHINE, Manufactured and Sold by ALEX. SHANKS & SON, Arbroath, Forfarshire, from whom particulars, with prices, may be had.—Arbroath, March 18.

CHAFF-CUTTERS, of the best workmanship, 25s.; Two-Knifed Chaff Engines, from 63s.; Mills for Bruising Oats and Beans, from 45s.

WILLIAM DRAY AND CO., Agricultural Implement Manufacturers, Swan Lane, Upper Thames Street, City.

LAND DRAINAGE.

MR. BAILEY DENTON'S TABLES OF COST, &c., price 1s. 4d. Sold by METCHIM, Parliament Street.

MR. BAILEY DENTON'S WORKMAN'S A LEVEL, price 1l. 10s. Sold by JONES & Co., High Holborn, London.

WEIR'S DRAINING LEVEL
PRICE 30s.

These Draining Levels have lately been greatly improved; they have stood the test of five years' use, during which upwards of 1000 of them have been sold. They are so simple that any labourer who can read can use them. They require no graduated staff, the index telling at once the rise and fall in inches without any computation.

EDWARD WEIR, Agricultural Engineer, 16, Bath Place, New Road, (6 Doors West of the Hampstead Road), Removed from Oxford Street.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

BAILY'S ROUP AND CONDITION PILLS FOR POULTRY.—This remedy has been extensively tried with uniform success, and is offered to amateurs and the public with the greatest confidence. It will effectually overcome that disease which has hitherto been the bane of the poultry-yard, and destroy that apprehension known to all poultry keepers, when a favourite and valuable fowl is seen to droop. It is inestimable for poultry returning from exhibitions, and greatly facilitates moulting.—Sold, with full instructions for use, in boxes containing 50 pills, by JOHN BAILY, 113, Mount Street, Grosvenor Square, price 3s. per box, or by post 3s. 4d. "Fowls, by Baily," the most useful and plainest treatise of the day; price 2s., by post 2s. 6d.

Baily's Registered Fountains, universally adopted and approved. Drawings and particulars, by post, on application.—113, Mount Street, Grosvenor Square.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

THE COTTAGER'S STOVE.—An economical, compact, and portable COOKING APPARATUS, combining a good sized Oven and Hotplate; may be had with or without a boiler, and will cook sufficient for a dozen persons with the consumption of 1 lb. of coal or coke per hour. It requires no fixing, may be placed in any apartment, and is a great security against accidents from fire. It will burn Coal, Coke, or Wood. They are also specially adapted for Emigrants, and may be seen in operation daily, at the Manufacturers', D. & E. BAILEY, 272, High Holborn, London.—Price 50s., and upwards.

STEPHENSON AND PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

TO LANDOWNERS, SOLICITORS, ESTATE AGENTS, ETC.

THE LANDS IMPROVEMENT COMPANY, incorporated by special Act of Parliament, 1853, having perfected their organisation, are prepared to receive applications for the execution of improvements, under the provisions of their Act.

The Act extends to England, Wales, and Scotland; and empowers persons in the actual possession of lands, or in receipt of the rents, such as tenants for life, trustees, bodies corporate, incumbents of benefices, mortgagees in possession, guardians of infants, &c., to effect substantial improvements on their estates, and to convert the outlay on such improvements into a terminable annuity or rent-charge of from 14 to 25 years, at will.

The Company, acting under the supervision of the Inclosure Commissioners, will undertake and execute improvements, or will supply the capital to landowners preferring to execute improvements themselves, or will grant the powers of their Act to landowners seeking merely to charge the inheritance with the outlay on improvements from their own funds.

The Agricultural Works of Improvement particularly specified in the Company's Act, are:—

1. The Drainage of any Lands by any such means as the Inclosure Commissioners shall approve.
2. Irrigation, and Warping of Lands.
3. Embanking of Land from the Sea, or Tidal Waters, or Rivers, in a permanent manner.
4. Enclosing or Improving the Drains, Streams, or Water-courses of the Land, under the Inclosure Commissioners.
5. Reclamation of Land lying waste.
6. Making Farm-roads to the extent of one-half of the outlay for such roads.
7. Clearing Lands.
8. Erection of Farm-houses, and other Buildings required for farm purposes to the extent of three-fourths of the outlay for such Farm-houses and other Buildings.

In effecting the above Improvements there may be erected any Engines, Machinery, Engine-houses, Mills, Kilns, Sheds, Yards, Shafts, Tanks, and Reservoirs, Pipes, Conduits, and Water-courses for Irrigation, Tram-roads and other ways, Bridges, Weirs, Sluices, Flood-gates, and Hatches.

For Forms of Application and further Information apply to the Hon. W. NAPIER, Managing Director, 2, Old Palace Yard, Westminster, London.

SUTTON'S PERMANENT PASTURE.
GRASS SEEDS, SEPARATE OR MIXED.

GENTLEMEN *intending to lay down land to Permanent Pasture, or for one or two years' lay, are recommended to communicate with us, stating the nature of the soil and situation, that we may advise as to sorts of Grass Seeds most suitable.*

Price 24s. to 30s. per Acre.

Further particulars will be sent post free on application, addressed JOHN SUTTON & SONS, SEED GROWERS, Reading, Berks.

CLOVER SEED.

GENUINE NEW CLOVER SEED *may be obtained of the undersigned, at very moderate prices.*

Large quantities, carriage free, to all parts.

JOHN SUTTON & SONS, *Seed Growers, Reading, Berks.*

NEW AGRICULTURAL ROOT.

SUTTON'S CRUICKSFIELD HYBRID SWEDE. This is very distinct from the Swede and the Kohl Rabi, but partakes of the nature of each of those valuable roots, from which indeed it has proceeded. It is of the shape and size of Skirving's Swede, but is much hardier, and has the flesh of the Kohl Rabi. Cattle, and especially Sheep, eat it with great avidity, preferring it to Swedes, when both are presented to them.

Particulars of Culture, &c., will be sent post free on receipt of one penny stamp.

Address, JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

N.B. We have an excellent Stock of Swede and other Turnip Seeds, Mangold Wurzel, and White Belgian Carrot Seed, &c.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

PATRON—His Royal Highness PRINCE ALBERT.
PRESIDENT OF COUNCIL—Earl BATHURST.
PRINCIPAL—Rev. J. S. HAYGARTH, M.A.

PROFESSORS, &c.

Chemistry—J. A. C. Voelcker, Ph D., F.C.S.
Geology, Zoology, and Botany—James Buckman, F.G.S, F.C.S.
Veterinary Medicine and Surgery—G. T. Brown, M.R.C.V.S.
Surveying, Civil Engineering, and Mathematics—F. Armstrong, C.E.
Manager of Farm—G. Austin.
Assistant to Chemical Professor—A. Williams, M.R.C.S.

Students are admitted after the Summer and Winter Vacations, also in April and October. The annual fees for Boarders vary from 45 to 80 guineas, according to age and other circumstances. The Fee for Out-Students is 40l. per annum. The College Course of Lectures and Practical Instruction is complete in one twelvemonth—though a longer course is recommended. There is a department for general as well as for agricultural purposes.

Prospectuses and information can be had on application to the Principal.

The GUIDE TO THE ROYAL AGRICULTURAL COLLEGE FARM may be obtained of HAMILTON, ADAMS, & Co., Paternoster Row, London; and EDWIN BAILY, Cirencester. Price 1s.

ROYAL PANOPTICON OF SCIENCE AND ART, Leicester Square. Notice is hereby given, that the preliminary opening of this Institution on SATURDAY next will be extended during the whole of the following week. Hours of Admission from 11 to 4, and from 7 to 10.

INSTRUCTION IN ART to FEMALE STUDENTS afforded by the DEPARTMENT of SCIENCE and ART.

The Spring Session commenced on the 1st of March, and will terminate on the 31st of July.

The School for the Female Students passing through the General Course is at No. 37, Gower Street, Bedford Square. Superintendent, Mrs. M'Ian; Assistants, Miss Gann and Miss West.

Fees:—Advanced Classes, 2l. and 4l.; Elementary Class, 20s.; Evening Class, 10s.

A Class meets at Gore House, Kensington, on Mondays, Wednesdays, and Fridays.

TECHNICAL COURSES, carried on at Marlborough House.

Porcelain Painting, daily Teaching and Practice, with Studies from the Living Draped Model. Fee 4l. Superintendents, Mr. Simpson and Mr. Hudson.

Engraving on Wood and Metal for Ornamental Purposes, daily Teaching and Practice, and Lectures. Fee 2l. Superintendents, Mr. Thompson and Miss Waterhouse.

Lithographic, Chalk, Pen, and Colour, daily Teaching and Practice. Fee 4l. Superintendents, Mr. Brooks and Miss Channon.

Marlborough House, Pall Mall.

POULTRY SHOW AT EXETER.
OPEN TO ALL ENGLAND.

THE DEVON AND EXETER BOTANICAL AND HORTICULTURAL SOCIETY will hold a GRAND POULTRY SHOW, on Northernbay, Exeter, in conjunction with the Society's Spring Horticultural Exhibition, on THURSDAY and FRIDAY, the 18th and 19th days of May next.

Prize Lists and Regulations may be obtained on application to the Honorary Secretary, THOMAS WILLIAM GRAY, Esq., Cathedral Yard, Exeter.

The Agricultural Gazette.

SATURDAY, MARCH 18, 1854.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, March 22—Agricultural Society of England.
THURSDAY, — 23—Agricultural Imp. Society of Ireland.
WEDNESDAY, — 29—Agricultural Society of England.
THURSDAY, — 30—Agricultural Imp. Society of Ireland.

THE last four weeks have seen more field work done than was probably ever done before so early in the season; that great advantage has been taken of so favourable a time for the benefit of fallow crops is unquestionable, but it yet remains to be seen whether the early seed time, to which many have been tempted, will be for the benefit of the farmer. Certainly, as land gets more and more improved under drainage and good cultivation, operations are earlier performed with safety than they used to be; but if an April like that of 1853 were to follow the present month, it would spoil the work of many a sanguine, over-active farmer.

Oats have been sown with safety; Barley it will generally be thought better to delay till towards the end of the month. Grass and Clover seeds may be sown, but they, too, had now better be delayed till the first showers shall have moistened the land. Potatoes may be planted now, and this probably may be considered the most suitable operation for this fine weather. Land should be prepared for Carrots to be sown the first week in April. Vetches, for consumption after midsummer, may be sown now. Peas may have been sown. Flax seed may be sown late in March, or early in April. And as to other operations, fallows for Mangold Wurzel may receive

a cross ploughing, and Grass lands should be cleaned and rolled. Young Wheats may be rolled previously to the hoeing which they will receive in April. Guano, and other half-soluble hand manures, may be scattered broadcast over either Wheat or Grass on which they are to be applied. The more soluble nitrates, &c., should not be used till the period of more active vegetable growth.

"Whereas it is expedient that the power to remove poor persons on the ground of settlement should be annulled" are words which we rejoice to say are likely ere long to find a place in a legislative enactment. That the most crying of the evils attendant upon the past and present system of our Poor-laws is the power which prohibits free trade in labour, which deprives the able-bodied pauper of the means of carrying his labour to the place in which it is wanted, and which forces him to offer it, whether wanted or not, in the parish in which he is "settled," has been long the opinion of reflecting men, and seems to be now universally admitted. The proposal of the Government to annul this power will be hailed with delight by all who are interested in the internal welfare of this country.

Second, however, in injustice only to the power of compulsory removal of the poor, is the mode in which the funds necessary for their support are raised. Under the present system of parochial assessment, the burdens imposed upon adjoining parishes are often unequal in the extreme; and the opportunity afforded by the abolition of the power of removal for placing the whole system of Poor-laws on a better footing should surely not pass without an attempt being made to remedy the great defect above alluded to. The framers of the Government measure about to be brought before Parliament seem to have entertained the same opinion, for in their bill they propose that the charge for the relief of all poor persons in an *Union* shall be borne by the common fund of that Union. As regards the raising of funds for the relief of the poor, the two great objects to be attained seem to be, first, to make the burdens fall as equally as possible all over the country; and second, to render the distribution of the funds a matter of local importance, in order to prevent indiscriminate relief, and wasteful expenditure. The first of these two objects is best attained by extending the area of country from which the common fund is raised, but unfortunately the more this area is extended, the less is the application of that fund likely to receive proper attention. The maximum of evil will naturally ensue where the area is too small to equalise the burdens, and yet too large to interest any individuals in particular in the expenditure of the money raised.

How far the proposed bill, should it pass into law in its present form, will equalise poor rates, and prevent wasteful expenditure, we of course presume not to say, but we cannot refrain from drawing the attention of our readers to a very able pamphlet* on this subject by Mr. Pashley, than whom no one is more familiar with the whole system of Poor-law, or more competent to pronounce a trustworthy opinion upon any matters relating to it. He observes that a divisional rating, similar to that now proposed, was tried as early as the reign of Elizabeth, and was found not to answer; that, in many parishes, the burden would not only be excessively increased, but be much heavier than the average burden of the whole country. Of course the value of the land in such parishes could not be otherwise than greatly affected. As regards the attention likely to be paid to the distribution of the funds, the learned author states:—

"Another and an extremely grave objection to merging the parish in the Union, as proposed by the bill, is, that the doing so would on the average reduce the interest of each guardian in examining into any case of alleged destitution in his own parish, to the twenty-third of its present amount; for there are, on the average, 23 parishes in every Union. After such a change the guardian would not attend to the Union interests, as he now does to those of his own parish. It is well-known that the establishment or Union charges at present existing are not the object of the same vigilant and jealous care with which every parochial burden is regarded."

Whether these opinions are or not well founded, they certainly deserve great attention, coming as they do from so high a quarter. That the Poor-laws should be wholly revised is doubted by no one; but prior to their revision, care should most undoubtedly be taken not to introduce evils greater than those abolished. Upon a former occasion (see the *Gardeners' Chronicle* for 1852, p. 749), the attention of our readers was directed to a plan proposed by Mr. Pashley himself for the assessment and distribution of the poor-rates, a plan which if adopted would seem to require fewer changes in the actually existing machinery, and to combine equality of burdens and vigilance over expenditure to a greater extent than any other scheme which has been brought forward. By this plan two-thirds of the whole amount of poor-rates for the entire country would be raised by an equal rate over the whole country, whilst the remaining one-third would be raised by rates levied on parishes as at present, and proportioned to their several necessities. In the words of the pamphlet above alluded to—

"My proposal is, that, on the repeal of the law of settlement, the various provisions for raising and administering relief to the poor be consolidated into one statute; that the sum needed yearly for the relief of the poor be raised by parochial rates on *all* real property; that the amount in the pound levied in each parish should be at such a sum as to equal one-third of the parish rate needed to raise the relief bestowed in the parish, added to two-thirds of the average poor-rate of England and Wales. According to this plan, two-thirds of the sum expended yearly in relieving the poor, though raised parochially, would be raised equally throughout the whole country, and the remaining third of the expenditure of the whole country would be raised by each parish contributing one-third of its own actual expenditure."

For an explanation of the mode in which this proposal would have to be carried out, reference must be had to the author's essay on "Pauperism and the Poor-laws," and his recent pamphlet, both of which are deserving of most careful consideration from those who have it in their power to assist or check the carrying out of the scheme about to be brought forward for the sanction of the Legislature.

* Observations on the Government Bill for Abolishing the Removal of the Poor. By Robert Pashley, one of her Majesty's Counsel. Second edition. Longman, 1854.

ON THE GRAIN STATISTICS OF FRANCE,

And more especially on those of Wheat, from 1815 to 1851.

By M. Becquerel (Comptes Rendus, Nov. 1853).

The statistics of cereals is, in a general point of view, an assemblage of documents which gives us information on the production and price of grain, the quantities necessary for sowing and for home consumption, the quantities imported and exported, as well as on the causes which exercise an influence on culture and production. But these statistics are not confined to the mere registration of the necessary documents; the value of the latter must be ascertained, and laws or principles deduced by which questions of the highest national importance relating to cereals may be answered. Statistics do not, however, inspire confidence, unless the elements composing them be perfectly exact; the results deduced can then possess all the requisite mathematical accuracy; but such is not always the case. It is frequently necessary to make use of documents more or less doubtful in their nature. This applies more especially to agricultural statistics.

We are indebted to the Government, says M. de Gasparin, for a valuable series of statistical researches elaborated by the perseverance of M. Moreau de Jonnes; these researches doubtless contain many errors resulting from imperfect means of investigation; but considering them as a whole they approximate the truth, and form the most exact basis on which we can work, until statistical science shall have perfected the means of collecting data." (Recherches sur les Subsistances, p. 3.)

The first documents collected on the production of grain, and on the population with respect to the annual consumption, date from the year 1815. At that period a series of questions was sent to the prefects; their replies served to compose the statistical archives of the Minister of Agriculture and Commerce.

In 1836 the Minister, in a circular, dated June 12, ordered the prefects to prepare the materials for a fresh body of statistics, and prescribed the measures to be taken for arriving at the object in view with greater precision than had been hitherto done. The Minister, in discussing the means of collecting the agricultural statistics, adds that "Two very different methods might be employed: the first, easy and expeditious, consists in estimating everything in masses by the department; the other, long and complicated, proceeds by collecting the necessary data from even the most obscure localities; and by adding the results obtained from the different communes, those of the cantons, arrondissements, departments, regions, and finally of the whole kingdom, are obtained. The latter method having been considered as the only one which was rational, it has been resolved that it shall be employed in forming a register of each of the 37,300 communes of France."

Instructions were sent to the prefects and transmitted by them to all the sub-prefects and mayors; but, as might be expected, the execution of this vast project encountered many and great obstacles. To obviate difficulties arising from omissions and errors in figures, the prefects submitted the returns of the communes to commissions of revision, formed in cantons and arrondissements, and these again submitted the returns to a central commission at the chief town of the department. In this way many modifications and improvements were introduced. Such was the care used that the Minister declared that the proofs for verifying the results were a guarantee that no considerable error could exist in the agricultural statistics. They are comprised in four volumes, the first of which was published in 1840, and the last in 1842. It is, however, a matter of regret that the respective years from 1836 to 1840, to which period it applied, were not stated, for each year should be particularised, so that the progress of cultivation from year to year might be followed out.

In this statistical account France is divided into four regions, each composed of departments allied to each other in respect to geographical position, soil, and climate. The meridian of Paris, which divides France from north to south into two nearly equal parts, and the 47th parallel of latitude, which crosses it exactly at the centre of the country, were chosen as lines of demarcation. In the subsequent statistical extracts, the results of which have not yet been published, the ancient division of France into ten regions has been adopted for the statistical archives of the Minister of Agriculture and Commerce.

The annual average increase of the number of acres sown with Wheat from 1836 to 1851 is 117,725 acres. It has also been proved that the produce per acre has likewise increased—

	Bushels.
From 1835 to 1839 the average produce per acre was	13.877
" 1840 to 1844 " " "	15.092
" 1845 to 1849 " " "	15.373
" 1850 to 1851 " " "	16.039

The analytical examination of the consumption of Wheat, whether for food or for seed and other uses, has led to the following results:—In the period from 1836 to 1851, after supplying all demands, and taking into account the increase of population, the crops have given a surplus of 9,912,795 quarters, being, on the average, an annual surplus of 660,852 quarters.

It is, however, to be remarked that from 1836 to 1846 there was a deficiency amounting to 17,785,761 quarters; but from 1846 to 1851 there is a surplus of 27,698,554 quarters; a result which is confirmed by the high prices from 1836 to 1847, and the low prices from 1848 to 1852.

Does there exist in a series of years periods of abundance and of scarcity? We must reply in the affirmative, if, with Count Hugo, we understand by a period of abundance that which is composed of years in which the exportations exceed the importations, and the price low; and by a period of scarcity, that in which the importations exceed the exportations, and the prices high. But we ought to reply in the negative, if we take into consideration the quantities of Wheat produced during these periods. According to Count Hugo, there have been seven periods from 1815 to 1852; three of abundance, three of scarcity, and one mixed, being partly abundant, partly scarce.

From 1816 to 1821—Period of Scarcity.	
Importation	2,354,523 quarters.
Exportation	206,110 "
Average price, per quarter	55s. 7d.
From 1822 to 1827—Period of Abundance.	
Importation	22,067 quarters.
Exportation	451,472 quarters.
Average price, per quarter	37s. 1½d.
From 1828 to 1832—Period of Scarcity.	
Importation	3,614,100 quarters.
Exportation	33,758 "
Average price, per quarter	51s. 8¼d.
From 1833 to 1837—Period of Abundance.	
Importation	176,348 quarters.
Exportation	501,034 "
Average price, per quarter	37s. 11½d.
From 1838 to 1842—Mixed Period.	
Importation	1,453,657 quarters.
Exportation	1,066,262 "
Average price, per quarter	47s. 8½d.
From 1843 to 1847—Period of Scarcity.	
Importation	6,933,556 quarters.
Exportation	503,596 "
Average price, per quarter	36s. 10d.
From 1848 to 1852—Period of Abundance.	
Importation	466,600 quarters.
Exportation	5,001,772 "
Average price, per quarter	39s. 2d.

The characters adopted by Count Hugo for specifying these different periods are incontestable; but on examining the figures of production in the respective periods, we find that the number of quarters harvested and distributed amongst the inhabitants have been nearly the same. The great amount of importations, and the high prices during the periods represented as those of scarcity are therefore not to be entirely attributed to a failure in produce, but rather to speculation, and the fear of scarcity, which induced individuals to store up the grain.

From 1815 to 1851 the importations have exceeded the exportations by 7,503,267 quarters, being on the average 197,210 quarters per annum; and as the crops since 1847 have yielded a surplus of 1,375,605 quarters, after supplying all wants, it may be asked, what has become of this surplus? Has it passed, in consequence of greater facility of communication, into the departments in which Wheat was not formerly used for food; or has it gone in another direction which the statistics have not taken into account? At all events, it is evident from the calculations that France since 1847 has produced a considerably greater quantity of Wheat than she requires.

In conclusion, it would be desirable that meteorological observatories were established throughout the country, in order that the results of observations might be studied with regard to the action of atmospheric influences on the crops.

Home Correspondence.

Meteorology.—I cannot agree with "F. P. B. M.'s" remarks on the rotary theory of storms, as I have been unable to trace a single storm which could be explained on such a supposition. It would be out of place to enter on a full discussion of this subject in the *Gazette*, but I would endeavour to meet one who holds views so oppo-

site to my own on this question, at the Liverpool meeting of the British Association in autumn, and discuss the whole matter. I would be quite willing to take the storm of January last for illustrating the fallacy of Mr. Redfield's views, or any other which "F. P. B. M." might select. I have been led to think that the very general assent which has been given to the rotatory theory in this country has done not a little to retard the progress of meteorology. *R.*

Stoppage of Drains.—My attention was first attracted to this subject 33 years since at Berry Pomeroy. The water that supplies the village is brought down in pipes from a hill about half a mile distant, in an easterly direction. These pipes frequently choke, and a force pump being used, the long hair-like filaments are driven out with violence, and the choking removed. On carefully examining in a large tub of water the mass thus extracted, I found it to consist of numerous filaments of great tenuity and of immense length, extending very many yards. There did not appear to be any rootlet, but as far as it was possible to trace the mode of growth, the filaments appeared to spring one from another in straight parallel lines, and it would seem to ascend against the stream. On subjecting the filaments to a powerful microscope it was discovered that they were copiously in bloom, although quite undiscoverable by the unassisted eye. The blossoms were white, of a pearly lustre, erect, but very minute. It so happens that Denbury, similarly situated on a dry limestone soil, is supplied with water by pipes from a neighbouring hill at nearly the same distance as at Berry Pomeroy. On making inquiries there, it was found that the water coming into the centre of the town falls into a tank or reservoir, which stores it for the use of the inhabitants. That the pipe conveying the water does not touch the surface of the stored water, and consequently the filamentous or thread-like weed does not ascend, and choke the pipes. Your correspondent, then, may take advantage of this circumstance to prevent the nuisance complained of; for if his drain pipes are clean and free, it will suffice to make a perpendicular fall of 1½ or 2 feet at the nozzle of the flow pipe, which will prevent the filaments from ascending and choking his drain pipes. *Pilos.*

Geology and Agriculture.—In these days, when agriculture is regarded as a scientific pursuit, and chemistry and engineering are held up to us as her crutches, we are apt to forget that there is another science to which the agriculturist is deeply indebted, namely, geology. It is not meant that the importance of geology is overlooked by scientific men; the able works of Professor Johnson, Mr. Morton, and others, prove that it is not from these that geology receives her slight, it is from the practical farmer; he speaks with due gratitude of the chemist, who has opened to him rich sources of fertility in new artificial manures, and has taught him how to make the most of those already at his command; he is not unthankful to the engineer, whose genius has lessened the cost of production by improvements in his implements, and by the removal, by means of drainage, of all surplus water; but he passes by the labours of the geologist, who points out to him the general characteristics and physical properties of his soil, directs him where and at what depth he may expect to find marl, lime, or other minerals, who by his maps indicates where he will find such a soil as will suit him, and by comparing districts of a like geological character, can tell him what plants are likely to succeed best in any given district. But these are advantages which the farmer is very apt to forget, probably because he does not avail himself of them to that extent which he might. Geology is a science, the study of which the agriculturist would find of great value to him, and yet one which he habitually neglects. *C. D. B.*

Measurement and Weight of Cattle.—It would, in my opinion, be of great importance to the feeders of stock generally, and more especially so to young farmers, were they to pay attention to the instructions laid down in Morton's "Cyclopædia" for estimating the value of stock by measurement. I have in several cases compared it with another plan of measurement in which I had hitherto placed great confidence, but have invariably found Ewart's to be the most accurate. I give two cases, though not such as to approach the dimensions of that beautiful animal referred to in a late number of the *Gazette*, yet they may be the means of inducing others to have recourse to this mode of ascertaining the value of stock before sending them to market. The dimensions of the first were—length, 5 feet 2 ins.; girth, 93 inches; then having taken the condition of the beast into account, the weight was equal to 73 stones 11 lbs.; the actual weight, the day after being killed, was 73 stones 4 lbs.; difference, 7 lbs. The second case was, length 5 feet 4 inches, girth 93 inches, equal to 76 stones 2 lbs.; actual weight was 76 stones; difference, 2 lbs. The age in both cases was "coming three years old." I could quote half-a-dozen more instances where the total difference between weighing and measuring did not exceed 14 lbs., but will only add that the person to whom the two beasts in question were sold, and in whose presence as well as in mine they were first measured and afterwards weighed, is Mr. Geo. Stephenson, butcher, Marketweighton, Yorkshire. *P. Deane.*

Harvest Returns.—I would suggest, in reference to the valuable statistics of the last harvest, published in No. 2 of the *Agricultural Gazette*, that the weight of the grain, especially of the Wheat, would be a valuable particular. With the weight of the grain, the quantity of flour directly varies; and if the grain of Wheat be this year quite as deficient in weight as the yield per acre, this may account for what is occasioning a good deal of comment and dissatisfaction, viz., the high price of bread at present relatively to the average price of Wheat, as compared with their relative prices in other years. On Jan. 7, for example, with the returned average of Wheat at 76*s.* 2*d.*, the price of the quartern loaf, as you report for London, and I find also in Essex, was 1*s.* and 1*s.* 0½*d.*; while, in May 1847, with the average price of Wheat at 105*s.*, we paid only 1*s.* 1*d.*, and, in some cases at the West End, 1*s.* 2*d.* per quartern. It is observable in the accounts of the late lamentable bread riots at Exeter, that the occasion of the outbreak is referred to a charge of 9*d.* for the quartern loaf, in relation to Wheat at 11*s.* a bushel, or 88*s.* a quarter, while here our peasants are peaceably paying 1*s.* for the loaf, in relation to Wheat at 10*s.* 6*d.* the bushel. *Brentwood.*

Fences.—I agree with Mr. May in most of the general rules he lays down for the management of young Thorn hedges, only, instead of cutting over a year after planting, I would delay till the end of the second, by which means a much stronger growth will be secured, and a sufficient fence sooner attained; and instead of cutting at 6 inches above the surface, I would prefer cutting as near the ground as possible. This obviates what sometimes happens when they are cut higher, that is, the shoots being broken off by the wind or other accidents; as a further security against this, I generally draw a little earth to the bottom of the stems after they have pushed a foot or two; indeed, it may be done with safety before they push at all. Old neglected hedges, if cut over, close to or a little below the surface, well cleaned, the empty spaces well dug up, manure well worked in, the wants made up with good healthy Beeches, and well attended to afterwards, will soon make as good fences as those raised from young Thorns, whereas, if cut at some height from the surface, they may grow for a time, but the old part left will soon decay—gaps will occur, and total death soon ensue. Mr. May's remarks refer of course to hedges planted on the surface, except in gardens, nurseries, or pleasure grounds; they are generally planted in this neighbourhood on the face of a bank, dug from a shallow ditch. *G. A., Kilmarnock.*

Soap.—On February 11, "C. S. C." again asks a receipt for making soap with snow. As no one has yet had the kindness to enlighten him on this very important subject, in the absence of more scientific communications, perhaps the following incident will give him as much information as he will care to obtain. In a tolerably old-fashioned winter, some 30 years ago, when a deep snow lay on the ground, it was current in the newspapers of Ireland, this manufacture of snow soap. A poor half-pay sub. of our Peninsular army, to whom economy in all household expenditure was more matter of life and death than half a dozen campaigns in Spain had been, and whose enthusiasm ever ran ahead, seized with delight the opportunity to convert 1 lb. of soap into 7. "Wife of my bosom!" says he, "send at once for half a stone of soap." "Stay," replies the little prudent woman, "let us try first the pound we have in the house." Down goes the pot, 7 lbs. of snow are soon gathered into it, and the pound of soap, cut into ribbons without the aid of Bushe's pulping machine, is added. The pot simmers, bubbles, boils, well stirred, and closely watched by my poor sub. and his wife; it thickens beautifully, and the viscid mass is quasi soap. "Oh," says Mrs. Prudence, "it will do," and, in great trepidation lest this provoking thaw should carry off the snow, she despatches instanter a poor shoeless drab to the next market town for the half stone of soap. It arrives just in time; a 4-stone pot is on the fire ready to receive it; all goes on well. The poor sub., who is something of a carpenter, sets to work and knocks up boxes to receive the emollient mass. They are filled, the soap firms, it is cut into bars, and put away on shelves in a dry room; it is as like any new soap as one Pea is like another. The sub. and his wife are delighted; a summer's supply of soap from only 7 lbs. So far, all well. Washing day comes. "Mistress, this is but weak soap; it makes very poor lather; the suds are no good." Oh, the prejudices of these poor ignorant creatures! Still in future washings the prejudices hold good. The summer comes; the soap is well dried, firm, and hard as any old soap; but, alas! it is also reduced to its original bulk and weight—the snow-water has all passed off in the slow process of evaporation. It is very possible that it is now too late this season to gather snow, and it may be too trying to "C. S. C.'s" patience to wait till next year; it may, however, be some comfort to him, the assurance that he has only to rest on his oars till the 1st of April, when he may collect 7 lbs. of rain-water to his pound of soap, and then participate with my poor sub. and his wife in their satisfaction, for his rain soap will be just as good as their snow soap. *J. M. Goodiff.*

Progress of Agriculture and Commerce.—In a manufactory every element of success is studied, economy of design is seen throughout, nothing is wasted that can possibly be converted to any use, and, by attention to innumerable minutiæ, manufacturers are enabled to realise a fair return for their capital, although the price of their produce is remarkably low, and the smallest possible margin even with the best management remains for profits. How is it that commerce has attained to its present gigantic position, while agriculture is still so behindhand? Desire an example of intelligence, vigilance in business and general enlightenment, and thousands offer in our manufacturing towns; not only among the masters, for in them you would naturally expect it from their position, education, &c., but in numbers of the artizans—in men who never had the opportunity while young of acquiring even the rudiments of those things with which they are now conversant. Why, nine-tenths of the mechanics in this country are as mentally superior to the smaller farmers as the improved Berkshire pig is physically to its long-eared, long-legged ancestor. When our glory and greatness are boasted of, it is with shame and sorrow that the condition of the agricultural population forces itself on my mind. Still it is interesting to consider the various circumstances which have led to the wide difference which exists between them and commercial men. In making this comparison, it is, I think, necessary to look backward to the feudal ages, for there we shall find the origin of the different paths they have since pursued. The towns sprang up in spite of, rather than owing to, the encouragement or protection of the great proprietors. At first, few and defenceless, they were glad to shelter themselves under the banners of the neighbouring chieftain; but as they increased through the spirit of commerce, they were not long in claiming the rights of freemen, and, by union and courage, rapidly acquired liberty, becoming a powerful body in the state, useful to the monarch in helping him keep the nobles in check, and replenishing his coffers in time of need. The towns thus forming themselves into corporate bodies acquired freedom in action, and the important quality of thinking and acting for themselves. Contrast with this the position of the cultivators of the soil. The serf or villein was an animal as completely a slave as any now in bondage in the southern states; he received a portion of land to cultivate, on condition of rendering an enormous tribute, and was tied to the soil as completely as the chained African; like the latter, his chattels and his life were at the mercy of his lord. The barons of England have passed away, the serfs they malgoverned exist only in the annals of history, but the marks of the feudal chain yet remain, and many of the laws and customs bearing upon real property are handed down unrepealed from those days, forming a fatal clog to every effort to place agriculture upon a footing with other manufactures. It is true they are not often taken advantage of, but when they are, great is the evil. One custom still remains, which, as it bears very appositely upon our remarks, may be mentioned. In cases where yearly agreements are the contracts for letting a farm, it is the law that a tenant desirous of leaving and giving his landlord notice, is unable to recover a farthing for all the improvements he may have made. Under such a system, what man with an uncertain tenure would be mad enough to risk more capital than he can help? Here and there we do find patches of well cultivated land with thriving farmers, good buildings, comfortable stock, &c.; and if inquiry is made, we shall generally find such land is occupied upon long leases. The landlord, a man of property and shrewdness, willing to lay out where he can insure a good rate of interest, and permanently improve his property. The tenant, a man of capital, with a good account at the bank, which is at all times preferable to a host of references; he knows that any expense he goes to with judgment will repay him during his long lease, and his landlord takes care by clauses and proper remuneration to prevent that exhaustion of the land towards its termination, which is too frequently practised. In order to ensure good tenants there must be good landlords, that is men possessed of capital who will invest freely when a good return is ensured. No tenant can be expected to farm well under a beggared landlord, on an estate deeply mortgaged, which, alas! is too often the case. For such diseases the remedies must be severe. The Encumbered Estates Act has worked most beneficially in Ireland—why not here? By this means the land would get into hands capable of developing its resources. With the moneyless landlords the under-capital farmers would disappear. Education having lent her valuable aid, we should at length see the land done justice to, and this country might at last be with reason proud of her agricultural classes. *C.*

Agricultural Labourers.—It has been the professed object of philanthropists and political economists, from time to time, to ascertain the cause, and if possible to find a remedy, for the degraded state of the agricultural labourer. Benefit societies, parish and county clubs, clothing societies, and every possible form that benevolence could conceive, have been tried; while some have gone so far as to coerce the labourer to the course of life that was deemed for his benefit: and too often has this last remedy been tried, and, we need not say, without success; for a man, as a man, must be very far sunk, and have but a poor idea of his standing in the social scale, to be the better for this. Benefit societies may in an enlightened community be of great service; but hitherto they have rather been a curse, leading to a sort of drunken, riotous holiday once or twice, and at last, by their management, driving the best of their members from them in disgust, and then the result is soon plain—the society is broken up, and in such a state that the dividend is small, indeed, that can be paid to the poor man who has paid into it. Again, parish and county clubs have been conducted on an entirely erroneous principle in regard to the admittance of those whose income was beyond a certain amount. Such an exclusion at once tends to show that the whole affair is based on false data, or, if not, why may not all be admitted who can pay their quarterly account? Is it that the promoters know that something must be added by private benevolence to make ends meet? If so, the principle is bad, and instead of inducing the would be self-supporting man to join, he is excluded by

the idea that he thereby becomes the recipient of charity. While again those who have high wages, and of course stand in a higher position as regards rank, are expressly excluded, while they would be of great use not only by inducing others to join, but in managing the business of the club. And from these causes the matter is left in the hands of the squire and clergyman to do as they please, and to use their power for the purpose of confining their subordinates within their own rules; and, instead of having a well ordered state of society composed of all grades, where the influence and example of the higher may stimulate the lower to follow, we have only the two extremes of wealth and poverty, and can it be wondered at that the whole comes to the ground? for even the poorest and most cringing serf will get tired of close control; but if he sees a prospect of managing his own affairs, he will feel very differently, and will feel that he belongs to a body of men that are endeavouring to stand on their own resources. But it is useless to think that any artificial props will raise the labourer from that slough of degradation to which he has sunk, or rather that he has been left in; for while other classes have got hold of the ladder, on which by perseverance they may rise, and have risen, the labourer has not had the same facilities placed within his reach. The foundation must be laid in the shape of a good and sound education;—not that sort alone that as yet passes by the name, which consists of a little reading and writing, and in their being constantly reminded that they are members of this or that section of the church, to the exclusion of every other topic. To my mind, the great defect hitherto has been in not teaching the study of human nature as it is, and ought to exist in each individual as regards his position in the social scale. Man ought certainly to be taught in the first place his duties as a Christian, to know the value of that religion that is indispensable to his own welfare. But he ought also to be taught his duties as regards his fellow-man, and his position in society; and in order to fit him for this, he ought to be taught to form something like an estimate of human character, as it is shown around him. We know that we are taught among our first lessons that we are to do our duty in whatever station it has pleased God to put us; but how few are taught what those duties are. How few of those who are called intelligent are aware of the charge committed to them on that account! It would seem that the use of this rule as understood, is to teach one party that they are to rule, and the other that they are to obey. Surely it would be well that we were taught our duties more in detail: that in being taught to do justice we were taught how full of meaning that word was—in how many and various ways it ought to affect the relations of life. But we must allude to the last and to many the easiest way of benefiting the poor labourer—that is, by direct almsgiving, and we do think that the less there is of this the better, for it is very far from inducing him to think himself a man, and consequently to try and act as such. There are many friendly offices that may be conferred upon him that will not, as this, stifle any spark of manly feeling. This almsgiving is no doubt an agreeable thing to a benevolent feeling, but if the giver would only consider with himself what are the duties that he owes to society, he will find many more important things that he may do for the benefit of those below him, and above all let him remember that the best way to do good to any one is to put them in the way of benefiting themselves. For it is true that "God helps those that help themselves;" so let them go and do likewise. *G. S.*

Societies.

ROYAL AGRICULTURAL SOCIETY.

Weekly Meeting, *March* 15.—Colonel Challoner, Trustee, in the chair.

A letter was read from Mr. Ellison, of Sizergh Castle, Westmoreland, conveying his 47 years' experience on the subject of "fingers-and-toes" in Turnips. As he had a great variety of soils on his farm, on none of which that excrescence had resulted until last year, he believed the nature of the soil to have but little, if any influence in that production. This exceptional piece of land was a 5-acre field of very bad limestone soil, which last year bore only a half crop; and which had failed, in Mr. Ellison's opinion, on account of the imperfect manner in which the seed had been steeped previously to sowing. He concludes his communication by stating the manner in which his steeping process was conducted, and his opinion of the good effects produced by the caustic urine on the seed by the destruction of any noxious germs it might be supposed to contain. He recommends the seed to be sown on the same day that it has been steeped, and that manured land should never be left unsown the same day the manure is put into it. —The reading of this communication was followed by a discussion on the preparation of seeds for sowing; in which Colonel Challoner, Mr. Burke, Mr. Fisher Hobbs, Lord Camoys, Mr. Raymond Barker, Lord Lovaine, M.P., Colonel Hall, Mr. Bullen, Mr. Mainwaring Paine, and Mr. Wrench took part. The following were the principal points on which the discussion turned:—1. On the French steep for seed Wheat, of which a supply had been left some time ago at the Society's Rooms by Mr. Fisher Hobbs, for such members as might feel disposed to try it and report upon its effects. 2. On steeping Mangold Wurzel seed in manure water, in dry seasons; and on allowing it, according to the late Mr. Burness's method, to sprout before sowing. 3. On dibbling Mangold Wurzel seed. 4. On the application of river slime (from decomposed Reed), dug up near Tooting, and applied as a manure for Mangold Wurzel, producing a crop of 71½ tons to the acre. 5. On the preparation of Carrot seed, and on the advantage of sowing it with a small hand drill on light soils, where the pressure of horses' feet would injure the texture of the land, and cause it to produce clubbed Carrots. 6. On the occurrence of excrescences in root crops grown on trodden gravel, or sandy soils; their absence on chalk and marl, even when trodden; and their disappearance on Mr. Paine's gravel or sandy soils in Surrey, on the application of marl. 7. On the prevalence of finger-and-toes in Berwickshire and Northumberland, and on lime being successfully used in those counties as a specific for the disease in question.

The Rev. S. N. Kingdon addressed to the Council a letter on the stoppage of drains, by a substance which appeared to him to be common Couch-grass; and Mr. W. Taylor, on a proposal for the trial of a plan of Potato cultivation.—The Imperial and Central Agricultural Society of Paris, the Horticultural Society of Rouen, the New York State Agricultural Society, the Georgofili Academy of Florence, and the Imperial Agricultural Society of Vienna, presented copies of their respective Transactions; and the American Commissioners of Patents, copies of their reports connected with Agriculture and the Mechanical Arts; for which the best thanks of the Council were ordered.

Adjourned to March 22.

Agricultural Improvement, of Ireland, *March* 7.—Mr. Harkness read a paper on *The several kinds of Manures which it is advantageous to apply in Agriculture*, from which we make the following extracts:—

Encouragement to the application of bones, superphosphate, guano, or any other special manures, ought not to subtract from the value, or to discontinue the making, of farm-yard manure. Yet still, as it is an important position to establish, that farm-yard manure produces the most profitable results, when used with a considerable diminution of dung, and the addition of special manures, somewhat in the proportion of half the value of the whole, we shall be excused in adducing some experiments which illustrate the principle.—1. In April, 1844, Mr. Gardner, at Barrochan, Scotland, applied 3*l*. 15*s*. worth of farm-yard dung along with special manures—viz., animal charcoal, sulphuric acid, gypsum, nitrate of soda, and common salt, to the amount of 18*s*. 6*d*. worth, from which he obtained a return of 20 tons 3 cwt. 19 lbs. of Potatoes per acre, while 25 tons of farm-yard manures produced only 14 tons 1 cwt. of Potatoes per acre, the expense being estimated the same for manure—viz., 4*l*. 13*s*. 6*d*. 2. In another case, Mr. Gardner, with an application of 15 tons of dung, and eight separate special or foreign manures, altogether valued at 7*l*. 12*s*. 4*d*., grew 21¾ tons, while 30 tons of farm-yard manure, valued at 7*l*. 10*s*., yielded only 13 tons 5 cwt. Similar results were obtained by Mr. Gardner in growing Carrots and Swede Turnips, with equal values of manures, the crop grown with farm-yard dung and special manures having yielded between 11 and 12 tons more produce per acre than that grown entirely upon a large quantity of farm dung. Referring to the tables of the Locherbey Club for 1853, I think the following remarks by the Club very appropriate, in reference to the application and advantage of using special manures along with farm-yard dung, in growing green crops. "The tables show that yearly the quantity of extra manure given is on the increase, and confirm the practice, which is becoming every year more general, of giving bones either raw or dissolved, along with guano and dung. The great crops of Hardgrave for several years brought this under notice; and the large weights of all sorts at Dalfibble, Shaw, and Barnsdale (the two latter at an elevation of 500 feet and second-rate quality of soil), which appear in the tables of this year, may extend still more the practice of applying bones in both forms." "One member showed, from a distinct set of experiments, in each of the last seven years, and on different varieties of soil, that dissolved bones, at the same expense, produced equal results in the Turnip crop with guano, while the greater permanency of its effects on the succeeding crops is acknowledged." This report, by a class of as shrewd farmers and careful observers as can be found in any country, is very strong indeed. The conclusion come to by them, however, is quite in harmony with many experiments and reports on the same subject. Meantime, it seems beyond a reasonable doubt, as regards green crops, that properly dissolved bones are quite equal to, and therefore a good substitute for, Peruvian guano, and not so expensive or difficult to be got. If, in addition, the nitrates be found to supply as advantageously the nitrogen or ammonia necessary for the green crops, the farmer's resources will be in no small degree bettered, and by combining phosphates with nitrates, the expense of the manure may be ultimately reduced, without diminishing its practical efficiency, or increasing its expense beyond that of guano.—Glancing back then upon some of these leading elements of the general question, it is obvious that the economical manufacture of bone-dust, the dissolution of the bone, the formation of soluble phosphates, and the cheapest and most effective method of applying such bone manure, are matters of the first consequence to the agriculturist. Peruvian guano, at 13*l*. or 14*l*. per ton, will not do for farmers generally, and the nitrates being considerably higher in price per ton, it is obvious their nitrogenous element will require to be cautiously drawn upon in the compounding of a manure, which must necessarily be composed of phosphates and alkalies.

As to the practice of liquid manuring, the following is interesting:

Some days ago I went out to Larkefield farm, to see Mr. Littleboy, the intelligent land steward of Counsellor Fitzgibbon. I had some conversation with him as to the effect and expense of distributing liquid manure. He has furnished me with his calculations, which I shall now read. "In calculating the cost per acre for watering our Mangold drills, I find that one man and horse, with boy assisting, were able to water an Irish acre in about three hours, distributing on the top of the drills 1254 gallons per acre. Our liquid cart holds about 209 gallons. The wheels are drawn along the alleys, and four drills are watered at a time. One load waters eight drills, giving each 26¼ gallons per drill of 204 yards in length. Forty-eight drills make 1 acre. The tank was very convenient to the field, and a load was put out every half hour; six loads finished the acre.

COST PER IRISH ACRE.

One man and horse, 3 hours	£0	1	6
Boy	0	0	4
	£0	1	10

"I consider the liquid an excellent stimulant for young plants, either Mangolds or Turnips, and the above is a correct statement of the cost, but of course the distance would vary the cost very much." In reality, then, the expense of liquid manuring is but trifling, and not at all difficult, even with the liquid manure cart. The nitrates and phosphates could be easily dissolved either in urine or common water, and thus distributed with greater vegetative effect than the application of solid or dry manure could accomplish. Of course the distribution could be more efficiently, and, on the whole, more profitably distributed by metal pipes, and either gravitation power or by the steam force pump.

Farmers' Clubs.

Fettercairn, *Feb.* 26.—Sir J. S. Forbes, Bart., made the following observations on *Ventilation*. In referring to the ingenious system of ventilation invented and patented by Mr. Watson, of Halifax, I may very shortly remind you that the portion of the air of the atmosphere without which life and combustion cannot be maintained is called oxygen, and constitutes one-fourth of its whole bulk. Whenever that portion is seriously diminished, the lungs become oppressed, and we breathe with difficulty, and hence a constant change of air becomes necessary. You must bear in mind that the same fact maintains in regard to all animals; just in proportion as the air breathed by man or animals is vitiated, the health declines; it thus becomes of importance to effect that change in the most suitable way. Atmospheric air becomes lighter by being heated by respiration or other means, and therefore ascends. The consequence is, that the upper portion of air in a room is always the hottest, and the lower part the coolest; in proportion as it is vitiated by respiration and fire it rises, and the pure air is more and more reduced, until the line which separates them becomes lower and lower, according to the height of the room, sooner or later, down to the level of the persons in the room, who then begin to feel oppressed. The desideratum, under these circumstances, is to refresh the air; and the common plan adopted is to have apertures for the escape of the vitiated air above. The idea that this alone will procure any important relief is quite a delusion. This I can prove to you by a little experiment. A glass bottle without a bottom I place in a trough with a little water in it, to prevent the access of air from below, but with the large neck, equal to one-third of the diameter of the body of the bottle, quite open. This may represent a room with doors and windows close, but with ventilators at the top, only that the aperture here is about 1-9th of the square of the bottom of the bottle, while three or four apertures, of one foot square each, would be thought sufficient in a church or other large place of meeting, though they would not in a building 50 feet square amount to 1-600th part of the area. What then is the effect of this large aperture? I light two candles inside, and, in the short space of half a minute, the tallest of them goes out. The aperture above has not the smallest effect to sustain the combustion of the candles. It is not denied that a certain change of air does take place through this aperture, because, if I light only one candle, it will continue to burn, though feebly; and if, after the candles are extinguished for want of air, I leave the bottle for a considerable time, and then introduce a light from above, the candles will burn without any fresh air from below, the air within having been very gradually renewed; but it is plain that process cannot take effect rapidly enough when the lungs and lights in the room are continuing to exhaust the oxygen below. I may observe, in passing, the effect upon the different candles. The tall candle first goes out, and this will represent the persons in the gallery of a church, who first feel the oppression of the bad air. What remedy, then, has been adopted or attempted in this state of things? Why, none other than the clumsy one of admitting air below. It is quite true, when I hold up the edge of the bottle the fresh air rushes in, the candles burn brighter, and a piece of smoking blotting paper shows the smoke rises readily through the chimney, while it merely circles about the eddy at the junction of the cold and hot air when the only vent is the aperture above; but this remedy is a very questionable one, and I have known many of my friends, near a window suddenly opened at a crowded meeting of this Club, pronounce the cure worse than the disease. Mr. C. Watson, of Halifax, whilst at the head of Messrs. Akroyd & Son's establishment for the daily education of the hundreds of young people employed at their gigantic factories, felt extreme inconvenience from want of ventilation in the school rooms. His health began to suffer; the children were often attacked with sickness and faintings. These facts set him to inquire; and, having heard of the fact, that though an aperture such as we have talked of produced a very gradual and almost insensible change of air while it remained a simple tube, if it were longitudinally divided into equal parts circulation was promoted, he began to inquire into the phenomenon, and soon found that it opened up a source for an important relief from the difficulty he wished to overcome. In effect, it turned out that by this simple apparatus, a rapid change of air was speedily effected, as you will see in the simple illustration of the bottle of which he makes use, and which he suggested to me when he lately paid me a visit here. When I see the candles beginning to burn dimly, I have only to insert in the chimney or neck any thin plate which will, without cement, simply bisect it, and immediately they revive. The vitiated air is rapidly removed on the one side of the plate and replaced by fresh air which rushes down on the other, and the whole is quickly restored to a healthful condition, without draft or inconvenience in the body of the room, or in this apparatus in the bottle, where the candles are quite undisturbed. The explanation appears to be that, from the hottest side of the room, a greater expansion and pressure upwards is created, and instantly a corresponding rush downwards occurs in the other limb, to supply the vacancy thus created. The effect on the comfort of a large meeting, or any situation where pure air is

vitiated, must be obvious. You have only to calculate the rate of the action of the cause, and proportion the means of counteracting it, and the result is infallible. Mr. Watson has invented the ventilator I am now illustrating, and after seven or eight years of unwearied effort has brought it to perfection. It consists of a tube of metal—zinc is found best—of the size required, with a division up the middle, communicating from the roof of the place to be ventilated with the outer air, where it is covered by a cap to keep out the weather, and with valves below worked by pulleys, to proportion its action to the demand from the causes of vitiation below. This is the whole apparatus with which he first cured the school rooms in Halifax. He has now ventilated buildings all over the country. My object in bringing it forward in this place is, of course, its application to farm-buildings, for which, in England and Scotland, it has already been frequently applied. The large amount of air consumed by horses and cattle, and the vitiating effect upon the air of their houses, render it extremely difficult, without danger to their health and condition, to change the air by openings below; but this invention at once solves the problem. For a four-horse stable, a 33-inch ventilator, costing 8*l*., will entirely remove all effluvia, and keep the air sweet and yet warm; because it is to be observed that, as the hottest of the air at the top of the building is changed, the action is quite gradual, and no draft being admitted below, the lower stratum is never unnecessarily cooled.

Reviews.

Journal of the Bath and West of England Society. Vol. II. Ridgway, Piccadilly.

The chief object of this Society is to make known throughout its district the best kinds of farm management adopted, whether within or without its limits; and so in its journal it does not aim at "novelty for its own sake;" and although the greater part of the present volume appears now in print for the first time, "the compilers of the journal have no ambition except the very humble one of being useful by enlarging the circle of intelligent thinkers and readers within their own neighbourhood, thereby assisting the young farmer to interpret the facts which his father has taught him to see with his own eyes, and to connect them with the broad principles of science with which every member of a mechanics' institute is familiar; at the same time aiding the educated man in the endeavour to apply his general knowledge to the improvement of his own district, by impressing upon him its peculiarities. These are the motives which seem to justify the repetition of general truths on the one hand, and practical details on the other, which may appear to those who do not know the wants of our district unsuitable or uncalled for."

The object, therefore, is to fill a certain number of pages in the way most useful to the agricultural readers of that particular district; and we must say that it has been most satisfactorily attained by the Society in the instance before us, without going beyond the list of its own members for contributors, or the limits of its own locality for material.

The chief feature of the volume is the large quantity of most seasonable information it contains on the culture of root crops. Mr. Miles contributes a paper on varieties of Wheat, a subject to which he has long devoted considerable attention, as the pages of the "English Agricultural Journal" will testify. A paper on the "Bridgewater Level," and another excellent paper on "Weeds"—Mr. Karkeek on "Hereditary Diseases"—"Reports on the Plymouth Exhibition," and a number of shorter papers collected under the heading, "Farmers' Note Book"—make up the volume. From the last we extract a passage relating to a subject on which its author had already published in our columns:

"*On Feeding Mountain Sheep.* By G. W. Fowler.—As you expressed a wish that I would transmit you particulars of the results of feeding 11 hoggets here last season, I now forward the same.

"*Food.*—I commence with half a pound of oil-cake daily each sheep, soaked in cold water 12 hours, then boiled 20 minutes, and thrown on cut Clover hay, and in about two hours, while quite warm, given to the sheep. Cost of the cake, 8*l.* 10*s.* per ton, arrived here; so that the purchased food, set down at ½*d.* each sheep per day, is fully covered. Swede Turnips cut and a supply always before them, 20 to 23 lbs. daily consumption by each sheep. Clover hay in rack always with them; the decrease of this small, perhaps 2 or 3 lbs. daily each sheep.

"*Mode of Housing.* 1852, *December* 4.—The sheep are placed under cover on sparred oak bars, 1½ inch thick, with 1 inch space between. There is a space of 17 inches below, of which 8 inches were filled with peat ashes, forming a bed for the dung and urine. After the sheep were sold, this was spread with excellent effect upon grain crops.

"*Increase in Weight. December* 6.—The 11 hoggets weighed 907 lbs.

"1853, *January* 3.—Again weighed; result, 1044 lbs.

"*April* 4.—Six hoggets sent to Skinner, butcher, Tavistock; gross weight, 807 lbs.

"*April* 11.—Five hoggets sent to Skinner; gross weight, 729 lbs.

"Total weight of the 11 hoggets, 1536 lbs. The 11 hoggets were feeding 17 weeks and 5 days; average gain during this time 57 lbs., being a trifle over 3 lbs. weekly each sheep during the whole time of the experiment. The hoggets were sold in their wool to Mr. Skinner, of Tavistock, at 7½*d.* per lb.; net money average, 43*s.* 10½*d.* Breed, partly Cotswold, Cheviot, and Dartmoor.

"*Query.*—Was the average increase of field-fed sheep last winter 1 lb. per week? I greatly doubt not.

"I fear that I have not sent you quite so precise a statement as you would wish, but the main features are given. Fifty hoggets next season I hope to feed in the same way."

At the close of the volume is a critical notice of books claiming a place on the farm library, and in the list of essays for which prizes are offered we notice that, beside the information asked for, a list of sources whence that which already exists may be obtained is given.

The whole work well deserves perusal, and will well repay it. We hope to hear of its having a large circulation out of its own immediate district.

Poultry.

Poultry: *Amateur.* The oatmeal should not be boiled, but mixed with hot water, and given warm in cold weather, or cold in hot. It should be so mixed for general feeding, that when a piece is thrown on the ground, it will break and scatter about. Fowls' eggs will hatch after travelling by railway, though the journey be hundreds of miles.—*M S.* "Sebright Bantams" *must* have double combs; they will hatch their own eggs, and generally prove excellent mothers. If eggs be thoroughly fresh and uninjured when packed, you are likely to get a very good brood from them after they have travelled a distance of 100 miles by railway; we have had nine chickens from 11 eggs, which had travelled 260 miles by railway and 17 by coach. Purchase the eggs of some person on whom you can depend, place them under a hen as soon as possible after they reach you, and the chances are in your favour.

Miscellaneous.

Improvements in Treating Sewage, and in Manufacturing Manure therefrom, by Thornton John Herapath, of Bristol. Patent dated March 15, 1853 (No. 643). This invention consists in causing the phosphoric acid and ammonia of sewage to be precipitated in a comparatively insoluble state by the addition of magnesia or a magnesian compound, at or about the same time as the deodorisation of the said sewage is effected by the addition of some deodorising chemical agent which will not decompose ammonia or its salts. *Mechanics' Magazine.*

Calendar of Operations.

MARCH.

Berwickshire Farm, *March* 13.—Since Candlemas we have had a series of westerly gales of uncommon violence and constancy, accompanied in the earlier part of last month by sharp frost and a threatening of a return of the snow-storm of January. The consequent dryness of the soil facilitated the completion of spring Wheat sowing, which operation has proceeded to more than average extent on some farms, while others have entirely abstained from it. Lea, most of which was still to plough after the storm, has been much affected by the intense drought, and is not in such good order as it was last year. Turnip land also, where sheep were folded in wet weather, got very hard. Sowing, however, progresses with alacrity: some sticking to the old plan of sowing the Oats first, while most people now find that early-sown Barley has more "bone" in the straw, and consequently carries a head of superior quality. The great deficiency of the Turnip crop admits of the early clearance for that grain. The Wheat plants have been somewhat injured by the late cold weather, but are thick enough in the ground. Clay soils are much in want of sap; but though the wind continues high, it is more southerly, and there is a prospect of some rain immediately. Live-stock markets are rather overcrowded, owing to a want of food; but grain continues to advance, independently of the demand for seed corn. This rise, it appears, is not consequent on the withholding of supplies, for stack-yards are pretty well thinned out; it is therefore the more likely to continue for some time. *J. T.*

Notices to Correspondents.

Agricultural Chemistry: *A Lady.* Johnstone's "Agricultural Chemistry" is the best book on agricultural chemistry, and Low's "Practical Agriculture"—on good farming. Both subjects are fully discussed in Blackie's "Cyclopedia of Agriculture."

Books: *Anon.* "Youatt on the Horse," of which there are two editions, one with Supplement by Spooner, as well as "White's Compendium of the Veterinary Horse" by Spooner, are standard works.

Brine: *J Daniel.* Brine is very injurious, and was probably the cause of death. We do not imagine the saltpetre could have been in sufficient quantity to have produced the mischief alone, though it might have assisted. *W. C. S.*

Cement: *Bagnalstown* will be obliged by any of our correspondents experienced on this subject, who will tell him what proportion and quality of sand should be used with Portland cement. Also as to quality of any other cement more lasting than Roman or Portland for using between wood-work and stove jambs. [Try just as much cement with the sand as the latter will *hold* of water. On measurement of tradesmen's work any "Builders' Manual," of which there are many, will supply your want.]

Damp Oats: *E Townend.* They will not hurt the horses. You had better mix them with chaff, so as to hinder them from being swallowed without mastication.

Devon Cow: *W F G F.* You should apply for advice to the editor of the "Devon Herd Book"—Mr. J. T. Davy, Roseash, South Molton.

Farm Management: *The same Neophyte.* Next week. We are glad to give all the information in our power on particular points in farm practice when information or decision is needed, and that is properly the use that should be made by inquirers of these columns; and when the subject is of more than merely individual interest, we are willing to do more than this, and supply such information as we can on the whole scheme of farm management—the capital needed and profits to be expected, &c. &c.—to which your inquiry extends; but both space and time are needed for such a discussion, and we cannot undertake it except at our leisure. We state this in reference to the delay you complain of.

Red Clover: *M.* Sow 4 bushels of Sainfoin (rough seed) per acre. It will succeed admirably on your "easy loam on chalk," and it is common now to keep it down for only one year, or at most two, just as Clovers are treated.

Small Farm: *J L* has sent us his address, and would be glad to communicate with "Clericus," the writer of the paragraph in page 139, on this subject.

Wheat: *Rusticus.* You had better apply nitrate of soda 1 cwt., or guano 2 cwt., or sulphate of ammonia 1 cwt. per acre rather than superphosphate, which is rather adapted for the Turnip crop.

SUBSTITUTE FOR GARDEN MATS.—Waxed Sheeting nearly 2 yards wide, 1*s.* per yard run—admits light and excludes cold; Thick Canvass Tarpauling, 1*s.* per square yard; Thick Canvass Waxed Sheeting, 1*s.* per square yard, may be had various widths; these Canvasses are excellent for Roofing Sheds and Outhouses, as they are quite Waterproof.
R. Richardson, 21, Tonbridge Place, Judd Street, New Road, London.

BLOSSOM of FRUIT TREES.—WORSTED NET to effectually protect the blossom of wall fruit trees from frost and blight, and the ripe fruit afterwards from wasps and flies, 7*d.* per square yard, in various widths. All kinds of garden, fishing, and sheep nets, made by machinery, and at very low prices.—R. Richardson, 21, Tonbridge Place, New Road, King's Cross.

WIRE FENCING, 6¾*d.* per Square Yard, in various widths from 6 feet to 15 inches, mesh less than 2 inches. An effectual fence against Hares, Rabbits, Sheep, Deer, &c., and for the enclosure of Poultry, Pheasants, &c.; 4 inch mesh, 4*d.* per square yard.—R. Richardson, 21, Tonbridge Place, New Road, London.

NETTING and BUNTING for FRUIT-TREES, RICK CLOTHS, MARQUEES, TENTS, &c., NEW or SECOND-HAND, for SALE or HIRE.—Benjamin Edgington has prepared for the ensuing season an extensive assortment of Marquees, &c., for Horticultural Societies, Fêtes, Cricket Clubs, &c. Rick Cloths, with poles, pulleys, and lines complete. A great variety of Emigration Tents erected on the premises, 2, Duke Street, Southwark. Warehouse, 32, Charing Cross.—Address, by post, 2, Duke Street, Southwark, London.

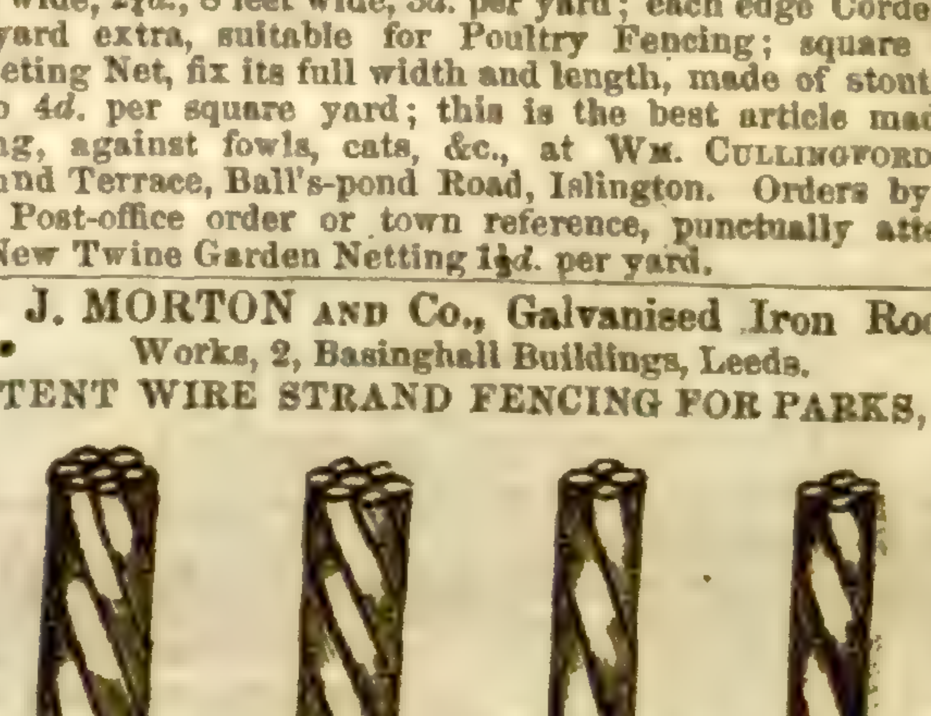
TANNED NETTING, for the protection of Fruit Trees from frost, blight, and birds, and for the security of fresh sown seeds, either in Gardens or Fields, at 1*d.* per square yard; 200 yards, 14*s.*; 500 yards, 30*s.*; 1000 yards, 50*s.* Scrim Canvass, for Wall Fruit.—At EDGINGTON and Co.'s, 17, Smithfield Bars, City, and Old Kent Road, Southwark, where may be seen erected Emigrant Tents in great varieties, on their latest improved principles, and also at Brunswick Street, Poplar, near the East India Export Dock.

TANNED GARDEN NETTING for protecting Fruit Trees from frost, blight, and birds, or as a fence for fowls, pigeons, Tulips, and seed beds, can be had in any quantity from John King Farlow's, Fishing Tackle and Net Manufactory, 4 and 5 Crooked Lane, London Bridge, at 1½*d.* per yard one yard, 3*d.* two yards, or 6*d.* four yards wide. Carriage free on all orders over 20*s.*, accompanied by a Post Office order, or London reference. Rabbit, Sheep, and Fishing Nets of every description in stock or made to order.

FRUIT TREES, POULTRY, RABBIT, SHEEP, and CAT FENCING.—Worsted Netting to protect the Bloom of Peach, Nectarine, and other Trees, Flower, or Seed Beds, from Frost, Blight, and Birds, 2 yards wide, 5*d.* per yard. NEW TWINE NETTING (Tanned if required), 1 yard wide, 1½*d.* per yard; 2 yards wide, 3*d.* per yard; 4 yards wide, 6*d.* per yard; Half-inch Mesh ditto, 2 yards wide, 6*d.* per yard. TANNED NETTING, 2 or 3 yards wide, 1½*d.* per yard; 4 or 6 yards wide, 3*d.* per yard; or 5*s.* per 100 yards, 1 yard; 10*s.* per 100 yards, 2 yards; and 20*s.* per 100 yards, 4 yards wide. ELASTIC HEXAGON GARDEN NET, or Scrim Canvas, 4½*d.* per square yard. COCOA NUT FIBRE, or Hemp Sheepfolding Net, of superior quality, 4 feet high, 4*d.* to 6*d.* per yard. Rabbit Net, 4 feet wide, 1½*d.* per yard; 6 feet wide, 2¼*d.* per yard; 8 feet wide, 3*d.* per yard. Each Edge Corded, ½*d.* per yard extra, suitable for Poultry Fencing. Square Mesh Cricketing Net, fix its full width and length, made of stout cord, 3*d.* to 4*d.* per square yard; this is the best article made for fencing, against fowls, cats, &c., at W. Cullingford's. Orders by post with Post-office order or town reference, punctually attended to. The Trade supplied. Fishing Nets of all kinds in stock. Nets made to order. Tents, Marquees, Rick Cloths, Tarpaulin, Lines, Rope, Twine, &c., made to order.—1, Edmund-terrace, Ball's Pond Road, Islington, London.

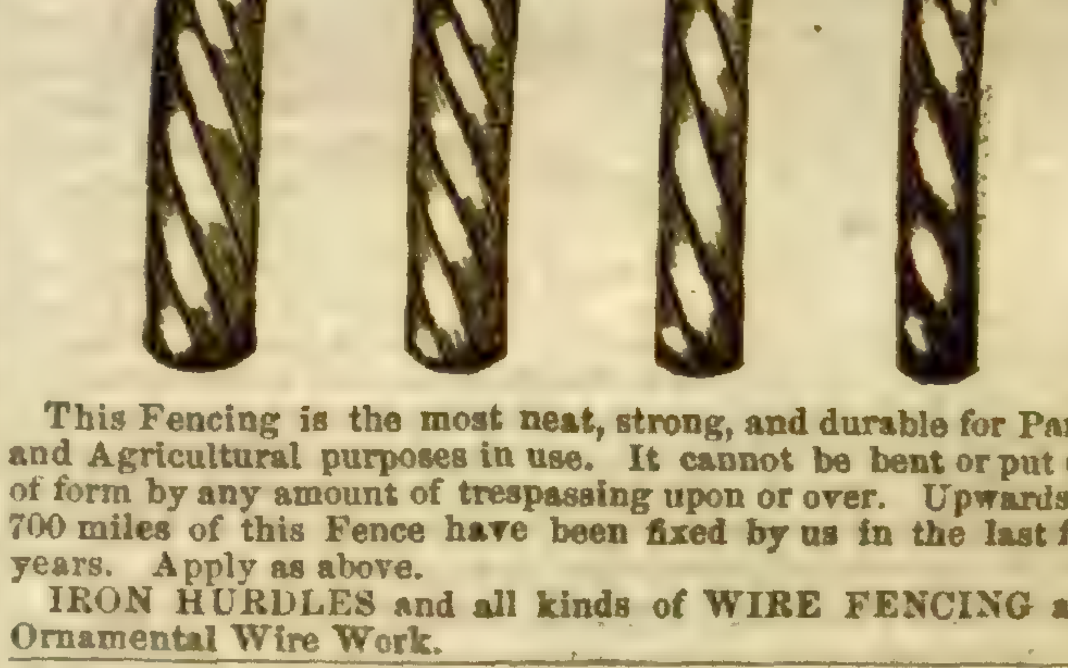
FISHING NETS, POULTRY FENCING.—A 20 yard Drag Net, with Purse complete, 2*l.* 10*s.*; a single Walled Drag Net, any length and depth, 1*s.* per square yard Casting Nets complete, 1*s.* per yard, measured round the lead line; Flue Nets, any size, 1*s.* per square yard complete; Minnow Nets, Eel Nets, Landing Nets, equally cheap, all warranted first-rate quality and workmanship; Rabbit Nets, 4 feet wide, 1½*d.*, 6 feet wide, 2¼*d.*, 8 feet wide, 3*d.* per yard; each edge Corded, ½*d.* per yard extra, suitable for Poultry Fencing; square mesh Cricketing Net, fix its full width and length, made of stout cord, 3*d.* to 4*d.* per square yard; this is the best article made for fencing, against fowls, cats, &c., at Wm. Cullingford's, 1, Edmund Terrace, Ball's-pond Road, Islington. Orders by Post, with Post-office order or town reference, punctually attended to. New Twine Garden Netting 1½*d.* per yard.

H. J. MORTON and Co., Galvanised Iron Roofing Works, 2, Basinghall Buildings, Leeds.
PATENT WIRE STRAND FENCING FOR PARKS, &c.



This Fencing is the most neat, strong, and durable for Parks and Agricultural purposes in use. It cannot be bent or put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply as above.
IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

H. J. MORTON and Co., 2, Basinghall Buildings, Leeds.—GALVANISED GAME AND POULTRY NETTING, very strong and neat, never requires painting.



24 inches wide, 3-inch mesh, 4½*d.*, 6*d.*, and 8½*d.* per yard.
24 inches wide, 2-inch mesh, 7*d.*, 9½*d.*, and 1*s.* per yard.
GALVANISED IRON SPOUTING, for Dwellings, Cottages, Farm Buildings, &c., never requires painting.
Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalte Roofing Felt, &c.

COTTAM AND HALLEN,

2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.

APPLICATION is requested for their NEW HORTICULTURAL LIST, containing Illustrations, Descriptions, and Prices of

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Syringes	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.

AGRICULTURAL LIST UPON APPLICATION.

EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

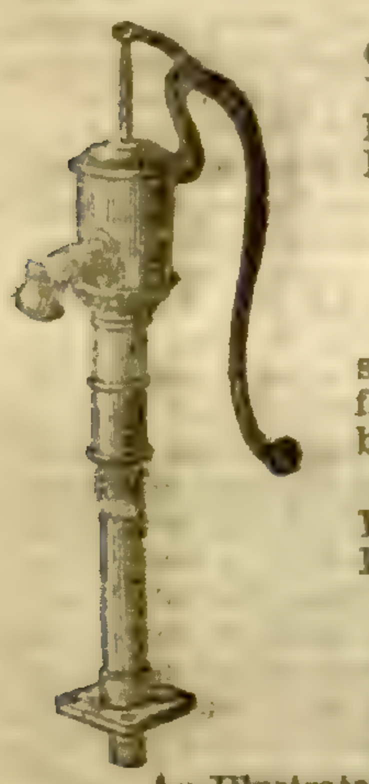
PATENT ENAMELLED MANGERS.

COTTAM, JUN., & Co., 33, Charles Street, Hampstead Road, London.—These Mangers possess all the Latest Improvements, and can be had Plain, Galvanised, or Enamelled, and fitted as Manger-rack and Water-trough—Manger and Rack, or Manger only. Stable Fittings of every description; Hurdles, Strained Wire, and all kinds of Fencing.—33, Charles Street, Hampstead Road.

BUDDING'S LAWN-MOWING MACHINES, with Registered Improvements,
MAPPLEBECK & LOWE, MACHINISTS & MANUFACTURERS, Birmingham.

GIDNEY'S PRUSSIAN HOES.—Gardeners and Amateurs are informed that this useful Tool is now becoming a general favourite in the garden, and only needs a trial to be appreciated. Price 1s. 6d. handled. To be had of every Ironmonger and Seedsman. Manufactured only by GIDNEY & SON, East Dereham, Norfolk.

WARNER'S PATENT FARM AND COTTAGE PUMPS.



Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

	£ s. d.
Patent Pump	1 15 0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing	3 0 0

Larger sizes if required.

The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,
8, CRESCENT, JEWIN STREET, LONDON.

Every description of Machinery for Raising Water; Fire Engines, &c.

An Illustrated Book sent on application post free.

JOHN WARNER AND SONS,
CRESCENT, JEWIN STREET, LONDON.
GALVANISED IRON TUB GARDEN ENGINE,
With Warner's Registered Spreader,

Is strongly recommended, for durability and low price, viz., 2l. 19s., to hold 10 gallons.

Larger sizes made either in wood or iron. May be obtained of any Ironmonger or Plumber in town or country, or of the Patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Syringes of various constructions and sizes from 9s. upwards. An extensive assortment kept.

WOOD'S PORTABLE ASPHALTE CAULDRON, with Hot-air Closet for drying Land without extra fuel, commended by the Royal Agricultural Society, Gloucester, to prepare a cheap and durable Flooring for every description of Agricultural Buildings, also Malting Floors, Warehouses, Cellars, Workshops, Yards, Paths, &c. Illustrated Circulars, with prices, will be sent post free, on application to JAMES WOODS, Agricultural Engineer, Stowmarket, or Implement Depot, Bury St. Edmunds. Printed directions, instructing the purchaser as to materials used, and the method of laying the various kinds of Flooring, accompany the execution of each order.

GREAT SAVING OF TIME AND MONEY.

R. RESTELL'S PATENT ECONOMICAL GAS APPARATUS for Forcing Houses, Greenhouses, Conservatories, Pits, Shops, Counting Houses, Warehouses, Drying Rooms, &c. &c., possessing all the advantages of Hot Water at half the expense of fitting, and most trifling cost for Gas, far surpassing any ordinary Gas Stove, requiring no furnace, and allowing of no fumes or evaporation in the Building, or possibility of accidents from negligence or carelessness. It has been tested through the late severe weather, on a variety of Plants, and found most satisfactory. It is very quickly fitted up and requires no night attention.—Apply to the Inventor and Patentee, RESTELL, 35, High Street, Croydon, Surrey.

Persons wishing to have Houses fitted will please to send the ... and dimensions.

J. TYLOR AND SON'S REGISTERED GARDEN SYRINGE.—By a simple arrangement this Syringe is rendered more effective than any portable Conservatory or Garden Pump ever offered to the public. It is equally adapted for Garden or Conservatory use, and is capable of discharging twice as much water in a given time as any other Syringe now in use. The arrangement consists in attaching a small flexible suction tube to the barrel of the Syringe, through which it is filled with water at every discharge of the previous contents. By this means the Syringe is always charged, and the pull-up stroke of the piston rendered perfectly easy, it having, indeed, no work to do, the barrel being previously full of water. Being thus made self-supplying, a great saving of labour is effected; and the necessity of stooping to fill the Syringe at every discharge being done away with, the direction of the water can be maintained for any length of time. It is perfectly cleanly in its action, as it is not possible for any water to get on the outside of the barrel, which is a well-known inconvenience attendant on the use of every other Syringe. Its construction is perfectly simple, and cannot get out of order; the ground-in ball valves and fittings used for filling all other patent Syringes being entirely superseded. Price complete, with India-rubber suction tube, with galvanised spiral inside, and covered with cotton outside, 25s. each. To be had of any respectable Ironmonger or Seedsman in town or country.

J. TYLOR & SONS, Manufacturers of Horticultural Apparatus, Warwick Lane, Newgate Street, London.

BY HER MAJESTY'S ROYAL LETTERS PATENT

E. DENCH, PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

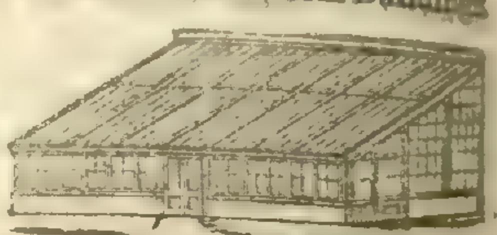
PATENT HOTHOUSES and excellent Glass at 1s. 3d. per foot super., which are superior to all others for price with quality, and if known would supersede all others. (See Appendix, in "Book of the Garden," by Mr. M'Intosh.) A Range of Houses and Hot Water Apparatus, was erected by E. D. for E. L. Betts, Esq., Preston Hall, Kent. Mr. J. Frost, head gardener, has shown their efficiency by their produce at the Royal Botanic Gardens, Regent's Park, June 8, and Chiswick, June 11. The editor of the *Gardeners' Chronicle* says: "Beautiful examples of Black Hamburgh, large both in bunch and berry, and as black as Sloes, were furnished by Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall, Kent; these well deserved the first prize which was awarded them."—*Gardeners' Chronicle*, June 18th, 1853. The Grapes were considered the best shown at Regent's Park during the season, and the Houses are as superior for the growth of everything else in horticulture, which has been fully proved, and they have been extensively erected for the nobility and gentry in all parts of the kingdom.

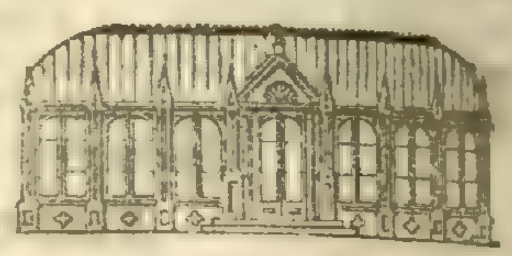
GLAZING WITHOUT PUTTY.—Iron and Glass alone. E. D. has Roofed the Public Baths and Washhouses, Endell Street, on this principle, and others are in hand. Patent Sashes for Peach Walls, Pits, &c., 8d. per foot super. Heating by Hot-water, on the most practical principles, and all the best materials used. Printed Price List sent on application.

HORTICULTURE IN ALL ITS BRANCHES.

J. WEEKS & Co., King's Road, Chelsea,

HOTHOUSE BUILDERS.





The Nobility and Gentry about to erect Horticultural Buildings or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

The splendid collections of Stove and Greenhouse Plant, are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. WEEKS & Co., King's Road, Chelsea, London.

HOTHOUSES, CONSERVATORIES, FRAMES & LIGHTS, FOR PITS, CUCUMBER & MELON BOXES & LIGHTS

JAMES WATTS, HOTHOUSE BUILDER, 8, Claremont Place, Old Kent Road, London.

Green and Hothouses, 9, 10, 11, 12, 13, and 14 feet wide, any length, from 16 to 100 feet. Frames and Lights for Pits, 6 ft. 6 in. 7 ft., 7 ft. 6 in., 8 ft., and 8 ft. 6 in. wide, any length, from 12 to 100 feet. Upwards of 200 Cucumber and Melon Boxes and Lights, from 4 ft. by 3 to 10 ft. 6 in. by 5 ft. 6 in., kept ready, glazed with stout sheet glass, painted four times, complete, ready for immediate use, all made of best material, packed and sent to all parts of the kingdom.—Reference may be had to the Nobility, Gentry, and the Trade, in most of the counties in England.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.

GRAY AND ORMSON, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

GREEN AND HOTHOUSES made by machinery at J. LEWIS'S HORTICULTURAL WORKS, Stamford Hill, Middlesex. Warranted of best materials; being made by steam-power, they are put together in a superior manner; one trial will prove these Buildings to be the cheapest and best made in England. 1½ in. Greenhouse lights at 3d. per foot; 2 in. at 4½d. per foot. Lists of Prices by enclosing two postage stamps.

MORNING FROSTS.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard run, of E. T. ARCHER, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey. (Removing in May next to 112, Regent Street, London.)

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2*d*. to 3*d*. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

FOREIGN GLASS, 16 ounces to the foot, of good quality, in boxes of 100 feet each, suitable for Horticultural purposes. Boxes included.

Sizes	Price	Sizes	Price	Sizes	Price
12 ins. by 10 ins.	15*s*. per box.	18 ins. by 14 ins.	16*s*. per box.	24 ins. by 18 ins.	17*s*. per box.
14 ins. „ 10 ins.		19 ins. „ 15 ins.		23 ins. „ 19 ins.	
15 ins. „ 11 ins.		18 ins. „ 16 ins.		24 ins. „ 20 ins.	
14 ins. „ 12 ins.		20 ins. „ 16 ins.		25 ins. „ 21 ins.	
16 ins. „ 12 ins.		21 ins. „ 17 ins.		26 ins. „ 22 ins.	
16 ins. „ 13 ins.		20 ins. „ 18 ins.		27 ins. „ 22 ins.	
17 ins. „ 14 ins.		22 ins. „ 18 ins.			

Also other descriptions of Glass at proportionate prices.
White Lead, Oils, Turps, Colours, &c.
G. FARMILOE & SON, 118, St. John Street. West Smithfield.

HARTLEY'S PATENT ROUGH PLATE GLASS, 1-8th thick, or 2 lbs. to the foot; 3-16ths, or 3 lbs.; and 1-4th, or 4 lbs. to the foot, for Ridge and Furrow Roofs, Greenhouses, Railway Stations, Engine Sheds, Mills, Market Halls, and Public Buildings generally.

For further information apply to JAMES PHILLIPS & CO., London Agents, 116, Bishopsgate Street Without.

"Rough Plate has never been, and never can be, prejudicial to the colouring of Grapes; though we can easily believe that it has been charged with such a fault by persons who have not skill enough to manage Grapes under glass."—*Gardeners' Chronicle.*

"There *can be no question now* that Rough Plate Glass is the most beautiful, as well as the most useful, kind of glass that can be employed in horticulture. It is free from all the faults of transparent glass, and has many advantages peculiar to itself, *without a single disadvantage as a set-off.*"—*Gardeners' Chronicle.*

"ROUGH PLATE GLASS.—We should have no hesitation in using this for a Vinery—INDEED WE SHOULD SELECT IT."—*Cottage Gardener.*

GLASS FOR CONSERVATORIES, GREENHOUSES, DWELLINGS, ETC.

ESTABLISHED MORE THAN ONE HUNDRED YEARS.

THOMAS MILLINGTON requests attention to his present prices of SHEET GLASS in 100 feet boxes.

Squares	*s*.	*d*.
Squares 6 by 4 and 6½ by 4½ } 7 by 5 and 7½ by 5½ } 8 by 6 and 8½ by 6½ }	13	6
„ 9 by 7 and 9½ by 7½ } „ 10 by 8 to 12½ by 9½ }	16	3
„ 12 by 10 to 24 by 14	19	0

Orchard House Squares on Mr. Rivers's approved plan, to whom I have sold some thousands of feet:—20 inches by 12, 20 by 13, 20 by 14, 20 by 15, 20½ by 12½, 20½ by 13½, 20½ by 14½, at 19*s*. per 100 feet.

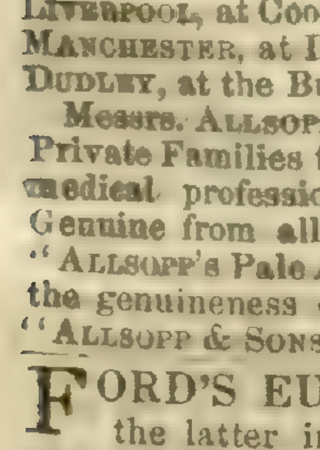
200 feet cases at 42*s*., and 300 feet case 63*s*., in large sheets.

Boxes charged 1*s*. extra per 100 feet, and the same allowed if returned free of all charge.

HARTLEY'S PATENT ROUGH PLATE GLASS, Fern Shades, Striking Glasses, Milk-pans, Bee Glasses, Cucumber Tubes, Sheet and Rough Plate Glass Tiles, Wasp Traps; Plate, Patent Plate, Crown and Sheet Window Glass, in every thickness and quality, and Ornamental Glass, plain and coloured; pure white Shades for Ornaments, Crystal Glass for Pictures.

Warehouse, 87, Bishopsgate Street Without—same side as Eastern Counties Railway.

TO AMATEUR GARDENERS, LOCAL BOARDS OF HEALTH, & SANITARY WORKS.



PATENT GLASS TUBES, Iron Coated with Glass, Gutta Percha, Combinated ditto, Patent Flexible India Rubber Tubing, and every other Hose for Watering Gardens. The Hydraulic Ram, Fire, Garden, and every other kind of Pump, Sluice Cocks, Hydrants, High Pressure Cocks, and all other articles to be had, Wholesale and Retail, of

FREEMAN ROE,
HYDRAULIC ENGINEER,
70, Strand, and Bridgefield, Wandsworth.

ALLSOPP'S PALE OR BITTER ALE.

MESSRS. S. ALLSOPP AND SONS beg to inform the Trade that they are now registering orders for the March Brewings of their PALE ALE in Casks of 18 Gallons and upwards, at the Brewery, Burton-on-Trent; and at the under-mentioned Branch Establishments:—

LONDON, at 61, King William Street, City	GLASGOW, at 115, St. Vincent St.
LIVERPOOL, at Cook Street	DUBLIN, at 1, Crampton Quay
MANCHESTER, at Ducie Place	BIRMINGHAM, at Market Hall
DUDLEY, at the Burnt Tree	SOUTH WALES, at 13, King Street, Bristol.

Messrs. ALLSOPP & SONS take the opportunity of announcing to Private Families that their Ales, so strongly recommended by the medical profession, may be procured in Draught and Bottles Genuine from all the most respectable Licensed Victuallers, on "ALLSOPP'S Pale Ale," being specially asked for. When in bottle, the genuineness of the label can be ascertained by its having "ALLSOPP & SONS" written across it.

FORD'S EUREKA SHIRTS, Plain and Coloured, the latter in cloths of every variety of pattern—stripes, curves, bars, spots, sprigs; in short, every figure that art can describe and taste approve. Six for 27*s*. Patterns to select from on receipt of six penny stamps. Price lists free on application. —RICHARD FORD, 38, Poultry, London.

QUALITY the TEST of CHEAPNESS.—FIRST-CLASS CLOTHING at the Lowest Charges.—Dress Coat, 3*l*.: Boy's Suit, 11*d*. per inch, according to height. The well-known Waterproof Light Overcoat, 45*s*. and 50*s*. Business established half a century.—W. BERDOE, 96, New Bond Street, and 69, Cornhill. (Nowhere else.)

ONE THOUSAND BEDSTEADS TO CHOOSE FROM.

HEAL AND SON'S Stock comprises a large assortment of handsomely Japanned and Brass-mounted IRON BEDSTEADS, CHILDREN'S CRIBS and COTS of new and elegant designs; MAHOGANY, BIRCH, and WALNUT-TREE BEDSTEADS, of the soundest and best manufacture, many of them fitted with Furnitures, complete; and every variety of SERVANTS' and PORTABLE BEDSTEADS. They have also a large assortment of

BED-ROOM FURNITURE, comprising WARDROBES, both in Japanned Wood and Mahogany, from 4 feet to 8 feet long, fitted with every variety of arrangement; DRESSING TABLES and GLASSES, WASH-STANDS, DRAWERS, and every article for the complete furnishing of a Bed-room.

HEAL & SON'S ILLUSTRATED CATALOGUE OF BEDSTEADS and priced List of Bedding, containing designs and prices of upwards of One Hundred Bedsteads (representing a stock of upwards of One Thousand), sent free by post.
HEAL & SON, 196, Tottenham Court Road, London.

TO ARCHITECTS AND BUILDERS.

THE Council of the MANCHESTER BOTANICAL and HORTICULTURAL SOCIETY, being desirous to erect a GLASS EXHIBITION HOUSE, are prepared to receive PLANS and ESTIMATES for such a structure. The building to cover a space of not less than 1000 square yards, and not to exceed the sum of 2000*l*. in its erection. Further particulars may be known on application to Mr. SHAW, 40, Princess Street, to whom sealed plans and tenders must be transmitted on or before the 5th day of April next.

By order, JOHN SHAW, Secretary.
Council Room, 40, Princess Street, March 18.

SEEING IS BELIEVING. (*Times*, Nov. 17, 1853.) MAN HIS OWN BENEFACTOR. The promised PAMPHLET! Extraordinary progress in Vegetation by LIQUID MANURE and AIR to the ROOTS of Plants; humbly dedicated to H.R.H. Prince Albert and Others. Showing by what means Swedes were grown 3 inches round in one week in hot weather; Potatoes reared in 11 weeks free from spot or defect; two Crops in Poor Heath Land in one year applicable to all gardens. Every slop of the house turned to profit. An effectual relief of the distressed Agricultural Labourers to the end of time. Little Farmers' 10 acres of Poor Land warrant their Crops average one pound per day, from Christmas to Christmas, and thankfully pay their landlords 10 per cent. for their outlay. Once done lasts 50 years. Youths 14 to Manhood provide themselves with clothes and pocket money. By EDWARD WILKINS, Patentee, 68, Queen's Row, Walworth, Surrey.—Sold by CASH & Co., 5, Bishopsgate Street; ORDER & MERYON, 174, Fenchurch Street; MANN & Co., 39, Cornhill, London. Price 8*d*.; in stiff cover, 1*s*.

Follow the noble example of JOHN KNIGHT, Esq., Banker, Farnham, Surrey, who is testing, with Hops, Corn, &c. &c. (No time to lose.) The Patentee hopes and believes this gentleman, who does possess immense landed property and wealth, with a disposition to carry it out, will do so to serve his agricultural labourers. How remarkable! first for a good object at the place of the nativity of the Patentee.

METCALFE AND CO.'S PERFUMERY DEPARTMENT.—PROPRIETARY ARTICLES.—METCALFE'S celebrated ALKALINE TOOTH POWDER is acknowledged as the safest and most efficient now in use. Dupuytren's Medicated Pomade is the most certain remedy for preventing the hair prematurely falling off, and for restoring it when baldness has already commenced. Dupuytren's Medicated Balm strengthens, cleanses, and improves the growth, and is generally acknowledged as the best wash for the hair.—Manufacturers of British and Importers of Foreign Soaps, Perfumery, and J. M. Farina's genuine Eau de Cologne, at METCALFE, BINGLEY, & Co.'s only Establishment, 130B and 131, Oxford Street, second and third doors west from Holles Street.

NO CHARGE FOR STAMPING ARMS, CRESTS, INITIALS, &c., on paper and envelopes, at LOCKWOOD'S well-known establishment, 75, New Bond Street. Good cream-laid Note-paper, five quires for 9*d*.; Thick ditto, five quires, 1*s*.; Albert and Queen's sizes, five quires for 6*d*., 9*d*., and 1*s*.; Envelopes, 3*d*. to 1*s*. 6*d*. per hundred; Foolscap paper, 7*s*. 6*d*. per ream; Copybooks, 2*s*. 6*d*. per dozen. Card Plate engraved, 2*s*. 6*d*.; 100 Cards printed, 2*s*. 6*d*. Mourning Stationery equally cheap. Wedding Orders promptly executed. A large variety of Writing and Dressing Cases, Envelope Boxes, Blotting Books, Inkstands, Gold Pens, Church Services, &c. Copy address, LOCKWOOD'S, 75, New Bond Street. Country orders for 20*s*. sent carriage free.

HYGIENIC BATHS, A POWERFUL PROMOTER OF HEALTH AND WELL-BEING.—JENSEN'S Herbaceous Daphne Marina Salt for Baths, when dissolved in a cold, tepid, or warm bath, imparts so eminently strengthening and beneficial properties to the same, that, when once tried, a bath will scarcely ever be taken without it. In the bouyancy and freshness it produces in the system, it is far superior to any known sea bath. Highly recommended by that distinguished Physician, Dr. Andrew Ure, M.D., F.R.S., &c.—Sold at 1*s*. per Packet, by C. MEINIG, 103, Leadenhall Street, and by all Chemists and Bathing Establishments.

QUANTITY AND QUALITY OF THE HAIR.

NO TOILET can be considered complete without a careful attention to that department which so materially affects the entire contour, viz., the Hair, which, both in quantity and quality, is susceptible of the most material alteration. That which is weak can be strengthened, and be made to receive a most beautiful gloss by artificial applications. It is to its extraordinary and valuable properties in these respects that is due the character of C. AND A. OLDRIDGE'S BALM OF COLUMBIA, for its invigorating, nutritious, and regenerative qualities. OLDRIDGE'S BALM causes Eyebrows to grow, prevents the Hair from turning grey, and the first application causes it to curl beautifully, frees it from scurf, and stops it from falling off. Price 3*s*. 6*d*., 6*s*., and 11*s*. per bottle. No other prices are genuine.—N.B. Ask for OLDRIDGE'S BALM, 13, Wellington Street North, Strand, London.

THE SUCCESSFUL RESULTS OF THE LAST HALF CENTURY HAVE PROVED BEYOND QUESTION THAT

ROWLAND'S MACASSAR OIL possesses singularly nourishing powers in the growth, restoration, and improvement of the human Hair, and when every other specific has failed. This celebrated Oil is now universally acknowledged to be the cheapest, and superior to all other preparations for the hair. It prevents it from falling off or turning grey, strengthens weak hair, cleanses it from scurf and dandriff, and makes it beautifully soft, curly, and glossy. Its operation in cases of baldness is peculiarly active; and in the growth of the Beard, Whiskers, Eyebrows, and Moustachios, it is unfailing in its stimulating operation. For children it is especially recommended, as forming the basis of a beautiful head of hair. Price 3*s*. 6*d*. and 7*s*.; Family Bottles (equal to four small), 10*s*. 6*d*.; and double that size, 21*s*. CAUTION.—On the wrapper of each bottle are the words, Rowland's Macassar Oil, in two lines. The same are engraven on the back of the wrapper nearly 1500 times, containing 29,028 letters.—Sold by A. ROWLAND & SONS, 20, Hatton Garden, London, and by Chemists and Perfumers.

PAINS IN THE BACK, GRAVEL, LUMBAGO, RHEUMATISM, GOUT INDIGESTION, FLATULENCY, NERVOUSNESS, DEBILITY, &c.

DR. DE ROOS' COMPOUND RENAL PILLS, as their name Renal (or the Kidneys) indicates, are a most safe and efficacious remedy for the above dangerous complaints. For depression of spirits, incapacity for society, study, or business, giddiness, drowsiness, nervousness, and insanity itself, when arising from or combined with urinary diseases, they are unequalled. Price 1*s*. 1½*d*., 2*s*. 9*d*., 4*s*. 6*d*., 11*s*., and 33*s*. per Box, through all Medicine Vendors, or sent (free) on receipt of the amount in postage stamps, by Dr. DE ROOS, 35, Ely Place, Holborn, London. At Home for consultation daily from 11 till 1, and 5 till 8, Sunday excepted. Advice and Medicines, 1*l*.

HOLLOWAY'S PILLS REMARKABLE FOR THEIR EFFICACY IN CURING DROPSY.—Mrs. Nicholls, of Longton, had been a sufferer for years from a troublesome Cough, Shortness of Breath, and a constant lassitude of feeling, rendering her unwilling to move or attend to her domestic duties. She had the advice of several Medical practitioners without deriving any benefit whatever; shortly afterwards, about the meridian of life, her various complaints settled into a confirmed Dropsy, and no hopes whatever were entertained of her life; however, by a steady perseverance in the use of HOLLOWAY'S Pills, she soon improved in health, and is now completely recovered, being better than ever she was before.—Sold by all Druggists, and at Professor HOLLOWAY'S Establishment, 244, Strand, London.

FENDERS, STOVES, AND FIRE-IRONS.—Buyers of the above are requested, before finally deciding, to visit WILLIAM S. BURTON'S SHOW ROOMS, 39, Oxford Street (corner of Newman Street), Nos. 1 and 2, Newman Street, and 4 and 5, Perry's Place. They are the largest in the world, and contain such an assortment of FENDERS, STOVES, RANGES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with bronzed ornaments and two sets of bars, 2*l*. 14*s*. to 5*l*. 10*s*.; ditto, with ormolu ornaments and two sets of bars, 5*l*. 10*s*. to 12*l*. 12*s*; Bronzed Fenders complete, with standards, from 7*s*. to 3*l*.; Steel Fenders from 2*l*. 15*s*. to 6*l*.; ditto, with rich ormolu ornaments, from 2*l*. 15*s*. to 7*l*. 7*s*.; Fire-irons from 1*s*. 9*d*. the set to 4*l*. 4*s*. Sylvester and all other Patent Stoves, with radiating hearth plates. All which he is enabled to sell at these very reduced charges,

1st,—From the frequency and extent of his purchases; and,
2dly,—From those purchases being made exclusively for cash.

THE PERFECT SUBSTITUTE for SILVER.—The real NICKEL SILVER, introduced 20 years ago by WILLIAM S. BURTON, when Plated by the patent process of Messrs. Elkington & Co., is beyond all comparison the very best article next to sterling silver that can be employed as such, either usefully or ornamentally, as by no possible test can it be distinguished from real silver.

	Fiddle Pattern.	Thread or Brunswick Pattern.	King's Pattern.
Tea Spoons, per dozen	18*s*.	26*s*.	32*s*.
Dessert Forks „	30*s*.	40*s*.	46*s*.
Dessert Spoons „	30*s*.	42*s*.	48*s*.
Table Forks „	40*s*.	56*s*.	64*s*.
Table Spoons „	40*s*.	58*s*.	66*s*.

Tea and Coffee Sets, Waiters, Candlesticks, &c., at proportionate prices. All kinds of replating done by the patent process.

CHEMICALLY PURE NICKEL, NOT PLATED.

	Fiddle.	Thread.	King's
Table Spoons and Forks, full size, per doz.	12*s*.	28*s*.	30*s*.
Desert ditto and ditto	10*s*.	21*s*.	25*s*.
Tea ditto	5*s*.	11*s*.	12*s*.

CUTLERY WARRANTED.—The most varied assortment of TABLE CUTLERY in the world, all warranted, is on Sale at WILLIAM S. BURTON'S, at prices that are remunerative only because of the largeness of the sales; 3½-inch ivory-handled table knives, with high shoulders, 11*s*. der dozen; desserts to match, 10*s*.; if to balance, 1*s*. per dozen extra; carvers, 4*s*. per pair; larger sizes, from 14*s*. 6*d*. to 26*s*. per dozen; extra fine, ivory, 32*s*.; if with silver ferrules, 37*s*. to 50*s*.; white bone table knives, 7*s*. 6*d*. per dozen; desserts, 5*s*. 6*d*.; carvers, 2*s*. 3*d*. per pair; black horn table knives, 7*s*. 4*d*. per dozen; desserts, 6*s*.; carvers, 2*s*. 6*d*.; black wood-handled table knives and forks, 6*s*. per dozen; table steels, from 1*s*. each. The largest stock in existence of plated dessert knives and forks, in cases and otherwise, and of the new plated fish carvers. Also a large assortment of Razors, Penknives, Scissors, &c., of the best quality.

WILLIAM S. BURTON has TEN LARGE SHOW ROOMS (all communicating), exclusive of the shop, devoted solely to the show of GENERAL FURNISHING IRONMONGERY (including Cutlery, Nickel Silver, Plated and Japanned Wares), Iron and Brass Bedsteads, so arranged and classified that purchasers may easily and at once make their selections.

Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of.

No. 39, Oxford Street (corner of Newman Street); Nos. 1 and 2, Newman Street; and 4 and 5, Perry's Place.

THE MECHIAN DRESSING CASE, the most portable ever invented, being only the size of a pocket-book, containing One Pair of MECHI'S Ivory-handled Peculiar Steel Razors, his Magic Strop, Comb, Badger-hair Shaving Brush, and Nail and Tooth Brushes, price only 25*s*.; the same with Hair Brush and Soap Dish, 35*s*. To military men, and as a steam-boat or travelling companion, this invention is an invaluable acquisition. An immense variety of other Dressing Cases for ladies and gentlemen, either in fancy woods or leather, at all prices, to suit either the economical or luxurious. An extensive stock of Writing Desks, Writing Cases, Work Boxes, Bagatelle Tables, Razor Strops, Table Cutlery, Superb Papier Maché articles, &c.—Manufactory, 4, Leadenhall Street, four doors from Cornhill.

DINNEFORD'S PURE FLUID MAGNESIA has been for many years sanctioned by the most eminent of the Medical Profession, as an excellent remedy for Acidities, Heartburn, Headache, Gout, and Indigestion. As a mild aperient, it is admirably adapted for delicate females, particularly during pregnancy; and it prevents the food of infants from turning sour during digestion. Combined with the Acidulated Lemon Syrup, it forms an Effervescing Aperient Draught, which is highly agreeable and efficacious.—Prepared by DINNEFORD & Co., Dispensing Chemists (and General Agents for the Improved Horse-Hair Gloves and Belts), 172, New Bond Street, London, and Sold by all respectable Chemists throughout the Empire.

PAUL GAGE'S ELIXIR.—This valuable family medicine has been established 44 years as the best remedy for

PHLEGM,

and all the disorders arising from it, viz., bilious complaints, indigestion, colds, coughs, catarrh, asthma, worms, hooping cough, colics, cholera morbus, ague, fevers, gout, scrofula, nervous affections, female complaints, &c. It is demonstrated in a pamphlet on Phlegm, delivered gratis at all the depots, why PAUL GAGE'S ELIXIR has not failed in desperate cases, where other means have been found of no avail. Sold in bottles at 2*s*. 9*d*., 4*s*. 6*d*., and 11*s*., by PAUL GAGE, 462, New Oxford Street; and by all respectable medicine vendors.

ELECTRICITY FOR NERVOUS, FUNCTIONAL, AND RHEUMATIC DISEASES.

MR. MEINIG'S new and greatly improved GALVANIC ELECTRO GENERATOR, for supplying vito-functional energy to any organ in want of the same, and to the system generally, may now be had at the Establishment, 103, Leadenhall Street. All wet and metallic contact with the body is entirely obviated; it acts with water alone, without acid, the action lasts more than 24 hours after each damping, and can be renewed and regulated without undressing, the Generator, enclosed in an envelope, being carried in the pocket or suspended from the neck. The extraordinary curative virtues of these mild currents of Electricity are now fully established by experience; the Prospectus (to be had gratis, or by post for two stamps) contains the names of more than 600 persons cured within the last 18 months, and this remedy is now adopted in nearly all the hospitals, and by the most eminent practitioners. Sold at 5*s*. upwards, according to power, at C. MEINIG'S, 103, Leadenhall Street. N.B.—It is impossible, when wearing a Generator, to be attacked by Cholera.

CURE OF CHRONIC COUGH, BY DR. LOCOCK'S PULMONIC WAFERS. From Mr. J. Smedley, Bookseller, Sleaford, Oct. 22, 1853.—Gentlemen: I can speak with confidence, particularly of the Pulmonic Wafers, with which I have been not only relieved, but cured, of a Chronic Winter Cough. Hundreds of boxes I have sold, and still the sale is as great as ever. Signed, J. Smedley.—Dr. Locock's Pulmonic Wafers give instant relief and a rapid cure of Asthma, Coughs, and all disorders of the breath and lungs. To singers and public speakers they are invaluable, for clearing and strengthening the voice. They have a most pleasant taste—Price 1*s*. 1½*d*., 2*s*. 9*d*., and 11*s*. per box. Sold by all chemists.

Just Published, with considerable Additions, fourth Edition fcp. 8vo., cloth, 12s. 6d.

ELEMENTS OF NATURAL PHILOSOPHY; an Experimental Introduction to the Study of the Physical Sciences. Illustrated with numerous Engravings on Wood. By GOLDING BIRD, M.D., F.R.S., and CHARLES BROOKE, M.B., Cantab., F.R.S. London: JOHN CHURCHILL, Princes Street, Soho.

Just Published, 8vo, cloth, 15s.,

HAND-BOOK OF CHEMISTRY, Theoretical, Practical, and Technical. By F. A. ABEL, F.C.S., Professor of Chemistry at the Royal Military Academy, Woolwich, Assistant Teacher of Chemistry at St. Bartholomew's Hospital; and C. L. BLOXAM, formerly First Assistant at the Royal College of Chemistry. With a Recommendatory Preface by Prof. HOFFMAN.

London: JOHN CHURCHILL, Princes Street, Soho.

Just published, third Edition, 18mo, cloth, 6s.,

THE DRUGGIST'S GENERAL RECEIPT-BOOK; comprising a copious Veterinary Formulary; numerous Recipes in Patent and Proprietary Medicines; Druggists' Nostrums, &c.; Perfumery, Cosmetics, and Beverages; Dietetic Articles and Condiments; Trade Chymicals, &c.; with an Appendix of useful Tables. By HENRY BEASLEY.

London: JOHN CHURCHILL, Princes Street, Soho.

Just published, 24mo, cloth, 6s.,

PRACTICAL PHARMACEUTICAL CHYMISTRY; an Explanation of Chymical and Pharmaceutical Processes, with the Methods of Testing the Purity of the Preparations, deduced from Original Experiments. Translated from the Second German Edition of Dr. G. C. WITTSTEIN, by STEPHEN DARBY.

London: JOHN CHURCHILL, Princes Street, Soho.

Just published, foolscap 8vo, cloth, 5s.,

ON GOUT AND ITS COMPLICATIONS, and on the Treatment of Joints Stiffened by Gouty Deposits. By T. SPENSER WELLS, F.R.C.S., late Assistant-Surgeon in Malta Hospital.

London: JOHN CHURCHILL, Princes Street, Soho.

Just published, 8vo, cloth, 5s.,

ON HEARTBURN AND INDIGESTION. By HENRY HUNT, M.D., Member of the Royal College of Physicians of London.

London: JOHN CHURCHILL, Princes Street, Soho.

Just published, with Plates, post 8vo, cloth 5s.,

HOW TO PRESERVE THE TEETH, Cure Toothache, and Regulate Dentition from Infancy to Age. By J. PATERSON CLARK, M.A., Dentist Extraordinary to his Royal Highness Prince Albert.

London: JOHN CHURCHILL, Princes Street, Soho.

Just published, second edition, foolscap 8vo, cloth, 7s. 6d.,

ON NEAR SIGHT, Aged Sight, Impaired Vision, and the means of assisting Sight. With 31 Illustrations on Wood. By W. WHITE COOPER, F.R.C.S., Ophthalmic Surgeon to St. Mary's Hospital, and Senior Surgeon to the North London Eye Infirmary.

London: JOHN CHURCHILL, Princes Street, Soho.

Just published, 8vo, cloth, 12s. 6d.,

RHEUMATISM, RHEUMATIC GOUT, AND SCIATICA; their Pathology, Symptoms, and Treatment. By HENRY WILLIAM FULLER, M.D., Cantab., Assistant Physician to St. George's Hospital, &c.

"Dr. Fuller's volume contains a large amount of valuable and instructive information."—*Medico-Chirurgical Review.*

"We earnestly recommend a careful perusal of Dr. Fuller's pages."—*Lancet.*

London: JOHN CHURCHILL, Princes Street, Soho.

Just published, second edition, 8vo, cloth, 6s.,

ON INDIGESTION AND CERTAIN BILIOUS DISORDERS often conjoined with it. By G. C. CHILD, M.D., Consulting Physician to the Westminster General Dispensary.

"There is evidence that the author unites experience, study, and reflection."—*Schmidt's Jahrbucher.*

London: JOHN CHURCHILL, Princes Street, Soho.

Just published, the Fourth Edition, fcp. 8vo, 2s. 6d.,

HEALTHY SKIN; a popular Treatise on the Skin and Hair, their Preservation and Management. By ERASMUS WILSON, F.R.S.

London: JOHN CHURCHILL, Princes Street, Soho.

Just published, fcp, 2s. 6d.,

HUFELAND'S ART OF PROLONGING LIFE. A new Edition. Edited by ERASMUS WILSON, F.R.S.

London: JOHN CHURCHILL, Princes Street, Soho.

Just published, 8vo, cloth, 7s. 6d.,

THE PATHOLOGY AND TREATMENT OF STRICTURE OF THE URETHRA. By JOHN HARRISON, Fellow of the Royal College of Surgeons of England, and formerly Lecturer on Surgical Anatomy.

"A useful practical treatise on the important subject of stricture of the urethra."—*Lancet.*

London: JOHN CHURCHILL, Princes Street, Soho.

Just published, with Plates, 8vo, cloth, 7s. 6d.,

ON PULMONARY CONSUMPTION. By THEOPHILUS THOMPSON, M.D., F.R.S., Physician to the Brompton Hospital for Consumption and Diseases of the Chest.

"The extracts we have already made are sufficient to show the practical character of Dr. Thompson's work. The volume abounds in useful and instructive matter, and displays Dr. Thompson's talents for observation in a very favourable light." *Dublin Medical Press.*

London: JOHN CHURCHILL, Princes Street, Soho.

Just published, Second Edition, post 8vo, cloth, 7s. 6d.,

ON GOUT: its History, its Causes, and its Cure. By W. GAIRDNER, M.D.

"Essentially a practical work, and may be consulted with equal service by the student and old practitioner. We are much mistaken if this volume does not assume a permanent and honourable position in British medical literature."—*Medico-Chirurgical Review.*

London: JOHN CHURCHILL, Princes Street, Soho.

Just published, with numerous Engravings on Wood, 8vo, cloth, 8s.

ON LITHOTRITY and LITHOTOMY. By. WILLIAM COULSON, Surgeon to St. Mary's Hospital, &c.

London: JOHN CHURCHILL, Princes Street, Soho.

Just published, 13th edition 8vo, cloth, 5s. 6d.

DR. ROWE, on NERVOUS DISEASES, Liver and Stomach Complaints, General Debility, and Disorders of Warm Climates, the result of 30 years' practice.

"Dr. Rowe claims with justice a priority of authorship, while he yields to none in the wide field of inquiry."—*Lancet.*

"We have no hesitation in placing this work among the foremost ranks."—*Medical Times.*

London: JOHN CHURCHILL, Princes Street, Soho.

Just published, fourth edition, price 2s. 6d.

THE WATER CURE in CHRONIC DISEASES: an Exposition of the Cause, Progress, and Termination of various Chronic Diseases of the Digestive Organs, Lungs, Nerves, Limbs, and Skin, and of their Treatment by Water and Hygienic Means. By JAMES M. GULLY, M.D., Fellow of the Royal Medical and Chirurgical Society, London.

London: JOHN CHURCHILL; Malvern, HENRY LAMB.

WITH EXTENSIVE ADDITIONS & EMENDATIONS.

Now ready, the Tenth Edition, with 107 Engravings on Wood, 8vo, cloth, 12s. 6d.,

VESTIGES OF THE NATURAL HISTORY OF CREATION.

London: JOHN CHURCHILL, Princes Street, Soho.

HARD TIMES.—By CHARLES DICKENS. On Wednesday, the 29th of March, will be published in HOUSEHOLD WORDS, the First Portion of a New Work of Fiction, called "HARD TIMES," by CHARLES DICKENS.

The publication of this Story will be continued in HOUSEHOLD WORDS from week to week, and completed in five months.

Price of each Weekly Number of HOUSEHOLD WORDS (containing, besides, the usual variety of matter), Twopence; or Stamped, Threepence.

HOUSEHOLD WORDS, Conducted by CHARLES DICKENS, is published also in Monthly Parts and in Half-yearly Volumes.

Office, 16, Wellington Street North, Strand.

This day is published, in Two Volumes, demy 8vo, price 25s.,

THE LIFE AND TIMES OF OLIVER GOLDSMITH. By JOHN FORSTER, of the Inner Temple, Barrister-at-Law.

Containing many facts not hitherto included in any Life of Goldsmith; and all the original authorities.

Printed uniformly with, and forming companion volumes to, "MURRAY'S LIBRARY EDITION OF GOLDSMITH'S WORKS."

London: BRADBURY & EVANS, 11, Bouverie Street.

COMPLETION OF A VOLUME.

Now ready, Volume I., price 1s. 6d., in handsome boards,

DR. LARDNER'S MUSEUM OF SCIENCE AND ART. A Miscellany of Instructive and Amusing Tracts on the Physical Sciences, and on their Application to the Uses of Life. Illustrated by Engravings on Wood.

Contents:

Part I., price 5d.—No. 1, The Planets, are they Inhabited Globes? Chap I.; 2, Weather Prognostics; 3, The Planets, are they Inhabited Globes? Chap. II.; 4, Popular Fallacies in Questions of Physical Science.

Part II., price 5d.—5, Latitudes and Longitudes; 6, The Planets, are they Inhabited Globes? Chap. III.; 7, Lunar Influences; 8, Meteoric Stones and Shooting Stars. Chap. I.

Part III., price 6d.—9, Railway Accidents. Chap. I.; 10, The Planets, are they Inhabited Globes? Chap. IV. and last; 11, Meteoric Stones and Shooting Stars. Chap. II.; 12, Railway Accidents. Chap. II.; 13, Light.

"This serial, which will form quarterly eighteenpenny volumes, is, we are disposed to think, the best literary investment of a penny a week now extant."—*Examiner.*

"This series, besides affording popular but sound instruction on scientific subjects, with which the humblest man in the country ought to be acquainted, also undertakes that teaching of 'common things' which Lord Ashburton and every well-wisher of his kind are anxious to promote."—*Times.*

London; WALTON & MABERLY, Upper Gower Street, and Ivy Lane, Paternoster Row.

CHEAP FUEL AND DEAR COALS.—Excellent GAS COKE, in quantities of 20 Chaldrons and upwards, loaded in one day, by barge or by cart, from the PHŒNIX GAS WORKS, 70, Bankside, Southwark, or at the upper side of the Bridge foot, at Vauxhall, at the low price of 12s. per Chaldron. Terms—Cash with the order. The above Coke is in use in the best Conservatories.

TO NURSERYMEN AND OTHERS.

TO BE LET, about 45 Acres of GARDEN and NURSERY GROUNDS, planted with Fruit Trees and Plants, with two Residences thereon, containing several rooms, with barn, stable, and other outbuildings, in Essex, about 45 miles from London and 2½ miles from the Braintree Railway Station, and near to Witham, on the Eastern Counties Railway, at the very low rent of 100*l.* a year.—Apply to Mr. AMBROSE, Solicitor, 7, Manchester Square, London.

TO FLORISTS AND OTHERS.

TO BE LET, with immediate possession, a desirable and convenient Nursery, established nearly 40 years, situated about four miles south of the metropolis, comprising a Dwelling House and Seed Shop, 10 Greenhouses, Pits, Frames, and other conveniences. Satisfactory reasons will be given by the Proprietor for retiring from the business.—For further particulars, address A. B., Mr. FORBES, Seedsman, near the Elephant and Castle, Southwark.

CROYDON, SURREY.

TO BE LET, with possession at Lady-day, about 30 acres of good LAND, well adapted for Market Garden purposes, being close to the town. For terms apply to Messrs Blake, Croydon, Surrey.

SOMERSET.

TO BE LET, with immediate possession, a PUBLIC HOUSE, with large Grapery attached, known as the Railway Inn, and adjoining the Yeovil Station. The Hothouse is 140 feet long, well stocked with choice Vines, and there is a good business in the Plant and Seed way. Coming in easy.—Direct, prepaid, to Mr. MASON, Brewery, Dorchester, Dorset.

WANTED, three or four PEA HENS between the ages of two and four years. Price and particulars to be addressed to E. M., Post-office, Birches Green, near Maidenhead.

COCHIN CHINA POULTRY, ETC.

EGGS FROM PRIZE BIRDS.

MR. JOHN FAIRLIE, of Cheveley Park, Newmarket, in reply to the very urgent applications from numerous amateurs, is now prepared to dispose of a limited number of Eggs, from his celebrated prize Cochins, Brahma Pootras, Scotch Bakies, Dorkings, &c., according to the dates of the orders received.

MR. GILBERT, of Grays, Essex, having entered into an arrangement with THOMAS STURGEON, Esq., for the Purchase of the whole of his remaining Stock of COCHIN CHINA Fowls, bred by him in 1853, Gentlemen and Amateurs are informed the Birds are now on Sale. Eggs may be had from the above birds at 20s. per dozen.

BRAHMA POOTRA FOWLS' EGGS for Hatching, 30s.; white-faced Spanish, 15s.: Dorking, 6s.; Aylesbury Duck Eggs, 6s. per dozen. A Brahma Pootra Cockerel and white-faced Spanish Fowls for Sale. Remittance with all orders to WM. TURNER DRAYTON, Abingdon, Berks.

EGGS FOR HATCHING FROM PRIZE BIRDS. —The Birds from this breed have taken the Prize at Birmingham for three years together; Gloucester, in 1853; London, in 1853; Manchester, in 1854; and other local shows. Golden Spangled Hamburghs, 9s. per dozen; also, Silver Spangled Hamburghs, of a first-rate breed, 5s. per dozen; packing included.—Apply to H. CLAPHAM, Esq., Aireworth House, Keighley, Yorkshire.

TO AMATEURS OF THE HAMBURGH FOWLS.— A few sittings of Eggs of each class of the Hamburgh Fowls, viz.:—Gold and Silver Pencilled, Gold and Silver Spangled, and Black, to be disposed of in the spring, from birds which have taken thirty prizes at most of the principal Shows during the past season. Eggs will be supplied according to the dates of the orders received. Also, Eggs of Prize Game Fowls and Aylesbury and Rouen Ducks.—Apply to the Feeder, Mr. ROBERT HUGGINS, Beighton Rectory, Acle, Norfolk.

AYLESBURY DUCKS' EGGS.

TO BE SOLD, EGGS warranted from the best selected White Ducks, good shape, bill and legs fine and a good colour, 6s. per dozen, including packing. Early application to secure them at the above price is necessary.—Apply to WILLIAM HENRY GREEN, Builder, Walton Street, Aylesbury.

LIGHT BUFF COCHIN CHINA FOWLS' EGGS. —An Amateur having a first-rate stock of Light Buff Cochin China Fowls from Prize Birds, and more eggs than he requires for his own use, is willing to part with a few sittings at a reasonable price—5s. 6d. per doz., box included.—Address "Chanticleer," Post-office, Farnham, Surrey.

Sales by Auction.

FANCY POULTRY—PERIODICAL SALE.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, 21st March, at 12 o'clock precisely, a very choice selection, including BRAHMA POOTRAS, COCHINS, &c., from the yards of J. Fletcher, Esq., Rev. J. Hutchinson, J. Nightingale, and others, many being 1st class birds. Also a few pure PTARMAGANS, bred by Dr. Burney, and other Fancy Stock.—Catalogues, by enclosing a stamped directed envelope to Mr. J. C. STEVENS, 38, King Street, Covent Garden.

FANCY POULTRY—EXTRA SALE OF CHOICE STOCK.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, 28th March, at 12 o'clock precisely, a SELECTION OF COCHINS from Lord Cottenham's yard; the entire brood stock of 1st Class Cochins belonging to Mr. Stainton, some good birds from Mr. Bridges, Mrs. Fooks, and others.—Catalogues by enclosing a stamped directed envelope to Mr. J. C. STEVENS, 38, King Street, Covent Garden.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AFD MORRIS will sell by Auction, at the Mart, Bartholomew Lane, on FRIDAY, March 24th, at 12 o'clock, a first-rate collection of CARNATIONS, PICOTEES, and PINKS; also a choice assortment of Standard and Dwarf Roses, American Plants, fine Dahlias in dry roots, Pæonias, Fuchsias, and Verbenas; together with about 100 fine double Camellias well furnished with bloom buds.—May be viewed the morning of sale; Catalogues had at the Mart; and of the Auctioneers, American Nursery, Leytonstone, Essex.

FULHAM ROAD, CHELSEA.

To NOBLEMEN, GENTLEMEN, NURSERYMEN, BUILDERS, & OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. D. Smith to submit to public competition by Auction, on the premises, Stewart's Grove Nursery, Fulham Road, Chelsea (late in the occupation of Mr. Westmacot), on MONDAY, March 20, without reserve, in consequence of the land being required for building purposes, 7 newly erected Greenhouses, several Pits and 2-Light Boxes, about 1300 feet 2, 3, and 4-inch Hot-water Pipe, 3 capital Saddle Boilers, and excellent Shop Front; useful Light Cart Horse, Iron Posts, Stages, &c. May be viewed prior to the sale; Catalogues had (6d. each, returnable to purchasers), of Mr. D. SMITH, 4, Upper Queen's Buildings, Brompton; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

IMPORTANT AND ABSOLUTE SALE OF MAGNIFICENT SPECIMEN PLANTS.

MESSRS. PROTHEROE AND MORRIS are instructed by J. M. Yeeles, Esq., of Bathford, near Bath, to submit to public competition by Auction, without reserve, on the premises, on WEDNESDAY, March 22d, at 11 o'clock, in consequence of his declining their cultivation, the whole of his unrivalled collection of SPECIMEN, ORCHID, STOVE, and GREENHOUSE PLANTS, many of which are not equalled in this country as splendid examples of superior culture, and just in condition for the coming season's exhibitions. They comprise Saccolabium, Dendrobium, Ixora, Gardenia, Franciscea, Allamanda, Echites, the best kinds of Ericas, Azaleas, Ixoras, Leschenaultias, Boronias, Pimeleas, Aphelexes, Eriostemons, and almost every kind of exotic plant worth culture for exhibition.—May be viewed two days prior to the Sale. Catalogues may be had 6d. each, returnable to purchasers, on the premises; the Castle and Ball, the Greyhound, of the principal Seedsmen in Bath; Messrs. Garraway and Mayes, Nurserymen, Bristol; of Mr. Glendinning, Chiswick Nursery, Turnham Green; the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MR. J. WILLMER will sell by Auction, at the Mart, Bartholomew Lane, on WEDNESDAY, March 22, at 12 o'clock, a choice collection of Carnations, Picotees, Standard, Dwarf, and Climbing Roses, Dahlias in dry roots, fine Lancashire Gooseberries, and other Miscellaneous Plants.—May be viewed the morning of sale; and Catalogues had at the Mart; and of the Auctioneer, Sunbury, Middlesex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. MUMFORD AND CASEBOW are instructed by Thomas Ingle, Esq., M.D., of Wood Hall, Hilgay, near Downham Market, Norfolk (who is removing from Wood Hall), to Sell by Auction, on FRIDAY, March 31, a nearly new STOVE and GREENHOUSE 54 feet long by 13 feet, a CONSERVATORY 26 feet by 16 feet, an ORCHID HOUSE 20 feet by 16 feet, all fitted up complete; together with all the rare and valuable Orchid, Tropical, and Greenhouse Plants, including a very choice selection of carefully hybridised Fuchsias, Gloxinias, Gesneras, and Cacti not yet flowered; excellent Cucumber and Melon Frames, Copper Steamer and Pipes, Lead Pumps, &c. &c., the whole of which are fully described in Catalogues, which may be had of the Auctioneers, Downham Market, at 1s. each (to be returned to purchasers); or if forwarded by post by an enclosure of 12 stamps. May be viewed the day previous and morning of sale. Sale will commence at 11 o'clock precisely.

FIGURES, FOUNTAINS, VASES, ETC.

To PRIVATE GENTLEMEN, BUILDERS, & OTHERS.

MR. PEAKE is directed to Sell by Auction, on the Premises, 74, Borough Road, Newington Causeway, on TUESDAY, March 21st, 1854, at 12 o'clock, without reserve, the Genuine Stock in Trade of the Artificial Stone Works, comprising a great and pleasing variety of Figures, Fountains, Vases, Ornaments, and other elaborate works of Art, suitable for embellishing Gardens and Pleasure Grounds, well worthy the attention of private Gentlemen and others. Also a variety of Curbing, Closet Pans, &c. Likewise the Lease, Goodwill, and Implements in Trade of the old established business which has been successfully carried on there for the last 15 years.

May be viewed prior to the Sale, and further information, with Catalogues, had on the Premises, and at Mr. PEAKE'S Offices, 44, Tooley Street, and 4, Fair Street, Southwark.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, MARCH 18, 1854.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 12.—1854.] SATURDAY, MARCH 25. [PRICE 6*d*.

INDEX.

Agri. Soc. of England	187	*c*	Lambs, disease in	187	*a*
— progress	185	*c*	Mildew, Vine	180	*a*
— statistics	186	*a*	National Floricultural Society	183	*c*
America for gardeners	182	*c*	Nitrogen in green crops	186	*c*
Barley sowing	187	*b*	Orchids, Khasia	181	*c*
Bees	181	*c*	Pansies from seed	183	*c*
Bread, Wheat	187	*b*	Paper from soft woods	179	*c*
Brown's (Mr.) presentation	184	*a*	Parasites, Robin on, rev.	183	*b*
Calendar, horticultural	184	*a*	Pathology, vegetable	180	*b*
Cedar, ancient	182	*a*	Pigeons, Arabian	189	*a*
Cement	187	*a*	Plants, new	183	*c*
Coniferous wood	181	*b*	— new arrangement of	182	*a*
— seeds	184	*c*	Plantations, young	182	*b*
Conoclinium ianthemum	181	*a*	Potato disease	180	*b*
Crops, green, nitrogen in	186	*c*	Radish seed	181	*c*
Cultivation, schemes of	186	*b*	Radnor's (Lord) estate	185	*c*
Dartmoor, notice of	188	*c*	Rhododendron anthopogon	182	*b*
Deodar timber	181	*b*	Rose Manetti	181	*c*
Drains, stoppage of	187	*b*	Statistics, agricultural	186	*b*
Ealing Park plants	184	*c*	Timber, coniferous	181	*b*
Farms, small	186	*b*	— ancient Cedar	182	*a*
Farm buildings, Lord Radnor's	188	*a*	Vegetable pathology	180	*b*
Flax Society	188	*a*	Vine mildew	180	*a*
Gardeners, America for	182	*c*	Wardian cases	183	*a*
Glass, Hartley's rough	182	*a*	Woods, coniferous	181	*b*
Horticultural Society	182	*c*	— ancient Cedar	182	*a*
Husbandry, modern	189	*a*	— paper made from soft	179	*c*
Labourers	187	*b*	Woods and forests	184	*c*

21, REGENT STREET.

HORTICULTURAL SOCIETY OF LONDON.
PRIVILEGED TICKETS.

The Exhibitions will take place on the Second Saturdays in May, June, and July, namely—

MAY 13, JUNE 10, JULY 8.

All Fellows who shall apply, on or before Tuesday the 25th of April, may obtain, at the rate of Three Shillings and Sixpence each, any number of Tickets NOT EXCEEDING THIRTY-SIX; but no application for such tickets will be received after that day. *Fellows of the Society subscribing for tickets at this price will be allowed a clear week from the 25th of April during which they may claim them.* AFTER THAT PERIOD ALL THE 3s. 6d. TICKETS SUBSCRIBED FOR, BUT NOT ISSUED, MAY BE CANCELLED.

After the 25th of April, any further number of tickets will be delivered to Fellows on their personal application or written order, at the price of *Five Shillings* each ticket.

SPECIAL PRIVILEGE OF FELLOWS.—Fellows of the Society enter free at half-past 12, and can introduce two friends WITH TICKETS; or the Fellow's privilege may be transferred to a brother, sister, son, daughter, father, mother, or wife, residing in the Fellow's house, provided the person to whom the transfer is made be also furnished with a ticket signed by that Fellow. That is to say, the privilege of entering early may be transferred, but not the privilege of FREE admission.

ROYAL BOTANIC SOCIETY, REGENT'S PARK.—The days appointed for the EXHIBITIONS of PLANTS, FLOWERS, and FRUIT this season are WEDNESDAYS, May 24, June 21, and July 5; and of AMERICAN PLANTS, MONDAYS, June 12 and 19.

Tickets of Admission can be obtained at the Gardens by orders from Fellows of the Society. Price on or before May 13, 4s.; after that day, 5s.; or on the days of Exhibition, 7s. 6d. each.

The Plants will be arranged on a new plan, similar in form to the American Garden, being placed upon terraces.

GRAND HORTICULTURAL EXHIBITION, AT RIPON. (Open to all England), on Wednesday and Thursday, August 2 and 3, during the show of the Yorkshire Agricultural Society in that City. The Committee announce that the Schedules are now ready, and may be obtained gratis by any Exhibitor, on application to Mr. R. W. NICHOLSON, Hon. Sec., Town Hall, Ripon. Prizes are offered to the amount of 102*l*. 10*s*. Specimens sent for competition from a distance will receive every care and attention.

HENRY MORTON, Mayor,
Chairman of the Committee.

NEW PLUMS.

HENRY DOWLING, FRUIT-GROWER, Woolston Lawn, Southampton, most respectfully begs to return his sincere thanks to the Nobility, Gentry, and Public generally, for the most liberal patronage he has received, and informs them that he has none of the Standard of England, but can supply good strong plants of the Angelina Burdett and Black Gage, which can be obtained at Mr. C. TURNER'S, Royal Nursery, Slough, or from the Grower. See the *Florist* for December, or *Gardeners' Chronicle* of November 5th or 12th for testimonials and particulars.
Woolston Lawn, March 11, 1854.

NEW TURNIP SEED.

TO THE TRADE.—NEW TURNIP SEED.—*The Subscribers having a few Bushels more than they require for their regular Trade, can offer the following varieties, grown by Farmers of the highest respectability, and warranted all* NEAT *as delivered by them.*

GREEN-TOP SCOTCH YELLOW TURNIP.
PURPLE-TOP ABERDEEN "
GREEN GLOBE "
WHITE GLOBE "

The have also a few hundred weight of the following Mangold Wurzel, &c., also saved by farmers:—

YELLOW GLOBE MANGOLD WURZEL.
LONG RED " "
RED GLOBE " "
WHITE BELGIAN CARROT.

As the quantity is small, an early application is requested. Wholesale Catalogues can be had on application in exchange for one penny stamp.

WILLIAM E. RENDLE & CO., Seed Merchants, Plymouth.

"NORFOLK HERO" CUCUMBER.—Without exception the very best Cucumber for open ground cultivation that has yet been offered. It is a most prolific bearer, as handsome as any frame variety, and is as delicate in point of texture, the fruit measuring from 16 to 20 inches in length. It is in the sole possession of YOUELL & CO., who will forward per post free (on receipt of postage stamps) packets containing six Seeds, 1*s*.; 18 Seeds, 2*s*. 6*d*. "To Market Gardeners the above will be found a great acquisition."—Royal Nursery, Great Yarmouth.

GRASS SEEDS FOR PERMANENT PASTURE.

WHEELER AND SON'S DESCRIPTIVE LIST of GRASS SEEDS will be forwarded free on application.
J. C. WHEELER AND SON, GLOUCESTER.

A FIRST CLASS CATALOGUE OF GERANIUMS, VERBENAS, FUCHSIAS, DAHLIAS, HOLLYHOCKS, ETC.

GEO. SMITH begs to announce that the above is now ready and will be forwarded in exchange for one postage stamp.—Tollington Nursery, Hornsey Road, Islington.

LILIUM LANCIFOLIUM, PELARGONIUMS, RANUNCULUSES, ANEMONES, AND GLADIOLUS.

HENRY GROOM, Clapham Rise, near London, by Appointment FLORIST TO HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to say that his SPRING CATALOGUE is ready, and will be forwarded by post on application.

NEW DESCRIPTIVE PLANT CATALOGUE.

WM RUMLEY AND SONS beg to announce that their NEW DESCRIPTIVE SPRING CATALOGUE of new and choice Fuchsias, Verbenas, Geraniums, Cinerarias, Petunias, Chrysanthemums, Pansies, Hollyhocks, Dahlias, Stove, Greenhouse, Bedding, and Hardy Plants, at very reduced prices, is now ready, and may be had on application. For choice Fuchsias, Verbenas, Cinerarias, Pansies, &c., see our Advertisement in this Paper of March 11.
Gilling, near Richmond, Yorkshire.

RHODODENDRON COCCINEA SMITHI.

S. JOHNSON begs to say he has a fine Plant of the above named, in good condition, with above 100 blooms, 10 feet high, and fine foliage.—Maison Dieu Nursery, Dover.

PELARGONIUMS.

GEORGE CLARKE begs to offer 12 of the newest and best Pelargoniums for exhibition, in strong healthy plants, for 18*s*.; Fancy do. do., 15*s*. per doz., hampers included. Streatham Place Nursery, Brixton Hill, Surrey.

CHOICE CALCEOLARIA SEED.

MESSRS. MANDER AND ADAMS having some choice CALCEOLARIA SEED from a well known amateur in the West of England, offers the same in packets of 1*s*. and 2*s*. 6*d*. each; by enclosing the amount in postage stamps, it will immediately be forwarded, post paid, to any part of the United Kingdom. Early orders are requested, as the stock is limited.—Address, Ranelagh Nursery, Leamington Spa, Warwick

FINE MANGOLD WURZEL SEED.

LONG RED MANGOLD WURZEL.—Fine new Seed, 10*d*. per lb., or 70*s*. per cwt.
JOHN SUTTON AND SONS, Seed Growers, Reading, having a large Stock of the above, are now selling it at the low price here quoted. LARGE YELLOW GLOBE and other sorts, as see Priced List, which may be had in return for two Postage Stamps.

GENUINE NEW WHITE AND RED CLOVER SEED, COW GRASS, *and the Alsike Hybrid Clover, can be obtained at the lowest market prices from*
WILLIAM E. RENDLE & CO., Seed Merchants, Plymouth.

NEW ALSIKE CLOVER, Price Ten Guineas per cwt., or in small quantities at 2*s*. per lb., may be had on application to Mr. H. RAYNBIRD, Basingstoke, Hants. Also New Home-grown ITALIAN RYE-GRASS, of good and genuine Stock, at 30*s*. to 35*s*. per quarter.

FLOUR BALL POTATOES, in quantities of not less than 10 pecks, at 2*s*. per peck. Early application should be made to WILLIAM BECKETT, Welham, Retford, Notts, as the stock is limited. Post-office orders, made payable at Retford, must accompany all orders.

SEED POTATOES.

EARLY SHAWS, per bushel	7*s*. 0*d*.
FORTYFOLDS, ditto	7 0
THOMPSON'S SEEDLINGS, a new and early stock, per bushel	8 0

Also a few sacks of the Kidneys on hand advertised last week, price 7*s*. per bushel. The whole of the above have been carefully selected, and are free from disease. Growers who wish to cultivate first-rate stocks ought to order without delay.
Address to JOSEPH WILSON, St. Helen's, Ipswich, Suffolk.

CAPITAL OLD AND NEW HAY.

TO BE SOLD, in one Lot, 77 loads of good MEADOW HAY, standing 4½ miles from the Stevenage Station on the Great Northern Railway, comprising part of a Rick of very fine Old Hay, containing 35 loads, a Rick of prime New Hay, got up without any wet, containing 22 loads, and another with but little wet on it, of 20 loads.
Apply to Mr. HUMBERT, Land Agent, Watford, Herts.

THE BLACK BARBAROSSA.

JOHN BUTCHER begs to state that a Certificate of Merit was awarded to this Grape at the Horticultural Society's Meeting on the 21st February, as a mark of its excellent qualities; one of which was stated to be that "it will hang longer in a ripe state without shrivelling than any other black Grape in cultivation."

Fine Fruiting Plants, 10*s*. 6*d*.; good plants, 5*s*. 6*d*., may be obtained of the above splendid Late Grape. London Agent, Messrs. DAWE, COTTRELL, & BENHAM, 36, Moorgate Street; and JOHN BUTCHER, Nurseryman, Stratford-on-Avon.

BEAUTIFUL NEW BEDDING PLANT.
MILLER'S HYBRID MULE PINK.

ROBERT MILLER, Hartshill, Nursery, Newcastle, Staffordshire, offers with confidence the above Pink, colour a bright crimson scarlet, double; grows from 9 to 15 inches high, branches out and forms a little bush, and flowers most abundantly from June to October. See *Gardeners' Chronicle*, Sept. 24, 1853.

DIANTHUS R. M., very pretty, and being dwarf in habit, it will doubtless make a good bedding plant. Price 12*s*. per doz., package included. The usual discount to the Trade. To be let out the second week in April. Post-office orders from unknown correspondents made payable at Newcastle.

"WELLINGTONIA GIGANTEA."

MESSRS. VEITCH, of EXETER and CHELSEA, have much pleasure in stating that their Seeds of the above magnificent Tree are vegetating satisfactorily. They therefore hope to be able to send out well established seedling plants during the ensuing summer and autumn. They are now taking orders for them at the following prices:—

For a Single Plant ... 2 guineas	For 8 Plants ... 10 guineas
For 4 Plants ... 6 guineas	For 12 Plants ... 12 guineas

And all orders will be executed strictly in the rotation in which they are received.—March 25.

WELLINGTONIA GIGANTEA.—Beautiful Lithographed Plates (from a drawing taken in California) of this wonderful Tree may be had, at 7*s*. 6*d*. each, of Messrs. VEITCH & SON, Exeter, and Mr. JAMES VEITCH, jun., Exotic Nursery, Chelsea.

The Bark, Wood, Cones and Foliage, which were exhibited on Tuesday week at 21, Regent Street, may be seen at the Exotic Nursery, Chelsea.—March 25.

NEW ROSES FOR 1854.

BENJAMIN R. CANT has now ready for sale, strong plants in pots of all the NEW ROSES, some of which have never before been offered to the public, descriptive Catalogues of which can be had on application.
St. John's Street Nursery, Colchester.

WILLIAM NICHOLSON still continues to send out very strong well-rooted Plants of his four new and distinct varieties of STRAWBERRIES, viz., AJAX, dessert Fruit; RUBY, ditto; CAPTAIN COOK, Market Fruit; FILL-BASKET, ditto, at 15*s*. per 100, or 25 each of any two sorts for 10*s*., box included. Post-office orders payable at Yarm, Yorkshire. For a full description, see Advertisement *Gardeners' Chronicle* Jan. 28, 1854.—Egglescliffe, near Yarm, Yorkshire.

MANGOLD WURZEL SEED.—PURCHASERS OF LARGE QUANTITIES *will be supplied liberally.*
For Prices, apply (stating quantity required) to JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

LARGE RED ALTRINGHAM CARROT, the most nutritive of all Carrots, and best for horse feed. Price 1*s*. 3*d*. per lb., for quantities of not less than 14 lbs.
JOHN SUTTON & SON, Seed Growers, Reading, Berks.

DOUBLE FRENCH MARIGOLD AND CAPE STOCK SEEDS. A packet of beautiful DOUBLE FRENCH MARIGOLD SEEDS forwarded on receipt of Seven Penny Postage Stamps. Ditto, SCARLET CAPE STOCK, ditto
EDWARD SANG & SONS, Nursery and Seedsmen, Kirkaldy, N.B.

PERMANENT PASTURE.

R. H. SMITHE, of Eastling, Faversham, Kent, is now prepared to send out his Mixtures of the NATURAL GRASSES, PERENNIAL CLOVERS, &c., to lay down Land to Permanent Pasture, at 25*s*. per acre, allowing 3 bushels to the acre, carriage free. Mixtures for Lawn, or any other purpose, or the sorts separate. Most of the species of Grass are collected by the Advertiser, and he will bestow the greatest attention in selecting such as shall constitute mixtures specifical to the soil, purpose, &c., of each buyer.

WHITE MULBERRY TREES,
EXPRESSLY CULTIVATED FOR THE REARING OF THE SILKWORM.

GEORGE BALCHIN is now sending out fine healthy White Mulberry Trees at the following low prices: 10*s*., 15*s*., 20*s*. and 25*s*. per 100. Also Silkworms' Eggs, of a superior quality, white and yellow, 1*s*. 6*d*. per 1000.
Orders containing Post Office order punctually attended to.
Address, JOHN RICHARD EVANS, Cork Street, Bond Street, London; or, GEORGE BALCHIN, Spring Place, Godalming, Surrey.

HOLLYHOCKS.

A. PAUL AND SON have now ready for Sale a very large and healthy stock of HOLLYHOCKS, suited to bloom well next autumn; Border Flowers, 4*s*., 6*s*., and 9*s*. per dozen; fine named kinds, 12*s*., 18*s*., 24*s*., and 30*s*. per dozen. A fresh supply of their new and unrivalled seedlings, which obtained first prizes at the leading exhibitions last year, and were never once beaten, will be sent out the end of the month, strong, healthy plants. A priced descriptive Catalogue free by post on application.

Recently published, free by post, price 1*s*., AN HOUR WITH THE HOLLYHOCK.

N.B. Post-office orders may be drawn on Waltham Cross or London.—Nurseries, Cheshunt, Herts.

CAPE HEATHS.

W. J. EPPS begs to call attention to his extensive and rare Collection of Heaths, which are in the finest condition possible; very bushy and well formed for specimens in 3, 4, and 6-inch pots, consisting of all the best varieties, such as Aristata ampullacea, tricolor, jasminiflora, ventricosa, Massoni, Webbiana, obbata, &c., &c., 12*s*., 18*s*., and 21*s*. per doz. A Collection of 100 varieties, 5*l*., carriage paid to London. A liberal allowance to the Trade, provided a quantity be taken. All the new and best kinds of Azaleas, Stove and Greenhouse Plants, Fuchsias, Dahlias, Verbenas, and Roses, equally moderate.

W. J. E. has about 200 young specimens of Heath, &c., to part with in 8, 11, and 20-inch pots. Also a Collection of very beautiful Orchids. Lists sent on application.
Nurseries, Maidstone and Ashford.

MAY'S PARAGON CABBAGE.

THE Subscriber, in offering the above for the first time, guarantees it to be the finest Cabbage in existence; of dwarf habit; has never been known to run; attains a large size (having been grown to the great weight of 28 lbs.); of a most beautiful green, and boils tender as Asparagus, which it continues to do throughout the season; in flavour is as far superior to the ordinary Cabbages of the day as they are to the old Drumhead Scotch. In ¼ oz. packets, 1*s*. each, free by post. The usual allowance to the trade.

H. M. begs to inform the public that he is unable to supply any more of his MAGNUM BONUM LETTUCE, as the stock was only small and is completely sold out.

Address all orders and communications to HENRY MAY, the Hope Nurseries, near Bedale, Yorkshire.

BASS AND BROWN'S SEED AND PLANT LIST

free by post for three penny stamps.

COLLECTIONS OF VEGETABLE SEEDS, comprising the best in cultivation, including several new sorts of first-rate quality, 3l., 2l., 25s., and 15s.

For a few choice new Vegetables, see *Gardeners' Chronicle* of Feb. 13th and 27th, advertised.

FLOWER SEEDS—BEST ASSORTMENTS, free by post.

The Catalogue gives colours, heights, months of flowering, hardiness, duration, and much descriptive information of time of sowing, and other treatment.

	s.	d.
100 varieties select showy Annuals, including the newest	15	0
50 vars. do., 8s. 6d.; 30 vars., 5s. 6d.; 20 vars.	4	0
20 varieties best Dwarf Annuals, in large packets, for filling beds on lawns, 7s. 6d.; 12 do.	5	0
20 vars. choice Greenhouse Annuals, including the new, 7s. 6d.; 12 varieties, do.	5	0
20 vars. choice Greenhouse Perennials, including fine and new	10	6
12 varieties ditto ditto	7	6
20 vars. Hardy Biennials and Perennials, including very choice and new, 7s. 6d.; 12 varieties do.	5	0

The following we beg strongly to recommend as saved from collections of first-class flowers, in packets as follows:—

	s.	d.
Calceolaria, very choice, 1s.; extra superb, from fine selected flowers	2	6
Cineraria, very choice, 1s.; extra new and choice from our superb collection	2	6
Fuchsia, new and choice, from our superb collection ...	1	0
Geranium, extra choice and new, from our superb collection	2	6
,, Scarlet, from our choice collection	0	6
,, Fancies, from our beautiful collection of best vars.	1	6
Gloxinia, choice, 6d.; extra, from our superb collection ...	2	6
Petunia, new and choice, from our superb collection ...	1	0
Verbena, very choice, 1s.; extra, from our superb collection of new varieties	2	6
Antirrhinum, choice, 6d.; from new of our superb collection	1	0
Carnation and Picotee, from collection of 400 vars	2	6
Gladiolus, fine mixed early, 6d.; from choice named of our superb collection	1	0
Iris, English vars. fine, 6d.; best of our superb collection...	2	6
Pansy, extra choice, from a first-rate collection	1	0
Potentilla, very choice, 1s.; extra, from our very beautiful collection	2	6
Ranunculus, from our superior collection	2	6
Auricula, from a first-rate collection	1	0

A FEW VERY CHOICE NEW FLOWER SEEDS.

	s.	d.
Leptosiphon luteum, fine orange colour; very beautiful, packets, 1s. and	2	6
Nemesia bicolor, white and blue, very showy and attractive half-hardy annual, height 9 inches, beautiful for massing	0	6
Calceolaria chelidinoides, ex., clear bright yellow, fine for massing on lawns; the mouth being closed, it is not injured by wet	1	0
Lobelia Limburgensis, a new perennial variety from Prussia, extra	1	0
Portulacca aurantiaca, new orange, 1s.; nova rosea ...	1	0
Sweet William, very choice striped French	0	6

For a large number of new Flower Seeds, see advertisement in the *Gardeners' Chronicle* of Feb. 13th and 27th.

CHOICE IMPORTED SEEDS.

	s.	d.
24 superb varieties Dwarf German Stocks, 4s.; 12 varieties	2	6
Mixed, in 40 superb varieties, per packet ... 6d. to	1	0
Choice new brimstone	0	6
*Fine new French, straw colour	1	0
10 Superb varieties, new large flowering	2	6
18 ,, Wallflower leaved, or Prussian ...	3	6
New white Wallflower leaved, very dwarf and fine, per packet ... ... 6d. to	1	0
6 Superb varieties Brompton Stocks	1	6
7 ,, Emperor Stocks, lasting more than 4 years, and blooming 2 or 3 times a year	2	0
New White Emperor, very choice, per packet	1	0
12 Superb varieties Globe-flowering Aster	2	0
12 ,, Pyramidal Aster	2	0
12 Very fine French Pæony-flowering varieties; these are extraordinarily fine	5	0
Mixed do., per packet	1	0
6 Superb varieties Zinnia elegans	2	0

And other fine Imported Seeds. See Catalogue.

☞ Goods CARRIAGE FREE with orders of 20s. and upwards to London, Ipswich, Norwich, or any Station on the Line.

Remittances are requested with orders from unknown correspondents. Post-office Orders to be made payable to BASS & BROWN, or to STEPHEN BROWN.—The Autumn and Spring Catalogues supplied free by post for three penny stamps each, the cost of which may be deducted from orders sent.

BASS & BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk. ESTABLISHED ABOUT HALF A CENTURY.

EDWARD GEORGE HENDERSON AND SON, of the Wellington Nursery, St. John's Wood, London, are now prepared to take orders for any of the undermentioned, which will be sent out in the course of the present season, due notice of which will be given.

BEDDING CALCEOLARIAS.

"Matchless," magnificent crimson, 7s. 6d.

"Loveliness," yellow cap and ground, with crimson blotch in the centre, 7s. 6d.

"Surprise," bright orange crimson, good form, 7s. 6d.

"Masterpiece," deep maroon scarlet, 7s. 6d.

"Superba," very dwarf plum, 7s. 6d.; the set for 31s. 6d.

The entire stock of the above is in our possession; they were exhibited at Chiswick in June last by Mr. Constantine; they are all of robust, compact habit, with large flowers and profuse bloomers.

FUCHSIA "MONARCH," as a show flower, stands preeminent; the flowers are of a fine stout substance with sepals of great width: colour scarlet, with a magnificent expanded corolla of a light blue violet, and the exceedingly fine texture of the corolla will render this a gem of the season; habit and growth fine and robust; 10s. 6d.

GERANIUM "SILVER QUEEN."—Clear white with dark cherry spot in the upper petals; good form, free flowerer, fine and distinct for exhibition, and one of the most useful for other purposes; the entire stock was purchased of J. H. Horsey, Esq., Taunton; 7s. 6d.

FANCY GERANIUM, "THE FORNARINA."—Very novel; ground colour blush with dark puce blotch in the upper petals, and lower petals spotted with the same colour; 10s. 6d.

FANCY GERANIUM, "BONNIE LASSIE."—Bright crimson ground colour with white centre, and all the petals distinctly margined with clear white; 15s.

FANCY GERANIUM, "LOVELINESS."—Upper petals bright crimson shading off to violet towards the centre, beautifully margined with pure white; lower petals clear white strikingly spotted with crimson; 10s. 6d. The last two varieties were figured in Turner's "Florist" for 1853.

GERANIUM, "PRETTY POLLY."—An extraordinary, novel and distinct new bedding variety; it received a certificate at the National Floricultural Society, and was exhibited by Mr. Keynes, of Salisbury, from whom we purchased the entire stock; 10s. 6d.

We shall also be prepared to offer the three undermentioned distinct Bedding Geraniums; viz: Quercifolium eximium, 7s. 6d.; Etoile de Varse, 3s. 6d.; Picturata, 3s. 6d. A full description of the above Bedding Geraniums will be published hereafter.

March 25.

MESSRS. YOUELL AND CO.

BEG TO OFFER THE FOLLOWING:—

ERICA VENTRICOSA SUPERBA, bushy plants, in 48s and 60s, finely set with flower-buds. We particularly recommend these to the trade, at 60s. and 75s. per 100.

ERICAS.—Fine bushy blooming plants, in large 48s, of the following sorts, at 12s. per dozen varieties, viz.:—*Aggregata, Bowei, *Coventryana, *Cavendishi, colorans, *densa, *daphnoides, echiflora, *exsurgens coccinea, *hyacinthoides, *Linnæoides nova, lævis alba, mirabilis, mammosa, metulæflora bicolor, *nigrita, *ovata, pyriformis, perspicua nana, *rubens, rubra calyx, trossula, transparens nova, Westcoti, *Wilmorea superba, Walkeri, viridiflora, *ventricosa breviflora, *v. Bothwelli, *v. coruscans, v. carnea, v. dependens coccinea, *v. fasciculata rosea, *v. f. longiflora, *v. f. superba, *v. hirsuta, *v. perspicuoides, *v. superba, *v. tenuiflora, *v. tumida.

ERICAS, in small and large 60s, nice bushy plants, many of them set for flower. All the above named marked with an asterisk, as well as the following, at 9s. per dozen varieties, viz.:—Denticulata moschata, elata, hyemalis, hybrida, scabriuscula, Sindryana, trossula rubra, umbellata, verticillata, ventricosa, cintra rubra, v. densa carnea, gracilis.

EPACRIS HYACINTHIFLORA, by far the best of the campanulata varieties, in strong plants, 1s. 6d. each.

EPACRIS.—The following choice varieties, in 48s, well set for bloom, at 12s. per doz. varieties, viz.:—Ardentissima, Atleeana, campanulata alba, c. grandiflora, c. maxima, Copelandica, carnea, coruscans, densiflora incarnata, elegantissima, formosa, grandiflora, impressa, imp. alba, imp. magna, lineatus magnifica, miniata, nivalis, onosmæflora, pulchella major, purpurescens, sanguinea, Tauntoniensis, the Bride, variabilis.

Abelia uniflora, small, 12s. per dozen.

Abutilon insigne, Linden's fine new species, 2s. 6d. each.

Aphelexis humilis and superbum, strong bushy plants, in large 48s, well set for flower, 12s. per dozen.

Burchellia capensis nana. This fine old favourite, 12s. per dozen.

CAMELLIAS.—The well known difficulty of inducing the greater part of the choice varieties to bloom in a young state, tempts us to offer the following, in stout plants, without buds, at 21s. per dozen, viz.:—Beali, Monarch, Juliana, Bruceana, Forbesi, Grand Frederic, Ruckeri, Lombardi, Horsfalli, Lefeveriana, Picturata, Lepidata, Fimbriata rubra, Agnesi, Sieboldi, &c.

Cassia corymbosa, a good winter-flowering plant, in 48s, 9s. p. doz.

Ceanothus rigidus and dentatus, in large 60s, 12s. per dozen.

CALCEOLARIAS—Crimson King (Henderson), deep crimson, very dark and rich, and does not fade; habit dwarf and robust, flowers large, and shape good.

,, Magnificent (Henderson), rich crimson, with yellow crown; a large, fine-formed, and very splendid flower, quite distinct from anything yet out.

,, Gold Chain, fine golden yellow, of great substance and fine habit, with very stout foot-stalks.

,, Gold Cap (Garraway), rich dark maroon, the upper division of the flower deep gold colour, the flowers large and of fine compact habit.

These handsome varieties will be found the gems of the season, for bedding; strong plants, 2s. 6d. each, or 24s. per dozen.

CINERARIAS, the choicest of the new varieties; strong flowering plants, in 48s, 12s. per dozen.

Corræa speciosa, major, bicolor, and Cooperi; strong flowering plants, 12s. per dozen.

Daphne collina, 12s. per dozen; Dauphine, 18s. per dozen.

Deutzia gracilis, small, 9s. per dozen.

Diosma ericoides and capitata, nice bushy plants of these sweetly-scented species, 9s. per dozen.

Eutaxia myrtifolia, strong bushy plants of this fine old favourite, in large 48s, 9s. per dozen; floribunda, in 60s, 9s. per dozen.

FUCHSIAS: choicest of the new kinds, including Glory (Banks), England's Glory, King Charming, Dr. Lindley, Duchess of Lancaster, Incomparable, &c., 21s. per dozen.

Fairy Roses, 9s. per dozen.

Kennedya monophylla, 1s.; ovata alba, 2s. 6d.; and rubicunda maxima, 1s. 6d.

Mandevilla suaveolens. This is certainly one of the finest greenhouse creepers we possess, producing large bunches of pure white and sweetly-scented flowers through the summer and autumn. It is of robust habit and rapid growth; 12s. per dozen.

Mitraria coccinea. This fine shrub has stood through the winter in the open ground in our nursery with very slight protection; its magnificent orange-scarlet flowers are produced in abundance in June and July. It stands unrivalled as a greenhouse or conservatory plant, and will no doubt thrive in most places out of doors against a wall. Strong flowering plants, 2 feet, 3s. 6d. each; smaller, 1s. 6d. each.

Mimulus variegata. This very beautiful variety produces large white flowers, handsomely spotted with rich crimson, 1s. each.

Mimulus, 6 handsomest varieties, including the foregoing, for 4s. 6d. the set.

Olea fragrans, 24s. per dozen.

Passiflora racemosa cærulea, in large 48s, 12s. p. doz.; Bellotti, fine new peach-coloured variety, 1s. 6d. each; Buonaparti, 1s. 6d. each.

Pittosporum tobirum, this fine old favourite, 1s. 6d. each.

Sollya Drummondi, strong, 1s. 6d. each; heterophylla, 12s. per dozen; linearis, 12s. per dozen.

Swainsonia Osborniana, new, 12s. per dozen.

Tecoma australis, 1s. 6d. each; jasminoides, 12s. per dozen; rosea, 1s. 6d. each.

Tetratheca ericæfolia, small, 18s. per dozen.

Geranium Flower of the Day, 6s. and 9s. per dozen.

,, Crimson Ivy-leaf; this fine variety, sent out by Messrs. Standish & Noble, 5s. each (splendid for bedding).

HARDY SHRUBS.

Berberis Darwini, 12s. p. doz.; very strong and bushy, 3s. 6d. each.

,, dulcis, strong, 4s. per dozen.

Cerasus illicifolia, a new hardy evergreen Cherry from California, producing purple fruit, 3s. 6d. each.

HARDY SHRUBS.

Chimonanthus fragrans, blooming at Christmas; its campanulate flowers fragrant as the Jonquil; strong plants, 12s. per dozen.

Clematis azurea grandiflora, strong, 12s. to 15s. per dozen; Sieboldi, strong, 12s. to 15s. per dozen; Montana, strong, 12s. per dozen; flammula, or sweet scented, in pots, 9s.

Escallonia macrantha; strong plants of this most charming evergreen flowering shrub, 12s. per dozen.

Eunonymus fimbriatus, strong plants of this handsome evergreen, 2s. 6d. each; japonicus fol. variegatus, 9s. per dozen.

Ilex castanifolia, strong, 3s. 6d. each; Cunninghami, 3s. 6d. each; latifolia, strong, 1s. 6d. to 3s. 6d. each; Sheppardi, fine, strong, 1s. 6d. each.

Lardizabala biternata, a fine hardy evergreen creeper, 5s. each.

Ligustrum ovalifolium, new species, 12s. per dozen.

Passiflora cærulea, strong, 9s. to 12s. per dozen.

Quercus Fordi, 2 to 3 feet, 24s. per dozen; Ilex Humei, 2 to 3 feet, 30s. per dozen; ballota, 2s. 6d. each; rotundifolia, 2s. 6d. each.

ROSES.—"Queen Victoria" (Paul's), standard and half standard, 2s. 6d. each; "Prince Albert," strong, in pots, 5s. each.

Wistaria sinensis, strong, 12s. to 24s. per dozen.

Weigela rosea, strong bushes, 2 to 3 feet, 9s. per dozen.

Yucca gloriosa superba, strong, 3s. 6d. to 5s. each.

CHOICE HOLLYHOCKS, PANSIES, AND OTHER HERBACEOUS PLANTS, BULBS, ETC.

HOLLYHOCKS.—The following fine varieties, in strong plants, well established in pots, 12s. per dozen varieties:—Commander-in-Chief, Delicata, Fireball, Formosa Improved, Lilac Perfection, Magnum Bonum, Maiden's Blush, Mr. Charles Baron, Mulberry Superb, Obscura, Princess Royal, Rosea rubra, Venosa rubra, Walden Gem, &c.

PANSIES.—The following choice kinds, at 10s. per dozen varieties:—Alba Superba, Androcles, Blanche, Cæsar, Calysto, Caroline, Commander-in-Chief, Crystal Palace, Drusilla, Duchess of Rutland, Elegant, Emma, Euphemia, Glory, Helen, Heroine, Indian Chief, Isabella, Junius, Lady Carrington, Lady Franklin, Lady Harding, Lord Jeffery, Marchioness of Lothian, Masterpice, Miriam, Miss Talbot, Mrs. Beck, Penelope, Polyphema, Post Captain, Prince Arthur, Princess, Queen of England, Rubens, Sambo, Smolensko, The Rajah, Uttoxeter Hero, Viceroy, Yellow Prince.

Pentstemon speciosum. This fine old species, in strong plants, 18s. per dozen.

Delphinium Mooreanum. This little known variety, raised in this neighbourhood, is undoubtedly a very fine and distinct plant, and worthy to be ranked with Barlowi and Grandiflorum; its colour is somewhat intermediate between the two. Strong plants, 1s. 6d. each.

Delphinium Barlowi, fine, 9s. per dozen.

Daisies, new Belgian, in 50 fine varieties, 4s. per dozen.

Dielytra spectabilis, 9s. per dozen.

Funkia grandiflora, 2s. 6d. each.

Rockets, double white, 3s. per dozen; purple, 4s. per dozen; crimson, 1s. 6d. each.

Oxalis rosea, one of our prettiest hardy herbaceous plants, and nearly always in flower, 6s. per dozen.

Pæonies, herbaceous, in 25 fine varieties, 12s. per dozen.

Phloxes, in numerous fine varieties, 9s. to 12s. per dozen.

Potentilla M'Nabiana, and other choice kinds, 6s. per dozen.

Primrose, double white, 4s. per dozen; double yellow, 4s. per dozen; double purple, 4s. per dozen; double lilac, 3s. per dozen; double crimson, 12s. per dozen.

Silene maritima plena, fine double white, 9s. per dozen.

Statice latifolia, strong, 9s. per dozen; pseudo armeria, 6s. per dozen; maritima rosea, very pretty and distinct, 6s. per dozen.

Choice selection of Herbaceous Plants, 25s. per 100.

Lilium colchicum may be described as a yellow L. lancifolium, as it resembles this fine species in shape of flower; strong bulbs, 7s. 6d. each; L. lancifolium album, flowering bulbs, 9s. per dozen; L. rubrum, flowering bulbs, 18s. per dozen.

Lily of the Valley, strong roots, 5s. per 100.

CHRYSANTHEMUMS, comprising the very best of the new kinds of large flowering and Pompon varieties, in strong plants, 6s. to 9s. per dozen.

TREE CARNATIONS, of the choicest kinds, by name, 18s. per dozen.

CARNATIONS AND PICOTEES.—Beautiful selections from their superb and extensive collections, at 18s., 24s., and 30s. per dozen pairs; fine mixed, for borders, 9s. per dozen pairs. True Old Clove Carnation, 12s. per dozen pairs.

PINKS.—Extra fine sorts by name, 9s. to 12s. per dozen pairs.

CHOICE FRUITS. (WARRANTED TRUE TO NAME.)

"FASTOLFF RASPBERRY."—It is with much satisfaction that we announce a third award made by the London Horticultural Society, on 26th of July last, for examples of the above most excellent Raspberry, unequalled by any other variety in size, fruit, and richness of flavour.

It is reported in the *Gardeners' Chronicle* of July 30th, page 486, as follows:—"Messrs. Youell, of Great Yarmouth, sent a boxful of beautiful fruit of the Fastolff Raspberry; they were unusually fine, and well deserved the certificate of merit awarded them."

Strong well-rooted canes, 15s. per 100.

OLD YELLOW ANTWERP RASPBERRY. This splendid fruit, unequalled for the dessert, has become almost extinct, and in its place a worthless variety substituted; we possess a fine stock of strong canes, and offer them at 24s. per 100.

New Monthly Fruiting, 24s. per 100.

RHUBARB, Myatt's Victoria, 9s. per dozen; Royal Albert, 9s. per do.; Linnæus, 9s. per do.; Tobolsk, 6s. per do. (strong).

SEAKALE, strong, 2 years, 6s. per 100.

ASPARAGUS, extra strong, 3 years old, 3s. 6d.; 2 years old, 2s. 6d. per 100.

☞ Less quantities than those named above supplied at the same prices. Orders of 2l. and upwards are delivered Carriage Free to London or Hull, or to any Railway Station within 150 miles of the Nursery. Catalogues will be forwarded free on application.

ANEMONE SEED, saved from selected roots, 10s. per lb. The usual discount to the trade.

YOUELL & CO., ROYAL NURSERY, GREAT YARMOUTH.

EDWARD GEORGE HENDERSON AND SON, Wellington Nursery, St. John's Wood, London, beg to recommend the following (for description see this Paper of the 4th of March):—

	s.	d.
GLOXINIA DUKE OF WELLINGTON	7s.	6d.
,, LADY FRANKLIN	7	6
,, LEONIE VAN HOUTTE, ... 5s. and	7	6
ACHIMENES CHERITA, beautiful new sp., 5s. and	10	6
,, SIR TRECHERNE THOMAS, splendid ... ... 3s. 6d. and	5	0

Any or all the above forwarded free by post.

In May the following 12 new Verbenas, raised by Messrs. Banks, Stewart, and Fozard, will be ready for sending out at 42s. the set, viz., Orion, Robin Hood, Marie Antoinette, Matchless, Beauty, Madonna, Attraction, Diadem, Ne Plus Ultra, Ariosto, Beauty of the Garden, and Sulphur Model. For the descriptions see this Paper of the 11th of March.

Seed Catalogue forwarded post free, containing a description of the best known new Annuals, excluding the new Californian and other varieties that have not sufficient merits for our recommendation.—March 25.

STANDISH AND NOBLE, NURSERYMEN, SEEDSMEN, &c., Bagshot, Surrey, are now prepared to receive orders for the following new and beautiful varieties of AZALEAS, which will be ready for delivery in June next. The Advertisers can recommend them with the greatest confidence, as superior to any others of their kind.

AZALEA BEALII.—This very distinct variety was introduced by them from China. The flowers, which are of first-rate shape, are quite unique, being striped, like a Carnation, with rich vermilion on a pure white ground. It is of good habit, fine in foliage, and a most abundant bloomer; and although decidedly in the first rank as a greenhouse plant, it is quite hardy enough for the open border. Each, 21s.

AZALEA CRISPIFLORA, a species differing much from any other known Azalea, having a character entirely its own. No other kind approaches it in compactness of habit, and its foliage is very fine, abundant, and evergreen. The flowers are very large, and the edges of the petals have the appearance of being irregularly *gaufred*, like a lady's frill; the colour is a rich rose lake. From the fact of its blooming very late—much later than any other Azalea—it will be doubly valuable for many purposes. Each 21s.

GERANIUMS.

BASS AND BROWN

Having this season a very large stock of GERANIUMS, are enabled to offer the following of strong and very fine plants, in 4-inch pots, ready for immediate re-potting, which will yield an abundant bloom. For Descriptive List, see Autumn Catalogue.

BEST NEW VARIETIES OF LAST SEASON.

Any 12 may be selected for 50*s*., our selection, 44*s*., or the collection of 19 for 70*s*.

Hoyle's Astrea	5*s*. 0*d*.	Hoyle's Lagoma	5*s*. 0*d*.	Foster's Eleanor	3*s*. 6*d*.	Dobson's Jupiter	3*s*. 6*d*.
„ Albina	3 6	„ Leonora	5 0	„ Optimum	10 6	„ Spot	5 0
„ Butterfly	3 6	„ Novelty	3 6	„ Rachel	5 0	„ Vulcan	5 0
„ Kulla	3 6	„ Portia	5 0	„ Queen of May	5 0	Simond's Admiral	3 6
		„ Zaria	5 0	Dobson's Harriett	3 6	„ Warrior	3 6

Any 12 of the following for 21*s*., our selection, 18*s*., or the set of 30 for 45*s*.

Ariadne	Chieftain	Exhibitor	Incomparable	Major Domo	Painter Improved
Ambassador	Commissioner	Flavia	Lavinia	May Queen	Rubens
Arethusa	Exquisite	Gem	Magnet	Nepaulese Prince	Shylock
Ajax	Elise	Generalissimo	Mochanna	Ocellatum	Silk Mercer
Alibi	Enchantress	Herald	Monteith	Prince Arthur	Tyrian Queen

Fine varieties, our selection, 6*s*. and 12*s*. per dozen.

FANCY GERANIUMS.

The following Six choice new varieties of last season for 18*s*.

Ayres' Barrier	Henderson's Lady Downs	Ambrose's Princess Alice Maude
„ Darling	Ambrose's Magnum Bonum	Wilmore's Surprise

The following 12 choice varieties for 18*s*.

Caliban	Delicata	Formosissimum	Marion	Princess Royal	Singularity
Captivation	Electra	Gipsy Queen	Miranda	Richard Cobden	Superba

Fine varieties, our selection, 9*s*. and 12*s*. per dozen.

GLOXINIAS.

The following new varieties are chiefly Continental, and very beautiful. The Collection of Nine for 33*s*.

	s. *d*.
Bella Clymene, white, with a large, deep, blue throat, and the entire marbled with blue, very beautiful	3 6
Charles Dickens, the best red grown, white throat, beautifully spotted	3 6
Duchess de Brabant, a fine, new, Continental variety	5 0
Dr. Planchon, flowers very erect, rich red, with spotted throat, very handsome	3 6
Fyfiana grandiflora, very fine	5 0
Imperialis, delicate lavender white, with deep purple centre	3 6
Leonie Van Houtte, beautiful rose, with a pure white throat, very distinct and handsome	5 0
Princess de Lambelle, a fine variety, figured in the "Flora" of L. Van Houtte	3 6
Wilsoni, pre-eminently majestic above all others, figured in the "Floricultural Cabinet," July, 1853	5 0

Any 12 of the following fine varieties for 25*s*., with one plant in addition of Achimenes Marie Van Houtte, our selection, 12*s*. to 20*s*. per dozen.

Alba grandiflora	Fyfiana	La Perouse	Marginata	Priestleyana	Tricolor
Argyrostigma	General Baudraud	Labiata	Mrs. Addanson	Pulcherrima	Victoria Regina
Carminata splendens	Grandis	Leopold 1st	Passinghami	Spectabilis	Wortleyana
Frederick Lenning	Hogoveen	Marie Van Houtte	Petoiana		

Descriptions see Spring Catalogue.

ACHIMENES.

CHERITA, fine ultra-marine blue, shaded with red, magnificent	3*s*. 6*d*.
LOUIS VAN HOUTTE, rich rosy purple, white centre	2 6
MR. APARPAIT, beautiful carmine purple	2 6
SIR TRECHERNE THOMAS, beautiful rosy carmine, very rich	2 6

The following 12 beautiful varieties for 10*s*. (Descriptions, see Spring Catalogue.)

Bœckmani [cærulea	Hilli (or Kewensis)	Kewensis vera	Magnifica purpurea	Multiflora	Fimbriata
Beuchmania hirsuta	Hirsuta cærulea	Longiflora alba	Margaretta	Ghiesbreghtii	Coccinea grandiflora

A FEW NEW PLANTS.

Æschynanthus splendidus ... each	2*s*. 6*d*. to 5*s*. 0*d*.
Æchmea fulgens	5 0 to 7 6
Alloplectus Schlimii	15 0
Aphelandra aurantiaca	1 6 to 2 6
„ micans	3 6 to 5 0
„ grandis	3 6 to 5 0
„ variegata	5 0 to 7 6
Berberis Darwini	1 6 to 2 6
Begonia miniata	5 0
„ Prestoniensis	3 6 to 7 6
Centropogon tovarensis	5 0 to 7 6
Cissus discolor	5 0 to 7 6
Cyrtanthera magnifica	2 6
Fitzroya patagonica	5 0 to 7 6
Libocedrus chilensis	3 6 to 7 6
Saxe-Gothæ conspicua	5 0 to 7 6
Deutzia gracilis	1 6 to 3 6
Dracæna nobilis	
Echites Harrisi	10 6 to 21 0
Franciscea eximia	2 6 to 3 6
Gastrolobium Drummondi ... each	7*s*. 6*d*.
Gesnera purpurea macrantha	2*s*. 6*d*. to 3 6
„ Leopoldiana	7 6
Hexacentris mysorensis	5 0 to 10 6
Hoya coriacea	2 6 to 3 6
„ campanulata	2 6 to 3 6
„ picta	5 0 to 7 6
„ Imperialis	2 6 to 3 6
Ixora Lobbiana	15 0
Kennedya ovata alba	3 6
Passiflora Comte Nesselrode	2 6
„ „ Kisseleff	2 6
„ alata superba	2 6
„ cœrulea grandiflora	2 6
Plectranthus concolor picta	2 6
Rhodolea Championi	21 0
Streptocarpus biflorus	2 6 to 3 6
Tritonia aurea, 24*s*. per doz.	2 6
Viburnum suspensum	1 6 to 3 6
Weigela amabilis	3 6 to 5 0
„ lutea	1 6 to 2 6

GREENHOUSE PLANTS.—*List of these and Stove Plants, see Spring Catalogue.*

12 fine and select species and vars., 12*s*.; 50 ditto, 45*s*.; or 25 for 24*s*.; 12 extra choice and select ditto, 25*s*.

STOVE PLANTS.

12 fine and select species and varieties, 18*s*.; 50 ditto, 60*s*.; or 25 for 35*s*.

HERBACEOUS PLANTS.

Heights and Colours, see Autumn Catalogue.

100 distinct and showy vars.	30*s*. 0*d*. or 50 for £0 17*s*. 6*d*.
25 ditto ditto	10 6 or 12 for 0 6 0
100 superior and new vars.	50 0 or 50 for 1 10 0
25 ditto ditto	17 6 or 12 for 0 9 0
25 fine vars. best adapted for Rockwork	12*s*. or 12 for 0 7 6
HOLLYHOCKS, choice vars. ... per doz.	9*s*. to £1 5*s*. 0*d*.
DWARF ROCK CISTUS, 24 beautiful vars.	0 15 0
„ „ „ 12 ditto	0 7 6
AZALEA INDICA, 25 superb vars., bushy plants	1 15 0
„ „ 12 ditto ditto	0 18 0

The Autumn and Spring Catalogues free by post for three penny stamps each.

Goods Carriage Free (not under 20*s*.) to all the London termini, and all Stations on the London and Norwich Colchester line. Plants added gratis with orders of 40*s*. and upwards.

Post-office Orders payable to Bass and Brown, or Stephen Brown, Sudbury Post-office.

SEED & HORTICULTURAL ESTABLISHMENT, SUDBURY, SUFFOLK.

THE FINEST BALSAMS in EUROPE, in Six Classes; Seed saved by Mr. Glenny from flowers three inches across: the six, 37 stamps; Mixed Seeds, 13 stamps, in Sealed Packets only, signed and sealed. The finest seeds that can be had procured to order, and all other choice Horticultural subjects.—420, Strand.

FLOWER SEEDS.—We have selected out of our large collection of Flower Seeds the most beautiful and showy varieties, each sort distinct in colour, and calculated to produce a fine effect when planted out in beds or groups in the flower border: and we have had each variety distinctly marked with its Botanical and English name, height, time of flowering, colour of the flower, manner of growing, whether erect or trailing, &c., the time it should be sown, and other valuable hints as to its cultivation. In selecting these varieties, we have been careful to exclude all which are shy bloomers, or have an insignificant appearance, so that the collections will comprise only those which are really showy and handsome, and which we believe would prove to the entire satisfaction of any lady or gentleman who might be disposed to order them. The German Stocks and Asters especially are most superb. The Collections will be sent free by post to any part of the kingdom at the following prices:—

Twenty extra fine varieties, all distinct and beautiful, 5*s*.
Fifty ditto ditto 10*s*. 6*d*.

Payment can be made either by Postage Stamps or Post Office Order, made payable to J. C. Wheeler & Son, Nurserymen, Gloucester.

NEW AND CHOICE FLOWER SEEDS.

ASTERS, new French Pæony-flowered, very fine
„ „ „ Pyramidale, splendid
„ German Globe, quilled and striped, 12 vars. mixed
POPPY, new Pæony-flowered, 8 vars. mixed
STOCKS, German 10 week, 12 vars. mixed, fine
„ „ intermediate, 12 vars. mixed
„ „ new large flowering, 6 vars. mixed

Abronia umbellata	Hollyhock, from named flowers
Arctotis breviscapa, fine	Indian Pink, new white striped
Calceolaria, very fine	Leptosiphon lutens, new yellow
Calandrinia umbellata	Linum grandiflorum rubrum
Calliopsis coronata, fine	Lythrum roseum, new, fine
Cenia turbinata flava	Lindheimeria texana, new, fine
Centauridium Drummondi	Pansy, very superior
Cineraria, very superior	Perilla arguta
Collinsia bartsiæfolia	„ nankinensis
„ multicolor	Saponaria calabrica
Convolvulus minor, fl. pleno	Schizanthus lilacinus
Cyperus glomeratus	Silene atro-rosea
Dianthus Gardneri, fine	Tropæolum Scheurmannianum
Gymnopsis uniseralis	Wallflower, German, double

One packet each of the above forwarded, free, for 10*s*.; any 24 for 7*s*. 6*d*.; any 12 for 5*s*.; any 6 for 3*s*. 6*d*.

Charles Alexander, Seedsman and Florist, 32, West Register Street, Edinburgh.

CARRIAGE FREE.

SUTTON'S GRASS SEEDS.—
Extract of a Letter from Dr. Lindley:—

"Messrs. Sutton,—*We have already made a trial of your Lawn Grass Seeds, and it is but justice to say they have proved the best we have sown for many years.*

(*Signed*) "John Lindley.
"*Horticultural Society*, 21, *Regent Street, London, Nov.* 9, 1853."

Messrs. Sutton are continually receiving similar letters of commendation of their Lawn Grass Seeds. Price of seed, 1*s*. 3*d*. per lb., 3*s*. per gallon, or 21*s*. per bushel, carriage free, except very small quantities. The quantity required is 40 lbs. per acre, in forming new lawns, or from 10 to 20 lbs. per acre for improving old lawns.

GRASS SEEDS FOR PERMANENT PASTURE.

Gentlemen intending to lay down Land to Permanent Pasture, or for two or three years' lay, are recommended to communicate with us, stating the nature of the soil and situation, that we may advise as to sorts of Grass Seeds most suitable. Price 20*s*. to 30*s*. per acre.

IMPROVEMENT OF GRASS LANDS.

SUTTON'S RENOVATING GRASS SEEDS FOR IMPROVING OLD PASTURES.—Many Old Upland Pastures Parks, and Meadows, are nearly destitute of Clovers and the finer and more nutritious sorts of Grasses, in which case we are in the practice of furnishing such sorts only as are wanting.

The following is similar to many other letters received from former purchasers:—

From D. T. Cunyaghame, Esq., Wellesbourne, Warwick, November, 1852.

"The meadows that were renovated with your Seeds are looking very well. I cut nearly two tons of hay to the acre, and three years ago the same land hardly produced half a ton per acre. The Garden Seeds I have had from you exceed by far any that I have bought elsewhere."

Quantity of Seed required, 8 *lbs. to* 12 *lbs. per acre. Price* 1*s*. *per lb.*, Carriage Free.—Address

John Sutton & Sons, Seed Growers, Reading, Berks.

N.B.—We have a very fine Stock of Mangold Wurzel and Carrot Seed; also of good Clover Seed, at very moderate prices. Priced Lists will be sent post-free.

PAGE AND CO.'S

BLIGHT COMPOSITION should be in the hands of all Plant and Fruit Cultivators. 4*s*. per gallon, sufficient to make four. For testimonials see back leaf *Gardeners' Chronicle*, March 11, 1854.

GARDEN AND AGRICULTURAL SEEDS, first quality, and lowest market price.

Oxford Street (adjoining Radley's Hotel, 20 yards from the Railway and Docks), Southampton.

H. BIGLAND and Co., in returning their best thanks for the liberal support they have received during the twelve years they have been in business, beg to state that they have disposed of their SEED BUSINESS to Mr. T. F. WINSTANLEY, whom they confidently recommend to their friends, and respectfully solicit for him a continuance of the kind support they have received.

H. B. & Co. will carry on the NURSERY BUSINESS as usual until the stock is disposed of, to effect which, as quickly as possible (their lease having nearly expired) they are prepared to treat with customers on the most liberal terms, and respectfully invite an inspection of their stock at the Nursery Grounds, Whalley Range, where all letters to them should in future be addressed.

T. F. WINSTANLEY, in succeeding to the SEED BUSINESS of Messrs. H. Bigland & Co., begs to assure his friends and the public that no exertions shall be wanting, on his part, to keep up the well-earned name of the late firm for supplying their customers with the best and truest Seeds that can be procured, and hope, by strict attention to business, to merit a continuance of the support they have hitherto enjoyed.

Seed Warehouse, 28, Market Place, Manchester.

GEORGE BAKER begs to say that his DESCRIPTIVE CATALOGUE of AMERICAN PLANTS, CONIFERS, ORNAMENTAL SHRUBS, FRUIT and FOREST TREES, &c., may be had by enclosing two postage stamps.

G. B. wishes to call particular attention to his fine Stock of GREEN and WEEPING HOLLIES, from 1 to 12 feet high.

G. B. has supplied the American Exhibition in the Royal Botanic Gardens, Regent's Park, from its commencement.

American Nursery, Windlesham, near Bagshot, Surrey, about six miles from Staines Station, Windsor Branch, South-Western Railway, where conveyances may be obtained.

FINE GRASS SEEDS FOR ORNAMENTAL PARKS, LAWNS, &c., *where a fine sward is required*, 1*s*. 3*d*. *per lb.*, 3*s*. *per gallon, and* 20*s*. *per bushel. Our mixtures for this purpose have given the greatest satisfaction.*

William E. Rendle & Co., Seed Merchants, Plymouth.

The Gardeners' Chronicle.

SATURDAY, MARCH 25, 1854.

The small market value of soft-wooded Trees is such as to render them scarcely worth attention among planters, except under very peculiar circumstances. When Willows, or Limes, or Poplars, or Sycamores, or any such species are felled, they are in so little demand, that after a small quantity of the best has been taken for the turner, toyman, or butcher, the rest may go as firewood. There is now, however, some prospect of their coming into consumption on a very large scale in an unexpected manner, for which, if anticipations are realised, we shall have to thank the Great Exhibition of 1851.

It appears that at a late meeting of the French Society for the Encouragement of National Industry, a paper was read explaining how such wood may be converted into paper. The bark is taken off, and the wood is reduced into shavings; the shavings are then cut very thin; they are next placed in water for six or eight days, dried, and afterwards reduced to the finest powder possible by a corn mill. This powder is mixed with rags, which serve to prepare the pulp of paper, and the ordinary operation of paper making is proceeded with. All white woods, such as the Poplar, the Lime, and the Willow, are suitable for the purpose, but the discoverer ascribes a good deal of his success to the quality of the water he employed—that of the little river Doller, which

runs near Mulhausen. For the first experiment he employed the wood of the Aspen. Specimens of the paper so obtained were laid before the meeting, but we are not informed of its quality.

No doubt can exist that wood may be made into paper, provided it can be reduced into threads or particles fine enough for the purpose. For what is Flax or Hemp except wood, whose fibres are readily separable? There is no difference between the wood of Hemp and of Willow, or other soft trees, than such as arises from the greater cohesiveness of the threads of the latter, or from greater toughness, which is not a difference of importance in paper-making, for the weakest wood in the world is stronger than cotton dross, now so largely used in all paper-mills. The only question is, can the cohesiveness of the fibres be overcome, or does the substance produced by grinding into pulp, either when used alone or mixed with other pulp, present a material fit for paper? We apprehend that it does.

The Mulhausen experiment is reported to have been made with timber. Suppose that the newly cut branches of Poplars, Limes, and Willows had been macerated for a fortnight, cut into suitable lengths, and then put into a tearing (not grinding) mill, where they could be worked with water, we suspect that good pulp (or at least "half stuff") would have been obtained without a preliminary reduction of the wood into shavings, and an after process of grinding.

That the present enormous demand for paper will lead to the discovery of some new source of fibre is certain. In fact it has already resulted in the manufacture of paper from straw, both here and in the United States, and a very good article, though not of a high class, is thus obtained. Our West Indian colonies indeed might keep our market amply supplied, with no small profit to themselves; but they do so little except cry for aid to Hercules, and wring in despair their feeble hands, that we expect nothing from them unless the British Government will take taxes in kind, and allow the inhabitants to pay their imposts with trusses of dry Plantain stems; if indeed it should prove that West Indians would not also, in such an event, expect Government officers to reap and pack their Plantains for them.

It appears from a return just issued by the Board of Inland Revenue that, notwithstanding the excise duty on paper, the quantity of that substance manufactured in the United Kingdom has risen from 150,903,543 lbs. in 1851, to 177,633,009 lbs. in 1853, showing an increase of manufacture to the extent of nearly 27 millions of pounds weight in three years. In 1844, the gross receipt for paper duties amounted to 709,320*l.*, and in 1853 to 1,049,662*l.*; showing an increase of about 340,000*l.* in the course of nine years. But of that increase above 190,000*l.* apply to the last five years, or about 38,000*l.* a year, representing, we believe, an annual increase of raw material exceeding six millions of pounds weight.

Let us ask whence these six million pounds annually added to the wants of the paper market are to be supplied. Materials are already becoming scarce; the price of paper is rising, and must continue to advance unless an enormous quantity of matter convertible into paper is furnished to the manufacturers. The effect will be something much worse than even an excise duty; the cost of books, newspapers, and everything else made of paper must inevitably be enhanced, and a natural permanent tax upon knowledge, as it is the fashion to call the paper duties, will be added to whatever artificial tax the financial necessities of the country may call for.

The remedy probably lies at our doors; it is certainly within our reach. Fibrous plants not strong enough for linen, but amply sufficient for paper, may be brought into profitable cultivation; as, for instance, the Hemp Nettle (*Urtica cannabina*), the Marsh Mallow, or even common Mallows, and the Hemp Mallow (*Lavatera cannabina*), to all which our climate is perfectly adapted. In the meanwhile, without awaiting the issue of experiments with such plants, our paper makers and country gentlemen would do well to ascertain what can be made of their soft woods.

Frequently as we have called the attention of our readers to the subject of the Vine mildew, we should be guilty of an unpardonable omission if we did not direct their notice to the very remarkable pamphlet of M. Bouchardat, which was originally published in the memoirs of the Imperial Central Agricultural Society of France, but which is now to be had in a separate form.* Its excellence does not consist in any new or brilliant discoveries, but in the patience with which the disease has been watched, and materials collected for its study, whether historical or physical. The collection of Vines in the Luxembourg Gardens is beyond all doubt the most extensive in the world, comprising above 4000 individuals from every country where the Vine is cultivated, arranged under 2050 numbers, consisting either of distinct varieties or sub-varieties, or coming from distinct and different localities. Every plant in this collection was examined during the prevalence of the Vine mildew, and a table drawn up, showing in what degree every separately numbered variety was affected. With the exception of the American Grapes, scarcely one escaped, and not all of these; and, unfortunately, in the majority of instances the Vines of inferior quality were those which escaped the most completely, though a few of those which supply the best wines of Bordeaux and the Gironde, as the Carmenet, the Cots, and Sauvignons, have been only slightly attacked. The value of such a list, faithfully drawn up, is incontestibly of the highest importance to all who have extensive interests in the cultivation of the Vine, and the more so because it seems quite certain that the malady spreads the most readily where a variety of different sorts are cultivated in the same Vineyard. Even the American Vines and the European varieties, known under the name of Cots, become at last infested when in company with other varieties which suffer extensively. It is also quite certain that Vines which are kept low and propagated by layering are far less subject to attack than those which are trained on trellises; and it is probable that the best method of improving those trellised Vines which have suffered seriously is at once to bring them down to the surface of the soil, and to encourage the growth of new shoots from the depressed stems. It appears, also, that the time of pruning is by no means a matter of indifference, and that far greater impunity is secured by spring than by autumn pruning.

Two other chapters are very valuable, the one because it contains an account of almost every plan which has been adopted to alleviate the malady, the other because of the long and very complete list which it affords of the works which have appeared on the subject, or even bear upon it, from the earliest times far into 1853; nor is it merely a dry list of titles, but affords in many cases interesting notices of the contents of the respective books or pamphlets themselves.

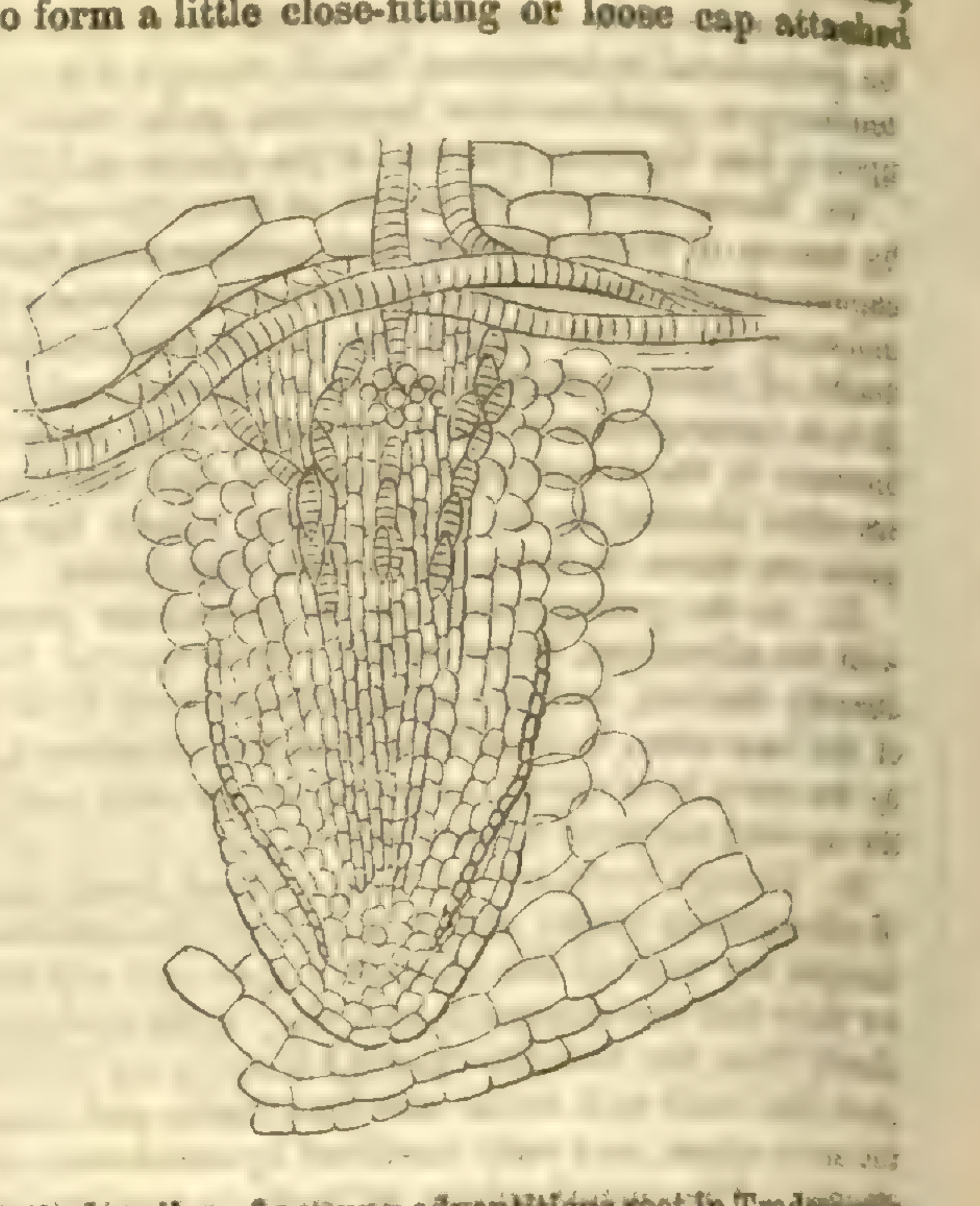
The great mass of evidence, and the opinions of a large portion of those who have examined the subject scientifically and practically, is in favour of what is called the fungal theory; and, perhaps, in consequence of the truth of that theory being so much more palpable than in the earlier Potato murrain; and the efforts, therefore, directed to a particular end, so much more success has attended remedial attempts than in the other malady first mentioned. So much is this the case, that were it not for the almost unconquerable prejudices of the Vine-grower, there seems every reason to believe that the malady, should its ravages be unhappily continued, would be, to a very great extent, under the control of the cultivator. *M. J. B.*

* "Traité de la Maladie de la Vigne." By M. Bouchardat. 8vo. Paris, 1853. Bouchard-Huzard.

It is almost impossible to say anything new about the Potato Disease; nevertheless, a communication, which we have just received from Mr. J. Henderson, A.L.S., the well-known gardener of the Earl of Fitzwilliam, at Wentworth, is not without interest. It has generally been supposed that when the murrain is developed in forced Potatoes, there is no indication of the presence of the peculiar parasite which is so indicative of the malady. Such, however, cannot be said in the present instance; for not only is the under-side of the leaves covered with patches of the mould, exactly as in the usual autumnal form, but the brown spots on the stem are equally frosted with the *Botrytis*, as are also the walls of its internal cavity, from which the threads are seen protruding in every direction, and having perfect fruit, exactly as in the cavity of the fruit of Tomatoes. Mr. Henderson informs us that the disease has appeared in a more destructive form than he had ever before seen it at Wentworth—nearly all the plants in one frame being completely blighted, while it has already begun to show itself in another. There is a very general expectation that the severity of the late winter will prove destructive to this malady, and the no less disastrous disease of the Vine; unhappily, the case just reported shows that the spores of the *Botrytis infestans*, at least, are as active as ever, and forbids us to hope that these fearful visitations have at present entirely vanished. *M. J. B.*

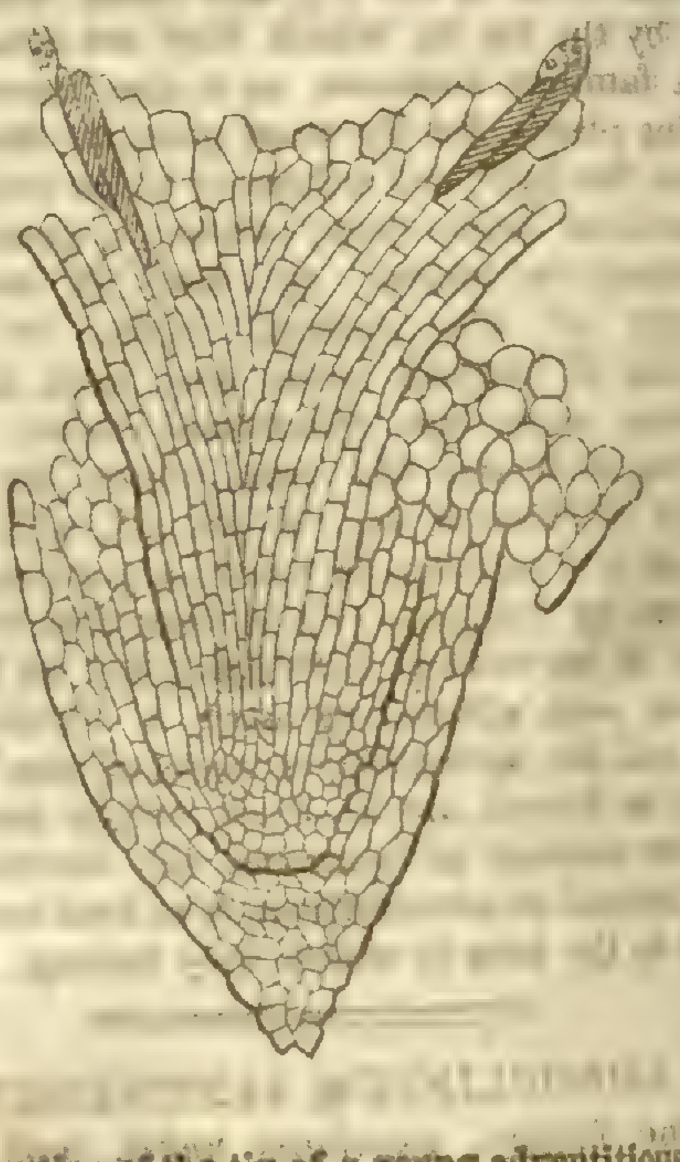
VEGETABLE PATHOLOGY.—No. XII.

46. Roots, whether normal or adventitious, in their earliest stage of growth consist of a little convex body, composed of apparently homogeneous cells resting upon the bast cells, and more or less distinctly converging to the apex. The outer cells at the apex however, soon, become distinct or separated from the rest of the mass all round, so as to form a little close-fitting or loose cap attached



A vertical section of a young adventitious root in Tradescantia, showing the spongy tip (pileorhize) ready to burst through the bark. The cuticle of the root is perfectly distinct from the pileorhize, and the central tissue is seen communicating with the vascular tissue, both vertical and horizontal.

only in the centre. The whole gradually forces its way through the bark, either turning aside the tissue or absorbing it, so as ultimately to become free, the spongy cap still adhering and forming the principal, or at least the most permanent part by which the moisture of the soil is imbibed from the earth. In those cases where



A vertical section of the tip of a young adventitious root of the common Nettle just emerged from the bark. The pileorhize is quite distinct from the subjacent tissue, and that again from the central cone which communicates with the vascular tissue lower down. Both after Trécul.

it is more permanent the outer cells, as they are worn out, are gradually replaced by new tissue formed within.

47. The adventitious or air roots in Orchids have a very different structure from those of ordinary plants, as their office is partially different. The outer cells, as observed by Vriese, contain spiral threads; and, like other vascular tissue, though peculiarly active when young, soon lose their protoplasm and contain air only. It is probable, therefore, that while the young external tissue is gifted with superior powers of absorption, the older tissue keeps up a constant communication by gaseous penetration between the air and the more central tissue. Schleiden asserts that this layer of spiral cells is external to the true epidermis; but such does not seem to be the case in the species which I have examined, nor does it appear very clearly how such a structure is possible. The true roots when present are usually covered with delicate hairs.*

48. As the moisture is imbibed principally by the tips of the roots, which supply the constant waste due to evaporation, as well as what is deposited in the shape of

* The structure varies considerably in the air roots of different species. While in some eight or more layers of cells containing copious spiral threads, of which the outermost is horizontal and the rest vertical, are succeeded by numerous strata of beautifully reticulated cells, of which the outermost contain grains of chlorophyll, and these by a central bundle of bast cells, dotted ducts, and straight spiral vessels; in other cases the strata of cells containing spiral threads are at once succeeded by regular hexagonal tissue. A third modification, in which all the spiral cells are horizontal, is represented in this Journal, 1852, p. 229. The tips of the air roots are green, while the rest is externally of a silvery white. A section through the tip shows that there is a true spongelet or pileorhize, while every gradation from ordinary parenchymatous tissue containing cytoblasts, to spiral and reticulated cells, or both, as the case may be, is traceable upwards. The pileorhize is external to the outer layer of horizontal cells, which must therefore by analogy be the true epidermis. The air roots therefore differ in nothing from ordinary adventitious roots save in the ultimate structure of the outer cells, which keep up a communication between the surrounding atmosphere, while the green tips are capable of absorbing any moisture which may adhere to the substance to which the plants are attached. Air roots of a similar structure occur in Pothos and some other genera, but not apparently so constantly as in some Orchids; at least, in Pothos violacea I have found no such structure.

new tissue, or laid up as nutriment in the old, it is at once evident that the vigour of a transplanted tree must be much impaired if the delicate fibres and their tips are injured, or are suffered to become dry, and that any very considerable destruction of the smaller fibres must be prejudicial to luxuriant health, though it may have a tendency to produce other beneficial ends, which depend upon a less vigorous growth of the shoots and foliage.

49. Roots increase in length at their tips only, which, by reason of their delicate and compressible tissue, are capable of penetrating into the narrowest crevice wherever moisture is to be found, by which circumstance the health of trees is maintained in long continued drought. It is in consequence of this property and capability of increase in the direction of moisture, that draining pipes are often blocked up by fibres, even where the utmost pains are taken to make the joints impervious.

50. As the young roots are in immediate connection with the alburnum, from which their central tissue is directly derived, and the spongy mass rests upon the tip of the bast cone, it is evident that the moisture imbibed by the roots is at once conveyed to the very part where the upward current is most active.

51. Though buds are often produced from the base of adventitious roots, where the roots themselves have decayed for want of the necessary moisture and medium for their full development, and they both spring immediately from the vascular tissue, there is no evidence to show that buds and roots are essentially and originally the same organ, and only modified by accidental circumstances. The casual origin of both is equally obscure, but it is at least certain that in the majority of instances roots will not flourish long without a superior bud, though the roots of Dahlias, which will grow for years without the formation of a single bud, are a remarkable exception to this law. Adventitious roots are in some cases almost normal, but moisture and obscurity have great influence in their production. Damp moss, for instance, kept round a branch will often favour their development, and the occurrence of adventitious roots in the Fig and other trees when surrounded by the list by which they are attached to the wall, is a familiar instance, as is also their occurrence in climbing plants, for the most part, on the side turned away from the light and adherent to the matrix. Again, as adventitious buds occur where a greater quantity of nutriment is stored up than is necessary for the supply of the normal buds, or where the whole mass of normal buds has been destroyed, so adventitious roots are generated under similar circumstances, as is also the case where the descending current of elaborated sap is cut off, either by actual division, as in a cutting, or where a portion of the bark is removed by ringing. It is rare that roots are produced in an ascending direction; but we have already more than once alluded to such a circumstance (see No. 28), and the adventitious roots of the Yellow Lily, according to Trécul, are in their origin ascending. In the greater number of instances the direction of roots, whether normal or adventitious, is at first horizontal with reference to the axis to which they belong. *M. J. B.*

CONOCLINIUM IANTHEMUM.

The fine foliage, excellent habit, and large loose spreading heads of light blue flowers, which terminate every shoot of this plant, make it exceedingly attractive; and its season of blooming, winter and early spring, when blue flowers are scarce, merits for it a place in every collection of plants.

This is an excellent time for commencing its culture, as a good specimen of it may be grown in the course of the summer. When received it should be placed in a close pit or house, keeping it near the glass, and as soon as it has got over the effects of travelling shift it into a pot two sizes larger than that in which it has been growing. For soil use good rich turfy loam, fibry peat, and well decayed leaf soil in about equal proportions, adding a sufficient quantity of clean sharp sand to ensure perfect drainage, and a small quantity of thoroughly decayed cow manure may also be added with advantage. Be careful to have the ball and soil in a nice moist healthy state when the plant is shifted, and place it in a close moist warm situation, to avoid the necessity of giving much water at the root until free growth shall have commenced. Sprinkle the plant morning and evening with the syringe, and maintain a humid atmosphere; also keep it as near the glass as is convenient, in order to induce a vigorous start. When it is evident that the roots have taken hold of the fresh soil, stop the shoots, and tie them out, so as to induce the lower buds to push, in order to obtain a well-furnished foundation. Continue to afford the plant a humid atmosphere, sprinkling it frequently overhead with a fine-rosed syringe, but regulate the temperature so as to secure strong close-jointed shoots. If all goes on well, a second shift will be required towards the middle or end of May, and this should not be deferred until the roots get matted, or the plant sustains any check for want of pot room. There will be no danger in giving a large shift now, but beginners will be safer to give only a moderate one, for there is some danger of erring in watering a plant, when it is surrounded by a large body of loose soil, and therefore it is better to give two moderate shifts. Attend to keeping the shoots nicely tied out, in order to admit light and air to the foliage, and to secure a compact sturdy habit of growth. During summer the plant, if in vigorous health, may be removed to a cold pit or frame, which can be kept close and moist. But the very best position for securing rapid strong growth would be a pit where a bottom-heat of 80° or 85° could be maintained, and where the plant could be kept near the glass, keeping the atmosphere rather cool, and affording it a slight shade for a few hours on the forenoons of very bright days. Here it would grow very rapidly, and a frame and a little fermenting material properly put together might be easily made to afford a gentle bottom-heat for two or three months, and would be useful for many plants besides this. Attend during the growing season to keeping the shoots nicely tied out, stopping them as may be necessary, and also to shifting as may be required. Stopping, however, should not be practised later in the season than will allow of getting the last growth well ripened before winter; and if the shoots are kept properly tied out, and the plant well managed otherwise, very little stopping will be necessary to secure compact bushy specimens. When damp cloudy weather occurs in autumn, the plant should be removed to a rather dry atmosphere, where the temperature may average about 55°, placing it near the glass, and it should be rather sparingly supplied with water for a few weeks, in order to get the wood well ripened, which will greatly conduce to a fine display of bloom. By removing the plant to a warmer situation, and giving a liberal supply of water at the root, it will soon develope its beauty, and may be placed in the conservatory while in flower. Care must be observed, however, not to place it in the way of cold draughts, and a damp stagnant atmosphere must be guarded against, as this would soon destroy the blossom, and greatly impair the beauty of the plant.

If afforded a close dry situation, the flowers will remain some two months in perfection, and will present a striking and agreeable contrast with those of most winter blooming plants. After the flowering, the plant may be cut back rather closely, and removed to a cool dry situation for a few weeks, keeping it sparingly supplied with water until it shows indications of growth; when it should be repotted, slightly reducing the old ball, and clearing away a portion of the old exhausted soil. The same treatment as recommended above may be repeated, and will produce an immense specimen in course of the second season. Cuttings selected of firm bits of the young wood, and treated in the ordinary way, will root very freely in bottom heat. But the plant will bear cutting back and disrooting to any extent; so that when once a stock is obtained, there will be little necessity for propagating it. *Alpha.*

Home Correspondence.

Coniferous Wood.—You make me out to be rather more determined a sceptic than I really am; I certainly have some doubts as to whether the Deodar will become generally valuable as a timber tree in England, but I must also disclaim wishing to make out any case against it. I wrote under the conviction that some persons who read the glowing account of its value, both as a timber and a plantation tree, might be led to act in what I should think a very hasty manner, and really plant it extensively in the place of trees of known value; for I think I remember having heard last year of something like a ton or two of seed being imported for the purpose of planting parts of the royal forests with them. If I wished to make out a case at all, it was, I think, rather my object to make out a better character for the Cedar of Lebanon, both at home and in Syria, than it generally gets. On this latter point I should be glad to know whether any of your correspondents know the character of the common soft English grown Cedar of Lebanon wood, as respects its power of resisting worms? I have several times seen it used in furniture (for insides of drawers, and such purposes); it has a good deal of scent when first cut up, but this goes off in a few years. I can only say I have never seen it worm eaten, but I do not think I have seen it when it has been much exposed to their attacks. Altogether my impression is that the Deodar will probably turn out to be a superior wood to the common Cedar, but yet not very different in character; that it will grow very rapidly, and produce wood which will be soft, pleasant to work, and with a sweet scent, but not of much strength when young; that grown on rocky ground, in a climate similar to its native climate, and to a great age, it might probably produce wood nearly equal to the finest Indian specimens. I fully concur in almost all that you say respecting the value of evidence of the quality of any tree in its native country, and the character of the climate in which it grows; still there is an infinite variety of soil, situation, and climate, by all of which the growth and quality of timber (especially I believe of the Pine tribe) is affected. Perhaps the wood of Pinus insignis may not turn out wholly worthless; a bit of English grown Weymouth Pine (P. strobus), at 11 years old would look like very poor stuff, yet I have used wood of old trees (though they do not appear to thrive well in England) nearly as good as American White Pine. I am afraid that I shall not be able to find a specimen of the wood of this or of the Hackmatack at present. It is some years since any trees of either have been cut down at Boynton (where they grow), and I am afraid all the wood has been used up. If any more should be cut down I will take care that good specimens of the wood are preserved. I have no doubt I can get a fair specimen of the other American Larch (the Red Larch), which is more plentiful there than the Hackmatack, and seems to thrive better. What you say of the extreme difference of climate between England and the Eastern parts of America is perfectly true, and it certainly is naturally to be expected that the trees from there would not thrive in England. Yet some of them do thrive, and produce valuable wood, nevertheless; for instance, some of the Hickories, and the black and white Walnut. There are some small tables at Boynton made of English grown black Walnut. The heart-wood is handsome and durable, yet different in look from American specimens of the same, which may perhaps arise from the greater age of the latter. All I wish to insist upon in the remarks I now make, or have before made, is the extreme uncertainty of the results of planting any particular tree in any particular place until it has actually been tried. I do not think that I know of a stronger instance than that I before mentioned, if I am correct in supposing that Memel timber, Petersburgh and Archangel deal, and the several widely different qualities of British grown Scotch Fir timber, are all the produce of the same kind of tree; at the same time I fully acknowledge the great value and interest of any evidence on the subject, such as specimens of the wood, and accounts of the climate and situation in which trees thrive, which are hardy and ornamental in England. And I think what you say of the Laricio will justify me in planting it more than I have done, as it certainly is a very quick growing and handsome tree. My remarks have reached a great length, but I hope that you will not think the space they occupy wholly wasted if they should help to turn the attention of any one concerned in such matters, to the intricate, but at the same time most interesting and important subject of the external causes which influence the quality of any particular kind of timber. *C. W. Strickland, Hildenley.*

Radishes.—In answer to Messrs. Rendle's inquiry, as to the species of Radish grown at Constantinople, and described as so large and so excellent in flavour, I beg to state I am unable exactly to solve his query; but I know that much finer and better Radishes are produced from French seed than from that ripened in our own country. Some Turnip-Radish seed was once given me that was brought from Amiens, which produced roots at least double the diameter of any I ever saw grown from English seed. But the Radishes grown the next year from the seed of these superior roots in no way differed from the ordinary English Turnip-Radish. It is fair to presume then, I think, that this climate is incapable of bringing the vegetable to full perfection. In these days of easy communication it would be worth the while to procure French seed. Is it not also very possible that Onion Seed ripened in Egypt or Portugal would be far superior to our own? *Sigma.* [Half the Turnip Radish and Spanish Onion seed sold in England is ripened on the Continent.]

Bees.—Your unsuccessful correspondent ("Somerset," p.134), cannot too quickly clear away the dead bees lying on the floor boards of his hive; the smell from the dead bodies of so many of the insects is very injurious to the survivors. The fine weather we have lately had, has most probably, by this time, dried the bottom of the hive, wetted when it was blown down; if, however, his hive has the means of ventilation at the top, the ventilator or other orifice had better be opened. You must also have immediate recourse to feeding, as we fear that want of food rather than damp has been the chief cause of the death of so many of your bees. Such a wretched bee-season as the last has, perhaps, never been known. *W.*

Manetti Rose Stock.—I have cultivated this stock these 10 years on a portion of my nursery ground, consisting of about 3 acres of light poor soil resting on a subsoil of gravel. The better part of it is light sandy loam; I find the Manetti to suit me much better than the Dog Rose for dwarf plants; nearly all the Hybrid Perpetuals and Bourbons take freely upon it, and make fine heads. Some specimen plants have stood seven or eight years, and are now full of health, while, if they had been worked on the Dog Rose, or upon their own roots, they would not have remained healthy above two or three years, having nothing to feed upon but light dry soil. Rose growers, who are fortunately situated on a rich soapy loam, or on a deep loam, or who possess a deep vegetable soil with a cool moist bottom, doubtless find the Dog Rose suit them best. And these are the cultivators whom I have generally heard condemn the Manetti stock. I believe, however, that in most other soils and situations the Manetti is preferable, and it will be highly prized by those who have to contend with light, dry, or poor soils, on which this stock will flourish, when the Dog Rose would scarcely live. A few Roses will not grow well upon it, such as Cloth of Gold, Solfaterre, Ophirie, &c., but as a set-off, it will be found that Robin Hood, Madame Aimée, Hypocrate, Œillet parfait, Superb Shaped, Unique, &c., grow much more robust on it than they do on the Dog Rose, and they produce finer flowers. *R. B. Bircham, Hedenham Rosery, Bungay, Suffolk.*

Khasia Orchids.—Dr. Hooker, in his travels in the Khasia mountains, mentions Eria, Cœlogyne (Wallichi, maculata, and elata), Cymbidium, Dendrobium, Sunipia, and other beautiful air plants, as growing at the top of the Kolleng rock, flowering profusely; and though freely exposed to the sun and wind, dews and frosts, rains and droughts, they were all fresh, bright green, and strong, under very different treatment from that which they are exposed to in the damp, unhealthy, steamy Orchid houses of our English gardens. Vol. ii, 294. "Vanda cœrulea grows in profusion, waving its panicles of azure flowers in the wind. As this beautiful Orchid is at present attracting great attention, from its high price, beauty, and difficulty of culture, I shall point out how totally at variance with its native habits is the

cultivation thought necessary for it in England* The dry Grassy hills which it inhabits are elevated 3000 to 4000 feet; the trees are small, gnarled, and very sparingly leafy, so that the Vanda which grows on their limbs is fully exposed to sun, rain, and wind. There is no moss or lichen on the branches with the Vanda, whose roots sprawl over the rough bark. The atmosphere is, on the whole, humid, and extremely so during the rains; but there is no damp heat or stagnation of the air, and at the flowering season the temperature ranges between 60° and 80°; there is much sunshine, and both air and bark are dry during the day; in July and August, during the rains, the temperature is a little higher than above, but in winter it falls much lower, and hoar-frost forms on the ground. Now this winter's cold, summer's heat, and autumn's drought, and above all, the constant free exposure to fresh air and the winds of heaven, are what, of all things, we avoid exposing our Orchids to in England. It is under these conditions, however, that all the finer Indian Orchideæ grow, of which we found Dendrobium Farmeri, Dalhousianum, Devonianum, &c., with Vanda cærulea; whilst the most beautiful species of Cœlogyne, Cymbidium, Bolbophyllum and Cypripedium inhabit cool climates, at elevations above 4000 feet in Khasia, and as high as 6000 to 7000 in Sikkim."—*Dodman.*

Cedar Wood of the Ancients.—In a late Number (see pp. 148-9), were two interesting articles on the Cedar of the ancients compared with the Cedar of Lebanon and the Deodar. It is most probable that the Cedar of Lebanon and of Atlas was formerly rather more than less diffused than it is at present, and therefore very improbable that it should have been unknown to the ancients, who were more familiar with its habitats than we are. No mention is made in these articles of the Juniperus drupacea, generally understood to become a tree in Syria; nor to Callitris quadrivalvis, which is certainly a tree in Barbary. Either of these may be the ancient Cedar, and the latter, which is as fragrant as the Cypress, is a very fine wood. The Oxycedrus of botanists, and its ally, or variety, macrocarpa, is sometimes a large bush, more often a small one, in the most favourable climate. The common Cypress (upright) is frequently called, in Greece and Italy, the male Cypress; the horizontal is, for distinction, called the female—a popular notion unconnected with botany. Whether Juniperus phœnicea and lycia be identical or not, that which passes for the former in southern Europe grows rapidly into an upright, straight tree, resembling the horizontal Cypress. I know three such in this country, nearly 25 years old, from seed, about 20 feet high, flowering and ripening fruit annually. *S.*

Hartley's Rough Plate Glass (see p. 165).—Mr. Rivers has no doubt forgotten the circumstance, but the rough plate glass he used in "1850," was not purchased of us, but of another London house. After our former letter, we have thought it might be as well to explain this to you, as we have also done to Mr. Rivers. *Jas. Phillips and Co., Bishopsgate Street Without.* [Mr. Rivers has requested us to correct the unintentional error complained of. He states that the glass of inferior manufacture referred to was not purchased of Messrs. Phillips.]

New Arrangement of Plants under Glass.—This being, *par excellence*, the age of cheap glass, allow me to offer a few remarks as to the desirability of a reform in our plant structures. I think it high time that our old-fashioned greenhouses, &c., with their trim stages and shelves for pots, *à la amphithéâtre*, were consigned "to the tomb of all the Capulets;" for the artificial appearance of the interior of such houses, with their rows of artistically arranged specimens, is anything but agreeable to the eye of taste, how perfect soever the occupants may be as specimens of good cultivation. Why not banish our present artificial system and approximate more to a natural style of arrangement? As a case in point, I may quote Storch's account of the winter garden at the Palace of Taurida, in St. Petersburgh:—"The walks of this garden meander amidst flowery hedges and fruit-bearing shrubs winding over little hills, producing at every step fresh occasions for surprise. The genial warmth, the fragrance and brilliant colours of the nobler plants, and the voluptuous stillness which reigns in this enchanting spot, lull the fancy into sweet romantic dreams; we imagine ourselves in the blooming groves of Italy." He describes the pillars of the roof as disguised in the form of Palm trees, also concealed flues, &c. I do not of course introduce this instance as a model; but how infinitely superior would it not be to have the beautiful plants of other climes growing naturally at their ease as they would in their native habitats, than to have them supported by the stakes and ties which at present disfigure even our finest specimens of plant cultivation. What delightful promenades would not such houses afford compared with the distorted lines of pottery ware, now misnomered collections of plants, with their every branch pegged or tied up, the very personifications of formality. I think it very probable that the time will come when we shall have geometrical flower gardens laid out under glass, filled *en masse* with the beautiful free-flowering greenhouse plants, at present seen only in pots; for we have plenty of beautiful things extremely eligible for this style of cultivation. It may, however, be urged that the transference of the geometrical garden under glass, is still but another phase of formal gardening; and, indeed, in introducing the idea of massing greenhouse plants, I certainly do not speak exclusively for the adoption of that style, but only as an original idea worthy of being carried out. Groups of some of our showy plants, well disposed, would have a very imposing appearance, on the same principle that the different kinds of forest trees are grouped by themselves in park scenery. The fountain I hold to be another essential feature in ornamental plant-houses, whatever be the form of that noble adjunct, which offers innumerable varieties for the landscape gardener to exercise his taste upon; its neighbourhood affords a very eligible site for exotic Ferns, interspersed it may be with the flowering plants which ornament the rocks of milder climes. *Gulielmus, Alderwasley.* [A pleasant dream—but a mere dream.]

* We collected seven men's loads of this superb plant for the Royal Gardens, at Kew, but owing to unavoidable accidents and difficulties, few specimens reached England alive. A gentleman who sent his gardener with us to be shown the locality, was more successful: he sent one man's load to England on commission, and though it arrived in a very poor state, it sold for 300*l.*, the individual plants fetching prices varying from 3*l.* to 10*l.* Had all arrived alive, they would have cleared 1000*l.* An active collector, with the facilities I possessed, might easily clear from 2000*l.* to 3000*l.*, in one season, by the sale of Khasia Orchids.

Management of Young Plantations.—Foresters should pay great attention to young trees for the first two or three years after they have been planted, in order to keep them clear of rough Grass, Gorse, &c.; they may even be required to go over them as often as twice a year, depending on the nature of the soil for the growth of such annoyances. When young plantations are not so attended to, the rough Grasses completely overtop the trees, decay, and fall upon them, preventing free access of air, and of course their young growths are retarded as they otherwise would not be. Every one is aware of the forester's pest—the rabbits—which if not kept down prove very destructive to young woods. Last year I had to replant the whole of a strip which had been cleared of its crop (Oak and Larch) by these vermin. It is to be regretted that they prevail to such an extent everywhere. Last harvest a farmer in this neighbourhood had his crop on one field so completely destroyed by rabbits that he "let it alone." No particular time can be specified as to when a plantation of Oak and Larch should first be thinned, that must be regulated by the soil and locality; if these be favourable the trees will progress rapidly, and if otherwise the contrary must be expected; generally, however, the first thinning is required in about nine years. Indications of the necessity of performing the operation will be apparent, owing to the trees becoming close, their branches meeting and intertwining; and then is the forester's busy and careful time. I say careful because great caution is necessary to be observed; for the trees having stood rather close for a time, any undue exposure might injure them. If the Oaks are to be kept as the permanent crop, the Larch in after years should be gradually removed, giving the former all possible freedom, both among themselves and the nurses, and regularity is a great point to be secured, both as regards the health of the trees, and in order that the wind may not be permitted to play too roughly upon them. I have seen many trees blown down from inattention to regularity. In the blue-books are to be found examples of thinning in the royal forests. In some cases that operation has been delayed for a period of 20 years, and will the public believe it in others until the trees had become nearly matured! Did the surveyors contemplate a great demand for fishing-rods and whip handles? It would certainly appear so. But what could be expected of men who had never studied their profession? For your remark is perfectly true, that "forest management is a very difficult art; it demands long experience, great acquaintance with trees and their nature, and a perfect familiarity with all that influences the rate of growth of timber." *W. B. A.*

Rhododendron anthopogon.—It may interest some of your readers to know that the plant which has borne the above name for no less than 34 years, and whose title to be considered peculiarly an Indian mountain plant has, I believe, never hitherto been challenged, proves to be the Osmothamnus fragrans, DC., of Siberia and the Altai. This, under the name of Azalea, was discovered 100 years ago, and described and figured by Gmelin, in 1769, in his "Flora Sibirica." Subsequently it has been published, also with a plate, by Pallas, as Azalea lapponica, in his "Flora Rossica," published 1784; and still more recently by Adams, in the "Transactions of St. Petersburgh Academy," as Azalea fragrans, also with a figure. The second Siberian species, O. pallidus, does not seem even a variety of the above, for the flowers change colour, from yellow in bud to pink, and are white in age. As Rhododendron anthopogon this same plant has been carefully examined and described no less than 10 times—by Don twice, by Royle (with a plate), by Loudon in his "Arboretum" (figured), by Graham ("The Edinburgh Phil. Journal"); in the "Botanical Magazine" (t. 3947), in De Candolle's "Prodromus," and twice by myself. I have dwelt at length on these facts, for the sake of the illustration it affords of the backward state of the flora of India. I need not say that I take to myself more blame than belongs to all my predecessors put together, both because I professed to have made the genus Rhododendron an especial study, and because excellent authentic specimens of Osmothamnus, from various Russian botanists, are in the Hookerian Herbarium, and are wholly undistinguishable from Himalayan ones. Had I possessed such a general acquaintance with Ericeæ as is necessary to the proper elucidation of any of its genera, this would not have happened; as it is, I was led astray by the character attributed to Osmothamnus, of a four-celled ovary, which is not constant, if indeed true, and R. anthopogon varies with 4—6 cells. I may also add that the figures of Gmelin and Pallas are not recognisable. The above is one instance out of many occurring daily to Dr. Thomson and myself, in our studies of the Indian flora, of the involved state of systematic botany, and of the necessity of taking widely different views of the number of known species of plants to what obtain in most scientific works. *J. D. Hooker.*

America as a Field for Gardeners.—Since this subject began to be agitated in your columns, I have learned that two or three young men in this neighbourhood have resolved to cross the Atlantic in the course of a few weeks. It is likely enough that some elsewhere have also determined on going to America, and the probability is, that many are halting between two opinions. I have sought information on the subject from parties in this country and others in America, as in my opinion it is a very important matter, for there are hundreds and thousands of gardeners in this country who must, in the nature of things, meet with disappointment here, have their hopes blasted, and spend their days on earth in penury and toil. The market is over-stocked. A gentleman who lately advertised for a person to manage his garden and ground, informed a correspondent of mine, that he was "for many days literally overwhelmed with applications." A friend and brother gardener of mine, holding a first-rate situation in Scotland, and much respected for his moral worth and professional attainments, informs me that most of the young gardeners who left this place for America had considerable experience—some of course better qualified than others; but the best places have not uniformly fallen into the hands of the best men, which not unfrequently happens in this country, as well as in America. In the Northern States, the average rate of wages may be about 70*l.* or 80*l.* a year, with board in some cases, in others, house, fuel, and perquisites. In the Southern States, the wages are much higher, but in summer the climate is unhealthy there. In general, however, much money has been realised by those only who have embarked in business as nurserymen, florists, or market gardeners. One man who left me in 1839 was landed at New York with only 1*s.* in his pocket; was employed there, and soon got a situation in the south, where he saved money enough to enable him to start or open a seed and general store in Charlestown. When he visited this country some five or six years ago, he told me that he could then retire from business with 700*l.* a year to live on. My friend, Mr. ——, florist, New York (one of the first who left this for America), is now carrying on a profitable trade there. His heart, however, appears to be in Scotland, for, in a letter I had very recently from him he says that he has a great desire to spend the evening of his days in this country, and that he could afford to buy a piece of ground large enough to build a house upon, make a garden, keep a cow, and have at least 150*l.* a year to live on. He mentions, however, that young people only should go to America, as those advanced in life rarely like it, while young folks are likely to become acclimatised, and, as I suppose, "yankeeised." I could make other extracts of an encouraging nature from this letter from Scotland; but I hasten to notice the cases of two of my wife's brothers, who were ploughmen or farm servants in Holderness, in Yorkshire, before they went to America. Of course they knew nothing more of gardening than other farm men, but they both got situations as gardeners on their arrival in America. John, the eldest, crossed the Atlantic 12 or 14 years ago. He kept his first situation 2 or 3 years, and then he left it for a better at Enfield, Hartford county, where he had a great number of men under him. As soon as he could count over 1000 dollars of his own, he left his situation and went to the town of Urbana, in the state of Ohio; there he commenced the nursery business, and is succeeding well. His younger brother, David, went to America in 1852, and engaged himself as a gardener to a gentleman at Urbana for 7 dollars a week; but whether he had board or not, I cannot say. Unfortunately for David his sweetheart left England the same year, and went to the state of Illinois. Well, at the termination of his twelvemonths engagement, he gave up his situation, in order to go to Illinois; but he found considerable difficulty in getting away, as his employer was most anxious for him to remain. On the 14th of last month he wrote to us from Paris, Edgar county, where he is now working on a farm. His wages are 15 dollars a month, with board and washing. "But," he adds "I think I shall not work at farming after this winter, unless it be for myself, as I can get more wages at gardening, which is much prettier work. Take one thing with another I like America much better than England, as the people here are not proud; and it is a man's principle, not his money, that makes him a gentleman." As my letter is much swelled by these extracts, I shall reserve my "comments and counsels," till another occasion. *A. Pettigrew, Woodside Gardens.*

Societies.

Horticultural, *March* 21.—Dr. Henderson in the chair. Sir J. Davis, Bart., T. F. Baily, Esq., G. E. Frere, Esq., and Dr. Madden were elected Fellows. A paper on the cultivation of Hyacinths in glasses, by the Rev. W. B. Hawkins, was read, as were also some remarks by Mr. John Edwards, on the Fluke Potato, a seedling from the Lapstone, which it was stated to excel in general good qualities; and it was also reported never to have been affected by the disease.—Mr. Gaines, of

Battersea, received a Knightian Medal for a Rhododendron, named Princess Alice, in the form of a tree some 10 feet high, profusely ornamented with fine heads of white flowers delicately suffused with pink, each floret being prettily spotted in the upper petal with minute brown dots. The same exhibitor also furnished a young plant of the tender orange-blossomed Rhododendron javanicum, for which a Certificate of Merit was awarded, and a well-flowered Azalea, "Mont Blanc." —From Messrs. Veitch came a cut specimen of Rhododendron with a compact head of white flowers richly spotted with brown. It was named R. picturatum superbum, and appeared to be a hybrid from R. maximum crossed with arboreum. — Messrs. Lee sent a boxful of beautiful Camellia blossoms, and five plants of Camellias in pots, among which the most strikingly beautiful was certainly De la Reine, a well-formed, good sized, white flower, with a tinge of creamy yellow in the centre. The most marketable plant perhaps, however, was Wilderi, which appeared to be a most profuse bloomer. A Banksian Medal was awarded.—Camellia formosa from Messrs. Chandler, stated to be a seedling from Waratah, arrived too late for competition. — Messrs. Rollisson contributed the Indian Dendrobium Farmeri, the rhubarb-scented D. macrophyllum, and another species, together with three kinds of Lycaste, a similar number of Vandas, all referable to V. suavis; two handsome forms of Cattleya Harrisoniæ, one of which passes on the continent under the name of amethystina; the charming Barkeria elegans, the column of which bears a striking resemblance to the head of some animal; a pale variety of Sobralia macrantha; the singularly formed Masdevallia Wageneriana and Philodendron Simsi—an Arum-like plant, whose beauty consists rather in the large handsome foliage and flower-spathe than in the blossoms which it conceals. A Knightian Medal was awarded. — From C. B. Warner, Esq., came a handsome, high-coloured, slender-growing Dendrobium very nearly related to nobile, for which a Certificate of Merit was awarded. — Messrs. Henderson furnished Acacia celastrifolia, in the shape of a little tree covered with blossoms; Eriostemon scabrum, nicely grown and flowered; the charming pink Boronia triphylla, a basketful of pretty little flowering plants of the hardy Sikkim Rhododendron ciliatum, the brilliant orange-scarlet Æschynanthus speciosus, and one or two other plants. A Knightian Medal was awarded.—From Mr. Brown, gr. to F. Parnell, Esq., came three pots of Keens' Seedling Strawberry, and also a dish of the same variety. A Certificate of Merit was awarded for those in pots. — Much better coloured Keens' Seedling Strawberries not in pots were exhibited by Mr. Higgs, gr. to Mrs. Barchard, for which a Certificate was awarded.—Of foreign Salad Vegetables, Mr. Lewis Solomon, of Covent Garden, sent a beautiful contribution, consisting of excellent Lettuces, Endive, Turnip Radishes, Blanched Chicory or Barbe de Capucin of the French, Tarragon, and Chervil. A Banksian Medal was awarded.—Among miscellaneous subjects of exhibition was a block of Larch from the Right. Hon. T. F. Kennedy's estate, near Maybole, in Scotland. It was a section of a tree about 2 feet in diameter, and was produced to show how different from American Larch or Hackmatack British-grown wood of this kind is. A piece of American Larch was placed beside it, for the purpose of comparison. Specimens of the timber of our two English kinds of Oak (Quercus pedunculata and Q. sessiliflora) and of Spanish Chestnut, were furnished by the Vice-Secretary, in order to exhibit the difference that exists between the woods of the pedunculate and sessile-flowered kinds and Chestnut, for which the timber of the last-named Oak, when found in old buildings, has always been mistaken. It was, however, proved by bits of wood from Westminster Abbey that the timber in the roof of that building is not Chestnut, as is still by many believed, but sessile-flowered Oak, which, although softer, more pliable, and easily worked, was stated to be in some respects quite equal to the common pedunculate kind.—From the Garden of the Society came Deutzia gracilis, the double-flowered white Prunus sinensis, a very ornamental shrub, requiring about the same treatment as the Deutzia; Dielytra spectabilis, and other plants, together with the following salad vegetables, which were good for the present season, viz.:—Laitue Romaine verte Maraîchere, and Laitue Chou de Naples, the former a green Cos, the latter a Cabbage Lettuce, both from cold frames, which were covered on several nights with frigi domo; Scarole à fleur blanche, Oseille de Belleville, French Sorrel, and Broad-leaved Sorrel, Curled Chervil, Normandy Cress, and the two kinds of Lamb Lettuce, or Corn Salad, called by the French Mâche d'Italie, and Mâche ronde. Concerning the Lettuces, it should be stated that they had been watered occasionally with manure water.

Royal Institution, *March* 17. — Dr. Stephen H. Ward delivered a lecture on this occasion, on "Wardian Cases," of which the following is an abridged report. Dr. Ward began by explaining the circumstances which had led his father to adopt air-tight cases for the accommodation of his London window plants. He had placed a chrysalis in a bottle, with a little damp earth, in order to watch its progress towards transformation into a moth; a Fern and a Grass began to vegetate, and, to his surprise, continued to show a healthy appearance, the former on its more perfect development proving one of his favourites, which he had often failed in rearing under ordinary circumstances. On investigating and questioning himself on these appearances, the answers readily presented themselves, inasmuch as all the requirements of nature were contained within the bottle—air, light, and moisture. Many persons had fallen into the error that Ward's cases were, or ought to be, hermetically sealed; on the contrary, a change of air is frequently necessary; this will imperceptibly occur in the closest made cases, or they would inevitably burst. The trough to contain the earth may be made of any materials—earthenware or wood pitched inside; but the best are zinc. Of all, by far the best were stated to be bell-glasses, which are also admirably adapted for cut flowers, which are long preserved in them, as in the case of a Camellia, which, on one occasion, had retained its beauty for nearly a month. To size there are no limits—from an ounce phial even to the Crystal Palace itself. The decay of a healthy plant on transmission to a room in town is effected by the variety of noxious gases, evaporation from dryness of air, frequent and sudden alteration of current and temperature, deposition of dust, soot, &c., the latter especially inimical; all these were provided against by the glass case, while the moisture which was raised became condensed on the sides of the glass on occasions of change in the external temperature, accumulating and descending to the earth, at the bottom becoming more perfectly aërated, and in a state better adapted for stimulating and nourishing the plant. So complete is the *routine* in such a little world, in itself independent of external circumstances, that the old bottle sealed up 19 years since is green with vegetation, though the deposits of Confervæ on the inner surface materially disfigure its appearance. This bottle has had no fresh moisture since first closed. The advantages, besides those of mere ornament, were stated to be great—to the poor man in hospitals, treatment of the insane, transportations of plants from one country to another, duration of flowering, to all ranks confined in cities and sick rooms, they were stated to be a blessing. At St. Thomas's Hospital a subscription has been set on foot to provide cases, one of which was exhibited, most elegant in form, and in these the patients found a fruitful source of gratification. One of the advantages belonging to cases of this kind was the facility of transmitting plants from one country to another. Mr. Fortune has sent to this country 250 specimens, out of which 215 have arrived in health. Mr. Ward successfully forwarded to Sydney a variety of English plants in a case that was five months on the passage; on its arrival there the Primrose was just blossoming; and this case subsequently returned to England with a collection of Australian plants. The carbonisation of the atmosphere by animal respiration, and the restoration of oxygen by vegetation, is a well known fact, and upon this Mr. Ward claims the merit of suggestions as to sanitary buildings in which vegetation would form a conspicuous feature. In connexion with the restorative nature of the process of vegetation, a taper was put under a bell-glass containing a Rose and other flowers, and was extinguished in 10 minutes. But after exposing the glass to the sun for about three hours, the taper could be again kept alight for the same period as before. In the same manner vegetation in water would be found to restore the oxygen, and in consequence it was possible to keep fish in air-tight cases, when vegetation was allowed to accompany them. To Mr. Ward was due the credit of having first introduced a vivarium into a closely glazed case in 1841, and for having depended for the renovation of the air necessary for the gold and silver fish contained therein upon the purifying action of associated plants, such as Pontederia crassipes, Pistia stratiotes, Valisneria spiralis. Mr. Bowerbank took the hint from Mr. Ward, and established a little vivarium in a large glass jar—stickle-backs, minnows, and fresh water snails, and with plants of Valisneria, and covered the mouth of the jar with glass, so as to make it a closed case. Snails for the purpose of removing the Confervæ that cover the leaves of Valisneria and other aquatics were first recommended in a note in the number of the "Microscopical Journal," for September, 1841. It was, however, stated that so long ago as 1763, Ledermüller had published, in his "Microscopical Recreations," a figure of an open-mouthed bottle containing fresh-water zoophytes, associated with Duckweed, Chara, and other plants. Mrs. Thynne first introduced marine vivaria into London; having brought some living Madrepores up to town in 1846, from Torquay, she placed them in two glass tanks, and at first effected aëration of the water by having it daily taken out and poured in gradually from a height, occasionally sending for fresh sea-water and thoroughly renewing it; after a year or two her Madrepores seemed to flag, and then she procured some pieces of rock and shell with living seaweeds attached, and subsequently depended upon the counterbalancing action of these. Dr. Ward decidedly entertains sanguine hopes that success will ultimately attend the adaptation of the principles in extension to the maintenance or restoration of health to the human frame, although he admits that difficulties would present themselves in the attempt to realise such adaptation.

Reviews.

Histoire Naturelle des Végétaux Parasites qui croissant sur l'Homme et sur les Animaux vivants. Par C. Robin, D.M. 8vo. pp. xvi. and 702. Avec un Atlas de 15 planches gravées, en partie coloriées. Paris, 1853.

We noticed a few years ago the academical thesis on this subject, which was maintained by the author when a candidate for his doctor's degree, and which was a highly creditable production, giving good promise of future success in a line of study in which there are few special labourers, though there are multitudes of scattered treatises on individual cases, unhappily too often proceeding from the pens of persons who are by no means proficients in that branch of botany, without a competent knowledge of which it is almost impossible to avoid making blunders. There was evidence in the treatise just mentioned, that the subject had not been taken up merely for the passing occasion, as it was written with a tone of interest which could hardly prove deceptive, and we have now before us in the present delightful volume full proof of a continued and increasing interest, insomuch that it would be difficult to point out what sources of information have not been investigated, or what particular branch of the subject has been neglected. The vegetables which find a fitting matrix and finally induce disease in living animals are far more numerous and various than would at first be supposed, and it is now incontestible that no man can pretend to an accurate knowledge of disease without making himself acquainted with the facts here reported. No less than 87 species are enumerated as properly growing on animals, the greater part of which, if not all, commence their growth while the animals are yet alive, producing as their consequence either death or serious disease. In every case where the author has been able to investigate the matter for himself, science has derived benefit from his observations, and in other cases he is not answerable for error or imperfect description. The least happy part perhaps of the volume is the appendix on the bodies found in the dejections of patients suffering under cholera in 1848; but this is exactly one of the cases in which he has been obliged to depend on others, without any opportunity of examining the bodies in question himself. There is no doubt that the larger bodies were of a vegetable nature, and Mr. Henfrey's notion that they were pollen grains of some Thistle or allied vegetable is possibly very near the truth—certainly much nearer than that which was once asserted, that they were spores of bunt which had entered into the composition of the bread devoured by the patients.

We have already had occasion to speak of the more interesting matters contained in the volume, and shall not enter further into it at present. It has already commanded a considerable sale in this country, and we doubt not that there will be an increasing demand for it, which we trust may prove a fresh incentive to exertion on the part of the excellent author.

New Plants.

51. Alloplectus Schlimii. *Planchon and Linden.*

A stove soft-wooded plant from New Grenada, where it was found by Schlim in the deep damp ravines of Sinto, near Bucaramanga, at an elevation of 4—5000 feet. It has been introduced by Mr. Linden, who has it for sale. It is similar in habit to other species of the genus, being more remarkable for the rich colours of the foliage and calyx than for that of the corolla; the first is deep rose colour underneath, the second scarlet, the third dull deep violet. It requires the same treatment as a Gloxinia. There is a good figure in a late number of the *Flore des Serres* of Mr. Van Houtte.

52. Cercis Japonica. *Siebold.*

Judging from a figure of this in the "Flore des Serres," it is very like *C. Siliquastrum*, from which Mr. Van Houtte states that it is distinguished by its leathery leaves. We have not seen a specimen, but it appears to be fully as handsome as the common Judas tree, and as hardy.

53. Clematis patens, *Decaisne*; var. *Sophia.* Van Houtte.

This is a very large-flowered variety of what is called in England *C. cærulea*, but which appears to have been first named *C. patens* in the Proceedings of the Brussels Academy. Its peculiarity consists in the presence of a broad green band down the middle of each sepal. *Flore des Serres, t.* 852.

FLORICULTURE.

Cultivation of the Pansy from Seed.—The seeds may be collected all through the summer months, but they should be saved only from the very best flowers, leaving but one or two pods to ripen on each stem. They should be sown from the middle of next month to the middle of June, but not later, because it is desirable that the plants should flower the same summer. They are best sown in the open border, in a shady situation, where the soil retains its moisture, which is of much importance to the young plants. Sow the seeds in a light rich soil. Make the latter level on the surface with the back of a spade, and cover the seeds about the eighth of an inch deep, again lightly pressing the surface of the bed with the spade. When the plants shall have grown to the height of an inch, they should be pricked out in a bed at from 4 to 6 inches apart, in a part of the garden which is rather shady; let them be well watered with a can having a rose with very fine holes in it, and they must be shaded for a few days, until they have become established. They must be kept quite free from weeds, both whilst in the seedling bed and after transplanting. It is not advisable to remove the young plants during the months of July or August, the weather generally being too hot and dry. As they bloom, throw away all that have not some strong recommendation; looking more to form than to colour, this being the first requisite in a good Pansy. Discard all that have flimsy petals, or notched and rough edges. Such as are good cut back early, that they may throw out side shoots more abundantly, and increase by cuttings as fast as possible. The first object to be desired in a Pansy is, as I have just stated, symmetry of the flower. The petals should be large, thick, broad, and flat, lying upon each other so as to form a circle; the colour should not be cloudy, but clear and distinct. Worms, snails, and slugs commit great depredations on seedling Pansies, if care be not taken to prevent them. *S.*

National Floricultural Society, *March* 23.—Mr. Beck in the chair. Messrs. Henderson contributed a very handsome Camellia on this occasion, named Marguerite Gobillon. In colour it is pale blush, mottled and striped with pink. It is a good-sized well-formed flower, which cannot possibly fail to be a favourite. Of seedling Cinerarias Mr. Bousie, of Stoke Park, sent Rose of England, a fine white ground sort, with a medium margin of rosy purple, petal broad, and form and disk good. Label of commendation awarded. Cineraria Delicata, from the same grower, could scarcely be called a first-class flower—it is pure white, narrowly margined with rosy purple. A very good seedling Pansy, named Mr. Thompson, came from Mr. Bragg, of Slough. It is a yellow ground kind, with broad margin of deep maroon; eye bold, with a regular lacing of yellow on the lower petals. First-class certificate awarded. Mr. Ayres sent cut flowers of six varieties of very pretty Tropæolums. Mr. Rosher, St. John's Wood, contributed a seedling Cineraria called Pet, a clear white sort, with a rather broad margin of rosy carmine, petal and disk good. From Mr. Ruffett, Brocket Hall, came a seedling Cineraria named Rosea alba, also a good white, rather broadly margined with rosy pink; disk, however, rather coarse; Lady Palmerston, from the same grower, a white with medium margin of rosy purple, promises to be a useful variety. From Mr. Kendall, of Stoke Newington, came, amongst other Seedlings, Cineraria Paphian Queen, bright carmine, not a first-rate flower, but desirable on account of its colour. Mr. Turner contributed a box of Pansies, amongst which were good blooms of Emperor (Hale's), Ophir (Widnall's), Memnon (Turner's), a very dark rich flower; Pandora (Hunt's), Flower of the Day (Downie and Laird), a rich dark kind; Lord John Russell (Turner's), a good yellow ground; Satisfaction (Turner's), yellow ground and well formed; Marchioness of Bath (Wheeler's), one of the best white grounds; Charles Turner (Hale's), Admiral

Dundas (Turner's), yellow ground, and Miss Stewart (Hale's), white ground. The same exhibitor also furnished a collection of Cinerarias, all very dwarf compact plants. Of seedlings, among them the most remarkable was Lady Mary Labouchere, a variety possessing first-rate properties: in colour it is clear white, narrowly margined with deep porcelain blue; first-class certificate awarded. To Mrs. Foster a certificate of merit was awarded: it is a white sort, broadly margined with rosy lilac. Mr. Turner also sent a seedling Cineraria named Sir C. Napier, a dark blue kind with broad petal and good form, likewise specimens of Polyanthus George the Fourth and Admirable, two pleasing kinds.

Miscellaneous.

Presentation to Mr. Brown, of Arniston.—Mr. James Brown, who for many years discharged the duties of forester to Robert Dundas, Esq., of Arniston, was entertained to dinner, on Friday, 16th ult., on the occasion of his leaving Scotland to enter on the surveyorship of the Dean Forest, to which he has been appointed. Mr. M'Corquodale, forester, Scone Palace, occupied the chair; and Mr. Thomson, deputy-surveyor of Chopwell Wood, acted as croupier. The chairman, in a short and appropriate speech, endeavoured to express the feelings of respect and esteem which not only himself but every one present entertained towards Mr. Brown, whose well-known public character was only excelled by his worth as a private friend. As a token of their regard, he presented to Mr. Brown a handsome gold watch and chain, accompanied by an elegant gold brooch for Mrs. Brown. The conversation of the evening chiefly related to foresting affairs, in which many of the party were professionally interested, and the meeting did not separate before originating a movement likely to do good service in placing forestry in a better position than it has hitherto occupied in Britain. On the suggestion of Mr. Thomson, it was agreed that as agriculture and horticulture had much improved by Associations for holding discussions on their respective branches, it was desirable that something of a similar kind should be done for forestry; and accordingly an association was formed with this view, and a committee was appointed for the purpose of drawing up rules for the conduct of the same:—President: Mr. Brown, Dean Forest. Vice-President: Mr. M'Corquodale, Scone. Secretary: Mr. J. Alexander, Nursery and Seedsman, Edinburgh. Treasurer: Mr. Anderson, Nursery and Seedsman, Perth. Committee: Mr. Taylor, Camperdown; Mr. Balden, Lennoxlove; Mr. Cowan, Arniston; Mr. M'Laren, Hopetoun House; Mr. Forbes, Whittingham; Mr. M'Donald, Bargany; Mr. Thomson, Chopwell Wood; Mr. M'Laren, Shaw Park; Mr. Gardiner, Eglinton Castle; Mr. Rutherford, Buckden; Mr. Balden, Bywell Castle; Mr. Campbell, Alloa House; Mr. Thomson, Culhorn; Mr. M'Cleish, Alnwick Castle; Mr. Dickson, Charleton. It was agreed that the object for which the association has been established should be made known in the horticultural periodicals, and that the co-operation of those interested in the scheme should be solicited. The meeting adjourned till an early day in May. *Scotch Newspaper.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

CONSERVATORY.—During the continuance of cold, easterly winds, which we are now experiencing, air must be admitted with caution, opening the ventilators on the sheltered side of the house, and avoiding as much as possible the passage of cold, drying currents over either plants in bloom or those commencing growth, for in either case they would be highly injurious. See that twiners which are starting into growth are kept free from insects, as these, if allowed to gain a footing upon the young tender shoots, will soon do a vast amount of mischief. Mandevilla suaveolens is one of the most beautiful and useful of twiners, but it is subject to the attacks of green-fly and thrips when commencing its growth in a cool house, and unless these are eradicated, they will greatly retard its growth, and prevent its blooming early; and it is well worth any attention or care it may require, for it almost rivals the lovely Stephanotis itself in beauty, and is not much inferior to it in fragrance, and it grows and blooms as freely in the conservatory as the Stephanotis does in the stove. It requires, however, to be kept dry at the root during winter, and should not be encouraged to start into growth early in spring. In a close-roofed conservatory, such as was recommended some years ago, it has been one mass of bloom from the middle of July till November.

FORCING DEPARTMENT.

PINERY.—Where Pines are grown in pots, it is no bad practice to re-arrange the fruiting pit about this time, placing those showing fruit by themselves, so as to be able to afford them a rather dry atmosphere while in bloom, while those following to keep up the succession can also be placed in a warm part of the pit. Indeed, where a continuous succession of ripe fruit must be secured from a moderate quantity of plants, frequent re-arrangements will be found necessary, placing the most promising plants in the warmest part of the pit, or in case of too many showing at one time, removing a portion of them to the coolest part, to retard them slightly. This, however, is a matter which will be more effectually learnt by careful observation, and a season's practice, than by any other means. Give plants swelling their fruit plenty of manure-water, and afford them a moist humid atmosphere. VINERIES.—Where fermenting materials are employed for warming the borders, the heat must not be allowed to decline at present, and without prompt attention it will be very apt to do so under the influence of the "March winds" now prevailing. Ventilate cautiously, using the ventilators on the sheltered side of the house only on cold windy bright days. During weather such as we are now experiencing it requires no small amount of time and attention to give sufficient air at all times without admitting cold drying currents; but this must be carefully attended to at any expense of time or attention. Attend to last week's directions as to disbudding, tying, &c., and proceed with thinning the fruit, &c., in the succession house as soon as ever the berries are fairly set. Maintain a moist humid atmosphere, and keep a sharp look out for red spider. Give French Beans in a bearing state a liberal supply of manure-water, and see to keeping up a succession of them. MELONS.—Encourage those newly planted out with a close moist heat, so as to get them into free growth as quickly as possible; but plants that are fairly established should be kept cooler, admitting air on every favourable opportunity, in order to secure short-jointed fruitful wood. Keep the shoots thin and regular, pinching out any not wanted, but avoid stopping the main shoot until they reach the sides of the pit, when by pinching out the point the laterals will start into growth and show fruit abundantly. Do not let the night temperature exceed 65°, and air should be admitted as soon as the glass rises to 75°; but be very careful of cold winds. See to providing plenty of young plants for succession crops, and endeavour to get these strong and vigorous by keeping them near the glass, and not allowing them to suffer for want of pot-room.

FLOWER GARDEN AND SHRUBBERIES.

Nothing is so injurious to recently transplanted shrubs, especially large sized evergreens, as cold drying winds; and where the soil is of a sound dry nature, watering must be resorted to at once, giving a liberal application, without loss of time, to such plants as may appear to require it. It is of the utmost importance to well care for things after transplanting until they can form fresh roots, but this is often neglected at the present season until the plants get greatly injured, and when this is the case it requires ceaseless attention to carry them over the summer, besides the loss of a season's growth. Such things should have every necessary attention until they get established, for without this it is folly to expect them to succeed.

KITCHEN GARDEN AND HARDY FRUIT DEPARTMENT.

After the long-continued favourable weather for outdoor operations which we have experienced, all kinds of work here should be in a forward state. Take advantage of the dry firm state of the ground to get manure wheeled upon quarters where it is wanted, and to push forward any jobs which may involve wheeling. If any nailing remains to be done, get this finished as quickly as possible, and do not neglect to protect the blossoms of Peach and Apricot trees, so as to secure a crop if possible. Whatever kind of covering is used, it should be so arranged as to be easily removed on fine days, and let down again at night, for the thinnest covering is injurious to the trees in sheltering insects, and obstructing the light, &c., when allowed to remain all the time the trees are in blossom. See that ground is in readiness for Asparagus, Seakale, and Rhubarb, which should be planted soon. These require a deep rich soil, which should be trenched 2 feet deep, with plenty of rotten manure well incorporated with the bottom spit; indeed the ground can hardly be made too rich, particularly for Asparagus. This, when planted in well-prepared soil, is very productive, yielding a vast quantity of fine strong shoots every season; whereas if planted on poor shallow soils, no after attention in the way of surface-manuring, or watering with manure-water, will serve to secure first-rate heads; and it is so much esteemed in most families, that the trouble or expense necessary to properly prepare the ground should not be complained of, particularly as beds rightly made last for many years.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending March 23, 1854, as observed at the Horticultural Gardens.

March.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind.	Rain.
Friday 17	18	30.529	30.396	53	23	38.0	44	46	N.	.00
Satur. 18	19	30.212	29.957	53	35	44.0	43	46	S.W.	.19
Sunday 19	20	30.141	29.907	45	31	38.0	43	45½	E.	.15
Mon. 20	21	30.358	30.278	45	31	38.0	42	44	N.E.	.01
Tues. 21	22	30.404	30.321	49	27	38.0	41	45	N.E.	.00
Wed. 22	23	30.498	30.419	49	42	45.5	40	44	N.E.	.00
Thurs. 23	24	30.399	30.349	52	23	37.5	42	44	N.W.	.00
Average		30.363	30.232	49.4	30.3	39.8	42.1	41.9		3.5

March 17—Clear throughout; frosty at night.
— 18—Slight haze; rain; partially overcast.
— 19—Rain; overcast throughout.
— 20—Clear and cold; cloudy; slight showers occasionally; overcast.
— 21—Fine throughout; frosty at night.
— 22—Hoar frost; clear and fine; uniformly overcast at night.
— 23—Cloudy and cold; clear at night; sharp frost.
Mean temperature of the week, 2½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending April 1, 1854.

March and April.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 26	51.7	32.5	42.1	11	0.17 in.	—	5	4	3	4	4	3	5
Mon. 27	53.6	34.4	44.0	10	0.27	1	6	4	3	1	5	9	0
Tues. 28	53.1	33.7	43.4	10	0.68	2	6	5	2	3	3	6	1
Wed. 29	53.7	33.8	43.7	7	0.33	1	3	7	3	1	5	4	4
Thurs. 30	53.8	35.0	44.4	11	0.50	3	4	3	1	4	3	4	6
Friday 31	55.0	36.0	45.5	12	0.30	2	7	2	3	5	2	4	3
Satur. 1	54.5	35.2	44.8	15	0.76	3	6	3	3	3	6	1	4

The highest temperature during the above period occurred on the 27th, 1830—therm. 75 deg.; and the lowest on the 27th and 28th, 1850, and the 1st, 1838—therm. 16 deg.

Notices to Correspondents.

ACACIAS: *J H B.* Much obliged. We will keep the papers, but just now we are overwhelmed with matter, and cannot possibly find room for the article.

ANTS: *A George.* It is a correspondent, not we, who states that gas water will destroy ants in Grass. We should not choose to apply it to the roots of Peach or Nectarine trees.

CONIFERS: *J T.* Chundrow or Kundrow is understood to Abies Smithiana, the Himalayan Spruce. Raise the seed in a pan of loam in a cool frame; and when the plants have made their second leaves, transfer them to separate pots.

CRYPTOMERIA: *H M.* What you mention is nothing new. This plant has been flowering near London for several years past.

EALING PARK. We are requested to contradict, on the authority of Mrs. Lawrence's own gardeners, a report that it is the intention of that lady to entirely give up plant growing. "On the contrary, she intends still to grow a small but extremely choice collection of Orchids, stove, greenhouse, variegated plants, &c. And the flower-garden and pleasure-grounds, &c., at Ealing Park, have been all the winter undergoing improvements, for which purpose more than 20 men have been constantly employed. Mrs. Lawrence's present collection of plants occupies the enormous number of 23 glass houses, most of them of large size, these are to be reduced to 13 (a large number still for a private grower); and when it is known that this lady is also an amateur in farming, poultry, &c., it is not surprising that a delicate state of health should induce her to give up the large collections of Orchids, stove, and greenhouse plants, which we believe will shortly be to be disposed of; indeed, we understand more than one party is already in negotiation for the Orchids *en masse*."

FLUES: *W.* We do not see why your flue should not draw under the circumstances you describe. It will only be necessary to take care that the fuel is not thrown in too far; should this happen, it will collect at the elbow and produce explosion. If you employ hot water, use 3-inch pipes and the smallest boiler you can get.

FRUITS: *A H.* The Prune de Montfort is described as being large, oval, violet, tolerably juicy, and rich. The Cerise Belle Magnifique, Belle de Sceaux, or Belle de Chatenay, is said to be very large, red, and juicy. It is not classed among the Bigarreau, or firm-fleshed Cherries. The tree is vigorous and productive, suitable for the open ground, or a wall with an east aspect.‖

FUNGI: *C F.* It is common mouldiness acting upon dead sticks in a damp, ill-ventilated place.

GRAPES: *M.* As you wish to have Black Grapes for a span-roofed greenhouse, well exposed to the morning, midday, and afternoon sun, but without fire heat, you cannot do better than plant the Black Hamburgh and Black Prince, but most of the former.‖

LIMES: *J C L.* The plant is doubtless true. If a seedling, as we understand, then it is probably not old enough to bear fruit though it flowers. Age will cure that evil. But try the effect of putting the pots in gentle bottom-heat as soon as the flowers are half-grown, and keeping them there till the fruit sets.

LUCUMA DELICIOSA: *M G.* We are not aware whether this is in England. It is a kind of Sapotilla Plum, all the forms of which are spoken well of by weary travellers. It will require a Banana house.

NAMES OF PLANTS. We have been so often obliged reluctantly to decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*May.* Erica carnea.—*A H.* Anemone palmata.* We have at last discovered that the Aquilegia californica is so called in some gardens, but without authority. It is a handsome form of A. canadensis, as we before suggested.

PERFUMES: *Wallflower.* A series of articles on the perfumes of plants, and the different modes of obtaining them, appeared in our volume for 1849, where you will find all the information you seek for on the subject.‡

POISONED PLANTS: *W C.* You should not have put your plants into your house till the smell of paint was gone. Bad smells, that is to say, smells which disagree with plants, are as injurious to them as to animals. There is no remedy. When the smell is quite gone your plants will perhaps push again.

SEEDS: *W R.* Sow them now in *loam* in pans, placed in a cool frame. The seeds should be just buried. As soon as the young plants have formed their second leaves, transfer them singly into separate pots—still keeping them in loam. You *may* succeed without a frame, by treating the Coniferous seeds like Larch; but in that case you had better defer the sowing till the ground becomes warmer, and let them remain in their seed-bed till next spring.

SPRING PROTECTION FOR WALL TREES: *A W.* We are unacquainted with tanned cotton net; but if it keeps off cold, and admits air and insects freely, it will doubtless answer the purpose. The inverted shoots of Spruce Firs tied to the branches, straw-bands, canvas blinds, Birch twigs interwoven among the branches, are the materials most commonly in use.‡

SWERTIA: *M A.* None are in the trade. You must endeavour to procure them from the place where you saw them. Your Chicory is unskilfully managed; probably kept too cold. It ought to be sweet. Have you not been blanching Dandelions?

TANKS: *R W.* Lead is so apt to be dissolved by water that we cannot recommend it as a lining of a cistern, if the water is to be drank or used in gardening. The purer the water the greater the chance of poisoning. You had better use iron—or what is far better—slate.

WOODS AND FORESTS: *Σοφ.* We have most carefully confined ourselves to the official evidence in the Parliamentary papers; not choosing, in so important a matter, to trust to other sources of information. We have read these papers carefully, and upon them our opinion is formed. If the evidence they contain is not trustworthy, why do not the parties concerned disprove it? With regard to the Forest of Dean, we have now seen Mr. Machen's circular, which, although written in a good spirit, does not, in our judgment, meet the case, except in some particulars. This will probably form part of the documents on which we suppose Mr. Drummond's motion is to be founded, which we shall not attempt to anticipate. We are perfectly aware of the state of the Forest of Dean in former days: we know that Mr. Machen has done good service as a magistrate in reducing a set of lawless desperadoes to order and obedience; but we have never entered upon that subject, with which in fact we have nothing to do. The question before us is strictly this; has the management of the timber and plantations been such as to render them as profitable as they should have been, or has it not? After reading all the published evidence, from the appointment of Lord Duncan's committee to the present session, we are bound to answer in the negative. As to misdemeanours and their consequences, and mineral management, we are not called upon to discuss these subjects, nor is it our intention to do so. Permit us to advise you, before you form your own opinion, to peruse the evidence collected by Lord Duncan's committee. Perhaps you do not know that this forest cost, between 1808 and 1848, above 400,000*l.*, exclusive of an outlay of 154,000*l.* in 1817; and that its average net return had not, up to 1848, been quite 4000*l.* a year, including all mineral profits. The place has not, in fact, yielded altogether ordinary interest upon even the 154,000*l.*

MISC.: *Q Q.* No doubt the tree described in "Revelations of Siberia," as a Cedar bearing eatable nuts in such abundance that oil is expressed from them, is Pinus Cembra, a very hardy coniferous plant. The so-called yellow flowering Acacia, said to be the only tree hardy enough to make hedges of near St. Petersburgh, is probably some species of Caragana, perhaps spinosa.

NOTICE.

THE SEWAGE MANURE COMPANY beg to state that the higher price of PEAT CHARCOAL, and the increased expense of making the Manure in its present improved state, have compelled them to advance the price of the Manure to 4*l.* per ton; but at this price it still is the cheapest, and one of the best Manures that can be used, yielding a greater return for the outlay than Guano or any other Manure.

N.B.—No charge will be made for sacks; and in quantities of a ton, or upwards, it will be delivered at the Railway Stations in London free of charge for cartage.—March 18.

SEWAGE CHARCOAL MANURE.—This highly fertilising Manure, which is Peat Charcoal completely saturated with London Sewage, will be found most efficient for every species of crop; more especially for Peas, Beans, Turnips, Mangold Wurzel, and other root crops. It will produce a greater return for the outlay than Guano or any other Manure at an equivalent value; it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained at the SEWAGE MANURE WORKS, Stanley Bridge, Fulham, at 4*l.* per ton, and in quantities less than half a ton at 5*s.* per cwt., for ready money only; and in quantities not less than a ton, will be delivered at the London Termini of the Railroads free of charge for cartage. No charge for sacks.

It may also be had from Messrs. G. GIBBS & Co., 26, Down Street, Piccadilly, Agricultural Seedsmen, Agents for London: and from all the other Agents of the Company.

THE LONDON MANURE COMPANY'S WHEAT MANURE, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. EDWARD PURSER, Sec.
Bridge Street, Blackfriars.

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures.
WM. INGLIS CARNE, 10, Mark Lane, London.

PEAT MOSS CHARCOAL, AND OTHER MANURES.—The Undersigned are appointed sole Agents by the Peat Moss Charcoal Company, for the sale of this valuable fixer and distributor of ammoniacal matter.

Also on Sale, Peruvian Guano, Superphosphate of Lime, Gypsum, Nitrate of Soda, Bone-Dust, Sulphuric Acid, and all other Manures of known value.—Apply to MARK FOTHERGILL & Co., 204A, Upper Thames Street, London.

THE FOLLOWING MANURES are manufactured at MR. LAWES' Factory, Deptford Creek:—Turnip Manure, 7*l.* per ton; Superphosphate of Lime, 7*l.*; Sulphuric Acid and Coprolites, 6*l.*

Office, 69, King William Street, City, London.

N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

SUPERPHOSPHATE OF LIME MANUFACTURED BY MR. J. C. NESBIT'S IMPROVED STEAM MACHINE. The following is the analysis of an average sample.

"College of Chemistry, Agriculture, and General Science, 38 & 39, Lower Kennington Lane, London.

Analysis of Sample of Superphosphate of Lime from Mr. Jolliffe:

Moisture ...		13.97
Organic Matter, &c.		21.98
Silica		6.05
Phosphate of Lime		35.27
SOLUBLE	16.10	
INSOLUBLE	19.17	
Sulphate of Lime, &c....		22.73
		100.00
Nitrogen (equal to)		1.16
Ammonia		1.41

(Signed) J. C. NESBIT."

Delivered free at a Wharf or Railway Station in London at 6*l.* per ton.—Apply to E. Y. JOLLIFFE, 70, Mark Lane, or the Works, Lavender Dock Wharf, Rotherhithe.

Agents wanted in all the principal towns.

SEWAGE GUANO, 5*l.* 5*s.* per ton (bags included). Circulars and Testimonials forwarded on application.

DEODORIZING CHARCOAL, 1*l.* 10*s.* per ton (bags to be returned). Terms: Cash on delivery.
The Manchester Sewage Guano Company, 3, Watling Street, Shudehill, Manchester. E. RANSBOTTOM, Agent.
JOHN THOMPSON, Secretary.

PURVEYORS OF LIVE BIRDS

BY SPECIAL APPOINTMENT TO HER MAJESTY AND H.R.H. PRINCE ALBERT.

BAKER'S POULTRY RESTORATIVE.—Ten years' experience of its success, in all Diseases of Poultry, justifies them in recommending it with the greatest confidence; one among its many advantages being the facility with which (in its liquid form) it is administered, obviating the troublesome necessity of handling the birds, and speedily imparting such vigour and high condition that can be acquired by no other means. Price 2*s.* 6*d.*, either in Liquid or in Pills, with directions for Roup, &c. By all Chemists.

BAKER'S REGISTERED FOUNTAINS, for Poultry, Pheasants, and Pigeons, supplant all others. Four quarts, 6*s.* 6*d.*; nine quarts, 8*s.* 6*d.*—Messrs. BAKER, City; and the Pheasantry, Beaufort Street, Chelsea.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

BAILY'S ROUP AND CONDITION PILLS FOR POULTRY.—This remedy has been extensively tried with uniform success, and is offered to amateurs and the public with the greatest confidence. It will effectually overcome that disease which has hitherto been the bane of the poultry-yard, and destroy that apprehension known to all poultry keepers, when a favourite and valuable fowl is seen to droop. It is inestimable for poultry returning from exhibitions, and greatly facilitates moulting.—Sold, with full instructions for use, in boxes containing 50 pills, by JOHN BAILY, 113, Mount Street, Grosvenor Square, price 3*s.* per box, or by post 3*s.* 4*d.* "Fowls, by Baily," the most useful and plainest treatise of the day; price 2*s.*, by post 2*s.* 6*d.*

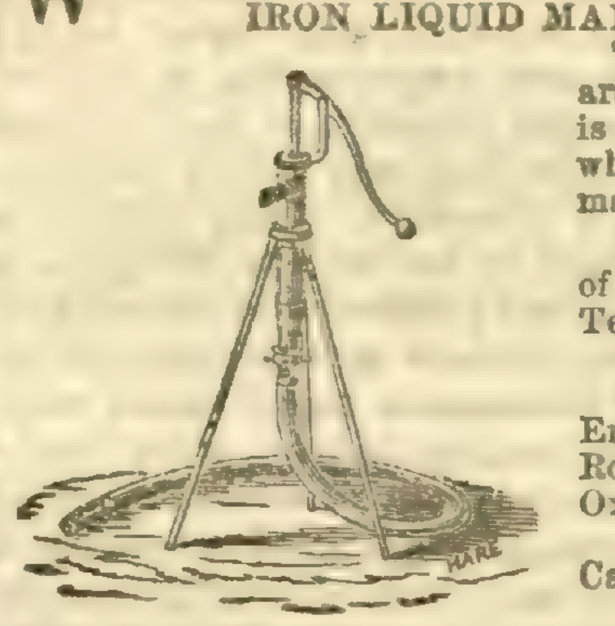
Baily's Registered Fountains, universally adopted and approved. Drawings and particulars, by post, on application.—113, Mount Street, Grosvenor Square.

STEPHENSON AND PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

REDUCTION IN PRICE.

WEIR'S IMPROVED GALVANISED WROUGHT IRON LIQUID MANURE PUMP.



The Fittings of these Pumps are wholly of Brass, and there is no leather or other matter which can be affected by the manure.

Price, complete, with 10 feet of Flexible Suction Pipe, 4*l.* 15*s.* Terms, cash on delivery.

EDWARD WEIR, Agricultural Engineer, 16, Bath Place, New Road, London. Removed from Oxford Street.

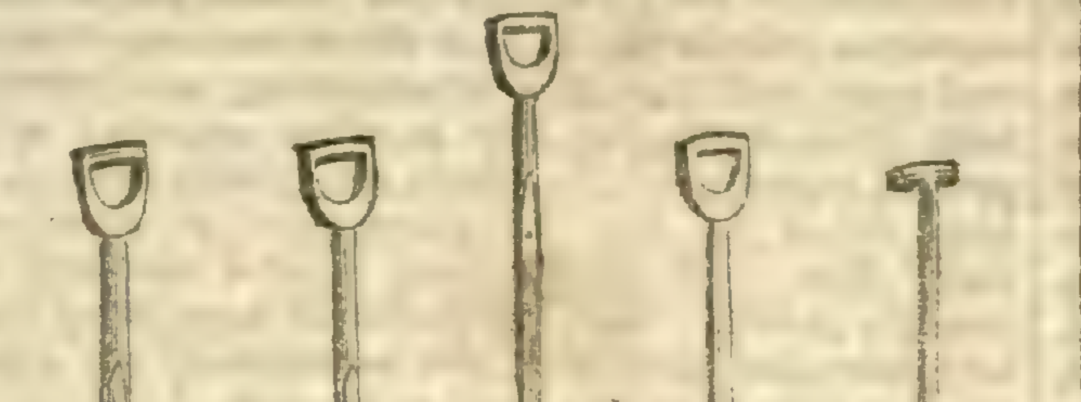
Catalogues, with Illustrations, sent free by post.

CHAFF-CUTTERS, of the best workmanship, 25*s.*; Two-Knifed Chaff Engines, from 63*s.*; Mills for Bruising Oats and Beans, from 45*s.*

WILLIAM DRAY AND CO., Agricultural Implement Manufacturers, Swan Lane, Upper Thames Street, City.

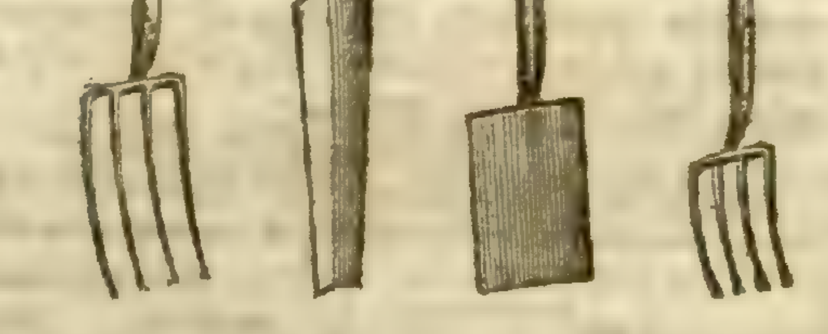
ANTHONY'S PATENT AMERICAN CHURN.—Extract from the Royal Agricultural Society's Report of the trial of Churns at the Gloucester meeting in July last. "In this trial the American Churn not only maintained its character in producing butter rapidly, but in producing a greater quantity from the like amount of cream." It made from 4 quarts of cream 4 lbs. 6 oz. of butter, being 8 oz. more than any of the other Churns from the same quantity and quality of cream. Price Lists of Churns and Implements by the best makers sent free, and Illustrated Catalogues on receipt of eight postage stamps. BURGESS & KEY, 103, Newgate Street, and 52, Little Britain, London, who have always a large stock of Steam-engines, Ploughs, Harrows, Diggers, Waggons, Carts, Threshing and Dressing Machines, Mills, Oat and Grain Bruisers, Oilcake Breakers, Reaping Machines, Haymakers, Horse-rakers, Turnip Cutters, Liquid Manure Carts, Parkes' celebrated Steel Digging Forks and Draining Tools, Pumps for Manure, Farm Fire Engines, and for Garden Purposes, &c. &c.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.



MESSRS. BURGESS AND KEY, as Mr. PARKES' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.
103, Newgate Street, and 52, Little Britain, London.

TO AGRICULTURISTS, GARDENERS, ETC.



BENNETT AND NAYLOR, GENERAL IRONMONGERS, and FACTORS, Sole West End Agent for PARKES', late WINTON PARKES' CELEBRATED STEEL DIGGING FORKS and TOOLS. Also for the only efficient Stove, with or without a flue, suited particularly for Conservatories and Greenhouses. Patronised by her Majesty. Price 12*s.*, and upwards, at the Great Western General Ironmongery Warehouse, 255, Oxford Street, between Park Street and North Audley Street. Established for the sale of all descriptions of Ironmongery at Wholesale Prices. Sheet, Hoop, Rod, and Bolt Iron; Locksmiths and Bell-hangers. Patent Fuel, to be used with the Stove, 2*s.* 3*d.* per bushel.

SAMUELSON'S PRIZE FORKING or DIGGING MACHINE, as applied to Spring Cultivation, serves to thoroughly pulverise land which has been trodden by sheep or autumn ploughed, deepening the staple, leaving no pan, dragging up the Couch Grass, and preparing a finely divided seed-bed.

Extracts of Testimonials from persons using it.

"Answers thoroughly; brings everything to the surface."—*E. W. Wilmot, Congleton.*

"The very best a man can have upon a mixed or stiff soil, it so thoroughly pulverises it."—*Joseph Cooper, Acton Burnel, Salop.*

"I inform you, with the greatest satisfaction, of its success."—*Francis Hamilton, Friars Place, Middlesex.*

"Attached horses at half-past 8, on 5½ acres, finished at a quarter past 3, making first-rate work."—*J. Kirby, Bodicott, Oxon.*

"Has been working every day."—*T. Cardus, Barwell, Surrey.*

"Will do a given amount of labour, not only cheaper but better than the plough."—*J. J. Mechi, Tiptree, Essex.*

"Let me have one at your earliest convenience."—*Earl of Essex, Cassiobury, Herts.*

"Send to Exton Park one of Samuelson's Forking Machines for *Earl of Gainsborough, Oakham.*"

"Besides improved tillage, economises ploughmen."—*P. Gener, Cuba.*

Price 24*l.* 10*s.*, the general purpose size; and 27*l.* 10*s.* large size, Cash; at the Works, Banbury.

HOSE PIPING.—GREAT REDUCTION IN PRICE.

WAITHMAN'S PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense Pressure, and much more than Leather, vulcanised Rubber, or any other Hose; and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented Inventions, the cost of manufacturing it is now reduced at least 60 per cent., which advantage is offered to the Public.—London Agents, BURGESS & KEY, 103, Newgate Street, and 52, Little Britain, who on application will forward wholesale and retail prices.

NEW AGRICULTURAL ROOT.

SUTTON'S CRUICKSFIELD HYBRID SWEDE. This is very distinct from the Swede and the Kohl Rabi, but partakes of the nature of each of those valuable roots, from which indeed it has proceeded. It is of the shape and size of Skirving's Swede, but is much hardier, and has the flesh of the Kohl Rabi. Cattle, and especially Sheep, eat it with great avidity, preferring it to Swedes, when both are presented to them.

Particulars of Culture, &c., will be sent post free on receipt of one penny stamp.

Address, JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

N.B. We have an excellent Stock of Swede and other Turnip Seeds, Mangold Wurzel, and White Belgian Carrot Seed, &c.

NEW FARM SEEDS, GROWTH OF 1853.

WILLIAM E. RENDLE AND CO., SEED MERCHANTS, Plymouth, *have a very large and well selected Stock of all kinds of* SEEDS *required in Agriculture, grown by Farmers of the first respectability and experience in Devonshire, Somerset, Gloucester, Kent, Essex, Sussex, and several other counties.*

CARRIAGE OF ALL PARCELS ABOVE £1 FREE, SEE PRICE CURRENT.

The following are the prices of a few of the leading articles:—
Italian Rye-grass, 6*s.* to 7*s.* per lb.
Pacey's Perennial Rye-grass, 6*s.* per lb.
North Devon Evergreen Rye-grass, 5*s.* to 6*s.* per lb.
Rough Cocksfoot Grass, 5*s.* per lb.
White and Red Clovers, 7*d.*, 8*d.*, 9*d.*, 10*d.* per lb.
Swede Turnips, all the best varieties, 1*s.*, 1*s.* 4*d.*, to 1*s.* 6*d.* per lb.
Scotch Turnips, 1*s.*, 1*s.* 4*d.* to 1*s.* 6*d.* per lb.
Summer Turnips, 8*d.* to 1*s.* per lb.
Large White Belgian Carrots, 2*s.* per lb.
Other varieties of Carrots, 1*s.* 6*d.* per lb.
Large Red Mangold Wurzel, 1*s.* per lb.
Yellow Globe ditto, 1*s.* 4*d.* per lb.

All other kinds of Agricultural Seeds at fair remunerative prices. For full particulars see RENDLE'S "FARMING PRICE CURRENT AND AGRICULTURAL SEED DIRECTORY," to be obtained from the subscribers in return for six postage stamps.

WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.
ESTABLISHED 1786.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

PATRON—His Royal Highness PRINCE ALBERT.
PRESIDENT OF COUNCIL—Earl BATHURST.
PRINCIPAL—Rev. J. S. HAYGARTH, M.A.
PROFESSORS, &C.

Chemistry—J. A. C. Voelcker, Ph D., F.C.S.
Geology, Zoology, and Botany—James Buckman, F.G.S., F.C.S.
Veterinary Medicine and Surgery—G. T. Brown, M.R.C.V.S.
Surveying, Civil Engineering, and Mathematics—F. Armstrong, C.E.
Manager of Farm—G. Austin.
Assistant to Chemical Professor—A. Williams, M.R.C.S.

Students are admitted after the Summer and Winter Vacations, also in April and October. The annual fees for Boarders vary from 45 to 80 guineas, according to age and other circumstances. The Fee for Out-Students is 40*l.* per annum. The College Course of Lectures and Practical Instruction is complete in one twelve-month—though a longer course is recommended. There is a department for general as well as for agricultural purposes.

Prospectuses and information can be had on application to the Principal.

The GUIDE TO THE ROYAL AGRICULTURAL COLLEGE FARM may be obtained of HAMILTON, ADAMS, & Co., Paternoster Row, London; and EDWIN BAILY, Cirencester. Price 1*s.*

The Agricultural Gazette.

SATURDAY, MARCH 25, 1854.

MEETINGS FOR THE TWO FOLLOWING WEEKS

WEDNESDAY, March 29—Agricultural Society of England.
THURSDAY, — 30—Agricultural Imp. Society of Ireland.
MONDAY, April 3—Central Farmers' Club.
WEDNESDAY, — 5—Agricultural Society of England.
THURSDAY, — 6—Agricultural Imp. Society of Ireland.

THERE is probably no better illustration of the remark made some weeks ago in these columns, that the real evidence of agricultural progress amongst us is to be found in quiet and comparatively unknown quarters, than is given in the present condition of Lord RADNOR's estate, near Highworth, Berkshire. There is hardly a subject of any great agricultural importance which has of late engaged attention but will be found developed into actual practice there.

The following are instances:—A correspondent was lately recommending the preservation of plans of all the drains executed on a farm, so as to enable the examination of any spot without waste of time and labour in seeking for it. He will find plans preserved of the drainage here, in the manner which he justly recommends.

We have had discussions as to where the cost of agricultural improvement should lie—whether tenant or landlord should bear the cost of permanent improvements. Our own opinion is that the question does not admit of an answer. There is no duty nor even policy that we know of concerned in the matter—no general principle depending on either to regulate conduct in reference to the subject; so that every separate case must be decided between landlord and tenant on its individual merits according to the relative means, opinions, and will of the parties concerned. At Coleshill, however, the question is being systematically answered on the landlord's side, and farm after farm is being

taken in hand, drained, improved, and relet at a rent increased by a per centage on the landlord's outlay.

Again, we have had abundant criticism and scepticism on agricultural estimates—criticism we must say justified by ordinary experience on such subjects; the visitors to Coleshill will, however, find records of estimates and plans relating to complicated series of operations—the removal of fences—the drainage of land—the making of roads—the erection and improvement of buildings, and lastly, farm occupation for one or more years. He will also find records of actual cost, and evidence of actual performance: and we engage he shall come away from the inspection with the impression that it is possible to frame agricultural estimates correctly, and to carry out agricultural improvements at the cost and with the returns foreseen.

No subject has more properly, and of late more earnestly, engaged attention than the bearing of good and sufficient lodging on the social condition of the labouring classes, we venture to promise any intending visitor that he will find Coleshill a model village in this important respect; and that improvements here, as in other quarters, have been carried out with the same regard to economical and profitable investment as have guided Mr. Moore (Lord Radnor's agent, by whom and under whom the whole has been accomplished) in other departments of his most successful management.

And talking of example villages, there has been ample recognition of the value of example farms of late. Now, no greater usefulness is attainable by such institutions than where they are not *professedly* example farms, but, without obtrusiveness or pretension to official authority, present to the inspection of all who choose to visit them specimens of good cultivation, good architecture, and good general management. Let us refer to the farmery at Coleshill, in illustration of the second point here named. It is on the largest scale of farmeries, and confessedly in the style fitted for a nobleman's home farm: the execution, space, style, and quality of work, and, therefore, the expense, are higher than a strict £ *s. d.* aspect of the question will justify. But for the principles of its arrangement, the skilfully managed connection of the different parts, the admirable adaptation of the circumstances of the site, and the perfect adaptation of each part to its purpose, we know of none excelling it. A longer description than we could give here, is extracted in another column from a Wiltshire paper. We may, however, just enumerate some of its merits in this place: and we would point out especially the very admirable arrangement of threshing, grinding, and cutting machinery; the accessibility and roominess of the granaries, and their connection with a cartway beneath; the relation of steaming-house and food stores generally with cattle boxes and stalls; the proper mixture of boxes, stalls, and yards—the first for fattening cattle, the second especially for stables (box feeding answering only in the case of animals continually standing on the litter), and the third for younger stock; lastly, the sheep-yards and the sheep-feeding house over a sparred and open floor, which seems specially adapted, and we might say *only* adapted to the case of sheep, which carry their bed-clothes continually about them, and do not suffer from so hard a mattress. Many other points might be noticed. We shall, however, allude to only one. The farm answers its *unasserted* purpose of a model farm also, by the interesting experiments progressing on it, especially in cattle feeding, to which we hope hereafter to attend, and in pig breeding—the latter having already resulted in the establishment of a breed which is daily rising in estimation.

This notice of these buildings is permitted us with a view to the extension of their usefulness as developing principles of construction and arrangement, which deserve adoption, without, however, necessarily involving exact imitation. The place is of course a private establishment, notwithstanding we are thus allowed to draw attention to it; but we doubt not those interested in the subject of farm buildings, or in the other subjects which have in this short notice been referred to, will obtain without difficulty that permission to examine the place which we readily received.

Let us make a single remark in illustration of the vague and general manner in which objections to the collection of agricultural statistics have been stated. Many farmers are apprehensive that an accurate statement of their crops would let their landlords know too much; but what is it, we should like to know, that landlords will then acquire which they now have not the means of obtaining? What is to prevent any landlord, for instance, riding over his own estate, and ascertaining from year to year the statistics of its produce? We might admit (although we know some landlords that are better judges than their tenants) that at present he is unable to form an opinion as to the amount of produce; but the tenant is surely to be pitied who concludes that he is to remain so, or rather that the progress of things will allow any landlord to continue in such a state of ignorance much longer. Moreover, we know landlords who employ agents whose duty, among other things, is to examine every farm and field, and enter their reports in an estate book of cropping kept for the purpose, and who, by reference to this book, can tell you at any time what this or that farm or field produces. And this is not only an exceptional fact—we would say it is a duty binding on those who have the management of estates, under that relationship between landlord and tenant which prevails over the greater part of England. In all such cases, experience has shown that the nearer the truth is approached, so much the better for both parties. The thing feared is that the *opinion* of the landlord on the farm produce should exceed the truth, and so rent be raised unreasonably, or, indeed, *at all*. Then, the remedy for this is, by publishing the truth, to ensure that his opinion be founded *on* the truth. At present, opinion is quite as likely to be founded on excessive estimates as on defective ones; and, we repeat it, experience has shown that the nearer the truth is approached, so much the better for both parties.

Then, take another aspect of the matter in which the landlord is not immediately concerned. The Central Farmers' Club declare that they do not believe farmers in particular are interested in the knowledge of the food supplies of the country. We can only say that the discussion which terminated in such a resolution ended most illogically; for many even of those speakers who carried it drew attention to the losses which holders of food had sustained by ignorance of the subject. The case is well put by Mr. Milburn in his letter to the *Times* last Tuesday:—"The fact that corn has fluctuated cent. per cent. in price in three years out of seven is enough to convince farmers that statistical information would be useful to themselves as well as others." We ourselves, in one of these three years, sold several hundred sacks of Wheat at 6*s.* a bushel which rose to 12*s.* within a few months. Would not correct information as to the stock of food held by farmers and by factors have hindered us from doing this? And apart from individual instances—our case might well be rested on the fact alluded to by Mr. Milburn, that the French, knowing their own necessities, were large buyers in our markets months ago, when English farmers knew nothing about the necessities of others or of their own ability, and while, therefore, supplies were readily provided at prices much below those which sounder information would have ensured for them.

Then comes the question of the possibility of reaching the information which is desired. The question, we would simply say, argues great ignorance of what is already yearly done in the same way. Mr. Milburn disposes of it in a single sentence. All this information used to be obtained annually over thousands of acres when tithe was let from year to year. It is so obtained now over thousands of acres in the case of farms being left by out-going tenants.

We notice that on Thursday last Mr. Cardwell stated, in his place in Parliament, that the Hampshire and Norfolk farmers have very generally replied to the inquiries addressed to them, not more than 3 per cent. of the circulars having been returned unfilled; that the cost of the inquiry in the two countries has been 850*l.*; and that the particulars ascertained have been the acreage of the several crops and the quantities of the several kinds of live stock.

SCHEMES OF CULTIVATION.

From a farm of 200 acres in the county of Surrey, of which about 50 acres are pasture, 20 acres stiff clay, and the remainder light loam inclining to sand, what receipts might fairly be looked for? what stock, and what number of stock should be kept? and what the fair cost of cultivating the same (putting out of the question, as already known, rent, tithes, and poor-rates) in wages, interest of capital, wear and tear, &c.? The questioner is the proprietor, and would be his own market to a great extent. The land is not now in good order, but is capable of being made more productive. The information conveyed in a plain manner, with a view to enable a balance to be struck between loss and profit, will be much esteemed by *A Neophyte.*

It is plain that the data are not sufficient for the information desired. The cost and returns of cultivation depend not more upon the character and quality of the soil, which is all we have given to us, than upon the method of cultivation adopted, which is not described. Our correspondent desires us in effect to *state* his dream as well as interpret it. We shall therefore suggest a rotation of cropping, estimate the cost of management under it, and suggest a way of disposing of the produce.

We assume 50 acres to be in Grass, 70 in arable green crops, 80 in grain. If the rotation on arable land be—1, Wheat; 2, Clover; 3, Wheat; 4, Mangold Wurzel; 5, Wheat; 6 Beans; 7, Wheat; 8, Clover; 9, Wheat; 10, Vetches and Turnips; 11, Wheat; 12, Cabbages; 13, Wheat; 14, Oats; 15, Swedes—then we should have 70 acres in Wheat, 10 acres in Oats, 10 acres in Beans, 20 acres in Clover, and 100 acres in Mangold Wurzel, Cabbages, Swedes, and Vetches or Turnips. If we assume a good quality of land, we may put the produce as follows:—

70 acres	Wheat ...	at 36 bushs.	= 2520	bushels.
10 „	Oats ...	at 60 „	= 600	„
10 „	Beans ...	at 36 „	= 360	„
20 „	Clover ...	at 12 tons	= 240	tons green food.
10 „	Mangold Wurzel	at 30 „	= 300	„
10 „	Swedes ...	at 20 „	= 200	„
10 „	Cabbage (2 crops)	at 30 „	= 300	„
10 „	Vetches and Turnips	at 25 „	= 250	„
25 „	Pasture ...	at 10 „	= 250	„
25 „	Do. aftermath	at 4 „	= 100	„

The Wheat is for sale, and may be worth 750*l.* to 800*l.* a-year. The Oats will just suffice for the three pairs of horses the tenant will need to keep. The Beans will be consumed on the farm.

The green food amounts to 840 tons for summer consumption and 800 tons for winter consumption, besides 25 acres of meadow hay, with 360 bushels of Beans, chiefly for consumption during the latter season. A tolerably equal stock may thus be kept through the year. And food to the amount of about 32 tons a week will in ordinary seasons be produced for cattle. If the food for horses and per centages for risks of various kinds, such as rotting of roots, &c., be deducted, there will still remain at least 4 tons of green food a day, available as food, and this will keep 400 sheep, or 200 sheep and 24 oxen, a stock which can be got on hand by purchasing, in June, 24 two-year old oxen to feed and fat in the course of 10 months or so, and 150 shearlings to fold on Clovers, and all off towards autumn, replacing most of these then with some 120 breeding ewes, and purchasing some 60 or 70 shearling sheep to feed in autumn. By consuming the green food in this way, probably 5*s.* a ton will be made of it, and 2*l.* a ton of the hay, along with the price of the Beans, and of what other food may be purchased. To the 750*l.* for Wheat, you have thus to add about 410*l.* for green food; 70*l.* for hay; and 90*l.* for Beans, or in all 1320*l.*

The Capital undetailed required will be, without going into particulars—

For six horses	£200
Implements and harness, at least 1*l.* per acre ...	200
Wages, probably	400
To purchase live stock (some portion sold before purchase of rest), say	450
To purchase manure and cattle food, say... ...	100
„ seed, say...	100
Rent and taxes	400
	£1850

The Annual Cost may be—

	£	s.	d.
Seed	£100	0	0
Labour	450	0	0
Manure (food repaid)	50	0	0
10 per cent on horses	20	0	0
5 „ live stock	22	10	0
10 „ implements ...	20	0	0
Rent and Taxes	400	0	0
	£1062	10	0

This would leave a balance in favour of the tenant of 257*l.* 10*s.*, or about 14 per cent. on the capital employed.

We give this rough outline, which is built upon data that we have been accustomed to consider trustworthy. The result is brought out without any aim at it, simply as the unforeseen consequence of the estimates in detail; and it shall stand for what it may be worth, without revision, as it has been arrived at without intention. *M. S.*

NITROGEN IN GREEN CROPS.

In considering this question (as I promised at page 155 to do), I am not disposed to hinge my elucidation of it on the jocose assertion of the estimable agriculturist of Sutton Waldron, "Give me manure enough, and I will grow Turnips on a mahogany table." I shall rather view it in the light of a proposition which I believe few will dispute, viz., that on a soil naturally of fair quality, but exhausted by cropping, I can, by the application of 3 cwt. of Peruvian guano per acre, together with inorganic manure suited to the different plants, grow good crops of Beans, Turnips, and Clover, assuming that the mechanical condition of the soil has been duly looked to.

I select the above crops as being those of most extended cultivation; and I purpose to consider them only as they serve the purpose of in-gathering aerial nitrogen. I do this, not forgetting that they also act an important part in elaborating from the soil, by a subtle alchemy of their own, inorganic matters which they prepare for the use of the cereal crops, which, as generally cultivated by thick sowing, are poor providers for themselves of inorganic food, as they are gluttons and wasters of nitrogenous food. In conducting my inquiry, I shall adopt the plan of a debtor and creditor account of the supply and product of nitrogen. The debtor side will be the same in each case, and will stand thus:—

Nitrogen in 336 lbs. Peruvian guano, at 14 per cent.	47.04 lbs.
Ditto added to the soil in nitric acid and ammonia carried down by a year's rain, assuming as correct the calculations given by Mr. Pusey in Royal Ag. Soc. Journal, p. 379	41.42 „
Total per acre	88.46 lbs.

The crops I shall examine by the light of Dr. Anderson's analyses as published in No. 30 of Highland Society's Journal.

Beans.—I shall assume 4 quarters per acre; and the

straw I take at the weight of experiments reported in the above Society's Journal. We shall thus have—

Grain 32 bushels, 63 lbs. 2016 lbs. nit. p. cent.	4.26	85.20 lbs.
Straw in-gathered, 2 tons, 4480 lbs. „	1.30	58.24 „
Stubble and roots left behind, 1 ton, 2240 lbs. nit. per cent. 1.30		29.12 „
		172.56 lbs.

Being 84.10 lbs. nitrogen (equal to 600 lbs. Peruvian guano) more than was supplied by the manure, and by the rain-washings of the atmosphere, even supposing that the whole supply had been appropriated by the growing plants.

The adaptation—thus shown to be great—of the Bean crop to place at the disposal of its cultivator an unbought store of nitrogen is further illustrated by the result (stated in "Blackie's Cyclopedia," p. 786) attained by an agriculturist combining science with practice, from the use of an appropriate inorganic manure, sulphate of soda. An application of 2 cwt. per acre of this salt gave an addition of 2 quarters of Beans; and though the straw was not tested by the weighing machine, its luxuriance testified to its being equally in excess as was the grain. Thus, from the use of an inorganic manure, so much additional vigour was given to the growing plant that it had in-gathered from the atmosphere, and enabled the cultivator to gather into his stackyard, 71.72 lbs. nitrogen. I may here remark that the power of absorption from the atmosphere belonging to this crop was, very correctly, ascribed in your columns of Jan. 24, 1852, by Mr. Russell, Kilwhiss, to the fact that "its vegetative powers co-exist with its flowering and seed-forming processes." Taking the knowledge thus presented to us by a trustworthy observer as a guide, we would attain to this striking result—that on a farm where 40 acres of Beans are cultivated (and there are many such in the Lothians of Scotland), the use of 4 tons of sulphate of soda would place in the stackyard (leaving out of consideration the roots and stubble left in the soil) the nitrogen of 9 tons 3 cwt. of Peruvian guano, or 8 tons 10 cwt. nitrate of soda.

Now, sulphate of soda is a refuse of our chemical manufactories, and is, I believe, in many cases, altogether lost; guano and nitrate of soda, I need not tell my readers, are both scarce and costly. Perhaps it is rather late to suggest, for this season, further trials of the same and cognate inorganic substances; but I should consider that I have done some service if these notes should bring out some further information on this subject.

Passing from Beans, which have surpassed my anticipations, I come to Turnips and Clover, which have much disappointed them; so much so, indeed, that I must give them a low rank—if one at all—as aerial collectors.

Of Turnips, I assume 25 tons, including tops and tails, as the full crop to be obtained under the conditions stated, *i. e.*, 56,000 lbs. — Nitrogen = 112 lbs., being 23.54 lbs. in excess of the supply.

Of red Clover, I assume 8 tons as a first cutting, and 4 tons as a second, *i. e.*, 12 tons—26,880 lbs. Nit. O₄ —107 lbs., being but 19 lbs. in excess of the supply; and when those crops are consumed by animals, we may safely suppose that no nitrogen in excess of that supplied will be found in the manure. *S.*

Home Correspondence.

Cement.—In answer to the inquiries of "Bagnalstown" about cement for using between woodwork and stove jambs, I recommend him to try an excellent "fire cement" made in Manchester, and which seems to stand any amount of heat. If your correspondent would apply to Messrs. Crowther, painters, &c., Ridgefield, Manchester, I have no doubt they would supply him with it, or tell him where it can be procured. *J. W. T., Cheshire.*

Disease in Lambs.—I shall be glad if you can inform me on a disease that is proving very destructive. It is one of those in which treatment is generally out of the question; the animals are perhaps taken in the night, and are found dead in the morning. The great object, of course, is to discover the causes; and having done this, prevention may perhaps be suggested. The animal when first attacked is observed to walk round the boundaries of the fold, and become stupid. Purging soon commences and the patient dies. I have made no minute *postmortem* examination of the lambs which have died, but I have generally noticed that there is a collection of water round the heart, either transparent or tinged with red, and that the kidneys begin to decompose at a very early period. I had heard that the disease was caused by the lambs eating certain weeds when allowed to roam at large, consequently I had my land pared all over, and the weeds buried, the Turnips being in pits. My lambs died as fast as ever. During this time there were some very sharp frosts, and the Turnips in the pits were a little frozen. Thinking that it was the milk of the mother which caused the disease, I have sometimes, when it has been very destructive, weaned my lambs very early, and I have never had the deaths so frequent afterwards. I have noticed that more deaths occur after a frost, and have thought that frozen Turnip-tops or frozen weeds, taken into the stomach, is one of the causes of the disease. I have, therefore, shut my lambs in the fold at night, not allowing them to run out until after the frost is gone in the morning. When this system of management is adopted, deaths are not near so numerous. The present knowledge of the disease, of sheep is very imperfect, and the sooner agriculturists and agricultural societies stir themselves in this important particular the better. *C. B.* [The disease described is probably induced by hoar frost, the system being chilled by lying on the cold damp ground, or by taking internally food covered by hoar frost. The collection of fluid in the pericardium indicates disease of the serous membrane which invests the heart. The rapidity of the disease precludes treatment, but care should be taken to prevent the lambs ranging over the Turnip greens, until the influence of the sun has removed the effects of the frost. In addition to this, we would recommend a moderate supply of the soft American Linseed-cake, say a quarter of a pound to each lamb, given early in the morning, so that the little animal should have its hunger appeased by this nutritious and heat-producing food, which will prevent the too rapid consumption of the greens, and neutralise their ill effect. Rock salt should also be kept in the troughs. *W. C. S.*]

Barley.—In your leading article of March 18 you express a fear that over-active farmers may suffer from having planted their Barley early in this month; it may reassure them to know, that for the last 20 years I have never willingly sowed mine after the first week in March, and that in 1850, 1851, 1852, and 1854 I have put it in at the end of February, and in the three first mentioned years have reaped more than eight quarters per acre. I was led to such early sowing by finding the quality of the corn more level, and the straw stiffer, and consequently my Clover less injured by a heavy crop than when it is sown late. You likewise recommend cross ploughing for Mangold Wurzel at this time. My experience of 30 years as a grower of Mangold Wurzel has led me to manure my land as early in the winter as I can find suitable weather, and plough the manure in as soon as I can afterwards, and sowing upon the stale furrow. If the seed is sown too deep, it does not vegetate on my land; and if the soil is light from a recent ploughing, the seed is apt to be dry. These observations apply to a well-drained land on the new red sandstone formation. The subject of covered fold yards is exciting considerable interest, many of us having found our manure injured by the wet of 1853. I think many of your subscribers have adopted the plan, and if they would communicate their opinion of it after three or four years' experience, it would help your readers to form an opinion of its value. I should like also to hear the opinion of those who, having seen it adopted by their neighbours, do not wish to put it in practice on their own farmsteads. *Charles Paget, Ruddington Grange.*

Stoppage of Drains.—In reply to an inquiry, at p. 157, I beg to state that there is not a perennial flow from the drains adverted to. They run for eight or nine months of the year; but during that portion of the year when evaporation goes on most rapidly, they are almost or altogether dry. As soon, however, as the land becomes once more fairly saturated by heavy rains in August or September, they begin to flow again, and continue doing so, more or less, for some eight or nine months again. I have had an opportunity, since my last communication, of tracing roots of an Equisetum (I believe E. arvense, perhaps sylvaticum) almost down to the tile. The last 3 or 4 inches had been broken away by the tool employed in laying the tile bare, and, from a slip near the same place, I was enabled to observe countless fibrous roots of different Grasses (a species of Carex, &c.) hanging down in various lengths, from 4 or 5 inches to as many feet. I have since heard of other similar instances of stoppage at Ayton, in this county. *A.*

Labourers, Servants, and Others.—We are well aware that in this free country much distress is produced by persons emigrating from one place to another, without being known and without a certificate from parties known to those who may be in want of men; strangers are generally treated with much suspicion who possess no recommendation, and are generally considered mere trampers, although having the best of characters from whence they came; now, as the law of settlement is about to be altered, a clause might be introduced that, when a man might wish to leave his native county and come to London, for instance, that he would first apply to the head of the police of that district, and obtain a certificate of honesty, so that when he came to London a total stranger he could apply to any other police-office, and when the thing became generally known plenty of masters would, at all times, be ready to engage them. I am aware that, in the country, men meet no difficulty in engaging with new masters—not so in towns, as employers are obliged to be much more particular about a stranger, however honest he may be. I too well know that many an honest man, trying to better his condition, and moving to where he is not known, is very often at starvation's point before he gets employment, and too often is it the case that he is obliged to go back again from whence he came, merely for want of a certificate from a public body: good men are always wanted in and around London. *James Cuthill, Camberwell, London.*

Wheat Bread.—"A Country Housekeeper" is informed that wheaten bread, if made of good sound flour and fresh barm, will always keep for a week, even when fermented by brewer's table beer yeast, well washed to take off the bitterness, and then strained through sweet bran; in fact, if all the water used in making up the dough were passed through miller's bran, the fermentation would be much assisted. Our proportions are 6 quarts of water and 28 lbs. of the best grist, or "one way" flour for a week's bread. German yeast imparts no bitterness, and we recommend it in preference to either brewer's barm or that substitute which is known as patent yeast. German yeast will keep for several weeks in cool temperate weather, but is apt to fail in the height of summer if a moist heat of 75° to 80° prevail. We believe that if a little of it were added to a quart of rich malt sweetwort, without hops, a fresh barm might be weekly made at home. German yeast is sold here at 1*s.* per lb.; 2 oz. of it are added to 3 pints of lukewarm water to make more than two 4 lb. loaves. In setting sponge, the flour is placed in a pan or bread trough; in the centre of it a cavity is made with the hand, large enough to contain the diluted yeast, and with this so much of the flour is worked up as will produce a good batter; the vessel is then set sloping before a fire in cold weather, and covered with a flannel. When the sponge is active and rises over the level of the flour, they are to be thoroughly incorporated and kneaded to a compact dough, adding more bran water if required; when the mass rises and becomes active it is placed on a floured board, and made up into loaves. Salt, according to taste, must be dissolved in the water. *J. T.*

Agricultural Labourers.—In the last number of the *Agri. Gazette* your correspondent "G. S." says, "It has been the professed object of philanthropists and political economists, from time to time, to ascertain the cause, and if possible to find a remedy, for the degraded state of the agricultural labourer," &c. I have just been reading a little work by W. B. M'Pherson, published three or four years since, "On Planting and Improving Estates, and the Condition of the Agricultural Labourer," and I send you a short extract from it, which perhaps will in some measure meet the case, as "G. S." puts it.

"Independent of ornamental planting, how many thousand acres of land, now lying waste, might be made profitable, that at first sight is considered not worth the breaking up; yet it would be found, if properly done, that the outlay would soon be repaid, and the ground, if planted with Larch, would in a few years considerably more than cover all expenses, and in many cases leave the ground fit for agricultural purposes. The want of employment for the labouring poor ought also to be an inducement to carry out such improvements; which would be like casting bread upon the waters. Much has been said and written to better their condition, but the most certain way will be by finding them employment in productive labour; the sum paid in this way is better for them than double the amount in the shape of charity. The able-bodied labourer is satisfied if he finds constant employment, but idleness is his bane; the former extinguishes the torch of the incendiary, snaps the wire and rots the nets of the poacher, while want of employment gives rise to every vice an uneducated mind is capable of receiving. The apparently distinct caste to which the agricultural labourers belong speaks loudly in their behalf, and must forcibly appeal to our sympathy. Located apart from large cities and manufacturing towns (whose inhabitants possess every means of obtaining useful and interesting information), confined almost to one particular parish, they seek no further knowledge than the simple education obtained in early youth; and, as their wants are but few, and they have no acquired tastes, they are content if in employment, nor trouble themselves about political affairs or agrarian laws. Surely, then, it is the duty of those who are in possession of the soil to make this most useful class of beings happy, without whose exertions the machinery of the manufacturer must lay idle—as the first call of nature is for food. If, in the endless chain of animated beings, the link that connects the agricultural labourer with his master has become weakened, it behoves all classes to assist in strengthening the same; or it may, by its disunion, seriously affect the bond of society. Most farms would be much improved by grubbing wide hedge-rows, filling up useless ditches, irrigating meadows, and deep-draining arable lands; money expended in this way would be far better than in heavy poor-rates. Next to employment, their dwellings and gardens should be considered. The allotments of garden-ground should be as near to their cottages as possible; one-fourth of an acre attached thereto is better than double that quantity at a distance; and this ought, in the first instance, to be planted with a few good fruit trees and other little matters, the cost of which would not exceed 40*s.*, but which sum it would be out of their power to pay. Those that have witnessed the distribution of the prizes to the competitors at the provincial fruit and flower shows (at which the cottager has been allowed to exhibit), must have been convinced that much good results from this practice."

J. E. S., March 20.

Societies.

ROYAL AGRICULTURAL SOCIETY.

Weekly Council, *March* 23.—Mr. Pusey, President, in the chair.

Gelatinous and Saline Manures.—Mr. Tuckett, of Lonco, near Looe in Cornwall, communicated the results of trials undertaken by him for the conversion of fish-offal into manure; and a statement of his mode of reducing animal substances, in the course of three hours, into a pulp or jelly, preparatory to its being diluted with water for the liquid-manure drill, or mixed with a fine powder for drilling with seeds. He also referred to the plan he employed for separating the chief manuring elements from gas-liquor, by saturating it with common salt, and then filtering it through a layer of powdered peat-charcoal, mixed with two-thirds its quantity of dried clay, ground. Mr. Tuckett at the same time offered a suggestion, that search should be made on the north coast of Africa, especially in Tunis, for deposits of the nitrates of potash and soda. He thought the present time was favourable for such inquiries in districts under the Mohammedan rule; and he cited various extracts from Dr. Shaw's travels in those regions, showing the natural fertility that had from time immemorial subsisted in certain districts, from no other apparent cause than that of the strong nitrous impregnation to which the soil was constantly subjected. The President took that opportunity of communicating the following statement transmitted to him by Mr. Dyce Nicol, to whom it had been addressed by that gentleman's overseer in Kincardineshire:—

"The land on which the following experiment was made was a peat bog reclaimed in 1850, thoroughly drained, and six inches of clay applied over the whole surface; the only crops raised upon it had been Oats, Turnips, and again Oats sown out with Grass. In March last I sowed on one portion of the new Grass 2 cwt. of nitrate of soda with 1 cwt. of salt; on another portion 4 cwt. of

guano, and on the remainder of the field no manure was applied. The nitrate gave per imperial acre 300 stones of hay,

at 9*d*. per stone of 22 lbs.	£11	5	0
Guano gave 270 stones, value	10	2	6
Nothing gave 140 " "	5	5	0

"Independently of the increase of weight of hay from nitrate, I prefer that manure for either new or old Grass, as it appears to require little moisture to put it down to the roots of the plants. A strong dew in the course of one night appeared sufficient for that purpose, and in about 36 hours after its application the Grass turned to a luxuriant dark green colour, whereas the guano requires a good shower of rain to put it down; unless it gets such fall of rain, it does little good. My trial of nitrate on Oats and Barley last year leads me to prefer guano for these crops. I applied 1½ cwt. of nitrate on one portion and 3 cwt. of guano on another, but the Oats top-dressed with nitrate kept a bluish sort of colour throughout the season, and did not ripen equally, and the ear soft; while those which had guano ripened equally, had a harder crisper ear, and weighed better. The land upon which that experiment was made had not been previously cropped, and was of a mossy loam with a mixture of clay."

Mortality among Lambs. — Communications were read from Mr. Dorrien, in Sussex, and Mr. Creswell, in Leicestershire, on the subject of mortality among their lambs. The case of Mr. Dorrien was considered to be an ordinary one, but that of Mr. Creswell new both to the shepherds and to Professor Simonds. The following statement was read from Mr. Creswell, and Professor Simonds was directed to inspect these lambs, and make a report upon the circumstances under which the mortality was taking place, and might in the best mode be prevented.

"Ravenstone, Ashby-de-la-Zouch, March 20, 1854.

"I have been sadly puzzled by my sucking lambs having sore mouths; the affection begins generally in the roof of the mouth and gums, and becomes so bad that the lambs will not suck, but in a few days die. I lost three in one night. My lambs are high-bred Leicesters, and of course are very valuable. In some instances the mother's udder catches the complaint, and I have lost one of them. I have tried alum and borax, but without any good result: I am now trying nitric acid, diluted with water. In a *post-mortem* examination, we find the covering round the heart very much diseased, and the lungs partially so. Of course we drench the lambs with milk frequently, and I have dosed them all with castor oil."

This communication led to the expression of various opinions and results of experience on this subject, especial reference being made to the disease in the joints, arising to sheep pastured on the black blowing sands of Norfolk, especially about Thetford, after they had been recently marled.

The President, Prof. Simonds, Mr. Raymond Barker, Mr. Fisher Hobbs, Mr. Druce, Mr. Paine, Prof. Way, Mr. Cavendish, Sir John Johnstone, and Mr. Caird having expressed their opinions on the communications then made to the Council, Mr. Raymond Barker read a letter on adulteration of oil-cake; and Mr. Wrench, a statement on the character of the Mustard seed employed as a condiment in this country.

Adjourned to March 29.

Flax Society: Belfast, *March* 1.—A communication was read, notifying that the Treasury had directed the payment of 1000*l*. for the Society's account, to be expended in the practical instruction of Flax-growers in the counties of Cork, Kerry, Clare, Tipperary, Galway, Mayo, Sligo, Leitrim, and Roscommon, in certain proportions recommended by the Society. It was ordered that as many of the instructors as were necessary should be forthwith sent to superintend the preparation of land for the sowing of Flax. Allusion was made to the great encouragement that existed in the prospect of high prices for Flax to farmers who would sow it this year; and it was hoped that, as the Irish press had given considerable prominence to the facts on which this anticipation was founded, farmers would recognise the soundness of the advice given, and not allow the present dearness of grain to induce them to give it a preference over Flax, since all kinds of food were pretty certain to be much cheaper next harvest, while Flax was equally certain to maintain its very high value.

Farm Memoranda.

Lord Radnor's New Farm Buildings.—These buildings were planned by Mr. Moore, Lord Radnor's intelligent agent, who resides on the estate, and were executed by Mr. Pedley, of Highworth, under the superintendence of Mr. G. Lamb, architect, of London. With the exception of the Duke of Bedford's, they are, perhaps, the most extensive in England; but in arrangement and completeness, in perfect adaptation to the purposes required, they are second to none. They are placed on the west side of the mansion and park, just without its boundary, on the slope below the entrance to Mr. Moore's residence, occupying the space between that house and the garden attached to it, and the highroad leading from Highworth to Faringdon. They cover, with the courts and yards belonging to and forming part of them, about 3 acres of land, and are approached, on the Highworth side, by a private road leading round the west and south sides of the buildings, and on the Faringdon side, by the entrance just above-mentioned, thus being entirely surrounded by a road—public on the north side, and private on the east, south, and west. They are built of rough stone, and covered in part with slate and in part with stone-tile, forming a substantial and imposing-looking mass of building, and presenting a striking appearance when viewed from the west, on descending the hill leading from Highworth.

So much for the exterior. Inside, the partition walls are of brick, but some of the yards are divided, and enclosed from the passages, by thin slabs of stone set up on end, and capped on the top by wooden rails, to which they are clamped. The cattle boxes and stalls are divided one from another by Oak posts and rails, each box and stall being fitted with a rack and a manger on a level with each other, and with a trough for water, which is supplied, pure and fresh, from a natural stream which is turned in at the upper or east end of the premises, and is conveyed through them—each trough being filled from a separate tap. The surplus water is carried off into the rain-water tank, adjoining to the liquid manure tank, and being first strengthened by an admixture of liquid manure, is intended to be conveyed by underground pipes (not yet laid down), to irrigate a field of Grass containing about 10 acres, lying at some little distance to the west of the buildings. The principal entrance to these capacious and complete premises is at the east end, through a pair of folding gates, and down a wide and well-made road, which divides the rick-yard or barton from the timber-yard, the former being on the right hand and the latter on the left. These yards occupy the upper end of the farm premises; and the barn, stables, boxes, and sheds, and other buildings the lower end. There are two other main entrances, one at the south side and the other at the south-west corner; and the boundary of the whole is either the exterior walls of the buildings, or a stone wall 6 or 8 feet in height. The whole forms a long square, the corners of which at the lower end are slightly rounded off, as well for the sake of convenience in using the road which surrounds the premises as of appearance. Such is the general outline of the whole.

On entering the buildings, and the adjoining rick and timber-yards, which you do at the east end, you find yourself in the barn, and in the upper story of it—for it is two stories high, the upper story being on a level with the rick-yard, and the lower on a level with the floors of the stables, cattle-sheds, and yards. This difference in the levels is caused by the site being on a declivity, which has been most judiciously taken advantage of, and by a little extra labour divided into two steps or flats, each with a very slight incline downwards, towards the west. The convenience of the premises is increased by this difference in the levels, and the difficulty which the rather steep incline of the whole presented at first is entirely got rid of, and turned into a favourable circumstance by this mode of dealing with it. In this upper story of the barn is placed part of the machinery connected with threshing and dressing the corn, weighing and sacking it; also a mill, with a pair of French stones, for grinding Wheat or other grain, either into fine flour, or for merely crushing it or kibbing it. There is, too, a mill for grinding Linseed. Opening from this large floor is, on one side, a spacious granary, from which the corn, when dressed and sacked, can be let down, through a trap-door, by a chain and pulley, into the waggons, to be conveyed away when sold. It opens also into the engine-house, and into a large loft for storing wool or anything else that requires to be kept dry. The threshing-machine, which, with all the other machinery, mills, chaff-cutters, &c., is driven by a steam-engine of 7-horse power, is placed on the ground adjoining to and on the same level with the upper floor of the barn, as is also a circular saw for cutting out rough stuff, which is likewise worked by the engine. All this machinery, including the steam-engine, was made and erected by Messrs. Clayton & Shuttleworth, of Lincoln, and for finished execution and smooth and easy working is equally creditable to them and satisfactory to their noble employer. It is composed of various machines by which the grain is threshed, dressed, deposited in sacks, and weighed, ready for market at one operation, without any intervention of manual labour. This is effected by its first passing into the threshing machine, which also performs the operation of shaking the straw after it is threshed, riddles the corn out of the straw, and also winnows the "caving" from the grain, which then passes to elevators, and is raised a certain height, where it is deposited in a Barley-horning machine, which is used to considerable advantage with all descriptions of grain, by rubbing, and thus cleaning its surface and improving its appearance. From this machine the grain passes into a dressing apparatus, which effectually cleans and separates the good corn from the light and inferior quality, and finally deposits the former in a sack on a weighing machine, and when the proper quantity is deposited, by a simple mechanical contrivance, the descent of the beam of the weighing machine shuts the supply valve, and rings the call-bell, which summons the man in attendance to remove the full sack and replace it with an empty one. There is also a mill on an improved principle for grinding corn for cattle; also a chaff-cutter; a mill for bruising Oats and Linseed; a saw-bench with circular saw, &c., in the carpenter's shed—all of which are driven by a 7-horse power portable steam-engine outside the barn wall, which communicates the power to a line of shafting extending across the barn, from which the various machines are driven by leather bands. Upwards of 50 quarters of Wheat can be threshed and dressed by this machinery in a day of 12 hours, at a consumption of not more than 7 to 8 cwts. of coal, and requiring about seven or eight hands, more or less, according to circumstances. The straw is not seen at all in the upper part of the barn, for it passes down from the threshing-machine, on a sort of riddling screen, to the ground floor below (where the chaff-cutter is placed), either to be converted into chaff or to be stored away in the straw-house. Following it, by a staircase, which leads down to the ground floor, which is on the second flat or step of the area of the premises, you find yourself in a commodious building, with large doors, north and south, large enough for a loaded waggon to pass through them. This building is appropriated for receiving the caving, chaff, and straw when cut for litter, being divided into separate rooms; the north end being reserved for the purpose of storing roots which are thrown in from the upper level through a shute provided for that purpose. The adjoining rooms are fitted up with various apparatus for steaming and preparing food for pigs and cattle, and comprise, as well, vaults for skim-milk, wash, &c., and a slaughter-house. On leaving this building by the south door, you enter a court in which, on your left hand, are the riding-horse stables, coach-house, harness-house, &c.; and above, and adjacent to them, the steward's office, room for reckoning with the men, &c. On your right hand is the building containing the boxes and stalls for the dairy cows, and the yards and sheds for these cows and their offspring, and for young stock. On leaving this building by the north door, another court is entered, which is surrounded by sheds for carts, ploughs, and other implements — by the cart-horse stables, harness-houses, &c.—and by the yards attached to some of the boxes for fatting cattle. In this court, in the centre of which stands a fine Elm tree, the poultry houses and yards are to be placed.

Returning to the centre of this building—that is, to the spot, or near to it, where the straw from the threshing machine comes out from the apparatus above—and turning your face to the west, you look down a long vista, flanked on one side by the piggeries, and on the other by boxes for fatting cattle. The roof is of slate, with skylights, glazed with rough plate glass, and open at the sides, which are fitted with ventilators. The roofs of the other avenues and of those parts of the building where the stock is kept confined are lighted and ventilated in a similar manner; thus every part of the place wears a light and cheerful appearance, and as there is free escape for all impure exhalations from the cattle and the litter, and as powdered gypsum is scattered about when and wherever necessary, the building is entirely free from any unpleasant smell. In the centre of this covered path, or main avenue, is a tramway which runs down to the tanks, and is to be continued on into the sheep-house, which is placed at the bottom, at the extreme west end. On passing along about two-thirds of this avenue, you come to a turn-table on the tramway, the line being intersected here, at a right angle, by another avenue or transept, on which also a tramway is laid, which runs across the building from north to south, and on each side of which are cattle-boxes—the south end of it running into the building containing the boxes and stalls for the dairy cows. Leaving the main avenue at its western end (at the tanks), you cross a yard and enter the sheep-house, a spacious building at the extreme west of the premises, with an open railed floor, and pits underneath for the manure. Here there is ample room for about 400 sheep, for 250 or 300 ewes, and for 100 fat sheep, which latter are tied up at rack and manger. Right and left of this sheep-house and of the open yard between it and the tanks and manure shed, and occupying the south-west and the north-west corners or wings of the premises, are sheds and yards for young cattle, for 30 head of which there is ample room.

Returning from this point, and reaching the turn-table, you have, right and left, and before you, the cattle-boxes, 44 in number, intended for the use of 30 large beasts, each occupying an entire box, and 28 young beasts, standing 2 in a box. Turning to the right, you pass along the south branch of the transept, with cattle-boxes on each side of you, till you enter the cow-house, which occupies the centre portion of the south side of the premises. Here is room provided for 30 dairy cows, 20 in stalls, tied up, and boxes for 10, intended for the calving cows and their offspring. Attached to this department is the cow-yard, constructed to accommodate 14 cows, with room for 20 calves, on stages and boxes. There is also provision made for tying up 12 beasts, on the old stall-system, and for 4 bulls—2 old and 2 young ones. On turning to your left, at the turn-table, on coming away from the sheep-house, you pass between the other end of the double row of cattle-boxes, and come out into the yard in front of the row of buildings composing the cart-horse stable (for 12 horses, with 2 loose boxes), harness-houses, sheds for implements &c., &c.; these occupy one side, the north side of the yard; the west side being occupied by sheds, and enclosed yards for young stock, colts, and for other purposes.

The piggeries—which, of course, are not forgotten at a place which has give its name to the handsomest and most approved breed of white pigs in the country—are placed, as stated at the commencement of the description of the part of the buildings devoted to the reception of cattle, on your left hand, as you proceed westward down the main avenue. They contain boxes, walled in, for 8 breeding sows and their young, for 2 boars, and for a score of fat pigs; each box having an inner and an outer compartment, or rather having an open yard attached to it, so that the inmates can enjoy themselves in the open air or under cover at will.

From the above general description a tolerable idea may be gathered of the nature, extent, and capabilities of these buildings; but to be able fully to comprehend and to appreciate their utility and perfect completeness, a personal inspection is necessary. *Abridged from the Wiltshire Independent.*

Reviews.

A Guide to the Eastern Escarpment of Dartmoor; with a Descriptive Map.

This pamphlet, which we owe to the local knowledge, antiquarian zeal, and geological attainments of Dr. Croker, of Bovey Tracy, is an interesting guide to the

beauties, antiquities, and geology of the district it describes. It does not refer to the agriculture of the neighbourhood. We extract the following description of the Bovey coal, which will be read with interest:—"The coal or lignite is found towards the northern margin of the heathfield; the uppermost strata rise within a foot of the surface, under a sharp sand intermixed with an ash-coloured clay; they underlie the latter towards the south-east, about 1 to 5 feet. The perpendicular thickness of these strata, including the beds of various coloured sandstone clays, is about 80 feet. The principal deposit takes a south-east direction, in the anticlinal line of the valley at an angle of 25°, through which coal is found more or less amongst the clay beds, but not of sufficient thickness to work. There is no doubt that the Bovey coal has a ligneous origin; it consists chiefly of the trunks of exogenous trees, and well marked appearances of branches and compressed vegetable matter. In one layer, seeds have been found, and within a few feet of the surface, in loose coal, a mass of Fir cones of the Pinus sylvestris. There are various kinds of the coal, some charred with a pulverulent charcoal, heavy black coal highly bituminous, and sometimes containing pyrites. Until lately it could only be made to produce a red heat, sufficient for the first burning of the earthenware, which in this state is called 'biscuit ware.' The fixing of the glaze or enamel, in the second burning, had been hitherto produced by the white heat of the mineral coal of the North of England; but now, by the perseverance and ingenuity of Messrs. Buller and Divett, the present proprietors of the Bovey potteries, the lignite can be made to afford a degree of white heat, sufficiently high to vitrify the finest porcelain ware."

Modern Husbandry; a Practical and Scientific Treatise on Agriculture, illustrating the most Approved Practices, &c. By G. H. Andrews, Esq., C.E., late of Fleet and Brook Farms; author of "A Treatise on Agricultural Engineering." Nathaniel Cooke, Milford House, Strand.

This is a systematic work on the whole subject—aiming, we presume, at greater cheapness than some of those already published, and at greater attractiveness, if we may judge from the number and character of the illustrations.

There is a great deal of matter in the work which may, of course, be already found in previous publications of the class to which it belongs; and we should have doubted the policy of adding to the number of such works, though the progress of the art has certainly been sufficient, in some of its departments, to render general pictures, such as these works convey, sufficiently distinct from one another when taken at any considerable interval of time. The department in which farming has of late years most extended is precisely that which the author of this work was best qualified, by professional experience and education, to delineate, and accordingly on all matters relating to the architecture, the engineering, and machinery of the farm, Mr. Andrews's volume is more than usually full. In other respects—in the artistic rather than instructive character of the illustrations—in the introduction of historical and general information, when the barest detail and baldest statement of fact would have better filled the space—and in the use of general and qualitative terms instead of information as to quantities, places, prices, which is what the reader wants, we consider the volume, as far as we have examined it, to rank below such works as Low's "Elements of Practical Agriculture," Stephens's "Book of the Farm," and others.

POULTRY.

Arabian Pigeons.—In your No. of February 18, 1854, your correspondent "J. E.," in describing Arabian laughing pigeons, states that they "are a clear white, feathered legs even to the end of the toes, with feathers on the back of the head." In this description he is right, but I beg to say they are also blue, red, and mottled; some are also clear legged and without the feathers on the head. I bought two pairs when in the East, neither of which had feathers on their legs, or those turned on their heads; and when I asked the Arab the reason, he said some have them and some have not. I, however, did not believe him; but to my surprise, when they lived in the East, one pair came with this turned crown, and the other plain. I have since in England, from the same pair of pigeons, bred them plain and turned crowned and rough legged (I mean feathered). They are mixed very much by the Arabs, and are certainly very curious pigeons in the sounds they make, and my friends admire them very much. *J. E. S.*

Notices to Correspondents.

Address: We must, unfortunately, ask "J. L." again to forward his address.

Books: *S T.* "Gibson's Land Surveying."

Peat for Kilns: *J R* asks for information, founded on experience, as to the utility of wood or peat as a substitute for coal in the burning of lime or drainage tiles, particularising the proportions of each to produce a given heat. The articles "Bricks" and "Tiles" in "Blackie's Cyclopedia" give information on the general subject of burning these articles.

Salt: *J Scott.* The quantity that may be applied without risk of injury varies with the lightness of the soil; 4 to 5 cwt. may be applied on light soils, and 2 cwt. is enough on a clay.—*R J W.* You must stop your bailiff, or you will kill everything; 10 cwt. per acre is the most we ever heard of, and 4 cwt. more than we ever used.

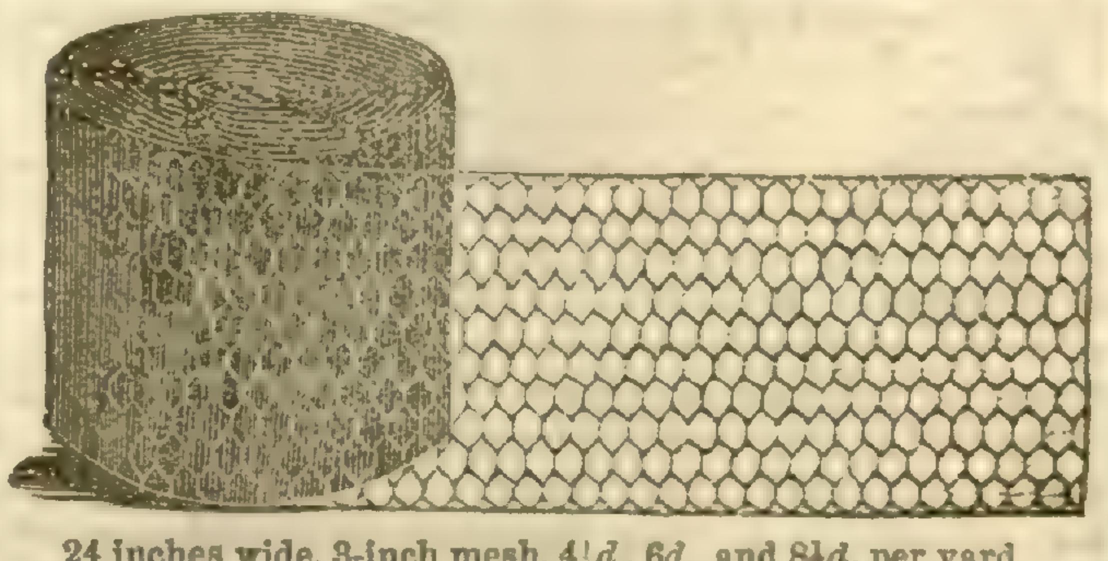
Unsoundness in a Cow: *Esher.* The question is too indefinite; if the unsoundness relates to the structure of parts it cannot be removed, if to their functions it may. In either case it may possibly be alleviated. *W O S.*

H. J. MORTON and Co., Galvanised Iron Roofing Works, 2, Basinghall Buildings, Leeds.
PATENT WIRE STRAND FENCING FOR PARKS, &c.

This Fencing is the most neat, strong, and durable for Parks and Agricultural purposes in use. It cannot be bent or put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply as above.

IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

H. J. MORTON and Co., 2, Basinghall Buildings, Leeds.—GALVANISED GAME AND POULTRY NETTING, very strong and neat, never requires painting.

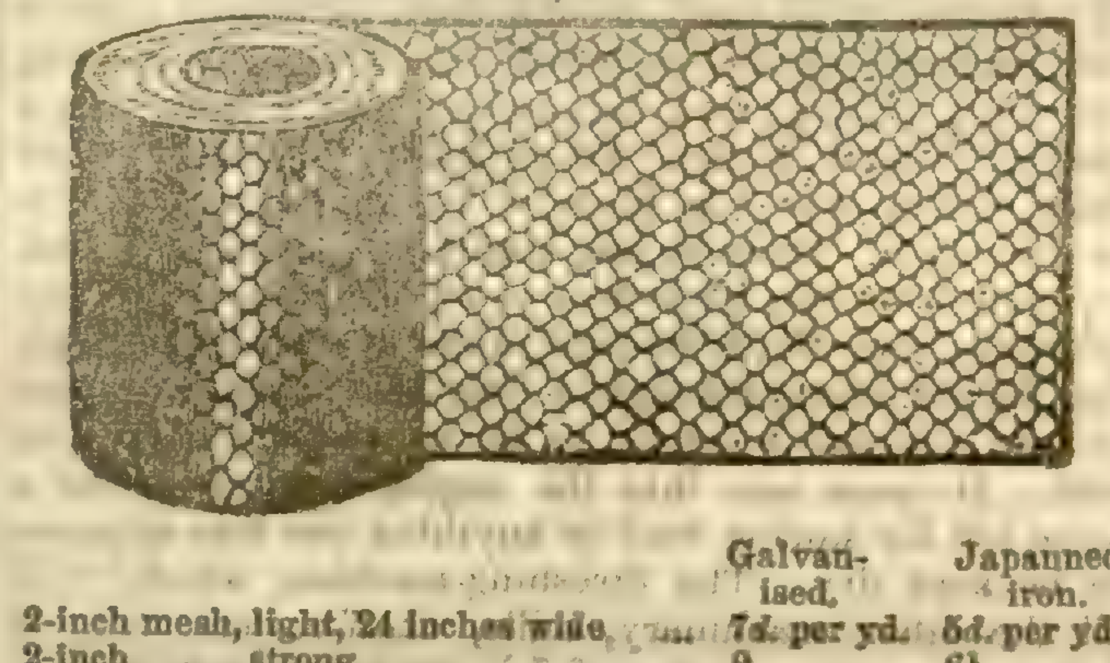


24 inches wide, 3-inch mesh, 4½d., 6d., and 8½d. per yard.
24 inches wide, 2-inch mesh, 7d., 9½d., and 1s. per yard.

GALVANISED IRON SPOUTING, for Dwellings, Cottages Farm Buildings, &c., never requires painting.

Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalte Roofing Felt, &c.

GALVANISED WIRE GAME NETTING.—7d. per Yard, 2 Feet Wide.

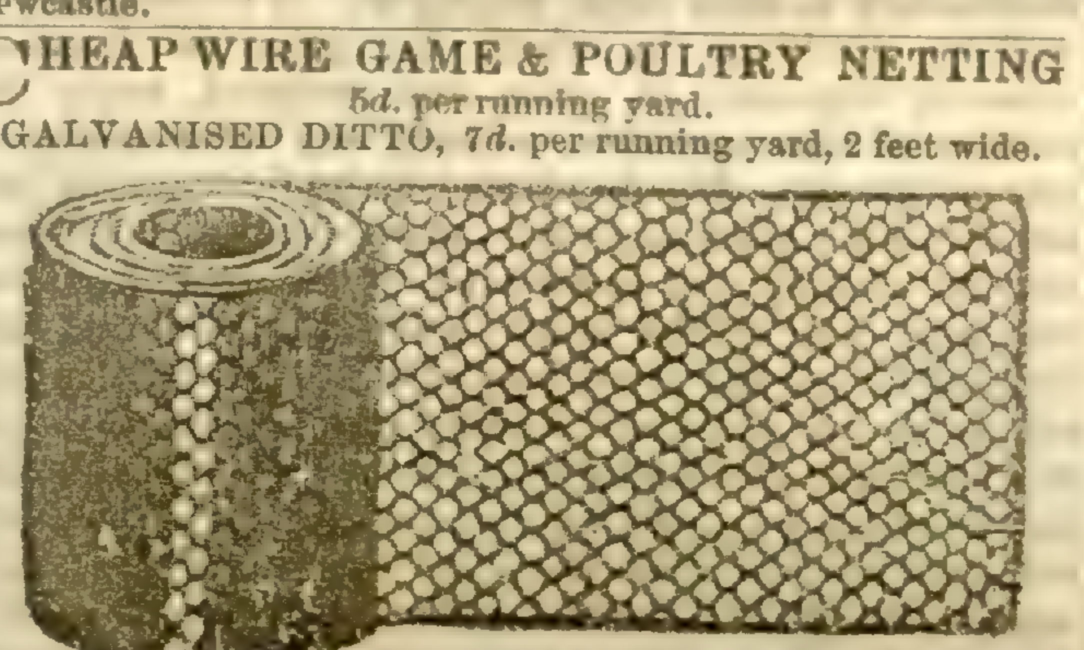


		Galvanised.	Japanned iron.
2-inch mesh, light, 24 inches wide	...	7d. per yd.	5d. per yd.
2-inch „ strong „	...	9 „	6½ „
2-inch „ extra strong „	...	12 „	9 „
1⅝-inch „ light „	...	8 „	6 „
1⅝-inch „ strong „	...	10 „	8 „
1⅝-inch „ extra strong „	...	14 „	11 „

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasantries, 3d. per square foot. Patterns forwarded post free.

Manufactured by Barnard & Bishop, Market Place, Norwich; and delivered free of expense in London, Peterborough, Hull, or Newcastle.

CHEAP WIRE GAME & POULTRY NETTING 5d. per running yard.
GALVANISED DITTO, 7d. per running yard, 2 feet wide.



	Galvanised.		ot Galvanised
24 in. wide, 2 in. mesh,	d. per yard.	... ...	5d. per yard
30 in. „ 2 in. „	9d. „	... ...	6½d. „
36 in. „ 2 in. „	10½d. „	... ...	7½d. „
48 in. „ 2 in. „	1s. 2d. „	... ...	10d. „

Sparrow Proof Netting, Galvanised, 3d. per square foot, made to any size for the same proportionate price. This article was shown at the Great Exhibition, where it was so much admired for its light and durable appearance, and acknowledged to be the cheapest and best article of the kind ever offered. Extra strong Wire Sheep Netting, 3 feet high, 1s. 6d. and 2s. 3d. per yard. Also every description of Flower Trainers, Dahlia Rods, Garden Arches, Bordering, Flower Stands, Tying Wire, Trellis Work, Invisible Wire Fencing, Hurdles, and every description of Wire Work for Horticultural purposes.—Illustrated Catalogues of Patterns forwarded, post free, on application to T. H. Fox, City of London Wire Work and Iron Fence Manufactory, 44, Skinner Street, and 6 and 8, Snow Hill, London.

FRUIT TREES, POULTRY, RABBIT, SHEEP, and CAT FENCING.—Worsted Netting to protect the Bloom of Peach, Nectarine, and other Trees, Flower, or Seed Beds, from Frost, Blight, and Birds, 2 yards wide, 5d. per yard. NEW TWINE NETTING (Tanned if required), 1 yard wide, 1½d. per yard; 2 yards wide, 3d. per yard; 4 yards wide, 6d. per yard; Half-inch Mesh ditto, 2 yards wide, 6d. per yard. TANNED NETTING, 2 or 3 yards wide, 1½d. per yard; 4 or 6 yards wide, 3d. per yard; or 5s. per 100 yards, 1 yard; 10s. per 100 yards, 2 yards; and 20s. per 100 yards, 4 yards wide. ELASTIC HEXAGON GARDEN NET, or Scrim Canvas, 4½d. per square yard. COCOA NUT FIBRE, or Hemp Sheepfolding Net, of superior quality, 4 feet high, 4d. to 6d. per yard. Rabbit Net, 4 feet wide, 1½d. per yard; 6 feet wide, 2½d. per yard; 8 feet wide, 3d. per yard. Each Edge Corded, ½d. per yard extra, suitable for Poultry Fencing. Square Mesh Cricketing Net, fix its full width and length, made of stout cord, 3d. to 4d. per square yard; this is the best article made for fencing, against fowls, cats, &c., at W. Cullingford's. Orders by post with Post-office order or town reference, punctually attended to. The Trade supplied. Fishing Nets of all kinds in stock. Nets made to order. Tents, Marquees, Rick Cloths, Tarpaulin, Lines, Rope, Twine, &c., made to order.—1, Edmund-terrace, Ball's Pond Road, Islington, London.

TANNED NETTING, for the protection of Fruit Trees from frost, blight, and birds, and for the security of fresh sown seeds, either in Gardens or Fields, at 1d. per square yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Scrim Canvass, for Wall Fruit.—At EDGINGTON and Co.'s, 17, Smithfield Bars, City, and Old Kent Road, Southwark, where may be seen erected Emigrant Tents in great varieties, on their latest improved principles, and also at Brunswick Street, Poplar, near the East India Export Dock.

TANNED GARDEN NETTING for protecting Fruit Trees from frost, blight, and birds, or as a fence for fowls, pigeons, Tulips, and seed beds, can be had in any quantity from John King Farlow's, Fishing Tackle and Net Manufactory, 4 and 5 Crooked Lane, London Bridge, at 1½d. per yard one yard, 3d. two yards, or 6d. four yards wide. Carriage free on all orders over 20s., accompanied by a Post Office order, or London reference. Rabbit, Sheep, and Fishing Nets of every description in stock or made to order.

WANTED IMMEDIATELY, the Address of every Gardener or his Employer wishing to have (free by post) Patterns, with prices and particulars, of HAYTHORN'S HEXAGON GARDEN NET, patronised by the Nobility, Clergy, Gentry, and all the principal Gardeners. The best and cheapest article for the protection of bloom, fruit, and flowers from frosts, birds, wasps, flies, children, and servants; and also for covering Hothouses.—Letters and orders to be directed to J. W. Haythorn, Nottingham. Parcels, carriage paid to London, Liverpool Leeds, Bristol, Hull, &c.

FISHING NETS.—A 20 yard Drag Net, with Purse, complete, 2l. 10s.; a Single Walled Drag Net, any length and depth, 1s. per square yard; Casting Nets, complete, 1s. to 1s. 6d. per yard, measured round the lead line; Flue Nets, any size, 1s. per square yard, complete. Minnow Nets, Eel Nets, Landing Nets, equally cheap; all warranted first-rate quality and workmanship.—W. Cullingford, 1, Edmund Terrace, Ball's Pond Road, Islington, London.

MORNING FROSTS.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard run, of E. T. Archer, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey. (Removing in May next to 112, Regent Street, London.)

GLASS FOR CONSERVATORIES, ETC.

HETLEY and CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES, GREENHOUSES, DWELLINGS, ETC.

Established more than One Hundred Years.

THOMAS MILLINGTON requests attention to his present prices of SHEET GLASS in 100 feet boxes.

Squares	6 by 4 and 6½ by 4½		
„	7 by 5 and 7½ by 5½	... ...	13 6
„	8 by 6 and 8½ by 6½		
„	9 by 7 and 9½ by 7½		
„	10 by 8 to 12½ by 9½	... ...	16 3
„	12 by 10 to 24 by 14	... ...	19 0

Orchard House Squares on Mr. Rivers's approved plan, to whom I have sold some thousands of feet:—20 inches by 12, 20 by 13, 20 by 14, 20 by 15, 20½ by 12½, 20½ by 13½, 20½ by 14½, at 19s. per 100 feet.

200 feet cases at 42s., and 300 feet case 63s., in large sheets.

Boxes charged 1s. extra per 100 feet, and the same allowed if returned free of all charge.

HARTLEY'S PATENT ROUGH PLATE GLASS, Fern Shades, Striking Glasses, Milk-pans, Bee Glasses, Cucumber Tubes, Sheet and Rough Plate Glass Tiles, Wasp Traps; Plate, Patent Plate, Crown and Sheet Window Glass, in every thickness and quality, and Ornamental Glass, plain and coloured; pure white Shades for Ornaments, Crystal Glass for Pictures.

Warehouse, 87, Bishopsgate Street Without—same side as Eastern Counties Railway.

FOREIGN GLASS, 16 ounces to the foot, of good quality, in boxes of 100 feet each, suitable for Horticultural purposes. Boxes included.

12 ins. by 10 ins.	15s. per box.	18 ins. by 14 ins.	16s. per box.	24 ins. by 18 ins.	17s. per box.
14 ins. „ 10 ins.		19 ins. „ 15 ins.		23 ins. „ 19 ins.	
15 ins. „ 11 ins.		18 ins. „ 16 ins.		24 ins. „ 20 ins.	
14 ins. „ 12 ins.		20 ins. „ 16 ins.		25 ins. „ 21 ins.	
16 ins. „ 12 ins.		21 ins. „ 17 ins.		26 ins. „ 22 ins.	
16 ins. „ 13 ins.		20 ins. „ 18 ins.		27 ins. „ 22 ins.	
17 ins. „ 14 ins.		22 ins. „ 18 ins.			

Also other descriptions of Glass at proportionate prices.
White Lead, Oils, Turps, Colours, &c.
G. FARMILOE & SON, 118, St. John Street, West Smithfield.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

JAMES PHILLIPS and Co. have the pleasure to hand their present prices of Glass for Cash:—

	SHEET SQUARES. In Boxes of 100 feet. £ s. d.		CROWN SQUARES. In Boxes of 100 feet. s. d.
Under 6 by 4	0 12 6	...	8 6
6 by 4, and 6½ by 4½	0 13 0	...	12 6
7 „ 5, — 7½ „ 5½; 8 „ 6, — 8½ „ 6½	0 15 0	...	14 0
9 „ 7, — 10 „ 8, 12 by 9, 12 by 10, 14 by 10	1 0 0		

Larger Sizes, not exceeding 40 inches long.
16 oz. from 3d. to 3½d. per square foot, according to size.
21 oz. „ 4½d. to 5d. „ „ „
26 oz. „ 6d. to 7½d. „ „ „

SHEET GLASS OF ENGLISH MANUFACTURE FOR ORCHARD HOUSES, the same quality as we supply to Mr. Rivers, and of various dimensions, always on hand.

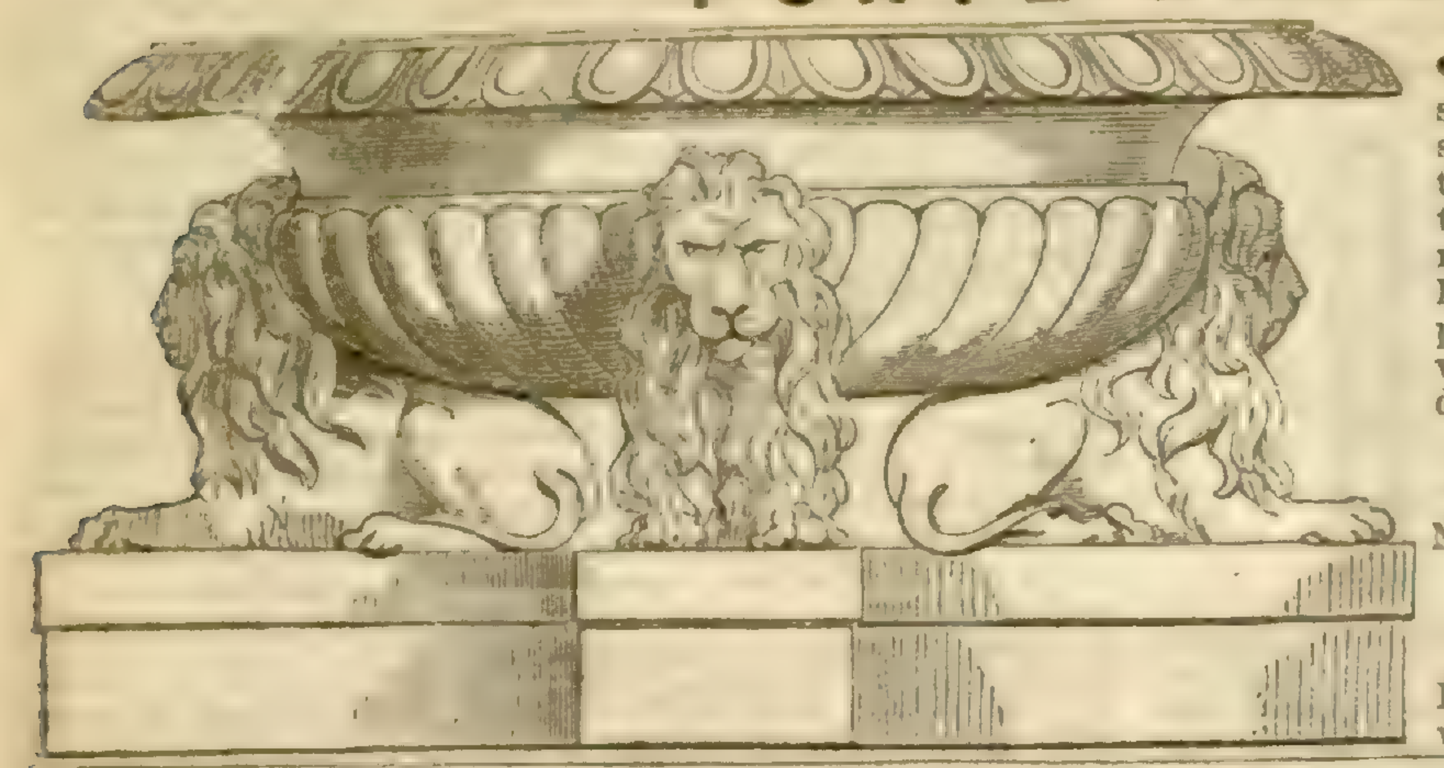
London Agents for the Sale of HARTLEY'S PATENT ROUGH PLATE GLASS.

Glass Tiles, ¼ of an inch thick, packed in cases, containing 50, at 1l. 17s. 6d. per case. Packages 2s. each extra, but allowed for when returned.

Glass Milk Pans, 21s. per dozen; Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoys' Milk Syphons, Wasp Traps; Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the trade.

Horticultural Glass Warehouse, 116, Bishopsgate Street Without, London.

PORTE-FLEURS.



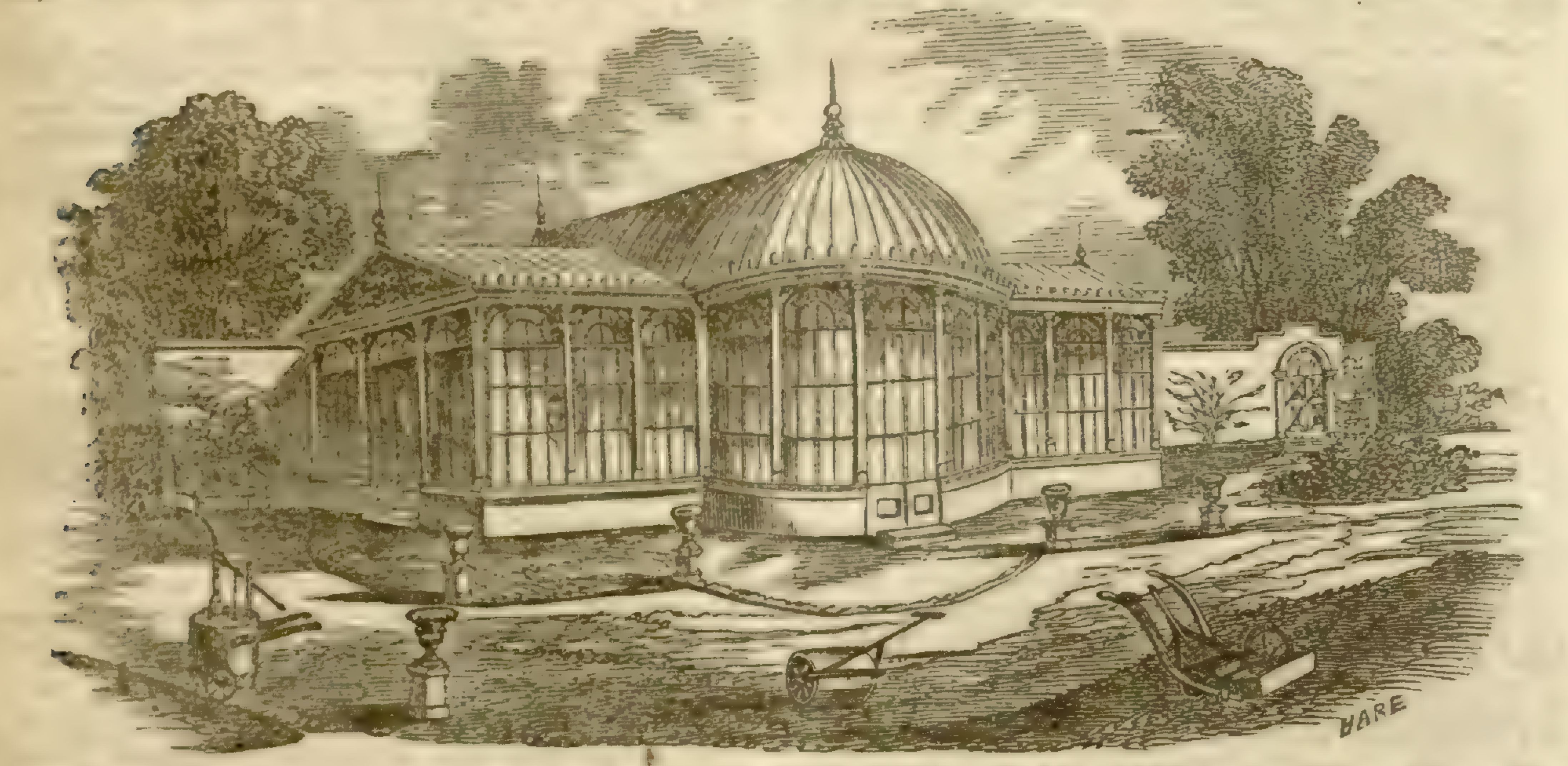
J. SEELEY respectfully informs the nobility and gentry that he has many handsome Designs for large Flower Bowls, and he solicits orders for them at the present time, for the purpose of insuring their being made before the summer is too far advanced—at least, two months is necessary to prepare such work; and he therefore trusts that gentlemen intending to place such ornaments in their grounds this year, will favour him with their instructions without delay.

ARTIFICIAL STONE WORKS,
Nos. 1 to 4, KEPPEL ROW, NEW ROAD, REGENT'S PARK, LONDON.

N.B. A large quantity of Garden Vases and Figures, which have stood exposed to the last winter, may be inspected.

COTTAM AND HALLEN,

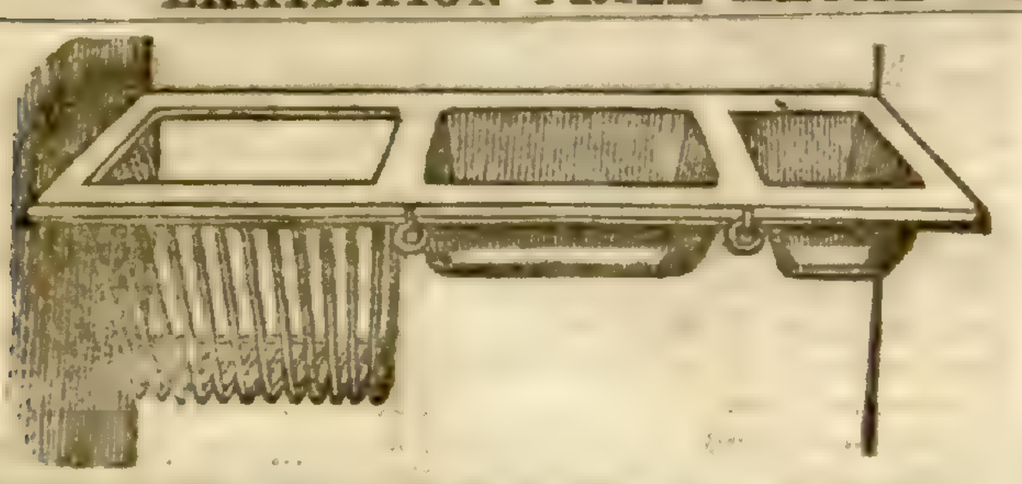
2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.



APPLICATION is requested for their NEW HORTICULTURAL LIST, containing Illustrations, Descriptions, and Prices of

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Syringes	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

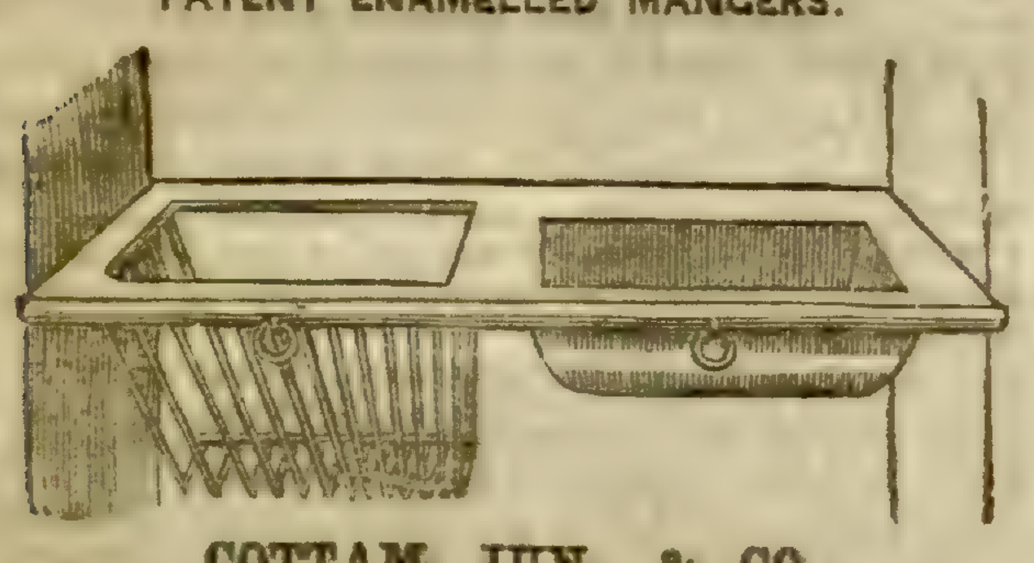
IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.
AGRICULTURAL LIST UPON APPLICATION.
EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.
EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.



COTTAM'S ENAMELLED MANGERS.—(Registered.)—To this article was awarded the Great Exhibition Prize Medal. No stable should be built or re-built without having these Mangers, which have the following advantages over those generally in use, viz.: Cleanliness, comfort to the horse whilst feeding, economy, appearance, and being impervious to any infection. Every kind of stable furniture kept in stock. The new designs are registered.

COTTAM and HALLEN, 2, Winsley Street, Oxford Street.

PATENT ENAMELLED MANGERS.

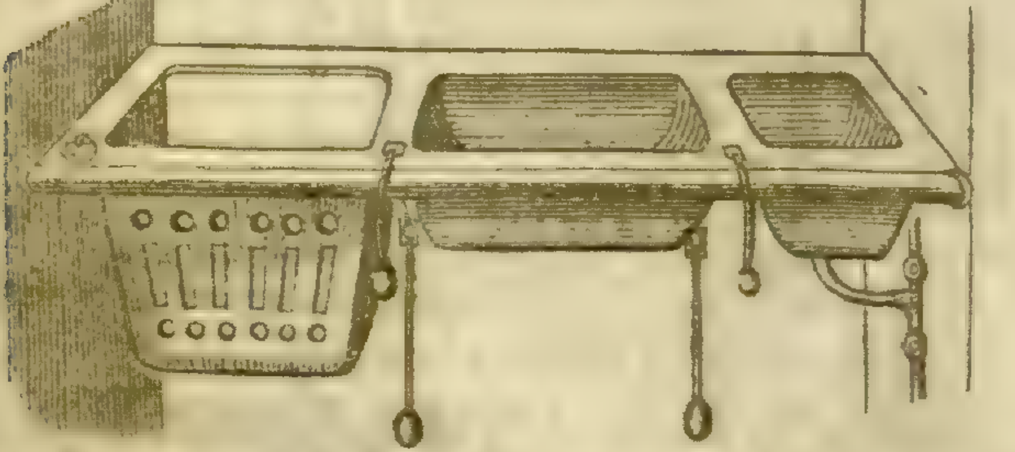


COTTAM, JUN., & CO.
33, CHARLES STREET, HAMPSTEAD ROAD, LONDON.

THESE MANGERS possess all the Latest Improvements, and can be had Plain, Galvanised, or Enamelled, and fitted as Manger-rack and Water-trough—Manger and Rack, or Manger only. Stable Fittings of every description; Hurdles, Strained Wire, and all kinds of Fencing.

33, Charles Street, Hampstead Road.

BARTON'S PATENT STABLE FITTINGS—PLAIN, ENAMELLED, AND GALVANISED.



The Improvements in these Fittings consist of the economical ventilating Hay-box, the front revolving Guard-roller, and the superior manner of working the Halter-balls and removing them away from the horses' legs; these, together with the compactness of the general arrangement and superior workmanship, render them indispensable to all desirous of the most perfect and economic Stable Management. Stable Furniture of every description. Iron Gates, Railing, Strained Wire Fencing, and Hurdles; Sheep, Poultry, and Game Wire Netting; Registered Poultry Fountains, Troughs, Feeders, &c.

James Barton, Ironmonger, &c.: Manufactory and Warehouse, 370, Oxford Street (a few doors east of the Pantheon), London.

BUDDING'S LAWN-MOWING MACHINES, with Registered Improvements.
MAPPLEBECK & LOWE, Machinists & Manufacturers, Birmingham.

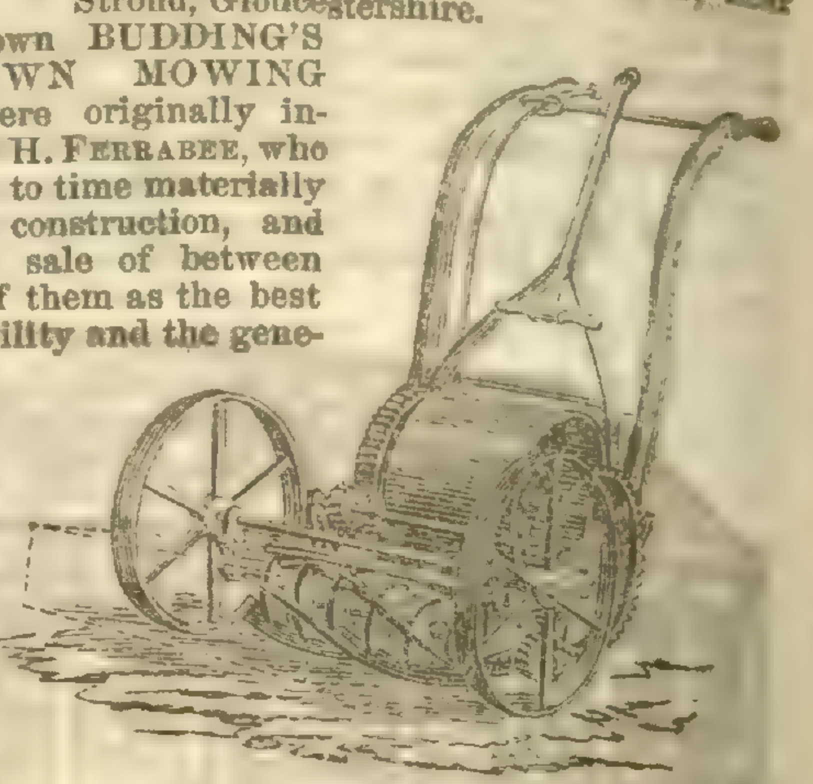
GIDNEY'S PRUSSIAN HOES.—Gardeners and Amateurs are informed that this useful Tool is now becoming a general favourite in the garden, and only needs a trial to be appreciated. Price 1s. 6d. handled. To be had of every Ironmonger and Seedsman. Manufactured only by Gidney & Son, East Dereham, Norfolk.

J. TYLOR and SON'S REGISTERED GARDEN SYRINGE.—By a simple arrangement this Syringe is rendered more effective than any portable Conservatory or Garden Pump ever offered to the public. It is equally adapted for Garden or Conservatory use, and is capable of discharging twice as much water in a given time as any other Syringe now in use. The arrangement consists in attaching a small flexible suction tube to the barrel of the Syringe, through which it is filled with water at every discharge of the previous contents. By this means the Syringe is always charged, and the pull-up stroke of the piston rendered perfectly easy, it having, indeed, no work to do, the barrel being previously full of water. Being thus made self-supplying, a great saving of labour is effected; and the necessity of stooping to fill the Syringe at every discharge being done away with, the direction of the water can be maintained for any length of time. It is perfectly cleanly in its action, as it is not possible for any water to get on the outside of the barrel, which is a well-known inconvenience attendant on the use of every other Syringe. Its construction is perfectly simple, and cannot get out of order: the ground-in ball valves and fittings used for filling all other patent Syringes being entirely superseded. Price complete, with India-rubber suction tube, with galvanised spiral inside, and covered with cotton outside, 25s. each. To be had of any respectable Ironmonger or Seedsman in town or country.

J. Tylor & Sons, Manufacturers of Horticultural Apparatus, Warwick Lane, Newgate Street, London.

THE IMPROVED LAWN MOWING MACHINE, MANUFACTURED BY

J. and H. FERRABEE, Phœnix Iron Works, near Strond, Gloucestershire.



The well-known BUDDING'S PATENT LAWN MOWING MACHINES were originally introduced by J. & H. Ferrabee, who have from time to time materially improved their construction, and can refer to a sale of between 4000 and 5000 of them as the best proof of their utility and the general satisfaction which they have given.

The Machines offered this year by J. & H. Ferrabee are superior to any yet produced, being perfectly adapted for cutting the Grass on Lawns and Verges, and between flower beds; while their strength and durability have been increased and their management simplified. Any person can use them effectually without the least practice. They can be adjusted to cut various lengths of Grass, and will produce a more even and uniform surface than the most skilful mower. The Grass is cut best when dry, so that a machine can be employed at the most convenient time to the workman, and more than double the work may be done with the same manual labour that is requisite with a scythe.

Sizes and Prices.

			£ s. d.
Hand Machine, for One Man, cutting	16 inches wide		5 15 0
Ditto for Two Men,	„ 22 ditto	...	6 10 0
Pony Machine,	„ 28 ditto	...	10 0 0
Horse ditto	„ 36 ditto	...	15 0 0

The Horse Machine will cut the longest and coarsest Grass usually met with on Lawns and Pleasure Grounds.

London Agents:—Messrs. Boulnois & Son, Baker Street Bazaar, Portman Square.

JOHN WARNER AND SONS,
Crescent, Jewin Street, London.
GALVANISED IRON TUB GARDEN ENGINE,
With Warner's Registered Spreader

Is strongly recommended, for durability and low price, viz., 2l. 19s., to hold 10 gallons.

Larger sizes made either in wood or iron. May be obtained of any Ironmonger or Plumber in town or country, or of the Patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Syringes of various constructions and sizes from 9s. upwards. An extensive assortment kept.

WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

	£ s. d.
Patent Pump	1 15 0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing	3 0 0

Larger sizes if required.

The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.

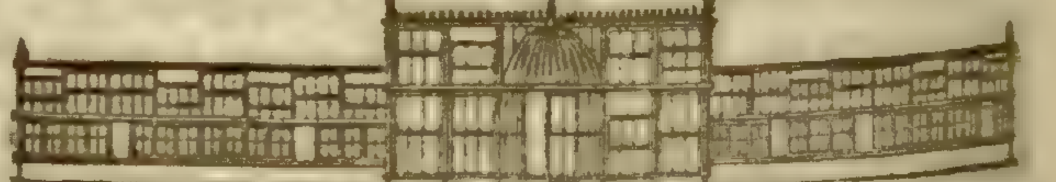
May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,
8, Crescent, Jewin Street, London.
Every description of Machinery for Raising Water; Fire Engines, &c.

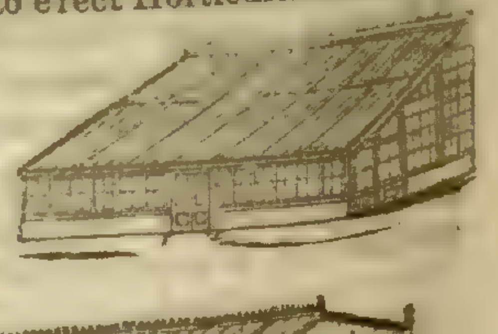
An Illustrated Book sent on application post free.

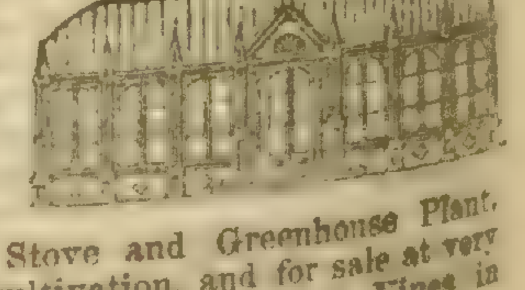
HORTICULTURE IN ALL ITS BRANCHES.

J. WEEKS & Co., King's Road, Chelsea.



HOTHOUSE BUILDERS.





The Nobility and Gentry about to erect Horticultural Buildings or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

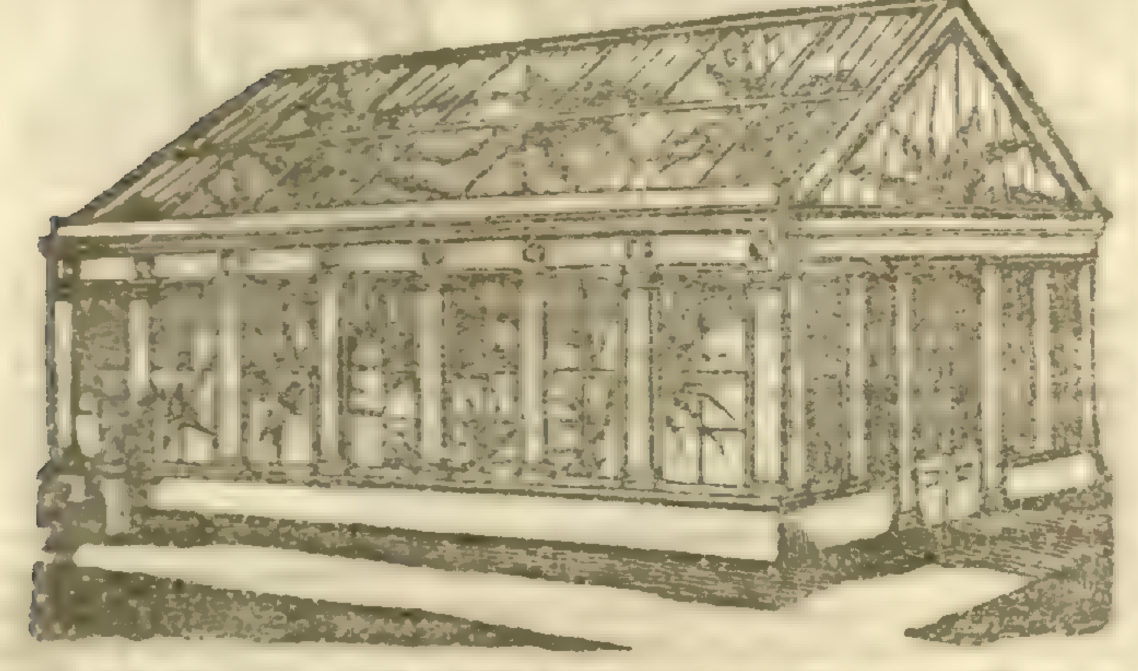
Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. Weeks & Co., King's Road, Chelsea, London.

GREEN AND HOTHOUSES made by machinery at J. LEWIS'S HORTICULTURAL WORKS, Stamford Hill, Middlesex. Warranted of best materials; being made by steam-power, they are put together in a superior manner; one trial will prove these Buildings to be the cheapest and best made in England. 1-in. Greenhouse lights at 3*d*. per foot; 2 in. at 1½*d*. per foot. Lists of Prices by enclosing two postage stamps.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



GRAY AND ORMSON, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

HOTHOUSES, CONSERVATORIES, FRAMES & LIGHTS, FOR PITS, CUCUMBER & MELON BOXES & LIGHTS.

JAMES WATTS, HOTHOUSE BUILDER, 8, Claremont Place, Old Kent Road, London.

Green and Hothouses, 9, 10, 11, 12, 13, and 14 feet wide, any length, from 16 to 100 feet. Frames and Lights for Pits, 6 ft. 6 in. 7 ft., 7 ft. 6 in., 8 ft., and 8 ft. 6 in. wide, any length, from 12 to 100 feet. Upwards of 200 Cucumber and Melon Boxes and Lights, from 4 ft. by 3 to 10 ft. 6 in. by 5 ft. 6 in., kept ready glazed with stout sheet glass, painted four times, complete, ready for immediate use, all made of best material, packed and sent to all parts of the kingdom.—Reference may be had to the Nobility, Gentry, and, the Trade, in most of the counties in England.

BY HER MAJESTY'S

ROYAL LETTERS PATENT

E. DENCH, PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

PATENT HOTHOUSES and excellent Glass at 1*s*. 3*d*. per foot super., which are superior to all others for price with quality, and if known would supersede all others. (See Appendix, in "Book of the Garden," by Mr. M'Intosh.) A Range of Houses and Hot Water Apparatus, was erected by E. D. for E. L. Betts, Esq., Preston Hall, Kent. Mr. J. Frost, head gardener, has shown their efficiency by their produce at the Royal Botanic Gardens, Regent's Park, June 8, and Chiswick, June 11. The editor of the *Gardeners' Chronicle* says: "Beautiful examples of Black Hamburgh, large both in bunch and berry, and as black as Sloes, were furnished by Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall, Kent: these well deserved the first prize which was awarded them."—*Gardeners' Chronicle*, June 18th, 1853. The Grapes were considered the best shown at Regent's Park during the season, and the Houses are as superior for the growth of everything else in horticulture, which has been fully proved, and they have been extensively erected for the nobility and gentry in all parts of the kingdom.

GLAZING WITHOUT PUTTY.—Iron and Glass alone. E. D. has Roofed the Public Baths and Washhouses, Endell Street, on this principle, and others are in hand. Patent Sashes for Peach Walls, Pits, &c., 8*d*. per foot super. Heating by Hot-water, on the most practical principles, and all the best materials used. Printed Price List sent on application.

GUTTA PERCHA HORTICULTURAL LABELS FOR ROSES, SHRUBS, TREES, &c., are easily read, very elegant, and extremely durable. Price 8*d*. per dozen, INCLUDING every NAME, printed on the Gutta Percha in bold letters.

"What is wanted in a Garden Label is durability, legibility, and cheapness; and this (the Gutta Percha Label) seems to approach such requisites nearer than any we have yet seen."—*Gardeners' Chronicle*.

Sample dozens sent post free on receipt of 12 postage stamps. Sold by E. TAYLOR, Gutta Percha Warehouse, Colchester.

ADAMSON'S REGISTERED ORNAMENTAL GARDEN EDGING, a cheap, durable, and perfect substitute for all other Edgings, for Conservatories, Terrace Walks, or Garden Borders, being of an agreeable colour, a thorough drain for the walks, applicable to borders of any form or size, and does not harbour vermin. To be obtained only of the Inventor and Manufacturer, T. H. ADAMSON, Jun., Builder, High Street, Putney, where Prospectuses may be obtained on application.

May be seen laid down in the Horticultural Society's Gardens, Chiswick, where it has withstood the late severe winter.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

Priced lists of plant tubs and boxes forwarded on application.

A GOOD HIT FOR A YOUNG BEGINNER.

TO BE SOLD, THREE GREENHOUSES, and Plants to be taken at a Valuation or Private Contract, with sundry other useful articles—Frames, a Pit, a quantity of Stocks, Tools, Mould, Manure, with House, and Fixtures. 28*l*. a year, with three years' agreement.—For further particulars apply at 6, Alpha Road, Regent's Park.

TO BE SOLD, a small GREENHOUSE, containing 30 Camellias and 10 Azaleas.—Apply to Mrs. D. WITHERS, Wimbledon, Surrey.

TO BE SOLD, a quantity of VINES, from Eyes, in Pots, three years old (Black Hamburgh).—Apply to Mr. G. FIELD, Springfield Watercress Ground, Wandsworth Road.

TO BE SOLD, about 2000 yards of superior BOX EDGING.—Apply at Mr. HEAD'S Nursery, Upper Street, Islington, London.

A GENTLEMAN about to leave for Australia, and who has had considerable professional practice in Ornamental Gardening, is desirous of Disposing of his Plans and Specifications. Rural Architecture could be very advantageously combined.—A. B., 50, Office of this Paper.

COCHIN CHINA POULTRY, ETC.

EGGS FROM PRIZE BIRDS.

MR. JOHN FAIRLIE, of Cheveley Park, Newmarket, in reply to the very urgent applications from numerous amateurs, is now prepared to dispose of a limited number of Eggs, from his celebrated prize Cochins, Brahma Pootras, Scotch Bakies, Dorkings, &c., according to the dates of the orders received.

COCHIN CHINA FOWLS.

MR. THOMAS GILBERT, of Grays, Essex, having purchased of THOMAS STURGEON, Esq., his entire breed of 1853, Gentlemen and Amateurs are informed the Birds are now on Sale, and are bred exclusively from his best Stock Birds, Jerry and Nelson. Eggs may be had at 16*s*. per dozen, from the above.

EGGS.—An Amateur has some very good Partridge, Cochin China, Dorking, and White India Game Fowls' Eggs to dispose of, at 4*s*. 6*d*. per dozen. Also, a few young Partridge Cochin China Fowls, at 1*l*. 3*s*., and Golden-laced Bantams at 18*s*. the pair, packing included.—Address, An Amateur, Matlock Bath, Derbyshire.

BRAHMA POOTRA FOWLS.

TO BE SOLD, a few Sittings of EGGS of this breed (according to priority of application), from the prize and selected birds of a gentleman—Brahmas of whose breeding have, during the past year, taken prizes at the following important Poultry Shows: the Royal Agricultural, Great Metropolitan, Birmingham, Great Yarmouth, Doncaster, Winchester, Norwich, and Manchester.—W. C. G., Post-office, Sandbach, Cheshire.

AYLESBURY DUCKS' EGGS.

TO BE SOLD, EGGS warranted from the best selected White Ducks, good shape, bill and legs fine and a good colour, 6*s*. per dozen, including packing. Early application to secure them at the above price is necessary.—Apply to WILLIAM HENRY GREEN, Builder, Walton Street, Aylesbury.

TO AMATEURS OF THE HAMBURGH FOWLS.—A few sittings of Eggs of each class of the Hamburgh Fowls, viz.:—Gold and Silver Pencilled, Gold and Silver Spangled, and Black, to be disposed of in the spring, from birds which have taken thirty prizes at most of the principal Shows during the past season. Eggs will be supplied according to the dates of the orders received. Also, Eggs of Prize Game Fowls and Aylesbury and Rouen Ducks.—Apply to the Feeder, Mr. ROBERT HUGGINS, Beighton Rectory, Acle, Norfolk.

TO BE SOLD (WARRANTED).—PURE SILVER SPANGLED HAMBURGH EGGS, at 10*s*. per Sitting, package included, but not carriage. To be had of Mr. WILLIAM FIRTH, at Stourton, near Knaresborough, Yorkshire.

LIGHT BUFF COCHIN CHINA FOWLS' EGGS.—An Amateur having a first-rate stock of Light Buff Cochin China Fowls from Prize Birds, and more eggs than he requires for his own use, is willing to part with a few sittings at a reasonable price—5*s*. 6*d*. per doz., box included.—Address "Chanticleer," Post-office, Farnham, Surrey.

PUREST BRED AYLESBURY DUCK EGGS, 1*s*. 6*d*. per egg; Dorkings, 1*s*. per egg; beautiful Silver Cinnamon Cochin, large and well feathered, 1*s*. 6*d*. per egg; Buff Ditto, 6*d*. per egg; Guinea Fowls, 8*s*. per dozen; White Cochin, very handsome, 1*s*. 6*d*. per egg; Grey large Cambridge Turkey, 5*s*. and 5*s*. 6*d*. per egg; Nutmeg and Black-edged Feathers, 5*s*. per egg; Norfolk Black, 2*s*. 6*d*. per egg; White, 2*s*. 6*d*. per egg; Brahma Pootra, 5*s*. per egg. A pair of Brahma Pootra Chickens, six weeks, 5*l*.—Apply immediately to O. E. U. F., care of Mr. George Lees, Ashbocking, Needham Market, Suffolk.

Sales by Auction.

FANCY POULTRY—EXTRA SALE OF CHOICE STOCK.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, 28th March, at 12 o'clock precisely, a SELECTION OF COCHINS from Lord Cottenham's yard; the entire brood stock of 1st Class Cochins belonging to Mr. Stainton, some good birds from Mr. Bridges, Mrs. Fooks, and others.—Catalogues by enclosing a stamped directed envelope to Mr. J. C. STEVENS, 38, King Street, Covent Garden.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction, at the Mart, Bartholomew Lane, on THURSDAY, March 30th, at 12 o'clock, a first-class collection of CARNATIONS, PICOTEES, and PINKS, also a choice assortment of Standard and Dwarf Roses, American Plants: together with a superb collection of Hollyhocks, from a celebrated grower, Fuchsias, Verbenas, Dahlias in dry roots, &c.—May be viewed the morning of sale; Catalogues had at the Mart; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Goldham to Sell by Auction, on the premises, Barnsbury Nursery, Thornhill Road, Islington, on TUESDAY, April 4, at 11 o'clock, in consequence of the ground being let for building, Five newly-erected Greenhouses, about 100 Pit-Lights, 1000 feet 3 and 4-inch Hot-water Pipes, a large quantity of Slate Shelving and York Paving; Erection of Shed, a capital Van, Chaise Cart, Garden Pots, and sundry effects; may be viewed three days prior to the sale. Catalogues may be had on the premises; of the principal Seedsmen in London; and of the Auctioneers, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MR. J. WILLMER will Sell by Auction, at the Mart, Bartholomew Lane, on WEDNESDAY, March 29, at 12 o'clock, a choice collection of Carnations and Picotees, including a unique assortment of Yellow Standard and Climbing Roses; Dahlias in dry roots, fine Lancashire Gooseberries, Pæonies, Hollyhocks, &c.—May be viewed the morning of sale, and Catalogues had at the Mart, and of the Auctioneer, Sunbury, Middlesex.

CHOICE NEW GERANIUMS, ETC.

HENRY WALTON, FLORIST, &c., Edge End, Marsden, Burnley, Lancashire, begs to offer the following at the reduced prices annexed:—

GERANIUMS.—Optimum, Queen of May, National, Eleanor, Rachael, Heroine, Astrea, Leonora, Zaria, Lagoma, Cordelia, Kulla's Butterfly, Spot, Vulcan, Commander, Harriet, Jupiter, Furpurea, and Basilisk. Purchasers' selection of 12 of the above for 36*s*., or the set of 20 for 3*l*. Hamper, &c., included.

GERANIUMS.—Ambassador, Bride of Abydos, Chloe, Commissioner, Cristine, Enchantress, Exactum, Elise, Flying Dutchman, Ganymede, Jullien, Lablache, Lavinia, Lord Mayor, Lord Gough, Lancashire Witch, Pulchra, Painter Improved, Rosa, Renown, and Surprise. Purchasers' selection of the above, 20*s*. per dozen; H. W.'s selection, 17*s*. per dozen; or the set of 21 for 35*s*., with a plant of Henderson's Extravaganza included.

GERANIUMS, older show varieties, 9*s*. to 12*s*. per dozen.

" Fancy varieties, 12*s*. to 24*s*. per dozen.

FUCHSIAS, new varieties of last Season.—Beauty, Brilliant, Collegian, Dr. Lindley, Duchess of Lancaster, England's Glory, Glory (Banks), Incomparable, King Charming, Lady Emily Cavendish, Lady Montague, Lady Franklin, Mrs. Patterson, Perfection, Princeps, Premier, Purple Perfection, Vesta, Beauty of Devonshire, and Roi des Fuchsias. The above 1*s*. 6*d*. each, or 10*s*. 6*d*. to 15*s*. per dozen.

CINERARIAS.—British Queen, Uttoxeter Pet, Dagobert, Lady of the Lake, Brilliant, Enchantress, Hebe, Tyrian Prince, and Prima Donna. The above 9 for 14*s*.

CINERARIAS.—Catherine Seaton, Clara Mowbray, Gustavus, Iago, Mrs. Sidney Herbert, Mr. Sidney Herbert, Mrs. Charles Kean, Marianne, Magnum Bonum, Nonsuch, Rosy Morn, St. Clair of the Isles, and Surprise. 12*s*. per dozen, package included: older varieties, 6*s*. and 9*s*. per dozen

VERBENAS, choice varieties of last year, 1*s*. each, or 7*s*. 6*d*. per dozen.

PETUNIAS, new varieties of last season, 1*s*. each.

The above selections are all strong, healthy, and well-established plants, and cannot fail to give satisfaction to parties purchasing.

PANSIES in great variety, of which H. W. possesses more than 2000 extra strong healthy plants of the best leading show varieties out, 4*s*. 6*d*., 6*s*., 9*s*., 12*s*., and 18*s*. per dozen.

H. W. has also a good collection of Hollyhocks, Dahlias, and a great variety of Bedding Plants, &c. &c., catalogues of which will be ready, and may be had for one postage stamp, in the course of a few days.

It is respectfully requested that all orders from unknown parties (unless reference is given) be accompanied with a Post-office Order, payable at Marsden, Lancashire.

JOHN HOLLAND, Bradshaw Gardens, Middleton, Manchester, is, this year, selling out his celebrated Pansy, "FATHER GAVAZZI," at 5*s*. per plant. It is allowed by all who have seen it to be the best Pansy yet raised. Three blooms of this noble flower were submitted to the Editor of the *Gardeners' Chronicle*, who thus notices them in that paper of May 21, 1853:—

"J. H., Middleton.—Your seedling is a first-class flower, and an improvement on the Duke of Norfolk."

It was also in the first stand, and had a first class certificate awarded it at the Botanical Gardens, Manchester, May 25th, 1853. Colour deep golden yellow, top petals rich dark maroon, bottom petals margined with the same, and the belting continued evenly round, very large and fine form, solid eye.

Also the following superior SHOW PANSIES, in strong Plants, at 6*s*. per dozen, package, &c., included.

Adela—Turner	Iron Duke—Grieve
Amelia—Bragg	Ibrahim Pacha—Edmonds
Aurora—Bell	Juventa—Hooper
Blanche—Turner	King—Jennings
Black Diamond—Parker	Loveliness—Fellowes
British Queen—Dickson & Co.	Miriam—Dickson & Co.
Blue Border—Boyd	Mr. Beck—Turner
Blue Perfection—Byne	Miss C. Bouverie—Archer
Constance—Thomson	Nobilis—Bell
Commander-in-Chief—Youell	Prince of Orange—Hooper
Duke of Perth—Handasyde	Pandora—Hunt
Duke of Norfolk—Bell	Queen of England—Fellowes
Euphemia—Turner	Rotunda—Hunt
Eustace—Turner	Robert Burns—Campbell
Ethelred—Turner	Sir J. Paxton—Dixon & Sons
Eloise—Byne	Sir John Franklin—Hooper
Fair Flora—Byne	Sir P. Sidney—Fellowes
Favourite—Hooper	Sylvia—Griffin
France Cycole—Grieve	Timour—Bragg

Pansy Seed, selected from best sorts only, 1*s*. and 2*s*. per packet. A few packets of very choice Auricula Seed, 2*s*. 6*d*. each.

Priced and Descriptive Lists are now ready, of Auriculas, Alpines, Polyanthuses, Primroses, Pansies, Carnations, Picotees, Pinks, &c. &c., and may be had for one stamp. Post Office Orders to be made payable at Middleton, Lancashire.

FIRST CLASS NEW VERBENAS.

GEORGE SMITH, in offering the following, warrants them to give entire satisfaction; having this season raised three times the usual number from seed, and with greater success than usual, has been able to select twelve distinct and beautiful varieties, which G. S. flatters himself cannot fail to please.

CALIBAN—Rosy purple crimson, extra large, smooth on the edge and of fine form, has taken First-class Certificates at the National, Brighton, and North London Floricultural Societies.

CLIMAX—Rosy purple, eye shaded with crimson maroon, extra large, of fine form and extra fine show flower.

ANGELINA—Rosy purple, primrose eye, very large, of fine shape. First-class at the Royal Surrey Gardens.

ELECTRA—Bright lilac, fine conspicuous eye, large, of exquisite form. First-class at the Royal South London and the North London Societies.

ISLINGTON RIVAL—Bright scarlet, eye white, flower large and smooth, a free bloomer. First-class Certificate at the National, Brighton, Royal South London and North London.

NOBLISSIMA—Rosy peach, with conspicuous white eye, truss large, of exquisite form. First-class at the Royal South London, also the North London.

FORGET-ME-NOT—Lavender, with large crimson purple eye, a most conspicuous variety, of fine form, extra large and a profuse bloomer. First-class at the Royal South London, Brighton, and the North London.

TRIUMPH—Scarlet crimson, eye white, surrounded with maroon, form exquisite. First-class at the Royal South London, National, and North London.

QUEEN—Pure white, the eye surrounded with bright cherry, pip extra large and smooth. First-class at the Royal South London and North London.

SCARLET KING—Deep scarlet with white eye, fine habit, a free bloomer, flowers large, extra fine bedder.

MAGNIFICENT—A brilliant puce, of fine form, truss large, very free, surpassing all of its class, either a show or bedding var.

ZARIA—Rich lilac, dark eye, large, of fine form, an extra fine variety.

The Set of 12 for 2*l*. 5*s*., or 6 for 25*s*., in strong plants, about the 20th of April.

FUCHSIA "TELEGRAPH."

This splendid variety will be found an acquisition. The Plant is of fine growth and habit; the contrast is greater than in any other dark Fuchsia: the tube and sepals are smooth, the latter thick and broad, of brilliant coral red, well reflexed; corolla deep violet, of good size, and circular; quite equal to and distinct from Glory and Nil Desperandum. Strong Plants about the 20th of April, at 10*s*. 6*d*.; with all the leading varieties of Florists' Flowers. Catalogues forwarded in exchange for one postage stamp.

Tollington Nursery, Hornsey Road, Islington, London.

WM. HAMILTON, SEEDSMAN & FLORIST, &c., 41, Margaret Street, Cavendish Square, London, offers the following NEW SEEDS, free by post, for 5s.:—

Arctotis breviscapa	Ipomœa luteum
Centranthus macrosiphon	Linum grandifl. var. rubrum
Ethulya corymbosa	MaurandyaBarclayana coccinea
Gamolepis tagetis	Portulacca aurantiaca
Gaura Lindheimera	Perilla Nankinensis
Gomphrena aurantiaca	Vittadenia lobata

The following Seeds, which he imports annually from the Continent, have always proved very superior, and he particularly recommends them:—

	s. d.		s. d.
12 vars. Hamburgh 10-week Stocks	3 6	12 varieties Double Dwarf Rocket Larkspur ...	2 6
12 „ autumn flowering do.	3 0	12 vars. finest Zinnias ...	2 6
12 „ fine Brompton do.	3 0	10 „ Camellia Balsam...	5 0
12 „ China Asters ..	3 6	9 „ distinct Wallflower	3 6

The above sent free by post, 25s. Bedding Plants of all sorts, well established, at moderate prices. His Catalogues will be forwarded on application; they are all priced and descriptive.

SELECT FLOWER SEEDS.—POST FREE.

Marigolds, finest double dark French.	Aster, Reine Marguerite (the best variety in cultivation).
Do. do. striped Unique French.	Saponaria calabrica, var multiflora.
Do. do. true dwarf French.	Eschscholtzia californica alba.
Do. do. new dark Pigmy.	Nemesia versicolor.
Do. do. new yellow Pigmy.	Cenia turbinata.
Do. do. double orange African.	Mignonette, new large variety.
Do. do. double lemon African.	

The above MARIGOLDS are well known in the locality, having obtained First Class Awards at several Provincial Exhibitions; all own saved from carefully selected double flowers, and can be recommended with confidence. In packets of about 1000 seeds each. The Marigolds separately, 3s.; the whole collection of 13 packets, 5s.

Collections of all the most approved Annuals (own growth) 60 packets, 10s.; 30 do. 5s.; 15 do. 2s. 6d., in descriptive and cultural labels. Catalogues may be had on application.

JOHN SLATER, The Nurseries, Malton, Yorkshire.

BEAUTIFUL FLOWERS.—50 varieties of Flower Seeds, 6d. per oz.; 30 varieties of beautiful sorts, 1s. per oz.; 50 varieties in half-quarter oz. packets, 4s. per oz.; 30 varieties in packets, 3s. per oz. Any kind, in 1d. and 2d. packets, sent free by post, upon receipt of a stamped directed envelope. Vegetable Seeds of all kinds, Shrubs, Flowers, &c., at W. CULLINGFORD'S, 1, Edmund Terrace, Ball's Pond Road, Islington, London.

NEW VERBENAS FOR 1854:—

	s.	d.
ORION, dark scarlet, with a light eye	3	6
ROBIN HOOD, fine puce self	3	6
MARIE ANTOINETTE, large lavender self, distinct ...	3	6
MATCHLESS, fine purple self, excellent bedder... ...	3	6
BEAUTY, white, rosy purple eye, splendid flower, extra	5	0
MADONNA, white, distinct rose eye, fine habit and free flowerer, a splendid bedder	5	0
ATTRACTION, lavender puce, large white eye	3	6
DIADEM, orange scarlet, very attractive	3	6
NE PLUS ULTRA, splendid blue, one of the best of the colour for bedding	5	0
ARIOSTO, mulberry self, fine habit.		
BEAUTY OF THE GARDEN, excellent trusser, colour pink, with light eye, surrounded with a large circle of bright crimson, a very conspicuous and distinct variety	5	0
The stock of this variety we purchased from Mr. Fozard, of Hall Park.		
SULPHUR MODEL, fine stout habit, with splendid large trusses of excellent formed flowers; colour nankeen or pale sulphur yellow, quite distinct and new in colour	5	0
The stock of this variety we purchased of Mr. Stewart, of Salt Hill.		

All the above have been proved the second season, consequently can with confidence be the more highly recommended; and, with the exception of "Sulphur Model" and "Beauty of the Garden," were all raised by E. Banks, Esq. The collection of the above 12 distinct varieties, 42s.

Chrysanthemum "ANNIE HENDERSON," price 7s. 6d.; a full description of this appeared in *Gardeners' Chronicle* of the 18th inst.

E. G. HENDERSON & SON,
Wellington Nursery, St. John's Wood.—March 25, 1854.

MESSRS. J. AND H. BROWN offer to the Nobility and Gentry the following CHOICE SELECTED PLANTS, &c., which they will forward to any part of the Kingdom, and their new descriptive Catalogue of Plants and Seeds by post.

		s.	d.
25	Azaleas, new hardy Belgian varieties, on their own roots, with flower-buds, one of a sort by name ...	20	0
25	American Azaleas, do. do.	15	0
25	Hardy American Plants, one of a sort, by name ...	10	6
12	Hardy Heaths and Kalmias	6	0
12	Rhododendrons, including scarlet, white, and rose—hardy varieties	12	0
	New hardy Yellow Rhododendrons, each 5s. 6d. to	7	6
	Fine hardy Scarlet Rhododendrons, 2 feet, per dozen...	12	0
	Cedar of Lebanon, 3 feet, well grown in pots, per dozen	12	0
	(Araucaria, Deodara, and Coniferas of all kinds, see List.)		
	Roses, standard and half standards, per dozen ... 12s. to	15	0
	Climbing Roses of choice sorts, per dozen	6	0
50	Dwarf Roses, two of a sort, on own roots	15	0
	Wistaria sinensis, extra fine, in pots, 5 to 10 feet, each	3	6
6	Fine hardy Magnolias, one of a sort	10	6
12	Greenhouse Azaleas, one of a sort, blooming plants ...	25	0
12	Choice Camellias, by name, do.	30	0
24	Choice Ericas, one of a sort, by name	16	0
12	Orchidaceous Plants, choice species, and good plants	40	0
50	Choice Greenhouse Plants, one of a sort...	45	0
	Tree Carnations, 6 best new sorts in small pots ...	6	0
	Mimulus, 6 best sorts do. do.	4	6
	Calceolarias and Cinerarias, fine, per dozen ...12s. to	18	0
	Fancy Geraniums, the choicest kinds, per dozen ...	18	0
	Scarlet Geraniums, one of a sort, do. do.	12	0
	Fuchsias, strong plants, fine varieties, per dozen 6s. to	10	0
	Verbenas and Petunias, newest varieties, per dozen ...	6	0
12	New Perennial Belgian Phloxes, one of a sort, for ...	10	0
12	Pæonias, new white, pink, and blush, of sorts	8	0
25	Hardy Herbaceous Plants, one of a sort	7	6
25	Pinks, choicest sorts	10	0
	Yellow Picotees and Carnations, per dozen	10	0
	Pansies, best varieties by name, per dozen	10	0
12	Chrysanthemums, large and small flowered varieties ...	8	0

FRUIT TREES.

Fine Dwarf and Standard Peaches, Nectarines, Apricots, Plums, Pears, and Cherries. The best and most approved sorts of these respective kinds, to name, each 2s. 6d., or, per dozen	24	0
Untrained or maiden do., 1s. 6d. each, or, per dozen ...	12	0
Apples, dwarfs and standards of best sorts, per doz. 10s. to	15	0
Fine Gooseberries, Currants, and Raspberries, per dozen	3	0
Figs, Medlars, Walnuts, and Mulberries, each	2	0
Filberts, new thin shelled and red skinned, per dozen ...	3	0
Strong Vines, from eyes and layers, in pots, per dozen ...	18	0

A Selection of the most approved Flower Seeds, 18 papers, 5s., 36 papers, 10s., sent free by post.

New Gardens and Greenhouses furnished on moderate terms.

Albion Nursery, Stoke Newington, London.—March 25.

DILCOCK'S BRIDE BROCCOLI.

BAINBRIDGE AND HEWISON (late Jas. Edward), have the pleasure of again offering to their friends and the public their DILCOCK'S BRIDE BROCCOLI, at 2s. 6d. per packet; and while returning their thanks to their numerous patrons of last season, they beg to refer them to the following extract, taken from the *Yorkshireman* newspaper of the 30th of April last, when it was exhibited at York, for the fourth time:—"Mr. Dilcock deservedly obtained all the three prizes for Broccoli with his seedling—the 'Bride.' Taking the season into account, these vegetables were really remarkable specimens." It was equally successful the two previous years.

B. & H. are prepared to send out their Catalogues of Kitchen Garden and Flower Seeds, post free, on application, and also their Catalogue of Plants is now ready, containing Stove, Greenhouse, &c., including many of the newest and choicest of the season. Their Seeds will be of the very best quality, and in the greatest possible variety.

Sold Wholesale by NOBLE, COOPER, & BOLTON, Fleet Street; CHARLWOOD & CUMMING, Covent Garden; and by all respectable Seedsmen in town and country.—York Nurseries, March 11.

DOUBLE ITALIAN TUBEROSE ROOTS, 4s. per dozen.—The annual importation of the above-named beautiful and fragrant Flower has just been received, and large and well selected Bulbs may be obtained, without disappointment, at A. COBBETT'S Foreign Warehouse, 18, Pall Mall.

N.B. Printed regulations for treatment sent; also, just arrived very moist and open Parmasan Cheeses.

FUCHSIA "DUKE OF WELLINGTON" (STOKES).

Colour—sepals light scarlet; tube deep carmine; corolla rosy purple. Form—as given. Habit—shrubby, compact, and very prolific, blooming at every joint, perfectly distinct from all others yet in cultivation, and a type and groundwork for a new and much improved class.

JOHN MOORE AND SON, NURSERYMEN, Perry Barr, near Birmingham, beg to state that they are the fortunate possessors of this truly magnificent Fuchsia, and will send it out on and after the 20th of April next, in strong plants at 10s. 6d. each, with usual trade discount.

The great improvement of late in the colour of Fuchsias has added much to their value, but while that quality has been attained, others of equal or perhaps greater importance have not been so rapidly advancing, namely, form and habit, the latter in many instances being even worse in new than in old varieties; it will therefore be evident that improved form and habit are highly desirable. The above fine Fuchsia has these qualities in an eminent degree, and is therefore invaluable for the purpose of hybridisation alone; but apart from this it is considered of first-rate merit, as the following extracts will show:—

Mr. C. Turner, in a letter of August 27 says, "Your Fuchsia is a fine flower, of best form. I wish the corolla had been darker."

John Edwards, Esq., in National Garden Almanack.

"Stokes' 'Duke of Wellington' Fuchsia is reputed to possess many high class claims; this, we know, that the men of Birmingham are amply competent to appreciate all that pertains to merit in Fuchsias."

Mr. Glenny, in Lloyd's Newspaper of October 2, remarks:—

"We some time ago noticed an extraordinary Fuchsia, of which the blooms were sent by Mr. Stoke. We have now others from MOORE & SON just announced—'The Duke of Wellington.' We could wish for a more decided contrast, but there is everything else that can be desired; the form, size, habit, and its reflexing qualities especially, place it among the best." And again, October 9, 1853:—

"'Duke of Wellington,' the variety was raised by Stokes, who sent it long ago to us for our opinion, which was highly favourable; in fact, the flower loses upon only one point, which is the same as the Duchess of Lancaster does."

Mr. S. Moreton, of Birmingham, in a letter dated March 1853, *says:*

"The Fuchsia 'Duke of Wellington' I selected from a number of seedlings submitted to me last autumn by Mr. Stokes. It is a fine variety; the form is undeniable, and will please the most fastidious of the Birmingham growers. The tube is short; the sepals a light rosy scarlet, very broad, of good substance, and reflexing so as nearly to hide the tube; the corolla a rosy purple, proportionate, nicely rounded and smooth; size, a full average. The flower has only one fault, viz.:—corolla scarcely strong enough in colour, but from its excellent habit will make one of the best exhibition varieties that has been let out in this locality."

Mr. George Glenny, in his Garden Almanack:—

"The flower is an acquisition, and the drawing faithfully executed." In the sheet Almanack it is classed among Fuchsias "really fine;" and by letter dated February 8, Mr. G. remarks, "The Duke is different to anything else."

At Handsworth and Lozells Exhibition, July 26th, it was highly commended by the judges. See *Midland Counties Herald*, July 28, report of the Show.

At the Wolverhampton Horticultural Show, August 30, it was awarded a Certificate of Merit; also at Wellington, Salop, September 5, and at Walsall, September 14, the only places where it has been shown for a prize. It has already been seen and ordered by the following gentlemen:—

Messrs. A. Henderson & Co.	Mr. G. Smith
„ Jackson & Son	„ R. Smith, Worcester
„ Fisher, Holmes, & Co.	„ Rogers, Uttoxeter
„ J. & C. Lee	„ McPherson, Gardener to the Rt. Hon. Lord Calthorpe
„ A. Paul & Son	„ Poole, Gardener to the Rt. Hon. Earl Aylesford
„ MacIntyre & MacIntosh	„ Carpenter, Gardener to Sir F. Scott, Bart.,
„ Low & Co.	
„ E. G. Henderson & Son	
Mr. C. Turner	

And many others.

London Agents, Messrs. HURST & M'MULLEN, 6, Leadenhall Street.

A Coloured Lithograph, correctly and beautifully executed, may be had free by post for 24 stamps, which will be allowed to purchasers of not less than three plants.

WHEELER'S SHORT SELECT SEED LIST.

J. C. WHEELER AND SON'S SEED LIST *is now ready, and will be forwarded free on application. We have tried to make it as short and as select as possible, leaving out all inferior varieties, so that it is really a List of the best Seeds in cultivation. Grasses and other Agricultural Seeds, Garden and Flower Seeds, all described, and prices put to every article. We deliver our Seeds Carriage Free to almost every Railway Station in the kingdom, and take especial care that every sort we send out is true to name, and of the best quality.*

J. C. WHEELER & SON, Seed Merchants, Gloucester.

RENDLE'S NEW FARMING PRICE CURRENT AND AGRICULTURAL DIRECTORY FOR 1854.

OPINION OF THE EDITOR OF THE "MARK LANE EXPRESS:"—

"We have just seen a copy of this excellent Price Current, and consider it a most valuable companion to the Agriculturist. It is the same size as the garden edition, lately reviewed in this paper. It contains an excellent Almanack, with the University Terms, Eclipses, &c., and a List of Fairs and great Markets held in the four Western Counties. The descriptive lists of Grasses are excellent; they give all the best varieties for permanent pasture, ornamental parks and lawns, sheep walks, heathy and moory lands, &c. Then comes the list of Clover and Turnips, all described in a concise and useful manner. Then follows descriptions of the best Mangold Wurzel, Carrots, and other vegetables used in agriculture; then we have a Price Current of all the best Natural and Artificial Manures, with much useful information relative to Peruvian Guano, Lawes' Patent Superphosphate, Nitrate of Soda, Bone Dust, Bolivian Guano, &c.; then are found some very good advice relative to the purchase of so-called Wheat Manures; but the best Paper is one contributed by J. B. Lawes, Esq., of Rothamsted, 'On the Cultivation of one Green Crop after another on Heavy Land.' This should be read by all engaged in agricultural pursuits. There are some valuable tests for discovering adulterations in manures, by J. C. Nesbit, Esq., the celebrated agricultural chemist; and the report of a lecture by Professor Way on the same subject; then follow the Advertisements, comprising some illustrations of the best implements of the day. It is very well got up, and comprises 52 closely-printed pages, crown quarto size, and we strongly recommend it for the perusal of all engaged in the healthy pursuit of agriculture."

RENDLE'S PRICE CURRENT.—Opinion of the Editor of the *Illustrated London News*. See *Illustrated London News*, March 18, 1854.

"This is a scientific catalogue of the Seeds of Garden Plants by Mr. Rendle, of Plymouth, the eminent Nurseryman. The Pamphlet will be very suggestive to all who are fond of a garden, as it contains not only a classified list of every necessary or ornamental Garden Seed, but also the fullest description of the plants, and the mode of cultivating them. We rarely find so much information in so small a compass."

RENDLE'S PERMANENT PASTURE GRASSES *have always given the greatest satisfaction, and those who want Seed for the present season should consult* RENDLE'S "FARMING PRICE CURRENT AND AGRICULTURAL SEED DIRECTORY," to be obtained from

WILLIAM E. RENDLE & CO., Seed Merchants, Plymouth.

RENDLE'S PERMANENT PASTURE GRASSES *can be obtained from 24s. to 30s. per acre, according to sorts required. Renovating Grasses 10s. per acre, and all the best varieties known at the lowest market price. See Price Current.*

Apply to WILLIAM E. RENDLE & CO., Seed Merchants, Plymouth.

NORTH DEVON EVERGREEN RYE GRASS.—*This Grass, which is held in great celebrity in the West of England, should be introduced into every mixture—for* PERMANENT PASTURE.

It is a very hardy Grass, and remains evergreen throughout the most severe winter. It forms a fine bottom, and is much liked by cattle. The true sort can be had from

WILLIAM E. RENDLE & CO., Seed Merchants, Plymouth.

Price from 5s. to 6s. per bushel, or 4d. per lb.

This Grass can be recommended with the greatest confidence.

RENDLE'S IMPROVED SWEDE TURNIP.—*The Stock of this excellent Swede has been grown for us this season by R. H. Watson, Esq., Dorsley, near Totnes. It is a most hardy and valuable variety. Price 1s. 6d. per lb. For further particulars and testimonials of its excellence see* "FARMING PRICE CURRENT," to be procured from

WILLIAM E. RENDLE & CO., Seed Merchants, Plymouth.

PERUVIAN GUANO, WARRANTED OF THE BEST DESCRIPTION, AND THE DIRECT IMPORTATION OF MESSRS. ANTONY GIBBS & SONS; LAWES'S *Patent Superphosphate, Nitrate of Soda, Bone Dust, and all other Natural and Artificial Manures, at the lowest remunerative prices.—See* RENDLE'S "FARMING PRICE CURRENT AND AGRICULTURAL DIRECTORY," to be obtained from

WILLIAM E. RENDLE & CO., Seed Merchants, Plymouth.

MORTON'S YELLOW GLOBE MANGOLD WURZEL, *saved by Thomas Bennett, Esq., Gloucester, from the Stock originally grown by J. C. Morton, Esq., the Editor of the Agricultural Gazette.*

Seed of this most excellent variety can now be obtained from WILLIAM E. RENDLE & CO., Seed Merchants, Plymouth, who have purchased the whole of the Stock.

SEEDS TO IRELAND.—*Plymouth is admirably situated for supplying our sister country with some English Seeds. The Subscribers can refer to some of the leading families in Ireland, who have for many years obtained the whole of their supplies of Garden and Farm Seeds. Seeds delivered free to many of the Irish ports. See Price Current.*

WILLIAM E. RENDLE & CO., Seed Merchants, Plymouth.

WANTED, a quantity of Seedling COMMON HOLLIES and SILVER FIRS.—Apply to H. and R. STIRZAKER, Nurserymen, Skerton, Lancaster.

P.S. We have on hand about 20,000 fine transplanted Ash, from 4 to 5 feet, at 12s. 6d. per 1000; a reduction to the trade.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, MARCH 25, 1854.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 13.—1854.] SATURDAY, APRIL 1. [PRICE 6*d*.

INDEX.

Agriculture, stages of	201 *c*	Manures, Dr. Anderson on	204 *c*
— progress of	204 *c*	M'Glashen's tree-lifter	197 *b*
Agri. Soc. of England	204 *a*	Pathology, vegetable	196 *b*
— statistics	205 *a*	Pæonies, select	196 *c*
Ammonia, origin of	203 *c*	Payen on Diseases, rev.	199 *b*
Balsams, treatment of	200 *a*	Pit, dung, Cucumber	198 *b*
Bean straw	202 *c*	Plants, white-flowered	200 *c*
Bees	197 *c*	Poinsettia pulcherrima	196 *c*
Calendar, horticultural	200 *a*	Potatoes, deep soiling	198 *a*
— agricultural	205 *b*	Shanghae, news from	169 *a*
Cattle feeding	202 *c*	Sheep, mountain	203 *b*
Cookery, cottage	196 *a*	— diseases of	203 *c*
Cucumber pit, dung	198 *b*	Soils, absorptive power of	204 *b*
Diseases, Payen on, rev.	199 *b*	Statistics, agricultural	205 *a*
Draining, Dutch	202 *b*	Storms, rotatory	203 *b*
Food, working men's	196 *a*	Timber, Larch	198 *c*
Fungals	199 *c*	Trees, commemorative	198 *a*
Glass, Hartley's rough plate	198 *a*	— Coniferous	198 *c*
Grapes, weights of	197 *c*	Tree lifter, M'Glashen's	197 *b*
Highland Agricultural Society	204 *b*	Vegetable pathology	196 *b*
Holland, its dyking, &c.	202 *b*	Walnut, Himalayan	197 *b*
Horticultural Society's garden	199 *c*	Weights of Grapes	197 *c*
Indigo, green	199 *a*	Wheat disease	199 *b*
Larch timber	198 *c*	Woods and forests	198 *c*
Linnean Society	199 *a*	Zingiberaceæ, structure of	198 *a*

HORTICULTURAL SOCIETY OF LONDON.—Notice is hereby given that the EXHIBITIONS OF FLOWERS AND FRUIT, in the SOCIETY'S GARDEN, in the present season, will take place on the following SATURDAYS, viz: May 13, June 10, and July 8; and that TUESDAY, April 25, is the last day on which the usual privileged Tickets are issued to Fellows of the Society.

GRAND NATIONAL TULIP EXHIBITION FOR 1854.—It will gratify all who are interested in this event, to learn that the Council of the Royal Botanic Society of London have given permission to hold the annual meeting of the GRAND NATIONAL TULIP EXHIBITION for 1854, at the Society's Gardens, in the Regent's Park, in connexion with the Royal Botanic Society's first show, on WEDNESDAY, May 24. Schedules and full particulars will be shortly announced. In the mean time communications are to be sent to CHARLES TURNER, Royal Nursery, Slough.

ROYAL OXFORDSHIRE HORTICULTURAL SOCIETY.—The SCHEDULE of PRIZES for the year 1854, is Now Ready, including those Open to all England, on the 27th of June, viz., Stove or Greenhouse Plants, 12: 1st Prize, 15*l*.; 2d, 7*l*. 10*s*. Geraniums: 1st Prize, 15*l*.; 2d, 3*l*.—Apply for same, and for further information, to Mr. W. R. HOBBS, Acting Secretary, 23, St. Giles's Street, Oxford.

NEW ROSES FOR 1854.

BENJAMIN R. CANT has now ready for sale, strong plants in pots of all the NEW ROSES, some of which have never before been offered to the public, descriptive Catalogues of which can be had on application.

St. John's Street Nursery, Colchester.

ROLLISSON'S UNIQUE.

JAMES JENNER, NURSERYMAN and GRAPE GROWER, Priory Nursery, Priory Grove, South Lambeth, begs to inform the Public he has a large and well grown stock of the above GERANIUM, which he offers from 8*s*. to 12*s*. per dozen. Also, large plants of Tom Thumb, for vases, &c., 9*s*. per dozen; small ditto, 4*s*. per dozen. Also, a large stock of all the best Bedding Plants, 4*s*. per dozen.

FUCHSIA—DUKE OF WELLINGTON.

J. MOORE AND SON, Perry Barr, Birmingham, beg to call attention to their advertisement of the 25th ult., and in answer to numerous correspondents, they beg to say that, although possessed of a Large and Fine Stock, they cannot in fairness send it out before the day appointed, namely, the 20th inst., when good Plants will be supplied at 10*s*. 6*d*. each, with Trade discount.

CHOICE ANTIRRHINUMS.

R. LAING is now sending out Antirrhinum Seed, saved from a fine Collection of Seedlings. If sown now in the open ground it will produce fine flowering plants in the autumn. An extra Prize was awarded for 18 of the varieties exhibited at the Isleworth Horticultural Show in June last. Packets 2*s*. 6*d*. each.—The Nursery, Twickenham, Middlesex.

NEW ANTIRRHINUMS.

JOHN DOBSON begs to offer the following splendid new varieties, which he feels assured will give the greatest satisfaction. They have been selected from several thousands of Seedlings. They have also been very favourably spoken of by Mr. Edwards in the National Almanac for 1854. Strong Plants in April, at 7*s*. 6*d*. each. Beatrice (Newton) very fine white, with stripes. Sulphurea (Dobson) the best yellow ever offered.

Woodlands Nursery, Isleworth.

FLORAL NURSERY, TURNHAM GREEN.

JNO. WESTWOOD has now the pleasure of announcing (in reply to very numerous applications) that his FIRST CATALOGUE will be ready in a few days, and will be forwarded to all who have already requested, as well as those who may apply for it. The List of GERANIUMS, FUCHSIAS, VERBENAS, CHRYSANTHEMUMS, &c., will contain nearly every variety grown, J. W.'s stock being the largest in the country.—The prices will bear favourable comparison with any others, being on the lowest scale possible.

PERMANENT PASTURE.

R. H. SMITHE, of Eastling, Faversham, Kent, is now prepared to send out his Mixtures of the NATURAL GRASSES, PERENNIAL CLOVERS, &c., to lay down Land to Permanent Pasture, at 25*s*. per acre, allowing 3 bushels to the acre, carriage free. Mixtures for Lawn, or any other purpose, or the sorts separate. Most of the species of Grass are collected by the Advertiser, and he will bestow the greatest attention in selecting such as shall constitute mixtures specifical to the soil, purpose, &c., of each buyer.

"NORFOLK HERO" CUCUMBER.—Without exception the very best Cucumber for open ground cultivation that has yet been offered. It is a most prolific bearer, as handsome as any frame variety, and is as delicate in point of texture, the fruit measuring from 16 to 20 inches in length. It is in the sole possession of YOUELL & CO., who will forward per post free (on receipt of postage stamps) packets containing six Seeds, 1*s*.; 18 Seeds, 2*s*. 6*d*. "To Market Gardeners the above will be found a great acquisition."—Royal Nursery, Great Yarmouth.

NEW PLANT CATALOGUE FOR SPRING 1854.

WILLIAM E. RENDLE & Co., Plymouth, *have now the pleasure of announcing that their new Spring Catalogue of Stove and Greenhouse Plants, Geraniums, Dahlias, Azaleas, Camellias, Fuchsias, Cinerarias, Chrysanthemums, and other Flowering Plants, is now ready, and can be had in exchange for One Penny Stamp.*

Apply to WILLIAM E. RENDLE & Co., Nurserymen and Seed Merchants, Plymouth.—Established 1786.

GRASS SEEDS FOR PERMANENT PASTURE.

WHEELER AND SON'S DESCRIPTIVE LIST of GRASS SEEDS will be forwarded free on application.
J. C. WHEELER AND SON, GLOUCESTER.

A. VAN GEERT, NURSERYMAN, Ghent, Belgium, begs to inform amateurs and the trade that he has just published a SUPPLEMENT to his CATALOGUE of PLANTS for the present year, which may be obtained on application to his Agent, Mr. R. SILBERRAD, 5, Harp Lane, Great Tower St., London.

A FIRST CLASS CATALOGUE OF GERANIUMS, VERBENAS, FUCHSIAS, DAHLIAS, HOLLYHOCKS, ETC.

GEO. SMITH begs to announce that the above is now ready and will be forwarded in exchange for one postage stamp.—Tollington Nursery, Hornsey Road, Islington.

FINE MANGOLD WURZEL SEED.

LONG RED MANGOLD WURZEL.—Fine new Seed, 10*d*. per lb., or 70*s*. per cwt.

JOHN SUTTON AND SONS, Seed Growers, Reading, having a large Stock of the above, are now selling it at the low price here quoted. LARGE YELLOW GLOBE and other sorts, as see Priced List, which may be had in return for two Postage Stamps.

HARDY FLOWER SEEDS POST FREE.

SUTTON'S CHOICE ASSORTMENTS:—

		£	s.	d.
The best 100 sorts, with instructions...	... ...	1	1	0
The best 50 sorts	ditto	0	10	6
The best 36 sorts	ditto	0	7	6
The best 24 sorts	ditto	0	5	0

Address, JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

PELARGONIUMS, ETC.

JOHN DOBSON begs to announce that his Stock of the following are in fine health, and will bloom well through the season, and make good specimens for another year. Any 12 of the following, purchasers' selections, for 42*s*.; hamper, package, and carriage to London included in the price:—

Ambassador	Prince Arthur	Astrea
Magnet	Vulcan	Exhibitor
Zaria	Arethusa	Glowworm
Optimum	Spot	Helen
Harriett	Leader	Incomparable
Enchantress	Rachel	Galatea
		Rosa

Catalogues with descriptions may be had in exchange for one stamp.

J. D.'s General Spring Catalogue is now ready, and will be forwarded in exchange for one stamp.

Woodlands Nursery, Isleworth.

4, GREAT RUSSELL STREET, COVENT GARDEN,
March, 1854.

JOHN KERNAN begs to offer to gentlemen farmers, tenant farmers, and agriculturists in general, the following true and unadulterated varieties of TURNIPS and other beneficial AGRICULTURAL SEEDS:—

	Per lb.—s. d.		Per lb.—s. d.
Skirving's Improved Swede	1 0	Red Clover	0 8
Purple-topped do.... ...	1 0	White do.	1 0
Green-topped do.	1 0	Parsley, plain (a most certain essential herbage against the rot in sheep, when in Clover lays or sheep walks), per bushel	16 0
Mangold Wurzel, Long Red	1 0	Rape ... "	12 0
" Long Yellow	1 0	Mustard ... "	20 0
" Yellow Globe	1 0	Tares ... "	10 0
" Red Globe ...	1 0	Trefoil ... ... per lb.	0 6
Carrot, White Belgian ...	1 0	Lucerne ... ... "	0 9
" Altringham ...	1 0		
Italian Rye-grass, p. bushel	6 0		
Meadow Fescue do., "	7 0		
And other Grasses.			

Seeds for Exportation.

A well educated Youth wanted as an Apprentice.

SELECT FLOWER SEEDS.—POST FREE.

Marigolds, finest double dark French.	Aster, Reine Marguerite (the best variety in cultivation).
Do. do. striped Unique French.	Saponaria calabrica, var multiflora.
Do. do. true dwarf French.	Eschscholtzia californica alba.
Do. do. new dark Pigmy.	Nemesia versicolor.
Do. do. new yellow Pigmy.	Cenia turbinata.
Do. do. double orange African.	Mignonette, new large variety.
Do. do. double lemon African.	

The above MARIGOLDS are well known in the locality, having obtained First Class Awards at several Provincial Exhibitions; all own saved from carefully selected double flowers, and can be recommended with confidence. In packets of about 1000 seeds each. The Marigolds separately, 3*s*.; the whole collection of 13 packets, 5*s*.

Collections of all the most approved Annuals (own growth) 60 packets, 10*s*.; 30 do. 5*s*.; 15 do. 2*s*. 6*d*., in descriptive and cultural labels. Catalogues may be had on application.

JOHN SLATER, The Nurseries, Malton, Yorkshire.

BEAUTIFUL NEW BEDDING PLANT.
MILLER'S HYBRID MULE PINK.

ROBERT MILLER, Hartshill, Nursery, Newcastle, Staffordshire, offers with confidence the above Pink, colour a bright crimson scarlet, double; grows from 9 to 15 inches high, branches out and forms a little bush, and flowers most abundantly from June to October, and perfectly hardy. See *Gardeners' Chronicle*, Sept. 24, 1853.

DIANTHUS R. M., very pretty, and being dwarf in habit, it will doubtless make a good bedding plant. Price 12*s*. per doz., package included. The usual discount to the Trade. To be let out the second week in April. Post-office orders from unknown correspondents made payable at Newcastle.

UNBLOOMED SEEDLING CALCEOLARIAS.

C. KIMBERLEY has a large stock of the above; the seed was saved from that well-known favourite Kinghorn's Masterpiece, and other splendid kinds, carefully impregnated. The plants are nice and healthy, established in small pots, and may be had at 6*s*. per dozen, or three dozen for 15*s*., Hamper included.

Nurseries; Pinley and Stoke, near Coventry.

HOLLYHOCKS.

A. PAUL AND SON have now ready for Sale a very large and healthy stock of HOLLYHOCKS, suited to bloom well next autumn; Border Flowers, 4*s*., 6*s*., and 9*s*. per dozen; fine named kinds, 12*s*., 18*s*., 24*s*., and 30*s*. per dozen. A fresh supply of their new and unrivalled seedlings, which obtained first prizes at the leading exhibitions last year, and were never once beaten, will be sent out the end of the month, strong, healthy plants. A priced descriptive Catalogue free by post on application.

Recently published, free by post, price 1*s*., AN HOUR WITH THE HOLLYHOCK.

N.B. Post-office orders may be drawn on Waltham Cross or London.—Nurseries, Cheshunt, Herts.

MAY'S PARAGON CABBAGE.

THE Subscriber, in offering the above for the first time, guarantees it to be the finest Cabbage in existence; of dwarf habit; has never been known to run; attains a large size (having been grown to the great weight of 28 lbs.); of a most beautiful green, and boils tender as Asparagus, which it continues to do throughout the season; in flavour is as far superior to the ordinary Cabbages of the day as they are to the old Drumhead Scotch. In ¼ oz. packets, 1*s*. each, free by post. The usual allowance to the trade.

H. M. begs to inform the public that he is unable to supply any more of his MAGNUM BONUM LETTUCE, as the stock was only small and is completely sold out.

Address all orders and communications to HENRY MAY, the Hope Nurseries, near Bedale, Yorkshire.

CAPE HEATHS.

W. J. EPPS begs to call attention to his extensive and rare Collection of Heaths, which are in the finest condition possible; very bushy and well formed for specimens in 3, 4, and 6-inch pots, consisting of all the best varieties, such as Aristata ampullacea, tricolor, jasminiflora, ventricosa, Massoni, Webbiana, obbata, &c., &c., 12*s*., 18*s*., and 21*s*. per doz. A Collection of 100 varieties, 5*l*., carriage paid to London. A liberal allowance to the Trade, provided a quantity be taken. All the new and best kinds of Azaleas, Stove and Greenhouse Plants, Fuchsias, Dahlias, Verbenas, and Roses, equally moderate.

W. J. E. has about 200 young specimens of Heath, &c., to part with in 8, 11, and 20-inch pots. Also a Collection of very beautiful Orchids. Lists sent on application.

Nurseries, Maidstone and Ashford.

DOUBLE FRENCH MARIGOLD AND CAPE STOCK SEEDS. A packet of beautiful DOUBLE FRENCH MARIGOLD SEEDS forwarded on receipt of Seven Penny Postage Stamps. Ditto, SCARLET CAPE STOCK, ditto. EDWARD SANG & SONS, Nursery and Seedsmen, Kirkaldy, N.B.

DOUBLE ITALIAN TUBEROSE ROOTS, 4*s*. per dozen.—The annual importation of the above-named beautiful and fragrant Flower has just been received, and large and well selected Bulbs may be obtained, without disappointment, at A. COBBETT'S Foreign Warehouse, 18, Pall Mall.

N.B. Printed regulations for treatment sent; also, just arrived very moist and open Parmasan Cheeses.

NEW ALSIKE CLOVER, Price Ten Guineas per cwt., or in small quantities at 2*s*. per lb., may be had on application to Mr. H. RAYNBIRD, Basingstoke, Hants. Also New Home-grown ITALIAN RYE-GRASS, of good and genuine Stock, at 30*s*. to 35*s*. per quarter.

PAGE AND CO.'S

BLIGHT COMPOSITION should be in the hands of all Plant and Fruit Cultivators. 4*s*. per gallon, sufficient to make four. For testimonials see back leaf *Gardeners Chronicle*, March 11, 1854.

GARDEN AND AGRICULTURAL SEEDS, first quality, and lowest market price.

Oxford Street (adjoining Radley's Hotel, 20 yards from the Railway and Docks), Southampton.

BALSAM SEED.—Mr. GLENNY has none but mixtures left, but they contain all the varieties; 60 seeds for 13 stamps.

DAHLIA SEED.—A few sealed packets of 100 seeds from 12 first-rate flowers, grown by themselves, 30 stamps. Mr. GLENNY engages to procure all the subjects recommended in his Almanac, if they are to be had at all: letters only attended to.—420, Strand.

SUPERB SHOW CARNATIONS, PICOTEES, PINKS, AND PANSIES.

JOHN HOLLAND, Bradshaw Gardens, Middleton, near Manchester, is now sending out choice selections of the above, in strong well-rooted plants, package, &c., included.

	£	s.	d.
25 pairs of Show Carnations in 25 different varieties	£1	0	0
25 pairs of Picotees do. do. ...	1	0	0
25 pairs of Pinks do. do. ...	0	10	0
25 pairs of fine show Pansies, in 25 distinct varieties...	0	12	0

Auriculas, Alpines, Polyanthuses, &c. Extra fine selected Pansy Seed, 1*s*. and 2*s*. per packet. A few packets of Auricula Seed, extra fine, 2*s*. 6*d*. per packet. Priced and Descriptive Catalogues are now ready, and may be had for one postage stamp. Post Office orders to be made payable at Middleton, Lancashire.

J. H. begs to refer to his Advertisement in this Paper of March 25th, for names of a portion of his stock of Pansies.

GEORGE BAKER begs to say that his DESCRIPTIVE CATALOGUE of AMERICAN PLANTS, CONIFERS, ORNAMENTAL SHRUBS, FRUIT and FOREST TREES, &c., may be had by enclosing two postage stamps.

G. B. wishes to call particular attention to his fine Stock of GREEN and WEEPING HOLLIES from 1 to 12 feet high.

G. B. has supplied the American Exhibition in the Royal Botanic Gardens, Regent's Park, from its commencement.

American Nursery, Windlesham, near Bagshot, Surrey, about six miles from Staines Station, Windsor Branch, South-Western Railway, where conveyances may be obtained.

FIRST CLASS NEW VERBENAS.

GEORGE SMITH, in offering the following, warrants them to give entire satisfaction; having this season raised three times the usual number from seed, and with greater success than usual, has been able to select twelve distinct and beautiful varieties, which G. S. flatters himself cannot fail to please.

CALIBAN—Rosy purple crimson, extra large, smooth on the edge and of fine form, has taken First-class Certificates at the National, Brighton, and North London Floricultural Societies.

CLIMAX—Rosy purple, eye shaded with crimson maroon, extra large, of fine form and extra fine show flower.

ANGELINA—Rosy purple, primrose eye, very large, of fine shape. First-class at the Royal Surrey Gardens.

ELECTRA—Bright lilac, fine conspicuous eye, large, of exquisite form. First-class at the Royal South London and the North London Societies.

ISLINGTON RIVAL—Bright scarlet, eye white, flower large and smooth, a free bloomer. First-class Certificate at the National, Brighton, Royal South London and North London.

NOBLISSIMA—Rosy peach, with conspicuous white eye, truss large, of exquisite form. First-class at the Royal South London, also the North London.

FORGET-ME-NOT—Lavender, with large crimson purple eye, a most conspicuous variety, of fine form, extra large and a profuse bloomer. First-class at the Royal South London, Brighton, and the North London.

TRIUMPH—Scarlet crimson, eye white, surrounded with maroon, form exquisite. First-class at the Royal South London, National, and North London.

QUEEN—Pure white, the eye surrounded with bright cherry, pip extra large and smooth. First-class at the Royal South London and North London.

SCARLET KING—Deep scarlet with white eye, fine habit, a free bloomer, flowers large, extra fine bedder.

MAGNIFICENT—A brilliant puce, of fine form, truss large, very free, surpassing all of its class, either a show or bedding var.

ZARIA—Rich lilac, dark eye, large, of fine form, an extra fine variety.

The Set of 12 for 2*l.* 5*s.*, or 6 for 25*s.*, in strong plants, about the 20th of April.

FUCHSIA "TELEGRAPH."

This splendid variety will be found an acquisition. The Plant is of fine growth and habit; the contrast is greater than in any other dark Fuchsia; the tube and sepals are smooth, the latter thick and broad, of brilliant coral red, well reflexed; corolla deep violet, of good size, and circular; quite equal to and distinct from Glory and Nil Desperandum. Strong Plants about the 20th of April, at 10*s.* 6*d.*; with all the leading varieties of Florists' Flowers. Catalogues forwarded in exchange for one postage stamp.

Tollington Nursery, Hornsey Road, Islington, London.

BASS AND BROWN'S SEED AND PLANT LIST
free by post for three penny stamps.

COLLECTIONS OF VEGETABLE SEEDS, comprising the best in cultivation, including several new sorts of first-rate quality, 3*l.*, 2*l.*, 25*s.*, and 15*s.*

For a few choice new Vegetables, see *Gardeners' Chronicle* of Feb. 13th and 27th, advertised.

FLOWER SEEDS—BEST ASSORTMENTS, free by post.

The Catalogue gives colours, heights, months of flowering, hardiness, duration, and much descriptive information of time of sowing, and other treatment.

	s.	d.
100 varieties select showy Annuals, including the newest	15	0
50 vars. do., 8*s.* 6*d.*; 30 vars., 5*s.* 6*d.*; 20 vars.	4	0
20 varieties best Dwarf Annuals, in large packets, for filling beds on lawns, 7*s.* 6*d.*; 12 do.	5	0
20 vars. choice Greenhouse Annuals, including the new, 7*s.* 6*d.*; 12 varieties, do.	5	0
20 vars. choice Greenhouse Perennials, including fine and new	10	6
12 varieties ditto ditto	7	6
20 vars. Hardy Biennials and Perennials, including very choice and new, 7*s.* 6*d.*; 12 varieties do.	5	0

The following we beg strongly to recommend as saved from collections of first-class flowers, in packets as follows:—

	s.	d.
Calceolaria, very choice, 1*s.*; extra superb, from fine selected flowers	2	6
Cineraria, very choice, 1*s.*; extra new and choice from our superb collection	2	6
Fuchsia, new and choice, from our superb collection ...	1	0
Geranium, extra choice and new, from our superb collection	2	6
„ Scarlet, from our choice collection	0	6
„ Fancies, from our beautiful collection of best vars.	1	6
Gloxinia, choice, 6*d.*; extra, from our superb collection ...	2	6
Petunia, new and choice, from our superb collection ...	1	0
Verbena, very choice, 1*s.*; extra, from our superb collection of new varieties	2	6
Antirrhinum, choice, 6*d.*; from new of our superb collection	1	0
Carnation and Picotee, from collection of 400 vars	2	6
Gladiolus, fine mixed early, 6*d.*; from choice named of our superb collection	1	0
Iris, English vars, fine, 6*d.*; best of our superb collection...	2	6
Pansy, extra choice, from a first-rate collection	1	0
Potentilla, very choice, 1*s.*; extra, from our very beautiful collection	2	6
Ranunculus, from our superior collection	2	6
Auricula, from a first-rate collection	1	0

A FEW VERY CHOICE NEW FLOWER SEEDS.

	s.	d.
Leptosiphon luteum, fine orange colour; very beautiful, packets, 1*s.* and	2	6
Nemesia bicolor, white and blue, very showy and attractive half-hardy annual, height 9 inches, beautiful for massing	0	6
Calceolaria chelidinoides, ex., clear bright yellow, fine for massing on lawns; the mouth being closed, it is not injured by wet	1	0
Lobelia Limburgensis, a new perennial variety from Prussia, extra	1	0
Portulacca aurantiaca, new orange, 1*s.*; nova rosea ...	1	0
Sweet William, very choice striped French	0	6

For a large number of new Flower Seeds, see advertisement in the *Gardeners' Chronicle* of Feb. 13th and 27th.

CHOICE IMPORTED SEEDS.

	s	d.
24 superb varieties Dwarf German Stocks, 4*s.*; 12 varieties	2	6
Mixed, in 40 superb varieties, per packet ... 6*d.* to	1	0
Choice new brimstone	0	6
*Fine new French, straw colour	1	0
10 Superb varieties, new large flowering	2	6
18 „ Wallflower leaved, or Prussian ...	3	6
New white Wallflower leaved, very dwarf and fine, per packet ... ... 6*d.* to	1	0
6 Superb varieties Brompton Stocks	1	6
7 „ Emperor Stocks, lasting more than 4 years, and blooming 2 or 3 times a year	2	0
New White Emperor, very choice, per packet	1	0
12 Superb varieties Globe-flowering Aster	2	0
12 „ Pyramidal Aster	2	0
12 Very fine French Pæony-flowering varieties; these are extraordinarily fine	5	0
Mixed do., per packet	1	0
6 Superb varieties Zinnia elegans	2	0

And other fine Imported Seeds. See Catalogue.

☞ Goods CARRIAGE FREE with orders of 20*s.* and upwards to London, Ipswich, Norwich, or any Station on the Line.

Remittances are requested with orders from unknown correspondents. Post-office Orders to be made payable to BASS & BROWN, or to STEPHEN BROWN. The Autumn and Spring Catalogues supplied free by post for three penny stamps each, the cost of which may be deducted from orders sent.

BASS & BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk. ESTABLISHED ABOUT HALF A CENTURY.

EDWARD GEORGE HENDERSON AND SON, of the Wellington Nursery, St. John's Wood, London, are now prepared to take orders for any of the undermentioned new Plants which will be sent out in the course of the present season, due notice of which will be given:—

VERBENAS.

Orion	3*s.*	6*d.*	Attraction	3*s.*	6*d.*
Robin Hood	3	6	Diadem	3	6
Marie Antoinette ...	3	6	Ne Plus Ultra	5	0
Matchless	3	6	Ariosta	—	
Beauty	5	0	Beauty of the Garden	5	0
Madonna	5	0	Sulphur Model ...	5	0

Or 42*s.* the set.

Chrysanthemum Annie Henderson... ... ... 7*s.* 6*d.*

BEDDING CALCEOLARIAS.

Matchless	7*s.*	6*d.*	Masterpiece	7*s.*	6*d.*
Loveliness	7	6	Superba	7	6
Surprise	7	6	Or the set for 31*s.* 6*d.*		

Fuchsia Monarch	10*s.*	6*d.*
Geranium Silver Queen	7	6
Fancy Geranium The Fornarina	10	6
„ „ Bonnie Lassie	15	0
„ „ Loveliness	10	6
Geranium Pretty Polly	10	6
Bedding Geranium Quercifolium eximium ...	7	6
„ „ Etoile de Vaise	—	
„ „ Picturata	3	6
Cyclamen Atkinsii, to be sent out next spring ...	10	6
Gloxinia Duke of Wellington	7	6
„ Lady Franklin	7	6

The two last can now be forwarded, post free.

April 1, 1854.

J. COLE begs respectfully to inform the Floricultural Public that he has some very fine Shrubby Bedding CALCEOLARIAS to offer them, namely, PRINCE OF ORANGE and ERECTUM. The former a dark orange with a large umbel of flowers nearly as large as "Kentish Hero;" the latter an orange with a scarlet tinge, of erect habit, similar to "Viscosissima," with much larger flowers. J. C. flatters himself they will give the greatest satisfaction to all purchasers, being entirely shrubby and free from that coarseness of foliage many of the varieties evince. "Prince of Orange" is of dwarf habit, with small green glossy foliage, and never infested with green-fly, which is a great acquisition in the Calceolaria. J. C. offers them at 5*s.* per plant. The usual discount when three are taken. Flowers of them were submitted to some of the leading London nurserymen, who wished to have plants when sent out. A remittance solicited from unknown correspondents.

Keyfield Nursery, St. Albans, Herts.

YOUELL AND CO. beg to offer the following CONIFERS, most of which, being in pots, may still be removed with perfect safety; indeed, owing to the backward spring, they have not yet commenced growth in our Nursery, so that the largest specimens would not injure by removal.

CEDRUS DEODARA AND ARAUCARIA IMBRICATA.—The beauty and unique character of the above hardy and most ornamental of all Evergreen Trees are too well known to admit of any comment. Our plants are grown within 500 yards of the wash of the Sea, in this the most eastern point of England, and consequently fully exposed to the gales of the North Sea and German Ocean, which they stand with impunity. The advantage to be derived from the selection of such for similar exposed situations must therefore be obvious, whilst their removal to a more genial climate is calculated to induce them to grow with extraordinary vigour; and these remarks hold good not only concerning the Araucaria imbricata and Cedrus Deodara, but also in regard to all the other Conifers enumerated below.

CEDRUS DEODARA.

	Per dozen.—s.	d.		Per dozen.—s.	d.
4 to 6 inches ...	6	0	2 to 2½ feet ...	30	0
12 to 15 inches ...	12	0	3 feet	42	0
1½ to 2 feet ...	20	0	3½ to 4 feet ...	60	0

Large specimens, 15*s.* to 21*s.* each.

ARAUCARIA IMBRICATA.

4 inches	Per doz. 6*s.* 0*d.*		1½ to 2 feet	Per doz. 60*s.* 0*d.*	
1 foot ...	„ „ 30	0	2 to 2½ feet	„ 80	0
1 to 1½ foot ...	„ 42	0	Large specimens up to 4 feet.		

	Per dozen.—s.	d.
Abies Douglasi, 4 to 6 in.	12	0
khutrow, or Morinda, 6 to 9 in. ...	9	0
„ 12 to 15 in. ...	12	0
„ 2 to 3 ft. ...	24	0
Menziesi, 9 to 12 in. ...	9	0
„ 1½ to 2 ft. ...	12	0
orientalis, 4 to 6 in., bushy	12	0
„ 6 to 9 in., do. ...	18	0
pumila (Waterer's), very strong ...	24	0
Smithiana, 1 yr., p. 100	15	0
Witmannia	60	0
Cedrus Atlantica, 9 to 12 in.	20	0
„ Libani, 1½ to 2 ft.	18	0
„ „ 2 to 3 ft.	30	0
Cryptomeria japonica, 3 to 3½ ft., each	3	6
Cupressus Tourneforti:—		
1 year, per 100 ...	5	0
funebris, 4 to 6 in. ...	9	0
„ 6 to 9 in. ...	12	0
Goveniana, 1½ to 2 ft...	42	0
„ 2 to 2½ ft...	60	0
Lambertiana, 12 to 15 in.	24	0
„ 18 in. to 2 ft.	42	0
Uhdeana, 9 in... ...	12	0
„ 12 to 18 in...	18	0
„ 18 to 24 in...	24	0
Whitleyi, each ...	5	0
Cupressus Nova sp., from the Himalaya Mountains, forming a magnificent Evergreen Tree, 80 ft. in height, strong 1-year old plants from seed established in single pots	63	0
The above is quite new to Europe, and is not yet named.		
Dacrydium Franklini, 4 to 6 in.	24	0
Juniperus Bedfordiana, 6 in.	6	0
„ „ 9 to 12 in.	9	0
„ „ 1 to 1½ ft.	18	0
„ excelsa, 12 to 15 in.	20	0
„ Hibernica, 2 to 3 ft.	24	0
„ squamata, 4 to 6 in.	9	0
„ „ 9 to 15 in.	12	0

	Per dozen.—s.	d.
Libocedrus chilensis, each 3*s.* 6*d.* to	5	0
Picea cephalonica:—		
1½ to 2 ft.	42	0
nobilis, 6 to 9 in., each	7	6
Nordmanniana, 4 to 6-inch cuttings ...	42	0
stout seedlings, 9 in., each	15	0
Pindrow, 9 in.	12	0
Webbiana, 1 year, per 100 ...	25	0
„ 9 in. ...	18	0
Pinsapo, 4 in., bushy...	24	0
„ 6 in., each ...	3	6
„ 2 to 3 ft., fine specimens, each, 15*s.* to	21	0
Pinus:—		
cembra, 9 in. to 1 ft. ...	6	0
cembroides, 9 in., each	5	0
Edgariana, 1 to 1½ ft....	10	6
excelsa, 1 year, per 100	10	0
„ 9 to 12 in., in pots	9	0
„ 1½ to 2 ft. „	12	0
„ 1½ to 2 ft., bedded, per 100	60	0
„ 2 to 2½ ft. „	75	0
Gerardiana, 9 in. to 1 ft., very strong	6	0
insignis, each, 2*s.* 6*d.* to	5	0
ponderosa, from seed..	60	0
canariensis	20	0
Hamiltoni	20	0
Podocarpus totara, 2 to 2½ ft.	42	0
Taxus adpressa, 9 to 12 in.	18	0
„ Dovastoni, or weeping, 12 to 15 in.	20	0
„ fastigiata, or Irish, 1½ to 2 ft., per 100 ...	30	0
Larger proportionately cheap.		
„ variegata, each ...	3	6
„ baccata, gold striped, 6 to 9 in. ...	18	0
„ „ silver striped, each	2	6
„ „ elegantissima, 1 to 2 ft., each ...	5	0
„ pyramidalis, 1 to 1½ ft., per dozen	12	0
„ „ 1½ to 2 ft. „	18	0
„ Harringtoni, each ...	3	6

☞ Less quantities than those named above supplied at the same prices. Orders of 2*l.* and upwards are delivered Carriage Free to London or Hull, or to any Railway Station within 150 miles of the Nursery.

YOUELL & CO. beg to refer to their Advertisement of a choice and extensive Collection of Plants which appeared in this Paper of last week. Catalogues will be forwarded free on application.

YOUELL AND CO., Royal Nursery, Great Yarmouth.

GRASS SEEDS, ETC.

THOMAS GIBBS AND CO. (the SEEDSMEN to the Royal Agricultural Society of England), corner of HALF-MOON STREET, Piccadilly, beg to draw attention to their Grass Seeds for Laying down Land to Permanent Grass. The Seeds which they employ in forming the Mixtures for various soils are well cleaned under their own superintendence.

Mixtures for Permanent Meadows and Pastures
„ Parks or Pasturage in sight of Mansions
„ Irrigation on Water Meadows
„ Renovating Old Swards
„ Fine Garden Lawns, Cricket Grounds, &c.
„ two or three years' lay.

RYE-GRASS—Italian, very fine sample
„ Dickinson's Italian do.
„ Pacey's Perennial and Evergreen
„ Annual or Common.

CLOVERS—Red, White, and Alsike
„ Trefoil, Red Suckling, &c.

CARROTS—Large White Belgian
„ Field, Altringham, &c.

MANGOLD WURZEL—Long Red
„ Orange or Yellow Globe, and other sorts.

TURNIPS—Swedes, Purple Top, Skirving's, &c.
„ Hybrids, Gibbs' Green Top
„ Globes, Tankards, &c.

FARM SEEDS of all descriptions.

Priced Lists, Detail Catalogues, and other information can be obtained on application to THOMAS GIBBS & CO.

NEW DAHLIA, FUCHSIAS, AND PETUNIA.

CHARLES KIMBERLEY begs to offer the following novelties:—

DAHLIA.

MAGNET (KIMBERLEY'S).—Ruby crimson, a distinct shade of colour, very constant, one of the best Dahlias of the season. Obtained a Certificate at Brighton Open Show, Sept. 14, 1853, and the National Floricultural Society, London, Sept. 22 (six blooms at each place, cut from two plants); also in the first stand of 24 blooms at Leamington, Aug. 30, 1853. Height 3 feet, plants the first week in May; 10*s.* 6*d.* each.

FUCHSIAS.

HENRY MONTEITH (KIMBERLEY'S).—Tube and sepals rich crimson, corolla deep purple; awarded the first prize at the Coventry Horticultural Society, Sept. 13, 1853, and acknowledged by all who saw it to be the finest specimen ever seen. Plants the first week in April; 7*s.* 6*d.* each.

GLOBOSA SPLENDENS (KIMBERLEY).—Tube and sepals rich crimson with deep purple corolla; the largest and best Globe Fuchsia ever raised. Plants the first week in April; 7*s.* 6*d.* each.

PETUNIA.

NOVELTY (KIMBERLEY'S).—Blotched lilac, a distinct and beautiful variety, awarded a Label of Commendation at the National Floricultural Society, Sept. 22, 1853. Plants the first week in April; 3*s.* 6*d.* each.

A Descriptive Catalogue of Dahlias, &c., may be had on application.—Pinley and Stoke Nurseries, near Coventry.

CHARLES TURNER will have ready to send out by the 1st of May, strong plants of the following:—

NEW DAHLIAS.

KING OF YELLOWS (COLLIER).—Pure yellow, petals smooth, and well rounded; very double, good outline, and very constant; the best of its class. This superb variety was awarded First-class Certificates at the National Floricultural Society; Royal South London Society; Slough; Surrey Amateur Dahlia Society, and several other metropolitan exhibitions. 10*s.* 6*d.*

GOLDEN EAGLE (W. HOLMES).—Bright golden orange of the most pleasing shade, quite new, and distinct in colour to any variety at present in cultivation; very double, constant, and of good form. Certificate of merit at the National Floricultural, and several other societies. 10*s.* 6*d.*

TALISMAN (FELLOWES).—Rich deep-shaded plum, medium size, very deep and well formed, with prominent close high centre. This is a fine show flower. First-class Certificate at Norwich. 10*s.* 6*d.*

LADY MARY LABOUCHERE (TURNER).—White delicately tipped with lavender, resembling Lady St. Maur in colour, but of good form, high centre, and very useful show flower. It was awarded Certificates of Merit at the National Floricultural Society; Trowbridge, and Newbury. 10*s.* 6*d.*

ROSEA ELEGANS (RAWLINGS).—Lilac Rose, approaching the old Dahlia "Hope" in shade of colour. The petals are smooth and very stout; good exhibition flower, of medium size. 10*s.* 6*d.*

FANCY VARIETIES.

ADMIRATION (GREEN).—White, edged with scarlet; the white is pure, and the marking regular; fine form, and very constant: has been successfully shown at the principal exhibitions. It was awarded a First-class Certificate at the Royal South-London Floricultural Society; Certificate of Merit at the National and Slough Shows, 4 feet. 10*s.* 6*d.*

HENRIETTA (HOWARD).—Bluish-violet purple, tipped with white; chaste, novel, and fine form, with smooth stout petals; a first-class flower, 3 to 4 feet. 10*s.* 6*d.*

NEW FUCHSIAS.

The following eight new varieties were raised by E. Banks, Esq., the successful raiser of "Glory," and several other established favourites, and are highly recommended by C. Turner.

AUTOCRAT, a large bold dark variety, tube and sepals crimson, with rich smooth dark corolla; reflexes back to the tube. 7*s.* 6*d.*

CHARMER, white tube and sepals, purple corolla, free habit; very novel and attractive, being a light variety, with a decided purple corolla. 7*s.* 6*d.*

VANGUARD, rich crimson tube and sepals, with intensely dark corolla; shape and habit very good, extra fine. 7*s.* 6*d.*

QUEEN OF HANOVER, pure white tube and sepals, carmine corolla, stout, reflexes handsomely, good habit. 7*s.* 6*d.*

ELEGANS, a beautifully reflexed dark variety, of the richest colours. 7*s.* 6*d.*

OMEGA, crimson tube and sepals, bright lilac corolla, very dissimilar to all existing varieties, good shape. 7*s.* 6*d.*

CLIO, white with lake corolla; large, stout, and free-flowering one of the best light varieties. 7*s.* 6*d.*

MAGNIFICA, crimson, dark purple corolla; an excellent flower, of good form. 7*s.* 6*d.*

NEW VERBENAS.

MRS. D. TYSSON (ROBINSON), white, with large deep crimson eye; pips large, flat, and smooth; full size truss, and remarkably close dwarf habit; well adapted for bedding or pot culture; extra fine. 5*s.*

ANNIE LAURIE (EDMONDS), rosy-purple, with large white eye; large, very fine shape, and good grower; extra fine. 5*s.*

ROUGE ET NOIR (EDMONDS), rich dark crimson, distinct white eye, very novel, and attractive for bedding; fine. 5*s.*

PRESIDENT (EDMONDS), dark maroon, with large white eye; very conspicuous, novel, and showy; fine. 5*s.*

MRS. GERARD LEIGH (EDMONDS), lilac, with large white eye, fine shape, and free bloomer; extra fine. 5*s.*

BRIDESMAID (EDMONDS) white, large rose eye, full size, free flowering, and fine for bedding. 5*s.*

CANARY BIRD (EDMONDS), sulphur yellow, good shape. 3*s.* 6*d.*

C. T. begs to offer good plants of the newest and best varieties of POMPON CHRYSANTHEMUMS, at 9*s.*, 12*s.*, and 18*s.* per dozen. These can be supplied at once.

THE FLUKE KIDNEY POTATO.

CHARLES TURNER begs to call attention to this excellent Potato for a general crop. It is a most prolific variety, superior flavour, large size, smooth skin, and keeps remarkably free from disease. Price 12*s.* per bushel.—Royal Nursery, Slough, Bucks.

SUTTON'S PERMANENT GRASS SEEDS.

GENTLEMEN intending to lay down LAND to PERMANENT PASTURE, or for one or two years lay, are recommended to communicate with us, stating the nature of the soil and situation, that we may advise as to sorts of Grass Seeds most suitable. Having had many years' experience in laying down Land to Permanent Pasture in almost every part of the kingdom, we can confidently undertake to supply the sorts of Seeds best adapted to the land to be laid down. The following sorts of NATURAL and ARTIFICIAL GRASSES may be had separate, at low prices. All the best and most suitable of them are contained in Messrs. SUTTON'S MIXTURES.

Achillea millefolium	Agrostis alba	Festuca loliacea	Festuca tennifolia	Lolium Italicum	Poa fertilis
Agrostis stolonifera	Agrostis vulgaris	Festuca ovina	Glyceria aquatica	Lotus corniculatus	Poa sempervirens
Anthoxanthum odoratum	Bromus arvensis	Festuca rubra	Holcus avenaceus	Medicago Lupulina	Trifolium minus
Alopecurus pratensis	Cynosurus cristatus	Festuca pratensis	Lolium perenne sempervirens	Phleum pratense	Trifolium pratense perenne
Avena flavescens	Dactylis glomerata	Festuca elatior	Lolium perenne Paceyanum	Poa nemoralis	Trifolium repens
	Festuca duriuscula	Festuca heterophylla		Poa pratensis	Trifolium hybridum
				Poa trivialis	

As some Agriculturists feel a pleasure in making their own selection of Grass Seeds, the above List is presented, but the greatest economy and certainty of success will be obtained by procuring Messrs. SUTTON'S *Mixtures, as see below:—*

SUTTON'S MIXTURES FOR LAYING DOWN LAND TO PERMANENT MEADOW OR PASTURE, 24s. to 30s. per acre, according to the sorts which the soil may require.

SUTTON'S MIXTURE FOR LAYING DOWN WATER MEADOWS.—In this department also we have been very successful. Cost of Seeds for this purpose, 24s. per acre.

MIXTURES TO LAY DOWN NEW PARK LAWNS.—For this purpose all coarse growing kinds are carefully excluded, and the sward will at all seasons present a luxuriant verdure, so desirable in parks contiguous to the mansion. The cost of Seeds for this purpose will vary according to the nature of the soil, and other circumstances. We quote the following from the *Reading Mercury* of July 9, in allusion to a new plot of building land, called "DOWNSHIRE SQUARE:"—"*The Grass Lawn especially is worthy of remark, it having been prepared and sown by* Messrs. SUTTON *only about four weeks since, and already presents a perfect close sward, much more green and beautiful than the natural meadow outside the railing.*"

SUTTON'S RENOVATING SEEDS FOR IMPROVING OLD PASTURES.—Many old Upland Pastures, Parks, and Meadows are nearly destitute of Clovers and the finer and more nutritious sorts of Grasses, in which case we are in the practice of furnishing only such sorts as are wanting. Quantity of Seed required, 8 to 12 lbs. per acre. Price 1s. per lb.

PERMANENT EVERGREEN GRASSES FOR CHURCHYARDS, &c.—We have had the honour of supplying many Clergymen and others with Grass Seeds for Churchyards and Cemeteries, which have given great satisfaction. Price of Seed, 1s. per lb. From many similar letters we extract the following:

From Mr. C. Judd, Gr. to his Grace the Archbishop of Canterbury.

"The Grass Seeds received from you succeeded admirably, and, although sown late, the growth was such that we were enabled to mow the Churchyard in the autumn, and it has now the appearance of an established lawn of some years' standing; and my employer, the Archbishop of Canterbury, is quite satisfied with its appearance."

"*Addington Park, January 7th, 1853.*"

FINE LAWN GRASS SEEDS.—For Improving Old, or making New Lawns. Price 1s. 3d. per pound, or 3s. per gallon.

The following is an extract of a letter received from Dr. Lindley.

"MESSRS. SUTTON.—We have already made trial of your Lawn Grass Seeds, and it is but justice to say they have proved the best we have sown for many years.

(Signed) "JOHN LINDLEY.

"Horticultural Society, 21, Regent Street, London, Nov. 9, 1853."

GRASSES FOR ALTERNATE HUSBANDRY.—MIXTURES OF CLOVERS, RYE GRASS, FESCUES, &c.—For one, two, or three years' lay. These we can supply, of very best quality, at 14s., 18s., and 22s. per acre.

*** *Sacks and Bags are charged at cost price only, and the full amount allowed, if they are returned.*

JOHN SUTTON & SONS, SEED GROWERS, READING, BERKS.

PRICED LIST OF GRASS SEEDS OFFERED BY
J. C. WHEELER & SON, GLOUCESTER,
Seedsmen to the Gloucestershire Agricultural Society.

GRASS SEEDS.—CARRIAGE FREE.

WE have for some time paid considerable attention to GRASS SEEDS, and especially in mixing them in such proportions as the nature of the soil and other local circumstances may require, so as to form fine Pastures. Having had much experience in this branch of our business, and the Grass Lands we have laid down having given great satisfaction, it is with much pleasure that we can recommend a fine mixture of the best Grasses and Clovers, suitable for the formation of a rich Permanent Pasture, at from **20s. to 30s.** per acre. For improving the quality of Grasses already laid down, we can supply a good mixture at 1s. per lb. For the information of those gentlemen who would prefer buying the varieties separately, and mixing them themselves, we have given a short description of some of the best sorts. From 2 to 3 bushels of Grass Seed, and 12 lbs. of Clover is the quantity usually sown to the acre.

ITALIAN RYE-GRASS—Imported Seed ... per bushel 7s. 0d.

Too much cannot be said in favour of this very excellent Rye-grass. Compared with any other of the varieties of common Rye-grass, the Italian affords a stronger braird, arrives sooner at maturity, has a greater abundance of foliage and of a lighter and more lively green colour, grows considerably taller, and is more upright, or less inclined to spread on the ground. Another of its distinguishing characteristics is, that it is much preferred by cattle to any of the common sorts, and is greedily eaten by them, whether green or dry. Imported seed is very much superior to that saved in this country.

PERENNIAL RYE-GRASS ... ... per bushel 6s. 0d.

MEADOW CATSTAIL, OR TIMOTHY GRASS (Phleum pratense) ... ... per lb. 0 10

The Timothy Grass possesses the advantage of affording double the quantity of nutriment when its seeds are ripe, that it does if cut when in flower. On strong, tenacious, and rather moist soils, it is entitled to a precedence to almost any other, and should at least form a considerable portion of the mixture employed for sowing down such, either for alternate husbandry or permanent pasture.

MEADOW FOXTAIL GRASS—(Alopecurus pratensis) ... ... per lb. 1s. 6d.

This is one of the earliest and best of Pasture Grasses, but not so well adapted for hay, as it produces but few stalks; its root leaves are very broad, long, soft, slender, and grow rapidly when cut, or when eaten down by live stock. It requires two or three years after sowing to arrive at full maturity.

ROUGH COCKSFOOT—(Dactylis glomerata) ... per lb. 1s. 0d.

Is a valuable Grass in cultivation, on account of the great quantity of produce which it yields, and the rapidity with which its leaves grow after being cut. It is well adapted for growing in shady moist places under trees, as in orchards, &c.

MEADOW FESCUE GRASS—(Festuca pratensis) per lb. 1s. 0d.

This is an excellent Grass, either for alternate husbandry or permanent pasture, but more particularly the latter. It is well liked by all kinds of herbivorous animals.

HARD FESCUE GRASS—(Festuca duriuscula) per lb. 1s. 0d.

Will thrive on a great variety of soils, and is found to resist the effect of severe drought in summer, and to retain its verdure during winter, in a remarkable degree. From the fineness of its foliage and greenness in winter, it is well adapted for sowing in Parks, especially for sheep pasture.

SHEEP FESCUE—(Festuca ovina) ... ... per lb. 1s. 0d.

This Grass forms the greater part of the sheep pasture of the Highlands. In quantity of Grass it is much inferior to the other cultivated Fescues; but, from being well liked by sheep, it should always enter into the composition of mixtures of lands on which they are to be pastured; in fact, on the authority of Linnæus, these animals have no relish for hills and heaths which are destitute of this Grass.

WOOD MEADOW GRASS—(Poa nemoralis) ... per lb. 1s. 3d.

Its habit of growth is delicate, upright, close, and regular. There is no Grass better adapted for pleasure grounds, particularly under trees, as it will not only grow in such places, but forms a fine sward where few of the other fine Grasses can exist. It produces a considerable deal of foliage early in spring.

ROUGH-STALKED MEADOW GRASS—(Poa trivialis) ... ... per lb. 1s. 0d.

This is a valuable Grass as a mixture for Grass Lands, particularly on damp soils. Its habit of growth fits it for mixing along with the upright grown sorts, such as the Italian Rye-grass.

SMOOTH-STALKED MEADOW GRASS—(Poa pratensis) ... ... per lb. 1s. 0d.

This Grass yields a large quantity of herbage at a very early period of the season.

SWEET-SCENTED VERNAL GRASS—(Anthoxanthum odoratum) ... ... per lb. 2s. 0d.

This Grass yields but a scanty portion of herbage, yet, on the whole, Permanent Pasture should not be without a mixture of it, particularly in parks and pleasure grounds, were it for no other reason than its pleasant scent, not only when cut for hay, but also when the seeds become nearly ripe.

CRESTED DOGSTAIL GRASS—(Cynosurus cristatus) ... ... per lb. 1s. 6d.

From this Grass forming a close turf, and having rather fine foliage, it may be advantageously sown on lawns and other places to be kept under by the scythe.

LAWN GRASS SEED ... ... per lb. 1s. 6d.

By sowing this Grass a fine sward may be obtained in a short time, at one quarter the expense of laying down turf. It is a selection of the FINEST *Grasses, and is entirely free from weeds. We can strongly recommend it to those about to form lawns or pleasure grounds.*

CLOVER—White Dutch	per lb.	10d. to 1s. 0d.
" Red or Broad	"	9d. to 0s. 10d.
" Trefoil	"	5d. to 0s. 6d.
" Cow Grass, or Perennial Red Clover	per lb.	1s. 0d.

A vast quantity of Clover Seed is grown in Gloucestershire, more particularly the Perennial Red Clover or Cow Grass. When the selection of the varieties of Grasses and Clovers is left to us, we invariably send a good proportion of this; for Permanent Pasture it is invaluable. It will at all times afford us very great pleasure to give any information in our power on the subject of laying down land for Pasture; the proportions of the different varieties of seed should vary according to the nature of the soil and other local circumstances, and whether the land is intended to be laid down permanently or for a year or two. Any inquiries sent to us shall have an immediate reply, and one to the best of our judgment.

J. C. WHEELER & SON, SEED MERCHANTS, GLOUCESTER.

DAHLIAS FOR 1854.

CLARKE AND CO., SEEDSMAN, 86, Borough, London, beg to inform the public that they have published their New CATALOGUE of DAHLIAS, which they will be happy to forward on application. The following choice kinds are in the 10s. per dozen list this season, viz.:—Exquisite, Lilac King, Duchess of Kent, Amazon, Robert Bruce, Plantagenet, Bishop of Hereford; and amongst the 4s. per dozen varieties are Annie Salter, R[illegible]s of England, Louisa Glenny, Malvina, Triumphant, and a great many other good known flowers.

PINUS SABINIANA,

THE GREAT HOOKED CONE PINE OF CALIFORNIA.

PETER LAWSON AND SON, Edinburgh, have just received from San Francisco a small consignment of Seeds of this fine Hardy Pine. Price 2l. 2s. for 100 selected Seeds, free by post. They were gathered last autumn, and are in excellent condition and well grown—the seeds measuring about 1 inch in length. Being perfectly hardy, they may be sown in a dry sheltered situation in the open air.—Edinburgh, April 1.

"WELLINGTONIA GIGANTEA."

MESSRS. VEITCH, of EXETER and CHELSEA, have much pleasure in stating that their Seeds of the above magnificent Tree are vegetating satisfactorily. They therefore hope to be able to send out well established seedling plants during the ensuing summer and autumn. They are now taking orders for them at the following prices:—

For a Single Plant ...	2 guineas	For 8 Plants ...	10 guineas
For 4 Plants	6 guineas	For 12 Plants ...	12 guineas

And all orders will be executed strictly in the rotation in which they are received.—April 1.

WELLINGTONIA GIGANTEA.—Beautiful Lithographed Plates (from a drawing taken in California) of this wonderful Tree may be had, at 7s. 6d each, of Messrs. VEITCH & SON, Exeter, and Mr. JAMES VEITCH, jun., Exotic Nursery, Chelsea.

The Bark, Wood, Cones and Foliage, which were exhibited on Tuesday week at 21, Regent Street, may be seen at the Exotic Nursery, Chelsea.—April 1.

The Gardeners' Chronicle.

SATURDAY, APRIL 1, 1854.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	April 3—Entomological	....	8 P.M.
TUESDAY,	— 4 Horticultural	....	3 P.M.
	— 4 Linnean	....	8 P.M.
FRIDAY,	— 7—Botanical	....	8 P.M.
SATURDAY,	— 8—Royal Botanic	....	3½ P.M.

A LETTER has just appeared on the subject of the WOODS and FORESTS, which requires more than a cursory notice, especially since it opens a somewhat new view into the causes which have led to what the writer calls the ruin of the Royal Forests. Mr. BILLINGTON, the author of the pamphlet in question*, was formerly employed as Superintendent of the Forest of Dean, whence he was removed in the same capacity to Chopwell woods, where he remained for several years. About 1826 he was superannuated, entirely against his will, as he informs us, and has ever since been in receipt of a pension. The cause of his superannuation is not clear; we believe it to have arisen from his determination to do what he knew to be his duty, and his dogged resolution not to lend himself to a system of "making things pleasant." His own statement is that his superannuation allowance or pension was granted to him "under peculiar and discreditable circumstances." Be that as it may, there is no doubt that he contrived to give mortal offence to the gentlemen at that time charged with the administration of the Woods and Forests.

We do not venture to examine all Mr. BILLINGTON'S charges against the Commissioners of his day, but we must not entirely disregard them, because, although the events to which they relate have long since passed by, and many of the alleged actors in them are dead, nevertheless the statement before us may serve as a warning to Parliament, and we trust will prevent the possibility of a recurrence of such discreditable transactions as constitute the private history of the Woods and Forests.

The more material of Mr. BILLINGTON'S allegations are these. He says that he was removed from Dean Forest for no other reason than that he had offended Mr. MACHEN, the then deputy-surveyor, and the neighbouring gentry, by reports upon extensive damage done by deer, game, and sportsmen, which reports led the then Chief Commissioner, Lord GLENBERVIE, to command the destruction of the game. So grave an offence was never forgiven. If this were so, then it is clear that the deputy-surveyor and his friends thought the Forest of Dean was intended as a game preserve for their special enjoyment.

Having got into hot water on account of his anti-game reports, Mr. BILLINGTON tells us that he was removed to Chopwell. But here his rugged honesty soon brought about his final superannuation. He began by offering to prove that a friend of the Board had sacked 900l. by some private arrangement with the nurseryman who had the contract for planting the estate. He then informed the Board that thriving Oak plantations, of 50 years' growth, were cut down for the mere purpose of enabling the gentlemen concerned to carry out their private and beneficial arrangements; and he asserts that so gross was this case of—what shall we call it? ignorance? fraud?—that 10 years afterwards the Larch, planted under the beneficial contract aforesaid, were so overpowered by coppice from Oak stools, that scarcely a plant could be found big enough for a besom-handle. Notwithstanding these incidents it would seem that the Board was "perfectly satisfied with Mr. ——'s conduct in every respect." Among other events that drew forth indignant remonstrance from the *protégés* of the Board, Mr. BILLINGTON mentions one of some significance. It seems that he had endeavoured to sell a quantity of Larch thinnings; but those around him insisted upon such stuff being his and their perquisite. Our obstinate friend would not agree in that view of the matter, and found a market for the thinnings in question, the proceeds of which he

* How the Royal Forests have been [illegible]: a Letter to ALEXANDER MILNE, Esq., late Commissioner of Her Majesty's Woods and Forests, &c. By WM. BILLINGTON. LONGMANS and RIDGWAY. A Pamphlet.

carried to his public account. No wonder that he was immediately set down "as an unaccommodating stupid fellow, who could not see his own interest."

We are next informed that in order to put a bit in the mouth of William Billington, the Mr. Turner, of New Forest celebrity, who had been a journeyman carpenter under Mr. Nash, the architect, was despatched to Chopwell; and it would seem that upon his intelligent report our W. B. was superannuated; it having been found impracticable to convince him of the necessity of all the forest authorities "learning to pull one way." If, indeed, we are to believe that his memory has not failed him, we are to understand that the Board did not want any profit from the Royal forests. At all events, they took care that none should be realised, for in superannuating Billington, they appointed a Mr. James, "a military man—totally ignorant of everything relating to forestry." This gentleman was ascertained by Lord Duncan's committee to have been a lieutenant in a militia regiment. The doings of the new deputy-surveyor are recorded in our columns of July 2, 1853, and very extraordinary doings they were.

And thus William Billington's connection with the Royal Woods and Forests terminated.

Such was the reward of honesty in a public servant. That he was of a stern unbending nature is like enough; that he would have nothing to do with peculation seems clear; but that he was a good honest man, well acquainted with forest management, we have every reason to believe. No one could be spoken of more highly to ourselves than he was by a very successful planter in Flintshire, who looked with indignation upon the doings in Delamere. No wonder Billington was never mentioned to Lord Duncan's committee; his name would have thrown some gentlemen in Whitehall into a panic.

The *science* of diet seems still to be a desideratum, though chemical and medical investigations have contributed much towards the placing it on a sound basis. Articles like those of Dr. M'Cormack, page 101, seem likely to elicit principles; the Dr. says, "Food for working men must be substantial, varied, sufficient, savoury," to which may be added, of competent bulk, and furnishing all the elements of which the human frame is made up. Let food be deficient in any of these items, disease or premature old age is a never-failing consequence. It would seem that no class of persons is so competent as the physician to elicit the true principles on which the poor man's dietary should be founded, reference at the same time being had to his means, the climate in which he lives, to different seasons of the year, and the degree of labour he has to perform.

Climate has a powerful influence on the process of digestion; we have authentic records that an Esquimaux can eat and digest 8 or 10 lbs. of raw salmon, and that in the same arctic regions the British sailor can with impunity swallow half that weight of salmon, together with other food; whilst in more genial climates, the healthiest food consists mainly of vegetable matters, whether grain, pulse, fruits, or herbaceous plants. Considerations of this nature render it difficult to define the kinds of food most suitable for the British cottager or working man, though an approximation may be arrived at of that best, taking at the same time into consideration many other influencing circumstances.

The article, page 101, says that "food for working men must be *substantial*." It was on this account that several *substantial* articles have been suggested in the pages of the *Chronicle*. Gelatine, black puddings, chitterlings, lights, are all of them substantial; all of them are such as the gentleman can feed on with pleasure if well cooked; they have been eaten of at a gentleman's table in the ordinary course of providing for it; but it was under a persuasion that cheapness does not imply inferiority, though the commonalty seem under a conviction that what is dearest must be best. If *substantial* food be necessary for the working man, would it not be philanthropic to introduce many an article of diet that is now despised? To continue, food for the working man must be "*varied*." The food of the English cottager is anything but varied. Their wives are wholly ignorant of the many ways in which a bit of beef or mutton is habitually prepared in France, for example, to afford variety, not to speak of eggs, or of the combination of meat or fish with grain, pulse, or fresh vegetables. Further, food must be "sufficient." True, it must be sufficient in bulk no less than in nutritious quality; indeed this is intimated in the same article, which says that "the richest animal soups, even, will not keep men alive unless eaten with good bread." Food must also be "sufficiently savoury." It is in this particular, alas, that cottage cookery is altogether wanting, though in ancient times books indicate that many things were used to give flavour that are now neglected—Marigold flowers for instance. It is for want of savouriness that soups and stews have acquired the derogatory name of *messes*. It was to give savour that Count Romford added salt herring to his cheap dishes; it is in this respect that French cookery for all ranks surpasses that of England; and until our housewives become instructed in the means of obtaining savouriness, economical cottage cookery is not to be hoped for.

But how is this desirable quality attained in France? It is by the habitual employment of matters that give flavour; in the poor man's cottage those of little cost. A gentleman's cook would be thought shabby if asking at market for less than a sous' worth of "*herbes pour le pot au feu*," but the poorer orders are habitually served with a farthing's worth of vegetables for their soups; for their farthing they obtain a very small Carrot, a small Turnip, Onion or Leek, either full-grown or green, including green leaves, a sprig of Thyme, a little Mint, Parsley, or in lieu of it green tops of Celery, and to complete the vegetable ingredients of the soup either some Lettuce or Endive, often the surplus of a seed-bed, or plants not promising to come to perfection as salads. What would our cottagers say on being supplied with green leaves of Celery? yet in France they are often substituted for Parsley. So many articles that we throw away are used for giving flavour in France; as the rinds of Oranges, for instance. Our Carrots and Turnips are too large to be only part of a farthing's-worth; but why should not these roots be cut up for sale at petty standings? The cottager has in respect to vegetables a great advantage over the townsman, for in the country an allotment will furnish a variety of vegetables by cultivating it only at odd times; even the yard of small cottages may be made to grow Parsley, Thyme, and other sweet herbs; but a first need is that of teaching their wives how to make good use of the products of their garden by a superior mode of cookery.

VEGETABLE PATHOLOGY.—No. XIII.

52. Roots for the most part penetrate to a greater or less depth into the soil, according to their peculiar exigencies, sometimes running close to the surface, while in other cases, especially in the larger trees, they descend many feet into the earth, so as almost to verify the description of the Roman poet, who speaks of them as extending as far towards Tartarus as the trunk and branches into the air above.* The proportion borne by the roots to the stem with its branches and leaves is very variable according to the degree of evaporation which takes place. In aerial Orchids and Cacti the difference attains its maximum, and in succulent plants the roots are for the most part slightly developed, while in forest trees which present a vast expansion of foliage to the action of the air, the points of absorption must be multiplied in proportion. Roots are active, and consequently in a growing state at all seasons of the year, except during severe frost, and it is on this account that such advantages are obtained by autumnal in preference to vernal planting. Their object in every case is to imbibe water and the matters held in solution by it: earth is therefore only so far a necessary medium as it contains the matters requisite for the proper nutriment of the plant, may give out that nutriment in the true proportions, neither with too great speed, nor in too great quantities, and moreover as itself imbibing so much fluid as under ordinary circumstances not to admit of too large a measure of liquid being at once in contact with the spongelets—all very necessary conditions, except in individual cases, which, in addition to others, will be detailed more properly when we come to the consideration of the article Soil. It is clear, therefore, that the immediate presence of soil in contact with the roots is no necessary requisite of vegetation, as indeed appears from the multitude of air plants, the various aquatic species which float freely in the water †, and a variety of plants which occasionally derive a large portion of their nutriment immediately from water, or which, though usually growing in soil, are capable of sustaining life by means of water only.

53. Plants, according to their peculiar constitutions, are impatient both of excessive drought and moisture; it is not, however, in general the presence of abundant water which is injurious to plants, provided that water be constantly renewed; but water which remains long in contact with the soil becoming impregnated with putrescent matter or noxious gases, a material consideration in the theory of draining, though the concomitant depression of temperature forms undoubtedly a very material point in the question. Aerial roots have been already considered under a previous number.

54. Besides the purposes of nutrition, roots subserve a very important end in the economy of plants, namely, sustaining them in a fixed locality, by means of their numerous ramifications, and the consequent resistance which they offer to the violence of winds. Without a very high degree of development in the larger plants, it is obvious that the trees themselves would be a prey to every blast. Another important end which they answer is to keep up the due equilibrium of temperature by means of their imbibition of moisture from considerable depths where the earth maintains a temperature according to circumstances, either above or below that of the atmosphere. Such considerations, however, belong to a future division of our subject.

55. As the majority of plants are confined to a fixed spot, and peculiar constituents in the soil are absolutely requisite for the health of particular species, it is obvious that the exigencies of perennial plants could not in general be supplied, provided the spongelets remained stationary. Hence the necessity not only of repeated ramification, but of the progression of the tips of the roots in order to their contact with new portions of soil. It is this necessity which makes the change of place necessary in many perennial plants, a change which is peculiarly remarkable in plants propagated by bulbs and tubers, especially in terrestrial Orchids. The law of such progression is sometimes singular. Many examples will be found in the admirable essay of Irmisch on "Bulbs and Tubers," copious abstracts of which have been given by the author of the present notes in the "Journal of the Horticultural Society of London" for 1853. *M. J. B.*

* Virg. Georg., ii., v. 291.

† The roots of Lemna and Pistia are remarkable for the little cap with which they are terminated. This, as remarked by Schleiden, is no portion of cuticle carried forward by the projecting root, but an especial organ; it is already formed before the root bursts forth, and is apparently merely an exaggerated state of the pileorhize (Schleid. Grundz., vol. ii., p. 120; figs. 136, 137.) The slimy coat which is formed at the end of Hyacinth roots, when grown in water, is no true analogue, if considered abstractedly from the spongelet, and is due probably to mucilaginous excrementitious matter given out by the spongelet. Ingenious theories have been proposed for either case by botanists, who find it more easy to theorise than to observe. The very first root which is sent out by a germinating Lemna, like the rest, is furnished with the little sheath.

POINSETTIA PULCHERRIMA.

Few plants are more really useful than this, both for decorative purposes and for furnishing cut flowers; but unfortunately it is of a very straggling habit, and is not easily induced to form anything like a handsome well furnished specimen. Pieces of the ripened wood root readily if planted in light sandy soil, and afforded a gentle bottom-heat; or propagation may be effected by means of eyes treated in the same manner as those of Vines. Young shoots coated where cut with collodion would doubtless also root freely. In this case, by planting a sufficient number in a good sized pot, there will be no difficulty in obtaining compact bushy plants. The cuttings for this experiment should not be taken off until they are strong and rather firm, and of course stopping must not be resorted to, for that operation practised late in the season causes the plants to produce their brilliant floral leaves both scantily and small.

Cuttings rooted at the present time should be potted singly in small pots, and placed in a close warm pit, affording them a gentle bottom-heat till well established in their pots. When this is the case, shift into pots two sizes larger, using a rich light compost, say one-half prime turfy loam, one-fourth leaf-soil, and one-fourth of old thoroughly decayed cow-dung, well intermixed with plenty of clean sharp sand and lumpy bits of charcoal, to secure perfect drainage. If convenient to afford the plants bottom-heat till established, after this shift, it will be beneficial to them. But they must now be kept near the glass, and exposed to all the light possible, in order to induce them to make strong short-jointed wood. And when they are well established they should not be kept too close, as a moderate supply of air is necessary to secure strong wood. As to stopping, this must be regulated by circumstances, for it is useless to stop unless the eyes are somewhat prominent, as in this case only the uppermost would start into growth. The shoot should be bent so as to check the flow of the sap, and induce the lower buds to push slightly before stopping; but it must also be borne in mind that there is no chance of obtaining a fine display of scarlet bracts, except on strong well matured wood; and stopping must not be practised later in the season than will allow of securing this. Keeping the plants rather dry at the root, when a fair amount of growth has been obtained, and placing them in a rather dry atmosphere, will be useful in checking growth and producing a tendency to flower. When in bloom the plants may be placed in a close part of the conservatory, taking care to guard them from damp and currents of cold air.

After blooming they should be kept rather dry at the root, placing them in any out of the way part of a house, where the temperature may average from 45° to 50°; and when the leaves fall off, cut the shoots back to two or three eyes each. As early in spring as circumstances will admit of affording the plants a gentle bottom heat, with a moist growing temperature, shake the old soil from their roots, and repot in pots just sufficiently large to admit the roots, and water very carefully until they start into growth. By treating the plants as directed above, and keeping them near the glass, and the branches tied out, &c., to induce strong growth, good sized specimens will be obtained the second season. Manure water may be given with advantage in a clear rather weak state, to plants filling their pots with roots. *Alpha.*

PÆONIES.

For splendour of blossoms, brilliancy of colour, hardihood, and magnificent effect, these are unequalled by any other tribe of plants, and when successfully grouped their value for ornamental purposes is very great—blooming, as they do, throughout the spring and early summer months. The comparative rarity of the fragrant rose-

coloured summer-flowering variety in gardens generally, offers an opportunity for making a few remarks on kinds more commonly cultivated. The names of the respective varieties noticed are given as they generally stand in trade lists, so as to admit of their being obtained by the characters here given them. The following popular division of the genus into three progressive sections or groups, each in rotation to its period of blooming, &c., may possibly be as good a way as any of conveying correct information on the subject.

First Group, in bloom from the second week in April until May :—

1. Pæonia paradoxa simplicifolia	6. Pæonia arietina Grevillei
2. „ arietina oxoniensis	7. „ paradoxa fimbriata
3. „ „ peregrina compacta	8. „ mollis
	9. „ tenuifolia
	10. „ „ flore pleno
4. „ „ decora	11. „ hybrida
5. „ „ Andersoni	12. „ Moutan (arborea).

These are distinguished from the other sections by their less robust and generally more erect compact habit of growth, averaging from 1½ to 2 feet in height.

P. ar. oxoniensis is remarkable for its showy rich violet-crimson blossoms, measuring from 6 to 8 inches in diameter, and having clusters of clear yellow stamens in the disc or centre of each bloom.

P. arietina peregrina compacta is recognised by its peculiarly neat erect habit, being about 2 feet in height, with darkish green leaves, and numerous distinct rich purple cup-shaped blossoms, expanding to a roseate tint.

P. arietina decora grows from 1½ to 2 feet in height, with comparatively large single crimson purple flowers from 6 to 9 inches in diameter.

P. arietina paradoxa fimbriata has a very neat erect compact growth, with rich double purple blossoms from 6 to 8 inches in width.

P. hybrida.—This is an elegant variety, of medium height, and having neat Fennel-like scented leaves, and nodding terminal richly crimsoned single-petalled flowers.

P. tenuifolia flore pleno is a fine variety (18 inches to 2 feet), having beautifully divided narrow-lobed leaves, and double dark crimson blossoms, nearly 6 inches in diameter.

Second Section.—In bloom from the first week in May until June :—

13. Pæonia officinalis Byzantina (atrorubens)	16. Pæonia officinalis anemonæflora
14. P. officinalis rubro pleno	17. „ „ lobata
15. „ „ carnescens	18. „ „ albicans

This group includes a class of highly picturesque kinds, forming large robust hardy perennials, from 2 to 3 feet in height, with simple broad-lobed leaves, and gorgeous flower heads, from 6 to 9 inches in width, and varying from the deepest crimson to brightly shaded carmine and pale flesh colour. They are admirably adapted for adorning the foreground of select shrubberies and arboretums, in which positions they are unequalled for massive beauty and grandeur of effect. Those most deserving of notice are—

P. officinalis rubro pleno.—A well-known kind, with remarkably large rich crimson blossoms, measuring from 6 to 9 inches across.

P. officinalis Byzantina (*atrorubens*).—This is equally large as the last described, and readily recognised by its dark-tinted stems and foliage, and by the still richer and deeper crimson of its magnificent blossoms.

P. officinalis carnescens is perhaps the finest of the rosy carmine coloured sorts, its large and conspicuous blooms rendering it a noble and distinct variety.

P. officinalis anemonæflora.—This is a highly ornamental hybrid, 2 feet in height, with large single-petalled terminal, rich violet-crimson blossoms, measuring from 6 to 8 inches in width, and beautifully contrasted with yellow staminiferous sepals in the disc.

P. officinalis lobata is neat and compact in habit, growing from 18 inches to 2 feet in height, with ample broad-lobed leaves, and comparatively large and beautifully bright rosy salmon coloured blossoms, measuring from 4 to 6 inches in diameter.

Third Section, in bloom from first week in June until July :—

19. Pæonia albiflora uniflora	24. Pæonia albiflora pleno
20. P. albiflora sibirica	
21. „ „ vestalis	25. „ „ fragrans
22. „ „ Whitleji (albiflora pleno syn.)	26. „ „ Humei
	27. „ „ Pottsi
23. „ „ chinensis (albiflora pleno syn.)	28. „ „ festiva

This group is distinct in habit and colour, ranging from 2 to 3 feet in height, more erect and stately in growth, darker green in foliage, and terminating in blossoms varying from clear white to roseate purple and rich crimson. The varieties are well adapted for the summer decoration of select flower-gardens, and for the middle foreground of arboretums and shrubberies. Nos. 19, 20, 21, are neat habited plants, growing from 18 inches to 2 feet in height, with conspicuous single petalled white blossoms, from 6 to 8 inches across, and prettily contrasted with masses of yellow stamens in the disc. Nos. 22, 23, 24 are more stately in growth, and of similar habit, producing large conspicuous double white delicately-scented blossoms 6 inches in diameter.

P. albiflora fragrans is an exceedingly desirable kind, growing from 2 to 3 feet in height, with dark green leaves, and having large roseate-purple flowers, which diffuse a delightful rose-like odour.

P. albiflora Humei resembles the last in habit of growth, but occasionally it forms a larger plant with rougher surfaced leaves, and it has scentless rose-coloured flowers; but their want of fragrance is, in some measure, compensated for by their larger dimensions, averaging as they do on strong specimens from 6 to 8 or 9 inches in diameter.

P. albiflora Pottsi has very beautiful rich deep crimson-coloured double blossoms, and a medium-sized neat growth.

P. albiflora festiva is neat and dwarf in habit, with ample dark green leaves, and remarkably large, clear, creamy-white flower-heads, measuring from 6 to 9 ins. in diameter, and casually streaked and dashed with rosy crimson. *William Wood, Holdgate Nurseries, York.*

MR. M'GLASHEN'S TRANSPLANTING MACHINE.

The following is the report of the Caledonian Horticultural Society's Committee, appointed to examine the roots of trees and shrubs transplanted by means of this machine. The committee consisted of the following gentlemen, viz., Hon. Lord Murray, Sir J. Russel, Mr. Hunt, Mr. Girdwood, Mr. Sivewright, Mr. G. Patton, Mr. I. Anderson, Mr. W. T. Thomson, Mr. H. Graham, Mr. J. Wilson, Mr. M'Intosh, Dalkeith Park, Mr. M'Nab, Mr. D. Mackinlay, of Newlandburn, Dr. Graham Weir, Mr. Crawford, of Caitsburn, Mr. C. H. I. Smith, and Mr. Baxter Riccarton; with Dr. Balfour, Secretary, and Mr. Evans, Superintendent.

Edinburgh, March 4, 1854.

The committee beg to report that they were conducted by Mr. M'Glashen first to Newington House, the seat of the Right Hon. the Lord Provost, where some large plants, consisting chiefly of Hollies and Portugal Laurels, had been transplanted during April, 1853. Here the committee examined the roots of two of the shrubs lifted, the first being a Holly 16 feet high, with a stem 18 inches in circumference, raised with the 3-feet lever power transplanting spades. This plant had many cut roots half an inch in diameter, and from their extremities numerous tufted rootlets in a healthy condition were seen varying from 5 to 8 inches in length, all made during the past summer. The second plant examined was a very old and stinted Portugal Laurel, 12 feet high, with a stem 3 feet in circumference, lifted by screw power, with a 5-feet ball of earth. This large shrub has not made much progress. The cut roots examined were in a satisfactory condition, one root, 3 inches in circumference, had numerous rootlets, from 3 to 4 inches in length, proceeding from the cut extremity. The subsoil at Newington House from which the shrubs were lifted, consisted of a strong, red, rotten, rocky clay. The committee next proceeded to Prestonfield, the seat of Sir William Dick Cunyngham, Bart., where 45 shrubs had been transplanted during April, 1853, 15 of them being of large size, consisting of Hollies, Cherry or Bay Laurels, and Portugal Laurels. All of them were found to be in a very healthy thriving condition. Some of the Bay Laurels were about 30 feet in circumference of branches, and 8 feet high, and had been lifted by the 3-feet lever power spades, from a deep rich loamy clay soil, which adhered firmly to them. The roots of a Bay Laurel examined had made numerous healthy fibres, from 12 to 14 inches long, from various sized cut surfaces. A large green Hedgehog Holly, 12 feet high, and 16 feet in circumference of branches, lifted by the 3-feet lever power spades, had also healthy new-made fibres proceeding from the sides of numerous cut roots, half an inch in diameter. From Prestonfield, the committee went to Campie Musselburgh, the seat of G. L. Hay, Esq., where upwards of 500 trees and shrubs of various sizes had been operated on during the spring of 1853, only four of which had failed. The soil at Campie is of a deep very light sandy nature. The roots of all the plants appeared in a healthy state, and the growths made during the past season were very satisfactory. At Campie only one deciduous tree was examined, viz., a Sycamore 12 feet high, with a stem 21 inches in circumference. Some of the cut roots, upwards of 1 inch in diameter, were covered with numerous recently made fibres 14 inches long. From Campie, a deputation of the committee proceeded to the Edinburgh Cemetery, where a large number of trees and shrubs were pointed out as having been transplanted with the patent spades. All were in a highly satisfactory state. The plants selected for examination were a Spruce Fir and a Scotch Fir. The former 6 feet high, lifted with the 2-feet transplanting spades, had made roots 15 inches long; and the Scotch Fir, 8 feet high, lifted with the 2-feet spades, had made new roots 25 inches long during the last 10 months.

March 9, 1854.

This day a deputation of the committee, accompanied by Mr. M'Glashen, proceeded to Cramond House, the seat of C. F. Inglis, Esq., where a Sycamore was lifted last March with a streng screw transplanting machine, the ball of earth and roots being 10 feet in diameter. The Sycamore tree was 53 feet high, with a stem 5 feet 4 inches in circumference, and when raised with the ball of earth weighed about 14 tons. The cut roots examined on the 9th March varied from 1 to 8 inches in diameter, and all of them were covered with recently made tufted roots, varying from 7 to 10 inches in length. A Beech tree 19 feet high, with a stem 17 inches in circumference, lifted with the 30-inch patent spades, had also healthy new-made roots 18 inches long. The buds of the transplanted Sycamore and Beech, when compared with the untransplanted ones in the neighbourhood, presented no perceptible difference. From Cramond House the deputation proceeded to examine a variety of trees in the extensive nursery establishment of Messrs. P. Lawson & Sons, consisting chiefly of Deodars, Taxodium sempervirens, Pinus Laricio, and evergreen Oaks, in sizes varying from 3 to 14 feet in height, all lifted with the 2 feet and 2 feet 6 inches transplanting spades, and many of them operated on during midsummer. These plants were all in a healthy vigorous state. In the nursery grounds of Messrs. J. Dickson & Sons, of Inverleith, several plants of Arbutus, Alaternus, Sweet Bays, Irish Yews, and a variety of other shrubs, varying from four to eight feet in height, all transplanted with the 2-feet patent spades, likewise proved satisfactory to the committee. In the Royal Botanic Gardens, a considerable variety of Coniferæ, also many evergreens and deciduous shrubs, were transplanted with the patent spades from 15 inches to 4 feet, during the spring and summer of 1853, and all were found to be in perfect health. At the experimental garden, a Deodar Pine 12 feet high, with a stem 14 inches in circumference, and 9 feet 5 inches in diameter of branches, lifted with the 5-feet screw-transplanting machine, in December, 1852, was also in a highly satisfactory condition.

Such are some of the data upon which the committee have founded their opinions of the success of Mr. M'Glashen's method of transplanting. They believe that his transplanting spades are well fitted for the purpose, and from their easy application, are likely to be extensively employed. The results, so far as the formation of roots and of wood is concerned, appeared to the committee to be highly satisfactory, and they have no hesitation in calling the attention of horticulturists to the value of Mr. M'Glashen's patent.

Excerpt from Minutes of a Meeting of the Council and Committee, held 16th March, 1854, J. Hope, Esq., V.P., in the Chair:—

"A Report (of which the foregoing is a copy) having been read from the Committee on Mr. M'Glashen's Patent Transplanting Apparatus, was approved of and sanctioned, and the Secretary was requested to transmit a copy of the same to Mr. M'Glashen.

(Signed) "J. H. Balfour, M.D., Secretary."

Home Correspondence.

Himalayan Walnut.—In answer to your inquiries as to the value of the Walnut-tree wood in the Himalaya, I have to remark that it varies extremely in different parts of those mountains. My own experience is confined to the Sikkim Himalaya, where the Walnut inhabits mountain slopes at 4000 to 7000 feet elevation, forming a middling-sized tree; but, from the denseness of the forest, never assuming the rounded form that it does in this country. Its wood is pale, soft, and spongy, as compared with the European; it does not take a good polish, but otherwise is of fair quality, not warping or splitting under ordinary circumstances. Soon after the establishment of Dorjeling it was recommended that Sikkim Walnut-wood should be used for gun-stocks, and a considerable quantity was thereupon sent to Calcutta and, I believe, also to England; but it was pronounced (justly, I believe) worthless for the purpose, being deficient both in hardness and weight. I have had a box, in use for now six years, made from a well-selected and seasoned plank of Sikkim Walnut; it has stood a great deal of rough usage, though the wood is so soft that I can drive my nail into it. The Walnut is equally common in the north-west Himalaya, extending from Sikkim, probably the whole way to Persia; and in Kashmir and Affghanistan the wood is justly prized for gun-stocks beyond any other. Such difference in the quality of timber of the same species of tree, accompanying differences in soil, climate, and exposure, are very familiar to all timber-cutters in India, but are, I believe, very partially appreciated in this country. A very few Indian woods, and those of peculiar weight, hardness, and durability, are always worth felling, such especially as Sal, Teak, Mesua, Ebony, &c.; but even amongst these the differences are very considerable. I have lately conversed a great deal with an experienced timber-cutter, who was professionally engaged for many years in the Nepal and Sikkim Terrai, in felling Sal alone. He assures me that the quality of that wood varies to such a degree that he has sometimes met with a clump upon which the woodmen's axes have been literally broken to pieces, obliging him to send to Calcutta for a complete new stock. This was the case with tools which had stood ordinary usage for many months, and had been employed to fell no other wood but Sal. My friend informs me that generally speaking he could account in some measure for the extraordinary hardness of such clumps, by soil or exposure; but he never could predicate of a tree whether it would be hard or soft with any certainty before the axe was put to it. Generally speaking the best Sal wood grows on dry gravelly spurs and rocky slopes. In the latter situation, however, the trees too often become gnarled; in low moist situations the timber is softer, but much depends upon drainage and other qualities of the subsoil, which it is impossible to ascertain in the forest. The above remarks are also applicable to the Deodar wood, about which I have a few observations to offer on a future occasion; meanwhile I may say that I entirely agree with Mr. Strickland in considering that we are not warranted in concluding that it will be a profitable tree in this country, though it is well worth a trial on a limited scale. *J. D. Hooker.*

Grape Growing.—I send you a list of the weight of Grapes cut in an old lean-to house here during the last four years. I may say that for years there were not 12 lbs. of good Grapes cut in it; and as it has been brought to its present state of fruitfulness by following the directions given in your Paper, I think it right to give it publicity. The house is 36 feet long, 11 deep, and 13 feet high—no other fruit in it except Grapes, which are principally Black Hamburgh, and trained on the rod principle. Last year was the first year there was any fruit on the back trellis, the Vines having been only planted on it the year before. The produce was as follows, all carefully weighed, and good weight given :—128 lbs., 1850; 158 lbs., 1851; 201 lbs., 1852; 234 lbs., 1853. *E. F. L., Donaghadee, Co. Down.*

Commemorative Trees.—In England there yet exist trees that point back to the manners of our ancestors—such as the Gospel Oaks, under whose shade our forefathers were accustomed to assemble to hear sermons; in the same manner as at a later date our markets and other crosses were the sites selected for religious instruction to the assembled crowd. It was at Paul's Cross that one of the brightest ornaments of our church had nearly lost his life by the exposure to rain and wind, and having recovered from his illness, in the gratitude of his heart offered to do anything which his careful nurse and landlady demanded of him, in return for her unwearied attention. She said "marry my daughter," and the divine obeyed the mandate. This anecdote is merely introduced to show at how recent a date preaching in the open air was common in England, and as we may suppose that in country places the practice of preaching under trees might have continued long after it had been discontinued in towns, there seems every probability that those venerable remains, joying in the distinction of Gospel Oaks, were in the lusty vigour of their manhood, so to speak, the identical trees selected, and thus traditionally confirming a curious phase of our history. Herne's Oak, that thousands as well as myself have made a pilgrimage to see, as is well known, is not the veritable one (it is a pity to know it), but the one that was uprooted in George III.'s time in all probability was that tree of some ghostly legend in the time of our Shakespeare, and which, owing to the merry wives' conceit, had preserved its identity almost to our own times. Nor can we forget the Mulberry planted by the bard's own hands; and it takes a vast effort to forgive its ruthless destroyer. How much pure gratification has he deprived not Englishmen alone of, but the cultivated and refined of

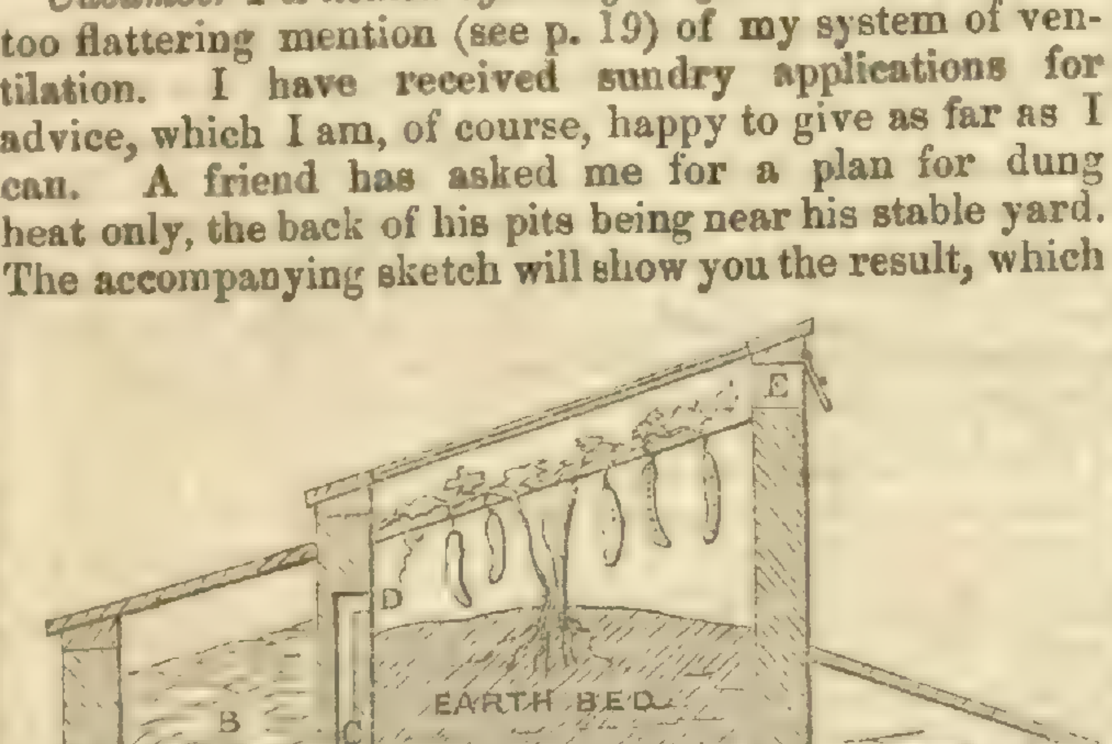
all nations. The circumstances alluded to are of national interest; but how many thousand commemorative trees exist that are of family notoriety only? and to each most deeply interesting. A knoll upon an estate, where I have recently been employed, is called "Bunker's Hill;" and upon comparing the age of the Elm trees, with the date of the engagement, I find a very near approach to years and annual layers of woody accumulation. I will give one more instance of a family nature that I was connected with; a friend of mine had been married to his wife 50 years; there was a gathering of sons and daughters and grandchildren, and each one assisted to plant an Oak in such a manner that the whole should ultimately form a striking group in after years. Each of these trees were known to persons on the estate by the names of the persons who assisted to plant them. It has occurred to me that persons having gardens might make them of deeper interest by the power of association, and, by way of illustration, I will relate what has occurred to myself. Some years agone I was conversing with the late Sir William Garrow upon the delight I felt in possessing any plant that was mentioned by Virgil; he said he could add to my collection by giving me a plant of Bay that was taken from his tomb. I possess the plant yet, and it slightly differs from that in common cultivation. Napoleon Willows will become in fashion again if the President maintains his friendly position with England; for everything relating to his uncle is with a large party in France at present in high estimation. The late poet laureate Wordsworth, the author of that noble poem, "The Excursion," and the "Prelude," not enough known—the author of the lyrical ballads—sent me a Laurel from Rydal Mount, which I need not say I cherish. More recently Sir Robert Inglis, with great kindness, gave me plants brought from the Holy Land—indeed from the garden at Nazareth. I mention these as proofs of the additional interest a garden may be made to afford, and how it may be made conducive to all that is ennobling and good. *William Masters, Canterbury.*

Bees.—A few golden rules must be observed to secure success in bee keeping; one is, that damp is one of the greatest enemies of bees. A damp floor-board ought to be removed immediately, and replaced by a dry one, to which a light hive ought to be tied down. When bees lie on the floor-board 24 hours, they must be dead, and should be removed; and if the bottom of the combs is very moist and mouldy, I would advise turning up the hive in a warm, sheltered place, and with a very sharp knife cutting off the mouldy part, employing that right hand of the practical apiarian, a puff of tobacco smoke among the combs. Feed, if possible, at the top; it will raise the spirits of the workers, and stimulate the queen, if she is safe; if she is not, the life of the hive is gone, and its days are numbered. The numerous complaints of the loss of hives during the last unfavourable season seem to indicate a misapprehension of the physiology and habits of the bee, leading to the idea that bees are torpid during winter; whereas, they consume food, and maintain a temperature of about 80°. To insure their safety, I weigh my hives in September; if they have more food than sufficient to carry them through the winter, they are welcome to it, they have worked for it, and it is their share of the partnership; if they are too light, as I do not expect profit without outlay, I supply food as rapidly as possible. The quantity necessary for winter store varies greatly in different localities, even of England. In Kent, 10 lbs. are considered sufficient, in Northumberland, they are not safe with less than 20 lbs. This is the plan I adopt, and I never lose a hive nor feed during winter; but should I find a hive light in February, I would pour a pound or two of syrup into the side combs, as recommended by Mr. Golding. Perhaps, the best advice I can offer is, study the "Shilling Bee Book." *C. H.*

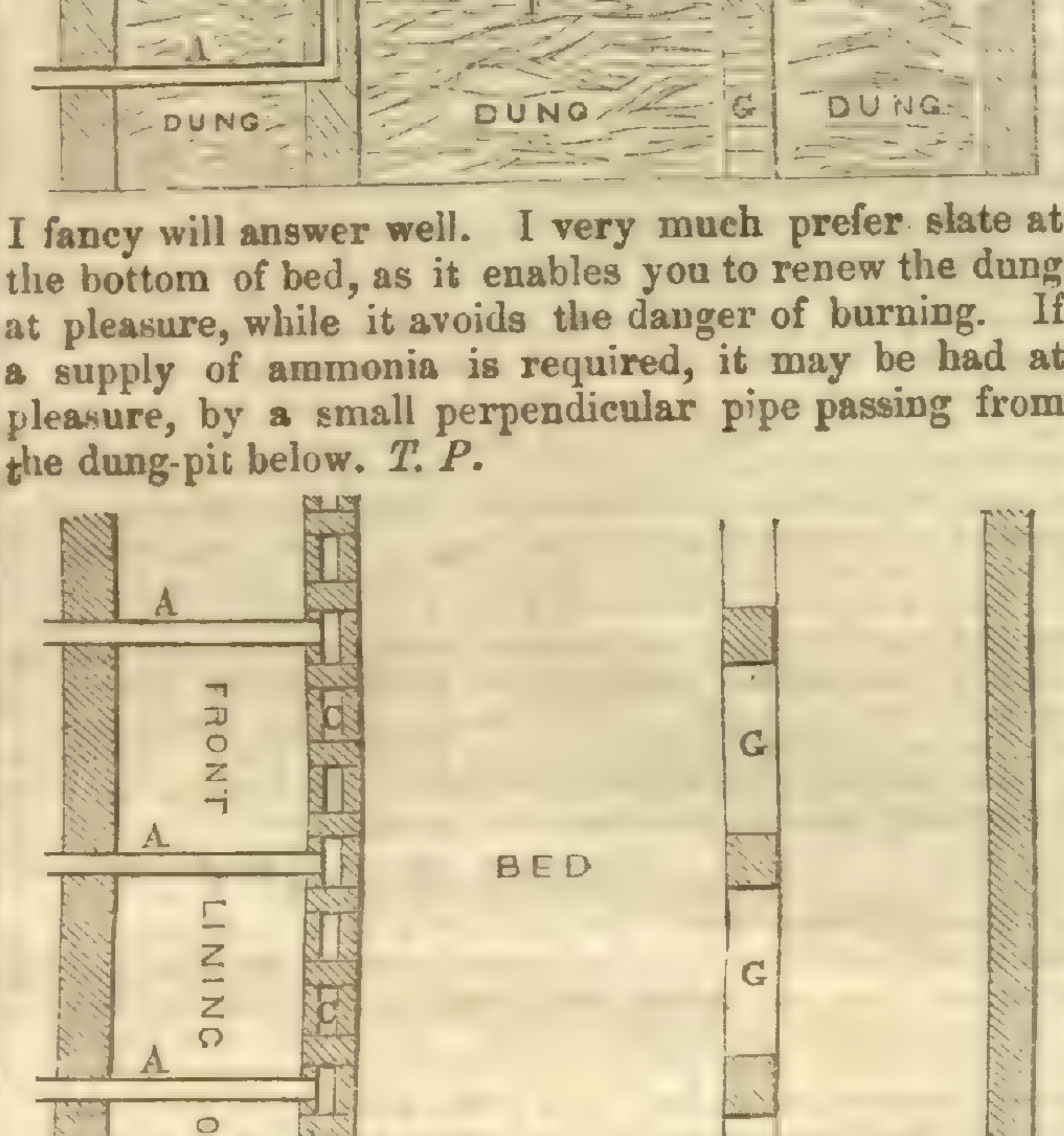
Deep Soiling Potatoes.—Since this method of preventing the disease appeared in your Paper of the 18th February (see p. 101), I have received so many inquiries respecting the distance I put the rows apart, and how much of the foliage is covered in the after management, that to save myself trouble I would feel grateful for your publishing the following:—I plant strong-growing varieties in the usual way, 3 feet apart; early sorts or weaker foliaged kinds, 2 feet 6 inches, and 2 feet 3 inches for field culture, will give sufficient room to operate upon them in the way I have found to preserve them. In earthing, I do not cover more foliage than is necessary, but I turn that all on one side. The rows having been well earthed up with the hoe, I dig out between them nearly a spit of soil, which I lay in a ridge on the top of them, so that the foliage, as it were, hangs out of a bank. At planting time, the sets are covered over only about 2 inches, and they stand 12 inches apart in the drills. I am glad to see it mentioned that the Horticultural Society has planted some Potatoes on this plan, with a view to test its efficacy. Wait till the Potatoes have arrived at some considerable size, then dig down beside them, pit them up, and you will have a sound crop. The digging down between the rows drains them at the bottom, and by placing the soil on the top in a ridge, the rain is thrown off the crop, which thus has a comparatively dry bed. *Charles Alborough, gardener to G. S. Kett, Esq., Brooke House, Norwich, Norfolk.*

Hartley's Rough Plate Glass.—About four years ago I had two small houses glazed with this glass, one for Ferns, the other for miscellaneous plants. To the former house I could of course give very little ventilation, and it certainly became warmer than it would have been with clear glass; scorching consequently ensued, but the application of shades (inside) at once remedied the evil, and I have not since had the slightest reason for complaint, although with clear glass I did not always find similar shading a sufficient protection for Ferns. The other house was exposed to the full force of the sun, and although I did not use shading at all, I never saw a plant scorched, nor do I remember to have seen even the growing wood of a Camellia droop, and all my plants were as healthy and short jointed as any one could desire. Great attention should be paid to ventilation, especially at the highest part of the house, as heat accumulates as soon there under rough plate as under clear glass. After four years' experience I have found all the merits attributed to this kind of glass fully confirmed, and I cannot but think that the failures now and then noticed in regard to it arise from want of sufficient ventilation, at least in the case of houses used for ordinary plants, and from not providing suitable shading when the nature of the inmates require them to be kept close. *R. White, Camberwell.*

Cucumber Pit heated by Dung only.—Thanks for your too flattering mention (see p. 19) of my system of ventilation. I have received sundry applications for advice, which I am, of course, happy to give as far as I can. A friend has asked me for a plan for dung heat only, the back of his pits being near his stable yard. The accompanying sketch will show you the result, which



I fancy will answer well. I very much prefer slate at the bottom of bed, as it enables you to renew the dung at pleasure, while it avoids the danger of burning. If a supply of ammonia is required, it may be had at pleasure, by a small perpendicular pipe passing from the dung-pit below. *T. P.*



A, air pipe, passing from the outside through B (dung lining), into C (front wall, built of brick 9 inches thick, hollow, the bricks being set on edge, leaving an air chamber within. This is delivered at D, an opening on the inside 9 inches by 5 inches under each light, covered with perforated zinc. The heated air passes off at E, ventilator in the back. The bottom heat is supplied by fresh dung introduced through G G, arches in the back wall, under the slate which supports the bed.

Structure of Zingiberaceæ.—I have recently been thinking a good deal over the structure of the flowers in the Zingiberaceæ and allied families, and I fancy I have fallen on the proper explanation of it. It is somewhat different from the one you have offered in the "Vegetable Kingdom." I take the anthers (in Kæmpferia, for instance) to be composed of the approximated halves of two contiguous anthers; the so-called inner petals being the other halves; the labellum to be the third anther. We shall then have an inner series, consisting of a fertile and two barren styles. The next

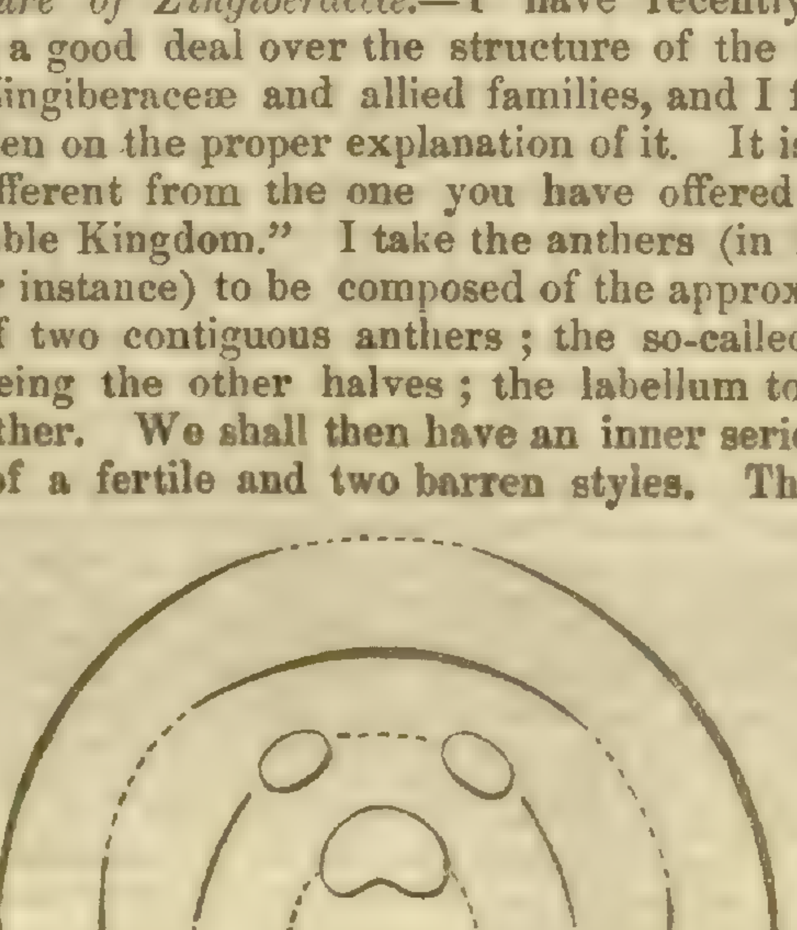


Diagram of the Flower of Kæmpferia.

1st, or outer series, three sepals; 2d, ditto, three petals; 3d, "anther," "petals" (inner), and "labellum," three stamens—nearly altogether petaloid; 4th, "style" and "appendages," three styles—two barren.

series, alternating with the above, consisting of three stamens, all but two halves petaloid. Alternating with these a row of petals, and outside them the sepals. Adopting this view, in the Orchideæ we should have, as you have suggested, to consider the so-called sepals to be the petals, and the anther, petals, and labellum, the staminal series of three stamens, as in Kæmpferia. The sepals being adnate to the ovarium gives probably the appearance of the latter being composed of six carpellary leaves. The fact of the pollen-masses being united to one gland is no argument against my view, as we have a somewhat similar thing in the Asclepiadaceæ. I inclose a little diagram to explain my meaning. *G. H. U. Thwaites, Peradenia, Feb. 9.*

Coniferous Trees.—I am glad to find that you confirm the good opinion I have always entertained of the Corsican Pine as a timber tree. With regard to the Pinus Douglasi I fear you are mistaken in regarding it as a quite hardy tree, at least I have found by repeated trials that it will not stand the winter of this midland county when planted as single trees, and even when not placed in exposed situations. But with sufficient shelter from other trees it does well. Of the Deodar, I have a better opinion than of the P. Douglasi, but to grow with a straight stem it had need be planted thickly, I believe, with other trees, as one that I have standing singly (about 25 feet high) is sadly twisted from bottom to top, though it is still a very ornamental specimen. Cupressus torulosa is quite hardy here, and is a beautiful species, though not so vigorous in its growth as C. macrocarpa, which is also hardy. Taxodium sempervirens, which is stated in your columns to be hardy, I have not found to be altogether so. *W. H., Oxfordshire.*

Fungals.—The following very interesting information has been forwarded from Florence, to Dr. Seemann, dated Nov. 16, and has since been published in "Bonplandia" of Dec. 15:—"Prof. Amici authorises me to publish a very interesting observation he made a short time ago. As you well know, the professor has been very assiduous in studying the disease of the Vine; and the better to study the Oïdium, its supposed author, he reared it on plates of glass with a little water. Now it so happened that several other minute fungi were found to vegetate at the same time on the glass plates, and amongst them one peculiar species, consisting of very slender filaments, from which rose rounded sporangia, supported by short stalks, each of them containing a great number of minute oval or oblong spores, animated by a motion exactly similar to that of the zoospores of seaweeds. The sporangium bursts after some time like a soap-bubble, and throws out the spores all in a heap, and when once extended, their motion ceases immediately; they are perfectly smooth, without anything like vibrating ciliæ. Their length is 0.0035 mm; their breadth, 0.0014 mm; the breadth of the largest sporangia, 0.0215 mm; the breadth of the filaments, 0.0014 mm."* It has escaped the notice of Professor Amici that a somewhat similar phenomenon was observed in a fungal published and figured several years since in "Hooker's Journal of Botany," vol. iii., 1841, under the name of Endodromia vitrea. It grows in woods, on smooth, fallen twigs, especially of Ash, and is so delicate that it requires some care to take it home in a fit state for examination. The globose hyaline sporangia are in this case filled with hyaline globose spores, each of which contains a single nucleus which moves about with great activity within its mother cell. The spores are accompanied by a few delicate threads, and the peridium breaks up when placed in water into a multitude of granular fragments, the nuclei frequently becoming free. It is to be observed that in neither instance is the motion merely molecular, as should seem to be the case in the young Aregma observed by Unger, and in the cystidia of Lecythea, according to my own recent observations. In like manner the granules of the blood rain possesses apparently merely molecular motion, but the production requires further study, as, according to the observations lately published by Mr. H. O. Stephens, in the "Annals of Natural History," it is possible that a second and larger form of fruit may occur; for the bodies which he has figured as seen not only by himself but as exhibited to numbers at the Bristol Institution, are mountains compared with the incommensurable granules which alone were supposed to constitute the blood rain. If my conjecture be right, that the mould which occurs so frequently on animal substances under water, and which is known under the name of Leptomitus, be only a condition of some Mucor, as seemed long ago indicated by the observations of Carus, though he deduced from them an inference in favour of the doctrine of spontaneous generation, and not of the different forms of fruit which the same production may assume under different circumstances, we shall then have zoospores in fungals as well as Algæ furnished with long flagelliform processes. It is, however, to be observed that the blue colour assumed by the cellulose of the Leptomitus, when immersed in iodine and sulphuric acid, is different from the tint of the threads of Mucor when similarly treated. *M. J. B.*

Larch Timber, English or Foreign.—In the report of the last meeting of the Horticultural Society I see a statement of the exhibition of a block of British-grown Larch, 2 feet in diameter, exhibited and compared with a piece of American Larch, to show the difference (and, I presume, the inferiority) of the British-grown. Is there reason to suppose that the two specimens were the same species? The Hackmatack, or, as it is called by Loudon, the Tamerach or American Larch, is very rare in England, at least large specimens of it are;

* There must be some error in this last number, as it accords with the breadth of the spores, which is not very probable.

and, unless very satisfactory evidence be given on the subject, it seems highly improbable that a block of American Larch, 2 feet in diameter, should have been produced from a tree grown in Britain. Michaux, quoted by Loudon, gives that as a large diameter for an American-grown specimen. If the wood was the European, not American, species, the comparison was futile. With respect to the quality of British and foreign-grown timber of the same species, I would remark that there are few Larch in Great Britain, except those at Dunkeld, old enough to exhibit the true character of their wood. The dark-coloured, close-grained Italian Larch is the produce of very old trees; and I suspect it does not assume that character under 150 to 200 years. I once saw a butt of Larch near Samaden, in the Ober. Engadin in the Grisons (the great region of European Larch), which was about 6 feet in diameter. I counted its rings till they became too close to distinguish, and then measuring inwards and counting back, allowed as many for the uncounted space as occurred in that which I could count; this reckoning gave 560 years as the age of the tree, and it was still perfectly sound. I saw some growing apparently about the same size; they had columnar stems, nearly cylindrical, and flat umbrella-shaped heads—not a branch within 70 or 80 feet of the ground. *J. R.* [The specimen of American Larch here alluded to was produced to show its difference from European Larch, and its similarity to Deodar.]

Foreign Correspondence.

Shanghae, January 17, 1854. — While on the subject of dyes, I may mention to you that Mr. Fortune has been fortunate enough to discover some plants of the green Indigo (so called) which the French chemists and manufacturers are hunting after. M. Persoz says he has seen a small sample of the dye—that with certain mordants it produces a colour of great beauty and permanence, and that such a colour is unknown in Europe. Mr. Fortune returned to this port a few days since with a large collection of tea seeds and plants, as well as seeds and plants of useful and ornamental things likely to meet the climate of India, and he is now sending them onward. Luckily for him the rebels have kept out of the Tea districts, and have not interrupted his operations. Shanghae is still in a dreadful state—here we have fighting every day—we hear the balls whizzing over our heads; on several occasions they have struck the foreign houses, but no foreigner has as yet been wounded. Chinese fights are most amusing performances, and were it not that the loss of life is considerable, the scenes would be quite laughable. Whatever the real rebels are, the fellows here are a set of rascals, and yet the sympathies of most of the foreigners, and nearly all the missionaries, are on their side. How to account for this, I confess is quite beyond my power.

Societies.

Linnean, *March* 21.—The President in the chair. F. D. Dyster, M.D., and J. T. Syme, Esq., were elected Fellows. Among the presents announced were a series of about 60 species and varieties of British and Scandinavian Hieracia, presented by D. Oliver, jun., Esq.; and Spathelia simplex, Macfadgen (not Lam.), the Mountain Pride of Jamaica, presented by Dr. Alexander. Mr. S. Stevens exhibited a specimen of a species of Nepenthes, collected by Mr. R. W. Plant, in the Seychelles. It was stated that living plants of this Nepenthes were on their voyage to this country; and Dr. Hooker remarked that it was apparently a new species, allied to N. phyllamphora. N. B. Ward, Esq., exhibited living specimens of Gymnogramma leptophylla, grown in a closed case, and produced from soil taken from its native habitat in Jersey, in September, 1853; it was remarked that, grown under these conditions, the plant attains a larger size, and continues fresh much longer than in its native locality. [This fact furnishes a hint as to the most convenient way of importing many of the fine tropical Ferns not yet in our gardens. The soil about their roots must be filled with their spores, and a small portion of this preserved in a close bottle, and spread out on its arrival here, in a close case, could hardly fail to produce plants of the Ferns]. The following papers were read:—1. "On the genus Myrmica and other indigenous Ants," by J. Curtis, Esq. In this paper, the author described several English Myrmicæ, which were either new or little known. The descriptions were accompanied by some beautiful drawings. 2. "Notes on the Habits of the common Garden Ant (Formica nigra, L.)," by G. Daniell, Esq. The author had observed the ants feeding apparently on the excrement voided by the Vine Coccus, and on a similar matter about the green aphides on Calceolarias and similar plants. While observing this, he noticed that the ants also attack the aphides themselves. "In the spaces between the pots, on the square tiles which cover the flue," he observes, "I noticed ants running to and fro in a rapid manner, crossing and recrossing as a dog tracks the field for game; and curious to ascertain the reason for these evolutions, I turned my attention to those ants which were above in the foliage of the plants. The aphides were seated in comparative safety among the long hairs on the leaves, but it was evident that, while some of the ants were apparently feeding, others were striving to dislodge an aphis from its leafy stronghold; the evidence of this being that, as the ant approached, the aphis put out its legs to parry the attack. To test this, I shook the plant and dislodged some of them, when it immediately became evident what the ants below were scouting for. They at once set upon these fallen aphides, appearing first to break the legs and strip the wings off their victims, and then carry them off."

Reviews.

Les Maladies des Pommes de Terre, des Betteraves, des Blés, et des Vignes de 1845 à 1853, avec Indications des meilleurs Moyens à employer pour les combattre. Par A. Payen. 12mo, pp. 200, tab. 5. Paris 1853.

We should be truly thankful to find matter provided for our railway travellers equal to that which is contained in the little unpretending volume before us, and that which we lately noticed. M. Payen needs no recommendation from us, for his reputation as that of a skilful chemist and botanical analyst is witnessed by the admirable memoirs which have long since proceeded from his pen; and it is no small praise that he has thus condescended to cater for the instruction of the public. Much novelty is not to be expected in a field which numbers so many labourers; we do not, however, recollect having seen any description of that peculiar disease of Wheat which he describes under the name of piétin, and which is the more interesting because it has occurred more than once in England, having been communicated by Prof. Henslow and Miss Molesworth, though by some accident it has not been described in our pages. A portion of the account given by M. Payen will present a suitable extract, and at the same time afford information which is at present inaccessible to the English reader.

"The disease first appeared about the 10th or 20th of June, 1851, in several distinct localities, at which time it was already clear that the abortion of a large number of ears, or at least the discoloration of a part of their spikelets, was coincident with the occurrence of brown spots at the base of their stems (upon the first or second internode), a cryptogamic malady distinguished by the peasants by the name of piétin, because of the part of the stem which was the subject of attack. At a later period, however, the affection, which had been rapidly developed under the influence of predominant moisture, had ceased, or at least considerably moderated its intensity, under the contrary influence of the succeeding drought, and had allowed the grains to be developed, and the ears in great measure to be filled. There was reason in fact to hope on the 16th and 30th of July, when the matter was reported by M. Pommier, that its cessation would admit of an average harvest. The disease reappeared in 1852, appearing, as before, upon the first or second internode, sometimes simultaneously upon both.

"The malady was recognised at first by the brown tint in the interior of the diseased stems. This tint gradually became deeper, the circulation of the sap seemed to be impeded, the spikes remained short and slender, the organs of fructification more or less completely abortive; the grains small and wrinkled when dry; while the stems were gradually more and more changed under the influence of rain, moisture, and heat, and became brown through their whole extent; so that nothing but meagre grains and inferior straw could be expected from the plants which had ceased to live before they had accomplished the successive phenomena of vegetation, or had attained maturity.

"At this period the cavity of the diseased internodes presented a white filamentous mycelium, which seemed to have originated within under the upper knot of the part attacked, descending thence into the cavity between that and the lower knot, in general for about half its length.

"Observations on the 3d of August showed things in the same state, except that the progress of the evil was characterised not only by the brown colour of the greater part of the large cells, but by the impaired condition and brown tint of a portion of the walls of the vessels, some of which contained in many places a brown liquor filling completely the tubular cavity.

"A comparative examination of the sound and diseased stems, by M. Wartz, gave—

	Sound.	Diseased.
Carbon	46.549	46.707
Hydrogen	6.042	6.146
Nitrogen	0.380	0.825
Oxygen	47.029	46.000
	100.	100.

The principal difference is in the nitrogenous matter, the sound Wheat containing 2.47 per cent., while the diseased contained 5.36.

"It is worthy of remark that the substances introduced by the bodies which attack Potatoes destroying their fecula, by those which are developed on manufactured sugar to its destruction, and finally by the different parasites which attack bread and certain vegetable products—have always the effect of causing nitrogenous organic matters to penetrate into the subjects of attack, and to consume the ternary non-nitrogenous bodies (as fecula, glucose, sugar, cellulose, &c.), which gradually disappear, by transforming them into water and carbonic acid."

Some other matters might be selected which are not familiar to English readers, but our limits only admit of indicating sources of information, and not of giving perfect analyses of the contents of the books under review. The chapter on Beet-root and its diseases may, however, be pointed out as especially deserving of notice; and some of the less generally known affections of Potatoes, to the accuracy of which we can speak, as we have long since been favoured with specimens.

Garden Memoranda.

Horticultural Society's Garden, Turnham Green. —That the progress of vegetation has been slow this spring is proved by the Almond and Cherry Plum, which are only now in full flower, whilst some seasons they have been as profusely covered with blossoms by the beginning of March; and, with the exception of Gooseberries and Currants, which are at present nearly in full flower and leaf, the development of young foliage is comparatively backward. This retarded growth, we need not say, is, however, very favourable to fruit crops, for it is well known that the longer the flower buds remain dormant the less are the blossoms likely to be cut off by late frosts. Peaches on walls are in full flower, and are protected by 9-inch coping boards by day, and straw mats at night. The latter are made of Wheat straw laid lengthwise, and fastened together with tar twine. They are about 3 feet in width, and are fixed to the wall above the trees, off which they are kept (at an angle of some 45°) by means of long inch-square laths, which are placed against the wall for their support. Other trees for which protections of this kind could not be found were covered with common twine net. Apples promise to be a heavy crop here this year, but the blossoms of some Pears are scanty. The young Cherry trees in the orchard which were planted against espaliers in 1850, have now reached the fourth rail, and are covered with fruit buds. Trained in this way they occupy little space, and they are easily netted, so as to keep the fruit from birds. Other kinds of fruit trees planted at the same time have also made satisfactory progress. They are all being pruned and trained, preparatory to having the ground in the orchard dug. The Rose house, which we stated last month was to be converted into an orchard-house for the accommodation of fruit trees in pots, has now received its intended occupants, which consist of 34 Vines, 9 pyramidal Pears, chiefly Belgian; 5 Figs, 8 Plums, including Cabool Greengage, Dowling's, &c.; 3 Apples, and one or two seedlings from the Stanwick Nectarine. All, in fact, consist of the newer sorts of fruits, of their respective kinds, which have been put into this house, not so much to show what the capabilities of such an erection are in the way of cultivation, as to prove the value of the fruits that have been placed in it. While speaking of new fruits it may perhaps be as well to mention that the trial ground contains Apples, Pears, Plums, Cherries, &c., to the amount of upwards of 700 trees, many of which promise to produce fruit this year, and therefore, should the season keep favourable, there will be an opportunity of proving them, which late spring frosts during several years have prevented.

The Roses, which have been moved out of the Rose house and planted in Messrs. Hartley's specimen Conservatory, are pushing vigorously, and bid fair to succeed better than they have ever hitherto done. The beds in which they now are are flat, which is considered to suit them better than the raised beds of the orchard-house. A group of low standard Bourbon Roses, that have been wintered in a cold frame with their roots among ashes, has just been planted in the arboretum, where they are fast starting into growth. These are intended to be taken up late in autumn, wintered in the same way, and planted out again in spring; and thus they are to be treated every year—a kind of management that keeps them safe in winter, and under which they are reported to bloom well in summer.

In the various plant-houses, floral beauty is, as a matter of course, increasing with the advancement of the season. The white and red Brugmansias in the great conservatory are especially worthy of notice, being huge trees loaded with hundreds of long trumpet-shaped blossoms. These, together with Acacias, Camellias, and many other showy shrubs, render this house at present well worth inspection. In one of the stoves Citrus japonica, the Cum-quat of the Chinese, is ripening its small oval orange fruit, and in a cool pit the Sikkim Rhododendrons glaucum and thœflorum, are in blossom. The former has little pink bell-shaped flowers, five or six in a cluster, while those of the latter are white and rather more numerous. Erysimum Arkansanum was also in bloom here. It is yellow, and smells strongly of honey, but appears to be of no particular value.

In the American garden the Rhododendrons are well set with bloom, the beds have been dug, and what few plants that were killed by frost removed. Among the latter must be mentioned Dracæna indivisa, which has not stood the winter here. A whole row of Eucalyptus globulus, the kind of gum tree which furnished the large timber that excited so much attention in the great Exhibition of 1851, has been killed by the last severe winter. These were planted along the face of a bank some three years ago, and were most of them trees varying from 10 to 15 feet in height.

The arboretum has all been mown; its beds and borders are being cleaned and put in order. The plants on the conservative wall are being trimmed, and the ornamental department generally begins to put on the cheerful aspect of spring.

We find that Mr. Matteo Botteri, the Society's new collector of plants, has arrived from Dalmatia, and will be dispatched to Mexico at the earliest possible moment after the necessary preparations are completed.

FLORICULTURE.

Treatment of Balsams.—The Balsam is easily and speedily grown, but like many other plants it is often indifferently managed, and unless properly attended to it is very apt to "draw." Being a successful cultivator and exhibitor of this flower, I will offer a few remarks respecting the manner in which my plants are treated. For early blooming I sow in April for general show in May and June, in a gentle bottom-heat, using small thumb pots, and putting one seed in each pot. Place them as near the glass as possible, in order that they may come up strongly. As soon as they are sufficiently large to handle, pot them into 4-inch pots, using plenty of drainage; a frame that can be raised as the plants progress will be found the most suitable for them; but care must be taken to exclude all steam. The plants should be placed in a gentle bottom-heat and set as near the glass as possible, admitting all the air possible in mild weather; for if once they get "drawn" they will never recover so as to make handsome plants. The syringe should be freely applied, as they are liable to be attacked by red spider, and on fine mornings and evenings a watering-pot with a small rose should be used freely over them, as all possible means should be employed to keep the red spider and green fly in check; should the latter prove troublesome syringe well with tobacco-water, as smoking injures the plants, unless great care is taken to prevent it. As soon as they have filled their pots with roots, give them a shift into 6-inch pots, keeping the seed-leaves not more than half an inch from the top of the pot; still retain them in a gentle bottom-heat, and as near the glass as possible. The next shift should be into 8-inch pots; still continue to use the watering-pot over the heads of the plants. If large specimens are required, they should receive a liberal shift, more or less, according to the size you intend to grow your specimens, still keeping the seedling leaf not more than 1 inch above the mould. As the Balsam throws out roots freely from the stem, it will be benefited by being sunk deep in the pots at the last shift. All the early flowers should be pinched off. If intended for large specimens, and if dwarf handsome plants are required, tie a piece of matting round the pots for the purpose of neatly regulating the shoots by tying them down to it. By this method they are induced to form beautiful bushes with but little extra trouble. Plants sown in June may be grown on an open hot-bed, but it should be slightly shaded from the hot sun, and the plants should never be allowed to want for pot room. If a few spare lights can be procured, a temporary frame should be erected over them, about 4 feet above the top of the plants; this will screen them from bad weather; and still they will have plenty of air, for the sides should be left quite open. This is the method in which my large specimens are treated. The syringe should be applied morning and evening until the plants come into blossom, when they should be removed to the greenhouse, and placed as near the glass as convenient. Those who are admirers of the Balsam, but who have no glass structures for its growth, may nevertheless still possess this beautiful flower, for if a hot-bed is prepared, and covered with light rich soil and rotten leaves, 1 foot or 18 inches deep, and the plants are turned out or sown 3 feet apart, they will make enormous specimens. Care must, however, be taken not to have the bed too hot when the plants are first put out. The beginning of June will be the best time to raise the seed for out-door treatment. The chief points in successful cultivation are the following, viz.:—Never allow the plants to get drawn by keeping them close, and at a distance from the glass; never let them suffer for want of pot room, which is one of the most essential points to be attended to; freely sprinkle them overhead morning and evening in bright weather; never water but when it is quite necessary, for although the Balsam likes moisture, yet it is very impatient of being over watered; and, lastly, the pots should be well drained, this being of the greatest importance, for if neglected they are liable to rot off just above the surface of the soil. The compost best suited to their culture is fibrous maiden loam, leaf-mould, rotten cow dung, and a portion of old mortar rubbish. If the latter cannot be procured, use sharp sand or a few pieces of charcoal, mixed with the soil, using two parts of the former soil. Manure water should be given them as soon as the flower buds begin to make their appearance. If cultivated in small pots, place them in a pan of water during the day in very hot weather. Never discard old seed for new ones, as I have found from experience that the older the seed is, the more double the flowers become. *E. B.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Conservatory, &c.—Many of the structures which go under this name are very unfit places for Heaths, being generally too lofty and kept too warm; but such varieties as vernix coccinea, hiemalis, Lamberti rosea, Burnetti Linnæoides, &c., which bloom in winter, when the house is generally kept cooler than at any other season, are invaluable, blooming as they do when well grown most profusely. These varieties should be largely cultivated for the decoration of conservatories, and for supplying cut bloom. They should be cut back severely as soon as they have done flowering, giving them a liberal shift when they start into growth, using rich strong peat; and if they are well attended to during the growing season they will overcome any injury they may sustain through occupying a somewhat unsuitable position while in bloom. What with Azaleas, Camellias, Roses, &c., and a sprinkling of New Holland plants, show houses should now be a blaze of flowers. Let every plant, however, be placed in the most suitable position, and aim at maintaining a pleasing uniformity of arrangement, and displaying the colours to the greatest advantage, bearing in mind that no amount of floral display will compensate for bad arrangement, bnt will rather serve to make the latter more apparent. Pick off decaying flowers and leaves directly they make their appearance, and endeavour to replace the plants with others as soon as they shall have begun to get shabby. Sprinkle the surface of the beds frequently, so as to assist in keeping the atmosphere moist, and also see that the under soil is kept in a uniformly moist state. Watch for insects, and attack them as soon as they are perceived, which is the only way of preventing their doing mischief. Stove.—Proceed with the repotting of such plants as require it, and give all necessary attention to those in active growth, using every means to induce rapid growth, combined with strong short-jointed wood. The only way of effecting this is by securing a vigorous root action, and keeping the plants near the glass. Specimens that were started early in the season will require rearrangement, so as to place them in positions suitable to their state of growth. Ixoras, Clerodendrons, Allamandas, &c., "feeling their pots," will be greatly benefited by a careful supply of manure water, but see that it is given in a tepid state. Look sharply after mealy bug and thrips, for if these pests are allowed to establish themselves at this season, they will furnish plenty of work for leisure hours during the summer.

FORCING DEPARTMENT.

Pinery.—Attend to re-potting succession stock as it requires it, but avoid the old-fashioned practice of repotting the whole at once, irrespective of what the state of the roots may be, than which nothing can be more injudicious, particularly in cases where a constant supply of fruit is required. Every plant should be shifted before its roots become too much matted, and no plant should be repotted until it needs it. This requires considerably more time and attention than the practice of repotting all at one time, but the result well repays the extra trouble. The temperature may be slightly advanced with the gradual increase of light, but this is a matter in which the state of the plant will be the best guide. Aim at obtaining strong dwarf stocky plants, and if this is secured, it is immaterial whether the night temperature is 60° or 70°, and very much will depend upon circumstances as to which of them will be proper. Backward plants, if kept near the glass to prevent weakly growth, will be benefited by a temperature, which would ruin those in free growth. Use every means to ensure a healthy root action, and use fibrous soil for potting, so as to be able to supply the plants liberally with manure-water. Keep the atmosphere moist by frequent light syringings, and see that the roots, whether in pots or in a bed are surrounded by soil in a moist healthy state, and there will be no difficulty in obtaining rapid growth. Admit fresh air as freely as the state of the weather will allow, but avoid drying currents, and shut up early in the afternoon. Vineries.—The Vines in the late house will soon be fairly on the move, and, unless great care is taken at once to keep them back, it will soon be impossible to do so. See that Vines starting into growth are tied up in their places, before the shoots get so long as to endanger their being broken off or injured. Look over houses where the fruit is swelling, and see if any of the bunches would be improved by tying up the shoulders, and let any necessary alterations involving handling the berries be done before they begin to change colour, as it will be impossible to handle them without injury after that is the case.

FLOWER GARDEN AND SHRUBBERIES.

Look over all recently transplanted shrubs and trees, for the purpose of ascertaining whether they are securely staked, for if these are allowed to roll about with the wind the tender roots are broken off, and the plants are consequently deprived of their only means of obtaining nourishment. Now with April showers, and bright and occasionally warm sunshine, we must be in readiness for mowing. Have the turf swept, well rolled, and made thoroughly firm without loss of time, and remember that if the first mowing is deferred till the Grass gets long, it will require much time and labour to get the turf into proper order. Also get the walks edged, and otherwise put into proper order. Attend carefully to the stock of bedding plants, and get rooted cuttings potted off as soon as they are in a fit state, and encourage them with gentle bottom-heat and careful management to make quick growth, for after this season there is no time to be lost with young stock. Calceolarias, if well established, may be planted out in a turf pit in poor sandy soil, where they can be protected from frost or cold winds; but they must be prepared for this by previously inuring them to full exposure to sun and air, &c., whenever the weather will permit. Their place under glass can be profitably occupied with recently potted-off stuff, and with ordinary care they will do better planted out than stunted in small pots.

KITCHEN GARDEN AND HARDY FRUIT DEPARTMENT.

Get in the main crop of Carrots the first fine day, when the ground is in fair working order. Sow in drills and rather thickly, for the quality of seed is said to be bad this season; although, so far, I have no cause to verify the general statement. Attend to keeping up a succession of Peas by planting, every fortnight, a breadth proportionate to the demand. Soil up and stake those above ground, and protect them from the ravages of mice and slugs, which are often very destructive at this season. Blanch Seakale in the open ground by placing inverted flower pots over the crowns, and covering these with light soil, or any material which will effectually exclude light and air. Prick out, on a slight hot-bed, Cauliflower plants raised in heat. The gentle bottom heat will greatly assist in pushing them along, without their being weakly and drawn, as is the case when they are grown under glass. Also prick out Celery on a gentle bottom heat, and protect with a frame or hand-glasses till well established, and sow seed for the main crop. Attend to providing succession crops of Spinach, and keep the surface soil regularly stirred among growing crops; also do not forget small salads, as Radishes, &c., and sow sweet herbs for transplanting.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,

For the week ending March 30, 1854, as observed at the Horticultural Gardens.

March.	Moon's Age.	Barometer.		Temperature.					Wind.	Rain.
				Of the Air.			Of the Earth			
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Friday 24	25	30.271	30.203	48	23	35.5	41	43	N.E.	.00
Satur. 25	26	30.106	29.954	48	40	44.0	41	43	N.W.	.00
Sunday 26	27	30.061	29.876	56	36	46.0	41½	44	N.W.	.02
Mon.. 27	28	30.199	30.192	56	28	42.0	42	44½	W.	.00
Tues. 28	●	30.379	30.295	61	28	44.5	44	45½	N.W.	.00
Wed. 29	1	30.387	30.312	60	31	45.5	44	46	W.	.00
Thurs. 30	2	30.294	30.212	58	28	43.0	44	46	S.W.	.00
Average.		30.242	30.149	55.3	30.5	42.9	42.5	44.5		.02

March 24—Cloudy; uniformly overcast.
— 25—Overcast throughout.
— 26—Overcast; cloudy; sunshine occasionally: uniformly overcast.
— 27—Overcast; very fine; clear at night; slight frost.
— 28—Slight frost; cloudy; very fine; clear.
— 29—Clear; very fine; clear at night.
— 30—Overcast; fine; clear frosty.

Mean temperature of the week, 1-10th deg. above the average.

RECORD OF THE WEATHER AT CHISWICK,

During the last 28 years, for the ensuing week, ending April 8, 1854.

April.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 2	55.3	36.4	45.8	12	1.19 in.	4	3	3	2	3	7	3	3
Mon. 3	56.3	34.8	45.5	7	0.30	4	3	3	1	2	6	5	4
Tues. 4	56.0	37.0	46.5	12	0.46	4	5	2	2	6	4	2	3
Wed. 5	56.4	36.1	46.2	14	0.65	—	5	3	1	2	5	10	2
Thurs. 6	56.2	36.7	46.4	11	0.30	3	8	2	1	4	9	1	—
Friday 7	56.5	37.0	46.8	13	0.40	2	7	2	2	1	9	5	—
Satur. 8	55.8	35.6	45.7	13	0.80	2	6	5	—	4	5	5	1

The highest temperature during the above period occurred on the 3d, 1848—therm. 78 deg.; and the lowest on the 6th 1851—therm. 21 deg.

Notices to Correspondents.

Books: *Sub.* There is no separate treatise of any value upon the use of liquid manure. Abundant discussion concerning it has appeared in our columns from time to time.

Calla Æthiopica: *J W.* Where there are plenty of plants this may possibly be had in bloom nearly the whole year round, by forcing some into flower early in spring, and retarding the blooming of others till late in autumn. It will, however, require a season's experience to be able to effect this satisfactorily. ‡

Cement: *W C.* Cement the inside with *good* Portland Cement.

Grapes: *S P.* We know of no reason why the Mill Hill Hamburgh should not do well in the same house with the Black Hamburgh.

Heating: *W.* Yes. Please send the Holly *at all events.*

Horticultural Schedule: *A Fruit Exhibitor.* We cannot again go through the calculations, but we have no doubt about our being correct. At all events, according to your own showing, the new schedule is *more* in favour of exhibitors than we had supposed. As to fruit, it has always happened that more is offered than is given; this arises from want of competition; the sum *given* last year, which is a full average, is what is offered this year, and as the giving is at the discretion of the judges, it is needless to offer more than the wants of the exhibitors demand. Have no fear about the judges, they are already provided. You are quite right in regarding the new regulation as a great improvement upon the old one.

Insects: *F D., Pershore.* Certainly. The best plan will be to recork the bottles and dip the tops of the new corks in melted resin and wax, to prevent fresh mischief.—*X.* Kolenati has not published a second part of his Trichoptera. Kuster's book is on the plan of Panzer—irregular; 27 Parts, at 3s. each, are out. There are not sufficient papers in the Stockholm and Moscow Transactions to make it worth the while of an English entomologist to purchase them. Messrs. Williams and Norgate, or any foreign bookseller will supply the other information respecting these works. Messrs. Barthes and Lowell are now the agents for Guérin's "Revue d'Zool." The Stettin and French Entomol. Trans. are a little behind-hand, but not to the extent you mention. The Blatta is, we believe, undescribed. —*J O.* The French use cords dipped in dilated honey, hung between trees, to entice moths; and the Americans, rags dipped in soap-suds, which have stood in the hot sunshine till they are sour. *W.*

Kensington Gardens: *D C L.* The names of plants in this resort have been furnished by some ignorant person; they are another instance of the way in which the Woods and Forests are administered. No Laurus is a native of Britain; and there is no such plant as Laurus salicifolia.

Lily of the Valley: *H C.* The specimen sent is an extremely good one. It appears to have been grown in a 6-inch pot, which it has filled most completely with strong healthy shoots, each bearing a long spike of highly fragrant flowers. The latter, however, evidently require a little fire heat, as you suggest, to bring them nicely out. We shall be much obliged for the remarks you promise respecting the culture of this Lily, which you appear to manage so well. ‡

Pine Pits: *X.* Your plan looks as if it would answer perfectly. We should, however, use 4-inch pipes instead of 3-inch ones, which will be found too small. Lay them in rough gravel at the bottom of the bed, which is quite deep enough. We should also employ 4-inch pipes for the top-heat. ‡

Rhododendron Seeds: *Enquirer.* Sow them now in pans filled with sandy peat, and start them on a very gentle bottom-heat. When up transfer them to a cold frame to harden, preparatory to their being placed out of doors. ‡

Vines: *J H S.* Out of the long list you sent, four Vines for a small greenhouse may consist of 2 Black Hamburgh, 1 Black Prince, 1 Royal Muscadine.

White Flowered Plants: *Alba.* The following may possibly answer your purpose: Arabis grandiflora, and white Daisies, for spring; Iberis coronaria, and sempervirens for summer; and white Verbenas, for autumn. ‡

Misc.: *Cleaveland.* Messrs. Parsons and Co., Flushing, Long Island, United States; or Mr. Reid, Elizabeth Town, New Jersey.

TO MANURE MANUFACTURERS.

THE Directors of the Crystal Palace Company are prepared to exhibit in the Agricultural Department samples of MANURES and other substances applied to the Soil. The terms, &c., may be obtained on application to the above department at this office.—3, Adelaide Place, London Bridge, April 1.
G. GROVE, Secretary.

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures.
WM. INGLIS CARNE, 10, Mark Lane, London.

THE LONDON MANURE COMPANY'S WHEAT MANURE, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. EDWARD PURSER, Sec.
Bridge Street, Blackfriars.

PEAT MOSS CHARCOAL, AND OTHER MANURES.—The Undersigned are appointed sole Agents by the Peat Moss Charcoal Company, for the sale of this valuable fixer and distributor of ammoniacal matter.

Also on Sale, Peruvian Guano, Superphosphate of Lime, Gypsum, Nitrate of Soda, Bone-Dust, Sulphuric Acid, and all other Manures of known value.—Apply to MARK FOTHERGILL & Co., 204A, Upper Thames Street, London.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7*l.* per ton; Superphosphate of Lime, 7*l.*; Sulphuric Acid and Coprolites, 6*l.*

Office, 69, King William Street, City, London.

N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

SUPERPHOSPHATE OF LIME MANUFACTURED BY MR. J. C. NESBIT'S IMPROVED STEAM MACHINE. The following is the analysis of an average sample.
"College of Chemistry, Agriculture, and General Science, 38 & 39, Lower Kennington Lane, London.
Analysis of Sample of Superphosphate of Lime from Mr. Jolliffe:

Moisture ...		13.97
Organic Matter, &c. ...		21.98
Silica ...		6.05
Phosphate of Lime ...		35.27
SOLUBLE ...	16.10	
INSOLUBLE ...	19.17	
Sulphate of Lime, &c....		22.73
		100.00
Nitrogen (equal to) ...		1.16
Ammonia ...		1.41

(Signed) J. C. NESBIT."

For price and full particulars, apply to E. Y. JOLLIFFE, 70, Mark Lane, or the Works, Lavender Dock Wharf, Rotherhithe.
Agents wanted in all the principal towns.

SEWAGE GUANO, 5*l.* 5*s.* per ton (bags included). Circulars and Testimonials forwarded on application.

DEODORIZING CHARCOAL, 1*l.* 10*s.* per ton (bags to be returned). Terms: Cash on delivery.
The Manchester Sewage Guano Company, 3, Watling Street, Shudehill, Manchester. E. RANSBOTTOM, Agent.
JOHN THOMPSON, Secretary.

PERUVIAN GUANO, WARRANTED OF THE BEST DESCRIPTION, AND THE DIRECT IMPORTATION OF MESSRS. ANTONY GIBBS & SONS; LAWES'S *Patent Superphosphate, Nitrate of Soda, Bone Dust, and all other Natural and Artificial Manures, at the lowest remunerative prices.—See* RENDLE'S "FARMING PRICE CURRENT AND AGRICULTURAL DIRECTORY," to be obtained from W. E. RENDLE & Co., Seed Merchants, Plymouth.

THE BRITISH ECONOMICAL MANURE COMPANY supplies in any quantity the "Economical Manure," a complete and by far the cheapest substitute for Guano. 1¼ to 1½ cwt. per acre of this powerful Manure, costing 15*s.* to 18*s.*, is ample (more must not be used), and equals 3 cwt. of the best Peruvian Guano, thus saving at least 50 per cent., besides carriage, &c.

The agricultural world is respectfully urged to read the hundreds of Testimonials from all parts of England, Scotland, and Wales, France, Belgium, and Spain, to be convinced that this Manure warrants especial and immediate attention. They prove that it gave most wonderful results last year on every soil and crop, far surpassing the expectations of the purchasers, the dampness of this climate and the coldness of the soil peculiarly favouring its action on the vegetation.

No one reading the Company's pamphlet can doubt its being by far the cheapest of all manures. In fair comparative trials on every kind of soil and crop with guano, dung, and other long recognised fertilisers, it will be seen the "Economical" was superior; that it proved most valuable for fruit trees, shrubs, and garden purposes, and produced the most astonishing effects upon manure heaps, applied in solution, decomposing in 15 days all vegetable matter, peat included; and that it is a perfect deodoriser for liquid manure, besides enhancing its fertilising properties.

It is the result of many years' labour of an eminent Foreign Agriculturist, the Director of the Government Schools of Agriculture in his own country, and of high reputation as a chemist. It is patented, and is one of the most useful and greatest discoveries of the day.

Price 12*s.* per cwt., packages included, and delivered free on rail or wharf in London.

The Company's pamphlet containing the Testimonials, directions for use, and all particulars, also samples, to be had at the Offices, 10, Mark Lane, London, or sent on applying to
BENJAMIN COVENEY, Manager.
Good Agents wanted. An allowance to the Trade.

CHAFF-CUTTERS, of the best workmanship, 25*s.*; Two-Knifed Chaff Engines, from 63*s.*; Mills for Bruising Oats and Beans, from 45*s.*
WILLIAM DRAY AND CO., Agricultural Implement Manufacturers, Swan Lane, Upper Thames Street, City.

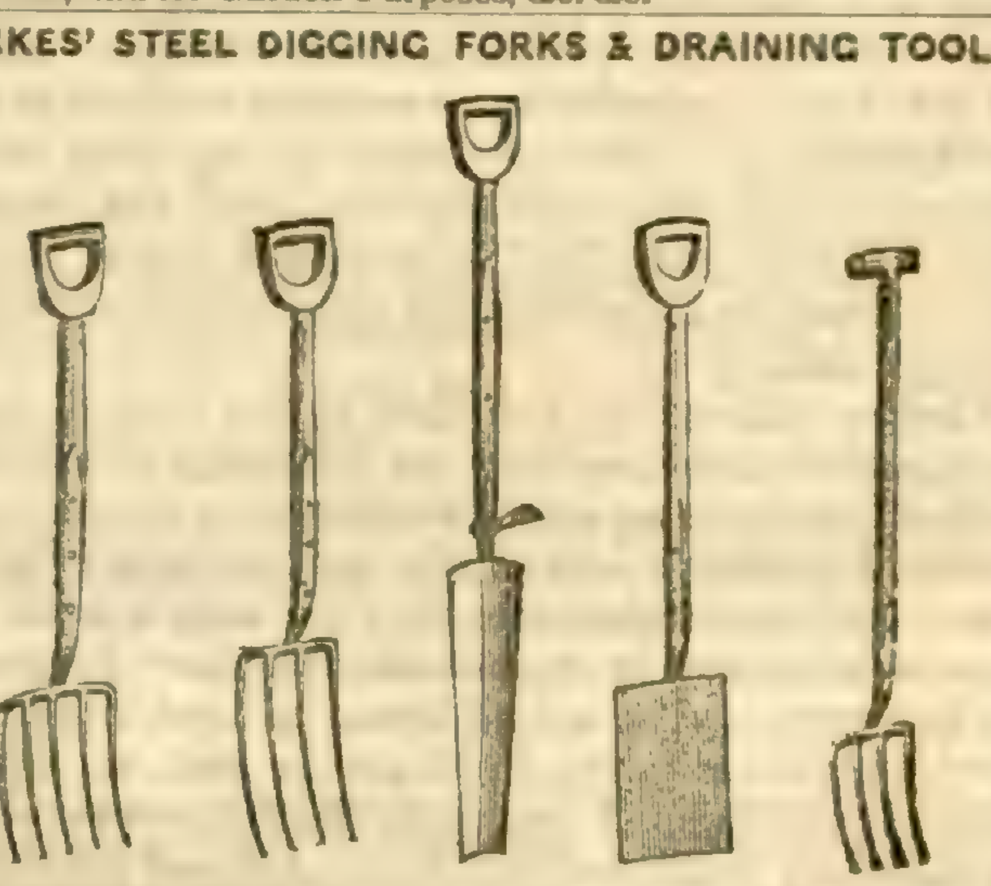
GIDNEY'S PRUSSIAN HOES.—Gardeners and Amateurs are informed that this useful Tool is now becoming a general favourite in the garden, and only needs a trial to be appreciated. Price 1*s.* 6*d.* handled. To be had of every Ironmonger and Seedsman. Manufactured only by GIDNEY & SON, East Dereham, Norfolk.

BUDDING'S LAWN-MOWING MACHINES, with Registered Improvements.
MAPPLEBECK & LOWE, MACHINISTS & MANUFACTURERS, Birmingham.

BUDDING'S LAWN MOWERS, with SAMUELSON'S registered improvements, *lightening the draught fully one-half*, and enabling an unskilled labourer to make neat work with it; free from liability to choke, or get out of order May be had of all ironmongers in town or country, or from the Works, Banbury; delivered free in a packing case to any station on the North-Western and Great Western Railways. Testimonials forwarded on application.—Britannia Works, Banbury.

ANTHONY'S PATENT AMERICAN CHURN.—Extract from the Royal Agricultural Society's Report of the trial of Churns at the Gloucester meeting in July last. "In this trial the American Churn not only maintained its character in producing butter rapidly, but in producing a greater quantity from the like amount of cream." It made from 4 quarts of cream 4 lbs. 6 oz. of butter, being 8 oz. more than any of the other Churns from the same quantity and quality of cream. Price Lists of Churns and Implements by the best makers sent free, and Illustrated Catalogues on receipt of eight postage stamps. BURGESS & KEY, 103, Newgate Street, and 52, Little Britain, London, who have always a large stock of Steam-engines, Ploughs, Harrows, Diggers, Waggons, Carts, Threshing and Dressing Machines, Mills, Oat and Grain Bruisers, Oilcake Breakers, Reaping Machines, Haymakers, Horse-rakers, Turnip Cutters, Liquid Manure Carts, Parkes' celebrated Steel Digging Forks and Draining Tools, Pumps for Manure, Farm Fire Engines, and for Garden Purposes, &c. &c.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.



MESSRS. BURGESS AND KEY, as Mr. PARKES' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.
103, Newgate Street, and 52, Little Britain, London.

HALL'S GARDEN NETTING, the best protection against Frosts, Storms, or Scorching Heat.

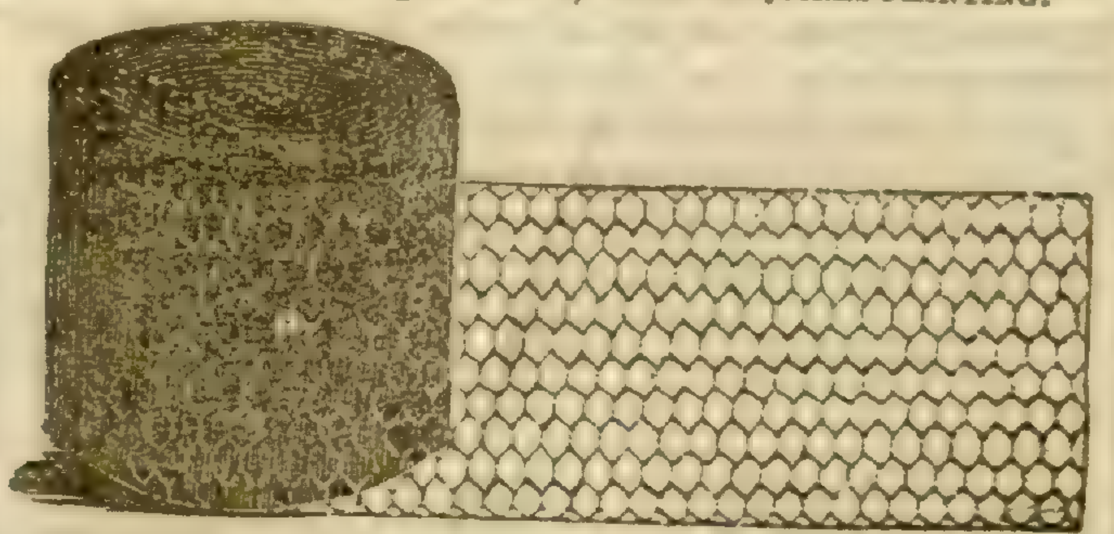
TANNED NETTING, for the protection of Fruit Trees from frost, blight, and birds, and for the security of fresh sown seeds, either in Gardens or Fields, at 1*d.* per square yard; 200 yards, 14*s.*; 500 yards, 30*s.*; 1000 yards, 50*s.* Scrim Canvass, for Wall Fruit.—At EDGINGTON and Co.'s, 17, Smithfield Bars, City, and Old Kent Road, Southwark, where may be seen erected Emigrant Tents in great varieties, on their latest improved principles, and also at Brunswick Street, Poplar, near the East India Export Dock.

H. J. MORTON AND Co., Galvanised Iron Roofing Works, 2, Basinghall Buildings, Leeds.
PATENT WIRE STRAND FENCING FOR PARKS, &c.

This Fencing is the most neat, strong, and durable for Parks and Agricultural purposes in use. It cannot be bent or put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply as above.

IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

H. J. MORTON AND Co., 2, Basinghall Buildings, Leeds.—GALVANISED GAME AND POULTRY NETTING, very strong and neat, NEVER REQUIRES PAINTING.



24 inches wide, 3-inch mesh, 4½*d.*, 6*d.*, and 8½*d.* per yard.
24 inches wide, 2-inch mesh, 7*d.*, 9½*d.*, and 1*s.* per yard.
GALVANISED IRON SPOUTING, for Dwellings, Cottages Farm Buildings, &c., NEVER REQUIRES PAINTING.
Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalte Roofing Felt, &c.

FRUIT TREES, POULTRY, RABBIT, SHEEP, and CAT FENCING.—Worsted Netting to protect the Bloom of Peach, Nectarine, and other Trees, Flower, or Seed Beds, from Frost, Blight, and Birds, 2 yards wide, 5*d.* per yard. NEW TWINE NETTING (Tanned if required), 1 yard wide, 1½*d.* per yard; 2 yards wide, 3*d.* per yard; 4 yards wide, 6*d.* per yard; Half-inch Mesh ditto, 2 yards wide, 6*d.* per yard. TANNED NETTING, 2 or 3 yards wide, 1½*d.* per yard; 4 or 6 yards wide, 3*d.* per yard; or 5*s.* per 100 yards, 1 yard; 10*s.* per 100 yards, 2 yards; and 20*s.* per 100 yards, 4 yards wide. ELASTIC HEXAGON GARDEN NET, or Scrim Canvas, 4½*d.* per square yard. COCOA NUT FIBRE, or Hemp Sheepfolding Net, of superior quality, 4 feet high, 4*d.* to 6*d.* per yard. Rabbit Net, 4 feet wide, 1½*d.* per yard; 6 feet wide, 2¼*d.* per yard; 8 feet wide, 3*d.* per yard. Each Edge Corded, ½*d.* per yard extra, suitable for Poultry Fencing. Square Mesh Cricketing Net, fix its full width and length, made of stout cord, 3*d.* to 4*d.* per square yard; this is the best article made for fencing, against fowls, cats, &c., at W. CULLINGFORD'S. Orders by post with Post-office order or town reference, punctually attended to. The Trade supplied. Fishing Nets of all kinds in stock. Nets made to order. Tents, Marquees, Rick Cloths, Tarpaulin, Lines, Rope, Twine, &c., made to order.—1, Edmund-terrace, Ball's Pond Road, Islington, London.

LAND DRAINAGE.

MR. BAILEY DENTON'S TABLES OF COST, &c., price 1*s.* 4*d.* Sold by METCHIM, Parliament Street.
MR. BAILEY DENTON'S WORKMAN'S A LEVEL, price 1*l.* 10*s.* Sold by JONES & Co., High Holborn, London.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

BAILY'S ROUP AND CONDITION PILLS FOR POULTRY.—This remedy has been extensively tried with uniform success, and is offered to amateurs and the public with the greatest confidence. It will effectually overcome that disease which has hitherto been the bane of the poultry-yard, and destroy that apprehension known to all poultry keepers, when a favourite and valuable fowl is seen to droop. It is inestimable for poultry returning from exhibitions, and greatly facilitates moulting.—Sold, with full instructions for use, in boxes containing 50 pills, by JOHN BAILY, 113, Mount Street, Grosvenor Square, price 3*s.* per box, or by post 3*s.* 4*d.* "Fowls, by Baily," the most useful and plainest treatise of the day; price 2*s.*, by post 2*s.* 6*d.*

Baily's Registered Fountains, universally adopted and approved. Drawings and particulars, by post, on application.—113, Mount Street, Grosvenor Square.

AGRICULTURAL SEEDS.
TO THE TRADE.

BASS AND BROWN can at present supply fine stocks of the following at the lowest wholesale prices.
MANGOLD WURZELS—Long Red and Long Yellow.
" " Red Globe and Yellow Globe.
CARROT—Large White Belgian.
" Long Red Altringham.
Fine ITALIAN RYE-GRASS and PERENNIAL RYE-GRASS; COCKS-FOOT, MEADOW FESCUE, SWEET VERNAL, and a few others of the leading kinds of Grasses.
TURNIPS—A few of the leading kinds.
The New Agricultural GREY PEA, Bishop's last and best, a few bushels left. Also most other Agricultural Seeds. Prices to the Trade on application.
Seed Establishment, Sudbury, Suffolk.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.
PATRON—His Royal Highness PRINCE ALBERT.
PRESIDENT OF COUNCIL—Earl BATHURST.
PRINCIPAL—Rev. J. S. HAYGARTH, M.A.
PROFESSORS, &c.
Chemistry—J. A. C. Voelcker, Ph D., F.C.S.
Geology, Zoology, and Botany—James Buckman, F.G.S , F.C.S.
Veterinary Medicine and Surgery—G. T. Brown, M.R.C.V.S.
Surveying, Civil Engineering, and Mathematics—F. Armstrong, C.E.
Manager of Farm—G. Austin.
Assistant to Chemical Professor—A. Williams, M.R.C.S.

Students are admitted after the Summer and Winter Vacations, also in April and October. The annual fees for Boarders vary from 45 to 80 guineas, according to age and other circumstances. The Fee for Out-Students is 40*l.* per annum. The College Course of Lectures and Practical Instruction is complete in one twelvemonth—though a longer course is recommended. There is a department for general as well as for agricultural purposes.

Prospectuses and information can be had on application to the Principal.

The GUIDE TO THE ROYAL AGRICULTURAL COLLEGE FARM may be obtained of HAMILTON, ADAMS, & Co., Paternoster Row, London; and EDWIN BAILY, Cirencester. Price 1*s.*

REAPING MACHINE COMPETITION AT STIRLING. The STIRLING GENERAL AGRICULTURAL ASSOCIATION hereby offer the following PREMIUMS to be competed for during next harvest:—

1st, For the most approved Reaping Machine, of any price, 20*l.*;
2d, For the most approved Machine, not exceeding 25 guineas in price, 20*l.*

Should the judges fix on a Machine of 25 guineas, or under, to be the best on the field, it will thereby be entitled to both prizes.

The price and simplicity of construction of all the machines will be taken into consideration in awarding the Premiums, but the Society reserves the power of withholding the Premiums, if, in the opinion of the Judges, the Machines are not of sufficient merit.

Intending competitors will require to enter with Mr. Hutton, their Secretary, at Stirling, not later than the 20th of July next, when they will have due notice of the time and place of competition forwarded to them.

Intending competitors must forward with their notice of entry the sum of 2*l.* sterling, to be returned on the morning of trial to those who appear on the field of competition with their Machines.

The Machines are to be tried on all kinds of crop, and upon both Dryfield and Kerse Lands, if required. The trials to be continued until the Judges and Committee appointed by the Association are satisfied.

Machine-makers entering Machines are to state what price they will furnish such machines as they compete with to members of the Association, and Farmers entering are to state the price they paid for those they compete with. By order of the committee.
WM. HUTTON, } Joint.
Stirling, March 17, 1854. WM. FORRESTER. } Secs.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—PRIZE SHEETS for the LINCOLN MEETING may be had on application to the SECRETARY of the Society, No. 12, Hanover Square, London.

NOTICE.

WEST KENT POULTRY SHOW.—At a Special Meeting held at the Committee Room, Lion Inn, Farningham, on Wednesday last, it was unanimously resolved to hold the West Kent Poultry and Flower Show on THURSDAY and FRIDAY, the 1st and 2d of JUNE.
Further particulars will appear in future advertisements.

The Agricultural Gazette.
SATURDAY, APRIL 1, 1854.

MEETINGS FOR THE TWO FOLLOWING WEEKS

MONDAY,	April	3—Central Farmers' Club.
WEDNESDAY,	—	5—Agricultural Society of England.
THURSDAY,	—	6—Agricultural Imp. Society of Ireland.

EVER since the days of "the first keeper of sheep" and "the first tiller of the ground," agriculture has included three main divisions—three steps or stages in the development of the raw material of all her manufactures. The first is that from which the progress starts. The student standing on it has the mineral world before him in its various forms of rock, soil, water, air. The second—one step higher in the progress of development—presents the results of vegetable life as it acts upon, and by means of, the materials and the forces furnished by the first. The third includes those portions of the animal kingdom in which the farmer is interested—herbivorous animals and their products, in and upon whose bodies the results gathered upon the second stage are manufactured or transmuted into the still

more highly developed products of the third and highest stage of all.

If, besides looking upon the mere products to be gathered on these several platforms, the student shall direct his attention to the processes exhibited on each, by which the several results are elaborated, he will notice, as belonging to each, the various artificial methods and facilities which have been introduced in order to accelerate the natural process of development, and he will also notice the various natural obstacles which have to be either conquered or submitted to. On the first stage he will observe the gradual work of disintegration and solution, by which the original impracticability of the rock is overcome, and coarse material is reduced to the state in which plants can feed on it; and while, on the one hand, he will see how, by the operations of cultivation and draining, these processes have been accelerated, he will also notice how artificial methods have been contrived for overcoming special obstacles presented to them by the impervious character of some soils, and the deficiencies of others. On the second stage, he will find the natural processes of vegetable growth accelerated by cultivation and attention to the plant during the course of it, and the natural products of vegetable growth increased both in quantity and quality, by attention to the breeding and selection of improved seed. Here he will also see how the obstacles to this growth have been met and partly conquered—how parasites, directly robbing cultivated plants, have in some cases been destroyed — and how weeds, indirectly robbing them, have continually to be fought against.

Let him now take his stand on the highest stage of all, and he will here, too, see how much both the processes and the results of unassisted Nature have been improved—how the food gathered as the result of natural growth, slowly feeding animals in an unimproved condition, has been replaced by food artificially prepared and administered to well-bred stock, yielding a result, whether in meat or fat or wool (confining ourselves to British agriculture), manifold the natural amount. And he will also see the operation of those obstacles to agriculture presented by all animal pests which prey directly upon animals, or indirectly on them through their food.

All this we have said the student *sees*: it would certainly be very greatly to his advantage if he could. Unfortunately, he can but read and hear about it all, and supply the missing illustrations of his studies by imagination. This inability, however, is not only felt to be an omission in agricultural education, it is felt to be a defect fatal to the perfect efficiency of such an education; and, accordingly, those intending to be farmers take up their residence upon a farm, where they *may* see so much of all we have described as is presented to them on the particular 1000-acre piece on which they may be placed.

The importance of actually *seeing* what one studies, is recognised by all practical men who insist on an agricultural education in the field; and it is equally felt by all lecturers, chamber teachers, and professors, as is shown by their anxiety to enlarge and fill the museums attached to their respective schools and colleges. Almost the only professional education which the former have enjoyed may have been received in this way through the eye; and even when in conversation, or by books, they may have added to what their field experience had taught them, yet the indistinctness and the fugitiveness of information so obtained has only served to confirm their judgment of the superiority of this field experience as the true agricultural instructor. And lecturers and professors will agree with them in this; they know by experience the imperfections of mere language as a vehicle of all the truth one would convey—and they also know how much more firmly truth is lodged, when the subject is before the eye as well as ear.

It is in this way that our great national museums and repositories are true educational establishments. In Jermyn Street we have a collection of many things, and expect to have a collection of everything, connected with the first platform alluded to above. The museum of economic geology refers, of course, to other arts besides (and, indeed, to other arts *rather than*) that of the farmer, but the *agricultural* student will find plenty to instruct him in it. Rocks—the material in its origin, and soils—this same material in its disintegrated condition, out of which every product of his art arises, are, or will be, represented fully; and when the scheme of the institution shall have been fully developed, every substance, process, and result in the mineral kingdom, in its agricultural as well as every other relation, will be perfectly illustrated. At Kew, again, we have, in ideal at any rate, a full representation of the second platform already named. A museum of plants, not confined indeed, nor even in a remarkable degree devoted, to those portions of the vegetable world in which the British farmer is particularly interested, but one in which every intelligent agricultural student may justly take a careful studious interest nevertheless. And when it too shall have had full scope given to its original purpose and intention, we presume that it will be a perfect illustration and museum of everything in the vegetable world; of everything that can interest the farmer as well as the gardener.

As to the third and highest platform on which the agriculturist can stand, and the museum of animal processes, products, and results which will adequately represent it, we have simply to say that *as yet there is no such thing*. And this is the point at which our remarks must at present terminate. We are happy to say that the deficiency is to be supplied, and that the steps which will ultimately lead to its establishment have been planned, and are being taken by intelligent and energetic men.

Whether the analogy furnished by the mineral and the vegetable museums does not reasonably lead us to expect at least an equal usefulness in a museum of animal products—what the particular subjects of an agricultural character may be which such a museum should illustrate—and whether farmers may not properly be called upon to lend a hand, in order that that particular share in such an establishment which shall represent their interests may be completely furnished with instances and illustrations—all these are subjects which we commend to the attention of our correspondents.

In Howitt's pleasant tale of the "Honest Dutchman," a thriving population is represented as having been in olden times much straitened for room; and upon the exhortation of one Van Manslaughter that they should march through the German forests, conquer cities and country, and "get great glory," up rose one Mynheer Kinderman, saying "let us take no man's goods, and let us do no murder; for behold we can *invade the sea!*" Then they began with mighty embankments to shut out the boisterous ocean from oozy shoals and sands; and thus in successive ages has been created the wonderful country of Holland. Dyking and draining have become the habit of the people—nay, even their national passion; so that—as in France, the children play at war; and in slave States at flogging—the Dutch boys and girls will build mimic walls of sand at the sea-side, encompassing themselves with glee against the rippling tide. By engineering works of vast magnitude the downs of sand have been connected into a continuous barrier along the coast; the many islands of rich warp inclosed at the mouths of the Rhine, the Maese, and the Scheldt; and the broad alluvial plains defended from the floods of these rivers. Often does the fierce and storm-driven ocean sweep over the huge ramparts, and history tells us of 100,000 inhabitants destroyed at a time; but this undaunted and truly patriotic people continually renew the broken dykes. These are generally from 120 to 150 feet through at the base; cased externally with stone, usually from the rocks of Norway. Where exposure is great, the expense of repairs is very heavy; it was even said of a well-known dyke in Walcheren, that, had it been originally made of solid copper, the cost would have been less than it has actually been. In addition to the ocean and the impetuous rivers, the numerous great inland lakes or meers, and the still more formidable salt zees, have to be banked out, and occupy the enterprise of drainers in pumping them dry, as we have just done with our own Whittlesea Mere. Many of these shallow lakes were baled out by windmills in the 16th and 17th centuries; innumerable smaller plots of low ground, or bogs from which peat had been dug for fuel, were drained in the same manner; and in process of time, a large proportion of the surface of the country lying below low-water mark in the sea, has been placed under the keeping of wind-mills, which now amount in number to many thousands. The draining of a plas (lake) or marsh is conducted in two different ways. Certain individuals, having obtained from the Government, or purchased from private parties, the necessary concession or authority, form themselves into a company. They fence the lake round with a double bank and a ring canal, erect mills, make the land dry, and then divide it among themselves, or sell it to others. But when the undertaking is large, and the profit doubtful, the work is undertaken by the Government; the land is dyked and laid dry at the public expense, and is then sold, the purchasers being bound to maintain the dykes and pumps at the common cost. In nearly all cases of "poldering," as the operation is called, the new land is exempt from taxes for the first 20 years, and, in special instances, other privileges are granted. Six, 10, or 13 feet, are depths of water which have been thus removed from off the now cultivated ground; and then the mills have perpetually to effect the drainage by lifting the water 15 to 25 feet, at a permanent annual expense of 5*s*. or 6*s*. per acre. The great Meer of Haarlem, 60,000 acres in extent, has been now drained by three monster steam-engines, which, in less than a year and a half, have pumped out the water, amounting to a thousand million tons, at a total cost of 150,000*l*., which would have required 114 windmills, working for four years, at an expense of more than 300,000*l*. The future annual charge of maintenance will be little more than 2*s*. per acre.

It is to be observed that the general superintendence, supervision, or entire management of all the dykes, canals, and drainage, has, from the earliest times, been more or less a care of the Government for the time being. Long before the period of the Spanish dominion, the provincial dukes and governors were accustomed to extend and strengthen the dykes. In the Spanish times, the general oversight of every extensive local drainage was in the hands of the crown; and the appointment of bailiffs, dykgraafs, &c., to each, was (as we might expect) a valuable part of the patronage of the governor or viceroy of the Netherlands. Dugdale records that the Governor of Friesland, under Philip II., perfected a famous sea-bank, compelling the people, "of themselves averse and slow to so public a work, to come in, man by man, to raise this strong bank, as if it had been to quench a fire." The first polders were comparatively small inclosures; manor after manor being secured, and gradually united into large districts, superintended by separate "heemraads," or inspectors, and single boards of management. The functions of these local boards are at present confined to the application of the cheapest and most efficient methods of preserving the canals and dykes, and of maintaining their polders in the most profitable condition. But the execution of the larger enterprises is undertaken by the Government, who afterwards dispose of them to private individuals; and the special supervision of the sea-walls and great river dykes, and of all canals and sluices, in so far as they concern the general good, continues to be in the hands of the Government and the States-General. For this important national service, a special department of civil engineers has been created—the Water-staat, Water-staff, Etat d'eau. They receive special instruction in the new college at Delft, from which they are transferred to various parts of the country, and are made responsible for the condition of the works placed under their care. All national works they both advise upon and execute; concerning the state and efficiency of private works, they only advise; it is the right of the proprietors to administer.

Two centuries ago, the Dutchmen were in request as agricultural improvers in almost every part of Europe; and in England, we know that, besides the various plants, implements, &c., which they introduced to us, we have the results of their active labours in draining our fens and inclosing our marshes, as in the Great Bedford level; in the Lincolnshire fens; in the flats upon the Trent, Ouse, and Humber; in Foulness and Wallasea Islands upon the Essex coast. Some persons are of opinion that we should again profit by the experience of our semi-amphibious neighbours, in improving our own river drainage. Not exactly by sending over for a company of their engineers, but by copying their management; placing all our arterial streams under the supervision of a competent central authority, under control of the Government; and, where private or local interest has failed in remedying and preventing the disasters of floods, making it a duty of Government to execute the necessary works for the public good, in spite of local feeling as to the contrary. The information given above will assist our readers in forming their judgment of the proposal; which, though excellent enough in Holland, may be viewed with some jealousy in our own country. *I. A. C.*

BEAN STRAW FOR CATTLE FEEDING.

On referring to my statements of cattle feeding, in the *Agricultural Gazette*, of December 24th, 1853, it will be observed that I used steamed Bean straw as a substitute for Turnips partially through March, and wholly in April and May, with success. The eight heifers so treated, which in the month of February were in ordinary store condition, and the cost of which up to that time would be about 9*l*. to 10*l*. each, were sold at the close of June for 16*l*. 10*s*. each, being 6½*d*. per lb., the then top price of the market.

Up to 1852 I had used my Bean straw in a raw state, together with other more palatable material; it was, however, only imperfectly consumed, and I had not observed any particular results from it.

My Bean crop of 1853, being unusually strong in the straw, I had difficulty in inducing my cattle to eat even a small quantity. I therefore had recourse to steaming it, and procured for this purpose an inexpensive

temporary steamer of tin, with perforated holes made to fit a large pan used for brewing and other domestic purposes. The favourable effect of the steaming process was at once apparent. The Bean straw was changed from a brittle dry material into a soft pulpy one, and emitted an odour not unlike that of spent grains. The cattle showed a relish for it, and instead of requiring more palatable material as a condiment, it became the incentive, and I have as yet found no material which serves so well as an inducement to the consumption of other straw, as an admixture of steamed Bean straw.

For the present season I have procured a proper steaming apparatus, and mix before steaming one-third of Bean straw, one-third of Oat straw, and one-third of shells of Oats, to which is added, also before steaming, 4 lbs. of Rape-cake, and 3 lbs. of bran for each per day; of this, which is given *ad libitum*, they consume more than 20 lbs. each, some more and some less, or when moistened by the steam, from 50 lbs. to 60 lbs. per day; in addition to this, Turnips in limited quantity, some of them getting about 50 lbs., and others only 30 lbs. each per day. After each feed of steamed food and Turnips, given three times a day, they are supplied with fresh chopped Oat straw, of which they eat 4 lbs. to 6 lbs. each. On this fare my cattle are now gaining at the rate of 18 lbs. to 20 lbs. each per week, being the greatest average gain I have as yet effected, since I commenced the practice of weighing.

It will be observed that the materials used have hitherto been comparatively little noticed for feeding. Chemistry assigns to Rape-cake and bran a much higher value than they have yet obtained in practice; of Bean straw, I could find no analysis. I therefore sent to Professor Way a sample of that I am now using—the produce of 1853, which I give :—

Moisture	14.47
Mineral ingredients	9.45
Albuminous matter	16.38
Oil	2.28
Woody Fibre	25.84
Starch, Gum, &c.	31.63
	100.00

Nitrogen .. .. 2.58 per cent.
February, 1854. J. T. WAY.

This Bean straw, as compared with an analysis of meadow hay, shows a double per centage of albuminous matter, a somewhat less proportion of gum, starch, &c., being 40 in the hay, to 31.63 in the Bean straw. Of woody fibre, with ash or mineral matter, the proportions will be nearly the same.

The Bean crop of 1852 was cut in September, on what would generally be thought the short side of ripeness, retaining a considerable portion of the foliage, the weather was favourable, and it was stacked without rain; the yield of Beans was fully 48 bushels to the acre, of good quality, and weighed 67 lbs. per bushel. The crop of 1853 was sown early in March, but was not ready for cutting till October; the yield of straw was abundant, that of Beans was at the time of cutting thought quite equal to that of 1852. Before carrying to the stack it was exposed to some weeks of wet weather, and when carried was not in a satisfactory condition; on taking down, the Beans were much damaged, and the straw partially so; the sample for analysis was taken promiscuously from a quantity of chopped straw and leaves; the sheaves selected for the purpose were in fair condition. It will be borne in mind that this sample was from the produce of 1853. Both crops were after Turnips, the land being clean and in good heart.

I have been thus particular in describing the state of these crops, from a persuasion that hitherto straw has not obtained that attention to which it is entitled as a feeding material. I may add, that for my own consumption, I much prefer risking a little of the plumpness of the grains of Oats or Beans, by cutting them on the short side of ripeness, and preserving some of the virtue in the straw, to allowing the crop to ripen fully, in which state the straw acquires too great a proportion of woody fibre. I am by no means sure that a step further in the same direction might not be attended with advantage.

This practice of feeding was begun in December; it was not till towards the close of February that I obtained the analysis of Bean straw, which enabled me to examine the composition of the food. It appears the most correct mode of estimating the comparative properties of food to consider it as dry substance, omitting the moisture, or water, and retaining the woody fibre. It is shown in the consumption of Turnips, of which cattle will eat 150 to 200 lbs. a day, that water does not satiate, whilst of hay and straw which contain a great proportion of woody fibre, they are satisfied with less than 30 lbs., with 60 to 70 lbs. of water given separately. Taking my data from approved authorities, I find the different materials used to contain :—

	Turnips.	Bean Straw.	Oat Straw.	Bran.	Rape-cake.
Protein or albumen ...	15	19	4	16	32
Oil	2	2.75	40	6.35	12
Sugar, gum, starch, &c.	71	37	...	43.65	39.70
Fibre and ash	12	41.25	56	34	16.30
	100	100	100	100	100

The analyses of Oat straw differ considerably, from 33 to 98 per cent. of nitrogen; its quality will be influenced by the nature and condition of the soil, but still more so by the state of ripeness when cut; I have estimated mine at .63 of nitrogen and .40 gum protein, &c. In this neighbourhood we use our Oat straw for fodder, and find it answer equally well as hay when combined with Turnips either for feeding or dairy purposes; we attribute this to its correcting the laxative tendency of the Turnips—a quality which I think is not sufficiently attended to—and not to its being equally nutritive; indeed, we find our cattle thrive and do well on hay alone, whilst on straw alone they exist but do not thrive. In accordance with the contents of the foregoing Table of materials of food, I have computed the daily consumption of my animals under treatment, and give the result.

	Lbs. per day.	Protein.	Oil, starch &c.
		lbs.	lbs.
Bean straw	4	76	1.60
Oat straw, shells of Oats, and dry straw ...	12	48	4.80
Bran	3	48	1.50
Rape-cake	4	1.28	2.00
	23	3.00	9.90
Deduct for moisture in straw, &c.	2	33	1.10
	21	2.67	8.80
Swede Turnips average 40 lbs. per day; being stored in autumn, I allow 85 per cent. for moisture	6	90	4.38
	27	3.57	13.18
			3.57
Consumption per day of elements of nutrition and respiration			16 75

The comparison with feeding on Turnips, say 160 lbs. per day, with a little straw—

	Dry matter.	Protein.	Oil, &c.
Turnips	16	2.40	11.68
Straw	$5\frac{1}{2}$	22	2.16
	$21\frac{1}{2}$	2.62	13.74
			2.62
Per day for nutrition and respiration			16 46

Shows a less per centage in my food of protein compounds, and also in oil, starch, &c.; yet, by inducing them to eat a greater quantity of solid matter, I obtain a greater amount of the former, and a nearly similar amount of the latter.

There is doubtless some standard of food combining with bulk, in due proportion, elements of nutrition and respiration; it will probably admit of some modification in a lengthened course of feeding, the tendency being more to fat in the advanced stage; if we can ascertain this, or an approximate to it, we may use highly nitrogenous or oily food to compensate for their deficiency in straw or other material; this I look upon as the proper office of such food.

The tendency of my experience as a feeder is to strengthen my reliance on the chemical composition of food, and I look to the analysis of an able chemist almost with greater interest than to the many feeding experiments which are yearly published. *Y., March* 18.

Home Correspondence.

On Feeding Mountain Sheep.—In the *Agricultural Gazette* of March 18, there appears in the review of the Bath and West of England Society's Journal, a full-length report of an experiment made by Mr. G. W. Fowler, of Prince Hall, Dartmoor, on feeding mountain sheep. Eleven hoggets were selected for the trial, and they were sold in April, 1853, at $7\frac{1}{4}d.$ per lb.; net money average, $2l.$ $3s.$ $10\frac{1}{2}d.$ Mr. Fowler has once before in the *Gazette* brought this experiment before its readers, and he now winds up his report with a sort of challenge. "Query: Was the average increase of field-fed sheep last winter 1 lb. per week? I greatly doubt it." I cannot but come to the conclusion that there must be something extraordinary about it, and hope therefore we may have the benefit of seeing it particularised, as some one may doubtless then be in a position to answer the challenge. We have given to us the value of the hogget when killed by the butcher, and its keep from Dec. 4; but previous to that period nothing is said. I would therefore ask Mr. Fowler of what breed the ram was? what it cost him? how many seasons he has had him? and the number of his produce yearly? This will place me in a position to calculate the first cost of the lambs; then I would trouble Mr. Fowler with another question,—Were the hoggets ever removed from the mountains into a more genial country prior to Dec. 4? I do not despair of Mr. Fowler's challenge being taken up by some breeder of mountain sheep; for when he considers the 11 selected hoggets sold at $7\frac{1}{4}d.$ per lb., and that they were consequently only $17\frac{1}{4}$ lbs. per qr., it is not much to be frightened at. *Devon.*

The Snow-storm of Jan. 2 to 5, 1854.—I accept with the greatest pleasure the challenge of your correspondent "R." to show that this was rotatory and progressive, as suggested by me in your Number of the 11th March, and that it travelled up the British Channel, over Ushant, Kent, and Heligoland, or in a line across that country. Some weeks, however, must necessarily elapse before I shall be able to collect the requisite information from some of the stations, such as Scilly and Heligoland, with which at this time of year communication is not very frequent or very easy. In the meantime, however, in reference to "R.'s" remark that "he has never been able to trace a single storm which could be explained on such a supposition" (*i. e.*, the rotatory theory), am I taking too great a liberty in asking you to reprint the following extract from a local journal? It was drawn up by me for the purpose of putting an opinion on record, and by a somewhat curious coincidence, at the very time I was preparing a diagram to illustrate it, "R.'s" communication was sent to me. I hope by next week to have this diagram ready for your acceptance.

To the Editor of the Dorset County Chronicle and Somersetshire Gazette.

October 5, 1853.

MR. EDITOR,—Having had reason to believe that the violent wind which raged in the south of England on the 26th and 27th August last, was a rotatory storm, I made application to the Boards of Light-houses for England and Scotland to favour me with copies of their reports. I have now the pleasure of presenting to the public through your columns an abstract of the results. From the high temperature of the air and the great amount of rain, my opinion at the time was that this storm came from the southward and westward, probably passing between England and Ireland: and from the length of time the storm lasted that it must have crossed this island in an easterly or north-easterly direction; which I apprehend now to have been the case, and that it travelled up the Solway Firth and along the Cheviots towards Norway. At St. Bees on the coast of Cumberland the wind, which during the forenoon of the 26th had been strong at SSE. and S., with squalls and rain, fell light in the afternoon and shifted to WNW. and NW., with blue sky until the barometer began to rise, when rain set in again, which would indicate that the storm's eye must have passed over that locality.—I am, Sir, yours obediently, F. P. B. MARTIN.

Lighthouses.	Barom. began to fall.	Period of greatest depression	Direction and Force of Wind, 1-12.	
			26, A.M.	27, A.M.
	August	August		
Scilly	24, 9 A.M.	26, 3 A.M.	WNW. 8	WNW. 9
Flamborough..	24, 3 P.M.	26, 9 P.M.	SSE–E 9	SW–WSW. 6
North Foreland	25, 9 A.M.	27, 3 A.M.	SW. 6	SW–WSW. 9
St. Bees	24, 3 P.M.	27, 3 A.M.	SSE.–S 6	W–WNW. 4
Longstone	24, 9 P.M.	27, 9 A.M.	SSE 8	W–WNW. 6
Rhins of Islay	24, A.M.	27, A.M.	Various	W Breeze
Island Glass...	25, A.M.	26, P.M.	NE Strong	NNE Strong
Kinnaird Head	25, A.M.	27, A.M.	SE Gale	E–N Breeze
Sumburg Head	26, A.M.	27, noon	SE Str. gale	NE. Str. gale
Heligoland ..	26, 3 P.M.	27, 9 P.M.	S 5	S by W SW 8-9

The above letter arose out of a circumstance that excited much interest at the time. The new steam-ship Bengal left Southampton for India on the 25th August, and her life-boat having been washed ashore near Portland before the lapse of many hours, some anxiety was momentarily entertained upon her account, as it was probable that her course had led her into the vortex of the hurricane; and, in my own private mind, I thought it not impossible that our list of naval casualties would have to record another catastrophe similar to that of the ill-starred President, which, though in a far-distant quarter, encountered her fate under precisely similar circumstances, viz., putting to sea in the teeth of an approaching hurricane. My principle is, that, with an electric telegraph over the whole extent of these islands, no vessel need go to sea in the certainty of encountering such weather. Nothing is gained by so doing. She remains stationary at the best. The Bengal, with her immense powers, made but 34 miles in 24 hours. Mind me, I do not blame anybody; I only say that the practice of sending ships (not under contract) to sea at such a time is one more honoured in the breach than in the observance, especially now that science has made such rapid strides since the days of the President. Nevertheless, the Bengal did put to sea; she encountered this very bad weather; from causes with which I need not trouble you, her commander was prevented from communicating with Lloyd's until his arrival in India, and in the meantime I drew up and published the foregoing letter. How far my meteorological anticipations were verified, your readers will shortly be able to judge. *F. P. B. M.*

Disease in Sheep and Lambs, and on Draining.—In reply to the observations of your correspondent "C. B." respecting his loss of lambs, the cause is apparent from the purging of the animal. Sheep, feeding upon Turnips, should be put back at night upon the previous fold and remain there until 10 o'clock the next morning, and during that time be supplied with dry food, with a few bruised Oats, malt-coombs, or the sifting of dried split Peas. The Turnips are injured by the sprouting, and, the sprouts being eaten greedily by both sheep and lambs, disorder the bowels. That the tops of the Turnips are the main cause is quite certain; for, since the tops have been cleared from my Turnips (from the demand of the London market for vegetables), we have not lost a lamb, but previously we frequently lost both sheep and lambs. Wether sheep, feeding upon common white Turnips, fatten rapidly if hard grey Peas are given; but if fed upon Rape, and Peas are added, they die rapidly from purging and griping of the bowels, with general inflammation. Whenever sheep and lambs are affected as described by your correspondent, it almost invariably arises from the quality of the food; and if a corrective course is substituted, a cure is easily effected. And it is always advisable when feeding on Turnips, or other succulent food, to give plenty of dry food in addition, especially if the slightest disposition to scouring is apparent either among the ewes or lambs; and bruised Oats will always be found beneficial, to the extent of a pint per day. Another correspondent alludes to the Equisetum, its roots interfering with his drains. I have known an instance of drains being entirely filled with the roots of this plant within three years; and I took from one drain a continuous band of roots upwards of 20 feet long, so closely interlaced as to resemble a large rope of cocoa-nut fibre. *R. B.*

Origin of Ammonia.—I cannot say, in answer to Mr. Prideaux's inquiry in a late Number, that I have ever made any experiment for the specific purpose of proving that ammonia is formed or developed in the decomposition of vegetable matter, containing an unappreciable amount of nitrogen. But the ground on which I stated that such is the case was observation of the fact under casual or accidental circumstances, which I regarded at the time as confirming the view I had adopted of the

origin of ammonia. A small Grass plat had been mown, consisting entirely of blades of Grass or herbage, without any intermixture of flower or seed stems. I mention this, as I consider it presented in this state a specimen of simple vegetable substance, in which there could be little, if any, nitrogen present. The Grass was thrown into a heap, and left in that state in wet weather for some days, when it was removed under cover; a few days afterwards, when the heap was opened up, it was found heated inside, and decomposition had proceeded to some extent, and the odour of ammonia was distinctly perceptible in the fermenting mass. Perhaps this account may not be altogether satisfactory to Mr. Prideaux; but if, as I conceive was the case, there was little or no nitrogen present in the Grass mowings, from what could the ammonia have been formed, except from the hydrogen of the decomposing vegetable matter, uniting with the nitrogen of the atmosphere? But, indeed, in my view, it would scarcely alter the complexion of the question, if it were admitted or proved that the vegetable matter contained any amount of nitrogen; for, unless there had been hydrogen present in it, it appears to me that no ammonia could have been formed, whatever the amount of nitrogen present. For the only other supposable source than the vegetable matter itself, from which hydrogen could be obtained, is in the decomposition of water; but what proof is there that water either is or can be decomposed under the circumstances and conditions of the case, viz., the resolution into its elements of inert vegetable matter, and their re-combination with other elements, both of which are present in the atmosphere in unlimited quantity, and their operative influence in the process seen in the fact, that if the atmosphere be excluded, decomposition is stayed? Mr. P. observes that non-nitrogenous matters ferment acid, meaning, I presume, that in the decomposition of vegetable matter, the carbon and hydrogen unite with oxygen, and form respectively carbonic acid and water. The first is an acknowledged fact: but, with respect to the other—the uniting of the hydrogen with oxygen and forming water—will Mr. P. permit me to ask him whether this be even possible in the given circumstances? I have been accustomed to regard the chemical union of oxygen and hydrogen, constituting water, as a thing not effected without the intervention of powerful electrical agency, or some equivalent force. If you mix these gases in the proportions that constitute water, they refuse to unite until the electric spark is passed through them, when they are converted into water with explosive violence. Or, if you wish to make hydrogen unite with the oxygen of the atmosphere and form water, you must first ignite the hydrogen. It cannot be done on easier terms. As no such condition of flame or elevated temperature is, or can be, found in a mass of fermenting and decomposing vegetable matter, I submit that it is a physical impossibility for the hydrogen to unite with oxygen under these circumstances. What, then, becomes of the hydrogen? It does not escape into the atmosphere, for no traces of free or uncombined hydrogen are to be detected there. If it unites with nitrogen and forms ammonia, the latter can be obtained only from the atmosphere, if the full proportion be not present in the decomposing vegetable matter requisite for combining with the hydrogen in forming ammonia. *J. H. H., March* 11.

Societies.

ROYAL AGRICULTURAL SOCIETY.

Weekly Council, *March* 29.—Colonel Challoner, Trustee, in the Chair. The names of 61 candidates for election at the next meeting were announced.

Mortality among Lambs.—Professor Simonds informed the Council that he had inspected Mr. Cresswell's lambs in Leicestershire, and had made *post-mortem* examinations at the Royal Veterinary College, of some that had died there. He had been favoured by Mr. Cresswell with others, which, with an ewe, were undergoing inspection in reference to the gradual development of the disease with which it was supposed they were affected. He had made a minute examination into all the local circumstances under which this malignant disease had occurred among Mr. Cresswell's flock, and when he had completed his investigations into its nature, and the best remedies for its treatment, he would lay before the Council a complete report, embracing the whole of the details connected with the subject, which presented many novel features in reference to the disorders affecting sheep.—A letter in reference to the case of Mr. Cresswell's lambs was read from Mr. Eames, of Ashby-de-la-Zouch; and remarks on the different points connected with Prof. Simonds's inspection, were made by Colonel Challoner, Mr. Raymond Barker, Mr. Fisher Hobbs, Col. Hall, M.P., and Sir John Shelley, Bart., M.P.

Mad Dogs.—Prof. Simonds then communicated the following statement relative to the fearful increase of mad dogs, and their ravages in and about London:—

1. At the present time madness prevails among dogs to an unusual extent, particularly in the neighbourhood of London. Within the last few weeks several sheep and horses have been bitten by dogs, and have since died in a rabid state. These occurrences have taken place in the northern districts of the metropolis; and within the last few days two dogs, which gave only very slight evidences of deranged health, were brought to the Royal Veterinary College, and have since died in a perfectly rabid condition; one of these dogs having previously bitten no less, it is feared, than 40 other dogs.

2. The sheep alluded to belonged to three farmers at Hendon, and were bitten in the early part of last February; they died at the beginning of March, exhibiting all the symptoms of this horrible malady.

3. A horse also bitten at the same time died a fortnight since in Kentish town, perfectly mad.

4. This disease prevailed last year in the northern part of England, and has been gradually proceeding southwards. A farmer in Lincolnshire had last year upwards of 60 ewes bitten in one night by a single dog, all of which animals, with two or three exceptions, died within a few weeks afterwards. An unusual number of dogs are at the present time loosely wandering about the streets, apparently without owners.

Prof. Simonds then read a letter addressed to him on this subject by Mr. William Simpson, one of the Members of the Council; and Col. Challoner, Mr. Majendie, Sir John Shelley, Mr. Bullen, Prof. Way, Mr. Foley, and Mr. Wrench, favoured the meeting with their remarks, when, on the motion of Mr. Raymond Barker, seconded by Sir John Johnston, Bart., M.P., the Council agreed to the following preamble and resolution:

"Professor Simonds, the Veterinary-Inspector of the Society, having made a report to the Council, relative to the alarming increase of mad dogs in the immediate neighbourhood of the metropolis, and of the fact that several sheep and horses have been bitten and destroyed.—Resolved, that the Secretary of the Society be instructed to communicate these facts to the Right Hon. Viscount Palmerston, G.C.B., her Majesty's Principal Secretary of State for the Home Department, with the view of calling his lordship's attention to their consideration."

Oil-cake.—Mr. Fisher Hobbs called attention to the following communication, which had that day been placed in his hands:—

"We observe from the public press that your Council have been discussing the subject of oilcakes, and, as seed crushers, we are much pleased that the adulteration of Linseed cakes has been taken up by your Society, and we trust that the attention of so influential a body amongst agriculturists being directed to the question may pave the way for at least an abatement, if not to an entire suppression, of the evil, which is not only a fraud upon the buyers, but an injury to manufacturers of genuine cakes. We would, however, respectfully state that, from our own knowledge, much of the evil complained of arises from the prejudice of farmers, by their objection to cakes being hard, and which has induced many crushers to resort to adulteration, not only with nut cakes but also with bran and other mixtures to produce a soft cake, and we have known many instances in which a preference has been given to adulterated cakes over those made from genuine seed. We beg further to communicate that what is called a soft cake, to be genuine, cannot be produced from the finest description of seed, and one step towards the object sought by your Council would be by agriculturists laying aside their objections to a cake, if rather hard. There being no process that should be kept secret in the manufacture of cakes, we would suggest that crushers at all times allow to buyers free access to any part of their mills, by which means they may satisfy themselves that the cakes they are buying are free from all mixture of bran, nut cake, or other ingredient. Our own mill is open in every part and at all hours for the inspection of buyers—let this be generally acted upon, and the adulteration of Linseed cakes will cease. We sincerely trust that the evil so justly complained of may be removed."

Mr. Hobbs thought this communication most valuable. He had known soft oil-cake contain in many cases no less than 15 per cent. of water, and he thought the purchase of such an article was buying water at too dear a rate.—Col. Challoner, Prof. Way, Mr. Paine, Mr. Caird, Mr. Gower, and Prof. Simonds, offered observations on, 1, The degree to which chemical analysis could furnish more than the relative proportion of albuminous matter and oil in different oil-cakes, with a view to detecting adulteration; 2, On the value of the microscope, by the discriminative means of which it was probable that all agents used for adulterating cake might be detected; 3, On the conditions under which the feeding and keeping qualities of oil-cake were affected by its hard or soft state; and 4, On the confidence to be placed in cake purchased of established dealers of known reputation.

Manure Heaps.—Mr. Robert Austin, of 65, George Street, Manchester, informed the Council that upwards of a ton of horse-dung was produced in his stables daily, and the usual offensive odour and evaporation from it entirely prevented by sprinkling over the dung-heap, by means of an ordinary watering-can, a solution of a pound of common green copperas in a gallon of water. The value of this chemical agent in fixing ammonia and strengthening manure had long been known (Journal I., 468, 470, 475), but Mr. Austin's practical application may be considered simple, effective, and easily adopted in similar cases.

Potato Disease.—The Hon. Grantley Berkeley presented a copy of his work "On the Origin, Nature, and Cure of the Potato Disease" (dedicated to the Society), with a statement of further details connected with his system of cultivation. Dr. Malfatti transmitted from Vienna a second series of his experiments on the cure of the Potato disease. M. Lainé, of Paris, forwarded copies of his results on the same subject.

The Council ordered their usual acknowledgements for the communications then made to them, and adjourned to the 5th of April.

Highland and Agricultural, *March* 22.—Professor Lowe presided. "*The Recent Progress of Scientific Agriculture.*" Dr. Anderson, in the course of his address on this subject, after preliminary remarks, referred first to our knowledge of soils, and on this department of his subject he thus discussed the researches of Professor Way, on the absorptive power of soils:—

It has been long known to chemists that clay possesses, to a small extent, the power of absorbing and fixing ammonia; but Mr. Way has shown that all fertile soils are capable of absorbing not only that substance, but the alkalies and magnesia. Thus, if a soil be shaken up with water containing a small quantity of ammonia or any of its salts in solution, and then left to deposit, the clear fluid drawn from the surface is found to be entirely free of ammonia. This absorption, however, is confined to the ammonia, none of the acid with which it is combined being retained by the soil. Thus, if sulphate of ammonia be employed the whole of the sulphuric acid is found in the fluid combined with lime. A true chemical decomposition has here occurred, lime derived from the soil having replaced the ammonia in its compound. The extent to which the absorption of these substances takes place is small, and has, as yet, been accurately ascertained only with regard to ammonia and potash. It differs greatly according to the nature of the soil, and whether the substance is employed in the pure state or combined with acids. Thus, a loamy soil from Dorsetshire absorbed 0.3921 per cent. of ammonia; a lighter soil from Berkshire took up 0.1570, and a subsoil clay from Somerset only 0.0818. In regard to potash, the experiments published by Mr. Way refer only to a sort of pottery clay, which takes up 0.4366 per cent. from the nitrate and 1.05 from a solution of pure caustic potash. Direct experiment has shown that this absorptive power is not due to sand; and as it is found to exist in pure potter's clay, brought up from a considerable depth, Mr. Way infers that it does not depend on organic matters, but is entirely due to the clay. In a later paper he has extended his investigations, and starting from the obvious fact that the absorption could not be due to the clay as a whole, but rather to some particular substance existing in it, and possessing a high degree of absorptive power, he has inquired into the subject in this point of view, and arrived at results of much practical and scientific interest. As it was manifestly impossible to extract from the clay the supposed substances to which its absorptive power was attributed, he adopted a different mode of investigation. He first proved that felspar, albite, and the other minerals from which the clay of our soils is produced, have no absorbent effect, and then proceeded to try what could be done by the artificial formation of substances of similar nature. When silicate of soda is added to a solution of alum, a white powder is formed which is a compound of silicate of alumina and silicate of soda, and this, when treated with a salt of lime, gives a similar compound, containing lime in place of soda. When this substance is macerated with a salt of potash or ammonia, it is decomposed, and there are formed double compounds containing these substances, and nearly insoluble in water. The potash compound so formed contains 24 per cent. of potash, and that of ammonia contains about 5 per cent. These substances are so little soluble in water, that a gallon extracts from them only 2.27 grains of potash, and little more than 1 grain of ammonia. The practical inference from these facts is sufficiently obvious; suppose the soil to contain the silicate of lime and alumina, and a quantity of sulphate of ammonia to be employed as a manure, we should necessarily have produced the absorptive effect actually observed in practice: sulphate of lime would be formed, and the ammonia would pass into the sparingly soluble double silicate of alumina and ammonia, which would thus become a magazine from which that important element of our crops would be slowly liberated to the extent of a grain for every gallon of water, so as to fulfil the requirements of the plant. The solubility of these compounds is however so small, that in some instances a sufficient quantity of potash and ammonia might not be obtained by the plant, were it not that their solubility is remarkably increased by carbonic acid and common salt. Mr. Way found that a gallon of water saturated with carbonic acid gas dissolved 2.5 grains of ammonia from its compound, and a solution containing 1.97 per cent. of common salt dissolved out ammonia at the rate of 23 grains per gallon. We have thus another function which carbonic acid may possess, and in addition to that of acting as a food for the plant, it may serve as the agent by means of which an additional supply of other substances is presented to it. The fact just mentioned may also explain the effect produced by common salt, which has always been a difficulty, especially since we have seen reason to believe soda is of little importance as a food of plants. We have already alluded to the absorption of phosphoric acid, which is in no degree dependent upon these double silicates, but solely on the presence of lime in the soil, with which it forms an insoluble compound. It cannot be doubted that these observations are of much importance, and have a very important bearing on the practice of agriculture. I cannot help thinking, however, that Mr. Way carries his views too far, when he denies any absorbent influence to the organic matters of the soil, and attributes it exclusively to these double silicates. It has been distinctly proved that humus absorbs and retains ammonia and its carbonate; and though I do not know that the experiment has been tried, the humate of lime (which certainly exists in the soil) ought on chemical grounds to decompose the salts of ammonia, and form the humate of ammonia, which retains its base with great obstinacy. It must also be remembered that it has not been proved that these double silicates actually do exist in the soil, but only inferred, that because when artificially produced they absorb ammonia, they may be the cause of the same effect in the soil. Difficulties even exist in explaining how they should be formed there; but, with all this, it is manifest that the inquiry is an important contribution to our knowledge of the chemistry of the soil. But we must beware lest we carry too far the inferences to be deduced from those experiments, and I think there is rather a tendency to do so. The absorptive power of soils is a convenient phrase which I have sometimes heard used, as if sufficiently explaining facts otherwise unintelligible, although a very little consideration might have shown that they could not possibly have any connection with it.

On the next section of his subject, *Manures*, Dr. Anderson referred thus to Mr. Pusey's experiments on nitrate of soda:—

I presume all my audience are aware that by the use of no more than 42 lbs. per acre, Mr. Pusey obtained an increase of 7 bushels of Barley, or more than four times the value of the manure. I need scarcely say that the experience of many farmers in this neighbourhood has clearly established the value of nitrate of soda as a top-dressing for Grass lands; in general, however, it has been employed in larger quantity (1½ to 2 cwt. per acre), and the application of two-thirds cwt. by Mr. Main is, so far as I know, the smallest recorded except Mr. Pusey's. In a subsequent paper, on the natural law by which cubic nitre acts as a manure, Mr. Pusey enters on more difficult ground. In regard to it, I may observe in the first place, that a very curious misapprehension seems to have existed as to the views entertained by chemists regarding the source of the value of nitrate of soda, and it has been asserted that they still considered it uncertain whether that manure acted by virtue of its nitric acid or its soda. I think it right distinctly to contradict this statement. The strict retainers of the Giessen School of Chemistry may possibly still entertain such doubts, but I apprehend, that if Mr. Pusey had put the question to any agricultural chemist, he would have received for reply that it was most unequivocally due to the nitric acid, and not to the soda. It has, however, always been considered doubtful whether the nitric acid is assimilated directly by the plant or is first converted into ammonia, which we know it very readily is; that, however, is an entirely different question on which experiment has not as yet thrown the slightest gleam of light, and which will probably continue long undecided. As far as the question of the constituent on which the value of nitrate of soda depends is concerned, it must be considered as having been entirely set at rest 10 years since, by the experiments of Kuhlman, who showed that nitrate of lime produced the same effects; and the experiment with diluted nitric acid which Mr. Pusey has detailed in his last paper, though sufficiently interesting in other respects, was quite unnecessary. As the result of the experiments contained in his papers, Mr. Pusey has deduced as a natural law, that "substances strengthen vegetation, mainly by their contents of nitrogen." But in this there is nothing new; it is exactly what chemists have over and over again asserted, except that they have not gone by any means so far; and while attributing a pre-eminence to nitrogen, have not failed to point out the importance of other substances. But when we come to consider the matter in all its details, there are other points not referred to by Mr. Pusey, which deserve attention. The experiments of Kuhlman were made for the purpose of contrasting the value of nitrogen in different forms, and the substances used were sulphate and muriate of ammonia, nitrate of soda, Peruvian guano, and the gelatine of bones. The result was, that for every 100 lbs. of nitrogen contained in the manure, there was obtained an increased produce in round numbers of 3000 lbs. of hay with the salts of ammonia, of 5000 lbs. with nitrate of soda, while with Peruvian guano there

was in one case an increase of about 9500, and in another of no less than 16,000 lbs. of hay for the same quantity of nitrogen. The gelatine gave nearly the same increase as the ammonia salts. These results are still more striking when we observe the effect on the subsequent crops; for with the salts of ammonia and nitrate of soda, the effect was not only entirely exhausted on the first crops, but that immediately following was actually diminished, while with Peruvian guano and gelatine, the increase was spread over several years. Nor is there anything unintelligible in this result; guano gives to the soil much more than nitrogen, it supplies phosphoric acid and the alkalies, and hence, theoretically, ought to produce a higher effect. Such are the results of Kuhlman's experiments. They support fully Mr. Pusey's opinion as to the value of nitrate of soda, but they are totally at variance with that law which Mr. Pusey tells us we may now adopt with unhesitating certainty, namely, that substances strengthen vegetation mainly by their contents of nitrogen; for we perceive that nitrate of soda surpasses sulphate of ammonia in the ratio of 5 to 3, while if their action was merely dependent on their nitrogen, they ought to produce the same effect. Further, a quantity of guano produces in one experiment three, and in another five times the effect of sulphate of ammonia, a difference which can only be attributed to the other constituents of the guano. I have mentioned these experiments, not with the view of throwing any doubts on the advantages derived from the use of nitrate of soda, for on that point there can be no question, but rather as a caution against the too hasty adoption of that law, which Mr. Pusey says we may now assume with unhesitating certainty, and to show that there are many points regarding its use on which we still require experimental evidence. So far from supporting Mr. Pusey's law, those experiments rather point towards a view which at a monthly meeting of the society, some two or three years since, I suggested as deserving experimental inquiry, but which, much to my regret, has not yet been taken up. I believe the facts at present known tend to show that, while nitrate of soda exerts a marked influence upon the growth of the great family of graminaceous plants, it is nearly or altogether without effect upon roots and Clover, and I suggested that just as there are two classes of animals, carnivorous and herbivorous, so there might possibly be two classes of plants capable of deriving their nitrogenous constituents from different sources, one assimilating it chiefly or only from ammonia, the other possessing in addition the power of elaborating it from nitric acid. This view derives some support from the recent experiments of Wolff, which have shown that the nitrates which act powerfully upon Barley are almost without effect upon Tares. It must be understood, however, that I throw out this merely as a suggestion, to be confirmed or refuted by experiment.

We must postpone for a week Dr. Anderson's further remarks on rotations of cropping.

Society of Arts, *March* 29.—The Right Hon. the Earl of Harrowby in the chair. *A paper by Mr. Leone Levi, F.S.S., on Agricultural Statistics.*

The paper stated that the arable and garden land of the United Kingdom is about 20,000,000 of acres, and the meadows, pastures, and marshes contain 27,000,000, a surface considerably smaller than that of many other countries. The number of farmers in Great Britain actually does not exceed 300,000. We may conceive that in such an immense country as Russia, with half the land comparatively raw and unapproachable by the ice, or in such a country as the United States, now only subjected to human strength by the iron axe of the sturdy settler, it will indeed prove difficult to scan it all over to compute the number of acres sown with different crops, and the number of quarters of grain which they yield. No such difficulty ought to be experienced within the British Islands, every portion of which has been long explored, inhabited, and tested as to its capabilities to the best of human powers and ingenuity. The important object to be kept in mind is, that of all statistics agricultural statistics are intended to meet a substantial want. What is wanted is, first, how many acres of land are sown with each kind of crop; secondly, the probable yield; and this sufficiently in time to govern the markets, to check alarm, or to give a timely warning of impending wants. We know our wants, if we do not know our supplies. We know that a population of 28 millions will require 28 million quarters annually of Wheat and flour, besides what is wanted for cattle, horses, malting, and other purposes. Already our population is largely dependent on foreign Wheat. Estimating the yearly consumption of each individual at eight bushels, and taking the average yearly importation of Wheat and Wheat-flour, it seems that whilst from 1801 to 1810, the mean population of Great Britain being 11,769,725, the number of persons fed upon foreign Wheat was 600,946; from 1841 to 1850, the mean population being 19,967,876, the number dependent upon foreign Wheat and Wheat-flour was not less than 2,818,328. Of late, the importation has been uniformly large, leaving a conviction that our agricultural produce does not keep pace with the increase of our population and with their growing resources; and we are the more interested to ascertain as early as possible what is that amount of extra supplies which will be required to meet our already large want of foreign help. Of the two subjects of inquiry, how many acres of land are sown, and the probable yield, the former is more easily ascertained than the latter. In both there must necessarily be some looseness. The first would embrace the number of acres sown with Wheat, Barley, Oats, Rye, Beans, Peas, Flax, Seeds, Turnips, Potatoes; the number of acres in permanent Grass, and the number in annual Grass, &c.; the second, an estimate of the probable yield of each per acre. The returns of the number of acres under crop might be collected early in spring.

With respect to agricultural statistics, it needs be a vast national measure, co-extensive with the kingdom itself, requiring considerable and permanent machinery, such as no private energy can in any case supply, and like the census of population, the statistics of education or of crime, it behoves Government to undertake it by the best means at their command. This duty Government is about to assume, and it is all-important that all classes—the farmers, the merchants, the landholders, and the magistrates—should afford them their moral and physical co-operation. The statistics of agriculture should devolve on the statistical department of the Board of Trade; but that office would require to be expanded and reconstructed to undertake this important duty. The next statistical organisation in this country is that of the Registrar-General for births, deaths, and marriages. The other statistical organisation which Government seems disposed to adopt, is the Poor-law Board; and it is by their instrumentality that agricultural statistics have lately been obtained for the counties of Norfolk and Hampshire. With regard to Scotland, the Highland and Agricultural Society having succeeded in the statistics of three counties, they, in all probability, will be entrusted with the entire management for that part of the kingdom. It remains now to notice the objections that have been raised on the part of some of the farmers. They fear the results of such statistics, that such may be subsequently used to their disadvantage, either by imposing on them new taxes, or by the raising of the rents, or that they are intended for some political purpose. Such objections it is all important to remove by convincing the farmers of the utility of such accounts, and by showing them their bearing on the price of produce, and on the public welfare. Sir John Boileau proposes that commissioners be sent throughout the country to extend information among the farmers on the subject of agricultural statistics; and though the plan would be attended with considerable expense, it would have the effect of removing any prejudice which may still exist against such statistics, and facilitate materially the obtaining of compendious accounts from the most distant provinces. M'Culloch gives the value of the crops of the British empire at 120 millions sterling, and the value of the land in England at 128 millions. It has already appeared that the improvement of agriculture in this country has scarcely kept pace with the increase of population.

A discussion followed the reading of the paper. Mr. Sidney explained and combatted the objections of farmers, and criticised the details of the plan suggested. Mr. Caird referred in considerable detail to the agricultural and national importance of the information sought, and described his own plan for collecting it, which we hope to give next week. Lord Harrowby stated his opinion that the information on the crops for any year should be given simply relatively to the ordinary average yield of each district, for which information was required. Mr. Morton related an instance within his own experience, illustrative of the money value to the farmer of the information which correct statistics will give him. Mr. Slaney referred, among other things, to the relation in which the subject stood to the labouring class. The discussion was adjourned till next week, when we hope to report it in greater detail.

Calendar of Operations.

MARCH.

Cheshire, *March* 28.—The very favourable weather during the last month for all field operations has enabled the farmers to proceed rapidly with their spring tillage. About the latter end of February and the first week in March, the sowing of Wheat, which had been deferred from the latter end of the year, was very satisfactorily completed; immediately after Bean sowing commenced, and Oats also were sown the first week in March, on some of the best land, and they are now making their appearance above ground. The growers of early Potatoes have taken advantage of the fine weather, and put in their seed at a much earlier period than usual; but as the crop frequently suffers from frosts, there is a deal of risk in planting so early, for should the "wizle" be cut down, the growth of the young Potatoes is much retarded, consequently the crop is materially injured, and in all probability will not be ready for market any sooner than from those planted a fortnight or three weeks later. The Wheats, which have been severely cut by the frosty winds, are beginning to recover their green appearance, but it is to be feared that in many instances the slug has committed such ravages as to leave the young plants too thin on the ground; Oat and Barley sowing is in a forward state, and land intended to be laid down with seeds is in fine order for receiving them. The planting of winter Potatoes is progressing rapidly, as the experience of a few of the past years proves that in these days of Potato blight, delays are dangerous. The land intended for green crops is in a forward state of preparation, and with a continuance of favourable weather, will be in fine condition for receiving the seed. Upon the whole it has been a good season for ewes and lambs, and the Clover roots are now beginning to afford them a good bite. *N C.*

West Sussex, *March* 27.—Since our last report we have not had much change in the weather. It has been very dry and rather cold, so that vegetation is very little advanced. On the 17th we had some fine refreshing showers, which made a great change in the appearance of the Wheat, and it was beginning to want it; but as it has been cold since, the effects of those showers are not now so perceptible, and a little rain now would be of great use to everything. The cleaning of land has been got done well, and dry weather would still be found useful for that purpose. Work is generally well advanced, as indeed it ought to be, for we have seldom had a season so favourable to its progress. Barley sowing is got forward so far, as the land is clear for it after the sheep, and it will be got in rather earlier than usual; the Turnips being not so plentiful as they generally are, and with the cold weather that we have, we may find it difficult to provide sufficiently for the stock till Grass becomes fit. But everything will come the better for being kept well back in its place. And with the month of April we may hope to have showers that will put all to rights. Our work will now be to get the Mangold Wurzel land in order for sowing about the end of next month; and though it is said, and with some reason, that if they are sown much before the end of April they will run to seed, yet I have seen them, when sown in the middle of that month, not do so, and I have seen some do it when sown in the middle of May—so that something besides the time has to do with it; and may it not, in some measure, be caused by the badly pulverised state of the soil below preventing the small fibres from spreading themselves freely?—and instead of a large bulb with small thread-like fibres collecting its food, we have a cluster of only strong roots, striking themselves where they best can in the hard soil, and spending part of their strength in nourishing a strong unsightly top. Whatever is the cause, I do not think the time of sowing at all times can account for it; and as it is a plant that grows but slowly in its first stages, it is well to have it in in good time, so as to be fit for hoeing before the annual weeds are in their full strength of growing. We shall also have employment in abundance to get the Turnip lands prepared in good time, as the last few wet seasons have left their effects upon them, but it is to be hoped that the present season will put all to rights. *G. S.*

Notices to Correspondents.

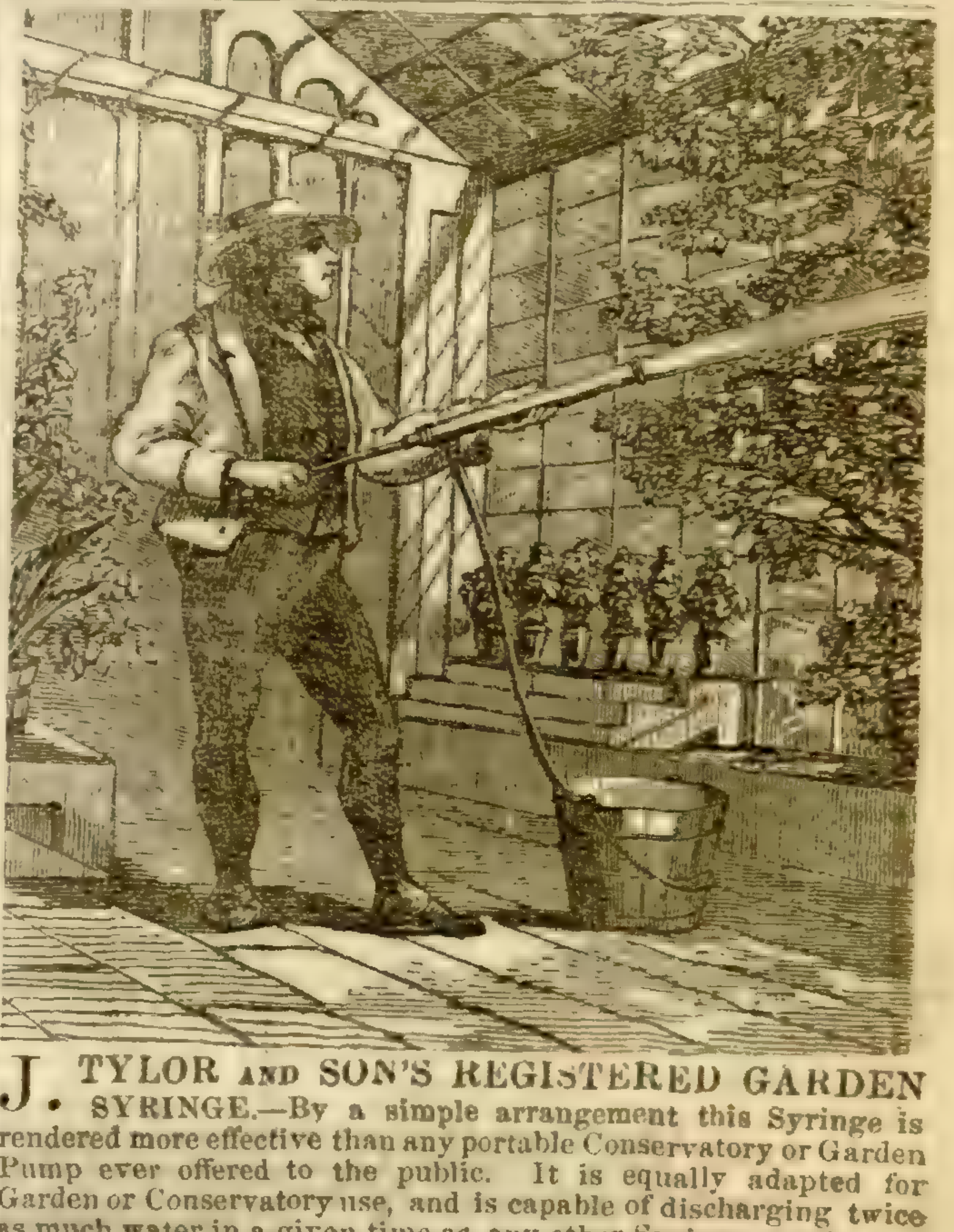
Grass: *Clericus.* You had better mix 3 cwt. of Peruvian guano with a cart-load of vegetable mould, and sow that quantity broadcast over each acre of your Grass field in wet weather *now.* It will cost you 36s. per acre for the guano, which is now to be had at 12*l.* per ton.

Soapers' Waste: *W Blood.* When first turned out they contain carbonate, sulphuret, and sulphite of lime. By exposure and burning, the latter becomes converted into sulphate of lime. When well burned, or exposed to the air till it becomes a white powder, it consists of sulphate and carbonate of lime. In most works the ashes are wheeled out to a large heap, which is in a constant state of internal combustion; and when well burnt the farmers fetch them away. They are valued on stiff land. You must not apply them to growing crops, nor should you sow anything immediately after their application. If, however, left for a week or two on the soil, the perfect oxygenation of their sulphur would be effected, and they then are harmless and beneficial. It is worth while giving 2*s.* a ton for them, and hauling them six or seven miles. They apply a ton per acre.

HOSE PIPING.—Great Reduction in Price.

WAITHMAN'S PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense Pressure, and much more than Leather, vulcanised Rubber, or any other Hose; and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented Inventions, the cost of manufacturing it is now reduced at least 60 per cent., which advantage is offered to the Public.—London Agents, Burgess & Key, 103, Newgate Street, and 52, Little Britain, who on application will forward wholesale and retail prices.

THE GUTTA PERCHA COMPANY'S TUBING for WATERING GARDENS, with Roses and Union Joints Fitted.—27, CITY ROAD, LONDON.



J. TYLOR and SON'S REGISTERED GARDEN SYRINGE.—By a simple arrangement this Syringe is rendered more effective than any portable Conservatory or Garden Pump ever offered to the public. It is equally adapted for Garden or Conservatory use, and is capable of discharging twice as much water in a given time as any other Syringe now in use. The arrangement consists in attaching a small flexible suction tube to the barrel of the Syringe, through which it is filled with water at every discharge of the previous contents. By this means the Syringe is always charged, and the pull-up stroke of the piston rendered perfectly easy, it having, indeed, no work to do, the barrel being previously full of water. Being thus made self-supplying, a great saving of labour is effected; and the necessity of stooping to fill the Syringe at every discharge being done away with, the direction of the water can be maintained for any length of time. It is perfectly cleanly in its action, as it is not possible for any water to get on the outside of the barrel, which is a well-known inconvenience attendant on the use of every other Syringe. Its construction is perfectly simple, and cannot get out of order; the ground-in ball valves and fittings used for filling all other patent Syringes being entirely superseded. Price complete, with India-rubber suction tube, with galvanised spiral inside, and covered with cotton outside, 25s. each. To be had of any respectable Ironmonger or Seedsman in town or country.

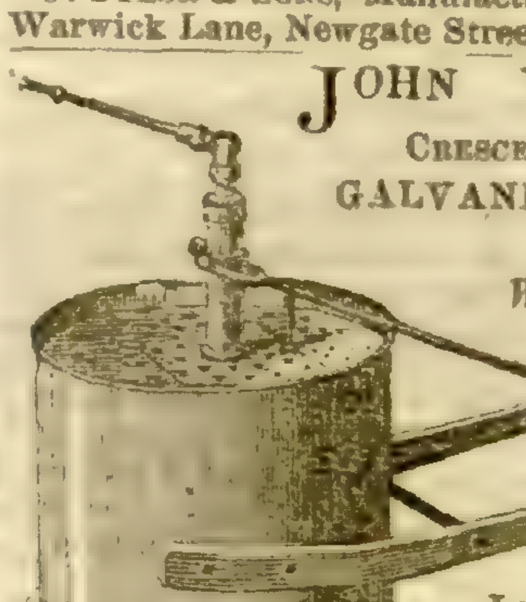
J. Tylor & Sons, Manufacturers of Horticultural Apparatus, Warwick Lane, Newgate Street, London.

JOHN WARNER AND SONS,

Crescent, Jewin Street, London.

GALVANISED IRON TUB GARDEN ENGINE,

With Warner's Registered Spreader



Is strongly recommended, for durability and low price, viz., 2*l.* 19*s.*, to hold 10 gallons.

Larger sizes made either in wood or iron. May be obtained of any Ironmonger or Plumber in town or country, or of the Patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Syringes of various constructions and sizes from 9*s.* upwards. An extensive assortment kept.

WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

	£	s.	d.
Patent Pump	1	15	0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing	3	0	0

Larger sizes if required.

The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,

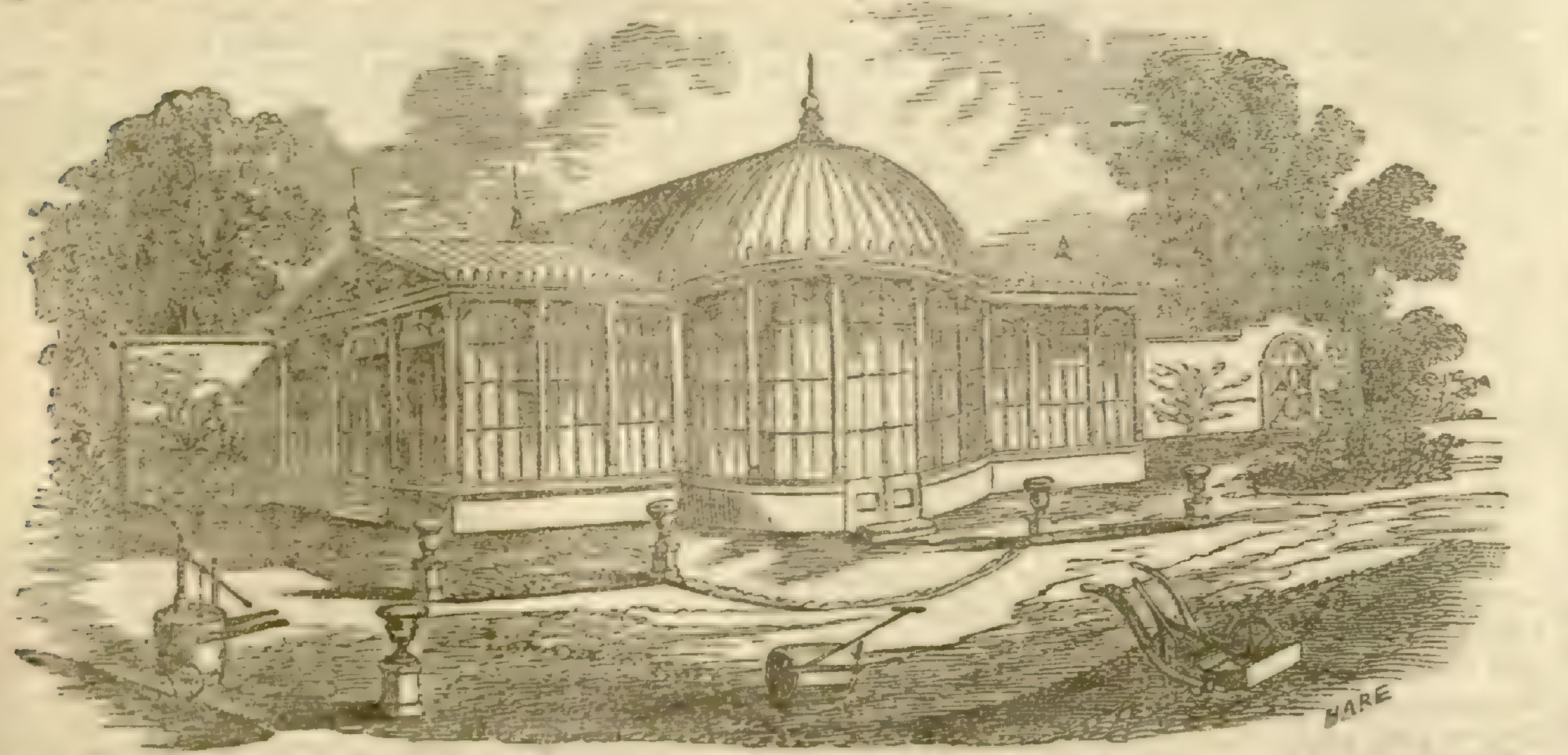
8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water; Fire Engines, &c.

An Illustrated Book sent on application post free.

COTTAM AND HALLEN,

2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.



APPLICATION is requested for their NEW HORTICULTURAL LIST, containing Illustrations, Descriptions, and Prices of

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Syringes	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.

AGRICULTURAL LIST UPON APPLICATION.

EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

GLASS.

THOMAS MILLINGTON, Importer of Foreign Sheet Glass, requests attention to the present Prices of Glass and Stock sizes, which are cheaper and better than those of English manufacture :—

PACKED IN ONE HUNDRED FEET BOXES, THIRDS QUALITY, BOXES INCLUDED.

Inches.	Per 100 ft.	Inches.	Per 100 ft.	Inches	Per 100 ft.	Inches.	Per 100 ft.	Inches.	Per 100 ft.	Inches.	Per 100 ft.
6 by 4	12s.	12 by 10		14 by 11		16½ by 12½		18 by 13		18 by 14	
6½ ,, 4½		12½ ,, 10½		14½ ,, 11½		17 ,, 12		18½ ,, 13½		18½ ,, 14½	
7 ,, 5		13 ,, 10		15 ,, 11		17½ ,, 12½		19 ,, 13		19 ,, 14	
7½ ,, 5½	14s. 6d.	13½ ,, 10½		15½ ,, 11½		18 ,, 12		19½ ,, 13½		19½ ,, 14½	
8 ,, 6		14 ,, 10		16 ,, 11		18½ ,, 12½		20 ,, 13		20 ,, 14	
8½ ,, 6½		14½ ,, 10½		16½ ,, 11½		19 ,, 12		20½ ,, 13½		20½ ,, 14½	
9 ,, 7		15 ,, 10	20s.	17 ,, 11	20s.	19½ ,, 12½	20s.	21 ,, 13	20s.	21 ,, 14	20s.
9½ ,, 7½		15½ ,, 10½		17½ ,, 11½		20 ,, 12		21½ ,, 13½		21½ ,, 14½	
10 ,, 8		16 ,, 10		14 ,, 12		20½ ,, 12½		22 ,, 13		22 ,, 14	
10½ ,, 8½	17s. 3d.	16½ ,, 10½		14½ ,, 12½		16 ,, 13		16 ,, 14		22½ ,, 14½	
11 ,, 9		17 ,, 10		15 ,, 12		16½ ,, 13½		16½ ,, 14½		23 ,, 14	
11½ ,, 9½		17½ ,, 10½		15½ ,, 12½		17 ,, 13		17 ,, 14		23½ ,, 14½	
12 ,, 9		13 ,, 11		16 ,, 12		17½ ,, 13½		17½ ,, 14½		24 ,, 14	
12½ ,, 9½		13½ ,, 11½									

IMPROVED PATENT ROUGH PLATE, PLAIN, FLUTED, AND IN QUARRY PATTERNS.

British Plate, Patent Plate, Sheet Crown, and Coloured Window Glass. Pure White Shades for Ornaments. Pumps, Water Closets, and Plumbers' Brass Work. Genuine White Lead, Paint, Colours, Varnishes, Brushes, &c.

Tariffs of the above on application to

T. MILLINGTON, 87, Bishopsgate Street Without, London.

FOREIGN GLASS, 16 ounces to the foot, of good quality, in boxes of 100 feet each, suitable for Horticultural purposes. Boxes included.

12 ins. by 10 ins.	15s. per box.	18 ins. by 14 ins.	16s. per box.	24 ins. by 18 ins.	17s. per box.
14 ins. ,, 10 ins.		19 ins. ,, 15 ins.		23 ins. ,, 19 ins.	
15 ins. ,, 11 ins.		18 ins. ,, 16 ins.		24 ins. ,, 20 ins.	
14 ins. ,, 12 ins.		20 ins. ,, 16 ins.		25 ins. ,, 21 ins.	
16 ins. ,, 12 ins.		21 ins. ,, 17 ins.		26 ins. ,, 22 ins.	
16 ins. ,, 13 ins.		20 ins. ,, 18 ins.		27 ins. ,, 22 ins.	
17 ins. ,, 14 ins.		22 ins. ,, 18 ins.			

Also other descriptions of Glass at proportionate prices.

White Lead, Oils, Turps, Colours, &c.

G. FARMILOE & SON, 118, St. John Street, West Smithfield.

HARTLEY'S PATENT ROUGH PLATE GLASS, 1-8th thick, or 2lbs. to the foot; 3-16ths, or 3lbs.; and 1-4th, or 4lbs. to the foot, for Ridge and Furrow Roofs, Greenhouses, Railway Stations, Engine Sheds, Mills, Market Halls, and Public Buildings generally.

For further information apply to JAMES PHILLIPS & CO., London Agents, 116, Bishopsgate Street Without.

"Rough Plate has never been, and never can be, prejudicial to the colouring of Grapes; though we can easily believe that it has been charged with such a fault by persons who have not skill enough to manage Grapes under glass."—*Gardeners' Chronicle.*

"There *can be no question now* that Rough Plate Glass is the most beautiful, as well as the most useful, kind of glass that can be employed in horticulture. It is free from all the faults of transparent glass, and has many advantages peculiar to itself, *without a single disadvantage as a set-off.*"—*Gardeners' Chronicle.*

"ROUGH PLATE GLASS.—We should have no hesitation in using this for a Vinery—INDEED WE SHOULD SELECT IT."—*Cottage Gardener.*

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

HETLEY AND CO. are supplying 16-oz. Sheet Glass of British Manufacture, packed in boxes, containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

Sizes.—Inches.	Inches.		Per foot.		Per 100 feet
	Under 6 by 4	at	1½d.	is	£0 12 6
From 6 by 4	,, 7 ,, 5	,,	2d.	,,	0 16 8
7 ,, 5	,, 8 ,, 6	,,	2¼d.	,,	0 18 9
8 ,, 6	,, 10 ,, 8	,,	2½d.	,,	1 0 10
10 ,, 8	,, 12 ,, 9	,,	2¾d.	,,	1 2 11

Larger sizes, not exceeding 40 inches long.

16 oz. from 3d. to 3 d. per square foot, according to size.

21 oz. ,, 3½d. to 5d. ,, ,, ,,

26 oz. ,, 3½d. to 7½d. ,, ,, ,,

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

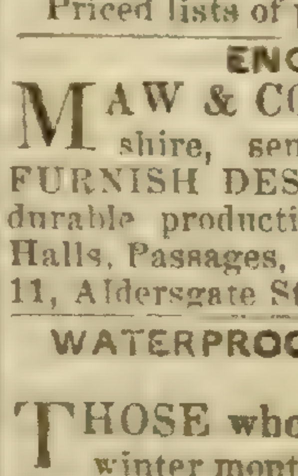
GLASS TILES AND SLATES made to any size or pattern, either in sheet or Rough Plate Glass.

Propagating Glasses, Beehive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in Glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the excise duty, reduced one-half. List of Prices and Estimates forwarded on application to JAMES HETLEY & Co., 35, Soho Square, London.

TO AMATEUR GARDENERS, LOCAL BOARDS OF HEALTH, & SANITARY WORKS.



PATENT GLASS TUBES, Iron Coated with Glass, Gutta Percha, Combinated ditto, Patent Flexible India Rubber Tubing, and every other Hose for Watering Gardens. The Hydraulic Ram, Fire, Garden, and every other kind of Pump, Sluice Cocks, Hydrants, High Pressure Cocks, and all other articles to be had, Wholesale and Retail, of

FREEMAN ROE,

HYDRAULIC ENGINEER,

70, Strand, and Bridgefield, Wandsworth.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

Priced lists of plant tubs and boxes forwarded on application.

ENCAUSTIC TILE PAVEMENTS.

MAW & CO., of Benthall Works, Broseley, Shropshire, send Post Free their PATTERN BOOK and FURNISH DESIGNS (with estimates) in this beautiful and durable production to any given plans of Churches, Entrance Halls, Passages, Conservatories, Verandahs, &c.—Specimens at 11, Aldersgate Street, London.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

MORNING FROSTS.

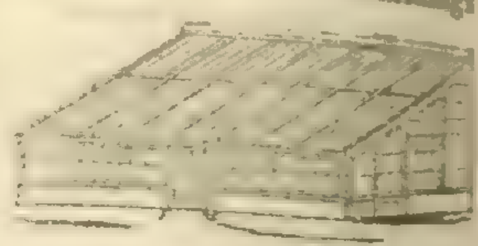
"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

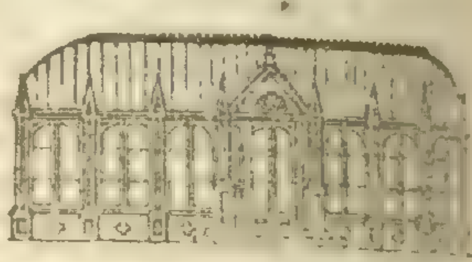
"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard run, of E. T. ARCHER, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey. (Removing in May next to 112, Regent Street, London.)

HORTICULTURE IN ALL ITS BRANCHES.

J. WEEKS & Co., King's Road, Chelsea,

HOTHOUSE BUILDERS.





The Nobility and Gentry about to erect Horticultural Buildings or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

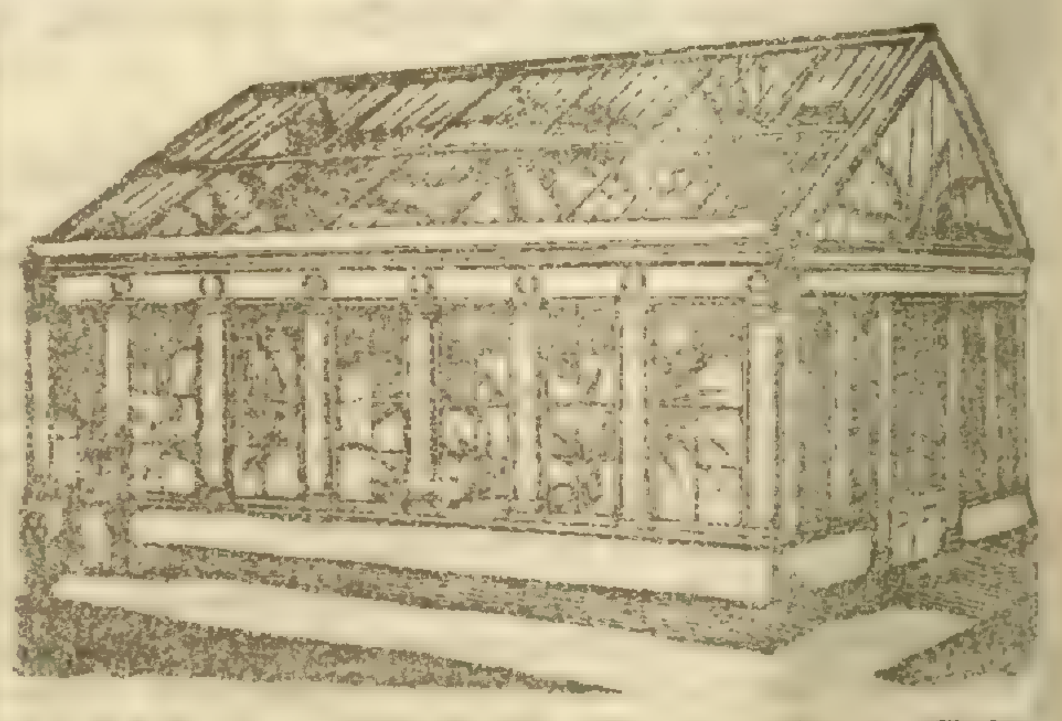
The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. WEEKS & Co., King's Road, Chelsea, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



GRAY AND ORMSON, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

BY HER MAJESTY'S ROYAL LETTERS PATENT

E. DENCH, PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

PATENT HOTHOUSES and excellent Glass at 1s. 3d. per foot super., which are superior to all others for price with quality, and if known would supersede all others. (See Appendix, in "Book of the Garden," by Mr. M'Intosh.) A Range of Houses and Hot Water Apparatus, was erected by E. D. for E. L. Betts, Esq., Preston Hall, Kent. Mr. J. Frost, head gardener, has shown their efficiency by their produce at the Royal Botanic Gardens, Regent's Park, June 8, and Chiswick, June 11. The editor of the *Gardeners' Chronicle* says: "Beautiful examples of Black Hamburgh, large both in bunch and berry, and as black as Sloes, were furnished by Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall, Kent; these well deserved the first prize which was awarded them."—*Gardeners' Chronicle*, June 18th, 1853. The Grapes were considered the best shown at Regent's Park during the season, and the Houses are as superior for the growth of everything else in horticulture, which has been fully proved, and they have been extensively erected for the nobility and gentry in all parts of the kingdom.

GLAZING WITHOUT PUTTY.—Iron and Glass alone. E. D. has Roofed the Public Baths and Washhouses, Endell Street, on this principle, and others are in hand. Patent Sashes for Peach Walls, Pits, &c., 8d. per foot super. Heating by Hot-water, on the most practical principles, and all the best materials used. Printed Price List sent on application.

GREEN AND HOTHOUSES made by machinery at J. LEWIS'S HORTICULTURAL WORKS, Stamford Hill, Middlesex. Warranted of best materials; being made by steam-power, they are put together in a superior manner; one trial will prove these Buildings to be the cheapest and best made in England. 1½ in. Greenhouse lights at 3½d. per foot; 2 in. at 4½d. per foot. Lists of Prices by enclosing two postage stamps.

STEPHENSON AND PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

TELESCOPES.—Her Majesty's Royal Letters Patent, for valuable and extraordinary improvements in the most powerful and brilliant Telescopes to know the distances of objects viewed through them, at Messrs. S. and B. SOLOMONS, Opticians, 39, Albemarle Street, Piccadilly. These Telescopes possess such extraordinary powers, that some three and a half inches with an extra eye-piece, will show distinctly Jupiter's moons, Saturn's ring and the double stars; and a person's countenance three and a half miles distant. The Royal Exhibition, 1851.—A valuable newly-invented very small powerful waistcoat-pocket glass, the size of a walnut, to discern minute objects at a distance of from 4 to 5 miles, which is found to be invaluable to SPORTSMEN, GENTLEMEN, and GAMEKEEPERS. Opera and Race-course glasses with wonderful powers. Invaluable newly-invented Preserving Spectacles. Invisible and all kinds of Acoustic instruments for relief of extreme deafness.

QUANTITY AND QUALITY OF THE HAIR.

NO TOILET can be considered complete without a careful attention to that department which so materially affects the entire contour, viz., the Hair, which, both in quantity and quality, is susceptible of the most material alteration. That which is weak can be strengthened, and be made to receive a most beautiful gloss by artificial applications. It is to its extraordinary and valuable properties in these respects that is due the character of C. AND A. OLDRIDGE'S BALM OF COLUMBIA, for its invigorating, nutritious, and regenerative qualities. OLDRIDGE'S BALM causes Eyebrows to grow, prevents the Hair from turning grey, and the first application causes it to curl beautifully, frees it from scurf, and stops it from falling off. Price 3s. 6d., 6s., and 11s. per bottle. No other prices are genuine. — N.B. Ask for OLDRIDGE'S BALM, 13, Wellington Street North, Strand, London.

THE SUCCESSFUL RESULTS OF THE LAST HALF CENTURY HAVE PROVED BEYOND QUESTION THAT

ROWLAND'S MACASSAR OIL possesses singularly nourishing powers in the growth, restoration, and improvement of the human Hair, and when every other specific has failed. This celebrated Oil is now universally acknowledged to be the cheapest, and superior to all other preparations for the hair. It prevents it from falling off or turning grey, strengthens weak hair, cleanses it from scurf and dandriff, and makes it beautifully soft, curly, and glossy. Its operation in cases of baldness is peculiarly active; and in the growth of the Beard, Whiskers, Eyebrows, and Moustachios, it is unfailing in its stimulating operation. For children it is especially recommended, as forming the basis of a beautiful head of hair. Price 3s. 6d. and 7s.; Family Bottles (equal to four small), 10s. 6d.; and double that size, 21s. CAUTION.—On the wrapper of each bottle are the words, Rowland's Macassar Oil, in two lines. The same are engraven on the back of the wrapper nearly 1500 times, containing 29,028 letters.—Sold by A. ROWLAND & SONS, 20, Hatton Garden, London, and by Chemists and Perfumers.

DO YOU WANT LUXURIANT HAIR, WHISKERS, &c.? If so, use Miss GRAHAM'S NIOUKRENE, the most efficacious Hair generant ever introduced. It reproduces the Hair when lost either by disease or decay, prevents its falling off, effectually checks greyness, strengthens weak hair, and is guaranteed to produce those attractive ornaments, Whiskers, Moustachios, Eyebrows, &c., in three or four weeks. For nourishing and beautifying the hair, and sustaining its curling powers in all weathers, it has no equal. Price 2s., and sent post free to any part of the kingdom, on receipt of 24 penny postage stamps, by ELLEN GRAHAM, 3, New Road, Hornsey, Middlesex.—"My hair is quite restored." Miss ORME.—"I have a full pair of Whiskers, thanks to your Nioukrene." H. ROBB, Esq.—"It has checked the greyness." Mrs. JONES.—Sold at 14, Hand Court, Holborn, London.

DO YOU WANT LUXURIANT HAIR, WHISKERS, &c.?—EMILY DEAN'S CRINILENE has been many years established as the only preparation that can be relied upon for the Restoration of the Hair in Baldness from any cause, preventing the Hair falling off, strengthening weak Hair, and checking Greyness, and for the production of Whiskers, Moustachios, Eyebrows, &c., in three or four weeks with certainty. It is an elegantly scented compound, price 2s., sold by all chemists, or will be sent post free, on receipt of 24 penny postage stamps, by Miss DEAN, 37A, Manchester Street, Gray's Inn Road, London.—"I have used your Crinilene, and have now a good pair of Whiskers." J. L. HIGGS, Dudley.—"It has certainly improved my hair." J. THOMPSON, Durham.

HOLLOWAY'S PILLS REMARKABLY EFFICACIOUS IN CURING A CONFIRMED CASE OF DROPSY.—Extract of a letter from Mr. David Simpson, of Collingham, dated March 15, 1854:—"To Professor Holloway. Sir,—I feel it my duty towards you and the public to inform you of a most remarkable Cure of Dropsy, by the use of your Pills. My daughter was a sufferer for years; and, when under medical treatment, she had upwards of 13 pints of water taken away without obtaining any permanent relief; since then she commenced taking your Pills, which I am satisfied has been the sole means of effecting a lasting Cure, as she is now perfectly well."—Sold by all Druggists; and at Prof. HOLLOWAY'S Establishment, 244, Strand, London.

PAINS IN THE BACK, GRAVEL, LUMBAGO, RHEUMATISM, GOUT, INDIGESTION, FLATULENCY, NERVOUSNESS, DEBILITY, &c.

DR. DE ROOS' COMPOUND RENAL PILLS, as their name Renal (or the Kidneys) indicates, are a most safe and efficacious remedy for the above dangerous complaints. For depression of spirits, incapacity for society, study, or business, giddiness, drowsiness, nervousness, and insanity itself, when arising from or combined with urinary diseases, they are unequalled. Price 1s. 1½d., 2s. 9d., 4s. 6d., 11s., and 33s. per Box, through all Medicine Vendors, or sent (free) on receipt of the amount in postage stamps, by Dr. DE ROOS, 35, Ely Place, Holborn, London. At Home for consultation daily from 11 till 1, and 5 till 8, Sunday excepted. Advice and Medicines, 1l.

TO NERVOUS SUFFERERS.

A RETIRED CLERGYMAN, having been restored to health in a few days, after many years of great nervous suffering, is anxious to make known to others the means of cure, and will therefore send (free), on receiving a stamped envelope properly addressed, a copy of the Prescription used.—Direct to Rev. E. DOUGLASS, 18, Holland Street, Brixton, London.

THE LATEST DISCOVERY IN ELECTRICITY.

ELECTRICITY IS VITALITY, and when communicated in mild but continuous currents by wearing MEINIG'S patent portable GALVANIC ELECTRO GENERATOR, for personal use. All Nervous, Functional, or Rheumatic Diseases (where no organic change has taken place) disappear with a safety, certainty, and speed, which is as marvellous as it is demonstrable beyond the possibility of a doubt; for the prospectus contains the names and addresses of more than 400 persons cured within the last 18 months by this extraordinary agent, which is moreover adopted in all the Hospitals in this country and in France, and by the first men of the day. The effects being instantaneously perceptible, may be tested freely and beforehand. Price from 5s. upwards, according to power. A full description of this extraordinary discovery may be had (by post for two stamps) of C. MEINIG, 103, Leadenhall Street, London; or from all respectable Chemists.

N.B. In this new Apparatus durability is secured, and all metallic or wet contact with the body entirely obviated.

It weighs two ounces, and can be worn with the greatest comfort. MEINIG'S ELECTRO GENERATOR when worn on the Liver, has been found a never-failing preventive of Cholera, supplying the central and hepatic system with vital energy, to resist and counteract all miasmatic influences.

TOBACCO PAPER! TOBACCO PAPER!

THE Cheapest and most effectual article for smoking Greenhouses, and destroying the Fly on Plants, is Genuine Tobacco Paper, which JOSEPH BAKER, of 73, Fleet Street, can supply in large quantities, at 1s. per lb.; and if under 7 lbs. at 1s. 2d. per lb. Post-office Orders payable at the Strand Office.

JOSEPH BAKER, 73, Fleet Street, London (opposite the *Dispatch* newspaper).

CURE FOR MILDEW ON GRAPES, &c.—In consequence of the increased prevalence of mildew on the Vines, &c., during the last few seasons, G. TABER, of Rose Cottage, Rivenhall, practical Gardener, Seedsman, and Florist, has directed particular attention to the best mode of preventing it, or for curing the Vines that have been attacked, and he now begs to announce that he has succeeded in preparing a composition known as TABER'S ANTI-MILDEW COMPOSITION, which will effectually prevent or cure the disease without doing the slightest injury to the Vines; and any person, by the aid of the printed instructions, may use it without risk. It is also an invaluable remedy for preventing Mildew on Wall Trees, Roses, &c. Sold in packets containing 1 lb., 1s. 3d.; 3 lbs. 3s.; 6 lbs 5s. 6d., with directions for use. By enclosing two postage stamps, G. T. will send a circular with full particulars as to quantity required for a house for the season, and also testimonials of the success he has met with.

G. T. will personally attend gentlemen, and give instructions to their gardeners at a reasonable remuneration for time and travelling expenses. The trade supplied at the usual discount. Post Office orders to be made payable to GEORGE TABER, and drawn upon the Witham Post Office. Postage stamps received in payment of small orders. Packets delivered free to the Witham Station of the Eastern Counties line.—Address GEORGE TABER, Rose Cottage, Rivenhall, near Witham.

FORD'S EUREKA SHIRTS, Plain and Coloured, the latter in cloths of every variety of pattern—stripes, curves, bars, spots, sprigs; in short, every figure that art can describe and taste approve. Six for 27s. Patterns to select from on receipt of six penny stamps. Price lists free on application. —RICHARD FORD, 38, Poultry, London.

QUALITY THE TEST OF CHEAPNESS.—FIRST-CLASS CLOTHING at the Lowest Charges.—Dress Coat, 3l.; Boy's Suit, 11d. per inch, according to height. The well-known Waterproof Light Overcoat, 45s. and 50s. Business established half a century.—W. BERDOE, 96, New Bond Street and 69, Cornhill. (Nowhere else.)

ONE THOUSAND BEDSTEADS TO CHOOSE FROM.

HEAL AND SON'S Stock comprises a large assortment of handsomely Japanned and Brass-mounted IRON BEDSTEADS, CHILDREN'S CRIBS and COTS of new and elegant designs; MAHOGANY, BIRCH, and WALNUT-TREE BEDSTEADS, of the soundest and best manufacture, many of them fitted with Furnitures, complete; and every variety of SERVANTS' and PORTABLE BEDSTEADS. They have also a large assortment of

BED-ROOM FURNITURE, comprising WARDROBES, both in Japanned Wood and Mahogany, from 4 feet to 8 feet long, fitted with every variety of arrangement; DRESSING TABLES and GLASSES, WASH-STANDS, DRAWERS, and every article for the complete furnishing of a Bed-room.

HEAL & SON'S ILLUSTRATED CATALOGUE OF BEDSTEADS and priced List of Bedding, containing designs and prices of upwards of One Hundred Bedsteads (representing a stock of upwards of One Thousand), sent free by post.

HEAL & SON, 196, Tottenham Court Road, London.

KNOW THYSELF!—Professor BLENKINSOP continues to receive from individuals of every rank the most flattering testimonials of his success in describing the CHARACTERS of Persons from their HANDWRITING, pointing out their mental and moral qualities, whether good or bad.—Address by letter, stating age, sex, and profession, inclosing 13 uncut postage stamps, to Dr. BLENKINSOP, 344, Strand, London.

TO BE LET, for a Cemetery or Market Garden, 50 acres of the BEST LAND in the county of Surrey, 8 miles from London Bridge, situate at Mitcham, adjoining Merton Abbey, in fine condition, and all trenched. Rent moderate. A Lease will be granted if required; further particulars may be had of Mr. HOOK, 13A, Great George Street, Westminster.

TO BE LET, an excellent arable FARM, beautifully situate midway between Guildford and Farnham, containing 135 acres. Immediate possession may be had.

For further particulars apply to Mr. FINNEY, West Surrey Bank, Guildford, Surrey.

TO BE DISPOSED OF, PLANS AND SPECIFICATIONS, by a gentleman about to leave for Australia, who has had a considerable professional practice in Ornamental Gardening, and is desirous of Disposing of his Plans and Specifications, amongst these are Plans of Parks, Pleasure Grounds, Villas, Terraces, Flower Gardens, and Arboretums, including Plans for improving and remodelling these; also Plans of Kitchen and Fancy Gardens, Conservatories, Greenhouses, Stoves, Vineries, Pits, &c., which have been executed in various districts of the country. The Plans will be disposed of in one lot, or in sections. Rural Architecture may be advantageously combined.—Apply to R. S., Mr. Bishop, News Agent, 1, Lily Pot Lane, London.

TO BE SOLD, a Quantity of DECAYED VEGETABLE MATTER, having accumulated for years.—Apply to Mr. WILLIAM FAGGATTER, West End Farm, Aldershot. A large quantity has been used for Plants in the Sydenham Palace. The enclosure from which the mould is dug is about three miles from the Ash Station, on the South Eastern line, and about the same distance from the Farnham and Farnborough Stations, on the South Western line.

TO BE SOLD, a GREENHOUSE, SPAN ROOF, 30 feet long by 21 feet wide, nearly new, with slate Shelves and Paths, heated by hot water, with Blinds and Rollers; also 250 feet of 4-inch Piping, and 500 feet of Slate Slabs, together or separate.—Apply to Mr. CHARTRES, Seedsman, King William Street, City; or Mr. COOK, Park Road, Clapham, near London.

PEA-FOWLS.

TO BE SOLD, a handsome PEACOCK and PEAHEN; the cock four and the hen three years old, price 3l. 10s. If a purchaser required two Pea-hens, an additional one could be parted with, price 30s. The foregoing birds are in full plumage.—Apply, by post, to A. B., Post Office, Wellington, Somerset.

GOLDEN SPANGLED HAMBURGH. — Eggs from PRIZE BIRDS, 7s. 6d. the sitting of 13. The Cock is well marked all over, nine months older than the Hens, and of a distinct strain.—Apply to Mr. TAYLOR, Godalming, Surrey.

TO AMATEURS OF THE HAMBURGH FOWLS.—A few sittings of Eggs of each class of the Hamburgh Fowls, viz.:—Gold and Silver Pencilled, Gold and Silver Spangled, and Black, to be disposed of in the spring, from birds which have taken thirty prizes at most of the principal Shows during the past season. Eggs will be supplied according to the dates of the orders received. Also, Eggs of Prize Game Fowls and Aylesbury and Rouen Ducks.—Apply to the Feeder, Mr. ROBERT HUGGINS, Beighton Rectory, Acle, Norfolk.

COCHIN CHINA POULTRY, ETC.

EGGS FROM PRIZE BIRDS.

MR. JOHN FAIRLIE, of Cheveley Park, Newmarket, in reply to the very urgent applications from numerous amateurs, is now prepared to dispose of a limited number of Eggs, from his celebrated prize Cochins, Brahma Pootras, Scotch Bakies, Dorkings, &c., according to the dates of the orders received.

COCHIN CHINA FOWLS.

MR. THOMAS GILBERT, of Grays, Essex, having purchased of THOMAS STURGEON, Esq., his entire breed of 1853, Gentlemen and Amateurs are informed the Birds are now on Sale, and are bred exclusively from his best Stock Birds, Jerry and Nelson. Eggs may be had at 16s. per dozen, from the above.

EGGS.

MR. PEARSON will supply a sitting of 13 Eggs of the Spotted Dorkings, Gold Pencilled Hamburghs, Gold Spangled do., Silver Pencilled Hamburghs, Silver Spangled do., for 5s. each sitting, including package. His Gold Pencilled Hamburghs won the 1st Prize at Birmingham in 1852, and 2d Prize in 1853; the Silver Pencilled won the 1st Prize in 1853 at Birmingham. The Gold Spangled Hamburghs being out at walk, letters for them must be addressed Mr. W. HETLEY, Orton, Peterborough.

The other varieties are kept at Chilwell, near Nottingham.

BRAMAH POOTRA FOWLS' EGGS, 20s.; White faced Spanish, 10s.; Dorking, 6s.; and Aylesbury Duck Eggs, 6s. per dozen, warranted fresh from Prize Stock. A few choice Spanish Fowls for sale. A remittance with all orders, and stamp for inquiries.—W. TURNER, Drayton, Abingdon, Berks.

PRIZE WHITE SHANGHAES.—An Amateur, whose stock birds have, during the past season, gained high and distinguished awards at Bedford, Birmingham, Bury, Farningham, Gloucester, Leeds, Manchester, Metropolitan, Surrey Gardens, and Southampton Exhibitions, has for disposal a few first-class Pullets now laying, including some Birmingham and Metropolitan Prize Birds of great merit. Also two first-rate, heavily feathered, vulture-hocked Cockerels; and an imported bird, lately weighing 10½ lbs., winner of prizes at Cheltenham, Halifax, and Yarmouth.—For price, &c., apply to T. B. F., Post-office, Braintree, Essex.

Sales by Auction.

FANCY POULTRY—PERIODICAL SALE.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, April 4th, at 12 o'clock precisely, Choice Buff and White Cochins, from the yards of C. Rawson, Esq., Capt. Snell, Mr. Collinson, and others; also some good Spanish, Dorkings, Polands, Hamburghs, and a very choice Lot of Brahma Pootras, from Dr. Gwynne of Sandbach.—Catalogues by enclosing a stamped directed envelope to Mr. J. C. STEVENS, 38, King Street, Covent Garden.

EALING PARK.

MRS. LAWRENCE'S STOVE AND GREENHOUSE PLANTS, AZALEAS, AND HEATHS, THE MOST IMPORTANT AND VALUABLE COLLECTION EVER OFFERED TO PUBLIC SALE.

MR. J. C. STEVENS is honoured with instructions (in consequence of the continued ill-health of Mrs. Lawrence) to Sell by Auction, at the Gardens, Ealing Park, on WEDNESDAY, 26th April, and following days, at 1 o'clock precisely, this unrivalled Collection of Magnificent Specimen STOVE AND GREENHOUSE PLANTS, so well known that it is sufficient to say it contains about 500 Azaleas and Heaths, the finest and best cultivated in the world, in admirable health, well set with bloom buds, and offering to Gentlemen and Nurserymen an opportunity of possessing specimens of transcendent splendour for exhibition at the forthcoming shows.—May be viewed two days before the Sale by Catalogues only, to be had (2s. 6d. each, returnable to purchasers) of Mr. J. C. STEVENS, 38, King Street, Covent Garden.

TO GENTLEMEN, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Goldham to Sell by Auction, on the premises, Barnsbury Nursery, Thornhill Road, Islington, on TUESDAY, April 4, at 11 o'clock, in consequence of the ground being let for building, Five newly-erected Greenhouses, about 100 Pit-Lights, 1000 feet 3 and 4-inch Hot-water Pipes, a large quantity of Slate Shelving and York Paving; Erection of Shed, a capital Van, Chaise Cart, Garden Pots, and sundry effects; may be viewed three days prior to the sale. Catalogues may be had on the premises; of the principal Seedsmen in London; and of the Auctioneers, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction, at the Mart, Bartholomew Lane, on FRIDAY, April 7, at 12 o'clock, a first-class collection of CARNATIONS, PICOTEES, and PINKS, also a choice assortment of Standard and Dwarf Roses, American Plants; together with a superb collection of Hollyhocks, from a celebrated grower, Fuchsias, Verbenas, Dahlias in dry roots, &c.—May be viewed the morning of sale; Catalogues had at the Mart; and of the Auctioneers, American Nursery, Leytonstone, Essex.

BRIXTON.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, on the premises, Loughborough Road, near the White Horse Inn, Brixton, on WEDNESDAY, April 5th, 1854, at 12 o'clock, without reserve, by order of Mr. Edward Randell, quitting the premises, the STOCK IN TRADE of a MARKET GARDENER, comprising 15 3-light Boxes and Lights, 240 Hand Glasses; the erection of Greenhouse, 31 ft. by 18 ft.; Hot-water Apparatus and Bricks; about 5000 Rhubarb Roots, viz., Linnæus, Victoria, and Prolific; 5000 Cauliflower Plants; about half an acre of young Plants of Eleanor and British Queen Strawberry; quantity of Moss Roses, Bulbs, Cabbage, Lettuce, Parsley, Flower Roots, &c.; two Iron Pumps, and Utensils in Trade.—May be viewed the day previous to and morning of sale; Catalogues had on the premises, of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MR. J. WILLMER will Sell by Auction, at the Mart, Bartholomew Lane, on WEDNESDAY, April 5, at 12 o'clock, a first-class collection of CARNATIONS, PICOTEES, and AURICULAS, the property of an Amateur deceased.—May be viewed the morning of sale. Catalogues at the Mart, and of the Auctioneer, Sunbury, Middlesex.

LENTON, NEAR NOTTINGHAM.

IMPORTANT SALE OF SHORT-HORNED CATTLE.

MR. STRAFFORD begs to announce that he has received instructions from Mr. Wilkinson, of Lenton, near Nottingham, to Sell by Auction, without reserve, on THURSDAY, the 13th of April next, his entire Herd of SHORT HORNS, consisting of upwards of 60 Bulls, Cows, and Heifers, which have been bred with great care and attention for upwards of 40 years, from the justly celebrated stocks of Messrs. Colling, Mr. Mason, of Chilton, Earl Spencer, and other first class breeders. They will be found on inspection to combine good size with great substance and excellent quality. Attention has also been paid to their milking properties.—Catalogues with the pedigrees are now ready, and may be had on application to Mr. STRAFFORD, 13, Euston Square, London; or of Mr. WILKINSON, at Lenton, near Nottingham.

NEW TURNIP SEED.

TO THE TRADE.—NEW TURNIP SEED.—*The Subscribers having a few Bushels more than they require for their regular Trade, can offer the following varieties, grown by Farmers of the highest respectability, and warranted all* NEAT *as delivered by them.*

GREEN-TOP SCOTCH YELLOW TURNIP.
PURPLE-TOP ABERDEEN "
GREEN GLOBE "
WHITE GLOBE "

The have also a few hundred weight of the following Mangold Wurzel, &c., also saved by farmers:—

YELLOW GLOBE MANGOLD WURZEL.
LONG RED " "
RED GLOBE " "
WHITE BELGIAN CARROT.

As the quantity is small, an early application is requested. Wholesale Catalogues can be had on application in exchange for one penny stamp.

WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

NEW FARM SEEDS. GROWTH OF 1853.

WILLIAM E. RENDLE AND CO., SEED MERCHANTS, Plymouth, *have a very large and well selected Stock of all kinds of* SEEDS *required in Agriculture, grown by Farmers of the first respectability and experience in Devonshire, Somerset, Gloucester, Kent, Essex, Sussex, and several other counties.*

CARRIAGE OF ALL PARCELS ABOVE £1 FREE, SEE PRICE CURRENT.

The following are the prices of a few of the leading articles:—

Italian Rye-grass, 6*s.* to 7*s.* per lb.
Pacey's Perennial Rye-grass, 6*s.* per lb.
North Devon Evergreen Rye-grass, 5*s.* to 6*s.* per lb.
Rough Cocksfoot Grass, 5*s.* per lb.
White and Red Clovers, 7*d.*, 8*d.*, 9*d.*, 10*d.* per lb.
Swede Turnips, all the best varieties, 1*s.*, 1*s.* 4*d.*, to 1*s.* 6*d.* per lb.
Scotch Turnips, 1*s.*, 1*s.* 4*d.* to 1*s.* 6*d.* per lb.
Summer Turnips, 8*d.* to 1*s.* per lb.
Large White Belgian Carrots, 2*s.* per lb.
Other varieties of Carrots, 1*s.* 6*d.* per lb.
Large Red Mangold Wurzel, 1*s.* per lb.
Yellow Globe ditto, 1*s.* 4*d.* per lb.

All other kinds of Agricultural Seeds at fair remunerative prices. For full particulars see RENDLE'S "FARMING PRICE CURRENT AND AGRICULTURAL SEED DIRECTORY," to be obtained from the subscribers in return for six postage stamps.

WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.
ESTABLISHED 1786.

RENDLE'S IMPROVED SWEDE TURNIP.—*The Stock of this excellent Swede has been grown for us this season by R. H. Watson, Esq., Dorsley, near Totnes. It is a most hardy and valuable variety. Price 1s. 6d. per lb. For further particulars and testimonials of its excellence see* "FARMING PRICE CURRENT," to be procured from

WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

MORTON'S YELLOW GLOBE MANGOLD WURZEL, *saved by Thomas Bennett, Esq., Gloucester, from the Stock originally grown by J. C. Morton, Esq., the Editor of the Agricultural Gazette.*

Seed of this most excellent variety can now be obtained from WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth, who have purchased the whole of the Stock.

GENUINE NEW WHITE AND RED CLOVER SEED, COW GRASS, *and the Alsike Hybrid Clover, can be obtained at the lowest market prices from*

WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

RENDLE'S PERMANENT PASTURE GRASSES *have always given the greatest satisfaction, and those who want Seed for the present season should consult* RENDLE'S "FARMING PRICE CURRENT AND AGRICULTURAL SEED DIRECTORY," to be obtained from

WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

FINE GRASS SEEDS FOR ORNAMENTAL PARKS, LAWNS, &c., *where a fine sward is required*, 1*s.* 3*d. per lb.*, 3*s. per gallon, and* 20*s. per bushel. Our mixtures for this purpose have given the greatest satisfaction.*

WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

RENDLE'S PERMANENT PASTURE GRASSES *can be obtained from 24s. to 30s. per acre, according to sorts required. Renovating Grasses 10s. per acre, and all the best varieties known at the lowest market price. See Price Current.*

Apply to WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

NORTH DEVON EVERGREEN RYE GRASS.—*This Grass, which is held in great celebrity in the West of England, should be introduced into every mixture —for* PERMANENT PASTURE.

It is a very hardy Grass, and remains evergreen throughout the most severe winter. It forms a fine bottom, and is much liked by cattle. The true sort can be had from

WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

Price from 5*s.* to 6*s.* per bushel, or 4*d.* per lb.

This Grass can be recommended with the greatest confidence.

SEEDS TO IRELAND.—*Plymouth is admirably situated for supplying our sister country with some English Seeds. The Subscribers can refer to some of the leading families in Ireland, who have for many years obtained the whole of their supplies of Garden and Farm Seeds. Seeds delivered free to many of the Irish ports. See Price Current.*

WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

RENDLE'S PRICE CURRENT.—Opinion of the Editor of the *Illustrated London News*. See *Illustrated London News*, March 18, 1854.

"This is a scientific catalogue of the Seeds of Garden Plants by Mr. Rendle, of Plymouth, the eminent Nurseryman. The Pamphlet will be very suggestive to all who are fond of a garden, as it contains not only a classified list of every necessary or ornamental Garden Seed, but also the fullest description of the plants, and the mode of cultivating them. We rarely find so much information in so small a compass."

PAGE AND CO., SEED MERCHANTS TO THE AGRI-HORTICULTURAL SOCIETY OF BOMBAY.

SEEDS FOR EXPORTATION (free on board) AND HOME USE (carriage paid).

		£	s.	d.
No. 1.	A choice collection of Vegetable Seeds, suited to the climate (case included)	£5	0	0
No. 2.	Do. Do. in smaller proportions	2	10	0
No. 3.	Do. Do. Do.	1	0	0
No. 1.	A selection of the most beautiful and showy Annuals (case included)	1	5	0
No. 2.	Do. Do. Do. ...	0	15	0
No. 3.	Do. Do. Do. ...	0	10	6

General Priced Catalogues free upon application.

In addition to our great experience, the port of Southampton affords us unrivalled facility for the almost daily shipment of SEEDS to all parts of the world; and as no greater test of genuineness and vitality than a long transit by sea can be applied to Seeds, we yield priority to none in supplying such for home growth as cannot fail to prove most satisfactory.

All parties desirous of taking or sending Seeds to the Peninsula, Mediterranean, East and West Indies, Australia, Brazil, Cape of Good Hope, China, America, &c., are particularly requested to state their wishes to us, whereby the annoyance and disappointment which too frequently happens by placing their orders in the hands of inexperienced persons will be prevented. We are continually receiving the warmest thanks of our consignees; only a few days since, a gentleman writes from Melbourne, "Your Seeds have proved excellent. The selection of Peas has afforded us the greatest delicacy in Australia." From Capt. H. J. Barr, Secretary to the Horticultural Society of Bombay: "*Gentlemen,—In acknowledging the receipt of your last supply of Vegetable and Flower Seeds, which reached me on the 8th of June by the overland route, I have the honour to inform you that they have all turned out so fresh and good that the demands on our Society have increased so much that I must now cancel my former order, and beg you to supply me according to the list now furnished.*"

PAGE & CO.'S BLIGHT COMPOSITION should be in the hands of all Plant and Fruit Cultivators. For testimonials see back leaf of *Gardeners' Chronicle*, March 11.

Oxford Street (adjoining Radley's Hotel, 20 yards from the Railway and Docks), Southampton.

NEW AND CHOICE FLOWER SEEDS.

ASTERS, new French Pæony-flowered, very fine
" " " Pyramidale, splendid
" German Globe, quilled and striped, 12 vars. mixed
POPPY, new Pæony-flowered, 8 vars. mixed
STOCKS, German 10 week, 12 vars. mixed, fine
" " intermediate, 12 vars. mixed
" " new large flowering, 6 vars. mixed

Abronia umbellata	Hollyhock, from named flowers
Arctotis breviscapa, fine	Indian Pink, new white striped
Calceolaria, very fine	Leptosiphon luteus, new yellow
Calandrinia umbellata	Linum grandiflorum rubrum
Calliopsis coronata, fine	Lythrum roseum, new, fine
Cenia turbinata flava	Lindheimeria texana, new, fine
Centauridium Drummondi	Pansy, very superior
Cineraria, very superior	Perilla arguta
Collinsia bartsiæfolia	" nankinensis
" multicolor	Saponaria calabrica
Convolvulus minor, fl. pleno	Schizanthus lilacinus
Cyperus glomeratus	Silene atro-rosea
Dianthus Gardneri, fine	Tropæolum Scheurmannianum
Gymnopsis uniseralis	Wallflower, German, double

One packet each of the above forwarded, free, for 10*s.*; any 24 for 7*s.* 6*d.*; any 12 for 5*s.*; any 6 for 3*s.* 6*d.*

CHARLES ALEXANDER, SEEDSMAN AND FLORIST, 32, West Register Street, Edinburgh.

SUPERB SEEDLING POTENTILLAS, RAISED BY BASS AND BROWN.

"This fine Perennial is not grown a tithe of what it should be."—*G Glenny.*

We have the pleasure to offer the following very beautiful Potentillas, which we have selected from a large and much admired batch of Seedlings. We intend to send them out in May, and all orders are recommended to be forwarded early, as the stock of some of them may run short. We quote as under several authorities to whom they have been submitted for opinion:—

"All are very handsome kinds, and well worthy of cultivation."—*Gardeners' Chronicle*, July 3, 1852.

"We see no reason to alter our opinion formerly given of your Seedlings; they are certainly all very fine."—*Gardeners' Chronicle*, July 16, 1853.

"The whole appear bright, and many of them novel. They would make a pretty collection of a very pretty perennial, which from this batch of Seedlings seems to be going a-head."—*G. Glenny*, July 17, 1853.

"A very interesting collection of this useful hardy plant in great variety of colours, many of them being quite new and beautifully varied."—*Turner's Florist*, Sept. 1, 1853.

"We were not aware until we received specimens of these that there were so many beautiful varieties at the command of the gardener. All very rich and fine."—*Cottage Gardener*, July 28, 1853.

A letter from Mr. C. Turner, of July 29, states, "Your Potentillas are exceedingly fine and beautiful."

KING OF CRIMSONS, rich bright blood red, very large, and of dwarf habit ... ... 10*s.* 6*d.*

"Decidedly the most striking is No. 21, a deep scarlet crimson."—*Gardeners' Chronicle*, July 3, 1852.

"All very fine, more especially No. 21, which measures about 2 inches in diameter."—*Gardeners' Chronicle*, July 16, 1853.

"Deep blood, very large."—*Cottage Gardener*, July 28, 1853.

"Immensely large, bright blood, rich in texture, and above the average form."—*G. Glenny*, July 2, 1853.

THEODORE, a fine yellow, richly spotted, and shaded with bright red ... ... 7*s.* 6*d.*

"A good orange yellow, tipped."—*Gardeners' Chronicle*, July 16, 1853.

George Glenny, in selecting it as one of the finest, describes it as "yellow, shaded with bright red."

JULIA, a fine large primrose yellow ... ... 7*s.* 6*d.*

The Editor of the "Cottage Gardener" in selecting this from many others as one of the finest, describes it as "a very pale clear yellow."—July 28, 1853.

SUDBURY GEM, a rich orange yellow, deeply shaded and spotted with bright red ... ... 10*s.* 6*d.*

"A very beautiful variety, orange, veined upwards from the base with crimson."—*Cottage Gardener*, July 28, 1853.

SHYLOCK, a very rich dark velvet maroon, large, fine, and attractive ... ... 10*s.* 6*d.*

"Rich and dark."—*George Glenny*, July 17, 1853.

The set for 42s. The usual allowance to the trade by taking two or more sets.

The following SEEDLINGS are also very fine, rich, and showy:

	s.	d.
FLORAL BEAUTY, a rich scarlet, dark centre ...	3*s.*	6*d.*
NAPOLEON, blood red, dark centre	2	0
DEFIANCE, rich dark crimson	2	0
NEGRESS, rich dark velvet maroon	3	6
SCARLET GEM, bright scarlet, black centre ...	3	6
PRIMROSE, a fine large clear yellow...	2	0
ARGO, a fine bright yellow	2	0

This set for 16s.

Seed and Horticultural Establishment, Sudbury, Suffolk.

G. RUSSELL begs to offer the following:—2000 Evergreen Oaks, two year plants, 6*s.* per 100; 450 Evergreen Oaks, one year plants, 5*s.* per 100; 700 Privets, three year plants, 3 ft. high, 14*s.* per 100.—20, Sussex Road, Brixton.

STANDISH AND NOBLE, NURSERYMEN, SEEDSMEN, &c., Bagshot, Surrey, are now prepared to receive orders for the following new and beautiful varieties of AZALEAS, which will be ready for delivery in June next. The Advertisers can recommend them with the greatest confidence, as superior to any others of their kind.

AZALEA BEALII.—This very distinct variety was introduced by them from China. The flowers, which are of first-rate shape, are quite unique, being striped, like a Carnation, with rich vermilion on a pure white ground. It is of good habit, fine in foliage, and a most abundant bloomer; and although decidedly in the first rank as a greenhouse plant, it is quite hardy enough for the open border. Each, 21*s.*

AZALEA CRISPIFLORA, a species differing much from any other known Azalea, having a character entirely its own. No other kind approaches it in compactness of habit, and its foliage is very fine, abundant, and evergreen. The flowers are very large, and the edges of the petals have the appearance of being irregularly *gaufred*, like a lady's frill; the colour is a rich rose lake. From the fact of its blooming very late—much later than any other Azalea—it will be doubly valuable for many purposes. Each 21*s.*

GERMAN DOUBLE DAISIES.—A fine healthy stock of the above unique Flower is now offered to the Public. It is very novel and distinct, and such as will give all purchasers satisfaction. Out of the 100 imported varieties, 50 of the most striking and best flowers have been selected, and can be sent out from one dozen plants, and upwards. These Daisies surpass everything for making edgings to flower beds, &c., and are quite a novelty of their kind; price 3*s.* 6*d.* per dozen, postage and package free; or 1*l.* 1*s.* per hundred, hamper and package free.

Also a fine stock of MYOSOTIS VANGLEEKI, or the new improved Forget-me-Not, well adapted for rock-work or making single beds; 2*s.* 6*d.* per dozen, postage free; 15*s.* per hundred, package free.

SWEET WILLIAMS.—A fine stock of very select and striking varieties 2*s.* per dozen, or 10*s.* per hundred, package free.

CHOICE HOLLYHOCK SEED saved from all the best and latest varieties yet sent out; 1*s.* 6*d.* per packet.

SEEDLING ANTIRRHINUM SEED, all from striped and spotted flowers, and will give every one satisfaction; 1*s.* per packet.

GERMAN ASTER SEED, saved from all first prize flowers; 1*s.* per packet.

STRAWBERRY PLANTS.—This is an excellent opportunity for those to plant who may have neglected to do so last autumn. Victoria, 5*s.* per 100; Prolific, 3*s.* 6*d.* per 100; Eleanor, 3*s.* 6*d.* per 100; Surprise, 3*s.* 6*d.* per 100; Cremont's Perpetual, 5*s.* per 100; and many other leading varieties, package free. The above named will be sufficient to give a supply of fruit the whole of the Strawberry season, being the earliest and latest varieties.

CUCUMBER and MELON SEEDS can be still supplied in varieties, and price, as advertised on the 18th ult. On receipt of a money order, or penny postage stamps, the whole, or any part of the above, will be immediately forwarded.

EDWARD TILEY, Nurseryman and Seedsman, No. 14, Abbey Churchyard, Bath, Somerset.

KNAP HILL NURSERY, WOKING, SURREY.

WATERER AND GODFREY, Nephews and Successors to the late HOSEA WATERER, respectfully invite the attention of parties engaged in planting to the following list:—

Araucaria imbricata, 2, 3, 4, 5, and 6 feet high, in the open quarters, regularly removed every year, and as robust and handsome as it is possible to get them. We have a large stock.

Cryptomeria japonica, 2, 3, 4, 5, 6 to 8 feet.

Cedrus Deodara, stout handsome plants from seed, in any quantity, and of all heights from 1 to 7 feet. A few splendid specimens, 10 to 15 feet; warranted to transplant with perfect safety.

Cedar of Lebanon, 2, 3, 4, 5, 6, 7 to 10 feet. These large Cedars of Lebanon are also very handsome trees.

Cupressus macrocarpa, or Lambertiana, 2, 3, 4, 5, 6, and 8 feet, all from seed.
" Goveniana, 2 to 3 and 4 feet.
" Funebris, 2 and 3 feet.
" thyoides variegata, 2, 3, and 4 feet.

The Variegated White Cedar, a scarce but most beautiful variegated plant, seldom seen except at Elvaston Castle. We hold a large quantity.

Juniperus Bedfordiana, fine plants, 3, 4, and 5 feet.
" Chinese, 2, 3, 4, 5, 6, 8, and 10 feet.
" repandus, 3, 4, 5, to 8 feet.
" Upright Irish, 3, 4, 5, 6, 7, and 8 feet; perfect columns, and, except at Elvaston, unequalled.
" Virginiana, the Red Cedar, 4, 5, 6, and 8 feet.

Taxodium sempervirens, 2, 3, 4, 5, and 7 feet.

Yew, common, 3, 4, 5, to 8 feet high.
" Irish, 3, 4, 5, to 10 feet. A splendid lot, all being trimmed to one stem; it adds much to their appearance and value.
" Gold striped, 1, 2, and 3 feet.
" do. worked on the Common, with fine heads, 4, 5, 6, and 7 feet high; very handsome.
" elegantissima (new striped) standards. The golden Yews are very ornamental, and we have a large quantity of fine plants.
" Dovaston, or Weeping Yew, fine standards.

Pinus Douglasi, 3, 4, 5 and 7 feet; a few magnificent plants, 10 to 12 feet high.
" insignis, 2, 3, 4, 5, 6, and 7 feet; all from seed.
" cembra, 3, 4, to 6 feet.
" Canadensis (Hemlock Spruce), 3, 4, and 6 feet.
" morinda, 3, 4, and 6 feet.
" Menziesi, 3, 4, 6, and 8 feet.
" cephalonica, 3 to 4 feet.
" Pinsapo, large and handsome, 3 and 4 feet.
" Nordmaniana, from seed, $1\frac{1}{2}$ foot; a few larger, 2 feet.
" nobilis, stout plants, with perfect heads, about $1\frac{1}{2}$ foot; a few larger specimens, 3 and 4 feet. We hold a fine stock of this beautiful Fir, none of which are grafted.

Thuja Arbor-vitæ, American, 3 to 6 feet. We recommend this plant for hedges.
" Weareana, 3 to 6 feet, one of the few really hardy and most useful evergreens.
" aurea. This is perhaps one of the prettiest plants of the day; it was first sent out from this Nursery, and our stock, for size and beauty, is unsurpassed.

Libocedrus chilensis, $1\frac{1}{2}$, 2, and 3 feet. This is a very distinct and beautiful plant, of recent introduction. Our stock is large and good.

Independent of the foregoing we are very large holders of the most useful Evergreens, Deciduous and Ornamental Trees, and of large size. Priced Catalogues will be forwarded on application, enclosing two postage stamps, which will also include a Descriptive Priced Catalogue of the celebrated collection of American Plants grown at this Nursery.

The Nursery is near the Woking Station, and about an hour's ride from London. A visit is earnestly solicited from all who intend planting during the forthcoming season.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, APRIL 1, 1854.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 14.—1854.] SATURDAY, APRIL 8. [PRICE 6d.

INDEX.

Acacias .... 214 c
Agri. Soc of England .... 226 a
— statistics .... 221 b—226 a
Artists, advice to .... 220 a
Bacon, to cure .... 223 b
Boehmeria nivea .... 218 b
Calendar, horticultural .... 220 b
— agricultural .... 227 a
Cedar of the ancients .... 214 a
China Grass .... 218 b
Chinese Note Book .... 217 c
Crystal Palace grounds .... 219 b
Dyer, Love's Practical, rev. .... 218 c
Food plants, green .... 222 b
Forking machine, rotary .... 225 a
Hemp, Manilla .... 218 b
Horticultural Society .... 218 a
Indigo, Chinese .... 217 c
Ireland, tour in .... 222 a
Labourers, aid to .... 225 c
Leaves, lettered .... 217 a
Leek, new .... 220 a
Leidy's (Dr.), Flora within Living Animals, rev. .... 218 b
Lucuma deliciosum .... 217 a
Manure, salt as .... 224 a
Meteorological abstract .... 217 b
National Flori. Society .... 220 a
Note Book, Chinese .... 217 c
Orchids, news about .... 217 a
Paper, Plantain .... 218 b
Pathology, vegetable .... 214 b
Pigeons, Eaton on .... 226 c
Pink, the .... 219 c
Plants, new .... 219 a
Plaintain cordage .... 218 b
Potato disease .... 213 c
Pork, to cure .... 223 b
Rain gauges .... 214 a
Salt as manure .... 224 a
Sarracenias .... 216 b
Sheep feeding .... 224 c
Snowstorms of January last .... 225 a
Soap mould .... 216 b
Society of Arts .... 226 a
Statistics, agri. .... 221 b—226 a
Steelbow .... 222 a
Tenants, outgoing .... 222 a
Threshing machines .... 226 c
Tree of 10,000 images .... 217 a
Vegetable pathology .... 214 b
Walks, concrete .... 216 c
Weather at Pembroke .... 217 b
Wheat, origin of .... 215 c

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.—In accordance with the wishes of Farmers, Millers, and others interested in the Corn Trade, an Edition is published in time for post every Monday afternoon, containing a Full Report of the Mark Lane and Smithfield Markets of the day

In consequence of the Advertisement Duty having been taken off by the Government, the customary charges for Advertisements in *The Gardeners' Chornicle and Agricultural Gazette* have been reduced. Advertisements appear in both Editions without extra charge.

	£	s.	d.
Space of Four lines and under (body type) ...	0	2	6
Each additional line up to Twenty	0	0	6
Every Five lines beyond	0	2	0
A Column	3	0	0
A Page	8	8	0

Advertisements of Bailiffs and Gardeners out of Place, if not more than Four lines, 1s. 6d. each.—From the Official Stamp Returns published April 5, 1854, it appears that during the three preceding years, 1851, 1852, and 1853, the Stamps supplied to each of the undermentioned Journals gave them an average Publication of—

GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE	6277	St. James's Chronicle ...	2844
Era...	5500	Morning Post	2652
Wesleyan Times ...	5094	Sun	2539
Magnet	4705	Morning Chronicle ...	2361
Examiner...	4694	Britannia...	2329
Mark Lane Express ...	4500	Express	2235
Evening Mail	4488	Leader	2140
Field	4409	Herapath's Journal ...	2066
Morning Herald... ...	4021	John Bull...	2020
Daily News	3910	Globe	1926
Guardian	3904	Weekly News	1709
Economist	3837	United Service Gazette...	1708
British Banner	3798	Railway Times	1641
Record	3736	Atlas	1479
Watchman	3681	Standard	1456
Nonconformist	2987	Naval & Military Gazette	1313
Spectator	2856	Patriot	1304
		Gardener's and Farmer's Journal...	752

OFFICE FOR ADVERTISEMENTS AND COMMUNICATIONS,
5, Upper Wellington Street, Covent Garden, London.

HORTICULTURAL SOCIETY OF LONDON.—Notice is hereby given that the EXHIBITIONS OF FLOWERS AND FRUIT, in the SOCIETY'S GARDEN, in the present season, will take place on the following SATURDAYS, viz: May 13, June 10, and July 8; and that TUESDAY, April 25, is the last day on which the usual privileged Tickets are issued to Fellows of the Society.

ROYAL BOTANIC SOCIETY, REGENT'S PARK.—The days appointed for the EXHIBITIONS of PLANTS, FLOWERS, and FRUIT this season are WEDNESDAYS, May 24, June 21, and July 5; and of AMERICAN PLANTS, MONDAYS, June 12 and 19.

Tickets of Admission can be obtained at the Gardens by orders from Fellows of the Society. Price on or before May 13, 4s.; after that day, 5s.; or on the days of Exhibition, 7s. 6d. each.

The Plants will be arranged on a new plan, similar in form to the American Garden, being placed upon terraces.

SOUTH LONDON SOCIETY OF AMATEUR FLORISTS.

NOTICE TO EXHIBITORS.—In consequence of the unprecedented forwardness of the Season, the AURICULA EXHIBITION will take place on THURSDAY, 20th April, instead of Wednesday, the 26th, at the Horns Tavern, Kennington.

Horns Tavern, April 8. JOHN BUSHELL, W. TRAHAR } Hon. Secs.

GRAND NATIONAL TULIP EXHIBITION FOR 1854.—It will gratify all who are interested in this event, to learn that the Council of the Royal Botanic Society of London have given permission to hold the annual meeting of the GRAND NATIONAL TULIP EXHIBITION for 1854, at the Society's Gardens, in the Regent's Park, in connexion with the Royal Botanic Society's first show, on WEDNESDAY, May 24. Schedules and full particulars will be shortly announced. In the mean time communications are to be sent to CHARLES TURNER, Royal Nursery, Slough.

BRIGHTON FLORICULTURAL AND HORTICULTURAL SOCIETY.—ROYAL PAVILION.—The Annual Summer Exhibition of Plants, Flowers, and Fruits, will be held on WEDNESDAY and THURSDAY, the 28th and 29th June next, on the same grand scale as last year. Upwards of 200 guineas are offered as Prizes. Schedules are now ready, and may be had on application to the Secretary, Mr. E. CARPENTER, 45, Lavender Street. By order of the Committee,

Brighton, April 8. EDWARD CARPENTER.

IPOMEA RUBRO CÆRULEA.

MR. GEORGE ROBERTS begs to make known to the Seed trade that he has still on Sale some of this choice and scarce Seed.—32, Moorgate Street, London

NEW ALSIKE CLOVER.

SUTTON AND SONS can supply genuine new Alsike and other Clover Seeds, at lowest market prices, as per List of Prices just published.—JOHN SUTTON & SONS, Reading, Berks.

LARGE RED ALTRINGHAM CARROT, an excellent sort for Cattle. Price of good new Seed, 1s. 3d. per lb., in quantities of not less than 14 lbs., with Instructions on Cultivation of Carrots and other Root Crops.

JOHN SUTTON AND SONS, Reading, Berks.

GARDEN SEEDS FOR PRESENT SOWING.—Good Seeds of all the best kinds of Lettuces, Broccolies, Cauliflowers, Peas, and other Vegetables, may still be obtained of the undersigned. Priced Lists post free.—Address,

JOHN SUTTON AND SONS, Seed Growers, Reading, Berks.

FINE MANGOLD WURZEL SEED.

LONG RED MANGOLD WURZEL.—Fine new Seed, 10d. per lb., or 70s. per cwt.

JOHN SUTTON AND SONS, Seed Growers, Reading, having a large Stock of the above, are now selling it at the low price here quoted. LARGE YELLOW GLOBE and other sorts, as see Priced List, which may be had in return for two Postage Stamps.

HARDY FLOWER SEEDS POST FREE.

SUTTON'S CHOICE ASSORTMENTS:—

	£	s.	d.
The best 100 sorts, with instructions...	1	1	0
The best 50 sorts ditto	0	10	6
The best 36 sorts ditto	0	7	6
The best 24 sorts ditto	0	5	0

Address, JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

FINE GRASS SEEDS FOR ORNAMENTAL PARKS, LAWNS, &c., *where a fine sward is required,* 1s. 3d. *per lb.,* 3s. *per gallon, and* 20s. *per bushel. Our mixtures for this purpose have given the greatest satisfaction.*

WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

RENDLE'S PERMANENT PASTURE GRASSES *can be obtained from* 24s. *to* 30s. *per acre, according to sorts required. Renovating Grasses* 10s. *per acre, and all the best varieties known at the lowest market price. See Price Current.*

Apply to WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

RENDLE'S PERMANENT PASTURE GRASSES *have always given the greatest satisfaction, and those who want Seed for the present season should consult* RENDLE'S "FARMING PRICE CURRENT AND AGRICULTURAL SEED DIRECTORY," to be obtained from

WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

GENUINE NEW WHITE AND RED CLOVER SEED, COW GRASS, *and the Alsike Hybrid Clover, can be obtained at the lowest market prices from*

WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

NEW ALSIKE CLOVER, Price Ten Guineas per cwt., or in small quantities at 2s. per lb., may be had on application to Mr. H. RAYNBIRD, Basingstoke, Hants. Also New Home-grown ITALIAN RYE-GRASS, of good and genuine Stock, at 30s. to 35s. per quarter.

NEW ROSES FOR 1854.

BENJAMIN R. CANT has now ready for sale, strong plants in pots of all the NEW ROSES, some of which have never before been offered to the public, descriptive Catalogues of which can be had on application.

St. John's Street Nursery, Colchester.

THE NIMROD STRAWBERRY.

LUCOMBE, PINCE, AND Co., respectfully inform the Public that they are now sending out this fine new Strawberry at 3l. per 100. The great superority of the

NIMROD STRAWBERRY

has been acknowledged by many competent judges. Dr. Lindley pronounces it to be "superior to the British Queen, sweeter and richer." See the *Gardeners' Chronicle* of July 23d, 1853, p. 472. Mr. Spencer, of Bowood, a first-rate authority in all that appertains to Horticulture, speaks very highly of it in the same publication, July 30, p. 485. It has also been proved to force exceedingly well.—Exeter Nursery, April 8, 1854.

TO BE SOLD, six finely grown CAMELLIAS, specimens averaging 6 to 9 feet high. Also a fine plant of Acacia armata.—For particulars apply to W. F. B., Box 26, Exeter.

TO BE DISPOSED OF, 100 Bushels of LAING'S PURPLE-TOP SWEDE TURNIP SEED: an excellent Stock, and Transplanted by W. WOODCOCK, Agricultural Seed-grower, Wisbeach.

FIG TREES.—The Advertiser wishes to meet with some of the best kinds and good size, say 3 to 5 feet high, and furnished. He will be obliged to any one having such to dispose of sending particulars of size, kind, price, and whether in or out of pot, to Mr. PERRY, Nurseryman, Banbury.

BEAUTIFUL NEW BEDDING PLANT.
MILLER'S HYBRID MULE PINK.

ROBERT MILLER, Hartshill, Nursery, Newcastle, Staffordshire, offers with confidence the above Pink, colour a bright crimson scarlet, double; grows from 9 to 15 inches high, branches out and forms a little bush, and flowers most abundantly from June to October, and perfectly hardy. See *Gardeners' Chronicle*, Sept. 24, 1853.

DIANTHUS R. M., very pretty, and being dwarf in habit, it will doubtless make a good bedding plant. Price 12s. per doz., package included. The usual discount to the Trade. To be let out the second week in April. Post-office orders from unknown correspondents made payable at Newcastle.

GRASS SEEDS FOR PERMANENT PASTURE.

WHEELER AND SON'S DESCRIPTIVE LIST of GRASS SEEDS will be forwarded free on application.
J. C. WHEELER AND SON, GLOUCESTER.

A FIRST CLASS CATALOGUE OF GERANIUMS, VERBENAS, FUCHSIAS, DAHLIAS, HOLLYHOCKS, ETC.

GEO. SMITH begs to announce that the above is now ready, and will be forwarded in exchange for one postage stamp.—Tollington Nursery, Hornsey Road, Islington.

A. VAN GEERT, NURSERYMAN, Ghent, Belgium, begs to inform amateurs and the trade that he has just published a SUPPLEMENT to his CATALOGUE of PLANTS for the present year, which may be obtained on application to his Agent, Mr. R. SILBERRAD, 5, Harp Lane, Great Tower St., London.

ROBERT M. STARK begs to intimate that his Spring Catalogue of FLORISTS' FLOWERS, BEDDING PLANTS, &c., for the season, is now ready and may be had on application.

Very superior assortment of Imported GERMAN FLOWER-SEEDS, NEW ANNUALS, &c., of which separate Lists may be had.—Edinburgh: Edgehill Nursery, and 145, Princes Street.

UNBLOOMED SEEDLING CALCEOLARIAS.

C. KIMBERLEY has a large stock of the above; the seed was saved from that well-known favourite Kinghorn's Masterpiece, and other splendid kinds, carefully impregnated. The plants are nice and healthy, established in small pots, and may be had at 6s. per dozen, or three dozen for 15s., Hamper included.

Nurseries: Pinley and Stoke, near Coventry.

PERMANENT PASTURE.

R. H. SMITHE, of Eastling, Faversham, Kent, is now prepared to send out his Mixtures of the NATURAL GRASSES, PERENNIAL CLOVERS, &c., to lay down Land to Permanent Pasture, at 25s. per acre, allowing 3 bushels to the acre, carriage free. Mixtures for Lawn, or any other purpose, or the sorts separate. Most of the species of Grass are collected by the Advertiser, and he will bestow the greatest attention in selecting such as shall constitute mixtures specifical to the soil, purpose, &c., of each buyer.

PINUS SABINIANA,
THE GREAT HOOKED CONE PINE OF CALIFORNIA.

PETER LAWSON AND SON, Edinburgh, have just received from San Francisco a small consignment of Seeds of this fine Hardy Pine. Price 2l. 2s. for 100 selected Seeds, free by post. They were gathered last autumn, and are in excellent condition and well grown—the seeds measuring about 1 inch in length. Being perfectly hardy, they may be sown in a dry sheltered situation in the open air.—Edinburgh, April 8.

"WELLINGTONIA GIGANTEA."

MESSRS. VEITCH, of EXETER and CHELSEA, have much pleasure in stating that their Seeds of the above magnificent Tree are vegetating satisfactorily. They therefore hope to be able to send out well established seedling plants during the ensuing summer and autumn. They are now taking orders for them at the following prices:—

For a Single Plant ...	2 guineas	For 8 Plants ...	10 guineas
For 4 Plants	6 guineas	For 12 Plants ...	12 guineas

And all orders will be executed strictly in the rotation in which they are received.—April 8.

WELLINGTONIA GIGANTEA.—Beautiful Lithographed Plates (from a drawing taken in California) of this wonderful Tree may be had, at 7s. 6d. each, of Messrs. VEITCH & SON, Exeter, and Mr. JAMES VEITCH, jun., Exotic Nursery, Chelsea.

The Bark, Wood, Cones and Foliage, which were exhibited on Tuesday week at 21, Regent Street, may be seen at the Exotic Nursery, Chelsea.—April 8.

E. SPARY respectfully announces that he has commenced cutting HOTHOUSE GRAPES in fine condition, and will have a constant supply through the year.

His New Dahlias, Ariel and Glory, with other first-rate sorts, will be ready, in fine plants, on the 1st of May. Catalogues of which, including a variety of Plants ornamental to Greenhouses, Drawing-rooms, and Flower Gardens, may be had on application. Vines, Seeds, &c.—Queen's Graperies, and Western Road, Brighton.

DOUBLE ITALIAN TUBEROSE ROOTS, 4s. per dozen.—The annual importation of the above-named beautiful and fragrant Flower has just been received, and large and well selected Bulbs may be obtained, without disappointment, at A. COBBETT'S Foreign Warehouse, 18, Pall Mall.

N.B. Printed regulations for treatment sent; also, just arrived, very moist and open Parmasan Cheeses.

SUPERB SHOW CARNATIONS, PICOTEES, PINKS, AND PANSIES.

JOHN HOLLAND, Bradshaw Gardens, Middleton near Manchester, is now sending out choice selections of the above, in strong well-rooted plants, package, &c., included.

	£	s.	d.
25 pairs of Show Carnations in 25 different varieties	1	0	0
25 pairs of Picotees do. do. ...	1	0	0
25 pairs of Pinks do. do. ...	0	10	0
25 pairs of fine show Pansies, in 25 distinct varieties...	0	12	0

Auriculas, Alpines, Polyanthuses, &c. Extra fine selected Pansy Seed, 1s. and 2s. per packet. A few packets of Auricula Seed, extra fine, 2s. 6d. per packet. Priced and Descriptive Catalogues are now ready, and may be had for one postage stamp. Post Office orders to be made payable at Middleton, Lancashire.

J. H. begs to refer to his Advertisement in this Paper of March 25th, for names of a portion of his stock of Pansies.

INGRAM'S PRINCE OF WALES STRAWBERRY.—This splendid new Strawberry, now so extensively grown at the Royal Gardens, Frogmore, both for forcing and out-door culture, may now be had of J. AND E. SMALL, at the following reduced prices:—Strong well-rooted Plants, 25s. per 100, or 15s. for 50. This is quite a distinct Strawberry to the Prince of Wales now being sent out by Mr. Cuthill, of Camberwell. Order Ingram's Prince of Wales.

The following new kinds can also be supplied at moderate prices:—Trollope's Victoria, Myatt's Superfine, do. Prolific, Nicholson's Ajax, do. Ruby, and Jackson's Britannia. The usual discount to the trade.—Agents, Messrs. NUTTING & SONS, Seedsmen, 46, Cheapside, London.

GERANIUMS.

BASS AND BROWN

Having this season a very large stock of GERANIUMS, are enabled to offer the following of strong and very fine plants, in 4-inch pots, ready for immediate re-potting, which will yield an abundant bloom. For Descriptive List, see Autumn Catalogue.

BEST NEW VARIETIES OF LAST SEASON.

Any 12 may be selected for 50*s.*, our selection, 44*s.*, or the collection of 19 for 70*s.*

	s. d.		s. d.		s. d.		s. d.
Hoyle's Astrea	5 0	Hoyle's Lagoma	5 0	Foster's Eleanor	3 6	Dobson's Jupiter	3 6
" Albina	3 6	" Leonora	5 0	" Optimum	10 6	" Spot	5 0
" Butterfly	3 6	" Novelty	3 6	" Rachel	5 0	" Vulcan	5 0
" Kulla	3 6	" Portia	5 0	" Queen of May	5 0	Simond's Admiral	3 6
		" Zaria	5 0	Dobson's Harriett	3 6	" Warrior	3 6

Any 12 of the following for 21*s.*, our selection, 18*s.*, or the set of 30 for 45*s.*

Ariadne	Chieftain	Exhibitor	Incomparable	Major Domo	Painter Improved
Ambassador	Commissioner	Flavia	Lavinia	May Queen	Rubens
Arethusa	Exquisite	Gem	Magnet	Nepaulese Prince	Shylock
Ajax	Elise	Generalissimo	Mochanna	Ocellatum	Silk Mercer
Alibi	Enchantress	Herald	Monteith	Prince Arthur	Tyrian Queen

Fine varieties, our selection, 6*s.* and 12*s.* per dozen.

FANCY GERANIUMS.

The following Six choice new varieties of last season for 18*s.*

Ayres' Barrier	Henderson's Lady Downs	Ambrose's Princess Alice Maude
" Darling	Ambrose's Magnum Bonum	Wilmore's Surprise

The following 12 choice varieties for 18*s.*

Caliban	Delicata	Formosissimum	Marion	Princess Royal	Singularity
Captivation	Electra	Gipsy Queen	Miranda	Richard Cobden	Superba

Fine varieties, our selection, 9*s.* and 12*s.* per dozen.

GLOXINIAS.

The following new varieties are chiefly Continental, and very beautiful. The Collection of Nine for 33*s.*

	s. d.		s. d.
Belle Clymene, white, with a large, deep, blue throat, and the entire marbled with blue, very beautiful	3 6	Imperialis, delicate lavender white, with deep purple centre	3 6
Charles Dickens, the best red grown, white throat, beautifully spotted	3 6	Leonie Van Houtte, beautiful rose, with a pure white throat, very distinct and handsome	5 0
Duchess de Brabant, a fine, new, Continental variety	5 0	Princess de Lambelle, a fine variety, figured in the "Flora" of L. Van Houtte	3 6
Dr. Planchon, flowers very erect, rich red, with spotted throat, very handsome	3 6	Wilsoni, pre-eminently majestic above all others, figured in the "Floricultural Cabinet," July, 1853	5 0
Fyfiana grandiflora, very fine	5 0		

Any 12 of the following fine varieties for 25*s.*, with one plant in addition of Achimenes Marie Van Houtte, our selection, 12*s.* to 20*s.* per dozen.

Alba grandiflora	Fyfiana	La Perouse	Marginata	Priestleyana	Tricolor
Argyrostigma	General Baudraud	Labiata	Mrs. Addanson	Pulcherrima	Victoria Regina
Carminata splendens	Grandis	Leopold 1st	Passinghami	Spectabilis	Wortleyana
Frederick Lenning	Hogoveen	Marie Van Houtte	Petoiana		

Descriptions see Spring Catalogue.

ACHIMENES.

	s. d.
CHERITA, fine ultra-marine blue, shaded with red, magnificent	3 6
LOUIS VAN HOUTTE, rich rosy purple, white centre	2 6
MR. APARPAIT, beautiful carmine purple	2 6
SIR TRECHERNE THOMAS, beautiful rosy carmine, very rich	2 6

The following 12 beautiful varieties for 10*s.* (Descriptions, see Spring Catalogue.)

Bœckmani [cærulea	Hilli (or Kewensis)	Kewensis vera	Magnifica purpurea	Multiflora	Fimbriata
Beuchmania hirsuta	Hirsuta cærulea	Longiflora alba	Margaretta	Ghiesbreghtii	Coccinea grandiflora

A FEW NEW PLANTS.

Æschynanthus splendidus ... each	2*s.* 6*d.* to 5*s.* 0*d.*	Gastrolobium Drummondi ... each	7*s.* 6*d.*
Æchmea fulgens	5 0 to 7 6	Gesnera purpurea macrantha	2*s.* 6*d.* to 3 6
Alloplectus Schlimii	15 0	" Leopoldiana	7 6
Aphelandra aurantiaca	1 6 to 2 6	Hexacentris mysorensis	5 0 to 10 6
" micans	3 6 to 5 0	Hoya coriacea	2 6 to 3 6
" grandis	3 6 to 5 0	" campanulata	2 6 to 3 6
" variegata	5 0 to 7 6	" picta	5 0 to 7 6
Berberis Darwini	1 6 to 2 6	" Imperialis	2 6 to 3 6
Begonia miniata	5 0	Ixora Lobbiana	15 0
" Prestoniensis	3 6 to 7 6	Kennedya ovata alba	3 6
Centropogon tovarensis	5 0 to 7 6	Passiflora Comte Nesselrode	2 6
Cissus discolor	5 0 to 7 6	" " Kisseleff	2 6
Cyrtanthera magnifica	2 6	" alata superba	2 6
Fitzroya patagonica	5 0 to 7 6	" cœrulea grandiflora	2 6
Libocedrus chilensis	3 6 to 7 6	Plectranthus concolor picta	2 6
Saxe-Gothæ conspicua	5 0 to 7 6	Rhodolea Championi	21 0
Deutzia gracilis	1 6 to 3 6	Streptocarpus biflorus	2 6 to 3 6
Dracæna nobilis		Tritonia aurea, 24*s.* per doz.	2 6
Echites Harrisi	10 6 to 21 0	Viburnum suspensum	1 6 to 3 6
Franciscea eximia	2 6 to 3 6	Weigela amabilis	3 6 to 5 0
		" lutea	1 6 to 2 6

GREENHOUSE PLANTS.—*List of these and Stove Plants, see Spring Catalogue.*

12 fine and select species and vars., 12*s.*; 50 ditto, 45*s.*; or 25 for 24*s.*; 12 extra choice and select ditto, 25*s.*

STOVE PLANTS.

12 fine and select species and varieties, 18*s.*; 50 ditto, 60*s.*; or 25 for 35*s.*

HERBACEOUS PLANTS.

Heights and Colours, see Autumn Catalogue.

100 distinct and showy vars.	30*s.* 0*d.* or 50 for £0 17*s.* 6*d.*	HOLLYHOCKS, choice vars. ... per doz. 9*s.* to	£1 5*s.* 0*d.*
25 ditto ditto	10 6 or 12 for 0 6 0	DWARF ROCK CISTUS, 24 beautiful vars.	0 15 0
100 superior and new vars.	50 0 or 50 for 1 10 0	" " " 12 ditto	0 7 6
25 ditto ditto	17 6 or 12 for 0 9 0	AZALEA INDICA, 25 superb vars., bushy plants	1 15 0
25 fine vars. best adapted for Rockwork	12*s.* or 12 for 0 7 6	" " 12 ditto ditto	0 18 0

The Autumn and Spring Catalogues free by post for three penny stamps each.

Goods Carriage Free (not under 20*s.*) to all the London termini, and all Stations on the London and Norwich Colchester line.

Plants added gratis with orders of 40*s.* and upwards.

Post-office Orders payable to Bass and Brown, or Stephen Brown, Sudbury Post-office.

SEED & HORTICULTURAL ESTABLISHMENT, SUDBURY, SUFFOLK.

FUCHSIA "TRENTHAM."

COLE and SHARP, Aston Lane Nursery, near Birmingham, have the satisfaction to announce that they are preparing to send out the above noble seedling Fuchsia, which they feel confident, from its colour, habit, and fine character, will be generally regarded as a desideratum, both in the Conservatory and for exhibition purposes. The following critical remarks upon its merits will show the high estimation in which it is held by competent judges.

"Your Fuchsia is a bold and distinct variety, with remarkably broad scarlet sepals, and a fine purple corolla, of good substance and brilliant colour. It may not reflex sufficiently for some parties, but its bold properties will doubtless render it a great favourite."—*Mr. Charles Turner, Royal Nursery, Slough.*

"Your bloom has good broad sepals, and is a stout and well reflexed flower; the foliage is fine. It will prove an addition to its class, or we are mistaken."—*The Midland Florist, October* 1853.

The Censors of the Birmingham and Midland Society for the Promotion of Floriculture, who awarded this Fuchsia a first-class certificate, stated—"The blooms are unusually large, well proportioned, and of good substance, the sepals being of a brilliant scarlet colour, very broad, and gracefully reflexed. The corolla is of a purplish mazarine blue, smooth, and velvety. The foliage is fleshy, large, and handsome."

Plants, 10*s.* 6*d.*, with the usual allowance to the trade. Coloured engravings (mounted) forwarded on receipt of address, accompanied by six postage stamps.

GRASS SEEDS, ETC.

THOMAS GIBBS and CO. (the Seedsmen to the Royal Agricultural Society of England), corner of HALF-MOON STREET, Piccadilly, beg to draw attention to their Grass Seeds for Laying down Land to Permanent Grass. The Seeds which they employ in forming the Mixtures for various soils are well cleaned under their own superintendence.

Mixtures for Permanent Meadows and Pastures
" Parks or Pasturage in sight of Mansions
" Irrigation on Water Meadows
" Renovating Old Swards
" Fine Garden Lawns, Cricket Grounds, &c.
" two or three years' lay.

RYE-GRASS—Italian, very fine sample
" Dickinson's Italian do.
" Pacey's Perennial and Evergreen
" Annual or Common.

CLOVERS—Red, White, and Alsike
" Trefoil, Red Suckling, &c.

CARROTS—Large White Belgian
" Field, Altringham, &c.

MANGOLD WURZEL—Long Red
" Orange or Yellow Globe, and other sorts.

TURNIPS—Swedes, Purple Top, Skirving's, &c.
" Hybrids, Gibbs' Green Top
" Globes, Tankards, &c.

FARM SEEDS of all descriptions.

Priced Lists, Detail Catalogues, and other information can be obtained on application to Thomas Gibbs & Co.

DILCOCK'S BRIDE BROCCOLI.

BAINBRIDGE and HEWISON (late Jas. Edward), have the pleasure of again offering to their friends and the public their DILCOCK'S BRIDE BROCCOLI, at 2*s.* 6*d.* per packet; and while returning their thanks to their numerous patrons of last season, they beg to refer them to the following extract, taken from the *Yorkshireman* newspaper of the 30th of April last, when it was exhibited at York, for the fourth time:—"Mr. Dilcock deservedly obtained all the three prizes for Broccoli with his seedling—the 'Bride.' Taking the season into account, these vegetables were really remarkable specimens." It was equally successful the two previous years.

B. & H. are prepared to send out their Catalogues of Kitchen Garden and Flower Seeds, post free, on application, and also their Catalogue of Plants is now ready, containing Stove, Greenhouse, &c., including many of the newest and choicest of the season. Their Seeds will be of the very best quality, and in the greatest possible variety.

Sold Wholesale by Noble, Cooper, & Bolton, Fleet Street; Charlwood & Cumming, Covent Garden; and by all respectable Seedsmen in town and country.—York Nurseries, April 8.

FIRST CLASS NEW VERBENAS.

GEORGE SMITH, in offering the following, warrants them to give entire satisfaction; having this season raised three times the usual number from seed, and with greater success than usual, has been able to select twelve distinct and beautiful varieties, which G. S. flatters himself cannot fail to please.

CALIBAN—Rosy purple crimson, extra large, smooth on the edge and of fine form, has taken First-class Certificates at the National, Brighton, and North London Floricultural Societies.

CLIMAX—Rosy purple, eye shaded with crimson maroon, extra large, of fine form and extra fine show flower.

ANGELINA—Rosy purple, primrose eye, very large, of fine shape. First-class at the Royal Surrey Gardens.

ELECTRA—Bright lilac, fine conspicuous eye, large, of exquisite form. First-class at the Royal South London and the North London Societies.

ISLINGTON RIVAL—Bright scarlet, eye white, flower large and smooth, a free bloomer. First-class Certificate at the National, Brighton, Royal South London and North London.

NOBLISSIMA—Rosy peach, with conspicuous white eye, truss large, of exquisite form. First-class at the Royal South London, also the North London.

FORGET-ME-NOT—Lavender, with large crimson purple eye, a most conspicuous variety, of fine form, extra large and a profuse bloomer. First-class at the Royal South London, Brighton, and the North London.

TRIUMPH—Scarlet crimson, eye white, surrounded with maroon, form exquisite. First-class at the Royal South London, National, and North London.

QUEEN—Pure white, the eye surrounded with bright cherry, pip extra large and smooth. First-class at the Royal South London and North London.

SCARLET KING—Deep scarlet with white eye, fine habit, a free bloomer, flowers large, extra fine bedder.

MAGNIFICENT—A brilliant puce, of fine form, truss large, very free, surpassing all of its class, either a show or bedding var.

ZARIA—Rich lilac, dark eye, large, of fine form, an extra fine variety.

The Set of 12 for 2*l.* 5*s.*, or 6 for 25*s.*, in strong plants, about the 20th of April.

FUCHSIA "TELEGRAPH."

This splendid variety will be found an acquisition. The Plant is of fine growth and habit; the contrast is greater than in any other dark Fuchsia; the tube and sepals are smooth, the latter thick and broad, of brilliant coral red, well reflexed; corolla deep violet, of good size, and circular; quite equal to and distinct from Glory and Nil Desperandum. Strong Plants about the 20th of April, at 10*s.* 6*d.*; with all the leading varieties of Florists' Flowers. Catalogues forwarded in exchange for one postage stamp.

Tollington Nursery, Hornsey Road, Islington, London.

KNAP HILL NURSERY, WOKING, SURREY.

WATERER and GODFREY, Nephews and Successors to the late Hosea Waterer, respectfully invite the attention of parties engaged in planting to the following list:—

Araucaria imbricata, 2, 3, 4, 5, and 6 feet high, in the open quarters, regularly removed every year, and as robust and handsome as it is possible to get them. We have a large stock.

Cryptomeria japonica, 2, 3, 4, 5, 6 to 8 feet.

Cedrus Deodara, stout handsome plants from seed, in any quantity, and of all heights from 1 to 7 feet. A few splendid specimens 10 to 15 feet; warranted to transplant with perfect safety.

Cedar of Lebanon, 2, 3, 4, 5, 6, 7 to 10 feet. These large Cedars of Lebanon are also very handsome trees.

Cupressus macrocarpa, or Lambertiana, 2, 3, 4, 5, 6, and 8 feet, all from seed.
" Goveniana, 2 to 3 and 4 feet.
" Funebris, 2 and 3 feet.
" thyoides variegata, 2, 3, and 4 feet.

The Variegated White Cedar, a scarce but most beautiful variegated plant, seldom seen except at Elvaston Castle. We hold a large quantity.

Juniperus Bedfordiana, fine plants, 3, 4, and 5 feet.
" Chinese, 2, 3, 4, 5, 6, 8, and 10 feet.
" repandus, 3, 4, 5, to 8 feet.
" Upright Irish, 3, 4, 5, 6, 7, and 8 feet; perfect columns, and, except at Elvaston, unequalled.
" Virginiana, the Red Cedar, 4, 5, 6, and 8 feet.

Taxodium sempervirens, 2, 3, 4, 5, and 7 feet.

Yew, common, 3, 4, 5, to 8 feet high.
" Irish, 3, 4, 5, to 10 feet. A splendid lot, all being trimmed to one stem; it adds much to their appearance and value.
" Gold striped, 1, 2, and 3 feet
" do. worked on the Common, with fine heads, 4, 5, 6, and 7 feet high; very handsome.
" elegantissima (new striped) standards. The golden Yews are very ornamental, and we have a large quantity of fine plants.
" Dovaston, or Weeping Yew, fine standards.

Pinus Douglasi, 3, 4, 5 and 7 feet; a few magnificent plants 10 to 12 feet high.
" insignis, 2, 3, 4, 5, 6, and 7 feet; all from seed.
" cembra, 3, 4, to 6 feet.
" Canadensis (Hemlock Spruce), 3, 4, and 6 feet.
" morinda, 3, 4, and 6 feet.
" Menziesi, 3, 4, 6, and 8 feet.
" cephalonica, 3 to 4 feet.
" Pinsapo, large and handsome, 3 and 4 feet.
" Nordmaniana, from seed, 1½ foot; a few larger, 2 feet.
" nobilis, stout plants, with perfect heads, about 1½ foot; a few larger specimens, 3 and 4 feet. We hold a fine stock of this beautiful Fir, none of which are grafted.

Thuja Arbor-vitæ, American, 3 to 6 feet. We recommend this plant for hedges.
" Weareana, 3 to 6 feet, one of the few really hardy and most useful evergreens.
" aurea. This is perhaps one of the prettiest plants of the day; it was first sent out from this Nursery, and our stock, for size and beauty, is unsurpassed.

Libocedrus chilensis, 1½, 2, and 3 feet. This is a very distinct and beautiful plant, of recent introduction. Our stock is large and good.

Independent of the foregoing we are very large holders of the most useful Evergreens, Deciduous and Ornamental Trees, and of large size. Priced Catalogues will be forwarded on application, enclosing two postage stamps, which will also include a Descriptive Priced Catalogue of the celebrated collection of American Plants grown at this Nursery.

The Nursery is near the Woking Station, and about an hour's ride from London. A visit is earnestly solicited from all who intend planting during the forthcoming season.

NEW FARM SEEDS, GROWTH OF 1853.

WILLIAM E. RENDLE AND CO., SEED MERCHANTS, Plymouth, *have a very large and well selected Stock of all kinds of SEEDS required in Agriculture, grown by Farmers of the first respectability and experience in Devonshire, Somerset, Gloucester, Kent, Essex, Sussex, and several other counties.*

CARRIAGE OF ALL PARCELS ABOVE £1 FREE, SEE PRICE CURRENT.

The following are the prices of a few of the leading articles :—
- Italian Rye-grass, 6s. to 7s. per lb.
- Pacey's Perennial Rye-grass, 6s. per lb.
- North Devon Evergreen Rye-grass, 5s. to 6s. per lb.
- Rough Cocksfoot Grass, 5s. per lb.
- White and Red Clovers, 7d., 8d., 9d., 10d. per lb.
- Swede Turnips, all the best varieties, 1s., 1s. 4d., to 1s. 6d. per lb.
- Scotch Turnips, 1s., 1s. 4d. to 1s. 6d. per lb.
- Summer Turnips, 8d. to 1s. per lb.
- Large White Belgian Carrots, 2s. per lb.
- Other varieties of Carrots, 1s. 6d. per lb.
- Large Red Mangold Wurzel, 1s. per lb.
- Yellow Globe ditto, 1s. 4d. per lb.

All other kinds of Agricultural Seeds at fair remunerative prices. For full particulars see RENDLE'S "FARMING PRICE CURRENT AND AGRICULTURAL SEED DIRECTORY," to be obtained from the subscribers in return for six postage stamps.

WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth. ESTABLISHED 1786.

CANADIAN SEEDS.

COCKBURN & BROWN, NURSERYMEN, SEEDSMEN, and FLORISTS, Montreal, solicit orders for the seed of Balsam and Spruced Firs, Canadian Larch or Tamasac, Red and White Pine, American Oaks, Sumachs, &c. We particularly refer to the beautiful Hemlock Spruce, any quantity of the seed of which we will undertake to furnish. They can be sent from Montreal either by steam or sailing ship. Samples can be had from Mr. JOHN BROWN, 44, Norfolk Street, Glasgow.—Orders for next Autumn delivery to be sent not later than middle of August. We can furnish all sorts of Canadian Plants.—April 8, 1854.

CALCEOLARIAS FOR BEDDING.—The following four very handsome varieties will be found the gems of the season for bedding purposes, at 12s. per dozen.

CRIMSON KING (Henderson), deep crimson, very dark and rich, and does not fade; habit dwarf and robust, flowers large, and shape good.

MAGNIFICENT (Henderson), rich crimson, with yellow crown; a large, fine-formed, and very splendid flower, quite distinct from anything yet out.

GOLD CHAIN, fine golden yellow, of great substance and fine habit, with very stout foot-stalks.

GOLD CAP (Garraway), rich dark maroon, the upper division of the flower deep gold colour, the flowers large and of fine compact habit.

Also the following older favourites for bedding :—

BEAUTY OF MONTREAL, fine bright crimson, dwarf habit, 6s. per dozen.

WELLINGTON HERO, rich deep golden yellow, 6s. per dozen.

SULTAN, large rich crimson, 6s. per dozen.

MRS. BEECHER STOWE, fine canary, 9s. per dozen.

SULPHUREA SPLENDENS, fine yellow, dwf. habit, 6s. per doz.

Calceolarias (Seedlings not yet flowered) raised from "Benary's" superb spotted varieties, 5s. per dozen, post free.

GERANIUM—Boule de Neige, a pure white-flowering horse-shoe leaved variety, of compact habit, producing large trusses of well formed flowers, 2s. 6d. each.
- " Kingsbury Pet, a bright rosy salmon, with dark horse-shoe leaf and of the same habit as the foregoing, 2s. 6d. each.
- " Flower of the Day, 6s. to 9s. per dozen.
- " Crimson Ivy-leaved; this fine variety sent out by Messrs. Standish & Noble, 5s. each. (Splendid for bedding).

HOLLYHOCKS—Walden Gem, Mr. Charles Baron, Magnum Bonum, Commander-in-Chief, Venosa rubra, Formosa, and Lilac Perfection, 12s. per dozen.

PANSIES.—The following choice kinds, at 10s. per dozen varieties:—Alba Superba, Androcles, Blanche, Cæsar, Calysto, Caroline, Commander-in-Chief, Crystal Palace, Drusilla, Duchess of Rutland, Elegant, Emma, Euphemia, Glory, Helen, Heroine, Indian Chief, Isabella, Junius, Lady Carrington, Lady Franklin, Lady Harding, Lord Jeffery, Marchioness of Lothian, Masterpiece, Miriam, Miss Talbot, Mrs. Beck, Penelope, Polyphemus, Post Captain, Prince Arthur, Princess, Queen of England, Rubens, Sambo, Smolensko, The Rajah, Uttoxeter Hero, Viceroy, Yellow Prince.

Pentstemon speciosum. This fine old species, in strong plants, 18s. per dozen.

Delphinium Mooreanum. This little known variety, raised in this neighbourhood, is undoubtedly a very fine and distinct plant, and worthy to be ranked with Barlowi and Grandiflorum; its colour is somewhat intermediate between the two. Strong plants, 1s. 6d. each.

Delphinium Barlowi, fine, 9s. per dozen.

Daisies, new Belgian, in 50 fine varieties, 4s. per dozen.

Dielytra spectabilis, 9s. per dozen.

Funkia grandiflora, 2s. 6d. each.

Rockets, double white, 3s. per dozen; purple, 4s. per dozen; crimson, 1s. 6d. each.

Oxalis rosea, one of our prettiest hardy herbaceous plants, and nearly always in flower, 6s. per dozen.

Pæonies, herbaceous, in 25 fine varieties, 12s. per dozen.

Phloxes, in numerous fine varieties, 6s. to 9s. per dozen.

Potentilla M'Nabiana, and other choice kinds, 6s. per dozen.

Primrose, double white, 4s. per dozen; double yellow, 4s. per dozen; double purple, 4s. per dozen; double lilac, 3s. per dozen; double crimson, 12s. per dozen.

Silene maritima plena, fine double white, 9s. per dozen.

Statice latifolia, strong, 9s. per dozen; maritima rosea, very pretty and distinct, 6s. per dozen.

Choice selection of Herbaceous Plants, 25s. per 100.

Lilium colchicum may be described as a yellow L. lancifolium, as it resembles this fine species in shape of flower; strong bulbs, 7s. 6d. each; L. lancifolium album, flowering bulbs, 9s. per dozen; L. rubrum, flowering bulbs, 18s. per dozen.

CHRYSANTHEMUMS, comprising the very best of the new kinds of large flowering and Pompon varieties, in strong plants, 6s. to 9s. per dozen.

TREE CARNATIONS, of the choicest kinds, by name, 18s. per dozen.

CARNATIONS AND PICOTEES.—Beautiful selections from their superb and extensive collections, at 18s., 24s., and 30s. per dozen pairs; fine mixed, for borders, 9s. per dozen pairs. True Old Clove Carnation, 12s. per dozen pairs.

PINKS.—Extra fine sorts by name, 9s. to 12s. per dozen pairs.

30 packets of Choice Flower Seeds, per post free, for 5s.

☞ Less quantities than those named above supplied at the same prices. Orders of 2l. and upwards are delivered Carriage Free to London or Hull, or to any Railway Station within 150 miles of the Nursery. Catalogues will be forwarded free on application.

ANEMONE SEED, saved from selected roots, 10s. per lb. The usual discount to the trade.

YOUELL & Co., Royal Nursery, Great Yarmouth.

BASS AND BROWN'S SEED AND PLANT LIST free by post for three penny stamps.

COLLECTIONS OF VEGETABLE SEEDS, comprising the best in cultivation, including several new sorts of first-rate quality, 3l., 2l., 25s., and 15s.

For a few choice new Vegetables, see *Gardeners' Chronicle* of Feb. 13th and 27th, advertised.

FLOWER SEEDS—BEST ASSORTMENTS, free by post. The Catalogue gives colours, heights, months of flowering, hardiness, duration, and much descriptive information of time of sowing, and other treatment.

	s.	d.
100 varieties select showy Annuals, including the newest	15	0
50 vars. do., 8s. 6d.: 30 vars., 5s. 6d.: 20 vars.	4	0
20 varieties best Dwarf Annuals, in large packets, for filling beds on lawns, 7s. 6d.: 12 do.	5	0
20 vars. choice Greenhouse Annuals, including the new, 7s. 6d.; 12 varieties, do.	5	0
20 vars. choice Greenhouse Perennials, including fine and new	10	6
12 varieties ditto ditto	7	6
20 vars. Hardy Biennials and Perennials, including very choice and new, 7s. 6d.; 12 varieties do.	5	0

The following we beg strongly to recommend as saved from collections of first-class flowers, in packets as follows :—

	s.	d.
Calceolaria, very choice, 1s.; extra superb, from fine selected flowers	2	6
Cineraria, very choice, 1s.; extra new and choice from our superb collection	2	6
Fuchsia, new and choice, from our superb collection ...	1	0
Geranium, extra choice and new, from our superb collection	2	6
" Scarlet, from our choice collection	0	6
" Fancies, from our beautiful collection of best vars.	1	6
Gloxinia, choice, 6d.; extra, from our superb collection ...	2	6
Petunia, new and choice, from our superb collection ...	1	0
Verbena, very choice, 1s.; extra, from our superb collection of new varieties	2	6
Antirrhinum, choice, 6d.; from new of our superb collection	1	0
Carnation and Picotee, from collection of 400 vars	2	6
Gladiolus, fine mixed early, 6d.; from choice named of our superb collection	1	0
Iris, English vars. fine, 6d.; best of our superb collection...	2	6
Pansy, extra choice, from a first-rate collection	1	0
Potentilla, very choice, 1s.; extra, from our very beautiful collection	2	6
Ranunculus, from our superior collection	2	6
Auricula, from a first-rate collection	1	0

A FEW VERY CHOICE NEW FLOWER SEEDS.

	s.	d.
Leptosiphon luteum, fine orange colour; very beautiful, packets, 1s. and	2	6
Nemesia bicolor, white and blue, very showy and attractive half-hardy annual, height 9 inches, beautiful for massing	0	6
Calceolaria chelidinoides, ex., clear bright yellow, fine for massing on lawns; the mouth being closed, it is not injured by wet	1	0
Lobelia Limburgensis, a new perennial variety from Prussia, extra	1	0
Portulacca aurantiaca, new orange, 1s.; nova rosea ...	1	0
Sweet William, very choice striped French	0	6

For a large number of new Flower Seeds, see advertisement in the *Gardeners' Chronicle* of Feb. 13th and 27th.

CHOICE IMPORTED SEEDS.

	s.	d.
24 superb varieties Dwarf German Stocks, 4s.; 12 varieties	2	6
Mixed, in 40 superb varieties, per packet ... 6d. to	1	0
Choice new brimstone	0	6
*Fine new French, straw colour	1	0
10 Superb varieties, new large flowering	2	6
18 " Wallflower leaved, or Prussian ...	3	6
New white Wallflower leaved, very dwarf and fine, per packet ... ... 6d. to	1	0
6 Superb varieties Brompton Stocks	1	6
7 " Emperor Stocks, lasting more than 4 years, and blooming 2 or 3 times a year	2	0
New White Emperor, very choice, per packet	1	0
12 Superb varieties Globe-flowering Aster	2	0
12 " Pyramidal Aster	2	0
12 Very fine French Pæony-flowering varieties; these are extraordinarily fine	5	0
Mixed do., per packet	1	0
6 Superb varieties Zinnia elegans	2	0

And other fine Imported Seeds. See Catalogue.

☞ Goods CARRIAGE FREE with orders of 20s. and upwards to London, Ipswich, Norwich, or any Station on the Line.

Remittances are requested with orders from unknown correspondents. Post-office Orders to be made payable to BASS & BROWN, or to STEPHEN BROWN.—The Autumn and Spring Catalogues supplied free by post for three penny stamps each, the cost of which may be deducted from orders sent.

BASS & BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk. ESTABLISHED ABOUT HALF A CENTURY.

ALEXANDER PONTEY, NURSERYMAN AND SEEDSMAN, Plymouth, has an extensive and very fine Stock of the choicest varieties of the following BEDDING PLANTS, from 4s. to 5s. per dozen :—

Verbenas, best new sorts of 1853	Salvias, sorts
Petunias, sorts	Calceolarias, sorts
Phlox Drummondi	Neirembergias
Cupheas, sorts	Ageratums
Scarlet Geraniums, sorts	Lobelias, sorts
Heliotropiums, sorts	Lantanas, sorts
Anagallis, sorts	Groundsels, double purple
	Alonsoa

GERANIUMS, with Scarlet Flowers and beautifully Variegated Leaves, at 12s. per dozen, viz.:—Flower of the Day, Mountain of Light, and Bridal Bouquet.

IVY LEAVED GERANIUMS, with Scarlet Flowers, 12s. per dozen.

DAHLIAS, 21s. per dozen :—Alice, Attraction, Annie Neville, Annie Salter, Brilliant, Exquisite, Gloire de Paris, Harlequin, Lilac King, Lilliput, Lord Byron, Lord Lyndhurst, Motley, Mrs. James, Queen Victoria, Scarlet King, Sir John Franklyn, Wonderful, Zebra.

The following at 9s. per dozen :—Bathonia, Beeswing, Beauty of Kent, Box, Caractacus, Captain Warner, Cardinal, Duke of Wellington, General Fauchier, General Negrier, John Edward, Louis de France, Magnificent (Edwards'), Magnificent (Keyne's), Madame Gaubert, Princess Louisa, Queen of England, Queen of Primroses.

Older Varieties, 6s. per dozen.

Also, AGRICULTURAL AND GARDEN SEEDS of every description.

Price Lists of Plants and Seeds sent post free, on application.

J. COLE begs respectfully to inform the Floricultural Public that he has some very fine Shrubby Bedding CALCEOLARIAS to offer them, namely, PRINCE OF ORANGE and ERECTUM. The former a dark orange with a large umbel of flowers nearly as large as "Kentish Hero;" the latter an orange with a scarlet tinge, of erect habit, similar to "Viscosissima," with much larger flowers. J. C. flatters himself they will give the greatest satisfaction to all purchasers, being entirely shrubby and free from that coarseness of foliage many of the varieties evince. "Prince of Orange" is of dwarf habit, with small green glossy foliage, and never infested with green-fly, which is a great acquisition in the Calceolaria. J. C. offers them at 5s. per plant. The usual discount when three are taken. Flowers of them were submitted to some of the leading London nurserymen, who wished to have plants when sent out. A remittance solicited from unknown correspondents.

Keyfield Nursery, St. Albans, Herts.

SUPERB LATE WHITE BROCCOLI—"EMPEROR."

EDMUND PHILIP DIXON having purchased the entire stock of the above Broccoli of Messrs. Elletson, Market Gardeners, Thorngumbald, near Hull, begs to announce that he is prepared to send it out in sealed packets at 2s. 6d. each. This Broccoli has been raised by the Messrs. Elletsons, the raisers of the Mammoth, sent out some time ago, who state that the EMPEROR, if sown at the same time, will come into use before it. It is of very dwarf growth, perfectly hardy, with heads from 15lbs. to 20lbs. weight; keeps its colour, and stands firm three weeks after it is ready to cut. A noble flower, and commands the best price of any other in the Hull market, where it is well known, and will be a great acquisition to the market gardeners around London, as well as those who wish for a first-rate Broccoli.

May be had of Messrs. NOBLE, COOPER, & BOLTON, 152, Fleet Street; and Messrs. HURST & M'MULLEN, 6, Leadenhall Street, London; also of the Advertiser, 57, Queen Street, Hull.

NEW TURNIP SEED.

TO THE TRADE.—NEW TURNIP SEED.—*The Subscribers having a few Bushels more than they require for their regular Trade, can offer the following varieties, grown by Farmers of the highest respectability, and warranted all* NEAT *as delivered by them.*

GREEN-TOP SCOTCH YELLOW TURNIP.
PURPLE-TOP ABERDEEN "
GREEN GLOBE "
WHITE GLOBE "

The have also a few hundred weight of the following Mangold Wurzel, &c., also saved by farmers :—

YELLOW GLOBE MANGOLD WURZEL.
LONG RED " "
RED GLOBE " "
WHITE BELGIAN CARROT.

As the quantity is small, an early application is requested. Wholesale Catalogues can be had on application in exchange for one penny stamp.

WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

RENDLE'S PRICE CURRENT.—Opinion of the Editor of the *Illustrated London News*. See *Illustrated London News*, March 18, 1854.

"This is a scientific catalogue of the Seeds of Garden Plants by Mr. Rendle, of Plymouth, the eminent Nurseryman. The Pamphlet will be very suggestive to all who are fond of a garden, as it contains not only a classified list of every necessary or ornamental Garden Seed, but also the fullest description of the plants, and the mode of cultivating them. We rarely find so much information in so small a compass."

STANDISH AND NOBLE, NURSERYMEN, SEEDSMEN, &c., Bagshot, Surrey, are now prepared to receive orders for the following new and beautiful varieties of AZALEAS, which will be ready for delivery in June next. The Advertisers can recommend them with the greatest confidence, as superior to any others of their kind.

AZALEA BEALII.—This very distinct variety was introduced by them from China. The flowers, which are of first-rate shape, are quite unique, being striped, like a Carnation, with rich vermilion on a pure white ground. It is of good habit, fine in foliage, and a most abundant bloomer; and although decidedly in the first rank as a greenhouse plant, it is quite hardy enough for the open border. Each, 21s.

AZALEA CRISPIFLORA, a species differing much from any other known Azalea, having a character entirely its own. No other kind approaches it in compactness of habit, and its foliage is very fine, abundant, and evergreen. The flowers are very large, and the edges of the petals have the appearance of being irregularly *gaufred*, like a lady's frill; the colour is a rich rose lake. From the fact of its blooming very late—much later than any other Azalea—it will be doubly valuable for many purposes. Each 21s.

EUGENIA UGNI, a very fine new Myrtaceous plant, recently received by the Subscribers from Mr. Bridges, of Valparaiso, will prove hardy in most parts of Great Britain. It is figured in the January number of Curtis's "Botanical Magazine," and Sir William Hooker describes it as forming a charming Evergreen Shrub, the flowers and leaves of which are fragrant. This peculiarity alone would be sufficient to ensure its general cultivation, independent of its merits as an ornamental shrub of easy culture. Small established plants 21s. each. No discount unless three are ordered.

LAPAGERIA ROSEA; young plants in a growing state, 31s. 6d. each.

AZALEA INDICA (Beauté de l'Europe).—A new variegated variety of great merit—received a First Class Certificate at the National Floricultural Society, also at the Exhibition of the Society of Horticulture, of the Seine, held at Paris in March, 1853. It is one of the most abundant flowering Azaleas in cultivation. Price 7s. 6d.

BORONIA DRUMMONDI.—In the style of B. pinnata; colour, beautiful rosy crimson. Unlike other species of this genera, that now offered is of extremely easy culture, elegant habit, and will undoubtedly prove the finest greenhouse plant suitable for exhibition purposes that has been introduced to this country since the Subscribers offered for the first time Pimelea spectabilis. Price 7s. 6d. each. From the last three Plants usual discount will be allowed to the trade.

HUGH LOW & CO., Clapton Nursery, near London.

TURNIP SEEDS.—The Subscribers are now selling from a large and carefully selected Stock, the following varieties of TURNIP SEEDS. Prices are moderate.

SWEDES.—Skirving's Purple Top. On strong clays or other heavy soils no variety of Swede will produce so bulky a crop as this.—Lothian Purple Top: an established well-known sort; rounder shape than Skirving's, and does not grow so much to "long necks."—Hardy Green Top. There is nothing to equal this variety for mellow or peaty soils; it is less liable to rot than any other Swede, and it possesses excellent feeding properties, being crisp, juicy, and sweet.—Laing's Improved. A beautiful shaped bulb, and on rich loamy soils yields a good crop, but is not equal in hardiness to any of the preceding.

YELLOWS.—Green Top, or Aberdeen Bullock—Improved Stock. It is questionable if there be a better Yellow Turnip than this, provided it be grown from a properly selected stock; it has, however, above all others, in too many instances, disappointed the farmer, in consequence of the spurious character it has assumed through a bad stock of seed, which, instead of giving a heavy crop of large well shaped bulbs, with moderate sized tops, produce only stunted small bulbs with a profusion of large coarse tops.—Improved Purple Top Aberdeen—Skirving's variety. A very superior sort, yielding a heavy crop, but is not considered equal in hardiness to the preceding.—Dale's Hybrid. This variety yields a very bulky crop, and is a first-rate kind for early winter consumption. From the bulbs growing considerably out of the ground it is well adapted for sheep feeding.—Improved Early. A superior sort; bulbs large and finely shaped, with small top and tap root. Unless wanted for early autumn use it should not be sown till the end of June, and sowing may be continued up to the middle of July, with the certainty of having a good crop.

WHITES.—Large Globe, Green Globe (the stocks of these are extra good)—Red Globe.

Priced Lists of the above, with every other description of Farm Seeds, may be had on application, post free.

All parcels of Seeds are delivered carriage free to the principal Railway Stations and Shipping Ports throughout the kingdom.

W. DRUMMOND & SONS, Seedsmen, Stirling, N. B.

TRUE BLUE ORKNEY POTATOES.

DIRECT FROM ORKNEY, MAY BE HAD FROM

WM. HAMILTON, SEEDSMAN, &c., 41, Margaret Street, Cavendish Square, London, price 3s. per peck, or 10s. per bushel.

The qualities of the above Potato are most excellent in every respect. It boils mealy, and has a fine flavour, is very hardy and most prolific, and of good size in almost any soil.

W. H. had a few of these Potatoes two years ago, and from the trial he has given them, and the very flattering accounts he has had of them from *all* the correspondents who were supplied with them, he can particularly recommend them as a most valuable Potato; AND HE WARRANTS THEM FROM ORKNEY, THUS SECURING ANY BENEFICIAL RESULT WHICH MAY ACCRUE FROM A COMPLETE CHANGE OF SOIL.

W. H. begs to inform those who may favour him with their orders for VEGETABLE OR FLOWER SEEDS, that he will ensure their being supplied of the best quality; as also BEDDING PLANTS strong, and well rooted. Descriptive Catalogues withprices, maybe had on application.

Canvas for shading Frames, Greenhouses, &c., 4d. per square yard.

FLORAL NURSERY, ACTON ROAD, TURNHAM GREEN.

JNO. WESTWOOD has now on Sale, at the above Nursery, upwards of 60,000 FINE HEALTHY GERANIUMS AND FANCY GERANIUMS, including almost every variety, grown at very reduced prices; also, an immense Stock of Verbenas, Heliotropes, Petunias, Scarlet and other Bedding Geraniums, comprising all the newest and best sorts. The trade will be treated liberally.—April 8.

POMPONE CHRYSANTHEMUMS, SPLENDID MIMULUS, AND SEEDLING HERBACEOUS CALCEOLARIAS.

JOHN WESTWOOD, having a large Stock of all the leading Pompone Chrysanthemums (including those recommended by Mr. Robinson in the "Florist" of January last), is prepared to send out well established plants, at 9s. per dozen. Also several thousands of Mimulus, raised from the seed of the finest plants in the trade of 1853, at 9s. and 12s. per dozen; and an equally large Stock of Seedling Herbaceous Calceolarias from the seed of plants, raised by the Rev. E. Simmer, finer than any hitherto exhibited.

J. W. can also supply any quantity of first-rate Bedding Plants, including Shrubby Calceolarias, of all the best kinds, of which he has on hand upwards of 20,000.

A General Catalogue may now be had on application.

The Floral Nursery, Acton Road, Turnham Green.

SEEDS TO IRELAND.—*Plymouth is admirably situated for supplying our sister country with some English Seeds. The Subscribers can refer to some of the leading families in Ireland, who have for many years obtained the whole of their supplies of Garden and Farm Seeds. Seeds delivered free to many of the Irish ports. See Price Current.*

WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

ERICA VENTRICOSA SUPERBA, bushy plants, in 48s and 60s, finely set with flower-buds. We particularly recommend these to the trade, at 60s. and 75s. per 100.

ERICAS.—Fine bushy blooming plants, in large 48s, of the following sorts, at 12s. per dozen varieties, viz.:—*Aggregata, Bowei, *Coventryana, *Cavendishi, colorans, *densa, *daphnoidea, echiflora, *exsurgens coccinea, *hyacinthoides, *Linnæoides nova, lævis alba, mirabilis, mammosa, metulæflora bicolor, *nigrita, *ovata, pyriformis, perspicua nana, *rubens, rubra calyx, trossula, transparens nova, Westcoti, *Wilmorea superba, viridiflora, *ventricosa breviflora, *v. Bothwelli, *v. coruscans, v. carnea, v. dependens coccinea, *v. fasciculata rosea, *v. f. longiflora, *v. f. superba, *v. hirsuta, *v. perspicuoides, *v. superba, *v. tenuiflora, *v. tumida.

ERICAS, in small and large 60s, nice bushy plants, many of them set for flower. All the above named marked with an asterisk, as well as the following, at 9s. per dozen varieties, viz.:—Denticulata moschata, elata, hyemalis, hybrida, scabriuscula, Sindryana, trossula rubra, umbellata, verticillata, ventricosa, cintra rubra, v. densa carnea, gracilis.

EPACRIS.—The following choice varieties, in 48s, well set for bloom, at 12s. per doz. varieties, viz.:—Ardentissima, Atleeana, campanulata alba, c. grandiflora, c. maxima, Copelandica, carnea, coruscans, densiflora incarnata, elegantissima, formosa, grandiflora, impressa, imp. alba, imp. magna, lineatus magnifica, miniata, nivalis, onosmæflora, pulchella major, purpurescens, sanguinea, Tauntoniensis, the Bride, variabilis.

TETRATHECA ERICIFOLIA.—A neat evergreen low bushy shrub, of glossy green foliage, flowering profusely at the end of every branch, flowers the size of a sixpence, delicately perfumed, of a light shade of lilac. Small, 1s. 6d. each.

YOUELL & Co., Royal Nursery, Great Yarmouth.

PAGE AND CO., SEED MERCHANTS TO THE AGRI-HORTICULTURAL SOCIETY OF BOMBAY.

SEEDS FOR EXPORTATION (free on board) AND HOME USE (carriage paid).

		£	s.	d.
No. 1.	A choice collection of Vegetable Seeds, suited to the climate (case included)	£5	0	0
No. 2.	Do. Do. in smaller proportions	2	10	0
No. 3.	Do. Do. Do.	1	0	0
No. 1.	A selection of the most beautiful and showy Annuals (case included)	1	5	0
No. 2.	Do. Do. Do. ...	0	15	0
No. 3.	Do. Do. Do. ...	0	10	6

General Priced Catalogues free upon application.

In addition to our great experience, the port of Southampton affords us unrivalled facility for the almost daily shipment of SEEDS to all parts of the world; and as no greater test of genuineness and vitality than a long transit by sea can be applied to Seeds, we yield priority to none in supplying such for home growth as cannot fail to prove most satisfactory.

All parties desirous of taking or sending Seeds to the Peninsula, Mediterranean, East and West Indies, Australia, Brazil, Cape of Good Hope, China, America, &c., are particularly requested to state their wishes to us, whereby the annoyance and disappointment which too frequently happens by placing their orders in the hands of inexperienced persons will be prevented. We are continually receiving the warmest thanks of our consignees; only a few days since, a gentleman writes from Melbourne, "Your Seeds have proved excellent. The selection of Peas has afforded us the greatest delicacy in Australia." From Capt. H. J. Barr, Secretary to the Horticultural Society of Bombay: "*Gentlemen,—In acknowledging the receipt of your last supply of Vegetable and Flower Seeds, which reached me on the 8th of June by the overland route, I have the honour to inform you that they have all turned out so fresh and good that the demands on our Society have increased so much that I must now cancel my former order, and beg you to supply me according to the list now furnished.*"

PAGE & CO.'S BLIGHT COMPOSITION should be in the hands of all Plant and Fruit Cultivators. For testimonials see back leaf of *Gardeners' Chronicle*, March 11.

Oxford Street (adjoining Radley's Hotel, 20 yards from the Railway and Docks), Southampton.

ENCAUSTIC TILE PAVEMENTS.

MAW & CO., of Benthall Works, Broseley, Shropshire, send Post Free their PATTERN BOOK and FURNISH DESIGNS (with estimates) in this beautiful and durable production to any given plans of Churches, Entrance Halls, Passages, Conservatories, Verandahs, &c.—Specimens at 11, Aldersgate Street, London.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES, GREENHOUSES, DWELLINGS, ETC.

ESTABLISHED MORE THAN ONE HUNDRED YEARS.

THOMAS MILLINGTON requests attention to his present prices of SHEET GLASS in 100 feet boxes.

		s.	d.
Squares	6 by 4 and 6½ by 4½; 7 by 5 and 7½ by 5½; 8 by 6 and 8½ by 6½	13	6
"	9 by 7 and 9½ by 7½; 10 by 8 to 12½ by 9½	16	3
"	12 by 10 to 24 by 14	19	0

Orchard House Squares on Mr. Rivers's approved plan, to whom I have sold some thousands of feet:—20 inches by 12, 20 by 13, 20 by 14, 20 by 15, 20½ by 12½, 20½ by 13½, 20½ by 14½, at 19s. per 100 feet.

200 feet cases at 42s., and 300 feet case 63s., in large sheets.

Boxes charged 1s. extra per 100 feet, and the same allowed if returned free of all charge.

HARTLEY'S PATENT ROUGH PLATE GLASS, Fern Shades, Striking Glasses, Milk-pans, Bee Glasses, Cucumber Tubes, Sheet and Rough Plate Glass Tiles, Wasp Traps; Plate, Patent Plate, Crown and Sheet Window Glass, in every thickness and quality, and Ornamental Glass, plain and coloured; pure white Shades for Ornaments, Crystal Glass for Pictures.

Warehouse, 87, Bishopsgate Street Without—same side as Eastern Counties Railway.

FOREIGN GLASS, 16 ounces to the foot, of good quality, in boxes of 100 feet each, suitable for Horticultural purposes. Boxes included.

15s. per box.	16s. per box.	17s. per box.
12 ins. by 10 ins.	18 ins. by 14 ins.	24 ins. by 18 ins.
14 ins. " 10 ins.	19 ins. " 15 ins.	23 ins. " 19 ins.
15 ins. " 11 ins.	18 ins. " 16 ins.	24 ins. " 20 ins.
14 ins. " 12 ins.	20 ins. " 16 ins.	25 ins. " 21 ins.
16 ins. " 12 ins.	21 ins. " 17 ins.	26 ins. " 22 ins.
16 ins. " 13 ins.	20 ins. " 18 ins.	27 ins. " 22 ins.
17 ins. " 14 ins.	22 ins. " 18 ins.	

Also other descriptions of Glass at proportionate prices.

White Lead, Oils, Turps, Colours, &c.

G. FARMILOE & SON, 118, St. John Street, West Smithfield.

JAMES PHILLIPS AND CO. beg to call attention to their present reduced prices of Glass Milk Pans, Propagating Glasses, &c. &c.

GLASS MILK PANS, packed in cases containing 12.

12 inches diameter ...	12s.	0d.	22 inches diameter ...	42s.	0d.
14 " " ...	18	0	24 " " ...	48	0
16 " " ...	21	0	26 " " ...	60	0
18 " " ...	30	0	Cases 2s. each extra, returnable at full price.		
20 " " ...	36	0			

PROPAGATING GLASSES.—Per dozen.

2 inches diameter ...	2s.	0d.	12 inches diameter ...	18s.	0d.
3 " " ...	2	6	13 " " ...	20	0
4 " " ...	3	0	14 " " ...	24	0
5 " " ...	4	0	15 " " ...	30	0
6 " " ...	5	0	16 " " ...	36	0
7 " " ...	6	0	17 " " ...	42	0
8 " " ...	7	0	18 " " ...	48	0
9 " " ...	8	0	19 " " ...	60	0
10 " " ...	10	0	20 " " ...	72	0
11 " " ...	12	0			

CUCUMBER GLASSES,—Each.

24 inches long	2s.	0d.	16 inches long	1s.	4d.
22 "	1	10	14 "	1	2
20 "	1	8	12 "	1	0
18 "	1	6	Made to any length.		

FERN SHADES.—Each.

6 in. diam., with stands	2s.	9d.	12 in. diam., with stands	8s.	1d.
7 " "	3	6	13 " "	9	6
8 " "	4	1	14 " "	12	6
9 " "	4	9	15 " "	16	9
10 " "	5	9	16 " "	21	10
11 " "	6	8			

Bee Glasses, Lactometers, Lord Camoys' Milk Syphons, Tiles and Slates, Wasp Traps; Plate, Crown, and Ornamental Glass, Shades for Ornaments, and every article in the trade.

HARTLEY'S PATENT ROUGH PLATE GLASS, for Conservatories, Public Buildings, Manufactories, Skylights, &c.

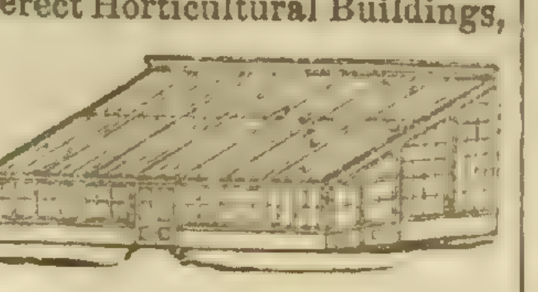
JAMES PHILLIPS AND CO., Horticultural Glass Warehouse, 116, Bishopsgate Street Without, London.

HORTICULTURE IN ALL ITS BRANCHES.

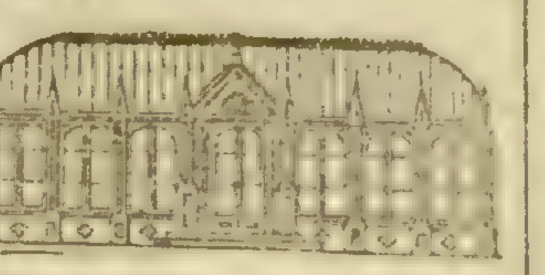
J. WEEKS & Co., King's Road, Chelsea,

HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.



The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.



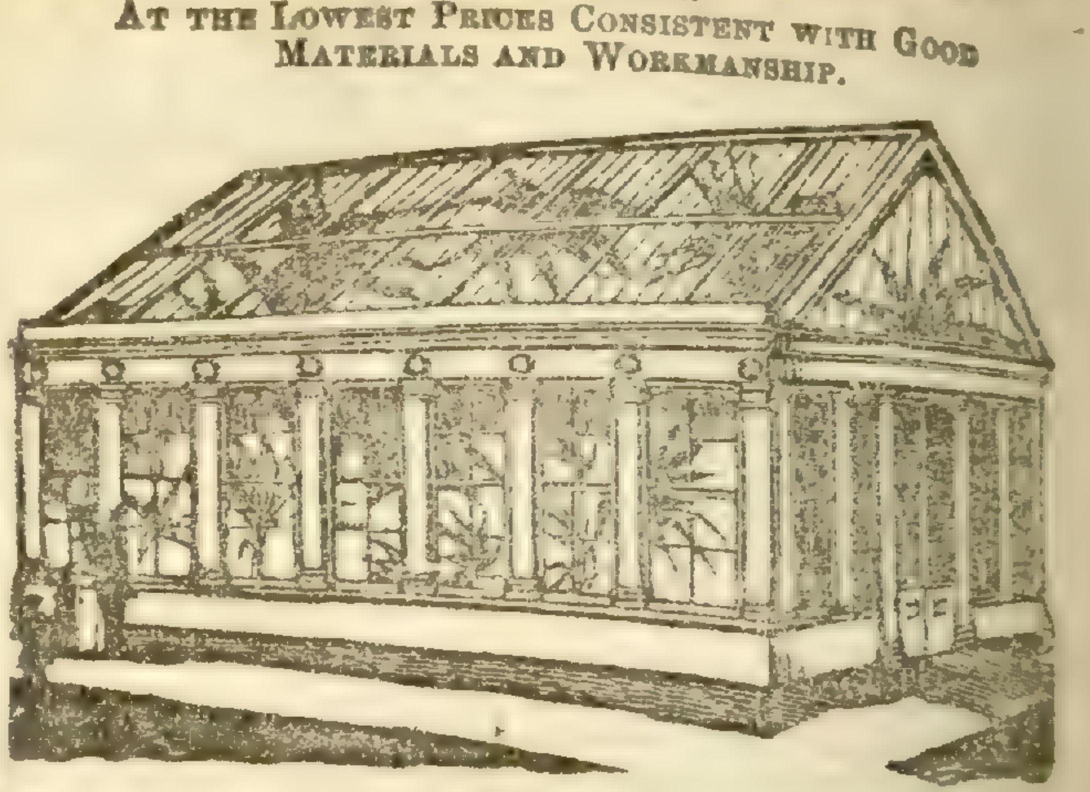
The splendid collections of Stove and Greenhouse Plants, are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. WEEKS & Co., King's Road, Chelsea, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



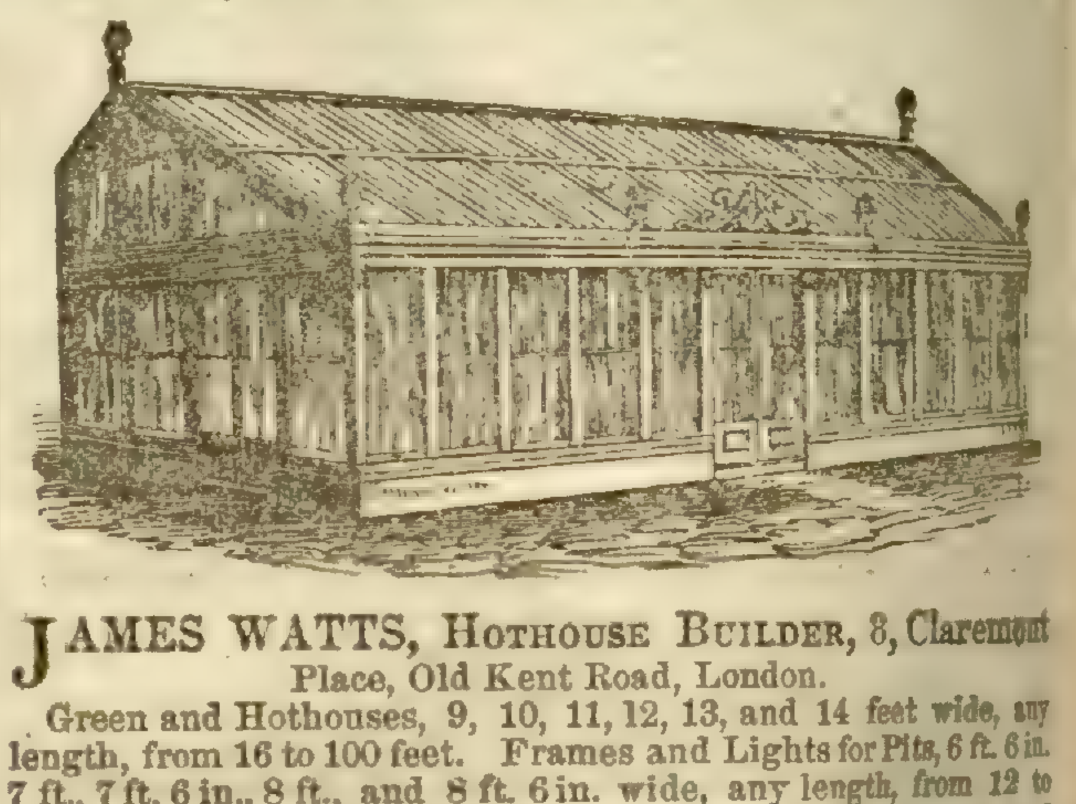
GRAY AND ORMSON, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

GREEN AND HOTHOUSES made by machinery at J. LEWIS'S HORTICULTURAL WORKS, Stamford Hill, Middlesex. Warranted of best materials; being made by steam-power, they are put together in a superior manner; one trial will prove these Buildings to be the cheapest and best made in England. 1½ in. Greenhouse lights at 3½d. per foot; 2 in. at 4½d. per foot. Lists of Prices by enclosing two postage stamps.

HOTHOUSES, CONSERVATORIES, FRAMES & LIGHTS, FOR PITS, CUCUMBER & MELON BOXES & LIGHTS.



JAMES WATTS, HOTHOUSE BUILDER, 8, Claremont Place, Old Kent Road, London.

Green and Hothouses, 9, 10, 11, 12, 13, and 14 feet wide, any length, from 16 to 100 feet. Frames and Lights for Pits, 6 ft. 6 in. 7 ft., 7 ft. 6 in., 8 ft., and 8 ft. 6 in. wide, any length, from 12 to 100 feet. Upwards of 200 Cucumber and Melon Boxes and Lights, from 4 ft. by 3 to 10 ft. 6 in. by 5 ft. 6 in., kept ready glazed with stout sheet glass, painted four times, complete, ready for immediate use, all made of best material, packed and sent to all parts of the kingdom.—Reference may be had to the Nobility, Gentry, and the Trade, in most of the counties in England.

BY HER MAJESTY'S ROYAL LETTERS PATENT

E. DENCH, PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

PATENT HOTHOUSES and excellent Glass at 1s. 3d. per foot super., which are superior to all others for price with quality, and if known would supersede all others. (See Appendix, in "Book of the Garden," by Mr. M'Intosh.) A Range of Houses and Hot Water Apparatus, was erected by E. D. for E. L. Betts, Esq., Preston Hall, Kent. Mr. J. Frost, head gardener, has shown their efficiency by their produce at the Royal Botanic Gardens, Regent's Park, June 8, and Chiswick, June 11. The editor of the *Gardeners' Chronicle* says: "Beautiful examples of Black Hamburgh, large both in bunch and berry, and as black as Sloes, were furnished by Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall, Kent; these well deserved the first prize which was awarded them."—*Gardeners' Chronicle*, June 18th, 1853. The Grapes were considered the best shown at Regent's Park during the season, and the Houses are as superior for the growth of everything else in horticulture, which has been fully proved, and they have been extensively erected for the nobility and gentry in all parts of the kingdom.

GLAZING WITHOUT PUTTY.—Iron and Glass alone. E. D. has Roofed the Public Baths and Washhouses, Endell Street, on this principle, and others are in hand. Patent Sashes for Peach Walls, Pits, &c., 8d. per foot super. Heating by Hot-water, on the most practical principles, and all the best materials used. Printed Price List sent on application.

BEEHIVES.

NEIGHBOUR'S IMPROVED COTTAGE BEE-HIVE, as originally introduced by GEORGE NEIGHBOUR & SONS, with all the recent improvements, glasses, thermometer, &c., price 35s. securely packed for the country.

This unique hive has met with universal commendation, and may be worked with safety, humanity, and profit, by the most timid: its arrangements are so perfect, that the honey may be taken at any time of the gathering season without at all injuring the bees, the produce being of crystal purity. The public are hereby cautioned against a piracy of this Beehive.

Early applications, addressed to GEO. NEIGHBOUR & SONS, 127, High Holborn, or 149, Regent Street, London, will receive prompt attention. Their newly arranged Catalogue of other improved Beehives, with Drawings and Prices, sent on receipt of two stamps.

SUTTON'S PERMANENT GRASS SEEDS,

Price 24s. to 30s. per Acre.

GENTLEMEN intending to lay down LAND to PERMANENT PASTURE, or for one or two years lay, are recommended to communicate with us, stating the nature of the soil and situation, that we may advise as to sorts of Grass Seeds most suitable. Having had many years' experience in laying down Land to Permanent Pasture in almost every part of the kingdom, we can confidently undertake to supply the sorts of Seeds best adapted to the land to be laid down.

EXTRACTS FROM LETTERS TO MESSRS. SUTTON.

It may appear superfluous that we should publish anything in the way of testimonial; we will, however, quote the following from among many other letters now before us:—

From Mr. Dandeswell, Steward to R. B. Sheridan, Esq., Frampton Court, October 22, 1853.

"The Grass Seeds have turned out uncommonly well this season, and we have some very fine crops of Turnips, Swedes, and Mangold Wurzel."

From the Rev. Joseph Gibbs, Clifton Hampton, Nov. 25, 1852.

"The Pasture made with your seed is every year improving, and getting more Clover in it, which is more than I expected, as the land hereabouts is not calculated to grow good natural Grass."

From Professor Lindley, Horticultural Society, 21, *Regent Street, London, November* 9, 1853.

"We have already made trial of your Grass Seeds, and it is only justice to say that they have proved the best we have sown for many years."

From the Rev. J. Lawson Sisson, Edingthorpe Rectory, North Walsham, November 2, 1852.

"I have one piece of land, sown last May with your Permanent Grass Seeds, and no one can possibly tell it from an old meadow, save in the absence of weeds. I have had a great deal of feed from it also."

From William A. Commerell, Esq., Strood Park, Nov. 13, 1852.

"I beg to forward a cheque for the Grass Seeds supplied by you, and am glad to be able to bear witness to their quality, having found them so very superior to what I have generally obtained."

From Mark Philips, Esq., Snitterfield, Stratford-on-Avon, November 16, 1852.

"The Permanent Grass Seeds supplied me last spring are remarkably strong and healthy."

The Rev. Joshua Bennett, Caverson Parsonage.

"In less than three months it has presented a most luxuriant herbage, forming a striking contrast to the self-sown turf around it."

From P. Pusey, Esq., Pusey, February 11, 1850.

"I was particularly pleased with your Grass Seeds, which I employed for laying down fresh broke land. It became a close, fine sward, by August."

From the Rev. A. Huxtable, November 19, 1852.

"Mr. Huxtable has the pleasure of acquainting Messrs. SUTTON that their Grass Seeds of 1851 have turned out admirably."

From the Rev. Mr. Wingfield, Gulval Vicarage, Penzance, November 15, 1852.

"My pasture laid down with seeds from you in March, 1851, is in a very luxuriant state, and in every way satisfactory. The Clover Seed also, sent during the present year, have grown admirably."

From R. Tull, Esq., Crookham House, near Newbury, November 19, 1852.

"The Grass Seeds sent in the spring to sow for a pasture grew remarkably well, and the present appearance of the pasture is most satisfactory."

From N. Manby Power, Esq., the Hill Court, Ross, Herefordshire, April 2, 1853.

"The Grass Seed sent has answered very well, and is almost a sward already."

From Rev. J. W. Knipe, Woodford Rectory, Dorset, February 16, 1853.

"The Grass Seed I had in the spring has given very great satisfaction."

From Rev. Robert Hawthorn, Stapleford Lodge, near Cambridge, October 31, 1853.

"I was very much pleased with the Grass Seeds which you sent me; the Grass sprang up quickly and covered the field well."

From the Rev. Jerome Clapp, Odem House, Appledore, Devon.

"Allow me to say that the Grass Seeds you sent me have fully realised my highest expectations."

From Mr. C. Judd, Gardener to his Grace the Archbishop of Canterbury.

"The Grass Seeds received from you succeeded admirably, and, although sown late, the growth was such that we were enabled to mow the Churchyard in the autumn, and it has now the appearance of an established lawn of some years' standing; and my employer, the Archbishop of Canterbury, is quite satisfied with its appearance."

SUTTON & SONS, Seed Growers, Reading, Berks, *having made the cultivation of Natural and Artificial Grasses the subject of their especial attention for many years, have much satisfaction in receiving (besides very many others), the above communications quite unsolicited.*

Clovers and Grasses for One, Two, or Three Years' Lay, 14s., 18s., and 22s. per Acre.

A Priced List of Mangold Wurzel, Turnips, and other Agricultural Seeds may be had post free on application, addressed

JOHN SUTTON & SONS, SEED GROWERS, READING, BERKS.

CAPE HEATHS.

W. J. EPPS begs to call attention to his extensive and rare Collection of Heaths, which are in the finest condition possible; very bushy and well formed for specimens in 3, 4, and 6-inch pots, consisting of all the best varieties, such as Aristata ampullacea, tricolor, jasminiflora, ventricosa, Massoni, Webbiana, obbata, &c., &c., 12s., 18s., and 21s. per doz. A Collection of 100 varieties, 5l., carriage paid to London. A liberal allowance to the Trade, provided a quantity be taken. All the new and best kinds of Azaleas, Stove and Greenhouse Plants, Fuchsias, Dahlias, Verbenas, and Roses, equally moderate.

W. J. E. has about 200 young specimens of Heath, &c., to part with in 8, 11, and 20-inch pots. Also a Collection of very beautiful Orchids. Lists sent on application.

Nurseries, Maidstone and Ashford.

MAY'S PARAGON CABBAGE.

THE Subscriber, in offering the above for the first time, guarantees it to be the finest Cabbage in existence; of dwarf habit; has never been known to run; attains a large size (having been grown to the great weight of 28 lbs.); of a most beautiful green, and boils tender as Asparagus, which it continues to do throughout the season; in flavour is as far superior to the ordinary Cabbages of the day as they are to the old Drumhead Scotch. In ½ oz. packets, 1s. each, free by post. The usual allowance to the trade.

H. M. begs to inform the public that he is unable to supply any more of his MAGNUM BONUM LETTUCE, as the stock was only small and is completely sold out.

Address all orders and communications to HENRY MAY, the Hope Nurseries, near Bedale, Yorkshire.

TO DAHLIA GROWERS.—EDWIN HARRISON (PERRY'S), is the most brilliant crimson Dahlia ever raised; build and form of General Fauchier, and more constant than any crimson Dahlia in cultivation. No grower can be without it; as an ornamental plant it has no rival. It has obtained one first-class Certificate and three first Prizes as the best crimson Dahlia, beating all other varieties. Plants in May, 10s. 6d. each.

ALEXANDER POPE (PERRY'S), is a constant well-formed Dahlia, with very high centre; colour pale lemon. It has obtained one first-class Certificate and two first Prizes as the best yellow or buff Dahlia. The *Gardeners' Chronicle* says—"We like the flower much for its novelty." Plants in May, 7s. 6d.

Early orders are solicited, as the stock is small.—HENRY POPE, Gib Heath, near Birmingham.

BALSAM SEED. — Mr. GLENNY has none but mixtures left, but they contain all the varieties; 60 seeds for 13 stamps.

DAHLIA SEED.—A few sealed packets of 100 seeds from 12 first-rate flowers, grown by themselves, 30 stamps. Mr. GLENNY engages to procure all the subjects recommended in his Almanac, if they are to be had at all; letters only attended to.—420, Strand.

FLOWER SEEDS.—We have selected out of our large collection of Flower Seeds the most beautiful and showy varieties, each sort distinct in colour, and calculated to produce a fine effect when planted out in beds or groups in the flower border; and we have had each variety distinctly marked with its Botanical and English name, height, time of flowering, colour of the flower, manner of growing, whether erect or trailing, &c., the time it should be sown, and other valuable hints as to its cultivation. In selecting these varieties, we have been careful to exclude all which are shy bloomers, or have an insignificant appearance, so that the collections will comprise only those which are really showy and handsome, and which we believe would prove to the entire satisfaction of any lady or gentleman who might be disposed to order them. The German Stocks and Asters especially are most superb. The Collections will be sent free by post to any part of the kingdom at the following prices:—

Twenty extra fine varieties, all distinct and beautiful, 5s.
Fifty ditto ditto 10s. 6d.

Payment can be made either by Postage Stamps or Post Office Order, made payable to J. C. WHEELER AND SONS, Nurserymen, Gloucester.

SEED POTATOES.

JOSEPH WILSON, SEED POTATO MERCHANT, Ipswich, Suffolk, begs to inform Seedsmen and Growers that he has on hand the following Stocks, which are not excelled by any other now in the market:—

Early Ashleaf	10s. 0d.	per bushel
" Shaws	7 0	"
Thompson's Seedlings, new stock, an improvement of the Shaw ...	8 0	"
Fortyfold	7 0	"
Pink Kidney	7 0	"

The Advertiser would remind correspondents that all letters of inquiry should contain a stamped envelope for reply. Orders for 6 bushels and upwards will be carriage paid to London, and no order whatever will be attended to unless accompanied with a remittance.

SELECT FLOWER SEEDS.—POST FREE.

Marigolds, finest double dark French.	Aster, Reine Marguerite (the best variety in cultivation).
Do. do. striped Unique French.	Saponaria calabrica, var multiflora.
Do. do. true dwarf French.	Eschscholtzia californica alba.
Do. do. new dark Pigmy.	Nemesia versicolor.
Do. do. new yellow Pigmy.	Cenia turbinata.
Do. do. double orange African.	Mignonette, new large variety.
Do. do. double lemon African.	

The above MARIGOLDS are well known in the locality, having obtained First Class Awards at several Provincial Exhibitions; all own saved from carefully selected double flowers, and can be recommended with confidence. In packets of about 1000 seeds each. The Marigolds separately, 3s.; the whole collection of 13 packets, 5s.

Collections of all the most approved Annuals (own growth) 60 packets, 10s.; 30 do. 5s.; 15 do. 2s. 6d., in descriptive and cultural labels. Catalogues may be had on application.

JOHN SLATER, The Nurseries, Malton, Yorkshire.

NEW AND CHOICE PANSIES.

National (Turner)	Marchioness of Bath.
France Cycole.	Adela (Turner.)
Constance (Turner)	Albion (Thomson.)
Sir J. Paxton (do.)	Almanzor (do.)
Queen of England (do.)	Criterion (do.)
Alfred the Great (do.)	Caroline (do.)
Mr. Beck (do.)	Sultan (Hooper)
Sir P. Sydney (do.)	Lucidum (do.)
Mrs. Beck (do.)	Commander-in-Chief.
Polyphemus (Thomson)	Lady Walsingham.
Elegant (do.)	Elegantissima.
Eva (do.)	Blanche.

The above set, 20s. Post-office orders payable at Guildford. Good named varieties, 6s. per dozen.

HART AND NICKLIN, Guildford, Surrey.

FIRST-CLASS NEW VERBENAS, FUCHSIAS, GERANIUMS, ROSES, PANSIES, &c.

CHARLES H. GARDINER offers the undernamed, in strong plants, at the following prices, hamper and packing included.

VERBENA JESSIE, large, white, with purple centre, extra large truss, fine form, good for bedding or exhibition; strong plants, 5s. each. Choice and new kinds of 1853, 9s. per dozen.

FUCHSIAS.—Selections from the following choice and new kinds, strong plants, 12s. per dozen:—Glory, Incomparable, King Charming, Model, Dr. Lindley, England's Glory, Beauty of Clapton, Premier, Commodore, Nil desperandum, Duchess of Lancaster, Ariel, Mrs. Patterson, Perfection, Lady Franklin, Lady Cavendish.

BEDDING GERANIUMS.—Hendersonii, Boule de Neige, White Unique, Lilac ditto, Shrubland Pet, Bagshot Park, Mrs. Rickett's—fine scarlet with white eye, very dark horse-shoe leaf—strong plants, 9s. per dozen.

PANSIES.—Choice and best kinds, 9s. per dozen.

TEA ROSES.—Strong plants in pots, of the best kinds, 12s. per dozen.—Fant Nursery, Maidstone.

RENDLE'S IMPROVED SWEDE TURNIP.—*The Stock of this excellent Swede has been grown for us this season by R. H. Watson, Esq., Dorsley, near Totnes. It is a most hardy and valuable variety. Price* 1s. 6d. *per lb. For further particulars and testimonials of its excellence see* "FARMING PRICE CURRENT," to be procured from

WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

MORTON'S YELLOW GLOBE MANGOLD WURZEL, *saved by Thomas Bennett, Esq., Gloucester, from the Stock originally grown by J. C. Morton, Esq., the Editor of the Agricultural Gazette.*

Seed of this most excellent variety can now be obtained from WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth, who have purchased the whole of the Stock.

NORTH DEVON EVERGREEN RYE GRASS.—*This Grass, which is held in great celebrity in the West of England, should be introduced into every mixture—for* PERMANENT PASTURE.

It is a very hardy Grass, and remains evergreen throughout the most severe winter. It forms a fine bottom, and is much liked by cattle. The true sort can be had from

WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

Price from 5s. to 6s. per bushel, or 4d. per lb.

This Grass can be recommended with the greatest confidence.

HUGH LOW AND CO. would invite inspection of their large and healthy stock of SOFT-WOODED PLANTS, suitable for Flower Garden decoration, amongst which they would more especially enumerate the under-named. The plants are all established in small pots well adapted for packing. Prices moderate, and purchasers of large quantities will be treated with great liberality. Calceolarias, shrubby and herbaceous; Coleus Blumeii, variegated foliage; Ageratum cœlestinum and variegatum; Fuchsias in all the leading varieties; Verbenas, do.; Chrysanthemums, do.; Phloxes, do. Scarlet and variegated Geraniums; Lantanas in many varieties; Pentstemons, do.; Petunias, do.; Lophospermums, do.; Maurandyas, do.; Mimulus, do.; Lobelias (tall and dwarf), do.; Antirrhinums, do.; Heliotropes, do.; Salvias, do. Double Crimson Rocket, Pentstemon purpureum hybridum, superior to all other varieties of P. gentianoides; Cheiranthus Delileanus; Pyrethrum grandiflorum plenum.—Clapton Nursery, London.

NEW FUCHSIAS OF 1854, raised by Mr. Batten, who sent out Fuchsia Clapton Hero, which gave universal satisfaction.

MR. CHARLES PALMER, scarlet corolla, white tube, broad inverted sepals, fine habit; 7s. 6d.

GRANDISSIMA, deep claret corolla, long white tube, good habit, 7s. 6d.

ADMIRAL, light crimson corolla, light tube, and a free bloomer, 7s. 6d.

Oxalis, new species from Chili, very large, bright rose-coloured flowers, and an abundant bloomer, 30s. per dozen.

Tropæolum azureum, large sound roots, 30s. per dozen.
" tricolorum " " 15s. "
" brachyceras " " 15s. "

The usual discount to the Trade.

HUGH LOW AND CO., Clapton Nursery, London.

PAGE AND CO.'S

BLIGHT COMPOSITION should be in the hands of all Plant and Fruit Cultivators. 4s. per gallon, sufficient to make four. For testimonials see back leaf *Gardeners' Chronicle*, March 11, 1854.

GARDEN AND AGRICULTURAL SEEDS, first quality, and lowest market price.

Oxford Street (adjoining Radley's Hotel, 20 yards from the Railway and Docks), Southampton.

The Gardeners' Chronicle.

SATURDAY, APRIL 8, 1854.

THE Honourable GRANTLEY F. BERKELEY, brother of Earl FITZHARDINGE, acquaints the wo ld* that he has found out what ails the POTATO; and, to use his own impressive words, he has, "by a series of annual experiments, established the mode of culture that perfects its cure." The Potato has been attacked by a fever; that is the whole secret; it caught it from "guano or foreign manures;" the symptoms were aggravated by "an attempt to impose on the public a manufacture sold for, and in imitation of, guano;" added to which, if we take into account "all sorts of chemical inventions," "we need not open a wider door to conjecture as to what new disease, through exhalation, might or might not have been engendered." There is really no escape from Mr. GRANTLEY BERKELEY's conviction that the disease is a *feverish epidemic.* His reasoning is conclusive.

That point established, the next object was to cure the feverish epidemic. At first the noble experimentalist "followed up the entomological idea," but succeeded in realising nothing beyond "*a remarkable hint.*" We don't quite see the connection between the hint and the grand discovery—but that is immaterial—a discovery was made. This consisted in finding out that Potatoes without manure are more free from disease than those which are "enriched." So, in order to abate the fever, manure was sparingly applied in a form "easily soluble to the earth;" this was done, we are told, "to rally, as it were, the pulses of nature"—that is, we presume, the pulses of the Potato. By strict attention to this process, we are assured that one pound sterling was netted off the Potato ground. The noble author's figures are not quite so clear as his philosophy; but we understand him to say that, in making out a profit of 20s. an acre, he does not reckon manure, because it costs him nothing; nor does he consider

* The Potato Disease, its origin, nature, and cure; in a Letter to the Earl of DERBY. By the Hon. G. F. BERKELEY. LONGMANS.

that any labour should be included in the account, except additional labour and horse hire.

Let us hope that these discoveries will be appreciated, and that the world will be sensible of the inestimable value of noble authorship. We are at least sure that those who had the honour to preside over Mr. Grantley Berkeley's education will contemplate his discoveries, his erudition, and his philosophical spirit with that pride which all tutors must feel when a distinguished student stands revealed as a still more distinguished man.

Some months since attention was drawn in our columns to an observation by Mr. Lawes of Rothamsted, that the small rain gauges in use among meteorological observers do not indicate the amount of rain which really falls upon a given area; but a considerably smaller amount. We have now before us the following results, obtained by this excellent experimentalist during an entire year, and they entirely confirm his anticipations. The same conclusion has, we understand, been arrived at in the Paris Observatory.

Rain obtained at Rothamsted from a large gauge having an area of 43½ feet=1-1000 of an acre, and from one of the ordinary size.

	Actual weight of Rain from large gauge.		Inches calculated from weight in large gauge.	Inches of Rain from small gauge.	Large gauge exceeds small.	No. of Days Rain by large gauge.	No. of Days Rain by small gauge.
	lbs.	ozs.					
February	867	9	1.6261	0.824	0.7841	18	12
March ..	537	12	2.3739	1.665	0.7089	21	9
April ...	678	10	2.9892	2.465	0.5242	23	18
May	879	11	1.6764	1.360	0.3164	17	9
June	769	2	3.3996	3.075	0.3246	23	12
July	1006	6	4.4925	4.140	0.3525	22	18
August ...	673	9	2.9740	2.605	0.3690	14	10
Septem....	455	2	2.0114	1.655	0.3564	23	12
October..	827	14	3.6556	2.995	0.6606	26	22
Novem....	464	7	2.0545	1.655	0.5965	26	12
December	92	4	0.4089	0.180	0.2289	10	4
January	456	0	2.0153	1.645	0.3703	23	12
Total......	6708	6	29.6744	24.282	5.3924	249	150

Hence it appears that the indications by the small gauge are not only more than 5¼ inches too low in one year, but that even the number of rainy days is not correctly given, for the large gauge indicates 249, and the small gauge only 150.

We refrain for the present from making any remarks upon this subject: but we shall not fail to return to it on some future occasion.

In a former article on the Cedar of the Ancients, it was shown that the term was employed in a general sense, and not restricted to a single species, much, indeed, as the term is used in the present day, since it includes the Cedar of Lebanon and the pencil Cedar of the new world, as well as other trees which have nothing to do with the Coniferæ; usually from some general resemblance in their wood to what are now considered to be the characteristics of Cedar wood. Indeed, we might say that it was a very general practice among the ancients to apply the names of plants and drugs in a general rather than in a specific sense, as in the case of Kedros and Cedrus; so under the name of Hellebore they included the root of the plant now called Helleborus officinalis, while their white Hellebore was Veratrum album, the roots of both plants being very similar in properties. Their lesser Centaury, again, was one of the Gentianeæ, and their greater Centaury one of the Compositæ. Under the term Cedrus both Pines and Junipers were included, and probably sometimes the Cypress also. Indeed the earlier botanists treated of Pines under the head of Cedrus conifera, and of Junipers under Cedrus baccifera. The ancients were, however, well acquainted with the properties of their several woods, that of the Pines being used for shipbuilding, and the trees known to yield resin. The Cypress was distinguished as an evergreen, for its long life, and for its incorruptible wood. The statue of Jupiter in the Capitol, and the doors of the Temple of Diana, at Ephesus, were both made of Cypress wood. The former after 600, and the latter after 400 years, were said to have displayed no symptoms of decay. In the east it is planted in Mahommedan cemeteries, and probably for the above reason is called "the tree of life." The Juniper woods seem to have been more frequently referred to by the name of Cedar, and used for some domestic purpose, as well as burnt on their altars, when sacrificing to their gods. The berries were thrown on funeral piles, to protect the departing spirit from evil influences.

Having obtained these general results, we may proceed to ascertain which is the *Cedar wood*, and which the *Cedar tree* of scripture. From the confidence with which some references are made, it might be inferred that in this there could be no difficulty. Yet, if we refer to those who have written expressly on the subject, we find great uncertainty respecting the meaning of the words *Æres* or *Eres*, and *Berosh*, which are translated *Cedar* and *Fir* in the authorised version of the scriptures. Celsius, for instance, considers that the first is a general term for the Pine tribe, and that the latter indicates what we call Cedar of Lebanon; while Rosenmuller, and others, conceive that this tree is referred to under the name Eres, and that Berosh signifies the Cypress. But, it would rather appear that the term *Eres* is used in a general sense, like Cedrus, and *Berosh* may not be more specific. In the first place, the word Æres or Eres seems to be the same as the Arabic *Aruz* or *Arus* and *Orus*, which in Arabic works is given as a synonyme of *Abhul* or the Juniper. Niebuhr says that near Aleppo it refers to a Fir tree, while near Mount Lebanon we hear of its being applied to the Cedar of Lebanon. In Alerce, again, which is evidently a corruption of *al-arus*, or *the* Pine tree, we have it applied to Callitris quadrivalvis, or the Cedar of Mount Atlas, of which the wood was lately shown to be of such excellent quality, and which has been found to have been used in the woodwork of the roof of the mosque, now the cathedral of Cordova.

In the scriptures, wherever we find any natural product mentioned, we may be quite sure that in the localities named something is to be found having the properties and applicable to the uses required for the elucidation of the several passages, and often, indeed, with great similarity of name among the Arabs of the present day. Thus, if we take the Cape plant, the *Asuph* of the Arabs, to be the *esof* or hyssop of scripture, we find it both in Lower Egypt and in the deserts of Arabia, likewise near Jerusalem, and also growing on a wall. So, when the Israelites, while wandering in the desert, are directed to burn *eres* (translated Cedar wood) with hyssop and wood dyed in scarlet, it is evident that they must have been able to obtain some kind of Cedar wood as well as the hyssop. This they might easily have done if they applied the term to the Juniper, growing on the rocky mountains of Sinai, where they could not have obtained the wood of the Cedar of Lebanon. At a later period, as in several passages of Kings and of Chronicles, *eres* (translated *Cedar*) is frequently mentioned. We read of the Cedar trees out of Lebanon, and the uses to which the timber was applied, but nothing so distinctive as to enable us to say that only the Cedar of Lebanon, or the Cypress, or the sharp-leaved Juniper were intended, to the exclusion of the others, for all are found on Mount Lebanon; all were formerly much employed, and all were probably more abundant in ancient times. Perhaps, also, some of the wood of the Alerce might have been obtained by the Phœnicians from Africa and sent with the Cedar from Lebanon. But as the wood of the Cedar of Lebanon is sufficiently good for many purposes, there is no reason why it should not have been included with the others, though not to their exclusion, and may thus have obtained a character for its wood which was due to the others. But it certainly seems to be alone alluded to in Ezekiel ch. xxxi., "Behold the Assyrian was a Cedar in Lebanon, with fair branches, and with a shadowy shroud, and of a high stature, and his top was among the thick boughs."

VEGETABLE PATHOLOGY.—No. XIV.

56. The tips of the roots or spongelets consist of delicate cells, whose walls have no particular thickening, and are thereby fitted, like other thin membranes, to imbibe moisture by the action of endosmose. The cells may either be in perfect contact with each other, or intercellular spaces may be left, but if so, these spaces, in most cases, except in particular organs where the cells are in contact by a very small portion of their surface, as in the spongy tissue of the under-side leaves, or the stellate cells of certain kinds of pith, &c., will not communicate with each other, but will constitute little insolated cavities, which, according to circumstances, may either contain air or fluid. It is vain, therefore, to imagine any general imbibition of moisture by capillary attraction, though in a few instances such may possibly take place, the grand moving agent being the reciprocal action of fluids of different densities on opposite sides of an intervening membrane, an action first discovered by Dutrochet, and designated by the terms endosmose and exosmose. Nor is their action confined to inelastic fluids, but is extended to gaseous matters, which are imbibed according to different rates of penetration, as demonstrated by Mitchell.*

57. From the very nature of the case, it is clear that plants can exercise very little choice in the matters which they imbibe, but, in general, injurious substances in solution will enter as freely as those which are not injurious, except they exercise some chemical or mechanical action on the tissue, as in the case of many poisons, which are in consequence rapidly fatal. It appears, however, that owing to some vital action, combined possibly with some laws of rapidity or intensity of penetration, analogous to those which maintain in gaseous bodies, it is certain that plants do in particular cases exercise some degree of choice, or, at least, that certain substances do not enter with the same facility. If a Pea and a grain of Wheat, for instance, are placed in the same soil, the Wheat will absorb silex, while the Pea will absorb none. Dr. Daubeney has also shown that certain plants will not absorb strontian, and Saussure could not make Polygonum Persicaria absorb acetate of lime, though it took up freely muriate of soda.* As a consequence of the very limited choice which plants exercise, they are not only benefited by the addition to the soil of such substances as in due proportions are promotive of health, but they suffer from the presence of matters directly destructive or existing in larger proportions than are requisite for health. For the most part such mineral or vegetable, or even gaseous, poisons as are injurious to man, are equally injurious to plants.† Fungi, however, afford many exceptional cases; for in strong solutions of arsenic and other mineral poisons, the mycelium of moulds will flourish, while the strongest opium affords a matrix for the development of a peculiar fungus, and these are no rare or isolated examples. Tannin, which is peculiarly obnoxious to vegetable life, does not prevent the growth of a Rhizomorpha, on the walls of the tan vats; and Russian leather, though the contrary has been asserted, is by no means exempted from the production of moulds. Though gaseous matters do not prove immediately destructive to vegetation by at once withering the leaves, their absorption by the soil may in the end be equally injurious, a point which ought to be carefully kept in view in those questions respecting chemical works which so often come before juries. During several months of the year their action on the aerial portions of plants is comparatively insignificant, while the absorbing powers of the spongelets are very rarely at rest.

58. Besides the office of imbibing nutritive matter from the soil, the spongelets bear a part in the separation of noxious or superfluous substances from the plant, for there is not only an upward current but a lateral and downward current also, according to the laws of the action of endosmose and exosmose; some of the principles of the plant therefore must mix with the surrounding moisture. It is not to be supposed that this is conducted on purely mechanical or chemical laws, but by a modification of these by vital action. That matter is given out by the roots is proved by the fact that water becomes impregnated with the peculiar qualities of plants whose roots are immersed in it, and by those experiments which show that chemical matters held in solution and absorbed by a portion of the roots of a plant immersed in one vessel will be conveyed by means of another portion of the roots of the same plant into another contiguous vessel. It is probably in consequence of such separation of noxious matter, and not only by reason of the absorption of the constituents peculiarly suited to the individual plants, that successive crops of the same kind will not flourish in the same soil. And as the matters requisite for nutrition must be presented to the plant in proper proportion, within certain reasonable limits, if health is to be maintained, it is clear that the superfluous matter may be returned in such quantities as to be, in addition to any perennial supply, an injurious item in the elements of the question. *M. J. B.*

* The dripping of fluid from the divided end of a truncheon in full sap, as from the shoots of the Lianas of South America, is easily explicable without the supposition that, being contained in the intercellular cavities, it obeys the laws of gravity as superior to those of capillary attraction. Whether the ducts, often of considerable size, contain air or sap, is a totally different question. If the latter, it would be discharged very rapidly by mere gravitation. See Gaudichaud, Ann. des Sc. Nat. Sept. 1836.

* These instances are taken from Dr. Lindley's "Theory of Horticulture," of which a new edition is promised.

† Multitudes of instances are recorded in the edition of Dr. Pereira's "Materia Medica," just completed, a work which is beyond all praise, and which ought to be in the hand, not only of every medical practitioner, but of every botanist who is desirous of knowing something more about plants than their mere external or even structural, differences.

ACACIAS.

Of the whole class of New Holland plants, few are more interesting than Acacias. The strange variety in the phyllodes or leaves, the profusion and fragrance of their blossoms, and the season of the year when they are in the greatest perfection, render them eminently worthy of cultivation. My object, therefore, in the following remarks is to bring, if possible, this interesting tribe of plants more into notice than ever it yet has been; and with that view, I have sketched or drawn out the more prominent characters of a collection of 25, well adapted for the conservatory border, shelves, or the greenhouse stage; but before I commence my enumeration, permit me to offer a few words common to the generality of those I intend bringing under notice:—First, I have to state that the whole of these Acacias are natives of various parts of New Holland; therefore enjoying a brisk growing climate through the spring months, and a dry atmosphere during summer. And thus we are furnished with two leading points whereon to base the successful cultivation of this genus; these are, to maintain such a condition of climate as will insure a quick growth, and when once that is obtained, nothing is better for ripening it than an exposure to bright sunlight, with a free circulation of air at all times. Second, Acacias generally seed well; and thus propagation is rendered easy, as the seeds germinate freely, either when sown as soon as they are ripe, or kept back until the ensuing spring. In the latter case, they must be soaked in hot water. I have, however, seen seeds which have fallen from cyanophylla and

other species spring up as plentifully as Sycamore. Another mode of propagation is by means of cuttings placed in sharp sand, and the pots placed on a warm greenhouse shelf for a month or six weeks, and then introduced into a growing temperature of about 70°, taking care to have the cuttings covered with bell-glasses, until roots have been freely emitted; afterwards, pot off singly, and place them again in the same situation, until they have got well established, when nothing more is needed than ordinary attention. The soil most suitable for the Acacia is three-quarters good turfy loam, with the remainder made up of peat and sharp sand. Another point, which I think is not generally known, is that the generality of them, although very gummy, stand the knife well, without appearing to suffer from its effects; at least with some species its application is absolutely necessary, in order to form good specimens, and keep them within bounds.

A. armata.—This is a valuable species, not only on account of the late period at which it flowers, but likewise on account of its large bright yellow flowers, which are produced in profusion, in globular heads, situated on a peduncle 1 inch in length. This kind is best adapted for pots.

A. alata.—In this the stem and phyllodes are all flattened, and every secondary branch is connected with the midrib of the primary one. The phyllodes are so connected as to assume the form of one long narrow phyllode, thickly beset with hairs, and furnished with short spines at intervals on each side. The flowers are all attached in pairs to the midrib of the primary phyllode, and diverging alternately right and left on each side, to the number of about 30, on a phyllode of about 4 inches long. Peduncle about 3-10th inch in length; flower heads globular, pale yellow. This forms a straggling bush, requiring to be upheld with stakes. It is most suitable for conservatory borders.

A. biflora.—This is a delicate but pretty species, and well worth cultivating. Phyllodes triangular, sharp spined, much resembling an Epacris 1-5th inch long. Peduncles about the same length, bearing two very small white flowers. This plant must be kept in a pot, and clear of other plants, and it will require stopping to make it bushy, otherwise it will soon become weak and straggling.

A. cochlearis is neat and compact, and well adapted for large pots and the margins of conservatory borders. Height, 6 feet. Phyllodes 2 inches long, linear, pointed, but not stiff, rather hoary. Flower heads globular, small, produced in pairs, from the axis of the phyllodes. Peduncles 2-5th inch long. This is a plant of rather slow growth, and it requires no pruning.

A. celastrifolia will flower well, even in small pots, but in 13-inch ones it forms a huge bush, loaded so completely with flowers as hardly to render either phyllodes or pot perceptible; phyllodes about 3 inches long, and 1¼ inch wide; branches forming, as it were, a very long panicle, from 30 inches to 3 feet long; flowers whitish, sweet scented. This species is very subject to scale, the best way of clearing which off is to cut it well in after flowering, and not to be sparing of soft soap and water; or, best of all, use Dominy's mixture.

A. cyanophylla.—This forms a splendid object for the centre of a lofty conservatory, growing as it does to a great height, and producing large loose panicles of exquisitely bright yellow flowers, which are large and highly scented. Phyllodes 10 inches long, and 1¼ inch or 1½ inch in diameter, very wavy, unequal sided. This plant, like celastrifolia, requires a periodical cleaning; it also stands pruning well, and it is much improved by it. No one in possession of a large conservatory should be without this desirable species.

A. cygnorum has rather a pendulous habit, its branches being very slender and almost covered with small pinnated leaves, which are composed of three pairs of leaflets, and it is also studded with sharp spines; leaflets 1-6th inch long. Flowers much like rotundifolia, but smaller. This is certainly an excellent Acacia where variety is wanted, and it is admirably adapted for pots.

A. Drummondi.—What is there to be desired in an Acacia that is not to be found in this? Its habit, which is at once neat and compact, and its flowers, which are conspicuous and produced in profusion, at once place it in the first rank. Its leaves are bipinnate, about an inch in length, formed of three pairs of leaflets, from ¾ to 1 inch long, composed of three pairs of pinnules, which are of an oblong shape, 3-10th inch long; and the petiole of both the primary leaves and leaflets is slightly extended. Flower heads oblong, about an inch long, placed on a peduncle, about the same length, produced singly. Every one who only has room enough for one Acacia should endeavour to obtain this one. The best place for it is the conservatory shelf.

A. dependens.—This is adapted for conservatory borders or large pots. It is of an upright growth, of a very dark colour, and has linear phyllodes an inch in length. Spikes of flowers 1¼ inch long, of a light yellow colour, and not particularly conspicuous. This is a species that can be kept to any shape by means of the knife.

A. diffusa is suitable for pots, but it is loose in character, and requires the use of ligatures to make it assume a nice shape. It makes shoots about 1 foot long in a year, and furnishes them for about 9 inches in length with flowers, which are produced in pairs from a single phyllode, or in fours, fives, or sixes, when a pair or three phyllodes occur close together. Peduncle about 2-5th inch in length; phyllodes linear, 1 inch in length; margins of the phyllodes running into a sharp point at the apex. Well worth cultivation.

A. grandis.—This is one of the neatest and best of the genus for pot culture, forming as it does, by simply stopping it, either a dense bush, or, with a little more attention, a fine pyramidal specimen; grown in the latter form it is certainly extremely ornamental, either on a greenhouse shelf or the margin of a conservatory border. Its leaves are pinnated, about 3-5th inch in length, formed of eight pairs of leaflets, about ½ inch long; flowers globular, produced from the axil of each leaf, either singly or in pairs; peduncle ½ inch in length. This is a plant that deserves to be in every collection.

A. ixiophylla is not one of the best, but its earliness renders it worthy of cultivation. It is well suited for pot culture, making a very pretty bush under ordinary attention. Its phyllodes are linear, about 1½ inch long; flowers small, globular, produced singly from the axis of the phyllodes. Peduncles 3-5th inch in length.

A. lineata in all its stages makes a fine pot plant, but being of rather weak growth the use of sticks and ligatures is necessary in order to form a nice specimen. A strong plant under ordinary circumstances will make shoots in one year from 20 inches to 2 feet, producing flowers during their entire length, with the exception of an inch or two at the base; flowers in pairs at the base of each phyllode; peduncles 1-5th inch long; flower-heads globular, small, of a bright orange yellow; phyllodes 2-5th inch long, linear, with the upper margin rounded at the apex and forming a point. One of the earliest and best of the Acacias.

A. longiflora major.—This is a neat kind for a small conservatory border; for when in blossom its bright yellow oblong flower-heads render it a most conspicuous object. Phyllodes linear-lanceolate, 4 inches long, and 2-5th inch across at the widest part; flower-heads about 1¼ inch long, sessile, in pairs, diverging right and left from the axils of the phyllodes, and produced for about 8 inches along the branches. Habit, upright, thin of branches, and inclined to become straggling when well flowered. This is a splendid Acacia, but being difficult to propagate there are but few plants of it in the country.

A. lophantha is best suited for the border of a large conservatory, where it is much esteemed, not for the sake of the flowers (for they are produced but sparingly) but for its fine spreading foliage, consisting of leaves 9 inches long and 5 inches wide, formed of 10 pairs of leaflets, and each leaflet composed of from 14 to 20 pairs of pinnules. Pinnules half-an-inch in length, and ⅛ inch wide; flower heads solitary, of an oblong shape, from 1½ inch to 2 inches long, and of a light colour; peduncle about 3 inches long. The knife must not be used for this plant.

A. mucronata.—This species is well adapted for conservatory borders; its phyllodes are 2 inches long, being twice the length of those of dependens; but in all other respects they are similar.

A. nigricans has much the appearance of grandis, but close inspection will at once show the difference, for instead of 8 pair of leaflets constituting a leaf, there is but one pair in this species. Leaves bipinnate; leaflets formed of five pairs of pinnules, which are 1-6th inch long; flower heads globular, produced in pairs from the axis of the leaves; peduncle half an inch long. A very good plant for a pot, but better adapted for the margin of a conservatory border.

A. pubescens.—This is a neat plant for a pot or small conservatory border, being rather delicate and much inclined to assume the umbrella shape. Stem pubescent. Leaves bipinnate, about 1½ inch long, primary leaflets about 3-5ths inch long, of which eight pairs constitute the leaf. Leaflets formed of 12 pairs of pinnules of about 1-10th inch long; racemes produced singly from the axis of the leaves, about 3 inches long; flowers globular, small, yellow. A rather slow growing species, which will not stand pruning.

A. pulchella is best adapted for the margin of conservatory borders, or for the centre of a circular bed which is to be filled with dwarf plants; for by means of the knife you have free control over its shape and habit; its height is from 6 to 7 feet, and it forms as dense and compact a bush as any plant with which I am acquainted. Leaves about 1-5th inch long, formed of four pairs of leaflets, which are 1-10th inch each in length. Flowers globular, small yellow, produced singly, and furnished with a spine on each side of its base. Peduncle 2-5ths inch long. For a low bush, in a conservatory border, this stands almost unequalled.

A. pentadenia is another fine Acacia, well adapted for pot culture. Branches erect; and although making a nice compact bush, it does not become too dense, but is of a nice slender and open character. Leaves bipinnate, composed of two pairs of leaflets, the lower composed of seven pairs of pinnules, and in length about half as long as the upper ones, which are composed of 12 pairs of pinnules. Flower heads globular, produced in twos, threes, fours, or fives, from the axils of the leaves. Peduncle ¼ inch in length. A nice plant for a greenhouse stage.

A. præmorsa.—This has a rather straggling habit, but it is well adapted either for pots or borders, and certainly makes handsome plants when about 3 feet high, though it will require skilful management in training to prevent its becoming unsightly from the loss of its lower phyllodes. The latter are triangular, ⅓ inch long. The branches grow about 1 foot or 15 inches in the course of a year, and are covered with flowers from the apex to the commencement of the season's growth. Peduncle ⅓ inch long; but its phyllodes are almost hid by its profusion of flowers. Altogether a pretty plant.

A. paradoxa, although of straggling growth, is suitable for pot culture, standing the knife well; phyllodes ½ in. in length, very wavy, unequal sided; situated very closely together along the stem, furnished with two sharp spines at the base of each, rendering the plant very prickly by their stiffening as they grow old. Flowers globular, of a bright yellow, produced very plentifully. Peduncles the same length as the phyllodes.

A. Riceana.—This forms a magnificent plant for a large conservatory, towering to the height of some 25 feet, and producing long pendulous branches hung their whole length, as it were, with numberless bunches of flowers. The latter are sessile, arranged upon a peduncle of from 2½ to 3 inches long. The phyllodes are 3-5ths inch long—linear, stiff, and nearly as sharp as needles when they get old. This plant is capable of being trained into whatever shape you may require it. It also bears the knife extremely well, and is a most abundant flowerer.

A. rotundifolia forms a loose spreading shrub, of about 3 feet high, and as much in diameter; it is most suitable for pots. Phyllodes ⅙ inch in length, somewhat rotundate, rather pubescent, and deep green; flowers globular, bright orange yellow, solitary, sometimes in racemes of two to four heads; peduncle ⅜ inch long. This is by no means a plant of fine habit when allowed to assume its wild form; but with judicious pruning, and by training tastefully upon a balloon-shaped trellis, allowing the shoots to hang gracefully from the top, its appearance is greatly improved, and when in flower it forms a worthy inmate of our greenhouses.

A. verticillata.—This is one of the most interesting, and, at the same time, most beautiful and conspicuous, of Acacias, and well worthy of a prominent position either on the greenhouse stage, conservatory shelves, or in the borders, where its graceful habit must render it a favourite. Its phyllodes, as its name implies, are arranged in a verticillate manner, although in broken whorls of about 1-5th inch apart; the phyllodes are about 3-10ths inch in length, linear, stiff, and very sharp pointed. Its flower heads are about an inch in length, of an oblong shape, and seated upon a peduncle of about 3-10ths inch long; in some cases they appear singly, in others four or five flower heads are so arranged as to appear verticillate. Nothing is better than to allow this species to take its own natural habit, for the use of the knife or ligatures would not improve it.

The following alphabetical list will show at a glance the time of flowering, form of flower, &c., of the various sorts just described:—

Name.	Time of flowering.	Form of Flower Heads.	Size, &c.
Acacia armata	Late	Globular	Large
" alata	Late	Globular	Middle
" biflora	Early	Globular	Small
" cochlearis ...	Middle	Globular	Middle
" celastrifolia ...	Early	Panicled, glob.	Middle
" cygnorum ...	Middle	Globular	Small
" cyanophylla ...	Middle	Panicled, glob.	Large
" Drummondi ...	Middle	Oblong	Large
" dependens ...	Middle	Panicled, oblng.	Small
" diffusa	Middle	Globular	Middle
" grandis	Late	Globular	Large
" ixiophylla ...	Early	Globular	Middle
" lineata	Early	Globular	Middle
" longiflora major...	Middle	Oblong	Large
" lophantha ...	Early	Oblong	Large
" mucronata ...	Middle	Spiked, globular	Small
" nigricans	Late	Globular	Large
" pubescens ...	Middle	Globular	Small
" pulchella	Late	Globular	Small
" pentadenia ...	Late	Globular	Middle
" præmorsa ...	Middle	Globular	Large
" paradoxa... ..	Middle	Globular	Small
" Riceana	Early	Spiked, globular	Large
" rotundifolia ...	Early	Spiked, globular	Large
" verticillata ...	Early	Oblong	Large

—*J. A. Beckman.*

IS THERE POSITIVE PROOF OF THE ORIGIN OF WHEAT FROM A GRASS BELONGING TO A DIFFERENT GENUS?

By L. C. Treviranus.

The question where those objects of cultivation originated which are so indispensable to man in a state of civilisation does not, when taken by itself, admit of any general answer; but considered in a wider extent, can only be answered conditionally. For either the answer is inseparable from the general question as to the development of the human race, and so far lies out of the range of experience, or we must assume that these objects were found by man in a state of nature, and in the condition in which they were found applied to his uses; or, finally, that they at first existed in a certain form which has been modified by the agency of man, so that the original state is no longer extant, or if so, in such a condition as not to exhibit the transition from the cultivated plant to the parent from which it was derived. The first method of reply holds the question as in itself unanswerable, and in some measure coincides with those views which regard the objects of cultivation, such as the Laurel, the Myrtle, the Vine, the different kinds of corn, &c., as the gifts of the Gods, that is, of beings who introduced cultivation into the earth from their unknown habitations. The second answer to the question must have been received unconditionally as the right one, were it clear that our cultivated forms have ever been found wild, or still are found so; that is, whether they have ever lived or still live in any specific locality independently of the agency of man. But the necessary proofs are altogether wanting.

When Dureau de la Malle would make it probable from

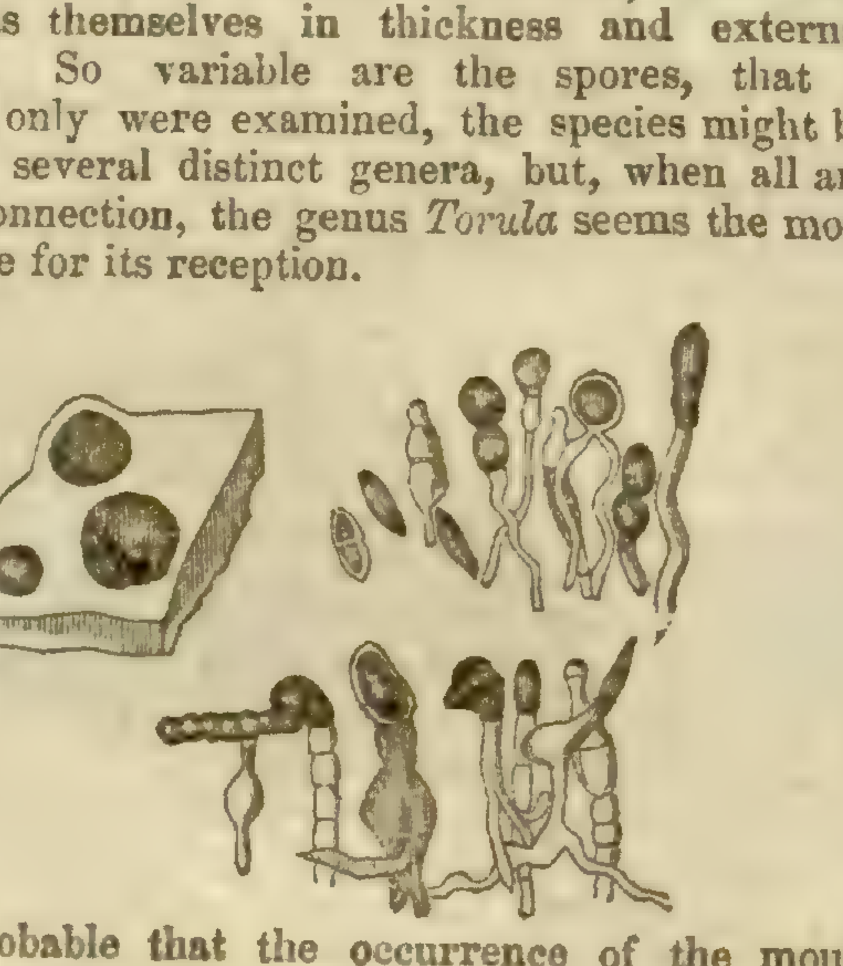
historic dates that the part of Palestine and Syria which borders on Arabia is the parent country of corn, namely, of Wheat and Barley (Ann. de Sc. Nat. ix. 61); when Heinzelmann would consider Wheat as growing wild in the country of the Baschkirs, and A. Michaux Spelt in the mountains in the north of Hamadan, in Persia (Lamarck, Encyc. Bot. ii. 458), we must bear in mind that, as regards the first, we can place very little reliance upon the accounts of the occurrence of species by persons who were little acquainted with objects of natural history, or upon their description or pictorial illustrations; and that, in respect of the other instances, a far longer residence than falls to the lot of travellers in general in the countries where they are supposed to have taken their origin is requisite, in order to distinguish the wild state of a plant from such as have merely escaped from cultivation. There remains, then, only in answer of the question, that a typical form of these plants originally existed, which has been so modified by art and human skill, in conformity with man's necessities or uses, that it is no longer capable of being recognised as such, though existing in its wild state, or together with the form produced by culture. That such alterations of plants have been effected by cultivation, and are now become permanent, is beyond question. Our biennial cultivated Carrots, with their succulent well-flavoured roots, may be produced in perfection after some generations, by the art of the gardener, from the annual wild form, whose root is dry and of an acrid taste (Lond. Hortic. Soc. Trans. ii. 348). We cannot, however, prove the origin of other cultivated plants by experiment; we are ignorant, for instance, how the Cauliflower originated from the normal form of our Coleworts. The wild form of our Potatoes is far from being perfectly known. Of many forms found apparently wild in the lower mountains of South America and Mexico, which have been introduced into sytematic natural history under the names of *Solanum Commersoni, maglia, etuberosum, immite, verrucosum, utile, stoloniferum*, &c. (D. C. Prod. Syst. Veg. xiii. s. 1, 32, 677; J. D. Hooker, Bot. Antarct. Voy. 32), sometimes one, sometimes another is brought forward in proof that an alteration of the original form has been effected by culture, which by repeated reproduction has become permanent, but whose derivation from that particular species has not been observed. A similar origin has been assumed for our species of corn, especially for the most important of them, viz., Wheat, but no one had succeeded in indicating the original form, and the alterations which had taken place. That this, however, has been effected we are assured by M. Esprit Fabre, an intelligent gardener at Agde, near Montpellier, to whom we are indebted for some excellent observations on the plants of his rich neighbourhood (Ann. des Sc. Nat. 2. Ser. vi. 378, 3 Ser. xiii., 122). The observations on which this result is grounded have been published by the author himself very briefly in a small pamphlet entitled "Des Ægilops du midi de la France et de leur Transformation," 20 s. in 4to., with three lithographic plates; and Prof. Felix Dunal, of Montpellier, has added a short preface and appendix, and I have myself, when at Montpellier in the autumn of 1851, had an opportunity of examining some dried specimens of the plants resulting from the experiments of M. Fabre, which had been communicated by him to his friends in that neighbourhood. M. Fabre considers Ægilops ovata and Æ. triaristata, of which the first especially abounds everywhere on the coasts of the Mediterranean, as the parent plants of our Wheat, an opinion by no means new, but one which had never before been supported by such weighty arguments. The genera Ægilops and Triticum, it is well known, though they agree in inflorescence, in the multitude of flowers, and in the general form and texture of the parts of fructification, differ in this respect, that the glumes in Ægilops are more swollen, that the upper spikelets are abortive, containing no ovaries but only stamens, and that the fruit, instead of being convex on either side, as in Wheat, is concave. The presence and number of the awns is inconstant in either genus, and in a species or form of Ægilops which Requien found in Provence, and named Æ. triticoides, but which occurs in Sicily, at Palermo, as appears from specimens now before me, and, if as I believe, Link's Crithodium Ægilopoides (Linnæa ix. 132, t. 3) be the same thing, in Greece also, the glumes are gradually flatter, so that their form, especially as at the same time there is but one awn instead of several, approaches very closely to that in the genus Triticum. Fabre, whose attention was attracted by this phenomenon, undertook in consequence a series of experiments with Æ. ovata, which he cultivated with the greatest care for 12 years, from 1838 to 1850, and at first in a plot of ground inclosed by walls, in which no other species of Grass existed, and afterwards in the open field, surrounded however by vineyards. The result of this experiment was that the plant acquired longer ears, whose rachis was not brittle as before when ripe, and in which, step by step, fewer blossoms were abortive; the glumes, meanwhile, were less broad and flatter; instead of a number of awns, in general one only remained; and the ripe grain, which in consequence of its concave form remained inclosed in the hollowed glume, burst out by reason of its increased thickness. In brief, the species Ægilops ovata had acquired a form, represented in the figures, which every one must recognise as that of a Triticum, and which in continued cultivation was retained without any tendency to return to its original condition. M. Fabre observed also that Æ. triaristata, Willd. was subject to the same metamorphoses, only he became acquainted with this species too late to make the same experiments with it which he had made with Æ. ovata, so as to be able to prove its transition into Triticum. His treatise closes with these words: "We had here also (instead of Ægilops ovata with which the experiment was commenced) a Triticum, a true species of Wheat, which cultivated in the open field for four successive years retained its form and yielded harvest like that of other corn of this kind;" and M. Dunal adds, "We are in consequence necessitated to allow, that certain of our cultivated kinds of Wheat, if not all, are nothing more than peculiar forms of certain species of Ægilops, and that they can be regarded as none other than races of these species, so that to M. Esprit Fabre belongs the honour of having demonstrated the true origin of cultivated Wheat, which others before him only imagined and have indicated doubtfully."

Whatever consideration, however, may be due to this expression of so acute and practical an observer, who not only from personal acquaintance with a near neighbour, but from an immediate inspection of the result obtained by these experiments, was in a condition to judge of the correctness of the observations, and the justice of the inferences, the subject is too important, not to make one wish for a repetition of the experiments by a combination of many persons of different views — experiments which are easy of repetition, and have no other difficulty than the length of time requisite before the necessary result can be attained. We have before us the coincidence of two genera so different in apparently essential characters as Triticum and Ægilops, and the question arises, if a transition between these is established, must not other genera of Gramineæ in a similar way fall to the ground? But more especially, inasmuch as the normal condition of the several species of Ægilops is maintained in their native localities, it is requisite to know more perfectly than we have learned from M. Fabre, what are the conditions and influences under which the observed changes have taken place, before we can regard the results which have been obtained as perfect verities in the annals of science and agriculture.

SOAP MOULD.

It is well known that the mischievous effects of fungals are not confined to the raw materials of the vegetable world, whether living or collected for industrial purposes. What is called mildew in glass, paper, silk, and other manufactured articles is due principally to their agency, connected, more or less, with chemical causes, under peculiar conditions of moisture and temperature, and I have now before me a very curious case forwarded by Mr. Hort, in which the subject of attack has been a peculiar kind of soap, prepared at Cheltenham, by Mr. Beetham, who has kindly and promptly answered such questions as were proposed to him on the subject. The soap, known by the name of toilet soap, is of a singular character, into the composition of which honey and milk enter largely; and partly in consequence of the trouble attendant on its manufacture, partly on account of the development of the fungal, the preparation of it has been of late neglected.

The fungal was developed in those specimens only which were wrapped in tinfoil, those in paper remaining unsullied. In the former case a large portion of the squares were infested with broad jet black velvety somewhat conical spots, like little volcanoes, penetrating the substance by their rootlets, and rendering the article perfectly unsaleable. Each spot consists of a number of dark black spores, arranged occasionally in short necklaces, varying very greatly in form, and seated on hyaline or slightly discoloured threads, which vary as much as themselves in thickness and external characters. So variable are the spores, that if individuals only were examined, the species might be referred to several distinct genera, but, when all are taken in connection, the genus *Torula* seems the most proper place for its reception.



It is probable that the occurrence of the mould depends upon the animal matter which enters into the composition of the soap, which is in general not a substance subject to such injury, but the curious point is that, unlike the moulds which usually attack manufactured articles, it is no ubiquitous species, as *Cladosporium herbarum*, but incapable of being referred to anything described. The species may be characterised as follows:—*Torula Saponis* soris conico-depressis orbicularibus; sporis versiformibus fibrillis radicantibus enatis. *M. J. B.*

SARRACENIAS.

Where the accommodation necessary for the successful cultivation of these plants can be found, a few of them should be grown, as they are extremely interesting, and, under proper treatment, they grow freely. They are not difficult to flower, and their blossoms are pretty enough, but it is the curious pitcher-like appendages belonging to the leaves which render them worth attention. They are found in a wild state in swamps in North America, and are by no means tender, but, as their natural habitats indicate, they require a moist atmosphere, plenty of water at the root, and a warm shady situation during the growing season, to have them in perfection.

Those who intend to commence their culture should procure a healthy young plant at once of each of the following varieties, viz., S. purpurea, rubra, variolaris, and Drummondi. They should be placed in a low pit, where the temperature can be kept at about 60° by night, allowing it to rise to 75° or 80° with sun heat, before admitting air—shading during bright sunshine, to prevent the necessity of drying the atmosphere by currents of air to keep down the temperature. Turn the plants out of their pots, removing as much of the old soil as can be done without injuring the roots, and repot them in convenient sized pots, using light fibry peat, broken up roughly with the hand. Fill the pots about half way with crocks, on which lay some thin pieces of peat; and in potting be careful to pack the soil closely and nicely about the roots, and cover with a thin layer of sphagnum, which will give the whole a neat appearance. The pots should be placed in saucers, which should be kept regularly filled with water during the growing season, and the water must be frequently changed, always using water at a temperature of 80° or 90°. Keep the atmosphere thoroughly moist by frequent syringings during bright weather, and keeping the pit close; and also see that the soil about the roots is kept regularly wet, for any approach to dryness would be injurious to the plants. As the specimens advance in growth, attend to affording them sufficient pot room, and do not defer shifting until the plants suffer for want of sufficient space for their roots. By following out the above system of treatment during the growing season, the plants will make rapid progress, and will form nice-sized specimens by autumn. At that season they may be removed to a warm corner of the conservatory or show house, where, by covering them with large bell-glasses, to secure the necessary amount of moisture, they will be quite at home for the winter months, provided a temperature of about 45° is maintained. Water must be liberally supplied, however, to the soil; and if convenient to continue the use of pans, it will be advisable to do so, as this will ensure keeping the roots regularly moist. Should the plants show indications of injury from the confined atmosphere, remove the glasses at night, replacing them before giving air to the house. In the absence of better accommodation, the plants may be grown during the summer in a one-light box, in which, if it be kept close and properly managed, they will be quite at home; but artificial heat must be afforded in spring, otherwise large specimens will not soon be obtained, nor will the plants bloom freely.

Propagation is easily effected by means of division, which should be done just before starting the plants into growth, taking care to select some promising pieces for rooting, and also to keep the young plants close, warm, and thoroughly moist until they become well established in their pots. The same care must be observed with the young plants as to placing their pots in pans of water, &c., as recommended above. *Alpha.*

Home Correspondence.

Concrete Walks.—Seeing in a late *Chronicle* inquiries respecting the economical formation of walks, where material is expensive, I beg to furnish the plan I adopted here under similar circumstances. I have had no experience with burnt clay; but as good gravel costs here 8s. per load of 24 bushels, delivered on the ground, it became necessary in laying down extensive terrace and garden walks (which within the last two years we have done at this place), to adopt some plan for economising this expensive material. Coarse gravel at a cheaper rate was obtained, and some excellent grey lime which we get delivered at 11s. per chaldron; to two-thirds of the gravel was added one-third of quicklime,—in convenient quantities to work, say three or four loads at a time; sufficient water was added to reduce the mass to a semi-liquid state, so that it would just remain on the barrows whilst being moved to the walks. About 2½ inches in depth of this were spread on the intended form of the walk with the back of a shovel; when sufficiently dry to bear a man without the foot sinking in it, but before it set hard, a roller was twice passed over it, which produced a smooth face, so that no water could remain upon it. When thoroughly dry, one inch in depth of fine gravel was laid upon the surface, and it was rolled smooth; this effected a considerable saving of the best material, and a much better walk was the result than those made in the usual way; for whilst concrete walks remain quite unaffected by frost, worms, or deep-rooting weeds, other walks that had been previously formed with several inches of brick rubbish as a foundation, and 3 or 4 inches of gravel on the surface, have been puffed up by the frost, and an indefinite number of little mounds are continually being formed by worms, rendering much more rolling necessary than on walks formed of concrete; as, however, no water will pass through the latter, particular care should be taken to introduce a sufficient number of surface drains. I may remark that fresh burnt lime, and that grey in preference to white, should be used. I have no doubt that where cinder ashes abound, a large proportion of them

might also be employed with advantage. *H. Howlett, the Gardens, Haverland Hall.*

Lucuma deliciosa.—I am glad to see this new fruit alluded to in your columns, though rather surprised and disappointed at the statement that it will require a Banana house, as Mr. Linden distinctly asserts that his collector found it, not only in thick woods, where it became a tree, but at an elevation of 9000 feet, where the thermometer falls to zero, and there it only attains a height of 8 or 9 feet, and fruits abundantly. This assurance made me desirous to try a plant on the system so successfully pursued with the Citrus tribe in South Devon, but your opinion makes me hesitate; perhaps we shall hear more about it soon. Notwithstanding the late rigorous winter, my hybrid Rhododendrons are in glorious bloom, especially some from cinnamomeum raised by Messrs. Rollisson, which are singularly beautiful. One plant of the true arboreum was finely in flower nearly a month ago, in the open ground, and the Luculia, flowers of which were exhibited in Regent Street, has shoots 6 inches long already. A tree of Acacia dealbata, between 20 and 30 feet high, is a mass of bloom, without an injured leaflet. *A Devonian.* [Since you possess the Lucuma, we trust you will be among the first to ascertain its constitutional peculiarities experimentally.]

Tree of 10,000 Images.—Amongst a variety of leaves communicated to me by Dr. Hooker from Sikkim, Bhotan, and Khasia, as presenting on the surface more or less distinct traces of vegetation, galls, or other morbid affections, are those of a species of *Symplocos* from Khasia, which at once, from the singularity of their marking, called to mind the tree of 10,000 images of Messrs. Huc and Gabet. Like other matters mentioned in the curious book which professes to give an account of their travels, and which, though evidently highly varnished and exaggerated, is to all appearance not a pure fiction like George Psalmanazar's "History of Formosa," the reality of the existence of such a tree rests probably to some extent, however slight,

on fact. Without having recourse with the missionaries to any notion of supernatural agency, or the trickery of crafty Lamas, it is very possible that a tree presenting certain analogous characters may exist in the country which they assign for its habitation, though the details may not deserve credit, and the figures of the plant and leaves are doubtless mere fictions. Be this, however, as it may, the leaves of which I furnish a figure do really present a very curious assemblage of characters on their under surface, which without any very great stretch of imagination, infinitely less, for instance, than that which would enable a Greek to read AI AI on the flowers of the yellow Martagon, or a royalist to behold Charles sheltered in the Oak depicted in the cross section of a Fern root, might very readily be considered by ignorant and superstitious people as truly literal characters, and if regarded as miraculous, wonderful enough to make the foreheads of the credulous "Sirs Lamas" trickle. They do not, however, resemble either of the alphabets in use in Tibet, of which they want the circular lines which characterise a great many of their letters, but much more Chinese or Japanese characters, to some of which they occasionally approximate very closely. The marks are raised above the surface of the leaf with a narrow but distinctly defined fissure down their centre, the cuticle having been ruptured by the swelling of the subjacent tissues, and resemble closely the apothecia of some *Graphis*, still covered by the epidermis. They do not, however, present any organised structure, but appear to be due not to the agency of insects but to a diseased state of the cells which still exist in their cavity corroded and lacerated, and surrounded, as is not uncommon in such cases, by a denser stratum; and it is very probable that such marks might equally be present on the smooth bark of the tree while young, though certainly not on bark shelling off like that of the Plane tree. It is not, however, necessary to follow up the points of resemblance or difference further, for it is not pretended that the species itself has given rise to the well-told tale of the French Missionaries, or at least fathered upon them; there is quite sufficient likeness at least to show that their story might have had a certain degree of foundation in fact; and, indeed, it would have been scarcely worth while occupying so much space with the subject did it not give an opportunity of figuring a very curious and previously unrecorded form of disease. *M. J. B.*

News about Orchids.—I have lately been into one of our savannahs, and have found some Orchids novel to me. One is a Cyrtopodium, which from its fragrance may be called odoratum, though I do not find that name in my edition of "Lindley." The flower-stem rises only about 12 or 18 inches, instead of 8 or 10 feet, as in our ordinary Cyrtopodium, and the flower is darker, spotted with purple. It is the only Orchid I have seen in this land that requires no shade. It is only known to grow in one part of this savannah, in the moist sand, exposed to the full glare of the sun. I have got a dozen plants or more of it. In the same savannah, but growing under the shade of low bushes, I found a very pretty Orchid, with a delicate pink flower, I think of the Ophrys tribe, but the flower is extremely evanescent, and the plant so delicate, that though I dug up a good number, not one, I am sorry to say, promises to live. In the same savannah, I am told, is to be found in April or May an Orchid of great beauty, but of singular description, having no bulbs or leaves, and shooting its flowers above ground on a short stem, somewhat like the Cyclamen of the south of Europe. *Demerara.*

Monthly Meteorological Abstract: Pembroke Dockyard.—

Date	Thermometer. Absolute Max.	Thermometer. Absolute Min.	Thermometer. Mean.	Thermometer. Average Max.	Thermometer. Average Min.	Thermometer. Mean.	Barometer. Absolute Max.	Barometer. Absolute Min.	Barometer. Mean.	Barometer. Average at 9 a.m.	Barometer. Average at 10 p.m.	Barometer. Mean.	Aneroid. Absolute Max.	Aneroid. Absolute Min.	Aneroid. Mean.	Aneroid. Average at 9 a.m.	Aneroid. Average at 10 p.m.	Aneroid. Mean	Rain in Inches. 8 inch Gauge 5 ft. from grnd.	Rain in Inches. 5 inch Gauge 5 ft. from grnd.	Wet Days.
1853																					
January ...	52	22	37	47.25	37.31	42.25	30.268	29.068	29.668	29.676	29.697	29.686	30.130	28.725	29.427	29.182	29.501	29.491	3.641	3.267	24
February ...	46.50	15.50	31	39.80	29.12	34.45	30.208	29.000	29.604	29.738	29.734	29.736	30.050	28.750	29.400	29.551	29.554	29.552	2.472	2.335	16
Melted Snow																			1.050	1.050	
March ...	53.50	20	36.75	41.88	32	38.44	30.316	28.936	29.626	29.938	29.926	29.932	30.150	28.690	29.420	29.741	29.726	29.733	1.336	1.230	16
Melted Snow																			002		
April... ..	58	27.50	42.75	52.31	40.85	46.58	30.428	29.288	29.858	29.910	29.933	29.921	30.255	29.005	29.630	29.693	29.718	29.705	1.902	1.756	17
May	78	30.25	54.12	62.35	43.6	52.70	30.242	29.614	29.928	29.953	29.966	29.959	...	...	...	...	...	...	2.064	1.935	17
June	...	38.25	...	...	49.43		30.222	29.572	29.897	29.928	29.931	29.929	...	...	...	...	...	...	2.644	2.412	20
July	70	49.75	59.87	64	51.33	59.20	30.318	29.428	29.873	29.908	29.925	29.916	30.100	29.110	29.605	29.640	29.654	29.647	3.535	3.276	24
August ..	73	43	58	65.80	51.17	58.48	30.380	29.090	29.735	29.980	29.983	29.981	30.170	28.725	29.447	29.710	29.709	29.709	2.259	2.103	12
September...	65	40.75	52.87	60.71	48.30	54.50	30.484	29.240	29.862	30.024	30.031	30.027	30.260	28.955	29.607	29.758	29.763	29.760	2.426	2.230	18
October ..	60	31.25	45.62	56.48	44.72	50.60	30.090	28.980	29.535	29.659	29.689	29.674	29.830	28.620	29.225	29.363	29.374	29.368	3.466	3.159	22
November...	57.50	25.75	41.62	49.90	38.57	44.23	30.602	29.580	30.091	30.052	30.053	30.052	30.395	29.248	29.821	29.795	29.785	29.790	3.255	2.999	19
December ...	52	16.25	34.12	41.95	30.69	36.31	30.476	29.198	29.837	29.941	29.950	29.945	30.255	28.870	29.562	29.668	29.666	29.667	2.154	2.072	15
Means	60.50	30.2	44.88	53.22	41.62	47.6	30.336	29.219	29.792	29.892	29.901	29.896	30.159	28.869	29.514	29.640	29.645	29.642	Total 31.154	28.774	220
Melted Snow																			1.052	1.050	

Mean Rain 29.964

MEAN TEMPERATURE OF SEASONS.

Winter	41.62	Mean of Year 48.94
Spring	45.90	
Summer	58.49	
Autumn	49.77	

Difference between hottest and coldest months ... 24.75
„ summer and winter 16.87

Maximum temperature May 25 ... 78.0 } Difference 62.50
Minimum do Feb. 13 ... 15.50 }

Analysis of Temperature and Fall of Rain at Pembroke Dockyard for 1850, 51, 52, and 53.

MEAN OF SEASONS.

	Winter.	Spring.	Summer	Autumn	Year Mean of Seasons.	Year Mean Months.
	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.
1850	41.90	47.73	59.76	51.83	50.30	50.60
1851	43.76	46.50	59.23	49.60	49.77	49.60
1852	42.81	46.37	59.82	50.50	49.90	50.24
1853	41.62	45.90	58.49	49.77	48.82	47.60
Means ...	42.55	46.62	59.32	50.42	49.69	49.53

Means of Maximums and Minimums for 1850, 51, 52, and 53.

	Max.	Min.		
1850	55.70 ...	45.60	Difference between mean summer and winter ...	16.77
1851	55.90 ...	43.30	Mean hottest month ...	61.17
1852	56.40 ...	44.10	Mean coldest do.... ...	38.74
1853	53.22 ...	41.62		
Means	55.30 ...	43.65	Difference	22.43

Difference, 11.65.

RAIN.—*Means of Months for the Four Years.*

	Ins.		Ins.
January	4.681	August	2.897
February	1.958	September	2.154
March	1.827	October	3.263
April	2.488	November	4.730
May	1.789	December	2.629
June	2.191		
July	2.152	Mean total of four years	32.761

T. S P.

Foreign Correspondence.

LEAVES FROM MY CHINESE NOTE BOOK.—No. V.

Chinese Indigo—a new kind discovered.—Those who read my "Wanderings in China" may remember the account I gave of a valuable kind of indigo made from species of woad (*Isatis indigotica*), which is extensively cultivated in the level country, a few miles to the westward of Shanghae; I have now to notice another kind, equally valuable, if not more so, which is made from a species of *Justicia*, or from a plant of that natural order to which Justicia belongs. This kind is largely cultivated in the hilly country near Ningpo, or rather in the valleys amongst the hills. It seems to be easily cultivated—it grows most luxuriantly, and is no doubt very productive. Having evidently been introduced from a more southern latitude, it is not hardy in the province of Chekiang, any more than Cotton is about Shanghae; but nevertheless it succeeds admirably as a summer crop. It is planted in the end of April or the beginning of May, after the spring frosts are over, and it is cleared from the ground in October. During this period it attains a height of a foot or a foot and a half, becomes very bushy, and is densely covered with large green leaves. It is cut before any flowers are formed. The Chinese method of preserving plants for next year's crop is most ingenious and well worth notice. I have already remarked that it is a tender plant, and consequently the roots left in the ground after the gathering season are all destroyed by the first frosts of winter. But the Chinese do not depend upon these for the next year's crop; nor do they take them up, or cover them in any way, but simply leave them to their fate, after having done their duty for one year. Cuttings are found to be much more vigorous and productive than the old roots, and to the preservation of cuttings the Chinese cultivator directs his attention. When the stems are cut for the manufacture of Indigo, a large quantity of them have their leaves stripped off, and are afterwards taken into a house or shed to be properly prepared. The leaves thus stripped from the cuttings are thrown into the tanks with the other stems and leaves, so that nothing is lost except what is actually required for the purpose of propagation. The stems are now tied up firmly in large bundles, each containing upwards of 1000, and the ends of each bundle are cut across, so as to leave them perfectly neat and even, both at top and bottom. These bundles are each about a foot long, and, of course, nearly round. Having been thus prepared, they are carried to a dry shed or outhouse, where, in some snug corner, they are packed closely and firmly together, and banked round with very dry loam. A portion of the dry soil is also shaken in between the bundles; and this being done, the operation is complete. Should the winter prove unusually severe, a little dry straw or litter is thrown over the surface of the cuttings, but nothing else is required. During the winter months, the cuttings remain green and plump; and, although no leaves are produced, a few roots are generally found formed, or in the act of forming, when the winter has passed, and the season for planting has come round. In this state they are taken to the fields and planted. The weather during the planting season is generally showery, as this happens about the change of the monsoon, when the air is charged with moisture. A few days of this warm showery weather is sufficient to establish the new crop, which now goes on growing with luxuriance, and requires little attention during the summer—indeed none, except keeping the land free from weeds. In the country where this dye is grown, there are numerous pits or tanks on the edges of the fields. They are usually circular in form; and one which I measured was 11 feet in diameter, and 2 feet in depth. About 400 catties* of stems and leaves are thrown into a tank of this size, which is then filled to the brim with clear water. In five days the plant is partially decomposed, and the water has become lightish-green in colour. At this period the whole of the stems and leaves are removed from the tank with a flat-headed broom made

* A Chinese catty is equal to $1\frac{1}{3}$ lb.

of Bamboo twigs, an admirable instrument for the purpose. When every particle has been removed, the workmen employed give the water a circular and rapid motion with the brooms just noticed, which is continued for some time. During this part of the operation, another man has employed himself in mixing about 30 catties of lime with water, which water has been taken out of the tank for the purpose. This is now thrown into the tank, and the rapid circular motion of the water is kept up for a few minutes longer. When the lime and water have been well mixed in this way the circular motion is allowed to cease. Four men now station themselves round the tank and commence beating the water with bamboo rakes made for this purpose — the beating process is a very gentle one. As it goes on the water gradually changes from a greenish hue to a dingy yellow, while the froth becomes of a beautiful bright blue. During the process the head workman takes a pailful of the liquid out of the tank and beats it rapidly with his hand. Under this operation it changes colour at once, and its value is judged of by the hue it presents. The beating process generally lasts for about half an hour. At the end of this time the whole of the surface of the tank is covered with a thick coating of froth of the most brilliant colours, in which blue predominates, particularly near the edges. At this stage, it being desirable to incorporate the froth with the liquid below it, I witnessed a most beautiful chemical operation which took me completely by surprise, and showed how universally must be the knowledge of the effect of throwing "oil upon the waters." A very small portion of Cabbage-oil—only a few drops—was thrown on the surface of the froth, the workmen then stirred and beat it gently with their flat brooms for a second or two and the whole disappeared as if by some enchanter's wand. And so small a quantity of oil was necessary for this purpose that even when the cup had been emptied, and had only the oil that was necessarily adhering to its edges, it was thrown into another tank, and produced the desired effect. The liquid, which is now darker in colour, is allowed to stand quiet for some hours, until the colouring matter has sunk to the lower stratum, when about two-thirds of the surface is drawn off and thrown away. The remaining third part is then drawn into a small square tank on a lower level, which is thatched over with straw, and here it remains for three or four days. By this time the colouring matter has separated itself from the water, which is now entirely drained off—the dye occupying 3 or 4 inches of the bottom in the form of a thick paste, and of a beautiful blue colour. In this state it is packed in baskets and exposed for sale in all the country towns in this part of China. What its intrinsic value may be when compared with the indigo of commerce, I have no means of ascertaining, but it is largely used in this part of the world, where blue is the most fashionable colour, judging from the dresses of the people. And it is possible that with our knowledge of chemistry a colour of this kind might be greatly improved. After being grown and manufactured as I have described, it is sold at rates varying from 50 to 100 cash a catty, say from 2*d.* to 4*d.* per lb. Some is sold as low as 30 cash, but this is very inferior; the greater part produced is sold from 60 to 80 cash a catty, and it must be of a very superior quality if 100 cash is paid. Like the Shanghae Indigo made from *Isatis indigotica*, it is called "Lien-ching" by the Chinese. I have just sent a large supply of the cuttings above described to the Agricultural and Horticultural Society of India, and hope the plant may prove of some value in a country where the Indigo of commerce is largely cultivated. *R. F.*

Societies.

Horticultural, *April* 4.—The Right Hon. Lawrence Sulivan in the chair. By far the most novel and striking object exhibited on this occasion was a flowering specimen of Rhododendron Dalhousianum, from Mr. Packman, gr. to J. Gadesden, Esq., of Ewell, to whom belongs the honour of having been the first to flower this plant in England. The only other place in which it has yet blossomed in Britain is Dysart House, in Fifeshire, where it produced flowers last year, under the care of Mr. Laing, gr. to the Earl of Rosslyn. Mr. Gadesden's plant had had five blooms on it; but two of them had dropped, leaving, of course, only three behind, each of which measured about 4½ inches in diameter, and as much in length. They somewhat resembled the flowers of the white Lily (L. candidum), except that they were deeply tinged in the throat with yellow. Notwithstanding their great size, they were not at all flimsy in texture; on the contrary the petals were thick, and the flowers extremely well formed. When it is considered that a single stem, some 18 inches in height, produced five flowers, the display that may be expected to be made by a large specimen, covered with blossoms of the dimensions stated, must be grand indeed; and, therefore, whether this Rhododendron prove hardy or not, it must certainly be regarded as a great acquisition. A Knightian Medal was awarded it.—Of Orchids, some fine things were again produced by Messrs. Rollisson, who furnished Cattleya citrina, a yellow kind found on branches of Oak trees in Mexico; the handsome purple C. Skinneri; Dendrobium albo-sanguineum, and D. densiflorum; Cypsis bracteseens; the Brassia-like Oncidium phymatochilum; an Anguloa; and one or two other plants. A Knightian Medal was awarded.—From Messrs. Veitch came a variety of Dendrobium macrophyllum, with a fine spike of flowers, nearly four times as large as those of the ordinary state of this plant, and they did not smell quite so strongly of rhubarb as those of macrophyllum generally do. The same firm also showed a variety of Calanthe vestita, the red colour in the eye of which was not so dark as that of the best form of this plant. Certificate awarded. — From Messrs. Lane, the great Rose-growers at Berkhampstead, came four boxfuls of the "Queen of flowers" in as fine condition as they possibly could have been in the month of June. They consisted of the newer and better sorts of Roses now in cultivation, and were stated to have been selected from a collection of no fewer than 500 plants. A Banksian medal was awarded them.—Of Hyacinths, Messrs. Henderson sent a large collection, from which six double and six single sorts were set apart for special competition, this being a day on which the Society had invited Hyacinths to be shown for prizes offered for them; but no other grower had courage enough to send any, and therefore the prize — a Banksian Medal—was awarded to Messrs. Henderson for the following varieties, viz., double: — Prince of Waterloo, L'Eclipse, Jaune Supreme, Madame Marmone, Triumph Blandina, and Laurens Koster; single:—Queen of the Netherlands, Orondates, Lord Grey, Gumal, Baron Van Thuyll, and Mrs. Beecher Stowe.—Messrs. Henderson also furnished the following plants, viz., a small example of Elæocarpus dentatus, covered with little white, toothed bell-shaped flowers; two Acacias; Eriostemon linearifolium, a pretty species; Boronia tetrandra; small plants of Grevillea lavandulacea; Daviesia pungens; Gastrolobium Drummondi; and Cheiranthera linearis, a New Holland plant, spoken of many years ago by Mr. Allan Cunningham, as being a plant of great beauty. It has violet or rather blue starry flowers of sufficient size to be showy; but unfortunately, owing to the want of bright sunlight in the room, they did not open, and therefore its beauty could not be seen. It was mentioned that wild specimens, however, showed the plant to be much more robust than that exhibited, which was small and somewhat attenuated. A Certificate of Merit was awarded it.—Of Camellias J. Allnutt, Esq., of Clapham Common, sent two blooms, one white and the other red; but both from the same tree, which had been in cultivation many years, but had never been known to sport in a similar manner before. It was remarked that this circumstance was a good illustration of the way in which many of our existing varieties, not only of Camellias, but also of other flowers and fruits, have from time to time been obtained; and Coe's Golden Drop Plum, which was stated to have sported in a similar way from the Magnum Bonum, was adduced in confirmation of the statement.—A dish of Keens' Seedling Strawberries was shown by Mr. Brown, gr. to F. Parnell, Esq., of Waltham Abbey, Essex. — Dr. Royle then drew the attention of the meeting to specimens of paper, rope, cordage, and other substances prepared from the Plantain (*Musa paradisiaca*). He also entered into highly interesting details concerning the amount of produce obtainable from an acre of Plantain ground, independently of the fruit, for which alone the plant is now cultivated in the greater part of the tropics. The paper, although for the most part unbleached, and not prepared with European skill, was of the best quality as regards strength and fineness. Some of it was of a delicate cream colour. The threads of the Musa textilis constituted, he observed, the invaluable Manilla hemp. After going into numerous statements upon these important points, he directed attention to a living plant of the *Boehmeria nivea*, Chou-ma, or China Grass, also called occasionally, though erroneously, Manilla hemp. Specimens of the raw material and of exquisite manufactures prepared by the Chinese from this plant were laid upon the table; the excessive strength of its fibres was pointed out, and it was shown that the Indian province of Assam was capable of alone supplying an unlimited quantity of such hemp. The Vice-Secretary produced a specimen of the plant from Shanghae, and remarked that since it was capable of enduring the climate of so cold a part of China it might be reasonably expected to succeed as a field crop in the west and south of Ireland. It had this advantage over common hemp, that it was perennial, not annual, and afforded two or three cuttings in a year; so that it might be found much cheaper to grow, and more productive, as well as of far better quality than hemp itself.—From the garden of the Society came a good specimen of Rhynchospermum jasminoides, Weigela amabilis, three Azaleas, the Sikkim Rhododendron thenæflorum, two Eriostemons, and other plants, among which was the beautiful Tropæolum Triomphe de Gand, which is one of the most showy and useful of the genus.

Reviews.

A Flora and Fauna within Living Animals. By Joseph Leidy, M.D. Philadelphia. 4to, pp. 67, tab. x.

This is one of the publications of the Smithsonian Institution, and a very valuable addition to our knowledge of such vegetable or animal productions as affect living organisms. It may be true that it does not contain much which may not be found in Robin's second edition of his admirable work on those fungals which grow on animals: but the illustrations are in some instances far more complete, and well worth the attention of every botanist and physiologist who may chance to be interested in the subject. We would point out more especially the plates which represent the curious parasites which infest the intestines of different species of Julus, and the several Entozoa which live in their company; for, though the principal of them are not overlooked by Robin, there is nothing in his plates as regards these particular productions which can for a moment be compared with Dr. Leidy's copious and excellent figures.

A question perhaps may be raised as to the real nature of some of these bodies, with reference to their respective claims to be considered as fungals or algæ. For our own part, we have little doubt that they are all true fungals, as also such productions as *Saprolegnia* and *Leptomitus*, which are so commonly developed upon living animals in water. The zoosperms indeed in *Saprolegnia* seem at first sight to remove such productions very far from fungi, but we strongly suspect that it will hereafter be established that they are mere states of different species of *Mucor*, a fact which seems to be indicated by the supposed transformation observed many years since by Carus, and described and figured in Nov. Act., 1823, t. lviii., of an allied production on the larvæ of a salamander into a species of *Mucor*.

The ravages committed by a fungal on silkworms are unfortunately too well known in those parts of Europe where silk is an industrial product, and the affection occurs in America as well as in the old world. Similar affections have been observed in other caterpillars and larvæ, and there is no doubt that the fungals thus exercise a very important office in keeping up the proper balance between the several parts of the living world. Dr. Leidy suggests this more especially with respect to the 17-year locust, whose larvæ are sometimes affected by a fungal, in consequence of which, though still living "the posterior third of the abdominal contents is converted into a dry, powdery, ochreous-yellow compact mass of sporuloid bodies. The caudal appendages, and posterior two or three abdominal rings covering the mass, are loose, and easily detached, leaving the fungoid matter in the form of a cone, affixed by the base to the unaffected part of the abdomen of the insect."

Dr. Leidy is evidently an original observer, though not perhaps completely *au courant* in European publications, and his work is one amongst numerous instances of the immense progress which is making every day in natural history in the United States; and no better proof of the wide extent to which a taste for such matters exists in that country need be given, than the large impression of their publication, which the Smithsonian Institution find necessary to supply the wants of the public.

The Practical Dyer and Scourer. By Thomas Love. Small 8vo, pp. 289. Longmans.

The author is a working dyer and scourer, living at 25, Great Windmill Street, Haymarket, and he gives his brethren in the trade the benefit of his practical knowledge and long experience. He also communicates instruction to thrifty housewives, showing them how they may dye and scour for themselves. For instance—

"*To Dye Five Ladies' French Merino Dresses Five Different Colours, from Ruby to dark Brown, in one little Copper.*—In my instructions for cleaning woollens (see p. 90), I said, Sort your woollens and put up all to dry except the marones, the clarets, the rubies, and all sorts of brown merino dresses. These woollens have been prepared for dyeing, that is, boiled off in muriate of tin, alum, and copperas; they are now dry, and ready to dye with any of the many dye stuffs that crimson and brown can be dyed with. I shall dye them now with cudbear, in preference to archil or peachwood; although in the state they are at present, being full of preparation, they are ready to suck up any dye-stuff they may get.

"Clean out well a small copper, that will hold four or five pails of water, fill it up, and get it on to a boil; have a clean copper bowl, and begin.

"*The Ruby*, first. Put in your copper bowl 2 lbs. of cudbear, and mix it well with clean water, as you would flour. When mixed, put it in the copper, and take your ruby merino dress, dry as it is, and handle it well in the copper, boiling it well all the time for 40 minutes; now fill up the copper, and take the work out, and put it to drain over one of your clean small vessels, to save the liquor that will run from it; when it is taken out of the copper, the tenter-hooks are the best for it to hang by; now tell your man to rinse this ruby dress in three cold waters, and hang it up directly in a warm room to dry.

"*Crimson* is next. I sometimes give those a scarlet body first; I have not done so in this case, so we must go on. Now mix in the copper bowl as before 1 lb. of cudbear, and put in the copper, stir it well, and handle the crimson merino dress in the copper for 40 minutes; the copper boiling well all the time; now fill the copper, and take it out to drain as before, and give it to your man to rinse; tell him to give it five minutes in a common sour, and a cold water after the sour; hang it up to dry, and see that he does not touch the ruby with it.

"*Marone* is the next merino I will dye in this copper. Put 1 lb. of cudbear in the copper for this dress, stir it well and handle it in; make it boil well, and give it 20 minutes, and then get it up; put in the copper ½ lb. of turmeric, and the merino back again for 20 minutes longer, well handling and boiling it all the time; now fill up the copper with clean water, take up the work to cool, and give it to your man to rinse and hang up to dry carefully.

"*Claret* is next in the same copper. Give this another pound of cudbear and half an hour's good boiling; take

it up, and fill one of your large kettles with scalding water; melt ½ lb. of copperas in it, handle it well in this for a quarter of an hour; take it up, cool, and rinse it in three waters, and put it in the copper again and boil it well for half an hour; get it up to drain, and tell your man to rinse it well and hang it up to dry.

"*Brown* and *Rappee* are next in your copper. For these two merinos, put 1 lb. of cudbear, 1 lb. of turmeric, and 1 lb. of sumach in the copper, and handle in these two merinos, and boil them well for half an hour; fill up the copper, and hang them up to drain over a kettle, and melt 1 lb. of copperas in the kettle you had for the claret, and handle them in this for half an hour, and get them up and rinse them in three waters, and put them back in the copper and boil them for half an hour; get them up to drain, give the man the brown to rinse and hang up, and return the rappee merino in the saddening for a quarter of an hour; take it up, rinse, and return it in the copper; boil it well for half an hour, take it up, cool it, rinse it, hang it up, and tell your man to empty the copper, and fill it up with clean water, and you have done."

In another place the mystery of cleaning carpets is revealed:—

"Have them taken up and well beaten, brushed, laid flat on a floor, and the spots taken out by rubbing a piece of hard soap on the greasy spot, and rubbing it out with a brush and clean cold water, well drying each spot as it is done with a cloth before you leave it. Cut a bar of the best mottled soap into two gallons of water, and put it on the fire to dissolve, and when dissolved, begin and scour the carpet in the manner following:—Take two pails of blood-warm water, and put in one of them two quarts of the melted soap to scour the carpet with, and the other pail of warm water is to rinse the soap and dirt out of the carpet as you go on with the cleaning, which must be done at less than one square yard at a time. Now dip a brush into the pail with the soap in it, and lift it out on the carpet, and scour about a square yard at a time, while on the knees, and do it so as not to let it go through to the back of the carpet; when this spot or yard is cleaned well with a soap and brush, rub the soap well out by means of a flannel or coarse sponge, and suck up in the sponge or flannel the wet and dirt that was made on the carpet by the scouring-brush, and rinsing the flannel in a pail of clean water repeatedly. Have a pail of clean cold water and a little common sour in it, and have a clean sponge and dip it in the sour, squeeze it well, kneel down and rub the sponge well into the spot you have first cleaned and rinsed. Now this spot must be dried with clean coarse cotton or linen cloth, before you leave it as properly done, and before you proceed with another yard of the carpet. Cleaning carpets dry exemplifies the old saying, and the true one, 'You should rub off as you go.' And so you must go on, square after square yard, until the carpet is entirely cleaned. A good fire ought to be in the room to help dry it on the floor as fast as it is done. The floor must be clean and dry before you begin to scour the carpet.

"*Remarks.*—I have cleaned this carpet with the best soap, but I do not like it so well as Feild's oil soap; for, after the mottled soap is melted, it congeals as it gets cold, whereas Feild's never congeals after it is once melted, and Feild's is the cheapest. It is to be had at Legg's, in Wardour Street, Soho; and Barnes's, Long Acre; and of the makers."

It is easy to see that these instructions come from a man who knows what he is talking about; and, we dare say, Mr. Love's volume will find a place by the side of cookery books, British wine-making, and those other useful volumes which constitute the private library of economical housekeepers. At all events it ought to be placed there.

Mr. Luke Hansard has just published a pamphlet upon *Strikes and Lock-outs* (Aylott & Co.), concerning which we can only remark that his queer crabbed English wholly destroys the effect of his good intentions.

New Plants.

54. Oncidium cæsium *Rchb. fil. in Regel's Gartenflora*, t. 80.

This is certainly a mere variety of *Oncidium reflexum*, with leaves more glaucous than usual, owing perhaps to bad cultivation. Such differences as are pointed out in the figure and description, if sufficient to establish a species, would lead to the sub-division of every species of Oncidium yet known, and to a multiplication of names which can only render a subject, already sufficiently difficult, altogether impenetrable. The plant has no horticultural value.

55. Dendrobium macrophyllum, var. *giganteum*.

At the last meeting of the Horticultural Society Messrs. Veitch produced a variety of this well-known species with flowers four times as large as usual. It was a shade lighter in colour than the common kinds, and not altogether so strongly scented with rhubarb. We believe it was obtained from the Continent with some garden name indicating its being, what it is not, a new species.

56. Allosorus flexuosus. *Kaulfuss.*

This is a South American Fern, of slender growth and graceful habit. Although little known, it is, in my opinion, worthy of notice, on account of its fragrance, which I am inclined to think will render it an especial favourite with those who are cultivators of this interesting and truly beautiful tribe of plants. I remember to have first met with it about 17 years ago, in the garden of the Baroness Bassett, Tehidy Park, Cornwall, where I was told it had accidentally made its appearance among some other plants that had been then received from Real del Monte, in Mexico, of which country I presume it is a native. Through the kindness of my friend Mr. Cady, of Tehidy, I have again renewed its acquaintance, and by means of a specimen lately forwarded to me, have found it to possess the property of being remarkably sweet-scented, resembling that, with which we are all more or less familiar, of the Pteris aquilina, or common Brake, after it has been cut for some time and dried in the sun, but far more powerful, the smell of a small frond being sufficient to fill a large room. *W. B. Booth.*

Garden Memoranda.

Crystal Palace at Sydenham.—The more gigantic works in the Park, connected with this, in all respects, wonderful speculation, are now getting somewhat into shape, and those which, from the nature of the ground, have required less labour to accomplish, are beginning to assume a finished appearance. In anticipation of opening on the 24th of May, increased exertions are being made to have everything in as forward a state as possible; but, although the terrace gardens may be completed by that time, yet it is scarcely possible that the heavy operations towards the bottom of the park, where islands have to be formed, huge mounds and embankments raised, and, consequently, immense quantities of soil conveyed from one place to another, involving both much labour and time, can do more than exhibit, by the day fixed for opening, the great distinguishing features of a design, which, when completed, must be the wonder and admiration of everybody. The tons of soil that have been moved, since this park has been commenced, are incalculable; and many more must yet be turned over, and conveyed from one place to another, before all shall have been accomplished that is contemplated. The transfer is effected by means of trucks, drawn by horse-power on railways, put down temporarily for the purpose. The two projecting wings of the palace, enclosing the ends of the terrace garden, are progressing rapidly, more especially the one on the Norwood side, which is nearly up; and all the more important ground operations connected with the formation of the terraces have been completed. The upper terrace only requires the broad walk, that runs parallel with the palace, to be fine gravelled to be finished; a great portion of the turf on the terrace garden below has been laid down, and, notwithstanding the very dry weather for such work, the planting of the beds here is now being actively proceeded with. Those at present finished have been filled chiefly with the finer varieties of deep crimson and other Rhododendrons, several of which are coming into bloom. Many of the beds are edged with the pretty little Erica carnea, which is also now in flower, and very interesting in appearance it is. In order to counteract the ill effects of drought, the newly planted shrubs, not only here, but in all other parts of the grounds, are being continually watered at the root during the whole day, and towards evening they are syringed overhead with garden engines. Many young specimen Deodars, varying from 8 to 12 feet in height, have been recently planted, both on the terrace and in the park; but these having had good balls, do not appear to be the least affected by the change. The walks in the terrace garden are nearly all rough gravelled, and the different basins for the fountains have been formed, and only wait for the latter to render this garden in a tolerably advanced state. The bottoms of the basins have been puddled with clay, so as to keep them from leaking, and all round the outside of the white stonework, which forms the sides, has also been puddled for a distance of 3 feet in width, in order to effect the same end.

In our last report we stated that the main central walk had been formed as far as the first great fountain in the park; since that time no more of this noble promenade has been made, but the channels for the waterfalls and succession of little cascades on either side of it have been roughly blocked out as far as the first great lake, into which they are to empty themselves over piles of ornamental rockwork. The site for the immense valley of water which is to spread all over this lower part of the park is also now apparent; great portions of the stonework along its margin, more especially on the Anerley side, being built, and a great extent of the sloping banks around it being turfed and already under the scythe. These banks are traversed by flights of white stone stairs, which lead from walks on the higher ground down to the water's edge. The bottoms of the lakes are being covered with burnt clay, which is also largely employed here for walks, for which it is found to be cheaper than gravel. It is burnt with small coal, first (after having made a good fire in the centre, with air-holes to it), putting a layer of coal and then a layer of clay, and so continuing these concentric layers till the heap is large enough. Numbers of heaps of this kind, smoking and smouldering (for they must not be allowed to burst into flame), may now be seen in different parts of the ground, but especially in the great valleys intended for the water. In these, islands are beginning to make their appearance; but as yet so shapeless that no idea can be gleaned of what their ultimate forms may be. Several of the Saurian monsters that are to ornament them are, however, already placed out of doors. Those at present set out are in the corner of the park nearest Anerley.

Passing up towards the Palace, the whole of the ground on the west side of the central walk will be found in a tolerably advanced state. On the little knoll, a short distance east of the new railway station, is being erected a series of corrugated iron arches, supported on metal pillars, and furnished with ornamental trellis work for climbing Roses and other drapery of that kind. A belt of Roses has also been planted round the base of this floral temple, which, when fully covered with foliage and flowers, cannot fail to be a feature of much interest, more especially when viewed from the terrace garden, from which it is not far distant. The planting of the clumps on the Anerley Road side of the grounds with Rhododendrons and other shrubs is being proceeded with at a great rate; and it will be gratifying to know that few if any deaths have occurred among things previously planted here, either from frost or other causes. The great extent of turf alluded to by us in our last report, as having been laid down here, is now green and beautiful, showing no symptoms of suffering from drought.

The ground work on the large track of park lying between the east end of the Palace and the Sydenham boundary is also now receiving special attention. New walks are being formed here, planting is being done, the surface in general is being levelled and put into shape, and considerable portions of it have even already been turfed; owing, however, to the parched condition of the ground, especially on a natural knoll here, the newly-laid down turf was quite brown, and looked burnt up. At the base of this hill, a small triangular lake is already filled with water, but, with this exception, all the other lakes are as yet dry, and will apparently not be ready to receive their contents for some time to come.

We imagine we have now said enough to show that, notwithstanding the number of men employed (and they literally swarm in every part of the grounds, their number of late being nearly doubled), a large amount of work has yet to be effected before this large and fine park, with its beautiful undulating surface, judiciously interspersed with trees, shrubs, and sheets of water, with their islands and waterfalls, shall have been completed. With regard to the large fountains, the taking down of the water towers has prevented their being worked, at least for the present; but that does not affect the smaller ones. It may also perhaps be worth while to state that the walks, after draining them well, are all bottomed here with faggots, which are covered with burnt clay or rough gravel, and over that will be laid fine gravel when the walks shall come to be finished.

FLORICULTURE.

The Chrysanthemum.—In the following remarks respecting Chrysanthemums I shall chiefly confine myself to the mode of cultivating them in pots. As soon as the plants have done flowering, I cut them down, and place them in any convenient corner on the south side of a wall, where they are in some measure sheltered from frost and north easterly winds. They remain in this situation undisturbed, except by watering them now and then, until the present time, when they are removed to a more open place, preparatory to their being wanted for the purpose of propagation. Chrysanthemums may be increased by cuttings, layers, and offsets; I have often grown them from the latter; but I have found the foliage so apt to go off them, and leave the plants naked at the bottom, that I greatly prefer cuttings, which, with good treatment, will retain their foliage green and healthy almost to the rims of the pots. The best time for putting in cuttings is the latter end of April, or the beginning of May. I use the points of the best shoots of the current year's wood, not more than 2 or 3 inches in length, cutting them close to a joint, and removing the bottom leaves. When potted, I transfer them to a close frame; and if it is convenient, I assist their striking by means of a gentle bottom-heat, but this is not absolutely necessary, for they strike readily without it. I shade for a few hours in the daytime, until they have taken root, when I give them plenty of air, and pinch out their tops, which causes them to break freely. When the shoots have grown an inch or two in length, I pot into 3-inch pots, in a mixture of turfy loam and one-third rotten dung, selecting the strongest and bushiest plants, and discarding the rest. When potted, I again place them in a close frame, and shade a little until they have made fresh roots. They are afterwards set out of doors, sufficiently far apart to prevent their being drawn, and kept well supplied with water. When the shoots have grown 3 or 4 inches in length, I again pinch out their tops, in order to make them bushy; and after they have grown an inch in length, I shift the plants into 6-inch pots, placing them again in their former situation; and when they have filled the pots well with roots, I re-pot them into 9-inch pots, in which I flower them, using the same compost as before. I now place them thinly in a nice open place, where they have a free circulation of air: this keeps them dwarf and healthy. I keep the pots clear of weeds and suckers; water them as often as they require it; and when they have fairly set their flower-buds, I give them some good clear manure-water twice a week, or more or less according to the state of the weather. About the beginning of October, I remove some of the most forward plants under glass, giving them plenty of air during the day. The others are taken in as they are required, or as the weather may render necessary; for though hardy, the Chrysanthemum will not stand more than 4° or 5° of frost, without sustaining some injury. I bloom here every year about 150 plants, varying from one to two

feet high, and having from 25 to 30 full blown flowers on each plant, many of which do not require a single stake to suppport them. It may be worth while to remark that, if some of the most promising shoots of out-door plants are layered in the beginning of September, by giving them a twist, and pegging them down a few inches below the surface of the ground, so as to make young plants about ten inches high, they will be well rooted in three weeks, *i.e.* if they are kept watered. When rooted, they may be taken up and potted in 6-inch pots, and placed in a close frame for a few days, while they make fresh roots; afterwards they should have plenty of air. Plants managed in this way are very suitable for the front shelves of the stage, or for mixing with other plants. The earliest and best flowering of the plants I take cuttings from are selected and planted in any vacant places in the shrubberies, all the shoots being first shortened back to within six inches of the pot. This causes them to make more shoots, which are again stopped, thus keeping the plants dwarf and in due bounds, and inducing them to bloom at a season when few flowers adorn the garden. *T. R.*

National Floricultural Society, *April* 6.—Mr. Hancock in the chair. A Certificate was awarded on this occasion to a Pansy called Memnon, exhibited by Mr. Turner. It is a large flower, colour dark purple maroon, smooth, and of good texture; three blooms were exhibited. A Certificate was also awarded to the same for Cineraria Sir C. Napier, a dark indigo-blue kind, with good broad petals of good substance; also a Label of Commendation for a pretty alpine Auricula, named King of Crimsons. This is a neat round flower, buff ground, with shaded crimson edges.—Mr. Bousie, of Stoke Park, contributed a finely bloomed plant of his seedling Cineraria, Rose of England, which on a former occasion received a Label of Commendation. This one, however, it was awarded a Certificate. Two well bloomed plants were also sent of Bousie's Optima, a large clear bold Cineraria, pure white, with deep-blue tips; this variety received a Certificate in 1853. It is a fine flower.—Mr. Clark sent Cineraria Beauty of Streatham Place, but it was not in good condition. It has a white ground, with deep purple edge, inclined to cup; the footstalks are quite hard and wiry.—Messrs. Lee sent a Cineraria named Star, white, tipped with bright rose; a showy variety, but not of the best form. There were a few promising Auriculas, a Polyanthus, and a box of 30 fine blooms of Pansies, from Mr. Turner. The best of them consisted of Victory, Comet, Uncle Tom, Emperor, Monarch, Fair Rosamond, Sovereign, Royal Standard, Earl Mansfield, Satisfaction, Lord John Russell, Lord Palmerston, National, and Sir John Cathcart.

Miscellaneous.

Poireau d'Été Petit de Brabant.—This is an early Leek, with very long narrow leaves, of a dark green colour. It is not so well adapted for a main crop as the large Rouen Leek and some others, because, if sown at the same time, it is more apt to run to seed than they are. But a little of it may be sown for early use with advantage. *Journal of Hort Soc.*

Advice to Artists.—If the principles which these remarks have been intended to explain are important to those who would represent vegetable forms as they are, they have, if possible, a still greater bearing upon those compositions in which plants and their parts are to be employed conventionally. It is to be hoped that the time is approaching when good taste will shrink from huge bouquets hung upon curtains, or carpets loaded with mountains of fruit, or muslin dresses made uncomfortable with eternal garlands of leaves and flowers, put in with a due regard to impossible perspective, and incomprehensible light and shade. Refined taste is shocked at such offences against common sense, and seeks eagerly for that which is beautiful without being ridiculous. Is it not possible that devices of botanists, not intended for decoration, but for the representation of ideal truth, may lend some assistance to the manufacturer! Botanists are accustomed, for the purposes of abstract science, to project the parts of plants, and especially of flowers or fruit, upon plane surfaces, preserving all the organs in their due position with respect to each other, but neglecting form and other minor attributes. Such projections they call diagrams. Their nature and the mode of constructing them will be the best understood by an example; for which purpose the Raspberry flower may be selected. In this flower the centre is occupied by a number of small grains forming a circular heap, each grain having a thread or style proceeding from its end; these would be represented in a diagram by numerous circles, with or without the threads. Next the grains comes a fleshy rim, which may be represented by a wavy line. Beyond this stand about 20 stamens, the expression of which would be as many rays, with oblong or globular heads. On the outside of the stamens are placed five petals, imitated by as many curves of any form; and then come five green leaves in two rows, indicated by any five points. This gives a regular figure, which represents to the eye of a botanist a Raspberry flower; but, by certain slight alterations of form or proportion in the constituent parts, the same diagram may be made to change its whole aspect without changing its material form; and of these changes I should think that intelligent artists might avail themselves. Some hundreds of thousands, nay millions of variations of this are conceivable, and they seem to answer all the exigencies of manufacturing art. I certainly think that, in this way, much may be done by the taste and skill of those who know how to apply principles to practical purposes. I have no doubt that if an artist were to take the Victoria Lily, and project all the multifarious parts of it, of different forms, upon a plane surface, and make such changes in it as would be perfectly allowable for such a purpose, consistently with the structure of plants, he would obtain an elaborate pattern, in which taste could find no fault, and in which unintelligent surprise would find much to admire. *Professor Lindley's Symmetry of Vegetation.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Conservatory, &c.—The bright sunshine and cold drying winds which have recently prevailed will, unless means are used to counteract their effects, soon destroy the beauty of the finest specimens, particularly if their blooming has been forwarded in a close moist atmosphere; and although it is yet too early to bring shading into general use, it will be impossible, without its assistance, to preserve the blossom of plants during such weather as we are now experiencing. Blinds can hardly be looked upon as anything better than necessary evils; for, besides their being troublesome and expensive, it is very difficult to arrange them so as to prevent their being continual eyesores, through their disfiguring the house. It is therefore worth while to have them so arranged as to be easily drawn up or let down, and to be as little conspicuous as possible when not in use; for if they are troublesome to move, there is a great tendency to use them more than is absolutely necessary, and nothing can look more dismal than a house wrapped in canvass when the sun is hid; and besides the disagreeable appearance, it is most injurious to any growing plants in the house, and also prevents those in bloom from attaining their proper colour. Whatever material is used for blinds, it should be light and strong, for what is wanted is merely to break the force of the sun's rays, without darkening the house. A nice, light, openmade canvass forms the best article I have met with. A close net is superior in some respects, but so objectionable in the case of lofty houses, from its liability to get torn through moving it up and down, that it is altogether unsuitable. It will be necessary to admit air freely, to keep down the temperature during bright sunshine, such as we have experienced for some days past; but avoid, as far as possible, allowing currents to blow over the plants, and counteract their drying effect by keeping every available surface moist.

FORCING DEPARTMENT.

Pinery.—Plants swelling their fruit must be frequently looked over, to see that they are sufficiently moist at the root; for if they are allowed to get too dry here, the fruit will not reach the size that it would under proper treatment. It is, however, very easy to err in the opposite extreme, and some care and practice are necessary to enable one to properly water plants having their pots plunged. This sort of work, therefore, should not be entrusted to inexperienced hands, who would probably water every plant, if the surface soil indicated dryness. Use clear weak manure-water in a tepid state, for all plants that are moderately well rooted. Keep the atmosphere regularly moist, but avoid heavy syringings over the plants, and give air sparingly until the external atmosphere becomes warmer, and more congenial to vegetation; shut up early in the afternoon, allowing the glass to stand at 85° or 90° for an hour or two after shutting up and syringing the house. Vineries.—Proceed as expeditiously as possible with thinning the fruit, and regulating the growth, in succession-houses, endeavouring to get all such important work as this done at the proper time, for it is a very bad practice to allow the Vines to produce a quantity of laterals, which only serve to exclude the light from the useful foliage and render it liable to scorch when the laterals are removed; and allowing a quantity of fruit to attain some size before cutting it off, is simply taking a proportionate amount from the weight and quality of the fruit, which the Vines will bring to perfection. Give inside borders a liberal supply of tepid manure water, using that from the stable tank when it can be obtained. Admit air carefully during the prevalence of drying winds, and maintain a moist atmosphere, using the syringe freely, except where the Vines are in bloom, or where the berries are beginning to change colour. It is of importance, however, to secure a supply of pure soft water for syringing with, as, if limy water is used, the fruit and foliage become coated, or specked with a crustation of lime, which injures as well as greatly disfigures them. Peaches.—Trees swelling their fruit must be carefully attended to with water, giving liquid manure to those in a weakly state, or that show indications of being overcropped for their strength. Keep the young wood nicely and regularly tied in, and guard against insects and mildew by a liberal use of the syringe, and the timely application of tobacco water and sulphur.

FLOWER GARDEN AND SHRUBBERIES.

What with bright sunshine and strong drying winds, it will require the utmost care to save recently transplanted evergreens of large size. And no mere surface watering will be of any service, but the ground about the roots as well as the ball should be thoroughly soaked. After applying water, and allowing the surface to become moderately firm, stir it slightly with a blunt fork, which will prevent its cracking, and will also allow the free action of the sun and air to warm the soil, and encourage the production of active roots. Surface dress with fine soil and water, newly laid turf, whenever it is observed to be suffering from the effects of the dry cold weather. Take advantage of the present dry weather to stir the surface soil of shrubbery and herb borders, to prevent the growth of weeds, and give a fresh clean appearance. Do not neglect to put in plenty of Mignonette; and if not already done, hardy annuals should be sown without further loss of time, except in cases where they are not wanted to bloom before autumn.

KITCHEN GARDEN and HARDY FRUIT DEPARTMENT.

See that recently transplanted trees are not suffering for the want of water; this, however, will hardly be the case except on soils of a very porous dry nature, and in such cases the ground should be mulched with decayed leaves, to preserve it in a uniformly moist state. Attend carefully to the protection of the blossoms of all fruit trees; where nothing better or more convenient can be obtained, Yew or Spruce branches will be of service, provided they are so fixed as not to be liable to be blown against the blossoms. Remove the covering as frequently as convenient on fine days, so as to fully expose the trees to sun and air. Get a supply of tobacco water in readiness to attack the aphides immediately they make their appearance on the Peach trees. Sow Broccoli on beds of light rich soil in an open situation for the main crop, and Cabbage, Cauliflower, Lettuce, &c., for succession; also attend to sowing small breadths of Turnips about once a fortnight, so as to secure having a regular supply in a fit state for use. Put in a small breadth of an early variety of French Bean on a warm, dry, sheltered border, and plant a quantity in small pots to be raised in a cold frame, and planted out as soon as the danger of frost is past. Use the hoe liberally among growing crops, to destroy weeds, and keep the surface loose and friable.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending April 6, 1854, as observed at the Horticultural Gardens.

March and April.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind.	Rain.
Friday 31	3	30.401	30.354	57	29	43.0	45	46	W.	[illegible]
Satur. 1	4	30.290	30.139	71	30	50.5	46	46	S.W.	[illegible]
Sunday 2	5	30.409	30.290	62	32	47.0	46	47	E.	[illegible]
Mon.. 3	6	30.496	30.457	58	26	42.0	47	48	N.	[illegible]
Tues. 4	7	30.527	30.384	61	28	44.5	46	48	W.	[illegible]
Wed. 5	8	30.371	30.342	65	27	46.0	46	48	S.W.	[illegible]
Thurs. 6	9	30.441	30.308	67	28	47.5	47	48	W.	[illegible]
Average.		30.419	30.319	63.0	28.5	45.7	46.1	46.4		[illegible]

March 31—Clear with dry air; very clear at night.
April 1—Fine; very fine; clear at night.
— 2—Clear; very fine; overcast.
— 3—Clear; masses of dusky and white clouds; fine; very clear; frosty.
— 4—Slight haze; cloudless; hot sun; very clear; frosty.
— 5—Clear; very fine; clear; frosty.
— 6—Foggy; very fine, with hot sun; clear; slight frost.
Mean temperature of the week, 1-10th deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending April 15, 1854.

April.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 9	54.4	35.2	44.8	13	0.30 in.	4	4	5	1	3	5	5	1
Mon. 10	55.1	33.6	44.4	11	0.27	2	6	5	2	4	4	4	1
Tues. 11	55.0	35.7	45.3	14	0.51	2	6	3	1	5	7	2	[illegible]
Wed. 12	55.5	37.3	46.4	18	0.56	1	6	4	—	2	9	1	5
Thurs. 13	55.8	34.8	45.3	12	0.45	2	5	—	4	2	7	1	[illegible]
Friday 14	57.4	37.4	47.4	11	0.21	2	5	5	1	4	6	1	4
Satur. 15	57.3	39.6	48.4	16	0.47	6	6	5	1	2	4	2	2

The highest temperature during the above period occurred on the 14th, 1852—therm. 73 deg.; and the lowest on the 16th, 1847—therm. 20 deg.

Notices to Correspondents.

Australian Wine: *W M.* Not yet arrived. Many thanks. How can a parcel of books be most conveniently and unexpensively sent to you?

Conifers: *Anon.* We doubt whether your plants, having become corkscrewed at the root, will ever lose the form; if they do not they will never be healthy, and will probably be blown down some day. You have, however, done all that was possible under the circumstances. Barron's "Winter Garden," or Brown's "Forester," will give you the information which we suppose you to be seeking. So will Loudon's "Arboretum Britannicum." We do not think that Deodar seeds are on sale anywhere.

Exhibition at Chiswick: *Verax.* We cannot explain how the writer in the last No. of the "Florist" makes out his "facts." But we know that he entirely misunderstands the case; we content ourselves with referring to what he asserts about Orchids, as a sample of his accuracy. He assures the readers of the "Florist" that the additional medals offered by the Society in 1853 for Orchids amounted in value to 106*l.*; but if you will turn to the offer itself, as advertised, May 7, 1853, you will see that it amounted to only 53*l.*, exactly half the estimate of the writer in the "Florist." Surely we may be excused from making any further reply to such statements. Examine the facts, and judge for yourself.

Fountains: *Nemo.* We know of no better lining for a fountain than Portland cement; it will stand if well done and of very good quality.

Green-fly: *W C E.* Fumigation with tobacco is the only remedy.

Names of Plants. We have been so often obliged reluctantly to decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*Erzeroum.* 607, Cystopteris dentata; 599, Astragalus Echinus; 332, Astr. Lagurus; 881 A, Astr. tragacanthoides; 1260, Astr. sp. n.(?); do any of these yield Tragacanth?—Have we sent you the new edition of the "Vegetable Kingdom?" 37, Onobrychis cornuta; 1212, Onobrychis Pallasii; 1259, Hedysarum grandiflorum.—*V D.* The long green Okra is probably Hibiscus esculentus; you must treat it like a Balsam. The Osage Orange is Maclura aurantiaca, a hardy shrub much used in the United States for excellent hedges. Raise it in a little heat, and then prick it out under hand-glasses. Soil is immaterial.—*A Devonian.* The flower is so crushed that nothing can be made of it. But it is supposed to be Hemerocallis flava. The "Hibbertia" is Candollea cuneifolia.—*A H.* Anemone alpina and apennina are distinct species; but A. acutipetala is a mere variety of A. pulsatilla.—*Diss.* This is certainly Doronicum Pardalianches, whatever the other may have been; perhaps it was D. plantagineum, sometimes confounded with it.—*T Gaines.* Some Pomaderris; we will ascertain what species, and tell you next week.—*R L.* Acer rubrum.

Vines: *R H.* Stoves will do no harm, provided you keep the air damp, and the stoves do not exhale any noxious vapour, a habit of which it is by no means easy to cure them. We should have thought a flue cheaper.

*** As usual, many communications have been received too late and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

TO MANURE MANUFACTURERS.

THE Directors of the Crystal Palace Company are prepared to exhibit in the Agricultural Department samples of MANURES and other substances applied to the Soil. The terms, &c., may be obtained on application to the above department at this office.—3, Adelaide Place, London Bridge, April 8.
G. GROVE, Secretary.

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures.
WM. INGLIS CARNE, 10, Mark Lane, London.

THE LONDON MANURE COMPANY'S WHEAT MANURE, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. EDWARD PURSER, Sec.
Bridge Street, Blackfriars.

PEAT MOSS CHARCOAL, AND OTHER MANURES.—The Undersigned are appointed sole Agents by the Peat Moss Charcoal Company, for the sale of this valuable fixer and distributor of ammoniacal matter.

Also on Sale, Peruvian Guano, Superphosphate of Lime, Gypsum, Nitrate of Soda, Bone-Dust, Sulphuric Acid, and all other Manures of known value.—Apply to MARK FOTHERGILL & Co., 204A, Upper Thames Street, London.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7*l.* per ton; Superphosphate of Lime, 7*l.*; Sulphuric Acid and Coprolites, 6*l.*

Office, 69, King William Street, City, London.

N B. Genuine Peruvian Guano, guaranteed to contain 16 per cent of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

SUPERPHOSPHATE OF LIME MANUFACTURED BY MR. J. C. NESBIT'S IMPROVED STEAM MACHINE. The following is the analysis of an average sample.
"College of Chemistry, Agriculture, and General Science,
38 & 39, Lower Kennington Lane, London.
Analysis of Sample of Superphosphate of Lime from Mr. Jolliffe:

Moisture		13.97
Organic Matter, &c.		21.98
Silica		6.05
Phosphate of Lime		35.27
SOLUBLE	16.10	
INSOLUBLE	19.17	
Sulphate of Lime, &c.		22.73
		100.00
Nitrogen (equal to)		1.16
Ammonia		1.41

(Signed) J. C. NESBIT."

For price and full particulars, apply to E. Y. JOLLIFFE, 70, Mark Lane, or the Works, Lavender Dock Wharf, Rotherhithe.
Agents wanted in all the principal towns.

SEWAGE GUANO, 5*l.* 5*s.* per ton (bags included). Circulars and Testimonials forwarded on application.

DEODORIZING CHARCOAL, 1*l.* 10*s.* per ton (bags to be returned). Terms: Cash on delivery.
The Manchester Sewage Guano Company, 3, Watling Street, Shudehill, Manchester. E. RANSBOTTOM, Agent.
JOHN THOMPSON, Secretary.

SEWAGE CHARCOAL MANURE.—This highly fertilising Manure, which is Peat Charcoal completely saturated with London Sewage, will be found most efficient for every species of crop; more especially for Peas, Beans, Turnips, Mangold Wurzel, and other root crops. It will produce a greater return for the outlay than Guano or any other Manure at an equivalent value: it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained at the SEWAGE MANURE WORKS, Stanley Bridge, Fulham, at 4*l.* per ton, and in quantities less than half a ton, at 5*s.* per cwt., for ready money only: and in quantities not less than a ton, will be delivered at the London Termini of the Railroads free of charge for cartage. No charge for sacks.

It may also be had from Messrs. G. GIBBS & Co., 26, Down Street, Piccadilly, Agricultural Seedsmen, Agents for London: and from all the other Agents of the Company.

PERUVIAN GUANO, WARRANTED OF THE BEST DESCRIPTION, AND THE DIRECT IMPORTATION OF MESSRS. ANTONY GIBBS & SONS; LAWES'S *Patent Superphosphate, Nitrate of Soda, Bone Dust, and all other Natural and Artificial Manures, at the lowest remunerative prices.—See* RENDLE'S "FARMING PRICE CURRENT AND AGRICULTURAL DIRECTORY," to be obtained from W. E. RENDLE & Co., Seed Merchants, Plymouth.

SAMUELSON'S PRIZE FORKING or DIGGING MACHINE, as applied to Spring Cultivation, serves to thoroughly pulverise land which has been trodden by sheep or autumn ploughed, deepening the staple, leaving no pan, dragging up the Couch Grass, and preparing a finely divided seed-bed.

Extracts of Testimonials and references to persons using it.

"Answers thoroughly; brings everything to the surface."—*E. W. Wilmot, Congleton.*

"The very best a man can have upon a mixed or stiff soil, it so thoroughly pulverises it."—*Joseph Cooper, Acton Burnel, Salop.*

"I inform you, with the greatest satisfaction, of its success."—*Francis Hamilton, Friars Place, Middlesex.*

"Attached horses at half-past 8, on 5½ acres, finished at a quarter past 3, making first-rate work."—*J. Kirby, Bodicott, Oxon.*

"Has been working every day."—*T. Cardus, Barwell, Surrey.*

"Will do a given amount of labour, not only cheaper but better than the plough."—*J. J. Mechi, Tiptree, Essex.*

"Let me have one at your earliest convenience."—*Earl of Essex, Cassiobury, Herts.*

"Send to Exton Park one of Samuelson's Forking Machines for *Earl of Gainsborough, Oakham.*"

"Besides improved tillage, economises ploughmen."—*P. Gener, Cuba.*

"Been digging all the week; the *champion* of all implements in England; should be very sorry to be deprived of it."—*Thomas Lawrence, Thurlaston, Dunchurch.*

Price 21*l.* 10*s.*, the general purpose size; and 27*l.* 10*s.* large size, Cash; at the Works, Banbury.

MORNING FROSTS.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1*s.* 6*d.* per yard run, of E. T. ARCHER, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey. (Removing in May next to 112, Regent Street, London.)

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

WEDLAKE'S OAT-CRUSHERS, 2*l.* 15*s.*; do. 4*l.* 5*s.*; Chaff-cutters, 1*l.* 7*s.*; do. 3*l.* 7*s.*; Mangles, 2*l.* 10*s.*; Flour-mills, 4*l.* 10*s.*—118, Fenchurch Street.

FOR HOME AND FOR AUSTRALIA.—Cheap Corn Winnowing Machines, Wheat Dressing Machines, Flour Dressing Machines, Threshing Machines, Oil-Cake Breaking Machines, Turnip Cutting Machines, Brick Making Machines, Tile Making Machines, Sowing Machines, Chaff Cutting Machines, Oat Crushing Machines, Barley Crushing Machines, Grass Mowing Machines, Reaping Machines, Washing Machines, Mangling Machines, Wringing Machines.

All improved and at Free Trade Prices. List of Machines free per post, 1*s.* 4*d.*; How to Keep a Horse Cheaply, 1*s.* 4*d.*—MARY WEDLAKE & Co., 118, Fenchurch Street. Established Half a Century.

THE GENERAL LAND DRAINAGE and IMPROVEMENT COMPANY.—Incorporated by special Act of Parliament.—Offices, 52, Parliament Street, London.

Directors.
HENRY KER SEYMER, Esq., M.P., Chairman.
Sir JOHN VILLIERS SHELLEY, Bart., M.P., Deputy Chairman.

John C. Cobbold, Esq., M.P.	William Fisher Hobbs, Esq.
Sir William Cubitt, F.R.S.	Edward J. Hutchins, Esq., M.P.
Henry Currie, Esq.	Samuel Morton Peto, Esq., M.P.
	William Tite, Esq., F.R.S.
Thomas Edward Dicey, Esq.	William Wilshere, Esq.

Empowered to execute or to assist Landowners in executing with their own capital Works of Land Improvement, viz., Drainage, Irrigation, Roadmaking, Enclosing, Reclaiming, and the Erection of Farm Buildings upon any Estates, under Settlement, Mortgage, or Disability, and without any investigation of title, to charge the total amount of the outlay and expenses upon the property improved, to be repaid by annual instalments, varying according to the number of years over which Landowners may determine the repayment shall extend.
WILLIAM CLIFFORD, Secretary.

GRAND POULTRY SHOW AT BATH, JUNE 7th, 8th, and 9th. In connection with the Bath and West of England Agricultural Society, but with a separate entrance and subscription.

Director and Steward—JONATHAN GRAY, Esq.

The Honorary Secretary will forward Prize Lists and Certificates of Entry on application.

All Certificates must be returned to him on or before the 10th of May, or Exhibitors will be excluded.

All Advertisements for the Catalogue must be forwarded to him by the 10th of May.

By the kind liberality of the Great Western, the Bristol and Exeter, and South Devon Railway Companies, all Poultry will be taken to and fro free of carriage, provided the same are not sold.

HENRY SPACKMAN, Honorary Secretary, 6, Terrace Walk, Bath.

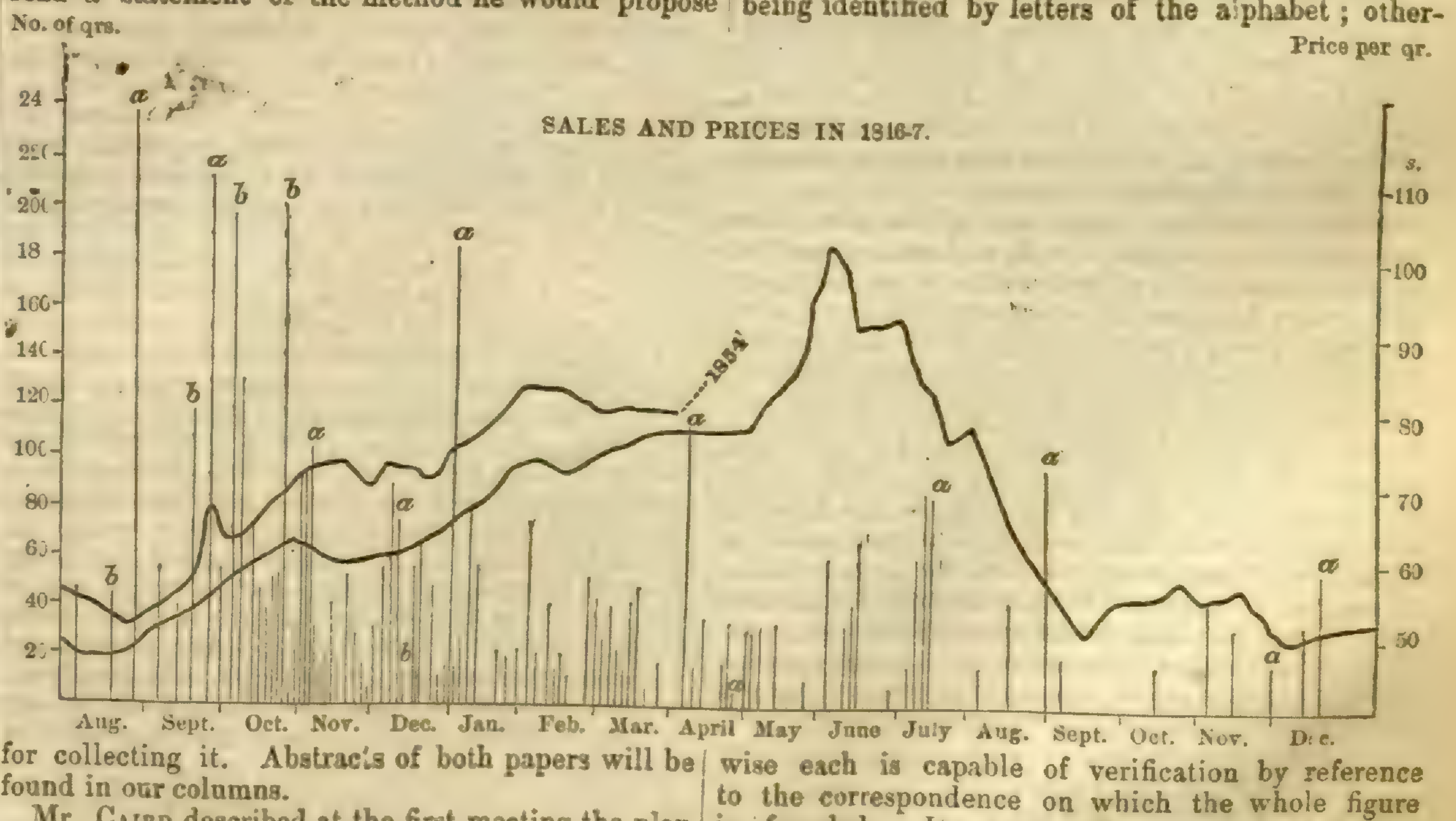
ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—PRIZE SHEETS for the LINCOLN MEETING may be had on application to the SECRETARY of the Society, No. 12, Hanover Square, London.

The Agricultural Gazette.

SATURDAY, APRIL 8, 1854.

MEETING FOR THE FOLLOWING WEEK.
THURSDAY, April 13—Agricultural Imp. Society of Ireland.

A VERY interesting discussion on the policy and on the methods of collecting annual returns of the agricultural produce of the country has been proceeding at the last two meetings of the Society of Arts. It was opened last week by a paper from Mr. LEONE LEVI on the need and value of such information; and this week the same gentleman read a statement of the method he would propose



for collecting it. Abstracts of both papers will be found in our columns.

Mr. CAIRD described at the first meeting the plan for the same purpose, which he had drawn up and submitted to Government; and on Wednesday last Mr. LUMLEY described the plan which Government had actually conducted to a successful issue in the counties of Norfolk and Suffolk. These several methods will be found described in another page, and will furnish matter for future remark.

The preliminary consideration as to the utility—and especially the agricultural utility of agricultural statistics—was not so entirely taken for granted as to be altogether lost sight of. Several speakers referred to it, some believing that the information published would be useless, and others that it might even be injurious to the farmer. These opinions were well combatted by Mr. CAIRD; and a short paper on the same side was read by Mr. MORTON, in which records of the sale of the harvest of 1846 over 1500 acres in different parts of the country, were quoted, in order to show how the farmer was interested in obtaining correct and early information of the produce of the country. The subjoined woodcut is reduced from the diagram exhibited by Mr. MORTON, in which these sales are represented. And it is to the information, on which it is founded, that we wish very shortly to call the attention of our readers.

In the first place it is a striking illustration of the readiness with which agricultural information is granted to inquirers. On Thursday of last week some 20 letters were written to gentlemen occupying land in different counties in Scotland and England, asking the following almost impudent question:—"What were the dates and quantities of the several sales by which you disposed of the Wheat, whether old or new, which you held, whether in barn, rick, or field, in October, 1846." And by return of post back came information giving full details of the disposal of upwards of 50,000 bushels of Wheat grown in that year, corresponding to probably 1500 acres in that crop, and therefore perhaps 10,000 acres of arable land. In some cases the object of the inquiry was strongly disapproved of,—the writers believing that the information would, by guiding the movements of importers, cheapen corn, and so injure the growers of corn,—but even when this was the case the information asked for was frankly supplied. And we here gratefully acknowledge the confidence which has been exhibited in the good faith and intention with which the inquiry was made.

Some of these returns were not detailed enough to be useful—some proceeded upon a mistaken idea of the object, and referred to sales of the *year* 1846, whereas the sales of the *harvest* of that year were what was desired; in a few cases the information was given generally and not in figures. One gentleman who replied in this way gives a most conclusive testimony, as we believe it to be, on the commercial as well as the agricultural importance of the information which trustworthy agricultural statistics would supply. He says that he sold all his old Wheat in October, 1846, and all his new crop during the winter and spring, before the high prices came, being guided in this by one in the corn trade whose judgment proved erroneous, and who was afterwards ruined by the extravagantly altered views which he entertained when high prices set in. So here was damage done both to the commercial man and to the agriculturist by ignorance.

The diagram represents, by the vertical lines upon it, the sales of ten gentlemen farming in Lincolnshire, Gloucestershire, Berks, Hampshire, Sussex, Mid-Lothian, and Dorsetshire; the scale on which they are drawn does not admit of the several lines being identified by letters of the alphabet; otherwise each is capable of verification by reference to the correspondence on which the whole figure is founded. It may suffice to say that the curved lines indicate the way in which prices varied

during the months August, 1846, to December, 1847, the height of the curve indicating that of the prices as the months passed on; and the key is given in the right-hand column of figures, where the price per quarter is stated. The vertical lines indicate successive sales of Wheat; their position indicates the date of each, and their height shows the amount of each sale, as may be read in the left-hand column of figures, by which it will be seen that several individual sales exceeded 200 quarters.

Now, of course, it needs no record of facts, such as is given here, to prove that price must be inversely as supply, and that just as prices are excessive is the fewness of those who benefit by them, and the number of those who are injured by their ignorant sale of produce while prices were low; but an actual record of sales, such as is here given, will, it is thought, be more influential than any mere *à priori* reasoning, and as such we commend this diagram to the attention of all those farmers who believe that information on our food supplies would be useless to them. They will see how the great majority of sales were effected while prices were low, crossing the curve of price before it had attained any height, and how very few were effected while it was near its maximum. Let them remember, too, that these sales were conducted by intelligent men, and by strong men too—there was no need for *them* to dispose of their Wheat so early in autumn, on account of the approach of rent day. These sales were the deliberate resolution of reasonable men, guided simply by what information was accessible to them. Take that first sale by letter *a*, for instance: Prices had been falling ever since May, and he threshed out one-fourth of his whole produce in August, in order to obtain a price before it had got lower; in order, in fact, to obtain what looked to be the highest price of the year—*the fact is, he got the lowest price of the year!* If he had known how the crops were turning out he would have been better guided; and if he had known that in October he would have accurate information on the subject, he would have waited till October for it. He not only injured himself by his ignorance, but he injured all those smaller farmers who are *forced* into market before rent day, and whose prices are necessarily very materially affected by these sales of the greater holders, conducted in utter ignorance of what it is for their personal interest to do. It is in this way, too, that the information, which all admit would be useful to our great corn importers, would be useful to corn growers as well. All farmers are corn merchants; and if great importers are guided aright in their purchases, it will be a safer, steadier trade for those smaller holders who grow what they have for sale.

But we must postpone further remarks on the subject till next week.

To avoid the removal of straw at the expiry of the lease, unless where its equivalent of manure is returned, the incoming tenant sometimes agrees to take the whole crop at a valuation, but the most effectual barrier to removal is the practice of "steelbow;" for under it the straw, like the land, is the property of the landlord.

Under "steelbow" the statistics of the away-going crop are generally taken by the outgoing and incoming tenants, the bushel and balance determining quantities. So long as crops were threshed by the flail the practice had to contend with many difficulties, and not unfrequently fell short of the truth; but now that we have steam engines to thresh and sack the corn ready for market, obstacles of this kind are beginning to disappear, hence we lately suggested the statistics of the away-going crop, or last crop of the lease under renewal, or crop at the expiry of periods for the renewal of agreements under tenancy at will, as the case may be, as a distinct branch of statistical science.

The proposition forms part of the general one we enunciated the other week, and not the least important branch of it; for if a definite per centage of crops were thus ascertained annually in every county, it would prove a counter check, as it were, to the accuracy of the other returns, and might be preferred by many for the regulation of rents and the like, now determined by the corn averages and fiars prices. If we suppose, for example, that at the expiry of every 20 years landlords and tenants, instead of appointing valuators to revise rents at renewals by inspection, adopted the more practical plan of setting to work themselves with the balance and bushel, then this would amount to five per cent. in every county on an average, or one-twentieth of the whole crop yearly, so that over this area the yield per acre, and price, could be certified in a manner beyond objection. Every county-schedule might have columns for returns of this kind, which, when compared with the others for a series of years, would afford probably a truer index to corn merchants for the regulation of imports than they could have without them. The benefits gained would, therefore, be of the highest value, and shared by all parties.

Landlords and tenants, however, would be the greatest gainers, for the actual statistics of the away-going crop would enable them to base the contract of lease upon a more solid foundation than they now are able to do, and, by consequence, improve the relation between them during its currency; for the former would then know how much rent they ought to receive, and the latter how much they could safely afford to give.

NOTES ON SOME EXPERIMENTS IN THE BOTANICAL GARDEN OF THE ROYAL AGRICULTURAL COLLEGE.—No. III.

By Professor J. BUCKMAN, F.G.S., F.L.S.

IN completing the notice of our green-food plants, it remains to comment upon the eight following species, namely:—

1. Symphytum asperrimum, Prickly Comfrey	5. Achillea millefolium, Millefoil
2. „ officinale, Comfrey	6. Plantago lanceolata, narrow-leaved Plantain
3. Heraclium sphondylium, Cow Parsnip	7. Brassica Napus, Rape
4. Poterium sanguisorba, Burnet	8. Sinapis alba, Mustard

About four years since the *Gardeners' Chronicle* contained a notice of the properties of Symphytum asperrimum, recommending it for cultivation as a green food plant; from this I determined upon procuring some plants, which I accordingly obtained, and planted them in a plot of ground five yards square, preserving nearly the distance of 2 feet between each set. It soon grew to a great height, and stooled out so abundantly that the following year I might have planted a quarter of an acre. When growing I used to amuse myself by taking branches of it into the meadow to the cows; and it was highly curious to watch how eagerly they surrounded me, and with what appetite the whole plant was demolished by them. Again, the first crop, on being cut down, was taken into the feeding stalls, where the cattle as readily devoured it; this clearly showing that the plant is far from unpalatable, whilst the laboratory report upon it shows it to be rich in flesh and fat forming principles. In speaking of the qualities of this plant, Dr. Voelcker, to whom I am indebted for the subjoined analysis, makes the following remarks.

"In its fresh state, Comfrey contains more moisture than white Mustard; but notwithstanding this large proportion of water, the amount of flesh-forming constituents in this plant is considerable. This appears still more striking by throwing a glance at the composition of the dried plant. The whole plant, and more particularly the stems, contain a great quantity of gum and mucilage, but comparatively speaking little sugar."

The following is the composition of Symphytum asperrimum with respect to its alimentary substances:—

	In Natural State.	Dried at 212° Fahr.
Water	94.74	...
Nitrogenised substances (flesh-producing matters)	0.69	13.06
Substances not containing nitrogen (heat-giving and fat-forming substances) ...	3.81	72.49
Inorganic matters (ash)	0.76	14.45
	100.00	100.00

This plant does not require a rich soil, yields two abundant crops in the course of the year, and at the same time keeps making fresh shoots, which can readily be divided, to make new plants. We have not yet tried it in the practical department of the farm, and perhaps on a large farm, with a regular system of cropping, it is not advisable; still I am convinced that for small holdings, a patch of a few yards devoted to this plant would be well employed. It takes but little trouble to cultivate; one or two hoeings, to keep down the weeds until the sets make head, will be sufficient to keep it clean, as the large leaves of the plant keep down any extraneous growth; it can be cut down when 2 or 3 feet high, and used as a soiling plant. Its bed will last many years, if manure be dug in between the sets every spring, which supplies the waste of constantly carrying away the crop, and loosens the soil about the plants.

Symphytum officinale.—On introducing the S. asperrimum to my botanical garden it struck me that notwithstanding the latter is known as a Caucasian species (which was introduced as a garden plant, on account of the beautiful colour of its flower bells), yet that the former scarcely presented those marked differences which should belong to species. I therefore determined to plant some specimens of S. officinale, concluding that, if I could get a plant from the waterside to grow in an upland district remote from water, so great a change of circumstance would at least exert great influence upon its growth. Accordingly a plant with white bells was introduced into the botanical garden, which at once grew abundantly, and the following year was subdivided into several sets, which flowered, but this season the flowers became stained with a dull reddish blue tinge, and each season great changes have gone on in this plant, so that in fact in the summer of 1853 it was scarcely distinguishable from the S. asperrimum; and as these changes cannot be otherwise than interesting in a scientific point of view, I have drawn up the following comparison, to mark it in as clear a manner as possible.

SYMPHYTUM OFFICINALE (wild).—*Flowers* pendent, white, sometimes stained with red. *Leaves* of the root on long petioles; petioles slightly winged; of the stem all decurrent. *Habit.*—Plant covered with rough hairs, from 18 inches to 2 feet high.

SYMPHYTUM OFFICINALE (cultivated).—*Flowers* pendent, buds a darkish red, a light blue when expanded. *Leaves*—of the root on long petioles—of the stem slightly petiolate. *Stem* with a slight leafy line marking the position of the decurro. Plant rough, from 3 to 4 feet high.

SYMPHYTUM ASPERRIMUM.—*Flowers* pendent, buds vermilion, bright blue when expanded. *Leaves*—of the root on long petioles—of the stem quite petiolate. *Stem* with a mere line marking the position of the decurro. Plant rough, from 3 to 4 feet high.

These experiments tend to show that, however different plants may appear, after all, they are not specifically distinct; and I so far felt the interest of experiments of this kind as to induce me to draw up a notice of the changes of the Symphytum for the meeting of the British Association at Hull. In an agricultural point of view it has a further interest, because we now know that the S. officinale has the same properties as the S. asperrimum; it too will admit of field cultivation: that, taken from its natural situation by the river side and brought to the field, it does not degenerate, but gradually increases in size and strength, so that, should any one wish to experiment upon the food properties of Symphytum, our own observations lead to the conclusion that our common wild species is admirably adapted for the purpose.

The *Heraclium sphondylium* grows well in my plots, and its herbage is eaten readily by pigs; and cattle in general may do tolerably well upon it; but as yet I can see nothing about it to recommend the plant for cultivation. It is often found abundant in Grass meadows, where, although fed off by cattle, it is very unsightly; and as the plants are large and coarse, should be eradicated as a weed, on account of the great room it takes, to the prejudice of the growth of Grass, which is so much better.

The *Poterium sanguisorba* and *Achillea millefolium* are examples of plants which can never be cultivated as self crops, but the fineness of their herbage recommends them (as they are not objected to by sheep and cattle) for sparing admixture with seeds in laying down pasture, as there can be but little doubt that the hay and even Grass of mixed plants of a wholesome kind is much preferred to that of an unmixed or unvaried description.

These plants are particularly good in thin upland districts, as they readily grow, and thus tend to keep the ground covered.

Plantago lanceolata, so common in fields, especially on upland soils, offers a very useful bite for sheep, and where mixed with seeds is really a valuable plant, though in one field of seeds, about four years since, we had scarcely anything but the Plantain, when it was so distasteful to the sheep as to be mostly refused by them. Its upright method of growth, when compared with the P. media, which grows flat on the ground, will recommend it, or at least lead to its not being molested in pastures, while the latter should in all cases be treated as a weed. This plant was introduced into my garden principally with the view of demonstrating its habit of growth to my class.

Brassica Napus.—Rape does not succeed well on our poor soils, and is hence a most unprofitable crop; however, if it paid to cultivate the seed, it would be worth trying with this view, as, though it would not produce an abundant herbage, yet, on the principle of arrested development, we should have reason to hope for a good seed crop; and the change from the uplands to the deeper soils would be so beneficial as to render the seed valuable for planting.

Sinapis alba is much used on stubbles, and its quick growth and use for sheep should recommend a quantity being sown each year, as it is a change of food considered to be of value in sheep farming. It has been occasionally sown on headlands on our farm, and here, from the better preparation of the soil, from that adopted in sowing on the stubbles, its crop is sometimes enormous—so much so as to lead to the assumption that under some circumstances it would be a soiling crop worth cultivating with care; and from its quick growth and the certainty with which it can be managed, there would be no difficulty in preparing for succession to any amount. *Cirencester, March* 15.

NOTES OF A RECENT AGRICULTURAL TOUR IN IRELAND.—By MARTIN DOYLE.

FORTY years ago I was well acquainted with the southern parts of Ireland more particularly; within this period my visits there have been "few and far between," and during the last 20 years, until the spring of 1853, they had ceased altogether. I then left England with the intention of ascertaining by personal observation how far modern progress has produced changes not only in the localities with which my early associations have been connected, but also on the whole railway line of country from Dublin to the southern limit of my tour, but also through more eastern districts, not yet united with the trunk line.

He must be a dull observer who has no pleasurable impressions on entering the Bay of Dublin, surrounded by an infinite number of suburban terraces, rows, and villas of all dimensions and characters, embellishing the whole area of space around the foreground of a magnificent amphitheatre, backed by mountains of considerable elevation. My first impressions were, however, modified considerably after a few days' observation of the detailed features of the panorama; incongruities became apparent, and while all the colouring of prosperity and good taste was glowingly bright in certain favoured localities, within and without the precincts of the metropolis, other parts, severed by some apparently capricious line of fashion, have remained in an unfinished state at best.

The distinction is obvious as regards the north-eastern and south-eastern streets and environs; the course of improvement, with the stream of fashion, has flowed far into the country also on the south-east side; yet, even within a short walk of Kingstown and the line of railway leading to it, and passing along the intermediate suburban residences, which have been improved so strikingly, the aspect of Irish misery is to be recognised.

The agricultural training school at Glasnevin, in connection with the National Model Farm, on the north side of the city, and not far from the celebrated Botanic Gardens of the Royal Dublin Society, was an early object of attraction to me. There considerable progress has been made. A new range of buildings, in direct continuation of the first, in order to complete the necessary accommodations for 100 resident agricultural pupils and a superintendent, has not added architectural beauty to the previously built portion, from its want of uniformity, and extreme inelegance of style; but it is an evidence that the important objects of economy, convenience, and durability, were scrupulously regarded in the design and details of the structure. The necessary offices for cattle, &c., with steam machinery, and every appropriate adjunct, are principally at the rear of, and partly at right angles with this new part of the long barrack-like row. About 80 fine-looking young fellows were at various labours on my approach to the building, through a large extent of open arable land, and many of them were engaged in planting out evergreens in well-prepared soil, to relieve the bare and bleak aspect of the buildings, not far from the front of which was a long rampart of very fine cattle Beet, carefully covered up, and apparently containing a supply of food sufficient for a great many head of cattle during a long confinement in the straw-yard. The 80 pupils are boarded, lodged, and educated at the expense of the National Education Society, and selected from young men previously educated either at minor agricultural or at elementary national schools, and of satisfactory characters and literary attainments. The period of instruction for these pupils is two years, hardly enough for any effective purpose, and quite inadequate if they should aspire to be teachers. However, there is a distinct class for agricultural teachers, previously trained in the literary department; or at least such a class is contemplated in the prospectus. I had no opportunity of ascertaining whether this class has been realised, and if so, to what extent of numbers. One year's tuition is the period of instruction for the individuals of this class; too short a term of discipline and experience. Extra pupils are admitted, on the payment of a fee of two guineas (for the purchase of agricultural books for the general library), to all the advantages of lectures on scientific and practical husbandry. The young men of this class board and lodge at their own expense in the neighbourhood, and take their full share of farm work. Each portion of the day, from 5 A.M. in the summer and 6 A.M. in the winter half year, to 9.40 P.M. throughout the year, is apportioned in an occupation time-table.

The bread, milk, butter, meat, and vegetables will, I believe, be supplied by the farm, and thus all the elements of ordinary domestic economy in the farmer's private establishment will be, if not already so, introduced into this most interesting national institution.

Moving by railway to Cork, through the counties of Dublin, Kildare, Queen's, and Tipperary, the agricultural tourist soon has evidence in the undrained and dreary-looking lands through which he travels, that he has left behind or is passing through a wide interstice between the wooded and improved portions of those counties. When he has passed the undulating down of the Curragh, so admirably suited to sheep feeding from the calcareous quality of the soil, he is passing over a cheerless expanse of bog-land, and learns that the Bog of Allen is one of the two distinguishing features of the county of Kildare, the Curragh being the other. He hardly sees the fertile and improved parts of this county; his eye rests on the passing diorama—bog, bog—undrained, ill-fenced land—straggling, crumbling furze banks—from Monastereven to Portarlington, a wretched soil. I think it was between Portarlington and Mountrath I saw a plough drawn by two donkeys, the only one I had ever seen thus yoked in Ireland. The thinness of the peaty surface earth may be inferred from this fact, and yet it is probable that limestone gravel was beneath. Having read and heard of the wondrous extent of thorough and arterial drainage throughout the country, I was surprised that fewer indications of it appeared; the roofless cabins and mouldering walls of the departed natives being far more frequent. It is not a little provoking to an Irishman who feels proud of the many fertile, well-timbered, and highly embellished and well-farmed portions of Ireland, interrupted no doubt by many incongruities, that British tourists, whether in search of the picturesque or with the intention of purchasing estates, generally see the least favourable parts of the land: going southwards, to Killarney, they either travel over parts of the vast bog of Allen, or skirt its margin, and see bare and forbidding tracts, and traverse comparatively wild and desolate regions in the counties of Cork and Kerry; and if they take the western road, the other favourite line, and visit the wilds of Connemara, they have such large expanses of rocky, boggy, treeless, and ill-cultivated land, dotted with ruined villages and forsaken cabins, and only relieved by a gentleman's house and trees here and there, that their impressions regarding the agricultural condition of Ireland must be very painful and unfavourable; and as to capitalists who had gone there with a view to the investment of money in the purchase of estates, I am by no means surprised at their deciding not to buy, except at dead bargains; so much remains to be done, in the very elementary points of land improvement, even along the leading thoroughfares from Dublin to Killarney, and from Dublin to Galway: but let these travellers diverge from the trunk lines—let them pass through Carlow, Kilkenny, and, departing from the direct Dublin and Cork line, visit Cahir, Clonmel, Carrick, Waterford, and also the parts of Wexford along the Slaney—those splendidly timbered districts, with gentlemen's seats and well managed farms closely arrayed; or let them go by the east coast from Dublin northwards, how very different will be their impressions. Deeply disappointed as I have been with the aspect of the country from Dublin southwards by the railway line, my sensations on seeing the more eastern portions just referred to, and the decided progress which has been made in these districts, have been of the most exciting kind. But something of details will be better than a general expression of opinion. From Portarlington to Monastereven and Mountrath, the soil is a shallow layer of peat over clay, yielding however Grass, Oats, and Potatoes; the two latter in lazy beds—and wisely, because the soil is thus spade-trenched, and without this mode of tillage it would be impossible to deepen the staple of the soil, while the horses and ploughs of the small farmers are of their present feeble constitution.

As the practice of moulding the Potato plants two or three times in their beds, by scattering the soil obtained in the furrows over them, prevails in the south and west of Ireland, the sinking of the spade into the subsoil of the furrows for a supply of earth for the surface of the beds is in effect a sort of trenching, and especially advantageous in thin soils, which thus become deepened in course of time. The Dun variety of Oats is in high estimation on the interior soils of Ireland, and in some localities it is the favourite even on good strong loams capable of producing heavy crops of Barley.

To estimate the value of land in the actual condition of a large proportion of the soil alongside of the line of railway under notice would be very difficult. I was told that 30*s*. per (Irish) acre is the probable average rent charged for the moory land about Portarlington. When the proportion of rates chargeable to the tenant is added, this is apparently a high rent. From Maryborough, southwards, for some distance, the soil seemed to be desperately bad; but I should bear in mind that the engineers of the railway would have been directed to carry it through the least valuable land on the line, and though the portion of the Queen's County at present under review shows no indications of neat farms, and hedgerows, and gentlemen's demesnes, these are to be found in other parts of the county, on the great limestone base of the central level of Ireland. It was not surprising that so few cattle were to be seen—there was no grass for them to eat; the natural barrenness of that district, combined with the backwardness of the season, accounted for this, without inferring the inability of the landowners to stock the land. The great Munster fair had passed, and very high prices had been obtained for sheep and cattle, and I was informed that the Earl of Derby had recently let farms to Englishmen in the county of Tipperary, who had given unusually high sums for live stock.

The want of trees about Thurles, as generally throughout the course of the journey, was striking. Here was a considerable breadth of land in course of tillage, but of Clover fields I scarcely saw any, and generally very little Wheat relatively with Oats and Barley. This has been chiefly occasioned by the wetness of the last months of the past year, the favourite ones for Wheat-sowing in Ireland, which obliged the farmers to substitute Barley and Oats in the succeeding spring. It is not surprising that tillage rather than the pasturing of cattle and sheep should be practised about Thurles, where there is such want of shelter. However, there is no deficiency of timber a few miles farther off; the splendid woods and plantations on Lord Hawarden's demesne of Dundrum, which comprises 2400 acres, present a very beautiful appearance, and grand mountains furnish a noble background to the picture.

It was a relief to see, at the junction with the Limerick line, very splendid land, but miserably fenced, and usually without gates; a cart, when at rest from its active labours, might be seen doing duty as a gate, and dry banks frequently occupied space where they appeared to be utterly useless—certainly so as fences, for cattle walked over them when they pleased.

(*To be continued.*)

THE CURING OF BACON, PORK, &c.

The pig being killed, properly dressed, hung up, opened, the entrails taken out and cleansed, and the carcase well and thoroughly cleaned, it is left to cool and set for such indefinite period as appears requisite—this, in the mildest season, should not exceed one night, and in the coldest, frost should be avoided. The following very clear and concise account of the curing of bacon is from Henderson's Treatise on Swine; he says—"After the carcase has hung up all night, lay it upon a strong table, or bench, upon its back, cut off the head close by the ears, and cut the hinder feet so far below the hough as will not disfigure the hams, and leave plenty of room to hang them by; then take a cleaving knife and if necessary a hand mallet, and divide the carcase up the middle of the back-bone, lay it in two equal halves, then cut the ham from the side by the second joint of the back-bone, which will appear on dividing the carcase, then dress the ham by paring a little off the flank or skinny part, so as to shape it with a half round point, clearing off any top fat that may appear. The curer will next take off the sharp edge along the back-bone with his knife and mallet, and slice off the first rib next the shoulder, where he will perceive a bloody vein, which he must take out, for if it is left in, that part is apt to spoil. The corners must be squared off where the ham was cut out. In killing a number of swine, what sides you may have dressed the first day lay upon some flags or boards, piling them up across each other, and giving each flitch a powdering of saltpetre, and then covering it with salt; proceed in the same manner with the hams, by themselves, and do not omit giving them a little saltpetre, as it opens the pores of the flesh to receive the salt, and besides gives the ham a pleasant flavour, and makes it more juicy. Let them lie in this state about a week, then turn those on the top undermost, giving them a fresh salting; after lying two or three weeks longer they may be hung up to dry in some chimney, or smoke-house, or if the curer chooses he may turn them over again without giving them any more salt, in which state they may lie for a month or two without catching any harm, until he has convenience for drying them."

Pickled Pork.—The carcase, if intended for pork for pickling, is cut into small pieces, and is packed away in tubs or kits as follows:—Rub the pork with saltpetre and common salt; then spread common salt on the bottom of the tub or kit, about an inch thick, and lay in the pork close; cover it with salt, fill every crevice, and make all as firm and compact as possible; then lay in another quantity of pork with salt in the same manner. Proceed thus till within three inches of the top, when the tub or kit must be filled "with salt, pressing it hard down," and cover it with an air-tight covering, as upon the exclusion of the air depends the success. Another plan is to pack the pork in a tub or kit, and pour over it a strong brine made by dissolving salt in water, adding a little saltpetre, boiling it, letting it cool again, and then pour it upon the pork so as to cover it, when it should be closely headed up. In pickling for the navy, a slight deviation from the latter mode is made. It is all cut up as nearly as possible of equal size and weight; "it is thrown into large tubs containing a preparation of strong pickle, formed of salt and saltpetre; when cured it is put in barrels, the bottom of the cask being covered with a layer of bay salt, then a layer of pork, another layer of salt, and so on alternately until the cask is nearly filled; then a layer of salt is laid on the top, and the cask headed up. The fresh pickle out of which the pork has been taken is then saturated with salt and poured through a hole left in the head of the cask for the purpose; when the cask is full the hole is plugged up and the cask sent to market." In some districts the common practice before curing is to take out all the bony parts, as the spare-ribs and the loin bones; these are eaten as fresh meat; the spare-ribs are roasted; the loin is generally made into pies.

Much of the success in the curing of bacon and the pickling of pork depends upon the precise condition of the carcase and the state of the weather. Many old housekeepers will not have their pigs salted in the wane of the moon; this is preposterous, but it is evidence of the influence of the weather. It has, however, been clearly ascertained that changeable weather is highly injurious; that sultry, moist, and oppressive weather, *i. e.*, when the air is much charged with electricity, has an extremely prejudicial influence; that excess of moisture in the atmosphere is hurtful, but that hot weather with a dry atmosphere is not injurious, further than to prevent the proper cooling or setting of the meat; that severe frosty or intensely cold weather is not prejudicial, but that frozen meat will take salt freely on thawing, and remains perfectly fresh through the longest frost; the changeable weather of the winter is not so baneful as that of the summer.

The precise condition of the carcase is of great moment to successful curing. The flesh from well-fed pigs is much more readily and safely cured than from those ill-fed. Sound firm meat will take salt better, and absorb more of it than their soft and flabby meat. On no account should the pig be killed in a hot and feverish state; driving fat pigs to the slaughter in cold weather does injury, but in hot weather it is certain to spoil the meat. If the meat is but slightly heated it can scarcely be preserved—the great difficulty being to make it take salt freely enough. There is considerable difficulty in curing pork in hot weather, but it is much practised in many counties, and is the principal animal food of the inhabitants. The usual custom is to kill the pig in the evening, hang the carcase in the coldest place to be found till morning, cut it up and pack it away before the day waxes hot: a cold cellar is preferred for pickling. This pork is ready for consumption in two or three weeks. Bacon and hams are much injured by skippers when they are hung up, as in farmers' kitchens. Bacon flitches, as also hams, should be pasted over with brown paper—the hams hung up in bags made of harding.

The recipes for curing bacon, pork, and more especially hams, are innumerable; the following is an old one:—Take 3 oz. of saltpetre and rub over the ham, let it be till next day, then take ½ lb. bay salt, ½ lb. common salt, ½ lb. coarse sugar, a pint of beer-vinegar, and a pint of old ale, boil these all together, and pour the mixture boiling hot upon the ham; baste the ham with the pickle, and turn it twice a day for three weeks, then rub it over with Barleymeal, and hang it up to dry. This will suffice for a large ham.

In curing bacon, &c., all those parts of the carcase

usually converted into lard are taken out. The leaf from the inside of each flitch, the caul and other loose bits of fat (the caul being well washed may be used with the leaf), these are cut into small pieces or squares, and placed with a little water in a boiler to be melted or rendered down, during which process it requires constant attention, to prevent burning or injury to the lard. It is then strained and poured into prepared vessels, or into bladders. It keeps best in the latter, and is generally sold in bladders; if nicely melted, and sweet, it will fetch a good price. The parts of the squares not melted are left to drain; they are called scraps, and are generally considered an attractive dish on a farmer's breakfast-table. In large establishments they are pressed into large cakes, called greaves or graves, and sold as food for dogs, pigs, &c.

The offal or rather the head, feet, shanks, &c.—for literally the pig might be said to be without offal, every part being made available in some way or other for food—the head when cured and dried is eaten with great relish as an accompaniment to veal, fowl, &c.; the fat and shanks or houghs make a capital addition to the breakfast provisions, or when boiled down and made into brawn they are considered a delicacy. "Pig's fry" is universally known and eaten; it is made from the liver, kidneys, sweet-bread, and caul, with a little addition of fresh pork. Pork pie is in high esteem; it is made from the small and unconvertible pieces. Aselet is much prized; it is similar pieces inclosed in the skin of the "leaf" named above. Mince pies are made from the pluck or lungs. Sausages are greatly in favour; these are the finer portions of lean meat and fat chopped into a pulp, and enclosed in the small intestines. The tongue will pass for rein-deer tongue. Besides these dishes of extraordinary popularity, there are others of less note. The stomach and large intestines are made into first-rate tripe or chitterlings; and the blood, mixed with lard and other approved accessories, is inclosed in a large intestine, and is known as black pudding. The skin is appropriated by the saddler, and the bristles by the brushmaker and shoemaker. In many parts of the country it is customary to smoke-dry bacon and hams. *J. C.*

COMMON SALT AS A MANURE.

Common salt has been employed in all ages and in all countries, for the purposes of promoting vegetation, and has been found especially useful in inland countries. In some districts it has failed to produce any beneficial effects upon the growing crop, and has consequently suffered in the high estimation in which it was held in England about a century ago. Still, salt is largely employed for manuring purposes, and there can therefore be little doubt, that in many cases it produces a sensible improvement in various crops. Its use has been particularly recommended for the cereal crops; and numerous experiments have been published from time to time, in which the application of salt has produced a considerable increase in the yield of Wheat, Barley, and Oats. Thus Mr. C. Johnson found it answer exceedingly well on a light and gravelly soil, at Great Totham, in Essex. The produce per acre, on a part which had not been manured for four years, was found to be 17 bushels and 26 lbs.; and on a part, which he manured with 5 bushels of salt per acre, and which likewise had not received any manure whatever for four years, the yield of Wheat amounted to 26 bushels and 12 lbs. In a comparative experiment on a part which he manured with stable dung, to a crop of Potatoes in the preceding year, he obtained 26 bushels and 52 lbs. Mr. C. Johnson is, accordingly, a great advocate for salt as a manure for Wheat, and recommends it to be applied some time before sowing the seed, in a dose of no less than 10 bushels and not more than 20 bushels per acre. Mr. G. Sinclair, Mr. Fleming of Barochan, Mr. Hannam, and many others, speak highly of salt as manure for Wheat. The use of salt was found less beneficial by Mr. Fleming on Oats. In an experimental trial the produce of the unsalted portion of the field was 51 bushels, and that of the portion manured with 3 cwt. of salt, 53 bushels; the increase thus amounted to 2 bushels only. On Barley, a very large increase was obtained by Mr. Ransome, in Suffolk. No salt gave 30 bushels; and 16 bushels of salt raised the produce to 51 bushels. We abstain from mentioning any other experiments in which salt has been tried on corn crops, because they have, for the greater part, not been conducted with the requisite care and accuracy. Salt is said to give strength to the straw, and theoretical reasoning leads us to expect this; but whether it is the case or not, has never been determined as yet by any direct experiments. Neither theoretical speculation, vague statements, nor solitary practical observations, can establish so important a fact, which can only be proved by the rigorous tests of a series of well-conducted comparative experiments. The use of salt for root crops has also been highly recommended; and in some experiments by Mr. M'Lean of Braidwood, Mid-Lothian, a considerable increase in the Turnip crop was obtained, by the addition of 4 cwt. of salt to thirty carts of dung per acre. Root crops, especially Mangolds, contain a considerable proportion of common salt, and it is therefore very probable that they will be benefited by a generous supply. It has been estimated by Mr. Way ("Roy. Agr. Soc. Journal," viii., p. 186), that Turnips contain, according to the average of his trials, about 2 lbs. of common salt in every ton of bulbs; and Mangold-Wurzel, 6½ lbs. These analytical remarks lead us to expect that salt will be highly favourable to the luxuriant growth of root crops, and in an especial manner to that of Mangold-Wurzel. It is well known that a saturated solution of salt is capable of killing weeds; and we know further, that some plants are injured by a dose of salt, which decidedly improves others. There have been made as yet few precise experiments, with a view of determining in what quantities, and under what conditions, salt exercises a beneficial effect upon our various cultivated crops. That salt affects various plants differently will be seen from a series of experiments which were made some years ago by Dr. Voelcker, with a view of ascertaining in what quantities salt exercises an injurious, and when a beneficial effect. The following is the summary of the results of these experiments:—

1. Salt solutions, containing 3 grains of salt per imperial pint, or 6 grains, 12 grains, and even 24 grains of salt per pint, produced no injurious effects on Cabbages, Field-Beans, Onions, Lentils, Chickweed (Stellaria media), Groundsel (Senecio vulgaris), Thistle (Carduus pratensis), Annual Meadow-Grass (Poa annua), Radishes (common long red variety), which were regularly watered with these solutions during two months. Plants of Anthoxanthum odoratum (Sweet-scented Vernal) were killed by a solution containing 24 grains of salt per pint, after the lapse of one month.

2. Such weak solutions appeared to benefit most plants experimented upon, especially Cabbage, Radishes, and Lentils. All had a fresher and more luxuriant appearance than those watered with rain water only. The Lentils, which were watered with a salt solution containing 24 grains per pint, were nearly one-half larger in size than those watered with 6 grains of salt to the pint, and these again appeared more vigorous than the Lentils which received no salt at all.

3. Salt solutions, containing 48 grains of salt, exercised a prejudicial effect in the course of a month on Lentils, Chickweed, Groundsel, and the annual meadow Grass. They had no injurious effects on Cabbages, field Beans, Onions, Radishes, and Thistles.

4. Salt solutions, containing 96 grains of salt per pint, exercised an injurious effect upon Cabbages and field Beans, but did not injure Onions, Radishes, and Thistles, regularly watered with such solutions during two months.

5. Cabbages will continue to grow, though sickly, when watered regularly during a month with a salt solution, containing 192 grains of salt per pint, and even when watered with a solution containing 384 grains of salt per pint.

6. A solution of salt, containing 192 grains per pint, now proved prejudicial to Onions regularly watered with it during one month.

7. A solution, containing 24 grains of salt to the pint, decidedly benefited Radishes, Onions, Lentils, and Cabbages.

8. Grasses are affected by salt more readily than any other of the plants experimented upon.

9. Bulbous plants, and plants with succulent leaves are especially benefited by the application of salt.

Many of the plants in these experiments had taken up so large a quantity of salt, that they tasted quite saline; but, notwithstanding this, they grew healthily. This evidently shows that salt, in a moderately dilute solution, can be taken up by many plants without exercising a pernicious effect. In many cases in which salt was applied to the land, it has failed to produce any sensible improvement of the growing crop; but in examining the circumstances under which it was unsuccessfully employed, we shall frequently be able to point out the cause of the failure, if we pay due regard to the following considerations:—

1. The neighbourhood of the sea must necessarily interfere with its action. On land situated along or near the sea-coast, or which is exposed to the action of prevailing sea-winds, the application of salt will prove useless; because the soil in such localities contains already more than is sufficient to satisfy the wants of the growing crops. It is well known that the spray of the sea is constantly borne by the winds, and sometimes strewed upon the land at a great distance. Moreover, the clouds which form over the sea always contain a greater or less quantity of salt, which will be deposited in the soil by the rain. In England, rain seldom falls anywhere in which a sensible portion of common salt cannot be detected; and this circumstance no doubt explains at once why, on the whole, the application of salt to the land, in continental countries, has been attended with much better results than in England. Calculating the fall of rain at 31 inches per annum, Dr. Madden has determined, by analysis, that the rain which falls at Penicuik brings down upon each acre of land in that neighbourhood 641 lbs., or nearly 6 cwt. of salt. Dr. Madden has shown, also, that nearly all the failures which are described in the *Quarterly Journal of Agriculture*, September, 1842, page 574, were experienced on farms which are more or less freely exposed to the winds from the east or west sea.

2. Some soils, in inland districts, also, contain much salt; and the presence of deposits of salt, or the occurrence of salt springs, affords excellent indications, that on land, in the neighbourhood of localities where such deposits or saline springs occur, the application of salt will, in all likelihood, be unprofitable.

3. It must not be forgotten that salt is not a universal manure, and that for this reason it cannot supersede the use of other manures. Indeed, if land is out of condition, salt applied alone will do little to raise its fertility.

4. On farms where salt is given with the food to the stock, the manure which is made must necessarily contain much salt; so much, indeed, that in many instances the special application of salt to the land which has been dressed with such manure will be altogether superfluous.

5. In dry seasons common salt, like all other saline manures, exercises no effect if it be supplied to the land in moderate quantities, and may prove prejudicial when used in large doses. With respect to the theory of the action of common salt, when applied alone to the land, we would observe that it may exercise a beneficial effect upon most plants, for the following reasons:—

1. Common salt exists in greater or less proportion as such in all our cultivated plants. Several, naturally growing near the sea-coast, require considerable quantities for coming to perfection. One of the functions of salt will therefore be to supply plants with this necessary alimentary constituent.

2. According to Sprengel and Meyen, the leaves of plants give off chlorine in the dark. The chlorine must arise from the decomposition of a chloride, in all probability, from chloride of sodium, or common salt. The soda which is thus produced may act upon the constituents in the sap in a variety of ways, and produce effects highly conducive to the luxuriant growth of plants.

3. It is stated by Berthollet that, in a calcareous soil, common salt is gradually decomposed by the carbonate of lime which the soil contains. By a double decomposition, carbonate of soda and chloride of calcium are formed; and as carbonate of soda has the property of dissolving silica, we can in some measure explain the effects of salt by the circumstance that it supplies indirectly silica, which is so essential a constituent of many plants. Carbonate of soda not only dissolves silica, and may supply it to the plant in a readily-available form, but it is also a solvent for phosphoric acid, organic acids, &c., and may, therefore, exercise a beneficial effect by carrying these constituents into the vegetable organism, in combinations highly favourable to the healthy condition of plants.

4. Professor Way has lately shown that silicate of ammonia is much more soluble in a solution of common salt than in pure water. His researches render it very probable that silicate of ammonia fulfils the important function of carrying silica into our cereals, and depositing it on the surface of their leaves and stalks. Now, if silicate of ammonia is really the chief source from which the silica in our cereals is derived, the use of salt in growing corn can be intelligibly explained by the great solubility of silicate of ammonia in a salt solution. "If it be in any degree correct," Professor Way observes, "then the action of common salt in strengthening and brightening the straw of Wheat and Barley, which is the best ascertained of its effects as manure, is immediately traceable to the greater solubility of the silicate of ammonia in a saline solution." *Dr. Voelcker in the last number of Blackie's Cyclopedia of Agriculture*

Home Correspondence.

Sheep Feeding on Dartmoor.—In your *Gazette* of the 10th December last, Mr. G. W. Fowler, Prince Hall, Dartmoor, referring to a paper read by me to the Fettercairn Farmers' Club on "Sheep Feeding under cover," copied into your Paper of 26th Nov., makes some remarks upon the "dismal results" of my feeding, compared with his own, and which he attributes to the breed of sheep. In answer to Mr. Fowler's observations (which reply you inserted in your Paper of the 24th December), after giving him the information he asked as to my breed of sheep, I expressed an opinion that the difference in our results might be probably referable to climate rather than breed; but suggested that, to enable your readers to contrast the difference of profit, the value of the "hog," when put up ought to be stated, as well as the subsequent expense of feeding. Mr. Fowler, in your Paper of Jan. 7, in reply, gives the weight of his hogs when put up, and adds that they cost only a halfpenny per day for purchased food, but did not meet my suggestion by stating how the animals were fed, and what was the whole cost of his mode of treatment. I find in your *Gazette* of March 18 the information (extracted from the "Journal of the Bath and West of England Society") which enables me to place before your readers the details of the treatment, with the success of which Mr. Fowler seems so well satisfied as compared with mine. In my paper, read to the Fettercairn Club, I showed, as the result of two years' experience, a gross sale of 31*s.* 6*d.* and 29*s.* per head, average 30*s.* 3*d.*; and an expense incurred of 11*s.* 6*d.* and 10*s.* 6*d.*, average 11*s.*; leaving a net price obtained for my hogs, when put up, of 19*s.* 3*d.*, and this for 120 sheep. The difference betwixt 19*s.* 3*d.* and the market value of the hog when put up constitutes the net profit on the mode of house-feeding adopted. My valuation (which I believe to be their market value) was 15*s.* 6*d.*; consequently the profit per head, 3*s.* 9*d.*, exclusive of the increased value of the manure so produced. Let me compare this with Mr. Fowler's treatment:—

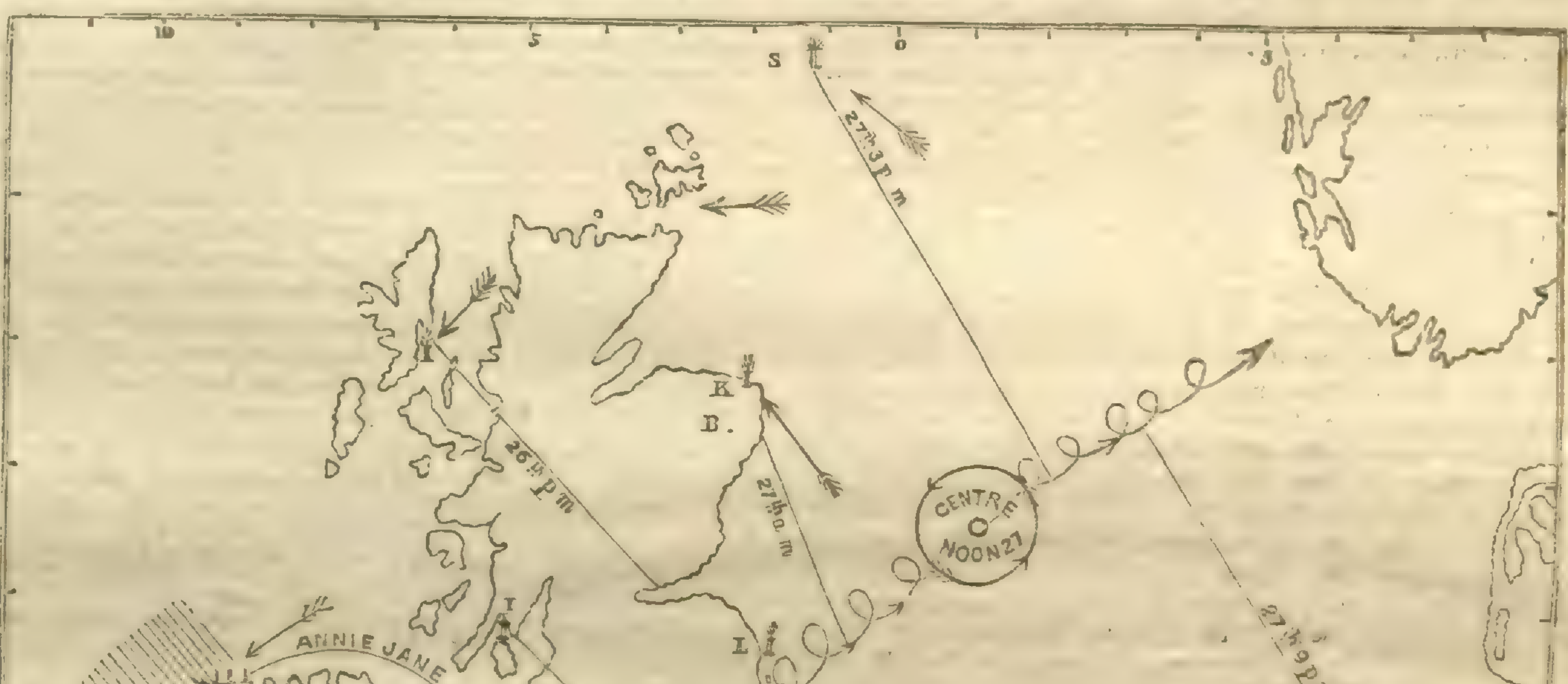
124 days on cut Swedes (21 lbs. per day), at 10*s.* per ton	£0	11	9
Clover hay (2 lbs. or 3 lbs. per day, say 2½ lbs.), at 70s. per ton	0	9	7½
Halfpenny per day for oilcake	0	5	2
	£1	6	6½
Hog sold for	2	3	10½
Remains for the hog	0	17	4

(N.B. Add fuel and attendance)

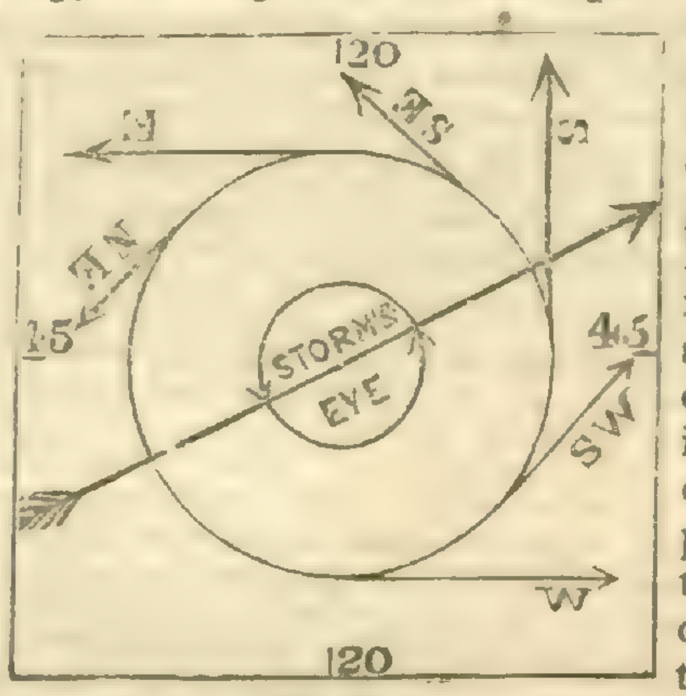
The quantities of food supplied are stated by Mr. Fowler. Am I rating hay at 3*l.* 10*s.* or Swedes at 10*s.* per ton too high, or is my calculation wrong? Then, if these articles be fairly estimated, it appears that I obtained for my hog 19*s.* 3*d.*, whereas Mr. Fowler netted

only 17s. 4d. for his, although sold at a much higher figure! As I seek information to correct or improve my practice of "feeding sheep under cover," I shall feel much obliged if Mr. Fowler will kindly point out if I have erred in my calculation of his expenditure of food, which appears to me very great even for such a result as he obtained. *William M'Inroy, The Burn, near Brechin, N.B.*

The Rotary Forking Machine.—I do not think you will deem it an abuse of your columns, if I endeavour, through their instrumentality, to call attention, at this season, to the forking machine which I introduced last year, and which found its way so rapidly into public favour, until its adoption received a check from the expectation held out on no mean authority that a steam cultivating engine would forthwith be introduced to the public. During many weeks I sent out one of these machines per day on the average, and you will see from the enclosed letters of persons using them, that they fully answered the expectations held out, when suddenly it was announced on the one hand that a Canadian had brought over an invention which would dig, sow, and reap, by steam, and that in a few weeks (this was last August) a machine, weighing about 30 to 35 cwt. would publicly perform those operations; on the other, the idea of forking by horse power was decried as barbarism, and the operations of existing forking machines declared to shame the very name of cultivation, by one of the most attractive writers on agricultural topics, who at the same time himself patented a steam cultivator, which he had previously described in that most charming of Georgics, the "Chronicles of a Clay Farm." The consequence was that many horse forking machines which had been previously ordered were countermanded, and the demand for them fell off to such an extent, that I have not latterly sent out as many machines in a month as I had previously done in a week. Indeed, to compare small things with great, the effect resembled that which might have been expected, in reference to guano, had the 1000*l.* prize for its artificial production at 5*l.* per ton been offered in the earliest stage of its introduction. Now if there be any advantage, *i. e.*, profit, in deep tillage, and if my forking machine effects it, then it is absurd to reject its use because it is not propelled by steam. I do not know what is the present stage of progress of either of the inventions, the anticipated introduction of which was so fatal to the progress of my humble tool, but I cannot help repeating it, so long as we do not disdain to plough, to harrow, to roll, to scarify, to sow by horse power, I think we need not hesitate to fork by the same means, even if we are to have the aid of steam in this operation before long. No doubt many earnest men are directing their talents to the accomplishment of so desirable a result; but it must be clearly understood what is the real difficulty. It is not the arrangement of such parts of a machine as will abrade or otherwise disintegrate the soil, but the discovery of a mode of generating and applying the force of steam in an engine of such limited weight as our engineers have hitherto sought for in vain, and which if found would not only cultivate our fields, but reduce the engine-room of our steam-ships, and the cost of the permanent way of our railroads by 70 or 80 per cent. I must not omit to allude to the draught of my forking machine. Many persons are working the largest size with five good horses, but to meet the circumstances of those who have not so much power at their disposal, I have constructed a narrower implement which, with three or four horses, will fork as many acres per day, which cannot be considered an extravagant application of power. Mr. Wilmot, of Congleton, who uses the large machine, puts a horse in the shafts and four oxen in front, and the same plan has been adopted in Cuba with perfect success. *B. Samuelson, Britannia Works, Banbury, March 28.*



Snowstorm of Jan. 2—5, 1854 (continued from p. 203).—I have stated that at the time this storm occurred my opinion was that it came from the southward and westward; that probably it passed between England and Ireland; that it crossed this island in an easterly or north-easterly direction; and that this opinion was based—1. On the high temperature of the air; 2. On the great amount of rain; 3. On the length of time the storm lasted. That your readers may more readily follow my train of reasoning, I annex two diagrams. The spiral line in the lower one represents the course along which I supposed the centre of the storm to have travelled; the small lines drawn from this to the various points of observation indicate the period at which the greatest depression of the barometer is recorded. The small arrows indicate the various directions of the wind at noon of the 26th. The former show the storm to have been progressive, the latter rotary; and 1, as regards the high temperature of the air at the commencement of the storm, if my young readers will copy the diagram No. 2 on a piece of transparent paper, and lay it on a globe, so that the lines of latitude and longitude of the diagram and globe may respectively coincide; and then, if they will describe a circle with a radius of 20 degrees, imagining the moveable leg of the pair of compasses to represent the wind moving in a circle, they will see that before the air coming from the southward could reach the coast of Dorsetshire, it must have passed over that portion of the North Atlantic Ocean which lies to the westward of Africa and the Peninsula, where the usual temperature of the atmosphere being considerably higher than in this country, the air before it reaches us must be warmed to a temperature of several degrees above that of the atmosphere of these islands. Had this storm come from the north of west (viz., from Newfoundland) it would have brought cold air, as may be seen by setting one leg of the compasses in latitude 55° instead of 45°, and then it will be seen that before the air could have reached, as it must have passed from so high a latitude, viz, the frigid zone, that it would have been sensibly cooled, and consequently that the rain which it brought, instead of being warm, would have been cold. 2. The great amount of rain by which this storm was attended, led me to infer that it came from a southerly direction, inasmuch as most of those storms of this nature, which I have succeeded in tracing, come from that quarter. I particularly instance one, that passed over England on the 3d and 4th April, 1850, which was a perfect deluge. And the cause of this phenomenon is very evident, and very easily to be explained, if we consider to what rain is owing. Rain is the precipitated moisture held in suspense in the higher regions of the air, and condensed by coming in contact with some colder medium. When that condensed moisture becomes excessive, or, in popular language, when the clouds have more water than they can hold, that moisture becomes rain. The moisture of the atmosphere is caused by evaporation, being the effect of the warm rays of the sun acting on the surface of the globe. This we frequently observe on Grass lands in summer evenings; the evaporation during the daytime is not noticed, because the air is warmer than the earth, but as soon as the heat of the sun is withdrawn the air becomes colder than the earth, and the evaporation from the moist Grass land coming in contact with the colder medium of the evening air is condensed and becomes fog, or mist. Therefore the greater the heat the greater the amount of evaporation, the moisture of which being carried upwards becomes cloud, in proportion to the amount of condensation; the greater the amount of condensed moisture, the greater the amount to be precipitated, that is to say, the greater quantity of rain will be the result. Now, it is hardly necessary to say that hot and cold are only so by comparison. Water at a temperature of 70° or 80°, which is very pleasant for the face or hands, would be disagreeably chilly as a bath for the body accustomed to be protected from the effect of the air by suitable clothing. I recollect well, being struck with the force of relative terms on the occasion of visiting those remarkable caverns with which the limestone hills of Franconia abound. The heat of the day had been intense, so our expedition was postponed until the cool shadows of the evening, which was perfectly delightful in comparison with the blaze of the noontide sun. We visited the caverns, and I shall never forget the feeling of suffocation on emerging from them into the oven-like heat of the outer air, which, cool as it seemed before entering, quite stopped our respiration after the still lower temperature of the limestone caverns. And so does the temperature of England affect the warm and moist air of the tropics when wafted into our latitude. Warm as the air may seem to us, it is nevertheless much colder than the temperature of the Cape de Verde Islands or of the Azores. If my readers will take the pair of compasses as before, they will see that the evaporated moisture of that latitude will become sensibly cooled down before it reaches us, and thus we see how it is that to us rain may feel warm at the very time that it becomes rain by condensation. This explanation shows us how it happens that we rarely have rain with a north-westerly wind. As the air which then reaches us comes from a colder latitude, any moisture which it might contain, instead of being condensed and precipitated, is rarified and evaporated. It would be irrelevant at this moment to discuss the connection between this fact and the rise of the barometer, which so constantly accompanies a north-westerly wind. *F. P. B. M.*



No. 2.

Aids to Labourers.—Sympathising in the remarks of "G. S." on this subject in the *Gazette* of March 20, I beg to forward you a notice of a case fully illustrating the effects resulting from aid to the labouring classes, given too much in the form of charity, without sufficient attention to justice, or to the ultimate issues of such help, and also of the manner in which such acts are regarded by the more intelligent members of that class. The man who drives the engine which I employ to thresh my corn has raised himself from the ordinary position of a common labourer entirely by his own unaided intelligence, industry, and prudence. In a short chat I had with him a few days since, whilst tending his iron horse, he told me that some coals had been gratuitously distributed to the poor of the parish in which he resided, of which he was denied a share because he belonged to the neighbouring parish, where, a week afterwards, there was a similar distribution, from

which he also received no benefit. I jokingly remarked, "They knew you didn't want it, John." "There," said he, "that's it; because I have tried to get on, and made better use of my money than spending it in the beer-shop, this is how I get served; while the lazy ones, and those that spend as fast as they can get, run off with the windfalls." These are very nearly his own words, and need no other comment than that which will suggest itself to every intelligent reader. *Clathrus Celatus.*

Societies.

ROYAL AGRICULTURAL SOCIETY.

Monthly Council, *April* 6. — Colonel Challoner, Trustee, in the Chair. Sixty-one new Members were elected.

Finances.—Mr. Raymond Barker, Chairman of the Finance Committee, presented the monthly Report on the accounts of the Society, from which it appeared that the current cash-balance then in the hands of the bankers was 1364*l*.

Chemical Grants.—Sir John V. B. Johnstone, Bart., M.P., laid before the Council the Report of the Chemical Committee, which was read and adopted.

Lincoln Meeting.—Colonel Challoner presented the Report of the General Lincoln Committee, which was also read and adopted. It had reference to the arrangements connected with the dinner of the Society at the ensuing country meeting, to be held at Lincoln in July next; and to the plan of the cattle, implement, and trial yards, drawn out by Mr. Brandreth Gibbs, the honorary director of the Show, and adopted by the Committee.

Member of Council.—On the motion of Colonel Challoner, seconded by Mr. Brandreth, Charles Towneley, Esq., of Towneley Park, in the county of Lancaster, was elected one of the general members of Council, to supply the vacancy created by the transfer of Sir John Villiers Shelley, Bart., M.P., to the class of Trustees.

Country Meeting of 1855.—A memorial was received from the authorities of Carlisle, inviting the Council to select that city as the place of the Society's country meeting of next year. The Council requested Mr. Raymond Barker, Mr. Brandreth Gibbs, Mr. Fisher Hobbs, Mr. Brandreth, and Mr. Cavendish to form an Inspection Committee, for the purpose of visiting the proposed localities, and of reporting to the Council, at their next monthly meeting, the respective capabilities of the several sites and edifices required for carrying out the objects of the meeting.

Arrangements for Country Meetings.—On the motion of Mr. Raymond Barker, seconded by Mr. Brandreth, it was resolved—"That the Council reserves to itself the right to adopt at all country meetings such arrangements as may seem most conducive to the general objects of the Society, without binding itself to adopt or follow the arrangements of previous years."

Lectures.—On the motion of Mr. Thompson, seconded by Sir John Shelley, the following arrangements were made for the delivery of lectures at weekly meetings of the Council, held at 12 o'clock at noon, and open to all members of the Society:—

May 10.—Prof. Way: On the progress made in the manufacture of artificial manures.

May 17. *and* *May* 24.—Prof. Simonds: On the particular indications of the ages of animals, furnished by the structure of the teeth and the general developments of growth, in cattle, sheep, and pigs.

May 31.—Prof. Way: On the nature and use of peat charcoal, and other deodorising substances, in reference to agriculture.

June 21.—Prof Way: On the absorbent nature of soils.

Mad Dogs.—Sir John Shelley took that opportunity of stating, that on inquiry at the Home Office, he had found that, in consequence of the representation made by the Council at their last meeting to Lord Palmerston, on the increase of mad dogs in the neighbourhood of the metropolis, attacking not only persons in the streets, but committing ravages on the live-stock of farmers, his lordship had given orders to the police to take possession of all dogs found at large and unowned. Under this salutary regulation, Sir John Shelley had reason to believe that several suspicious animals roaming abroad in the streets had already been removed, and being unclaimed had been shot.

Prize Essays.—Mr. Pusey, as Chairman of the Journal Committee, transmitted to the Council the following awards, made by the judges of Essays and Reports:—

I. To Lewis Henry Ruegg, of Sherborne; the Prize of 50*l*. for the best Report on the Farming of Dorsetshire.

II. To Clare Sewell Read, of Watlington; the Prize of 50*l*. for the best Report on the Farming of Oxfordshire.

III. To John Algernon Clarke, of Long-Sutton; the Prize of 50*l*. for the best account of Trunk or Arterial Drainage.

IV. To Edward E. Agate, of Horsham; the Prize of 10*l*. for the best essay on the Autumn Cleaning of Stubbles.—The essay in this class, bearing the motto: "Practice with Science," was commended by the judges.

Adjourned over Passion and Easter weeks to the 26th of April.

Society of Arts, *April* 5: *Agricultural Statistics.*—The following is a report of Mr. Caird's remarks at the previous meeting:—Mr. Caird said, he thought they must be all agreed that agricultural statistics, in a national point of view, were of the greatest importance, but imagined that if they taxed the farmer for that which was intended as a national benefit, they would set him against them at once. The quantity of grain sold annually in the English market amounted to 40 millions of quarters; and if accurate statistics should prevent the fluctuation of prices to the extent of only 1*s*. a quarter, the sum gained would amount to two millions sterling, which would pay for collecting the agricultural statistics of this country for the next century. He thought, after the paper which had been already read, that it was quite unnecessary to urge the importance of the subject; but he would read to the meeting a plan for collecting the statistics which he had prepared, upon the principle that it would be improper that they should demand of the farmer information as to his private affairs. With regard to the suggestion for sending out commissioners to instruct the farmers how to fill up the returns, he would observe, that during a very extensive experience, he had always met with the greatest civility from farmers, and a desire to give him every information which would be publicly useful and not privately injurious, but he considered such a commission entirely unnecessary.

Mr. Caird proceeded to say that the principles on which the system of collecting returns proposed by him was based, were—1. The main object is to obtain trustworthy returns, and these with the least necessary expense. 2. Trustworthy returns can be obtained only through trustworthy officers, responsible for the correct performance of their duty, and working under a system which affords a ready test of accuracy. 3. Economy will be promoted by employing a small number of competent and responsible men, rather than a very numerous body of local officials, each of whom must receive a fee, while they would be comparatively irresponsible, and, from their numbers, subject to no satisfactory test of accuracy. 4. As the returns, to be useful, must be made within a very short time after harvest, and before much of the corn can be threshed, they must necessarily be of the nature of an estimate, in so far as the yield per acre is concerned. 5. It is desirable, for many reasons, that the collection of the returns be made in a manner as little inquisitorial or offensive as possible; if either, they will be apt to fail in their main object—correctness. The employment of confidential officers, bound to secresy, will be a guarantee against the use of the returns for any but public purposes. 6. The first point to be ascertained is the acreage under each different crop; and this, as will be shown,* is by far the most important part of the inquiry. This will be not an estimate, but a record of facts. It is requisite, therefore, that it be conducted with care and deliberation; and, as it may be begun as soon as the seed is sown, the three months of May, June, and July may be occupied in this part of the inquiry. 7. There can be no reasonable objection on the part of any occupier to an inquiry as to the manner in which the surface of his farm is cropped. That is quite a different question from demanding to know the total produce of his crops. Nor would there be the same objection on the part of the farmers to answer such questions when put by a responsible and confidential officer, as by what might be thought a prying and irresponsible neighbour. 8. The varying measures and weights in use throughout the country are a further argument in favour of competently qualified officers who could personally ascertain the local measures, and convert them into the recognised standard; and this might be made the direct means of introducing and gradually establishing a uniform standard of weights and measures. 9. The acreage under each different crop having been ascertained, the occupier would be required to say not what was the actual produce of a particular field, but the actual produce per acre of each crop on his farm in ordinary years. 10. Before harvest these important facts would thus have been ascertained, viz.:—1st, The extent under each kind of crop. 2d, The average produce per acre of ordinary years. There would remain to be ascertained after harvest only—3d, How much the yield of that crop was above or below the average. 11. The effects of good or bad cultivation on each farm having been ascertained by the average produce, it follows that the effects produced by good or bad weather would be all that would remain to be learned after harvest; and, as the effects of weather over a parish would be pretty uniform, a single answer from a competent judge of light and heavy soils in each parish would fix this point. An alteration in the average quantity to the requisite extent could be made with great facility. 12. It will be necessary that each collector of returns be provided with an accurate map of the districts committed to him, and a correct list of the occupiers of land in each parish. 13. The Tithe and Inclosure Commission Office is suggested, as it affords a machinery already organised, with competently qualified officers locally employed in every part of Great Britain. This office is also possessed of the most complete system of maps of the various districts of the country which can at present be had. From these and the ordnance surveys, with local information, a very accurate map of each county and parish could be compiled. An accurate list of the occupiers of land would be obtained from the collector of rates in each parish. Taking the foregoing data as the principles on which to conduct the inquiry, we should proceed thus:—*Plan of Operations.* We shall suppose a branch of the Tithe and Inclosure Commission Office, or such other office as the Government may deem most suitable, to be the central office for issuing instructions, controlling officers, inspecting and testing the accuracy of the returns, and for arranging them for publication. One, two, and in some cases, three collectors of returns for each county, according to its extent, would be appointed. These would be selected men, of known competence. Each collector would be employed on an average 90 days before harvest in ascertaining the acreage under each crop, and other particulars, and 10 days after harvest in ascertaining the comparative yield of the last crop. The collector, provided with his map and list of occupiers, would between the 1st of May and the end of July, personally visit every occupier of land within his district, and mark down in a book the several particulars required to be ascertained. This book would, when completed after harvest, be forwarded to the central office in London, and would be preserved for being afterwards tested by the personal inquiry of a superior officer. Immediately after harvest, the collector would again visit each parish in his district, and satisfy himself as to whether the crop of each kind was an average, or in how far it was above or below an average. Having already calculated the average produce of each crop in a parish, he would alter that to correspond with the actual produce of the particular season. Thus, for example, if he had ascertained that a certain parish had 1500 acres in Wheat, which, at the rate of the average of years yielded 39,000 bushels, but that the actual yield of that year had proved 2 bushels an acre below the average, he would subtract 3000 bushels from the above quantity, and return 36,000 bushels as the estimated yield of Wheat in that parish. The main part of the calculations having been completed before harvest, the alterations necessary after harvest would be made with great facility, and the gross returns of the crops be ready for publication by the 10th of October. Monthly reports of the state of the growing crops at the most critical period would be made during the three months of inquiry. It would be part of the duty of the central office to test the returns of every collector by an inspector taking his returns for a particular parish, and investigating on the spot each statement recorded. This should be done in spring, so that the estimate might be compared with the fact after the crop was threshed out; and thus any carelessness or gross inaccuracy would be detected, and a useful guide be supplied for the future. Incompetency or carelessness would be visited with loss of employment. After the gross returns of produce were issued, which would be the first object, it would be the duty of the central office to compile from the returns such valuable statistics as had a special bearing on the agricultural improvement of the kingdom, and of every separate district in it. As to the expense of obtaining the returns, it is obvious that there will be considerable economy in taking advantage of an existing department of government, such as the Tithe and Inclosure Commission, upon which this scheme might be without much difficulty engrafted. The officers employed in the various parts of the country by this department are chiefly occupied at present in the autumn, winter, and spring months, so that the duties of this inquiry would not interfere much with their ordinary duties. For the first year a greater number of persons would be required to organise the system, but in after years the whole cost would certainly not exceed 25,000*l*. per annum. When it is considered that the estimated produce of the United Kingdom in grain of all kinds is 60 million quarters annually, 40 millions of which come upon the market for sale, and that 1*s*. per quarter of fluctuation in price amounts to 2,000,000*l*. sterling, the cost of collecting accurate information which should limit this fluctuation by only 1*s*. a quarter would be repaid one hundredfold. Each year's experience would render these returns more perfect, as all the persons engaged would acquire greater accuracy in every branch of the inquiry.

* The greater importance of ascertaining accurately the number of acres under each crop than the yield per acre, is shown by the Statistical Returns of Ireland, which tell us that

In 1849 there were 687,646 acres of Wheat,	yielding	2,148,893 qrs.
In 1852 " only 853,566 "	"	1,154,205 qrs.
Decrease in acres . 334,080	In Wheat .	994,688 qrs.

But, if the variation above or below average produce had been alone taken without inquiry at the same time, as to the proportion of acres under Wheat, the returns would have been entirely fallacious, the yield per acre in 1852 having averaged 26 bushels against 25 in 1849. Thus, taking the acreage of 1849 687,646, and applying to it the average yield of 1852, the returns would be 2,234,849, which would be an error of no less than 1,080,644 quarters beyond the actual produce of 1852. The ascertainment of the area under each crop is thus clearly the most important part of the returns, and this branch, as already mentioned, may be conducted with care and deliberation, as it extends over a period, if necessary, of three months.

At the adjourned discussion, Mr. Lumley stated the Government plan which had succeeded in Hampshire and Norfolk. He said:—

It had been employed with remarkable success. The failure—if such a phrase could be used—in embracing the statistics of these two counties was only from 2 to 4 per cent. Inspectors had a county each under their control, and were assisted by district unions. Every union formed its own statistical committee, and took cognisance of three or four parishes. Forms, returns, and schedules were duly delivered to occupiers of the land, to fill up with the number of those employed under them. Obstacles had been thrown in the way, and gross misapprehensions had been entertained by many residents in these counties, but they had been in a great measure removed by explanation and personal communication. Some might wish to adopt as a working machinery the tithe commission. That would be useless, as its staff of officers would soon be broken up. But the Poor-law Board was fixed for centuries, and was permanently arranged over the whole face of the country.

Mr. Leone Levi then referred to his plan for collecting the information desired; and we confine our report to the statement of the three plans, not having room for the discussion which ensued upon them, to which reference has been shortly made in a leading article:—

Two great machines would be required—a good central board possessing all the requisite knowledge of the subject, and of the instrumentalities to be used; and a local organisation possessing some influence. The tithe commission, combined with some of the Poor-law Board, would get the best and most accurate particulars. He read the following resolutions, which embodied his views as to gathering agricultural statistics:—1. That a central commission be authorised to obtain from the several boards of guardians in England and Wales annual returns of the total acreage comprised in each union, showing therein the total acreage of each parish or extra parochial place within the union separately, together with the acreage of the several crops or state of the whole land in such parish. 2. The board of guardians to be authorised to prepare the requisite returns by such ways and means as they may deem most expedient, having due regard to the utmost practicable accuracy as well as economy. 3. These returns to be forwarded to the central board on or before the 1st of June in each year, for the purpose of arrangement and publication. 4. Meteorological observations to be made throughout the country, and monthly accounts of the same to be forwarded to the central board, deducting the influence of the weather on the growing crops at the most critical period during the three months previous to harvest operations. 5. That the central board be authorised to appoint one fit and competent inspector in every county in England and Wales, to undertake the superintendence of certain defined districts, and report to the central board, on or before the 1st October, what in his judgment would be the average yield of the several crops in the districts superintended. 6. Such district to represent as far as possible the average of the county in which it is situated. 7. Each inspector's return to be signed by him, and to be published. 8. The several inspectors to be instructed to furnish the central board with such general remarks as to those crops on the lands in his county, not included in the district specially assigned to him, as he may deem important. These returns, when received, to be published by the central board without delay. 9. The expenses incident to be about 40,000*l*. per annum, and to be defrayed by Government. 10. The Highland and Agricultural Society of Scotland to be entrusted with the collection of agricultural statistics of that part of the kingdom, to be published in the same form, and as nearly as possible at the same time as those of England and Wales. The agricultural statistics of Ireland to be collected on the same plan by means of the stipendiary force which has hitherto performed so well those duties.

Farmers' Clubs.

London.—On Wednesday, a paper was read by Mr. Spooner on *Liquid Manuring*, a report of which, and of the discussion which ensued upon it, we must postpone till next week.

Reviews.

A Treatise on Pigeons. By J. M. Eaton. Author of "The Almond Tumbler." Published for the Author at Islington Green.

We have more than once been asked for a book on this subject, and have now the pleasure of recommending the one before us. It is apparently a collection of publications on the subject, and these somewhat multifarious and ill-arranged; but it is full of practical and useful information — the advice and experience of a man who has long made its subject his study.

Miscellaneous.

Agricultural Machinery and Implements.—The exhibition of machinery and implements, in connection with the Cattle Show of the Smithfield Club, held recently

in Baker Street, was of a very interesting character. We availed ourselves of the opportunity there afforded of inspecting the American threshing-machine, to which we had occasion to make reference in No. 1578 of our current volume. The result of our examination of this machine is an entire confirmation of what we before suggested concerning it; namely, that its novelty consists in but very little more than a mere modification of certain mechanical arrangements already well known and in extensive use. Those of our readers who are acquainted with the threshing-machines already in extensive use in this country will probaby read the foregoing description with some surprise, and will be able to estimate the real value of the invention, upon which Mr. Mechi has freely bestowed his praise, and of which English journals have written with so much laudation. Does its novelty consist in the revolving pegs, or in the travelling apron, or in the winnower, or in the screw? Or is it not rather to be seen only in the bringing together of these familiar parts into one machine, and mounting it upon wheels? The latter surmise is the true one. But we must not omit to state, that if the machine exhibited is to be considered a fair specimen of the American machines, as it no doubt is, it is impossible for English agriculturists to adopt them; for of all the machinery and implements exhibited, it was decidedly the most fragile and imperfect. The contrast between it and the machines of Garrett, Ransome, Dray, and other English manufacturers, was certainly very apparent. In fact, we are convinced that a machine similarly constructed, and sufficiently strong to bear the wear and tear of its operation for any reasonable length of time, must necessarily weigh much more than 14 cwt., which is said to be the weight of the American machine. We are anxious to insist upon this point, because of the error which has been so commonly propagated in unscientific periodicals concerning the relative cost of this and of our own machines. The fact is that the low cost of the American machine is entirely due to its inferiority. We have not space to notice at length the variety of new instruments exhibited, many of which were of evident worth. We especially regret the want of an opportunity to point out what we conceive to be serious defects in the principle of Smith's reaping, and several other machines; there is perhaps, however, but little necessity for this, since it is a fact, as we are willing to allow, that British farmers generally are not likely to adopt any invention which has not a well-established reputation both for utility and economy. In conclusion, we cannot refrain from pointing out the attempt made to palm off, as Bell's reaper, a machine of which the form of blade introduced by Mr. M'Cormick was, perhaps, the most conspicuous feature; and we may also add, that Mr. M'Cormick's blades were employed in nearly the whole of the reaping-machines on exhibition. *Mechanics' Magazine.*

Calendar of Operations.

MARCH.

Lammermuir Sheep Farm, *March* 21.—Ewes are now put on Turnips during the day with a run off at night. Those ewes which are crossed with a Leicester tup begin to lamb on or about the 1st April, and those with the pure Cheviot, lamb a fortnight later. In this district the system of crossing as above has been very considerably practised of late years. Many farmers cross their whole flock of ewes, and buy in small or second Cheviot lambs in autumn, to keep up their Cheviot stock. This is, perhaps, not carried to the same extent this season as formerly, owing to the very high prices which had to be given for small Cheviot lambs last year. This system, where a regular breeding mountain stock is kept, has very little to recommend it, as if pursued for a number of years, the stock degenerates sadly, from the inferior quality of the bought in lambs; and is only to be tolerated on the farms which are mostly arable, and where extra treatment can be given to the stock (generally small) by means of Turniping well during winter. But even then the breeding ewes will be an inferior and incongruous lot, entirely deficient in that similarity of shape, countenance, and contour so telling and so pleasing in the well-selected and carefully-bred flock. The large prices obtained for lambs of the above-mentioned cross, of late years, induced many to pursue the system further than a due regard to the ultimate quality and profitableness of their flocks will warrant. The Turnip crop is now nearly consumed, and few farmers have been able to reserve a sufficient quantity for spring use. About six weeks' Turnips are usually considered sufficient for Cheviot ewes in spring, commencing to give them about three weeks before the beginning of the lambing season. From the scarcity of Turnips, Grass is letting uncommonly high—from 30*s*. to 50*s*. per cent. above last year's rents; and many Grass fields are already stocked. Cheviot hogs are now turned to the hills. The usual plan in this district is to give the hogs half Turnips during winter, beginning them about the end of November, and continuing up till about the first or second week in April. This season, from the want of Turnips, they are turned off to the hills a fortnight or three weeks sooner than usual. *Lammermuir.*

Notices to Correspondents.

Books: *J W Reilly*. Blackie's "Agriculturist's Calculator."—*P P*. Low's "Elements of Practical Agriculture;" Stephens' "Book of the Farm;" Blackie's "Cyclopedia of Agriculture."

Dairy: *K B*. The American churn has been generally approved of, and is very suitable to the quantities you name.

Grass Land: *A B*. will probably find 1 cwt. per acre of nitrate of soda to be as efficient a dressing for his Grass as an equal value of any other manure. Apply it in wet weather in this month. It may be applied to Wheat, Barley, and Oats.

Hemp: *Tyro*. It likes deep rich alluvial land. It should be sown in the end of this month, or beginning of May. Two bushels of seed per acre are sown broadcast upon well manured land. Full details of after culture are given in agricultural works. See "Hemp" in Blackie's "Cyclopedia."

Mineral Coal Tar: *L*. asks where it is to be had. The answer, which we are unable to give, is properly an advertisement.

Errata. In the article on "Bean Straw," p. 203, first column, second and third lines of Table, for "Oil (Oat straw), 40," read "Oil, sugar, gum, &c. (Oat straw), 40." In second line from bottom, for ".40 gum protein, &c.," read "40 per cent. gum pectine, &c." In second column, after the Table of comparison with Turnips, read "Shows a like per-centage in my food of protein, and a less in oil, starch, &c." *Y.*

TESTIMONIAL

TO

J. B. LAWES, ESQ., OF ROTHAMSTED.

A number of Herts Tenant Farmers, influenced as well by their knowledge of Mr. Lawes' private worth as of his public services, met by previous arrangement, at the Town Hall, St. Albans, on December 24, 1853, for the purpose of considering the best manner of promoting and presenting him with a TESTIMONIAL in acknowledgment of those services; and since the benefits which he has conferred upon Agriculture could not be considered as merely local, it was desired, if it were found that the movement was responded to in other districts, that it should be in some degree a national one, though, from the great interest which it is known is taken by many foreign visitors in the researches at Rothamsted, Mr. Lawes' services cannot be considered as even limited to this country.

It was considered—that Mr. Lawes has for many years been engaged in a series of scientific and disinterested investigations, for the improvement of agriculture generally; which, having been carried out to an extent—with an attention to accuracy and detail—and at a cost never before undertaken by any individual, or even by any public institution. That, besides the Laboratory and other labours, from 40 to 50 acres of land are devoted exclusively to these investigations, the results of which, he, from time to time, gives freely, faithfully, and without exaggeration to the public, in the various agricultural periodicals. It was also considered, that he had, after a persevering course of practical experiments, introduced into the Turnip culture of this country, means more successful than any other known, for insuring the crop; whereby, the value of certain lands, and the produce of corn, meat, and wool, particularly in certain districts, has been much increased.

It was unanimously agreed by the Meeting, that a General Acting Committee, from the County of Herts, should be at once formed, for the purpose of promoting such a Testimonial to Mr. Lawes as would be worthy the acceptance of a man who may thus be considered as a benefactor to his country.

It was also agreed, that prior to issuing a General Circular, and thus giving a more national character to the movement, the Herts Committee should, through their Secretary, communicate with owners and occupiers of land in various parts of the kingdom, for the purpose of ascertaining their feeling in regard to it; and also, with a view to the formation of an Honorary Committee.

In many of the letters that have thus been received, the most gratifying testimony has been given, as to the respect in which Mr. Lawes' services are held by various classes of the agricultural interest; and, the following is a list of those Noblemen and Gentlemen interested in the improvement of agriculture, who have up to the present time given in their names as members of the Honorary Committee.

HONORARY COMMITTEE.

Ashburton, the Rt. Hon. Lord
Ames, Colonel
Alexander, Caledon, Esq.
Baker, Sir E. B., Bart.
Baldwin, W. T., Esq.
Betts, A., Esq.
Breadalbane, the Most Hon. the Marquess of
Bosanquet, G. J., Esq.
Butt, G. M., Esq., M.P.
Bland, W., Esq.
Beckford, W., Esq.
Burlington, the Right Hon. the Earl of
Cavendish, Hon. C. C., M.P.
Cavendish, W. H. F., Esq.
Caird, James, Esq.
Clutterbuck, Thomas, Esq.
Crawley, John, Esq.
Chichester, the Right Hon. the Earl of
Dacre, the Right Hon. Lord
Dickinson, John, Esq.
Dering, Sir E. C., Bart., M.P.
Dering, Robert, Esq.
Dorant, Richard, Esq.
Dyke, J. Dixon, Esq.
Ducie, The Rt. Hon. the Earl of
Essex, The Rt. Hon. the Earl of
Eley, George, Esq.
Greaves, E., Esq., M.P.
Greville, Colonel, M.P.
Hamond, Anthony, Esq.
Halsey, T. P., Esq., M.P.
Halsey, Rev. J. F. Moore
Hanbury, R., Esq.
Harvey, G. H., Esq.
Hilton, Captain
Huxtable, Rev. A.
Hilton, Rev. H.
Hodges, T. Law, Esq.
Johnson, Cuthbert W., Esq., F.R.S.
Jonas, Samuel, Esq.
Kelly, Sir Fitzroy, M.P.
Knight, T., Esq.
Lake, James, Esq
Langston, J. H., Esq., M.P.
Leicester, The Rt. Hon. the Earl of
Leigh, J. Shaw, Esq.
Lindley, Professor, Ph. D., F.R.S. and L.S.
Marshall, W., Esq., M.P.
Mechi, J. J., Esq.
Meux, Sir H., M.P.
Morton, John C., Esq.
Munn, Augustus, Esq.
Newman, Sir Robert, Bart.
Newman, Thomas, Esq.
Oakley, Richard, Esq.
Payne, J. Manwaring, Esq.
Pusey, Ph., Esq.
Puller, C. W., Esq.
Patterson, Captain
Prime, C., Esq.
Plomley, F., Esq., M.D.
Rushout, Colonel, M.P.
Ryder, Hon. G. D.
Romney, The Rt. Hon. the Earl of
Rivers, The Right Hon. Lord
Rice, E. R., Esq., M.P.
Scott, S., Esq.
Sebright, Sir T. G. S., Bart.
Simpson, H. Bridgeman, Esq.
Sheridan, R. B., Esq., M.P.
Sturt, H. C., Esq.
Smith, W. Masters, Esq., M.P.
Simpson, —, Esq.
Talbot, Hon. W. P.
Thompson, H. S., Esq.
Tylden, Sir J. M.
Twopenny, Edward, Esq.
Verulam, The Right Hon. the Earl of
Walsingham, the Rt. Hon. Lord
Wilson, Henry, Esq.
Woodward, F., Esq.
Wilshire, William, Esq.
Whatman, James, Esq., M.P.
Walter, William, Esq.
Windsor, the Hon. and Very Rev. Dean of

Chairman of the General Acting Committee—Mr. F. Gough. *Treasurer*—T. W. Overman, Esq.

Honorary Secretary—Mr. William Kerl, Harpenden, St. Albans. *Bankers*—London and County Bank, and its Branches.

Contributions may be paid by draft or Post-office order, on the St. Alban's Office, payable to T. W. Overman, Esq., Flamstead Bury, St. Alban's; or at any of the Branches of the London and County Bank, to the credit of the Treasurer of the Lawes' Testimonial Fund.

In now making an appeal to the Agricultural Interest generally, the Committee would suggest for the guidance of the large body of Tenant Farmers, who, it is believed, will desire to record their respect and gratitude to Mr. Lawes for his services, that even a higher tribute of respect would be paid to him, by the contribution of moderate sums from *a large number of Subscribers*, than by that of large sums from a comparatively limited number.

It may be interesting to Mr. Lawes' friends to know, that in a letter which has been received from Sir J. M. Tylden (Chairman of a local Committee formed in Kent, for aiding the movement in that County), he has communicated the result of a discussion which had taken place at a meeting of the Kentish Committee, as to what might might be considered a fit memorial to present to Mr. Lawes. It was suggested by that Committee, that as an *Heir-loom*, a piece of plate might be the more suitable; but that, in addition to this, to build him a new Laboratory for the prosecution of his Agricultural Investigations, would be exceedingly appropriate to the services which it was wished should be acknowledged; and it was thought that, in this point of view, the presentation of the Testimonial in some such form would probably be more acceptable to Mr. Lawes than that of any other. Decision on this point is, of course, at present quite premature; but, as these suggestions from the Kentish Committee are fully coincided with by the General Acting Committee, it was thought it might be well, even thus early, to afford some intimation of what would, in due time, come more fully under the consideration of the Committees.

The next Meeting of the General Acting Committee will be held at the Town Hall, St. Albans, on Saturday, April 8, 1854, at half-past eleven.

The Committee will have much pleasure in at any time receiving suggestions (addressed to the Secretary), from Gentlemen interested in the movement, prior to meeting (as they eventually hope to do) such Members of the Honorary Committee, or Deputations from District Acting Committees, as may signify their desire to confer as to the final appropriation of the fund.

W. Kerl, Hon. Sec.

Among the Subscriptions already announced are the following:—

	£ s. d.		£ s. d.		£ s. d.		£ s. d.
The Right Hon. Lord Ashburton	10 0 0	The Rt. Hon. the Earl of Ducie	5 0 0	Richard Knight, Esq. ...	1 0 0	E. R. Rice, Esq., M.P. ...	1 0 0
Colonel Ames	10 0 0	The Rt. Hon. the Earl of Essex	5 0 0	J.H. Langston, Esq., M.P.	10 0 0	Messrs. W. E. Rendle & Co.	5 5 0
Caledon Alexander, Esq.	50 0 0	The Rt. Hon. the Earl Fortescue	3 0 0	J. Shaw Leigh, Esq. ...	10 0 0	Sir T. G. S. Sebright, Bart.	100 0 0
The Most Hon. the Marquess of Breadalbane	25 0 0	Sir W. Brown Folkes, Bt.	1 0 0	James Lake, Esq. ...	1 0 0	S. Scott, Esq.	5 5 0
G. J. Bosanquet, Esq. ...	2 0 0	Andrew Fountaine, Esq.	2 2 0	Professor Lindley, Ph.D., F.R.S. and L.S. ...	2 2 0	R.B. Sheridan, Esq., M.P.	3 0 0
G. M. Butt, Esq., M.P. ...	5 5 0	Gardeners' Chronicle, Proprietors of the ...	5 0 0	The Rt. Hon. T. Pemberton Leigh	5 0 0	W. Masters Smith, Esq., M.P.	1 0 0
W. Beckford, Esq. ...	2 2 0	E. Greaves, Esq., M.P.	5 0 0	W. Marshall, Esq., M.P.	25 0 0	Hon. W. P. Talbot ...	1 0 0
Dr. T. F. Foord Bowes	2 2 0	Colonel Greville, M.P. ...	5 0 0	J. J. Mechi, Esq. ...	5 0 0	H. S. Thompson, Esq. ...	10 0 0
Hon. C. C. Cavendish, M.P.	10 0 0	Anthony Hamond, Esq.	5 0 0	Sir H. Meux, Bart., M.P.	5 0 0	Sir J. M. Tylden ...	2 0 0
Thos. Clutterbuck, Esq.	10 0 0	Thos. P. Halsey, Esq., M.P.	2 2 0	Sir Robt. Newman, Bart.	5 0 0	The Rt. Hon. the Earl of Verulam	10 0 0
John Crawley, Esq. ...	10 0 0	Rev. J. F. Moore Halsey	10 0 0	T. Newman, Esq. ...	10 0 0	The Right Hon. Lord Walsingham	2 2 0
The Rt. Hon. the Earl of Chichester	1 0 0	Captain Hilton	2 0 0	Richard Oakley, Esq. ...	10 0 0	Henry Wilson, Esq. ...	5 0 0
The Rt. Hon. the Earl Cowper	5 0 0	Rev. H. Hilton	2 0 0	T. W. Overman, Esq. ...	1 0 0	F. Woodward, Esq. ...	2 2 0
The Rt. Hon. Lord Dacre	25 0 0	R. Hanbury, Esq. ...	5 0 0	Ph. Pusey, Esq. ...	5 0 0	William Wilshire, Esq.	5 0 0
John Dickinson, Esq. ...	10 0 0	G. H. Harvey, Esq. ...	2 0 0	J. Manwaring Paine, Esq	5 0 0	Jas. Whatman, Esq., M.P.	1 0 0
Sir E.C. Dering, Bt., M.P.	1 0 0	Rev. A. Huxtable ...	25 0 0	C. W. Puller, Esq. ...	5 0 0	The Hon. and Very Rev. Dean of Windsor ...	1 1 0
Robert Dering, Esq. ...	5 0 0	T. Law Hodges, Esq. ...	1 0 0	Colonel Rushout ...	2 0 0	Mr. John White ...	1 0 0
Richard Dorant, Esq. ...	5 0 0	Samuel Jonas, Esq. ...	2 2 0	Hon. G. D. Ryder ...	2 2 0		
J. Dixon Dyke, Esq. ...	1 0 0	T. Knight, Esq. ...	1 0 0	The Rt. Hon. the Earl of Romney	1 0 0		

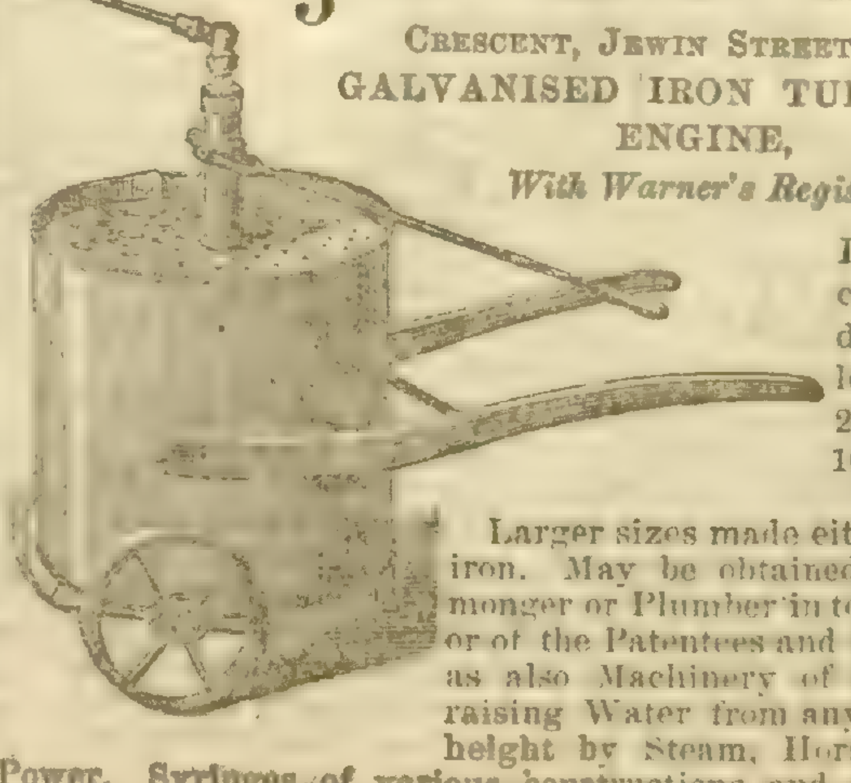
Upwards of 100 names subscribing sums of 1*l*. and upwards have been omitted, for want of space, from this Advertisement.

JOHN WARNER AND SONS,

Crescent, Jewin Street, London.

GALVANISED IRON TUB GARDEN ENGINE,

With Warner's Registered Spreader



Is strongly recommended, for durability and low price, viz., 2*l*. 19*s*., to hold 10 gallons.

Larger sizes made either in wood or iron. May be obtained of any Ironmonger or Plumber in town or country, or of the Patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Syringes of various constructions and sizes from 9*s*. upwards. An extensive assortment kept.

WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

	£ s. d.
Patent Pump	1 15 0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing	3 0 0

Larger sizes if required.

The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,

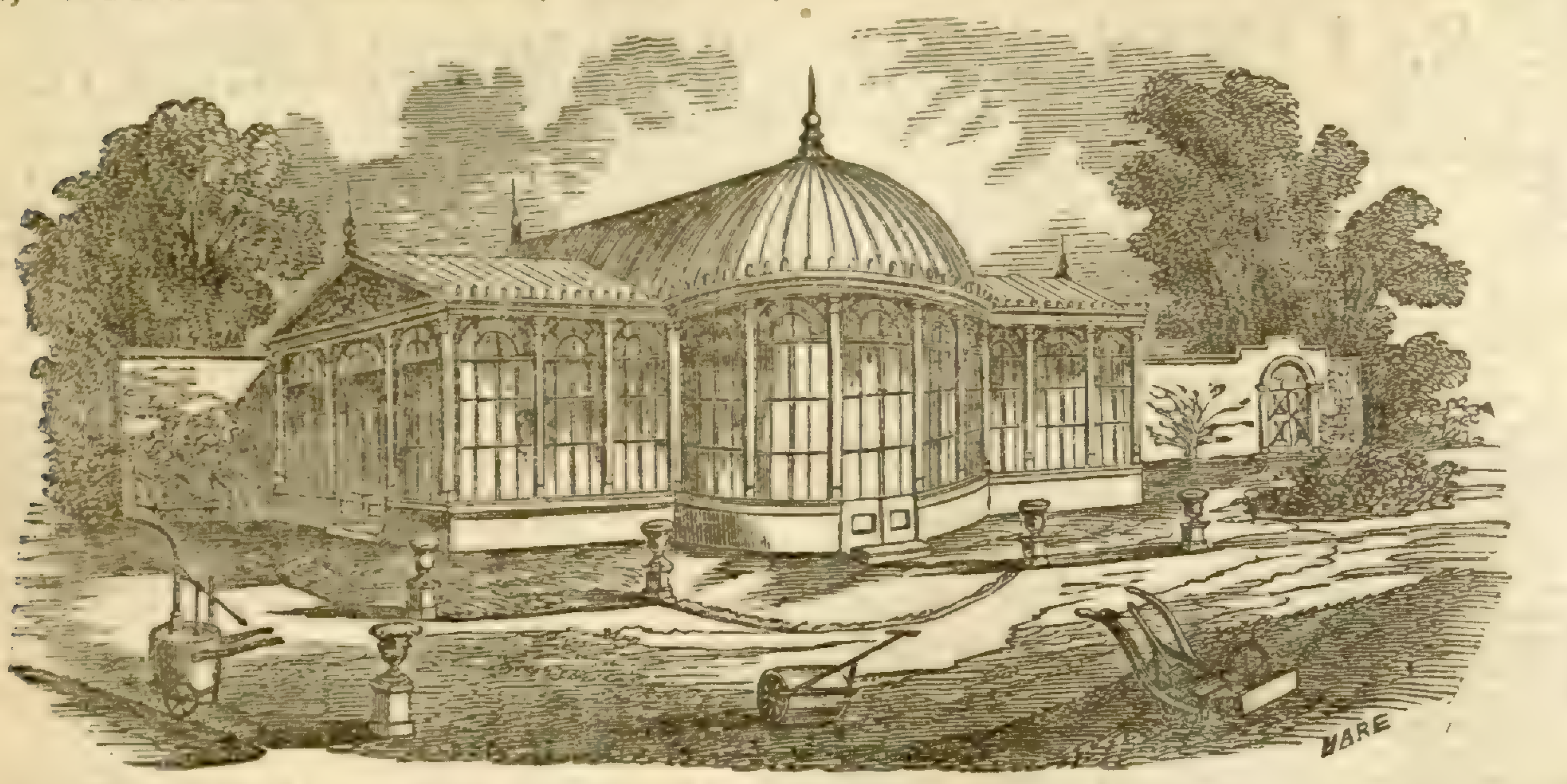
8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water; Fire Engines, &c.

An Illustrated Book sent on application post free.

COTTAM AND HALLEN,

2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.



APPLICATION is requested for their NEW HORTICULTURAL LIST, containing Illustrations, Descriptions, and Prices of

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Syringes	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

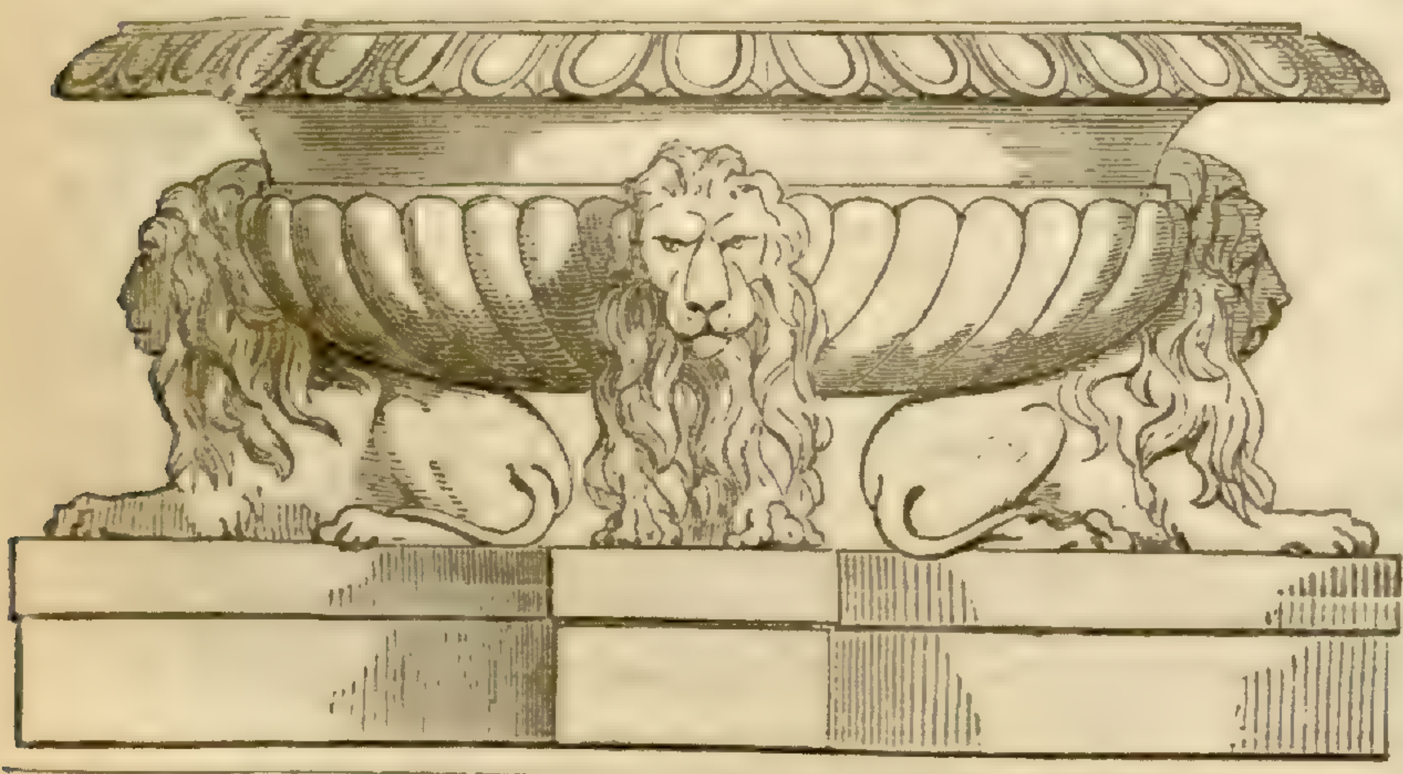
IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.

AGRICULTURAL LIST UPON APPLICATION.

EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

PORTE-FLEURS.



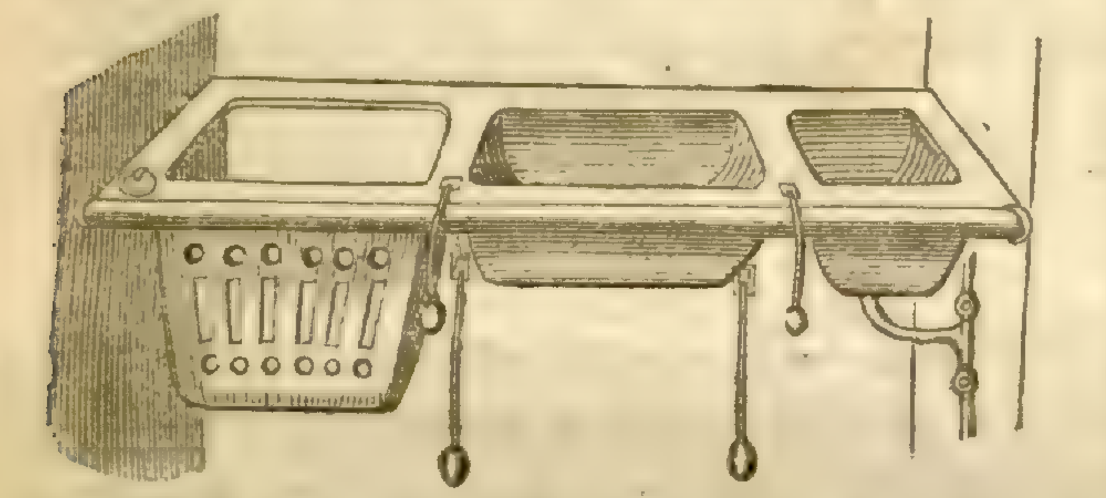
J. SEELEY respectfully informs the nobility and gentry that he has many handsome Designs for large Flower Bowls, and he solicits orders for them at the present time, for the purpose of insuring their being made before the summer is too far advanced—at least, two months is necessary to prepare such work; and he therefore trusts that gentlemen intending to place such ornaments in their grounds this year, will favour him with their instructions without delay.

ARTIFICIAL STONE WORKS,

Nos. 1 TO 4, KEPPEL ROW, NEW ROAD, REGENT'S PARK, LONDON.

N.B. A large quantity of Garden Vases and Figures, which have stood exposed to the last winter, may be inspected.

BARTON'S PATENT STABLE FITTINGS—PLAIN, ENAMELLED, AND GALVANISED.



These Fittings possess the latest Improvements, and are superior to any hitherto manufactured. Stable Furniture of every description. Iron Railing, Gates, Strained Wire Fencing, Hurdles; Sheep and Game Wire Netting; Registered Poultry Fountains, Troughs, Feeders, &c.

JAMES BARTON, Ironmonger, &c.; Manufactory and Warehouse, 370, Oxford Street (a few doors east of the Pantheon), London.

PURVEYORS OF LIVE BIRDS

BY SPECIAL APPOINTMENT TO HER MAJESTY AND H.R.H. PRINCE ALBERT.

BAKER'S POULTRY RESTORATIVE.—Ten years' experience of its success, in all Diseases of Poultry, justifies them in recommending it with the greatest confidence; one among its many advantages being the facility with which (in its liquid form) it is administered, obviating the troublesome necessity of handling the birds, and speedily imparting such vigour and high condition that can be acquired by no other means. Price 2s. 6d., either in Liquid or in Pills, with directions for Roup, &c. By all Chemists.

BAKER'S REGISTERED FOUNTAINS, for Poultry, Pheasants, and Pigeons, supplant all others. Four quarts, 6s. 6d.; nine quarts, 8s. 6d.—Messrs. BAKER, City; and the Pheasantry, Beaufort Street, Chelsea.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

BAILY'S ROUP AND CONDITION PILLS FOR POULTRY.—This remedy has been extensively tried with uniform success, and is offered to amateurs and the public with the greatest confidence. It will effectually overcome that disease which has hitherto been the bane of the poultry-yard, and destroy that apprehension known to all poultry keepers, when a favourite and valuable fowl is seen to droop. It is inestimable for poultry returning from exhibitions, and greatly facilitates moulting.—Sold, with full instructions for use, in boxes containing 50 pills, by JOHN BAILY, 113, Mount Street, Grosvenor Square, price 3s. per box, or by post 3s. 4d. "Fowls, by Baily," the most useful and plainest treatise of the day; price 2s., by post 2s. 6d.

Baily's Registered Fountains, universally adopted and approved. Drawings and particulars, by post, on application.—113, Mount Street, Grosvenor Square.

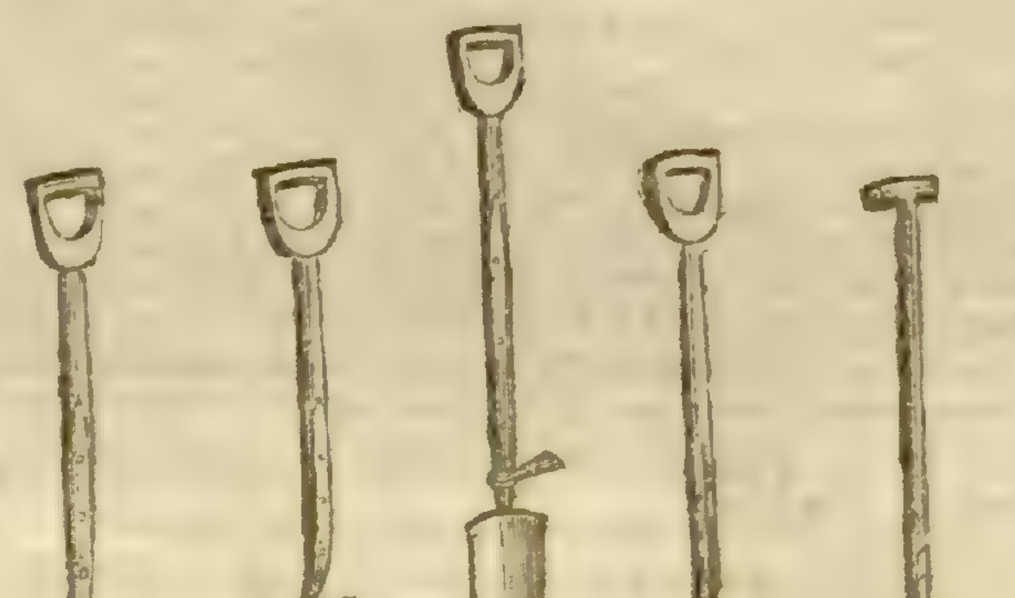
STEPHENSON AND PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.

MESSRS. BURGESS AND KEY, as Mr. PARKES' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps. 103, Newgate Street, and 52, Little Britain, London.

TO AGRICULTURISTS, GARDENERS, ETC.



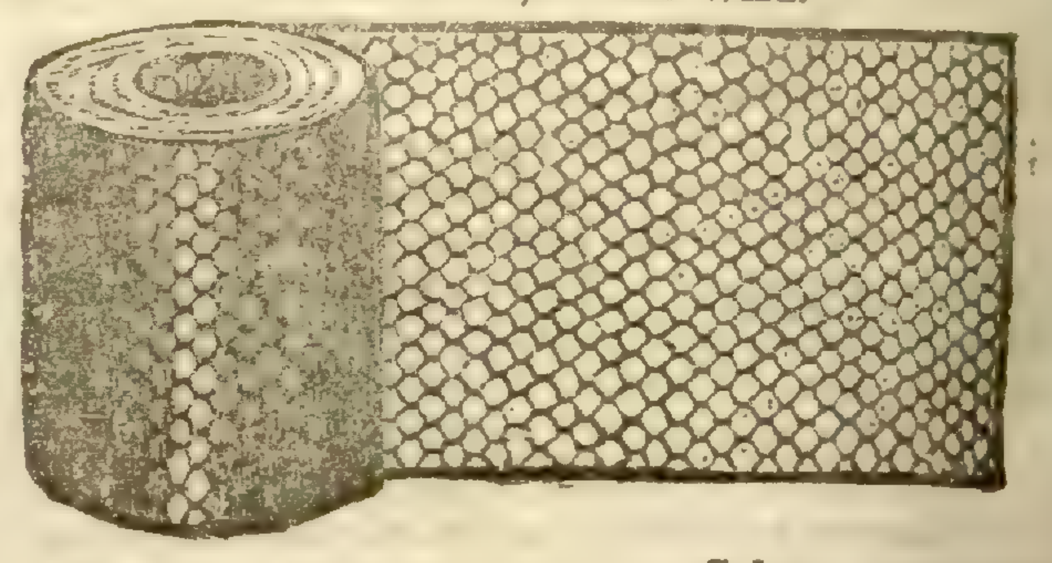
BENNETT AND NAYLOR, GENERAL IRONMONGERS, and FACTORS, Sole West End Agent for PARKES', late WINTON PARKES' CELEBRATED STEEL DIGGING FORKS and TOOLS. Also for the only efficient Stove, with or without a flue, suited particularly for Conservatories and Greenhouses, Patronised by her Majesty. Price 12s., and upwards, at the Great Western General Ironmongery Warehouse, 255, Oxford Street, between Park Street and North Audley Street. Established for the sale of all descriptions of Ironmongery at Wholesale Prices. Sheet, Hoop, Rod, and Bolt Iron; Locksmiths and Bell-hangers. Patent Fuel, to be used with the Stove, 2s. 3d. per bushel.

HALL'S GARDEN NETTING, the best protection against FROST, STORMS, OR SCORCHING HEAT.

TANNED NETTING, for the protection of Fruit Trees from frost, blight, and birds, and for the security of fresh sown seeds, either in Gardens or Fields, at 1d. per square yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Scrim Canvass, for Wall Fruit.—At EDGINGTON and Co.'s, 17, Smithfield Bars, City, and Old Kent Road, Southwark, where may be seen erected Emigrant Tents in great varieties, on their latest improved principles, and also at Brunswick Street, Poplar, near the East India Export Dock.

FRUIT TREES, POULTRY, RABBIT, SHEEP, and CAT FENCING.—Worsted Netting to protect the Bloom of Peach, Nectarine, and other Trees, Flower, or Seed Beds, from Frost, Blight, and Birds, 2 yards wide, 5d. per yard. NEW TWINE NETTING (Tanned if required), 1 yard wide, 1½d. per yard; 2 yards wide, 3d. per yard; 4 yards wide, 6d. per yard; Half-inch Mesh ditto, 2 yards wide, 6d. per yard. TANNED NETTING, 2 or 3 yards wide, 1½d. per yard; 4 or 6 yards wide, 3d. per yard; or 5s. per 100 yards, 1 yard; 10s. per 100 yards, 2 yards; and 20s. per 100 yards, 4 yards wide. ELASTIC HEXAGON GARDEN NET, or Scrim Canvas, 4½d. per square yard. COCOA NUT FIBRE, or Hemp Sheepfolding Net, of superior quality, 4 feet high, 4d. to 6d. per yard. Rabbit Net, 4 feet wide, 1½d. per yard; 6 feet wide, 2¼d. per yard; 8 feet wide, 3d. per yard. Each Edge Corded, ½d. per yard extra, suitable for Poultry Fencing. Square Mesh Cricketing Net, fix its full width and length, made of stout cord, 3d. to 4d. per square yard; this is the best article made for fencing, against fowls, cats, &c., at W. CULLINGFORD'S. Orders by post with Post-office order or town reference, punctually attended to. The Trade supplied. Fishing Nets of all kinds in stock. Nets made to order. Tents, Marquees, Rick Cloths, Tarpaulin, Lines, Rope, Twine, &c., made to order.—1, Edmund-terrace, Ball's Pond Road, Islington, London.

GALVANISED WIRE GAME NETTING.—7d. PER YARD, 2 FEET WIDE.



			Galvanised.	Japanned iron.
2-inch mesh,	light, 24 inches wide	...	7d. per yd.	5d. per yd.
2-inch „	strong „	...	9 „	6½ „
2-inch „	extra strong „	...	12 „	9 „
1⅝-inch „	light „	...	8 „	6 „
1⅝-inch „	strong „	...	10 „	8 „
1⅝-inch „	extra strong „	...	14 „	11 „

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasantries, 3d. per square foot. Patterns forwarded post free.

Manufactured by BARNARD & BISHOP, Market Place, Norwich; and delivered free of expense in London, Peterborough, Hull, or Newcastle.

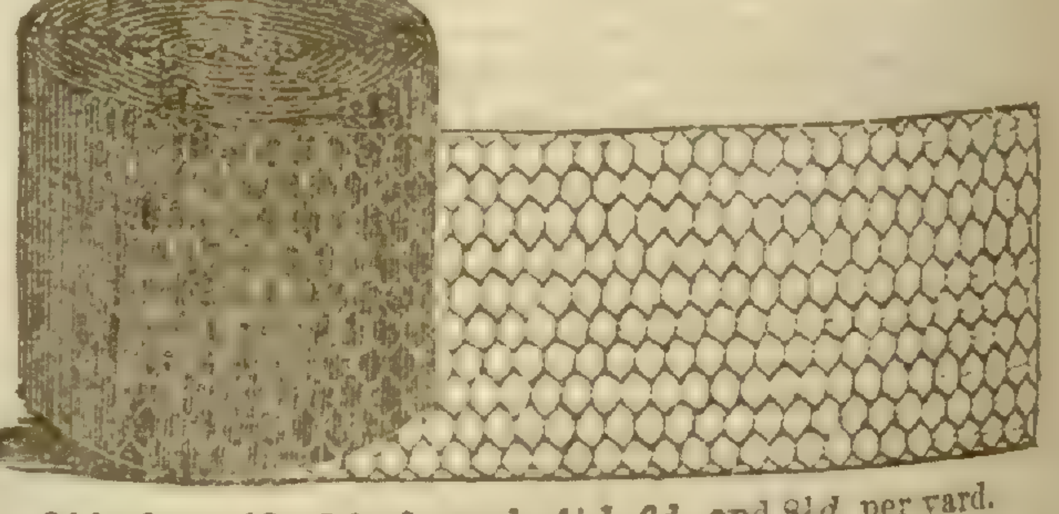
H. J. MORTON AND Co., Galvanised Iron Roofing Works, 2, Basinghall Buildings, Leeds.

PATENT WIRE STRAND FENCING FOR PARKS, &c.

This Fencing is the most neat, strong, and durable for Parks and Agricultural purposes in use. It cannot be bent or put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply as above.

IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

H. J. MORTON AND Co., 2, Basinghall Buildings, Leeds.—GALVANISED GAME AND POULTRY NETTING, very strong and neat, NEVER REQUIRES PAINTING.



24 inches wide, 3-inch mesh, 4½d., 6d., and 8½d. per yard.
24 inches wide, 2-inch mesh, 7d., 9½d., and 1s. per yard.

GALVANISED IRON SPOUTING, for Dwellings, Cottages, Farm Buildings, &c., NEVER REQUIRES PAINTING.

Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalte Roofing Felt, &c.

RICHMOND AND CHANDLER'S No. 1 CORN CRUSHER (Price 5l. 5s.) was first introduced a few years ago, as a decided improvement upon others theretofore made. Subsequent time and experience have served to render it more perfect, and to greatly extend the pre-eminent patronage of members of the Royal Agricultural Society and distinguished scientific authorities throughout the world.—Address, RICHMOND & CHANDLER, Implement Works, Salford, Manchester: and 32, South John Street, Liverpool.

Export orders completed on the shortest notice.

PRIZE MEDAL—1851.

AT A VERY ECONOMICAL RATE.

SAMUEL CUNDY, MASON and BUILDER, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Lower Belgrave Place, Pimlico, London.

Marble Chimney-pieces manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price. A good Marble Chimney-piece for 40s. Marble Work in all its branches at a remarkably cheap rate for Halls, Dairies, Larders, &c. Circulars sent on application.

N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

Priced lists of plant tubs and boxes forwarded on application.

ADAMSON'S REGISTERED ORNAMENTAL GARDEN EDGING, a cheap, durable, and perfect substitute for all other Edgings, for Conservatories, Terrace Walks, or Garden Borders, being of an agreeable colour, a thorough drain for the walks, applicable to borders of any form or size, and does not harbour vermin. To be obtained only of the Inventor and Manufacturer, T. H. ADAMSON, Jun., Builder, High Street, Putney, where Prospectuses may be obtained on application.

May be seen laid down in the Horticultural Society's Gardens, Chiswick, where it has withstood the late severe winter.

HOSE PIPING.—GREAT REDUCTION IN PRICE.

WAITHMAN'S PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense Pressure, and much more than Leather, vulcanised Rubber, or any other Hose; and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented Inventions, the cost of manufacturing it is now reduced at least 60 per cent., which advantage is offered to the Public.—London Agents, BURGESS & KEY, 103, Newgate Street, and 52, Little Britain, who on application will forward wholesale and retail prices.

READ'S GARDEN ENGINES, SYRINGES, &c.—When an article of real utility attracts public attention, imitators start into the field to snatch from the inventor the just reward of his labours. It has now become a daily practice to exhibit in the windows of ironmongers and others Syringes of the VERY COMMONEST DESCRIPTION, with the words "READ'S PATENT," as an inducement to purchasers. This, as an eminent writer on Horticulture has recently remarked on the subject, is indeed "living upon another man's fame."

READ'S Instruments have the royal arms, with the address—

35, Regent Circus, London.

☞ Descriptions sent post free.

ANTHONY'S PATENT AMERICAN CHURN.—Extract from the Royal Agricultural Society's Report of the trial of Churns at the Gloucester meeting in July last. "In this trial the American Churn not only maintained its character in producing butter rapidly, but in producing a greater quantity from the like amount of cream." It made from 4 quarts of cream 4 lbs. 6 oz. of butter, being 8 oz. more than any of the other Churns from the same quantity and quality of cream. Price Lists of Churns and Implements by the best makers sent free, and Illustrated Catalogues on receipt of eight postage stamps. BURGESS & KEY, 103, Newgate Street, and 52, Little Britain, London, who have always a large stock of Steam-engines, Ploughs, Harrows, Diggers, Waggons, Carts, Threshing and Dressing Machines, Mills, Oat and Grain Bruisers, Oilcake Breakers, Reaping Machines, Haymakers, Horse-rakers, Turnip Cutters, Liquid Manure Carts, Parkes' celebrated Steel Digging Forks and Draining Tools, Pumps for Manure, Farm Fire Engines, and for Garden Purposes, &c. &c.

CHAFF-CUTTERS, of the best workmanship, 25*s*.; Two-Knifed Chaff Engines, from 63*s*.; Mills for Bruising Oats and Beans, from 45*s*.

WILLIAM DRAY AND CO., Agricultural Implement Manufacturers, Swan Lane, Upper Thames Street, City.

GIDNEY'S PRUSSIAN HOE. — Gardeners and Amateurs are informed that this useful Tool is now becoming a general favourite in the garden, and only needs a trial to be appreciated. Price 1*s*. 6*d*. handled. To be had of every Ironmonger and Seedsman. Manufactured only by GIDNEY & SON, East Dereham, Norfolk.

BUDDING'S LAWN-MOWING MACHINES, with Registered Improvements.

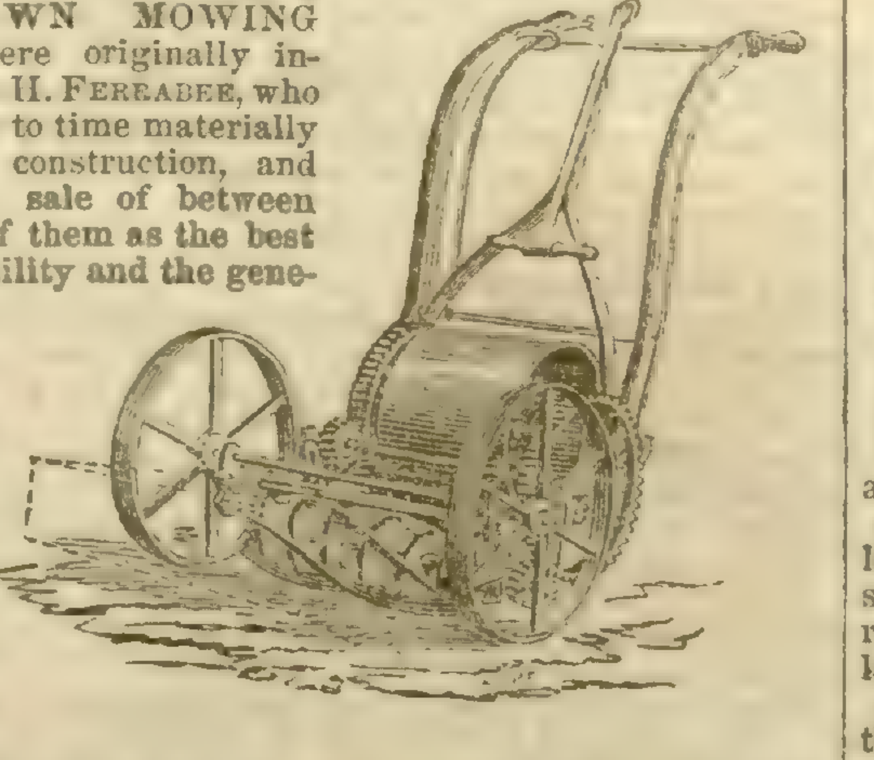
MAPPLEBECK & LOWE, MACHINISTS & MANUFACTURERS, Birmingham.

BUDDING'S LAWN MOWERS, with SAMUELSON'S registered improvements, *lightening the draught fully one-half*, and enabling an unskilled labourer to make neat work; free from liability to choke, or get out of order. May be had of all ironmongers in town or country, or from the Works, Banbury; delivered free in a packing case to any station on the North-Western and Great Western Railways. Testimonials forwarded on application.—Britannia Works, Banbury.

THE IMPROVED LAWN MOWING MACHINE,

MANUFACTURED BY

J. AND H. FERRABEE, Phœnix Iron Works, near Stroud, Gloucestershire.



The well-known BUDDING'S PATENT LAWN MOWING MACHINES were originally introduced by J. & H. FERRABEE, who have from time to time materially improved their construction, and can refer to a sale of between 4000 and 5000 of them as the best proof of their utility and the general satisfaction which they have given.

The Machines offered this year by J. & H. FERRABEE are superior to any yet produced, being perfectly adapted for cutting the Grass on Lawns and Verges, and between flower beds; while their strength and durability have been increased and their management simplified. Any person can use them effectually without the least practice. They can be adjusted to cut various lengths of Grass, and will produce a more even and uniform surface than the most skilful mower. The Grass is cut best when dry, so that a machine can be employed at the most convenient time to the workman, and more than double the work may be done with the same manual labour that is requisite with a scythe.

SIZES AND PRICES.

			£	*s*.	*d*.
Hand Machine, for One Man,	cutting	16 inches wide	5	15	0
Ditto for Two Men,	„	22 ditto ...	6	10	0
Pony Machine,	„	28 ditto ...	10	0	0
Horse ditto	„	36 ditto ...	16	0	0

The Horse Machine will cut the longest and coarsest Grass usually met with on Lawns and Pleasure Grounds.

London Agents:—Messrs. BOULNOIS & SON, Baker Street Bazaar, Portman Square.

TOBACCO PAPER! TOBACCO PAPER!

THE Cheapest and most effectual article for Smoking Greenhouses, and destroying the Fly on Plants, is Genuine Tobacco Paper, which JOSEPH BAKER, of 73, Fleet Street, can supply in large quantities, at 1*s*. per lb.; and if under 7 lbs. at 1*s*. 2*d*. per lb. Post-office Orders payable at the Strand Office.

JOSEPH BAKER, 73, Fleet Street, London (opposite the *Dispatch* newspaper).

THE GUTTA PERCHA COMPANY'S TUBING FOR WATERING GARDENS, WITH ROSES AND UNION JOINTS FITTED.—27, CITY ROAD, LONDON.

(Fig. 1.) (Fig. 2.)

J. TYLOR AND SON'S BARROW GARDEN ENGINE (Fig. 1), in best well painted oak tub, fitted with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 1	holds 10 gallons,	throws 30 feet high	...	£4 10
No. 2	„ 15 „	„ 45 „	...	5 10
No. 3	„ 28 „	„ 45 „	...	6 18

J. TYLOR AND SON'S BARROW GARDEN ENGINE (Fig. 2), in strong tinned iron tub, well painted inside and outside, with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 10	holds 8 gallons,	throws 25 feet high	...	£2 15
No. 13	„ 12 „	„ 30 „	...	3 5
No. 11	„ 16 „	„ 40 „	...	4 0
No. 12	„ 24 „	„ 45 „	...	5 0
No. 14	„ 30 „	„ 45 „	...	5 18

A large assortment of every description of Garden Syringes, Pail Engines, Conservatory Pumps, &c., kept in stock.

Full size Syringe, on Read's principle, of the very best quality and workmanship, with two roses and one jet, 21*s*.; Plain Syringes from 10*s*. 6*d*. upwards.

J. TYLOR & SON'S Horticultural Apparatus may be obtained at these prices from any respectable Ironmonger or Seedsman in town or country, through whom alone they will be supplied, and of whom Drawings and Prices may be had.

N.B. Cost of carriage, &c., not included in these prices.

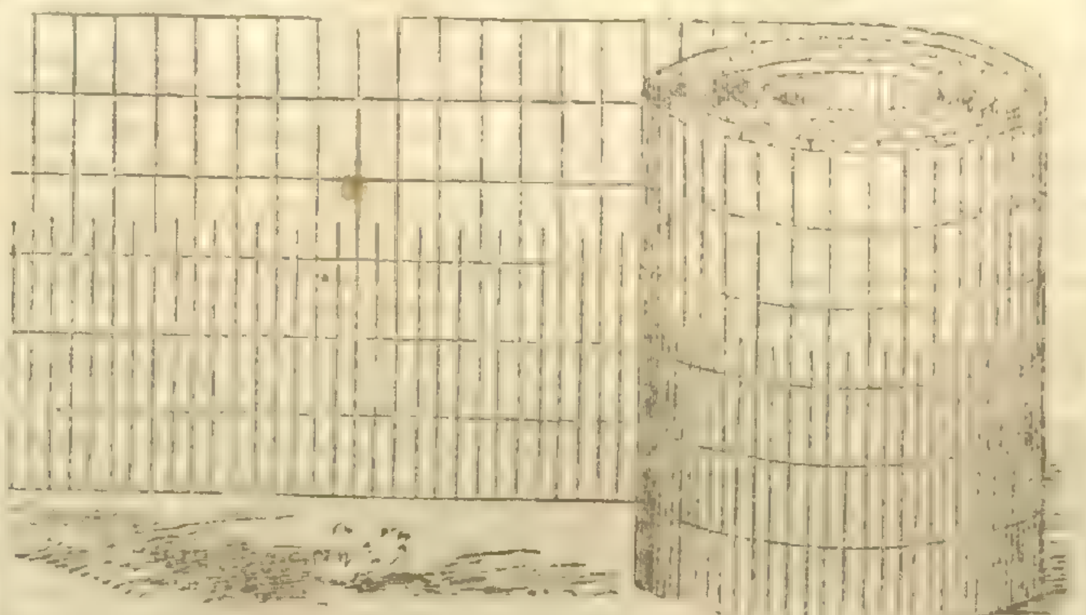
J. TYLOR & SON'S Manufactory, Warwick Lane, Newgate Street, London.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PORTABLE POULTRY FENCING, MANUFACTURED BY PATENT MACHINERY.

The great increase in the number and quality of POULTRY in the United Kingdom within the last few years has created a demand for an efficient Poultry Fence, which has called into existence every possible contrivance and adaptation of the Wire and Cord Netting, all of which have more or less proved failures.

B. GREENING & CO. have succeeded in supplying this acknowledged deficiency, by the introduction of a variety of their Portable Wire Fencing.



No. 11. PATENT DOUBLE FENCING (Proof against Poultry and Chickens).

This Fencing (which they manufacture by machinery, patented last year) is light, portable, and elegant in appearance, yet stronger and more durable than any Fence before the public. It requires few standards, and is fixed with the utmost facility by a labourer or gardener.

Notwithstanding the present high price of iron, B. G. & Co. offer these superior Fences at the following low prices:—

COCHIN CHINA FENCE.

36 inches high, 1*s*. 6*d*.; or, if Galvanised, 1*s*. 10½*d*. per lineal yard.
42 „ 1*s*. 9*d*.; or, if Galvanised, 2*s*. 2*d*. „

SPANISH, OR DORKING FENCE.

5 feet high......2*s*. 0*d*.; or, if Galvanised, 2*s*. 5½*d*. per lineal yard.
5 feet 6 in. high, 2*s*. 3*d*.; or, if Galvanised, 2*s*. 9*d*. „

NOTE.—It is a well-known fact, that fowl of these species will not fly over any fence, unless they can alight upon the top of it. To prevent this, B. GREENING & Co. have produced another variety of Fence, whose top, instead of being horizontal, is composed of a series of perpendicular wires, or spikes, thereby rendering it completely proof against even the lightest fowl of the above kinds.

FENCE TO CONTAIN THE SMALLER VARIETIES OF FOWL, (Polish, Hamburghs, and the Common Kinds.)

6 feet high, 2*s*. 6*d*.; or, if Galvanised, 3*s*. per lineal yard.

Every information respecting this new and valuable system of Fencing may be obtained from BENJAMIN GREENING & CO., 1 and 3, Church Gates, and 2, Cateaton Street, Manchester.

Cattle Fencing, Sheep and Lamb Fence, Hare and Rabbit Proof Fencing, Ornamental Fencing for Gardens, Poultry Fencing, Trainers for Peas, Garden Bordering, Export Fencing, &c. &c., manufactured by Patent Machinery by BENJAMIN GREENING & CO.

1 and 3, CHURCH GATES, and 2, CATEATON STREET, MANCHESTER.

(Prospectuses and Engraved Sheets of Patterns, gratis.)

IMPROVED MOWING AND ROLLING MACHINE.

ALEXANDER SHANKS AND SON, Arbroath, Forfarshire, Inventors and Sole Manufacturers, respectfully solicit the attention of the Nobility, Gentry, and Gardeners to this improved Machine for Mowing and Rolling Lawns. The Machine is in operation in the Royal Gardens at Windsor Palace, Buckingham Palace and at Osborne, in the Botanical Gardens at Kew, Regent's Park, Manchester, Sheffield, &c.; at Blenheim Palace, Trentham, Cliveden, Elvaston, Broadlands, Woburn Abbey, Clumber, Lilleshall, Castle Howard, Shrubland, Eridge Castle, Enville Hall, Tiptree Hall, Chatsworth, and in many other of the principal gardens in the kingdom, as well as in the United States, British America, and on the Continent, where its merits have been fully proved, and its success established.

The Machine is made to cut the breadths of 42, 30, 20, and 15 inches respectively, is exceedingly durable, easily managed, and adjusted to cut to the length required. The execution of the work is far superior to what may be attained by the most skilful mower, while at the same time a great saving of labour is effected. By the largest machine a Scotch acre may be mowed, rolled, and the Grass collected in one hour.

Further particulars, with prices, may be had on application.

THE COTTAGER'S STOVE.—An economical, compact, and portable COOKING APPARATUS, combining a good sized Oven and Hotplate; may be had with or without a boiler, and will cook sufficient for a dozen persons with the consumption of 1 lb. of coal or coke per hour. It requires no fixing, may be placed in any apartment, and is a great security against accidents from fire. It will burn Coal, Coke, or Wood. They are also specially adapted for Emigrants, and may be seen in operation daily, at the Manufacturers', D. & E. BAILEY, 272, High Holborn, London.—Price 50*s*., and upwards.

HEAL AND SON'S SPRING MATTRESSES.—The most durable Bedding is a well-made SPRING MATTRESS; it retains its elasticity, and will wear longer without repair than any other mattress, and with *one* French Wool and Hair Mattress on, it is a most luxurious Bed. HEAL & SON make them in three varieties. For prices of the different sizes and qualities, apply for HEAL AND SON'S ILLUSTRATED CATALOGUE OF BEDSTEADS and priced LIST OF BEDDING. It contains designs and prices of upwards of 100 Bedsteads, and prices of every description of Bedding, and is sent free by post.

HEAL & SON, 196, Tottenham Court Road.

MECHI'S SHILLING PENKNIVES.—These and the SIXPENNY TOOTH-BRUSHES will prove that, whilst he has the most elegant shop in London, he is determined to do business on the most reasonable terms. He manufactures extensively on his premises, No. 4, Leadenhall Street, London, Desks, Work-boxes, Dressing-cases, Bagatelle Tables, Table and Small Cutlery, Razors, Razor Strops, Brushes, Combs, and everything for the work-table and dressing-toilet. Every article is warranted. He is the sole inventor of the Mechian Dressing-case, the Patent Castellated Tooth Brush, the Magic Strop and Paste, and the Peculiar Steel Razor. Beware of counterfeits, none being genuine without his Name and Address, No. 4, Leadenhall Street, London.

METCALFE AND CO'S NEW PATTERN TOOTH BRUSH, PENETRATING HAIR BRUSHES, AND SMYRNA SPONGES.—The Tooth Brush performs the highly-important office of searching thoroughly into the divisions and cleansing in the most extraordinary manner—hairs never come loose. Peculiarly penetrating Hair Brushes, with durable unbleached Russian bristles, which will not soften like common hair, and immense stock of genuine unbleached Smyrna Sponge, with every description of British and Foreign Perfumery, at METCALFE, BINGLEY, & Co.'s only Establishment, 130 B and 131, Oxford Street, second and third doors west from Holles Street.

CAUTION.—Beware of the word "from" Metcalfe's, adopted by some houses. Metcalfe's Alkaline Tooth Powder, 2*s*. per box.

ASTROLOGY.—Persons residing in London or elsewhere can send any Address, Christian and Surname, and Age, in a letter containing 13 postage stamps, to Professor MELVILLE, Princes Road, Lambeth, London (the only Acrostic Astrologer in the universe), and they will receive by return of post, special Poems on their names, in which their destinies will be revealed.

YOURSELF! WHAT YOU ARE, AND WHAT FIT FOR. ELLEN GRAHAM continues to give her novel and interesting delineations of character from an examination of the Handwriting, in a style of description peculiarly her own, filling the four pages of a sheet of paper. Persons desirous of knowing their true character, or that of any friend, must send a specimen of the writing, stating sex and age, or supposed age (including 13 postage stamps) to Miss GRAHAM, 14, Hand Court, Holborn, London, and they will receive in a few days a minute detail of the gifts, defects, talents, tastes, affections, &c., of the writer, with many other things hitherto unsuspected.

Seventh Edition, "A Few Words before Matrimony," price 6*d*. sent post free on receipt of six postage stamps.

SOUND AND WHITE TEETH are not only indispensably requisite to a pleasing exterior in both sexes, but they are peculiarly appreciated through life as highly conducive to health and longevity. Among the various preparations offered for the purpose, ROWLAND'S ODONTO, or PEARL DENTRIFICE, stands unrivalled in its capability of embellishing, purifying, and preserving the teeth to the latest period of life. Prepared from Oriental herbs with unusual care, transmitted to this country at great expense, it will be found to eradicate all tartar and concretions, and impart a pearl-like whiteness to the enamelled surface, remove spots of incipient decay, render the gums firm and red, and thus fix the teeth firmly in their sockets; and from its aromatic influence imparts sweetness and purity to the breath.—Price 2*s*. 9*d*. per box. Caution.—The words "Rowlands' Odonto" are on the label, and "A. ROWLAND & SONS, 20, Hatton Garden," engraved on the Government stamp affixed on each box. Sold by them, and by chemists and perfumers.

ELECTRICITY FOR NERVOUS, FUNCTIONAL, AND RHEUMATIC DISEASES.

MR. MEINIG'S new and greatly improved GALVANIC ELECTRO GENERATOR, for supplying vito-functional energy to any organ in want of the same, and to the system generally, may now be had at the Establishment, 103, Leadenhall Street. All wet and metallic contact with the body is entirely obviated; it acts with water alone, without acid, the action lasts more than 24 hours after each damping, and can be renewed and regulated without undressing, the Generator, enclosed in an envelope, being carried in the pocket or suspended from the neck. The extraordinary curative virtues of these mild currents of Electricity are now fully established by experience; the Prospectus (to be had gratis, or by post for two stamps) contains the names of more than 600 persons cured within the last 18 months, and this remedy is now adopted in nearly all the hospitals, and by the most eminent practitioners. Sold at 5*s*. upwards, according to power, at C. MEINIG'S, 103, Leadenhall Street. N.B.—It is impossible, when wearing a Generator, to be attacked by Cholera.

EASTER HOLIDAYS.

THE ZOOLOGICAL GARDENS in the Regent's Park will be open to Visitors on payment of SIXPENCE each, every day in the week, except Saturday.

THE ST. MARGARET'S ESTATE, RICHMOND. —The magnificent Mansion and picturesque Park at St. Margaret's, opposite Richmond Gardens, may be viewed daily, between the hours of Twelve and Five o'clock (Sundays excepted) by cards only, to be had of the EXECUTIVE COMMITTEE of the CONSERVATIVE LAND SOCIETY. The purchase-money having been paid up on Lady-Day, the allotment of this valuable Estate on the Banks of the Thames has been fixed for WEDNESDAY, the 7th of June. Cards will be duly forwarded to the Members and their friends, on application to the Secretary. St. Margaret's may be reached either by the River Steamers, by Omnibus to Richmond, or by the South Western Railroad, at the Twickenham, Isleworth, or Richmond Stations.

CHARLES LEWIS GRUNEISEN, Secretary.
Offices, 33, Norfolk Street, Strand: April 8, 1854.

THE DIVIDENDS PAYABLE ON THE 8TH AND FOLLOWING DAYS.—Families visiting London upon this occasion will find the best assortment of ELASTIC BALBRIGGAN SUMMER HOSIERY, at Balbriggan House, 33, Lombard Street, City.

NO CHARGE FOR STAMPING ARMS, CRESTS, INITIALS, &c., on paper and envelopes, at LOCKWOOD'S well-known establishment, 75, New Bond Street. Good cream-laid Note-paper, five quires for 9d.; Thick ditto, five quires, 1s.; Albert and Queen's sizes, five quires for 6d., 9d., and 1s.; Envelopes, 3d. to 1s. 6d. per hundred; Foolscap paper, 7s. 6d. per ream; Copybooks, 2s. 6d. per dozen. Card Plate engraved, 2s. 6d.; 100 Cards printed, 2s. 6d. Mourning Stationery equally cheap. Wedding Orders promptly executed. A large variety of Writing and Dressing Cases, Envelope Boxes, Blotting Books, Inkstands, Gold Pens, Church Services, &c. Copy address, LOCKWOOD'S, 75, New Bond Street. Country orders for 20s. sent carriage free.

THE CHOLERA

PREVENTED BY THE DESTRUCTION OF ALL NOXIOUS EFFLUVIA.

CREWS'S DISINFECTING FLUID, Recommended by the College of Physicians. The Cheapest and Strongest Chloride of Zinc.—Quarts, 2s.; Pints, 1s.; Half-pints, 6d. Sold by all Chemists, Druggists, and Shipping Agents; and at Commercial Wharf, Mile End, London.

HYGIENIC BATHS, A POWERFUL PROMOTER OF HEALTH AND WELL-BEING.—JENSEN'S Herbaceous Daphne Marina Salt for Baths, when dissolved in a cold, tepid, or warm bath, imparts so eminently strengthening and beneficial properties to the same, that, when once tried, a bath will scarcely ever be taken without it. In the buoyancy and freshness it produces in the system, it is far superior to any known sea bath. Highly recommended by that distinguished Physician, Dr. Andrew Ure, M.D., F.R.S., &c.—Sold at 1s. per Packet, by C. MEINIG, 103, Leadenhall Street, and by all Chemists and Bathing Establishments.

RUPTURES EFFECTUALLY CURED WITHOUT A TRUSS.

ALL Sufferers from this alarming complaint are earnestly invited to consult or write to Dr. LESLIE, as he guarantees them relief in every case. His remedy has been successful in curing thousands of persons during the last 11 years, and is applicable to every kind of single and double rupture, however bad or long standing, in male or female of any age, causing no confinement or inconvenience in its use whatever. Sent post free to any part of the world, with full instructions for use, on receipt of 7s. 6d. in postage stamps, cash, or Post Office order, payable at the General Post Office, to Dr. HERBERT LESLIE, 37A, Manchester Street, Gray's Inn Road, London. At home daily, except Sunday, from 11 till 3 o'clock. A Pamphlet of Testimonials sent post free on receipt of one postage stamp.

THE ADVERTISER wishes to meet with a Capitalist to Advance, temporarily, from 1000*l*. to 2000*l*. on good security, by which advance a valuable property would be secured, in equal moieties, without cost. The advance would not be required for long, and would yield a good rate of interest until repaid. This is an excellent opportunity of making a good provision for a family, by a temporary advance of money, and without ultimate cost.—Full information will be given to *bonâ fide* applications from principals or their solicitors, addressed to Mr. GOGIN, 320, Regent Street.

TO BE LET, suitable for a Florist or a Market Gardener, a FIVE-ROOMED HOUSE, with TWO ACRES of LAND, situated in Hampton Lane, close by the Parish of Hanworth, one mile from the Feltham Station.—Apply to Mr. GATFIELD, Hanworth; or to Mr. J. POOLE, Covent Garden Market, London.

COCHIN CHINA POULTRY, ETC.

EGGS FROM PRIZE BIRDS.

MR. JOHN FAIRLIE, of Cheveley Park, Newmarket, in reply to the very urgent applications from numerous amateurs, is now prepared to dispose of a limited number of Eggs, from his celebrated prize Cochins, Brahma Pootras, Scotch Bakies, Dorkings, &c., according to the dates of the orders received.

COCHIN CHINA FOWLS.

MR. THOMAS GILBERT, of Grays, Essex, having purchased of THOMAS STURGEON, Esq., his entire breed of 1853, Gentlemen and Amateurs are informed the Birds are now on Sale, and are bred exclusively from his best Stock Birds, Jerry and Nelson. Eggs may be had at 16s. per dozen, from the above.

EGGS.—An Amateur has some very good Partridge, Cochin China, Dorking, and White India Game Fowls' Eggs to dispose of, at 4s. 6d. per dozen. Also, a few young Partridge Cochin China Fowls, at 1*l*. 3s., and Golden-laced Bantams at 18s. the pair, packing included.—Address, An Amateur, Matlock Bath, Derbyshire.

EGGS FROM PURE WHITE-FACED SPANISH FOWLS, at 10s. per set of 13.—Letters and Post-office orders to be addressed to Mr. JOHN COMPTON, Portchester, Fareham, Hants.

EGGS FROM WHITE-FACED SPANISH FOWLS AND PURE WHITE AYLESBURY DUCKS.—White-faced Spanish Fowls, pen 27 at Birmingham, pure white face, large size, and the cock's comb perfectly erect; Eggs 12s. per doz. Pure White Aylesbury Ducks, pen 1885 at Birmingham; the birds are of large size, bills and legs of a perfectly pure colour; Eggs 6s. per dozen.—W. POTTS, Neithrop House, Banbury.

BRAMAH POOTRA FOWLS' EGGS, from the stock that took the first prize in England at Birmingham, in 1851, as a new and distinct breed; they are heavily feathered and vulture hocked 20s. per dozen; true white faced Spanish, 10s.; speckled Dorking, 6s.; white Aylesbury Duck Eggs, 6s. per dozen. A few choice Spanish fowls for sale.

WM. TURNER, Drayton, Abingdon, Berks.

TO AMATEURS OF THE HAMBURGH FOWLS.—A few sittings of Eggs of each class of the Hamburgh Fowls, viz.:—Gold and Silver Pencilled, Gold and Silver Spangled, and Black, to be disposed of in the spring, from birds which have taken thirty prizes at most of the principal Shows during the past season. Eggs will be supplied according to the dates of the orders received. Also, Eggs of Prize Game Fowls and Aylesbury and Rouen Ducks.—Apply to the Feeder, Mr. ROBERT HUGGINS, Beighton Rectory, Acle, Norfolk.

BRAHMA POOTRA FOWLS.

TO BE SOLD, a few Sittings of EGGS of this breed (according to priority of application), from the prize and selected birds of a gentleman—Brahmas of whose breeding have, during the past year, taken prizes at the following important Poultry Shows: the Royal Agricultural, Great Metropolitan, Birmingham, Great Yarmouth, Doncaster, Winchester, Norwich, and Manchester.—W. C. G., Post-office, Sandbach, Cheshire.

PEA-FOWLS.

TO BE SOLD, a handsome PEACOCK and PEAHEN: the cock four and the hen three years old, price 3*l*. 10s. If a purchaser required two Pea-hens, an additional one could be parted with, price 30s. The foregoing birds are in full plumage.—Apply, by post, to A. B., Post Office, Wellington, Somerset.

TO BE SOLD, A SUBSTANTIAL POULTRY HOUSE, 12 feet by 4 feet; House 4 feet square and 6 feet high, with covered Run for Fowls, 8 feet long. Price 4*l*., complete, with Perches, Ladder, and Nest Boxes. Drawings of several Garden Summer Houses from 50s. each. Small House, 6 feet square, with door and windows, neat-shaped, 5*l*. All are portable, and can be erected by any ordinary labourer.—R. RICHARDSON, 21, Tonbridge Place, New Road, London.

N.B.—Maker of Iron and Wood Houses for Emigrants; 21 Drawings sent free.

GREENHOUSE.

TO BE SOLD.—15 feet by 9, with Stage and Flue complete. Price moderate. For particulars apply to Y. Z., 10, Highbury Park, London.

A GOOD HIT FOR A YOUNG BEGINNER.

TO BE SOLD, THREE GREENHOUSES, and Plants to be taken at a Valuation or Private Contract, with sundry other useful articles—Frames, a Pit, a quantity of Stocks, Tools, Mould, Manure, with House, and Fixtures. 28*l*. a year, with three years' agreement.—For further particulars apply at 6, Alpha Road, Regent's Park.

TO NURSERYMEN, FLORISTS, ETC.

TO BE SOLD, and may be entered upon immediately, at a fair valuation or by private contract, a most eligible and old-established NURSERY, of nearly ten acres, well stocked, situate in a large town in the centre of England, close to the London and North-Western Railway, convenient for railway transit to all parts of the kingdom; and to a person of good capital disposed to carry it well out, presents an opportunity rarely to be met with. The entrance grounds have recently been laid out, and are most pleasantly situated. The greenhouses, pits, and frames (well stocked with Camellias, Geraniums, &c.), with commodious potting and other sheds, are of recent erection, and have been arranged with strict attention to usefulness and convenience. There is an excellent supply of water from cisterns in each house, supplied from the roof, and a fine pond in the centre of the grounds with an ornamental fountain. There is a handsome seed shop at the entrance, well fitted up, also a warehouse and counting-house attached. The purchaser would be required to pay half the amount on entrance, and give satisfactory security for the remainder in six months.—For particulars apply to Mr. J. OGDEN, Nurseryman and Seedsman, Coventry.

Sales by Auction.

EALING PARK.

MRS. LAWRENCE'S STOVE AND GREENHOUSE PLANTS, AZALEAS, AND HEATHS, THE MOST IMPORTANT AND VALUABLE COLLECTION EVER OFFERED TO PUBLIC SALE.

MR. J. C. STEVENS is honoured with instructions (in consequence of the ill-health of Mrs. Lawrence) to Sell by Auction, at the Gardens, Ealing Park, on WEDNESDAY, 26th April, and following days, at 1 o'clock precisely, this unrivalled Collection of Magnificent Specimen STOVE AND GREENHOUSE PLANTS, AZALEAS and HEATHS, in all about 500. The Plants are so well known that it is sufficient to say they are the finest and best cultivated in the world, in admirable health, well set with bloom buds, and offering to Gentlemen and Nurserymen an opportunity of possessing specimens of transcendent splendour for exhibition at the forthcoming shows.—May be viewed two days before the Sale, by Catalogues only, to be had (2s. 6d. each, returnable to purchasers) of Mr. J. C. STEVENS, 38, King Street, Covent Garden. It is probable that for the purpose of enlarging the Flower Garden, 10 out of Mrs. Lawrence's 26 Plant Houses may be offered for Sale. They consist of two long Ranges, a Centre, &c., with 2500 feet of Pipe, four Boilers, slate and wood Stage, Stone Pavement, &c., which may be viewed any time before the Sale, by applying to the head gardener at Ealing Park.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, at the Mart, Bartholomew Lane, on THURSDAY, April 13th, at 12 o'clock, a first-rate collection of Carnations, Picotees, and Pinks, a fine assortment of Fuchsias, Verbenas, Dahlias in dry roots, American Plants, &c. On view the morning of sale. Catalogues may be had at the Mart; and of the Auctioneers, American Nursery, Leytonstone, Essex.

IMPORTANT SALE OF YOUNG SPECIMEN HEATHS, GREENHOUSE PLANTS, AND ORCHIDS.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions by Mr. Epps, of the Bower Nurseries, Maidstone, to Sell by Auction, on TUESDAY, April 25th, at 12 o'clock, at the Auction Mart, Bartholomew Lane, nearly 300 Splendid Young Specimen Heaths, Greenhouse Plants, and Orchids. The Ericas consist of Obbatas, Hartnellis, Tricolors, Massoni, Ampullacea, vars. ferruginea jasminoides, vars. Cavendishi, Ventricosas, &c., &c.; the Orchids, Cattleya, vars. Dendrobiums, Oncidiums, Brassias, Maxillarias, Cœlogyne, Vandas, &c. It is needless to state that the Ericas grown by Mr. E. are the finest and most healthy plants known; and on no occasion has there been submitted to the public so splendid a collection; they are calculated to suit all purchasers, as they consist of specimens in 8 to 20 inch pots, the bulk in 11 inch pots. The Orchids are choice and valuable species.—May be viewed the morning of Sale, Catalogues may be obtained (6*d*. each, returnable to purchasers), of Mr. Epps, Bower Nurseries, Maidstone; the principal Seedsmen in London; at the Mart; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MR. J. WILLMER will sell by Auction, at the Mart, Bartholomew Lane, on WEDNESDAY, April 12th, at 12 o'clock, a fine collection of CARNATIONS and PICOTEES, including a fine selection of yellows; also Pinks, Dahlias, Climbing Roses, Auriculas, Pœonies, Hollyhocks, &c.—May be viewed the morning of Sale, and Catalogues had at the Mart, and of the Auctioneer, Sunbury, Middlesex.

BABRAHAM HALL, CAMBRIDGESHIRE.

MR. CHARLES WISBEY will Sell by Auction, on THURSDAY, April 13, at 11 o'clock, on the Premises, by direction of the representatives of the late Robert Jones Adeane, Esq., a valuable and very choice collection of STOVE, GREENHOUSE, and other PLANTS, comprising fine specimen Plants of Indian Azaleas, Ericas, Epacris, &c. Also, in great variety, the following tribes:—Camellia, Cytisus, Acacia, Corræa, Stove Ferns, Fuchsia, Cactus, Cape and other Geraniums, Specimen Chrysanthemums, Alpines, Hybrid Rhododendrons, &c., all of the newest and most choice description; also 80 Succession Pine Plants.—On view the day preceding and on the morning of sale, and Catalogues had at GARRAWAY'S Coffee House, Cornhill, London; and of CHARLES WISBEY, Auctioneer, Valuer, and Estate Agent Trinity Street, Cambridge.

This day is published, in Two Volumes, demy 8vo, price 21s.,

THE LIFE AND TIMES OF OLIVER GOLDSMITH. By JOHN FORSTER, of the Inner Temple, Barrister-at-Law.

Containing many facts not hitherto included in any Life of Goldsmith; and all the original authorities.

Printed uniformly with, and forming companion volumes to, "MURRAY'S LIBRARY EDITION OF GOLDSMITH'S WORKS."

London: BRADBURY & EVANS, 11, Bouverie Street.

Price 7s. in cloth, the Sixth Edition of

THE 'LADIES' COMPANION TO THE FLOWER-GARDEN. Being an Alphabetical Arrangement of all the Ornamental Plants grown in Gardens and Shrubberies: with full Directions for their Culture. By Mrs. LOUDON.

BRADBURY & EVANS, 11, Bouverie Street.

INTELLECTUAL PRESENT.

New Edition, 12mo, 550 pages, antique cloth, gilt edges, price 6s.

TRUTHS ILLUSTRATED BY GREAT AUTHORS: a Dictionary of 4000 Aids to Reflection and Quotation from great Writers, in prose and verse, including 1000 from the Works of Shakspeare. "Every imaginable topic of interest or inquiry finds an apt illustration or felicitously selected apothegm."—*Globe*. The library edition, in 8vo, may also be had, price 10s. 6d. London: W. WHITE, 70, Piccadilly, and all Booksellers.

Part I. 10s., or coloured, 16s.

A CENTURY OF FERNS. Being Figures with brief descriptions of 100 new or rare Species of Ferns. A Selection from the "Icones Plantarum," by Sir WILLIAM JACKSON HOOKER, K.H., LL.D., F.R.A., and L.S., &c., and Director of the Royal Botanical Gardens at Kew.

The work is handsomely printed on a super-royal paper, and a Specimen Number can be sent to any address for 4 postage stamps.

London: WILLIAM PAMPLIN, 45, Frith Street, Soho.

Now ready, price 21s., with 15 highly finished coloured Plates and numerous Wood Engravings (or with Supplement and four additional plates, 5s. extra),

THE ROSE GARDEN. By WILLIAM PAUL, of the Nurseries, Cheshunt, Herts.

"Infinitely the best work ever written on the culture of the Rose."—*Botanic Garden*.

By the same Author, price 1s.,

AN HOUR WITH THE HOLLYHOCK.

London: PIPER, BROTHERS, & Co., 23, Paternoster-row; and all Booksellers.

Just published, second edition, price 3s.,

THE ENTOMOLOGIST'S COMPANION.

By H. T. STAINTON.

London: JOHN VAN VOORST, 1, Paternoster Row.

THE HORTICULTURAL JOURNAL AND FARM AND GARDEN ADVERTISER. (Garden Department by Mr. GLENNY.) No. 1 on SATURDAY, April 15th. Price 2d. Stamped 3d. Communications and Advertisements to F. DILLON, at the Publishing Office, 14, York Street, Covent Garden, London.

Price One Shilling,

THE NATIONAL MISCELLANY FOR APRIL

CONTAINS—

1. The New Civil Service Scheme	5. Mediæval London
2. The Flaw in the Column	6. Saturday Night
3. The Labour Parliament	7. The Weekly Periodicals
4. An Avalanche on the Great St. Bernard	8. Sea Life and Sea Literature
	9. Notices
	10. Poetry.

At the Office, No. 1, Exeter Street, Strand, London.

NEWSPAPER STAMP RETURNS.

By Order of the Honourable the House of Commons.

THE number of PENNY STAMPS issued to each of the Newspapers for 1853.

Dispatch	1,771,025	Spectator	146,500
Sunday Times ...	425,000	Era	277,450
Observer	332,000	Britannia	105,508
Examiner	241,525	John Bull	95,000
Bell's Weekly Messenger	622,000	Magnet	255,050
		Mark-lane Express ...	246,000

Total ... ... 4,517,058.

LLOYD'S WEEKLY LONDON NEWSPAPER, 4,648,025.

Being ONE HUNDRED and THIRTY THOUSAND NINE HUNDRED and SIXTY-SEVEN more than ALL the above Papers combined.

LLOYD'S WEEKLY LONDON NEWSPAPER is Edited by DOUGLAS JERROLD; and, in addition to Writings by the Editor, contains Sixty Columns of the LATEST NEWS, obtained by Electric Telegraph and other extraordinary means, regardless of expence. Threepence, post free.

London: E. LLOYD, 12, Salisbury Square. Sold by all News-agents in the world.

THE POULTRY CHRONICLE treats of all the leading questions connected with Poultry, Prize Fowls, Poultry Shows, Rules for Exhibitions, Contributions from Leading Amateurs. Published every Wednesday (No. VI. on Wednesday, the 5th of April), at No. 1, York Street, Covent Garden, where orders and advertisements should be addressed; and sold by G. ROUTLEDGE & Co., 2, Farringdon Street. Price 2d.; or stamped for post 3d. The monthly part for March is now ready.

TO AGRICULTURAL IMPLEMENT MAKERS. —The attention of Manufacturers of Agricultural Implements and Machinery is called to the following extract from the First Number of a series of original and popular articles "On Practical and Scientific Agriculture," to be commenced on the 15th of April in the *Oxford Journal*, which, owing to the great increase in the number of its Advertisements, is then to be permanently enlarged to a double sheet:—

"We shall, from time to time, give articles on Building, Planting, Draining, &c.: Agricultural Machinery and Implements will also receive a portion of our attention."

The *Oxford Journal* has a large and influential circulation amongst the agricultural community, and offers a good medium for the insertion of agricultural Advertisements.—Terms may be known on application to the Office, 65, Corn Market Street, Oxford.

Just published, New Edition, price 1s.; or, by post, for 1s. 6d.

THE SCIENCE OF LIFE; OR, HOW TO LIVE, AND WHAT TO LIVE FOR. With ample Rules for Diet, Regimen, and Self-Management; together with Instructions for securing perfect health, longevity, and that sterling state of happiness only attainable through the judicious observance of a well-regulated course of life. By a PHYSICIAN.

Also, by the same Author, price 2s. 6d.; by post, 3s. 6d.,

A MEDICAL TREATISE ON NERVOUS DEBILITY AND CONSTITUTIONAL WEAKNESS, with Practical Observations, illustrated with Anatomical Plates, on Health and Disease.

This work, emanating from a qualified Member of the medical profession, the result of many years' practical experience, is addressed to the numerous classes of persons who suffer from the various disorders acquired in early life. In its pages will be found the causes which lead to their occurrence, the symptoms which indicate their presence, and the means to be adopted for their removal.

London: JAMES GILBERT, 49, Paternoster Row; HANNAY, 63, Oxford Street, MANN, 39, Cornhill; and all Booksellers.

Now ready, considerably enlarged, price 5s. 6d., the Third Edition of

RURAL CHEMISTRY:

AN ELEMENTARY INTRODUCTION TO THE STUDY OF THE SCIENCE IN ITS RELATION TO AGRICULTURE.

BY EDWARD SOLLY, F.R.S. F.L.S. F.G.S.

Honorary Member of the Royal Agricultural Society of England, Professor of Chemistry to the Horticultural Society of London; Lecturer on Chemistry in the Honourable East India Company's Military Seminary at Addiscombe, &c. &c.

PREFACE TO THE THIRD EDITION.

"In accordance with numerous suggestions, very considerable additions have been made to this little book, in preparing it for a new edition; several important practical matters, not treated of in any former editions, having been introduced. Brief descriptions of the more important of the domestic arts, such as Wine and Vinegar Making, Brewing, the Manufacture of Spirits, Baking, Cheese-making, Cookery, &c., have been added, together with some account of the Scientific Principles involved in those arts. Numerous recent analyses of agricultural crops have likewise been given, and the whole has been carefully revised and corrected."

CONTENTS OF THE VOLUME.

Absorption of manure
Acetates
Acetic acid
Acetic fermentation
Acids
Acids, organic
Acids, tests for
Action of plants on the air
Active principles
Adulterated guano
Affinity, chemical
After-damp in mines
Air [nia
Air contains ammo-
Air contains carbonic acid
Air contains water
Air, inflammable
Air necessary to life
Air, composition of
Air resists compres-
Air, weight of [sion
Alabaster
Albumen
Albumen, vegetable
Alcohol
Ale
Alkali, test for
Alkali, volatile
Alkalies
Alkalies, vegetable
Alloys
Almonds
Alum
Alumina
Alumina absorbs ammonia
Alumina in soil, use of [of
Alumina, phosphate
Alumina, silicate of
Alumina, sulphate of
Aluminum
Aluminum, oxide of
Ammonia
Ammonia absorbed by alumina
Ammonia absorbed by charcoal, &c.
Ammonia, carbonate of
Ammonia, fixing of
Ammonia in air
Ammonia in rain-water
Ammonia, loss of
Ammonia, muriate
Ammonia, phosphate
Ammonia, salts of
Ammonia, sulphate
Ammonia, urate of
Analysis
Animal heat
Animal manures
Animal principles, proximate
Animal substances
Animals, breathing of
Animals, fattening of
Annotta
Apple jelly
Aqua-fortis
Argol
Arrack
Arrow root
Arteries
Artichoke, Jerusalem
Ashes
Atom
Attraction
Azote
Balloons
Bamboo
Barilla
Barley
Barley-straw
Barley-sugar
Barm
Barometer
Base
Basting-meat
Batatas
Bay salt
Bean, field
Bean straw
Beans, kidney
Beech ashes
Beech nuts
Beer
Beer, Bavarian
Beet
Beet-root sugar
Bell metal
Bile
Binary compounds
Biphosphate of lime
Bitartrate of potash
Bittern
Black Currant jelly
Bleaching by chlorine [phur
Bleaching by sul-
Blende
Blood
Blubber
Bones
Bran
Brandy
Brass
Bread
Bricks
Brimstone
British gum [sium
Bromide of magne-
Bromides
Bromine
Brown stout
Buckwheat
Buds
Burning
Burning lime
Burning of plants
Burnt clay
Burnt sugar
Butter
Butter, clarified
Butter, how coloured
Butter, melted
Butter, salt
Butyric acid
Cabbage
Cabbage, red
Calamine
Calcium
Calcium, chloride of
Calomel
Camphor
Candles
Candles, burning of
Cane
Cane, sugar
Caoutchouc
Caramel
Carbon
Carbon in plants
Carbonate of ammonia
Carbonate of iron
Carbonate of lead
Carbonate of lime
Carbonate of magnesia
Carbonate of potash
Carbonate of soda
Carbonates decomposed by acids
Carbonic acid gas
Carbonic acid gas necessary to plants
Carbonic acid gas, decomposition of
Carbonic oxide
Carburetted hydro-
Carcases [gen
Carrot
Caseine
Caseine, vegetable
Castor oil
Caustic potash
Cellars, foul air in
Cellulose
Chalk
Chamomile
Changes, chemical
Charcoal [ammonia
Charcoal absorbs
Charcoal, burning of
Charcoal, disinfecting powers of
Charring
Cheddar Cheese
Cheese
Cheltenham salts
Cherry-tree gum
Cheshire cheese
Chestnuts
Chlorides
Chlorine
Churning
Chyle
Chyme
Cider
Cinnabar [blood
Circulation of the
Citric acid
Clay
Clay, burnt
Clay, iron ore
Climate, differences
Clover [of
Coagulation of albu-
Coal ashes [men
Coal-gas
Coal-tar, naphtha
Cocoa-nut oil
Cognac brandy
Cohesion
Coke
Colophony
Colour of soils
Colours, changing of
Colours, vegetable
Colza
Combination
Combination, [by
changes produced
Combining weights
Combining numbers
Combustion
Combustion, results
Common salt [of
Composition of animal matter
Composition of organic matter
Composition of plants
Composition of soils
Composition of
Compounds [stones
Contagion
Contagious matter
Cookery
Copper
Copper in plants
Copper, oxide
Copper, pyrites
Copper, salts of
Copper, sulphate of
Copperas
Coprolites
Corn
Corrosive sublimate
Cotton
Couching
Cream
Cream cheese
Cream of tartar
Crops, rotation of
Cubic nitre
Cultivated land
Curd of milk
Currants
Daguerreotype
Dahlia
Death of plants
Decay [lime
Decay, influence of
Decay, like burning
Decay of humus
Decay of plants
Decay, results of
Decay, under water
Decomposition
Decomposition, induced [rocks
Decomposition of
Decomposition, spontaneous
Deliquescence
Dew
Dextrine
Diamond
Diastase
Digestion [ment of
Digestion, derange-
Diseases of plants
Distillation
Ditch scrapings
Double salts
Dough
Drainage water
Draining
Dunder
Dung
Dutch rushes
Dyeing
Earth
Earth nut
Earths
Earths, alkaline
Earthy matter in the
Earthy silicates [air
Earthy substances in plants
Effervescence
Egg, white of
Elaine
Electricity, influence
Elements [on plants
Embryo
Epsom salts
Equivalent
Excrement [fowl
Excrements of sea-
Exhaustion of soils
Expansion [damp
Explosion of fire-
Faints, distiller's
Fallowing
Farm-yard dung
Fat
Fat of animals
Feathers [sheep
Feeding off with
Ferment
Fermentation
Fertility
Fibre, woody
Fibrin, animal
Fibrin, vegetable
Finings
Fir-ashes
Fire
Fire-damp
Fish refuse
Fixed oil
Fixing ammonia
Flame
Flax
Flesh
Flint
Flooring malt
Flour
Flour, damaged
Flowers [on the air
Flowers, their effect
Fluorides
Fluorine
Food of animals
Food, chemical use of
Food of plants
Formation of seed
Formation of soils
Foul smells
Freezing, effects of
Freezing of water
Fruit
Fruit, ripening of
Fuel [chlorine
Fumigating by
Fumigation by sul-
Fungi [phur
Fur from water
Galvanised iron
Game, preserving
Gas
Gas coal
Gas, inflammable
Gas, manufacture of
Gas liquor [of
Gas liquor, strength
Gas tar
Gastric juice
Gelatine
Geneva
Germination
Germination acce-
Gin [lerated
Glass
Glauber's salts
Gliadine
Gloucester cheese
Glue
Glue refuse
Gluten
Glycerine
Gold
Gold, chloride of
Gold of Pleasure
Gold, mosaic
Gooseberries
Grain of Wheat
Grains, spent
Grape sugar
Grapes
Grass
Gravity
Gravity, specific
Greaves
Green manures
Green vitriol
Growth of plants
Guano
Gum
Gum Arabic
Gum British
Gum, cherry-tree
Gum, formation of
Gum resins
Gun cotton
Gunpowder
Gutta percha
Gyletun
Gypsum
Hair
Hard water
Hartshorn
Hay
Heat
Hedges, foul
Hemp-seed
Hollands
Honey
Hoofs
Hops
Hordein
Horn
Humates
Humic acid
Humus
Hydrogen
Hydrogen, carburetted [of
Hydrogen, lightness
Hydrogen, sulphu-
Ice [retted
Iceland moss
Indian corn
Indian rubber
Indigo
Inflammable air
Inorganic matter in plants.
Inorganic manures
Inulin
Iodides
Iodine
Iodine in sea water
Iron
Irrigation
Isinglass
Ivory
Juniper
Kelp
Kidneys
Kiln-drying
Kirschwasser
Lactic acid
Latent heat.
Lead
Leather
Leaven
Leaves
Leaves, fall of the
Leaves, office of
Lees of wine
Legumine
Lemons
Lentils
Lettuce
Light, effects of
Light, influence on plants
Lighting a fire
Lignin
Lime
Lime, action on soil
Lime and salt
Lime, biphosphate of
Lime, burning
Lime, carbonate
Lime, caustic
Lime, citrate
Lime, hydrate of
Lime in plants
Lime, muriate of
Lime, nitrate of
Lime, oxalate of
Lime, phosphate of
Lime, silicate of
Lime, slaking
Lime stone [sian
Lime stone, magne-
Lime, sulphate of
Lime, superphosphate of
Lime, when useful
Lime, when not to be
Limes, juice of [used
Linen
Linseed
Liqueurs
Liquid manure
Liquid manure
Litharge [tanks
Liver
Loss of manure
Lucerne
Lungs of animals
Macaroni
Magnesia [of
Magnesia, carbonate
Magnesia in plants
Magnesia, muriate of
Magnesia, phosphate of
Magnesia, silicate of
Magnesia, sulphate of [stone
Magnesian lime-
Magnesium [of
Magnesium, chloride
Magnesium, oxide of
Maize
Malic acid
Malt
Malting
Manganese
Manganese in plants
Manganese in soils
Manganese, oxide of
Mangold Wurzel
Manures
Maple sugar
Maraschino
Marble
Margarine
Mark of Grapes
Marl
Mashing
Mead
Meat boiling
Meat roasting
Medicines, action of
Mercury
Mercury, chlorides
Mercury, oxides of
Mercury, sulphuret
Metallic alloys [of
Metallic oxides
Metallic salts
Metals
Milk
Millet
Minium
Mixture
Mixture of soils
Molasses
Mordaunts
Mortar
Mosaic gold
Mould
Mouldering
Mouldiness
Mucilage
Muriate of ammonia
Muriate of lime
Muriate of magnesia
Muriate of soda
Muriates
Muriatic acid
Murk
Muscle
Muscovado sugar
Must
Mustard
Naphtha
Nascent state
Natural vegetation
Nightsoil [fected
Nightsoil disin-
Nitrate of lime
Nitrate of potash
Nitrate of soda
Nitrate of silver
Nitrates
Nitrates in plants
Nitre
Nitre beds
Nitre, cubic
Nitric acid
Nitric acid in manure
Nitrogen
Noyeau
Nutrition of plants
Nutrition of animals
Oak ashes
Oats
Odours of plants
Oil
Oilcake
Oil, castor
Oil of cloves
Oil, cocoa-nut
Oil, dregs
Oil, drying
Oil, fat
Oil, fixed
Oil, linseed
Oil, mustard
Oil of lavender
Oil of lemons
Oil of turpentine
Oil of vitriol
Oil, olive
Oil, poppy
Oil, rape
Oil, rock
Oil seeds
Oil, volatile
Oleine
Opodeldoc
Ores, roasting of
Organic acids
Organic manures
Organic matter
Organic substances in soils
Organic transformations
Organised matter
Oxalate of lime in
Oxalic acid [plants
Oxalis
Oxide, carbonic
Oxide of copper
Oxide of iron
Oxide of lead
Oxide of manganese
Oxide of mercury
Oxide of silver
Oxide of tin
Oxides, metallic
Oxygen
Paint, white
Palm juice
Paper bleached by
Paring [chlorine
Parmesan cheese
Parsnip
Paste
Pearlash
Peas
Peat ashes
Pectine
Per-oxides
Perry
Persalts
Petre
Petre, salt
Pewter
Phosphates
Phosphoric acid
Phosphoric acid in plants
Phosphoric acid in bone [water
Phosphoric acid in
Phosphorus
Pickling cabbage
Pine-apples
Pipes, bursting of
Pitch
Plants, composition
Plants, death of [of
Plants, decay of
Plants decompose carbonic acid
Plants, effect of, on air
Plants, elements of
Plants, food of
Plants, growth of
Plaster of Paris
Plaster stone
Plough, subsoil
Plums
Polenta
Pond mud
Poppy seed
Porter
Potash
Potash, binoxalate of
Potash, bitartrate of
Potash, carbonate of
Potash, caustic
Potash in plants
Potash in the soil
Potash, muriate of
Potash, nitrate of
Potash, salts of
Potash, silicate of
Potash, sulphate of
Potashes
Potassium [of
Potassium, chloride
Potato
Potato haulm
Potato spirit
Potato starch
Potato, sweet
Pottery
Principles, active
Proportions
Protein
Proto-salts
Protoxides
Proximate animal
Pruning [principles
Putrefaction
Putrefaction, influence of lime in
Putrefying animal matter
Putrid fermentation
Putrid urine
Putty powder
Pyrites
Pyrites, copper
Pyroligneous acid
Pyrolignites
Pyroxylic spirit
Quartz [pounds
Quaternary com-
Quicklime
Quicksilver
Rain water
Raisins
Rape seed
Rape vine
Red cabbage
Red lead
Refuse of gas works
Rennet
Resins
Respiration [tion
Results of combus-
Results of putrefac-
Rhubarb [tion
Rice
Ripening of fruit
River mud
River water
Road drift
Rock salt
Rocket
Rocks, disintegration of
Roman vitriol
Roots
Rotation of crops
Ruby
Rum
Rushes, Dutch
Rust of iron
Rye
Rye straw
Saccharine matter
Safety-lamp
Sago
Sainfoin
Sal-ammoniac
Saline compounds
Saline draughts
Saline manures
Salt
Salt and lime
Salt, bay
Salt, common
Salt in sea water
Salt, rock
Salt, spirit of
Salt, sea [water
Salt, solution of, in
Saltpetre
Salts
Sand
Sapphire
Sawdust
Schiedam [of
Sea-fowl, excrements
Sea-water
Sea-weed
Seed
Seed, formation of
Seeds, germination
Seeds, steeping [of
Seidlitz powders
Selection by roots of
Semolina [plants
Shell sand
Shells
Silex
Silica
Silica in plants
Silica in soil, use of
Silicate of alumina
Silicate of lime
Silicate of magnesia
Silicate of potash
Silicate of soda
Silicates
Silicic acid
Silicon
Silk dyeing
Silver
Silver, chloride of
Silver, nitrate of
Silver, oxide of
Silver, salts of
Silver, sulphuret of
Size
Size, resin
Skimmed milk
Skin
Slag
Slaking of lime
Smells, foul
Smoke
Straw ashes
Straw of barley
Straw of buckwheat
Straw of lentils
Straw of maize
Straw of oats
Straw of rye
Straw of vetch
Straw of wheat
Strong manures
Sub-salts
Subsoil
Subsoil ploughing
Substratum
Suffocation from
Sugar [charcoal
Sugar, barley
Sugar candy
Sugar, formation of
Sugar of lead
Sugar of milk
Sugar, refining
Sugar refiners' waste
Sulphates
Sulphur
Sulphur in plants
Sulphuret of iron
Sulphuret of lead
Sulphuret of silver
Sulphurets
Smelting
Soap
Soap-boiling
Soap, decomposition
Soap, soft [of
Soap, transparent
Soap, yellow
Soapmakers' ash
Soda
Soda, carbonate of
Soda in rocks
Soda in plants
Soda in soils
Soda, muriate of
Soda, nitrate of
Soda, silicate of
Soda, sulphate of
Sodium
Sodium, chloride of
Soft water
Soil
Soils, analysis of
Soils, colour of
Soils, composition of
Soils, exhaustion of
Soils, formation of
Soils, mixture of
Soils, nature of
Solder
Soot
Sorrel
Soup
Specific gravity
Spices
Spirit proof
Spirit, pyroxylic
Spirit of salt
Spirit of wine
Sponge
Spring water
Springs
Stall feeding
Starch
Steam
Stearic acid
Stearine
Still
Stilton cheese
Sulphuret of tin
Sulphuretted hydrogen
Sulphuric acid
Sulphurous acid
Sulphurous acid checks fermentation
Sunflower
Sunflower seed
Super-salts [lime
Super-phosphate of
Super-tartrate of
Swedes [potash
Tabasheer
Tannin
Tanning
Tapioca
Tar
Tarnish on silver
Tartar
Tartaric acid
Tartrates
Teeth
Ternary compounds
Tests, vegetable
Thermometer
Thunderbolt
Tiles
Tin
Tin, oxide of
Tin plate
Tin, sulphuret of
Toast
Toasted cheese
Tobacco
Toddy
Treacle
Tropical countries
Tubers
Turf-ashes
Turmeric
Turnips
Turpentine
Turpentine, oil of
Urate of ammonia
Urea
Uric acid
Urine
Use of leaves
Use of plants
Usquebaugh
Vapour condense by cold
Vapour in the air
Vegetable alkalies
Vegetable manure
Vegetable, boiling of
Veins
Vermillion
Vetch
Vinegar
Vinegar distilled
Vinous fermentation
Vitriol, blue
Vitriol, green
Vitriol, oil of
Vitriol, white
Volatile, alkali
Volatile oil
Walnuts
Wash, distillers'
Water
Water, action on lead
Water, air in
Water, composition of
Water, freezing of
Water, hard
Water, impurities in
Water, mineral
Water necessary to plants
Water, New River
Water, phosphoric acid in
Water, pure
Water, rain
Water, sea
Water, soft
Water, spring
Water, Thames
Water, well
Wax
Weed-ash
Weeds
Weeds, burning of
Weeds, putrefaction
Weeds, spread of [of
Wheat grain
Wheat straw
Wheat starch
Whey
Whiskey
Whitelead
White of egg
Wine
Wine, brandy
Wine, domestic
Wine, fermentation of
Wine, fining of
Wine, pricked
Wine, ripening of
Wine, vinegar
Wood ashes
Wood spirit
Woody fibre
Wool
Wool dyeing
Wool, mill refuse
Wool rags
Wool soap
Wort
Wort, foxiness of
Xyloidine
Yeast
Yeast as manure
Yeast, artificial
Yeast, bad
Yeast, dry
Zinc
Zinc, chloride of
Zinc, oxide of
Zinc, sulphate of

Published by J. Matthews, at the Office of the *Gardeners' Chronicle*, 5, Upper Wellington Street, Covent Garden, London; and may be had by order of any Bookseller.

4, Great Russell Street, Covent Garden, 1854.

JOHN KERNAN,

IN OFFERING TO HIS FRIENDS AND THE PUBLIC THE ANNEXED

LIST OF VEGETABLE AND FLOWER SEEDS,

WHICH INCLUDES EVERY NOVELTY INTRODUCED UP TO THE PRESENT SEASON,

Begs to assure his Customers that he has spared no trouble in securing every Article as good as it could possibly be procured.

☞ *From the unfavourable weather in the late harvest, many articles are in short supply.*

PEAS. Per qt.—s. d.
Early Emperor 1 0
Shilling's new early Grotto 1 0
Bishop's new long-podded 1 0
Fairbeard's Champion of England 1 0
Fairbeard's Surprize ... 1 0
British Queen 1 0
Knight's dwarf green and tall 1 0
Scimetar 0 9
Woodford or Nonsuch ... 1 0
Victoria Marrow 1 0
Dwarf green Mammoth ... 1 6
Tall white do. ... 1 6
With all other varieties worth cultivating.

BEANS. Per qt.
Early Mazagan 0 6
Sword Longpod 0 8
Hangdown 0 6
Taylor's Windsor ... 0 8
Johnson's Wonderful ... 0 8
Green Genoa 0 8
Dwarf French, of sorts ... 1 0
Scarlet Runners 1 0
Painted Lady do.... ... 1 0

Per oz.
Beet, fine London Red ... 0 6
„ Silver, or Seakale ... 0 6
„ Whyte's black ... 0 6
Borecole, new heading, per paper 0 6
„ red and white, variegated, for garnishing 0 6
„ dwarf curled, per oz. 0 6
Brussels Sprouts (foreign seed, fine), per oz. 0 9
„ English do. 0 6
Kohl Rabi, per paper ... 0 6
Savoy, green curled, per oz. 0 6

BROCCOLI. Per oz.
Myatt's Early Purple Cape 1 0
Miller's Dwarf 1 0
Chappell's Cream... ... 1 0
Dancer's Early White ... 1 0
Somner's Late White ... 1 0
Willcove White, late ... 1 0
Grange's Early White—from the original raiser 1 0
Invisible White 1 0
Purple Sprouting 1 0
Walcheren 1 0
Imperial Winter 1 0
Dwarf Siberian 1 0
Purple Syrian 1 0

CABBAGE. Per oz.
Nonpareil 0 6
Shilling's New Queen, fine 0 6
Atkin's Matchless ... 0 6
Early Venus 0 6
Knight's Early Dwarf ... 0 6
Early York 0 6
Large York 0 6
Early Battersea 0 6
True Cornish 0 6
Couve Tronchuda, per paper 0 6
Red Dutch 0 6
And all other kinds in cultivation.

CARROT. Per oz.
Early Scarlet Horn ... 0 3
Long Orange 0 3
Fine Surrey 0 3
Altringham, per lb. ... 1 6
White (for Agriculture), per lb. 1 6
Parsnip, Hollow-crown, per oz. 0 3

CAULIFLOWER. Per oz.
Mercer's fine Pearly ... 1 6
London Particular ... 1 6
Large Asiatic 1 6
Walcheren 1 6

PARSLEY. Per bush.
Plain, for sheepwalks and early lambs 14 0
Extra curled, per oz. ... 0 3

CRESS. s. d.
Plain, per pint 0 9
Curled 1 0
American, per oz. ... 0 3
Water, per paper 0 6
Mustard, per pint 0 9

CELERY. Per oz.
Cole's Superb Red ... 0 6
Seymour's Superb White 0 6
„ Superb Red ... 0 6
New Rose, solid 0 6
New Giant 0 6

CUCUMBER. Per paper.
Victory of Bath 0 6
Acme of Perfection ... 1 0
Syon House 1 0
Weedon's Free Bearer ... 0 6
Early Frame 0 3
Kerrison's 1 0
Walker's Rambler ... 0 6
Windsor Prize 0 6
Early Handglass 0 3
Early Ridge 0 3

MELONS.
Seymour's Golden Perfection 0 6
True Syon House... ... 0 6
Snow's Hybrid Green-flesh 0 6
Beechwood 0 6
And all the better sorts grown for this market.

ENDIVE.
New Imperial, per packet 0 6
Batavian, per oz.... ... 0 6
Green curled 0 6
White curled 0 6

Herbs, all the kinds, p. pkt. 0 6

LETTUCE.
Brighton Cos, per oz. ... 1 6
Imperial Cos 1 6
Victoria Cabbage 1 6
Green Paris Cos 1 6
White Summer Cabbage 1 6
Fine London White Cos 1 6
Paris Cos 1 6
Ady's Cos 1 6
Drumhead 1 6
Bath Cos, and others ... 1 6

ONION. Per oz.
James's Long Keeping ... 0 9
Fine White Spanish ... 0 9
Globe 0 9
Strasburgh... ... ... 0 9
Deptford 0 9
Silver-skin... ... ... 0 9
Tripoli 0 9
Blood-red 0 9
Two-bladed, for pickling 0 9

RADISH. Per oz.
New Scarlet Olive-shaped, a delicious new variety 0 3
New Rose 0 3
Early Frame, per pint ... 1 6
Long Scarlet 1 6
Red and White Turnip ... 1 6
Black Spanish, per oz. ... 0 3

SPINACH.
New Flanders, per pint ... 0 6
Round, or Summer ... 0 6
Lettuce-leaved (new) ... 0 6
New Zealand, per oz. ... 0 3

TURNIPS. Per oz.
Early Snowball 0 3
Red American Stone ... 0 3
Teltow, for stewing ... 0 3
Early Dutch 0 3
Yellow Maltese 0 3
„ Stone 0 3
Early Snowball, per lb. ... 2 0
Early Dutch (earliest), true imported 2 0

AGRICULTURAL TURNIPS.
Yellow Bullock per lb.—1 0
Skirving's Swede... ... 1 6
Laing's ditto 1 6
Ashcroft ditto 1 6
Dale's Hybrid 1 0
Red Round... ... ... 1 0
White Round 1 0
White Globe 1 0
Oxheart 1 0

per lb.
Drumhead Cabbage ... 1 6
Thousand Headed ... 1 6

Furze, per lb., 1s. Broom, 1s.
Coarse Grasses for Game Covers, 8s. per bushel.
Yellow Globe and Long Red Mangold Wurzel, per lb., 1s.
White Silesian or Sugar Beet, per lb., 1s.
Chevalier Barley; Hopetoun, Tartarian, Sandy, and other Oats.
Flax, from Riga seed, one year grown in this country.
A fine collection of all the best Permanent Grasses (hand picked) separate or mixed. If mixed, per bushel, 8s.
Sweet Vernal, the earliest and most suitable Grass for early Lambs, 2s. per lb.
White, 1s. 3d., and Red Clover, 1s.; Lucerne, 1s.; and Trefoil, 6d.
Kohl Rabi, for Agriculture, per lb., 2s.
Italian Rye-grass. Spring and Winter Tares.
A few of the very finest Grasses for Lawns, per lb., 1s. 6d.
Myatt's fine new Strawberries.
Asparagus plants, according to age, per 100, 2s. 6d. to 5s.

Seakale plants, according to age, per 100, 5s.; do. for forcing, 10s.
Dulley's Early Scarlet Admirable Rhubarb, per root, 1s.
Myatt's Victoria do. (the largest in cultivation), 1s.
Mushroom Spawn, per bushel, 5s.
Cornwell's Victoria Raspberry, per dozen, 2s. 6d.
All the fine new Raspberries, 2s. 6d. to 3s. per dozen.
Seeds of all the new Strawberries, Raspberries, Gooseberries, and Currants, per paper, 6d.; with Tree Seeds recommended to Emigrants.

POTATOES.
Per bushel.—s. d.
Soden's Early Oxford ... 10 0
Barnard's Early Frame 10 0
Shilling's Early Prolific 10 0
Kirke's True Ash-leaved Kidney 10 0
Walnut-leaved Kidney... 10 0
Ash-leaved Kidney ... 10 0
Forty-fold 6 0
Early Hen's Nest ... 6 0
Early Shaw 6 0
Prince Regent's 6 0
And many other most productive late kinds; also seed saved from the best varieties, 6d. per packet.

Garlic, per lb., 8d. Shallots, per lb., 8d.
Budding and Pruning Knives.
Russia Mats, 2s. each. Cuba Bass, per lb., 2s.
Buckwheat, Indian Corn, Rape, Hemp, &c., for Aviaries.
The trade supplied on moderate terms, with every article true to its kind. Catalogues may be had on application.

FLOWER SEEDS.
The following are the most recent introduced Flower Seeds:—
Per packet, 1s.

Abronia umbellata
Ageratum albiflora
Calliopsis marmorata
Collinsia Bartsiæfolia
Dianthus Garneriana
Gaura Lindhemani
Linum grandiflorum
„ rubrum verum
Limnanthes rosea
Lupinus monogynia
Lobelia ramosus alba
Lobelia rubra
Lophospermum Jacksoni
Mimulus cæruleus
Nolana grandiflora alba
Œnothera acaulis
Perilla nankinensis
Salpiglossis, scarlet
Saponaria multiflora
Thunbergia Bakeri (white)
Morina elegans

Asters, 24 distinct German varieties, in sealed packets, suitable for exhibition, the collection, 8s.
A mixture, including all the colours of the above, per paper, 6d.
Do. in 12 distinct colours, the collection, 4s.
A mixture of the best varieties of late Asters, 6d.
Superb German and Prussian Stocks, 24 distinct varieties, or exhibition, the collection, 8s.
12 varieties of do., distinct in colours, 4s.
12 autumn flow ring do, in distinct colours, 4s.
A mixture of all the finest varieties of Ten-week, per paper, 6d.
12 varieties Brompton Stocks, 4s.
A mixture of Brompton do., per packet, 6d.
12 named varieties of Hollyhocks, 3s.
8 named varieties of Marvel of Peru, 2s. 6d., fine, for the front of Shrubberies.

Per packet.—s. d.
Achimenes, seeds & bulbs of all the varieties.
Anagallis, of sorts ... 0 6
Amethystea cærulea ... 0 3
Anemone, fine mixed ... 0 6
Antirrhinum (all the new kinds) 0 3
Argemone grandiflora ... 0 3
„ Barclayana ... 0 3
„ speciosa ... 0 3
Aquilegia glandulosa, fine 0 6
„ fine mixed German varieties 0 6
Auricula, from fine named flowers ... 1 0
„ alpine 0 6
Brachycome iberidifolia ... 0 6
„ alba, new ... 0 6
Balsams, 12 very fine distinct colours, all double 5 0
„ mixture of above 0 6
Bartonia aurea 0 3
Blumenbachia insignis ... 0 6
Browallia, of sorts ... 0 6
Calceolarias, from a collection of named shrubby kinds 1 0
Calceolarias, from Herbaceous do. 1 0
Calendrinia discolor ... 0 3
„ grandiflora ... 0 3
„ umbellata ... 0 6
Campanula pulcherrima . 0 3
„ Lorei, blue ... 0 3
„ „ white ... 0 3
„ stricta ... 0 3
„ sylvatica ... 0 3
Catananche bicolor ... 0 3
Chænostoma fastigiata ... 0 6
Cistus guttatus, very dwf. 0 6
Clintonia pulchella ... 0 6
„ elegans 0 3
Cockscomb, Dwarf Scarlet 0 6
Cuphea, all the kinds ... 0 6
Cineraria, selected from the latest new kinds ... 1 0
Commelina alba 0 3
„ cœlestis ... 0 3
Carnation, from named flowers 1 0
Clarkias, all the varieties 0 3
Coreopsis, new marbled ... 0 6
„ tinctoria ... 0 3
„ Drummondi ... 0 3
„ nigra (new) ... 0 3
Candytuft, new crimson ... 0 3
„ purple 0 3
„ white 0 3
„ sweet-scented . 0 3

Per packet.—s. d.
Convolvulus major ... 0 3
„ minor ... 0 3
„ do. new dark 0 3
„ minor, striped 0 3

CLIMBERS.
Cobœa scandens 0 6
Calampelis scaber ... 0 6
Lophospermum erubescens 0 6
„ Hendersoni 0 6
Loasa aurantiaca 0 6
Maurandya Barclayana ... 0 6
„ new scarlet ... 0 6
Tropæolum peregrinum ... 0 6
„ pentaphyllum 0 6
„ tricolorum grandiflorum 1 0
„ trimaculatum 0 6
„ minor coccineum 0 6
Ipomœa rubra cærulea ... 0 6
„ punctata... ... 0 6
„ nil 0 6
„ rosea 0 6
„ striata and others 0 6
Thunbergia alata... ... 0 6
„ „ alba ... 0 6
„ aurantiaca ... 0 6
„ new yellow... 0 6

Collinsia grandiflora ... 0 3
„ bicolor 0 3
„ „ new dwf. 0 3
Dahlia scabigera, dwf. lilac 0 6
„ fine mixed ... 0 6
Datura fastuosa, purple ... 0 6
„ „ white ... 0 6
Delphinium or Larkspurs, distinct or mixed ... 0 3
Ditto, biennial and perennial varieties 0 3
Digitalis or Foxglove ... 0 3
Dianthus, double white Indian pink 0 6
„ Knight's new hybrid ... 0 6
„ double Indian 0 3
„ latifolia ... 0 3
„ Cherii ... 0 3
And others.
Didiscus cæruleus ... 0 6
Eucharidium grandiflorum 0 3
Eutoca viscida 0 3
Egg plant, white 0 3
„ purple ... 0 3
„ new, striped ... 0 6
Eschscholtzia, 3 sorts ... 0 3
„ new, white 0 6
Erysimum Perofskianum 0 3
Fuchsias from named sorts 0 6
Gaillardia picta 0 6
„ bicolor... ... 0 3

Per packet.—s. d.
Gaillardia Richardsoni ... 0 3
„ aristata ... 0 3
Globe Amaranthus, of sorts 0 3
Geum splendens 0 6
„ Wicei 0 3
Geranium, from fine sorts 1 0
Gilia, of sorts 0 3
Grahamia aromatica ... 0 6
Gramnanthes gentianoides, new 0 6
Godetia, all the new sorts 0 3
Heartsease, from first-rate prize flowers 0 6
Humea elegans 0 6
Helichrysum macranthum 0 6
„ bracteatum album 0 3
Heliotropium peruvianum 0 6
„ Voltaireanum 0 6
Hibiscus, of sorts ... 0 3
Heliophila araboides ... 0 3
Helianthemum, Rock Cistus 0 3
Hollyhock, Chinese ... 0 6
„ fine mixed ... 0 3
Ipomœa Burridgi... ... 0 6
„ quamoclit ... 0 6
And others ... 0 6
Ipomopsis elegans ... 0 6
Isotoma axillaris 0 6
Jacobæa, double crimson 0 3
„ „ purple ... 0 3
„ new lilac ... 0 3
Kaulfussia amelloides, for edging 0 3

Handsome Ornamental Grasses ....per paper, 6d.

Per packet—s. d.
Larkspurs, 12 distinct German vars. 2 6
„ mixed dwarf Rocket ... 0 3
Leptosiphon densiflores ... 0 3
„ androsaceus 0 3
Loasa aurantiaca 0 6
Lymnanthus grandiflora 0 6
„ Douglasi ... 0 3
Lobelia heterophylla major 0 6
And others ... 0 6
Lotus Jacobæus 0 3
„ nova sp. 0 6
Lupinus Hartwegi ... 0 3
„ nanus 0 3
„ Cruikshanki ... 0 3
„ affinis 0 3
Lychnis, of sorts 0 3
Malope grandiflora ... 0 3
Mallow, new zebra ... 0 3
Malva miniata 0 3
Marvel of Peru 0 3
Marigold, dwarf pigmy French 0 6
Other varieties 0 3
Mesembryanthemum tricolor 0 6
Mignonette, per oz. ... 0 9
„ Reseda odorata grandiflora, new ... 1 0
Mimosa sensitiva (Sensitive plant), per packet 0 6
Mimulus, from 12 distinct named varieties ... 0 6
„ moschatus ... 0 3
Martynia fragrans ... 0 6
Nasturtiums, all the sorts 0 3
Nemesia floribunda ... 0 6
„ vesicolor, new 0 6
Nemophila insignis major 0 3
„ insignis alba (new) 0 6
„ discoidalis ... 0 3
„ maculata 0 3
„ aurita alba (new) 0 6
Neirembergia splendens... 0 6
„ violacea ... 0 3
„ fine mixed 0 6
Nolana atriplicifolia ... 0 3
„ paradoxa 0 3
Nycterinia selaginoides... 0 6

Per packet—s. d.
Nycterinia capensis ... 0 6
Œnothera Sellowi ... 0 3
„ Drummondi ... 0 3
„ densiflora ... 0 6
„ macrocarpa ... 0 6
And others 0 3
Papaver marcelli 0 3
„ nudicaulis ... 0 3
Poppy, carnation, mixed... 0 3
Peas, sweet, all the colours separate or mixed ... 0 3
Pentstemon, of sorts ... 0 6
Phlox Drummondi, various shades ... 0 6
„ Drummondi, white... 0 6
„ Leopoldi (new) ... 1 0
„ new, scarlet ... 0 6
„ oculata 0 6
Picotee, from named flowers 1 0
Platystemon californicus . 0 3
Potentilla Garnieriana ... 0 3
„ Russelliana ... 0 6
„ Thomasi ... 0 3
Polyanthus, fine mixed ... 0 6
Portulacca splendens ... 0 6
„ Thellusoni ... 0 6
„ grandiflora ... 0 6
„ striata alba ... 0 6
„ Gilliesi ... 0 3
„ yellow... ... 0 6
Primula sinensis (white fringed) ... 1 0
„ lilac 1 0
„ large crimson ... 1 0
„ cortusoides ... 0 6
Rhodanthe Manglesi ... 0 6
Salpiglossis, new scarlet, very fine ... 1 0
„ fine mixed ... 0 6
„ new yellow ... 0 6
Salvia, of sorts 0 6
Sanvitalia procumbens ... 0 3
Saponaria calabrica ... 0 6
„ ocymoides ... 0 6
Schizanthus Hookeri ... 0 6
„ Grahami ... 0 6
„ retusus alba . 0 6
„ humilis ... 0 3
„ Priesti ... 0 3
„ venustus ... 0 3
Schizopetalon Walkeri, very sweet 0 6
Sphænogyne speciosa ... 0 3
Streptocarpus Rexi ... [illegible]
Silene Schafta 0 6
„ compacta 0 6
Stock, white pyramidal ... 0 6
„ Buck's Intermediate, 16 out of 20 will come double ... 0 6
„ Chapman's Scarlet Ten-week 0 6
„ Shepherd's White .. 0 3
„ „ Purple ... 0 3
Sedum cæruleum, for rock-work 0 6
Sultan, yellow 0 3
„ white and purple . 0 3
Tagetes signata 0 3
„ lucida 0 3
Thunbergia (*see* Climbers).
Tropæolum (*see* Climbers).
Viscaria oculata 0 3
„ new dwarf ... 0 6
„ white 0 6
Violet, Russian (ever-flowering) 0 6
Verbena, a mixture of best sorts 0 6
Wallflower, blood red ... 0 3
„ Double German 0 6
„ changeable .. 0 6
„ 8 vars. of imported German 2 6
Zinnia elegans coccinea ... 0 6
„ purpurea 0 6
„ aurea 0 6
„ mixed from 20 separate varieties 0 6

Ornamental Trees and Shrubs of all descriptions.
Cedrus Deodara, Cryptomeria japonica, Taxodium sempervirens. 2s. 6d. to 10s. 6d. each; all the new Pinus.
Named Double Anemones and Ranunculuses: Gladiolus Brenchleyensis and gandavensis: Tigridia pavonia and conchiiflora with many other flowering Bulbs, and Herbaceous Plants, which may be planted out till the middle of May.
Carnations, Picotees, and Pinks, per pair, from 1s. to 3s. 6d.
All the better named Heartsease from 6s. to 30s. per dozen.
Fine named Dahlias, per dozen, 12s.
„ Chrysanthemums, new kinds, 12s.
Standard Dwarf and Climbing Roses, 1s. to 2s. 6d. each.
Rivers' Miniature Fruit Garden, with directions for culture and root-pruning, 2s. Rivers' Orchard House, 2s.
Rivers' new edition of the "Rose Amateur's Guide," 6s.
Rivers' new Fruit Catalogue, 6d.
Paxton's "Cottage Calendar," 3d., which ladies and gentlemen should distribute to cottagers.
Collections of 24 Annuals, mixed, recommended by Dr. Lindley as suitable for Shrubberies, 5s.
Seeds for distribution by Gentlemen to their Tenants and Cottagers on the most liberal terms.
24 papers of Hardy Annuals, 5s.
Seeds selected and carefully packed for Australia, North and South America, India, and New Zealand, in the most secure way to arrive safe at any of the above places.

Ladies and Gentlemen relying upon the judgment and experience of John Kernan, instead of being supplied (as is often the case) with what is neither useful nor ornamental, may depend upon having a selection of the most useful and indispensable Vegetables to any amount named, by the parties forwarding him their orders. The same economy will be observed in the choice of Flower Seeds. J. K. feels it almost needless to observe that the liberality of discount will be with the amount.

Printed by William Bradbury, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and Frederick Mullett Evans, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be Addressed to the Editor.—Saturday, April 8, 1854.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley

No. 15.—1854.] SATURDAY, APRIL 15. [Price 6*d*.

INDEX.

Abies Douglasii	237 *c*	Inga pulcherrima	237 *a*
Acre, seed for an	244 *c*	Lily of the Valley	236 *c*
Agricultural statistics	241 *b*	Linnean Society	238 *c*
Ammonia, uses of	243 *b*	Mangold Wurzel	244 *c*
Aphelandra lateritia	239 *b*	Manure, liquid	241 *c*
Billington (Mr.) and Chopwell Wood	237 *b*	Meteorology, agri.	243 *a*
Bread, cheap whole flour	243 *a*	Mildew on Strawberries	236 *a*
Calendar, horticultural	240 *a*	New S. Wales, Grapes in	238 *a*
— agricultural	245 *a*	Orchids, new work on	236 *b*
Carrot, culture of	244 *c*	Paper materials	235 *c*
Cattle feeding	244 *b*	— wood	238 *a*
Chemistry, Cyclopædia of, rev.	239 *a*	Pathology, vegetable	236 *a*
Chopwell woods	237 *b*	Peach protector	237 *b*
Conifer seeds, to sow	240 *c*	Pescatorea	236 *b*
Crops, rotation of	244 *a*	Pink, the	240 *a*
Crystal Palace, plants for	236 *a*	Plants, new	239 *b*
Dacrydium Franklini	238 *a*	Reaping machines	245 *a*
Deodar	237 *c*	Seeds, to steep	237 *c*
Drains, stoppage of	244 *a*	— quantities for an acre	244 *c*
Entomological Society	239 *a*	Statistics, agricultural	241 *b*
Ewes and Lambs	242 *b*	Storms, rotatory	243 *a*
Gaines's nursery, noticed	239 *c*	Strawberry mildew	236 *a*
Grapes, colouring of	238 *a*	Sutton's agricultural seeds	244 *c*
Gravel	237 *c*	Vegetable pathology	236 *b*
Guano, nature of	239 *b*	Wine, New South Wales	238 *a*
Highland Agricultural Society	244 *a*	Wood paper	238 *a*
		Woods and forests	237 *b*

Erratum.—In Mr. John Holland's advertisement of April 1st and 8th, for 25 *pairs* of Pansies, read 25 *plants*.

THE GARDENERS' CHRONICLE and AGRICULTURAL GAZETTE.

In accordance with the wishes of Farmers, Millers, and others interested in the Corn Trade, an Edition is published in time for post every Monday afternoon, containing a Full Report of the Mark Lane and Smithfield Markets of the day.

In consequence of the Advertisement Duty having been taken off by the Government, the customary charges for Advertisements in *The Gardeners' Chronicle and Agricultural Gazette* have been reduced.

Advertisements appear in both Editions without extra charge.

	£	s.	d.
Space of Four lines and under (body type)	£0	2	6
Each additional line up to Twenty	0	0	6
Every Five lines beyond	0	2	0
A Column	3	0	0
A Page	8	8	0

Advertisements of Bailiffs and Gardeners out of Place, if not more than Three lines, 1*s*. 6*d*. each.

From the Official Stamp Returns published April 5, 1854, it appears that during the three preceding years, 1851, 1852, and 1853, the Stamps supplied to each of the undermentioned Journals gave them an average sale of—

Gardeners' Chronicle and Agricultural Gazette	6277	St. James's Chronicle	2844
		Morning Post	2652
		Sun	2539
Era	5500	Morning Chronicle	2364
Wesleyan Times	5094	Britannia	2329
Magnet	4795	Express	2235
Examiner	4694	Leader	2140
Mark Lane Express	4500	Herapath's Journal	2066
Evening Mail	4488	John Bull	2020
Field	4409	Globe	1926
Morning Herald	4021	Weekly News	1709
Daily News	3910	United Service Gazette	1708
Guardian	3904	Railway Times	1641
Economist	3837	Atlas	1479
British Banner	3798	Standard	1456
Record	3736	Naval & Military Gazette	1313
Watchman	3681	Patriot	1304
Nonconformist	2987	Gardener's and Farmer's Journal	752
Spectator	2856		

Office for Advertisements and Communications, 5, Upper Wellington Street, Covent Garden, London.

HORTICULTURAL SOCIETY OF LONDON.—Notice is hereby given that the EXHIBITIONS of FLOWERS and FRUIT, in the SOCIETY'S GARDEN, in the present season, will take place on the following Saturdays, viz: May 13, June 10, and July 8; and that Tuesday, April 25, is the last day on which the usual privileged Tickets are issued to Fellows of the Society.

WEST KENT SECOND ANNUAL POULTRY and FLOWER EXHIBITION, Under most distinguished Patronage, will take place on TUESDAY and WEDNESDAY, the 20th and 21st of June next, in the Market Field, Farningham.

Prizes will be awarded for Poultry, Pigeons, and Rabbits. Stove, Greenhouse, and Herbaceous Plants, Fruits, Vegetables, Roots, and Cut Flowers. Applications for Forms of Certificates of Entry, Prize Lists, and Regulations for Poultry, &c., to be made to the Secretary, and for Flowers, &c., to Mr Alfred Lockyer, Secretary, Farningham. By Order of the Committee of Management, Baptiste Thomas, Secretary.

Committee Room, Lion Inn, Farningham, Kent.

BRIGHTON FLORICULTURAL and HORTICULTURAL SOCIETY. Royal Pavilion.—The Annual Summer Exhibition of Plants, Flowers, and Fruits, will be held on WEDNESDAY and THURSDAY, the 28th and 29th June next, on the same grand scale as last year. Upwards of 200 guineas are offered as Prizes. Schedules are now ready, and may be had on application to the Secretary, Mr. E. Carpenter, 45, Lavender Street. By order of the Committee,

Brighton, April 15. Edward Carpenter.

IPOMŒA RUBRO CÆRULEA.

MR. GEORGE ROBERTS begs to make known to the Seed trade that he has still on Sale some of this choice and scarce Seed.—32, Moorgate Street, London

INGRAM'S PRINCE OF WALES STRAWBERRY.—This splendid new Strawberry, now so extensively grown at the Royal Gardens, Frogmore, both for forcing and out-door culture, may now be had of J. and E. SMALL, at the following reduced prices:—Strong well-rooted Plants, 25*s*. per 100, or 15*s*. for 50. This is quite a distinct Strawberry to the Prince of Wales now being sent out by Mr. Cuthill, of Camberwell. Order Ingram's Prince of Wales.

The following new kinds can also be supplied at moderate prices:—Trollope's Victoria, Myatt's Superfine, do. Prolific, Nicholson's Ajax, do. Ruby, and Jackson's Britannia. The usual discount to the trade.—Agents, Messrs. Nutting & Sons, Seedsmen, 46, Cheapside, London.

RENDLE'S PERMANENT PASTURE GRASSES *can be obtained from 24s. to 30s. per acre, according to sorts required. Renovating Grasses 10s. per acre, and all the best varieties known, at the lowest market price. See Price Current.*

Apply to William E. Rendle & Co., Seed Merchants, Plymouth.

RENDLE'S PERMANENT PASTURE GRASSES *have always given the greatest satisfaction, and those who want Seed for the present season should consult* Rendle's "Farming Price Current and Agricultural Seed Directory," to be obtained from

William E. Rendle & Co., Seed Merchants, Plymouth.

FINE GRASS SEEDS FOR ORNAMENTAL PARKS, LAWNS, &c., *where a fine sward is required*, 1*s*. 3*d*. *per lb*., 3*s*. *per gallon, and* 20*s*. *per bushel. Our mixtures for this purpose have given the greatest satisfaction.*

William E. Rendle & Co., Seed Merchants, Plymouth.

GENUINE NEW WHITE and RED CLOVER SEED, COW GRASS, *and the Alsike Hybrid Clover, can be obtained at the lowest market prices from*

William E. Rendle & Co., Seed Merchants, Plymouth.

SEEDS DIRECT FROM THE GROWERS

The most Certain Means of Preventing Disappointment.

SEEDS GROWN IN BERKSHIRE and the adjoining Counties having obtained great celebrity, we have made such arrangements with Messrs. Pickford & Co., who have offices on most of the great lines of Railway, as will enable us to deliver our Goods FREE OF CARRIAGE to most parts of the United Kingdom.

Catalogues and other particulars may be obtained by post, on application to us, addressed

JOHN SUTTON and SONS, Seed Growers, Reading, Berks.

FINE MANGOLD WURZEL SEED.

LONG RED MANGOLD WURZEL.—Fine new Seed, 10*d*. per lb., or 70*s*. per cwt.

JOHN SUTTON and SONS, Seed Growers, Reading, having a large Stock of the above, are now selling it at the low price here quoted. LARGE YELLOW GLOBE and other sorts, as see Priced List, which may be had in return for one Postage Stamp.

GARDEN SEEDS FOR PRESENT SOWING.—Good Seeds of all the best kinds of Lettuces, Broccolies, Cauliflowers, Peas, and other Vegetables, may still be obtained of the undersigned. Priced Lists post free.—Address,

JOHN SUTTON and SONS, Seed Growers, Reading, Berks.

HARDY FLOWER SEEDS POST FREE.

SUTTON'S CHOICE ASSORTMENTS:—

		£	s.	d.
The best 100 sorts, with instructions		1	1	0
The best 50 sorts	ditto	0	10	6
The best 36 sorts	ditto	0	7	6
The best 24 sorts	ditto	0	5	0

Address, John Sutton & Sons, Seed Growers, Reading, Berks.

TO THE SEED TRADE AND OTHERS.

BENJAMIN R. CANT, St. John's Street Nursery, Colchester, can supply in quantity the following Home-grown Seeds, of excellent quality:—

	Per lb.—s.	d.
WHITE BELGIAN CARROT	1	0
LONG RED ALTRINGHAM Do.	1	0
YELLOW GLOBE MANGOLD WURZEL	1	0
LONG RED Do.	1	0

Prices to the Trade on application.

BASS and BROWN'S NEW POTENTILLAS, so favourably noticed in the *Gardeners' Chronicle*, the "Florist," the "Cottage Gardener," also by Geo. Glenny, and C. Turner, for which see descriptions and remarks in *Gardeners' Chronicle*, March 13, page 144, and April 1, page 208.

A great number of orders have already been received. Strong Plants will be sent out early in May.

	s.	d.
KING OF CRIMSONS	10*s*.	6*d*.
THEODORE	7	6
JULIA	7	6
SUDBURY GEM	10	6
SHYLOCK	10	6

The set for 42*s*. The usual allowance to the trade for two or more sets. The Second Set of 7 Varieties, very fine, rich and showy, for 16*s*., with the same trade discount as first set.

Seed and Horticultural Establishment, Sudbury, Suffolk.

STATICE HOLDFORDI.

MITCHELL and CO., Successors to the late Edward Mitchell, Bristol Nurseries, Kemptown, Brighton, beg most respectfully to inform the trade, that they are prepared to supply strong healthy plants of the above at 25*s*. 6*d*. per dozen, package included, for ready money.—Post-office orders payable to Mitchell & Co., or John Fairbrother.

FOR IMMEDIATE EFFECT IN DECORATING THE GREENHOUSE, CONSERVATORY, FLOWER GARDEN, AND ORNAMENTAL PLANTING.

YOUELL and CO. beg to refer to their Avertisement of March 25, April 1, and 8.

100 kinds of very choice and free flowering Greenhouse or Conservatory Plants (Climbers included), 12*s*. per dozen.

Royal Nursery, Great Yarmouth.

WANTED IMMEDIATELY, a quantity of one or two years RED CEDAR, CYPRESS, and ARBOR-VITÆ; also three years SILVER FIR, SPRUCE, WEYMOUTH PINE, and any other Seedling Shrubs.—Address, stating quantity and price, Y. Z., Messrs. Hurst & M'Mullen, 6, Leadenhall Street, London.

TO BE SOLD, fine SPECIMEN CAMELLIAS, in good growth, from 4 to 5 feet high, and from 12 to 15 feet round, well furnished. The four largest are Double White, the others are approved sorts, and well worth the attention of any lady or gentlemen wishing to purchase them.—For particulars, apply to Mr. G. Smith, Tollington Nursery, Hornsey Road, Islington, London.

GRASS SEEDS FOR PERMANENT PASTURE.

WHEELER and SON'S DESCRIPTIVE LIST of GRASS SEEDS will be forwarded free on application.

J. C. WHEELER and SON, Gloucester.

ROBERT M. STARK begs to intimate that his Spring Catalogue of FLORISTS' FLOWERS, BEDDING PLANTS, &c., for the season, is now ready and may be had on application.

Very superior assortment of Imported GERMAN FLOWER-SEEDS, NEW ANNUALS, &c., of which separate Lists may be had.—Edinburgh: Edgehill Nursery, and 145, Princes Street.

NEW ROSES FOR 1854.

BENJAMIN R. CANT has now ready for sale, strong plants in pots of all the NEW ROSES, some of which have never before been offered to the public, descriptive Catalogues of which can be had on application.

St. John's Street Nursery, Colchester.

PERMANENT PASTURE.

R. H. SMITHE, of Eastling, Faversham, Kent, is now prepared to send out his Mixtures of the NATURAL GRASSES, PERENNIAL CLOVERS, &c., to lay down Land to Permanent Pasture, at 25*s*. per acre, allowing 3 bushels to the acre, carriage free. Mixtures for Lawn, or any other purpose, or the sorts separate. Most of the species of Grass are collected by the Advertiser, and he will bestow the greatest attention in selecting such as shall constitute mixtures specifical to the soil, purpose, &c., of each buyer.

E. SPARY respectfully announces that he has commenced cutting HOTHOUSE GRAPES in fine condition, and will have a constant supply through the year.

His New Dahlias, Ariel and Glory, with other first-rate sorts, will be ready, in fine plants, on the 1st of May. Catalogues of which, including a variety of Plants ornamental to Greenhouses Drawing-rooms, and Flower Gardens, may be had on application Vines, Seeds, &c.—Queen's Graperies, and Western Road, Brighton

"NORFOLK HERO" CUCUMBER.—Without exception the very best Cucumber for open ground cultivation that has yet been offered. It is a most prolific bearer, as handsome as any frame variety, and is as delicate in point of texture, the fruit measuring from 16 to 20 inches in length. It is in the sole possession of YOUELL & CO., who will forward per post free (on receipt of postage stamps) packets containing six Seeds, 1*s*.; 18 Seeds, 2*s*. 6*d*.

This Advertisement will not be repeated this season.

Royal Nursery, Great Yarmouth.

DOUBLE ITALIAN TUBEROSE ROOTS, 4*s*. per dozen.—The annual importation of the above-named beautiful and fragrant Flower has just been received, and large and well selected Bulbs may be obtained, without disappointment, at A. Cobbett's Foreign Warehouse, 18, Pall Mall.

N.B. Printed regulations for treatment sent; also, just arrived very moist and open Parmasan Cheeses.

"WELLINGTONIA GIGANTEA."

MESSRS. VEITCH, of Exeter and Chelsea, have much pleasure in stating that their Seeds of the above magnificent Tree are vegetating satisfactorily. They therefore hope to be able to send out well established seedling plants during the ensuing summer and autumn. They are now taking orders for them at the following prices:—

For a Single Plant	2 guineas	For 8 Plants	10 guineas
For 4 Plants	6 guineas	For 12 Plants	12 guineas

And all orders will be executed strictly in the rotation in which they are received.—April 15.

WELLINGTONIA GIGANTEA.—Beautiful Lithographed Plates (from a drawing taken in California) of this wonderful Tree may be had, at 7*s*. 6*d*. each, of Messrs. Veitch & Son, Exeter, and Mr. James Veitch, jun., Exotic Nursery, Chelsea.

The Bark, Wood, Cones and Foliage, which were exhibited on Tuesday week at 21, Regent Street, may be seen at the Exotic Nursery, Chelsea.—April 15.

MORTON'S YELLOW GLOBE MANGOLD WURZEL, *saved by Thomas Bennett, Esq., Gloucester, from the Stock originally grown by J. C. Morton, Esq., the Editor of the Agricultural Gazette.*

Seed of this most excellent variety can now be obtained from William E. Rendle & Co., Seed Merchants, Plymouth, who have purchased the whole of the Stock.

NEW ALSIKE CLOVER, Price Ten Guineas per cwt., or in small quantities at 2*s*. per lb., may be had on application to Mr. H. Raynbird, Basingstoke, Hants. Also, New Home-grown ITALIAN RYE-GRASS, of good and genuine Stock, at 30*s*. to 35*s*. per quarter.

BALSAM SEED.—Mr. Glenny has none but mixtures left, but they contain all the varieties; 60 seeds for 13 stamps.

DAHLIA SEED.—A few sealed packets of 100 seeds from 12 first-rate flowers, grown by themselves, 30 stamps. Mr. Glenny engages to procure all the subjects recommended in his Almanac, if they are to be had at all; letters only attended to.—420, Strand.

ROBT. DEBRON has a fine stock of SEEDLING PETUNIAS; the seed was saved from a very fine collection, carefully impregnated. The Plants are established in separate pots. May be had at 6*s*. per dozen, or three dozen for 15*s*., with Plants to compensate for carriage—hamper included. Also nice Plants from mixed impregnated seeds, 3*s*. per dozen.

Ely Nurseries, Ely, Cambridgeshire.

FLOWER SEEDS, for present sowing, sent post free, at the annexed prices: Antirrhinum, from 50 fine varieties, 6*d*.; Double Balsam, extra fine, 6*d*.; Carnation, fine, 1*s*.; Auricula, fine, 1*s*.; Double Daisy, fine, 6*d*.; Hollyhock, extra fine, 6*d*.; Gloxinia, extra fine, 1*s*.; Mimulus, fine, 6*d*.; Petunia, fine, 6*d*.; Verbena, extra fine, 1*s*.; 100 fine varieties of hardy annuals, 5*s*.; 50 ditto, 3*s*.; 12 ditto, 1*s*.; the following at 3*d*. each; Aquilegia, Digitalis, Potentilla, Polyanthus, Sweet William, and Phlox Drummondi. Catalogues of seeds sent on application for one stamp.—Wm. Knight, Florist, 67, High Street, Battle, Sussex.

CAPE HEATHS AND NEW AZALEAS.

W. J. EPPS begs to call attention to his extensive and rare Collections of Heaths and Azaleas, which are in the finest condition possible: very bushy and well formed for specimens in 3, 4, and 6-inch pots, consisting of all the best varieties, such as Aristata ampullacea, tricolor, jasminiflora, ventricosa, Massoni, Webbiana, obbata, &c., &c. AZALEAS—Prince Albert, Gladstanesi, Excelsa, Murrayana, Alba magna, Duke of Devonshire, Holderi, Toilette de Flora, Glory of Sunning Hill, Symmetry, Splendens, Ignescens, &c., &c., 9s., 12s., 18s., and 21s. per dozen: 5l. per 100 varieties, carriage paid to London. All the new Stove and Greenhouse Plants, Fuchsias, Verbenas, and Roses, equally moderate. Catalogues of the above sent on application.—Nurseries, Maidstone and Ashford.

STANDISH AND NOBLE, NURSERYMEN, SEEDSMEN, &c., Bagshot, Surrey, are now prepared to receive orders for the following new and beautiful varieties of AZALEAS, which will be ready for delivery in June next. The Advertisers can recommend them with the greatest confidence, as superior to any others of their kind.

AZALEA BEALII.—This very distinct variety was introduced by them from China. The flowers, which are of first-rate shape, are quite unique, being striped, like a Carnation, with rich vermilion on a pure white ground. It is of good habit, fine in foliage, and a most abundant bloomer; and although decidedly in the first rank as a greenhouse plant, it is quite hardy enough for the open border. Each. 21s.

AZALEA CRISPIFLORA, a species differing much from any other known Azalea, having a character entirely its own. No other kind approaches it in compactness of habit, and its foliage is very fine, abundant, and evergreen. The flowers are very large, and the edges of the petals have the appearance of being irregularly *gaufred*, like a lady's frill; the colour is a rich rose lake. From the fact of its blooming very late—much later than any other Azalea—it will be doubly valuable for many purposes. Each 21s.

MESSRS. J. AND H. BROWN offer to the Nobility and Gentry the following CHOICE SELECTED PLANTS, &c., which they will forward to any part of the Kingdom, and their new descriptive Catalogue of Plants and Seeds by post.

	s.	d.
25 Azaleas, new hardy Belgian varieties, on their own roots, with flower-buds, one of a sort by name ...	20	0
	15	0
25 American Azaleas, do. do. ...	10	6
25 Hardy American Plants, one of a sort, by name ...	6	0
12 Hardy Heaths and Kalmias ...		
12 Rhododendrons, including scarlet, white, and rose—hardy varieties ...	12	0
New hardy Yellow Rhododendrons, each 5s. 6d. to	7	6
Fine hardy Scarlet Rhododendrons, 2 feet, per dozen ...	12	0
Cedar of Lebanon, 3 feet, well grown in pots, per dozen	12	0
(Araucaria, Deodara, and Coniferas of all kinds, see List.)		
Roses, standard and half standards, per dozen ... 12s. to	15	0
Climbing Roses of choice sorts, per dozen ...	6	0
50 Dwarf Roses, two of a sort, on own roots ...	15	0
Wistaria sinensis, extra fine, in pots, 5 to 10 feet, each	3	6
6 Fine hardy Magnolias, one of a sort ...	10	6
12 Greenhouse Azaleas, one of a sort, blooming plants ...	25	0
12 Choice Camellias, by name, do. ...	30	0
24 Choice Ericas, one of a sort, by name ...	16	0
12 Orchidaceous Plants, choice species, and good plants	40	0
50 Choice Greenhouse Plants, one of a sort ...	45	0
Tree Carnations, 6 best new sorts in small pots ...	6	0
Mimulus, 6 best sorts do. do. ...	4	6
Calceolarias and Cinerarias, fine, per dozen ... 12s. to	18	0
Fancy Geraniums, the choicest kinds, per dozen ...	18	0
Scarlet Geraniums, one of a sort, do. do. ...	12	0
Fuchsias, strong plants, fine varieties, per dozen 6s. to	10	0
Verbenas and Petunias, newest varieties, per dozen ...	6	0
12 New Perennial Belgian Phloxes, one of a sort, for ...	10	0
12 Pæonias, new white, pink, and blush, of sorts ...	8	0
25 Hardy Herbaceous Plants, one of a sort ...	7	6
25 Pinks, choicest sorts ...	10	0
Yellow Picotees and Carnations, per dozen ...	10	0
Pansies, best varieties by name, per dozen ...	10	0
12 Chrysanthemums, large and small flowered varieties ...	8	0

A Selection of the most approved Flower Seeds, 18 papers, 5s., 36 papers, 10s., sent free by post.

New Gardens and Greenhouses furnished on moderate terms.

Albion Nursery, Stoke Newington, London.—April 15.

BASS AND BROWN'S SEED AND PLANT LIST free by post for three penny stamps.

FLOWER SEEDS—BEST ASSORTMENTS, free by post.

The Catalogue gives colours, heights, months of flowering, hardiness, duration, and much descriptive information of time of sowing, and other treatment.

	s.	d.
100 varieties select showy Annuals, including the newest	15	0
50 vars. do., 8s. 6d.; 30 vars., 5s. 6d.; 20 vars. ...	4	0
20 varieties best Dwarf Annuals, in large packets, for filling beds on lawns, 7s. 6d.; 12 do. ...	5	0
20 vars. choice Greenhouse Annuals, including the new, 7s. 6d.; 12 varieties, do. ...	5	0
20 vars. choice Greenhouse Perennials, including fine and new ...	10	6
12 varieties ditto ditto ...	7	6
20 vars. Hardy Biennials and Perennials, including very choice and new, 7s. 6d.; 12 varieties do. ...	5	0

The following we beg strongly to recommend as saved from collections of first-class flowers, in packets as follows:—

	s.	d.
Calceolaria, very choice, 1s.; extra superb, from fine selected flowers ...	2	6
Cineraria, very choice, 1s.; extra new and choice from our superb collection ...	2	6
Geranium, Scarlet, from our choice collection ...	0	6
Gloxinia, choice, 6d.; extra, from our superb collection ...	2	6
Petunia, new and choice, from our superb collection ...	1	0
Verbena, very choice, 1s.; extra, from our superb collection of new varieties ...	2	6
Antirrhinum, choice, 6d.; from new of our superb collection	1	0
Carnation and Picotee, from collection of 400 vars ...	2	6
Gladiolus, fine mixed early, 6d.; from choice named of our superb collection ...	1	0
Iris, English vars, fine, 6d.; best of our superb collection ...	2	6
Pansy, extra choice, from a first-rate collection ...	1	0
Potentilla, very choice, 1s.; extra, from our very beautiful collection ...	2	6
Ranunculus, from our superior collection ...	2	6

A FEW VERY CHOICE NEW FLOWER SEEDS.

	s.	d.
Leptosiphon luteum, fine orange colour; very beautiful, packets, 1s. and ...	2	6
Nemesia bicolor, white and blue, very showy and attractive half-hardy annual, height 9 inches, beautiful for massing	0	6
Calceolaria chelidinoides, ex., clear bright yellow, fine for massing on lawns; the mouth being closed, it is not injured by wet ...	1	0
Lobelia Limburgensis, a new perennial variety from Prussia, extra ...	1	0
Portulacca aurantiaca, new orange, 1s.; nova rosea ...	1	0
Sweet William, very choice striped French ...	0	6

☞ Goods CARRIAGE FREE with orders of 20s. and upwards to London, Ipswich, Norwich, or any Station on the Line.

Remittances are requested with orders from unknown correspondents. Post-office Orders to be made payable to BASS & BROWN, or to STEPHEN BROWN.—The Autumn and Spring Catalogues supplied free by post for three penny stamps each, the cost of which may be deducted from orders sent.

BASS & BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk. ESTABLISHED ABOUT HALF A CENTURY.

EXTRACT OF A LETTER FROM DR. LINDLEY:—"Messrs. SUTTON,—*We have already made a trial of your Lawn Grass Seeds, and it is but justice to say they have proved the best we have sown for many years.*
(*Signed*) "JOHN LINDLEY.
"*Horticultural Society, 21, Regent Street, London, Nov. 9, 1853.*"

Messrs. SUTTON are continually receiving similar letters of commendation of their Lawn Grass Seeds. Price of seed, 1s. 3d. per lb., 3s. per gallon, or 21s. per bushel, CARRIAGE FREE, except very small quantities. The quantity required is 40 lbs. per acre, in forming new lawns, or from 10 to 20 lbs. per acre for improving old lawns.

SUTTON'S GRASS SEEDS *for forming Permanent Pasture, 24s. to 30s. per acre*; SUTTON'S RENOVATING MIXTURE *for Improving Old Pastures*, 1s. *per lb.*

JOHN SUTTON AND SONS, Seed Growers, Reading, Berks.

NEW AND SUPERB SHOW PANSIES, &c.

Adela (Turner)	Ethelred (Turner)
Androcles (Dickson & Co.)	Favourite (Hooper)
Black Diamond (Parker)	Miriam (Dickson & Co.)
Blanche (Turner)	Mr. Beck (Turner)
British Queen (Dickson & Co.)	Pandora (Hunt)
Cæsar (Marsh)	Queen of England (Fellowes)
Commander-in-Chief (Youell)	Robert Burns (Campbell)
Criterion (Hooper)	Sir J. Paxton (Dixon & Sons)
Duke of Perth (Handasyde)	Sultan (Hooper)
Euphemia (Turner)	Victory (Dickson & Co.)

The above set of 20 Superb Show Varieties, 15s., hamper, &c., included.

Amelia (Bragg)	Inventa (Hooper)
Addison (Turner)	Loveliness (Fellowes)
Blue Perfection (Byne)	Mrs. Beck (Turner)
Chieftain (Turner)	Nobilis (Bell)
Duke of Norfolk (Bell)	Ophir (Widnall)
Eustace (Turner)	Pompey (Hale)
Fair Flora (Byne)	Rubens (Turner)
France Cycole (Grieve)	Sir J. Franklin (Hooper)
Ibrahim Pacha (Edmonds)	Sir P. Sydney (Fellowes)
Juliet (Hooper)	Tymour (Bragg)

The above set of 20 fine Show Varieties, 10s., hamper, &c., included. Parties having duplicates of the above, others will be substituted of equal merit.

Extra Fine Selected Pansy Seed, 1s. and 2s. per packet.

Choice Auricula Seed, 2s. 6d. per packet.

25 pairs Show Varieties of Carnations, 1l.; 25 do. do. Picotees, 1l.; hamper, &c. included.

The Celebrated Pansy "Father Gavazzi" (Holland's), 5s. p. plant.

Post-office Orders to be made payable at Middleton, Lancashire.

Catalogues on application, enclosing a stamp.

JOHN HOLLAND, Bradshaw Gardens, Middleton, near Manchester.

EAGLE AND HENDERSON, SEEDSMEN, NURSERYMEN, and FLORISTS to the QUEEN, from 81, George Street, Edinburgh, to the Seed Warehouse, at the Nursery Gate, Leith Walk. AGRICULTURAL SEEDS.

Per lb.	s.	d.	Per lb.	s.	d.
Broom ...	0	6	Timothy ... 6d. to	0	7
Carrot, fine large Altringham 1s. 6d. to	1	9	Turnip, Swede, Green-top ... 1s. to	1	2
Clover, Red ... 7d. to	0	9	Do. do. Purple-top 1s. to	1	2
" White, 8d., 10d., and	1	0	Do. do. Skirving's 1s. to	1	2
" Yellow ... 4d. to	0	5	Do. do. Laing's ... 1s. to	1	2
" Alsike, true, 2s. 6d. to	2	9	Do. Yellow, Green-top ...	0	9
Mangold Wurzel—Long Red ...	0	9	Do. do. Green-top Improved (Low's) ...	1	0
" Yellow Globe ...	1	2	Do. do. Purple-top ...	0	9
Parsnip, fine ...	1	6	Do. do. Skirving's ...	0	10
Rib-grass ... 6d. to	0	7	Do. do. Border Imperial	0	10
Per bushel.			Do. do. Hood's Improved	0	10
Rye-grass, fine Annual, 4s. to	5	6	Do. do. Gibbs' ...	1	0
" Perennial, fine, 4s. 6d. to	6	6	Do. do. Altringham, fine	1	6
" Pacey's Evergreen (28 to 32 lbs. per bushel) ... 8s. to	10	0	Do. do. Dale's Hybrid ...	0	9
" Moll's ... 7s. to	8	0	Do. White Globe ...	1	0
" Italian 4s. 6d. to	6	6	Do. Stone or Stubble ...	1	0
			Do. Green Globe ...	1	0
			Do. Red Globe ...	0	8
			Do. Woolton Hybrid ...	0	8
			Whin ... 9d. to	1	0

Natural Grasses, of sorts, at very moderate prices; Flower, Tree, and Kitchen Garden Seeds; Boiling and Split Peas, Bird Seeds, Double Superfine Mustard; Garden and Agricultural Implements, Saynor's Pruning Knives; Archangel Mats, Cuba Bast, Mushroom Spawn; fine Ornamental Vases, all sizes; Fruit, Forest, Ornamental Trees and Shrubs, Greenhouse, Herbaceous, and Alpine Plants, &c.

TURNIP SEEDS.

THE SUBSCRIBERS are now selling, from a large and carefully selected Stock, the following varieties of TURNIP SEEDS. Prices are moderate.

SWEDES.—Skirving's Purple Top. (*On strong clays or other heavy soils no variety of Swede will produce so bulky a crop as this.*)

" Lothian Purple Top. (*An established well known sort, rounder shape than Skirving's, and does not grow so much to "long necks."*)

" Hardy Green Crop. (*There is nothing to equal this variety for* mellow *and* peaty *soils. It is less liable to* ROT *than any other Swede, and it possesses excellent feeding properties, being crisp, juicy, and sweet.*)

" Laing's Improved. (*A beautiful shaped bulb, and on rich loamy soil yields a great crop, but is not equal in hardiness to any of the preceding.*)

YELLOWS.—Green Top, or Aberdeen Bullock — Improved Stock. (*It is questionable if there be a better Yellow Turnip than this, provided it be grown from a properly selected stock; it has, however, above all others, in too many instances, disappointed the farmer in consequence of the spurious character it has assumed through a bad stock of seed, which, instead of giving a heavy crop of large well shaped bulbs, with moderate sized tops, produce only stunted small bulbs with a profusion of large coarse tops.*)

" Improved Purple Top Aberdeen—Skirving's variety. (*A very superior sort, yielding a heavy crop, but is not considered equal in hardiness to the preceding.*)

" Dale's Hybrid. (*Yields a very heavy crop, and is a first-rate kind for early winter consumption. From the bulbs growing considerably above ground, it is well adapted for sheep-feeding.*)

" Improved Early. (*A superior sort; bulbs large and finely shaped, with small top and tap root. Unless wanted for early use it should not be sown till the end of June, and sowing may be continued up to the middle of July, with the certainty of having a good crop.*)

WHITES.—Large Globe,
" " Green Globe Imperial. (*A superior hardy sort.*)
" " Red Globe.

Priced Lists of the above, with every other description of Farm Seeds, may be had on application, post free.

All parcels of Seeds are delivered carriage free to the principal Railway Stations and Shipping Ports throughout the kingdom.

W. DRUMMOND & SONS, Seedsmen, Stirling, N. B.

NEW FUCHSIAS OF 1854, raised by Mr. Batten, who sent out Fuchsia Clapton Hero, which gave universal satisfaction.

MR. CHARLES PALMER, scarlet corolla, white tube, broad inverted sepals, fine habit; 7s. 6d.

GRANDISSIMA, deep claret corolla, long white tube, good habit, 7s. 6d.

ADMIRAL, light crimson corolla, light tube, and a free bloomer, 7s. 6d.

Oxalis, new species from Chili, very large, bright rose-coloured flowers, and an abundant bloomer, 30s. per dozen.

Tropæolum azureum, large sound roots, 30s. per dozen.
" tricolorum " " 15s. "
" brachyceras " " 15s. "

The usual discount to the Trade.

HUGH LOW AND CO., Clapton Nursery, London.

FIRST-RATE NEW DAHLIAS, FUCHSIAS, VERBENAS, PETUNIAS, GERANIUMS, CINERARIAS, PANSIES, BEDDING PLANTS, ETC., AT VERY REDUCED PRICES.

WILLIAM RUMLEY AND SONS are now sending out the following, in fine strong plants, hamper included, or free by post, viz.:

DAHLIAS.—The following best new varieties of 1853, 15s. per dozen, six for 8s., or 1s. 6d. each: Comtesse de Chambord, British Queen, Grand Duke, Ma Beauté, Miguel, Madame Portier, Mr. Souchet, Plantagenet, Queen Victoria, Sir John Franklin, Mr. Duglerc, Miss Caroline, and Victoire, &c.

Purchaser's selection from the following extra fine show varieties, 9s. per dozen; our selection, 6s. to 9s. 6d. per dozen. Alert, Annie Salter, Beauty of Versailles, Black Diamond, Edmund Foster, Defiance, Dr. Frampton, Evening Star, Rose of England, Sir F. Thesiger, Sir R. Whittington, Toison Orange, Red Gauntlet, Jaune de Passy, Barmaid, Lady E. Cathcart, Sylph, Malvina, Queen of Beauties, Louis de France, Douglas Jerrold, Queen of Scotland, &c.

FANCY DAHLIAS.—The following choice varieties, 9s. per dozen, or six for 5s.: Claude, Laura Lavington, Reine des Fleurs, Duchess of Sutherland, Picturata, Uncle Tom, Lilliput, Von Bagreuth, Kossuth, Miss Bathurst, Vulcan, Forget-me-Not, Gaiety, Miss Blackmore, &c.

FUCHSIAS.—The following best new varieties of 1853, 9s. per dozen, or six for 5s., viz.: Brilliant, Dr. Lindley, Duchess of Lancaster, England's Glory, Glory (Banks'), Incomparable, King Charming, Lady E. Cavendish, Lady Franklin, Model, Mrs. Patterson, Perfection, Premier, Sir J. Paxton, Vauban, Vandyke, Vesta, &c.

VERBENAS.—Purchaser's selection from the following best new varieties of 1853, 6s. per dozen; our selection, 5s. per dozen: Brilliant de Vaise, Danecroft Beauty, Elizabeth, Fulgorie, Garland, Glory, Grandeur Lyonnaise, Lady Franklin, Madame Boucharlat, Madame Ivery, Madame Lemonier, Madame Panmary, Madame Rougier, Monsieur Dervint, Mrs. Kirkpatrick, Orestes, Purity, Princesse Marianne, &c.

PETUNIAS.—The following best varieties of 1853, 6s. per dozen: Brilliant, Commander, Delicata, Eastern Beauty, Eva, Fairy Ring, Goliah, Lavinia, Lady Cullum, Lilac Perfection, Ponceau, Queen of Roses, Uncle Tom, Venosa Perfecta, &c.

GERANIUMS.—Choice show and fancy varieties, 9s. to 18s. per dozen.

CINERARIAS.—The best new varieties of 1853, 9s. to 12s. per dozen; good show varieties, 6s. per dozen.

PANSIES.—Extra fine varieties, 4s. to 7s. 6d. per dozen.

CHRYSANTHEMUMS.—The very best, large-flowered, and Lilliputian varieties, 4s. to 6s. per dozen.

BEDDING PLANTS.—Choice varieties, 3s. to 6s. per dozen.

The above will be forwarded immediately on receipt of a Post-office Order, payable at Richmond.

All orders of 1l. and upwards carriage free; for particulars see our General Descriptive Spring Catalogue of the above, which may be had on application.—Gilling, near Richmond, Yorkshire.

KNAP HILL NURSERY, WOKING, SURREY.

WATERER AND GODFREY, Nephews and Successors to the late HOSEA WATERER, respectfully invite the attention of parties engaged in planting to the following list:—

Araucaria imbricata, 2, 3, 4, 5, and 6 feet high, in the open quarters, regularly removed every year, and as robust and handsome as it is possible to get them. We have a large stock.

Cryptomeria japonica, 2, 3, 4, 5, 6 to 8 feet.

Cedrus Deodara, stout handsome plants from seed, in any quantity, and of all heights from 1 to 7 feet. A few splendid specimens 10 to 15 feet; warranted to transplant with perfect safety.

Cedar of Lebanon, 2, 3, 4, 5, 6, 7 to 10 feet. These large Cedars of Lebanon are also very handsome trees.

Cupressus macrocarpa, or Lambertiana, 2, 3, 4, 5, 6, and 8 feet, all from seed.
" Goveniana, 2 to 3 and 4 feet.
" Funebris, 2 and 3 feet.
" thyoides variegata, 2, 3, and 4 feet.

The Variegated White Cedar, a scarce but most beautiful variegated plant, seldom seen except at Elvaston Castle. We hold a large quantity.

Juniperus Bedfordiana, fine plants, 3, 4, and 5 feet.
" Chinese, 2, 3, 4, 5, 6, 8, and 10 feet.
" repandus, 3, 4, 5, to 8 feet.
" Upright Irish, 3, 4, 5, 6, 7, and 8 feet; perfect columns, and, except at Elvaston, unequalled.
" Virginiana, the Red Cedar, 4, 5, 6, and 8 feet.

Taxodium sempervirens, 2, 3, 4, 5, and 7 feet.

Yew, common, 3, 4, 5, to 8 feet high.
" Irish, 3, 4, 5, to 10 feet. A splendid lot, all being trimmed to one stem; it adds much to their appearance and value.
" Gold striped, 1, 2, and 3 feet
" do. worked on the Common, with fine heads, 4, 5, 6, and 7 feet high; very handsome.
" elegantissima (new striped) standards. The golden Yews are very ornamental, and we have a large quantity of fine plants.
" Dovaston, or Weeping Yew, fine standards.

Pinus Douglasi, 3, 4, 5 and 7 feet; a few magnificent plants 10 to 12 feet high.
" insignis, 2, 3, 4, 5, 6, and 7 feet; all from seed.
" cembra, 3, 4, to 6 feet.
" Canadensis (Hemlock Spruce), 3, 4, and 6 feet.
" morinda, 3, 4, and 6 feet.
" Menziesi, 3, 4, 6, and 8 feet.
" cephalonica, 3 to 4 feet.
" Pinsapo, large and handsome, 3 and 4 feet.
" Nordmaniana, from seed, 1½ foot; a few larger, 2 feet.
" nobilis, stout plants, with perfect heads, about 1½ foot; a few larger specimens, 3 and 4 feet. We hold a fine stock of this beautiful Fir, none of which are grafted.

Thuja Arbor-vitæ, American, 3 to 6 feet. We recommend this plant for hedges.
" Weareana, 3 to 6 feet, one of the few really hardy and most useful evergreens.
" aurea. This is perhaps one of the prettiest plants of the day; it was first sent out from this Nursery, and our stock, for size and beauty, is unsurpassed.

Libocedrus chilensis, 1½, 2, and 3 feet. This is a very distinct and beautiful plant, of recent introduction. Our stock is large and good.

Independent of the foregoing we are very large holders of the most useful Evergreens, Deciduous and Ornamental Trees, and of large size. Priced Catalogues will be forwarded on application, enclosing two postage stamps, which will also include a Descriptive Priced Catalogue of the celebrated collection of American Plants grown at this Nursery.

The Nursery is near the Woking Station, and about an hour's ride from London. A visit is earnestly solicited from all who intend planting during the forthcoming season.

EUGENIA OR MYRTUS UGNI.

MESSRS. VEITCH AND SON, of Exeter, and the Exotic Nursery, Chelsea, have much pleasure in offering to the Public the above beautiful evergreen flowering shrub of THEIR OWN introduction, from Patagonia, through their collector, Mr. Wm. Lobb.

It has stood several winters in the open ground without shelter, producing its delightfully fragrant flowers in July, succeeded by its Strawberry-flavoured red berries, eaten in Chili as dessert. It is a plant of easy culture, flowering in a very small state, when not above 6 inches high, and is well adapted for pot culture. It is figured by Sir Wm. Hooker in Curtis's "Botanical Magazine" for January, 1852.

Strong blooming plants, in 48-sized pots, 21s. each.
Second size do. in 60-sized pots, 15s. each.

With the usual discount to the Trade, and one over on either class when three are taken.—Exeter, April 15.

BEAUTIFUL NEW BEDDING PLANT.
MILLER'S HYBRID MULE PINK.

ROBERT MILLER, Hartshill Nursery, Newcastle, Staffordshire, offers with confidence the above Pink, colour a bright crimson scarlet, double; grows from 9 to 15 inches high, branches out and forms a little bush, and flowers most abundantly from June to October, and perfectly hardy. See *Gardeners' Chronicle*, Sept. 24. 1853.

DIANTHUS R. M., very pretty, and being dwarf in habit, it will doubtless make a good bedding plant. Price 12s. per doz., package included. The usual discount to the Trade. To be let out the second week in April. Post-office orders from unknown correspondents made payable at Newcastle.

BLOOMFIELD NURSERY, EDMONTON.

HENRY LEGGE begs to inform the Trade that he intends sending out, in May next, the under-named DAHLIAS, which will be found to surpass all in their respective Classes, and to be the most constant and free blooming ever sent out.

MIDDLESEX HERO.—Rose, full size, superb form and petal, high centre, free and constant; 10s. 6d. per plant.

SCARLET UNIQUE.—Large scarlet, first-rate form, close high centre, and constant; 10s. 6d.

MRS. COOPER.—White, tipped with crimson, splendid form, medium size, every bloom fit for exhibition; 10s. 6d.

SARDANAPALUS.—Black, tipped with white, a complete ball in shape, every bloom fit for show, extra fine fancy; 10s. 6d.

JOHNNY GILPIN.—Scarlet, tipped with white, this will be found to surpass every other of the colour, a complete gem; 10s. 6d.

DINAH.—Purple, tipped with white, fine form and petal, free bloomer, and constant; 7s. 6d.

All the leading Sorts sent out last season at 12s. per dozen; older varieties, 4s. per dozen. Catalogues can be had.

J. COLE begs respectfully to inform the Floricultural Public that he has two very fine Shrubby Bedding CALCEOLARIAS to offer them, namely, PRINCE OF ORANGE and ERECTUM. The former a dark orange with a large umbel of flowers nearly as large as "Kentish Hero;" the latter an orange with a scarlet tinge, of erect habit, similar to "Viscosissima," with much larger flowers. J. C. flatters himself they will give the greatest satisfaction to all purchasers, being entirely shrubby and free from that coarseness of foliage many of the varieties evince. "Prince of Orange" is of dwarf habit, with small green glossy foliage, and never infested with green-fly, which is a great acquisition in the Calceolaria. J. C. offers them at 5s. per plant. The usual discount when three are taken. Flowers of them were submitted to some of the leading London nurserymen, who wished to have plants when sent out. A remittance solicited from unknown correspondents.

Keyfield Nursery, St. Albans, Herts.

CANADIAN SEEDS.

COCKBURN & BROWN, NURSERYMEN, SEEDSMEN, and FLORISTS, Montreal, solicit orders for the seed of Balsam and Spruce Firs, Canadian Larch or Tamasac, Red and White Pine, American Oaks, Sumachs, &c. We particularly refer to the beautiful Hemlock Spruce, any quantity of the seed of which we will undertake to furnish. They can be sent from Montreal either by steam or sailing ship. Samples can be had from Mr. JOHN BROWN, 44, Norfolk Street, Glasgow.—Orders for next Autumn delivery to be sent not later than middle of August. We can furnish all sorts of Canadian Plants.—April 15, 1854.

SUPERB LATE WHITE BROCCOLI—"EMPEROR."

EDMUND PHILIP DIXON having purchased the entire stock of the above Broccoli of Messrs. Elletson, Market Gardeners, Thorngumbald, near Hull, begs to announce that he is prepared to send it out in sealed packets at 2s. 6d. each. This Broccoli has been raised by the Messrs. Elletsons, the raisers of the Mammoth, sent out some time ago, who state that the EMPEROR, if sown at the same time, will come into use before it. It is of very dwarf growth, perfectly hardy, with heads from 15 lbs. to 20 lbs. weight; keeps its colour, and stands firm three weeks after it is ready to cut. A noble flower, and commands the best price of any other in the Hull market, where it is well known, and will be a great acquisition to the market gardeners around London, as well as those who wish for a first-rate Broccoli.

May be had of Messrs. NOBLE, COOPER, & BOLTON, 152, Fleet Street; and Messrs. HURST & M'MULLEN, 6, Leadenhall Street, London: also of the Advertiser, 57, Queen Street, Hull.

TO DAHLIA GROWERS.—EDWIN HARRISON (PERRY'S), is the most brilliant crimson Dahlia ever raised; build and form of General Fauchier, and more constant than any crimson Dahlia in cultivation. No grower can be without it; as an ornamental plant it has no rival. It has obtained one first-class Certificate and three first Prizes as the best crimson Dahlia, beating all other varieties. Plants in May, 10s. 6d. each.

ALEXANDER POPE (PERRY'S), is a constant well-formed Dahlia, with very high centre; colour pale lemon. It has obtained one first-class Certificate and two first Prizes as the best yellow or buff Dahlia. The *Gardeners' Chronicle* says—"We like the flower much for its novelty." Plants in May, 7s. 6d.

Early orders are solicited, as the stock is small.—HENRY POPE, Gib Heath, near Birmingham.

EUGENIA UGNI, a very fine new Myrtaceous plant, recently received by the Subscribers from Mr. Bridges, of Valparaiso, will prove hardy in most parts of Great Britain. It is figured in the January number (1853) of Curtis's "Botanical Magazine," and Sir William Hooker describes it as forming a charming Evergreen Shrub, the flowers and leaves of which are fragrant. This peculiarity alone would be sufficient to ensure its general cultivation, independent of its merits as an ornamental shrub of easy culture. Small established plants 21s. each. No discount unless three are ordered.

LAPAGERIA ROSEA; young plants in a growing state, 31s. 6d. each.

AZALEA INDICA (Beauté de l'Europe).—A new variegated variety of great merit—received a First Class Certificate at the National Floricultural Society, also at the Exhibition of the Society of Horticulture, of the Seine, held at Paris in March, 1853. It is one of the most abundant flowering Azaleas in cultivation. Price 7s. 6d.

BORONIA DRUMMONDI.—In the style of B. pinnata; colour, beautiful rosy crimson. Unlike other species of this genera, that now offered is of extremely easy culture, elegant habit, and will undoubtedly prove the finest greenhouse plant suitable for exhibition purposes that has been introduced to this country since the Subscribers offered for the first time Pimelea spectabilis. Price 7s. 6d. each. From the last three Plants usual discount will be allowed to the trade.

HUGH LOW & CO., Clapton Nursery, near London.

FIRST-CLASS NEW VERBENAS, FUCHSIAS, GERANIUMS, ROSES, PANSIES, &c.

CHARLES H. GARDINER offers the undernamed, in strong plants, at the following prices, hamper and packing included.

VERBENA JESSIE, large, white, with purple centre, extra large truss, fine form, good for bedding or exhibition; strong plants, 5s. each. Choice and new kinds of 1853, 9s. per dozen.

FUCHSIAS.—Selections from the following choice and new kinds, strong plants, 12s. per dozen:—Glory, Incomparable, King Charming, Model, Dr. Lindley, England's Glory, Beauty of Clapton, Premier, Commodore, Nil desperandum, Duchess of Lancaster, Ariel, Mrs. Patterson, Perfection, Lady Franklin, Lady Cavendish.

BEDDING GERANIUMS.—Hendersoni, Boule de Neige, White Unique, Lilac ditto, Shrubland Pet, Bagshot Park, Mrs. Rickett's—fine scarlet with white eye, very dark horse-shoe leaf—strong plants, 9s. per dozen.

PANSIES.—Choice and best kinds, 9s. per dozen.

TEA ROSES.—Strong plants in pots, of the best kinds, 12s. per dozen.—Fant Nursery, Maidstone.

CHOICE GERANIUMS.

WILLIAM HUSSEY begs to offer the undernamed GERANIUMS, fine healthy Plants, for 20s., basket and mat included.

Chloe (Hoyle)	Mochanna (Hoyle)
Enchantress (Foster)	Narcissus (Foster)
Generalissimo (Hoyle)	Old Story (Hoyle)
Gulielma (Beck)	Pretty Polly (Hoyle)
Lavinia (Foster)	Prince of Orange (Hoyle)
Little Nell (Turner)	Pulchra (Foster)
Lord Mayor (Black)	Rachel (Foster)
Magnet (Hoyle)	Rosa (Beck)
May Queen (Hoyle)	Rubens (Foster)
Major Domo (Beck)	Silk Mercer (Beck)

N.B. Should the above Collection contain any sorts not required, others would be substituted.

Horticultural Gardens, Norwich.

SELECT FLOWER SEEDS.—
POST FREE.

Marigolds, finest double dark French.	Aster, Reine Marguerite (the best variety in cultivation).
Do. do. striped Unique French.	Saponaria calabrica, var multiflora.
Do. do. true dwarf French.	Eschscholtzia californica alba.
Do. do. new dark Pigmy.	Nemesia versicolor.
Do. do. new yellow Pigmy.	Cenia turbinata.
Do. do. double orange African.	Mignonette, new large variety.
Do. do. double lemon African.	

The above MARIGOLDS are well known in the locality, having obtained First Class Awards at several Provincial Exhibitions; all own saved from carefully selected double flowers, and can be recommended with confidence. In packets of about 1000 seeds each. The Marigolds separately, 3s.; the whole collection of 13 packets, 5s.

Collections of all the most approved Annuals (own growth) 60 packets, 10s.; 30 do. 5s.; 15 do. 2s. 6d., in descriptive and cultural labels. Catalogues may be had on application.

JOHN SLATER, The Nurseries, Malton, Yorkshire.

TIGRIDIA CANARIENSIS.

HURST AND M'MULLEN, 6, Leadenhall Street, can now supply Bulbs of this very beautiful variety, at 14s. per dozen.

Packets of very choice Calceolaria, Cineraria, Dahlia, Geranium, Fuchsia, and Gloxinia, saved from all the new varieties of last season, at 1s. and 2s. 6d. per packet.

The following at 1s. per packet:—

Abronia umbellata	Lisianthus Russellianus
Anagallis Phillipsi	Lobelia heterophylla rosea
" grandiflora rosea	" ramosa alba
Aquilegia glandulosa	Lophospermum scandens
" arctica	" Hendersoni
Arctotis breviscarpa	Lupinus Hartwegi rosea
Aster pæoniflora	" guatemalensis
" Bishop's Prize	" magnificus
Bœria chrysostoma	" venustus
Calandrinia umbellata	Maurandya Barclayana
Calliopsis coronata	" rosea
" nana bruneo	" semperflorens
Campanula barbata	Melampodium macranthum
Chænostoma fastigiatum	Mimulus, very choice mixed
Cockscomb, very fine dwarf crimson	Myosotis azorica
	" " grandiflora
Dianthus atropurpureus roseus	Nemesia bicolor
" imperialis	Nycterinia villosa
" very dwarf var., new	" selaginioides
Elichrysum bruneo pleno	Papaver pæoniflora
Erigeron Beyrechi	Penisetum villosum
Gaillardia Josephus	Phlox Drummondi coccinea
Globe, new golden yellow	" " alba
Grammanthes gentianoides	" " Leopoldina
" lutea	" " Mayi variegata
Ipomœa rubro cærulea	Polyanthus, extra fine selected
" Quamoclit	Primula sinensis, splendid [mixed
" " alba	" viscosa
Leptosiphon luteum	Salpiglossis, new scarlet

	s.	d.
Wall-leaved German Stocks, 12 vars.	3	0
Autumnal-flowering do., 12 vars.	3	0
Branching German Stocks, 12 vars.	3	0
Emperor Stock, large purple...	1	0
" " rose, new white, &c. &c.		
Brompton Stocks, new superb yellow.		
" " 12 vars. imported	3	0
Scabious, 10 German vars.	2	6
Cockscombs, 10 German vars.	2	6
Balsams, 10 Camellia-flowered vars.	4	0
Balsams, new yellow	1	0
Wallflower, mixed German	1	0
Zinnia elegans, imported, &c.		

ALEXANDER PONTEY, NURSERYMAN and SEEDSMAN, Plymouth, has an extensive and very fine Stock of the choicest varieties of the following BEDDING PLANTS, from 4s. to 5s. per dozen:—

Verbenas, best new sorts of 1853	Salvias, sorts
Petunias, sorts	Calceolarias, sorts
Phlox Drummondi	Nierembergias
Cupheas, sorts	Ageratums
Scarlet Geraniums, sorts	Lobelias, sorts
Heliotropiums, sorts	Lantanas, sorts
Anagallis, sorts	Groundsels, double purple
	Alonsoa

GERANIUMS, with Scarlet Flowers and beautifully Variegated Leaves, at 12s. per dozen, viz.:—Flower of the Day, Mountain of Light, and Bridal Bouquet.

IVY LEAVED GERANIUMS, with Scarlet Flowers, 12s. per dozen.

DAHLIAS, 21s. per dozen:—Alice, Attraction, Annie Neville, Annie Salter, Brilliant, Exquisite, Gloire de Paris, Harlequin, Lilac King, Lilliput, Lord Byron, Lord Lyndhurst, Motley, Mrs. James, Queen Victoria, Scarlet King, Sir John Franklin, Wonderful, Zebra.

The following at 9s. per dozen:—Bathonia, Beeswing, Beauty of Kent, Box, Caractacus, Captain Warner, Cardinal, Duke of Wellington, General Fauchier, General Negrier, John Edward, Louis de France, Magnificent (Edwards'), Magnificent (Keynes'), Madame Gaubert, Princess Louisa, Queen of England, Queen of Primroses. Older Varieties, 6s. per dozen.

Also, AGRICULTURAL AND GARDEN SEEDS of every description.

Price Lists of Plants and Seeds sent post free, on application.

PRIZE MANGOLD WURZEL AND SWEDE SEED.

SUTTON AND SONS have a fine stock of Seeds of the best kinds of Swedes, Mangold Wurzel, Carrot, &c., similar to those they supplied last season, the produce of which gained prizes at all the principal root shows throughout the kingdom.

At the Annual Root Show, held at Basingstoke, Hants, on December 21, 1853, *at which* 16 *prizes were awarded for root crops,* 13 *were gained with the produce of our seeds; and at the Reading Show, on the* 1st *of the same month, every prize was awarded to roots grown from our seeds.*

A Priced List, with Hints on Cultivation, may be had, post free, in return for one penny stamp.

SUTTON & SONS, Seed Growers, Reading, Berks.

RENDLE'S IMPROVED SWEDE TURNIP.—*The Stock of this excellent Swede has been grown for us this season by R. H. Watson, Esq., Dorsley, near Totnes. It is a most hardy and valuable variety. Price* 1s. 6d. *per lb. For further particulars and testimonials of its excellence see* "FARMING PRICE CURRENT," to be procured from

WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

NORTH DEVON EVERGREEN RYE-GRASS.—*This Grass, which is held in great celebrity in the West of England, should be introduced into every mixture —for* PERMANENT PASTURE.

It is a very hardy Grass, and remains evergreen throughout the most severe winter. It forms a fine bottom, and is much liked by cattle. The true sort can be had from

WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

Price from 5s. to 6s. per bushel, or 4d. per lb.

This Grass can be recommended with the greatest confidence.

SEEDS TO IRELAND.—*Plymouth is admirably situated for supplying our sister country with some English Seeds. The Subscribers can refer to some of the leading families in Ireland, who have for many years obtained the whole of their supplies of Garden and Farm Seeds. Seeds delivered free to many of the Irish ports. See Price Current.*

WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

PAGE AND CO.'S

BLIGHT COMPOSITION should be in the hands of all Plant and Fruit Cultivators. 4s. per gallon, sufficient to make four. For testimonials see back leaf *Gardeners' Chronicle*, March 11, 1854.

GARDEN AND AGRICULTURAL SEEDS, first quality, and lowest market price.

Oxford Street (adjoining Radley's Hotel, 20 yards from the Railway and Docks), Southampton.

The Gardeners' Chronicle.

SATURDAY, APRIL 15, 1854.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY,	April 18	Horticultural	3 P.M.
		Linnean	8 P.M.
SATURDAY,	— 22	Royal Botanic........................	3½ P.M.

THE wants of PAPER MAKERS can only be satisfied by the production of more raw material. That material can be as well provided in our own fields as by foreign importation, and we believe as abundantly. Whether, however, we can grow paper materials as cheaply as they may be imported is a question to be answered by no other means than by experiment. Country gentlemen, living near paper mills, are those by whom the experiment should be tried. It cannot cost much; their gardeners are the men to conduct it; and now is the time to set about it.

The problem to solve is, whether it is more profitable to grow an acre of corn, of root crop, or of paper materials?

Paper materials are vegetable fibre. All plants consist largely of this substance, but in some it is more abundant than in others, or more separable, or finer, or of a better colour. Those plants will be best suited for the purpose in question in which it is most abundant, most separable, finest, and whitest.

We are surrounded by suitable plants, but they are not cultivated. Nettles and Mallows in particular are well known to possess the requisite qualities; so does the Spanish Broom, and probably the Common Broom; any of these thrive in poor soil, where better crops cannot be produced.

The common Stinging Nettle is an example of what we mean. Its roots can be procured everywhere; and as it is perennial it will not only keep itself sufficiently clean, but may be cut two or three times a year. The principal cost consists in collecting its roots for planting, rent, &c., of land, and the labour of cutting and preparing. Its fibre is very fine and good; scarcely inferior to hemp, and has been used in Germany in the manufacture of first class paper. Fishing lines and cordage of good quality are also said to have been prepared from it. Wherever anything can grow, there the Nettle is at home; no bad seasons hurt it; no neglect injures it; and it is subject to neither blight nor mildew, nor the ravages of insects.

A larger produce may, no doubt, be had from the Hemp-leaved Nettle (*Urtica cannabina*). This plant does not sting; its stems grow 5—6 feet high, and it is perennial, like the last. But it can only be obtained sparingly in botanic gardens, and therefore is not immediately available.

Mallows are to be had everywhere; and from them a white fibre is procurable in abundance. We do not find that it has been employed in paper-

making, but its fibre is known to have been used for cordage. The best species, we imagine, for a trial would be one of the annual Mallows; either the curled-leaved (*Malva crispa*) or the Zebra Mallow (*M. mauritiana*), seed of both which is easily procurable of the great seed merchants. These are well known to gardeners, because of their being cultivated as ornamental plants; they grow 6—8 feet high, and come quickly to hand. They might be drilled in rows 18 inches apart, and 6 inches asunder in the rows.

As to the common Broom, it is worth ascertaining whether it may not be cut profitably for its fibre. Its near relative, the Spanish Broom (*Spartium junceum*), is reported to yield a very good substance without much trouble. So much of the former is to be found among plantations in poor sandy districts, that there can be no difficulty in procuring enough for a fair trial. It will only be necessary to cut it close in now, so as to force the bushes to produce plenty of young wood, which should, we imagine, be collected for the fibre, as soon as the wood shows the first signs of beginning to ripen.

It is by no means improbable, indeed, that many other neglected plants may be turned to similar account, by enlightened experimentalists; for there is no doubt that we are surrounded by wealth which we cannot recognise, and which never will be appreciated till "common things" are understood as well as useless rarities. In fact, there is now before us a sample of fibrous matter, produced in great abundance near Belmullet in Ireland, for which we have to thank Mr. Billington. He does not say what the plant is from which it was obtained, but he states that it will grow very luxuriantly in cold bleak situations where other crops refuse to thrive, and it seems to us to be very much more easily convertible into paper than white wood of any kind.

If, as we imagine, the object of the cultivator is to obtain the greatest amount of money out of land at the smallest possible expense, we venture to submit the above considerations to our country friends. For ourselves we would as soon grow an acre of Thistles as an acre of Potatoes, if we could obtain as much profit; and this, although, like all other speculations, it belongs at present to what Mr. Justice Maule happily calls the "regions of indistinctness," seems to us a subject extremely well worth careful investigation.

The report of progress in the grounds at Sydenham, which appeared lately in our columns, will have shown how rapidly the gigantic works in the Park and Garden there are approaching completion. To the decoration of the interior we have not hitherto alluded, nor are we prepared even now to say more than that we entertain no doubt that the effect produced within the building will be worthy in all respects of the exterior.

It is, however, to be remembered that while effect is easily given to the open ground by shifting the position of large trees already growing there, it is quite different with the landscape gardening of the interior. For this purpose an abundance of tender plants of considerable growth is absolutely necessary, and they cannot be procured among the nurserymen. The purchase of Loddiges' noble collection, by the directors of the Crystal Palace, almost exhausted the plant market; a few straggling specimens may have been procurable elsewhere, but their presence could scarcely be discovered in so vast a building.

That such plants exist, however, plentifully in private collections, we have no doubt. Almost every body who possesses large conservatories must have specimens either already too large to be confined within them or rapidly becoming so. The usual fate of such plants is destruction, greatly to the regret of those under whose eyes they have been reared for so many years. In the nave of the Crystal Palace they would find already welcome, such good treatment as would ensure their future health, and free space in which to develop their natural magnificence. We therefore venture to suggest that all who possess fine specimens of plants too large to be longer retained in their own conservatories, should hasten to confide them to Sir Joseph Paxton, at Sydenham. Under any circumstances this would be better than destroying them; we have reason to know that they would be gratefully received, and every donor would have the satisfaction of feeling that he too has contributed something to a palace which promises to become the eighth wonder of the world.

Few matters of greater mortification can happen to a gardener, anxious to have everything in its proper season, than the loss of his crop of early Strawberries; and yet it is very possible that the same misfortune, which has happened in part to one of our ablest and most scientific cultivators, may fall to the share even of those who seldom or never fail, where it is possible to use preventives. A crop of Cuthill's Black Prince has been entirely destroyed by a little white mildew, attacking first the leaves, but soon infesting, with increased vigour, the flowers and footstalks, and ultimately inducing very much the same appearances as those which are unhappily too well-known in the case of the shoots and foliage of Vines infested with the Grape mildew. At present, the evil has been confined to one variety of Strawberry—the plants of Keens' Seedling, on the same shelf, being perfectly free. Those, however, may soon be equal sufferers, and the malady may appear, or possibly has already appeared, in other quarters. The main question is, can anything be done by way of prevention? Now, happily, there is no doubt about the nature of the malady. It is induced by a little *Oidium*, resembling closely that of the Vine, but differing in having a constriction at either end of the elliptic spores, so as to give them the same tunlike outline which is observable in the mildew which infests the leaves of different species of Verbascum, *Oidium Balsamii*, Montagne. Their length varies from .0012″ to .0013″.

Since, then, the parasite is so closely allied to that of the Vine, and to the Peach mildew, it is highly probable that the methods, which, if applied sufficiently early, are uniformly successful with the Vine and Peach, will be so in the present case. We should recommend, then, on the very first appearance of any white mealy parasite on the leaves, to syringe the plants thoroughly with a properly diluted solution of lime and sulphur, made according to the *procédé* Grison, which was detailed in this Journal, p. 419, 1852, and we have little doubt that the little enemy will immediately disappear. Should the Vines or Peaches in the house come in for a share of the sprinkling, there will be no fear of their suffering from it, but should any lurking seeds of mildew exist at this early period, they would at once be destroyed before they had done any serious injury. *M. J. B.*

We learn that a work on Orchidaceous plants is about to appear at Brussels, under the name of Pescatorea. It is to be published monthly, in folio parts, each containing four coloured plates, and as many leaves of letter-press. The gentleman whose name it bears, and by whose munificent support the cost of the work is to be partly provided for, possesses the finest collection of Orchids known upon the continent, at his Chateau de la Celle, St. Cloud, near Paris; and he is most richly entitled to the compliment paid him in the title of the work. The editors are to be, in the first place, Mr. Linden, the well-known traveller, now director of the Royal Zoological and Horticultural Garden of Brussels; 2, Mr. Lüddeman, the skilful superintendent of M. Pescatore's hothouses; 3, Prof. Planchon, of Montpellier; and 4, Prof. Reichenbach the younger, to whom, in intimate knowledge of the order no continental botanist even approaches. These favourite plants are now so largely imported by continental growers, M. Pescatore is so extremely rich in fine plants, and Mr. Linden has such abundant materials, both living and preserved in the Herbarium, that we anticipate the appearance of a work of sterling value. The first number is announced for the 1st of June in Brussels.

VEGETABLE PATHOLOGY.—No. XV.

59. In the process of vegetation, of the three component parts of the embryo, viz., root, cotyledon, and primary bud or plumule, the first in order of development is the root. The moisture imbibed by the spongelet induces the growth of the cotyledon*, whether one or more in point of number, and the primary bud, whether more or less distinctly visible at first, is then gradually developed. Its evolution gives rise to the stem, the surface of which is studded with as many buds, whether latent or apparent, as there are leaves. Below the first pair of cotyledons there is occasionally a portion called the neck, which it is difficult to assign correctly either to the root or stem. In general, this neutral portion is reduced to a mere imaginary point. In some cases, as in Beet-root, it is of some practical importance.

60. The primary bud at first consists merely of parenchym, as does the rest of the perfect embryo, in the majority of cases. As the root increases, the tissue of which it is composed assumes distinct forms, and some of the cells soon become vascular. In the same manner as the primary bud expands, and is elongated, the cells in Exogens, between the central and external parts of the tissue, become modified, and gradually give rise to two distinct strata, in immediate contact with each other, one of which increases centripetally, forming the inner bark, and the other centrifugally, forming the young wood. The direction of these new cells is vertical, and the whole is connected by interposed wedges consisting of horizontal cells, and proceeding from the central tissue, which is known by the name of pith or medulla. In Endogens, the new vertical tissue is not combined into a distinct cylinder, but scattered about irregularly, and the mode of growth is in consequence modified. Various anomalies also occur in Exogens, which do not, however, demand notice in the present treatise.

61. The observations in the foregoing paragraph apply to perennial stems; but though the distinction is less marked in annual stems, the same law holds good.

62. The stem, then, consists of the external parenchymatous layers of the bark, of the pith, equally composed of parenchymatous cells, the inner bark and wood, and of the connecting horizontal cells, known by the name of medullary rays. The wood is interrupted here and there by bundles of bast cells, and various forms of spiral vessels and ducts.

63. The outer bark and pith are often merely temporary tissues, of great importance in an early stage of growth, but soon exhausted, though after a different lapse of time in different plants, from the constant demand made upon the substances suspended in their protoplasm by the advancing bud or plumule. The former in such case is gradually thrown off; the latter being inclosed in the centre of the cylinder remains for many years, sometimes during the whole existence of the tree, being variously modified by the increase of the tree in length, or the compression of the surrounding solidified wood cells. The nascent wood consisting of ligneous fibre, bast cells and vascular tissue with the intervening plates or wedges of the medullary rays and the maturation of the second year's buds, requires an immense quantity of nutritive matter in addition to what is brought to them by the descending current of elaborated sap, and this is mainly supplied by the pith, which is often of considerable dimensions, and which expands in every direction, while the growth of the vertical tissue and medullary rays takes place only at their outer limit. It is in consequence of this necessity that where the young pith is destroyed by insects, as is not unfrequently the case, the shoots inevitably die. It is probable that the old pith is for a time not without its uses, as the cells contain a great quantity of air. In some cases the old pith becomes diseased, and communicates its taint to the surrounding tissues when young, and thus rapidly impairs their vitality.

64. Pith is by no means confined to the stem, but occupies other parts occasionally, as the petioles of Catalpa syringæfolia. It is, however, very doubtful whether it ever occurs in true roots. The character of its general formation and component cells varies much in different plants. They consist sometimes of simple parenchym, sometimes of dotted cells, and occasionally there are wide intercellular passages, as in the stellate tissue of rushes. *M. J. B.*

* When the cotyledons are accidentally destroyed, as by snails or insects, the first pair of leaves sometimes assumes their form and texture, and the primary bud or plumule is then developed, as in ordinary cases. We have observed this more especially in *Centaurea atropurpurea*, where the seedling plant, with its new pair of cotyledons, could not be distinguished from any other seedling.

LILY OF THE VALLEY.

Although this is only a common English plant, there is, perhaps, no greater favourite than it is, more especially with the fair sex, nor any more deservedly so; its beautiful foliage, lovely white smart looking flowers, and delicious perfume, all conspiring to make it an object worthy of general admiration.

For many years I have made a practice of growing a few pots of it, for the purpose of winter and spring decoration of the drawing-room, as well as the conservatory. They are generally grown in 6-inch pots, and the average number of flower spikes has been from two to two and a half dozen, though they sometimes amount to above three dozen to each pot: and most people who see them through the months of February, March, and April, are in raptures with their loveliness, particularly those from the neighbourhood of towns. I have heard but few people say that they cannot grow them, but almost everybody complains that they cannot get them to bloom well; and from what I have seen of their culture, I might say that the fault lies in taking too much trouble with them; indeed, their cultivation is so simple, that I have often thought they would be almost the best thing a cottager or dweller in a town could have for a window plant in spring and early summer.

The only thing required is to provide a few 5 or 6-inch pots, and a few eyes, about the beginning of March; just as the eyes begin to show above ground a little rather light sandy loam should be placed in the pots, upon about half an inch of drainage; seven or eight eyes should then be placed equidistant about the pot, on the surface of the soil, allowing the eyes to be about level with the rim of the pot. A handful or two of the finest of the soil should then be placed on the top of the plants, and a good shake of the pot, by striking the bottom of it against the ground a few times, completes the work; plunge the pots as closely together as is convenient, in tan or ashes, or in the garden soil, in a situation where they can have the full sun for a few weeks. About the middle of April or beginning of May remove them to a situation where they may be partially shaded; the north side of a low deciduous hedge is a capital place, but they must be kept plunged. They will require no more care than a little water now and then till September, when a coat of about 6 or 7 in. of rotten manure may be thrown over them. The rains will carry the fertilising matter from the manure gradually through the soil amongst the roots; and if you force them they may be taken up about six or seven weeks before they are wanted in bloom and started at once in a very mild heat—say 55° by day and from 45°

to 50° by night. Another portion may be placed in a Vinery not at work, or in a cold pit, and introduced to the forcing house at intervals, and those left in the cold house will be in bloom all through the month of April. If they are wanted later, it is effected by placing them behind a wall with a north aspect; by this means they might be had in bloom from January till the middle of June. When done flowering, if very early, they must be put somewhere that will afford them full sun and protection from frost, but any that bloom in April will do very well plunged in a sunny sheltered place out of doors, and removed to the same quarters for summer and winter as before recommended.

If grown by the cottager, or where there is no convenience for forcing them, they may be taken at once out of the plunging material, and placed in the warmest corner of a south window, where the sun can play full on the outside of the pit, and when they have shot up about an inch or two, a pan may be placed under them with a little water in it, which should be quite used up before any more is added. When in bloom, they require plenty of water.

Now, all this is very simple, and some may say scarcely worth a place in your columns; and, indeed, I believe that the only secret in their management is to keep the same plants in the same pots and never shake them out, never cut them down (that is, never make a clean "shave" of all the top, as I have sometimes seen done to the destruction of Strawberries, Asparagus, Lilies, &c.), and always take care to well mould them before winter, covering up dead tops and all. If any strings remain of the last year's foliage, they can easily be pulled off in spring. The specimen you lately received from me had been potted at least ten years, and although there had been perhaps a dozen flowers with two leaves attached cut from it every year for the last seven or eight years, it has never been cut over for the sake of tidiness, and never been shaken out or repotted. I generally find that they bloom strongest when they have been potted three or four years; and so far from being injured by forcing, they absolutely grew, I should say at least twice as large as any I ever saw grown in the open air; the two spikes of cut bloom that accompanied the plant I sent for your inspection were grown on the top of a flue in an intermediate house, and cut from a plant in a 6-inch pot, containing 29 spikes of bloom. Some plants I shifted into larger pots last year have bloomed very finely, but they are not so ornamental as when they perfectly fill the pot to the rim.

Their value as a shrubbery plant need not be dilated on here, as everybody has seen them growing perfectly wild; but some are of opinion that a portion of manure strewed over them every autumn would much enhance their beauty at the proper season. *H. Cox.* [Mr. Cox's specimen was a beauty.]

INGA PULCHERRIMA.

I NEED scarcely say that the brilliant scarlet tassel-like flowers of this plant are extremely ornamental; under ordinary treatment theymay be had in perfection from January to February, but with a sufficient number of plants there would be no difficulty in having them from December till May. This may be effected by growing a portion of the plants early in the season, so as to be able to afford them a period of rest, after which they may be introduced into a forcing pit, where they will soon come finely in bloom; they may then be removed to a warm part of the conservatory or show-house. Cuttings selected of short jointed bits of the young wood, when about half ripe, planted in sandy peaty soil, afforded a gentle bottom heat, and the protection of a bell glass, root freely. As soon as they have got sufficiently strong to bear handling, they should be potted singly in small pots, placing them in a warm moist situation, near the glass, and shading them from bright sunshine till they have become well established. When their roots shall have reached the sides of the pots, shift into others two sizes larger, and attend to keeping them close and moist, placing them near the glass; and also syringing them freely over head, during bright weather. Some of the species are very subject to the attacks of red spider, which soon disfigures their foliage, if not well watched and syringed. Frequent stopping will be necessary to secure compact, well furnished specimens; the shoots should be allowed to grow some length, and then be bent down and tied, so as to check the flow of the sap to the points, in order to get the lower buds prominent before stopping; and unless this is attended to, stopping will be of little service, as only the top buds will start. The wood is, however, very pliable, and may be bent in any direction without danger, and by bringing the shoots down to a level with their base the buds along their whole length will be induced to start into growth, and well furnished specimens will be the result. The plants should not be kept growing too late in the season, but should be removed to their winter quarters towards the middle of October, and be freely exposed to light and air, to ripen the wood. During winter they should be very sparingly supplied with water at the root, and a temperature of 45° or 50° will be sufficiently high during their season of rest; for if a high temperature is maintained while the plants are kept dry at the root, they will be devoured by red spider.

As early the following spring as it may be convenient to place the plants in a close moist growing atmosphere, give them a liberal shift, and as soon as the roots strike into the fresh soil prune well in, and attend to bending down the shoots, so as to induce the buds to break freely. If nice bushy specimens of the desired size are obtained, it will be unnecessary to stop them again this season, and when the first growth is completed the plants may be allowed their season of rest, placing them out doors under the shelter of a north wall during the autumn months, and removing them to an intermediate house or pit when the weather becomes cold or wet. After allowing them about two months of rest, and getting the wood well ripened, they may be brought into bloom at any season by merely placing them in a sufficiently warm moist temperature to induce growth, and keeping them properly supplied with water at the root. I ought perhaps, however, to state that the flowers are produced on the young wood of the previous season's growth, consequently pruning must not be thought of until after flowering. But it must be attended to as soon as the beauty of the flowers is over, otherwise the plants will soon become extremely unsightly. By attending to pruning, and affording the plants plenty of pot room, specimens of almost any size may be obtained in the course of a few years, and by supplying them liberally with manure water, when shifting cannot be conveniently resorted to, they may be retained in vigorous health for many years; or when it becomes inconvenient to increase the size of the pot they are in, they may be disrooted sufficiently to permit their being repotted in the same sized pots, thus affording fresh compost, with a view to secure healthy vigorous growth.

For soil, take one-third rather strong turfy loam, one-third rich fibry peat, and one-third well decayed leaf-soil, well intermixed with plenty of clean sharp sand, to secure an open medium for the roots, and for the percolation of water after the decay of the fibre has taken place. *Alpha.*

Home Correspondence.

Peach Protector.—From the very changeable, and often severely cold state of our climate, at this season of the year, and the consequent failure of our crops of Peaches and other wall fruits, it becomes a serious question how most effectually to protect, not only the early blossom of these valuable trees, but our wall fruits generally; and the great desideratum is, not only to do this effectually, but with as little trouble and as little expense as possible. As I find, from experience, that I have attained this very desirable object, and that, too, beyond all chance of failure, I hasten to make it known through your columns, in which I find such information often asked for, and I hope those more immediately interested may be in time to secure their crops this season, and thus prevent a repetition of the loss and disappointments so generally felt last year. By this very simple, yet most effective method, I attain the following valuable desiderata: 1st. Perfect security and protection from the most severe frosts during the night; 2d. Complete exposure of every part of the tree to the sun's rays during the day; 3d. Avoidance of all obstruction by shadow or shade, either on the wall or on the border opposite, so that neither room nor ground is lost by using the protector; 4th. Such facility of shutting up at night and opening in the morning, that a dozen trees may thus be protected, and again exposed, in less than five minutes; 5th. No risk or chance of either the blossom or fruit being rubbed off, or in any way injured; and last, not least, a lock may be so placed on each as to effectively prevent the fruit being stolen. Each protector, for a tree of the usual size, may be made at an average price of 6*s.*, and, as it will last for a dozen years, the general cost will thus be about 6*d.* a season for each tree; while the construction is so simple that it may be made by any handy gardener or country mechanic. While the most plainly made have a neat appearance, they may yet be so constructed as to prove decidedly ornamental to the garden, while in use; and they can be removed with ease and facility when the cold season is over. I will now briefly describe its very simple mechanism. Procure half-inch or three-quarter boards, 4 inches wide, and with these make a frame the length and height of the tree. On a line with its front edge nail upright bars, 3 feet apart, of the same sized boards, but with their broad side out. Tack upon these divisions yard-wide scrim canvass (which costs 4½*d.* per yard), or any other, more ornamental and expensive, according to taste. The frame or screen being now complete, let your blacksmith make a pair of common hinges, called hooks and rides. Nail the hollow portion to the bottom of the frame, in front, and near each end; and drive the hooks into slight blocks of wood, a foot long; sink these blocks on a level with the ground, and at such a distance as will allow the edges of the frame to be drawn up close to the wall, by means of a pulley, fixed at the top of the wall, and near the middle of the tree, or opposite the centre upright bar. With this pulley and rope the screen can be lowered to an angle of 45°, or to any other distance required, so as to admit the full sun to the tree, and at the same time cast no shadow. On being again drawn up at night, the frame will completely inclose the tree, and effectually protect the blossom, &c., from the most severe frost; while its canvass front will be 4 inches from the blossom or fruit, thus preventing all chance or risk of rubbing off, or other injury. I trust that the above description will be found sufficiently plain to enable those interested to make and adopt my principles; and that they may be equally well satisfied as myself with the result. *Æ., Surrey.*

Mr. Billington and the Chopwell Woods.—Mr. Billington having favoured me with a copy of his letter to Mr. Milne, with your permission I will make a few observations upon it in your columns. Into Mr. Billington's *casus belli* with Mr. Milne I will not enter, further than to observe, that Mr. Billington's letter supports the concurrent testimony of all parties here, that he thoroughly understood the management of woodlands in the valley of the Derwent; and I have little doubt, if he had been permitted to remain, he would have returned a very handsome yearly sum into the Exchequer, which I am much afraid is more than any of his enlightened successors will do. I am quite satisfied that Mr. Billington is right in his opinion, that a second profitable crop of Larch will not thrive upon this ground at such a brief interval of time; and as the former crop under its late gallant deputy surveyor gained a signal victory over the young Oaks, so the day of retribution for the Larch is at hand, and the Oak shoots will amply avenge the cause of their murdered fathers. Indeed, I much doubt whether any of the Larch planted this very dry season will live to do battle at all, so completely have they taken the "sap" out of the land with their drains. If, in 1839, when the hurricane reversed the Chopwell order of things, converting the smothering into the starving system, the then gallant deputy surveyor had selected all the good young Oaks, and filled up the places of the bad ones with Larch, the Oaks would have recovered from the shock, and the Larch might now have been taken out. Instead of that the ground was left to right itself, and the young Oaks being deprived of the yearly increasing warmth the Larch would have afforded them, stood still, and presented the very uncomfortable looking crop of besom shanks that Mr. Clutton found when he visited them. Whether they were then past recovery is a point upon which I need not enter; for even if the property was ruined as a forest, there was abundance of all sorts of trees left, as, with the scattered masses of old Oak, made Chopwell a most marketable estate for country residences. Instead of so converting it, an order was issued for a clean sweep, and in lieu of the well broken sky line of a wooded horizon, we have now a dingy, dreary, drain-scored space, looking, for all the world, like a piece of roasting pork. This season the work of destruction is to come lower down the hill, and we shall soon have the farm labourer of this very dear district enhanced and deranged, by all hands rushing off to the Chopwell bark-wood—though really, at present prices, peeling an Oak is very like the penurious exploit of skinning a flea for the sake of its hide and tallow. Now that they have ruined our scenery, the only good use ever got from these imitation woods, the landowners, I think, may fairly complain of being saddled with the rates this property paid before the leases reverted to the Crown. *R. S. Surtees, Hamsterley Hall, April* 10.

Gravel.—Can any one give an account of the successful cultivation of plants in pure gravel? I have been informed that Roses, of some sorts, and Rhododendrons, will thrive under such treatment. I should like to know about that, and about the subject generally. *A. H.*

Steeping Seeds.—The germination of seeds is a thing which many are interested in, and any method to insure their pushing into growth more speedily than usual would doubtless be received by many with delight. I have found the following plan of steeping them to be of service in my own case. When about to sow seeds, such as Peas, Broad Beans, French Beans, &c., I collect some sheep-droppings beforehand, and put them into a vessel with water, enough to moisten them. Into this I put my seeds, but of course into something by means of which they may be conveniently withdrawn when required. Thus situated I let them remain till well soaked, when they will be in a fit state for sowing. I have found that for Beans about 36 hours are required, and for Peas about 24 hours. Steeping, however, does not apply to the above-mentioned seeds alone; it may be practised with advantage on many others, and doubtless many flower seeds might be safely treated in this way as well, and with success. This will, however, very much depend upon whether the plants intended to be raised are gross feeders or not; and also whether the soil contains much organic matter or not; for of course the more it contains the less time in proportion will the seed require to soak before being sown. This practice will be found (on poor soils especially) to be of very great service to gardeners in general; for it will not only hasten their crops, but will make them as strong and vigorous as need be; and those who have never tried it would be quite surprised to see the difference it makes, an instance of which I will now give. In 1852 I made a trial with French Beans,—a small quantity was placed in the soil, and at the same time a small quantity in sheep-droppings, as described, where they remained about 44 hours; they were then taken up and put in soil near the former, and the result was surprising; but at the time the former were about 8 inches high, the latter were, to the best of my recollection, nearly double that height, and their foliage testified as to the state of health the plants were in. I have since practised steeping with good results, and others who may be induced to give it a trial will no doubt be similarly rewarded. *Joseph Divers, Maidstone.* [Would they not have grown just as well if you had steeped them in clear rain water?]

Coniferous Trees—the Deodar, Douglas Fir, Huon Pine, &c.—I should be much obliged to your correspondent "J. R., Oxfordshire," if he would tell me on what kind of soil it is that he finds the Deodar hardier than the Douglas Fir. I have seen some places in York-

shire and Lincolnshire which make me think that the Douglas Fir does not like a limestone soil, and will hardly grow at all on some of the beds of oolite; but that, on these same soils, the Deodar is particularly vigorous. At Boynton, on a loamy sand above chalk, the contrary is the case, the Deodar is not healthy, and suffers from frost, whilst the Douglas Fir is vigorous and quite hardy. Your correspondent "J. R." has an interesting letter in the same number (that for April 1) respecting the age, size, and quality of foreign Larch. I have just cut down a Larch here 76 years old, 16 inches in diameter at 10 feet from the ground, with only an inch and a quarter of sap wood, perfectly sound throughout, and very fine red wood. This grew on what is called, by writers on the geology of Yorkshire, the calcareous grit, beds of sandy limestone varying greatly in quality. All the Larch I have seen here appear to be of similar good quality, whilst those at Boynton, of a similar age, are of inferior quality, and liable to be rotten at the heart. I have no doubt they have both been grown from the same seed. I think there are at Boynton American Larch (Red Larch) two feet in diameter, and more. The Black Larch (Tamarach or Hackmatack) of the same age are not half the size. Small plants of the Huon Pine (Dacrydium Franklini) have stood the winter uninjured with me. At Mr. Backhouse's garden at York (which is in a cold exposed situation) a large plant has stood the winter, with only the extreme tips of the shoots injured, as described in another instance by a correspondent of yours a few weeks ago. *C. W. Strickland, Hildenley, near Malton.*

Wood Paper.—For several years I have entertained the idea that paper might be made from wood. I was first led to think of it while attentively watching the movements of a wasp, as it gathered some fine fibre from a Larch rail, which had been exposed to the action of the elements until its outer surface had become covered with fine flax-like hairs or fibres, which I suppose had been caused by the bleaching process it had undergone. I scraped off a portion of the surface of the rail, which was easily formed into a pulp. I then thought that good paper might be made from wood; but how to convert large pieces of it into paper I could not tell, unless by the process of scraping, which I believed would be too expensive to allow wood to be used profitably for paper-making. "The Mulhausen experiment" appears to have been made with non-resinous wood. I think that resinous woods, such as young Larch, Pines, &c., might prove as good, if not better, than non-resinous material, as it is possible to convert it to a state of great whiteness by extracting the resinous matter, then washing, bleaching, &c. Some time ago I read in your columns an account of a process by which Fir leaves were cleaned of their resinous matter, and rendered useful for domestic purposes, for bedding, &c.; and I have been thinking whether it would not be possible to extract the resinous matter from the wood of Pine trees by means of a similar process; if that could be done, I think the wood could be easily made available for paper-making. Could sawdust not be made available for paper-making? The dust of Pine, or resinous wood, by extracting the resinous matter from it, and then grinding and macerating; and the dust of non-resinous woods, simply by grinding and macerating into pulp? I do not suppose that the length of fibre is an object, provided each fibre is reduced to a state of peculiar fineness; and an extremely fine mass of fibre might, I think, be easily produced from sawdust. Suppose a tearing machine was made by placing a number of circular saws close together upon one journal; or if not close together, about 1-12th or 1-16th part of an inch apart. If saws were placed to form a breadth of three or four inches, and the wood cut into boards of from one half to one quarter of an inch in thickness before being applied to the machine, a great amount of force would not be lost in friction, and I think the machine might be worked with the same power as an ordinary saw-mill. *A. Patterson, Maristow.*

Foreign Correspondence.

MEMORANDA FROM THE ANTIPODES.—*Colouring of Grapes.*—Through the irregularity of our postal communications with Europe, consequent upon the repeated failures of the Australian R. M. S. N. Company, a file of the *Gardeners' Chronicle* for part of December and January, 1852 and 53, has only just been received. I have interested myself in a discussion which I find in them relative to the occasional imperfect colouring of black Grapes. In a concluding paragraph of a Leading Article upon the subject, in the *Chronicle* of the 1st of January, the writer expresses a desire for information, whether this accident be known in warmer climates, such as the Vine districts of France and Spain. Perhaps, although late to mingle in the controversy, a few antipodean memoranda may not come amiss towards a right appreciation of the question; and as I have paid considerable attention, during more than 30 years, to Vine culture in this climate (which is extremely favourable to the perfect ripening of the Grape), having in that period planted, and up to the present time managed, more than 25 acres of Vines, I will offer no further apology for sending you the following observations. The Black Hamburgh, though not extensively cultivated for wine, owing to its deficiency in sugar, is a favourite eating Grape, and next to the Chasselas preferred by us for the table. We grow it in considerable quantity in a garden, trained to vertical trellises about 5 feet high, with provision, by means of temporary supports of the Indian Reed, for the extension laterally and upwards, at various angles of inclination, of the young shoots as they grow; the object being to afford the greatest quantity of light and air to as much foliage as the space devoted to each Vine will admit of, and to shelter the fruit from the direct action of the sun's rays. I probably need not explain that there is no deficiency of atmospheric heat, the Grapes being perfectly ripe throughout the month of March, or two months at least before the first approach of winter. It is not the practice to stop the young shoots until they have reached the full length of the supports, or to thin out either these or the laterals, further than to admit light and air sufficient to maintain a healthy colour in the under leaves down to the base of the shoots. Gourmands or water-shoots, and those which sometimes spring in clusters from the old wood, are of course rubbed off as they appear. Although it is the rule to have the Black Hamburgh, and all the black Grapes, perfectly coloured for some time previously to their being quite ripe, we occasionally see instances to the contrary; but never under garden culture, excepting in such cases of deficient nourishment as these: 1st, when the Vine is over-cropped through injudicious pruning and general treatment, or starved through the occurrence of long-continued dry weather, at the critical period between the stoning of the fruit and its first swelling off to maturity; 2d, when, upon a particular branch, injury has been caused to the bark by accidental fracture, the gnawing of some insect, such as the grasshopper, or by the sun during an intolerably hot day; or 3d, when either of the last two causes have operated upon the stalk of individual bunches. In the garden, so entirely do we consider the imperfect colour of the fruit a symptom that the Vine is over-cropped, that it is immediately relieved of the greater portion of the bunches, and at the winter's pruning cut back very short, besides having a good dressing of suitable manure applied at root. I cannot recollect in garden culture an instance of badly-coloured Grapes upon Vines in vigorous health (that is, properly furnished with healthy well-developed leaves), however screened by that foliage the fruit might have been. Not to make myself imperfectly understood, I mean, so long as air and light enough be admitted to keep the leaves down to the bases of the shoots in healthy condition. In a vineyard, where it is the practice to encourage the production of the fruit much nearer to the ground, I have witnessed the imperfect colouring of the Grapes from a different cause. The variety affected was the Black Hermitage (the "Scyras" or "Sirrah" of the celebrated vineyard of that name on the Rhone), which has a very rambling, rampant habit for a wine Grape. The Vines in question were growing in a low, rich spot, where the soil is both deep and porous; and there were probably three times as many plants to a given area as the nature of the soil and the particular variety rendered advisable. Owing to the sudden abstraction of labour attending our gold crisis, the Vines, which had been pruned to the height of about 18 inches from the ground, and attached to stakes 4 or 5 feet high, had been allowed to continue their summer's growth unchecked and untouched. They grew so much that, from the tops of the stakes, their shoots were completely interlaced with those of the adjoining Vines, so as to render the rows quite undistinguishable through the canopy of luxuriant foliage. Long before the vintage the under leaves had become sickly and yellow, from the exclusion of light and air. At the usual period of maturity the crop, which was sufficiently abundant, remained in very imperfect condition. The Grapes were sweet to the taste, but deficient in sugar, and so badly coloured that only the more exposed portions of the bunches and berries had a purple tinge; the less exposed, though swelled off to the usual size, and with other indications of maturity, retained a greenish colour, more or less splashed with red. After being allowed to hang upon the Vines much beyond the usual time without sensible improvement, the crop was gathered to save it from rotting. I may observe that the season had not been unfavourable, and that the same variety hard by, but much less closely planted, had ripened its fruit perfectly, with the ordinary fine colour and bloom. Where the Grapes were badly coloured, the accumulation of succulent growth, with largely developed leaves, had maintained the surface of the ground and the surrounding atmosphere in a damp, unwholesome condition. It is of course impracticable to distinguish the mischief produced by the exclusion of light simply, from that caused by a stagnated, damp atmosphere; because the two conditions are scarcely to be separated in out-of-door cultivation. I do not consider the state of the soil to have been unfavourable; it never remains wet after any quantity of rain, being so thoroughly drained in consequence of its great depth and porous character. Having stated the facts, I leave the conclusions to be drawn by authorities more competent than I am.

Here are a few more facts indirectly connected with the question. An extremely hot day occurring about mid-summer, the heat reflected from the ground, or a current of hot air, affected about 2 acres of vineyard in a remarkable manner. The under leaves, which were perfectly screened from the direct action of the sun, appeared to have their circulation suddenly arrested. They were not scorched, but, as well as the under growth of young wood, soon began to assume a premature autumnal appearance, and the former to fall off. By the end of four or five weeks, or before the Grapes were more than half ripe, the bunches were left hanging quite bare and exposed to view, but still well sheltered from the direct action of a nearly vertical sun, by the abundant foliage, which continued in perfect health upon the young shoots, upon probably three-fourths of their length, leaving enough apparently for the healthy circulation of the plants. The Grapes seemed to ripen more slowly than usual, but became perfectly well coloured, and fine to the eye. At the vintage, however, their must, tested with the saccharometer, proved to be less dense than usual by 15° to 18°; or, to express it differently, there was a deficiency of about half a pound of sugar to the gallon of must. From another portion of vineyard, occupied by the same varieties, which did not at all suffer from the excessive heat, the crop was gathered at the same time, the must proving to be rather richer in sugar than usual. There was nothing in the appearance of the Grapes upon the injured Vines to lead one to suspect such a difference. The season had been very favourable, and the period of gathering had been postponed to a later day than usual. I may mention, likewise, that even the injured Vines continued to make fresh growth for several weeks after the accident to their foliage, but not to any considerable extent, and that there was nothing unusual in their state, except that their lower leaves and the corresponding wood appeared to have ripened six or seven weeks earlier than usual. The foregoing circumstances would seem to indicate that the leaves which are situated in immediate relation to the bunches of fruit, exercise an important influence upon their richness in sugar, but that, other circumstances being favourable, the latter will become perfectly well coloured, although the lower leaves should be wholly removed.

Here are a few more memoranda relative to Vine culture, the result of our observations. The fruit of young Vines is never to be compared in quality to that from plants of mature age, which are well tended. It may be as fine, perhaps finer to the eye, but it is relatively coarse and thick skinned, and deficient in the high aromatic flavour which characterises the produce of healthy older Vines. Until Vines attain the age of seven or eight years, I do not think their fruit is in perfection, if even then. In vineyard culture, we are satisfied that the quality of the wine sensibly improves as the Vines acquire age. The wine of the same year from Vines 20 years old is better than that produced by the same sorts, in the same soil, of only 10 or 12 years' growth. I have no doubt of this fact, in our vineyard at least. We do not esteem Grapes for the table after they have attained the maturity desirable for wine; they are then scarcely wholesome, their juices becoming too viscous and sugary to be easily digested. The varieties most rich in sugar, out of several hundreds which at various times have been introduced from Europe, are the Verdelho, from Madeira, the different varieties of the Pineau, or Burgundy, and the Frontignans. Few of the others approach these in sugariness. A Grape may be very sweet to the palate, and yet contain very little sugar, witness the Chasselas; the converse also is frequently observed, a sort rich in sugar which does not impress its sweetness in any very sensible degree upon the palate. We consider the must to be too poor in sugar even for the lighter descriptions of wine, when its specific gravity does not exceed 1.085 or 1.086. The greater part of our dry wines are made from must ranging from this point to 1.110 or 1.112. They are considerably stronger than the majority of the French wines, and appear to be capable of being kept with advantage for a number of years. When the must attains still greater sweetness, it requires the fermentation to be carefully managed to insure the attenuation of the whole of the sugar; and when a much higher degree of ripeness is reached, which is sometimes managed by keeping such Grapes as the Frontignans to dry upon hurdles, in the shade, for several weeks after they have acquired the greatest maturity upon the Vines the season seems to admit of, a very rich, strong-bodied sweet wine is the result—less sweet but more spirituous than the boiled wines of Lunel and Frontignan, and much less sweet than Constantia, with more of the character of Malaga, perhaps, but with a perfume and flavour peculiar to itself. We have no means of ascertaining correctly the density of its must, the scale of the saccharometer we use not extending sufficiently, but it is probably from 1140° to 1150°. *W. McArthur, Camden, N. S. Wales.*

Societies.

LINNEAN, *April* 4.—The President in the chair. J. J. Stainton, Esq., was elected a Fellow; and Mr. C. M'Intosh, of Dalkeith, an Associate. N. B. Ward, Esq., exhibited flowering plants, in a closed case, of Gentiana verna, received by him two months since from its recently discovered locality in Galway, Ireland; together with a cut flowering specimen of Andromeda tetragona, accompanied by the following note:—"The specimens of Gentiana were only received by me two months since, but the plant itself has flowered on my open peaty banks for the last three years. The Andromeda is flowering on the same bank, now for the first time with me. The season is unusually backward. The Erica carnea, which came into flower in the first week of January in 1852 and 1853, did not flower this year till the middle of February; and Erica arborea is only just coming into flower, although in the last two winters it was in full flower by the third week in January." The following paper was read:—1, "Remarks relative to the affinities and analogies of natural objects, more particularly of Hydrocephalus, a genus of Coleoptera," by J. Curtis, Esq. The author expressed a fear, that in fixing the position in the scale

of nature of the many extraordinary new forms which have been discovered of late years, the shadow had been too frequently taken for the substance, and analogies mistaken for affinities. He remarked that the natural system had long been to naturalists an object of pursuit, which they would probably never overtake; that the truth appeared to be that there is no perfect natural system according to our limited notions; and that it would prove a stumbling-block to those who thought otherwise, to find that where a few links are forthcoming which unite certain groups, there are a vast number more discovered, which disturb what with fewer materials promised to be a complete arrangement. Thus, he observes, we have lines broken, circles not meeting, most curious types presenting themselves to augment infallible numbers, and to be dismissed by the theorist as inconvenient intruders. The remainder of the paper was occupied by a discussion of the affinities and structure of the Hydrocephalus armatus, an anomalous beetle, resembling so many individual members of different families, yet agreeing with none, that it has, from its first discovery, been a subject of speculation. Mr. Curtis considers it more nearly related to the lamellicorn group of beetles, than to the longicorn group, with which it has generally been associated.

Entomological, *April* 3.—W. W. Saunders, Esq., F.L.S., V.P., in the Chair. An interesting collection of minute insects found in Ceylon by Mr. Thwaites, containing many very interesting and novel Coleoptera, Hymenoptera, &c., was presented to the Society by that gentleman, who is engaged as the superintendent of the Botanical establishment at Paradenia in that island. The chairman also exhibited several interesting species of butterflies and moths, with their larva and pupæ, which he had received from Mr. Thwaites; and Mr. Spence communicated a letter from the same gentleman, relative to the destruction of the bug which attacks the coffee plant in Ceylon (and which appears to be one of the Coccidæ) by armies of red ants, which make their nests in the cinnamon trees at the end of the boughs, drawing the leaves together for a covering. It had been proposed to transport these insects to the coffee plantations, but they have proved as annoying to the natives employed in the plantations as the bugs are to the coffee plants, thus rendering it questionable whether they can be effectively employed; independent of the question (suggested by Mr. W. Wood) whether the ants really devour the Coccidæ, or merely visit the coffee plants in order to feed upon the honey dew emitted by the Coccidæ in the same way as it is by the aphides. A box of interesting Hymenoptera collected in Dalmatia by M. Bottari (who is about to start to Mexico, to collect objects of natural history) was exhibited by Mr. Baly. The chairman announced that a new part of the Transactions, completing the second volume of the New Series, was ready. Mr. S. Stevens exhibited some very beautiful butterflies recently received from Mr. Bates in Brazil, including a great number of Erycinidæ, of many species of which Mr. Bates had succeeded in determining the sexes which had hitherto been placed as distinct, and even in different genera. Also specimens of the magnificent new carabus and both sexes of Dicranocephalus Wallichi just received from Mr. Fortune in China. Mr. Douglas exhibited some blades of Grass infested with the larvæ of one of the species of Elachista, a genus of Tineidæ, the transformations of which were previously unknown, likewise the transformation of Depressaria capriolella from Sanderstead. Specimens of the very rare Stauropus Fagi and Gluphisia crenata, reared from the larvæ were exhibited by the Rev. J. Green from Halton, Bucks. Mr. Douglas communicated a notice from the French Annales on the habits of Bolbocerus mobilicornes, which had been captured in considerable numbers, flying at dusk over Lucerne fields near pathways, and digging holes in the ground. The papers read were a description of a case-bearing species of Bombycidæ, sent from the Amazon by Mr. Bates, after whom it had been named Perophora Batesii, by Mr. Newman. Descriptions of numerous new species of Lucanidæ, collected in China by Mr. Fortune, by Mr. Saunders; and descriptions of the larvæ of several species of Coleoptera, by Mr. Curtis; the species are Velleins dilatatus, the larvæ of which infesting hornets' nests had been communicated by Professor Henslow. Elater rhombeus, found in a decayed tree; Boletophagus reticulatus, found in a Boletus in Scotland, by Mr. Foxcroft; and Prostomes mandibularis, found in rotten wood at Pau, by Mr. Curtis himself.

Reviews.

Cyclopædia of Chemistry, with its applications to Mineralogy, Physiology, and the Arts. By Robert Dundas Thomson, M.D. Griffin and Co. 8vo, pp. 539.

Notwithstanding the numerous and in many respects excellent treatises on chemistry which have appeared in this country during the last few years, a want has often been felt of some work, compact, accurate, easy of reference, and in which all that interests people in general is stated clearly and fully, whilst matters interesting solely in a scientific point of view are either omitted altogether or stated very briefly. That want is well supplied by the Cyclopædia before us. The arrangement being alphabetical, reference is as easy as possible; and the author has explained with great clearness, and as fully as necessary, everything which is likely to be sought for in a book not professing to be an exhaustive treatise on the science of chemistry in general, or of any branch of it in particular. Substances of importance in the arts, or in agriculture, are treated evidently by the hand of a master, and, although short, are in no respect unsatisfactory. The article guano affords a good example of the mode in which the author has contrived, by judicious exclusion and concise statement, to compress his matter.

"*Guano. Huano.* The urine of sea-fowls, deposited on the coasts of Peru, Africa, &c., of great value as a manure, in consequence of its containing the salts and nitrogen necessary for the food of plants. It is usually mixed with a certain amount of granite powder from the soil on which it is deposited. Sometimes it contains bones of birds, feathers, &c.; and often salts, such as ammonia, phosphate of magnesia, bicarbonate of ammonia. It has been used for ages as a manure by the Peruvians, and was first brought into prominent notice in Europe by Humboldt and Boussingault; but more recently by Liebig, who has done great service to our agriculturists in this and other respects. When genuine it should have a light brown colour, with a smell of ammonia; should, when burned, leave a fine white ash of bone earth, &c. This ash, when heated with dilute muriatic acid, should not effervesce, indicating the absence of chalk or carbonate of lime, and should dissolve with the exception of less than 2 per cent. of white sand and microscopic shells. When treated by water alone, the best Peruvian guano I have found to yield fine crystals of oxalate of ammonia. As the other constituents are pretty equally diffused in different shipments of guano, one of the most important tests of its value depends on the amount of uric acid and ammonia which is present. But in all analyses the amount of the different constituents should be determined. From a long experience in the examination of guano, imported at Glasgow and elsewhere, I have constructed the following tables. Although I have frequently had submitted to my examination adulterated samples, I am happy to say, for the credit of importers, that I have scarcely ever found sophistication to be attempted in their hands, and I have therefore strongly to recommend farmers to unite and purchase their stocks at the ship's side, the price to be determined by chemical analysis:—

	A	B	C	D	E
1	11.90	9.40	25.02	37.72	50.30
2	5.20	9.43	15.07	4.65	1.00
3	53.90	51.58	28.98	30.13	13.60
4	27 80	27.98	29.65	26.00	12.10
5	1.20	1.59	1.28	1.5	15.00
6	18.98	17.28	6.85	5.81	3.47

1, water; 2, soluble salts, phosphate and sulphate of potash, chlorides of potassium and sodium; 3, organic matter, containing uric acid, ammoniacal salts, &c.; 4, phosphate of lime and magnesia; 5, siliceous matter from the soil; 6, ammonia. A and B, fine specimens of guano from Chincha, Peru, imported by John Thomson, Union Street, Glasgow. C, Inferior Peruvian guano. D, African guano. E, Guano from Ailsa Craig, coast of Ayrshire: along with the phosphate of lime is included 1·5 carbonate of lime. A specimen of adulterated guano I found to consist of water 26.60, volatile matter containing 4½ ammonia 27.4, phosphate of lime 12.09, carbonate of lime 10.58, sulphate of lime and peroxide of iron 1.84, sulphate of soda and some potash 2.3, chloride of sodium 5.06, river sand 12.56, cinders 1.57. Independently of its river sand and other substances, the presence of so much soda salts is a suspicious circumstance, as potash is the principal alkali in guano soluble salts."

The articles on atmosphere, blood, copper, fermentation, glass, iron, kelp, lead, soda, sulphur, water, and other common things, are characterised by the same judicious treatment; and the heads, acids, analysis, atomic weight, blowpipe, &c., show that whilst the wants of general readers have been carefully supplied, those of the student and experimenter have received equal attention. Nor is the Cyclopædia confined to pure chemistry; the requirements of students of geology have been by no means neglected, and by the labours of the late Dr. Thomas Thomson, the author has been enabled to supply a copious index of mineralogical synonyms, in addition to many new analyses published for the first time.

The text is illustrated by many excellent drawings, some of which, representing vegetable structure, are not usually found in works like the present. The volume itself, which appears to be the first of a contemplated series of portable Cyclopædias to be published by Messrs. Griffin and Co., is nicely printed and got up, and should the succeeding volumes be as ably and conscientiously edited, "Griffin's Portable Cyclopædias," will deserve a high place amongst our works of permanent utility.

New Plants.

57. Aphelandra lateritia.

A. lateritia; foliis ovato-lanceolatis in petiolum longum basi teretem decurrentibus cauleque carnoso glabris, bracteis ovatis integerrimis pubescentibus calyce longioribus, corollæ labio superiore integro inferioris lobis oblongis obtusis lateralibus duplo minoribus.

A very handsome stove plant, native of Guatemala, where it was found by Mr. Skinner, who gave it to Messrs. J. Weeks and Co., of the Nursery, King's Road, Chelsea. The leaves are in texture like those of Passiflora laurifolia, and have stalks fully as long as the blade. The flowers form a cone-like head, 4 or 5 inches long; with dull scarlet corollas, the tube of which is rather yellow. It is undoubtedly very different from any of the species described in De Candolle's Prodromus.

Garden Memoranda.

Mr. Gaines' Nursery, Battersea.—The show-house here (a span-roofed one) is at present extremely gay with Acacias, Rhododendrons, Kalmias, Deutzias, and other spring-flowering shrubs. On the middle of the centre table are Camellias, supported on all sides by large specimen Azaleas, the greater portion of which is in full bloom. Among the best were Calypso, a fine large rosy pink kind; rosea punctata, and Holfordiana; the latter an extremely showy variety, with brilliant rosy pink semi-double blossoms, which are produced in sufficient abundance to make a fine display. Other sorts consisted of floribunda, multiflora, magnifica, and dilecta, the last a pink kind, with blossoms measuring at least 4 inches across. Among Rhododendrons, aureum was coming finely into bloom, as was also a seedling, said to have been raised from ponticum, crossed with the white tree Rhododendron. It had compact heads of pink flowers, which, being shaded with purple, had a fine mottled appearance. The young plant of R. javanicum, which was shown in such good condition at a late meeting of the Horticultural Society, in Regent Street, is now producing seeds, which it promises to ripen. On the side shelves were numerous examples of Linum flavum, a useful plant for spring decoration; Pheasant's Eye and white Pinks; Lachenalia bicolor, and other plants of a similar description. Another house, 80 feet long, was entirely filled with young Pelargoniums, which are very extensively grown here, not only for "furnishing" but also for the purpose of exhibition. Of young plants of Tom Thumb there were many thousands, for which there is at all times a great demand. The kinds of Pelargonium used here for forcing are Mrs. Johnstone, Gage, album multiflorum, Phyllis, Surpass Napier, Mars, Gauntlet, and a purple seedling. The latter was not named, but its deep purple flowers make it particularly striking and attractive. The various variegated kinds, as Attraction, Mountain of Light, &c., were also plentiful. Of scented Pelargoniums, one of the greatest favourites is Odoratum variegatum, a sort with small leaves, margined with white, and very strongly perfumed. The stage of a lean-to house, 70 feet long, was wholly devoted to the growth of Roses in pots, the varieties employed for that purpose here being Fabvier, Abbé Moiland, Cramoisie superieure, Goubault, and yellow Noisette. These have been in bloom more than a fortnight, but never being all out at one time the effect they make is not so striking as might be imagined. Cytisus racemosus is cultivated in quantity, large pitfuls of it being here in different stages of growth. Being extremely showy, and remaining a very long time in beauty, it is a plant much prized for all purposes of decoration in which hardy greenhouse plants are employed. Calla æthiopica is also largely grown, its white trumpet flowers being often used in table bouquets. A house of Mimuluses was in full bloom. Many of them were named sorts; but there were also numbers of seedlings, some of which are very promising. Considering the little care which Mimuluses require in the way of cultivation, and the display they make when in bloom, it is surprising they are not more generally grown than they are; for when judiciously introduced among other plants, on a greenhouse shelf for instance, they certainly produce an amount of gaiety at this season, which it would be difficult otherwise to obtain. Cinerarias, named sorts, are also now in full beauty, and there were, likewise, a few seedlings, some of which are very pretty; but scarcely sufficiently distinct, perhaps, from existing kinds. Lady Hume Campbell—white edged with blue—is still one of the best. For autumn "furnishing," Kalosanths are found to be invaluable, and therefore stagefuls of them are grown here for that purpose. Double white Primulas have been blooming very finely, but their beauty is now nearly over. Of hardy sorts in the open grounds, we noticed several examples of the double yellow, growing in a bed intermixed with the pretty Persian Iris. Calceolarias, Acacia armata, Fuchsias, Myrtles, and Verbenas are abundant here, more especially the latter, of which there are some thousands. Many of the Fuchsias struck from cuttings put in this spring are already thriving plants. In a houseful of large specimens of the finer kinds of Rhododendrons, there were some interesting seedlings, the most striking of which were Orion, Scarlet, Queen Victoria (white, spotted with crimson), Prince of Wales (white, suffused with pink), and Princess Royal, white. These are all good kinds, well worth attention; one or two plants of Gaines' Floribunda Carnation were in bloom. It is a rose flake, and an excellent sort for forcing. Clove Carnations in the open ground have suffered from frost to some extent, but not near so much here as they are reported to have done in some other places. Outdoor Hyacinths have been very fine here this spring; and Tulips in beds, to which no protection has been applied, are unblemished. Double Jonquils are in full blossom, and a much finer show they make than the single kind, which is more common. The Dielytra spectabilis is uninjured by frost, while the foliage of the Cryptomeria, and that of a few other Conifers, has suffered considerably; it is but right to state, however, that they are, from their position, much exposed to cutting winds. Several beds were filled with Narcissi for forcing, home-grown roots of which are preferred by Mr. Gaines for that purpose to those which are imported. Ground which had been trenched and ridged last autumn is being levelled and put in order for Dahlias, which are being hardened off in cold frames, preparatory to their being planted out as soon as all danger from frost is over.

FLORICULTURE.

The Pink.—In a good Pink the stem should be strong enough to support the flower without drooping, and not less than from 10 to 12 inches high, which will elevate it above the foliage. The calyx or pod ought to be proportionately long, straight, and not too narrow, but correspond with the size of the flower; the base nicely rounded off towards the stem, the upper divisions equal in size, not incurved but rather turned outwards, so that the flower may expand freely and without bursting out at the side. The petals should be broad, flat, and substantial, and as free from indentation on the edges as possible. It is not desirable for the flower to be too double, but there ought to be a sufficient number of rows of petals to show symmetry without being crowded, each row being smaller in size than the next below, lying over each other in a regular imbricated form. If a laced kind, the belting should be even, and equal in breadth, surrounding the outer edge of each petal, and uniting with the eye. Whatever the colour is, it ought to be uniform, rich and solid. In the purple, a rich purplish maroon, and in the red, the nearer approach to scarlet the better. In all the classes the white ought to be clear and distinct, without blemish. Propagation is most readily accomplished by pipings (which are simply the tops of the shoots) struck under hand-glasses; very strong soils should not be used for the Pink, for too rich a compost only injures it and makes the colours run. The most suitable soil is a fresh loam, only ordinarily fertile—the top spit of a pasture with a fourth part cow-dung, and both thoroughly rotted together. Care should be used that there are no wire-worms in it, as they are very destructive, not only to the Pink, but also to the Carnation and Picotee. Where perfection is studied it is best to have nothing else in the same bed, which may be 12 inches deep, of the above-named material. Plant about the middle of August, about 8 inches apart, and make the soil somewhat solid around the neck of the plants, but do not bury too deeply. If dry weather should occur give a good soaking of water, but keep as dry as possible through the winter. Towards the middle of March stirring the soil and giving a top dressing will greatly invigorate the plants and assist the bloom. As the flower stems approach blooming, have in readiness a quantity of slender twigs, fix one to each plant, and tie loosely with soft thread. When the flowers begin to expand, if it is desired to have them quite perfect, examine the pods, and if they appear to be opening more on one side than the other, take a penknife and slit the closed divisions equally, but not so far as to let the petals fall down and out of place; at the same time tie a small bit of bast round, immediately under where slit; this will prevent "bursting," and keep the flower uniform in shape. If there be during blooming a thin covering of muslin fixed over the bed, and raised sufficiently high above the flower, so as not to rub them, the flowering will be considerably prolonged, and the colours much more distinct and clear. Where it is desirable to save seed, and keep the progeny in class character, each class ought to be kept separately, and the flowers assisted by artificial fertilisation, choosing those of the same class with good marking to hybridise with. The Pink is easily forced, and is a most desirable acquisition amongst early spring flowers. The care requisite to accomplish this object is very little. As soon as pipings can be had off forced plants, strike them in pots or pans in sand under a hand-glass in a gentle heat. After they have struck root gradually harden them off, and plant them out in well prepared beds, in which they will make strong plants ready for lifting and potting by October. Afterwards keep them in a cold frame. For forcing, the Pheasant's Eye—white with dark eye, Moss's Red, which is later than the last, and Paddington Pink, which is later still, are the best. In forcing them they may be placed near the glass, in any house where a temperature of 50° to 55° is kept at night. A Rose house is a very suitable place, but take care to keep them freely exposed to the sun, for in this is the main secret of success. Thus treated they may be had in bloom from the latter part of February, and I know of no flower that will give more satisfaction, or better repay the little extra trouble bestowed on it. *W. C.*

Auriculas: *K.* The late hot weather has brought these on amazingly, and though there is a difference of 10 days in the time of flowering, according to the locality, whether in the northern or southern part of the country, still the same degree of attention is requisite. For instance, they must have abundance of air, and never be allowed to droop for want of water. It is a good plan to put two oyster shells on the surface of each pot, by which means the soil is not displaced when watering. Great care also should be taken to prevent the expanded blossoms coming in direct contact with the sun's rays; it is therefore advisable to have two or more frames in which to place the flowers according to their state of progress; for whilst expanded flowers must be shaded, later ones will require sun to bring them sufficiently forward for exhibition on the Auricula stage.

Carnations: *Mary.* The soil which some of the best florists use for these flowers is the top spit of a meadow taken off long before it is wanted, and frequently turned, in order to clear it of wire worms: it is by no means heavy soil; the only addition it receives is about one barrowful of good decayed stable-manure to three of loam. Sufficient material for the following year is mixed every August.

Dahlias: *Amateur.* They should be harden'd in frames, but at the same time endeavour to promote their growth as much as possible; for stunted, hide-bound plants never give satisfaction.

Tulips: *E M.* These must be protected from the probable effects of hail-storms, which, as the buds are now getting forward, would otherwise be attended with very disastrous consequences.

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

Conservatory, &c.—Conservatory and other climbers should be frequently examined, to prevent a confused growth. Kennedyas, &c., if crowded, should have their shoots thinned. Climbers in pots will likewise require watching. The different Ipomœas and Thunbergias, being subject to red spider, should be well syringed, to prevent that pest gaining ground. Where a large quantity of hardy shrubs is annually forced, either to decorate the drawing-room or the conservatory, it is not desirable to pot a fresh stock each season, as a number of the deciduous shrubs, as Roses, Lilacs, Thorns, Honeysuckles, &c., may by proper treatment be made to bloom for several successive seasons; select, therefore, the most suitable plants, when removed from the houses, and give them some kind of temporary shelter, to gradually harden their foliage; those cramped for pot room, shift into a size larger pot, in rich turfy loam; towards the middle of the month plunge them in an open situation, in order that the wood may get ripe early; these plants, from having been previously forced, will bloom earlier than the new stock, of which a portion should each year be potted, to replace such as become useless for further work. Cut down and place in a cold frame the choicest Cinerarias for suckers, after they have done flowering, and put in a stock of Chrysanthemum cuttings for autumn display. As spring flowering plants for the stove and for cutting, we know of none more useful than Begonias. Now will be a good time to commence with a stock for next season's display; as they go out of bloom allow them a short rest, in a rather dry house, when they may be partially disrooted and repotted, pruning in any straggling shoots. Keep them close and syringe frequently, when they will soon commence growing. Abundance of light and a tolerable share of pot-room are necessary to insure fine plants. Above all, keep them a good distance apart, that the fine foliage of some of the species may have full room to expand. As the plants advance, liquid manure may now and then be given. Their period of blooming is from January to May.

FORCING DEPARTMENT.

Peach-house.—The early house may now safely have an advance of temperature, by night as well as by day. At this stage they will bear forcing freely. Keep, however, the syringe at work twice or thrice daily; tie in the shoots as they advance, and expose the fruit to the free action of light, if a high colour is wanted. The borders should be kept well watered, but manure water will not be of much service to the early crop after this time. Bring on the succession houses by attending to the requisite culture, in accordance with their stages—for which see our former directions. Vinery.—Although in a former Calendar we recommended, where very late Grapes were required, that the Vines should be retarded from breaking in the spring, yet it must be born in mind that after they have once started into growth the treatment must vary; for the most important part of the Vine's growth is comprised between that period and the setting of the fruit; and it is important for the formation of sound healthy wood, and perfect bunches, that they be assisted by artificial means during that stage. Hamburghs and the more hardy Grapes will require to be kept near 65° (as a night temperature), as they approach the time of flowering; but the Cannon Hall and common Muscat, with the Damascus and West's St Peter's, will require an addditional 5° as they get into bloom; and this heat should be maintained till the berries are wholly set, when a slight diminution of temperature may take place, and the treatment be regulated by the time when the crop is wanted to ripen. Regulate the growing Vines, so as to keep them as evenly balanced as possible. To effect this it will sometimes be necessary to keep the lower spurs on a par with the uppermost ones, to allow them to grow for some time after the former ones are stopped; this will help to counteract the flow of sap upwards, and balance the growth of the tree.

FLOWER GARDEN AND SHRUBBERIES.

If not done previously, the herbaceous ground should now be well cleaned and neatly raked over. Fill up vacancies, either from the reserve ground, or by sowing annuals in the intermediate spaces. Large plants of some genera, as Phloxes, Asters, &c., generally throw up too many flowering shoots; where such is the case, thin them out at once, so as to obtain not only fine heads of bloom, but increased strength to the remaining shoots, to enable them to need less assistance from stakes. Hollyhocks for late blooming may still be planted; as it is better, where they are grown extensively, to plant at two or three times, to insure a succession of bloom. These showy plants are admirably adapted for planting in long lines, and parallel to straight walks, walls, &c., where they produce a grand effect. One of the principal points in pleasure ground scenery is the beauty of the turf, which should be kept at all times closely cut, if perfection is aimed at, but more particularly at this season, when, by frequent mowings, cutting the Grass as low as possible, the foundation of a close-bottomed turf will be laid for the season; on poor sandy or rocky soils the verdure must be maintained by occasional waterings with liquid manures.

KITCHEN GARDEN.

Seedling plants of Cauliflowers, Cabbage, &c., raised this present spring should be pricked off, when large enough to get stocky for final transplanting. As the future growth of the Brassica tribe depends much on not being drawn when young, some attention should be paid to this point when they are in the seedling state, for the best after-culture rarely compensates for the first neglect. As the time for sowing the principal crops of winter and spring Broccolies and Greens is now at hand, select, if possible, an open piece of ground, rather poor than rich; let the seed be sown thinly, and when large enough to handle, prick them out on a similar soil. To carry out the above directions, among the numerous varieties inserted in the seedsmen's lists, not more than three or four are necessary. A crop of the Globe Artichoke should now be planted for producing a late supply of heads. We have in former Calendars given directions for preparing ground for these and other permanent plants; on this the young side shoots taken from the old stools may be planted in lines 4 feet apart and 18 inches between the plants; or trenches may be dug 18 inches wide and the same in depth, in which some well rotted manure should be dug, and the plants put out as above.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending April 13, 1854, as observed at the Horticultural Gardens.

April.	Moon's Age.	Barometer.		Temperature. Of the Air.			Of the Earth.		Wind.	Rain.
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Friday 7	10	30.392	30.344	69	33	51.0	47	48	W.	.00
Satur. 8	11	30.229	30.058	69	29	49.0	48	49	S.	.00
Sunday 9	12	30.184	30.125	65	31	48.0	48	48	N.E.	.00
Mon.. 10	13	30.214	30.130	54	30	42.0	48	49	E.	.00
Tues. 11	14	30.201	30.110	64	37	50.5	47	49	N.E.	[illegible]
Wed. 12	15	30.356	30.320	60	44	52.0	48	49	E.	[illegible]
Thurs. 13	○	30.346	30.250	61	26	43.5	48	48½	E.	[illegible]
Average.		30.274	30.191	63.1	32.8	48.0	47.7	48.6		[illegible]

April 7—Fine; very fine; clear at night.
— 8—Very fine throughout; clear at night.
— 9—Slight frost early A.M.; clear; very fine.
— 10—Foggy; cold haze; clear at night.
— 11—Very slight frost; hazy; fine; clear at night.
— 12—Very cold haze; fine; very dry air; partially overcast; slight shower.
— 13—Dry haze; fine; clear at night; frosty.
Mean temperature of the week, 2½ deg. above the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending April 15, 1854.

April.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 16	56.1	36.8	46.4	12	0.63 in	6	5	5	1	3	3	2	3
Mon. 17	57.0	36.2	46.6	14	0.32	4	5	2	1	3	4	6	3
Tues. 18	57.3	37.0	47.1	13	0.49	4	5	3	1	3	3	6	3
Wed. 19	57.7	35.5	46.6	7	0.45	6	7	2	1	1	[illegible]	5	—
Thurs. 20	59.0	36.3	47.6	14	0.39	2	6	3	1	—	8	5	3
Friday 21	58.0	39.2	48.6	12	0.28	2	5	4	3	1	4	8	1
Satur. 22	58.8	39.1	48.9	15	0.82	3	7	4	2	[illegible]	4	[illegible]	[illegible]

The highest temperature during the above period occurred on the 2d, 1842—therm. 75 deg.; and the lowest on the 16th, 1847—therm. 20 deg.

Notices to Correspondents.

Aquilegias: *A H.* It is evident from the letter-press of Aq. leptoceras, in the "Botanical Register," that the plant there spoken of is wholly different from that figured in the "Botanical Magazine" t. 4407, under the same name. The first is a Russian species, so called by Fischer; the second is American, and was named by Nuttall. We have not time to inquire which name has priority. Such coincidences are not very uncommon.

Conifers: *Little Harriet.* You must not sow the cones! It is the seeds contained in the cones that must be extracted and committed to the soil. Sow them now in beds facing the south, in nice light loam, about a quarter of an inch deep. Cover the beds with a little straw, and watch them. As soon as you find the seeds coming up take the straw away.

Conservatory: *J G.* We are sure that upon reflection you will agree with us in thinking that in our position we ought never to recommend tradesmen. You had better apply for plans and terms to those who advertise in our columns. They are all very respectable firms.

Effects of the Winter: *Windermere.* Thanks. We are anxious for as many returns as possible; but do not wish to have them earlier than the middle of May. It is our purpose then to consolidate them, if practicable.

Fungi: *C J C.* There are no other descriptions of such plants than those you mention. A species not mentioned therein will probably be new. To such works as you possess there is little useful to add, except Corda's "Icones," Bulliard's "Herbier de la France," Sowerby's "British Fungi," Greville's "Cryptogamic Plants," and Bolton on Funguses.

Hartley's Rough Plate Glass: *G W.* The specimen you have sent us is the right sort. ‡

Names of Fruits: *A W.* Your Apple is a middle-sized roundish fruit, glossy, brownish red next the sun; only fit for kitchen use. Its name, if it has ever had one, is not known.‖

Names of Plants. *T G.* Pomaderris elliptica. — *Mary.* Andromeda axillaris. — *Uckfield.* Oncidium leucochilum; Cyrtochilum maculatum, a good variety; and Dendrobium crepidatum. — *A Z.* 1, Maxillaria Harrisoniæ; 2, Goniophlebium Catharinæ; 3, Pteris longifolia; 4, P. serrulata. *S.* — *G F.* Ipomœa Quamoclit, a common tender annual. — *W D F.* Acer platanoides. — *F H S.* Pentlandia miniata. — *C., Inverness.* Luzula sylvatica, or pilosa, we cannot say which, from so young a specimen.

Natural Grafting: *S F D W.* Much obliged. We will examine it at our leisure.

Pears: *Novice.* Your Passe Colmar and Beurré Rance, from an east wall, appear to have been gathered too early. On that aspect they should have been allowed to hang, weather permitting, till they parted from the spur by merely lifting up. Instead of this the stalk of the Passe Colmar has been broken off by twisting.

Protecting Wall Trees: *Enquirer.* Coping boards 9 inches wide have been found sufficient when there have been no more than 4° of frost; but, of course, canvas screens made to pull up and down from the coping boards would be preferable. You will find a plan of protection described in another column, which you may possibly wish to try.‡

The Potato: *L S.* The Lazy-bed cultivation was that used in Ireland in 1845. We need not say that it wholly failed to produce the slightest advantage—the Lazy-beds having been worse, if possible, than any.

Vine Leaves: *H G.* The small green excrescences on your leaves are perfectly harmless. They are merely enlargements of the pulp and skin of the leaves, caused by their having grown in an atmosphere too damp, and not skilfully ventilated.‡

Vines: *J W J.* We are not aware that the Barbarossa is a shy setter. Nothing can be more perfect than the bunches which have come under our notice.

Water: *M B.* Your plants are not likely to be injured by the water used for watering them being tempered with hot water taken from the iron boiler with which the houses are heated, the cold water being rain-water, and the boiler water rather hard.

Window Gardens: *B G H.* If well managed, such a place as you describe may be gay and pretty, provided you keep the plants quite clean, i. e. free of soot and dust.

TO MANURE MANUFACTURERS.

THE Directors of the Crystal Palace Company are prepared to exhibit in the Agricultural Department samples of MANURES and other substances applied to the Soil. The terms, &c., may be obtained on application to the above department at this office.—3, Adelaide Place, London Bridge, April 15.

G. GROVE, Secretary.

PERUVIAN GUANO, WARRANTED OF THE BEST DESCRIPTION, AND THE DIRECT IMPORTATION OF MESSRS. ANTONY GIBBS & SONS; LAWES'S *Patent Superphosphate, Nitrate of Soda, Bone Dust, and all other Natural and Artificial Manures, at the lowest remunerative prices.—See* RENDLE'S "FARMING PRICE CURRENT AND AGRICULTURAL DIRECTORY," to be obtained from W. E. RENDLE & Co., Seed Merchants, Plymouth.

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime. Nitrate of Soda, Sugar Scum, and every description of Artificial Manures.

WM. INGLIS CARNE, 10, Mark Lane, London.

SEWAGE GUANO, 5*l.* 5*s.* per ton (bags included). Circulars and Testimonials forwarded on application.

DEODORIZING CHARCOAL, 1*l.* 10*s.* per ton (bags to be returned). Terms: Cash on delivery.

The Manchester Sewage Guano Company, 3, Watling Street, Shudehill, Manchester. E. RANSBOTTOM, Agent.

JOHN THOMPSON, Secretary.

PEAT MOSS CHARCOAL, AND OTHER MANURES.—The Undersigned are appointed sole Agents by the Peat Moss Charcoal Company, for the sale of this valuable fixer and distributor of ammoniacal matter.

Also on Sale, Peruvian Guano, Superphosphate of Lime, Gypsum, Nitrate of Soda, Bone-Dust, Sulphuric Acid, and all other Manures of known value.—Apply to MARK FOTHERGILL & Co., 204A, Upper Thames Street, London.

THE LONDON MANURE COMPANY'S WHEAT MANURE, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. EDWARD PURSER, Sec.

Bridge Street, Blackfriars.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7*l.* per ton; Superphosphate of Lime, 7*l.*; Sulphuric Acid and Coprolites, 6*l.*

Office, 69, King William Street, City, London.

N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

TOP DRESSING.

THE "ECONOMICAL MANURE."—A complete and by far the cheapest substitute for Guano. 1¼ to 1½ cwt. per acre of this powerful Manure, costing 15*s.* to 18*s.*, is ample (more must not be used), and equals 3 cwt. of the best Peruvian Guano, thus saving at least 50 per cent., besides carriage, &c. Hundreds of Testimonials from all parts of England, Scotland, and Wales, France, Belgium, and Spain, prove this, and show that it gave most wonderful results last year on every soil, as well on grain and grass as on root crops, far surpassing the expectations of the purchasers. Price 12*s.* per cwt., packages included, and delivered free on rail or wharf in London. Testimonials, directions for use, and all particulars, to be had gratis at the British Economical Manure Company's Offices, 10, Mark Lane, London, or sent on applying to

BENJAMIN COVENEY, Manager.

N.B—This Manure, unlike Guano and artificial Manures generally, does not require rain to render it effective. Sown broadcast and left on the surface (the best way of using it) it will not lose its virtue, and has the peculiar property of attracting sufficient moisture from the atmosphere.

Good Agents wanted. An allowance to the Trade.

SUPERPHOSPHATE OF LIME MANUFACTURED BY MR. J. C. NESBIT'S IMPROVED STEAM MACHINE. The following is the analysis of an average sample.

"College of Chemistry, Agriculture, and General Science, 38 & 39, Lower Kennington Lane, London.

Analysis of Sample of Superphosphate of Lime from Mr. Jolliffe:

Moisture		13.97
Organic Matter, &c.		21.98
Silica		6.05
Phosphate of Lime		35.27
SOLUBLE	16.10	
INSOLUBLE	19.17	
Sulphate of Lime, &c.		22.73
		100.00
Nitrogen (equal to)		1.16
Ammonia		1.41

(Signed) J. C. NESBIT."

For price and full particulars, apply to E. Y. JOLLIFFE, 70, Mark Lane, or the Works, Lavender Dock Wharf, Rotherhithe. Agents wanted in all the principal towns.

REAPING MACHINE COMPETITION AT STIRLING. The STIRLING GENERAL AGRICULTURAL ASSOCIATION hereby offer the following PREMIUMS to be competed for during next harvest:—

1st, For the most approved Reaping Machine, of any price, 20*l.*; 2d, For the most approved Machine, not exceeding 25 guineas in price, 20*l.*

Should the judges fix on a Machine of 25 guineas, or under, to be the best on the field, it will thereby be entitled to both prizes.

The price and simplicity of construction of all the machines will be taken into consideration in awarding the Premiums, but the Society reserves the power of withholding the Premiums, if, in the opinion of the Judges, the Machines are not of sufficient merit.

Intending competitors will require to enter with Mr. Hutton, their Secretary, at Stirling, not later than the 20th of July next, when they will have due notice of the time and place of competition forwarded to them.

Intending competitors must forward with their notice of entry the sum of 2*l.* sterling, to be returned on the morning of trial to those who appear on the field of competition with their Machines.

The Machines are to be tried on all kinds of crop, and upon both Dryfield and Kerse Lands, if required. The trials to be continued until the Judges and Committee appointed by the Association are satisfied.

Machine-makers entering Machines are to state what price they will furnish such machines as they compete with to members of the Association, and Farmers entering are to state the price they paid for those they compete with. By order of the committee.

WM. HUTTON, } Joint
Stirling, March 17, 1854. WM. FORRESTER. } Secs.

RYE-GRASSES.

	Per bushel.—s.	d.
1. True Italian Rye-grass (imported seed)	6	6
2. " " (English saved)	5	6
3. " (Sutton's improved Italian)	7	0
4. " (Dickenson's improved Italian)	6	6
5. Perennial Rye-grass (Lolium perenne) ... 5*s.* 6*d.* to	6	6
6. Pacey's Perennial Rye-grass, extra fine	6	6
7. Stickney's Perennial Rye-grass	6	6
8. Evergreen Rye-grass, true and excellent	6	6
9. Annual Rye-grass, or Common Ray, for alternate husbandry ... ... 3*s.* 6*d.* to	5	0

We believe there are as many varieties of Italian as of English Rye-grass: and after many trials in our sample ground, we have selected one variety as decidedly preferable to others, and for distinction have termed it SUTTON'S IMPROVED ITALIAN RYE-GRASS (No. 3, see above.) Quantity to sow an acre, 2½ bushels.

DICKENSON'S is also a good kind: we obtained our stock of this sort to grow from direct from Mr. Dickenson, of May Fair.

SUTTON AND SONS, Seed Growers, Reading, Berks.

GRAND POULTRY SHOW AT BATH, JUNE 7th, 8th, and 9th. In connection with the Bath and West of England Agricultural Society, but with a separate entrance and subscription.

Director and Steward—JONATHAN GRAY, Esq.

The Honorary Secretary will forward Prize Lists and Certificates of Entry on application.

All Certificates must be returned to him on or before the 10th of May, or Exhibitors will be excluded.

All Advertisements for the Catalogue must be forwarded to him by the 10th of May.

By the kind liberality of the Great Western, the Bristol and Exeter, and South Devon Railway Companies, all Poultry will be taken to and fro free of carriage, provided the same are not sold.

HENRY SPACKMAN, Honorary Secretary, 6, Terrace Walk, Bath.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—PRIZE SHEETS for the LINCOLN MEETING may be had on application to the SECRETARY of the Society, No. 12, Hanover Square, London.

The Agricultural Gazette.

SATURDAY, APRIL 15, 1854.

ONE of the speakers at the recent discussion upon AGRICULTURAL STATISTICS before the Society of Arts referred to the ignorance which prevailed on the subject of our supplies of food as one of the stimulants to enterprise; so that our granaries and warehouses were stored with extra abundance by our corn importers, and the country saved from risk of famine with extra security. Among the letters received from correspondents on this subject, we can refer to some which argue, with this gentleman, for the advantage of being in the dark on the state of the national store-room, but on altogether different grounds; because, indeed, *information* would induce excessive importation, and so cheapen Wheat. Now, we believe both to be in error in their anticipated results of statistical information, and both especially to be in error as to the mode in which it will lead to the results which may be expected from it.

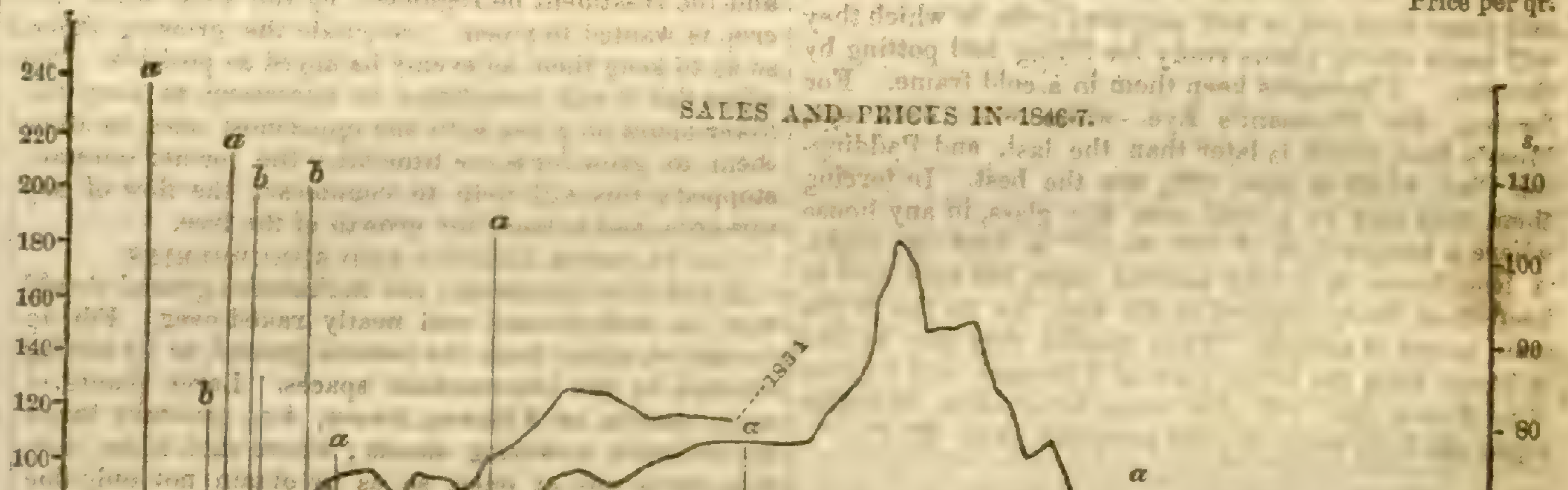
It is more especially to objections of the latter class that we would direct attention, the aspect in which the scheme stands to the agriculturist being that in which we are especially interested; and its consistency with the general interests of the nation being, we suppose, universally admitted.

It is urged that the knowledge of our deficiencies immediately after harvest would enable importers to supply them exactly, and so farmers would not derive the benefit of a high price to compensate for a deficient yield; or, to take a special case, that if full information had been published last September on the extent and yield of the crop, compared with previous years, merchants would have imported the corn of Russia, America, &c., in quantity sufficient to lower the price to 20*s.* or 22*s.* per bag; and where, then, would our English farmers have been "with Wheat, 10 or 12 bushels per acre on the clay land, and 20 bushels per acre on the sand?"

Now, the answer to the particular case is that Wheat could not, we believe, have been purchased in Russia, or elsewhere, except at prices about or above those here named; and the reply to the general proposition, which, after all, is the most deserving attention, is obvious enough. At present, importers are guided by an *opinion*, and their trade is a hazardous *speculation*; but in the case supposed, they would be guided by facts, and the trade would be perfectly safe; and if safe for them, as merchants, then safe also for us as growers; for it is assumed by those who think otherwise, that these merchants are, at present, liable to error only on the side of a too limited importation, which is just begging the whole question under discussion.

In the autumn of 1847 how many merchants were ruined and how rapid the fall of prices, are facts within the memory of all; but it seems to be forgotten that this injury to commerce, this injury to agriculture, was simply the result of ignorant fear, and consequent excessive importation. The ignorance which trustworthy information on our crops would remove is quite as injurious to the agriculturist as to the merchant; and it is especially injurious to the former, not only because it guides him erroneously in the sale of his produce, as our diagram, which we republish, and which we explained last week, sufficiently shows, but also because the blunders of the latter, to which it gives rise, fall in their mischievous effects upon the shoulders of both.

It is objected that this diagram of 1846-7 teaches nothing, because that was the season of the Potato rot, whose full effect no statistical information could have made known. We contend, nevertheless, that it teaches much, and among other things *this*—that ignorance, whether removable or not, is a source of great injury both to commercial and agricultural interests. No one disputes that this great wave of price rose much higher than it had any occasion to do, and by the enormous importation which it excited, subsequently fell much lower than it would otherwise have done. And if any one is thus forced to admit the general truth that the ignorance which produced this unreasonable panic, this electric sympathy with the fears and the prices, equally ignorant, of other countries—that this ignorance, *whether removable or not*, was most mischievous; then must he also admit that to the extent to which it is removable, it ought to be removed.



A GOOD deal of useful information was given at the meeting last week, of the Central Farmer's Club, upon the very important subject of applying MANURE in a liquid state. Mr. SPOONER, of Southampton, who opened the discussion, described the machines which have been employed for this purpose—CHANDLER'S liquid manure drill and his own, both of which were exhibited at Gloucester. The former is liable, by the settlement (during rest when turning at every land's end) of the manure which it delivers, to distribute muddy sediment at first, and comparatively poor liquid towards the end of each journey across the field, an unevenness which necessarily tells against its efficiency.* In Mr. SPOONER'S, two entirely distinct parts act separately; by the one, the manure, whatever it be, is delivered as from a drill in the ordinary way; and, by the other, simple water pours continuously from a reservoir, washing the powder and the seed into the furrow, and giving the latter that moist seed-bed which it requires, along with a sufficiency and uniform supply of nourishing food for the young plant as soon as it shall germinate. The efficiency of these water drills was proved by the evidence of Mr. RUSTON, of Chatteris, who gave the following facts in reference

* It is only fair to add that Mr. HOWARD, of Bedford, a subsequent speaker, stated on this point that he had visited several farms where CHANDLER'S drill was in use, and had seen several crops grown after it, without having discovered this defect, namely, that at the ends more manure was put into the soil than at the middle. The most even crops had, to his knowledge, been grown after it.

to the relative merits of the dry and water drills (Chandler's).

Experiment.	Quantities of Manure per acre.	When sown.	When weighed	Weight per acre.	Cost per acre of Artificial Manure.
				ton. cwt.	s. d.
1	10 loads of yard manure, 2 bush. dissolved bones, sown with liquid drill	June 17	Nov. 15	22 15	14 0
2	10 loads of yard manure, 6 bush bones, 12 bush ashes, sown with dry drill	June 18	Nov. 15	17 1	15 0
3	2 bush. bones dissolved and sown with liquid drill. No yard manure.	June 24	Nov. 15	18 15	14 0

If such results as these, he said, were produced by the adoption of the liquid manure-drill, surely it was worthy the attention of every root-growing farmer.

The general concurrence of the club in this opinion was expressed in the following resolution :

"That it is very desirable, in the sowing of Turnips or Mangold Wurzel, that vegetation should commence as soon as possible after the seed is committed to the earth. That the water drill, by supplying moisture as well as manure, secures this desideratum."

And on the other head of the discussion it was resolved "that it is equally profitable to apply liquefied manure to Grass crops :" for the greater part of the attention of the meeting was given to the question whether it is possible and profitable to apply the general manure of the farm in a liquid form over the surface by steam-power.

Mr. Spooner referred at considerable length to the experience of Mr. Telfer and others on this subject, as bearing more especially on the increase by this means of food for cattle. He observed that "it is far more profitable to apply liquid manure to the Grasses than to other kinds of crops. In many instances the crop of Grass, particularly of Italian Rye-grass, has been much more than quadrupled. Fourteen feet have been obtained by successive cuttings. We cannot expect to make as large an increase in corn crops as in Grass crops. To whatever extent we may apply manure, it appears impossible to double our corn crops, whereas there seems hardly any limit to the increase we can secure in Grass crops."

On the question of cost Mr. C. Johnson stated that 2000 tons of water, equal to 20 inches of rain per acre, might be raised 20 feet by an expenditure of 5s. in coals, and force enough was thus to be obtained for its distribution by gravity over the surface.

Mr. Mechi stated his experience at Tiptree to continue perfectly satisfactory on the question of cost and effect. We conclude with a few of his remarks on the subject :—

"Let them just compare the application to the land of liquid manure, and the application of solid. They carried out a certain number of loads of dry manure at a cost of 6d. per ton per mile. They had then to spread it and plough it in. They next had to wait for rain to wash it into the soil ; and probably the rain, when it came at that particular part of the summer, was barely enough to carry it down two or three inches. But by means of the system of irrigation, what took place? The manure which fell from the animals to-day was washed into the tank to-morrow, conveyed on to the land, and ploughed in a depth of three, four, or five feet, at a cost of something like five-farthings or three halfpence a ton. In putting on the liquid manure, the ground was saturated to the extent of three, four, or five feet. He termed it 'ploughing in,' because it penetrated the soil according to the depth of the drains. If they could put a ton of manure in a liquid state, anywhere within a mile, for five-farthings or three halfpence, deeply in the soil, surely it was far cheaper than doing the work with horse and cart. The use of liquid manure enabled the farmer to do this. After Tares, he might put in his Turnips, as he had done last year early in July, on what was naturally a very barren soil, and upon which he had grown 23 tons of white Turnips per acre, and 19 tons of Swedes per acre. They were put close, certainly ; but they were considered much better than the crops in the neighbourhood raised from solid farm-yard dung. The result was highly profitable, for he had had no carting of solid manure. On all kinds of green crops he believed the system would prove beneficial ; and the best proof of that was, that where it was adopted double the amount of live stock might be kept per acre, without any additional expenditure for the purchase of artificial food. One of the great tests of successful farming was the amount of live stock that a man could maintain on a given number of acres. His own apparatus cost him 4l. 5s. an acre, including everything ; but at that time iron was much cheaper than it is now. But if they expended 6l. an acre, and charged themselves 7½ per cent., and also the working expenses in coal, they would still be considerable gainers. Their horses would be at their service for ploughing and other work, instead of carting out manure, which had then to be spread over the land, and bringing the empty carts back again. It had this advantage, also, that all kinds of Grasses would be brought forward more rapidly in the spring, and continue their growth late in the autumn ; so that in his own case, while many of his neighbours were short of food, he had an abundance. The question under discussion had an important bearing on the sewage of our towns and the waste of manure which daily occurred. They were now almost crying about the supplies of guano, which was nothing more than bird's dung ; but if farmers, and landlords, and the inhabitants of towns were so inclined, there could be no practical difficulty in effecting the conveyance of the sewage of towns to the fructification of the country."

THE MANAGEMENT OF FORWARD EWES AND LAMBS.

There is no portion of farming economy more important than that part which relates to the management of sheep stock, and it may also be said that none will prove more profitable, when constant care and unremitting attention is bestowed upon it. But sheep farming embraces a considerable variety, with regard to breed, age, and sex. I therefore propose, in this paper, to confine my remarks to the management of forward ewes, and the rearing and fatting of early lambs ; and I hold this to be the most difficult point in the whole routine of sheep management, requiring, as it does, great judgment, experience, and foresight, coupled with the most vigilant superintendence.

I do not propose, in the present instance, to treat of the method of rearing and feeding house lambs, but strictly confine my remarks to the method of management necessary for the feeding and rearing of ewes and lambs of the best quality in the open field. This kind of stock is best calculated for arable farms of the southern counties ; for although many portions of the kingdom produce feed of all sorts, of the best quality, yet such is the influence of climate upon the rearing and fatting of early lambs, that it would not be advantageous to rear them upon cold and bleak situations. All kinds of sheep, when fatting, require the best food which can be obtained, but in the case of early ewes and lambs, a provision must be made in an exceptional manner, having regard not to one kind of food only, but to every kind which the land can be made to produce, and adapted for the purpose, in order that a great variety as well as abundance may be available. I therefore propose that, in addition to the ordinary produce of sheep's food upon the farm, the Italian Rye-grass should be grown in the Wheat or Oat eddishes, upon all that portion not required for tillage between the months of September and December. This is done by seeding the corn land in the month of March. A portion of white Carrots should also be grown in lieu of, or in addition to, the Turnip crop ; Mangold Wurzel may also be grown to some extent, as it is found very excellent food late in the spring, when the Swedes begin to lose their feeding properties. The breed of sheep kept for the rearing of early lambs is the horned Dorset, peculiar to the counties of Dorset and Somerset; we, however, sometimes meet with flocks of the same breed without horns, but they are quite an exception, and were originally propagated from the same stock. Early lambs are occasionally obtained from the Southdowns and other breeds, but after many years' futile attempts to obtain the early lambs as a rule from these breeds, it is now considered quite a hopeless case, and the horned Dorset is the only breed which can be depended upon for that purpose.

In selecting ewes of the horned variety, it is requisite that they should have been put to a Southdown tup, and by all means chosen of good quality, being well made, short legged, and clothed with fine wool. This breed of sheep has been greatly improved in quality and symmetry within the last 15 or 20 years ; but the number of flocks has been much diminished, having given place to the Southdowns upon the hill farms and in exposed situations. Formerly many flocks of these horned ewes were propagated almost entirely with regard to their milking qualities and propensity to produce twin lambs, in doing which the shape of the animal was comparatively disregarded. We still meet with flocks reared in the same manner at the present day ; hence the necessity of the before-named selection. During the last 26 years I have continued to keep this breed of sheep, and I have found in some seasons, when my ewes have been ill-shaped, that they have yeaned an immense number of lambs, and have proved very milky, and made lambs of the first quality ; they would not, however, fatten whilst suckling their lambs. At other times, when I have obtained the choicest description of horned ewes from the best districts of Somersetshire, I have found that they not only brought a large number of lambs, but that the ewes and lambs would both become fat and fit for sale at the same time, and in first-rate condition.

These ewes are sometimes sold in the spring of the year ; but the usual period at which the breeders of this kind of stock offer them for sale is at Michaelmas, just before the time of lambing. Since, however, the numbers of flocks have been diminished, they have become comparatively dear, and it is therefore a common practice for some graziers to purchase and keep over for breeding purposes, the second year, those ewes which may, from circumstances, be found poor, or in merely stock condition in the spring of the year. The plan of breeding from the ewes the second season is found to answer a good purpose upon small arable farms, having but little pasture land attached—it being the best policy to keep a stock flock in the summer, and a fatting flock in winter ; for it must be borne in mind that this kind of sheep does not fatten readily during the summer months in the enclosed districts of the southern counties, because they feel the annoyance of flies more than most other breeds. The custom is to turn the tup with the ewes the first week in May ; a short, fine-woolled sheep should be selected, in order that the offspring, more particularly in the case of twin lambs, which generally require to be kept a longer period, may possess a close coat, it being well known that loose hollow wool prejudices the sale of lambs in the live market. The tup should also possess good symmetry and plenty of flesh ; a well-bred Hampshire down I have found better than a pure bred Sussex down, for the lambs reared from the latter do not possess a due proportion of lean meat, whereas those produced from the former are highly esteemed by the consumers of the present day, affording, as they do, a well combined proportion of flesh and fat.

The rams should be shorn about a fortnight previous to being turned among the ewes, and kept in an open shed up to that time, in order that they may gradually become accustomed to the loss of their coats ; otherwise, in case of their being turned into the open field when recently shorn, they suffer much in health and condition during the night frosts, which often happen in the early part of the month of May. When these ewes are kept entirely for the purpose of producing early lambs, they should never be shorn until the rams are taken from them, which should be done about the 20th of June ; in that case the portion of the flock of ewes which proved to be pregnant would finish dropping their lambs about the 14th of November. It is not advisable, in a flock of early stock, to have lambs fall after that period ; for in case of ewes lambing later, they do not fatten readily with their lambs by their sides.

The manner of keeping the ewes must now be considered, as it will most probably have its influence in inducing the ewes to offer to the ram at the earliest time. Although the nature of this breed of sheep will go far in this respect, yet circumstances often arise, such as the state of the weather, to delay the breeding season ; yet this may in a great measure be prevented by generous keeping, and by choosing a warm and sheltered situation for feeding them. I have found at this particular period the best way to bring the ewes forward to the ram is to feed them upon Trifolium and cut Swedes, or Mangold, placed in troughs, having also a change, or run upon dry pasture for a few hours during the day ; but if the ewes are further delayed in their season, it is a good plan to give them about half a pint of Beans each per day, which will generally produce the desired object. It will at all events bring them forward in condition ; and that portion of the flock which may not prove in lamb will be the sooner fit for the market. After the rams are removed from the flock, and the ewes ascertained to be with lamb, it will be best not to keep them too high ; it is, however, desirable that they should have two or three changes of keep during the day, but not of luxuriant or rich arable Grass. A dry pasture, or a change to a fold of Tares or similar food, would be most suitable ; and they should, indeed, from this period up to the time of lambing, be managed as a stock or store flock, the object being to keep numbers and to feed the land bare, for the sake of the manure. The travelling consequent upon their removal for change of food will also prove beneficial, for it is admitted by all flock-masters that the ewes and their offspring will be more healthy when the former have received a moderate amount of exercise during the period of pregnancy. Having now brought the management of the ewes down to the period of lambing, I would observe that the risk or probability of loss is much less than it is with later stock when the lambing season occurs in the months of December or January. In general it is unnecessary to resort to the lambing-yard or "dead-fold," by reason of the comparative mildness of the weather (peculiar to our climate) during the month of October and early part of November. On the other hand, it is not advisable, as is too often the practice, to allow the ewes to roam at large during the night-time, as those about to yean are too apt to stray away from the main part of the flock, and their lambs are often lost, or found dead under untoward circumstances. The shepherd may be diligent and attentive, yet it is almost impossible for him to find the ewes which most need his assistance in a dark night, when they are allowed to lie promiscuously over a whole field. I therefore recommend that a shifting fold should be used, being placed on the driest and most sheltered part of the field, and removed on to fresh ground every day. By this means the animals lie on clean land, which, with shelter, will contribute greatly to their health and well-doing ; and will, at the same time, enable the shepherd to attend to those ewes which may require assistance ; for in the darkest night, when provided with a lanthorn, he will be able to discern them all ; nor can the young lambs, when they fall, escape his observation.

By this mode of proceeding, the shepherd can at every visit remove all those ewes and lambs which require such care to a place of greater security; for it often happens, when we get a heavy rain, that it is necessary to take them to a hovel or covered shed. When the lambs are perfectly strong, and the ewes healthy, it will not be necessary to put them under cover ; for should the weather be very wet, it is generally mild at the same time, and I have usually found them do well thus managed, when they have been well kept.

(To be concluded next week.)

AGRICULTURAL METEOROLOGY.

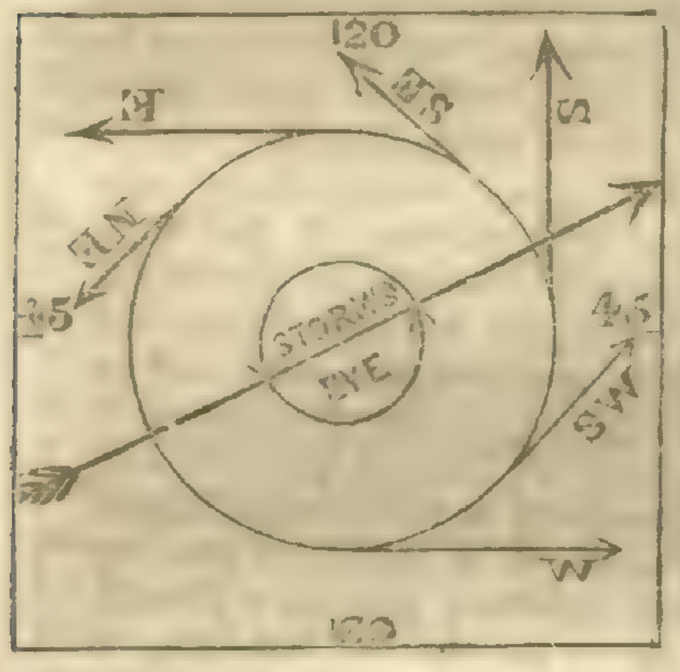
(Continued from page 225.)

III. Assuming this storm of the 25th-26th August to be rotatory and progressive, I supposed it to have passed between England and Ireland, crossing this island in an easterly or north-easterly direction. For the facility of reference, the diagrams are repeated in their proper relative position; and the smaller one represents the storm's eye as it was approaching these islands, and beginning to affect the barometer of Scilly light-house about noon of the 24th. The arrow of this diagram represents the track of the storm, or *axis*, as it is technically called, being the symbol most commonly used for this purpose.

If this axis, then, did not travel along the line I have suggested, it must have passed to the south of England, *i. e.*, along the British Channel, which, for reasons I will presently give, was totally impossible; or it must have passed to the westward of Ireland, which I thought extremely unlikely—firstly, because in that case the depression of my barometer would not have been so great as it was; and, secondly, the fall of rain would have discontinued much sooner.

Firstly (although hitherto no absolute standard has been ascertained for measuring the area of rotatory storms), the depression of the barometer is seldom found to exceed an inch in any of those gales which have been traced over these islands. Those of your readers who have had access to the works of Sir William Reid, or of Mr. Thom, will recollect the barometrical diagrams given by those gentlemen to illustrate this branch of science. In the course of my remarks I hope to add one for this purpose, which for the present I must postpone; but if the barometer fell three-fourths of an inch (.75) in England, from the effect of a storm passing to the westward of Ireland, it is certain that near the centre of the storm the depression of the barometer must have considerably exceeded an inch.

Secondly, in most storms that have been traced to the westward of Ireland, it has been found that, as soon as ever the barometer begins to rise, the wind flies round to the north-west, and fine weather immediately ensues, which was not the case in this instance.



For these two reasons, therefore, I inferred that the storm's centre did not pass to the westward of Ireland. That my readers may see how impossible it was that it could have passed up the English Channel, I shall ask them to move the small diagram up the Channel, and they will perceive that, as soon as the storm's eye arrives between Cherbourg and Portland, the wind (as indicated by the centrifugal arrows) will begin to change from South to S.E.; and, as the diagram is moved along, the wind will further change to East and N.E. But as the wind, during the 25th-27th August, changed from South to S.W. and W., it is evident the storm's centre did not pass to the south of England. I therefore infer it to have passed between England and Ireland.

The next question was, in which direction did it extricate itself from the *cul-de-sac* formed by the hills of Wales and Lancashire to the eastward, by the Cheviots and Western Highlands to the northward, and by the hills of Ulster to the westward? I have stated my opinion to have been "that, from the length of time the storm lasted, it must have crossed this island in an easterly or north-easterly direction." If your readers will take their compasses once more and describe a circle, with London for a centre, they will see that from 3 A.M. of the 26th, when it was nearest to Scilly, until 9 P.M. of the 26th, when it was nearest to Flamborough Head on the coast of Yorkshire, the storm was travelling very nearly along the arc of a circle, of which London would be the centre. This will explain why its influence continued to be felt so much longer than would have been the case, had the storm travelled right away up the valley of the Caledonian canal, or even up that of the Clyde and Forth. I may add, that all inquiry tends to confirm the principle that storms, whilst recurving, progress at a much slower rate than whilst advancing along a straight track; and this is found to hold true whether within or without the Tropics.

I must trust to the good-nature of your readers, and to your well-known liberality, to excuse me for intruding these diagrams a second time on their patience; but, in the discussion of a great law of Nature, and in the elucidation of such important principles, I feel that I rely justly on your sympathy:

> "Segnius irritant animos demissa per aures,
> Quam quæ sunt oculis subjecta fidelibus."

I have dwelt at the greater length on the foregoing explanation, because your correspondent "R." says "he has been unable to trace a single storm which could be explained on such a supposition" (p. 170), viz., "the opinion I had advanced (p. 155), that Mr. Redfield's '*Rotatory Theory*' was of universal application." I shall next proceed to give the substance of the details I have since been able to collect, which appear to me to establish the correctness of the track I assigned to this storm at the time of its occurrence. *F. P. B. M.*

(To be continued.)

Home Correspondence.

Cheap Whole Flour Bread.—The present high price of provisions is felt by no class more severely than by the labouring agricultural population; and I observe that the diffusion among them of modes whereby they may husband their resources of food, is one of the topics of the day. I shall endeavour to give some aid in this by stating the result of an economical system of bread making followed in my family for some months. The tailings of Wheat are sent to the mill, ground into flour, and returned with the loss of only about 6 per cent. in weight, being moisture evaporated in the milling process. This flour is made into dough with buttermilk instead of water. A dessert-spoonful of carbonate of soda is mixed with a portion of the milk, and a little yeast added, with salt to taste. This leavens the lump in a few minutes; it is at once shaped out into loaves, and put into the kitchen oven, from which it is taken in rather less than an hour in the form of wholesome brown bread, pleasing to the palate and easy of digestion. The cost stands thus:—A bushel of tailings, weighing 57 lbs., gave a return of 54 lbs. flour; value of Wheat, 7*s.* 6*d.*; milling and cartage, 6*d.*=8*s.* A baking of 6 lbs. flour at this rate costs 10½*d.*; half gallon buttermilk, 3*d.*; yeast, carbonate of soda, and salt, 1½*d.*; total, 1*s.* 3*d.* From this is produced 10½ lbs. bread, which costs 1¾*d.* per lb., say 5*d.* for the 4 lb. loaf! The labour of making is scarcely worth reckoning, being an act of pleasing housewifery to one of the family. The oven of the cooking stove is, ordinarily, hot enough to fire the bread put into it. Thus there is no expense for the item of firing. It is true that an ordinary cottager seldom has an oven; but he certainly ought to have one even for the daily purposes of cookery, and its cost would be made up by the savings on a very few weeks' loaves made as above. But, it may be said, all cannot have tailings. True; but even in the event of using full weight Wheat at 10*s.* 6*d.* per bushel, we should add but 1*d.* per loaf to the cost above stated; for a bushel of 63 lbs. Wheat, costing, including milling, 11*s.*, gives 60 lbs. flour; *i.e.* 1*s.* 1*d.* instead of 10½*d.* as above for the 6 lbs. flour required to make two and a half 4 lb. loaves. Thus, by following the simple process I have described, every one, from the Queen to the cottager, may, even in the present dear times, command a quartern loaf for 6*d.*! I will not promise that it shall be so nutritious as my 5*d.* loaf; for chemistry, by one of its latest and best expounders, teaches us that "the tail corn which the farmer separates before bringing his grain to market, and usually grinds for his own use, is richer in gluten than the plump full-grown grain, and is therefore more nutritious." By the way, this is another proof that we farmers don't enough prize our blessings; for here we learn that what we were wont to consider a grievance, the consuming at home of our inferior grains, has really been one of the causes of the goodly development of thews and sinews which marks the tenant farmer class. *S.*

Ammonia in Putrefaction of Grass, and its uses in Vegetation.—In acknowledgment to "J. H. H.," in No. 13 (page 203 *c*), as it can hardly be supposed that he may have mistaken the smell of ammonia, I can only express surprise that it should have been sensible under such conditions. That ammonia is produced is fully probable, as Grass (without Clover) may be taken to contain 1·4th per cent. of nitrogen; but that it should have been sufficient to neutralise all the acids, and emit its odour in excess, is not so easy to account for, unless it lay on a limy floor, or bed, which would take acid and set ammonia free. That the hydrogenous gases disengaged in the fermentation should have taken nitrogen from the air to form ammonia is hardly consistent with the known fact of the self-conversion of ammonia into nitric acid, by fermentation in the air in an alcalescent heap: if the heap had been, as might have been expected, acidulous, this would have been in common course, but then there could have been no smell of ammonia. Nor did I allude to carbonic acid only. Others of more decided properties are produced in the fermentation of vegetable juices (as present in green Grass), modifications, perhaps, of acetic acid, containing carbon, hydrogen, and oxygen united, as some of the offensive gases eliminated in the fermentation. In reference to his previous letter of March 9 (p. 139), in support of the hypothesis that ammonia acts rather by the supply of hydrogen than of nitrogen, we may observe, in passing, that as carbonic acid is absorbed and oxygen given out in vegetation, this oxygen may come from either the carbonic acid or the water present, the latter being as easy of decomposition as the former; but the fact of the woody fibre and the chief bulk of vegetable matter containing the hydrogen and oxygen in the proportions of water, seem to indicate not exactly decomposition, but their entering together into union with the carbon, under the action of vital chemistry, which produces compounds different from those effected by common affinity, and expelling the oxygen of the carbonic acid. That

in the fertilising reaction of ammonia, the hydrogen, as well as the nitrogen, is assimilated, will probably not be doubted; but when we consider that Grass (to take J. H. H.'s example) contains only 0·25 per cent. nitro gen = 0·3 ammonia, but 0·83 per cent. hydrogen = 14 ammonia, and consequently that an acre of green Grass (say 10 tons) 22,400 lbs. would require 224 × 14 lbs. = 3136 lbs. of ammonia to supply the hydrogen, contrasted with 224 × 0·3 = 67.2 lbs. to supply the nitrogen, probabilities will appear strong in favour of the latter; and the analogy of action in nitrate of soda, exemplified in Dr. Anderson's address in No. 13 (204 *c*, at foot), the nitrate being the more effective of the two, the intense green that both alike produce; and further, that plants will grow in pure sand and water, and assimilate large quantities of hydrogen, by aid of very little nitrate of soda, and no ammonia, the inference appears hardly questionable that the hydrogen is supplied by the water, and that the ammonia acts by supplying nitrogen, partly for sustenance of the plant, and perhaps also for exciting its growth, in a way somewhat analogous to stimulation. Prof. Johnston says (Lectures, p. 37, 2d edit.) that hay contains 5 per cent. hydrogen, and 1·5 per cent. nitrogen, and that it requires 600 lbs. of fresh Grass to make 100 lbs. hay. *J. Prideaux, Plymouth.*

Stoppage of Drains.—I have lately been much interested by the perusal of the communications of several correspondents on this subject, and as I am a sufferer, though from a different cause to any I have seen stated, I take the liberty of laying my case before you, and shall be much obliged by the suggestion of a remedy. I have on my farm, a 20 acre piece of boggy land, which, when I came in possession in 1851, was in a most wretched state, and as full of water as it was possible for land to be. My landlord, Sir W. W. Wynne, Bart., consented to drain it for me, and accordingly Mr. John Green (an experienced person whom he employs) and his staff were sent over to commence operations. The main drain or outlet was put in 600 or 700 yards in a straight line with double tiles, forming a culvert for the water, 11½ by 5½ inches, and from 6 to 9 feet deep; from this several other mains were put in, in other directions, to tap the banks of the elevated ground adjoining, the principal main being of the same sized tiles, with others of 6-inch and 4-inch pipes, with furrow drains of 3-inch and 2-inch pipes, tapping the banks 10, 12, and in some places 16 feet deep. All went on very satisfactorily, and the undertaking was perfectly successful, the large main culvert discharging at a furious rate two-thirds full of water, and the land by the spring of 1852 had become quite sound and dry, and continued so until the thaw of the great fall of snow we had in the beginning of January last, when one day walking across the land I found that there was a stoppage in one of the drains, I sent over to Mr. Green, but we found the land so charged with water that the attempt at examination was suspended, but eventually it was found that the large culvert was half filled with a yellow deposit, same as enclosed sample, and although perfectly slimy and loose in the pots, it had formed in such quantity as to stop the large stream of water in the mains. Orders were given to open holes at 20 yards distance from each other, a cord was lowered by the stream from one hole to the other, a sweeper was attached to the cord, formed of Holly or Gorse, and by this means, with a deal of trouble, all the main drains were cleaned, the furrow drains were poked with long rods fastened together, and thus all were put in good working order again. The liquor from which the deposit forms oozes out of the land in many places, about 1 or 2 feet above the pipes in the drains, and I find that some of the 4-inch pipes that were made quite clean about a month ago, have already three-quarters of an inch thick of this yellow substance, which I have inclosed, formed, and settled in them. It is proposed to make brick holes similar to pump wells, say 2 feet 8 in. diameter, frequently along the mains so as to be able to examine and brush them (as described above) when we find it necessary; but the question, and what we wish to arrive at is, what is the nature of the deposit? Is it likely that it will percolate out of the land (where I presume it has been pent up for very many years) in a year or two, or will it in your opinion continue to harass us for some length of time? Your opinion on this will confer a great favour on *Bernard Lewis.* [The deposit is no doubt ferruginous, and of the kind indicated by Mr. Parkes in his Newcastle lecture. Rain water will dissolve oxide of iron in a vegetable soil, but the carbonate of the protoxide of iron, which is thus held in solution, is decomposed on coming in contact with the air in the drain—the iron assumes a higher state of oxidation, which it could not do in the vegetable soil—and the peroxide thus formed, being insoluble in water, is deposited, and fills up the drain. The remedy is by persevering exposure to the air (and by the application of lime, which will "engage" all the acids likely to dissolve it and carry it into the drains), to facilitate the perfect oxidation of the mischievous protoxide.]

Societies.

HIGHLAND AND AGRICULTURAL.—*Dr. Anderson's Address (continued from p. 205).*—*Rotation of Crops.*—Since the investigation of the chemical composition of our crops has become more minute and precise, the explanation of the cause of their rotation has become more difficult rather than more simple. It is familiar to all that the necessity for a rotation has been usually attributed to different crops, extracting different inorganic constituents from the soil. Mr. Lawes has suggested another view deserving of notice:—

He believes that the necessity for a rotation depends upon the exhaustion not so much of the inorganic constituents of the soil, as of its nitrogen. His experiments have led him to the conclusion that nitrogen is an unnecessary constituent of the manure applied to the Turnip, while it is absolutely essential to the more exhausting Wheat, and to the cereals generally. Of course it is not meant that no nitrogen is required for the Turnip, but simply that that contained in the soil or derived from the air (in the form of ammonia or nitric acid) is sufficient for its requirements. But with Wheat, not only must nitrogen be present in the manure, but it must be there in a quantity out of all proportion to the quantity assimilated by the plant; in other words, that only a small proportion of the nitrogen of the manure makes its appearance in the plant, the rest being dissipated in some form or other. Mr. Lawes, founding on certain experiments which show that plants exhale nitrogen, believes that the nitrogen which has disappeared has actually undergone this process. In doing so (if I do not misunderstand his view), it acts, so to speak, as a carrier of carbon, that is to say, that the quantity which passes through stands in a direct relation to the quantity of carbon assimilated and converted into non-nitrogenous compounds, such as starch, &c. Hence, the cereals which contain in their seeds a large quantity of such compounds, require the passage through their system of abundance of nitrogen, and consequently exhaust the soil. Founding upon this view, he points out that the Turnip, which, when grown for its bulb, does not exhaust the soil, because it does not require nitrogen, becomes a scourging crop when grown for seed, which contains a large quantity of oil, and hence requires the expenditure of that element. Ingenious as this view is, I fear it can scarcely be considered as altogether satisfactory. The experiments on the exhalation of nitrogen by plants are too limited, and its amount too uncertain, to admit of the foundation of such a theory upon them. I think, moreover, that we can scarcely admit as a general fact that the Turnip does not require nitrogenous manures. Mr. Lawes' experiments, no doubt, give this result. It is very certain that the experience of farmers here is strongly in favour of guano for the Turnip, and guano, too, of the nitrogenous class—the different conditions of climate, no doubt, being the cause of the difference. And, in illustration of this distinction, I may mention a fact communicated to me by an extensive manure manufacturer, of scientific acquirements. He manufactures large quantities of superphosphate from coprolites alone, and he assured me that when sent to the south of England, it invariably gave satisfaction to those who employed it, while the very same substance in Scotland proved unsuccessful, and he had found it absolutely necessary to add a proportion of ammonia, or some other nitrogenous matter, to the superphosphate prepared for the Scotch market. The fact is, that the effect of a manure is not constant and definite, but varies to a much greater extent than we were at one time inclined to admit, under the influence of climate and various other circumstances; and ingenious as Mr. Lawes' idea is, we ought, I think, to suspend our judgment, and await the result of further experiments, before we adopt it.

The Feeding of Animals.—So extensive and elaborate have been the researches which have been made upon this subject, that I can attempt to give here but a very meagre account of them. The inquiries which have taken place may be divided into two classes—first, the determination of the chemical composition of the different substances used as cattle food, and second, experiments actually made upon the animals themselves.

In the first branch of the subject great progress has been made. The greater number of the analyses already executed have been founded on Boussingault's view, that the value of a food is invariably measured by the quantity of nitrogen it contains, and in many cases they have been confined entirely to the determination of that element. Of late we have seen reason greatly to limit this view, and it is now believed that the nitrogen only forms a correct measure of the relative feeding values of substances of allied characters. Even in this limited sense, Mr. Lawes doubts whether the results are correct. There is no question, however, that the want of accurate determinations of the amount of the respiratory elements (starch, sugar, &c.,) is to be regretted, and though no methods exist which permit their determinations with high accuracy, approximations may be made sufficient to serve all practical purposes. The experiments which have been made on animals during the last few years are remarkable for their extent and elaborate character. To Mr. Lawes, especially, agriculture is deeply indebted for a series of experiments, as yet but partially published, carried on with extraordinary precision on a most extensive scale, and at a very large pecuniary sacrifice. An equally important set of experiments has been undertaken by the Leipsic Economic Society, which have been directed in some respect to the elucidation of different points from those of Mr. Lawes. The first experiments to which I shall refer are those upon the comparative fattening qualities of different breeds of sheep. Mr. Lawes' experiments have been hitherto confined to three breeds, the Hampshire, Sussex, and Cotswold, in which a very marked difference is observed. The last appear to fatten more readily, and with a less expenditure of food than either of the others, for it is found that 100 lbs. increase of live weight is produced in the Cotswolds by the consumption of 259 lbs. oilcake, 219 lbs. clover hay, and 3668 lbs. Swedes; while the Sussex requires, to produce the same, 314 lbs. oilcake, 304 lbs. hay, and 4086 lbs. Swedes. In this respect, therefore, a marked economy appears on the side of the Cotswolds, and this becomes still more striking when we remember that the latter is a much larger breed than the Sussex, the average weight of carcase of the Cotswolds experimented on being 12 stone 3 lbs.; of the Sussex, 9 stone 3 lbs.; and though the former, owing to the inferiority of the meat, fetches a lower price in the market, the difference is far from sufficient to counterbalance its greater weight. Another interesting point distinctly brought out is the much greater amount of food required to produce a given increase of live weight towards the close of the fattening process. In the experiments which lasted 20 weeks, nearly half as much more food was required during the last four weeks, as during the first four weeks of that time, to produce the same increase in live weight. In a later paper on pig feeding, Mr. Lawes has still further developed these and other points, and has directed particular attention to the effect of the nitrogenous and non-nitrogenous elements of the food. It appears that the amount of increase diminishes in these as in the sheep towards the close of the experiment, and most rapidly when the food is most highly nitrogenous, and we may draw the practical conclusion that the food towards the end of the fattening process should be less nitrogenous. To a certain extent, however, it would appear that this diminished rate of increase is more apparent than real, for Mr. Lawes has ascertained that towards the end of the fattening the increase contains a much larger quantity of fat than at first, and increase of fat is attended with diminution of the per centage of water, so that the gain in live weight does not accurately represent the increase in real dry matter. It is also inferred from the experiments that the increase is more directly dependent on the non-nitrogenous or respiratory elements, for it appears that the consumption of the former to produce 100 lbs. live weight oscillated in the different experiments within very narrow limits, while the quantity of nitrogenous or protein compounds was sometimes three times as great as in other cases. The experiments on the whole strikingly illustrate the great physiological principle that there must be a proper balance between the flesh forming and respiratory elements, for in some cases the latter were clearly deficient, and in them the nitrogenous substances do not produce their full effect. In fact they are turned to other purposes, for as the respiratory function is a *sine qua non* of existence, when the constituents of the food which ought naturally to support it are deficient, those which would otherwise go to the formation of flesh are consumed in their place, and a wasteful expenditure of food is the consequence. The experiments of the Leipsic Society show that sheep cannot be fed to their full extent on hay alone, and that sheep of a particular breed which when fed on hay reach a weight of 90 lbs., acquire an additional 10 lbs. by the use of concentrated food. Further, that hay is not favourable to the production of fat, but that the grains, and especially Rape and Linseed cake, greatly surpass it. Experiments on cows have also shown that 1 lb. of Rape-cake given in the food produces an increase of ¾ lb. of milk, and that with cows of high milk-producing powers it may produce double that quantity, or, on the average, Rape-cake will produce its own weight of milk. The highest effect is produced by 2 lbs. daily, but this quantity is too high if butter is the object, as it acquires a disagreeable flavour; but when the milk is to be sold, this quantity may with safety be employed. In the production of milk, Rape-cake cannot be replaced by double its weight of hay; and under favourable circumstances, when conjoined with food poor in nitrogen, it will produce three times the nutritive effect of hay. These experiments on the nutritive value of Rape-cake have been followed by an inquiry into its effects upon the dung. From this it appears that when given to sheep, not for the purpose of fattening, but in small quantity and a part of their winter food, not more than 1-6th of the original quantity of nitrogen disappears during the nutritive process, and by decomposition, and the other 5-6ths remain in the dung. The quality of cow-dung is similarly increased; for as 1 lb. of Rape-cake produces 1 lb. of milk containing only 1-8th of the nitrogen of the cake, the other 7-8ths must manifestly appear in the dung. When, however, a rapid increase is taking place in the weight of the animal, a smaller proportion of the nitrogen will pass into the dung, and it may even happen that the whole of it may be consumed in the nutritive process. This actually occurred in one of the experiments where, in 14 days, 56 lbs. of Rape-cake gave an increase of 62 lbs. live weight, and at the same time 38 lbs. of milk. In this case the Rape-cake employed contained 2.8 lbs. of nitrogen, and the nutritive products 2.49 or very nearly as much, but this is, so to speak, a mere passing phenomenon, for so soon as the live weight corresponding to this mode of feeding is acquired, only that portion of nitrogen necessary for the milk is retained, and the remaining 7-8ths pass into the dung. It is manifest, however, that it must, in an economic point of view, be the aim of the farmer to obtain the greatest possible proportion of the nitrogen in the state of flesh or milk, and this the experiments show is best effected by combining the Rape-cake with substances extremely poor in nitrogen, but containing instead abundance of the respiratory elements. Such are the general inferences to be drawn from these very important experiments, and it is manifest that they are equally important to the science and practice of agriculture.

Reviews.

Present Prices of Agricultural Seeds, with Instructions on Cultivation. By Sutton and Sons, Seed Growers, Reading, Berks.

THIS tract, which is essentially, of course, an advertisement of the agricultural seeds for sale by Messrs. Sutton, is much more than a mere publication of names and prices, and we are permitted to make the following extracts, which furnish really useful information at the present season of the year.

"*Quantities of Seed to the Acre.*—The quantity of seed sown per acre varies greatly in different localities, but the following table may be a guide to gentlemen ordering seeds. If guano is drilled with it, the quantity of seed must be increased, as some will be destroyed by the guano. Swedish Turnips, 3 to 4 lbs. per acre; early large Turnips, 2 to 3 lbs.; stubble Turnip, 4 lbs.; Rape, 4 to 6 lbs.; Mustard, 16 to 24 lbs.; Mangold Wurzel, 4 to 6 lbs.; Carrot, 8 lbs.; Parsnip, 6 lbs.; Cow Cabbage (to transplant), 1 lb.; Kohl Rabi (to transplant), 1 lb.; Kohl Rabi, drilled, 4 lbs.; Trifolium incarnatum, 20 to 24 lbs.; Lucerne, 16 to 20 lbs.; Furze, for feed, 12 lbs.; Chicory, 4 lbs.; Rye, 2½ bushels; Italian Rye Grass, 2½ bushels; Vetches, 3 bushels; Buckwheat, 3 to 4 pecks; Saintfoin, common, 4 bushels; Saintfoin, giant, 5 bushels; Linseed for flax, 2½ bushels; Linseed for seed, 3 to 4 pecks; Maize, dibbled, 2 pecks; Beet, 6 lbs."

"*Instructions for the Cultivation of the Carrot.*—Carrot seed should not be sown in open fields before the third week of April, as it will not germinate until the temperature of the earth is considerably raised, and, consequently, the weeds indigenous to the soil are liable to get a-head of the Carrots, and seriously injure the crop. It is advisable to sow a little Rape or Mustard seed in the drills with the Carrot, which, coming up quickly, will show plainly where the drills are and allow of early hoeing, which is a most important point in the cultivation of this crop. Another mode now frequently adopted for attaining the above objects, is to sprout the seed by steeping it in moist sand before sowing; this is advantageous for several reasons, but care must be taken to turn the sand and seed over every day, to prevent its heating, and also not to sow in very dry weather, as the germ of the seed will suffer so much by the sudden check as not to recover entirely. When this practice is adopted the seed should not be put into the sand earlier than the second week in April, or the plants will be too forward, and liable to run to blossom, which spoils the root. Upon the whole we consider the former plan of sowing in the open ground (not earlier than the third week in April) is the safest. A funnel-shaped piece of tin held in the hand is the best means of depositing the seed; but where this is considered too tedious, a drill may be used, sawdust being mixed with the seed."

"*Instructions for the Cultivation of Mangold Wurzel.* — The best mode of sowing Mangold Wurzel seed is with the drill. Dibbling is more economical, however, as to the quantity of seed required; but if this plan is adopted, care must be taken not to set the seed more than half an inch below the surface, or it will not germinate. It may be sowed from middle of April till middle of May, but if sown late, it should be soaked in water for a few hours. If sown before the second or third week of April it is liable to suffer from

frosts, or if the weather should prove mild it will be too forward and run to seed. The practice of growing Mangold Wurzel and Carrots in alternate rows in the same field, as recommended by Philip Pusey, Esq., in the Journal of the Royal Agricultural Society, we proved to be highly profitable. The large leaves of the Mangold gather nutriment from the atmosphere, and the Carrot leaves being smaller, allow of a free current of air between the former."

Poultry.

SWANS: *F L S.* The male swan is generally larger than the female; the neck is thicker, and the "knob" on the bill more fully developed; it requires however, an experienced eye to distinguish the sex, where the plumage does not vary.

Miscellaneous.

Improvements in Machinery for Cutting Standing Crops and Gathering the same into Sheaves or Bundles; by A. E. L. Bellford, Castle Street, Holborn. Patent granted March 12, 1853. (No. 624.)—Claims: 1. A rib or projection on the under side or surface of each cutting tooth, for the purpose of preventing the teeth being clogged in the fingers. 2. Giving the endless apron an intermittent motion, for the purpose of carrying the grain, straw, stubble, &c., back and depositing it in suitable quantities to be bound into sheaves or bundles. 3. Certain collecting hooks, for the purpose of collecting the grain, straw, stubble, &c., together into the form of sheaves or bundles ready for binding. 4. The combination of the collecting hooks, and intermittently moving carrying apron. *Mechanics' Magazine.*

Calendar of Operations.

APRIL.

WESTER ROSS, *April* 4.—Last month was such as permitted agricultural labour to progress rapidly. In some parts of the north drought has been already complained of. Here, however, there has been abundance of rain, which, with a naturally moist climate, leaves us no room for complaint. Spring Wheat was got sown in good condition, and is now presenting a vigorous braird. Oat-sowing is far advanced, and on the earlier farms is completed. There is little Barley sown in this quarter until the middle, or towards the end, of this month. The kinds of Oats principally sown here are Hopeton and Sandy; Birley, Potatoes, and late Angus, are sown to a limited extent. On good soil, and soil in fine condition, Hopeton suit well; they yield a large return per acre, but the straw is comparatively coarse. Sandy are well suited for a late climate or inferior soil; they come quickly to harvest, and yield a large quantity of good straw. Potato planting has been commenced, and farmers, encouraged by last year's abundant crop, and highly remunerating prices, will plant a greater breadth this year than was ever planted on any former one; so that, with an ordinary season, and unvisited by the blight, we would do much to supply the necessities of all but insatiable London. Many farmers have this year paid their rents with Potatoes, and a few have greatly exceeded this. The manure principally used is that from the court-yard, supplemented by guano or dissolved bones. This last-named manure has been found particularly suitable for growing healthy Potatoes. Hogs are now returning to their summer walks, greatly benefited by the open spring, and with the prospect of early Grass. Wheat and Grass are now much further advanced than at the corresponding season last year. Wheat and Barley, after having fallen a good many shillings, are speedily running up in price again.

WEST SUSSEX, *April* 11.—We have still a continuance of very dry weather, and now and then a white frost in the mornings, but this cannot be said to do any direct harm, as vegetation is not far advanced, and we have hope that it will come strong, as it may be said to have been brought up hardy. It is almost surprising that the Wheat should go on so well as it does. For though some of it suffered from the slug in the autumn, and has been left rather thin, yet what remains is doing well, and where it is thick enough it certainly has a promising appearance. Oats and Barley are up in many places and look well. Peas and Beans look in want of a shower, as they, especially Peas, begin to look a little rusty coloured; but, upon the whole, they present a fair appearance. Turnips are beginning to draw into little room, and Grass is not far advanced; the consequence is that all store stock have got to be in very little demand, and people wait to see how things will turn. There is no doubt that there will be a sharp demand so soon as we have a shower, but if we do not get that soon it will be very tight work to keep cattle in good condition. The young Clovers are a fine regular plant, and give promise of a large supply of food. All are busily employed getting in the Barley as fast as the sheep clear off the Turnips, and every spare time is occupied in clearing the Turnip land. Sheep are doing generally well, and lambs look healthy. There has been a few fat horned lambs in the market, but we have not yet seen any of the downs fit for the butcher, but another week will no doubt bring some forward, as it is well to get rid of the most forward before they go off the Turnips, as the change of food has sometimes a tendency to let them fall back. Many, to prevent this, let them have a little Grass before the Turnips are quite done, so that the change may be gradual. All fat stock are high in price and in good demand, and are likely to be so, especially if the present dry weather continue, and there is not likely to be so good a supply of them in the earliest summer months. *G. S.*

Notices to Correspondents.

GAS LIME: *J Abell.* We doubt its being a disinfector. It is an absorbent of oxygen; whereas, we presume, most disinfectants will act either by furnishing oxygen, or some similar means of combustion, or by furnishing acids, which fix volatile nuisances. A weak solution of green vitriol in water is as good a disinfectant for nightsoil as you can use.

ITALIAN RYE-GRASS: *J F C.* We do not know Mr. Dickenson's address. Possibly this notice may obtain it for you.

MANGOLD WURZEL: *T C W.* Three cwt. of guano and 8 cwt. of common salt per acre will be a good dressing.

NITRATE OF SODA: *C B.* About 1 cwt. per acre, well crushed, and sown broadcast in wet weather any time this month will answer the purpose either for Wheat or Grass. If sown at twice, one-half with the first rain and the other early in May, greater economy might be insured. We fear there is no remedy for a shallow burning soil. Experiments, however, with soot and salt, reported in the "Journal" by Lord Essex, seemed to indicate by their results advantages traceable to the absorbent and deliquescent character of the manure.

STEAM CULTIVATORS: *B S.* We do not know where any steam cultivators are to be seen at work. Usher's has been tried somewhat extensively in East Lothian, and the one invented by the author of the "Chronicles" is not yet at work.

CHAFF-CUTTERS, of the best workmanship, 25*s.*; Two-Knifed Chaff Engines, from 63*s.*; Mills for Bruising Oats and Beans, from 45*s.*
WILLIAM DRAY AND CO., Agricultural Implement Manufacturers, Swan Lane, Upper Thames Street, City.

GIDNEY'S PRUSSIAN HOE. — Gardeners and Amateurs are informed that this useful Tool is now becoming a general favourite in the garden, and only needs a trial to be appreciated. Price 1*s.* 6*d.* handled. To be had of every Ironmonger and Seedsman. Manufactured only by GIDNEY & SON, East Dereham, Norfolk.

MORNING FROSTS.
"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.
"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1*s.* 6*d.* per yard run, of E. T. ARCHER, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey. (Removing in May next to 112, Regent Street, London.)

(Fig.

(Fig. 2.)

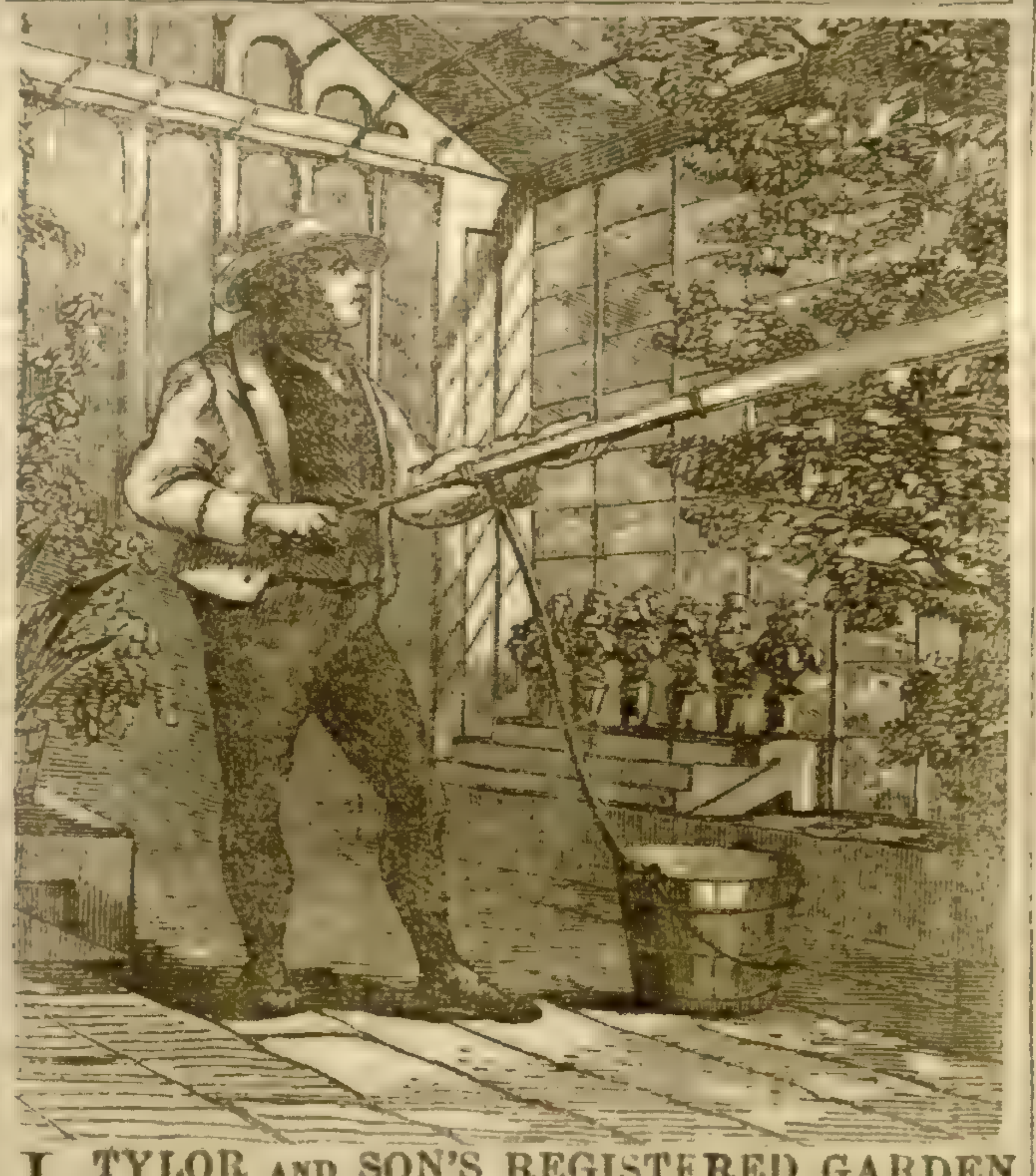
J. TYLOR AND SON'S BARROW GARDEN ENGINE (Fig. 1), in best well painted oak tub, fitted with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 1 holds	10 gallons,	throws 30 feet high	...	£4 10
No. 2 „	15 „	„ 45 „	...	5 10
No. 3 „	28 „	„ 45 „	...	6 18

J. TYLOR AND SON'S BARROW GARDEN ENGINE (Fig. 2), in strong tinned iron tub, well painted inside and outside, with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 10 holds	8 gallons,	throws 25 feet high	...	£2 15
No. 13 „	12 „	„ 30 „	...	3 5
No. 11 „	16 „	„ 40 „	...	4 0
No. 12 „	24 „	„ 45 „	...	5 0
No. 14 „	30 „	„ 45 „	...	5 18

A large assortment of every description of Garden Syringes Pail Engines, Conservatory Pumps, &c., kept in stock.
Full size Syringe, on Read's principle, of the very best quality and workmanship, with two roses and one jet, 21*s.*; Plain Syringes from 10*s.* 6*d.* upwards.
J. TYLOR & SON'S Horticultural Apparatus may be obtained at these prices from any respectable Ironmonger or Seedsman in town or country, through whom alone they will be supplied, and of whom Drawings and Prices may be had.
N.B. Cost of carriage, &c., not included in these prices.
J. TYLOR & SON'S Manufactory, Warwick Lane, Newgate Street, London.



J. TYLOR AND SON'S REGISTERED GARDEN SYRINGE.—By a simple arrangement this Syringe is rendered more effective than any portable Conservatory or Garden Pump ever offered to the public. It is equally adapted for Garden or Conservatory use, and is capable of discharging twice as much water in a given time as any other Syringe now in use. The arrangement consists in attaching a small flexible suction tube to the barrel of the Syringe, through which it is filled with water at every discharge of the previous contents. By this means the Syringe is always charged, and the pull-up stroke of the piston rendered perfectly easy, it having, indeed, no work to do, the barrel being previously full of water. Being thus made self-supplying, a great saving of labour is effected; and the necessity of stooping to fill the Syringe at every discharge being done away with, the direction of the water can be maintained for any length of time. It is perfectly cleanly in its action, as it is not possible for any water to get on the outside of the barrel, which is a well-known inconvenience attendant on the use of every other Syringe. Its construction is perfectly simple, and cannot get out of order; the ground-in ball valves and fittings used for filling all other patent Syringes being entirely superseded. Price complete, with India-rubber suction tube, with galvanised spiral inside, and covered with cotton outside, 25*s.* each. To be had of any respectable Ironmonger or Seedsman in town or country.
J. TYLOR & SONS, Manufacturers of Horticultural Apparatus, Warwick Lane, Newgate Street, London.
N.B. This price does not include carriage, package, or expenses of delivery in the country.

BUDDING'S LAWN-MOWING MACHINES, with Registered Improvements.
MAPPLEBECK & LOWE, MACHINISTS & MANUFACTURERS, Birmingham.

BUDDING'S LAWN MOWERS, with SAMUELSON'S registered improvements, *lightening the draught fully one-half*, and enabling an unskilled labourer to make neat work: free from liability to choke, or get out of order May be had of all ironmongers in town or country, or from the Works, Banbury; delivered free in a packing case to any station on the North-Western and Great Western Railways. Testimonials forwarded on application.—Britannia Works, Banbury.

RICHMOND AND CHANDLER'S No. 1 CORN CRUSHER (Price 5*l.* 5*s.*) was first introduced a few years ago, as a decided improvement upon others theretofore made. Subsequent time and experience have served to render it more perfect, and to greatly extend the pre-eminent patronage of members of the Royal Agricultural Society and distinguished scientific authorities throughout the world.—Address, RICHMOND & CHANDLER, Implement Works, Salford, Manchester; and 32, South John Street, Liverpool.
Export orders completed on the shortest notice.

HOSE PIPING.—GREAT REDUCTION IN PRICE.
WAITHMAN'S PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense Pressure, and much more than Leather, vulcanised Rubber, or any other Hose; and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented Inventions, the cost of manufacturing it is now reduced at least 60 per cent., which advantage is offered to the Public.—London Agents, BURGESS & KEY, 103, Newgate Street, and 52, Little Britain, who on application will forward wholesale and retail prices.

ANTHONY'S PATENT AMERICAN CHURN.—Extract from the Royal Agricultural Society's Report of the trial of Churns at the Gloucester meeting in July last. "In this trial the American Churn not only maintained its character in producing butter rapidly, but in producing a greater quantity from the like amount of cream." It made from 4 quarts of cream 4 lbs. 6 oz. of butter, being 8 oz. more than any of the other Churns from the same quantity and quality of cream. Price Lists of Churns and Implements by the best makers sent free, and Illustrated Catalogues on receipt of eight postage stamps. BURGESS & KEY, 103, Newgate Street, and 52, Little Britain, London, who have always a large stock of Steam-engines, Ploughs, Harrows, Diggers, Waggons, Carts, Threshing and Dressing Machines, Mills, Oat and Grain Bruisers, Oilcake Breakers, Reaping Machines, Haymakers, Horse-rakers, Turnip Cutters, Liquid Manure Carts, Parkes' celebrated Steel Digging Forks and Draining Tools, Pumps for Manure, Farm Fire Engines, and for Garden Purposes, &c. &c.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.

MESSRS. BURGESS AND KEY, as Mr. PARKES' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.
103, Newgate Street, and 52, Little Britain, London.

WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

	£ s. d.
Patent Pump	1 15 0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing	3 0 0

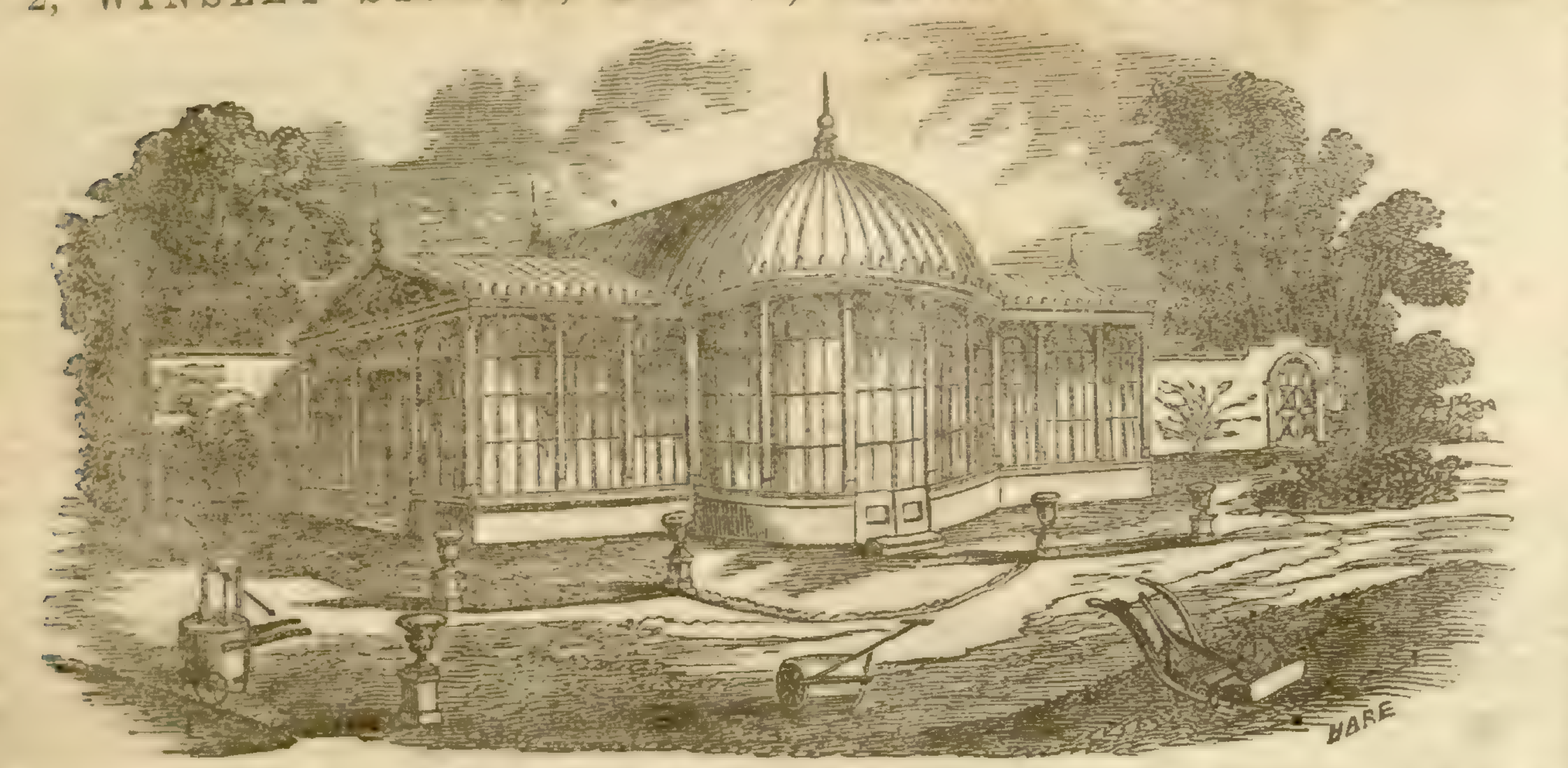
Larger sizes if required.
The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.
May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,
JOHN WARNER & SONS,
8, CRESCENT, JEWIN STREET, LONDON.
Every description of Machinery for Raising Water; Fire Engines, &c.

JOHN WARNER AND SONS,
CRESCENT, JEWIN STREET, LONDON.
GALVANISED IRON TUB GARDEN ENGINE,
With Warner's Registered Spreader.

Is strongly recommended, for durability and low price, viz., 2*l.* 19*s.*, to hold 10 gallons.
Larger sizes made either in wood or iron. May be obtained of any Ironmonger or Plumber in town or country, or of the Patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Syringes of various constructions and sizes from 9*s.* upwards. An extensive assortment kept.

COTTAM AND HALLEN,

2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.



APPLICATION is requested for their NEW HORTICULTURAL LIST, containing Illustrations, Descriptions, and Prices of

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Syringes	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.

AGRICULTURAL LIST UPON APPLICATION.

EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

ENCAUSTIC TILE PAVEMENTS.

MAW & CO., of Benthall Works, Broseley, Shropshire, send Post Free their PATTERN BOOK and FURNISH DESIGNS (with estimates) in this beautiful and durable production to any given plans of Churches, Entrance Halls, Passages, Conservatories, Verandahs, &c.—Specimens at 11, Aldersgate Street, London.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen *in use* at Worton Cottage, on application to the Gardener. Sundays excepted.

Priced lists of plant tubs and boxes forwarded on application.

HALL'S GARDEN NETTING, the best protection against FROST, STORMS, OR SCORCHING HEAT.

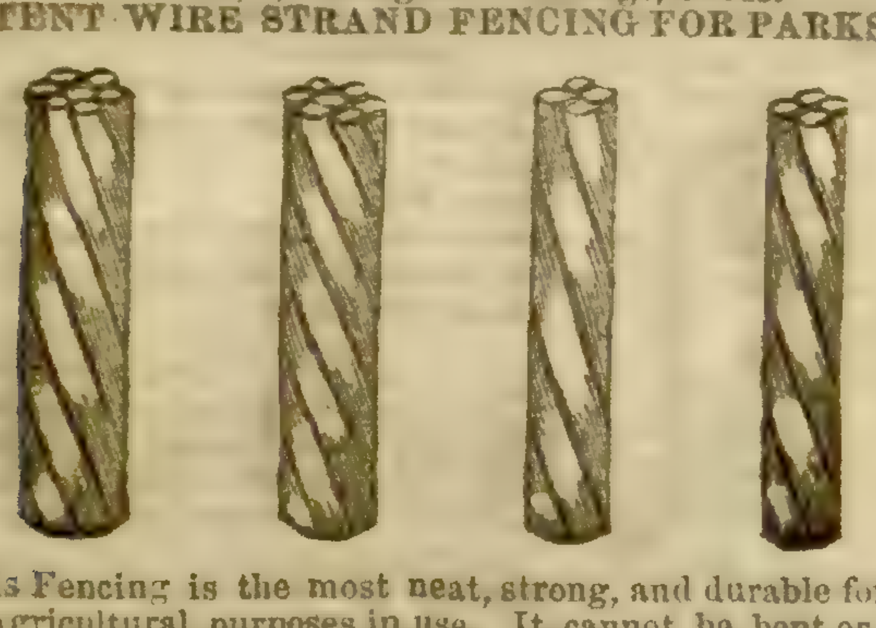
TANNED NETTING, for the protection of Fruit Trees from frost, blight, and birds, and for the security of fresh sown seeds, either in Gardens or Fields, at 1*d.* per square yard; 200 yards, 14*s.*; 500 yards, 30*s.*; 1000 yards, 50*s.* Scrim Canvass, for Wall Fruit.—At EDGINGTON and Co.'s, 17, Smithfield Bars, City, and Old Kent Road, Southwark, where may be seen erected Emigrant Tents in great varieties, on their latest improved principles, and also at Brunswick Street, Poplar, near the East India Export Dock.

RIPE FRUIT, STRAWBERRIES, AND SEED BEDS.—New Twined Netting (tanned if required), 1 yard wide, $1\frac{1}{2}$*d.* per yard; 2 yards wide, 3*d.* per yard; 4 yards wide, 6*d.* per yard; $\frac{1}{2}$-inch mesh do., 2 yards wide, 6*d.* per yard. The Elastic Hexagon Garden Netting, 76 meshes to the square inch, effectually excludes birds, wasps, flies, &c., from fruit trees, flower or seed beds, $4\frac{1}{2}$*d.* per square yard. Tanned Netting, 2 or 3 yards wide, $1\frac{1}{2}$*d.* per yard: 4 or 6 yards wide, 3*d.* per yard, exactly the same as advertised by others at double the above prices. Coir or Hemp Sheepfolding Net, of superior quality, 4 feet high, 4*d.* per yard. Lamb Net, 6*d.* per yard. Rabbit Net, $1\frac{1}{2}$*d.* per yard, 4 feet wide; each edge Corded, 2*d.* per yard, suitable for fowl fencing. Square Mesh Cricketing Net, fix its full width and length, made of stout cord, 3*d.* to 4*d.* per square yard; this is the best article made for fencing against fowls, cats, &c.

The largest, cheapest, and best stock in the world, at W. CULLINGFORD'S, 1, Edmund Terrace, Ball's Pond Road, Islington, London. The Trade supplied. Orders by Post punctually attended to. Fishing Nets of all kinds in stock.

H. J. MORTON AND Co., Galvanised Iron Roofing Works, 2, Basinghall Buildings, Leeds.

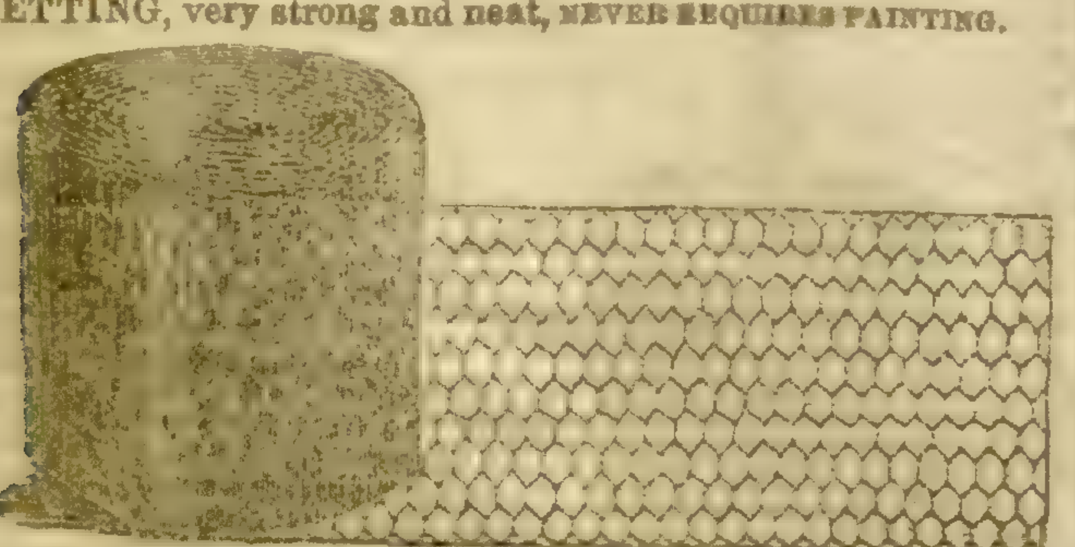
PATENT WIRE STRAND FENCING FOR PARKS, &c.



This Fencing is the most neat, strong, and durable for Parks and Agricultural purposes in use. It cannot be bent or put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply as above.

IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

H. J. MORTON AND Co., 2, Basinghall Buildings, Leeds.—GALVANISED GAME AND POULTRY NETTING, very strong and neat, NEVER REQUIRES PAINTING.



24 inches wide, 3-inch mesh, $4\frac{1}{2}$*d.*, 6*d.*, and $8\frac{1}{2}$*d.* per yard.

24 inches wide, 2-inch mesh, 7*d.*, $9\frac{1}{2}$*d.*, and 1*s.* per yard.

GALVANISED IRON SPOUTING, for Dwellings, Cottages Farm Buildings, &c., NEVER REQUIRES PAINTING.

Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalte Roofing Felt, &c.

JAMES PHILLIPS AND CO. beg to call attention to their present reduced prices of Glass Milk Pans, Propagating Glasses, &c. &c.

GLASS MILK PANS, packed in cases containing 12.

12 inches diameter	... 12*s.* 0*d.*	22 inches diameter	... 42*s.* 0*d.*
14 " "	... 18 0	24 " "	... 48 0
16 " "	... 21 0	26 " "	... 60 0
18 " "	... 30 0	Cases 2*s.* each extra, returnable at full price.	
20 " "	... 36 0		

PROPAGATING GLASSES.—Per dozen.

2 inches diameter	... 2*s.* 0*d.*	12 inches diameter	... 18*s.* 0*d.*
3 " "	... 2 6	13 " "	... 20 0
4 " "	... 3 0	14 " "	... 24 0
5 " "	... 4 0	15 " "	... 30 0
6 " "	... 5 0	16 " "	... 36 0
7 " "	... 6 0	17 " "	... 42 0
8 " "	... 7 0	18 " "	... 48 0
9 " "	... 8 0	19 " "	... 60 0
10 " "	... 10 0	20 " "	... 72 0
11 " "	... 12 0		

CUCUMBER GLASSES,—Each.

24 inches long ...	... 2*s.* 0*d.*	16 inches long ...	... 1*s.* 4*d.*
22 " ...	... 1 10	14 " ...	... 1 2
20 " ...	... 1 8	12 " ...	... 1 0
18 " ...	... 1 6	Made to any length.	

FERN SHADES.—Each.

6 in. diam., with stands	2*s.* 9*d.*	12 in. diam., with stands	8*s.* 1*d.*
7 " "	3 6	13 " "	9 6
8 " "	4 1	14 " "	12 6
9 " "	4 9	15 " "	16 9
10 " "	5 9	16 " "	21 10
11 " "	6 8		

Bee Glasses, Lactometers, Lord Camoys' Milk Syphons, Tiles and Slates, Wasp Traps; Plate, Crown, and Ornamental Glass, Shades for Ornaments, and every article in the trade.

HARTLEY'S PATENT ROUGH PLATE GLASS, for Conservatories, Public Buildings, Manufactories, Skylights, &c.

JAMES PHILLIPS AND CO., Horticultural Glass Warehouse, 116, Bishopsgate Street Without, London.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES, GREENHOUSES, DWELLINGS, ETC.

ESTABLISHED MORE THAN ONE HUNDRED YEARS.

THOMAS MILLINGTON requests attention to his present prices of SHEET GLASS in 100 feet boxes.

Squares	6 by 4 and $6\frac{1}{2}$ by $4\frac{1}{2}$; 7 by 5 and $7\frac{1}{2}$ by $5\frac{1}{2}$; 8 by 6 and $8\frac{1}{2}$ by $6\frac{1}{2}$	... ... 13 6
"	9 by 7 and $9\frac{1}{2}$ by $7\frac{1}{2}$; 10 by 8 to $12\frac{1}{2}$ by $9\frac{1}{2}$	... ... 16 3
"	12 by 10 to 24 by 14 ...	... ... 19 0

Orchard House Squares on Mr. Rivers's approved plan, to whom I have sold some thousands of feet:—20 inches by 12, 20 by 13, 20 by 14, 20 by 15, $20\frac{1}{2}$ by $12\frac{1}{2}$, $20\frac{1}{2}$ by $13\frac{1}{2}$, $20\frac{1}{2}$ by $14\frac{1}{2}$, at 19*s.* per 100 feet.

200 feet cases at 42*s.*, and 300 feet case 63*s.*, in large sheets.

Boxes charged 1*s.* extra per 100 feet, and the same allowed if returned free of all charge.

HARTLEY'S PATENT ROUGH PLATE GLASS, Fern Shades, Striking Glasses, Milk-pans, Bee Glasses, Cucumber Tubes, Sheet and Rough Plate Glass Tiles, Wasp Traps; Plate, Patent Plate, Crown and Sheet Window Glass, in every thickness and quality, and Ornamental Glass, plain and coloured; pure white Shades for Ornaments, Crystal Glass for Pictures.

Warehouse, 87, Bishopsgate Street Without—same side as Eastern Counties Railway.

TO AMATEUR GARDENERS, LOCAL BOARDS OF HEALTH, & SANITARY WORKS.

PATENT GLASS TUBES, Iron Coated with Glass, Gutta Percha, Combinated ditto, Patent Flexible India Rubber Tubing, and every other Hose for Watering Gardens. The Hydraulic Ram, Fire, Garden, and every other kind of Pump, Sluice Cocks, Hydrants, High Pressure Cocks, and all other articles to be had, Wholesale and Retail, of

FREEMAN ROE,

HYDRAULIC ENGINEER,

70, Strand, and Bridgefield, Wandsworth.

HORTICULTURE IN ALL ITS BRANCHES.

J. WEEKS & Co., King's Road, Chelsea,

HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Buildings or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

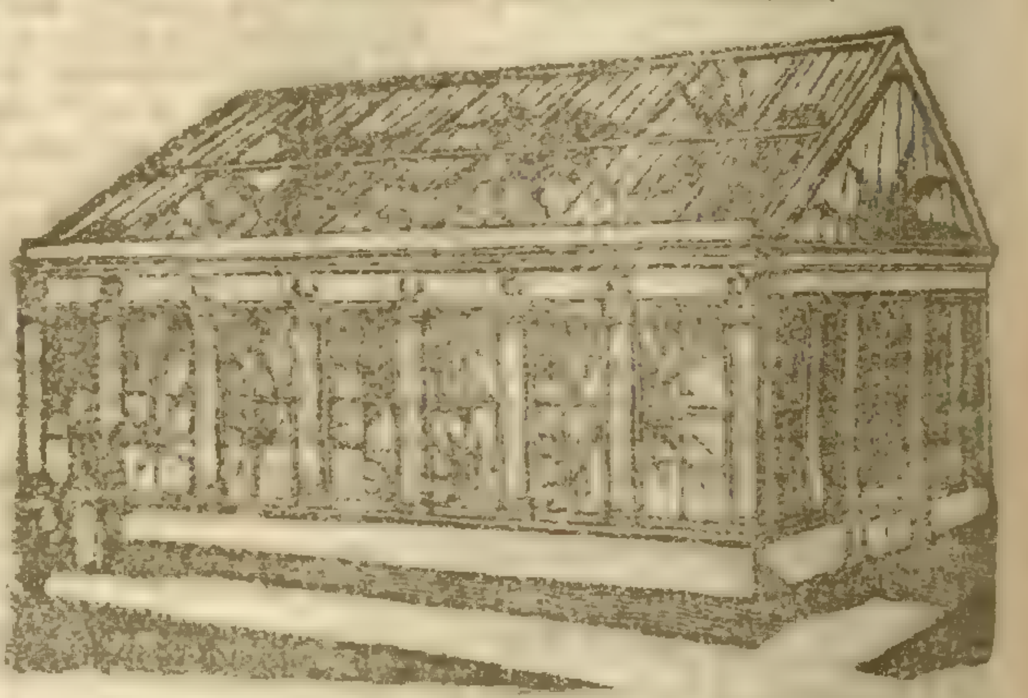
Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. WEEKS & Co., King's Road, Chelsea, London.

GREEN AND HOTHOUSES made by machinery at J. LEWIS'S HORTICULTURAL WORKS, Stamford Hill, Middlesex. Warranted of best materials; being made by steam-power, they are put together in a superior manner; one trial will prove these Buildings to be the cheapest and best made in England. $1\frac{1}{2}$ in. Greenhouse lights at $3\frac{1}{2}$*d.* per foot; 2 in. at $4\frac{1}{2}$*d.* per foot. Lists of Prices by enclosing two postage stamps.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



GRAY AND ORMSON, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

BY HER MAJESTY'S ROYAL LETTERS PATENT

E. DENCH, PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

PATENT HOTHOUSES and excellent Glass at 1*s.* 3*d.* per foot super., which are superior to all others for price with quality, and if known would supersede all others. (See Appendix, in "Book of the Garden," by Mr. M'Intosh.) A Range of Houses and Hot Water Apparatus, was erected by E. D. for E. L. Betts, Esq., Preston Hall, Kent. Mr. J. Frost, head gardener, has shown their efficiency by their produce at the Royal Botanic Gardens, Regent's Park, June 8, and Chiswick, June 11. The editor of the *Gardeners' Chronicle* says: "Beautiful examples of Black Hamburgh, large both in bunch and berry, and as black as Sloes, were furnished by Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall, Kent; these well deserved the first prize which was awarded them."—*Gardeners' Chronicle*, June 18th, 1853. The Grapes were considered the best shown at Regent's Park during the season, and the Houses are as superior for the growth of everything else in horticulture, which has been fully proved, as they have been extensively erected for the nobility and gentry in all parts of the kingdom.

GLAZING WITHOUT PUTTY.—Iron and Glass alone. E. D. has Roofed the Public Baths and Washhouses, Endell Street, on this principle, and others are in hand. Patent Sashes for Peach Walls, Pits, &c., 8*d.* per foot super. Heating by Hot-water, on the most practical principles, and all the best materials used. Printed Price List sent on application.

THE COTTAGER'S STOVE.—An economical, compact, and portable COOKING APPARATUS, combining a good sized Oven and Hotplate; may be had *with* or without a boiler, and will cook sufficient for a dozen persons with the consumption of 1 lb. of coal or coke per hour. It requires no fixing, may be placed in any apartment, and is a great security against accidents from fire. It will burn Coal, Coke, or Wood. They are also specially adapted for Emigrants, and may be seen in operation daily, at the Manufacturers', D. & E. BAILEY, 272, High Holborn, London.—Price 50*s.*, and upwards.

BEEHIVES.

NEIGHBOUR'S IMPROVED COTTAGE BEE-HIVE, as originally introduced by GEORGE NEIGHBOUR & SONS, with all the recent improvements, glasses, thermometer, &c., price 35s., securely packed for the country.

This unique hive has met with universal commendation, and may be worked with safety, humanity, and profit, by the most timid; its arrangements are so perfect, that the honey may be taken at any time of the gathering season without at all injuring the bees, the produce being of crystal purity. The public are hereby cautioned against a piracy of this Beehive.

Early applications, addressed to GEO. NEIGHBOUR & SONS, 127, High Holborn, or 149, Regent Street, London, will receive prompt attention. Their newly arranged Catalogue of other improved Beehives, with Drawings and Prices, sent on receipt of two stamps.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

BAILY'S ROUP AND CONDITION PILLS FOR POULTRY.—This remedy has been extensively tried with uniform success, and is offered to amateurs and the public with the greatest confidence. It will effectually overcome that disease which has hitherto been the bane of the poultry-yard, and destroy that apprehension known to all poultry keepers, when a favourite and valuable fowl is seen to droop. It is inestimable for poultry returning from exhibitions, and greatly facilitates moulting.—Sold, with full instructions for use, in boxes containing 50 pills, by JOHN BAILY, 113, Mount Street, Grosvenor Square, price 3s. per box, or by post 3s. 4d. "Fowls, by Baily," the most useful and plainest treatise of the day; price 2s., by post 2s. 6d.

Baily's Registered Fountains, universally adopted and approved. Drawings and particulars, by post, on application.—113, Mount Street, Grosvenor Square.

TOBACCO PAPER! TOBACCO PAPER!

THE Cheapest and most effectual article for Smoking Greenhouses, and destroying the Fly on Plants, is Genuine Tobacco Paper, which JOSEPH BAKER, of 73, Fleet Street, can supply in large quantities, at 1s. per lb.; and if under 7 lbs. at 1s. 2d. per lb. Post-office Orders payable at the Strand Office.

JOSEPH BAKER, 73, Fleet Street, London (opposite the *Dispatch* newspaper).

CURE FOR MILDEW ON GRAPES, &c.—In consequence of the increased prevalence of mildew on the Vines, &c., during the last few seasons, G. TABER, of Rose Cottage, Rivenhall, practical Gardener, Seedsman, and Florist, has directed particular attention to the best mode of preventing it, or for curing the Vines that have been attacked, and he now begs to announce that he has succeeded in preparing a composition known as TABER'S ANTI-MILDEW COMPOSITION, which will effectually prevent or cure the disease without doing the slightest injury to the Vines; and any person, by the aid of the printed instructions, may use it without risk. It is also an invaluable remedy for preventing Mildew on Wall Trees, Roses, &c. Sold in packets containing 1 lb., 1s. 3d.; 3 lbs. 3s.; 6 lbs. 5s. 6d., with directions for use. By enclosing two postage stamps, G. T. will send a circular with full particulars as to quantity required for a house for the season, and also testimonials of the success he has met with.

G. T. will personally attend gentlemen, and give instructions to their gardeners at a reasonable remuneration for time and travelling expenses. The trade supplied at the usual discount. Post Office orders to be made payable to GEORGE TABER, and drawn upon the Witham Post Office. Postage stamps received in payment of small orders. Packets delivered free to the Witham Station of the Eastern Counties line.—Address GEORGE TABER, Rose Cottage, Rivenhall, near Witham.

THE CHOLERA

PREVENTED BY THE DESTRUCTION OF ALL NOXIOUS EFFLUVIA.

CREWS'S DISINFECTING FLUID, Recommended by the College of Physicians. The Cheapest and Strongest Chloride of Zinc.—Quarts 2s.; Pints, 1s.; Half-pints, 6d. Sold by all Chemists, Druggists, and Shipping Agents; and at Commercial Wharf, Mile End, London.

THE CHOLERA—ITS BEST ANTIDOTE.

SIR W. BURNET'S DISINFECTING FLUID, the original and genuine CHLORIDE OF ZINC.—Sold by all Chemists, Druggists, and Shipping Agents; and at the Office, 18, Cannon Street, London Bridge.

HYGIENIC BATHS, A POWERFUL PROMOTER OF HEALTH AND WELL-BEING.—JENSEN'S Herbaceous Daphne Marina Salt for Baths, when dissolved in a cold, tepid, or warm bath, imparts so eminently strengthening and beneficial properties to the same, that, when once tried, a bath will scarcely ever be taken without it. In the buoyancy and freshness it produces in the system, it is far superior to any known sea bath. Highly recommended by that distinguished Physician, Dr. Andrew Ure, M.D., F.R.S., &c.—Sold at 1s. per Packet, by C. MEINIG, 103, Leadenhall Street, and by all Chemists and Bathing Establishments.

RUPTURES EFFECTUALLY CURED WITHOUT A TRUSS.

ALL Sufferers from this alarming complaint are earnestly invited to consult or write to Dr. LESLIE, as he guarantees them relief in every case. His remedy has been successful in curing thousands of persons during the last 11 years, and is applicable to every kind of single and double rupture, however bad or long standing, in male or female of any age, causing no confinement or inconvenience in its use whatever. Sent post free to any part of the world, with full instructions for use, on receipt of 7s. 6d. in postage stamps, cash, or Post Office order, payable at the General Post Office, to Dr. HERBERT LESLIE, 37A, Manchester Street, Gray's Inn Road, London. At home daily, except Sunday, from 11 till 3 o'clock. A Pamphlet of Testimonials sent post free on receipt of one postage stamp.

FENDERS, STOVES, AND FIRE-IRONS.—Buyers of the above are requested, before finally deciding, to visit WILLIAM S. BURTON'S SHOW ROOMS, 39, Oxford Street (corner of Newman Street), Nos. 1 and 2, Newman Street, and 4 and 5, Perry's Place. They are the largest in the world, and contain such an assortment of FENDERS, STOVES, RANGES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with bronzed ornaments and two sets of bars, 2l. 14s. to 5l. 10s.; ditto, with ormolu ornaments and two sets of bars, 5l. 10s. to 12l. 12s.; Bronzed Fenders complete, with standards, from 7s. to 3l.; Steel Fenders from 2l. 15s. to 6l.; ditto, with rich ormolu ornaments, from 2l. 15s. to 7l. 7s.; Fire-irons from 1s. 9d. the set to 4l. 4s. Sylvester and all other Patent Stoves, with radiating hearth plates. All which he is enabled to sell at these very reduced charges,

1st,—From the frequency and extent of his purchases; and,

2dly,—From those purchases being made exclusively for cash.

TEA URNS, OF LONDON MAKE ONLY.—The largest assortment of London-made TEA URNS in the world (including all the recent novelties, many of which are registered) is on Sale at WILLIAM S. BURTON'S, from 30s. to 6l.

THE BEST SHOW OF IRON BEDSTEADS in the Kingdom is WILLIAM S. BURTON'S.—He has two very Large Rooms, which are devoted to the exclusive show of Iron and Brass Bedsteads and Children's Cots, with appropriate Bedding and Mattresses. Common Iron Bedsteads from 15s. 6d.; Portable Folding Bedsteads from 12s. 6d.; Patent Iron Bedsteads, fitted with dovetail joints and patent sacking, from 21s.; and Cots from 21s. each; handsome Ornamental Iron and Brass Bedsteads, in great variety, *from 2l. 19s. to 13l. 13s.*

PAPIER MACHE AND IRON TEA-TRAYS.—An assortment of Tea Trays and Waiters wholly unprecedented, whether as to extent, variety, or novelty.

Gothic shape Papier Maché Trays, per set of three	from 20s.	to 10 guineas.
Ditto, Iron ditto.	from 13s.	to 4 guineas.
Convex shape, ditto.	from 7s. 6d.	

A large quantity of small Papier Maché and Iron Trays, many of them executed in the highest style of art, at about a quarter of their original cost; being odd, or slightly out of condition. These are especially worthy the attention of tavern and coffee-house keepers. Round and Gothic Waiters, Cake and Bread Baskets equally low.

WILLIAM S. BURTON has TEN LARGE SHOW ROOMS (all communicating), exclusive of the shop, devoted solely to the show of GENERAL FURNISHING IRONMONGERY (including Cutlery, Nickel Silver, Plated and Japanned Wares, Iron and Brass Bedsteads, and Bedding), so arranged and classified that purchasers may easily and at once make their selections.

Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of.

No. 39, Oxford Street (corner of Newman Street); Nos. 1 and 2, Newman Street; and 4 and 5, Perry's Place.

ONE THOUSAND BEDSTEADS TO CHOOSE FROM.

HEAL AND SON'S Stock comprises a large assortment of handsomely Japanned and Brass-mounted IRON BEDSTEADS, CHILDREN'S CRIBS and COTS of new and elegant designs; MAHOGANY, BIRCH, and WALNUT-TREE BEDSTEADS, of the soundest and best manufacture, many of them fitted with Furnitures, complete; and every variety of SERVANTS' and PORTABLE BEDSTEADS. They have also a large assortment of

BED-ROOM FURNITURE, comprising WARDROBES, both in Japanned Wood and Mahogany, from 4 feet to 8 feet long, fitted with every variety of arrangement; DRESSING TABLES and GLASSES, WASH-STANDS, DRAWERS, and every article for the complete furnishing of a Bed-room.

HEAL & SON'S ILLUSTRATED CATALOGUE OF BEDSTEADS and priced List of Bedding, containing designs and prices of upwards of One Hundred Bedsteads (representing a stock of upwards of One Thousand), sent free by post.

HEAL & SON, 196, Tottenham Court Road, London.

NO CHARGE FOR STAMPING ARMS, CRESTS, INITIALS, &c., on paper and envelopes, at LOCKWOOD'S well-known establishment, 75, New Bond Street. Good cream-laid Note-paper, five quires for 9d.; Thick ditto, five quires, 1s.; Albert and Queen's sizes, five quires for 6d., 9d., and 1s.; Envelopes, 3d. to 1s. 6d. per hundred; Foolscap paper, 7s. 6d. per ream; Copybooks, 2s. 6d. per dozen. Card Plate engraved, 2s. 6d.; 100 Cards printed, 2s. 6d. Mourning Stationery equally cheap. Wedding Orders promptly executed. A large variety of Writing and Dressing Cases, Envelope Boxes, Blotting Books, Inkstands, Gold Pens, Church Services, &c. Copy address, LOCKWOOD'S, 75, New Bond Street. Country orders for 20s. sent carriage free.

THE LATEST DISCOVERY IN ELECTRICITY.

ELECTRICITY IS VITALITY, and when communicated in mild but continuous currents by wearing MEINIG'S patent portable GALVANIC ELECTRO GENERATOR, for personal use. All Nervous, Functional, or Rheumatic Diseases (where no organic change has taken place) disappear with a safety, certainty, and speed, which is as marvellous as it is demonstrable beyond the possibility of a doubt; for the prospectus contains the names and addresses of more than 400 persons cured within the last 18 months by this extraordinary agent, which is moreover adopted in all the Hospitals in this country and in France, and by the first men of the day. The effects being instantaneously perceptible, may be tested freely and beforehand. Price from 5s. upwards, according to power. A full description of this extraordinary discovery may be had (by post *for two stamps*) of C. MEINIG, 103, Leadenhall Street London; or from all respectable Chemists.

N.B. In this new Apparatus durability is secured, and all metallic or wet contact with the body entirely obviated.

It weighs two ounces, and can be worn with the greatest comfort. MEINIG'S ELECTRO GENERATOR, when worn on the Liver, has been found a never-failing preventive of Cholera, supplying the central and hepathic system with vital energy, to resist and counteract all miasmatic influences.

PAINS IN THE BACK, GRAVEL, LUMBAGO, RHEUMATISM, GOUT, INDIGESTION, FLATULENCY, NERVOUSNESS, DEBILITY, &c.

DR. DE ROOS' COMPOUND RENAL PILLS, as their name Renal (or the Kidneys) indicates, are a most safe and efficacious remedy for the above dangerous complaints. For depression of spirits, incapacity for society, study, or business, giddiness, drowsiness, nervousness, and insanity itself, when arising from or combined with urinary diseases, they are unequalled. Price 1s. 1½d., 2s. 9d., 4s. 6d., 11s., and 33s. per Box, through all Medicine Vendors, or sent (free) on receipt of the amount in postage stamps, by Dr. DE ROOS, 35, Ely Place, Holborn, London. At Home for consultation daily from 11 till 1, and 5 till 8, Sunday excepted. Advice and Medicines, 1l.

HOLLOWAY'S PILLS, FOR IMPURITY OF THE BLOOD AND IRRITATION OF THE SKIN.—Persons subject to disorders of this nature generally suffer most at the spring and fall of the year; this may be greatly mitigated, and ultimately cured, by taking a course of HOLLOWAY'S Pills, as they are composed of ingredients peculiarly adapted for purifying the blood and cleansing the system. For Bile, Jaundice, Liver Complaints, and Diseases of the Stomach, they are admirably adapted, and quickly remove the causes of these ailments, thereby restoring the patient to a state of health, bouyancy of spirits, and elasticity of feeling, not to be attained by any other remedy.—Sold by all Druggists, and at Professor HOLLOWAY'S Establishment, 244, Strand, London.

TO NURSERYMEN AND FLORISTS.

WANTED, to Rent or Purchase, within a reasonable distance of London, an Established Nursery, with a good residence.—Terms and full particulars as to extent of business, price required, and locality, to be addressed to A. C., 23, York Terrace, Regent's Park.

TO BE SOLD, with immediate possession, a NURSERY and FLORIST BUSINESS, three miles from Hyde Park Corner, comprising a convenient House, an acre and a quarter of Ground, with five Greenhouses and other conveniences, together with the stock. A good Jobbing Connection.—Apply to N. HUGHES, Nurseryman, near the Church, Hammersmith.

TO BE SOLD, by order of the Executors, a GREENHOUSE; Galvanised Iron Frame, ornamented with Stained and Plain Glass Insides, Ends, and Doors; measuring 13 feet square; nearly new: was purchased at Great Exhibition in 1851. Can be seen at Mr. WOODS, Florist, Bowyer Place, Camberwell Road.

COCHIN CHINA POULTRY, ETC.

EGGS FROM PRIZE BIRDS.

MR. JOHN FAIRLIE, of Cheveley Park, Newmarket, in reply to the very urgent applications from numerous amateurs, is now prepared to dispose of a limited number of Eggs, from his celebrated prize Cochins, Brahma Pootras, Scotch Bakies, Dorkings, &c., according to the dates of the orders received.

COCHIN CHINA FOWLS.

MR. THOMAS GILBERT, of Grays, Essex, having purchased of THOMAS STURGEON, Esq., his entire breed of 1853, Gentlemen and Amateurs are informed the Birds are now on Sale, and are bred exclusively from his best Stock Birds, Jerry and Nelson. Eggs may be had at 16s. per dozen, from the above.

BRAHMA POOTRA FOWLS' EGGS.

MR. ALFRED SALTER can supply EGGS of these much esteemed Birds at 20s. per dozen, from Birds of the stock of Messrs. Gilbert, Garbonnatti, and imported hens.—Address, Versailles, William Street, Hammersmith, Middlesex.

BRAHMA POOTRA EGGS, from the choicest Birds of an Amateur, Brahmas of whose breeding have competed successfully at the first Shows in the Kingdom, viz., the Royal Agricultural, Great Metropolitan, Birmingham, Great Yarmouth, Doncaster, Norwich, Winchester, and Manchester. Price three guineas per dozen, warranted from the best prize and selected birds only.—W. C. G., Post Office, Sandbach, Cheshire.

PRIZE SILVER POLANDS (Dr. HORNER'S STRAIN).—The Subscriber can now furnish EGGS of the above from the Birds he successfully exhibited the past year at Hitchin Great Yarmouth, and Norwich, and awarded 11 prizes, price 15s. per dozen; also Eggs from extremely small pure White Bantams (prize Birds), at 18s. per dozen.—Orders, with Post-office order, addressed to Mr HENRY YOUELL, Church Square, Great Yarmouth, will be promptly attended to.

SPANISH AND DORKING FOWLS.—Captain HORNBY having transferred his whole Stock of celebrated POULTRY to Mr. H. D. DAVIES, of Spring Grove, Hounslow, a portion (for want of space) is for immediate sale.

TO BE SOLD, a very fine silver-pencilled Hamburgh COCK and three HENS, chickens of 1853. These birds are the property of a Clergyman, and are from prize strains. The Cock is not from the same strain as the Hens. Price 2l. 10s.—Apply to Rev. F. H. L., Atherstone, Warwickshire.

Sales by Auction.

FANCY POULTRY—PERIODICAL SALE.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, April 18, at 12 o'clock precisely, a choice selection of WHITE COCHINS, from the yard of G. H. Preston, Esq., of Great Yarmouth, fine Buff Birds from T. Shackle, Esq., of Hayes, some first-class White, Golden, and Silver Polands, from W. G. Vivian, Esq., of Singleton. A few Brahmas and other fancy varieties.—Catalogues, by enclosing a stamped directed envelope, to Mr. J. C. STEVENS, 38, King Street, Covent Garden, London.

EALING PARK.

MRS. LAWRENCE'S STOVE AND GREENHOUSE PLANTS, AZALEAS, AND HEATHS, THE MOST IMPORTANT AND VALUABLE COLLECTION EVER OFFERED TO PUBLIC SALE.

MR. J. C. STEVENS is honoured with instructions (in consequence of the ill-health of Mrs. Lawrence) to Sell by Auction, at the Gardens, Ealing Park, on THURSDAY, 27th April, and following days, at 1 o'clock precisely, this unrivalled Collection of Magnificent Specimen STOVE AND GREENHOUSE PLANTS, AZALEAS and HEATHS, in all about 500. The Plants are so well known that it is sufficient to say they are the finest and best cultivated in the world, in admirable health, well set with bloom buds, and offering to Gentlemen and Nurserymen an opportunity of possessing specimens of transcendent splendour for exhibition at the forthcoming shows.—May be viewed Monday and Tuesday before the Sale, by Catalogues only, to be had (2s. 6d. each, returnable to purchasers) of Mr. J. C. STEVENS, 38, King Street, Covent Garden. It is probable that for the purpose of enlarging the Flower Garden, 10 out of Mrs. Lawrence's 26 Plant Houses may be offered for Sale. They consist of two long Ranges, a Centre, &c., with 2500 feet of Pipe, four Boilers, slate and wood Stage, Stone Pavement, &c., which may be viewed any time before the Sale, by applying to the head gardener at Ealing Park.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, at the Mart, Bartholomew Lane, on THURSDAY, April 13th, at 12 noon, a first-rate collection of Carnations, Picotees and Pinks, a selected assortment of Herbaceous and Alpine Plants, American Plants, choice Dahlias in dry roots, Fuchsias, Verbenas, Geraniums, and other Plants in bloom.—On view the morning of sale. Catalogues may be had at the Mart; and of the Auctioneers, American Nursery, Leytonstone, Essex.

IMPORTANT SALE OF YOUNG SPECIMEN HEATHS, GREENHOUSE PLANTS, AND ORCHIDS.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions by Mr. Epps, of the Bower Nurseries, Maidstone, to Sell by Auction, on TUESDAY, April 25th, at 12 o'clock, at the Auction Mart, Bartholomew Lane, nearly 300 Splendid Young Specimen Heaths, Greenhouse Plants, and Orchids. The Ericas consist of Obbatas, Hartnellis, Tricolors, Massoni, Ampullacea, vars. ferruginea jasminoides, vars. Cavendishi, Ventricosas, &c., &c.; the Orchids Cattleya, vars. Dendrobiums, Oncidiums, Brassias, Maxillarias, Cœlogyne, Vandas, &c. It is needless to state that the Ericas grown by Mr. E. are the finest and most healthy plants known; and on no occasion has there been submitted to the public so splendid a collection; they are calculated to suit all purchasers, as they consist of specimens in 8 to 20 inch pots, the bulk in 11 inch pots. The Orchids are choice and valuable species.—May be viewed the morning of Sale, Catalogues may be obtained (6d. each, returnable to purchasers), of Mr. Epps, Bower Nurseries, Maidstone; the principal Seedsmen in London; at the Mart; and of the Auctioneers, American Nursery, Leytonstone, Essex.

READ'S GARDEN ENGINES, SYRINGES, &c.

WHEN an article of real utility attracts public attention, Imitators start into the field to snatch from the inventor the just reward of his labours. It has now become a daily practice of exhibiting in the windows of ironmongers and others, Syringes of the very commonest description, with the words "READ'S PATENT," as an inducement to purchasers. This, as an eminent writer on Horticulture has recently remarked on the subject, is indeed "living upon another man's fame."

Read's Instruments have the Royal Arms, with the Address—35, REGENT CIRCUS, LONDON.

*** A liberal discount allowed to Nurserymen, Seedsmen, &c., &c.—Descriptions sent Post Free.

NEW DAHLIAS.

THOMAS BARNES will be prepared to execute orders on the 1st of May for the following:—

INDISPENSABLE (Barnes). Bright clear yellow, finest ever offered; constant; stock limited. 10s. 6d.

JOHN H. HEDGE.—Lilac and purple, new in colours, and very fine. 10s. 6d.

DANECROFT BEAUTY (Barnes), peach, tipped with rose, centre and shape fine; constant. 10s. 6d.

GOSSIP, Fancy (Barnes).—Delicate lilac, pure white tip. 7s. 6d.

Also the following new continental varieties:—

EVA.—Pure white, shaded peach. 10s. 6d.

LE DIVAN.—Scarlet and maroon, shaded, fine. 10s. 6d.

LE GRAND SULTAN.—Black crimson, shaded with rosé, large and fine. 10s. 6d.

MENTOR.—Lilac, with metallic shade, new colour, and fine form. 10s. 6d.

OMER PASHA.—Amaranth red, with bluish shade. 10s. 6d.

SEEDLING PETUNIAS.

ALBA MAGNIFLORA, pure white; DISTINCTUS, peach, purple centre; ELIZABETH, blush, blue throat; FORMOSA, blush and ruby; PENCILLATA, pale peach, and crimson; ROTUNDA, crimson purple, fine. The above 3s. 6d. each, or 18s. the set.

SEEDLING VERBENAS.

LUTEA PALLIDA.—Cream, new and distinct. 3s. 6d.

MADONNA.—Pink, carmine centre. 5s.

PURPLE PERFECTION.—Deep purple, fine. 3s. 6d.

The Petunias and Verbenas will be sent out from April 20.

☞ Catalogues, with descriptions and price, are ready, and may be had on application, of all the leading Dahlias, Fuchsias, Verbenas, Petunias, &c.

Dane Croft Nurseries, Stowmarket, Suffolk.

BEDDING PLANTS, 2s. to 4s. per Dozen.—Verbenas, sorts; Petunias, do.; Phlox, do.; Cupheas, do.; Geraniums, Scarlet; Ditto Pink; Ditto Horse-shoe leaved; Heliotropium, sorts; Ageratum; Fuchsia; Groundsel, purple; Salvias of sorts; Calceolaria ditto; Œnothera riparia; Koniga maritima; Zelinda or Dwarf Dahlia; Lobelias, sorts; Dahlias, do.; Anagallis.—Catalogues had by application to Thomas Perkins, Nurseryman, Atherstone, Warwickshire.

HUGH LOW and CO. would invite inspection of their large and healthy stock of SOFT-WOODED PLANTS, suitable for Flower Garden decoration, amongst which they would more especially enumerate the under-named. The plants are all established in small pots well adapted for packing. Prices moderate, and purchasers of large quantities will be treated with great liberality. Calceolarias, shrubby and herbaceous; Coleus Blumeii, variegated foliage; Ageratum cælestinum and variegatum; Fuchsias in all the leading varieties; Verbenas, do.; Chrysanthemums, do.; Phloxes, do. Scarlet and variegated Geraniums; Lantanas in many varieties; Pentstemons, do.; Petunias, do.; Lophospermums, do.; Maurandyas, do.; Mimulus, do.; Lobelias (tall and dwarf), do.; Antirrhinums, do.; Heliotropes, do.; Salvias, do. Double Crimson Rocket, Pentstemon purpureum hybridum, superior to all other varieties of P. gentianoides; Cheiranthus Delileanus; Pyrethrum grandiflorum plenum.—Clapton Nursery, London.

CALCEOLARIAS FOR BEDDING.—The following four very handsome varieties will be found the gems of the season for bedding purposes, at 12s. per dozen.

CRIMSON KING (Henderson), deep crimson, very dark and rich, and does not fade; habit dwarf and robust, flowers large, and shape good.

MAGNIFICENT (Henderson), rich crimson, with yellow crown; a large, fine-formed, and very splendid flower, quite distinct from anything yet out.

GOLD CHAIN, fine golden yellow, of great substance and fine habit, with very stout foot-stalks.

GOLD CAP (Garraway), rich dark maroon, the upper division of the flower deep gold colour, the flowers large and of fine compact habit.

Also the following older favourites for bedding:—

BEAUTY OF MONTREAL, fine bright crimson, dwarf habit, 6s. per dozen.

WELLINGTON HERO, rich deep golden yellow, 6s. per dozen.

SULTAN, large rich crimson, 6s. per dozen.

MRS. BEECHER STOWE, fine canary, 9s. per dozen.

SULPHUREA SPLENDENS, fine yellow, dwf. habit, 6s. per doz.

Calceolarias (Seedlings not yet flowered) raised from "Benary's" superb spotted varieties, 5s. per dozen, post free.

CARNATIONS and PICOTEES.—Beautiful selections from our extensive collection, at 18s., 24s., and 30s. per dozen pairs; fine mixed, for borders, 9s. per dozen pairs. True Old Clove Carnation, 12s. per dozen pairs.

PINKS.—Extra fine sorts by name, 9s. to 12s. per dozen pairs.

30 packets of Choice Flower Seeds, per post free, for 5s.

☞ Less quantities than those named above supplied at the same prices. Orders of 2l. and upwards are delivered Carriage Free to any Railway Station within 150 miles of the Nursery.

YOUELL & Co., Royal Nursery, Great Yarmouth.

NEW FARM SEEDS, GROWTH OF 1853.

WILLIAM E. RENDLE and CO., Seed Merchants, Plymouth, *have a very large and well selected Stock of all kinds of* SEEDS *required in Agriculture, grown by Farmers of the first respectability and experience in Devonshire, Somerset, Gloucester, Kent, Essex, Sussex, and several other counties.*

CARRIAGE OF ALL PARCELS ABOVE £1 FREE, SEE PRICE CURRENT.

The following are the prices of a few of the leading articles:—

Italian Rye-grass, 6s. to 7s. per lb.
Pacey's Perennial Rye-grass, 6s. per lb.
North Devon Evergreen Rye-grass, 5s. to 6s. per lb.
Rough Cocksfoot Grass, 5s. per lb.
White and Red Clovers, 7d., 8d., 9d., 10d. per lb.
Swede Turnips, all the best varieties, 1s., 1s. 4d., to 1s. 6d. per lb.
Scotch Turnips, 1s., 1s. 4d. to 1s. 6d. per lb.
Summer Turnips, 8d. to 1s. per lb.
Large White Belgian Carrots, 2s. per lb.
Other varieties of Carrots, 1s. 6d. per lb.
Large Red Mangold Wurzel, 1s. per lb.
Yellow Globe ditto, 1s. 4d. per lb.

All other kinds of Agricultural Seeds at fair remunerative prices. For full particulars see Rendle's "Farming Price Current and Agricultural Seed Directory," to be obtained from the subscribers in return for six postage stamps.

William E. Rendle & Co., Seed Merchants, Plymouth.
Established 1786.

GRASS SEEDS, ETC.

THOMAS GIBBS and CO. (the Seedsmen to the Royal Agricultural Society of England), corner of HALF-MOON STREET, Piccadilly, beg to draw attention to their Grass Seeds for Laying down Land to Permanent Grass. The Seeds which they employ in forming the Mixtures for various soils are well cleaned under their own superintendence.

Mixtures for Permanent Meadows and Pastures
" Parks or Pasturage in sight of Mansions
" Irrigation on Water Meadows
" Renovating Old Swards
" Fine Garden Lawns, Cricket Grounds, &c.
" two or three years' lay.
RYE-GRASS—Italian, very fine sample
" Dickinson's Italian do.
" Pacey's Perennial and Evergreen
" Annual or Common.
CLOVERS—Red, White, and Alsike
" Trefoil, Red Suckling, &c.
CARROTS—Large White Belgian
" Field, Altringham, &c.
MANGOLD WURZEL—Long Red
" Orange or Yellow Globe, and other sorts.
TURNIPS—Swedes, Purple Top, Skirving's, &c.
" Hybrids, Gibbs' Green Top
" Globes, Tankards, &c.
FARM SEEDS of all descriptions.

Priced Lists, Detail Catalogues, and other information can be obtained on application to Thomas Gibbs & Co.

MITCHELL and CO., having a large Stock of the following, are enabled to offer good, strong, healthy Plants at the annexed prices.

FUCHSIAS.—The following fine varieties of 1853, viz.: Alba multiflora, Belle of Barton, Beauty (Smith's), Collegian (Banks'), Duchess of Lancaster (Henderson's), England's Glory (Harrison's), Glory (Banks'), Incomparable, (Maple's), L'Elegant, Lady Franklin, Mrs. Patterson (Patterson), Miniata, Premier (Henderson's), Purple Perfection (Henderson's). The collection of 14 for 12s. 6d. A choice selection of older varieties—Agnes, Beauty of Deal, Cartoni, Crystal Fountain, Flavescens, Gem of the Season, Globosa Perfecta, Hendersoni, Nonsuch, Peculiarity, Princess, Purity, Resplendens, Splendidissima, the collection of 14 for 9s. Fine Mixed Bedding Varieties, 4s. per dozen.

PHLOXES of the choicest varieties, by name, 6s., 9s., 12s., and 18s. per doz., strong plants.

Also their choice collection of TREE CARNATIONS, consisting of the most improved continental varieties, our own selection, by name, 9s., 12s., 18s., 24s. per doz.

GERANIUMS of 1853.—Any 12 of the following choice varieties may be selected for 42s.; our own selection for 36s.; or the collection of 17 for 54s. Strong healthy plants in 48 size pots:—Dobson's Harriett, Jupiter, Spot, Vulcan; Hoyle's Attica Albinia, Butterfly, Kulla, Lagoma, Leonora, Novelty, Portia Zaria; Foster's Eleanor, Optimum, Rachel, Queen of May.

CHOICE HELIOTROPES.—Gem, Madame Boucharlet, Souvenir de Liege, Voltaireanum nanum, 6s. per doz.; mixed varieties of ditto, 3s.

Goods carriage free, for orders not under 20s., to all London terminuses, and to all stations on the London, Brighton, and South Coast Railway. Plants added gratis with all orders of 30s. and upwards. Post Office orders expected from unknown correspondents payable to Mitchell & Co., or John Fairbrother, Brighton Post Office.

Bristol Nurseries, Kemptown, Brighton.

MAY'S PARAGON CABBAGE.

THE Subscriber, in offering the above for the first time, guarantees it to be the finest Cabbage in existence; of dwarf habit; has never been known to run; attains a large size (having been grown to the great weight of 28 lbs.); of a most beautiful green, and boils tender as Asparagus, which it continues to do throughout the season; in flavour is as far superior to the ordinary Cabbages of the day as they are to the old Drumhead Scotch. In ¼ oz. packets, 1s. each, free by post. The usual allowance to the trade.

H. M. begs to inform the public that he is unable to supply any more of his MAGNUM BONUM LETTUCE, as the stock was only small and is completely sold out.

Address all orders and communications to HENRY MAY, the Hope Nurseries, near Bedale, Yorkshire.

FLORAL NURSERY, ACTON ROAD, TURNHAM GREEN.

JNO. WESTWOOD has now on Sale, at the above Nursery, upwards of 60,000 FINE HEALTHY GERANIUMS and FANCY GERANIUMS, including almost every variety grown, at very reduced prices; also, an immense Stock of Verbenas, Heliotropes, Petunias, Scarlet and other Bedding Geraniums, comprising all the newest and best sorts. The trade will be treated liberally.—April 15.

POMPONE CHRYSANTHEMUMS, SPLENDID MIMULUS, AND SEEDLING HERBACEOUS CALCEOLARIAS.

JOHN WESTWOOD, having a large Stock of all the leading Pompone Chrysanthemums (including those recommended by Mr. Robinson in the "Florist" of January last), is prepared to send out well established plants, at 9s. per dozen. Also several thousands of Mimulus, raised from the seed of the finest plants in the trade of 1853, at 9s. and 12s. per dozen; and an equally large Stock of Seedling Herbaceous Calceolarias from the seed of plants, raised by the Rev. E. Trimmer, finer than any hitherto exhibited.

J. W. can also supply any quantity of first-rate Bedding Plants, including Shrubby Calceolarias, of all the best kinds, of which he has on hand upwards of 20,000.

A General Catalogue may now be had on application.

The Floral Nursery, Acton Road, Turnham Green.

PAGE and CO., Seed Merchants to the Agri-Horticultural Society of Bombay.

SEEDS for EXPORTATION (free on board) and HOME USE (carriage paid).

No. 1.	A choice collection of Vegetable Seeds, suited to the climate (case included)			£5	0 0
No. 2.	Do.	Do.	in smaller proportions	2	10 0
No. 3.	Do.	Do.	Do.	1	0 0
No. 1.	A selection of the most beautiful and showy Annuals (case included)			1	5 0
No. 2.	Do.	Do.	Do. ...	0	15 0
No. 3.	Do.	Do.	Do. ...	0	10 6

General Priced Catalogues free upon application.

In addition to our great experience, the port of Southampton affords us unrivalled facility for the almost daily shipment of Seeds to all parts of the world; and as no greater test of genuineness and vitality than a long transit by sea can be applied to Seeds, we yield priority to none in supplying such for home growth as cannot fail to prove most satisfactory.

All parties desirous of taking or sending Seeds to the Peninsula, Mediterranean, East and West Indies, Australia, Brazil, Cape of Good Hope, China, America, &c., are particularly requested to state their wishes to us, whereby the annoyance and disappointment which too frequently happens by placing their orders in the hands of inexperienced persons will be prevented. We are continually receiving the warmest thanks of our consignees; only a few days since, a gentleman writes from Melbourne, "Your Seeds have proved excellent. The selection of Peas has afforded us the greatest delicacy in Australia." From Capt. H. J. Barr, Secretary to the Horticultural Society of Bombay: "*Gentlemen,—In acknowledging the receipt of your last supply of Vegetable and Flower Seeds, which reached me on the 8th of June by the overland route, I have the honour to inform you that they have all turned out so fresh and good that the demands on our Society have increased so much that I must now cancel my former order, and beg you to supply me according to the list now furnished.*"

PAGE & CO.'S BLIGHT COMPOSITION should be in the hands of all Plant and Fruit Cultivators. For testimonials see back leaf of *Gardeners' Chronicle*, March 11.

Oxford Street (adjoining Radley's Hotel, 20 yards from the Railway and Docks), Southampton.

EASTER HOLIDAYS.

THE ZOOLOGICAL GARDENS in the REGENT'S PARK will be open to Visitors on payment of SIXPENCE each, every day in the week, except Saturday.

DURING EASTER WEEK the MUSEUM of ORNAMENTAL ART and SCHOOLS at MARLBOROUGH HOUSE, Pall Mall, will be open daily for the inspection of the Public. Admittance Free.

EASTER HOLIDAYS—ATTRACTIVE NOVELTIES.

ROYAL POLYTECHNIC INSTITUTION.

Patron:—H. R. H. Prince Albert.

The SEAT OF THE WAR, showing the principal places on the DANUBE, KALAFAT, WIDDIN, GIURGEVO, SEBASTOPOL, the entrance to the BLACK SEA, Battle of SINOPE and DESTRUCTION of the TURKISH FLEET, and other scenes, (kindly supplied by the proprietors of the *Illustrated London News*) EXHIBITED in a NEW SERIES of DISSOLVING VIEWS.

LECTURES by J. H. Pepper, Esq., on the CHEMISTRY of PAPER MAKING, and its duration with Colours, and on VOLTAIC ELECTRICITY and the ELECTRIC LIGHT by Dr. Bachhoffner. Explanation of MODELS, MACHINERY, &c. &c.

Open Mornings and Evenings, except Saturday Evenings. Admission, 1s.; Schools and Children under 10 years of age, half-price.

PROTOXIDE ANTI-CORROSION PAINT, for all external purposes, on iron, wood, brickwork, or stucco, is cheaper, and more durable, than any similar article.—Manufactured by Charles Francis & Sons, Cement Works, Nine Elms, London.

STEPHENSON and PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

Printed by William Bradbury, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and Frederick Mullett Evans, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be Addressed to the Editor.—Saturday, April 15, 1854.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 16.—1854.] SATURDAY, APRIL 22. [PRICE 6*d*.

INDEX.

Abies Kæmpferi	255 *b*	Oldenlandia Deppeana	253 *a*
Books noticed	255 *b*	Palmetto, the	254 *b*
Calendar, horticultural	256 *a*	Pathology, vegetable	252 *c*
— agricultural	261 *a*	Plants, new	255 *b*
Cattle, show of, at Dublin	260 *b*	— in Wardian cases	251 *c*
— short-horns	260 *c*	— of Scripture	254 *a*
Collodion	254 *b*	Potatoed cuttings	254 *c*
Cottages, labourers'	258 *a*	Pulmonaria angustifolia	254 *a*
Cuttings, Potatoed	254 *c*	Rain gauges	252 *b*
Ewes and Lambs	258 *c*	Scripture, trees of	254 *a*
Food, fruits, &c., as	254 *b*	Sheep, ewes and lambs	258 *c*
Fruits and farinacea as food	254 *b*	Strawberries, mildewed	254 *a*
Fuchsias, pyramidal	255 *c*	Thin seeding	260 *a*
Guano, adulteration of	260 *c*	Timber, enhanced value of	256 *a*
Horticultural Society	254 *c*	Trade Museum	258 *c*
Hydrophobia	259 *c*	Trees of Scripture	254 *a*
Labourers' cottages	258 *a*	Turnips for seed	257 *c*
Ladak, Major Cunningham's	253 *b*	Vegetable pathology	252 *c*
Lawes, Mr.	257 *b*	Vegetarianism	254 *b*
Meteorology, agri.	259 *a*	Walks, concrete	254 *c*
Mildew on Strawberries	254 *a*	Wardian cases	251 *c*
Museum, Trade	258 *c*	Winter, effects of the	253 *c*

HORTICULTURAL SOCIETY, 21, Regent Street. —Notice is hereby given, that the ANNIVERSARY MEETING of this SOCIETY will be held on MONDAY, May 1st, for the Election of Council and Officers for the ensuing year, and for receiving the Report of the Council for the past year. The chair will be taken at 1 o'clock P.M.

HORTICULTURAL SOCIETY OF LONDON.— Notice is hereby given that the EXHIBITIONS OF FLOWERS AND FRUIT, in the SOCIETY'S GARDEN, in the present season, will take place on the following SATURDAYS, viz: May 13, June 10, and July 8; and that TUESDAY, APRIL 25, is the last day on which the usual privileged Tickets are issued to Fellows of the Society.

ROYAL BOTANICAL SOCIETY, REGENT'S PARK. —The days appointed for the EXHIBITIONS OF PLANTS, FLOWERS, and FRUIT this season are WEDNESDAYS, May 24, June 21, and July 5; and of AMERICAN PLANTS, MONDAYS, June 12 and 19.

Tickets of Admission can be obtained at the Gardens by orders from Fellows of the Society. Price on or before May 13, 4*s*.; after that day, 5*s*.; or on the days of Exhibition, 7*s*. 6*d*. each.

The Plants will be arranged on a new plan, similar in form to the American Garden, and placed upon a series of terraces.

MANCHESTER BOTANICAL AND HORTICULTURAL SOCIETY.

NOTICE.—THE FIRST EXHIBITION OF PLANTS, FLOWERS, FRUITS, AND VEGETABLES will be held at the Gardens, Old Trafford, on THURSDAY, the 27th day of April, instead of WEDNESDAY, the 26th, as stated in the Schedules, owing to that day being set apart as a day of humiliation and prayer. By order of the Council, JOHN SHAW, Sec.

Schedules of prizes may be obtained from the Secretary, or at any of the Seed shops.

COUNTY OF GLOUCESTER AND CHELTENHAM ROYAL HORTICULTURAL SOCIETY.—The FIRST EXHIBITION of the Season will take place at the Royal Old Wells, Cheltenham, on WEDNESDAY, MAY 31. By the kind permission of Colonel the Hon. Arthur Upton, the splendid band of the Coldstream Guards will perform during the day. Exhibitors are particularly advised to attend to Rule No. 2, in the Schedule, as it will be strictly enforced.

HENRY J. COCHRANE, Sec.

Committee Room, 128, High Street.

FOR IMMEDIATE EFFECT IN DECORATING THE GREENHOUSE, CONSERVATORY, FLOWER GARDEN, AND ORNAMENTAL PLANTING.

YOUELL AND CO. beg to refer to their Advertisement of March 25, April 1, and 8.

100 kinds of very choice and free flowering Greenhouse or Conservatory Plants (Climbers included), 12*s*. per dozen.

Royal Nursery, Great Yarmouth.

FUCHSIA "TRENTHAM."

COLE AND SHARP, Aston Lane Nursery, near Birmingham, are prepared to send out the above fine new Seedling, for characteristics of which see previous advertisements. Plants 10*s*. 6*d*. each, with the usual allowance to the trade.

FANNY WEBB.—Plants of this new and attractive variety, 7*s*. 6*d*. each.

FUCHSIA DUKE OF WELLINGTON.

J. MOORE AND SON have still on hand a fine stock of this superb Fuchsia, for which they will be happy to receive orders at 10*s*. 6*d*. each. For description and opinions, see former Advertisements.

J. MOORE & SON beg also to call attention to their stock of Verbenas, &c.—Perry Barr, near Birmingham.

BEDDING PLANTS.—Many thousands of the above desirable Ornaments for the Flower Garden are now ready to be sent out, by JOHN SCOTT, of the Merriott Nurseries, near Crewkerne, Somerset, at the very low price of 2*s*. 6*d*. per dozen, consisting of

100 Sorts of VERBENAS	100 Sorts of FUCHSIAS
50 " GERANIUMS	12 " CALCEOLARIAS
12 " PETUNIAS	12 " LOBELIAS

With many other kinds too numerous to particularise. Nearly all are autumn-struck plants. Early application is solicited.

N.B.—All other kinds of Nursery Stock extensively grown.

LOBELIA ST. CLARE.

MESSRS. LAKE AND DYER, NURSERYMEN, &c., Bridgewater, will be prepared to send out this truly beautiful plant (so universally admired last autumn) the first week in May, at 12*s*. per dozen. Postage stamps or Post-office Order must accompany all orders from unknown correspondents. N.B. The Trade supplied.

JOSEPH HARRIS respectfully announces that his Annual Spring Catalogue of Bedding Plants is now ready, and may be had on application; it contains all the newest and best Verbenas, Fuchsias, &c. &c.

Cheltenham Road Nursery, Stoke's Croft, Bristol.

WILLIAM FROMOW, NURSERYMAN & FLORIST, Turnham Green, Middlesex, offers 25 varieties of Showy HERBACEOUS FLOWER ROOTS for 3*s*. 6*d*., on receipt of Post Office Order or Postage Stamps.

NEW ROSES FOR 1854.

BENJAMIN R. CANT has now ready for sale, strong plants in pots of all the NEW ROSES, some of which have never before been offered to the public, descriptive Catalogues of which can be had on application.

St. John's Street Nursery, Colchester.

TO THE SEED TRADE AND OTHERS.

BENJAMIN R. CANT, St. John's Street Nursery, Colchester, can supply in quantity the following Home-grown Seeds, of excellent quality:—

	Per lb.—*s.*	*d.*
WHITE BELGIAN CARROT ...	1	0
LONG RED ALTRINGHAM Do. ...	1	0
YELLOW GLOBE MANGOLD WURZEL ...	1	0
LONG RED Do. ...	1	0

Prices to the Trade on application.

BEAUTIFUL NEW BEDDING PLANT.

MILLER'S HYBRID MULE PINK.

ROBERT MILLER, Hartshill Nursery, Newcastle, Staffordshire, offers with confidence the above Pink, colour a bright crimson scarlet, double; grows from 9 to 15 inches high, branches out and forms a little bush, and flowers most abundantly from June to October, and perfectly hardy. See *Gardeners' Chronicle*, Sept. 24, 1853.

DIANTHUS R. M., very pretty, and being dwarf in habit, it will doubtless make a good bedding plant. Price 12*s*. per doz., package included. The usual discount to the Trade. To be let out the second week in April. Post-office orders from unknown correspondents made payable at Newcastle.

BEDDING PLANTS, 2*s*. to 4*s*. per Dozen.— Verbenas, sorts; Petunias, do.; Phlox, do.; Cupheas, do.; Geraniums, Scarlet; Ditto Pink; Ditto Horse-shoe leaved; Heliotropium, sorts; Ageratum; Fuchsia; Groundsel, purple; Salvias of sorts; Calceolaria ditto; Œnothera riparia; Koniga maritima; Zelinda or Dwarf Dahlia; Lobelias, sorts; Dahlias, do.; Anagallis.—Catalogues had by application to THOMAS PERKINS, Nurseryman, Atherstone, Warwickshire.

BASS AND BROWN'S NEW POTENTILLAS, so favourably noticed in the *Gardeners' Chronicle*, the "Florist," the "Cottage Gardener," also by Geo. Glenny, and C. Turner, for which see descriptions and remarks in *Gardeners' Chronicle*, March 13, page 144, and April 1, page 208.

A great number of orders have already been received. Strong Plants will be sent out early in May.

	s.	*d.*
KING OF CRIMSONS ...	10	6
THEODORE ...	7	6
JULIA ...	7	6
SUDBURY GEM ...	10	6
SHYLOCK ...	10	6

The set for 42*s*. The usual allowance to the trade for two or more sets. The SECOND SET OF 7 VARIETIES, very fine, rich and showy, for 16*s*., with the same trade discount as first set.

Seed and Horticultural Establishment, Sudbury, Suffolk.

CHOICE AND RARE SEEDS

OFFERED BY

WILLIAM DENYER, SEEDSMAN and FLORIST, 82, Gracechurch Street, London, near the Spread Eagle.

	s.	*d.*
AQUILEGIA, 6 distinct and beautiful colours ...	2	0
STOCKS—Autumnal, or late flowering, 12 varieties ...	3	0
" Emperor, or Perpetual, 12 vars., splendid ... (These are quite new, and different to any other Stock, being very double and of large growth, lasting and flowering for several years.)	4	0
" Hybrid, 3 distinct and brilliant colours, yellow, rose, and white ...	1	6
WALLFLOWERS, 6 gigantic double varieties, bright and singular colours ... (These are from a Continental grower, who has gained many first class prizes.)	2	0
ANTIRRHINUM, from a superb collection (saved by an amateur) ...	1	0
LINUM GRANDIFLORUM RUBRUM VERUM ... (A new and splendid Perennial Flax.)	1	0
LEPTOSIPHON LUTEUM, splendid, fawn colour, with dark crimson centre ...	1	0
PRIMULA SINENSIS FIMBRIATA (saved from the best fringed flowers, varying in shades of colour from white to crimson) ...	1	0
TROPÆOLUM MINUS COCCINEUM (a dwarf-growing and beautiful variety, well adapted for pot culture)	1	0

"WELLINGTONIA GIGANTEA."

MESSRS. VEITCH, of EXETER and CHELSEA, have much pleasure in stating that their Seeds of the above magnificent Tree are vegetating satisfactorily. They therefore hope to be able to send out well established seedling plants during the ensuing summer and autumn. They are now taking orders for them at the following prices:—

For a Single Plant ...	2 guineas	For 8 Plants ...	10 guineas
For 4 Plants ...	6 guineas	For 12 Plants ...	12 guineas

And all orders will be executed strictly in the rotation in which they are received.—April 22.

WELLINGTONIA GIGANTEA.—Beautiful Lithographed Plates (from a drawing taken in California) of this wonderful Tree may be had, at 7*s*. 6*d*. each, of Messrs. VEITCH & SON, Exeter, and Mr. JAMES VEITCH, jun., Exotic Nursery, Chelsea.

The Bark, Wood, Cones and Foliage, which were exhibited on Tuesday week at 21, Regent Street, may be seen at the Exotic Nursery, Chelsea.—April 22.

TO BE SOLD, by an East Norfolk Farmer, a few Sacks of LONG YELLOW and LONG RED MANGOLD WURZEL SEED, of good stock, all the growth of last year.—For price, address J. S., Post Office, Blofield, Norwich, Norfolk.

ARAUCARIA EXCELSA, AIT.

TO BE SOLD, a beautiful specimen of the ARAUCARIA EXCELSA, in luxuriant health and beautiful foliage, now standing in the Botanical Garden, Rotterdam (Holland). Height above the tub in which it stands, 20 feet 9 inches, with the tub, 23 feet; diameter of the spread of its branches, 13 feet 1 inch; the tub in which it stands is 2 feet 2 inches diameter.—For further particulars apply to C. A. J. A. OUDEMANS, M.D., Director of the Botanical Garden, Rotterdam, Holland.

FINE MANGOLD WURZEL SEED.

LONG RED MANGOLD WURZEL.—Fine new Seed, 10*d*. per lb., or 70*s*. per cwt.

JOHN SUTTON AND SONS, Seed Growers, Reading, having a large Stock of the above, are now selling it at the low price here quoted. LARGE YELLOW GLOBE and other sorts, as see Priced List, which may be had in return for one Postage Stamp.

ORANGE GLOBE MANGOLD WURZEL SEED FROM SELECTED ROOTS. Price 1*s*. 4*d*. per lb., or cheaper in larger quantities. Priced Lists of Turnips, Mangold Wurzel, and other Seeds, post free.

JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

GARDEN SEEDS FOR PRESENT SOWING.— Good Seeds of all the best kinds of Lettuces, Broccolies, Cauliflowers, Peas, and other Vegetables, may still be obtained of the undersigned. Priced Lists post free.—Address,

JOHN SUTTON AND SONS, Seed Growers, Reading, Berks.

SEEDS DIRECT FROM THE GROWERS

THE MOST CERTAIN MEANS OF PREVENTING DISAPPOINTMENT.

SEEDS GROWN IN BERKSHIRE and the adjoining Counties having obtained great celebrity, we have made such arrangements with Messrs. Pickford & Co., who have offices on most of the great lines of Railway, as will enable us to deliver our Goods FREE OF CARRIAGE to most parts of the United Kingdom.

Catalogues and other particulars may be obtained by post, on application to us, addressed

JOHN SUTTON AND SONS, Seed Growers, Reading, Berks.

SUTTON'S GRASS SEEDS FOR PRESENT SOWING. *The importance of procuring good Seeds will be proved more this season than usual, in consequence of the extreme drought which has prevailed so long.*

We are receiving very gratifying intelligence of the crops growing from the seeds we have supplied during the last few months. One of our customers (Mr. Joseph Newton) writing us from Biggleswade, on the 15th inst., says:—"The Grass seeds I had from you have convinced our farmers that it is better to have your selected *ripe seeds* than to use the unripe hay seeds, from the cow-cribs and hay-lofts." Having a fine stock, we can still supply seeds, which may be sown now with certainty of success, viz., Permanent Pasture Grass Seeds; Seeds for Improving old Pastures; Turnip, Mangold, and other Agricultural Seeds. Priced Lists may be had, post free.

SUTTON & SONS, Seed Growers, Reading, Berks.

MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS AND CO. beg to call attention to their MIXTURES OF GRASS SEEDS for laying Land down to Permanent Grass, price 30*s*. per acre.

Mixed sorts, for Improving Old Grass Land... 1*s*. 2*d*. per lb.
Fine sorts for Forming and Renovating Lawns 1 3 "

Directions for sowing accompany the seeds.

GEORGE GIBBS & Co. will be happy to forward their Priced Catalogues of Mangold Wurzel, Carrot, Swede, Turnip, and all Agricultural Seeds, free on application to GEORGE GIBBS & Co., Seedsmen, 26, DOWN STREET, Piccadilly, London.

N. GAINES begs to announce he will be prepared to send out his New SEEDLING DAHLIAS—ALBA SUPERBA, 10*s*. 6*d*. per plant; PRIMROSE PERFECTION, 10*s*. 6*d*. per plant; and KING OF THE YELLOWS, 10*s*. 6*d*. per plant. Also a good Collection of named Varieties raised by other growers. A large quantity of Bedding-out Plants will be ready at the same time, such as Verbenas, Salvias, Tom Thumbs, and other Scarlet Geraniums; Calceolarias, Petunias, &c. His large Collection of Show and Fancy Pelargoniums is coming into flower; they can be seen gratis any day, Sunday excepted.

Nurseries, Surrey Lane, Battersea, April 22.

BEAUTIFUL NEW PETUNIA.

"MONTREAL PURPLE" (SMITH.)

W. F. SMITH, Riverhead Nurseries, near Sevenoaks, will be prepared to send out, on and after May 1st, strong plants of the above splendid Petunia, at 3*s*. 6*d*. each. This variety possesses a first-rate habit, and produces fine large bold flowers of good form, well above the foliage; and it has proved to stand the wind and rain better than any other variety.

W. F. S. is confident that the above will give as much satisfaction as the Geranium "Lady Holmsdale," and Calceolaria "Beauty of Montreal," sent out by him in 1852. W. F. S. has also some splendid Plants for vases of Geraniums "Lady Holmesdale" and "Flower of the Day," from 20*s*. to 30*s*. per dozen.—Catalogues of Stove, Greenhouse, and Bedding Plants may be had on application.

CAPE HEATHS AND NEW AZALEAS.

W. J. EPPS begs to call attention to his extensive and rare Collections of Heaths and Azaleas, which are in the finest condition possible; very bushy and well formed for specimens in 3, 4, and 6-inch pots, consisting of all the best varieties, such as Aristata ampullacea, tricolor, jasminiflora, ventricosa, Massoni, Webbiana, obbata, &c., &c. AZALEAS—Prince Albert, Gledstanesi, Excelsa, Murrayana, Alba magna, Duke of Devonshire, Holderi, Tollette de Flora, Glory of Sunning Hill, Symmetry, Splendens, Ignescens, &c., &c., 9*s*., 12*s*., 18*s*., and 21*s*. per dozen; 5*l*. per 100 varieties, carriage paid to London. All the new Stove and Greenhouse Plants, Fuchsias, Verbenas, and Roses, equally moderate. Catalogues of the above sent on application.—Nurseries, Maidstone and Ashford.

TO DAHLIA GROWERS.—EDWIN HARRISON (PERRY'S), is the most brilliant crimson Dahlia ever raised; build and form of General Fauchier, and more constant than any crimson Dahlia in cultivation. No grower can be without it; as an ornamental plant it has no rival. It has obtained one first-class Certificate and three first Prizes as the best crimson Dahlia, beating all other varieties. Plants in May, 10*s*. 6*d*. each.

ALEXANDER POPE (PERRY'S), is a constant well-formed Dahlia, with very high centre; colour pale lemon. It has obtained one first-class Certificate and two first Prizes as the best yellow or buff Dahlia. The *Gardeners' Chronicle* says—"We like the flower much for its novelty." Plants in May, 7*s*. 6*d*.

Early orders are solicited, as the stock is small.—HENRY POPE, Gib Heath, near Birmingham.

PHLOXES.

YOUELL AND Co. have the pleasure of submitting the following list of very choice varieties of this beautiful tribe, which they can supply in strong flowering plants, at 9s. per dozen, viz. Spenceri, Imbricata, Abdel Medschid Khan, Anais, Captivation, Elegantissima, Eliza, Hydrangeæformis, Imperialis major, Roi Leopold, Macrantha, Madame Courcelles, Madame Poivre, Napoleon, Nelsoni, Princesse de Cleves, Speciosissima, Villaret Joyeuse, Princesse Marianne, Speculum, &c.

YOUELL & Co., Royal Nursery, Great Yarmouth.

DILCOCK'S BRIDE BROCCOLI.

BAINBRIDGE AND HEWISON (late Jas. Edward), have the pleasure of again offering to their friends and the public their DILCOCK'S BRIDE BROCCOLI, at 2s. 6d. per packet; and while returning their thanks to their numerous patrons of last season, they beg to refer them to the following extract, taken from the *Yorkshireman* newspaper of the 30th of April last, when it was exhibited at York, for the fourth time:—"Mr. Dilcock deservedly obtained all the three prizes for Broccoli with his seedling—the 'Bride.' Taking the season into account, these vegetables were really remarkable specimens." It was equally successful the two previous years.

B. & H. are prepared to send out their Catalogues of Kitchen Garden and Flower Seeds, post free, on application, and also their Catalogue of Plants is now ready, containing Stove, Greenhouse, &c., including many of the newest and choicest of the season. Their Seeds will be of the very best quality, and in the greatest possible variety.

Sold Wholesale by NOBLE, COOPER, & BOLTON, Fleet Street; CHARLWOOD & CUMMING, Covent Garden; and by all respectable Seedsmen in town and country.—York Nurseries, April 22.

DAHLIAS.

JOHN KEYNES, in taking the present opportunity of expressing his acknowledgments to his kind friends for the favours conferred on him in past seasons, and in offering his Annual Catalogue for their inspection, trusts that the NEW FLOWERS recommended by him will continue to give that general satisfaction which it has been his pleasure to find has hitherto been so generally approved.

J. KEYNES feels great pleasure in being able to offer this season such NEW FLOWERS as cannot fail to be appreciated. His unrivalled success in obtaining First Class Certificates with them must be a sufficient proof of their excellence; and wherever he has exhibited them they have called down unprecedented approval; in fact, they are considered by the first judges to be the best Collection of New Flowers ever offered, and will, without question, remain Standard Flowers for many years.

FANNY KEYNES (KEYNES).—Light yellow, deeply edged with bright crimson, always full and close, compact eye, habit of Triumphant, and one of the most magnificent flowers ever offered; easy of growth, constant, quite up in the centre, every way the first of its class. 4 ft. 10s. 6d.

FIRST CLASS CERTIFICATES.

National	... ... 3 blooms	Salisbury	... ... 6 blooms
Hackney	... ... 6 "	Surrey Gardens	... 3 "
Norwich	... ... 3 "	Edinburgh ...	... 3 "
Brighton	... ... 6 "	North London	... 6 "

Was never shown without obtaining a first class certificate.

RACHEL RAWLINGS (KEYNES).—A pure peach, unrivalled form, exquisite flower, and whoever has seen it has acknowledged it to be one of the finest flowers they have ever beheld. 4 ft. 10s. 6d.

FIRST CLASS CERTIFICATES.

National	... ... 6 blooms	Salisbury ...	... 6 blooms
Hackney	... ... 6 "	Surrey Gardens	... 3 "
Norwich	... ... 3 "	Edinburgh ...	... 3 "
Brighton	... ... 6 "	North London	... 6 "

Was never shown without obtaining a first class certificate.

COL. BAKER (DODDS).—Clear light sulphur yellow. This flower was grown by Mr. Dodds, who has been the most successful raiser of Yellow Dahlias, having had the best ever sent out in their day, particularly Yellow Standard, which is even now at times unrivalled. J. KEYNES again offers the best yellow ever yet sent out in Col. Baker; very full, compact cushion eye, unrivalled symmetry, and constant. The smallness of the stock has been the reason of its not being oftener seen; but where it has been shown it has received unqualified praise. 4 ft. 10s. 6d.

FIRST CLASS CERTIFICATES.

National 3 blooms | North London 3 blooms | Salisbury 3 blooms.

Was never shown without obtaining a first class certificate.

MRS. RAWLINGS (RAWLINGS).—Blush white. The form of this flower is first-rate in every respect, the eye quite the summit, and the best blush without question, and a fit companion for Lilac King and Exquisite, which were sent out by the same grower last year. 3 ft. 10s. 6d.

FIRST CLASS CERTIFICATE—Brighton.

JOHN KEYNES (DODDS). Pale salmon. This is another gem of the season, and must be grown by all exhibitors. Requires no cutting out, and will make a noble back row flower; of exquisite symmetry, eye well up, and every way first-rate. 4 ft. 10s. 6d.

CERTIFICATE AT

National	... ... 6 blooms	North London	... 3 blooms
Brighton	... ... 6 "	Salisbury ...	... 3 "

LADY BATHURST (BROWN).—This flower was raised by the grower of that unrivalled flower, Sir F. Bathurst; and J. KEYNES feels confident that its companion is equal in every respect to it. Colour, rosy purple. One of the finest flowers in cultivation. 4 ft. 10s. 6d.

PRIMROSE PERFECTION (KEYNES).—Pure bright primrose without shading, one of the most useful Dahlias ever offered; always producing fine blooms, and fit for any stand. Certificate at the National for its general good qualities. 5 ft. 10s. 6d.

FANCY FLOWERS.

With the exception of one first-class Flower, J. KEYNES has been so fortunate as to secure all the Fancy Flowers which have made way this year in obtaining Certificates, which alone is a sure test of their merit, particularly when they have been exhibited at Great Shows, and tested by the best judges in the kingdom. A flower may take a certificate at a little provincial show, but let it bear the test of the National and Metropolitan Judgment, and if it obtains a first class certificate its success is sealed, and it comes out with confidence and honour. Scarcely one flower of J. KEYNES's but has passed these tests, and been victorious.

LEADER (KEYNES).—Lilac, ticked and striped with maroon; finest stripe yet offered. 4 ft. 10s. 6d.

FIRST CLASS CERTIFICATES.

Salisbury	... ... 6 blooms	Hackney ...	... 6 blooms
National	... ... 3 "	Surrey Gardens	... 3 "
Brighton	... ... 6 "	North London	... 6 "

MARVEL (POPE).—Yellow, striped red. A most constant, useful, and beautiful flower, always to be depended on, and first class in every respect. 4 ft. 10s. 6d.

FIRST CLASS CERTIFICATES.

National	... ... 3 blooms	Slough... ...	... 3 blooms
Surrey Gardens	... 3 "	Teddington ...	... 3 "
North London	... 3 "	Hackney ...	... 3 "
		South London	... 3 "

TOPSY (KEYNES).—Colour of Elegantissima, but infinitely superior: always to be depended on, and one of the finest fancy flowers in cultivation. White, edged and mottled with purple. 3 ft. 10s. 6d.

FIRST CLASS CERTIFICATES.

Salisbury	... ... 6 blooms	Hackney ...	... 6 blooms
Surrey Gardens	... 3 "	North London	... 3 "

UNCLE TOM (DODDS).—Red, tipped white; superior in constancy to Nancy; good eye, always full. 3 ft. 10s. 6d.

Fine Plants, as usual, in May, 1854, with plants to compensate for carriage.—Castle Street Nursery, Salisbury.

GRASS SEEDS, ETC.

THOMAS GIBBS AND CO. (the SEEDSMEN to the Royal Agricultural Society of England), corner of HALF-MOON STREET, Piccadilly, beg to draw attention to their Grass Seeds for Laying down Land to Permanent Grass. The Seeds which they employ in forming the Mixtures for various soils are well cleaned under their own superintendence.

Mixtures for Permanent Meadows and Pastures
" Parks or Pasturage in sight of Mansions
" Irrigation on Water Meadows
" Renovating Old Swards
" Fine Garden Lawns, Cricket Grounds, &c.
" two or three years' lay.

RYE-GRASS—Italian, very fine sample
" Dickinson's Italian do.
" Pacey's Perennial and Evergreen
" Annual or Common.

CLOVERS—Red, White, and Alsike
" Trefoil, Red Suckling, &c.

CARROTS—Large White Belgian
" Field, Altringham, &c.

MANGOLD WURZEL—Long Red
" Orange or Yellow Globe, and other sorts.

TURNIPS—Swedes, Purple Top, Skirving's, &c.
" Hybrids, Gibbs' Green Top
" Globes, Tankards, &c.

FARM SEEDS of all descriptions.

Priced Lists, Detail Catalogues, and other information can be obtained on application to THOMAS GIBBS & Co.

S. WALTERS, Hilperton and Trowbridge Nurseries, Wilts, begs to offer the following NEW PETUNIAS, which he can recommend:—

BIGIO, deep rosy purple, of the best shape, a free bloomer, and a fine bedding variety, 2s. 6d. each.

SILVER QUEEN, glossy blush, with fine dark eye, shape and habit good, very fine for bedding, 2s. 6d. each.

JULIET, light, finely veined, striped with crimson purple, fine habit, and very attractive, 2s. 6d.

SURPRISE, lilac, striped with purple, free bloomer, of the best shape and habit, 2s. 6d. each.

PICTURATA, light, finely striped with purple, of great substance and fine shape, 2s. 6d. each.

CRATIA, light, deeply mottled with rose, very dark eye, shape and habit good, and fine for bedding, 2s. 6d. each.

GERANIUMS, NEW AND CHOICE VARIETIES, strong and showing flower, 12 of the following for 21s.—Arethusa, Ariadne, Alibi, Astrea, Albira, Basilisk, Butterfly, Boule-de-Neige, Chieftain, Diana, Extravaganza, Elise, Eurydice, Exhibitor, Exactum, Ganymede, Gertrude, Jullien, Lavinia, Magnet, Mont Blanc, Mochanna, Monteith, Novelty, National, Ocellatum, Optimum, Ondine, Painter Improved, Purple Standard, Shylock, Silk Mercer, Volcano. Other choice kinds, 6s., 9s., and 12s. per dozen.

FANCY GERANIUMS, such as Annetta, Defiance, Othello, Gipsy Queen, Mariosa, &c. &c., 6s. to 9s. per doz.

FUCHSIAS, the best of last season, Duchess of Lancaster, England's Glory, Banks' Glory, Lady Franklin, Mrs. Patterson, Vesta, from 1s. 6d. to 2s. 6d. each.

VERBENAS, the best of last season, 9s. per dozen.

BEGONIA PRESTONIENSIS, 2s. 6d. to 3s. 6d. each.

AGERATUM VARIEGATUM, 1s. each.

PENTSTEMON ATROCÆRULESCENS, blue, 1s. each.

BEDDING PLANTS, in good variety, at 3s. to 6s. per dozen.

Orders of 1l. and upwards will be forwarded any distance not exceeding 100 miles.

SAMUEL WALTERS, Hilperton and Trowbridge Nurseries, Wilts.

P.S.—S. W.'S 18th Annual Catalogue to be had in exchange for one postage stamp.

ALEXANDER PONTEY, NURSERYMAN and SEEDSMAN, Plymouth, has an extensive and very fine Stock of the choicest varieties of the following BEDDING PLANTS, from 4s. to 5s. per dozen:—

Verbenas, best new sorts of 1853	Salvias, sorts
Petunias, sorts	Calceolarias, sorts
Phlox Drummondi	Nierembergias
Cupheas, sorts	Ageratums
Scarlet Geraniums, sorts	Lobelias, sorts
Heliotropiums, sorts	Lantanas, sorts
Anagallis, sorts	Groundsels, double purple
	Alonsoa

GERANIUMS, with Scarlet Flowers and beautifully Variegated Leaves, at 12s. per dozen, viz.:—Flower of the Day, Mountain of Light, and Bridal Bouquet.

IVY LEAVED GERANIUMS, with Scarlet Flowers, 12s. p. doz.

DAHLIAS, 21s. per dozen:—Alice, Attraction, Annie Neville, Annie Salter, Brilliant, Exquisite, Gloire de Paris, Harlequin, Lilac King, Lilliput, Lord Byron, Lord Lyndhurst, Motley, Mrs. James, Queen Victoria, Scarlet King, Sir John Franklin, Wonderful, Zebra.

The following at 9s. per dozen:—Bathonia, Beeswing, Beauty of Kent, Box, Caractacus, Captain Warner, Cardinal, Duke of Wellington, General Fauchier, General Negrier, John Edward, Louis de France, Magnificent (Edwards'), Magnificent (Keynes'), Madame Gaubert, Princess Louisa, Queen of England, Queen of Primroses. Older Varieties, 6s. per dozen. Also,

AGRICULTURAL and GARDEN SEEDS of every description. —Price Lists of Plants and Seeds sent post free, on application.

PAGE AND CO., SEED MERCHANTS TO THE AGRI-HORTICULTURAL SOCIETY OF BOMBAY.

SEEDS FOR EXPORTATION (free on board) AND HOME USE (carriage paid).

		£	s.	d.
No. 1.	A choice collection of Vegetable Seeds, suited to the climate (case included)	£5	0	0
No. 2.	Do. Do. in smaller proportions	2	10	0
No. 3.	Do. Do. Do.	1	0	0
No. 1.	A selection of the most beautiful and showy Annuals (case included)	1	5	0
No. 2.	Do. Do. Do. ...	0	15	0
No. 3.	Do. Do. Do. ...	0	10	6

General Priced Catalogues free upon application.

In addition to our great experience, the port of Southampton affords us unrivalled facility for the almost daily shipment of SEEDS to all parts of the world; and as no greater test of genuineness and vitality than a long transit by sea can be applied to Seeds, we yield priority to none in supplying such for home growth as cannot fail to prove most satisfactory.

All parties desirous of taking or sending Seeds to the Peninsula, Mediterranean, East and West Indies, Australia, Brazil, Cape of Good Hope, China, America, &c., are particularly requested to state their wishes to us, whereby the annoyance and disappointment which too frequently happens by placing their orders in the hands of inexperienced persons will be prevented. We are continually receiving the warmest thanks of our consignees; only a few days since, a gentleman writes from Melbourne, "Your Seeds have proved excellent. The selection of Peas has afforded us the greatest delicacy in Australia." From Capt. H. J. Barr, Secretary to the Horticultural Society of Bombay: "*Gentlemen,—In acknowledging the receipt of your last supply of Vegetable and Flower Seeds, which reached me on the 8th of June by the overland route, I have the honour to inform you that they have all turned out so fresh and good that the demands on our Society have increased so much that I must now cancel my former order, and beg you to supply me according to the list now furnished.*"

PAGE & CO.'S BLIGHT COMPOSITION should be in the hands of all Plant and Fruit Cultivators. For testimonials see back leaf of *Gardeners' Chronicle*, March 11.

Oxford Street (adjoining Radley's Hotel, 20 yards from the Railway and Docks), Southampton.

PRIZE MANGOLD WURZEL AND SWEDE SEED.

SUTTON AND SONS have a fine stock of Seeds of the best kinds of Swedes, Mangold Wurzel, Carrot, &c., similar to those they supplied last season, the produce of which gained prizes at all the principal root shows throughout the kingdom.

At the Annual Root Show, held at Basingstoke, Hants, on December 21, 1853, at which 16 prizes were awarded for root crops, 13 were gained with the produce of our seeds; and at the Reading Show, on the 1st of the same month, every prize was awarded to roots grown from our seeds.

A Priced List, with Hints on Cultivation, may be had, post free, in return for one penny stamp.

SUTTON & SONS, Seed Growers, Reading, Berks.

GEORGE TURNER, of East Barnet, begs to inform the public, that he is a Collector and Cultivator of BRITISH ORCHIDS, GRASSES, AND AQUATICS, and that he has a choice collection of ALPINE and other rare and interesting Plants.

MAY'S PARAGON CABBAGE.

THE Subscriber, in offering the above for the first time, guarantees it to be the finest Cabbage in existence; of dwarf habit; has never been known to run; attains a large size (having been grown to the great weight of 28 lbs.); of a most beautiful green, and boils tender as Asparagus, which it continues to do throughout the season; in flavour is as far superior to the ordinary Cabbages of the day as they are to the old Drumhead Scotch. In ¼ oz. packets, 1s. each, free by post. The usual allowance to the trade.

H. M. begs to inform the public that he is unable to supply any more of his MAGNUM BONUM LETTUCE, as the stock was only small and is completely sold out.

Address all orders and communications to HENRY MAY, the Hope Nurseries, near Bedale, Yorkshire.

GERANIUMS, CALCEOLARIAS, MIMULUS, CHRYSANTHEMUMS, ETC.

THE FLORAL NURSERY, ACTON ROAD, TURNHAM GREEN.

JOHN WESTWOOD, having now the largest and best selected stock of the above in the kingdom, including almost every variety known, is enabled to offer them for sale at prices unequalled.

None but healthy well-established Plants will be sent out, and all orders will meet with prompt attention, and so as to insure future support and recommendation.

J. W. has also for sale an immense quantity of Bedding and Soft-wooded Plants generally.

Catalogues sent (post free) to all parts.

N.B.—The Trade will be treated liberally and fairly.

STANDISH AND NOBLE, NURSERYMEN, SEEDSMEN, &c., Bagshot, Surrey, are now prepared to receive orders for the following new and beautiful varieties of AZALEAS, which will be ready for delivery in June next. The Advertisers can recommend them with the greatest confidence, as superior to any others of their kind.

AZALEA BEALII.—This very distinct variety was introduced by them from China. The flowers, which are of first-rate shape, are quite unique, being striped, like a Carnation, with rich vermilion on a pure white ground. It is of good habit, fine in foliage, and a most abundant bloomer; and although decidedly in the first rank as a greenhouse plant, it is quite hardy enough for the open border. Each, 21s.

AZALEA CRISPIFLORA, a species differing much from any other known Azalea, having a character entirely its own. No other kind approaches it in compactness of habit, and its foliage is very fine, abundant, and evergreen. The flowers are very large, and the edges of the petals have the appearance of being irregularly *gaufred*, like a lady's frill; the colour is a rich rose lake. From the fact of its blooming very late—much later than any other Azalea—it will be doubly valuable for many purposes. Each 21s.

SPLENDID NEW SHRUBBY CALCEOLARIAS.

MR. HENRY MAJOR, Knosthorpe, near Leeds, begs to announce that his beautiful New Seedling Shrubby CALCEOLARIAS are now ready to send out, in two sets, viz., First Set of 15, 3l.; Second Set of 15, 2l. For description, see Catalogue, which may be had on prepaid application.

H. M. offers a third set of 20, to include some of his very best sorts sent out the two last years, as well as several of last year's Seedlings not yet let out, price 30s.

OPINIONS OF THE PRESS UPON MR. MAJOR'S CALCEOLARIAS.

"Mr. HENRY MAJOR, of Knosthorpe, near Leeds, has devoted much time to the improvement of the Shrubby Calceolaria, and to him, perhaps, more than any other individual, we are indebted for the perfection and beauty which have been obtained in this class of plants. Mr. MAJOR has, this season, a splendid lot of seedlings."—*Abridged from the Durham Advertiser, May* 13, 1853.

"H. M. We never before saw a collection of Seedling Calceolaria blooms, for perfection in form and beautiful colouring, equal to yours; they are far superior to any we have seen at the London Exhibitions."—*Floricultural Cabinet, July*, 1853.

"H. M. As a whole, the best collection of Calceolaria Seedlings we have seen this year."—*Abridged from the Cottage Gardener, June* 16, 1853.

"Z. Z. Your varieties are of the right stamp, something different from the interminable yellow and brown. We like No. 5 best; it is a very lively and novel variety. Next 43, then No. 3. The others are very pretty."—*Midland Florist, August*, 1853.

Very choice CALCEOLARIA SEED, 2s. 6d. per packet.

Orders from unknown correspondents inclosing Post-office order will be punctually attended to. Postage stamps are respectfully requested in payment of the seeds.

EDWARD GEORGE HENDERSON AND SON, Wellington Nursery, St. John's Wood, London, have much pleasure in stating that they have purchased the entire property of the following NEW PLANTS, which will be duly announced in this Paper when ready for sale.

CAMELLIA, JENNY LIND.—This most superb formed Camellia was raised by Mr. Peter Mackenzie, of Philadelphia, U. S., from whom we purchased the stock.

ECHITES ELEGANTISSIMA.—This plant in appearance resembles E. crassinoda, with the exception of foliage being much broader and hairy; the flowers are larger and much higher coloured, being of a rich carmine. We purchased the stock of M. Louis Van Houtte, of Ghent, Belgium.

HELIOTROPIUM, BEAUTY OF THE BOUDOIR.—This is the finest and most useful, surpassing all the others, having all their good qualities combined; the entire stock was purchased of M. Lambert Joviel, Liége, Belgium.

HYDRANGEA HORTENSIS FLORE PLENO.—This remarkable novelty will be found a great acquisition; the flowers are double, and remain on the plant for a long period in full beauty; the colour is the same as the Hortensis, either blue or pink, according to the cultivation. The entire stock we purchased of Messrs Chauvière and Rougier, of Paris.

RHODODENDRONS (NERVANE'S SEEDLINGS).—These superb varieties will be described hereafter: they are splendidly spotted and very fine. We have purchased 21 seedlings of M. Vervane, Ledeberg, Belgium, from which only six are selected, and will be placed in commerce.

AZALEA, GLORY OF FONTAINBLEAU.—This is a flower of good substance, rich deep crimson spotted, large and very conspicuous; the entire stock we purchased of M. Martins, of Fontainbleau, France.

INGRAM'S PRINCE OF WALES STRAWBERRY.—This splendid new Strawberry, now so extensively grown at the Royal Gardens, Frogmore, both for forcing and out-door culture, may now be had of J. AND E. SMALL, at the following reduced prices:—Strong well-rooted Plants, 25s. per 100, or 15s. for 50. This is quite a distinct Strawberry to the Prince of Wales now being sent out by Mr. Cuthill, of Camberwell. Order Ingram's Prince of Wales.

The following new kinds can also be supplied at moderate prices:—Trollope's Victoria, Myatt's Superfine, do. Prolific, Nicholson's Ajax, do. Ruby, and Jackson's Britannia. The usual discount to the trade.—Agents, Messrs. NUTTING & SONS, Seedsmen, 46, Cheapside, London.

BASS AND BROWN'S SEED AND PLANT LIST free by post for three penny stamps.

FLOWER SEEDS—BEST ASSORTMENTS, free by post.

The Catalogue gives colours, heights, months of flowering, hardiness, duration, and much descriptive information of time of sowing, and other treatment.

	s.	d.
100 varieties select showy Annuals, including the newest	15	0
50 vars. do., 8s. 6d.; 30 vars., 5s. 6d.; 20 vars.	4	0
20 varieties best Dwarf Annuals, in large packets, for filling beds on lawns, 7s. 6d.; 12 do.	5	0
20 vars. choice Greenhouse Annuals, including the new, 7s. 6d.; 12 varieties, do.	5	0
20 vars. choice Greenhouse Perennials, including fine and new	10	6
12 varieties ditto ditto	7	6
20 vars. Hardy Biennials and Perennials, including very choice and new, 7s. 6d.; 12 varieties do.	5	0

The following we beg strongly to recommend as saved from collections of first-class flowers, in packets as follows:—

	s.	d.
Calceolaria, very choice, 1s.; extra superb, from fine selected flowers	2	6
Cineraria, very choice, 1s.; extra new and choice from our superb collection	2	6
Geranium, Scarlet, from our choice collection	0	6
Gloxinia, choice, 6d.; extra, from our superb collection ...	2	6
Petunia, new and choice, from our superb collection ...	1	0
Verbena, very choice, 1s.; extra, from our superb collection of new varieties	2	6
Antirrhinum, choice, 6d.; from new of our superb collection	1	0
Carnation and Picotee, from collection of 400 vars... ...	2	6
Gladiolus, fine mixed early, 6d.; from choice named of our superb collection	1	0
Iris, English vars, fine, 6d.; best of our superb collection...	2	6
Pansy, extra choice, from a first-rate collection	1	0
Potentilla, very choice, 1s.; extra, from our very beautiful collection	2	6
Ranunculus, from our superior collection	2	6

A FEW VERY CHOICE NEW FLOWER SEEDS.

	s.	d.
Leptosiphon luteum, fine orange colour; very beautiful, packets, 1s. and	2	6
Nemesia bicolor, white and blue, very showy and attractive half-hardy annual, height 9 inches, beautiful for massing	0	6
Calceolaria chelidinoides, ex., clear bright yellow, fine for massing on lawns; the mouth being closed, it is not injured by wet	1	0
Lobelia Limburgensis, a new perennial variety from Prussia, extra	1	0
Portulacca aurantiaca, new orange, 1s.; nova rosea ...	1	0
Sweet William, very choice striped French	0	6

☞ Goods CARRIAGE FREE with orders of 20s. and upwards to London, Ipswich, Norwich, or any Station on the Line.

Remittances are requested with orders from unknown correspondents. Post-office Orders to be made payable to BASS & BROWN, or to STEPHEN BROWN.—The Autumn and Spring Catalogues supplied free by post for three penny stamps each, the cost of which may be deducted from orders sent.

BASS & BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk. ESTABLISHED ABOUT HALF A CENTURY.

KNAP HILL NURSERY, WOKING, SURREY.

WATERER AND GODFREY, Nephews and Successors to the late HOSEA WATERER, respectfully invite the attention of parties engaged in planting to the following list:—

Araucaria imbricata, 2, 3, 4, 5, and 6 feet high, in the open quarters, regularly removed every year, and as robust and handsome as it is possible to get them. We have a large stock.

Cryptomeria japonica, 2, 3, 4, 5, 6 to 8 feet.

Cedrus Deodara, stout handsome plants from seed, in any quantity, and of all heights from 1 to 7 feet. A few splendid specimens 10 to 15 feet; warranted to transplant with perfect safety.

Cedar of Lebanon, 2, 3, 4, 5, 6, 7 to 10 feet. These large Cedars of Lebanon are also very handsome trees.

Cupressus macrocarpa, or Lambertiana, 2, 3, 4, 5, 6, and 8 feet, all from seed.
" Goveniana, 2 to 3 and 4 feet.
" Funebris, 2 and 3 feet.
" thyoides variegata, 2, 3, and 4 feet.

The Variegated White Cedar, a scarce but most beautiful variegated plant, seldom seen except at Elvaston Castle. We hold a large quantity.

Juniperus Bedfordiana, fine plants, 3, 4, and 5 feet.
" Chinese, 2, 3, 4, 5, 6, 8, and 10 feet.
" repandus, 3, 4, 5, to 8 feet.
" Upright Irish, 3, 4, 5, 6, 7, and 8 feet; perfect columns, and, except at Elvaston, unequalled.
" Virginiana, the Red Cedar, 4, 5, 6, and 8 feet.

Taxodium sempervirens, 2, 3, 4, 5, and 7 feet.

Yew, common, 3, 4, 5, to 8 feet high.
" Irish, 3, 4, 5, to 10 feet. A splendid lot, all being trimmed to one stem; it adds much to their appearance and value.
" Gold striped, 1, 2, and 3 feet.
" do. worked on the Common, with fine heads, 4, 5, 6, and 7 feet high; very handsome.
" elegantissima (new striped) standards. The golden Yews are very ornamental, and we have a large quantity of fine plants.
" Dovaston, or Weeping Yew, fine standards.

Pinus Douglasi, 3, 4, 5 and 7 feet; a few magnificent plants, 10 to 12 feet high.
" insignis, 2, 3, 4, 5, 6, and 7 feet: all from seed.
" cembra, 3, 4, to 6 feet.
" Canadensis (Hemlock Spruce), 3, 4, and 6 feet.
" morinda, 3, 4, and 6 feet.
" Menziesi, 3, 4, 6, and 8 feet.
" cephalonica, 3 to 4 feet.
" Pinsapo, large and handsome, 3 and 4 feet.
" Nordmaniana, from seed, 1½ foot; a few larger, 2 feet.
" nobilis, stout plants, with perfect heads, about 1½ foot; a few larger specimens, 3 and 4 feet. We hold a fine stock of this beautiful Fir, none of which are grafted.

Thuja Arbor-vitæ, American, 3 to 6 feet. We recommend this plant for hedges.
" Weareana, 3 to 6 feet, one of the few really hardy and most useful evergreens.
" aurea. This is perhaps one of the prettiest plants of the day; it was first sent out from this Nursery, and our stock, for size and beauty, is unsurpassed.

Libocedrus chilensis, 1½, 2, and 3 feet. This is a very distinct and beautiful plant, of recent introduction. Our stock is large and good.

Independent of the foregoing we are very large holders of the most useful Evergreens, Deciduous and Ornamental Trees, and of large size. Priced Catalogues will be forwarded on application, enclosing two postage stamps, which will also include a Descriptive Priced Catalogue of the celebrated collection of American Plants grown at this Nursery.

The Nursery is near the Woking Station, and about an hour's ride from London. A visit is earnestly solicited from all who intend planting during the forthcoming season

TEXIAN FLOWER SEEDS, ETC., TO BE HAD OF

JAMES CARTER, SEEDSMAN and FLORIST, No. 238, High Holborn, London.

The following unique collection of Flower Seeds and Bulbs from Texas, the Garden of the New World, comprises the principal novelties of the season. Some of the species being undoubtedly new, have not yet been named or figured. Several of the following were introduced last year. An extensive Catalogue of Flower Seeds may be had gratis and pre-paid on application.

TEXIAN FLOWER SEEDS.

Per packet.—	s.	d.
A beautiful white shrub ...	1	0
A do. do., purple, fragrant...	1	0
A do. do., rose, fragrant ...	1	0
A do. do., yellow, fragrant	1	0
A curious Shrubby Plant...	1	0
Evergreen Shrub	1	0
A yellow flowered Annual...	1	0
A pink do. do.	2	6
Ipomœa sp., red centre ...	1	0
" striped flowered	1	0
" sp. variabilis ...	1	0
A globular-flowered Annual	2	6
Texian Sunflower (?) ...	1	0
A pretty blue flower ...	1	0
A do. white do.	1	0
A scarlet climbing Plant ...	1	0
A new purple flower ...	2	6
A do. purple and white ...	1	0
A do. scarlet	1	0
A very curious Plant ...	1	0
Texian Cacti	1	0

TEXIAN BULBS.—Each.

	s.	d.
Texian Lilies, white and pink	1	0

TEXIAN THORNS.

These are highly recommended for ornamental fences.

SEED. Per packet.—	s.	d.
White Evergreen Thorn ...	1	0
Do., flowers 3 times a year	1	0
Do. yellow Berries	1	0

Trade packets of 5s., 10s., and 20s. each, may also be had of the above three Texian Thorns.

TEXIAN GRASS.

	s.	d.
A gigantic Evergreen Grass	1	0
An excellent Grass either for Pasture or Hay; highly recommended to agriculturists	1	0

NEW TEXIAN GRAIN.

	s.	d.
Different from all the sorts cultivated in England; produces two crops in Texas	1	0

The entire collection of Seeds, 1l. 5s.

CACTI.—Very fine specimens, prices various.

TO ROSE GROWERS AND AMATEURS.

J. CARTER has also received ROSE SEED from a correspondent in Italy, who possesses a first rate collection of the most beautiful Roses, comprising 500 varieties, and including some of the novelties of last season. The seed is perfectly well ripened, and having been partly hybridised, new and beautiful sorts may be raised from it. It consists of Bourbon, Noisette, Moss, Tea, &c. Price, per large packet, all the sorts mixed, 20s.; Smaller do. do., 5s. The following may be had separate:—Moss, Tea (including Purpurea rubra), Hybrid, Remontants, Bourbon, Noisette, each 2s. 6d. per packet. Roses commonly flower the second year; in Italy frequently the first.

Also from the same correspondent Seeds of splendid CARNATIONS and PICOTEES, warranted at the following prices, per packet:—New Fancy Carnation, 5s. and 10s.; fine mixed Carnation, 2s. 6d. and 5s.; fine mixed Picotee, 2s. 6d. and 5s.

☞ CARTER'S new Giant Scarlet Runners, per quart ... 2s. 6d.

NOTICE.

THE ADMINISTRATORS of the late JOSEPH FAIRBAIRN, of Clapham, Nurseryman and Seedsman, beg most respectfully to call the attention of Noblemen, Gentlemen, Amateurs, and the Trade, to their varied and extensive Stock of STOVE and GREENHOUSE PLANTS, particularly to their Ericas, Azaleas, and Aphelexis, which are all now in high perfection; also their Shrubs and soft-wooded Plants for Parterre and Border Planting in every variety. They beg to return their grateful thanks for the patronage so long bestowed on the old established Firm of JAMES & JOSEPH FAIRBAIRN, and afterwards on JOSEPH FAIRBAIRN alone; and to state that all Orders will receive their prompt and best attention, and they are prepared to do Business on such liberal terms, for Cash, as they trust will insure a continuance of such patronage.

Clapham Nurseries, near London, April 22.

EAGLE AND HENDERSON, SEEDSMEN, NURSERYMEN, and FLORISTS to the QUEEN, from 81, George Street, Edinburgh, to the Seed Warehouse, at the Nursery Gate, Leith Walk.

AGRICULTURAL SEEDS.

Per lb.—	s.	d.
Broom	0	6
Carrot, fine large Altringham 1s. 6d. to	1	9
Clover, Red ... 7d. to	0	9
" White, 8d., 10d., and	1	0
" Yellow ... 4d. to	0	5
" Alsike, true, 2s. 6d. to	2	9
Mangold Wurzel—Long Red	0	9
" Yellow Globe ...	1	2
Parsnip, fine	1	6
Rib-grass ... ... 6d. to	0	7
Per bushel.		
Rye-grass, fine Annual, 4s. to	5	6
" Perennial, fine, 4s. 6d. to	6	6
" Pacey's Evergreen (28 to 32 lbs. per bushel) ... 8s. to	10	0
" Moll's ... 7s. to	8	0
" Italian 4s. 6d. to	6	6

Per lb.—	s.	d.
Timothy ... ... 6d. to	0	7
Turnip, Swede, Green-top ... ... 1s. to	1	2
Do. do. Purple-top 1s. to	1	2
Do. do. Skirving's 1s. to	1	2
Do. do. Laing's ... 1s. to	1	2
Do. Yellow, Green-top ...	0	9
Do. do. Green-top Improved (Low's) ...	1	0
Do. do. Purple-top ...	0	9
Do. do. Skirving's ...	0	10
Do. do. Border Imperial	0	10
Do. do. Hood's Improved	0	10
Do. do. Gibbs'	1	0
Do. do. Altringham, fine	1	6
Do. do. Dale's Hybrid ...	0	9
Do. White Globe ...	1	0
Do. Stone or Stubble ...	1	0
Do. Green Globe ...	1	0
Do. Red Globe	0	8
Do. Woolton Hybrid ...	0	8
Whin ... ... 9d. to	1	0

Natural Grasses, of sorts, at very moderate prices; Flower, Tree, and Kitchen Garden Seeds; Boiling and Split Peas, Bird Seeds, Double Superfine Mustard; Garden and Agricultural Implements, Saynor's Pruning Knives; Archangel Mats, Cuba Bast, Mushroom Spawn; fine Ornamental Vases, all sizes; Fruit, Forest, Ornamental Trees and Shrubs, Greenhouse, Herbaceous, and Alpine Plants, &c.

NEW AND SUPERB SHOW PANSIES, &c.

Adela (Turner)
Androcles (Dickson & Co.)
Black Diamond (Parker)
Blanche (Turner)
British Queen (Dickson & Co.)
Cæsar (Marsh)
Commander-in-Chief (Youell)
Criterion (Hooper)
Duke of Perth (Handasyde)
Euphemia (Turner)
Ethelred (Turner)
Favourite (Hooper)
Miriam (Dickson & Co.)
Mr. Beck (Turner)
Pandora (Hunt)
Queen of England (Fellowes)
Robert Burns (Campbell)
Sir J. Paxton (Dixon & Sons)
Sultan (Hooper)
Victory (Dickson & Co.)

The above set of 20 Superb Show Varieties, 15s., hamper, &c., included.

Amelia (Bragg)
Addison (Turner)
Blue Perfection (Byne)
Chieftain (Turner)
Duke of Norfolk (Bell)
Eustace (Turner)
Fair Flora (Byne)
France Cycole (Grieve)
Ibrahim Pacha (Edmonds)
Juliet (Hooper)
Inventa (Hooper)
Loveliness (Fellowes)
Mrs. Beck (Turner)
Nobilis (Bell)
Ophir (Widnall)
Pompey (Hale)
Rubens (Turner)
Sir J. Franklin (Hooper)
Sir P. Sydney (Fellowes)
Tymour (Bragg)

The above set of 20 fine Show Varieties, 10s., hamper, &c., included. Parties having duplicates of the above, others will be substituted of equal merit.

Extra Fine Selected Pansy Seed, 1s. and 2s. per packet.

Choice Auricula Seed, 2s. 6d. per packet.

25 pairs Show Varieties of Carnations, 1l.; 25 do. do. Picotees, 1l.; hamper, &c. included.

The Celebrated Pansy "Father Gavazzi" (Holland's), 5s. p. plant.

Post-office Orders to be made payable at Middleton, Lancashire. Catalogues on application, enclosing a stamp.

JOHN HOLLAND, Bradshaw Gardens, Middleton, near Manchester.

PAGE AND CO.'S

BLIGHT COMPOSITION should be in the hands of all Plant and Fruit Cultivators. 4s. per gallon, sufficient to make four. For testimonials see back leaf *Gardeners' Chronicle*, March 11, 1854.

GARDEN AND AGRICULTURAL SEEDS, first quality, and lowest market price.

Oxford Street (adjoining Radley's Hotel, 20 yards from the Railway and Docks), Southampton.

TURNIP SEEDS.

THE SUBSCRIBERS are now selling, from a large and carefully selected Stock, the following varieties of TURNIP SEEDS. Prices are moderate.

SWEDES.—Skirving's Purple Top. (*On strong clays or other heavy soils no variety of Swede will produce so bulky a crop as this.*)
" Lothian Purple Top. (*An established well known sort, rounder shape than Skirving's, and does not grow so much to "long necks."*)
" Hardy Green Crop. (*There is nothing to equal this variety for* mellow *and* peaty *soils. It is less liable to* ROT *than any other Swede, and it possesses excellent feeding properties, being crisp, juicy, and sweet.*)
" Laing's Improved. (*A beautiful shaped bulb, and on rich loamy soil yields a great crop, but is not equal in hardiness to any of the preceding.*)

YELLOWS.—Green Top, or Aberdeen Bullock—Improved Stock. (*It is questionable if there be a better Yellow Turnip than this, provided it be grown from a properly selected stock; it has, however, above all others, in too many instances, disappointed the farmer in consequence of the spurious character it has assumed through a bad stock of seed, which, instead of giving a heavy crop of large well shaped bulbs, with moderate sized tops, produce only stunted small bulbs with a profusion of large coarse tops.*)
" Improved Purple Top Aberdeen—Skirving's variety. (*A very superior sort, yielding a heavy crop, but is not considered equal in hardiness to the preceding.*)
" Dale's Hybrid. (*Yields a very heavy crop, and is a first-rate kind for early winter consumption. From the bulbs growing considerably above ground, it is well adapted for sheep feeding.*)
" Improved Early. (*A superior sort; bulbs large and finely shaped, with small top and tap root. Unless wanted for early use it should not be sown till the end of June, and sowing may be continued up to the middle of July, with the certainty of having a good crop.*)

WHITES.—Large Globe,
" " Green Globe Imperial. (*A superior hardy sort.*)
" " Red Globe.

Priced Lists of the above, with every other description of Farm Seeds, may be had on application, post free.

All parcels of Seeds are delivered carriage free to the principal Railway Stations and Shipping Ports throughout the kingdom.

W. DRUMMOND & SONS, Seedsmen, Stirling, N. B.

CALCEOLARIAS FOR BEDDING.—The following four very handsome varieties will be found the gems of the season for bedding purposes, at 12s. per dozen.

CRIMSON KING (Henderson), deep crimson, very dark and rich, and does not fade; habit dwarf and robust, flowers large, and shape good.

MAGNIFICENT (Henderson), rich crimson, with yellow crown; a large, fine-formed, and very splendid flower, quite distinct from anything yet out.

GOLD CHAIN, fine golden yellow, of great substance and fine habit, with very stout foot-stalks.

GOLD CAP (Garraway), rich dark maroon, the upper division of the flower deep gold colour, the flowers large and of fine compact habit.

Also the following older favourites for bedding:—

BEAUTY OF MONTREAL, fine bright crimson, dwarf habit, 6s. per dozen.

WELLINGTON HERO, rich deep golden yellow, 6s. per dozen.

SULTAN, large rich crimson, 6s. per dozen.

MRS. BEECHER STOWE, fine canary, 9s. per dozen.

SULPHUREA SPLENDENS, fine yellow, dwf. habit, 6s. per doz.

Calceolarias (Seedlings not yet flowered) raised from "Benary's" superb spotted varieties, 5s. per dozen, post free.

CARNATIONS AND PICOTEES.—Beautiful selections from our extensive collection, at 18s., 24s., and 30s. per dozen pairs; fine mixed, for borders, 9s. per dozen pairs. True Old Clove Carnation, 12s. per dozen pairs.

PINKS.—Extra fine sorts by name, 9s. to 12s. per dozen pairs.

PANSIES.—The following choice kinds, at 10s. per dozen varieties:—Alba Superba, Androcles, Blanche, Cæsar, Calysto, Caroline, Commander-in-Chief, Crystal Palace, Drusilla, Duchess of Rutland, Elegant, Emma, Euphemia, Glory, Helen, Heroine, Indian Chief, Isabella, Junius, Lady Carrington, Lady Franklin, Lady Harding, Lord Jeffery, Marchioness of Lothian, Masterpiece, Miriam, Miss Talbot, Mrs. Beck, Penelope, Polyphema, Post Captain, Prince Arthur, Princess, Queen of England, Rubens, Sambo, Smolensko, The Rajah, Uttoxeter Hero, Viceroy, Yellow Prince.

CHRYSANTHEMUMS, comprising the very best of the new kinds of large flowering and Pompon varieties, in strong plants, 9s. per dozen.

30 packets of Choice Flower Seeds, per post free, for 5s.

For immediate effect in decorating the Greenhouse, Conservatory, and Flower Garden, YOUELL & Co. *beg to refer to their advertisements of March 25, April 1 and 8.*

☞ Less quantities than those named above supplied at the same prices. Orders of 2l. and upwards are delivered Carriage Free to any Railway Station within 150 miles of the Nursery.

YOUELL & Co., Royal Nursery, Great Yarmouth.

The Gardeners' Chronicle.

SATURDAY, APRIL 22, 1854.

THE lecture delivered lately in the Royal Institution, a report of which has been given in our columns (p. 183) has again directed attention to what are called WARDIAN CASES. On many former occasions the subject has been discussed; but we still find so much misconception as to the real horticultural value of this invention, that we venture once more to address ourselves to its consideration.

If the more enthusiastic admirers of WARDIAN cases are to be trusted, the whole art of horticulture is illuminated by the lustre they shed upon it. We are told that it is merely necessary to put a plant into such a contrivance, and, *presto*, the care of a gardener becomes superfluous; the vigour of health is imparted to the sickly constitution; the most deteriorated atmosphere becomes genial; and a back window in a dingy London court becomes

redolent of country lanes and verdant meadows. We have even known attempts made by speculative gardeners to convert their conservatories and hot-houses into Wardian cases upon a gigantic scale. It is because all this is a great mistake that it becomes desirable to indicate once more what a Wardian case is, what it can do, and what it cannot do; for most assuredly it can do none of those things expected from it by the more eager of its friends.

In saying this we mean no disrespect whatever to the invention. We would not disparage it in the slightest degree. On the contrary, rightly used, and correctly understood, it is an excellent adjunct to horticulture. But it is one, the value of which is much exaggerated, or at least misunderstood.

When Mr. Ward first remarked a Grass and a Moss growing inside a damp bottle, he merely saw what gardeners had witnessed for a couple of centuries at least. He beheld the propagator's bell glass with its edges dipping into wet sand: a close cavity, with transparent sides, and an interior possessing an uniform and unchangeable degree of humidity. Thirty or forty years since, and probably long before, the same principle was employed in the drawing-rooms of the wealthy for the preservation of the freshness of cut flowers; the flowers were placed in a vase; the vase stood in water, and a bell-glass, dipping its edges into the water, covered the whole. There is not the smallest difference in principle between these old contrivances and the modern Wardian case.

But all such plans were merely preservative; no one thought of cultivating plants in close cases, though they found the latter invaluable for keeping plants alive. A cutting under a bell-glass was surrounded with moist air until it had formed roots; but the moment the action of roots was secured it was transferred to the open air. Gardeners never dreamed of growing a cutting under a bell-glass, even though the bell-glass were as capacious as the dome of St. Paul's.

What Mr. Ward did, when he proposed the case that bears his name, was to contrive a large portable bell-glass and its supporter, made of materials strong enough to bear the rough usage of a sea voyage. He demonstrated the defects of the old travelling greenhouses, and suggested a sure remedy, pointing out at the same time upon what principles the remedy depended. That principle was—1st, to expose plants to light, and—2d, to ensure their being constantly surrounded by a medium damp enough to keep their system in a state of activity. The old travelling greenhouses, or plant cases, were open at the joints, and the water originally contained in them quickly evaporated, leaving a mass of parched earth in which no vegetation could long survive; they were also glazed with talc, or oyster shells, or other half-opaque materials, through which no such amount of light could pass as plants require for the preservation of their vitality. When properly constructed, the Wardian case answers perfectly as a means of transporting plants to great distances.

It also has its value in places where the air is filled with floating soot or dust; or where it is naturally too dry for vegetation, as in sitting rooms. There the lives of certain kinds of plants may be maintained for a long period of time, with the appearance of health; shade-loving races, such as Ferns and Mosses, will even thrive there; and others, like dry Crocuses and Hyacinths, which have been previously made ready by the usual processes, out of doors, may be led to blossom in perfection for a season, or in some instances for more.

We shall be told no doubt that plants have been made to grow well, and flourish exceedingly in Wardian cases. To that statement we lend an incredulous ear. It will be always found, upon inquiry, that such cases are opened daily and ventilated freely, and thus, or otherwise, relieved from the moisture with which the air is saturated. But those are not Wardian cases at all; they are merely greenhouses on a small scale, in which plants grow well or ill, according to the care and skill with which they are managed. A Wardian case demands neither care nor skill; its operation is essentially automatic; it is its own gardener in every way. The moment its structure enables the possessor to give it daily attention—in short, to cultivate the plants within it, it ceases to be a Wardian, and may as well be called a Smithian, or a Blackian case.

The truth is, that plants cannot be cultivated in the absence of the freest access to light and to air in motion. The more rapid the motion, within certain limits, the higher the health of plants, and *vice versâ*. This is the very foundation of good gardening; and it is precisely this which is unattainable in a Wardian case. This is the exact opposite of a natural condition; but plants demand all the resemblance to natural conditions which is to be secured by art. In a Wardian case plants are in a state of semi-suffocation. In nature they breathe freely. Direct, constant, and most unrestrained communication with air, perpetually striking and then quitting them, is as necessary to a plant as to an animal; and that the Wardian case is intended to render impossible.

We venture to add that so far as gardening, properly so called, is concerned, the Wardian case has done nothing more than was effected years before it was suggested. As a convenient means of enabling plants to support existence under difficult circumstances it has value; and that is all. In short, it is to plants what *tripe de roche*, Bark-bread and Fern-root are to man—a means of prolonging life under difficult circumstances.

It must be evident, from the valuable series of experiments recorded by Mr. Lawes (at p. 214), that all our tables of the downfall of rain are essentially wrong, and that no results hitherto obtained by the Rain-gauge can be taken to represent the truth, or anything like it. It is clear that meteorologists have been groping in the dark, and misleading everybody. Their instruments neither indicate, with even tolerable precision, the quantity of rain which falls, nor the number of days on which it falls. The last error is as unfortunate as the first, for we have no longer an indication of the length of time during which the air is charged with vapour ready to be precipitated. A whole year's rain near London may be equalled by that of a week in Persia; and figures which express the general annual result of such extreme cases tell the cultivator nothing; no distinction is made between occasional torrents and a steady deposit throughout the year. But if we know that in the one case there are 200 days in which rain was measured, and in the other only 20, we perceive immediately that the one must be a damp, and the other an extremely dry region.

The small rain gauge used by Mr. Lawes asserted that he had in 1853 only 150 days on which rain fell, and this indicated a season dry for England. But the large gauge declared that the number of days was 249, and that the season was unusually wet; as we know it was. And this explained why, even in the absence of rain, there was so little dryness; for it is clear that with 249 days on which moisture was able to condense, there could have been very little evaporation from the surface of the soil.

It cannot be alleged that the indications by the large gauge used at Rothamsted were in excess of the truth; it could not indicate more than occurred. Condensation may have done something, or it may have indicated less; and so far may be regarded as not being quite trustworthy. No doubt it is to some extent inaccurate; but its inaccuracy can bear no sort of comparison with that of the little instruments now in use.

That the existing apparatus must be all altered seems certain. In what way it can be best altered requires consideration; and we hope to receive suggestions from our meteorological readers; for in Great Britain the fall of rain is, of all natural phenomena, that which has the most direct influence over our climate.

Imagine a gardener or farmer, accustomed to the dry climate of the Eastern counties, seeing in a Galway journal, kept from a 4-inch gauge, that there was not an inch more rain there than in Norfolk, and proceeding to the West of Ireland, with dry land husbandry at his fingers' ends, and nothing more. What would he do in a perpetual drizzle, with the routine that he had been accustomed to, and with no science to rely upon, as might very well happen. Such a man would have been thankful if he had never heard of a rain gauge, or allowed himself to be allured by the seduction of what is called philosophy.

A rain gauge, to be of any value, should indicate the total deposition of moisture on a certain horizontal area, and hence afford the means of calculating, by weight or measure, the quantity of water which falls in the locality or part of the country in which the instrument is placed.

The utility of rain gauges may be questioned by some persons, who may suppose that registers of the amount of rain are merely to be looked upon as matters of curiosity. But even with all their present imperfections, they are no doubt of considerable value. This is well illustrated by the following undoubted fact: After an extraordinary inundation from the overflowing of the Saône, in 1840, a society was formed to take into account the rising of the waters in connection with the fall of rain in the basin of that river. The quantity of rain and snow was registered at 33 stations, and the relation between the fall of rain and swell of the river was carefully observed. On the 9th of December, 1845, the Mayor of Lyons was informed by the Commission, in consequence of intelligence received from observers at Montbéliard and Dole, that the Saône would most probably rise to the height of 18 feet, at the bridge of La Feuillée, on the evening of the 12th or morning of the 13th of December. The flood did come; and it rose early on the morning of the 13th to the height of 17 feet 4 inches. Thus, it appears, that the authorities at Lyons had three days' notice of the approaching flood, in which time the lives and property of the inhabitants could be placed in comparative security. The time of greatest danger, and also the safety level, were pointed out with astonishing accuracy, considering the distance between the source of information and the city of Lyons. The time was within the limits stated, and the height to which the water rose was within eight inches of the point which it was calculated to attain. The source of information was, in fact, the rain gauge; and if this instrument has not proved useful in cases of inundations occurring in this country, as well as in that just mentioned, there is certainly no reason why it should not.

We all know, moreover, that the indications of the rain gauge are usefully consulted in determining the system of drainage which should be adopted in different localities, receiving different quantities of rain in the course of the year. When it is ascertained that in one place the amount of rain is, on the average, 40 inches per annum, and in another only 24 inches, it is evident that the area of the pipes, and the number of drain-outlets, ought to be much greater in the one case than in the other.

But if the indications of the rain gauge are useful in such respects, it cannot be denied that these indications should be correct; nevertheless, as has been seen, differently constructed gauges do not give, under similar circumstances, the same results; and the question is, by what means can a correct uniformity be established? Attention was called to the discrepancy between the amounts collected in large and small gauges by Mr. Lawes, at pp. 180 and 245, of last year's *Chronicle*, and at p. 198 of the volume for the same year, our correspondent, "T. S. P.," states that at H. M. Dockyard, Pembroke, an 8-inch gauge received, in the course of 11 months, upwards of $2\frac{1}{2}$ inches more depth of rain than was received by a 5-inch gauge. Of the accuracy of both observers no doubt can be entertained. And now we have a startling announcement by Mr. Lawes of the amounts collected in a gauge equal in area to the $\frac{1}{1000}$ part of an acre, and in one of the ordinary size. He has shown that the difference was upwards of $5\frac{1}{4}$ inches in 12 months, the greater depth being indicated by the larger gauge, and this was the case in every month throughout the year. It is to be observed, however, that the discrepancy was not uniformly equal, and therefore no uniform correction can be applicable. It may, indeed, be concluded, that, as an 8-inch gauge gave a greater return than a 5-inch, so if we employ one of not less than 12 inches, we shall obtain a closer approximation to the actual amount of rain which falls on the surface of the ground. The error in that case would perhaps be small; and if that convenient size were generally adopted, the indications in different localities might, at all events, be considered strictly comparable, as well as sufficiently correct for practical purposes. In the meantime, it is desirable that experiments should be made as regards the quantity received on the same day by a 4, 8, and 12-inch gauge, in order to ascertain whether their differences are in any direct ratio. But upon this and other points we hope to be favoured with the views of our correspondents.

VEGETABLE PATHOLOGY.—No. XVI.

65. Pith, however, though destitute of spiral vessels is by no means a perfectly homogeneous substance. Besides the part which is popularly known by that name, there is a cylinder composed of a close tissue, sometimes quite ligneous, though consisting of parenchyma, which surrounds it, varying in colour in different plants, and forming tranverse partitions, sometimes, as in the Vine,* at each bud, sometimes of more frequent occurrence, as in the Magnolia, and endowed with a far higher degree of vitality than the substance which it surrounds. It is with this cylinder that the normal buds are more immediately in contact, and from this spring the medullary rays. Threads of this sometimes penetrate the central pith, as in the Apple; and occasionally, instead of such threads, there are mucous ducts, as in the Lime tree. At the base of the nascent pith of the young bud, corresponding with the cicatrices immediately below it, there is a portion of a loose consistence, which becomes discoloured more or less rapidly when in contact with the air. To this M. Guillard gives the name of *möelle marcescente*, or *möelle morte*. It has a different construction from the

* If a young pushing bud of the Vine be examined, the transverse partitions are perfectly visible, while the whole mass is soft and tender. The various modifications assumed by the central pith may be studied in Guilliard's memoir, in "Annales des Sciences Naturelles," Nov., 1847.

ordinary centra[illegible]th, not being arranged evidently in lines,* but fo[illegible]g an irregular network. It is not impossible that [illegible] portion, which is apparently in a state of incipient [illegible]omposition, may act as a stimulus to the young bu[illegible] [illegible]actly as the brown matter in the Potato murrain c[illegible]ses diseased tubers to push more rapidly than in those which are sound.†

66. The normal buds, as distinguished from the adventitious buds, as said above, proceed from the annular pith, whether in immediate connection with a transverse partition of this pith or not. In essential characters all are similar, whether lateral or terminal, consisting of an indefinite number of leaves, or modifications of leaves, with a cone of young pith at the base, and below this, a short cylinder of a distinct substance. The growth of the stem is dependent on the evolution of the buds, and its increase bears a certain proportion to their number and activity. Where the lower branches, therefore, of a tree are constantly pruned off, without any reasonable consideration of the exigencies of a tree, the growth is always proportionally scanty; and, in many cases, if nature did not supply the loss by the production of adventitious buds, the health of the tree, and its general strength, would be materially impaired.

67. That the growth of the stem is in strict dependence on the vigour and number of the buds, will not admit of question. A theory has long prevailed that the wood is, in fact, the product of the buds, being nothing more than their descending roots, which, with a rapidity comparable to that of lightning, run through the whole extent of the tallest stems. No theory, perhaps, has been more strenuously defended and opposed, especially in France, or with greater ability on both sides; but strangely enough, with the death of M. Gaudichaud—its warmest advocate—it seems destined, notwithstanding very weighty theoretical arguments, to pass into comparative neglect. M. Trécul, more especially, has of late devoted his attention to the subject, and by a careful investigation of the reproduction of wood on denuded surfaces, has proved, almost beyond the possibility of doubt, that when they are protected from atmospheric agency, the terminal cells of the medullary rays, and the young external cells of the alburnum, are capable of increase, and that the tissue thus produced resolves itself after a time into bark and wood, with all the peculiarities of the original tissue. This resolution, in consequence of which a tissue, at first centrifugal, is divided into two portions, increasing in opposite directions, is amongst the mysteries of vital action, which, like many others, will probably never be fully understood.

68. When one variety or species is grafted on another, though the buds are entirely confined to the graft, the wood of the graft and stock respectively retains its own peculiar characters, which could not be the case if produced by roots descending from the buds. To a certain degree, however, the graft or stock‡ is modified as regards luxuriance and fertility; and on the proper accommodation of the stock to the graft mainly depends the complete success of the cultivator. Seedling varieties, for instance, which are worthless, either from delicacy of constitution or other bad qualities, on their own roots, are highly improved by grafting on suitable stocks. Such modifications depend upon the alteration which the sap has sustained in passing through the stock in its way to the graft, an alteration which, though probably altogether inappreciable to any means of analysis which we possess, has no mean influence on tissues destined originally to convey a different fluid, though different to so slight a degree.

69. It is probable, owing to some analogous cause, that grafting is only practicable within certain limits. Between plants of different natural orders an union is, we believe, never possible; but even in varieties of the same species, as in the Rose, the life of many varieties is of very limited duration, except on highly favourable stocks, and the same may be said of most unions between plants not very closely allied.

70. If the effect of a slight change in the sap is capable of producing such effects on the graft, it need not be matter of surprise if any material change in the constitution of the soil should be capable of inducing a canker or death. *M. J. B.*

OLDENLANDIA DEPPEANA.

The clusters of delicate little star-shaped white blossoms which terminate every shoot of this plant, its compact growth and habit of blooming almost perpetually, render it a very valuable subject for decorative purposes, and it is somewhat singular that it is not more generally grown than it appears to be; but its tendency to be continually in bloom, rendering some trouble and attention necessary to obtain specimens of any size, has probably led to the neglect with which this plant is now treated. It is, however, not subject to insects, and is quite at home in any warm shady corner while making its growth, such as would be unsuitable for the majority of plants; and the little time necessary to remove the flowers as they appear is well repaid by their abundance and long duration, when good sized plants have been once obtained.

Cuttings of the young wood, planted in sandy soil, covered with a bell-glass and placed in a gentle bottom-heat, root freely. When well rooted they should be potted singly in small pots, placing them in a rather warm close moist shady situation until they get well established. Beginners, however, will save time by procuring young plants, with which to commence, from the nursery; and they are not expensive. Plants procured at the present time will, with good management, form nice little specimens in course of the season, and will be useful for blooming in a rather warm house during the winter. When received they should be placed in a close pit, where they can be afforded a moist atmosphere, and shaded from bright sunshine. As soon as the pots are found to be moderately well filled with active roots shift into others two sizes larger, using rich fibry peat and light mellow turfy sandy loam, in about the proportion of two parts of the former to one part of the latter. The peat and loam should be nicely broken up, rejecting all but the prime, and be carefully mixed with a sufficient quantity of clean sharp silver sand, and a sprinkling of lumpy bits of charcoal or small potsherds. Water carefully for a few weeks after potting, keeping the atmosphere moist, and syringe over-head frequently. When free growth is once obtained a liberal supply of water will be necessary; but it will be easy to give too much just after potting, and if the plants are allowed to get into indifferent health it will be difficult to induce anything like free growth during the season. The blossoms must be removed as they appear, and the plants should be shaded from bright sunshine, affording a moist atmosphere, which will assist in checking their tendency to produce flowers; and if they can be placed in a cold pit after about the middle or end of May, they will be more at home than where artificial heat is used, but the pit must be kept rather close, otherwise the temperature will not be sufficiently warm to induce active growth. A second shift will probably be required about midsummer, and this must be attended to, shifting as soon as the roots require more space, but not until then.

If large specimens are desired it will be necessary to prevent their blooming this season at least, and to keep them growing as actively as possible. They should be removed to a warm corner of the greenhouse before damp cold weather sets in in autumn, giving very little water to the soil, so as to get the wood well ripened. As early in spring as it may be convenient to afford them a situation favourable to growth, remove them to it, and attend to potting and stopping, &c., as directed for last season, until specimens of the desired size are obtained. When this is the case they may be allowed to bloom, and may be removed to the conservatory while in flower, supplying them with weak clear manure water, if the pots are well filled with roots. By stopping the plants when the flowers decay, and removing them to a warmer situation for a few weeks, they will produce a second lot of their pretty little blossoms; or, if they are afforded a warm corner, they will go on growing and flowering for months. This exhausts the plants, however, and it is advisable to allow them a short period of rest after the beauty of the principal portion of their flowers is over. *Alpha.*

* Such at least is the case in the instances which we have examined, and as mentioned by Guillard. The term möelle morte is very inappropriate, for the duration of its life far exceeds that of the central pith, as a section through a four years' shoot of the Horse Chestnut will at once demonstrate. A section of the same tree shows also very clearly the exact agreement in the tint assumed by this portion of the pith, when exposed to the air, with diseased or wounded parts. In every case which we have examined, it has a strong acid reaction on litmus paper.

† A curious case of disease which is now ravaging the Gooseberries and Currants in the neighbourhood of London, characterised in its early stages by a precocious pushing of the buds, has just been communicated to us by Mr. R. Thompson. In a plantation of at least 5000, consisting of Keens' Seedling Gooseberries, far the greater part is worthless. The diseased plants sprout earlier than the others, but soon perish; the roots, meanwhile, are perfectly healthy, but the wood, when cut across, shows an appearance exactly like that in Apples destroyed by canker. The inner bark suffers more rapidly than the rest, and is full of little black specks, which show exactly the organisation of the perithecium of many species of Sphæria. A more minute description of the disease must be reserved till we arrive at that portion of our treatise which relates to individual diseases.

‡ Disease, for instance, as in the case of variegation, may be communicated by the graft to the stock.

MAJOR CUNNINGHAM'S "LADAK."

In the seventh volume of the Transactions of the Horticultural Society of Calcutta, 1850, appeared the supplement to an essay on the Coniferæ of the N. W. Himalaya, published several years before in a local journal of North-western India. In this supplement occur the following passage and note.

"According to Dr. Lindley in the 'Penny Cyclopædia' (copied in the 'Arboretum Brit.,' iv. 2429), two varieties or perhaps nearly allied species (of Cedar) called Shinlik and Christa Rooroo are mentioned by Moorcroft as natives of the forests of Ludakh (if any such there be); but the inhospitable soil and climate of the Tibetan table land (where it freezes more or less every night in the year), must form an impassable barrier to the transverse progress of this and other Himalayan Coniferæ, excepting, perhaps, Juniperus excelsa." A surmise quite confirmed by the researches of Dr. Thomson, who found that the Deodar Cedar does not extend beyond Soongnum in Kanaur, and is unknown in Tibet and Ladak. The note to the qualification, "if any such there be," is this: "This proviso is very necessary. I know not what materials Dr. Lindley consulted, but in the expurgated edition of Moorcroft's Travels, published by Professor Wilson, so far from any forest or Cedar of any kind being mentioned, I find (I. 267) that "a few Willows and Poplars are the only trees" in Ludakh. This is confirmed by Mr. Vigne (II. 342), with the exception of his "here and there a bunch of Fir trees" in the neighbourhood of Le, which, on the authority of Captain H. Strachey, I eliminate, as being imaginary. Captain S. assures me that the only trees are the Lombardy and a Balsam Poplar, Willows, Brier bushes, and Hippophäe by the rivers. To these must be added Juniperus excelsa, which, however, does not occur within 20 miles of Le, and is called Shookpa. In spite of the discrepancy of name, I concluded this to be Moorcroft's Cedar, *i. e.*, Pencil Cedar or Juniper, and understood by Dr. L. of the Deodar. But by comparing Moorcroft's volumes* (I. 287, 289), it is clear that Christa Rooroo is not a Cedar at all, but doubtless Hippophae conferta (salicifolia), or some allied species; "a prickly shrub called Cheerma and Chesta Ruru," growing by streams, and producing a small round orange berry, "too acid to be eaten." As Chesta Rooroo is "a variety or perhaps nearly allied species" of the second Ludakh Cedar, it follows that the last, "Shinlik," must belong to the same family, probably the "Sunjit"† or "Sarsing," (properly Sershing, or gold tree), Elæagnus Moorcrofti, which also grows in Ludakh and Kashmeer, and of which Dr. Royle (in Vigne II., 456) mentions a Kabul variety, "Singilla," which might easily in transcription become "Shinjik." "Chirma," in Tibetan, denotes any Thorn, properly Tserma.

"The Hippophae forms the most abundant brushwood of the river-beds in Ludakh, and though so common as to fix the notice of all travellers, has been nevertheless the subject of a second series of mistakes on the part of Mr. Vigne. He tells us (II. 360) that at a certain spot in the Nubra Valley of Ludakh, 'a long belt of jungle, chiefly of the Tartarian furze, occupies the banks of the river;' and in pp. 268, 269, 272, 319, as well as engraved on the map, near Khoppalu, on the Shayuk, the same shrub, explained to be Cytisus Gerardiana or versicolor, is said to occur in thick jungles on the stony and sandy banks of streams in Shighur and other parts of Baltistan. These are exactly the localities where we should expect Hippophäe, while their comparatively small elevation would naturally induce a doubt of the presence of Caragana versicolor. But the matter does not rest on inference. Captain Strachey has visited the Nubra site, and he assures me that the shrub there is Hippophäe; and so of course the rest."

Major Cunningham, in his work on Ladak, recently published, remarks (p. 218) on the above, thus:—

"Captain Madden, in the Horticultural Society's Journal, has quoted a passage from Moorcroft, to the effect that 'a few Willows and Poplars are the only trees in Ladak,' and he then produces the authority of Captain H. Strachey to show that Moorcroft was wrong. But the fact is, that Moorcroft is right in what he does say, for either Captain Madden or Captain Strachey has misquoted him. In his 'Travels,' I. p. 267, Moorcroft distinctly states that Willows and Poplars are the only timber trees in Ladak; and in I. p. 306, he repeats the same thing. But in both places he says timber trees; and he is right; for the Shukpa (Shug-pa) is too small a tree to yield timber, although, if not held sacred, it might yield wood for boxes. Captain Madden should have recollected that the Ser-shing had been first described by Moorcroft, and was therefore named Elæagnus Moorcrofti."

Now, how stands the question between us? The manifest object of my statement is to show that:—

1. There are not any forests,‡ or Deodar Cedars, in Ladak; and that Moorcroft's published journals on this point will not bear out the facts stated in the "Penny Cyclopædia" on his authority. [Upon this we must remark that, in the "Penny Cyclopædia," Dr. Lindley expressly states that the notes of Moorcroft to which he refers are those published under "Deodar," in Lambert's Monograph of the genus Pinus.]

2. That the plants supposed to be varieties or species of Cedrus are, in fact, a Hippophäe and Elæagnus Moorcrofti.

3. That Mr. Vigne has fallen into several mistakes in his enumeration of the plants of that country. These three points are, I think, satisfactorily established.

The most superficial examination of the passage suffices to prove that "the authority of Captain H. Strachey" is produced to show that it is Mr. Vigne, not Moorcroft, who is wrong: and that Captain Strachey quite confirms Moorcroft. It is true that Moorcroft's words are forest-trees, but as, on his own showing, there are no forests, his obvious meaning is, large trees. And, as I have already said, they were cited by me as right, not as wrong.

The drift of Major Cunningham's concluding sentence it is not easy to gather, for reference is made by me to the Elæagnus; and I can only conclude that he has either wholly misapprehended what I wrote; or, what is more probable, that he has referred to it from memory, and, owing to mere carelessness, has imputed to Captain H. Strachey and myself ideas exactly the reverse of those we really held. *Edward Madden, Clifton, April 7.*

Home Correspondence.

Effects of the late Winter.—The temperature here, on January 3d, 1854, fell 4° below zero, and on the Grass 6° below zero, whilst in the valley in the neighbourhood it was 8° below zero. From our own grounds we have cut down above a hundred cart-loads of dead trees within the last month. Cedrus Deodara, every leaf fallen off

* Q. I. 299, 300?

† Elæagnus orientalis is called Zinzeyd in Persia (*vide* "Vegetable Kingdom," 257). Evidently a corrupt reading for "Sunjit."

‡ Of this paucity of vegetation Major Cunningham's work affords abundant proof; to the indigenous plants enumerated by me he only adds a Tamarisk; and does not mention Hippophäe.

and some boughs killed, but the plants are recovering rapidly; Cedar of Lebanon, slightly injured; Mount Atlas Cedar, injured; Aucuba japonica, much injured, some plants killed to the ground; Viburnum Tinus almost all killed, the bark of the thick wood having been burst by the frost; Arbutus Unedo, all killed, some specimens were 30 years old, the bark forced off the trees by the frost; Pinus Cembra, not injured; P. excelsa, slightly injured; P. insignis, injured; P. Lambertiana, slightly injured; P. Laricio, slightly injured; P. Pinaster, not injured; P. Pinea, injured; Larix pendula, not injured; Abies canadensis, not injured; A. cephalonica, not injured; A. Menziesi, not injured; A. Morinda, not injured; A. Nordmaniana, not injured; A. Pindrow, not injured; A. Pinsapo, not injured; Araucaria imbricata, many killed; Quercus suber, much injured; Q. ilex (evergreen Oak), many killed, some plants 50 years old dead; Erica mediterranea, much injured; Ilex Aquifolium, many killed, all more or less injured, mostly the lower 6 feet of the trees are quite dead, making nearly all the trees standards; Cupressus funebris, much injured; C. Goveniana, ditto; C. horizontalis, ditto; C. thurifera, killed; C. torulosa, killed; Cryptomeria japonica, not injured; Yucca gloriosa, very much injured, all the branches killed, together with a portion of the stem; Buxus chinensis, killed; B. argentea, injured; Cerasus lusitanica, many killed; Laurus nobilis, killed; L. regalis, many killed; Roses, China and Tea-scented, many killed; Libocedrus chilensis, injured; Hedera Helix, injured; Ulex europæus, many killed; U. e. flore pleno, ditto; Ligustrum vulgare, injured; Alexandrian Laurel, much injured; Phillyrea angustifolia, trees 20 years old, killed; P. media, ditto; Juniperus chinensis, not injured; J. communis, injured; J. excelsa, uninjured; J. recurva, ditto; J. Sabina, much injured; Taxodium sempervirens, scarcely injured; Tulip tree, slightly injured; Rhododendrons, many killed, and even the Pontic varieties injured; Garrya elliptica, nearly killed; G. laurifolia, killed; Yew (common), some injured; Walnut, ditto. Bees in many hives frozen to death, with nearly 20 lbs. of honey in them. I might have swollen this list, but the above will be sufficient to show that we have not, for 50 years at least, had such a severe cold. It is worthy of remark that in one place, near Nottingham (Watnal), the Bay tree has not been injured. Probably no part of England has suffered to the extent that we have near here, especially between this place and the Earl of Harrington's and Newark. *E. J. Lowe, Highfield House Observatory, near Nottingham, April* 10.

Trees and Plants of Scripture.—I am greatly in want of some book that may be depended on for a correct description of the trees and plants named in the Bible; our clergyman here is vastly fond of illustrating his subject from natural objects, often plants; and it is truly painful to see an educated man, a public teacher, exhibit such an amount of ignorance on one science, as no doubt often leads many to place but little faith on what he may say of other things of higher moment; it is to stop the perpetual recurrence of those absurdities that I ask you to name some work as an authority, which I will purchase and present to him. *Rodney.* [The best book is Kitto's "Cyclopædia of Biblical Literature," which every clergyman should possess. Gorrie's "Illustration of Scripture," noticed at p. 73 of this volume, is to be depended upon, as far as it goes.]

Pulmonaria angustifolia.—I saw lately in one of its native habitats in Dorsetshire a profusion of this species in a wood; it is so much handsomer than either P. officinalis or mollis of the gardens (P. mollis of Germany is different) that it ought to be introduced; the dark purple contrasts finely with Primrose, Daisy, and Buttercup. *S.*

Mildewed Strawberries.—I observe that one of your correspondents complains of the failure of his first crop of Cuthill's Black Prince Strawberries, from the effects of mildew. The same has occurred here; my gardener fully expected to gather his first crop early in March, and having been recommended to try the Black Prince as the best sort calculated for early forcing, was much disappointed in the fruit not setting, being infected with mildew. Since their removal, I have had in the same house a most abundant supply of Keens' Seedlings in the highest perfection. *R. Hanbury, Poles, Ware.*——The whole of Cuthill's Black Prince that have been forced here have been destroyed by mildew. On February the 10th, 100 pots of Keens' Seedling, and 50 pots of Black Prince, were plunged in a pit with a bottom heat of 70°, close to the glass; they all showed fine blooms, especially the Black Prince; as the blooms began to expand the leaves became attacked with a white mildew, then the fruit stalks and fruit; while the whole of Keens' Seedling were perfectly free from the evil, and ripened good fruit on the 26th of March. Again, on the 20th of March I introduced into the same pit altogether 80 pots of Keens' Seedling, 30 pots of Roseberry, and 18 of Black Prince; the two former kinds are full of fine healthy leaves and fruit, and the Black Prince is completely covered with mildew. The plants are grown singly in 7-inch pots; nearly all were potted at the same time in the same loam, and had the same treatment throughout; they were kept in cold frames through autumn and winter, and forced in a pit glazed with sheet glass 22 oz. to the foot. I have forced here, for the last four years, 500 pots a year, and seldom failed in producing plenty of fruit; and for the failure of Cuthill's Black Prince this year, and not the others, under precisely the same treatment, I am quite at a loss to guess; but such is the case with me. *George Moses, Gardener to Lord Alvanley, Pepper Hall, Catterick, Yorkshire.*——A bed of this variety (Black Prince) in my garden, which had the finest crop of fruit that I ever saw, in July last was suddenly attacked with mildew, which quite destroyed the later portion of the fruit and the foliage. A bed of Myatt's Surprise, only separated by a path, was not in the least affected; neither was any other kind in the garden. *Henry Doubleday, Epping.*——I began to force the Black Prince about five years ago; the first season I was delighted with it, and thought it the best and most prolific of all for forcing; the second season they were nearly as good; the third they mildewed, and the fruit withered without ripening, although other sorts standing alongside of them were perfectly free from mildew; last season I was quite disgusted with them, for they became perfectly white with mildew, and did not ripen a single fruit. I am not, however, easily discomfited; so, this spring I again placed about a dozen pots alongside of my plants of Keens' Seedling, and have thrown them away, completely rotten with mildew; while the plants of Keens' have ripened a nice crop of fruit, are green and fresh, and as healthy as they can be. In the above experiments, the plants of the Black Prince were of the same age and quality as those of Keens' Seedling, and others. *T. R.* [Has sulphur been tried as a cure for this mildew?]

Collodion.—I may mention, as you have been good enough to notice my application of collodion for the propagation of cuttings, that, from some recent experiments on cuttings of such trees as Yews, Junipers, &c., it has not succeeded so well with them; perhaps this was owing to too thick a coating of the solution. However, it is not probable that anything could succeed with every class of plants. In stopping the bleeding of plants I have never as yet found it fail. I have tried gutta percha dissolved in chloroform, and it answers remarkably well. When the series of experiments that I am now trying has been fairly completed, I will write again. *E. J. Lowe, Highfield House Observatory, near Nottingham, April* 10.

The Palmetto.—Could you not get over some Palmetto berries from Charleston? They would be as hardy as the Chinese fan-palm, and as handsome, I conceive; they were recommended for cultivation here by Catesby, who could judge of climate, a hundred years ago. *S.* [We dare say some reader in the southern States of North America, whose eye this catches, will be obliging enough to collect the berries and send them over. They would be very acceptable.]

Fruits and Farinacea the proper Food of Man.—After reading the remarks respecting vegetarians in your review of M. Payen's "Des Substances Alimentaires" (25th Feb.), I felt disposed to solicit the insertion of an immediate reply, but deemed it more prudent to wait till I had procured and perused the work reviewed. This I have now done, and am prepared to show that neither Payen nor any other chemist has recorded a single *fact* opposed to vegetarian principles, or that will warrant the assertion that a mixed diet of animal food and vegetables is superior to one consisting of fruits and farinacea only. No one entertains a higher respect than myself for the talents, labours, and valuable discoveries of such men as Liebig, Playfair, Payen, &c., but I feel assured that some of their physiological inferences are incorrect, and I shall be glad if you will permit me to state, in your impartial journal, my reasons for dissenting from what, I think, they have too hastily assumed as established principles. I do not ask you to open your columns as an arena for discussing the merits or demerits of vegetarianism; but there are several chemico-physiological questions respecting the diet of man and the feeding of animals, which I consider far from being settled, although some chemists have taken for granted that this is the case. The late Dr. Pereira and other eminent writers have suggested the propriety of receiving certain modern doctrines of organic chemistry *cum grano salis*; and even Liebig, in his later writings, betrays a little doubt of the truth of his former statements. I will not trouble you with any direct reply to M. Payen's remarks on the eccentricities of Englishmen and the follies of vegetarians, any further than observing that the very tables which he has constructed with so much care refute his own inferences. Compare the tables at p. 352 with those at p. 349, &c. M. Payen seems, from his observations at p. 385, to have a very imperfect acquaintance with the arguments employed by vegetarians in support of their principles and practice; and the consequences which he foresees from a general adoption of their views are purely imaginary, as a more intimate acquaintance with all the bearings of the subject will show. I may also add that the many years' experience of some hundreds of vegetarians industriously employed in various avocations—literary, scientific and mechanical—should have some weight in the scale against mere hypothesis, or at any rate doubtful inferences. The names and experience can be given of accountants, architects, artists, editors, reporters, barristers, chemists, dentists, gentlemen, merchants, ministers, members of Parliament, physicians, surgeons, professors of music, schoolmasters, solicitors, students, travellers, bakers, blacksmiths, bricklayers, carpenters, clothiers, coopers, cotton-mill operatives, drapers, dyers, engineers, farmers, gardeners, grocers, ironmongers, joiners, labourers, machine makers, moulders, packers, painters, millwrights, printers, saddlers, shoemakers, stonemasons, tailors, warehousemen, and many others now practising the system, who are ready to testify to the beneficial effects they have experienced by a total abstinence from the flesh of animals as food. Some of these have been vegetarians for more than 40 years; some perhaps were so before M. Payen was born; they generally agree in stating that since they commenced their present diet their health has been better, their strength certainly not less, and their capabilities for continuous labour, mental or muscular, much increased; yet M. Payen would have us believe the total inadequacy of such a diet to impart health and strength in such climates as England and France. He says the amount of animal food consumed by the inhabitants of the Alps is not 1-30th of that taken by the inhabitants of the departments of the Seine, yet believes the latter considerably short of what it ought to be. Admitting that M. Payen is correct in his estimate of the amount of azotised and non-azotised principles respectively necessary for renewing the wasted tissues, and fer supporting animal heat, it is no difficult matter to prove that these, in the proportions mentioned, can be as effectually and as economically obtained from the vegetable kingdom alone as from a mixed diet. I believe, however, that strong evidence can be adduced to show that the conclusions arrived at by some chemists on this point are by no means so clear and satisfactory as they represent them; and if you will favour me with a small space in any of the forthcoming Numbers of the *Gardeners' Chronicle*, I will prepare a short paper on the subject. *John Smith, Malton.* [With pleasure, if short.]

Concrete Walks.—An error has inadvertently crept into my article on this subject at p. 216;—for "two-thirds of gravel to one-third quick lime" read—"to six loads of gravel add one chaldron of quick lime." When thoroughly dry, one inch in depth of fine gravel is laid upon the surface, and it is rolled smooth; this effects a considerable saving of the best material, and a much better walk is the result than those made in the usual way. *H. Howlett.*

Potatoed Cuttings.—In the *Bath Chronicle* of the 30th ult., at page 1, col. 1, No. 5006, I find the following article, viz.: "*Singular Mode of Planting.*—We read in *Galignani* that the following mode of planting has been acted on with success by a Bohemian arboriculturist. In place of using the process of grafting, he takes an offshoot of any fruit tree, an Apple tree for instance, and plants it in a Potato, both being carefully placed in the soil so that 5 or 6 inches of the shoot shall be above the ground. This latter takes root, grows with rapidity, and produces the finest fruits." Will you permit me to ask your judgment on the above? Is there, do you think, any reason in it, or any warrant from experience and fact? I have directed my gardener to try it; but I can see plainly that he thinks me on the high road to the county lunatic asylum for giving him such a direction. Why, he reasonably asks, a Potato? why not equally a Turnip? Is it, then, nothing that we vary our stock for different kinds of fruit? Quince for Pear, Crab for Apple, wild Plum for Magnum Bonums? But I will wait for your further instructions, and the expression of your views. *Little Harriett.* [Such inventions are no doubt intended to keep the cutting alive till it strikes root. We have no faith. Doubtless some things will grow under such circumstances, and so they would if the Potato were forgotten.]

Societies.

HORTICULTURAL, *April* 18.—J. R. GOWEN, Esq., Treasurer, in the chair. Sir W. W. Wynn, Bart., H. Acroyd, Esq., and W. E. Hubbard, Esq., were elected Fellows. The room on this occasion contained a fine display of beautiful objects, and a corresponding number of prizes was carried off, as will be seen presently. Messrs. Standish and Noble, of Bagshot, exhibited a "worked" example of Rhododendron Edgeworthi in bloom; but owing to its having been forced into that condition somewhat prematurely, in order to be in time for the meeting, the two large white blossoms which it had produced were not at all nicely expanded, and the delicious fragrance for which this species is so remarkable was only just perceptible in them. From the thick coating of brown fur in which this plant is enveloped it was thought that it might possibly prove hardy; but such has not been the case, for it was mentioned that it had been killed last winter in the Society's garden and elsewhere, while R. ciliatum and one or two others have survived. The same firm also sent a hybrid Rhododendron called Alstrœmerioides, for which a Certificate of Merit was awarded. It is remarkable for its showy heads of small rosy flowers, which are covered all over with little dark-coloured bars, like those on the blossoms of some Alstrœmeria. It is a continental kind, whose history is unknown; but, be its origin what it may, it must certainly be considered an acquisition. Messrs. Standish and Noble likewise furnished an Indigofera from the north of China, which, although said to be hardy, is not by any means so handsome as I. decora; and a white semi-double Chinese Azalea called Narcissiflora, which will doubtless become a favourite. Several small plants of the latter, each bearing a cluster of blossoms, were produced, to show how freely it blooms, even in a small state. Both this and the Indigofera were stated to have been introduced by Mr. Fortune.—Messrs. Lee contributed a collection of plants consisting of two well-grown specimens of Eriostemon, Pultenæa biloba, two Azaleas—one vittata, the other the pretty little purple A. amœna—several Epacrises, and a dish of kitchen Apples, called in Hampshire "Duran," and which

appeared to be a good keeper. A Banksian Medal was awarded for the plants.—Messrs. Lane furnished three charming Rhododendrons, in the shape of good sized trees of R. campanulatum, a variety of the same called General Napier, and a thick bush, profusely ornamented with compact heads of delicate white flowers, vividly bordered with pink. For these a Banksian Medal was awarded. — Messrs. Weeks and Co. sent a young plant in bad condition, more especially as regards colour, of Aphelandra lateritia, some account of which was given at p. 239 of last week's Number. —From Messrs. Henderson, of Pine-apple Place, came four pots of the hardy, yellow flowered, scentless Patagonian Violet called pyrolæfolia, an Oxylobium, and a well cultivated plant of Maranta sanguinea, the beauty of which consists in the red floral leaves which cover the flowers, and not in the flowers themselves, which are small polished bodies entirely hid from view. A Certificate of Merit was awarded for the Violets.—Messrs. Lucombe & Pince received a similar award for Calceolaria Ajax, a dwarf, shrubby, bedding kind, remarkable for its great trusses of brown and yellow blossoms, which require no sticks to support them, owing to its sturdy habit. It was stated to be from Sultan, crossed with some high-coloured shrubby variety. It is not quite new, a promising plant of it having been exhibited to the Society last year.—Mr. Keeble, gr. to H. Davies, Esq., received a Certificate of Merit for a very finely flowered Tropæolum tricolorum, covering most completely a circular wire trellis some 4 feet in diameter.—From Mr. Gaines came Rhododendron aureum, R. dilectum, and the strikingly high-coloured Azalea named Holfordiana, for which a Certificate of Merit was awarded.—Mr. Dunsford, of Chingford, Essex, received a similar award for a specimen of Epidendrum Stamfordianum. — Messrs. Jackson, of Kingston, sent the little Brazilian Leptotes serrulata, Chysis bractescens, Barkeria elegans, six small plants of Lycaste Skinneri, all in flower, Dendrobium pulchellum, and Vriesia speciosa, the latter bearing two long feather-like spikes of scarlet inflorescence, which, in addition to brilliancy of colour, remains a very long time in perfection. A Certificate of Merit was awarded for this and the Dendrobe.—Mr. Dobson, of Woodlands Nursery, Isleworth, contributed eight Cinerarias, well flowered and skilfully cultivated, for which a Certificate of Merit was awarded ; and four pots of a double-flowered variegated Polyanthus.—Messrs. Henderson, of the Wellington Road Nursery, St. John's Wood, sent a Gesneraceous-looking plant of no beauty, called Sciadocalyx Warszewiczi, and along with it a note intimating that they had also forwarded some Cyclamens (one of the subjects for which special awards were offered on this occasion), but through some unexplained cause the latter never arrived. — The other subjects specially invited by the Society for this meeting were Cauliflowers and Cherries ; of the former none made their appearance, while of the latter there was only one dish, which was furnished by Mr. Fleming, gr. to the Duke of Sutherland at Trentham, and consisted of May Duke, large, plump, and well coloured. A Banksian Medal was deservedly awarded them. — Some Keens' Seedling Strawberries came from J. Allnutt, Esq., of Clapham; and Mr. Bennett, gr. to J. Smith, Esq., of Dulwich, received a Certificate of Merit for a dish of finely grown British Queen Strawberries ; which, although rather pale in colour, were, to all appearance, quite ripe.—Mr. Spary, of Brighton, exhibited six well-coloured bunches of Black Hamburgh Grapes, for which a Certificate of Merit was awarded. Mr. John Edwards produced three punnets of Potatoes, the first containing Lapstone Kidney ; the second the Fluke, a Lancashire sort, said never to have been attacked by disease ; and the third a seedling from the Fluke.—From the garden of the Society came Indigofera decora, the large-flowered Azalea calycina; Epacris grandiflora, the broad-leaved Daviesia ; two Boronias, two Chorozemas, a well grown plant of Bauera rubioides, and beautiful clusters of cut flowers of the white Glycine sinensis, and also of the ordinary form of that plant, both of which were found by Mr. Fortune in the woods of Chusan, the only place where it has yet been seen wild. Along with these came fruits of Citrus japonica, or Cum Quat (a favourite Chinese preserve), from a plant which has just begun to bear in the garden. The fruit is small, oblong, and orange-coloured. It is preserved in sugar by the Chinese. The rind of the fruit is extremely fragrant. The garden also supplied some Neapolitan Cabbage Lettuces, a portion of which had been grown under Mr. Pilkington's bell glasses, which differ from the French cloche in having a ventilator at the top, in the shape of a neck or chimney, which can be left open or kept close as may be desired, by covering it over or not with another small bell glass, made for the purpose. In this way damp from the soil, which is often so destructive to winter Lettuces, can be let off without tilting up the side or moving the bell glass in any way, as has to be done in the case of cloches whenever air is given. The result of this trial has been very satisfactory—for, of a ridge of Lettuces planted out last October, those which had bell glasses put over them on the 27th of last month have attained nearly double the size of such as were left unprotected ; but which, in all other respects, were treated precisely like them. It was mentioned, however, that bell glasses can, unfortunately, only be had in the neighbourhood of places where they are made ; for, owing to the difficulty of packing them in small compass, the packing and carriage cost more than the original value of the glasses themselves.

Notices of Books.

Hooker's Icones Plantarum, Vol. X. Part I. (Pamplin).—This is wholly occupied by figures of Ferns, executed with very great skill by Mr. Fitch. It is understood that the succeeding part will also contain Ferns exclusively. Many of the species are now published for the first time. Collectors of living Ferns should send such books to their correspondents as guides to the kind of species which it is desirable to procure for ornamental purposes.

The Entomologist's Companion. By H. T. Stainton. (Van Voorst), 2d edition.—The title of this little volume is calculated to deceive the purchaser : it should have been called Microlepidopterist's Companion, for it relates to nothing whatever except the tiny moths. Collectors of such insects will find it of value ; to others it is useless.

Neill's Fruit, Flower, and Kitchen Garden (Black) has reached a fifth edition, under the care of Mr. Ravenscroft, of the Museum of the Highland Society. The favour with which the little work has been received it richly deserved, for it is no doubt a most useful practical guide to the management of common gardens; we may even say that when one volume only forms a gardener's library, this is the best he can select.

The *fourth part* of Dr. Seemann's *Botany of H.M.S. Herald* is before us. The plates are admirable, as usual, and the letter-press, which relates to the Isthmus of Panama, contains some interesting facts in addition to its systematical value. For example, we are told that the wood of some Melastomads is sometimes used for building purposes, and that the leaves of Conostegia speciosa are employed for washing dishes. The Apple and Pear-shaped Guavas are reduced, after Raddi, to one species. Turnerads are united to Passionflowers, through the intervention of a new genus called Erblichia, described as a good-sized tree, attaining a height of 30ft. and more. The Compositæ are from the pen of Mr. Steetz, who we regret to see cannot divest himself of the bad German habit of attaching to every supposed novelty a long Latin description, four-fifths of which are superfluous. It astonishes us that men of such real talent as the German botanists should be unable to perceive the immense distinction between prolixity and precision.

Untersuchungen über den Bau und die Entwickelung der Baumrinde. Von Dr. J. Hanstein. 8vo ; pp. vi. and 108; tab. 8. Berlin. 1853.

We can give little more than the title of this work, which gives a luminous account of the structure of bark in general, accompanied by some excellent figures ; a subject of the greater importance, as it is generally neglected more than other points of structure by analytical botanists. We can answer for the correctness of the illustrations, as we have had occasion to compare minutely the structure of Vine bark, both in shoots of the first and second year, and were delighted to find the most complete concordance between the figures, and what we ourselves observed under the microscope. The advantage of having such matters collected in a separate treatise is obvious, as it not only facilitates research, but the attention having been especially directed to one particular portion of the tree, the information is at once more complete and copious. The work is part of the same series as that of Schacht on the structure and functions of cells, of the same author, on flax and cotton, and of Bary on Cryptogamic fungi. All are so good, that we anxiously expect other valuable contributions from the same publisher.

Mr. Murray has published a 2d series of those admirable *Essays from the Times*, which have so much contributed to maintain the high character of the greatest of newspapers. Fourteen subjects are treated of in the present volume, among which the life of Lord Coke, Lord Clarendon and his friends, Affghanistan, and the Greek Revolution, may be more particularly mentioned.

The new part (the 2d) of Messrs. Longman's People's Edition of *Macaulay's Critical and Historical Essays* is another of those excellent cheap issues which will render our low-priced literature the best in the world.

New Plants.

58. Abies Kæmpferi. *Lindley in Penny Cyclopædia, vol.* T. Pinus Kæmpferi *Lambert, Monograph of genus Pinus, 2d volume. Preface.*

Seosi, vulgo Kara maatz Nomi. Larix conifera, nucleis pyramidatis, foliis deciduis. *Kæmpfer. Amœn. Exot. p.* 883.

A. foliis fasciculatis deciduis, cicatricibus pentagonis dorso rotundatis, strobilis oblongis cynaroideis fragillimis, squamis cordatis obtusè acuminatis (pyramidatis) patentibus deciduis, bracteis minimis serrulatis, seminum alis squamæ æqualibus ovato-lanceolatis dimidiatis.

Among the many curious things mentioned in that storehouse of learning, in which, under the name of "Amœnitates Exoticæ," Kæmpfer collected everything that he saw, from the cuneiform inscriptions of Persepolis to the trees and flowers of Japan, mention is made of a Japanese Larch called Seosi, bearing what are called "nuclei pyramidati," by which was probably meant pyramidal scales to its cones. No traveller has seen the tree since the days of Kæmpfer himself. Siebold takes no notice of it in his account of Japanese Conifers, although he says that a kind of Larch, his *Abies leptolepis*, is sometimes called Karamats in Japan ; that is to say, "the Fir tree from Kara, or north-eastern Asia." But that plant has no apparent relation to the few words of Kæmpfer. Lambert, who had seen some drawing by a Japanese artist, founded upon the *Seosi* the name of *Pinus Kæmpferi*, necessarily altered in the "Penny Cyclopædia" to *Abies Kæmpferi* ; and there research was arrested ; for the name appears nowhere since that time. Mr. Fortune, however, in a letter dated Hong-Kong, Feb. 10, 1854, announced the discovery by himself of "a Larch found in the Central, Northern, and Eastern provinces of China ; a very beautiful tree, and no doubt perfectly hardy. The cones when young are very pretty, but exceedingly brittle." From specimens which have since reached us, and from seeds transmitted to Mr. Glendinning, of Turnham Green, we have been able to ascertain that the plant is altogether unlike any coniferous plant previously discovered. The branches are exactly those of a common Larch. The leaves are very slender, clustered, deciduous, from 1¼ to 2 inches long, and leave behind them a pentagonal scar, the back angle of which is rounded off. The cones are pendulous, about 3 inches long, and 2¼ inches in diameter, with excessively deciduous scales, diverging like those of an Artichoke head, to which, on a small scale, the whole cone bears no little resemblance. Each scale is woody, flat, cordate, narrowed gradually to an obtuse point, and on an average rather more than an inch long ; at its base is a minute acute serrulated bract. The seeds are exactly the size of the scales, two of them occupying the whole inner face with their wings—rectilinear where they touch, and curved to correspond with the curvature of the scales on the external edge. The least touch suffices to break up the cones, when the scales fall asunder, adhering very loosely in a bunch by long woody threads, one of which passes out of the base of each scale into the axis of the strobilus.

Mr. Fortune, like Kæmpfer, calls this a Larch. And so it is, if deciduous leaves can make it so. But one of the essential characters of a Larch is to have cones with persistent scales, while in this plant they are so deciduous that it is scarcely possible to make them hold together. In the latter circumstance the plant agrees with the Cedars ; but its leaves are not evergreen ; and moreover the peculiar Artichoke-headed appearance of the cones corresponds with nothing yet known among Cedars or any other form of Abies. We are, therefore, unable to say whether it should be regarded as more a Larch than a Cedar, or more a Cedar than a Larch. This, however, is certain, that the plant is one of the most interesting which the Eastern Asiatic Flora has yet produced.

FLORICULTURE.

Fuchsias.—These are now generally grown on what may be termed the one-year system of cultivation, for the plants are mostly only of one year's growth from the cutting state ; or sometimes old stems of the height of 5 or 6 feet are made into plants furnished at regular distances with laterals, upon the ends of which there is often only one bunch of flowers. Now, take a plant of this description, and compare it with one the same height in the shape of a compact pyramid, covered with finely formed and well coloured flowers, and it will at once be apparent which is the most creditable specimen. Pyramids, however, take three and often four years to come to perfection, as I will presently show ; but before I do so, permit me just to describe the sort of place best adapted for growing them in, which is a low span-roofed house or pit well ventilated, and having a south aspect. This house should contain a well made pit, which may be filled up with broken brickbats to within 9 inches of the top, where there should be 6 inches of rough coal-ashes, and then 3 inches of fine ashes on the top for the plants to stand upon, and which will keep them dry and clean. It will be found necessary to have the pit of three different heights, so that the plants may always be near the glass. The path may either pass round the house or through its centre, as may be most convenient. It is not every one, however, who has got a house or pit like the one just described ; those who have not such convenience, must therefore be content with what they have, but care must be taken that it is a house which can be well ventilated, and capable of receiving at all times the full benefit of the sun. In beginning to form pyramidal plants, take cuttings in March, and strike them in the propagating-house or some other suitable place. As soon as they are struck, pot them off into 3-inch pots, using a mixture of maiden loam, leaf-soil, and sand. Put them into a frame, but do not plunge them. Keep the frame moist, and maintain a temperature in it of from 55° to 60°, giving a little air on fine days. As soon as they begin to grow, and have got well rooted, increase the amount of air given them. In a very short time the pots will have begun to get well filled with roots, when the plants should be shifted into 6-inch pots, using a compost of maiden loam of rather strong texture, about one-third leaf-soil and well rotted dung, and a sprinkling of sand. The plants will now require the support of a small stick, but be careful not to tie tightly. They may now be taken out of the frame, and put into the house or pit in which they are intended to be grown. Place them near the glass, and give plenty of air on all favourable occasions ; syringing them slightly in the morning, and damping the paths frequently during the day, to keep up a moist atmosphere, which the plants enjoy, and in which they will grow vigorously. Here they will soon begin to

push laterals, which must be stopped when they have reached 2 or 3 inches in length; for it is by stopping the laterals that a compact pyramid is obtained. They must, therefore, never be allowed to run, or it will be useless to attempt to obtain a pyramidal plant; stop them all as they come out within 2 or 3 inches of the stem. Be careful not to let the plants get pot bound; and, therefore, as soon as the pots begin to get well filled with roots, let the plants have their final shift for the season, which should be into 10-inch pots, using soil as before, but not in a fine state. See that the pots are well drained, which is of great importance. This time, instead of putting a layer of moss over the drainage, as is often done, use fibrous turf, such as is left after the soil has been sifted out of it. The plan s should now have a good stake put to them. Give them a slight syringing morning and evening, also all the air possible on fine days, and a little may now be left on at nights. All the laterals that were stopped before, should now be stopped again, as they require it. After they have been stopped twice, they may then be allowed to run, but do not let them bloom too much, for it will rob the plant of its support, and bloom is of no importance until you have obtained a fine specimen. The plants will now be growing vigorously; see therefore that they have a liberal supply of water, and abundance of air, and a little more air may now be left on at nights. It is by giving plenty of air, and using soil of rather a strong texture, that you obtain short jointed and well ripened wood, which is what is required in order to have Fuchsias in perfection. As the wood ripens so withhold water, and when it is quite ripe they may be kept dry, and the house or pit cold. Keep them in this condition until the beginning of February, then let them be pruned in to one or two eyes from where they were las tstopped, when a foundation will have been laid for a pyramidal plant. Give them a good soaking with water, when they will soon begin to break. As soon as they are well broken, let them be turned out of the pots, the old soil shaken from them, and the roots pruned in a little. Then pot them in small pots, using soil as before. Keep the house rather close for a few days, giving a slight syringing in the morning. Continue the same treatment as recommended above throughout the second and third years, and by that time you will have got a well formed specimen plant, worthy of a place in any exhibition or conservatory. The following year they may be allowed to bloom, therefore the laterals will not require to be stopped. Let the soil used for potting be of a strong texture, and give abundance of air on all favourable occasions, whereby you will get short-jointed wood and fine bloom. *E. A.*

Miscellaneous.

Enhanced Value of English Timber.—At a recent wood sale in the plantations of Mr. Barrow, of Sydnope (says a Derbyshire paper), the number of purchasers was greater than at any similar sale for years past, and Mr. Poyser, the auctioneer, knocked down 126 lots, chiefly Larch and Scotch poles, to eager buyers, in about three hours, at prices which in the aggregate realised fully 40 per cent. above the sum at which the timber had been valued by competent judges. A correspondent states that 5*d*. per foot has been refused for Scotch poles, containing 2 feet or over, while a few years ago, the same descriptions of wood might have been obtained at from one penny to three halfpence. The advanced price of foreign timber, no doubt, throws more English into use, rendering it more in request. *Builder.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Any attention which will serve to prolong the beauty of the Azaleas and New Holland plants, &c., with which the show house should now be gay, will be well bestowed, as when these are over it will, in most cases, be impossible to furnish the house with equally handsome specimens, and the same variety of colours, &c., which these afford. Get shading into use without loss of time. Also carefully examine the plants on the forenoons of bright days, and see that none of them are suffering for want of water; for with bright sunshine, accompanied with drying winds, it will be no easy matter to properly supply plants with water, particularly specimens that may be rather pot-bound. In ventilating, endeavour, while parching winds prevail, to avoid allowing currents to blow through the house, especially near recently potted specimens, or plants recently brought from stoves. Take care of the young leaves of Camellias, and apply shading the moment it is perceived to be necessary. Continue to repot, and place the plants in a moist growing temperature, as they have done blooming. Use the syringe liberally on those in free growth, and assist them with plenty of clear weak manure water; and Azaleas, if at all pot-bound, will be benefited by similar attention. Orange trees in middling health, which, owing to the neglect with which they are generally treated, is too commonly their case, will require attention, to prevent the young leaves being eaten up by red spider. The readiest and most effectual method of clearing them of this pest is to lay the plants on their side, and well wash the under parts of the leaves with the engine; but, unless the trees are kept in health, this will be but a partial cure. Afford them plenty of liquid manure, and a moist, somewhat shady situation, and see that the drainage is perfect; also repot where necessary, using a compost of two parts rather strong, rich, mellow turfy loam, and one part good strong fibry peat, nicely broken up, and well intermixed with clean sharp sand and bones broken small, and there will be no trouble from red spider. STOVES.—Many of the Orchids being now in active growth, will require careful shading, to protect the tender foliage from the direct rays of the sun, and also to keep down the temperature without admitting currents of air, which, during the present state of the weather, would render the atmosphere altogether unsuitable for them. Keep the atmosphere as moist as possible, by frequently sprinkling every available surface, and shut up early in the afternoon after syringing, giving the plants a good steaming. The specimens should be individually examined, frequently watering those that require it, and avoiding syringing heavily and promiscuously over-head, until the young growths become somewhat firm. Give every necessary attention to soft-wooded plants in free growth, keeping them near the glass, and regularly stopped, so as to secure close compact growths. Also attend to supplying them with plenty of pot room, and manure water. Give air freely on every favourable opportunity; but guard against drying currents.

FORCING DEPARTMENT.

PINERY.—In cases where the plants are near the glass, and growing in houses glazed with large sized squares, a slight shade will be almost indispensable. This, however, should be of a thin material, and used only a few hours in the middle of bright days. See that those planted out in the open bed are properly supplied with moisture at the root, and spare no trouble to afford the whole stock, excepting those ripening their fruit, a thoroughly moist atmosphere. Do not neglect staking fruit that require it, until the crowns get one-sided, and those colouring should be afforded as dry an atmosphere as circumstances will admit, giving no water at the root after they begin to colour. VINERIES.—The present weather will be very trying for weakly or overcropped Vines, and these will require to be carefully watched for red spider, which will be almost certain to make its appearance on weakly plants. This pest must be eradicated the moment it is perceived, for it is of little use trying to overcome it by means of the syringe, which only serves to keep it in check; and when the berries begin to colour, and syringing must be discontinued, it soon gains ground, and speedily destroys the foliage. It should be closely watched for in suspicious situations, carefully washing the affected leaves with a sponge the moment it is perceived, and this should be repeated as often as may be necessary, at the same time using every means to strengthen the plants by giving them plenty of manure water, &c. Be careful to maintain a moist atmosphere, giving air cautiously during weather like the present, and do not allow inside borders to become too dry. FIGS.—Where the fruit is approaching maturity the atmosphere must be kept drier, giving little or no water at the root from the time that the fruit begins to ripen until the crop is over. Plants in pots, however, will require a supply of water, but it should be very moderate while the fruit is ripening. Attend to stopping young shoots before the fourth or fifth leaf, and keeping them thin and regularly tied in; also guard against red spider by maintaining a moist atmosphere, &c. MELONS.—The present bright weather will be very favourable for plants setting their fruit; keep these rather dry, and avoid watering until a crop of fruit is fairly set, when the soil may be thoroughly soaked with tepid water, afterwards covering it with slates to prevent evaporation and assist in maintaining the soil in a uniformly moist state without the necessity of watering so frequently as would otherwise be necessary. Keep the shoots of young plants properly thinned and regulated, so as to secure strong fruitful wood.

FLOWER GARDEN AND SHRUBBERIES.

The long continuance of cold drying winds and bright sunshine will have been excessively trying to large-sized evergreens that have been recently transplanted, and the attention and expense in watering, &c., those will have required to carry them safely through, may probably convince many persons of the impropriety of removing large plants in winter or spring. At all events, those who have an opportunity of judging between September and winter or spring-transplanted shrubs and trees, will agree with us that early in autumn is the best season for effecting the removal of plants of any size. Nothing but the most careful attention will save those that have been recently transplanted; and besides keeping the roots regularly moist, watering the plants overhead with the garden engine towards evening will be necessary in the case of such as may appear to be suffering from the drying weather, and every plant should be examined daily and carefully, so that nothing may be allowed to suffer through neglect. Take advantage of the present favourable weather for the destruction of weeds, &c., to get shrubbery and herbaceous borders cleaned—indeed it will be advisable to run the Dutch hoe over these, if merely to lighten the surface. Bedding plants must not be rashly exposed for the present, as the weather we are experiencing would soon effectually dry the tissues of plants that have been growing in a moist, rather warm atmosphere. The season is, however, far advanced, and the process of hardening should be commenced as soon as the weather will admit; but for the present shade slightly during bright sunshine, and expose freely to air, such plants as are well established, carefully avoiding cold drying currents.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending April 20, 1854, as observed at the Horticultural Gardens.

April.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temp. of the Air. Max.	Temp. of the Air. Min.	Temp. of the Air. Mean	Temp. of the Earth 1 foot deep.	Temp. of the Earth 2 feet deep.	Wind.	Rain.
Friday 14	17	30.171	30.053	66	29	47.5	48	48½	E.	.00
Satur. 15	18	30.027	29.990	67	26	46.5	47½	49	N.E.	.01
Sunday 16	19	30.195	30.103	64	40	52.0	47½	49	N.E.	.00
Mon.. 17	20	30.234	30.206	59	32	45.5	49	50	E.	.00
Tues. 18	21	30.130	30.024	67	41	54.0	49	50	E.	.00
Wed. 19	22	29.968	29.868	77	44	60.5	50	51	S.E.	.00
Thurs. 20	☾	29.750	29.566	75	51	63.0	51	52	E.	.02
Average.		30.068	29.971	67.8	37.6	52.7	48.8	49.9		.03

April 14—Frosty; slight haze; very fine; clear; frosty.
— 15—Cloudy and fine; very fine; clear at night.
— 16—Very clear and fine; overcast.
— 17—Light clouds; fine; clear at night.
— 18—Slight haze; fine; very clear.
— 19—Slight haze; very fine; cloudless; air excessively dry; clear.
— 20—Very fine; excessively dry air; overcast; rain.

Mean temperature of the week, 5½ deg. above the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending April 29, 1854.

April.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 23	58.8	38.7	48.8	15	0.52 in.	1	4	4	—	4	4	5	5
Mon. 24	58.2	36.0	47.1	11	0.60	4	2	5	4	1	7	3	2
Tues. 25	58.6	38.3	48.5	12	1.40	3	7	4	—	—	7	6	2
Wed. 26	59.3	36.2	47.8	13	0.12	2	6	4	1	1	3	9	2
Thurs. 27	59.7	36.2	48.0	13	0.12	9	1	4	2	5	5	2	—
Friday 28	61.1	37.2	49.2	12	0.32	1	4	6	4	4	5	2	2
Satur. 29	61.4	39.2	50.3	10	0.75	2	3	6	2	4	5	2	4

The highest temperature during the above period occurred on the 29th, 1840—therm. 81 deg.; and the lowest on the 25th, 1827, and the 26th, 1835 and 1853—therm. 25 deg.

Notices to Correspondents.

BAROMETERS; *J D.* As a weather indicator, a *good* aneroid is as useful as a common barometer.

CONIFERS: *A B.* It must surely have been owing to soil, not cold, that you have lost Cupressus funebris and Cryptomeria japonica. They most likely object to growing on chalk. Try Abies Pinsapo, Cupressus macrocarpa, Pinus excelsa (and Webbiana, if you are above the reach of spring frosts), Araucaria imbricata, and Deodar, together with Juniperus sinensis, and Abies amabilis, if on its own roots. Pinus insignis cannot be depended upon.

INSECTS: *W D S.* The "bug" you have sent is a water beetle (Acilius sulcatus); it is quite harmless to vegetation. The shell is generally found in situations near or in water; it is a very common species.—*T F.* The woolly insects found on old wood in Peach-houses are the common scale of the Vine, with myriads of young and eggs enveloped in the woolly matter. Eyes and hands must be used forthwith, or your trees will soon be in a woeful plight. Hot water or tar-water are good destructives. The beetles are the click beetle (Elater striatus). Destroy them, as they are the parents of the wire-worms.—*J C.* The small beetles which are destroying your early Peas are the Pea-weevil, Sitona lineata. Powdered unslaked lime sprinkled thickly over the rows is advantageous, especially when the plants have been previously wetted. Gas-tar water will also penetrate to their quarters, and drive them out if used liberally. —*H H.* The small red grubs in the Raspberry buds are those of a pretty little moth (Tinea rubiella), whose history was given in this journal last year (p. 757).—*Anon.* The fly-traps you inquire about can be procured from W. Downing, 171, Great Dover Street, Borough; Knight & Sons, Foster Lane, Cheapside; or of Bews, 19, Newgate Street, London. *W.*

NAMES OF PLANTS: We have been so often obliged reluctantly to decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*Mrs.* Anagyris fœtida.—*H B.* Narcissus Bulbocodium.—*A Kentish Man.* Cyrtopodium Andersoni.—*Woodside.* Cerasus Mahaleb.

PEACH TREES: *P Q.* "Whether it is right to shorten the young shoots of Peach trees, at the winter pruning, when the trees are void of bearing wood except at the tops," admits of no doubt. If you do not shorten, you cannot have your trees furnished with bearing wood as they ought to be at their bases. Of this, your own trees are proofs; if you had shortened in time, they would not have been naked at the bottom. When bearing shoots are left at full length, you can rarely depend on getting a proper supply of well-placed succession shoots; they should be all shortened; and to this general rule the Noblesse and Royal George varieties form no exception.

PELARGONIUM SEED: *J R.* Really we cannot become public prosecutors. You must seek the usual remedy. We know nothing about the matter.

POLYANTHUS: *C C.* The cause of such changes is unknown; the fact that they often occur is well known; the theory respecting them belongs to morphology, concerning which a great deal was published in our columns a few years since.

POMEGRANATE: *J H.* It will not flower unless the wood gets thoroughly well ripened, by being roasted in a hot autumn air. Your tree against a south wall is, however, possibly too luxuriant to ripen its wood perfectly.

POTATOES: *L S.* Earth them up well; that is all.—*S T.* It is difficult to get Chapman's Kidney now; but, earlier in the season, plenty of it may be had in Covent Garden market.‡

SEED-STEEPING: *J D.* We have not the smallest belief in the process of steeping in manure water. The question has been very fully subjected, long ago, to the test of comparative experiment, and it was proved that, although steeping in water was useful, yet nothing whatever is gained by steeping it in manure water. Do you seriously believe that a child well nursed for two or three days, will, on that account, become a stronger man? And yet you must have faith in that, if you have faith in the other.

SPORTS: *J S.* Such cases are not uncommon. You find their parallel in double Anemones, double Bachelors' Buttons, and double Clematis florida.

THE CRYSTAL PALACE: *A Constant Reader.* We believe you to be wholly misinformed.

VINES: *R D Atkinson.* The small green excrescences on your leaves are not caused by the glass, but by too damp an atmosphere and unskilful ventilation. They are perfectly harmless.‡

VINE DISTRICTS: *W T.* We know of no such map as that you inquire for.‡

WINDOW GARDENS: *H T C.* If well managed, such a place as you describe may be gay and pretty, provided you keep the plants quite clean, *i.e.* free of soot and dust.

WOOD PAPER: *H Watt.* A great many thanks. We will attend to it next week.

MISC: *W T.* We cannot assist you, as we only supply the trade in sheets. Complain to your agent.—*T Underwood.* The address is perfectly correct. You had better inquire further into the matter.

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

GUANO (PERUVIAN) AND CHEMICAL FERTILISERS.—NITRATE OF SODA; PERUVIAN GUANO; SUPERPHOSPHATE OF LIME; AGRICULTURAL SALT; AND CONCENTRATED MANURE FOR TURNIPS.
The above articles are supplied on the lowest Cash Terms, for best qualities only, on application to Mr. JOHN CLARANCE, Agriculturist's London Agent, 1A, Bishopsgate Street Within.

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures.
WM. INGLIS CARNE, 10, Mark Lane, London.

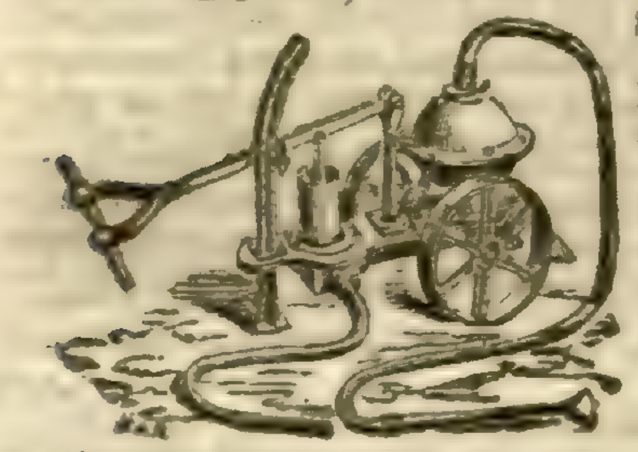
THE LONDON MANURE COMPANY'S WHEAT MANURE, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. EDWARD PURSER, Sec.
Bridge Street, Blackfriars.

PEAT MOSS CHARCOAL, AND OTHER MANURES.—The Undersigned are appointed sole Agents by the Peat Moss Charcoal Company, for the sale of this valuable fixer and distributor of ammoniacal matter.
Also on Sale, Peruvian Guano, Superphosphate of Lime, Gypsum, Nitrate of Soda, Bone-Dust, Sulphuric Acid, and all other Manures of known value.—Apply to MARK FOTHERGILL and Co., 204A, Upper Thames Street, London.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7l. per ton; Superphosphate of Lime, 7l.; Sulphuric Acid and Coprolites, 6l.
Office, 69, King William Street, City, London.
N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

SEWAGE CHARCOAL MANURE.—This highly fertilising Manure, which is Peat Charcoal completely saturated with London Sewage, will be found most efficient for every species of crop; more especially for Peas, Beans, Turnips, Mangold Wurzel, and other root crops. It will produce a greater return for the outlay than Guano or any other Manure at an equivalent value: it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained at the SEWAGE MANURE WORKS, Stanley Bridge, Fulham, at 4l. per ton, and in quantities less than half a ton, at 5s. per cwt., for ready money only; and in quantities not less than a ton, will be delivered at the London Termini of the Railroads free of charge for cartage. No charge for sacks.
It may also be had from Messrs. G. GIBBS & Co., 26, Down Street, Piccadilly, Agricultural Seedsmen, Agents for London: and from all the other Agents of the Company.

WEIR'S IRRIGATORS, LIQUID MANURE PUMPS, FIRE AND GARDEN ENGINES.

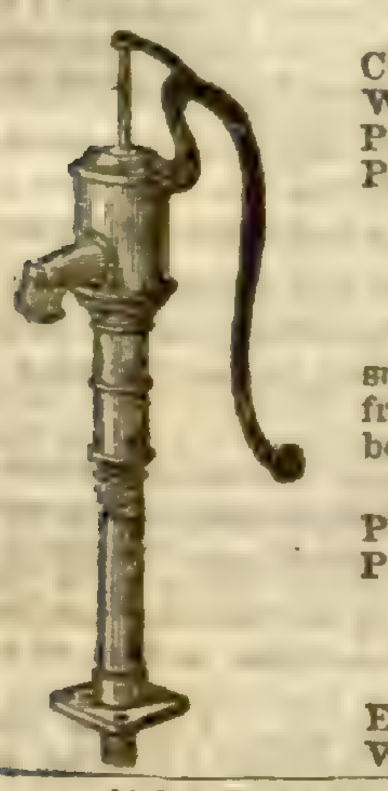


Single Cylinder (as engraving) ... £8 s.8 d.0
Double Cylinder ... 10 10 0
Horse power size ... 15 15 0
Exclusive of Suction and Delivery Pipes.
Illustrated Catalogues free per post.
Terms Cash on Delivery.
EDWARD WEIR, Agricultural Engineer, 16, Bath Place, New Road, London, removed from Oxford Street.

JOHN WARNER AND SONS,
CRESCENT, JEWIN STREET, LONDON.
GALVANISED IRON TUB GARDEN ENGINE,
With Warner's Registered Spreader.

Is strongly recommended, for durability and low price, viz., 2l. 10s., to hold 10 gallons.
Larger sizes made either in wood or iron. May be obtained of any Ironmonger or Plumber in town or country, or of the Patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Syringes of various constructions and sizes from 9s. upwards. An extensive assortment kept.

WARNER'S PATENT FARM AND COTTAGE PUMPS.



Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells. £ s. d.
Patent Pump 1 15 0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing 3 0 0
Larger sizes if required.
The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.
May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,
JOHN WARNER & SONS,
8, CRESCENT, JEWIN STREET, LONDON.
Every description of Machinery for Raising Water; Fire Engines, &c.

HOSE PIPING.—GREAT REDUCTION IN PRICE.
WAITHMAN'S PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense Pressure, and much more than Leather, vulcanised Rubber, or any other Hose; and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented inventions, the cost of manufacturing it is now reduced at least 60 per cent., which advantage is offered to the Public.—London Agents, BURGESS & KEY, 103, Newgate Street, and 52, Little Britain, who on application will forward wholesale and retail prices.

RICHMOND AND CHANDLER'S No. 1 CORN CRUSHER (Price 5l. 5s.) was first introduced a few years ago, as a decided improvement upon others theretofore made. Subsequent time and experience have served to render it more perfect, and to greatly extend the pre-eminent patronage of members of the Royal Agricultural Society, and distinguished scientific authorities throughout the world.—Address, RICHMOND & CHANDLER, Implement Works, Salford, Manchester; and 32, South John St., Liverpool. Expert orders completed on the shortest notice.

MORNING FROSTS.
"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.
"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard run, of E. T. ARCHER, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey. (Removing in May next to 112, Regent Street, London.)

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.
THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.
The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.
Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

STEPHENSON AND PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.
From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

POULTRY SHOW AT EXETER,
OPEN TO ALL ENGLAND.
THE DEVON AND EXETER BOTANICAL AND HORTICULTURAL SOCIETY will hold a GRAND POULTRY SHOW, on Northernhay, Exeter, in conjunction with the Society's Spring Horticultural Exhibition, on THURSDAY and FRIDAY, the 18th and 19th days of May next. Prize Lists and Regulations may be obtained on application to the Honorary Secretary, THOMAS WILLIAM GRAY, Esq., Cathedral Yard, Exeter.

WEST KENT SECOND ANNUAL POULTRY AND FLOWER EXHIBITION, Under most distinguished Patronage, will take place on TUESDAY and WEDNESDAY, the 20th and 21st of June next, in the Market Field, Farningham. Prizes will be awarded for Poultry, Pigeons, and Rabbits. Stove, Greenhouse, and Herbaceous Plants, Fruits, Vegetables, Roots, and Cut Flowers. Applications for Forms of Certificates of Entry, Prize Lists, and Regulations for Poultry, &c., to be made to the Secretary, and for Flowers, &c., to Mr. ALFRED LOCKYER, Secretary, Farningham. By Order of the Committee of Management, BAPTISTE THOMAS, Secretary.
Committee Room, Lion Inn, Farningham, Kent.

GRAND POULTRY SHOW AT BATH, JUNE 7th, 8th, and 9th. In connection with the Bath and West of England Agricultural Society, but with a separate entrance and subscription.
Director and Steward—JONATHAN GRAY, Esq.
The Honorary Secretary will forward Prize Lists and Certificates of Entry on application.
All Certificates must be returned to him on or before the 10th of May, or Exhibitors will be excluded.
All Advertisements for the Catalogue must be forwarded to him by the 10th of May.
By the kind liberality of the Great Western, the Bristol and Exeter, and South Devon Railway Companies, all Poultry will be taken to and fro free of carriage, provided the same are not sold.
HENRY SPACKMAN, Honorary Secretary, 6, Terrace Walk, Bath.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—PRIZE SHEETS for the LINCOLN MEETING may be had on application to the SECRETARY of the Society, No. 12, Hanover Square, London.

The Agricultural Gazette.

SATURDAY, APRIL 22, 1854.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY,	April 27	—Agricultural Imp. Society of Ireland.
MONDAY,	May 1	—Central Farmers' Club.
WEDNESDAY,	— 3	—Agricultural Society of England.
THURSDAY,	— 4	—Agricultural Imp. Society of Ireland.

ON the first publication of the *Agricultural Gazette*, now more than ten years ago, a large mass of MSS., containing the records of an immense number of experiments in the application of manures, was placed at our disposal by a gentleman who has since become the first living authority on such subjects. They appeared to us, in comparison with the individual facts and lessons which a weekly periodical is best fitted to convey, pretty much as the memory of a whole lifetime of agricultural experience must appear, when compared with the picture which at any one moment may occupy the eye in the field. An immense amount of labour had been spent in the determinations which they recorded, but an equal amount was necessary before they could be read, compared, and classified so as to present the general truths on which they rested, and to which they were due. The publication of so voluminous a series, valuable as it was, seemed more proper for a larger and less frequent periodical than our own, and they have accordingly since been published elsewhere.

During the ten years which have elapsed since that time, the facts then determined in reference to that one department of farm practice have become a fraction only, and a very small one, of the immense amount of information which agriculture in all its aspects owes to the same indefatigable observer. The food of animals, as well as that of plants—the processes and results of animal as well as of vegetable growth, have been largely illustrated. Never previously has agricultural truth been accurately read upon so large a scale; till very recently either the questions put to Nature on its behalf have been confined within the limits of a retort or a bushel as to contents, a few stones or cwts. as to weight, a few perches as to extent, and at the most a single season as to time; or no definite question at all has been framed, and the observer has been content to read, as best he might, the large and general aspects, which, unquestioned, she is continually presenting. It is one of the most striking evidences of the agricultural energy of these more recent times, that a research, which for its cost of time and of means — for the scale on which its several departments have been conducted, and the many years during which it has been perseveringly pursued — might well have been supposed the proper work of a great society or Government commission, should have been conducted unassisted, and even unsuggested, by a private English gentleman. Perceiving the great national value of a clearer insight into the true theory of agriculture—recognising, also, with great skill, those lines of inquiry by which it may be most successfully unravelled—securing to himself, in the person of Dr. GILBERT, of St. Albans, the assistance, and, no doubt also, to a great extent, the guidance of first-rate scientific ability—Mr. LAWES, of Rothamsted, has done more than any previous observer towards the attainment of the great object he has had in view.

An immense mass of facts has been collected—whether they have throughout been *read* perfectly, so as to exhibit all the truth they convey, we do not now stop to inquire—that they have been observed and recorded correctly is the most important point, and one which lays us under greatest obligations to himself.

The results are given in the important papers with which he has enriched the volumes of the English Agricultural Society's Journal, and their value is proved by the first-class position which they hold in every discourse on agricultural progress; such, for instance, as the very able lecture by Dr. ANDERSON before the Highland Society the other day.

Attention has recently been directed, by an advertisement in our columns (p. 227), to the services which Mr. LAWES has rendered to British agriculture. The movement there referred to has originated, as most properly it ought, in the neighbourhood of his labours, where their extent and cost and his own liberality can best be estimated; but it has since extended, as still more properly it ought, all over the country which has benefited by them. How cordially we approve of this movement may be judged by the remarks just made. We shall be heartily glad if this notice of it should tend to the fuller attainment of its object.

SOME weeks ago we referred to a discussion on the best kind of Turnips, and on the best means of obtaining good seed, which was conducted before the Highland Society of Scotland. Since then a very interesting statement on the subject has been made by the Marquis of TWEEDDALE, at a recent meeting of the United East Lothian Agricultural Society. This society, in accordance with a suggestion made by his lordship, has offered a prize of 20l. for the best essay on the question —"Whether a more correct principle than specific gravity can be discovered in selecting Turnip roots as the origin of seed for improving the stock?" We shall extract one or two passages from the address given by his lordship on the occasion of this meeting, but must condense his critique of the existing rules which have guided the decision of judges on this point hitherto. These relate almost exclusively to the particulars of form and weight; the one as determining in a great measure the ability of the root to withstand the weather, and the other as determining the acreable produce yielded. The note, accompanying an offer of premium for roots, stated—"Weight to be the principal criterion, provided the judges are satisfied of the quality, shape, and purity of the roots exhibited:" and it was contended by the speaker that, where practical experience in the use of roots for feeding is so general, and when the chemist is at our call to inform us of the constituent parts of any substance he may submit to analysis, so vague a mode of estimating superiority must give way to a more enlightened mode of deciding the merits of competing roots.

A series of experiments has been proceeding at Yester, with the improvement of the Turnip root as their object; and the whole has been planned on the principle that density is the true index of its value as food for cattle, and that by selecting

roots of the greatest specific gravity for seed, we transmit their hereditary quality of density nearly in the same ratio. The following is an extract on this point from the address we have referred to:—

"To illustrate the correctness of this principle, it will be suitable to divide the constituent parts of a Turnip into those heavier and those lighter than water—the former are woody fibre, albuminous compounds, sugar, gum, and other allied principles, phosphates, and other salts; the latter consist of oil and air. With the exception of oil, all the useful compounds of the root are denser than water, and the proportion of oil present in Turnips is greatly too small to go for much in counterbalancing the greater density of their other compounds. In those Turnips, accordingly, which are lighter than water, the low density must mainly be attributed to the amount of air present, which renders the whole buoyant. In regard to the oil, the proportion is small even in the Turnips richest in it, and its density, probably like other vegetable oils, about ·950; and as almost all sorts of Turnips, except Swedes, show a density of not more than from .800 to .900, it is manifest they cannot owe their small specific gravity to an ingredient excelling them in density. Air, therefore, and not oil, is, no doubt, the chief cause of their low density. Great lightness in a root, therefore, must be taken as implying that it contains much air, and correspondingly little nutritious matter; and, after setting down a very small per centage of the lightness to oil which is useful, the conclusion may safely be drawn that, bulk for bulk, there is a greater weight of nutritious matter in the heavier of two Turnips, both of which are lighter than water. A similar conclusion must be extended to Swedes, which generally are denser than water; for, doubtless, their specific gravity always appears smaller than that which the solid matters in them would show if all air were separated from them; for, although we have not ascertained precisely the feeding or fattening properties of each of the constituents, yet we learn from the density the amount of solid nutritious matter, excluding oil, which equal bulks of Turnips contain, and if we deduct the influence of the air contained in them in diminishing their specific gravity, then we may, without hesitation, conclude that the heavier a Turnip is, the larger will be the amount of nutritious matter contained in it. In regard to seed produced from roots of a given density, there is good evidence to show that the qualities of the parent will be certainly transmitted to its offspring, and exert an influence on succeeding generations. It has been ascertained in France that the per centage of sugar in the Beet-root has been nearly doubled by selecting, for a series of years, roots of the greatest density for seed as the origin of improvement. It may, therefore, be inferred by analogy, that similar treatment of the Turnip-root will be attended with a like increase of its nutritive properties. I have sent the seed grown on the principle described to Mr. Lawson, who has distributed it in portions to be sown on various soils in different parts of Great Britain, where he can depend on proper attention being paid to the seed not being adulterated by a mixture of other seed grown in the neighbourhood. The ticket I send to Mr. Lawson with the seed, guarantees that it is sprung from Turnips of the species enumerated, selected with the greatest care and nicety from many thousand Turnips, the specific gravity of which has been tested by weighing small pieces selected from three different parts of a Turnip in scales and water, and which has been afterwards planted for seed. I have received double the price at which Mr. Lawson sells seed of the same species of Turnip, which amply remunerates me for the expense and my trouble. I hope soon to be able to supply Mr. Lawson with seed produced by Turnips selected by a still more improved mode, though on the same principle, at the same time backed by the practical authorities to which I have previously alluded, and with the addition of the constituents parts of the Turnip-roots tested by the ablest chemists, and noted on the ticket. Any gentleman who may wish to see the process, and to satisfy himself of the correctness with which this system is carried out, will have an opportunity of doing so by paying a visit to the scene of our operations at Yester."

The Marquis of Tweeddale referred, in the course of his address, to the services rendered by Mr. Lawson in the course of this research, and to the difficulties which farmers who grow their own seed have to overcome, as compared with the position of those who deal with trustworthy seedsmen.

As to the immediate object of his address—the hereditary transmission of density in the bulb of the Turnip is a matter certainly of very considerable agricultural importance; but, as it is a question relating to simple fact, which will no doubt soon be satisfactorily answered, it is of little use to attempt any anticipations. That density indicates qualitative value seems pretty satisfactorily made out; and, if by continued care in the selection of roots on this principle, the quality of our cattle-food shall be permanently improved, farmers will be greatly indebted to the Marquis of Tweeddale for the perseverance which he has exhibited in directing his own efforts and the attention of others to this subject.

The increasing demand which our colonies are making upon our rural districts for labourers calls for remark. Instead of England having to complain of Irish "beggars," or the kingdom generally of Unions being filled with able-bodied paupers—many a parish may be found, ere long, having good cause to regret, when too late, its want of cottages for the settlement of labourers to cultivate its own soil and harvest its produce.

Take an instance in illustration:—A certain parish was, as it still is, supplied with labourers from the adjoining parishes, from Ireland and Scotland, to perform its work. From the redundancy of this supply it has neglected making provision for an increase of population to meet an increase of labour. It had even pulled down many a cottage, and, in some cases, farm-houses also—arable lands being sown down to permanent pasture and meadow—so as to diminish the heavy burden of tithe and poor rates at a time when the price of produce, and the amount of rent, as well as of tenants' profits, were on the decrease. At this time the reaping of corn, and, sometimes, part of the labours of hay-making also, were performed principally by hands from the sister country. Root crops were little grown in many of our southern provinces, so that the work of hoeing was proportionally insignificant. If a farmer wanted some 20 to 30 Irishmen to cut down his Wheat, he had only to write to some previously appointed party that he and his fellow reapers could have so many acres of Wheat, Barley, and Oats at the terms of last year, the work to be concluded within a given time, and that general employment could be had during the harvest by working northwards, when return of post brought him an answer invariably couched in the most grateful terms, that the chosen hands were on their way to England. Many of these poor people were small occupants of land—indeed the vast majority of them were so—or the sons of such, with barely half employment at home; their holdings yielding hardly a sufficiency of Potatoes, &c., to hold them in life, leaving nothing for rent, stipends, &c., so that little difficulty was experienced in arranging as to the temporal and spiritual management of their affairs and families during their absence, by promising to account for every sixpence earned during harvest. And how religiously such promises were fulfilled, they begging their way backwards and forwards under hardships and privations, our readers need not now be told.

So long as things remained in this state, all went well with the parish at issue; but old times are fast passing away, and the new ones exhibit a rapidly decreasing supply of labourers to perform an increasing amount of work. Land drainage, improved implements, manures, &c., are now enabling farmers to grow Turnips on soils which would not produce them otherwise, requiring thus an increase of hands to hoe them. Many of the lands, again, laid down to Grass some 20 to 50 years ago must now be broken up, thereby increasing the breadth of the harvest fields, while Ireland no longer responds to the old demand for reapers. The last census proves that between 1841 and 1851 upwards of two millions of the labouring population of Ireland, exclusive of the decennial increase, which would have been at least one million more, had left their native land never to return again, in spite of all the tenacity with which they had previously clung to their small holdings and wretchedness; and although the parent stock has thus been reduced, and is annually becoming less and less, yet the tide of emigration continues to roll on with undiminished volume, while English and Scotch agriculturists (landlords, tenants, and labourers) are fast filling up the dreary void thus created. Under such circumstances there is but one conclusion at which to arrive—that English parishes can no longer rely with safety on them for reapers in harvest.

Nor is the spirit of emigration confined to our Celtic population, for, on inquiry at home, it will be found that the hearts of many of our most industrious and enterprising labourers are either bent for the gold diggings or the independence and prosperity of colonial agriculture. And who does not approve of their conduct? Their change into independent colonial farmers is a work of the highest order, demanding not merely approbation, but encouragement and assistance; but whether we approve, encourage, and assist, or not, *one thing is plain*, that the pinching privations which they themselves are this year experiencing, in consequence of the high price of food, aggravated by the prospects of an expensive and protracted war, are teaching them a lesson they will not soon forget; and it may now be too late to talk of amended laws of settlement, or anything else, to avert the calamity now threatening parishes like the one under consideration.

The crisis to which we are fast approaching is simply this—a want of labourers on every farm, estate, parish, or union in the kingdom, alike English, Irish, and Scotch, which does not contain within itself a sufficient number to perform its own work at all seasons of the year; and the only remedy seems to be that of building cottages and furnishing gardens where required, so "settling" in every parish or Union where labourers had been removed, the requisite number to perform its work.

TRADE MUSEUM.

[The following circular is being very widely circulated. The Society of Arts have called the attention of the Institutions throughout the country in union with itself, to it; and the Central Farmers' Club would do well to do the same towards all farmers' clubs throughout the country. The subject is one in which farmers certainly, as well as other manufacturers, are interested; and we shall be glad if any of our readers should feel personal interest in the matter sufficient to induce their correspondence with Mr. Solly on the subject, with a view to any assistance they may be able to render him.]

"Sir,—Her Majesty's Commissioners for the Great Exhibition of 1851 having, conjointly with the Society of Arts, appointed me to commence the formation of a general collection of the raw produce and manufactures of all countries, as set forth in the second report of the royal commission, I am now occupied in forming a collection of raw and manufactured animal produce of every description; and I am, therefore, desirous of inviting the aid and co-operation of all who are interested in the pursuits of trade, commerce, and manufactures.

"The collection, with the formation of which I am thus charged, will contain samples of the produce of Great Britain and Ireland, the British colonies, and also of all foreign countries. It will hereafter be arranged and exhibited in the most convenient and instructive manner; and, when complete, will represent the productive resources of each country, accompanied by such statistical and scientific information as may be desirable.

"The object of the present circular is to invite producers, merchants, manufacturers, and others, who are disposed to aid, by contributing samples of raw or manufactured animal produce to the Trade Museum, to communicate with me on the subject. The specimens should in all cases, if possible, be accompanied by written descriptions, stating where from, by whom produced, collected, or manufactured, the cost of production, collection, or manufacture; and should be forwarded to me at the society's house. It is hardly possible to specify exactly the best size for each sample; the collection is formed for practical use, and therefore each specimen should be large enough to show the distinguishing characters or properties of each article in a clear and satisfactory manner. Specimens of all kinds of animal produce will be valuable, whether at present used in the arts or not. Samples of the same articles, showing peculiarities of manufacture, nature, or preparation, or derived from different sources or localities, will also be received, as it is an essential feature in the collection now forming that the productions of different countries or localities shall be contrasted and shown side by side.

"Yours, &c., Edward Solly."

The following list is by no means complete, and might be very considerably extended; it is merely given as an indication of the class of articles which are desired. We extract only a few of the classes named, in which farmers may be considered interested:—

Animal charcoal	Horse tails	Ox tallow
Blood (dried)	Horse hair	Peacocks' feathers
Bones	Horse oil	Pheasants' feathers
Butter (preserved)	Horse skins	Quills of all kinds.
Calf skins	Horns of all kinds	Rabbit skins
Cow hair	Hoofs of all kinds	Saddlery
Coprolites (fossil,	Hogs' lard	Sheep skins
Cod-liver oil	Hogs' skin	Sheep's tallow
Cow hides	[Insect pests?]	Sheep's tail oil
Eggs of all kinds	Lamb skins	Skins of all kinds
Guano	Leather of all kinds	Sugar of milk
Harness	Llama wool	Tallow of all kinds
Hides of all sorts	Milk (preserved)	Teeth
	Ox hides	Wool of all kinds

THE MANAGEMENT OF FORWARD EWES AND LAMBS.

(*Continued from p. 242.*)

The best Grass upon the farm having been reserved, both in Wheat stubbles and the young Clovers, the ewes with their lambs should now be placed on this food, taking care to feed the Clovers at the day-time, and the Wheat eddishes during the night, as the former would receive damage by the stock feeding during the night frosts; and the latter furnishes the best lair and shelter for the young lambs.

In this manner, if the Italian Rye-grass has been provided for them, as before directed, the ewes will give the greatest quantity of milk, and they may be kept upon these Grasses until the lamb is a month or five weeks old with immense advantage; for the lambs will be found at the end of that time in the best possible condition. At a month old the ram lambs should be castrated. There are two methods pursued; one called drawing, which is done whilst the lamb is from a week to 10 days old; the other called cutting and searing, which may be effected with advantage after the lamb is a month old. I prefer the latter plan, as it is much safer; and the lambs, when arrived at maturity, will be found much more fleshy; and (the prime parts of the animal being more perfect) they will be better appreciated by the purveyor. When the lambs have attained the above-named age, they, as well as the ewes, should be taken from the Grass and placed upon root-feeding. At this age the lamb begins to require food in addition to its mother's milk; and for the benefit of the ewe it is desirable that the lamb should have it; for although the lamb would go on and improve up to the age of eight or nine weeks old without artificial aid, yet the condition of the mother would be greatly reduced. And as it is

customary to fat the ewe and the lamb at the same time, I consider it necessary that they should both be advanced by the best known means from the time the lamb has attained the age of five weeks.

In order to do this, I recommend the following method (which is, indeed, my own practice) :—Previous to commencing the feeding of roots, whether they consist of common Turnips, Swedes, or Carrots, they should be stacked or heaped in readiness for consumption about a week or 10 days before being required for use. This will give time for the work to be kept forward should bad weather supervene, which may otherwise prevent the process of lifting the crop, and thus stop the system of feeding. The advantage of this mode of feeding depends very much upon the roots being cut and placed in troughs, both for the ewes and lambs, which has enabled parties occupying comparatively cold and heavy land to keep this early stock. Previous to the introduction of the cutter invented by Mr. Gardiner, the forward ewes and lambs were kept almost exclusively upon the driest soils, where the Turnips could be consumed upon the land without loss ; but it is now, however, rendered quite practicable, and, indeed, advantageous, to keep them upon nearly all soils where the climate is favourable, except cold clay soils, lying flat, and unable to get rid of the water. Indeed, it is now a well ascertained fact, that some of our heaviest clay loams, which feed badly in the winter months, produce roots of the best quality ; and with the plan of trough-feeding, these soils, under particular management, will produce the best stock, owing to the great feeding value of the roots grown upon them.

In commencing to feed ewes and lambs with roots, it is of the greatest importance that the lambs should feed in advance, and separate from the ewes. It is, therefore, necessary that what is called a lamb-gate should be provided, with space between the rounds, to allow the lambs to pass through freely, without being sufficiently wide to admit the ewes. In entering a field of roots, it is best to commence feeding the lowest part, for two reasons ; first, because the stock always seek the highest land to lie upon, and as the hurdles are advanced they will continue to follow, leaving their dung with regularity ; secondly, the lambs, particularly whilst young, will always draw through the gate in advance of the ewes to receive separate feeding, much better when the folding ascends the hill, than they will when the hurdles are advanced down the incline of the field.

I must now state the best method of feeding. The lambs should be fed first, as this will draw them away from the ewes, and otherwise they are apt to contract the habit of feeding with them, which is objectionable, because the ewes receive the coarser food. Feeding should commence as soon as the shepherd can see in the morning, giving hay first, both to lambs and ewes ; after which, the troughs should be filled with cut roots, taking care to have them cut finest for the lambs, which is done by passing them twice through the cutter, which plan reduces the food into a state resembling dice, in which state the lambs can readily consume it, and are induced to feed at the earliest period, without loss of time and without waste. As soon as the troughs have been supplied with cut roots, then proceed to give oil-cake and Peas, the quantity to be regulated by their wants, always taking care to allow them as much as they will eat. To prevent waste, let the oil-cake be broken fine—about the size of a Horse-bean is the best size—otherwise great waste will occur, for the lambs, whilst young, will take large pieces up and drop them outside the troughs, where it is trodden under foot and wasted.

To induce them to eat cake or Peas at first, it is sometimes necessary to mix a small portion of common salt with it. The ewes should next receive their allowance of cake, but without any Peas, commencing with a quarter of a pound per day, the half of which should be given at this time, the other half just before the last bait of roots in the evening. After receiving cake for two or three weeks, the quantity may be gradually increased up to a pound per day each, taking care to feed with only half the full allowance morning and evening. It often happens that the ewes, after they are well advanced in condition, do eat the larger quantity of cake readily, in which case it is advisable to give them the morning bait previous to their receiving any other food. Roots should be given at times during the day, and the trough quite filled at night.

The lambs whilst young should have hay or hay-chaff twice a day ; but after they arrive at the age of eight or nine weeks, they should receive hay three times per day ; the first bait, as has been stated, the first thing in the morning, the second at noon, and the third about 3 o'clock in the afternoon. It will not answer much later in the day ; for in the short days of winter, after the lambs have drawn away from the ewes, they will lie down for the night, and the portion of hay not consumed will, in case of rain, be distasteful to them, and damaged for further use. The lambs, however, seldom consume all the hay, nor should they be required to do so, for it is better that they select the best portions of it, the remainder being removed and given to the ewes. In feeding with oil-cake and Peas, care should be taken to use covered troughs, and the last bait in the afternoon should not be given later than 3 o'clock, otherwise a portion may be left in the troughs, which will be damaged in case of rain, with change of wind during the night-time ; for although the troughs may be covered, yet in damp weather, or drifting rain, the cake will become damaged or unpalatable. Roots for the lambs should be supplied at short intervals, taking care to have any refuse remaining in the troughs removed every morning ; cleanliness in feeding lambs being indispensable. The ewes may receive their oil-cake in open troughs, as they generally eat it immediately they are fed. There is then no time for it to receive damage by rain, &c. ; but the troughs should be turned upside down to keep them dry during the time they are not in use.

(To be continued)

AGRICULTURAL METEOROLOGY.

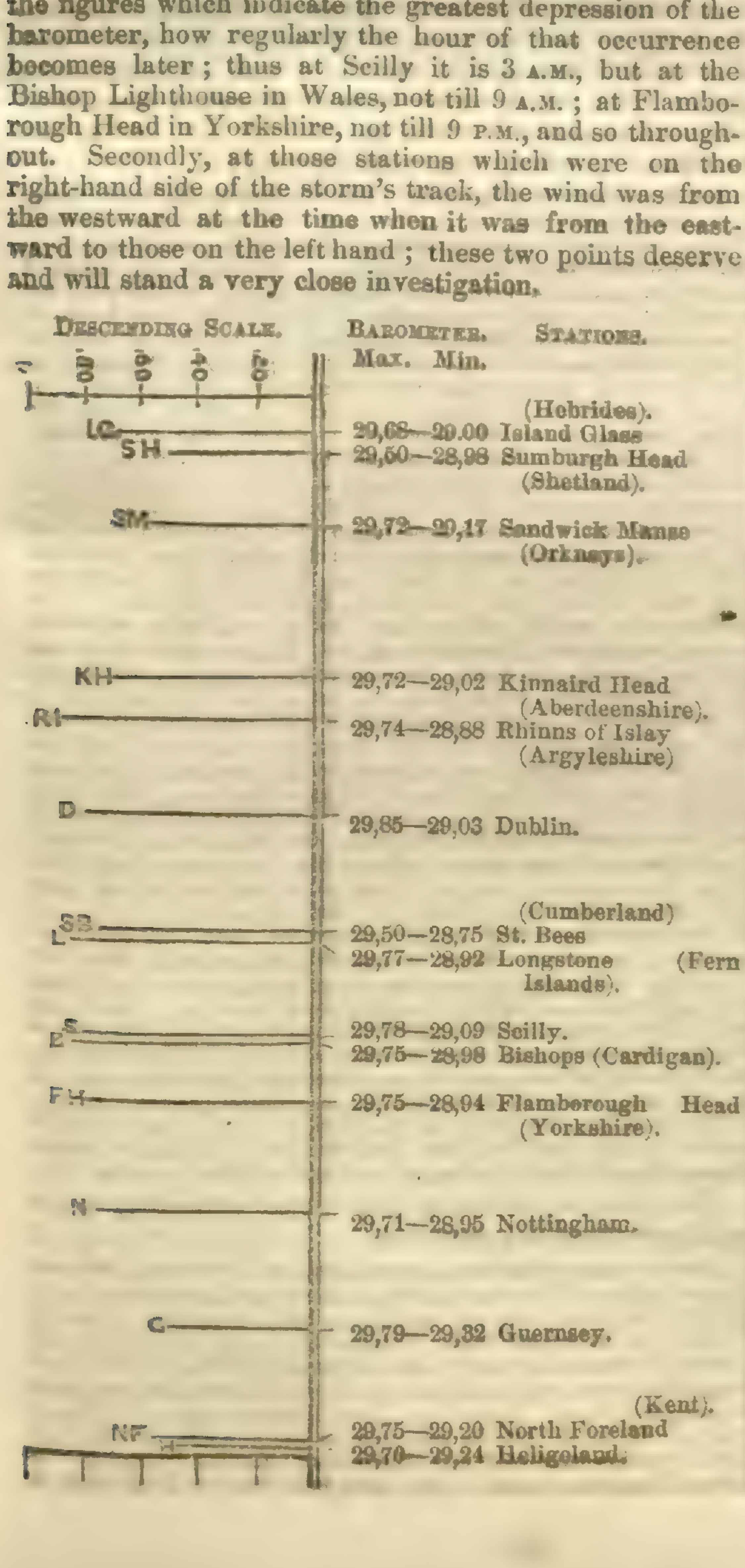
(Continued from page 243.)

Stations in Storm's Left Hemisphere.	Friday, August 26th.				Saturday, August 27th.				Stations in Storm's Right Hemisphere.
	3 a.m. Bar. W.	9 a.m. Bar. W.	3 p.m. Bar. W.	9 p.m. Bar. W.	3 a.m. Bar. W.	9 a.m. Bar. W.	3 p.m. Bar. W.	9 p.m. Bar. W.	
H.	29,65 S.	29,53 S.S.E.	29,44 S.	29,33 S.	29,27 S. b. W.	29,24 S.W.	29,27 S.W.	29,24 W.S.W.	Heligoland.
Sumburgh Head ...	—	29,24 S.E.	—	29,00 S.E.	—	28,98 N.E.	—	28,98 N.E.	S.H.
Sandwick Manse...	—	29,37 E.	—	29,21 E.	—	29,17 N.N.E.	—	29,23 N.N.E.	S.M. *
Kinnaird Head ...	—	29,20 S.E.	—	29,12 S.E.	—	29,02 E.	—	29,10 N.	K.H.
Island Glass ...	—	29,24 N.E.	—	29,00 N.E.	—	29,08 N.N.E.	—	29,18 N.N.E.	I.G.
N.F.	29,43 S.W.	29,38 S.W.	29,28 S.W.	29,23 W.	29,20 S.W.	29,25 W.S.W.	29,42 W.	29,51 W.	North Foreland.
Rhinns of Islay ...	—	28,94 Var.	— †	29,95 Var.	—	28,88 W.		29,13 W.	R.I.
Longstone... ...	29,33 S.S.E.	29,20 S.S.E.	29,11 S.S.E.	29,04 E.	28,98 W.	28,92 W.N.W.	29,07 N. b. W.	29,15 W.	Longstone.
St. Bees	28,90 S.S.E.	28,84 S.	28,78 W.N.W.	28,79 N.W.	28,75 W.	28,76 W.N.W.	28,89 W.N.W.	29.00 N.W.	St. Bees.
F.H.	29,21 S.S.E.	29,14 S.	29,03 S.	28,94 S.S.W.	28,96 S.W.	28,99 W.S.W.	29,04 W.S.W.	29,16 W.	Flamborough Head.
N. ‡	—	29,08 S.S.W.	—	28,95 S.W.	—	29,05 S.W.	—	29,29 S.W.	Nottingham.
Dublin	—	29,03 S.E.	—	29,10 S.W.	—	29,27 W.	—	29,45 S.W.	D.
B.	29,05 S.S.W.	28,98 S.S.E.	28,98 W.	29,03 N.N.W.	29,18 W.N.W.	29,24 W.	29,37 W.	29,42 W.	Bishop (South).
G. §	—	29,32 S.S.W.	29,34	—	—	29,55 W.N.W.	29,62	—	Guernsey.
S. ¶	29.09 W.S.W.	29.12 W.N.W.	29,19 W.N.W.	29.29 W.N.W.	29,45 W.N.W.	29,55 W.N.W.	29,60 W.N.W.	29,63 W.N.W.	Scilly.

¶ Scilly; at 9 p.m., August 25th, Bar. 29.25. § Guernsey; at 3 p.m., 25th, Bar. 29.56; communicated by Dr. J. E. Hoskins.
‡ Nottingham; 9 a.m. and 10. p.m. † Rhinns of Islay; probably an error for 28.95. * Sandwick Manse; 9 a.m. and 8½ p.m.

[N.B. This table is to be read comparing it with the diagram at page 243, and beginning at the lowest line.]

In the above Table there are two points to which I would draw the reader's attention :—Firstly, as he carries his eye upwards from one station to another, along the figures which indicate the greatest depression of the barometer, how regularly the hour of that occurrence becomes later ; thus at Scilly it is 3 A.M., but at the Bishop Lighthouse in Wales, not till 9 A.M. ; at Flamborough Head in Yorkshire, not till 9 P.M., and so throughout. Secondly, at those stations which were on the right-hand side of the storm's track, the wind was from the westward at the time when it was from the eastward to those on the left hand ; these two points deserve and will stand a very close investigation.



In the annexed diagram I have endeavoured to give a synopsis of the depression of the various barometers whose readings I have obtained, from Heligoland (the extreme point of observation on the right of the storm's track) to the Hebrides and Shetland, on its left.

I presume I need not explain to your readers that the material thing worth noticing in barometrical fluctuations, is not whether the quicksilver be high or low, but whether it be rising or falling. Thus, if we refer to Flamborough Head in the foregoing table at 9 A.M. of the 27th, the reading is 28·99, which is considerably lower than at 9 A.M. of the preceding day ; and inasmuch as this is a very low reading in August, the inference might be drawn, from a comparison of these two readings only, that bad weather was immediately to be apprehended. But low as the quicksilver was at 9 A.M. of the 27th, it had then been rising for some hours, which shows us that to draw correct and useful inferences we require frequent observations. In the annexed diagram I have, therefore, endeavoured to represent the *amount of depression* of each barometer by the length of the lines on a base taken across the storm's focus at right angles to its axis ; and in two columns I have shown the highest reading previous to the commencement of the depression, and the lowest reading during the depression ; the difference between these readings is the length of the annexed line. The respective dates of the *Max.* and *Min.* are given in the table which appeared at page 203. The distance between the lines, as the annexed diagram is held, north-west and south-east, *across* the line of the storm's course in the large diagram, represents the distance of each point of observation from the storm's axis.

I have by me the materials for tracing all the storms which passed over England during the first half of the year 1851, and I have no doubt that any one of them would have served the purpose of meeting "*R.'s*" challenge just as well as this storm of which I am now treating. But, setting aside other reasons (such as the materials being in my hand, with a diagram ready drawn when I read "*R.'s*" challenge, the comparatively recent period at which it had occurred, and the somewhat unusual season of the year), I was particularly desirous of availing myself of the fact that, in a paper (to be published next week) with which I have been favoured by Dr. Lloyd, the President of the Royal Irish Academy, I am enabled to lay before your readers a series of observations which brings to a practical and most important bearing the remarks with which I have trespassed at such length on your columns. *F. P. B. M.*

(To be continued.)

Home Correspondence.

Hydrophobia.—I notice that the subject of mad dogs is becoming of serious import. For some years in the north of England this pest has been experienced ; but fortunately by the example of a gentleman of Wolsingham, who shot his dogs which were suspected of having been bitten by a mad dog, and this being adopted by others, the evil was arrested. Yet we must not look to such a practice as an efficient remedy, and legislation is the proper appliance to fully eradicate this mischief. The late Mr. Blain stated his conviction to be, from his long and intimate practice, that no case of rabidness in dogs had ever come under his notice which could not be traced to a bite from some strange dog. It is also admitted that this malady is chiefly, if not entirely, propagated by dogs kept by parties who rarely feed or house their dogs—persons in low circumstances, and whose dogs roam about subjected to all vicissitudes of both weather and food, ever just in the way of being bit, and if appearing ill are never cared for or even observed; also, these are the animals for which no duty is paid. It appears to me that to properly enforce the payment of the duty on these would be the grand cure, and to attain this desideratum I suggest that the erroneous principle of last year's act be changed, which is unfairly applied, more especially to the agriculturist and resident in the country. It is clear that to be allowed by the public to have one's dog follow one, with freedom to be in the public streets, is a privilege and luxury, for which a duty should be paid. At present the duty is for keeping a dog. I therefore propose that the present duty of 12*s*., &c., be charged for a free license for our dogs to be in the public highways, either alone or with any one. To secure the payment for this purpose, each dog should have a Government badge, with a number and marks agreeing with the registry of the payment of the tax and description of the dog, and a copy of the same registry should be given to the owner, or a certificate entitling him to this right. The police would be proper parties to take and destroy, under proper regulations, any dog wanting this Government badge on its collar. It is obvious how soon all these wretched dogs, more than half starved, would under such a law, be provided for. The late act making the lowest duty on dogs 12*s*., will fall heavily on the rural classes who reside away from other habitations. It is self-evident that watch and house dogs are a very efficient branch of police for the prevention of crime, which should be the real aim and spirit of our laws. Once let a person take the

first step to theft, and the chances are he will make further progress in the evil pursuit. How often would such a primary step to crime be taken, were it not for the ceaseless and ever faithful watchfulness of our dogs over property beyond the limits of police or any other protection! And with what security many a nervous and lonely person sleeps during the hours of night, confiding their persons and property to the protection of a watch or house dog! These parties also contribute to the police rate, and it does seem unfair that they should also be called on to pay for keeping a dog, which, in fact, renders national service. I would, therefore, suggest that watch and house dogs, kept exclusively for such purposes, pay no tax, or say 1*s.* per annum, to obtain the registry or certificate, and badge for collar; and that such dogs be confined entirely to the premises, or otherwise be liable to the usual tax, if allowed to roam or follow parties on public roads or paths, or employed for sporting. It must be needless to offer any reasons for subjecting our dogs to be thus badged and under the control of the police, for these police are numbered and lettered, cab and omnibus drivers and conductors are badged—and, if I pay my dog-tax, why should I not have proof of it on the dog, whilst the many who now do not pay for their dogs carry the same appearance? I trust that this matter will meet with that attention which it deserves. *W. Wooler.*

Thin Seeding.—Well may the advocates of what may be called very thin seeding deprecate the sin of wastefulness in the customary sowings of our grain crops, if it is found that the acreable produce from their so thin sowing is generally equal to the ordinary thin sowings as well as to the more general thick sowings, despite of all the injuries the plant is subject to in its growth, and the seed in its germination. And as every saving effected in the seeding of land, both as affecting the additional quantity of the food thus freed to the use of the people, and as lessening to the farmer of the expense of raising it is desirable, so every fact tending to confirm the experiments of the very thin seeders must be worthy of attention. The Messrs. Hardy have very much pressed on us the trial of dropping isolated seed at considerable distances, and attribute much to their being so isolated; my respected friend the Rev. Mr. Wilkins has also repeatedly enforced upon us the benefits of such very thin sowings in the large returns he obtains by sowing singly, and at great distances, allowing large areas for each plant, even so much as two square feet; the extraordinary produce obtained by the Hardys from three plants of Wheat occupying a square yard, or three square feet each, has been before our readers, and such thin seeding has also found some other supporters. Our prejudices are against it; are they anything more? Do we find the casualties we apprehend affecting sound seed carefully sown where the subject has been attended to? Some years ago I found in a small experiment, in which from one to eight seeds were dropped in a hole, that the larger number were not more productive; and that where any produced not, every seed in the hole was abortive or nearly so; that where from one hole of seed (the holes were 4 inches apart) a very few stems were produced, from the next the number of stems was so great as amply to make up for the deficiency in the neighbouring one, and that these drills, sown with seed dropped 4 inches apart were more productive than those where four times the quantity of seed was closely sown, the drills 21 inches asunder. But in thin sowing, after-working sufficient to keep down weeds must always be presupposed, for weeds will as effectually prevent an abnormal produce of these thin sowings as additional plants do in thick sowings; and indeed they will be more effectual in working out this abortive process; as children of the soil they have and exert superior claims on the nutritious juices of their mother earth. Under the very unfavourable conditions of a harsh and dry spring to the perfect tillering of plants, I sowed last year in the middle of April—in double rows, 1 foot asunder, with intervals between each pair of rows of 4 feet—Barley dropped singly at 6 inches, 3 inches, and 1 inch from each other; the return from each experiment has been the same, each producing 11 sheaves, weighing 6 lbs. a sheaf. Some time since, I presumed to offer some objections to the three rows of my benevolent friend, the Rev. Mr. Smith; I was led to think that the conditions of the central row were in many respects so disadvantageous to it, that it would necessarily be less productive than the external rows. It is very evident that the central row does not enjoy an equal area either of soil or atmosphere with the external rows, nor the same advantages of a deep working of the soil proximate to its roots. To test this opinion, on the 10th of last April I sowed two sets of double and treble rows of Barley, each row 16 inches apart, the seed dropped singly 3 inches from one another, and each set of rows separated by intervals of 5 feet 4 inches, sown with three rows of Carrots, also at 16 inches apart; thus the double rows of Barley occupied a breadth of 2 feet 8 inches, and the treble rows 4 feet. The produce of the two rows was as four to five of the three rows, while the breadth of ground occupied by the grain was as two to three; of the whole ground, two-fifths were occupied by the double rows, and one half by the treble rows; thus, with the loss of only one-fifteenth of Barley, there is a gain of one-tenth of Carrots in the double rows. This was in the first set of experiments; in the second, the advantage was something more in favour of the double rows. It was remarked in the reaping, that the centre rows did not fill the hand so well as the outside rows. *J. M. Goodiff.*

Societies.

Royal Dublin Society's Cattle Show, *April* 18.—The annual exhibition of stock and implements, for the improvement of agriculture in Ireland, commences this day, and a short notice thus early may interest many of your readers who will not have the happiness of witnessing this, the best exhibition of the many I have seen through the agency of this, the first society ever established for such purposes in her Majesty's dominions.

In the cursory view which I was able to take of the stock, just as the yards were closed yesterday evening, I was enabled to discover, both in numbers and character, an improvement first in the young breeding stock of horned cattle, which were evidently an advance on last year's show. So with swine; and as to breeding sheep, the character and quality of those now for inspection here far exceed those witnessed on any former occasion. The numbers of such stock have never been at any former period great in Dublin; but thanks to railways throughout Ireland, and steam communication with the other parts of the kingdom, Dublin may now be said to be as near Connemara and Cumberland as it formerly was to Carlow and Carlingford. Poultry, the Irish cottager's main stock, are now displayed in a profusion truly astonishing: and, speaking of poultry, as I was coming in by the railway yesterday evening, I fell into the company of a cottager bringing up his little stock, consisting of one cock and two Cochin China hens, a common hen, and six chickens of the Cochin breed for sale. I asked him what he would take a couple for the chickens. He answered, "One guinea," saying at the same time "I do not care to sell them to you, as I can get the same price for them at home, as I have already done for 20 couples of the same age, all hatched since last January." I asked him how much land he held, and what his rent. He said, "Five Irish acres at two guineas an acre." "Well," said I, "you have already sold, of poultry alone, the amount of two years' rent in less than a quarter of a year." He said "Yes; and expect to sell as many more guineas' worth before the harvest comes in." "You keep a cow," said I, "rear her calf, and fatten a pig or two each year; do you not?" "Yes," said he, "I keep one cow, and her yearling heifer is now worth seven guineas. I fatten three pigs each year, kill one for my family at Christmas, one at Easter, and the other before harvest. I sold my cow fat last week for 16*l.*, and mean to give 20*l.* for a well-bred springer at the auction this week. I mean also to give five guineas for an improved breeding sow, and will henceforward breed my own pigs for sale, and otherwise." "Your land must be good," said I, "when you can pay such a high rent and support your family so well. Do you keep a horse?" "No," said he, "my land is but 'cut away bog;' I keep no horse, but keep a donkey for drawing bog stuff and lime for manure. My father used to keep a horse, but it ate the whole produce of the farm and left us starving. I cultivate my little farm with the spade. Some of my neighbours keep horses on larger farms of good land, at 25*s.* an acre, and they have not 'a penny to jingle on a griddle,' though, having three times as much of the good land at the low rent as I have of the bad land at the high rent. In fact," said he, "one of them is my landlord, and it is my wife that gives them milk when she has it to spare for the children with their yellow-meal stirabout." "Well, now," said I, "if you had more land, would you not be still more comfortable?" "No," said he, "my children are not yet able to help me. If I had more land I should keep a horse; I'd lose my time after him, and then should hire men at 2*s.* a day to do my work, who would not give me 6*d.* value, as I could not *watch* them." "Our countrymen," said I, "surely are not so lazy now, when such good wages can be got?" "Bless you," said he, "the good wages did not come time enough. All the good labourers are gone to America or working on the railroads, and we can get none to work now but the vagabonds that would not go away or get any one to take them. But," said he, "I have a son at one of the agricultural schools, and when he leaves it I will take more land, and get some of the new implements he tells me he is taught there to work with." And speaking of implements, the collection now exhibited at the Royal Dublin Society is indeed very fine; and *we want them.* As a proof that we do, I visited a farm of large size yesterday, said to be the best managed in the county, and what did I see there? two ploughs drawn by three fine horses each, "backstirring" land for Mangold Wurzel. I said to the owner, an old friend, "Here you have six fine well-fed horses and four men, doing less work, and that less effectually, than could be done *with two horses and one man* with a suitable grubber." Showing him his loss thus—

6 horses at 3*s.* 6*d.* a day	£1 1 0	
4 men at 1*s.* 6*d.* a day	0 6 0	
		1 7 0
Deduct:—		
2 horses at 3*s.* 6*d.*	0 7 0	
1 man at 1*s.* 6*d.*	0 1 6	
		0 8 6
Loss daily		£0 18 6

Or weekly, for he has a week's work in preparing his land for Mangolds, 5*l.* 12*s.*; or four weeks for his general green crop, 22*l.* 8*s.*; or the rent of 15 acres of land, at 30*s.* an acre. This he soon understood, and resolved to purchase and apply one of the fine grubbers now exhibited. But I have wandered from my immediate subject, yet I hope not far outside the objects contemplated by the Royal Dublin Society, who have still much to do in their arduous task, and still much to learn, like our Irish farmers, in their mode of doing it. More hereafter. *E. Carroll.*

Miscellaneous.

The Lenton Herd of Short-horns.—Mr. Wilkinson's celebrated herd was sold by Mr. Strafford Thursday week. We quote from the *Nottingham Herald.* Mr. Strafford stated that the herd had occupied Mr. Wilkinson's attention for upwards of 40 years. Many of the animals had been bred from a cow of Mr. Charles Colling's, and the bull Favourite, to which he had alluded in the pedigrees as comprising the best blood in the county of Durham. Mr. Wilkinson, and his father before him, had paid every attention to the improvement of the breed, and Mr. Wilkinson had made periodical visits to the seat of the short-horns, having been a frequent visitor of Mr. Charles Colling. He should direct their attention to particular animals as he passed along; he might just state that for hair, symmetry, character of flesh, and constitution, they were all that could be desired in short-horns. The animals, commencing with "Old 'Zeal," purchased at the Wiseton sale in 1846, she and her progeny being the mothers of 15 calves now living, and two lost, were then put up and disposed of. We can quote only a few of the prices.

COWS AND HEIFERS.

Lot.	Name and Colour.	When Calved	Sold for Gs.
1	Zeal, by Roman, w.	May 1837	31
6	Wiseton Lady, by Humber, roan ...	May 20, 1847	90
7	Roman 9th, by Will Honeycombe, roan	July 31, 1847	92
8	Roman 10th, by ditto, roan	Aug. 20, 1847	50
12	Phœnix, by Will Honeycombe, w. ...	April 26, 1848	165
14	Zeal 4th, by ditto, w.	Mar. 31, 1849	68
18	Roman 13th, by Will Honeycombe, roan	Sept. 24, 1849	90
19	Zealous, by St. Albans, roan	Mar. 18, 1850	130
20	Lenton Lady, by Eclipse, red	April 25, 1850	51
25	Lavender 3d, by St. Albans, r. and w.	Aug. 5, 1851	110
29	Lancaster 17th, by Prince Royal, w. ...	Feb. 21, 1852	91
30	Roan Lady, by St. Albans, roan ...	April 18, 1852	90
46	Pomp, by St. Albans, roan	Oct. 10, 1853	55
47	Roman 16th, by Monarch, w.	Nov. 14, 1853	26

BULLS.

5	Monarch, by ditto, w.	April 9, 1851	75
7	Lively Boy, by St. Albans, red	April 29, 1852	56
9	Splendid, by St. Albans, roan	April 11, 1853	110
13	Superior, by St. Albans, roan	Feb. 28, 1854	61

The average price realised by the cows and heifers was 47*l.* 9*s.*, and that realised by the bulls, exclusive of one or two calves, also 47*l.* The aggregate of the sale exceeded 2900*l.* Amongst the purchasers were their Graces the Dukes of Rutland and Marlborough, Earl Ducie, Sir John Crewe, Messrs. Ambler, Dawber, Smith, Dudding, and other celebrated breeders; and Mr. Anthony Cruickshank, of Sittyton, Aberdeenshire. The whole of Mr. Ambler's purchases, with the exception of Wiseton Lady, go to the western world, having been purchased for Dr. Watts and Mr. Waddle, the deputation from Ohio, who have visited almost every part of England, Ireland, and Scotland as well as France, making purchases of prime stock for transshipment to America.

Adulteration of Guano. Lang v. *Chope.*—A report, too long for our columns, is given in the *Exeter and Plymouth Gazette* of last week of a trial connected with guano fraud, which seems to have injured a number of Devonshire agriculturists, as well as Mr. Lang, the merchant by whom they were supplied:—

Mr. Crowder stated the case. The plaintiff is Mr. Isaac Lang, a merchant residing in Exeter; and the defendants, Messrs. Chope, are merchants at Bristol. The action was brought to recover damages, on the ground that the plaintiffs had supplied the defendant with three quantities of guano, which were not according to contract. On the 8th of March, 1853, they wrote to the defendant telling him that they had a quantity of Bolivian guano, which, as there was no Peruvian guano in the market, was becoming scarce; and they therefore recommended their friends to purchase it. Accordingly, on the 24th of March Mr. Lang, having previously received a sample with an analysis, which was stated to have been made by Mr. Herapath, of Bristol, forwarded an order to the defendants to supply him with 100 tons according to sample. He (Mr. Crowder) would be able to show them that Mr. Herapath had made no examination whatever of it, but that the analysis which Messrs. Chope sent was false and fraudulent. At that time, however, Mr. Lang was not aware of that fact, and as the defendants frequently wrote praising the article, and telling him it was daily becoming scarcer and dearer, he sent them two further orders for 5 and 10 tons respectively, which he received by railway from Bristol. Shortly after its arrival, some suspicion was entertained as to its genuineness, and Mr. Lang had an interview with Mr. Chope, sen., at Bristol, who assured him that the guano he had sent him was equal to sample, and was imported by the ship Cable. This satisfied Mr. Lang's mind, and he issued advertisements, mentioning that the guano he was selling was good Bolivian ex-Cable, appending also the analysis of Mr. Herapath. He (Mr. Crowder), however, would be enabled to prove to them that the guano in question never was imported, but that it was manufactured at Greenwich. The advertisements issued by Mr. Lang caused a large sale, and it was soon discovered by his customers that they had been deceived, the article which he had sold them being altogether spurious. The reputation of Mr. Lang was thus greatly injured; and Gibbs & Co., of Bristol, the sole importers of Peruvian Guano into this country, declined, according to their invariable rule, to supply him with any more of that article. His business was thus greatly injured, and it was absolutely necessary that he should bring the present action to clear his character. In consequence of the complaints he received, he had an analysis of the guano he had received from the defendants made by Messrs. Herapath and Nesbitt, who both declared it to be spurious.

We add that portion of the evidence relating to the spuriousness of the guano:—

George Jones stated that he was foreman to Messrs. Cooke and Co., at Greenwich, in April, 1853, and assisted in manufacturing guano; they used loam (a substance looking much like sand), breccia, turf ashes, and salt. Witness remembered a cargo being shipped in the Integrity by the lighterman Allen. The various ingredients were mixed with a shovel, and it took about ten hours to prepare 50 tons. There were about 10 tons of loam to 50 tons of guano. When the article was manufactured it was put in bags, some of which were new, but others were old ones which had contained Peruvian guano.—Mr. Herapath, analytical chemist at

Bristol, stated that the analysis which he received from the plaintiff, who had obtained it from Messrs. Chope and Son, could not possibly be the analysis of the guano which Mr. Lang forwarded him. He did not recollect having made the analysis, and it certainly was not in his handwriting. One pound of the sample thus analysed was worth 21 lbs. of farm-yard dung, that was, judging from the nitrogen. In the sample taken from the Integrity, one pound was only equal to 5 1-10th lbs.; and if it was guano at all, it was very bad. It was just such a kind of article as could be made by the ingredients named by the witness Jones. Since he had been in Exeter he had examined the bulk received by the Integrity, and after turning it over in the various bags, he discovered a few lumps of real guano near the mouth; the remainder was very much inferior. The guano in the sample ton which was forwarded to the plaintiff was more than twice as good as that taken from the Integrity. Nitrogen and phosphate were the two principal ingredients of guano. There were not more than three or four pounds of the pure article in one bag.

His Lordship summed up.—He said he would take their opinion upon the important facts in the case by reducing all the points into three questions. In the first place, the claim was made in respect of 100 tons of guano, which Mr. Lang alleged he bought with the warranty that it was Bolivian, and according to sample, and it would be for them to say whether or not that was the case. The second point was as to whether or not the same arrangement which was made for the first 100 tons extended to the 15 tons which were ordered subsequently. The third question was a much wider one. It was whether the warranty given with the guano was false to the knowledge of the defendants.—On all these questions the jury gave a verdict for the plaintiff. For the first 100 tons of guano they gave 150*l.* damages, the difference between the cost price of the guano and the amount at which it was selling at the time. On the 15 tons, the greater portion of which had been sold, they took off two-thirds, amounting to 84*l.*—His Lordship said there was one more point upon which it would be necessary for them to give their decision. Mr. Lang claimed special damages, on the ground that he had sustained great loss in his business, as well as in his reputation by the sale of the guano, which they had found to be spurious, and which there was no doubt was manufactured at Greenwich.—The jury again consulted, and in a short time returned a verdict for the plaintiff, by his lordship's permission, on the whole of the counts, giving him 400*l.* damages. This included the 150*l.* and the 84*l.*, the balance being given as special damages.

Poultry.

Poultry: *A Z.* We consider that some of the symptoms which you describe indicate roup, and therefore recommend you, immediately you perceive that the eyes of the birds look watery, to confine them in a dry place, and give a tablespoonful of castor-oil, taking especial care that they are supplied with no water that is not perfectly fresh and pure.—*A B.* It is, in our opinion, a bad thing to give fowls egg-shells. They supply nothing that is not equally furnished by lime, and especially bricklayers' rubbish, old ceilings, &c. Never do anything that has a tendency to make them eat eggs. They are apt scholars. They will do well in the place you describe, provided the floor of the roosting-house be of earth. If they find worms in a natural way they are good food, but it is a bad plan to give them by the handful. The colour of a golden Poland cock is not very essential, provided it be uniform, and the spangling regular, the legs a good clear blue, and the wing well laced. The top-knot should not have too much white.

Calendar of Operations.

APRIL.

Berwickshire Merse Farm, *April* 18.—Our seed time was satisfactorily concluded last month, with the exception of some very few breaks of Turnips yet unconsumed by sheep. Lammermuir was forward this year; but at considerable risk from frost, which they have been lucky enough to escape, though threatened with a second storm on the 21st ult. The case has been far otherwise on the clay soils of our south-east districts; where I have lately seen harrows leaving scarce a trace on the immense blocks of hardened clay, which it were almost useless to touch until softened by rain. We had, indeed, a few slight showers about the middle of last month; and, although they were but a drop to the parched ground, they seemed to have a moderating effect on the previous gales. Pastures are much injured by the cold easterly breezes and long-continuing drought — we can hardly realise the idea of rain now—and heavy hoar frosts at night destroy as much young Grass as is eaten by sheep during the day. This is the more unfortunate, as the great deficiency of Turnips has necessitated a heavier stocking of Grass than is usual at the season. From the same cause, Grass parks have elicited unprecedented competition, and their rents have risen from 35 to 50 per cent. above last year's. Spring corn shows a good braird, but suffers from drought more than winter Wheat, whose roots must obtain sap at a greater depth. Some good showers would put all right; but there is no promise at present of that invaluable boon. The weather has, however, been exceedingly favourable for the cleaning of fallows, and the opportunity has been keenly embraced, under a vivid recollection of the miseries of last season, and consequent failure of the Turnip crop. Potatoes have been planted to some extent, and in first-rate order. On the universally admitted principle of change, we get our seed from poor soils, such as Orkney or Argyll; and such tubers command as high a price as our produce of much superior quality. We find that lime is a preventive of disease to a great extent. Of markets it were useless to speak; for, in these times of electric and steam communication, our prices fluctuate with those at head quarters. *J. S.*

Notices to Correspondents.

Disease in Pigs: *Constant Subscriber.*—The disease in question is peculiar to highly bred and highly fed pigs, and appears to arise from exacting too much from the liver. *W. C. S.*

Gas Lime: *P.* As we stated last week, we doubt its being a disinfector. It is an absorbent of oxygen; whereas, we presume, most disinfectants will act either by furnishing oxygen, or some similar means of combustion, or by furnishing acids, which fix volatile nuisances. A weak solution of green vitriol in water is as good a disinfectant for nightsoil as you can use.

Ventilation: *Richmond and Chandler.*—In the statement by Sir J. S. Forbes, at a recent meeting of the Fettercairn Club, in a past number of this Paper, as to some Hay-barns, it is usual to build them with narrow openings in the walls, and to consider these ventilation enough.

Weeds: *P Y.* Rushy Grass land may be improved by drainage, by repeated mowing down the Rushes, and liberal treatment as to manure. If the field is wholly covered with Sedge and Rush, you had better break it up—take a fallow crop, as of Turnips, and relay it. Nettles are to be got rid of by the fork.

Erratum: At page 244, col. *a*, from the 10th line—for "and the analogy of action in nitrate of soda, exemplified in Dr. Anderson's address in No. 13 (204 *c*, at foot), the nitrate being the more effective of the two, the intense green that both alike produce; and further, that plants will grow in pure sand and water, and assimilate large quantities of hydrogen, by aid of very little nitrate of soda and no ammonia, the inference appears hardly questionable that the hydrogen is supplied by the water, and that the ammonia acts by supplying nitrogen," &c.,—read "and from the analogy of action in nitrate of soda, exemplified in Dr. Anderson's address in No. 13 (the nitrate being the more effective of the two); from the intense green that both alike produce; and further, from plants growing in pure sand and water assimilating large quantities of hydrogen, by the aid of very little nitrate of soda and no ammonia, the inference appears hardly questionable," &c.

PURVEYORS OF LIVE BIRDS

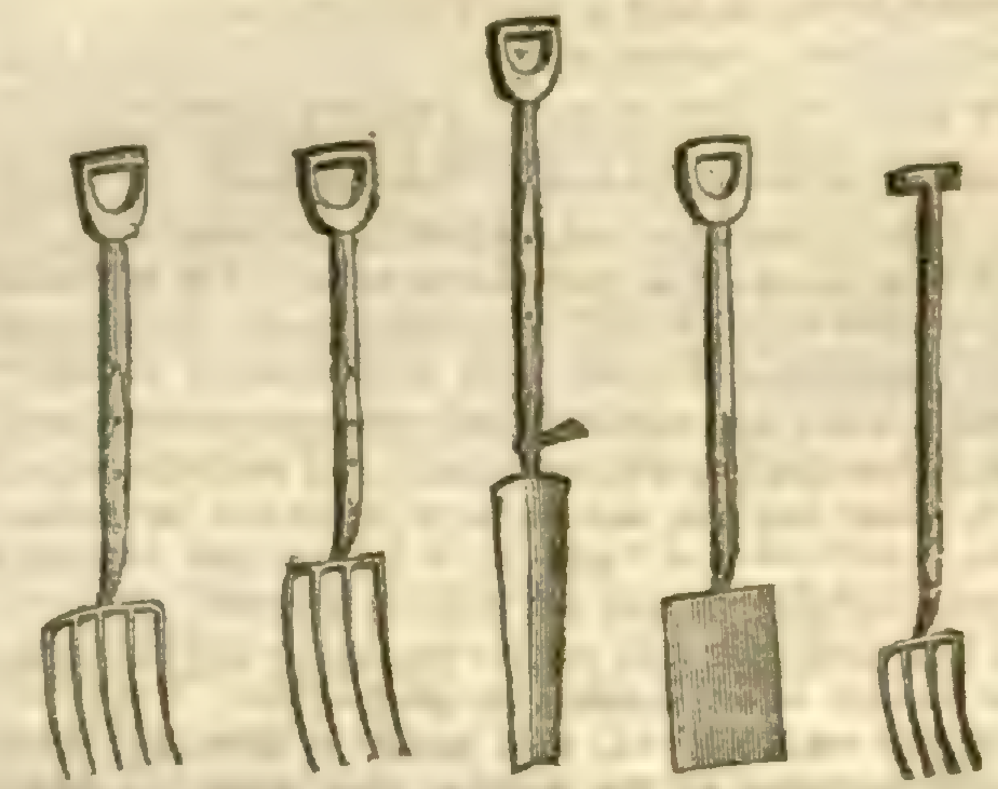
BY SPECIAL APPOINTMENT TO HER MAJESTY AND H.R.H. PRINCE ALBERT.

BAKER'S POULTRY RESTORATIVE.—Ten years' experience of its success, in all Diseases of Poultry, justifies them in recommending it with the greatest confidence; one among its many advantages being the facility with which (in its liquid form) it is administered, obviating the troublesome necessity of handling the birds, and speedily imparting such vigour and high condition that can be acquired by no other means. Price 2*s.* 6*d.*, either in Liquid or in Pills, with directions for Roup, &c. By all Chemists.

BAKER'S REGISTERED FOUNTAINS, for Poultry, Pheasants, and Pigeons, supplant all others. Four quarts, 6*s.* 6*d.*; nine quarts, 8*s.* 6*d.*—Messrs. Baker, City; and the Pheasantry, Beaufort Street, Chelsea.

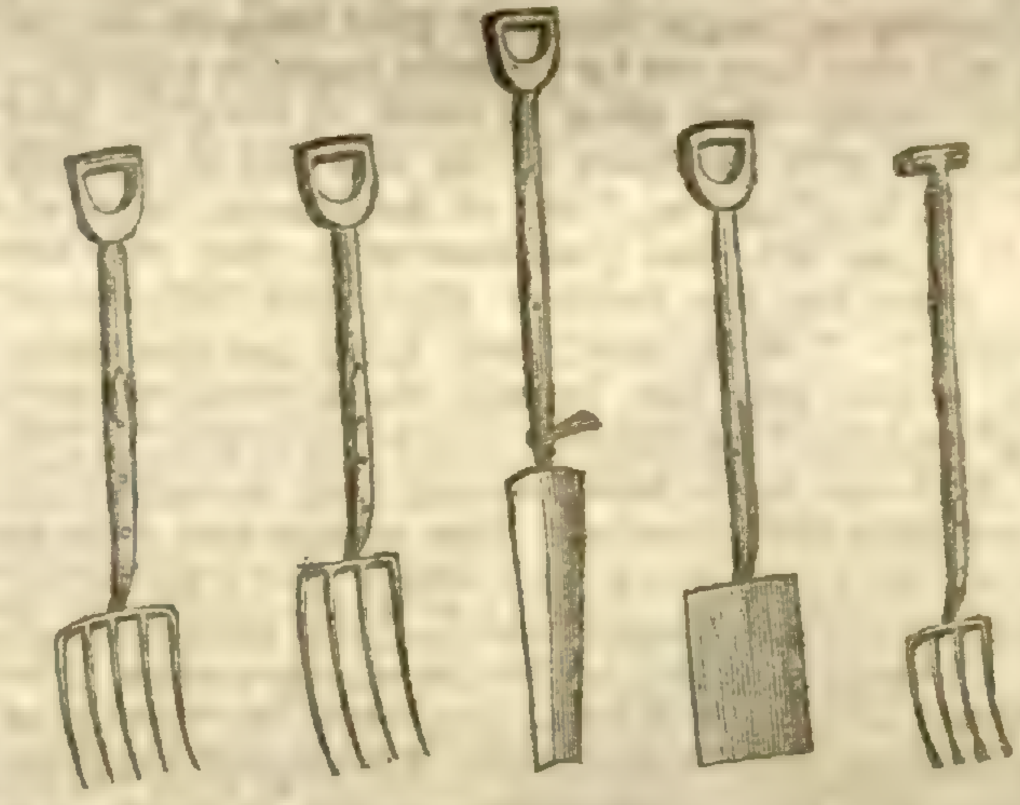
ANTHONY'S PATENT AMERICAN CHURN.—Extract from the Royal Agricultural Society's Report of the trial of Churns at the Gloucester meeting in July last. "In this trial the American Churn not only maintained its character in producing butter rapidly, but in producing a greater quantity from the like amount of cream." It made from 4 quarts of cream 4 lbs. 6 oz. of butter, being 8 oz. more than any of the other Churns from the same quantity and quality of cream. Price Lists of Churns and Implements by the best makers sent free, and Illustrated Catalogues on receipt of eight postage stamps. Burgess & Key, 103, Newgate Street, and 52, Little Britain, London, who have always a large stock of Steam-engines, Ploughs, Harrows, Diggers, Waggons, Carts, Threshing and Dressing Machines, Mills, Oat and Grain Bruisers, Oilcake Breakers, Reaping Machines, Haymakers, Horse-rakers, Turnip Cutters, Liquid Manure Carts, Parkes' celebrated Steel Digging Forks and Draining Tools, Pumps for Manure, Farm Fire Engines, and for Garden Purposes, &c. &c.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.



MESSRS. BURGESS and KEY, as Mr. Parkes' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps. 103, Newgate Street, and 52, Little Britain, London.

TO AGRICULTURISTS, GARDENERS, ETC.



BENNETT and NAYLOR, General Ironmongers, and Factors, Sole West End Agent for PARKES', late WINTON PARKES' CELEBRATED STEEL DIGGING FORKS and TOOLS. Also for the only efficient Stove, with or without a flue, suited particularly for Conservatories and Greenhouses, Patronised by her Majesty. Price 12*s.*, and upwards, at the Great Western General Ironmongery Warehouse, 255, Oxford Street, between Park Street and North Audley Street, Established for the sale of all descriptions of Ironmongery at Wholesale Prices. Sheet, Hoop, Rod, and Bolt Iron; Locksmiths and Bell-hangers. Patent Fuel, to be used with the Stove, 2*s.* 3*d.* per bushel.

SAMUELSON'S PRIZE FORKING or DIGGING MACHINE, as applied to Spring Cultivation, serves to thoroughly pulverise land which has been trodden by sheep or autumn ploughed, deepening the staple, leaving no pan, dragging up the Couch Grass, and preparing a finely divided seed-bed.

Extracts of Testimonials and references to persons using it.

"Answers thoroughly; brings everything to the surface."—*E. W. Wilmot, Congleton.*

"The very best a man can have upon a mixed or stiff soil, it so thoroughly pulverises it."—*Joseph Cooper, Acton Burnel, Salop.*

"I inform you, with the greatest satisfaction, of its success."—*Francis Hamilton, Friars Place, Middlesex.*

"Attached horses at half-past 8, on 5½ acres, finished at a quarter past 3, making first-rate work."—*J. Kirby, Bodicott, Oxon.*

"Has been working every day."—*T. Cardus, Barwell, Surrey.*

"Will do a given amount of labour, not only cheaper but better than the plough."—*J. J. Mechi, Tiptree, Essex.*

"Let me have one at your earliest convenience."—*Earl of Essex, Cassiobury, Herts.*

"Send to Exton Park one of Samuelson's Forking Machines for *Earl of Gainsborough, Oakham.*"

"Besides improved tillage, economises ploughmen."—*P. Gener, Cuba.*

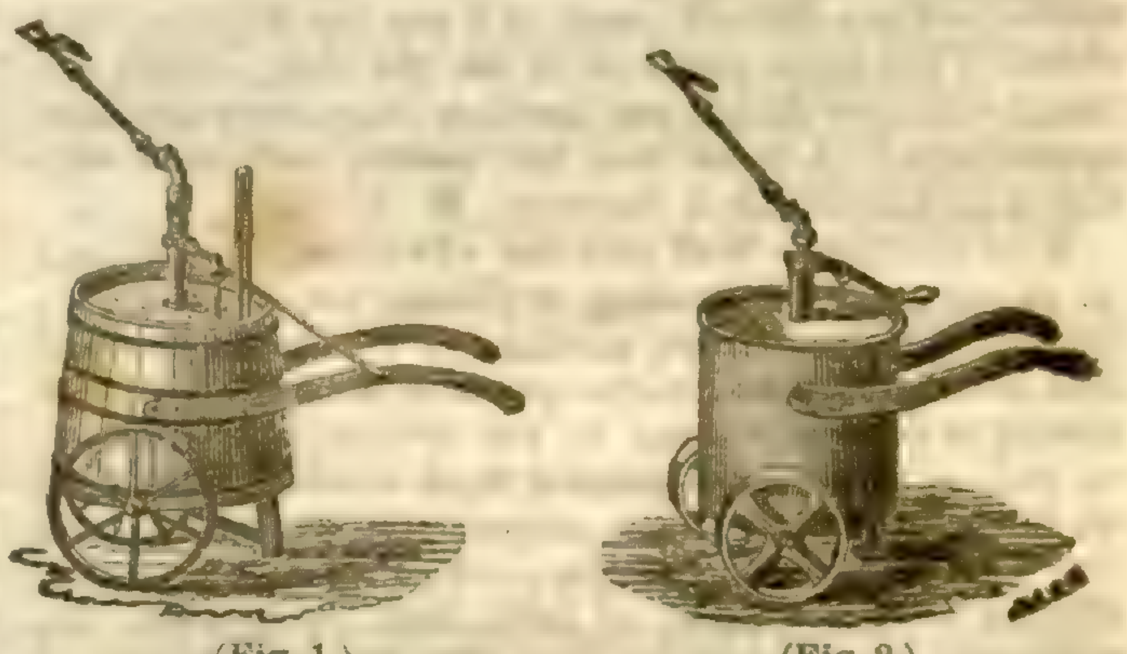
"Been digging all the week; the *champion* of all implements in England; should be very sorry to be deprived of it."—*Thomas Lawrence, Thurlaston, Dunchurch.*

Price 24*l.* 10*s.*, the general purpose size; and 27*l.* 10*s.* large size, Cash; at the Works, Banbury.

ENCAUSTIC TILE PAVEMENTS.

MAW & CO., of Benthall Works, Broseley, Shropshire, send Post Free their PATTERN BOOK and FURNISH DESIGNS (with estimates) in this beautiful and durable production to any given plans of Churches, Entrance Halls, Passages, Conservatories, Verandahs, &c.—Specimens at 11, Aldersgate Street, London.

THE GUTTA PERCHA COMPANY'S TUBING for WATERING GARDENS, with Roses and Union Joints Fitted.—27, CITY ROAD, LONDON.



(Fig. 1.) (Fig. 2.)

J. TYLOR and SON'S BARROW GARDEN ENGINE (Fig. 1), in best well painted oak tub, fitted with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 1	holds 10 gallons,	throws 30 feet high	...	£4	10
No. 2	„ 15 „	„ 45 „	...	5	10
No. 3	„ 23 „	„ 45 „	...	6	18

J. TYLOR and SON'S BARROW GARDEN ENGINE (Fig. 2), in strong tinned iron tub, well painted inside and outside, with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 10	holds 8 gallons,	throws 25 feet high	...	£2	15
No. 13	„ 12 „	„ 30 „	...	3	5
No. 11	„ 16 „	„ 40 „	...	4	0
No. 12	„ 24 „	„ 45 „	...	5	0
No. 14	„ 30 „	„ 45 „	...	5	18

A large assortment of every description of Garden Syringes, Pail Engines, Conservatory Pumps, &c., kept in stock.

Full size Syringe, on Read's principle, of the very best quality and workmanship, with two roses and one jet, 21*s.*; Plain Syringes from 10*s.* 6*d.* upwards.

J. Tylor & Son's Horticultural Apparatus may be obtained at these prices from any respectable Ironmonger or Seedsman in town or country, through whom alone they will be supplied, and of whom Drawings and Prices may be had.

N.B. Cost of carriage, &c., not included in these prices.

J. Tylor & Son's Manufactory, Warwick Lane, Newgate Street, London.

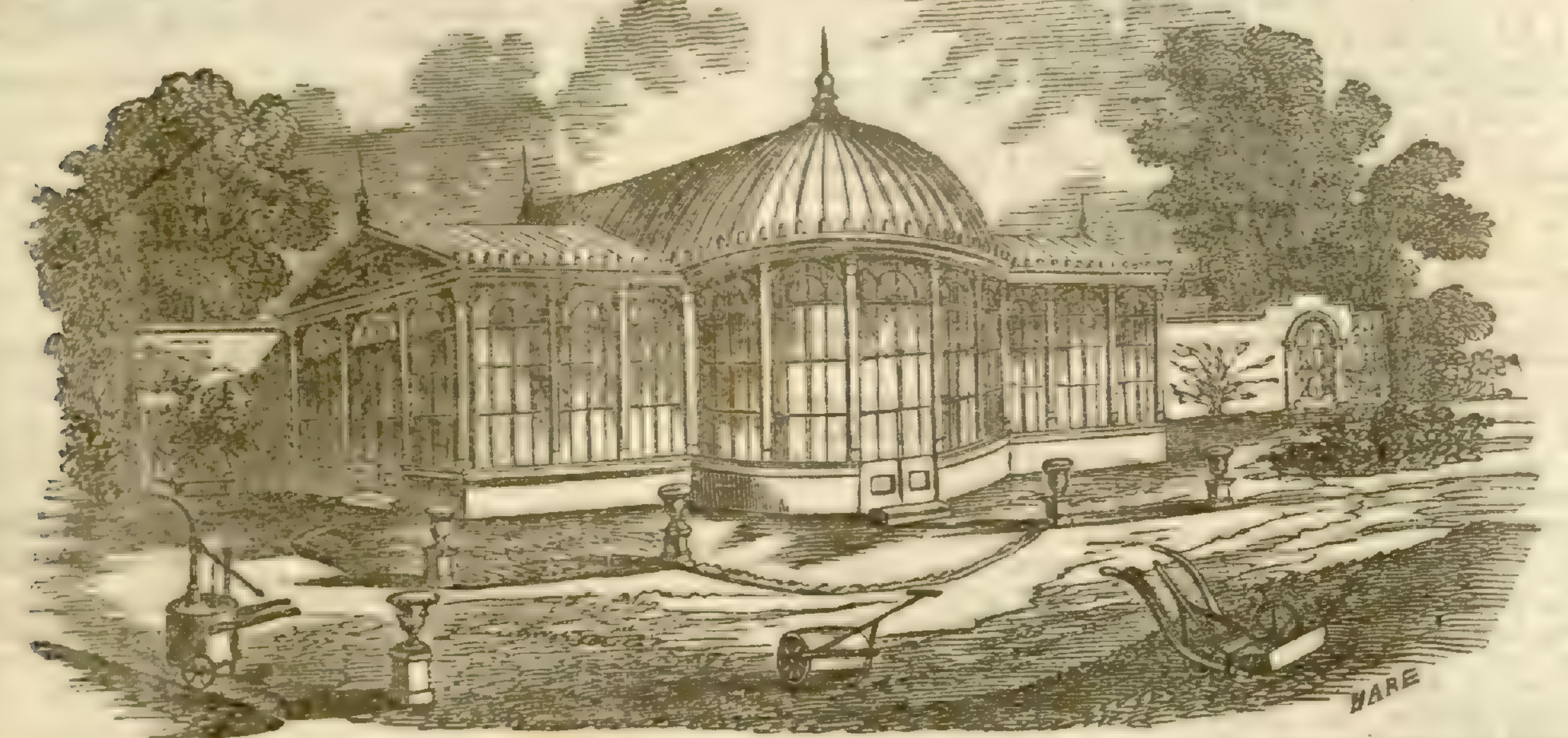
J. TYLOR and SON'S REGISTERED GARDEN SYRINGE.—By a simple arrangement this Syringe is rendered more effective than any portable Conservatory or Garden Pump ever offered to the public. It is equally adapted for Garden or Conservatory use, and is capable of discharging twice as much water in a given time as any other Syringe now in use. The arrangement consists in attaching a small flexible suction tube to the barrel of the Syringe, through which it is filled with water at every discharge of the previous contents. By this means the Syringe is always charged, and the pull-up stroke of the piston rendered perfectly easy, it having, indeed, no work to do, the barrel being previously full of water. Being thus made self-supplying, a great saving of labour is effected; and the necessity of stooping to fill the Syringe at every discharge being done away with, the direction of the water can be maintained for any length of time. It is perfectly cleanly in its action, as it is not possible for any water to get on the outside of the barrel, which is a well-known inconvenience attendant on the use of every other Syringe. Its construction is perfectly simple, and cannot get out of order; the ground-in ball valves and fittings used for filling all other patent Syringes being entirely superseded. Price complete, with India-rubber suction tube, with galvanised spiral inside, and covered with cotton outside, 25*s.* each. To be had of any respectable Ironmonger or Seedsman in town or country.

J. Tylor & Sons, Manufacturers of Horticultural Apparatus, Warwick Lane, Newgate Street, London.

N.B. This price does not include carriage, package, or expenses of delivery in the country.

COTTAM AND HALLEN,

2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.



APPLICATION is requested for their NEW HORTICULTURAL LIST, containing Illustrations, Descriptions, and Prices of

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Syringes	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.

AGRICULTURAL LIST UPON APPLICATION.

EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

CHAFF-CUTTERS, of the best workmanship, 25*s.*; Two-Knifed Chaff Engines, from 68*s.*; Mills for Bruising Oats and Beans, from 45*s.*

WILLIAM DRAY AND CO., Agricultural Implement Manufacturers, Swan Lane, Upper Thames Street, City.

BUDDING'S LAWN-MOWING MACHINES, with Registered Improvements.

MAPPLEBECK & LOWE, MACHINISTS & MANUFACTURERS, Birmingham.

BUDDING'S LAWN MOWERS, with SAMUELSON'S registered improvements, *lightening the draught fully one-half*, and enabling an unskilled labourer to make neat work; free from liability to choke, or get out of order. May be had of all ironmongers in town or country, or from the Works, Banbury; delivered free in a packing case to any station on the North-Western and Great Western Railways. Testimonials forwarded on application.—Britannia Works, Banbury.

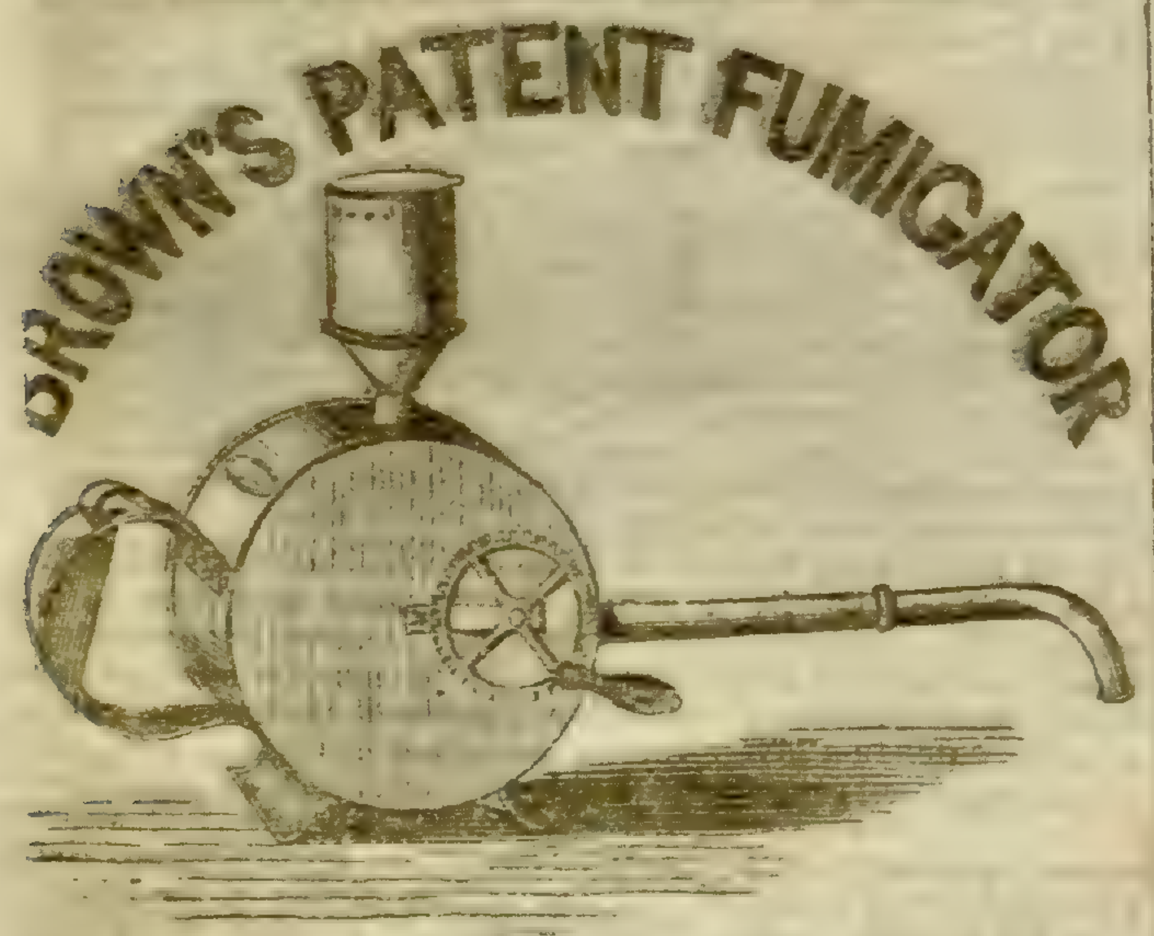
IMPROVED MOWING AND ROLLING MACHINE.

ALEXANDER SHANKS AND SON, Arbroath, Forfarshire, Inventors and Sole Manufacturers, respectfully solicit the attention of the Nobility, Gentry, and Gardeners to this improved Machine for Mowing and Rolling Lawns. The Machine is in operation in the Royal Gardens at Windsor Palace, Buckingham Palace and at Osborne, in the Botanical Gardens at Kew, Regent's Park, Manchester, Sheffield, &c.; at Blenheim Palace, Trentham, Cliveden, Elvaston, Broadlands, Woburn Abbey, Clumber, Lilleshall, Castle Howard, Shrubland, Eridge Castle, Enville Hall, Tiptree Hall, Chatsworth, and in many other of the principal gardens in the kingdom, as well as in the United States, British America, and on the Continent, where its merits have been fully proved, and its success established.

The Machine is made to cut the breadths of 42, 30, 20, and 15 inches respectively, is exceedingly durable, easily managed, and adjusted to cut to the length required. The execution of the work is far superior to what may be attained by the most skilful mower, while at the same time a great saving of labour is effected. By the largest machine a Scotch acre may be mowed, rolled, and the Grass collected in one hour.

Further particulars, with prices, may be had on application.

PRICE TEN SHILLINGS AND UPWARDS.



A PORTABLE INSTRUMENT for Fumigating Greenhouses Stoves, and Frames, or Shrubs and Flowers, in the open air, more effectually in conjunction with SANGSTER'S FLORUMBRA without injuring the most delicate plant; delivering the smoke cool, in a dense mass, and effecting a great saving of Tobacco.

Manufactured and supplied to the Trade by Messrs. BARBER and GROOM, London; and may be had of all Ironmongers, Seedsmen, and Florists.

TOBACCO PAPER! TOBACCO PAPER!

THE Cheapest and most effectual article for Smoking Greenhouses, and destroying the Fly on Plants, is Genuine Tobacco Paper, which JOSEPH BAKER, of 73, Fleet Street, can supply in large quantities, at 1*s.* per lb.; and if under 7 lbs. at 1*s.* 2*d.* per lb. Post-office Orders payable at the Strand Office.

JOSEPH BAKER, 73, Fleet Street, London (opposite the *Dispatch* newspaper).

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

Priced lists of plant tubs and boxes forwarded on application.

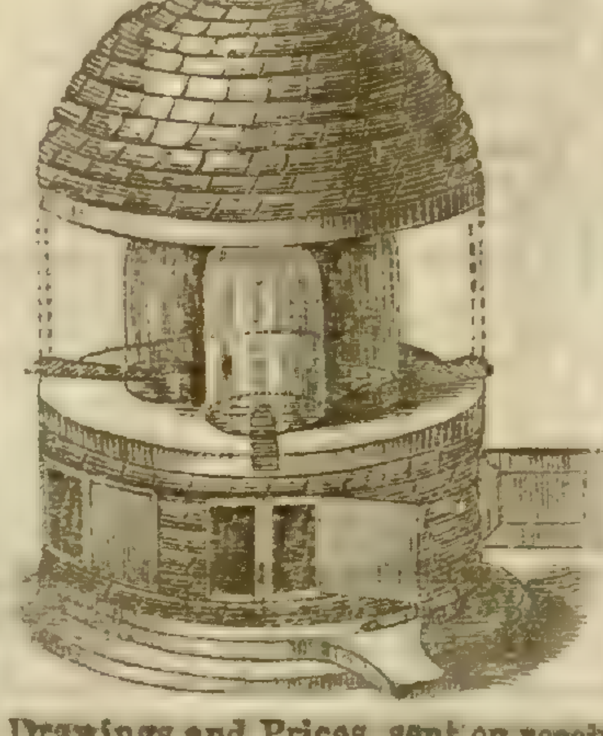
PROTOXIDE ANTI-CORROSION PAINT, for all external purposes, on iron, wood, brickwork, or stucco, is cheaper, and more durable, than any similar article.—Manufactured by CHARLES FRANCIS & SONS, Cement Works, Nine Elms, London.

FOR WATERING GARDENS, DISTRIBUTING LIQUID MANURE, ETC.

JAMES LYNE HANCOCK'S VULCANISED INDIA-RUBBER TUBING is now manufactured especially for the above purposes, and is of greater flexibility than any other description of hose or tubing. It is also manufactured to resist great pressure, suitable for attaching to the mains of water works or to tanks, or water butts of high elevations. WATERING HOSE fitted up with brass joints, branches, stop-cocks, roses, and jets complete. Vulcanised India-rubber suction pipes for pumps any length or size to order; HOSE for brewers' use, fire engines, &c. VULCANISED INDIA-RUBBER WASHERS, for Steam and Water Joints, and VULCANISED RUBBER in sheets of any size and thickness. Solid vulcanised India-rubber Tubing and Cord, for the joints of glass-doors, sashes, frames, &c.—Prices and every information may be had on application at the Manufactory, Goswell Mews, Goswell Road, London.

BEEHIVES.

NEIGHBOUR'S IMPROVED COTTAGE BEE-HIVE, as originally introduced by GEORGE NEIGHBOUR & SONS, with all the recent improvements, glasses, thermometer, &c., price 35*s.*, securely packed for the country.



This unique hive has met with universal commendation, and may be worked with safety, humanity, and profit, by the most timid; its arrangements are so perfect, that the honey may be taken at any time of the gathering season without at all injuring the bees.

Early applications, addressed to GEO. NEIGHBOUR & SONS, 127, High Holborn, or 149, Regent Street, London, will receive prompt attention. Their newly arranged Catalogue of other improved Beehives, with Drawings and Prices, sent on receipt of two stamps.

Agents:—Manchester, HALL & WILSON, 50, King Street; Liverpool, JAMES CUTHBERT, 12, Clayton Square; Chester, DICKSON & SONS, 16, Eastgate Street; Glasgow, AUSTEN & M'ASLAN, 186, Trongate Street; Dublin, J. EDMUNDSON & Co., 61, Dame Street.

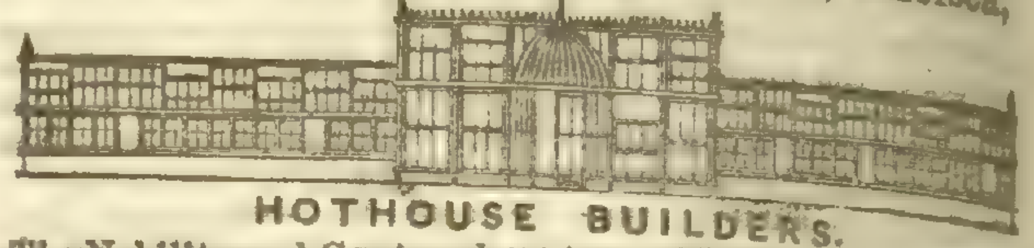
HOTHOUSES, CONSERVATORIES, FRAMES & LIGHTS, FOR PITS, CUCUMBER & MELON BOXES & LIGHTS.

JAMES WATTS, HOTHOUSE BUILDER, 8, Claremont Place, Old Kent Road, London.

Green and Hothouses, 9, 10, 11, 12, 13, and 14 feet wide, any length, from 16 to 100 feet. Frames and Lights for Pits, 6 ft. 6 in. 7 ft., 7 ft. 6 in., 8 ft., and 8 ft. 6 in. wide, any length, from 12 to 100 feet. Upwards of 200 Cucumber and Melon Boxes and Lights, from 4 ft. by 3 to 10 ft. 6 in. by 5 ft. 6 in., kept ready glazed with stout sheet glass, painted four times, complete, ready for immediate use, all made of best material, packed and sent to all parts of the kingdom.—Reference may be had to the Nobility, Gentry, and the Trade, in most of the counties in England.

HORTICULTURE IN ALL ITS BRANCHES

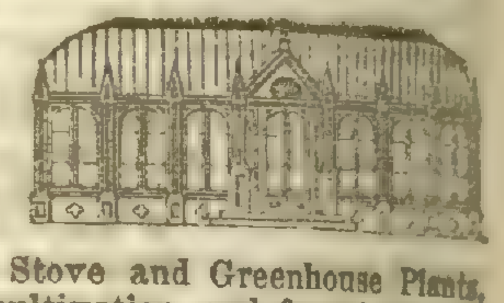
J. WEEKS & Co., King's Road, Chelsea,



HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Buildings or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.



The splendid collections of Stove and Greenhouse Plants, are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

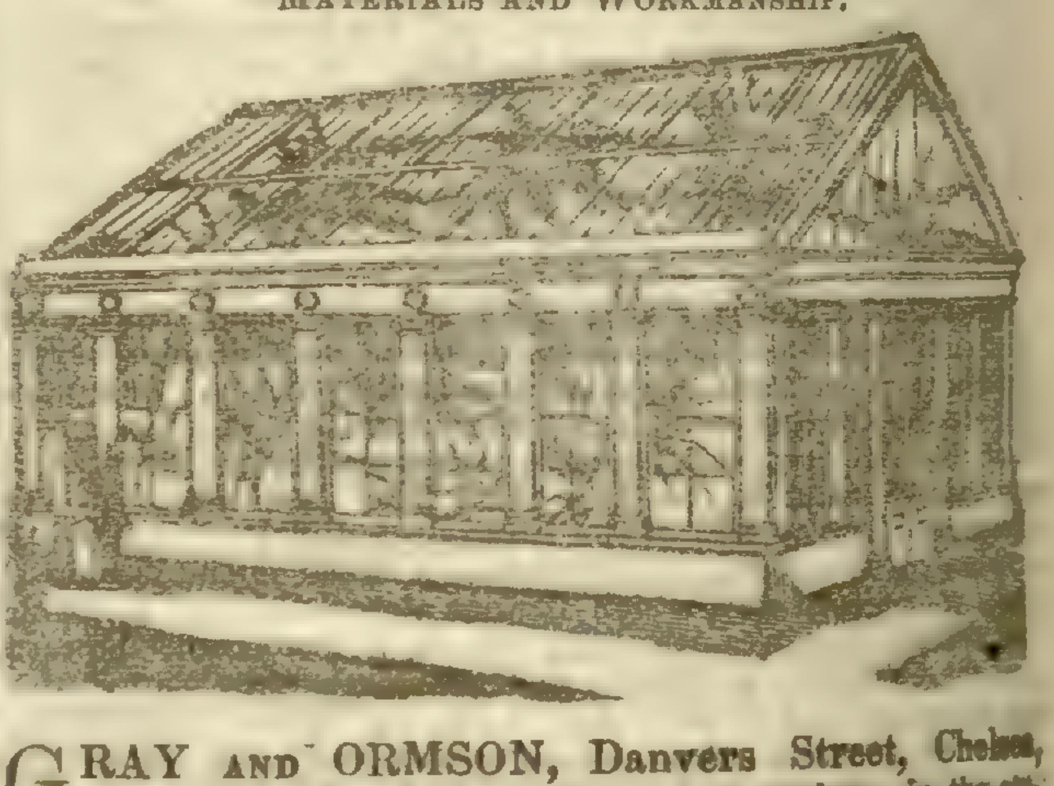
Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. WEEKS & Co., King's Road, Chelsea, London.

GREEN AND HOTHOUSES made by machinery at J. LEWIS'S HORTICULTURAL WORKS, Stamford Hill, Middlesex. Warranted of best materials; being made by steam-power, they are put together in a superior manner; one trial will prove these Buildings to be the cheapest and best made in England. 1½ in. Greenhouse lights at 3½*d.* per foot; 2 in. at 4½*d.* per foot. Lists of Prices by enclosing two postage stamps.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



GRAY AND ORMSON, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

BY HER MAJESTY'S ROYAL LETTERS PATENT

E. DENCH, PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

PATENT HOTHOUSES and excellent Glass at 1*s.* 3*d.* per foot super., which are superior to all others for price with quality, and if known would supersede all others. (See Appendix, in "Book of the Garden," by Mr. M'Intosh.) A Range of Houses and Hot Water Apparatus, was erected by E. D. for E. L. Betts, Esq., Preston Hall, Kent. Mr. J. Frost, head gardener, has shown their efficiency by their produce at the Royal Botanic Gardens, Regent's Park, June 8, and Chiswick, June 11. The editor of the *Gardeners' Chronicle* says: "Beautiful examples of Black Hamburgh, large both in bunch and berry, and as black as Sloes, were furnished by Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall, Kent; these well deserved the first prize which was awarded them."—*Gardeners' Chronicle*, June 18th, 1853. The Grapes were considered the best shown at Regent's Park during the season, and the Houses are as superior for the growth of everything else in horticulture, which has been fully proved, and they have been extensively erected for the nobility and gentry in all parts of the kingdom.

GLAZING WITHOUT PUTTY.—Iron and Glass alone. E. D. has Roofed the Public Baths and Washhouses, Endell Street, on this principle, and others are in hand. Patent Sashes for Peach Walls, Pits, &c., 8*d.* per foot super. Heating by Hot-water, on the most practical principles, and all the best materials used. Printed Price List sent on application.

PRIZE MEDAL—1851.

AT A VERY ECONOMICAL RATE.

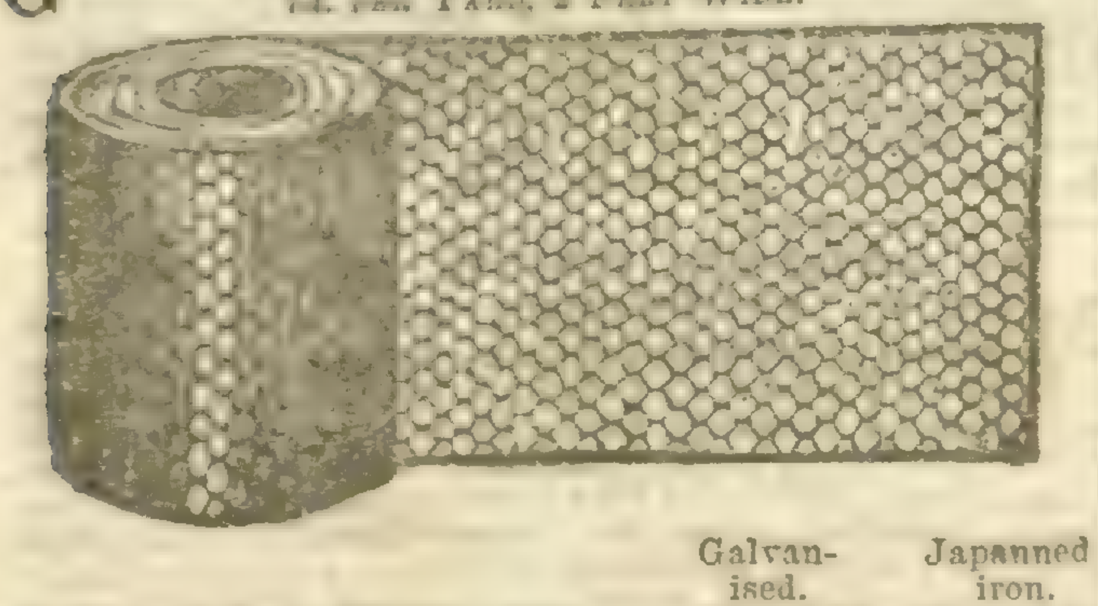
SAMUEL CUNDY, MASON and BUILDER, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Lower Belgrave Place, Pimlico, London.

Marble Chimney-pieces manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price. A good Marble Chimney-piece for 40*s.* Marble Work in all its branches at a remarkably cheap rate for Halls, Dairies, Larders, &c. Circulars sent on application.

N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank.

HALL'S GARDEN NETTING
the best protection against
FROST, STORMS, or SCORCHING HEAT.

GALVANISED WIRE GAME NETTING.—
7d. per Yard, 2 Feet Wide.



		Galvanised.	Japanned iron.
2-inch mesh, light, 24 inches wide	...	7d. per yd.	5d. per yd.
2-inch „ strong „	...	9 „	6½ „
2-inch „ extra strong „	...	12 „	9 „
1⅜-inch „ light „	...	8 „	6 „
1⅜-inch „ strong „	...	10 „	8 „
1⅜-inch „ extra strong „	...	14 „	11 „

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasantries, 3d. per square foot. Patterns forwarded post free.

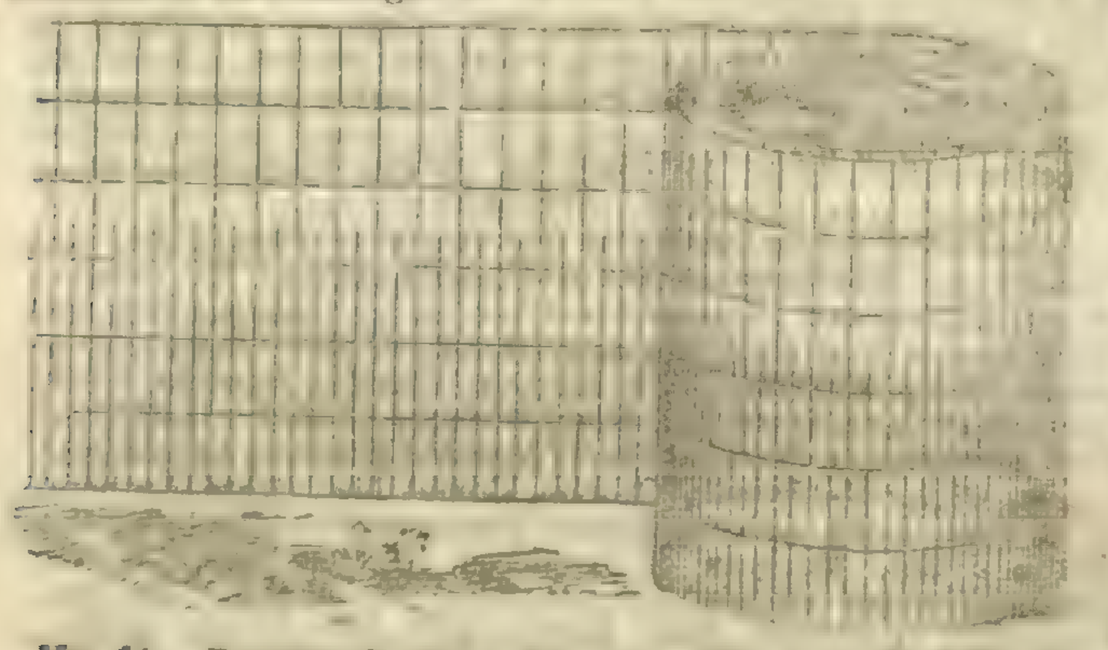
Manufactured by Barnard & Bishop, Market Place, Norwich; and delivered free of expense in London, Peterborough, Hull, or Newcastle.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

PORTABLE POULTRY FENCING,
MANUFACTURED BY PATENT MACHINERY.

The great increase in the number and quality of POULTRY in the United Kingdom within the last few years has created a demand for an efficient Poultry Fence, which has called into existence every possible contrivance and adaptation of the Wire and Cord Netting, all of which have more or less proved failures.

B. GREENING & CO. have succeeded in supplying this acknowledged deficiency, by the introduction of a variety of their Portable Wire Fencing.



No. 11. Patent Double Fencing (Proof against Poultry and Chickens).

This Fencing (which they manufacture by machinery, patented last year) is light, portable, and elegant in appearance, yet stronger and more durable than any Fence before the public. It requires few standards, and is fixed with the utmost facility by a labourer or gardener.

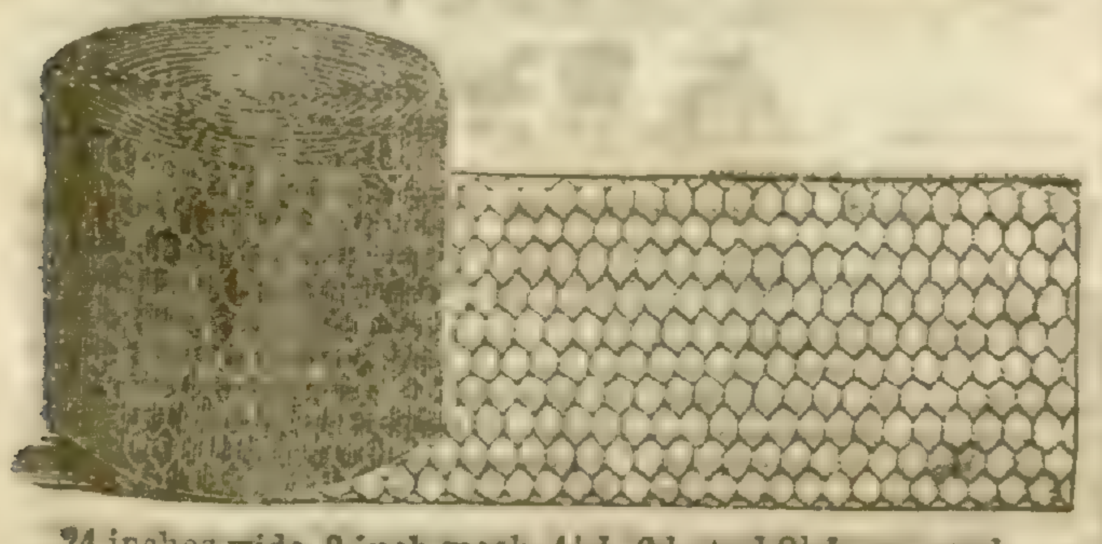
Notwithstanding the present high price of iron, B. G. & Co. offer these superior Fences at such prices as will ensure its ultimate adoption by all.

Cattle Fencing, Sheep and Lamb Fence, Hare and Rabbit Proof Fencing, Ornamental Fencing for Gardens, Poultry Fencing, Trainers for Peas, Garden Bordering, Export Fencing, &c. &c., manufactured by Patent Machinery by BENJAMIN GREENING & CO.

1 and 3, CHURCH GATES, and 2, CATEATON STREET, MANCHESTER,

From whom every information, together with Prospectuses and Engraved Sheets of Patterns may be obtained gratis.

H. J. MORTON and Co., 2, Basinghall Buildings,
Leeds.—GALVANISED GAME AND POULTRY NETTING, very strong and neat, never requires painting.

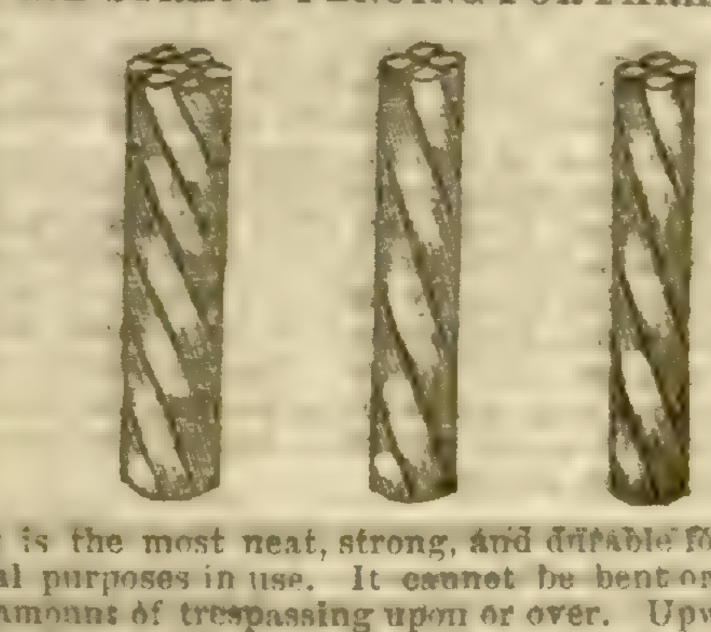


24 inches wide, 3-inch mesh, 4½d., 6d., and 8½d. per yard.
24 inches wide, 2-inch mesh, 7d., 9½d., and 1s. per yard.

GALVANISED IRON SPOUTING, for Dwellings, Cottages, Farm Buildings, &c., never requires painting.

Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalte Roofing Felt, &c.

H. J. MORTON and Co., Galvanised Iron Roofing
Works, 2, Basinghall Buildings, Leeds.
PATENT WIRE STRAND FENCING FOR PARKS, &c.



This Fencing is the most neat, strong, and durable for Parks and Agricultural purposes in use. It cannot be bent or put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply as above.

IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

TANNED NETTING, for the protection of Fruit
Trees from frost, blight, and birds, and for the security of fresh sown seeds, either in Gardens or Fields, at 1d. per square yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Scrim Canvass, for Wall Fruit.—At EDGINGTON and Co.'s, 17, Smithfield Bars, City, and Old Kent Road, Southwark, where may be seen erected Emigrant Tents in great varieties, on their latest improved principles, and also at Brunswick Street, Poplar, near the East India Export Dock.

GLASS FOR CONSERVATORIES, ETC.

HETLEY and CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES, GREENHOUSES, DWELLINGS, ETC.
Established more than One Hundred Years.

THOMAS MILLINGTON requests attention to his present prices of SHEET GLASS in 100 feet boxes.

Squares	6 by 4 and 6½ by 4½	}	
„	7 by 5 and 7½ by 5½	}	13 6
„	8 by 6 and 8½ by 6½	}	
„	9 by 7 and 9½ by 7½	}	
„	10 by 8 to 12½ by 9½	}	16 3
„	12 by 10 to 24 by 14 ...	... ...	19 0

Orchard House Squares on Mr. Rivers's approved plan, to whom I have sold some thousands of feet:—20 inches by 12, 20 by 13, 20 by 14, 20 by 15, 20½ by 12½, 20½ by 13½, 20½ by 14½, at 19s. per 100 feet.

200 feet cases at 42s., and 300 feet case 63s., in large sheets.

Boxes charged 1s. extra per 100 feet, and the same allowed if returned free of all charge.

HARTLEY'S PATENT ROUGH PLATE GLASS, Fern Shades, Striking Glasses, Milk-pans, Bee Glasses, Cucumber Tubes, Sheet and Rough Plate Glass Tiles, Wasp Traps; Plate, Patent Plate, Crown and Sheet Window Glass, in every thickness and quality, and Ornamental Glass, plain and coloured; pure white Shades for Ornaments, Crystal Glass for Pictures.

Warehouse, 87, Bishopsgate Street Without—same side as Eastern Counties Railway.

JAMES PHILLIPS and CO. beg to call attention
to their present reduced prices of Glass Milk Pans, Propagating Glasses, &c. &c.

GLASS MILK PANS, packed in cases containing 12.

12 inches diameter ...	12s. 0d.	22 inches diameter ...	42s. 0d.
14 „ „ ...	18 0	24 „ „ ...	48 0
16 „ „ ...	21 0	26 „ „ ...	60 0
18 „ „ ...	30 0	Cases 2s. each extra, returnable	
20 „ „ ...	36 0	at full price.	

PROPAGATING GLASSES.—Per dozen.

2 inches diameter ...	2s. 0d.	12 inches diameter ...	18s. 0d.
3 „ „ ...	2 6	13 „ „ ...	20 0
4 „ „ ...	3 0	14 „ „ ...	24 0
5 „ „ ...	4 0	15 „ „ ...	30 0
6 „ „ ...	5 0	16 „ „ ...	36 0
7 „ „ ...	6 0	17 „ „ ...	42 0
8 „ „ ...	7 0	18 „ „ ...	48 0
9 „ „ ...	8 0	19 „ „ ...	60 0
10 „ „ ...	10 0	20 „ „ ...	72 0
11 „ „ ...	12 0		

CUCUMBER GLASSES.—Each.

24 inches long	2s. 0d.	16 inches long	1s. 4d.
22 „	1 10	14 „	1 2
20 „	1 8	12 „	1 0
18 „	1 6	Made to any length.	

FERN SHADES.—Each.

6 in. diam., with stands	2s. 9d.	12 in. diam., with stands	8s. 1d.
7 „ „	3 6	13 „ „	9 6
8 „ „	4 1	14 „ „	12 6
9 „ „	4 9	15 „ „	16 9
10 „ „	5 9	16 „ „	21 10
11 „ „	6 8		

Bee Glasses, Lactometers, Lord Camoys' Milk Syphons, Tiles and Slates, Wasp Traps; Plate, Crown, and Ornamental Glass, Shades for Ornaments, and every article in the trade.

HARTLEY'S PATENT ROUGH PLATE GLASS, for Conservatories, Public Buildings, Manufactories, Skylights, &c.

JAMES PHILLIPS and CO., Horticultural Glass Warehouse, 116, Bishopsgate Street Without, London.

THE COTTAGER'S STOVE.—An economical, com-
pact, and portable COOKING APPARATUS, combining a good sized Oven and Hotplate; may be had with or without a boiler, and will cook sufficient for a dozen persons with the consumption of 1 lb. of coal or coke per hour. It requires no fixing, may be placed in any apartment, and is a great security against accidents from fire. It will burn Coal, Coke, or Wood. They are also specially adapted for Emigrants, and may be seen in operation daily, at the Manufacturers', D. & E. Bailey, 272, High Holborn, London.—Price 50s., and upwards.

THE MECHIAN DRESSING CASE, the most
portable ever invented, being only the size of a pocket-book, containing One Pair of Mechi's Ivory-handled Peculiar Steel Razor, his Magic Strop, Comb, Badger-hair, Shaving Brush, and Nail and Tooth Brushes, price only 25s.; the same with Hair Brush and Soap Dish, 35s. To military men, and as a steam-boat or travelling companion, this invention is an invaluable acquisition. An immense variety of other Dressing Cases for ladies and gentlemen, either in fancy woods or leather, at all prices, to suit either the economical or luxurious. An extensive stock of Writing Desks, Writing Cases, Work Boxes, Bagatelle Tables, Razor Strops, Table Cutlery, Superb Pâpier Maché articles, &c.—Manufactory, 4, Leadenhall Street, four doors from Cornhill.

THE CHOLERA—ITS BEST ANTIDOTE.

SIR W. BURNET'S DISINFECTING FLUID, the original and genuine CHLORIDE OF ZINC.—Sold by all Chemists, Druggists, and Shipping Agents; and at the Office, 18, Cannon Street, London Bridge.

THE CHOLERA
Prevented by the Destruction of all Noxious Effluvia.

CREWS'S DISINFECTING FLUID, Recommended by the College of Physicians. The Cheapest and Strongest Chloride of Zinc.—Quarts 2s.; Pints, 1s.; Half-pints, 6d. Sold by all Chemists, Druggists, and Shipping Agents; and at Commercial Wharf, Mile End, London.

HOLLOWAY'S OINTMENT AND PILLS
EFFECT EXTRAORDINARY CURES OF BAD LEGS.—Mrs. M'Gill, of Seel Street, Dublin, suffered for many years with a fearful bad leg, which broke out soon after her confinement; there were several wounds in it, and the swelling was enormous. She endured the most excruciating pain both day and night; and the general opinions of the medical attendants were, that it could not be cured, therefore amputation was the only remedy; however, bad as it was, Holloway's Ointment and Pills were resorted to, and these miraculous Medicines soon produced a wonderful change for the better, and ultimately effected a sound and perfect cure.—Sold by all druggists; and at Professor Holloway's Establishment, 244, Strand, London.

CRYSTAL PALACE GARDEN SEATS AND
CHAIRS.—The Directors are ready to receive Specimens, Designs, and Tenders for the supply of 500 Seats and 2000 Chairs, of the best seasoned wood and workmanship. These articles must be supplied on or before the 15th May next. The Specimens or Designs and Tenders to be submitted on or before Tuesday next, the 25th inst., at the Office of the Secretary, Crystal Palace, Sydenham. By order,

April 22, 1854. George Grove, Secretary.

ART-UNION OF LONDON.—The Annual General
Meeting to receive the Council's Report, and to distribute the amount subscribed for the purchase of Works of Art, will be held at the Theatre Royal Lyceum (by the kind permission of Charles Mathews, Esq.), on TUESDAY, the 25th inst., at 11 for 12 o'clock. The receipt for the current year will procure admission for Member and friends.

444, West Strand, London. George Godwin, } Lewis Pocock, } Hon. Secs.

THE LABORATORY OF THE ROYAL POLY-
TECHNIC INSTITUTION is always OPEN for the reception of Pupils under J. H. Pepper, Esq., F.C.S., A.C.S., &c.

Careful Analyses and Assays of Soils, Minerals, Waters, Mercantile or Agricultural Products, are performed with despatch, accuracy, and economy.

For terms, apply to R. I. Longbottom, Secretary.

HEAL and SON'S SPRING MATTRESSES.—
The most durable Bedding is a well made SPRING MATTRESS: it retains its elasticity, and will wear longer without repair than any other mattress, and with *one* French Wool and Hair Mattress on, it is a most luxurious Bed. Heal & Son make them in three varieties. For prices of the different sizes and qualities, apply for HEAL and SON'S ILLUSTRATED CATALOGUE OF BEDSTEADS and priced LIST OF BEDDING. It contains designs and prices of upwards of 100 Bedsteads, and prices of every description of Bedding, and is sent free by post.

Heal & Son, 196, Tottenham Court Road.

METCALFE and CO'S NEW PATTERN TOOTH
BRUSH, PENETRATING HAIR BRUSHES, AND SMYRNA SPONGES.—The Tooth Brush performs the highly-important office of searching thoroughly into the divisions and cleansing in the most extraordinary manner—hairs never come loose. Peculiarly penetrating Hair Brushes, with durable unbleached Russian bristles, which will not soften like common hair, and immense stock of genuine unbleached Smyrna Sponge, with every description of British and Foreign Perfumery, at Metcalfe, Bingley, & Co.'s only Establishment, 130 B and 131, Oxford Street, second and third doors west from Holles Street.

Caution.—Beware of the word "from" Metcalfe's, adopted by some houses. Metcalfe's Alkaline Tooth Powder, 2s. per box.

DEAFNESS, SINGING NOISES in EARS.—
SELF CURE.—Extraordinary discovery.—Just published, sent post free on receipt of 16 postage stamps, A STOP TO EMPIRICISM AND EXORBITANT FEES. Every deaf person can restore his own hearing, without absence from home or personal consultations. This book will cure thousands, and rescue them from the grasp of the extortionate empiric. By Dr. Hoghton, M.R.C.S., London, 2d May, 1845; L. A. C., April 30th, 1846. Consultations every day, Free, from 12 till 4.—9, Suffolk Place, Pall Mall, London.

DEAFNESS.—NEW DISCOVERY.—The Organic
Vibrator, an extraordinarily powerful, small, newly invented instrument, for Deafness, entirely different from all others, to surpass anything of the kind that has been, or probably ever can be produced; being of the same colour as the skin is not perceptible. It enables deaf persons to hear distinctly at church and at public assemblies; the unpleasant sensation of singing noises in the ears is entirely removed, and it affords all the assistance that possibly could be desired. Invaluable newly-invented Spectacles. The most powerful Patent Telescopes, possessing such extraordinary power, that some 3½ inches, with an extra eye-piece, will show distinctly Jupiter's Moons, Saturn's Ring, and the Double Stars. Opera, Camp, Race-course, and Perspective Glasses to know the distances. Also a very small, powerful, Waistcoat Pocket Glass, the size of a walnut, to discern minute objects at the distance of from four to five miles.—S. & B. Solomons, Aurists and Opticians, 39, Albemarle Street, Piccadilly; observe, opposite the York Hotel.

The Successful Results of the last Half Century have proved beyond Question that

ROWLAND'S MACASSAR OIL possesses
singularly nourishing powers in the growth, restoration, and improvement of the human Hair, and when every other specific has failed. This celebrated Oil is now universally acknowledged to be the cheapest, and superior to all other preparations for the hair. It prevents it from falling off or turning grey, strengthens weak hair, cleanses it from scurf and dandriff, and makes it beautifully soft, curly, and glossy. Its operation in cases of baldness is peculiarly active; and in the growth of the Beard, Whiskers, Eyebrows, and Moustachios, it is unfailing in its stimulating operation. For children it is especially recommended, as forming the basis of a beautiful head of hair. Price 3s. 6d. and 7s.; Family Bottles (equal to four small), 10s. 6d.; and double that size, 21s. Caution.—On the wrapper of each bottle are the words, Rowland's Macassar Oil, in two lines. The same are engraven on the back of the wrapper nearly 1500 times, containing 29,028 letters.—Sold by A. Rowland & Sons, 20, Hatton Garden, London, and by Chemists and Perfumers.

DO YOU WANT LUXURIANT HAIR,
WHISKERS, &c.? If so, use Miss Graham's NIOUKRENE, the most efficacious Hair generant ever introduced. It reproduces the Hair when lost either by disease or decay, prevents its falling off, effectually checks greyness, strengthens weak hair, and is guaranteed to produce those attractive ornaments, Whiskers, Moustachios, Eyebrows, &c., in three or four weeks. For nourishing and beautifying the hair, and sustaining its curling powers in all weathers, it has no equal. Price 2s., and sent post free to any part of the kingdom, on receipt of 24 penny postage stamps, by Ellen Graham, 3, New Road, Hornsey, Middlesex.—"My hair is quite restored." Miss Orme.—"I have a full pair of Whiskers, thanks to your Nioukrene." H. Robb, Esq.—"It has checked the greyness." Mrs. Jones.—Sold at 14, Hand Court, Holborn, London.

ELECTRICITY FOR NERVOUS, FUNCTIONAL, AND RHEUMATIC DISEASES.

MR. MEINIG'S new and greatly improved GALVANIC ELECTRO GENERATOR, for supplying vito-functional energy to any organ in want of the same, and to the system generally, may now be had at the Establishment, 103, Leadenhall Street. All wet and metallic contact with the body is entirely obviated; it acts with water alone, without acid, the action lasts more than 24 hours after each damping, and can be renewed and regulated without undressing, the Generator, enclosed in an envelope, being carried in the pocket or suspended from the neck. The extraordinary curative virtues of these mild currents of Electricity are now fully established by experience; the Prospectus (to be had gratis, or by post for two stamps) contains the names of more than 600 persons cured within the last 18 months, and this remedy is now adopted in nearly all the hospitals, and by the most eminent practitioners. Sold at 5s. upwards, according to power, at C. Meinig's, 103, Leadenhall Street. N.B.—It is impossible when wearing a Generator, to be attacked by Cholera.

STATICE HOLDFORDI.

MITCHELL AND CO., Successors to the late Edward Mitchell, Bristol Nurseries, Kemptown, Brighton, beg most respectfully to inform the trade, that they are prepared to supply strong healthy plants of the above at 25s. 6d. per dozen, package included, for ready money.—Post-office orders payable to Mitchell & Co., or John Fairbrother.

PERMANENT PASTURE.

R. H. SMITHE, of Eastling, Faversham, Kent, is now prepared to send out his Mixtures of the NATURAL GRASSES, PERENNIAL CLOVERS, &c., to lay down Land to Permanent Pasture, at 25s. per acre, allowing 3 bushels to the acre, carriage free. Mixtures for Lawn, or any other purpose, or the sorts separate. Most of the species of Grass are collected by the Advertiser, and he will bestow the greatest attention in selecting such as shall constitute mixtures specifical to the soil, purpose, &c., of each buyer.

NEW FUCHSIAS OF 1854, raised by Mr. Batten, who sent out Fuchsia Clapton Hero, which gave universal satisfaction.

MR. CHARLES PALMER, scarlet corolla, white tube, broad inverted sepals, fine habit; 7s. 6d.

GRANDISSIMA, deep claret corolla, long white tube, good habit, 7s. 6d.

ADMIRAL, light crimson corolla, light tube, and a free bloomer, 7s. 6d.

Oxalis, new species from Chili, very large, bright rose-coloured flowers, and an abundant bloomer, 30s. per dozen.

Tropæolum azureum, large sound roots, 30s. per dozen.
" tricolorum " " 15s. "
" brachyceras " " 15s. "

The usual discount to the Trade.

HUGH LOW AND CO., Clapton Nursery, London.

HUGH LOW AND CO. would invite inspection of their large and healthy stock of SOFT-WOODED PLANTS, suitable for Flower Garden decoration, amongst which they would more especially enumerate the under-named. The plants are all established in small pots well adapted for packing. Prices moderate, and purchasers of large quantities will be treated with great liberality. Calceolarias, shrubby and herbaceous; Coleus Blumeii, variegated foliage; Ageratum cælestinum and variegatum; Fuchsias in all the leading varieties; Verbenas, do.; Chrysanthemums, do.; Phloxes, do. Scarlet and variegated Geraniums; Lantanas in many varieties; Pentstemons, do.; Petunias, do.; Lophospermums, do.; Maurandyas, do.; Mimulus, do.; Lobelias (tall and dwarf), do.; Antirrhinums, do.; Heliotropes, do.; Salvias, do. Double Crimson Rocket, Pentstemon purpureum hybridum, superior to all other varieties of P. gentianoides; Cheiranthus Delileanus; Pyrethrum grandiflorum plenum.—Clapton Nursery, London.

NEW ALSIKE CLOVER, Price Ten Guineas per cwt., or in small quantities at 2s. per lb., may be had on application to Mr. H. Raynbird, Basingstoke, Hants. Also New Home-grown ITALIAN RYE-GRASS, of good and genuine Stock, at 30s. to 35s. per quarter.

A. VERSCHAFFELT, Nurseryman, Ghent, (Belgium), begs to inform Amateurs and the Trade, that he has just published his New CATALOGUE OF PLANTS for the present spring and summer, which may be obtained on application to his agent, Mr. R. Silberrad, 5, Harp Lane, Great Tower Street, London. A. V. begs to offer also his new work,

"L'ILLUSTRATION HORTICOLE."

Appearing Monthly, with a Number containing three fine coloured Plates, representing the best Trade Plants, accompanied with their description, culture, &c. Price 12s. a year.

The four first Numbers are out, and contain:—

First Number (January), Rhododendron album speciosum, Oncidium Barkeri, Philesia buxifolia.

Second Number (February), Epidendrum vitellinum, Abies bracteata, Sciadocalyx Warscewiczii.

Third Number (March), Maranta Warscewiczii, Azalea indica Beali, Ilex cornuta, Wellingtonia gigantea.

Fourth Number (April), Monochætum umbellatum, Odontoglossum Cervantesii, Skimmia japonica.

WANTED, by a Gentleman, a COTTAGE, of humble pretensions, Unfurnished and Detached. To contain two sitting, two best, and two secondary bed-rooms, kitchen, and convenient out-buildings, with garden, and from 3 to 4 acres of land. Within an hour or less railroad distance from London. The rent must be moderate.—M. D., Peak's Newspaper Office, 111, St. Martin's Lane, Charing Cross, London.

TO BE LET, WALKERN PARK FARM, with possession at Michaelmas, situate 5 miles from the Stevenage station on the Great Northern Railway. The Farm consists of 318 acres of fertile Corn Land, 74 acres of very productive Meadow, and 23 acres of Wood.—Apply to Mr. Humbert Land Agent, Watford, Herts.

TO BE LET, for a term of years, a sound Stock and well known compact Corn Farm, with water, and other Meadow Land, altogether about 514 acres, in a most eligible and healthy district in Hants. Good Markets around, and a Railway Station on a Metropolitan main-line within half a mile. Also adjoining and together with the above, or to be let separately, an Arable Farm, of about 200 acres, in a ring fence. Entry for preparations may be had forthwith on both farms.—For a view and to treat, apply to Lamb, Brooks & Co., Solicitors, Basingstoke and Odiham, Hants.

TO BE LET, with immediate possession, a NURSERY and FLORIST BUSINESS, three miles from Hyde Park Corner, comprising a convenient House, an acre and a quarter of Ground, with five Greenhouses and other conveniences, together with the stock. A good Jobbing Connection.—Apply to N. Hughes, Nurseryman, near the Church, Hammersmith.

DESIRABLE LEASEHOLD INVESTMENT,

Five Miles South-East of London.

TO BE SOLD, for 1500l., THREE GOOD EIGHT-ROOMED HOUSES, held for a term of 72 years unexpired, at a ground-rent for the whole of 10l. 10s. One is let at 42l. a-year, another at 38l., but is worth almost exactly the same as the first; the third is in hand. Part of the purchase-money may remain on mortgage, when the property, fairly let, would yield nine per cent. interest.—Address, W. Roscoe, Esq., Ensbury, Wimborne, Dorsetshire.

TO PIG AND CHICKEN FEEDERS.—Good Greaves may be had at 10l. per ton, upon application to Taylor & Pears, 8, George Yard, Lombard Street, City.

EGGS from Capt. Hornby's celebrated Spanish and Dorking Prize Fowls may be had on application to Mr. H. D. Davies, Spring Grove, Hounslow, to whom Capt. Hornby has transferred his whole stock. Spanish, 4l. 4s. per doz.; Dorking, 3l. 3s. per doz. Remittances to be made by post-office order, and to include 2s. for packing.

PRIZE SILVER POLANDS (Dr. Horner's Strain).—The Subscriber can now furnish EGGS of the above from the Birds he successfully exhibited the past year at Hitchin, Great Yarmouth, and Norwich, and awarded 11 prizes, price 15s. per dozen; also Eggs from extremely small pure White Bantams (prize Birds), at 18s. per dozen.—Orders, with Post-office order, addressed to Mr. Henry Youell, Church Square, Great Yarmouth, will be promptly attended to.

COCHIN CHINA POULTRY, ETC.

EGGS FROM PRIZE BIRDS.

MR. JOHN FAIRLIE, of Cheveley Park, Newmarket, in reply to the very urgent applications from numerous amateurs, is now prepared to dispose of a limited number of Eggs, from his celebrated prize Cochins, Brahma Pootras, Scotch Bak[illegible] &c., according to the dates of the orders received.

COCHIN CHINA FOWLS.

MR. THOMAS GILBERT, of Grays, Essex, having purchased of Thomas Sturgeon, Esq., his entire breed of 1853, Gentlemen and Amateurs are informed the Birds are now on Sale, and are bred exclusively from his best Stock Birds, Jerry and Nelson. Eggs may be had at 16s. per dozen, from the above.

PRIZE BRAMAH POOTRA FOWLS' EGGS, from the stock that took the first prize in England, at Birmingham in 1851; these fine Birds are heavily feathered and vulture hocked, 20s. per doz.; White-faced Spanish Eggs, 10s. per doz.; Speckled Dorking, 6s. per doz.; White Aylesbury Duck Eggs, 6s., per doz. Four Isle of Skye Terrier Dogs for sale.—Wm. Turner Drayton, Abingdon, Berks.

BRAHMA POOTRA FOWLS.

TO BE SOLD, a few Sittings of EGGS of this breed (according to priority of application), from the prize and selected birds of a gentleman—Brahmas of whose breeding have, during the past year, taken prizes at the following important Poultry Shows: the Royal Agricultural, Great Metropolitan, Birmingham, Great Yarmouth, Doncaster, Winchester, Norwich, and Manchester.—W. C. G., Post-office, Sandbach, Cheshire.

TO BE SOLD, EGGS from Prize Birds, from the Yard of Christopher Rawson, Esq., The Hurst, Walton-on-Thames:—Buff Cochins, Spanish, Coloured and White Dorkings, Gold and Silver Spangled, and Pencilled Hamburghs, Gold and Silver Bantams, and Aylesbury Ducks, 12s. per dozen; White and Black Cochins, Gold, Silver, and Black Polands, 21s. per dozen; Brahma Pootra Eggs, from imported birds of the best strains, 2l. 2s. per dozen.—Post-office orders (including 1s. for packing), to be sent with the order. The Eggs will be sent out in rotation according to the date of order.

TO BE SOLD, per dozen, WHITE-FACED SPANISH FOWL EGGS, from Pullets of Capt. Hornby's breed. Also a PULLET nine months old, now laying, and already showing the white face.—For price, &c., direct, H. S. W., North Leigh, near Oxford.

SPANISH AND DORKING FOWLS.—Captain Hornby having transferred his whole Stock of celebrated POULTRY to Mr. H. D. Davies, of Spring Grove, Hounslow, a portion (for want of space) is for immediate sale.

EGGS FROM PRIZE FOWLS.—Black Breasted Red Game, 1st Prize at the Metropolitan Show, exhibited by Capt. Hornby, 12s. per dozen. Silver Pencilled Hamburgh, the parent stock of prize and highly commended birds at Bedford, 4s. 6d. per dozen. Rouen Ducks, from the same strain as the 1st prize birds at Bedford and Liverpool, 10s. per dozen. Any of the above would be exchanged for Eggs from 1st prize Dorkings. All orders executed according to priority of application.—Address, Mr. G. Allen, Ampthill, Beds.

EALING PARK SALE.

J. SOUTH, of the Plough Inn, Ealing (two minutes' walk from the Sale), begs to inform Purchasers, who wish to attend the three days' Sale, that they can have every accommodation at reasonable charges. Good Beds, Stabling, &c.

Sales by Auction.

EALING PARK.

Mrs. Lawrence's Stove and Greenhouse Plants, Azaleas, and Heaths, the most important and Valuable Collection ever offered to Public Sale.

MR. J. C. STEVENS is honoured with instructions (in consequence of the ill-health of Mrs. Lawrence) to Sell by Auction, at the Gardens, Ealing Park, on THURSDAY, 27th April, and following days, at 1 o'clock precisely, this unrivalled Collection of Magnificent Specimen STOVE AND GREENHOUSE PLANTS, AZALEAS and HEATHS, in all about 500. The Plants are so well known that it is sufficient to say they are the finest and best cultivated in the world, in admirable health, well set with bloom buds, and offering to Gentlemen and Nurserymen an opportunity of possessing specimens of transcendent splendour for exhibition at the forthcoming shows.—May be viewed Monday and Tuesday before the Sale, by Catalogues only, to be had (2s. 6d. each, returnable to purchasers) of Mr. J. C. Stevens, 38, King Street, Covent Garden.

EALING PARK.—THE ERECTION OF FIVE PLANT HOUSES, IN EXCELLENT CONDITION.

MR. J. C. STEVENS will sell by Auction, at the Gardens, at Ealing Park, on SATURDAY, the 29th of April, at about 3 o'clock, after the Sale of the Plants, in Five Lots, instead of One, as mentioned in the Catalogue, a SPAN ROOF HOUSE, 65 feet by 17 feet 6 inches; a ditto, 18 feet by 16 feet; a Treble Span, ditto, 65 feet by 55 feet; a Span, ditto, 18 feet by 15 feet; and a ditto, 65 feet by 17 feet 6 inches, with all the Internal Fittings, about 2500 feet of Hot-water Pipes, four Boilers, Slate and Wood Stages, Stone Paving, &c.—May be viewed with Catalogues, or by special order; to be had of Mr. J. C. Stevens, 38, King Street, Covent Garden.

ORCHIDS FROM GUATEMALA.

MR. J. C. STEVENS begs to notify that he will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on FRIDAY, 5th May, an IMPORTATION OF ORCHIDS, just received from Mr. Skinner, who is now in Guatemala, and under whose directions they have been collected; they comprise all the splendid varieties from that country, in magnificent masses, and in the best possible condition.—Catalogues are preparing and will be forwarded in due course.

BRAMAH POOTRA, DORKING, SPANISH, COCHIN CHINA, AND OTHER CHOICE FANCY POULTRY.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, May 2, at 12 o'clock precisely, 50 BRAMAH POOTRA FOWLS, of the choicest quality, imported by Mr. Baily; first-class Dorkings, white and buff Cochins, from Dr. Allen and others; some well bred Spanish, Aylesbury Ducks, &c. —Catalogues by inclosing a stamped directed envelope to Mr. J. C. Stevens, 38, King Street, Covent Garden, London.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MR. TOOLEY will submit to public competition, early in May, unless previously disposed of by private contract, on the premises, Stockwell Green Nursery, in consequence of the proprietor retiring from the business, several thousands of SCARLET and other GERANIUMS, CALCEOLARIAS, VERBENAS, HELIOTROPES, FUCHSIAS, PETUNIAS, &c. The desirable and convenient Nursery to be Let, with immediate possession, consisting of good Dwelling-house, with Seed Shop, 10 Greenhouses, Pits, Frames, Shed, Stabling, &c.—For further particulars, address Mr. G. Tooley, Stockwell Nursery, Stockwell Green, Surrey.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE & MORRIS will Sell by Auction, at the Mart, Bartholomew-lane, on FRIDAY, April 28, at 12 o'clock, a first-rate Collection of CARNATIONS, PICOTEES, and PINKS, and a fine Assortment of FUCHSIAS, VERBENAS, DAHLIAS in dry roots, AMERICAN PLANTS, GERANIUMS, and other Plants in bloom, with a variety of Hardy Perennial and Rock Plants.—On view the morning of Sale. Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will submit to public competition by Auction, on the premises, Rush Grove, Woolwich, on MONDAY, May 1st, at 12 o'clock, by order of Mr. J. Grisbrook, leaving the premises, the whole of the Greenhouse Plants, consisting of fine specimen Azalea indica, Erica, Epacris, Aphelexis, Pimelea, Chorozema, Corræa, Diosma, Acacia, Geraniums, Camellias, Cactus, Cinerarias; also Lilium lancifolium, rubrum, punctatum, and album; a quantity of Plants for bedding; 5 capital 1, 2, and 3-Light Boxes, 2 Thermometers, Rustic Seats, Tables, Flower Stands, and sundry effects.—May be viewed two days prior to the sale; Catalogues may be had (6d. each, returnable to purchasers), on the premises; of the principal seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

IMPORTANT SALE OF YOUNG SPECIMEN HEATHS GREENHOUSE PLANTS, AND ORCHIDS.

MESSRS. PROTHEROE AND MORRIS are favoured with instructions by Mr. Epps, of the Bower Nurseries, Maidstone, to Sell by Auction, on TUESDAY, April 25th, at 12 o'clock, at the Auction Mart, Bartholomew Lane, nearly 300 Splendid Young Specimen Heaths, Greenhouse Plants, and Orchids. The Ericas consist of Obbatas, Hartnellia, Tricolors, Massoni, Ampullacea, vars. ferruginea jasminoides, vars. Cavendishi, Ventricosas, &c., &c.; the Orchids, Cattleya, vars. Dendrobiums, Oncidiums, Brassias, Maxillarias, Cœlogyne, Vandas, &c. It is needless to state that the Ericas grown by Mr. E. are the finest and most healthy plants known; and on no occasion has there been submitted to the public so splendid a collection; they are calculated to suit all purchasers, as they consist of specimens in 8 to 20 inch pots, the bulk in 11 inch pots. The Orchids are choice and valuable species.—May be viewed the day prior to and morning of Sale. Catalogues may be obtained of Mr. Epps, the Bower Nurseries, Maidstone; the principal Seedsmen in London; at the Mart; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO TULIP FANCIERS.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. Goldham to submit to public competition by Auction, without reserve, about the middle of MAY next, on the Premises, Ilynder Cottage, Merton Lane, Mitcham, Surrey, a portion of his costly and unrivalled collection of TULIPS. No comment on this magnificent Stock will be equal to an inspection of its striking beauties, for which an opportunity is now offered to the Amateur Florist, &c., new Flowers and Seedlings of Mr. Goldham's raising, the result of more than 30 years' successful cultivation and competition, and which for the first time are now offered. Among these may be named Fanny Kemble, John Kemble, Charles Kemble, Julius Cæsar, Napoleon, Fortunius, Gem, Duchess of Sutherland, Standard, Lord Byron, Marshal Soult, Marshal Blucher, Calphurnia, Emma, Oliver Goldsmith, Othello, Comet biz., Marc Anthony, Sir R. Peel, Lord Nelson, Helen, Picturata, Unique byb., Belvidera, Juliet, Marquis of Anglesea, Unique rose, &c. &c. Among Flowers already out are Pandora, Thalia, Musidora, Byzantium, Salvator Rosa, Homer, Lord J. Russell, Apelles, Duke of Devonshire, Camuse de Craix, Mrs. Siddons, Stein's Victoria, Strong's Eliza, St. Neots, Fanny Ellsler, Parmagiano, Wallace, General Bourmonville, Pentley's Queen, &c. &c. Future advertisements containing further information will shortly appear.—American Nursery, Leytonstone, Essex, April 22.

HIGH ELMS, NEAR FARNBOROUGH, KENT.

Important Sale of Short-horned Cattle, &c.

MR. STRAFFORD is again favoured with instructions from Sir John W. Lubbock, Bart., to Sell by Auction, without reserve, at the Dairy Farm, High Elms, Farnborough, near Bromley, Kent, on WEDNESDAY, April 26, upwards of 30 head of SHORT-HORNS, consisting of Young Bulls, Cows and Heifers, which have been chiefly bred from Cows purchased of Mr. Cartwright, of Tathwell, and since crossed by first-class Bulls from the famed Herds of the late Earl Spencer, Sir C. Knightley, Messrs. Booth, Combe, &c.; also a valuable 3-year-old Bay COLT, adapted for Harness, and a very superior Grey PONY, 7 years old.—Catalogues, with pedigrees and other particulars, may be had of Mr. Strafford, 13, Euston Square, London; or of Mr. Stow, at Farnborough Hall, near Bromley, Kent.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND EXHIBITORS.

St. Margaret's, Isleworth.—The Earl of Kilmorey's Stove and Matchless Collection of Orchidaceous, Stove and Greenhouse Plants.

MR. CAIN is instructed to Sell by Auction, on the premises as above (in consequence of the Earl of Kilmorey having disposed of his interest in the premises), on TUESDAY, May 2d, and following days, at 12 for 1, this NOBLE COLLECTION OF PLANTS, consisting of specimens of unrivalled excellency, and comprising all the choice varieties of Orchids, viz., Aerides, Anæctochilus, Bletia, Brassia, Cattleya, Cœlogyne, Cypripedium, Dendrobium, Epidendrum, Miltonia, Oncidium, Peristeria, Phaius, Sobralia, Stanhopea, Vanda, and Zygopetalum. The Ericas comprise fine Exhibition specimens of Cavendishi (very fine), depressa, elegans, Hartnelli, jasminiflora alba, Massoni major, metulæflora bicolor, perspicua nana, tricolor, vestita, &c. &c. About 100 of the choicest varieties of Camellias, of fine handsome growth, with good show of bloom. Two fine specimens of Araucaria excelsa, or Norfolk Island Pine; one 12 ft. high, beautifully furnished, and one 6 feet 6 inches, a fine tree. The collection of Azaleas comprise some of the finest specimens of the most choice varieties. Rhododendrons consist of a splendid collection of rare species, Orange trees of fine and noble growth. The Stove Plants comprise fine specimens of Allamandas, Begonias, Dipladenias, Franciscea, Gardenia, Ixora, Stephanotis, &c. Large American and plated Aloes of the most choice species. The plants are in a healthy state, and present a fine show of bloom;—to noblemen and nurserymen an opportunity of possessing fine exhibition plants for the forthcoming shows. Sculptured Stone and other Pedestals, and Ornamental Vases; a fashionable Chariot, in excellent order; a perfectly new four-oared Rowing Boat, by Salter; a Wager Boat, by Clasper; Garden Tools and Implements; a long, three-tier shaped, iron Flower Stage, and other effects.—May be viewed, by Catalogues only, at 1s. each (returnable to purchasers), one week prior to the sale; to be had on the premises, and of the Auctioneer, King Street, Richmond, Surrey.

Printed by William Bradbury, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and Frederick Mullett Evans, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be Addressed to the Editor.—Saturday, April 22, 1854.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley

No. 17.—1854.] SATURDAY, APRIL 29. [Price 6*d*.

INDEX.

Agri. Imp. Society, Irish	276 *b*	Gorse fibre for paper	269 *a*
America, shrubs in	270 *a*	Guano, report on	277 *a*
Apricot, Musch Musch	269 *c*	Hooker's (Dr.) Journals	269 *b*
Books noticed	270 *c*	Lawrence's (Mrs.) plants	271 *c*
Bread making	276 *a*	Linnean Society	270 *b*
Caledonian Hort. Society	270 *c*	Malt, to dry	277 *a*
Calendar, horticultural	272 *a*	Meteorology, agri.	275 *a*
— agricultural	277 *a*	National Floricultural Society	271 *c*
Chemico Agri. Society	277 *a*	Paper, materials for, 268 *a*, 269 *a*,	276 *a*
Chrysanthemum, the	271 *b*	Pathology, vegetable	268 *b*
Cookery	270 *a*	Plants, new	271 *a*
Cropping, green	276 *b*	Rain gauges	269 *b*
Drainage, effects of	273 *b*	Royal Botanic Garden, Regent's Park	271 *a*
— arterial	273 *c*	Scythe, Boyd's	269 *c*
Ealing Park sale	271 *c*	Sheep, house feeding	276 *a*
Euphorbia jacquiniflora	268 *c*	Shrubs in America	270 *a*
Ewes and lambs	275 *b*	Strawberries, mildewed	269 *b*
Farming near Liverpool	274 *b*	Textile materials	270 *c*
Farmery, English	276 *c*	Vegetable pathology	268 *b*
Figs	269 *c*	Vine disease in Greece	268 *b*
Frames, substitute for	270 *a*	Wall trees, protection of	269 *c*
Frost, effects of the	267 *c*	Weather, severity of	267 *c*
Fruit crops, injury done to	267 *c*	Wheat after Wheat	276 *a*
Fuchsias	271 *c*		

HORTICULTURAL SOCIETY, 21, Regent Street. —Notice is hereby given, that the ANNIVERSARY MEETING of this SOCIETY will be held on MONDAY, May 1st, for the Election of Council and Officers for the ensuing year, and for receiving the Report of the Council for the past year. The chair will be taken at 1 o'clock P.M.

HORTICULTURAL SOCIETY OF LONDON.— Notice is hereby given, that the FIRST EXHIBITION of FLOWERS and FRUIT, in the SOCIETY'S GARDENS, will take place on SATURDAY, May 13, at 2 P.M.

Tickets, price 5*s*. each, can be procured at this Office, upon presenting the order of a Fellow, or on the day of the meeting, at Turnham Green, price 7*s*. 6*d*. each.

PRIVILEGE OF FELLOWS.—Each Fellow of the Society has free personal admission to these Exhibitions without a Ticket. A Fellow may also personally introduce a friend with an Admission Ticket, at half-past 12, at Gate No. 4, in the Duke of Devonshire's Road: or, if unable to attend personally, the privilege may be transferred to a brother, sister, son, daughter, father, mother, or wife, residing in the Fellow's house, provided the person to whom the transfer is made be furnished with a Ticket signed by that Fellow.—21, Regent Street, London.

KENILWORTH HORTICULTURAL AND FLORICULTURAL EXHIBITION.—Notice is hereby given that a Grand General Horticultural and Floricultural Exhibition will be held (by permission) among the RUINS OF KENILWORTH CASTLE, on WEDNESDAY, July 5, when Prizes on a liberal scale will be awarded for collections and single specimens of Stove and Greenhouse Plants, Cut Flowers, Fruits, Vegetables, &c.—For Schedules and further particulars apply to JOHN CHEYNE, Secretary, Offchurch, near Leamington Spa.

WEST KENT SECOND ANNUAL POULTRY AND FLOWER EXHIBITION, Under most distinguished Patronage, will take place on TUESDAY and WEDNESDAY, the 20th and 21st of June next, in the Market Field, Farningham. Prizes will be awarded for Poultry, Pigeons, and Rabbits. Stove, Greenhouse, and Herbaceous Plants, Fruits, Vegetables, Roots, and Cut Flowers. Applications for Forms of Certificates of Entry, Prize Lists, and Regulations for Poultry, &c., to be made to the Secretary, and for Flowers, &c., to Mr ALFRED LOCKYER, Secretary, Farningham. By Order of the Committee of Management, BAPTISTE THOMAS, Secretary.
Committee Room, Lion Inn, Farningham, Kent.

THE GREAT NATIONAL ANNUAL EXHIBITION OF TULIPS (adjourned from the Town Hall, Nottingham), will, by permission of the Royal Botanic Society of London, be held in the Royal Botanic Gardens, Regent's Park, London, on WEDNESDAY, May 24th, 1854, in connexion with the First Exhibition of the Royal Botanic Society.

Committee.

John Bushell, Esq.	Joseph Hunt, Esq.
R. H. Betteridge, Esq.	A. Lane, Esq.
J. J. Colman, Esq.	Mr. W. H. Lawrence.
Henry Goldham, Esq.	Mr. Macefield.
James Holmes, Esq.	Mr. C. Turner.
Richard Headley, Esq.	Mr. Willmer.

Treasurer.—H. Groom, Esq., Clapham Rise.
Hon. Secretary.—Mr. Robert James Lawrence, Hampton, Middlesex.

SCHEDULE OF PRIZES.

CLASS A.—Six Dissimilar Blooms: First Prize, a Silver Cup, value 7*l*. 10*s*.; second, 5*l*.; third, 3*l*.; fourth, 2*l*.; fifth, 1*l*.

CLASS B.—Twelve Dissimilar Blooms: First Prize, a Silver Cup, value 5*l*.; second, 4*l*.; third, 3*l*.; fourth, 2*l*.; fifth, 1*l*.

CLASS C.—Eighteen Dissimilar Blooms: First prize, a Silver Cup, value, 5*l*.; second, 3*l*.; third, 2*l*.; fourth, 1*l*.

SINGLE SPECIMENS.

CLASS D.—Feathered Bizarres: First Prize, 10*s*.; second, 8*s*.; third, 7*s*.; fourth, 6*s*.; fifth, 5*s*.; sixth, 4*s*.

CLASS E.—Flamed Bizarres: First Prize, 10*s*.; second, 8*s*.; third, 7*s*.; fourth, 6*s*.; fifth, 5*s*.; sixth, 4*s*.

CLASS F.—Feathered Byblœmens: First Prize, 10*s*.; second, 8*s*.; third, 7*s*.; fourth, 6*s*.; fifth, 5*s*.; sixth, 4*s*.

CLASS G.—Flamed Byblœmens: First Prize, 10*s*.; second, 8*s*.; third, 7*s*.; fourth, 6*s*.; fifth, 5*s*.; sixth, 4*s*.

CLASS H.—Feathered Roses: First Prize, 10*s*.; second 8*s*.; third, 7*s*.; 4th, 6*s*.; fifth, 5*s*.; 6th, 4*s*.

CLASS I.—Flamed Roses: First Prize, 10*s*.; second, 8*s*.; third, 7*s*.; fourth, 6*s*.; fifth, 5*s*.; sixth, 4*s*.

CLASS K.—Six Dissimilar Breeders: First Prize, 1*l*.; second, 15*s*.; third, 10*s*.; fourth, 5*s*.

PREMIER PRIZES of 1*l*. each will be awarded to the best Feathered and Flamed Flower in each Class, selected from the entire Exhibition.

CERTIFICATES OF MERIT will be awarded to Seedlings, should the Judges think them worthy of such distinction.

In Class B, private growers only will be allowed to compete. The other Classes are open to all growers.

Subscribers of 1*l*. 1*s*. and upwards to be allowed to show free in their respective classes. Non-subscribers to pay the following entrance:—In Classes A., B., and C., 5*s*. each Class; in Class K. 2*s*. 6*d*. Single specimens 1*s*. each bloom. All entries to be made on or before the 10th of May. Rules and full particulars may be had on pre-paid application to the Secretary.

BURY FLORAL AND HORTICULTURAL SOCIETY.—The EXHIBITIONS of this Society will be held on JULY 5th and SEPTEMBER 6th. Prizes to the amount of 71*l*. are offered to Universal Competition; Schedules of which are now ready, and may be had on application to ROBT. J. KAYE, Secretary.—Applications per post must be pre-paid, and contain a stamped envelope.

MR. GLENNY requests that REPORTS of all the HORTICULTURAL and FLORAL EXHIBITIONS may be sent to him for publication, and that specimens of Fruit, Flowers, Plants, and Vegetables, as well as other subjects for his opinion, may be addressed, Mr. GLENNY, 420, Strand.

IMPROVEMENT OF GRASS LANDS.

SUTTON'S RENOVATING MIXTURE, consisting of PERENNIAL CLOVERS and fine GRASSES for IMPROVING OLD PASTURES, should now be sown immediately, at the rate of 6, 8, or 10 lbs. per acre, according to the condition of the Meadow or other Pasture. Price 1*s*. per lb.
JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

FINE MANGOLD WURZEL SEED.

LONG RED MANGOLD WURZEL. Fine new Seed, 10*d*. per lb., or 70*s*. per cwt.
JOHN SUTTON AND SONS, Seed Growers, Reading, having a large Stock of the above, are now selling it at the low price here quoted. LARGE YELLOW GLOBE and other sorts, as see Priced List, which may be had in return for one postage stamp.

LARGE YELLOW GLOBE MANGOLD WURZEL, and all other kinds at low prices in large quantities. For particulars address (stating quantities required) JOHN SUTTON AND SONS, Seed Growers, Reading, Berks.

GARDEN SEEDS FOR PRESENT SOWING.— Good Seeds of all the best kinds of Lettuces, Broccolies, Cauliflowers, Peas, and other Vegetables, may still be obtained of the undersigned. Priced Lists post free.—Address,
JOHN SUTTON AND SONS, Seed Growers, Reading, Berks.

BEDDING PLANTS.

JOHN HAYES, FLORIST, Farnham, Surrey, begs to say he is prepared to send out the above from 1*s*. to 4*s*. per dozen; the season being favourable, the plants are remarkably good. 50 Seeds of a good useful CUCUMBER sent for 12 stamps. Descriptive Catalogues sent for one postage stamp.

FUCHSIA DUKE OF WELLINGTON.

J. MOORE AND SON have still on hand a fine stock of this superb Fuchsia, for which they will be happy to receive orders at 10*s*. 6*d*. each. For description and opinions, see former Advertisements.
J. MOORE & SON beg also to call attention to their stock of Verbenas, &c.—Perry Barr, near Birmingham.

SAMUEL WALTERS begs to offer the following:— New and Choice GERANIUMS, New PETUNIAS, FANCY GERANIUMS, FUCHSIAS, VERBENAS, BEDDING PLANTS, &c. Orders of 1*l*. and upwards, will be forwarded any distance not exceeding 100 miles, carriage free. See *Gardeners' Chronicle*, p. 250.—Hilperton and Trowbridge, Wilts.

JOSEPH HARRIS respectfully announces that his Annual Spring Catalogue of Bedding Plants is now ready, and may be had on application; it contains all the newest and best Verbenas, Fuchsias, &c. &c.
Cheltenham Road Nursery, Stoke's Croft, Bristol.

TO THE SEED TRADE AND OTHERS.

BENJAMIN R. CANT, St. John's Street Nursery, Colchester, can supply in quantity the following Home-grown Seeds, of excellent quality:—

	Per lb.—*s*.	*d*.
WHITE BELGIAN CARROT	1	0
LONG RED ALTRINGHAM Do.	1	0
YELLOW GLOBE MANGOLD WURZEL... ...	1	0
LONG RED Do.	1	0

Prices to the Trade on application.

BASS AND BROWN'S NEW POTENTILLAS, so favourably noticed in the *Gardeners' Chronicle*, the "Florist," the "Cottage Gardener," also by Geo. Glenny, and C. Turner, for which see descriptions and remarks in *Gardeners' Chronicle*, March 13, page 144, and April 1, page 208.

A great number of orders have already been received. Strong Plants will be sent out early in May.

KING OF CRIMSONS	10*s*.	6*d*.
THEODORE	7	6
JULIA	7	6
SUDBURY GEM	10	6
SHYLOCK	10	6

The set for 42*s*. The usual allowance to the trade for two or more sets. The SECOND SET OF 7 VARIETIES, very fine, rich and showy, for 16*s*., with the same trade discount as first set.
Seed and Horticultural Establishment, Sudbury, Suffolk.

BEAUTIFUL FLOWERS:—

50 Varieties of Flower Seeds	6*d*.	per oz.
30 Varieties of beautiful sorts	1*s*.	"
50 Varieties in half-quarter oz. packets	4*s*.	"
30 Varieties in packets	3*s*.	"

Any kind, in 1*d*. and 2*d*. packets, sent free by post, upon receipt of a stamped directed envelope. Vegetable Seeds of all kinds, Shrubs, Flowers, &c., at W. CULLINGFORD'S, 1, Edmund Terrace, Ball's Pond Road, Islington, London.

SOFT-WOODED PLANTS, in large variety; suitable for decorating the Flower Garden during Summer and Autumn. To be had at low prices from the subscribers,
HUGH LOW & CO., Clapton Nursery, London.

TO BE SOLD, FRENCH GARLIC, of superior quality.—Apply to A. and A. DAVENES, 22, Turnmill Street, West Smithfield.

TO BE SOLD, at a moderate price, a fine specimen of FAN PALM, or CORYPHA UMBRACULIFERA, 9 feet high and 12 feet in circumference, some of its leaves 6 feet across.—For further particulars address to THOMAS COOLING, Mickleover, near Derby.

STATICE HOLDFORDI.

MITCHELL AND CO., Successors to the late Edward Mitchell, Bristol Nurseries, Kemptown, Brighton, beg most respectfully to inform the trade, that they are prepared to supply strong healthy plants of the above at 25*s*. 6*d*. per dozen, package included, for ready money.—Post-office orders payable to MITCHELL & CO., or JOHN FAIRBROTHER.

BEDFORD NURSERY, ACRE LANE, BRIXTON.

W. J. SANGSTER begs to say he is prepared to send out his admired New Seedling GERANIUM the "BEAUTY OF CLAPHAM," an excellent variety for pots and bedding culture, noticed in *Gardeners' Chronicle* as a beautiful rosy pink, and a very pretty variety. Good strong plants, 7*s*. 6*d*. each. Also a great variety of Bedding plants at 4*s*. per dozen, and every kind of Nursery Stock at very moderate prices.

NEW DAHLIA—MAGNET.

CHARLES KIMBERLEY is now sending out the above beautiful Dahlia; colour, ruby crimson, very constant, of first-rate form, one of the best flowers of the season; was awarded a Certificate at the Brighton Open Show, September 14th, and National Society, London, September 22d. Strong Plants, 10*s*. 6*d*. each; usual allowance to the Trade. Catalogues of Dahlias and Miscellaneous Choice Plants may be had on application.—Stoke Nursery, near Coventry.

BEAUTIFUL NEW BEDDING PLANT.
MILLER'S HYBRID MULE PINK.

ROBERT MILLER, Hartshill Nursery, Newcastle, Staffordshire, offers with confidence the above Pink, colour a bright crimson scarlet, double; grows from 9 to 15 inches high, branches out and forms a little bush, and flowers most abundantly from June to October, and perfectly hardy. See *Gardeners' Chronicle*, Sept. 24, 1853.

DIANTHUS R. M., very pretty, and being dwarf in habit, it will doubtless make a good bedding plant. Price 12*s*. per doz., package included. The usual discount to the Trade. To be let out the second week in April. Post-office orders from unknown correspondents made payable at Newcastle.

BEAUTIFUL NEW PETUNIA.
"MONTREAL PURPLE" (SMITH.)

W. F. SMITH, Riverhead Nurseries, near Sevenoaks, will be prepared to send out, on and after May 1st, strong plants of the above splendid Petunia, at 3*s*. 6*d*. each. This variety possesses a first-rate habit, and produces fine large bold flowers of good form, well above the foliage; and it has proved to stand the wind and rain better than any other variety.

W. F. S. is confident that the above will give as much satisfaction as the Geranium "Lady Holmsdale," and Calceolaria "Beauty of Montreal," sent out by him in 1852. W. F. S. has also some splendid Plants for vases of Geraniums "Lady Holmesdale" and "Flower of the Day," from 20*s*. to 30*s*. per dozen.—Catalogues of Stove, Greenhouse, and Bedding Plants may be had on application.

CAPE HEATHS AND NEW AZALEAS.

W. J. EPPS begs to call attention to his extensive and rare Collections of Heaths and Azaleas, which are in the finest condition possible; very bushy and well formed for specimens in 3, 4, and 6-inch pots, consisting of all the best varieties, such as Aristata ampullacea, tricolor, jasminiflora ventricosa, Massoni, Webbiana, obbata, &c., &c. AZALEAS—Prince Albert, Gledstanesi, Excelsa, Murrayana, Alba magna, Duke of Devonshire, Holderi, Toilette de Flora, Glory of Sunning Hill, Symmetry, Splendens, Ignescens, &c., &c., 9*s*., 12*s*., 18*s*., and 21*s*. per dozen; 5*l*. per 100 varieties, carriage paid to London. All the new Stove and Greenhouse Plants, Fuchsias, Verbenas and Roses, equally moderate. Catalogues of the above sent on application.—Nurseries, Maidstone and Ashford.

"WELLINGTONIA GIGANTEA."

MESSRS. VEITCH, of EXETER and CHELSEA, have much pleasure in stating that their Seeds of the above magnificent Tree are vegetating satisfactorily. They therefore hope to be able to send out well established seedling plants during the ensuing summer and autumn. They are now taking orders for them at the following prices:—

For a Single Plant ...	2 guineas	For 8 Plants ...	10 guineas
For 4 Plants	6 guineas	For 12 Plants ...	12 guineas

And all orders will be executed strictly in the rotation in which they are received.—April 29.

WELLINGTONIA GIGANTEA.—Beautiful Lithographed Plates (from a drawing taken in California) of this wonderful Tree may be had, at 7*s*. 6*d*. each, of Messrs. VEITCH & SON, Exeter, and Mr. JAMES VEITCH, jun., Exotic Nursery, Chelsea.

The Bark, Wood, Cones and Foliage, which were exhibited on Tuesday week at 21, Regent Street, may be seen at the Exotic Nursery, Chelsea.—April 29.

NEW ALSIKE CLOVER, Price Ten Guineas per cwt., or in small quantities at 2*s*. per lb., may be had on application to Mr. H. RAYNBIRD, Basingstoke, Hants. Also New Home-grown ITALIAN RYE-GRASS, of good and genuine Stock, at 30*s*. to 35*s*. per quarter.

MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS AND CO. beg to call attention to their MIXTURES OF GRASS SEEDS for laying Land down to Permanent Grass, price 30*s*. per acre.

Mixed sorts, for Improving Old Grass Land...	1*s*. 2*d*.	per lb
Fine sorts for Forming and Renovating Lawns	1 3	"

Directions for sowing accompany the seeds.

GEORGE GIBBS & CO. will be happy to forward their Priced Catalogues of Mangold Wurzel, Carrot, Swede, Turnip, and all Agricultural Seeds, free on application to GEORGE GIBBS & CO Seedsmen, 26, DOWN STREET, Piccadilly, London.

WILLIAM BARNES begs to inform his friends and the public generally, that his SPRING CATALOGUE is now ready, and can be had on application; it contains all the leading and most approved varieties in cultivation, of Indian Azaleas, Cinerarias, Calceolarias, Verbenas, Fuchsias, Hollyhocks, Phloxes, Roses, Geraniums, Chrysanthemums, Perpetual blooming Carnations, Petunias, Delphiniums, and Liliums, with many other plants too numerous to insert here. W. B. has much pleasure in stating his stock is exceedingly healthy and clean and warranted true to name.—Camden Nursery Camberwell.

SPLENDID NEW SHRUBBY CALCEOLARIAS.

MR. HENRY MAJOR, Knosthorpe, near Leeds, begs to announce that his beautiful New Seedling Shrubby CALCEOLARIAS are now ready to send out, in two sets, viz., First Set of 15, 3l.; Second Set of 15, 2l. For description, see Catalogue, which may be had on prepaid application.

H. M. offers a third set of 20, to include some of his very best sorts sent out the two last years, as well as several of last year's Seedlings not yet let out, price 30s.

OPINIONS OF THE PRESS UPON MR. MAJOR'S CALCEOLARIAS.

"Mr. Henry Major, of Knosthorpe, near Leeds, has devoted much time to the improvement of the Shrubby Calceolaria, and to him, perhaps, more than any other individual, we are indebted for the perfection and beauty which have been obtained in this class of plants. Mr. Major has, this season, a splendid lot of seedlings."—*Abridged from the Durham Advertiser, May* 13, 1853.

"H. M. We never before saw a collection of Seedling Calceolaria blooms, for perfection in form and beautiful colouring, equal to yours; they are far superior to any we have seen at the London Exhibitions."—*Floricultural Cabinet, July*, 1853.

"H. M. As a whole, the best collection of Calceolaria Seedlings we have seen this year."—*Abridged from the Cottage Gardener, June* 16, 1853.

"Z. Z. Your varieties are of the right stamp, something different from the interminable yellow and brown. We like No. 5 best; it is a very lively and novel variety. Next 43, then No. 3. The others are very pretty."—*Midland Florist, August*, 1853.

Very choice CALCEOLARIA SEED, 2s. 6d. per packet.

Orders from unknown correspondents, inclosing Post-office order, will be punctually attended to. Postage stamps are respectfully requested in payment of the seeds.

A. VERSCHAFFELT, Nurseryman, Ghent, (Belgium), begs to inform Amateurs and the Trade, that he has just published his New CATALOGUE OF PLANTS for the present spring and summer, which may be obtained on application to his agent, Mr. R. Silberrad, 5, Harp Lane, Great Tower Street, London. A. V. begs to offer also his new work,

"L'ILLUSTRATION HORTICOLE."

Appearing Monthly, with a Number containing three fine coloured Plates, representing the best Trade Plants, accompanied with their description, culture, &c. Price 12s. a year.

The four first Numbers are out, and contain:—

First Number (January), Rhododendron album speciosum, Oncidium Barkeri, Philesia buxifolia.

Second Number (February), Epidendrum vitellinum, Abies bracteata, Sciadocalyx Warscewiczii.

Third Number (March), Maranta Warscewiczii, Azalea indica Beali, Ilex cornuta, Wellingtonia gigantea.

Fourth Number (April), Monochætum umbellatum, Odontoglossum Cervantesii, Skimmia japonica.

EUGENIA UGNI, a very fine new Myrtaceous plant, recently received by the Subscribers from Mr. Bridges, of Valparaiso, will prove hardy in most parts of Great Britain. It is figured in the January number (1853) of Curtis's "Botanical Magazine," and Sir William Hooker describes it as forming a charming Evergreen Shrub, the flowers and leaves of which are fragrant. This peculiarity alone would be sufficient to ensure its general cultivation, independent of its merits as an ornamental shrub of easy culture. Small established plants 21s. each. No discount unless three are ordered.

LAPAGERIA ROSEA; young plants in a growing state, 31s. 6d. each.

AZALEA INDICA (Beauté de l'Europe).—A new variegated variety of great merit—received a First Class Certificate at the National Floricultural Society, also at the Exhibition of the Society of Horticulture, of the Seine, held at Paris in March, 1853. It is one of the most abundant flowering Azaleas in cultivation. *Price* 7s. 6d.

BORONIA DRUMMONDI.—In the style of B. pinnata; colour, beautiful rosy crimson. Unlike other species of this genera, that now offered is of extremely easy culture, elegant habit, and will undoubtedly prove the finest greenhouse plant suitable for exhibition purposes that has been introduced to this country since the Subscribers offered for the first time Pimelea spectabilis. Price 7s. 6d. each. From the last three Plants usual discount will be allowed to the trade.

HUGH LOW & CO., Clapton Nursery, near London.

BASS and BROWN'S SEED AND PLANT LIST, free by post for three penny stamps.

FLOWER SEEDS—BEST ASSORTMENTS, free by post.

The Catalogue gives colours, heights, months of flowering, hardiness, duration, and much descriptive information of time of sowing, and other treatment.

	s.	d.
100 varieties select showy Annuals, including the newest	15	0
50 vars. do., 8s. 6d.; 30 vars., 5s. 6d.; 20 vars.	4	0
20 varieties best Dwarf Annuals, in large packets, for filling beds on lawns, 7s. 6d.; 12 do.	5	0
20 vars. choice Greenhouse Annuals, including the new, 7s. 6d.; 12 varieties, do.	5	0
20 vars. choice Greenhouse Perennials, including fine and new	10	6
12 varieties ditto ditto	7	6
20 vars. Hardy Biennials and Perennials, including very choice and new, 7s. 6d.; 12 varieties do.	5	0

The following we beg strongly to recommend as saved from collections of first-class flowers, in packets as follows:—

	s.	d.
Calceolaria, very choice, 1s.; extra superb, from fine selected flowers	2	6
Cineraria, very choice, 1s.; extra new and choice from our superb collection	2	6
Geranium, Scarlet, from our choice collection	0	6
Gloxinia, choice, 6d.; extra, from our superb collection ...	2	6
Petunia, new and choice, from our superb collection ...	1	0
Verbena, very choice, 1s.; extra, from our superb collection of new varieties	2	6
Antirrhinum, choice, 6d.; from new of our superb collection	1	0
Carnation and Picotee, from collection of 400 vars... ...	2	6
Gladiolus, fine mixed early, 6d.; from choice named of our superb collection	1	0
Iris, English vars, fine, 6d.; best of our superb collection...	2	6
Pansy, extra choice, from a first-rate collection	1	0
Potentilla, very choice, 1s.; extra, from our very beautiful collection	2	6
Ranunculus, from our superior collection	2	6

A FEW VERY CHOICE NEW FLOWER SEEDS.

Leptosiphon luteum, fine orange colour; very beautiful, packets, 1s. and	2	6
Nemesia bicolor, white and blue, very showy and attractive half-hardy annual, height 9 inches, beautiful for massing	0	6
Calceolaria chelidinoides, ex., clear bright yellow, fine for massing on lawns; the mouth being closed, it is not injured by wet	1	0
Lobelia Limburgensis, a new perennial variety from Prussia, extra	1	0
Portulacca aurantiaca, new orange, 1s.; nova rosea ...	1	0
Sweet William, very choice striped French	0	6

☞ Goods CARRIAGE FREE with orders of 20s. and upwards to London, Ipswich, Norwich, or any Station on the Line.

Remittances are requested with orders from unknown correspondents. Post-office Orders to be made payable to Bass & Brown, or to Stephen Brown.—The Autumn and Spring Catalogues supplied free by post for three penny stamps each, the cost of which may be deducted from orders sent.

BASS & BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk. Established about Half a Century.

EDWARD GEORGE HENDERSON and SON, Wellington Nursery, St. John's Wood, London, are now prepared to send out the following new plants:—

		s.	d.
FUCHSIA.—Monarch	... ...	10	6
GLOXINIA.—Duke of Wellington	... ...	7	6
"	Lady Franklin	7	6
GERANIUM.—Silver Queen	... ...	7	6
"	(Fancy) Bonnie Lassie	15	0
"	(Fancy) The Fornarina	10	6
"	(Fancy) Loveliness	10	6
	Hybrid Bedding Varieties.		
"	Picturata	3	6
"	Etoile de Vaise (Ivy-leaf)	3	6
"	Quercifolium eximium	7	6

The above three hybrid bedding Geraniums are also beautiful plants for pot culture, as they continue covered with flowers the whole of the season. VERBENAS:—

	s.	d.		s.	d.
Robin Hood	3	6	Beauty	5	0
Marie Antoinette ...	3	6	Matchless	3	6
Attraction	3	6	Diadem	3	6
Ariosto	3	6	Ne Plus Ultra	5	0
Madonna	5	0	Sulphur Model	5	0
Orion	8	6	Beauty of the Garden ...	5	0

The Set, 42s.

The above twelve distinct Verbenas have been Bedded out and proved the second season; the raisers are Messrs. Banks, Stewart, and Fozard. For descriptions of the above New Plants see back numbers of this paper.—April 29, 1854.

EAGLE and HENDERSON, Seedsmen, Nurserymen, and Florists to the Queen, from 81, George Street, Edinburgh, to the Seed Warehouse, at the Nursery Gate, Leith Walk. AGRICULTURAL SEEDS.

Per lb.	s.	d.	Per lb.	s.	d.
Broom	0	6	Timothy ... ... 6d. to	0	7
Carrot, fine large Altringham 1s. 6d. to	1	9	Turnip, Swede, Green-top ... ... 1s. to	1	2
Clover, Red ... 7d. to	0	9	Do. do. Purple-top 1s. to	1	2
" White, 8d., 10d., and	1	0	Do. do. Skirving's 1s. to	1	2
" Yellow ... 4d. to	0	5	Do. do. Laing's ... 1s. to	1	2
" Alsike, true, 2s. 6d. to	2	9	Do. Yellow, Green-top ...	0	9
Mangold Wurzel—Long Red	0	9	Do. do. Green-top Improved (Low's) ...	1	0
" Yellow Globe ...	1	2	Do. do. Purple-top ...	0	9
Parsnip, fine	1	6	Do. do. Skirving's ...	0	10
Rib-grass ... ... 6d. to	0	7	Do. do. Border Imperial	0	10
Per bushel.			Do. do. Hood's Improved	0	10
Rye-grass, fine Annual, 4s. to	5	6	Do. do. Gibbs'	1	0
" Perennial, fine, 4s. 6d. to	6	6	Do. do. Altringham, fine	1	6
" Pacey's Evergreen (28 to 32 lbs. per bushel) ... 8s. to	10	0	Do. do. Dale's Hybrid ...	0	9
" Moll's ... 7s. to	8	0	Do. White Globe ...	1	0
" Italian 4s. 6d. to	6	6	Do. Stone or Stubble ...	1	0
			Do. Green Globe ...	1	0
			Do. Red Globe	0	8
			Do. Woolton Hybrid ...	0	8
			Whin ... ... 9d. to	1	0

Natural Grasses, of sorts, at very moderate prices; Flower, Tree, and Kitchen Garden Seeds; Boiling and Split Peas, Bird Seeds, Double Superfine Mustard; Garden and Agricultural Implements, Saynor's Pruning Knives; Archangel Mats, Cuba Bast, Mushroom Spawn; fine Ornamental Vases, all sizes; Fruit, Forest, Ornamental Trees and Shrubs, Greenhouse, Herbaceous, and Alpine Plants, &c.

NEW AND SUPERB SHOW PANSIES, &c.

Adela (Turner)	Ethelred (Turner)
Androcles (Dickson & Co.)	Favourite (Hooper)
Black Diamond (Parker)	Miriam (Dickson & Co.)
Blanche (Turner)	Mr. Beck (Turner)
British Queen (Dickson & Co.)	Pandora (Hunt)
Cæsar (Marsh)	Queen of England (Fellowes)
Commander-in-Chief (Youell)	Robert Burns (Campbell)
Criterion (Hooper)	Sir J. Paxton (Dixon & Sons)
Duke of Perth (Handasyde)	Sultan (Hooper)
Euphemia (Turner)	Victory (Dickson & Co.)

The above set of 20 Superb Show Varieties, 15s., hamper, &c., included.

Amelia (Bragg)	Inventa (Hooper)
Addison (Turner)	Loveliness (Fellowes)
Blue Perfection (Byne)	Mrs. Beck (Turner)
Chieftain (Turner)	Nobilis (Bell)
Duke of Norfolk (Bell)	Ophir (Widnall)
Eustace (Turner)	Pompey (Hale)
Fair Flora (Byne)	Rubens (Turner)
France Cycole (Grieve)	Sir J. Franklin (Hooper)
Ibrahim Pacha (Edmonds)	Sir P. Sydney (Fellowes)
Juliet (Hooper)	Tymour (Bragg)

The above set of 20 fine Show Varieties, 10s., hamper, &c., included. Parties having duplicates of the above, others will be substituted of equal merit.

Extra Fine Selected Pansy Seed, 1s. and 2s. per packet.

Choice Auricula Seed, 2s. 6d. per packet.

25 pairs Show Varieties of Carnations, 1l.; 25 do. do. Picotees, 1l.; hamper, &c. included.

The Celebrated Pansy "Father Gavazzi" (Holland's), 5s. p. plant.

Post-office Orders to be made payable at Middleton, Lancashire. Catalogues on application, enclosing a stamp.

John Holland, Bradshaw Gardens, Middleton, near Manchester.

PAGE and CO., Seed Merchants to the Agri-Horticultural Society of Bombay.

SEEDS for EXPORTATION (free on board) and HOME USE (carriage paid).

		£	s.	d.
No. 1.	A choice collection of Vegetable Seeds, suited to the climate (case included)	£5	0	0
No. 2.	Do. Do. in smaller proportions	2	10	0
No. 3.	Do. Do. Do.	1	0	0
No. 1.	A selection of the most beautiful and showy Annuals (case included)	1	5	0
No. 2.	Do. Do. Do. ...	0	15	0
No. 3.	Do. Do. Do. ...	0	10	6

General Priced Catalogues free upon application.

In addition to our great experience, the port of Southampton affords us unrivalled facility for the almost daily shipment of Seeds to all parts of the world; and as no greater test of genuineness and vitality than a long transit by sea can be applied to Seeds, we yield priority to none in supplying such for home growth as cannot fail to prove most satisfactory.

All parties desirous of taking or sending Seeds to the Peninsula, Mediterranean, East and West Indies, Australia, Brazil, Cape of Good Hope, China, America, &c., are particularly requested to state their wishes to us, whereby the annoyance and disappointment which too frequently happens by placing their orders in the hands of inexperienced persons will be prevented. We are continually receiving the warmest thanks of our consignees; only a few days since, a gentleman writes from Melbourne, "Your Seeds have proved excellent. The selection of Peas has afforded us the greatest delicacy in Australia." From Capt. H. J. Barr, Secretary to the Horticultural Society of Bombay: "*Gentlemen,—In acknowledging the receipt of your last supply of Vegetable and Flower Seeds, which reached me on the 8th of June by the overland route, I have the honour to inform you that they have all turned out so fresh and good that the demands on our Society have increased so much that I must now cancel my former order, and beg you to supply me according to the list now furnished.*"

PAGE & CO.'S BLIGHT COMPOSITION should be in the hands of all Plant and Fruit Cultivators. For testimonials see back leaf of *Gardeners' Chronicle*, March 11.

Oxford Street (adjoining Radley's Hotel, 20 yards from the Railway and Docks), Southampton.

GRASS SEEDS, ETC.

THOMAS GIBBS and CO. (the Seedsmen to the Royal Agricultural Society of England), corner of HALF-MOON STREET, Piccadilly, beg to draw attention to their Grass Seeds for Laying down Land to Permanent Grass. The Seeds which they employ in forming the Mixtures for various soils are well cleaned under their own superintendence.

Mixtures for Permanent Meadows and Pastures
" Parks or Pasturage in sight of Mansions
" Irrigation on Water Meadows
" Renovating Old Swards
" Fine Garden Lawns, Cricket Grounds, &c.
" two or three years' lay.

RYE-GRASS—Italian, very fine sample
" Dickinson's Italian do.
" Pacey's Perennial and Evergreen
" Annual or Common.

CLOVERS—Red, White, and Alsike
" Trefoil, Red Suckling, &c.

CARROTS—Large White Belgian
" Field, Altringham, &c.

MANGOLD WURZEL—Long Red
" Orange or Yellow Globe, and other sorts.

TURNIPS—Swedes, Purple Top, Skirving's, &c.
" Hybrids, Gibbs' Green Top
" Globes, Tankards, &c.

FARM SEEDS of all descriptions.

Priced Lists, Detail Catalogues, and other information can be obtained on application to Thomas Gibbs & Co.

DAHLIAS.

JOHN KEYNES, in taking the present opportunity of expressing his acknowledgments to his kind friends for the favours conferred on him in past seasons, and in offering his Annual Catalogue for their inspection, trusts that the NEW FLOWERS recommended by him will continue to give that general satisfaction which it has been his pleasure to find has hitherto been so generally approved.

J. Keynes feels great pleasure in being able to offer this season such NEW FLOWERS as cannot fail to be appreciated. His unrivalled success in obtaining First Class Certificates with them must be a sufficient proof of their excellence; and wherever he has exhibited them they have called down unprecedented approval; in fact, they are considered by the first judges to be the best Collection of New Flowers ever offered, and will, without question, remain Standard Flowers for many years.

FANNY KEYNES (Keynes).—Light yellow, deeply edged with bright crimson, always full and close, compact eye, habit of Triumphant, and one of the most magnificent flowers ever offered; easy of growth, constant, quite up in the centre, every way the first of its class. 4 ft. 10s. 6d.

First Class Certificates.

National ...	... 3 blooms	Salisbury ...	... 6 blooms
Hackney ...	... 6 "	Surrey Gardens ...	3 "
Norwich ...	... 3 "	Edinburgh ...	... 3 "
Brighton ...	... 6 "	North London ...	6 "

Was never shown without obtaining a first class certificate.

RACHEL RAWLINGS (Keynes).—A pure peach, unrivalled form, exquisite flower, and whoever has seen it has acknowledged it to be one of the finest flowers they have ever beheld. 4 ft. 10s. 6d.

First Class Certificates.

National ...	... 6 blooms	Salisbury ...	... 6 blooms
Hackney ...	... 6 "	Surrey Gardens	... 3 "
Norwich ...	... 3 "	Edinburgh ...	... 3 "
Brighton ...	... 6 "	North London	... 6 "

Was never shown without obtaining a first class certificate.

COL. BAKER (Dodds).—Clear light sulphur yellow. This flower was grown by Mr. Dodds, who has been the most successful raiser of Yellow Dahlias, having had the best ever sent out in their day, particularly Yellow Standard, which is even now at times unrivalled. J. Keynes again offers the best yellow ever yet sent out in Col. Baker; very full, compact cushion eye, unrivalled symmetry, and constant. The smaliness of the stock has been the reason of its not being oftener seen; but where it has been shown it has received unqualified praise. 4 ft. 10s. 6d.

First Class Certificates.

National 3 blooms | North London 3 blooms | Salisbury 3 blooms.

Was never shown without obtaining a first class certificate.

MRS. RAWLINGS (Rawlings).—Blush white. The form of this flower is first-rate in every respect, the eye quite the summit, and the best blush without question, and a fit companion for Lilac King and Exquisite, which were sent out by the same grower last year. 3 ft. 10s. 6d.

First Class Certificate—Brighton.

JOHN KEYNES (Dodds). Pale salmon. This is another gem of the season, and must be grown by all exhibitors. Requires no cutting out, and will make a noble back row flower; of exquisite symmetry, eye well up, and every way first-rate. 4 ft. 10s. 6d.

Certificate at

National ...	... 6 blooms	North London	... 3 blooms
Brighton ...	... 6 "	Salisbury ...	... 3 "

LADY BATHURST (Brown).—This flower was raised by the grower of that unrivalled flower, Sir F. Bathurst; and J. Keynes feels confident that its companion is equal in every respect to it. Colour, rosy purple. One of the finest flowers in cultivation. 4 ft. 10s. 6d.

PRIMROSE PERFECTION (Keynes).—Pure bright primrose without shading, one of the most useful Dahlias ever offered; always producing fine blooms, and fit for any stand. Certificate at the National for its general good qualities. 5 ft. 10s. 6d.

FANCY FLOWERS.

With the exception of one first-class Flower, J. Keynes has been so fortunate as to secure all the Fancy Flowers which have made way this year in obtaining Certificates, which alone is a sure test of their merit, particularly when they have been exhibited at Great Shows, and tested by the best judges in the kingdom. A flower may take a certificate at a little provincial show, but let it bear the test of the National and Metropolitan judgment, and if it obtains a first class certificate its success is sealed, and it comes out with confidence and honour. Scarcely one flower of J. Keynes's but has passed these tests, and been victorious.

LEADER (Keynes).—Lilac, ticked and striped with maroon; finest stripe yet offered. 4 ft. 10s. 6d.

First Class Certificates.

Salisbury ...	... 6 blooms	Hackney ...	... 6 blooms
National ...	... 3 "	Surrey Gardens	... 3 "
Brighton ...	... 6 "	North London	... 6 "

MARVEL (Pope).—Yellow, striped red. A most constant, useful, and beautiful flower, always to be depended on, and first class in every respect. 4 ft. 10s. 6d.

First Class Certificates.

National ...	... 3 blooms	Slough... ...	... 3 blooms
		Teddington ...	... 3 "
Surrey Gardens	... 3 "	Hackney ...	... 3 "
North London	... 3 "	South London	... 3 "

TOPSY (Keynes).—Colour of Elegantissima, but infinitely superior; always to be depended on, and one of the finest fancy flowers in cultivation. White, edged and mottled with purple. 3 ft. 10s. 6d.

First Class Certificates.

Salisbury ...	... 6 blooms	Hackney ...	... 6 blooms
Surrey Gardens	... 3 "	North London	... 3 "

UNCLE TOM (Dodds).—Red, tipped white; superior in constancy to Nancy; good eye, always full. 3 ft. 10s. 6d.

Fine Plants, as usual, in May, 1854, with plants to compensate for carriage.—Castle Street Nursery, Salisbury.

THE ELVETHAM MANGOLD WURZEL.—Having taken the precaution of supplying only half the quantities ordered (except in a few instances where small lots only were required), we have now a little Seed left for sale.

For the information of those who have not yet seen this superior new sort, we quote the following from among many other similar letters:—

From Col. Kingscote, Kingscote Park, Dec. 5, 1853.

"I could not wish for a better crop than I have of the Elvetham Long Red Mangold Wurzel; it succeeded with me far beyond what I could expect; the crop was a very heavy and even one, and far superior to either my Yellow or Red Globe."

From J. . Seaman, Esq., West Cliff Cottage, Bideford, Dec. 5, 1853.

"I have had a most excellent crop of Mangold Wurzel from the Seed I had of you last April. I have had the Elvetham weighing 31 and 32 lbs., and Yellow Globe upwards of 25 lbs. each."

From Charles Pagot, Esq., Ruddington Grange.

"The difference was so great between the Elvetham and the other Long Red Mangold Wurzel that I should have preferred it at three times the price."

From Mr. Houghton, Steward to Lord Calthorpe.

"Elvetham Mangold Wurzel is the best we ever had; nothing else will go down here."

The crop of SEED having been short, the price this year is 2s. 6d. per lb. Yellow Globe and other sorts at lowest market prices, as Seed Catalogue. Orders will be executed in strict rotation.—Address,

JOHN SUTTON AND SONS, SEED GROWERS, Reading, Berks.

TO DAHLIA GROWERS.—EDWIN HARRISON (PERRY'S), is the most brilliant crimson Dahlia ever raised; build and form of General Fauchier, and more constant than any crimson Dahlia in cultivation. No grower can be without it; as an ornamental plant it has no rival. It has obtained one first-class Certificate and three first Prizes as the best crimson Dahlia, beating all other varieties. Plants in May, 10s. 6d. each.

ALEXANDER POPE (PERRY'S), is a constant well-formed Dahlia, with very high centre; colour pale lemon. It has obtained one first-class Certificate and two first Prizes as the best yellow or buff Dahlia. The *Gardeners' Chronicle* says—"We like the flower much for its novelty." Plants in May, 7s. 6d.

Early orders are solicited, as the stock is small.—HENRY POPE, Gib Heath, near Birmingham.

STANDISH AND NOBLE, NURSERYMEN, SEEDSMEN, &c., Bagshot, Surrey, are now prepared to receive orders for the following new and beautiful varieties of AZALEAS, which will be ready for delivery in June next. The Advertisers can recommend them with the greatest confidence, as superior to any others of their kind.

AZALEA BEALII.—This very distinct variety was introduced by them from China. The flowers, which are of first-rate shape, are quite unique, being striped, like a Carnation, with rich vermilion on a pure white ground. It is of good habit, fine in foliage, and a most abundant bloomer; and although decidedly in the first rank as a greenhouse plant, it is quite hardy enough for the open border. Each, 21s.

AZALEA CRISPIFLORA, a species differing much from any other known Azalea, having a character entirely its own. No other kind approaches it in compactness of habit, and its foliage is very fine, abundant, and evergreen. The flowers are very large, and the edges of the petals have the appearance of being irregularly *gaufred*, like a lady's frill; the colour is a rich rose lake. From the fact of its blooming very late—much later than any other Azalea—it will be doubly valuable for many purposes. Each 21s.

MITCHELL AND CO., having a large Stock of the following, are enabled to offer good, strong, healthy Plants at the annexed prices.

FUCHSIAS.—The following fine varieties of 1853, viz.: Alba multiflora, Belle of Barton, Beauty (Smith's), Collegian (Banks'), Duchess of Lancaster (Henderson's), England's Glory (Harrison's), Glory (Banks'), Incomparable, (Maple's), L'Elegant, Lady Franklin, Mrs. Patterson (Patterson), Miniata, Premier (Henderson's), Purple Perfection (Henderson's). The collection of 14 for 12s. 6d. A choice selection of older varieties—Agnes, Beauty of Deal, Cartoni, Crystal Fountain, Flavescens, Gem of the Season, Globosa Perfecta, Hendersoni, Nonsuch, Peculiarity, Princess, Purity, Resplendens, Splendidissima, the collection of 14 for 9s. Fine Mixed Bedding Varieties, 4s. per dozen.

PHLOXES of the choicest varieties, by name, 6s., 9s., 12s., and 18s. per doz., strong plants.

Also their choice collection of TREE CARNATIONS, consisting of the most improved continental varieties, our own selection, by name, 9s., 12s., 18s., 24s. per doz.

GERANIUMS of 1853.—Any 12 of the following choice varieties may be selected for 42s.; our own selection for 36s.; or the collection of 17 for 54s. Strong healthy plants in 48 size pots:—Dobson's Harriett, Jupiter, Spot, Vulcan; Hoyle's Attica Albinia, Butterfly, Kulla, Lagoma, Leonora, Novelty, Portia, Zaria; Foster's Eleanor, Optimum, Rachel, Queen of May.

CHOICE HELIOTROPES.—Gem, Madame Boucharlet, Souvenir de Liege, Voltaireanum nanum, 6s. per doz.; mixed varieties of ditto, 3s.

Goods carriage free, for orders not under 20s., to all London terminuses, and to all stations on the London, Brighton, and South Coast Railway. Plants added gratis with all orders of 30s. and upwards. Post Office orders expected from unknown correspondents payable to MITCHELL & Co., or JOHN FAIRBROTHER, Brighton Post Office.

Bristol Nurseries, Kemptown, Brighton.

HONEYSUCKLE VERBENA.—So named for its delightful perfume, which is so near the odour of the Honeysuckle that it cannot be distinguished from it. Last season it was the constant inquiry of visitors at the Nursery Grounds if Honeysuckles were growing near, or what flower so much resembled them in fragrance, and on being informed it was the above new variety of Verbena, they were much surprised, and immediately ordered plants of it. Description—viz., compact habit, fine glossy foliage (will do excellently for bedding, or as a plant for pot culture), long stems to flowers, making it very useful for bouquets—blooms most abundantly; colour rich dark crimson, shaded lilac, very distinct eye; the truss of a fine globular shape, generally measuring 9 inches in circumference, all the pips fully expanded. It will force well during the winter, being a great advantage for cutting, or for its perfume in a greenhouse or conservatory at that season of the year; it will also stand the sun and rain during summer better than any other Verbena. A few blooms added to a bouquet will give it the scent of the sweetest Honeysuckle. Fine strong plants are now ready for sending out, at 5s. each.

LOBELIA LINDLEYANA.—The subscriber having purchased the whole stock of the above new Lobelia of Mr. Keynes, Salisbury, he begs to offer it to the public. It was awarded a Certificate of Merit at the Horticultural Society and National Society of London, June 1853. Description—viz.: Habit, dwarf and compact, flowering very freely, covering the whole surface of the plant; distinct in colour from all others yet out, being a bright rosy lilac. It is an excellent bedding variety, and will be sure to please every one who grows it, especially for its distinct colour and profusion of bloom. Strong plants now ready at 3s. 6d. each.

The usual allowance to the Trade when three plants of either are ordered. On receipt of a post-office order or penny postage stamps to the amount, the plant or plants will be sent postage and package free.—EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church Yard, Bath, Somerset.—April 29.

TRUE ALSIKE CLOVER.

GENUINE NEW ALSIKE CLOVER SEED may now be had at 2s. per pound, and Common Clovers at 5d. to 9d. per pound, of JOHN SUTTON AND SONS, Seed Growers, Reading, Berks.

NEW ROSES IN POTS, at reduced prices.

HYBRID PERPETUAL.	s.	d.	HYBRID PERPETUAL.	s.	d.
Archimede	5	0	Souvenir de Mdme. Lille	5	0
Colonel Lorry	5	0	Triomphe de Paris ...	5	0
Docteur Reynaud ...	2	6	BOURBON.		
Duchesse d'Orleans ...	5	0	Beauté Lyonnaise ...	3	6
James Veitch	5	0	Madame Helfinbein ...	5	0
Lady Shelley (Mitchell's)	5	0	Souvenir de l'Arquebuse	5	0
Lady Stuart	5	0	TEA.		
Le General Jacqueminot	10	6	Gloire de Dijon	10	6
Leon Plee...	3	6	MOSS.		
Mdlle. Aline Gilbon ...	10	6	Princess Alice (Paul's)...	5	0
Madame Harriet Stowe...	10	6	HYBRID CHINA.		
Madame Philip	5	0	Vivid (Paul's)	5	0
Rubens	3	6	HYBRID BOURBON.		
Salvator Rosa	3	6			
Sephora	7	6	President Pierce... ...	7	6

The following Choice Hybrid Perpetual Roses, at 30s. per doz.: Dr. Assas, Destigny, Diodore, Egerie, Genié de Châteaubriand, Inermie, La Seduisante, L'Enfant du Mont Carmel, Léon le Guay, Louise Odier, Laura Raymond, Louise Peronny, Ludovic Letaud, Madame Andry, Madame Flory, Madame Ducher, Madame Hilaire, Madame Rivers, Mére de St. Louis, Rose de Soil, Souvenir de la Reine des Belges.

BENJAMIN R. CANT, in offering the above, does so with the greatest confidence, as he has received several letters from customers stating that the plants sent are far better than those generally supplied by the Trade.

ST. JOHN'S STREET NURSERY, COLCHESTER.

Carriage paid to London and Norwich and all intermediate stations on the Line. Unknown Correspondents are requested to send a remittance or reference.

GERANIUMS.

SEVERAL THOUSANDS OF THE BEST IN CULTIVATION, VERY FINE AND STRONG.

BASS AND BROWN *beg to refer purchasers who wish to make their own Selection to their advertisements in the* Gardeners' Chronicle, *of March 27th, page* 179; *and April 8th, page* 210, *of these and many other new Plants:—*

	s.	d.
18 Best new of last season	66	0
12 " "	44	0
30 Very choice, of previous date	45	0
12 " "	18	0
Fine vars., 6s. to 12s. per dozen.		
6 Best Fancy vars of last season	18	0
12 Very choice of previous date	18	0
Fine vars., 9s. to 12s. per dozen.		
GLOXINIAS.		
9 Superb new vars.	33	0
12 Very choice "	20	0
12 Other fine "	12	0
ACHIMENES.		
4 Superb new vars, see previous advertisements	11	0
12 Beautiful and choice vars.	10	0
GREENHOUSE PLANTS.		
50 Fine and select species and vars.	45	0
25 " "	24	0
12 " "	12	0
12 Extra choice and select	25	0
STOVE PLANTS.		
25 Fine and select species and vars.	35	0

HERBACEOUS PLANTS.—In pots. Heights and colours, see Autumn Catalogue.

	s.	d.		£	s.	d.
100 Distinct and showy vars.,	30s.	0d.,	or 50 for	£0	17	6
25 " "	10	0	or 12 for	0	6	0
100 Superior and new vars.,	50	0	or 50 for	1	10	0
25 " "	17	6	or 12 for	0	9	0
25 Vars., best for Rockwork	12	0	or 12 for	0	7	6
DWARF ROCK CISTUS, 24 Beautiful vars.,				0	15	0
" 12 "				0	7	6

☞ An extensive assortment of Bedding Plants.

Goods Carriage free (not under 20s.) to all the London Termini and all Stations on the London and Norwich Colchester Line; and Plants added gratis with orders of 40s. and upwards.

Post-office Orders payable to BASS & BROWN, or to STEPHEN BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

TURNIP SEEDS.

THE SUBSCRIBERS are now selling, from a large and carefully selected Stock, the following varieties of TURNIP SEEDS. Prices are moderate.

SWEDES.—Skirving's Purple Top. (*On strong clays or other heavy soils no variety of Swede will produce so bulky a crop as this.*)

" Lothian Purple Top. (*An established well known sort, rounder shape than Skirving's, and does not grow so much to "long necks."*)

" Hardy Green Crop. (*There is nothing to equal this variety for* mellow *and* peaty *soils. It is less liable to* ROT *than any other Swede, and it possesses excellent feeding properties, being crisp, juicy, and sweet.*)

" Laing's Improved. (*A beautiful shaped bulb, and on rich loamy soil yields a great crop, but is not equal in hardiness to any of the preceding.*)

YELLOWS.—Green Top, or Aberdeen Bullock — Improved Stock. (*It is questionable if there be a better Yellow Turnip than this, provided it be grown from a properly selected stock; it has, however, above all others, in too many instances, disappointed the farmer in consequence of the spurious character it has assumed through a bad stock of seed, which, instead of giving a heavy crop of large well shaped bulbs, with moderate sized tops, produce only stunted small bulbs with a profusion of large coarse tops.*)

" Improved Purple Top Aberdeen—Skirving's variety. (*A very superior sort, yielding a heavy crop, but is not considered equal in hardiness to the preceding.*)

" Dale's Hybrid. (*Yields a very heavy crop, and is a first-rate kind for early winter consumption. From the bulbs growing considerably above ground, it is well adapted for sheep feeding.*)

" Improved Early. (*A superior sort; bulbs large and finely shaped, with small top and tap root. Unless wanted for early use it should not be sown till the end of June, and sowing may be continued up to the middle of July, with the certainty of having a good crop.*)

WHITES.—Large Globe,

" " Green Globe Imperial. (*A superior hardy sort.*)

" " Red Globe.

Priced Lists of the above, with every other description of Farm Seeds, may be had on application, post free.

All parcels of Seeds are delivered carriage free to the principal Railway Stations and Shipping Ports throughout the kingdom.

W. DRUMMOND & SONS, Seedsmen, Stirling, N. B.

CHOICE AND RARE SEEDS

OFFERED BY

WILLIAM DENYER, SEEDSMAN and FLORIST, 82, Gracechurch Street, London, near the Spread Eagle.

	s.	d.
AQUILEGIA, 6 distinct and beautiful colours	2s.	0d.
STOCKS—Autumnal, or late flowering, 6 varieties ...	2	0
" Emperor, or Perpetual, 6 vars. splendid ...	2	0
(These are quite new, and different to any other Stock, being very double and of large growth, lasting and flowering for several years.)		
" Hybrid, 3 distinct and brilliant colours, yellow, rose, and white	1	6
WALLFLOWERS, 6 gigantic double varieties, bright and singular colours	2	0
(These are from a Continental grower, who has gained many first class prizes.)		
ANTIRRHINUM, from a superb collection (saved by an amateur)	1	0
LINUM GRANDIFLORUM RUBRUM VERUM ...	1	0
(A new and splendid Perennial Flax.)		
LEPTOSIPHON LUTEUM, splendid fawn colour, with dark crimson centre	1	0
PRIMULA SINENSIS FIMBRIATA (saved from the best fringed flowers, varying in shades of colour from white to crimson)	1	0
TROPÆOLUM MINUS COCCINEUM (a dwarf-growing and beautiful variety, well adapted for pot culture)	1	0

NEW DAHLIAS, ETC.

THOMAS BARNES begs most respectfully to announce that he is now prepared to send out fine healthy plants of the following, all of which will be found deserving a place in the most limited collections.

DAHLIAS.—Show Flowers; 10s. 6d. each.

INDISPENSABLE (BARNES). — Bright clear yellow; best ever offered.

JOHN W. HEDGE (BARNES).—Lilac and purple, distinct and fine; constant.

DANECROFT BEAUTY (BARNES).—Peach-tipped rose; fine shape and centre.

NEW CONTINENTAL VARIETIES.

EVA.—Pure white shaded peach.

LE DIVAN.—Scarlet and maroon shaded.

LE GRAND SULTAN.—Black crimson, shaded rose.

MENTOR.—Lilac, with metallic shade.

OMER PASHA AMARANTH.—Red bluish shade.

GOSSIP (Fancy).—Delicate lilac, white tips; 7s. 6d.

All the leading varieties of last season, 24s. per dozen.

Older sorts of approved merit, 9s. per dozen.

Six new seedling PETUNIAS, 3s. 6d. each, or 18s. the set.

Three new seedling VERBENAS, 12s. the set.

20 Continental varieties of VERBENA, quite new, 2s. 6d. each, or 24s. per dozen. Descriptive Catalogues on application.

Danecroft Nurseries, Stowmarket.

MESSRS. J. AND H. BROWN offer the following SELECTED PLANTS, &c., which they will forward to any part of the Kingdom.

	s.	d.
25 Azaleas, new Hardy Belgian Varieties, on their own roots, with flower-buds, one of a sort by name ...	20	0
25 American Azaleas " " ...	15	0
25 Hardy American Plants, one of a sort by name ...	10	6
12 Hardy Heaths and Kalmias	6	0
12 Rhododendrons, including Scarlet, White, and Rose ...	12	0
12 Fine Hardy Scarlet Rhododendrons	18	0
Climbing Roses of choice sorts in pots, per dozen ...	6	0
Passifloras, Clematis, Jasmines and others, in pots, per dozen	10	0
6 Fine Hardy Magnolias, one of a sort	10	6
12 Greenhouse Azaleas of the leading sorts	20	0
24 Choice Ericas, one of a sort by name	16	0
12 Orchidaceous Plants, choice species and good plants ...	50	0
50 Choice Greenhouse Plants, one of a sort	45	0
Verbenas, Petunias, and Calceolarias, best sorts, per doz.	6	0
Yellow Picotees, Carnations, and Pinks, per dozen ...	10	0

A Selection of the most approved Flower Seeds, 18 Papers, 5s.; 36 Papers, 10s. Sent free by post. Also, Catalogues of Plants, &c.

Albion Nursery, Stoke Newington, London.—April 29.

PAGE AND CO.'S

BLIGHT COMPOSITION should be in the hands of all Plant and Fruit Cultivators. 4s. per gallon, sufficient to make four. For testimonials see back leaf *Gardeners' Chronicle*, March 11, 1854.

GARDEN AND AGRICULTURAL SEEDS, first quality, and lowest market price.

Oxford Street (adjoining Radley's Hotel, 20 yards from the Railway and Docks), Southampton.

The Gardeners' Chronicle.

SATURDAY, APRIL 29, 1854.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	May	1—Horticultural (Anniversary)....	1 P.M.
TUESDAY,	—	2—Linnean	8 P.M.
FRIDAY,	—	5—Botanical	8 P.M.
SATURDAY,	—	6—Royal Botanic......	3½ P.M.

COUNTRY SHOWS FOR THE MONTH OF MAY.—3d: Cheltenham.—15th: Hammersmith Pansy.—18th and 19th: Exeter.—23d: Handsworth and Lozells.—24th: Nottingham and Colchester.—25th: Derby.—26th: Bury St. Edmunds.—29th: Hunslet.—30th. Truro.

IT is to be feared that all round London the hopes of the gardener have been destroyed by a sudden and most SEVERE FROST on the night of the 24th inst. From the 18th to the 20th the weather was excessively hot for the period of the season, the thermometer indicating 77° in the shade on the 19th; and as high as 95° in the sun on the 21st. A strong gale commenced from north-east on the night of the 22d, and continued on the 23d, on the night of which there was 1° of frost; but the blossoms were safe. On the evening of the 24th there was 1° of frost at 10 P.M.; but during the night the thermometer fell to 18°—or 14° below freezing, notwithstanding the heat arising from the ground. Where this heat was prevented from affecting the thermometer by a radiator, the temperature of the air was as low as 12°.

The frost was what is termed a black frost, of the most pervading description. Apple, Pear, Plum, and Cherry blossoms are everywhere killed. There may be a few from later blossoms, and a few naturally late-blooming Apples, but all the most valuable are completely destroyed. Peaches and Nectarines on a good south wall have suffered, but such of the young fruit as were leaning against the warm wall are supposed to be safe. The shoots of Walnuts are hanging wet, black, and soft, as if parboiled.

There is no record of the thermometer having been

thus low in April, near London, in the present century at least.

Accounts from the surrounding counties are to the same effect. Near Tunbridge Wells the thermometer fell to 25°, and the most abundant young crop of Apricots, Peaches, and Pears which had been seen for several years was entirely destroyed. In Hampshire, near the Andover Road Station, betwixt 4 and 5 o'clock, the thermometer was 14° below the freezing point. The whole of the blooms on the Cherries, Pears, Plums, and Apples totally perished; also the young Apricots, which were larger than Damsons, and all the Greengage Plums, as well as Rhubarb, and every Asparagus head which was above ground. Such destruction had never before been seen by our correspondent.

At Sawbridgeworth, although Mr. Rivers observed the thermometer no lower than 25°, all the wall fruit which was not well covered, all the standard Pear, Plum, and Cherry blossoms, and the greater part of the Apples, if not all, utterly perished.

Near Worthing the common Box lost nearly all its *old* leaves; our informant assures us that he found the inside of them a solid plate of ice.

Next week we shall no doubt have abundant confirmation of this sad announcement.

Having lately called attention to the resources which we possess for paper making in our very weeds, some of which will grow well in our most barren soils, we return to the subject, to show that our colonies also possess abundant stores of similar material, but which are at present allowed to run to waste. This may appear an unimportant subject to some, for they hastily conclude that there must always be plenty of rags for all that is required; but if each educated person will consider the quantity of paper which he himself makes use of for writing, for packing, or for the periodicals and books which he purchases, and place against it the quantity of linen or of calico which he wears out in the year, he will readily admit that the latter quantity comes far short of the former. Every tradesman, moreover, wants much for the details of his business, while even the poor man has his cheap periodical and his share in a newspaper. In addition to this, the consumption is expected greatly to increase whenever the duty on paper is taken off, as being "a tax on knowledge."

Notwithstanding the enormous consumption, there is no doubt that this is susceptible of still greater extension, for even in a country like China, as we have been informed by an excellent observer, only those who have resided in that peculiar country can be aware of the very extensive uses to which paper is applied, or of its varieties, from the thin and bibulous ordinary paper and the coarse heavy half-inch-thick touch-paper, for retaining a slow enduring fire, to the beautiful Indian (or rather Chinese) paper, suited for our finest proof engravings. He moreover adduces the tea-chests, as showing the great economy of wood, and the lavish use of many thicknesses of paper coating its sides and greatly strengthening them. Again, in a leaky hut or boat, the bed is protected over-head by a very large sheet of oiled paper, so slanted that the rain shoots clean off the sleeper; or, does a shopkeeper want to tie up your parcel, he seizes a strip of tough paper, and by rolling it on his thigh, at once converts it into a strong pack-thread. Even patches on a torn boat's sail are, at times, made of tough paper. It is the cheapest of materials in daily use, and the manufactories are very numerous and simple in machinery, being situated on the banks of their rivers, of which the water is soft and well adapted for the purpose.

We do not adduce these various applications as susceptible of adoption in this country, but to show that, if the Chinese can, by making use of common materials, produce paper at so cheap a rate, the same thing may be done in other countries, by adopting the same methods—that is, by making use of the common plants of their country, and of which every country produces a great abundance, similar in nature, and applicable to the same purposes. Thus, Rice-straw is the substance most commonly used for their wrapping paper. The young shoots of the Bamboo, macerated in water, and then pounded in mortars, is another common material. The refuse of the various fibrous plants, and the inner bark of the Morus, now Broussonetia papyrifera; Indian gunny bags, which are usually made of Jute or Corchorus olitorius; and also cotton and silk refuse rags are all converted into paper. No doubt, the peculiar properties of the paper are due to the materials from which it has been made, as the thin and bibulous from Rice straw, and the fine and tough probably from the Broussonetia. So in India, another anciently civilised country, and where the manufacture has long been known, we have paper made from cotton, from the fibrous materials obtained from Malvaceous and Tiliaceous, as also from Leguminous plants; while in the Himalayas, immense sheets of very tough paper are made from the inner bark of Daphne cannabina.

Having adduced the above facts, on account of the inference to be drawn from them, we may, in addition to our former article pointing out the numerous plants in Europe, belonging to the very same families as many of the above, direct attention to the still more numerous plants in our colonies, equally applicable to the very same purposes, and which, now growing in rank luxuriance, are yearly burnt down, or are allowed to rot without enriching the fields where they have been grown. Though we may not, like Schaffers, look upon the world as "one vast mass of latent material for paper," yet it will not be difficult to point out, as we shall do in a future article, a number of plants which are at present grown profitably for other purposes, and of which the stems are capable of yielding materials for paper making, and which are at present made no use of—not even, as we have stated, for manuring the soil. We believe it would be quite as economical to collect some of these fibres for the express purpose of paper making, as to rake rags together from every hole and corner, and which, after all, are not very cheap, and take some trouble in sorting, in cutting and cleaning, as well as in bleaching, before they can be reduced to pulp fit for the use of the paper-maker.

We have now before us good writing paper prepared from deal shavings by Messrs. Watt & Burgess, under a patent they have taken out. By some unexplained process the pulp is prepared in such a condition that it may be immediately made into paper in a common paper mill.

Another correspondent, whose letter will be found in a neighbouring column, transmits from Ireland the fibre of Gorse, which seems to be so well suited to the same purpose that an eminent paper maker, to whom we have submitted it, values it at from 8*l.* to 12*l.* a ton. And a material, inferior, indeed, but reported to be most abundant near Ballina, in Ireland, and suited to common purposes, has been placed in our hands by Mr. Billington. It therefore seems clear that we have only to exert ourselves a little, in order to overcome the difficulty which at present threatens to extinguish every low-priced periodical in the kingdom.

It is announced that the Natural History Society of Athens, alarmed at the progress made in Greece by the Vine Disease, has invited communications upon the subject, for the best of which a gold medal is offered, value 400 drachmas, with the head of King Otho on one side, and the name of the author on the other. We suspect that in this country candidates would prefer the medal without his Majesty's bust upon it. The treatises may be written in Greek, Latin, Italian, French or German, and must be delivered to the Secretary, at Athens, upon the 13th January, 1855.

We believe the drachma is worth 9*d.*; so that the person who shall succeed in relieving Greece from the pest which is annihilating an important part of its produce, will be rewarded with the munificent prize of fifteen pounds sterling, or what, on the honour of a Greek, is equal to it. We hope the likeness of King Otho does not form part of the value.

VEGETABLE PATHOLOGY.—No. XVII.

71. Besides the normal buds, adventitious buds occur on various parts of plants, as on the stem and ligneous roots, when the tree has been severely pruned or lopped, or even under ordinary circumstances in such plants as have a peculiar tendency to their production. Such buds may be either truly adventitious—produced, that is, entirely independently of the normal arrangement of the leaves; or truly latent—that is, formed one or more years previously, but never before fully developed.

72. Buds exist in the axils of all leaves, at least of exogens; but besides these axillary buds, lateral buds often exist at the base of the former, which do not seem referable to any bracteæ.

73. Adventitious buds, like their analogous roots, arise in most cases from the vascular tissue of the wood. Their base, according to the observations of Trécul, is first formed before there is any trace of stem, and the first traces of vascular tissue occur in this part frequently before the appearance of any leaves; the true tracheæ are not formed till a later period, but reticulated vessels, which are soon transformed into dotted vessels* where adventitious buds occur in other situations, as in the bark, leaves, &c., they are probably always in connection with vascular tissue.

74. A curious form of latent buds often occurs in the bark of trees, called embryo buds, knaurs, &c., on the origin of which much light has been thrown very lately by Trécul. Perfectly independent woody nodules are thus formed in the bark, which increase by the additional or external concentric layers, a fact which is most strongly opposed to the notion of woody tissue being due to roots descending from buds. As these nodules present a peculiar form of disease, they will be more particularly considered in some future division of this treatise.

75. Every leaf bud contains in itself all that is needful for the reproduction of the tree; and, therefore, provided its life can be preserved unimpaired for a sufficient time, either to allow of the formation of adventitious roots to imbibe the necessary moisture, or for adhesion to take place between its surrounding tissue and that of the plant on which it may be inserted; provided also the nature of the plant on which it is inserted be congenial to its constitution, development will take place, and all the peculiarities of the parent plant, in some instances, however slightly modified, will be presented by the young shoot. On this depends the success of the various modes of budding and grafting practised by gardeners, and of the rearing of trees by cuttings, for the protection of the severed tissue of which from external agents a solution of gun cotton in ether has lately been used with much advantage.* Propagation has also been effected by the insertion of a portion of bark; but when this is the case, the new shoots must arise either from a latent or adventitious bud.

76. Buds either contain in themselves a store of nutriment, ready for use on their first development in spring, or are in close connection with such a supply. In some cases, as in the aerial bulbs of Lilium bulbiferum, and several species of Allium and Dentaria, these component leaves are transformed into thick scales, abounding in nutriment, and the whole readily becomes detached, forming a prolific and speedy mode of reproduction. True bulbs, whether central or lateral, differ in nothing except in size. In speaking of roots, the true nature of tubers, corms, &c., was indicated, the exact distinction of which is of great importance in descriptive botany. The large spongy bodies which occur in the capsules of some species of Crinum and allied genera, though possessing no evident imbricated structure, may be considered as a sort of buds.†

77. In many bulbous plants, whether truly bulbous or exhibiting bulb-like modifications of the axis, stem, &c., the buds may be traced which are destined to propagate the plant after a lapse of one, two, or even three years.‡ Numerous instances will be found in the work Irmisch on Bulbs and Tubers, to which attention has already been directed. *M. J. B.*

* See Trécul's Memoir on the Origin of Adventitious Buds. Annales des Sciences Naturelles, November, 1847.

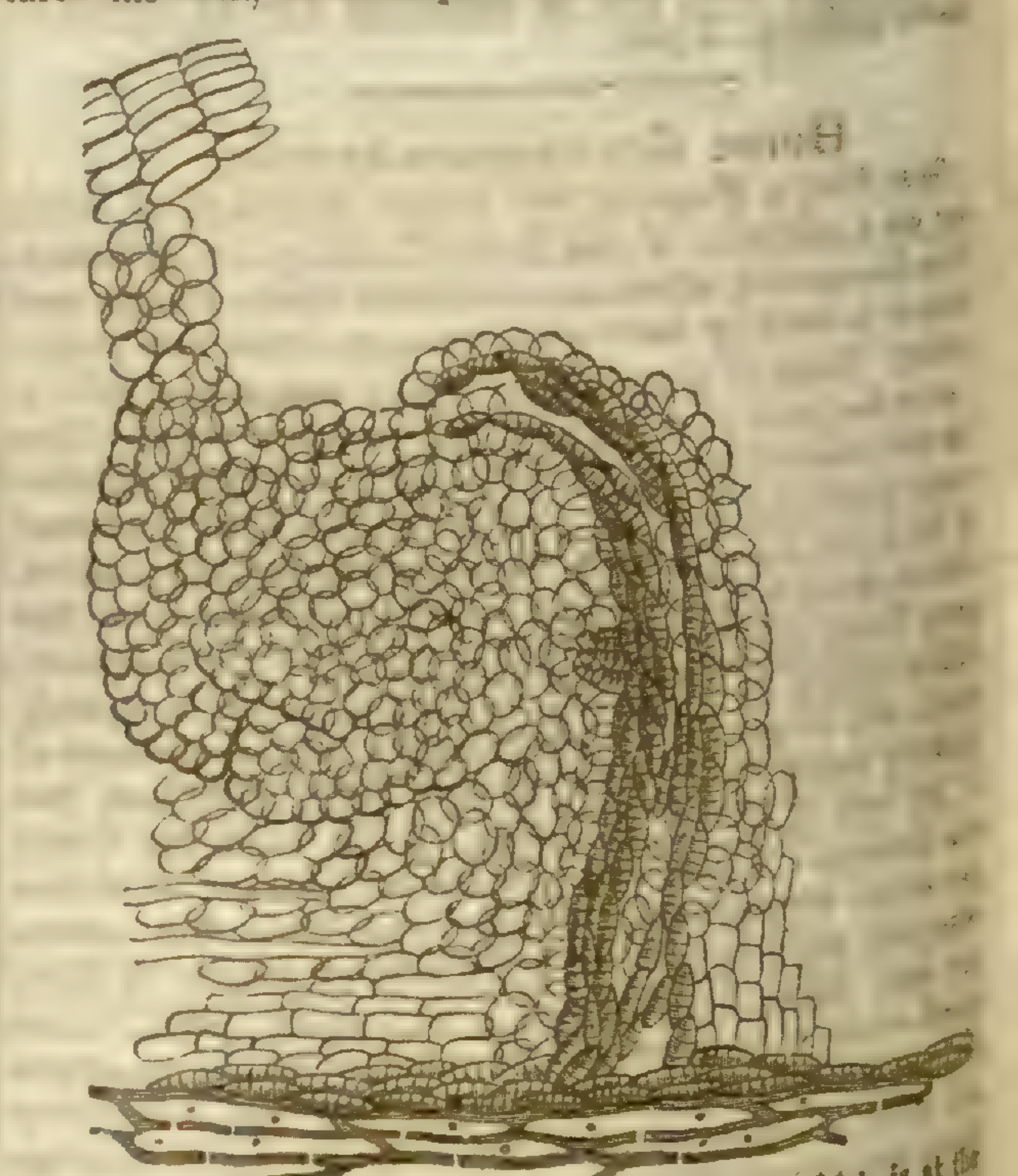
EUPHORBIA JACQUINIFLORA.

When seen in the form of moderately well-grown specimens, covered with brilliant scarlet flowers, few plants have a more striking appearance than this, and perhaps there is not another of equal beauty in cultivation whose flowers remain so long in perfection. Unfortunately this species is of a straggling habit, and it is not easily induced to form anything like a handsome specimen, but it is a free grower and by no means delicate, and, with proper attention to stopping, &c., fair specimens may be obtained at no great expense of time or attention.

---

* The solution may be preserved in a fluid state, by keeping it in a bottle and inverted in water. There can be no doubt that when it can be obtained at a reasonable price it will prove a valuable acquisition to the cultivator and physiologist, wherever it is requisite to prevent the access of external air or moisture.

† The analogy between buds and ovules is pretty generally allowed. The resemblance between the adventitious buds of *Ailanthus glandulosus* at their first origin, before they have ruptured the bark, to anatropous ovules is very striking, as ex-



hibited in the annexed woodcut from Trécul, which is at the same time illustrative of the mode of formation of adventitious buds in general.

‡ A great deal of very interesting information on the endurance of buds in trees, or of the power of producing new buds in trunks which have been removed for many years from the soil, will be found in a paper by M. Pepin in "Annales des Sciences Naturelles," sér. 2, vol. 15, p. 269. A curious instance is afforded by the dormant condition of the roots of some Orchids where circumstances are not favourable for their development. Certain species appear constantly in particular woods for a year or two after the copse has been cut, but are not seen again, though carefully sought for, till the rotation of the clearing of the underwood returns; and this not only in the case of such species as the Fly and Bee Orchis, but of varieties of Epipactis.

Propagation is easily effected by cuttings, either of the young wood in a moderately firm state, or of the shoots after flowering, and strong pieces of the roots answer equally well. The cuttings should be planted in thoroughly drained pots or pans, in sandy peaty soil, covered with a bell-glass, and placed in a mild bottom heat, taking care, in the case of cuttings of the young wood or roots, not to give too much water; and those made of the points of the flowering shoots will be more certain to root, if allowed to stand for a month in a shady part of a moderately warm house before placing them in bottom-heat. When the cuttings are fairly rooted, pot them singly in small pots, and place them in a shady part of a pit, where a warm humid temperature is maintained, until they become well established, after which they must be kept near the glass and freely exposed to light, to prevent long-jointed weakly growth. As soon as the young shoots are a few inches long, and sufficiently firm to bear handling, bend them carefully, so as to check the flow of the sap to the points, and when the lower buds become prominent pinch out the points; for very little will be gained by stopping unless means are used to get the lower buds prominent before this is done, and this must be attended to if anything like dwarf well furnished specimens are expected, and all the principal shoots on a plant should be stopped at the same time. During the growing season the plants should be afforded plenty of pot room, and a temperature of 60° to 70° at night, allowing it to rise 10° or 15° with sun-heat; and the atmosphere should be kept moist, syringing the plants over head morning and evening. A slight shade for a few hours on the forenoons of bright days will also be beneficial, but this should be used very sparingly. Flowers will not be produced freely unless the young wood is well matured; therefore, plants intended for blooming should not be stopped later than the beginning of August, otherwise, in most cases, it will be difficult to get the wood properly ripened; but this will be best regulated by circumstances. Towards the middle of October, or as soon as the plants have made shoots from 18 inches to 2 feet long, they should be removed to a cooler, drier atmosphere, giving water sparingly at the root, which will check their tendency to growth, and greatly assist in ripening the wood. By removing them to a somewhat moist growing temperature, and giving a proper supply of water to the soil, flowers will soon be produced from the axil of every leaf on the properly matured wood. And while in bloom the plants may be placed in the conservatory, where, if the temperature averages from 45° to 50°, they will remain in perfection some two months.

After flowering, remove the plants to any spare corner in a house where the temperature may range from 50° to 55° by fire heat, and let the soil become quite dry, when the shoots should be tied out and cut back, in order to induce as many buds as possible to break into growth. When growth has fairly commenced the plants should be repotted, or large old specimens may have their balls reduced, repotting them in smaller sized pots, and placing them in a brisk growing temperature, to induce a free root action. If proper attention is paid to tying down and cutting back the shoots, there will be no necessity in the case of old plants for stopping more than once after growth has commenced, and the specimens should not be kept in so warm a temperature as recommended for young plants.

The soil for this plant should be rich and thoroughly porous, so as not to be liable to become water-logged. Leaf soil, turfy sandy loam, and fibry peat, carefully broken up and well intermixed with plenty of sharp clean sand and small bits of charcoal, will be found to answer perfectly. *Alpha.*

Home Correspondence.

Gorse Fibre, a Material for Paper Making.—I have sent you a specimen of the fibre of the spines of Gorse (Ulex Europæus), which appears sufficiently strong and white to be used by itself alone as a material for paper making. Some of the crushed Gorse was taken, which I am in the habit of using largely, for horse food. This was well mashed in water with a pestle till all soluble matter separated. When so treated, the fibre becomes of the degree of whiteness which the specimen exhibits, without chemical bleaching. About 50 per cent. of the green Gorse appears to be water, and about 25 per cent. soluble matter, in which its feeding properties mainly reside, and 25 per cent. woody fibre. In the process of mashing under water, some of this fibre was lost, but 17 per cent. of the whole weight of the fresh cut Gorse was obtained. I find that I cut about 12 tons of Gorse per statute acre annually on light and deep, but otherwise poor, soil; so that a net yield of 2 tons of fibre per acre might be obtained. It would possibly be worth while so to arrange the process as to preserve and use the solution for moistening dry food for sheep and cattle. I do not know what value the paper makers would set on such fibre, but looking to the cost of waste cotton, I should think the value of 2 tons of it per acre ought to pay. Growing so well as it does on a large extent of land, little suited for other crops, and with so little expense and trouble attending it, it would form a cheap and abundant supply of raw material for one of the prime necessaries of advanced civilisation. The fibre forming the bark of the spines seems to possess more tenacity than the fibre of wood and straw. The wood in the interior of the spine is weak, and it is this part, I apprehend, which wastes so much in the mashing. The Ulex nanus, which covers the hills on this side of Ireland, affords a precisely similar fibre. I apprehend that the best mode of treatment would be to crush the Gorse when first cut, as now practised for cattle feeding, then to pass it through a paper maker's stuff engine till it is reduced to a pulp, afterwards to express the soluble matter (using it if possible for feeding purposes), and finally, wash it in several waters. The whole process should be completed before fermentation sets in, otherwise the fibre will be discoloured. An immediately available supply of both kinds of Gorse is to be found all through the western counties of Ireland, together with much unused water-power, which might be employed in bruising and mashing, so that the question of its successful and economical employment seems worth the serious attention of the paper-makers. *B. Blackburn, Valentia, Kerry, April* 19. [There is some little doubt on the part of paper-makers whether this article contains fibre enough to be a first-class paper-material. It is probably worth from 8*l.* to 12*l.* a ton at least, delivered; if better than is expected it will be worth more. We can find a customer for half a ton for trial.]

Dr. Hooker's Himalayan Journals.—Many of your readers, I should expect, have, like myself, been deeply interested with these delightful books, which appear to open to us a new world of botany, and it seems to me that a new interest will be created, if we can learn, through your volumes, whether the following trees and plants have been, or are likely to be, introduced to our gardens:—Magnolias excelsa and Campbelli; the large Fig mentioned in page 157, vol. i.; Talauma Hodgsoni, p. 162, vol. i.; the yellow Bramble; the scarlet (leaved) Berberry, and yellow Rose, p. 211, vol. i.; Primula petiolaris, p. 306, vol. i.; Hodgsonia, p. 7, vol. ii.—this must be a most unique plant; the yellow Raspberry, p. 19, vol. ii. What a magnificent tree must Juniperus recurva form, as given in vol. ii., p. 28! in England it does not seem to have sufficient vigour to form a tree; and then, again, have we Gonghia, "a large and handsome evergreen," and the Black Juniper; the Magnolia "with globular sweet-scented flowers like snow-balls; the lovely yellow, purple, pink, and white Primroses," as described p. 45, vol. ii.; and then, only think of yellow Cowslips 3 feet high! p. 58, vol. ii. I hope Dr. H. brought or sent over seeds of this fine plant. The Alpine Strawberry, with oblong fruit, p. 108, vol. ii., must be interesting. The blue climbing Gentian, Gentiana Crawfurdia, p. 145, vol. ii., must be a charming plant; and the "magnificent (evergreen) tree" Bucklandia, p. 185, vol. ii., is I hope growing at Kew; these are only a few—very few—of the highly interesting plants and trees alluded to and described in Dr. Hooker's pleasant pages. If you can give a little information as to the introduction of the above, or if likely to be introduced, I am quite sure you will much gratify a great number of your readers. The Sikkim Rhododendrons are beautiful things; I have at this moment a plant of R. Edgworthi, about 1 foot high, in a 6-inch pot, with a large cluster of its highly fragrant flowers in full bloom; they are white, and nearly 4 inches in diameter. What a remarkable un-Rhododendron-like plant it is! *T. R.*

Mildewed Strawberries.—I am confident that with care the mildew on Strawberries can be prevented. When I came here, on the 15th of February, I found 100 pots of Black Prince and Roseberry just coming into bloom; the greater part of these was standing on a shelf at the back of the stove, in feeders with a little charcoal in them, and some at the front without feeders. Nearly all those at the back were white with mildew, while those at the front were clear, both Black Prince and Roseberry. The cause of those at the back becoming mildewed was evidently their standing in stagnant water, and their having got less air than those in front, which were also altogether drier. I threw the greater part of the back ones away, and took those from the front and put them in their places, as I wanted the front for Roses, but, instead of placing them in feeders with charcoal as before, I took other pots the same size as they were in, put in them sufficient soil for each pot to rest firmly on, and then placed them on the feeders without charcoal, as I could not dispense with feeders, in consequence of the drip falling on some plants underneath them. Whenever I watered them I took care to go over them again, and empty the feeders of water and apply sulphur to those which appeared a little infected, and I found it to answer well. I gave plenty of air night and day, kept a drier atmosphere, and by these means I met with every success. I gathered good fruit in the middle of March, and I have no doubt that any one using the same precautions will meet with similar success. *R. F., gr. to H. Wormald, Esq., Sawley Hall, Ripon, Yorkshire.*

Rain Gauges.—Is it not probable that although Mr. Lawes found that the weight of the water collected by the large gauge was 6708 lbs., which, reduced to measure in depth, was equal to 5¼ inches more than fell in the ordinary gauge; yet some considerable portion of the excess may be owing, not to actual fall of rain, but to a deposition of moisture caused by the large body of metal necessarily required in the construction of a vessel covering an area equal to the 1-1000th part of an acre. All the moisture deposited in the 99 days in which no rain had fallen in the ordinary gauge, I presume must be accounted for in this way. Air that appears quite transparent, nevertheless contains moisture under ordinary circumstances, and this moisture is being continually deposited on the surfaces of bodies that are colder than the air in contact with them; it is deposited by a few degrees of cold when the air is nearly saturated with moisture; and if there is but little moisture a greater degree of cold is required to produce condensation. Now, as the temperature at night was lowering, the metal of the gauge would be warmer, and no deposition would take place upon its surface from condensation. But, when the temperature of the air rises from its minimum point, and becomes warmer than the metal, condensation will ensue, especially in the morning, when the air is saturated, or nearly so. In this way, more moisture would be accumulated in the metal receiver than on an equal area of the surface of the earth, for the latter would not become so cold. It may be said that a small gauge, being also composed of metal, would equally condense moisture in proportion to its size; but the small gauge requires to be made of only a thin sheet of metal, the heating and cooling of which nearly keeps pace with the changes of temperature of the air. In employing large rain gauges, it would be desirable to distinguish, as far as possible, the amount of rain from that which may be due to the condensation of moisture. *Robert Thompson.*

The self-adjusting Patent Scythe.—When this invention was first made known, I hailed it as a great boon to those who, like myself, have a good deal of Grass to keep in nice order, and that so varied in surface as to render the mowing machine inapplicable. I ordered some of these scythes, and at once appreciated the saving in men's time and blacksmiths' bills for laying them; to which must be added the advantage of one handle wearing out a number of blades, its iron heel obviating the decay to which the wood on the old plan was subject. The first set of blades which I had, having been worn out while the handles are in all respects perfect, I desired our ironmonger to procure more blades, but, to my dismay, am now told that the patentees will not sell one part without the other. The promised advantages therefore amount to *nil;* and the old plan must be adopted, unless every large establishment adds to its other requirements a repository for old scythe handles. *Henry Bailey, Nuneham, Oxford.* [Surely, the patentees cannot seriously intend to practise thus upon the public. If they do, it will be better to return to the old scythes.]

Protection of Wall Trees.—May I ask some of your correspondents to give me their experience as to placing shallow vessels of water in the near neighbourhood of wall-trees as a protection from frost?—and, if successful, can a reason be rendered?—or for the contrary? *J. P. Sampson, Chesterford, near Saffron Walden.*

Musch Musch Apricot, and Nerii and Pregussata Figs.—May I ask what experience has been had as to the bearing qualities of the Musch Musch Apricot, the Nerii Fig, and the Pregussata? The Musch Musch I have tried without success, both on the wall and in the orchard-house. Judging from the place it comes from, viz., the very hottest portions of the temperate zone, where it grows side by side with the Date Palm, one would not, *à priori*, suppose it likely to succeed well in latitude 52°. As to the Nerii Fig, in an excellent article which appeared in the *Chronicle*, April 13, 1844, Mr. Markham states that the superiority of this variety, even against an open wall, was so great as to induce him to discard all others. Now, though it has fruited with me, I find it a very bad bearer both on the wall, in a cool Vinery, and in an orchard-house. The Pregussata Fig is generally recommended in short select lists; but a potted plant I have has never, during four years, shown a single fruit either of first or second crop, though other varieties similarly treated have borne well. I really believe, that, taking all qualities into consideration, nothing equals the Brown Turkey. *C. M.* [In favourable seasons, or even in such as were formerly reckoned ordinary ones, the Musch Musch Apricot bore very well. In the Royal Gardens, Frogmore, some fine trees of it bear abundantly. The Nerii Fig was successfully cultivated by Mr. Knight, and the following extract from what he states respecting it in the Transactions of the Horticultural Society, Second Series, vol. 2, p. 165, may prove useful:—"I have made, during several successive years, attempts to ripen the Nerii Fig, which is one of the best, if not the best, of the Figs of Italy; and I have ultimately succeeded; and as the mode of management which I have adopted is peculiar only, and not difficult or expensive, and nearly similar to that under which the Peach and Nectarine will be found to acquire the highest state of perfection, I have thought the following account of it worth communicating:—I begin to heat the house in the middle of February, and continue the fire till the fruit has acquired its first swelling in May. If artificial heat be still applied, the first formed fruit will fall off, and will be succeeded by other fruit, which will also fall off abortively. The fruit, therefore, after it has acquired its first swelling, is subjected to the influence of confined solar heat only, till it begins to acquire maturity. Much air is then given, and if the weather be not dry and bright, artificial heat is, to a small extent, again employed to prevent the mature fruit from becoming mouldy; and I believe, upon the evidence of many friends, who are well acquainted with the merits of that fruit in different southern climates, that it is rarely seen in a higher state of perfection than when ripened in the manner above described. I have succeeded in ripening the Nerii Fig in a very considerable state of perfection, by introducing the trees in pots against the back wall of a stove in February, and removing them to a greenhouse, out of which the plants had been taken, in the middle of May. Almost all the spring fruit of my Nerii Fig trees has fallen off

immature, and none of it has ever ripened properly; and I doubt whether its spring fruit ever possesses much merit in any climate." The Pregussata Fig is considered a good bearer, but we agree with you that none exceeds the Brown Turkey, which is the best for general cultivation, as regards sure bearing.]

Substitute for Frames.—As some of your readers, like myself, may not be well supplied with frames for growing half-hardy plants, allow me to mention my plan, which may be worthy of notice. Take any old tub or box, put into it the stones and rubbish, weeds, &c., that accumulate in small gardens, then fill the vessel to within 2 inches of the top with good mould, adding plenty of sharp sand; then nail wires across the top at such distances as will suit any old pieces of glass you may have, making up with squares 6 in. by 4 in., which can be bought of the glassman at 4*d*. per dozen, 2*d*. per foot superficial. The glass is placed side by side on the wires, and covers the box or tub sufficiently to bring forward flower-seeds, Beans, &c., which require to be cared for in April and May; and when of the proper size are easily drawn up for transplanting into the open ground, where they are intended to flower. When this use is ended, the mould is applied to good purpose, and these tubs or boxes make good receptacles for weeds, &c., placed in some out-of-the-way corner for the next season, when the weeds and rubbish will have become good mould. *T. B. L.*

Cookery.—I am glad to find you seconding Lord Ashburton's most sensible advocacy of the study of "common things," especially among the poor, by your article upon diet, in a late *Chronicle.* It was, I believe, the custom at Edinburgh, not very long ago, and I believe it still prevails to some extent, for ladies of rank to receive lessons from some Maitresse de Cuisine, such as Mrs. Glasse, Mrs. Rundell, &c., in the art of cookery, and perhaps the manner in which our sisterhood over the border surpass us in the manufacture of marmalade, and other preserves and confectionery, may in a great measure be attributed to such instruction. At any rate, for the mistress of a family to be practically acquainted to a certain extent with such an art is an advantage which the master of a family will very speedily find out and very fully appreciate. The immense saving in butchers' bills which was to be effected by the lady's knowing what can be done with the odd scraps of meat, fish, vegetables, &c., and not trusting entirely to her cook's ideas of economy, will be incalculable, to say nothing of the increased wholesomeness which good cooking may bring to the food, and the agreeable variety which may be made in the dishes. How many things are used in other countries as food which we neglect in our island? And many a dish which the English smack their lips over at "Very's" or "Les Trois Freres," as a rare delicacy, upon analysis may be found to contain the simplest and in England the most neglected ingredients, but thrown together by the artistic hand of a skilful Parisian *cuisinière.* A friend of mine, a very able barrister, used to study cookery as a science; and among how many families would the knowledge of a little domestic economy be more serviceable than the exclusive study of music and all the accomplishments! Why should not the art be practically taught in our ladies' schools? and in simpler terms in our national schools? What an invaluable rarity is a good cook! What a treasure a wife of peasant, or one higher still, who knows how to have a warm wholesome dinner provided for her husband and children's return from school or work! What contentment does it bring! and how much comfort, soberness, health, and good feeling will it engender! I say, with all instruction among rich and poor, let a knowledge of common things be imparted. I have seen the lack of it among the most learned cause the greatest discomfort, confusion, and trouble; and I could tell you an amusing and rather appropriate anecdote, but I am afraid I have trespassed too long. I feel in myself that I cannot scold my groom properly as to the management of my horse, because, though I see he is not quite right in his stable work, I do not exactly know where he is wrong, as he is always ready with an answer, and my ignorance will soon display itself. (The late King of Holland, it is said, had his sons taught to groom their horses and make their own beds, and he did wisely.) So with my gardener, &c, though a very little in early life would have taught me, and taught them too. I heard once of a valuable workman in a manufactory, who, getting into bad company, ruined himself and his domestic comfort by drinking. His master, to his honour, determined to try and reclaim him; he, therefore, agreed with him not to pay him his wages in money, but to provide for him so much bacon, so much bread, beer, &c., as was necessary for himself and family for every day, and any surplus was put by in the savings' bank. Before the year was out he had his reward; the man found the blessing of soberness and saving. I think there was a list of the articles provided per day, and their cost, published. And would it not be of immense advantage to the labourer, if you could point out how he could most economically lay out his 10*s*., 12*s*., or 15*s*. per week? How he might club with his neighbours for bacon, flour, &c.? A few hints of the sort would surely be of great benefit, and teach them how far better good pork and bread is than bad gin and water—the decent cottage fireside and garden, than the riotous, extravagant, and ruining tap-room and settle. *Northwood.*

Ornamental Forest Shrubs of North America.—In my rambles, which extended from the Lower Province of Canada to Carolina, I visited all the principal towns in the Upper Province, three of the great lakes, viz., Ontario, Erie, and Huron, and the far-famed Falls of Niagara. To botany, however, I paid most attention; and reading in public prints of the rapid progress now making towards the completion of the Crystal Palace, has suggested to my mind the scope that will be there afforded for the development of the trees and plants of tropical and other climes, and which we can only expect to witness in this country in such places as the "Palace of Glass," where they can grow and exhibit their beauties in perfection. I am aware that a great proportion of the trees and plants of North America will survive out of doors in this country, but still the absence of their native summer heat prevents them from arriving at anything like perfection with us. Plants of at least three genera, which I shall name, would certainly be greatly improved by being transferred to the palace at Sydenham. I had no idea that the first of these was the beautiful plant which I found it to be, till I saw it in its native climate; I allude to an old inhabitant of our greenhouses — Gelsemium nitidum, Bignonia sempervirens of Willdenow. For forming an arbour, I know of no evergreen twining plant to compare with this Bignonia; its beautiful shining lanceolate leaves, and profusion of large fragrant yellow blossoms, making it an object truly desirable. When I met with it first in gardens in Virginia, growing in all its native luxuriance, it was difficult to believe it to be the same species as that represented by the poor puny specimens of it to be found in this country. Probably Rhododendron maximum var. purpureum of Pursh, would succeed well in this country, if placed under the protection of the crystal roof at Sydenham. I know not to what size R. arboreum attains in its native country, but I feel assured it would be interesting to many to have the two exhibited together, by way of contrast. Pursh describes R. maximum purpureum as growing to an immense size:—"Its stem is often found 18 inches and more in diameter, and its foliage triple the size of that of any other species." There are splendid groves of them in western Virginia; the first I met with in that State was of large extent, it must have covered many acres of a mountain valley; they were mixed with the broad-leaved Kalmia; I do not recollect any deciduous trees of the neighbouring forest being amongst them. It was November when I passed through the "Shades of Death," so named by the settlers in that part of the State, their deep gloom forming a curious contrast with the forest around, the trees of which were divested of their leaves. Many of them were certainly upwards of 20 feet in height, and 10 or 12 inches in diameter. Deep, however, as the gloom of their shade certainly was, I believe all the known species of Pyrola grew there in great luxuriance. Maculata and corymbosa were abundant. It is a fact, which I considered somewhat remarkable, that during a journey of 600 miles there was not a plant of Rhododendron met with, except at that place. The only other evergreen trees (with the exception of Coniferæ) were a few good specimens of Ilex opaca. The summits of the Alleghanies, where I passed, were thickly covered with Kalmia latifolia of low growth, mixed with a few scrubby Oaks. Of the beauty of Magnolias, we can form no conception from the specimens that exist in this country; and therefore, an excellent opportunity is now presented (which, no doubt, Sir Joseph Paxton will take advantage of) of having the eight American species, with their varieties, transferred to Sydenham, where an artificial summer heat might be supplied, somewhat resembling that of their native climates, and where they would also have scope enough for full development. I was not aware, till I visited Virginia, that M. glauca is invariably found in wet marshy ground, similar to that in which our Alders love to grow. *T. B.*

Societies.

LINNEAN, *April* 18.—WM. YARRELL, Esq., V.P., in the chair. C. S. Spence, Esq., and J. Byerley, Esq., were elected Fellows. Mr. J. D. Salmon exhibited fresh specimens of Lathræa squamaria, gathered under an Elm tree in Inwood Copse, near the Hog's Back, Surrey. Mr. Adam White exhibited a specimen of Baladeva Walkeri, and made some observations on that genus in relation to the genus Hypocephalus. He also exhibited a small collection of insects formed at Iskardo in Thibet, by Dr. Thomson. Read a letter addressed to Mr. Curtis by Robert Wakefield, Esq., containing some observations on the habits of ants, to which a paper by Mr. Curtis, read at a former meeting, had given rise. "All modern writers," he remarks, "including Hüber, have, I believe, relinquished the opinion that ants amass Wheat and other grain for their winter store, and that they deprive the corn of its germinating principle; but besides the resemblance of their pupæ to small corn, which a careless observer might readily mistake for seeds, I myself have seen the black species, which I suppose to be Formica nigra, for days and nights together industriously dragging to their cells the seeds of the common violet, V. odorata." As far back as 1832, he had observed them conveying these seeds to their cells, for several successive days and nights. "That they work all night has long been known. Pliny says only during the full moon, but by my memorandums I find I have noted them on the 6th June at work at 12 o'clock midnight, and also on the following night at the same hour, though the day had been stormy and accompanied by heavy rain, without any reference to the full moon. My late friend, Mr. Milne, once told me that he had seen on a morning in February a colony of ants (red) turned up by digging in a garden, and with them were distinctly seen many aphides alive, and also some vegetable substance on which, probably, they had subsisted during the winter. We have all seen the ants caress the aphides during summer and express the sweet juice (query, honey-dew?) they secrete, but I never besides met with any one who had seen the aphides, together with the ants, in their winter retreat."

CALEDONIAN HORTICULTURAL.—At the late Spring Quarterly Meeting prizes were awarded as follows, viz.:—Silver medal to Messrs. J. Dickson and Sons, for Hyacinths Baron de Tuyl, Voltaire, Grand Lilas, Charles Dickens, La Tour d'Auvergne, Regulus, Grand Vidette (blue and white), Lord Wellington, Amy, Emicus, and Prince Albert; second premium to Messrs. Dicksons and Co., for Baron de Tuyl, Prince Albert, Purpurea superbissima, Brooksbery, Madame Vander Hoop, Queen of the Netherlands, Alba superbissima, Passe tubiflora, Tasso, Silene, Mars, and Ida. For six Hyacinths produced by practical gardeners, the Silver Medal was awarded to Mr. Nicol, for Grand Vainqueur, Prince Albert, Baron de Tuyl, Nimrod, and Grand Vidette (blue and white); second premium to Mr. Douglas, for Garrick, Richard Steele, Voltaire, Grand Vidette, Lord Gray, and Laurens Koster. Heaths: Silver Medal to Mr. Smith, Melville Castle, for Erica hyemalis; second premium to Mr. J. Fowler, Glenesk, for the same species; third to Mr. Lockhart, Arniston, for E. mutabilis. Silver Medal to Mr. Reid, Millbank, for a fine specimen of Azalea vittata. First prize for Camellia blooms to Mr. Fowlis, Woodhouselee, for Imbricata, Fimbriata, Palmer's Perfection, Pratti Rosea, Double White, and Reine de Fleurs; second to Mr. Mitchell, Ravelston, for Frankfurtensis, Sweeti, Beali, Double White, Traversi, and Palmer's Perfection. Prize for Camellia plant to Mr. Reid, New Hailes, who produced Imbricata. First prize for Cinerarias to Mr. Addison, Gosford, for Cerito and Lady Gertrude; second to Mr. Mitchell for Ayrshire Lass and Pauline. Hardy Herbaceous Plants:—First prize to Mr. Reid, for Helleborus olympicus and Saxifraga oppositifolia alba: second to Mr Falconer for Saxifraga oppositifolia and Dondia Epipactis. First prize for Chinese Primroses to Mr. Mitchell, for double purple and double white; second to Mr. Fowler for single purple and single white. The best Seakale came from Mr. Kerr, Firth, Roslin. Stalks produced by W. Blackwood, Esq., Peebles, were stated to have been grown in a dark cellar. Roots placed there in November produce a crop in February and March, and are planted out in the open ground in May; this plan was stated to answer admirably. Silver Medal to Mr. Reid, for a beautifully grown Eriostemon cuspidatum; second premium to Mr. Lockhart, Arniston, for Epacris Atleeana. Among productions sent for exhibition only, Mr. Baxter, Riccarton, had specimens of the following fruits in an excellent state of keeping, viz.:—Pears: Beurré Rance, Easter Beurré, Ne plus Meuris, Bezi de Caisoy, La Fortunée. Apples: Blenheim Pippin, Ribston Pippin, Old Nonpareil, Nonsuch, Winter Greening. Grapes: Abercairney Seedling, and White Muscat; also, a dish of Filberts. The Society's Garden contributed Camellia Lady Belhaven, and a number of the Sikkim and other Rhododendrons, including several varieties of R. ciliatum, differing in the colour of their flowers.

Notices of Books.

Dr. Dickinson's Flora of Liverpool (Van Voorst) will, we doubt not, be found a useful guide to the localities of the plants growing wild near that greatest of towns.

A Plain and Easy Account of the British Ferns (Hardwicke) will certainly find favour with the young. The author will have nothing to do with the modern nomenclature of Ferns, which, it must be acknowledged, is sometimes preposterous. On the contrary, he sticks to the good old names to which the world is accustomed. We would not impale a fly, and therefore forbear to say more of the glossary attached to the little volume than that it is a pity any one should undertake to instruct others without possessing some knowledge of the subject taught. By the way, where is the authority for including Asplenium palmatum among British Ferns?

The Distinctions between Commercial Textile Materials (Die Prüfung der im Handel Vorkommenden Gewebe durch das Microskop und durch chemische Reagentien.) By Dr. H. Schacht, pp. viii and 64; tab. 8. Berlin. 1853.

As the title imports, this is not simply a botanical treatise, but extended to animal productions, such as silk, wool, &c., which, like flax, hemp, and cotton, are used in the manufacture of the various kinds of woven fabrics. In fact, the work is one rather of applied than of pure science, and must be very welcome to the microscopist, as no question is more frequently asked of those who are held in reputation than the means of distinction between such bodies, the importance of which must be obvious in a multitude of cases affecting both civil and criminal jurisdiction, in many curious points of historical and antiquarian research, and more especially as regards the manufacturing interests of the country. The author

has not confined himself to the articles more commonly used, but has passed under review New Zealand Flax, Manilla Hemp, Nettle Flax, &c., nor has he omitted the kindred manufacture of paper, under its different varieties.

The great difference between cotton and the different varieties of flax is that the latter are bast cells, with a more or less thick deposit upon their walls, rendering them less flexible, and having a smaller cavity, which, therefore, contains less air: whereas the cotton threads, on the contrary, are simple cells, consisting almost entirely of cellulose. While, therefore, iodine and sulphuric acid produce a blue tint in the cotton, the xylogen on the walls of the flax prevents it assuming this tint. The cellulose of the cotton is soluble in sulphuric acid, while the threads of flax, &c., are not soluble because of their xylogen; consequently in a mixed fabric, when immersed in sulphuric acid, the cotton threads vanish entirely when the web is repeatedly washed, while the linen threads remain. Again, if oil is applied to such a mixed fabric, the linen threads are transparent, while the cotton, in consequence of its greater content of air, is opaque. Other tests might be mentioned depending upon the different degrees in which colours are taken up by the respective threads. None, however, of these methods of observation is equal to direct microscopic examination, which will enable a skilful observer and manipulator at once to detect the different materials, even when they have been mashed up and treated with various chemical matters for the production of paper. It is of course impossible to enter fully into the matter, but the above sketch will be sufficient to show that the subject is by no means devoid of interest; and when extended to fabrics of wool or silk, or mixtures of them with cotton and flax in its various kinds, microscopical examination and chemical tests are equally certain. For everything in the shape of detail we must refer our readers to the book itself, which will be sure to furnish a good deal of instructive, useful, and entertaining matter, at once applicable to many different subjects of research. As the work is intended not merely for adepts in the use of the microscope, but for persons who have no pretension to science, some preliminary directions are given on such matters, and the mode of using the prescribed tests.

Synopsis Plantarum glumacearum (Stuttgart, Metzler) is the commencement of a revision, by Dr. Steudel, of the Genera and Species of Grasses and Sedges, assisted by the notes of Nees v. Esenbeck. The number before us consists of 80 quarto pages in close double columns. The author having already reached the 568th species of Panicum, we cannot forbear asking, what his idea of a species may be?

New Plants.

59. Anguloa Ruckeri, *Lindl. in Bot. Reg. t.* 41, 1846—*var.* sanguinea.

A fine variety of this rare plant has just blossomed with Messrs. Rollissons. Instead of being yellow, with blood-red dots, like the original, the inside of the flower is one uniform rich chocolate brown; the terminal lobe of the lip is, moreover, broader, and concave, not flat. It is a fine variety of its kind.

60. Pittosporum crassifolium *Bks. and Sol. J. D. Hooker, Flora of N. Zealand*, p. 23.

Recently flowered in the Royal Gardens, Claremont, under the care of Mr. Malleson, who received its seeds from New Zealand some years since. It forms a very dark evergreen bush, with leathery lanceolate or obovate leaves, smooth and shining on the upper side, but closely covered with grey wool on the under side, as well as upon the branches, flower-stalks, and calyces. The flowers are solitary (or, according to Dr. Hooker, sometimes in umbels) and about as large as an Orange blossom, with deep dull crimson leathery petals. The native name is said by R. Cunningham to be "Tarata." The flowers do not appear to have any fragrance.

Garden Memoranda.

Royal Botanic Society's Garden, Regent's Park.—It has been announced, as doubtless many of our readers will have observed, that the plants to be shown at the floral *fêtes* here this year "will be arranged on a new plan, similar in form to the American garden, and placed upon a series of terraces." On visiting this garden the other day, we found that these terraces have been formed immediately behind the Conservatory where the Pelargonium, and Orchid, and other tents stood. An unequally four-sided piece of ground here has been excavated some 8 or 10 feet deep, so as to form banks round its sides. These banks have been cut into stair-like terraces, in two tiers of three each, the one tier being distinctly divided from the other by means of a gravel walk, which winds along the face of the bank, and which is some 7 or 8 feet wide or more, as the case may be; for the under tier of terraces is by no means regular or on the same level as the upper one, but is uneven and broken off here and there into detached pieces by the intersections of the entrance walks, of which there are six, all leading directly or otherwise into the centre of the excavation or basin, where there is to be a large somewhat triangularly shaped piece of gravel for visitors to move about on. These grassy terraces everywhere, except on the east side, where they are straight, project and recede so as to fit the round ends of the tents, five of which, each some 33 feet in width, and three of them at least 153 feet in length, are to cover the whole exhibition to be held here, over which they will be supported by round poles of Baltic Spruce, the centre ones, or where the excavation is deepest, being some 30 feet in height. The whole space thus covered will be about 153 feet in width, and 165 feet in length. The entrances from the road on the Colosseum side, and from the garden on the west or lower side, have been cut through the embankments, and are covered over with boards bridge fashion; and immediately in front of the last-named entrance, but a considerable way in advance of it, is to be a terraced mound for showy plants, which will catch the eye on entering, and form a striking feature for the background. The terraces vary from 2 to 3 feet in height, and from 1 to 4 feet in width. The uppermost three terraces, we are informed, are intended for large plants, and the lower three for Pelargoniums and things of comparatively dwarf growth. The walk which passes between the two series of terraces will enable visitors to look up at the one tier and down on the other, while the whole may be seen at one view by persons standing in the bottom of the valley below. Whether fruit will be shown in this manner or not is a matter not yet decided; but if it should be, some straight terraces have been made on purpose, to suit the boards on which it will be placed. The turf on the terraces is already established, and beautifully green; but the formation and gravelling of the walks have not yet been completed. A Box hedge is to be planted all round the top of the banks, so as to form a background for the plants, of the effect produced by which, exhibited in this way, we shall soon have an opportunity of judging. In other parts of the garden some slight alterations have been effected. The rectangular strip of ground formerly occupied by the large tent in which the stove and greenhouse plants used to be shown is being converted into a small flower garden, laid out in different devices of small beds, bordered with Box and gravel, the whole being on Grass, and surrounded by straight gravel walks, about 15 inches higher than the plats on which the figures are. These little beds, for they are very small, are to be filled with low-growing plants, which will be trimmed in, so as to distinctly exhibit the forms of the figures. A new shell-like device of beds, with an embroidered band at the back, has also been made to fill a little recess at the base of the hill, on the right of the walk leading from the principal entrance to the conservatory. At present these beds are chiefly filled with Pansies, for early display. Some of the plants for exhibition in the American garden have already arrived, and will soon be put in their places. The whole of the framework which supports the covering of this exhibition is being renewed, the upright posts below the surface level having been found to have become too much decayed to stand another season. They were made of Baltic Spruce, and had been up six years. They are reported to have been more rotten where they stood comparatively dry than where they were in clay, full of water. Other alterations consist of a new refreshment room, which is to be built in the room of the old one, which has been removed. The plants in the conservatory have wintered well, and some of them are now very gay, a few large Azaleas being literally masses of flower. One or two bushes of Acacia armata and Cytisus racemosus have been, and are still, extremely effective, but the bright sunny weather we have been experiencing is driving things fast out of bloom. Pelargonium album multiflorum, in the shape of a pyramid some 4 feet high, was full of blossom, and we noticed several other Pelargoniums grown in this way, which, if they flower as freely as this has done, must be extremely useful in large houses like this. In the open grounds the winter has been less severe than it has been in some places. Ornamental Cherries and other spring-flowering trees, Wallflowers, Polyanthuses, Hyacinths, Early Tulips, Pansies, Alyssums, and Iberis sempervirens, are in full bloom. The Grass has been gone over with the mowing machine, and, although yet somewhat bare and bleak in appearance, the garden is altogether in good order.

FLORICULTURE.

The Chrysanthemum.—As I am usually more successful with this flower than my neighbours, and as it is well known to be invaluable for conservatory decoration during the winter and early spring months, being now to be had of every hue and tint, from the purest white to a beautiful crimson, I have been induced to furnish you with the following remarks, which may be useful to the amateur gardener. About the second week of April I choose my cuttings from the points of the present year's growth. I insert them in a light compost of leaf soil and river sand, and plunge the pots in a pit or frame where there is a slight bottom-heat, which will enable them to emit roots freely. I always, however, prefer offsets when I can get them, *i.e.*, taking single suckers and pinching them back to three or four eyes. If specimens are wanted I put three of these suckers in a 5-inch pot, 2 inches apart, in a compost of two-thirds turfy loam, and one-third well decayed cow-dung, adding also a portion of sand, to keep the soil porous, and taking care to secure good drainage by using plenty of potsherds, over which I put a few pieces of turf. This keeps the drainage open, which it should be, as the Chrysanthemum does not like to be kept in a stagnant condition. I now place them in a cold frame, shading them from the mid-day sun until they have taken hold of the new soil, giving as much air as possible throughout the day, but shutting up in the evenings till about the 1st of May, when the lights may be taken entirely off them, or the plants may be turned outside into some sheltered situation, where they may remain till the middle of June. While exposed they will require no attention, except that of giving them a good supply of water, for the Chrysanthemum delights in having the roots kept moist. They may also be sprinkled over-head twice a week, which will keep them in a fine healthy condition. Stake thinly, so as to admit plenty of air, which will prevent them from becoming drawn. About the middle of June give them their final shift into 10-inch pots, using a rough compost of good turfy loam two-thirds; rotten cow-dung one-third; to which add a sprinkling of bone-dust and charcoal. After potting tie them out neatly to nice green painted stakes, and plunge them in a sheltered situation, but well exposed to the sun to within a couple of inches of the rim of the pots. Give them a good supply of water now, night and morning, or as often as required; also give them a good syringing over-head every other evening with clear water, which will keep down green-fly; but should this pest make its appearance syringe with tobacco-water, which will soon cause it to disappear. A little manure-water now and then will enable them to push strong shoots; for unless the latter are strong you need not expect to get good blooms. About the beginning of October move them in-doors, and have them nicely tied up and dressed; also put a good mulching of sheep-dung on the tops of the pots; the strength of this will wash down with the water used in watering, and will assist them greatly during the blooming season, when they may be taken to the conservatory or greenhouse, as the case may be. By following these directions the Chrysanthemum may be grown in the greatest possible perfection. *W. F.*

The Fuchsia.—I am a self-taught amateur, and have grown this plant for a series of years, and have obtained prizes at exhibitions, judged by some of your most celebrated contributors, for specimens the equal to which I have not yet seen at the great metropolitan shows. My plan of management was this: In July I struck my cuttings, and as they required it I repotted them from time to time, using turfy fresh soil, a little rotten manure, and sand. They were kept in a moderately warm house, and in a growing state through the winter; as the warm weather in the following spring progressed, and at the repotting at that time, I sunk them deep in the pots, and as the roots were seen running on the surface of the soil, which they will soon do, if kept well syringed in a moist atmosphere, I kept filling the pot up with lumps of decayed sods and the compost they were originally potted in; a little weak manure-water was occasionally given. I never cut or stopped any branch, and only used one stake to keep the plants upright. The plants were studded with branches full of flowers, overhanging the pots, and to the height of from 5 to 10 feet, according to the variety. They were literally Nature's own specimens, and nothing could certainly be more beautiful than to see 40 or 50 such plants, of different shades and colours, pitted against each other. I had no propagating house, no frame to move them to after striking, no brickbats, no coal-ashes, or fine ashes on the top, as recommended by your correspondent "A. C." I watered them in the morning, then went to my business and remained till evening, the Fuchsias in the mean time attending to their own wants. When exhibited, my plants were from 10 to 12 months old. *R. R. R.*

National Floricultural Society, *April* 20.—Azalea Criterion, from Messrs. Ivery, of Dorking, received a first class Certificate. Its flowers are large and showy, of a light salmon colour, distinctly margined with white, and spotted on the base of the upper petals with crimson. It is in the way of Exquisita: but, as will be seen, it is very different in colour. A first-class Certificate was also awarded to Azalea Robinsoni, from Mr. Robinson, of Pimlico. This is a very pretty rosy pink variety; but scarcely perhaps sufficiently distinct from kinds already in cultivation. Mr. Ivery, of Peckham, received a Certificate of Merit for Cineraria Admiral Dundas, a clear white ground kind, edged with crimson purple; disk same colour, a showy kind. Messrs. E. G. Henderson sent some fancy Pelargoniums and Cyclamens, the latter all varieties of C. persicum. The same firm had also a promising Cineraria called Emilie. Cineraria Celestial, from Messrs. Henderson, Pine-apple Place, is also a good variety, which we hope to see again.

Miscellaneous.

Sale of Plants at Ealing Park.—The sale of Mrs. Lawrence's magnificent collection of stove and greenhouse plants commenced on Thursday last, and will be finished to-night. The first day was wet and cold; nevertheless upwards of 50 people attended, consisting of the principal metropolitan nurserymen, several noblemen and gentlemen's gardeners, and one or two gentlemen. Among the latter we noticed, W. Upton, Esq., of Forest Hill, and H. Colyer, Esq., of Dartford. The plants were for the most part in good condition, and realised, upon the whole, fair prices. When we were present on Thursday some of the largest of the specimens were brought forward. We observed that the enormous Epacris grandiflora, which for many years formed the crown head of the Ealing Park collection at the Chiswick fêtes, was bought by Mr. Eyles for the Crystal Palace Company for 12*l.* 10*s.*; this fine plant was quite 6 feet high, and as much through, and covered with bloom. A Polygala acuminata of similar size, and also in flower, was put up, and fetched 10*l.* 15*s.*; this was purchased by Mr. Upton, who also became the fortunate possessor of a magnificent Azalea exquisita, for which he paid the handsome sum of 17*l.* 17*s.*; this plant was in all respects in excellent condition, and measured about 5 feet in height and 6 feet in width. The same buyer likewise purchased a

beautiful Azalea variegata, 4 feet by 5 feet, for which 15*l.* 15*s.* were paid. An extremely good plant of Azalea Gledstanesi fetched 10*l.* 10*s.*; this was purchased by — Johnstone, Esq, of Oak House, Feltham. Azalea Lawrenceana (which did not appear to be different from Minerva) fetched the great price of 24*l.* 3*s.*; this was bought by Mr. Upton; it was certainly a splendidly grown plant, measuring 4 feet in height and 6 feet in width. Azalea Apollo, 5 feet by 4 feet, fetched 8*l.* 10*s.*; and A. Gledstanesi, 7*l.* 5*s.* Azaleas, altogether, fetched good prices, as did greenhouse plants generally; although some Heaths, Eriostemons, Podolobiums, Indigofera decora, and a few other things, sold for prices considerably below their value. Stove plants seemed less in demand than greenhouse plants, and therefore realised less money. Beautiful bushes of Ixora javanica, 4½ feet in height, and 3½ feet in width, only fetched 2*l.* 10*s.*; Dipladenia crassinoda, 4 feet high, and 3 feet through, 10*s.*; Allamanda cathartica, 5 feet high and 4 feet wide, 2*l* 15*s.*; and other plants of this description fetched similar prices. The number of lots sold to-day was 161; the principal purchasers, in addition to those already named, were Mr. Colyer, Mr. Ambrose Basset, of Stamford Hill; The Earl of Stamford and Warrington; Mr. Dods, gr. to Sir John Cathcart, Bt.; Mr. Walker, of Acton; Mr. James Veitch, of Chelsea; and Messrs. Fraser, of Lea-bridge.—Yesterday about the same number of buyers assembled, and a similar number of lots was sold, but they did not fetch near such high prices as they did on Thursday. The plants were, however, generally smaller. A Pimelea spectabilis 5 feet in height and 6 feet in width, was bought by Mr. Colyer for 6*l.* 15*s.*; a Dillwynia, 2½ feet high, and as much through, was knocked down to Messrs. Fraser for 5*l.* 5*s.*; Boronia serrulata, 2 feet in height, and a little more in width, was purchased by Mr. Veitch for 5*l.* 15*s.*; Mrs. Treadwell had a Chorozema Henchmanni, 3½ feet in height, and 4 feet in width, for 3*l.* 15*s.*; Erica metulæflora bicolor, one of the handsomest of the genus, measuring 3½ feet in height, and as much through, was purchased by Mr. Turner, of Slough, for 2*l.* 10*s.*; Franciscea latifolia, 2 feet high, and as much through, was bought by Dr. Daubeny, of Oxford, for 17*s.*; the same gentleman also purchased an Adamia versicolor of similar dimensions for 1*l.* 2*s.*; Boronia pinnata, 3 feet in height, and more in width, was knocked down to Mr. Speed, of Edmonton, for 2*l.* 12*s.* 6*d.* Coleonema rubrum, a beautiful plant, 6 feet high and as much in diameter, was bought by Mr. Eyles for the Crystal Palace Company for 3*l.*; other lots fetched from 10*s.* to 4*l.* each.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Conservatory, &c.—Among winter-blooming plants we have few that are so attractive and so useful as Gesnera oblongata and Euphorbia jacquiniflora, both being profuse bloomers, and remaining long in beauty. These should be extensively grown wherever winter flowers are valued; and if at the expense of neglecting some of our more recently introduced subjects, they should be afforded every necessary accommodation and attention at the present season, in order to secure good specimens for next winter. Also attend to affording Correas sufficient pot-room and a growing temperature, so as to induce free growth at the present season, and get the wood well matured early in autumn, which is the secret of having them finely in bloom throughout the winter. Primula sinensis, especially the double varieties, is also deserving of every attention, and should not be neglected at the present season. Pot off seedlings of the fringed varieties, and encourage them with a moist genial temperature, shading them slightly on bright days. Unless there is a good stock of young plants of the double varieties in hand, the flowers should be picked off the old plants as soon they show any symptoms of weakness, shaking the exhausted soil from the roots, and repotting in light fibry peat, well intermixed with sand, keeping the plants well down in the pots, and placing them in a warm shady situation. This will obviate the difficulty which many growers experience in the management and propagation of these showy winter flowers; for if the plants have not been too much exhausted by flowering, young roots will be freely emitted from every branch; and when this is the case, the plants should be broken up and repotted separately, affording them a rather warm and thoroughly moist atmosphere until they become well established, when, with ordinary care, they will grow freely, and form fine specimens before winter. Fuchsias intended for large specimens will require to be shaded from bright sunshine, and will be greatly benefited by a liberal supply of manure water; and where free growth is expected from these, after this season, the atmosphere can hardly be kept too moist. Young specimens of greenhouse hard-wooded plants should be kept as moist and warm as can be done without inducing weakly growth. See that these are properly supplied with water at the root, and do not allow them to sustain any check for want of pot room. Stove.—Attend to training the shoots of twiners as they advance in growth, and do not allow these to get entangled before giving them attention. Also attend to the stopping and training of other plants, and afford free growing subjects plenty of pot room. Achimenes and Gloxinias, filling their pots with roots, will enjoy an occasional watering with weak manure-water. Persevere in keeping down insects, which, if allowed, will progress with great rapidity. Very little fire-heat will now be sufficient, if the practice of shutting up early in the afternoon is adopted. Proceed with repotting Orchids as they may require it. Do not use the syringe too freely among those starting into growth, but keep the atmosphere thoroughly moist. See that specimens on blocks and in baskets are not allowed to suffer for the want of water, for when the soil in baskets is once allowed to get thoroughly dry, the water is apt to run off; when this is found to be the case the baskets should be immersed in tepid water until the soil gets thoroughly soaked.

FORCING DEPARTMENT.

Pinery.—Use the syringe lightly morning and evening, except where the fruit is colouring, but avoid too copious syringings, which sodden the soil about the collar of the plants, and render it very difficult to keep the roots in a properly moist state. Therefore, use means to maintain a thoroughly moist atmosphere, without a too free use of the syringe over the plants. See that none of the young stock is allowed to suffer for want of pot room, for a short time's neglect at this season will be very apt to throw them prematurely into fruit. Maintain a brisk bottom-heat, as near 90° as can be managed, but do not exceed this. Also keep the atmosphere as warm as the plants will bear without drawing. Successions, if all right at the root, and near the glass, will enjoy from 65° to 70° at night, and 75° to 85° by day, and 5° higher at night and 10° by day will be proper for plants swelling their fruit. Shut up early on sunny afternoons, giving the house a good steaming. Vineries.—As soon as the fruit in the early house is fairly ripe, discontinue the use of fire heat, except when necessary to dispel damp; and admit air freely, keeping the atmosphere cool, to prevent the increase of spider, and preserve the foliage in a healthy state as long as possible. Where fermenting materials are used on the border, the heat should not be allowed to decline while the fruit is colouring. See that Vines growing in pots or boxes are liberally supplied with manure water. Peaches.—Where the trees are in a healthy vigorous state, there will be little trouble in keeping insects under, but where they are weakly, or over-cropped, it will be very difficult to keep red spider in check. Give the trees a liberal dressing with the engine the moment this pest is perceived, and see that everything is done to keep the trees in vigorous health. Thin the crop freely as soon as the stoning is over, and avoid leaving more than the trees can bring to perfection, the result of which would be small flavourless fruit, and a continual war with insects and mildew. The quantity to be left on a tree, however, must be regulated by its condition; but do not be afraid to thin freely.

FLOWER GARDEN AND SHRUBBERIES.

The long continued cold northerly winds render the management of bedding stock unusually difficult this season; for it is still dangerous to risk even the hardier kinds from under the protection of glass. All that can safely be done until the weather changes, in the way of hardening the stock, preparatory to its being planted out, is to give as much air as circumstances will admit, without injuring the plants; and to place Calceolarias and the stronger Verbenas in turfy pits, where they can be securely protected at nights, and sheltered from the drying winds. Such things, when removed to cold pits, should be planted out in fine, very sandy soil, which will save trouble in watering, and be much better for the plants than keeping them confined in small pots. Tender annuals that have been raised in heat should be pricked out in light soil under hand-glasses, in order to get them strong before planting out time. If not already done, hardy annuals should be sown after the first shower, and do not forget plenty of Mignonette and Stocks, the fragrance of which will always render them favourites. Look over the stock of plants at present in flower, and mark the most admired for propagation at the proper season.

FLORISTS' FLOWERS.

This last night, Tuesday, 25th inst., there has been a severe frost, and all uncovered Tulips appear somewhat affected by it; fortunately, the beds and foliage are perfectly dry. Amateurs will see from this the necessity of giving the best beds, at all events, the necessary protection; very little will do it, a covering of Haythorn's hexagon net will be found efficacious, both against frost and hail. As the plants rise, the stems should be supported. The best way we have ever seen is to have neat sticks painted green; one of these placed between four bulbs will, with the aid of metallic wire in lengths of 6 inches, one end of which is placed round the support, whilst the other forms a small loop, like the eye of an ordinary skewer, round the flower stem, keep the blooms in their proper position, and the amateur runs no chance of his flowers dashing against each other. It has been a serious time for late planted Carnations and Picotees, which, if not carefully watered and tended, will infallibly spindle weakly. Put the sticks to the plants, and place oyster shells on the surface of the pots, that in watering the soil may not be washed away from the roots. Harden off Dahlias, and top-dress Pink beds, if not previously done; when the plants are throwing up too many shoots for blooming, cut them back, if strong, to three shoots, if weak allow only one. Remove Auriculas to their blooming stage, protecting the blooms with a slight awning.

HARDY FRUIT AND KITCHEN GARDEN DEPARTMENT.

Commence disbudding Peach trees, &c., but do this carefully at first, going over them two or three times, so as to prevent a too sudden check to the flow of sap, and afford the fruit the protection of the leaves, &c., as long as it can be done without injury to the trees. Look sharply after green-fly, and apply tobacco water the moment it is perceived; on light sandy soils, however, it may be kept in check by frequent washings with the engine. But, whatever method is preferred, see that it is applied before the pest gets established.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,

For the week ending April 27, 1854, as observed at the Horticultural Garden.

April.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind.	Rain.
Friday 21	24	29.486	29.3 7	70	41	55.5	65½	52	S.	.01
Satur. 22	25	29.639	29.311	49	39	44.0	52	53	N.	.06
Sunday 23	26	30.111	29.864	47	31	39.0	49	50	N.E.	.00
Mon.. 24	27	30.416	30.299	51	18	34.5	47	49	N.E.	.00
Tues. 25	28	30.427	30.374	51	39	45.0	46	49	N.	.00
Wed. 26	29	30.391	30.302	56	35	45.5	46½	48½	N.E.	.08
Thurs. 27	●	30.002	29.802	54	36	45.0	47	49	N.W.	.13
Average.		30.067	29.907	54.0	31.1	41.0	48.5	49.9		.20

April 21—Very fine; with hot sun; cloudy; shower in afternoon; cloudy.
— 22—Uniformly overcast; cold drizzling rain; overcast.
— 23—Cloudy and cold, with very dry air; boisterous; clear at night; windy.
— 24—Brisk wind from N. E. clear; quite cloudless sky; dusky and white clouds; excessively dry air; very clear; a black frost at night; thermometer lower than ever registered at Chiswick in April.
— 25—Light clouds; white fleecy ditto; very clear at night.
— 26—Overcast; partially overcast throughout.
— 27—Uniformly overcast; showery; very clear.

Mean temperature of the week, 4¼ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,

During the last 28 years, for the ensuing week, ending May 6, 1854.

April and May.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 30	62.9	41.2	52.0	10	0.31 in	3	3	6	7	3	5	5	4
Mon. 1	62.4	40.9	51.6	9	0.51	2	4	6	3	4	5	4	—
Tues. 2	63.4	41.3	52.3	10	0.72	2	6	6	—	5	5	2	1
Wed. 3	62.1	41.7	51.9	14	0.58	4	5	7	1	4	5	1	4
Thurs. 4	63.0	41.1	52.0	11	0.70	4	5	9	—	5	3	2	1
Friday 5	62.7	41.1	51.9	17	1.26	5	3	3	3	7	8	1	1
Satur. 6	60.8	40.2	50.5	12	0.68	—	9	3	3	8	6	3	2

The highest temperature during the above period occurred on the 6th, 1830—therm. 81 deg.; and the lowest on the 2d, 1852—therm. 25 deg.

Notices to Correspondents.

Aneroids: *Quæstor.* Apply to Dent at Charing Cross, or to Newman in Regent Street. It is a philosophical, not an optical instrument. We believe the patent is English as well as French.

Books: *G B.* Kitto's Cyclopædia can be had through the usual channels of the book-trade.—*C H.* We are sorry you do not understand your business—but are unable to assist you. Books do not communicate the information we understand you to require.

Broccoli: *Melville.* The two heads sent for inspection are nearly as white as those of a Cauliflower, and every way about as good. If the variety, therefore, is as hardy as you state it to be, it is certainly an acquisition. ‡

Gardeners: *E A.* No regular gardener thinks of being tied down to time like a labourer. But a labourer can only be required to work from some hour in the morning to some other hour in the evening which may be agreed upon. For extra time he claims extra pay. Winter is his holiday.

Grape Mildew: *A Gardener.* The only *sure* remedy is sulphur; apply it to the parts affected, either by means of a sulphurator or otherwise, but first wet them well, in order to make it stick. ‡

Insects: *B H.* The small objects infesting the flower buds of your Orange tree are the coccus or scale of the Orange. They have no means of gnawing off the buds, the fall of which is most probably attributable to some other cause. Oil, or turpentine, or, better still, hand picking, will destroy them: or, if on the stems, washing with hot water.—*R L.* The insects at the base of the young shoots of your Peach trees are small unimpregnated females of Coccus Persicæ, with a pupa of the male. For remedies, see answer to *B H.*—*H F.* The beetles which have attacked the buds of your Roses and fruit trees are the common weevil, Otiorhynchus tenebrosus. Spread a cloth under the trees infested by them during the day, and then shake the trees well over the cloth about midnight, when the beetles may be caught in great numbers, and destroyed by being thrown into boiling water. *W.*

Names of Plants: We have been so often obliged reluctantly to decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*X.* Apparently a bit of Juniperus squamosa.—*A W W.* Browallia Jamiesoni.—*M J Rac.* 1, Aubrietia deltoidea, 2, Phlox setacea; 3, Arabis alpina.—*O F.* It seems to be Salix fragilis. Such branched catkins are very uncommon; but since catkins are only branches, it is not surprising that they should branch.—*J C L.* Your Curcuma is rightly named; but it is a mere variety, we think, of the common Turmerick. The others are Oncidium hians, a rarity; Maxillaria ochroleuca, and Epidendrum oncidioides.—*Rosetta.* Celsia arcturus.

New Zealand Flax. We do not know of any field of this plant existing in the United Kingdom; nor do we believe it could possibly pay.

Osage Orange: *W H J.* You shall hear about this plant next week. It is quite hardy, and no doubt a capital hedge plant. Seed may be had of Messrs. Charlwood & Co.

Pruning: *Ballandyne.* Prune everything in mid-winter, except such evergreens as common and Portugal Laurels, Sweet Bays, and the like, which should be let alone till the middle or end of April.

Seed-steeping: *J Diver.* We repeat that experiments, most carefully conducted, prove the case against you. You may as well, in face of existing evidence, say that the sun shines at midnight.

The Crystal Palace. We have made the requisite enquiry, and have now to tell you, that if you had taken the trouble to ascertain the whole truth, and nothing but the truth, it would have been much more to your credit. We have heard of persons, calling themselves gardeners, taking a waggon load of stove plants to Sydenham in the midst of a hard frost. Do you happen to know who they were?

The Scarlet Runner: *G P.* It is a tuberous perennial; and, what is more, its tubers are highly poisonous.

Variation of the Compass: *A Subscriber.* We make it a rule never to answer questions having no relation to the particular subject of our paper—namely Horticulture, Agriculture, and Rural Economy.

Wood paper: *W and B.* Will you favour us with your address?

THE LONDON MANURE COMPANY'S WHEAT MANURE, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. EDWARD PURSER, Sec.
Bridge Street, Blackfriars.

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures.
WM. INGLIS CARNE, 10, Mark Lane, London.

GUANO (PERUVIAN) AND CHEMICAL FERTILISERS.—NITRATE OF SODA; PERUVIAN GUANO; SUPERPHOSPHATE OF LIME; AGRICULTURAL SALT; AND CONCENTRATED MANURE FOR TURNIPS.
The above articles are supplied on the lowest Cash Terms, for best qualities only, on application to Mr. JOHN CLARANCE, Agriculturist's London Agent, 1A, Bishopsgate Street Within.

PEAT MOSS CHARCOAL, AND OTHER MANURES.—The Undersigned are appointed sole Agents by the Peat Moss Charcoal Company, for the sale of this valuable fixer and distributor of ammoniacal matter.
Also on Sale, Peruvian Guano, Superphosphate of Lime, Gypsum, Nitrate of Soda, Bone-Dust, Sulphuric Acid, and all other Manures of known value.—Apply to MARK FOTHERGILL and Co., 204A, Upper Thames Street, London.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7*l.* per ton; Superphosphate of Lime, 7*l.*; Sulphuric Acid and Coprolites, 6*l.*
Office, 69, King William Street, City, London.
N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

THE "ECONOMICAL" MANURE.

A COMPLETE AND BY FAR THE CHEAPEST SUBSTITUTE FOR GUANO.—1¼ to 1½ cwt. per acre of this powerful Manure, costing 15*s.* to 18*s.*, is ample (more must not be used), and equals 3 cwt. of the best Peruvian Guano, thus saving at least 50 per cent., besides carriage, &c.
Hundreds of Testimonials from all parts of England, Scotland, and Wales, France, Belgium, and Spain, prove this, and show that it gave most wonderful results last year on every soil, as well on grain and Grass as on root crops, far surpassing the expectations of the purchasers. Price 12*s.* per cwt., packages included, and delivered free on rail or wharf in London. Testimonials, directions for use, and all particulars, to be had gratis at the British Economical Manure Company's Offices, 10, Mark Lane, London, or sent on applying to
BENJAMIN COVENEY, Manager.
N.B—This Manure, unlike Guano and artificial Manures generally, does not require rain to render it effective. Sown broadcast and left on the surface (the best way of using it) it will not lose its virtue, and has the peculiar property of attracting sufficient moisture from the atmosphere.
Good Agents wanted. An allowance to the Trade.

PROTOXIDE ANTI-CORROSION PAINT, for all external purposes, on iron, wood, brickwork, or stucco, is cheaper, and more durable, than any similar article.—Manufactured by CHARLES FRANCIS & SONS, Cement Works, Nine Elms, London.

ANTHONY'S PATENT AMERICAN CHURN.—Extract from the Royal Agricultural Society's Report of the trial of Churns at the Gloucester meeting in July last. "In this trial the American Churn not only maintained its character in producing butter rapidly, but in producing a greater quantity from the like amount of cream." It made from 4 quarts of cream 4 lbs. 6 oz. of butter, being 8 oz. more than any of the other Churns from the same quantity and quality of cream Price Lists of Churns and Implements by the best makers sent free, and Illustrated Catalogues on receipt of eight postage stamps. BURGESS & KEY, 103, Newgate Street, and 52, Little Britain, London, who have always a large stock of Steam-engines, Ploughs, Harrows, Diggers, Waggons, Carts, Threshing and Dressing Machines, Mills, Oat and Grain Bruisers, Oilcake Breakers, Reaping Machines, Haymakers, Horse-rakers, Turnip Cutters, Liquid Manure Carts, Parkes' celebrated Steel Digging Forks and Draining Tools, Pumps for Manure, Farm Fire Engines, and for Garden Purposes, &c. &c.

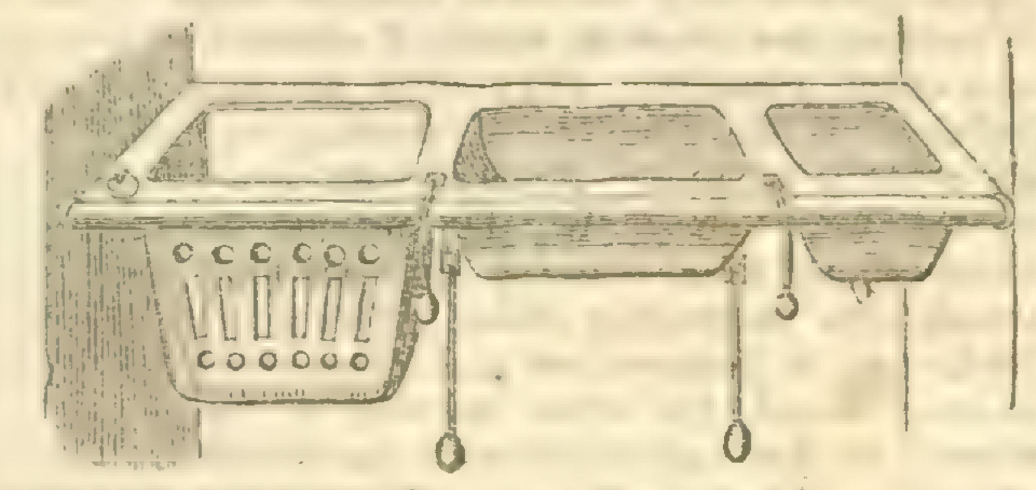
PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.

MESSRS. BURGESS AND KEY, as Mr. PARKES' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.
103, Newgate Street, and 52, Little Britain, London.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.
The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.
Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

BARTON'S PATENT STABLE FITTINGS, PLAIN, ENAMELLED, AND GALVANIZED.



THESE FITTINGS possess the latest improvements, and are superior to any hitherto manufactured. Patent dated 19th Oct., 1853. Stable Furniture, of every description Iron Gates, Railing, Strained Wire Fencing, Hurdles, Sheep and Game Wire Netting, Registered Poultry, Fountains, Feeders, &c. —JAMES BARTON, IRONMONGER, &c., 370, Oxford Street, a few doors east of the Pantheon.
CAUTION.—Other Stable Fittings of this description assuming to possess all the latest improvements, registered and patented, are fictitious.

WARNER'S PATENT FARM AND COTTAGE PUMPS.

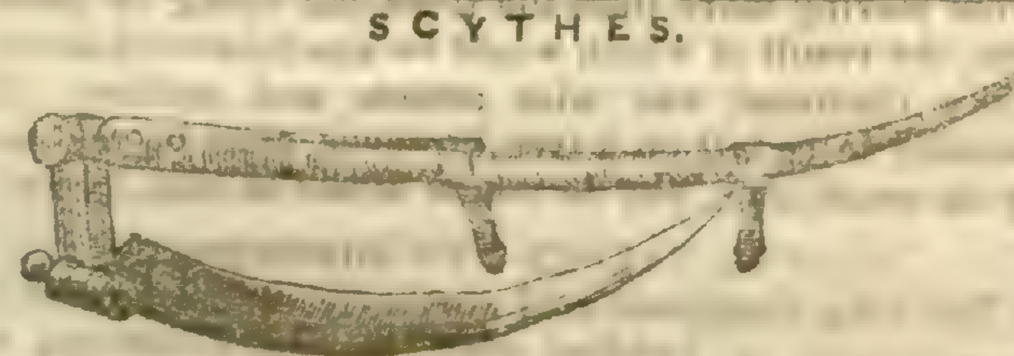
Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

	£	s.	d.
Patent Pump	1	15	0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing	3	0	0

Larger sizes if required.
The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.
May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,
JOHN WARNER & SONS,
8, CRESCENT, JEWIN STREET, LONDON.
Every description of Machinery for Raising Water; Fire Engines, &c.

WEIR'S DRAINING LEVEL, PRICE 30*s.*
These Draining Levels have lately been greatly improved; they have stood the test of five years' use, during which upwards of 1000 of them have been sold. They are so simple that any labourer who can read can use them. They require no graduated staff, the index telling at once the rise and fall in inches without any computation.
EDWARD WEIR, Agricultural Engineer, 16, Bath Place, New Road, (6 Doors West of the Hampstead Road) Removed from Oxford Street.

SCYTHES.



BOYD'S PATENT SELF-ADJUSTING SCYTHE will last out three of the ordinary sort, and is always ready for use.
"We have seen this Scythe at work, and can strongly recommend it."—See *Mark Lane Express*, May 16, 1853.
To be had of every Ironmonger and Nurseryman in the kingdom; and wholesale and retail of WM. DRAY AND CO., Agricultural Implement Makers, Swan Lane, London.

CHAFF-CUTTERS, of the best workmanship, 25*s.*; Two-Knifed Chaff Engines, from 63*s.*; Mills for Bruising Oats and Beans, from 45*s.*
WILLIAM DRAY AND CO., Agricultural Implement Manufacturers, Swan Lane, Upper Thames Street, City.

RICHMOND AND CHANDLER'S No. 1 CORN CRUSHER (Price 5*l.* 5*s.*) was first introduced a few years ago, as a decided improvement upon others theretofore made. Subsequent time and experience have served to render it more perfect, and to greatly extend the pre-eminent patronage of members of the Royal Agricultural Society, and distinguished scientific authorities throughout the world.—Address, RICHMOND & CHANDLER, Implement Works, Salford, Manchester; and 32, South John St., Liverpool. Export orders completed on the shortest notice.

THE THIRD CHELTENHAM SUMMER POULTRY SHOW will take place at that magnificent establishment PITTVILLE SPA, on the 14th and 15th of June. For Prize Lists and full particulars enclose a stamped directed envelope to JESSOP BROTHERS, Secretaries.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—PRIZE SHEETS for the LINCOLN MEETING may be had on application to the SECRETARY of the Society, No. 12, Hanover Square, London.

The Agricultural Gazette.

SATURDAY, APRIL 29, 1854.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

MONDAY,	May 1	Central Farmers' Club.
WEDNESDAY,	— 3	Agricultural Society of England.
THURSDAY,	— 4	Agricultural Imp. Society of Ireland.
WEDNESDAY,	— 10	Agricultural Society of England—Lecture by Professor Way.
THURSDAY,	— 11	Agricultural Imp. Society of Ireland.

THE oldest farmer living never probably experienced such a contrast as the present season and the spring of 1853, have exhibited. The two together illustrate the triumphs of art over natural systems; for undrained and slovenly managed lands, under both excessive rain and excessive drought, soon tell a very intelligible tale, both on Grass lands and arable.

We do not recollect when we have seen the plastic clays of Surrey so deeply rent in fissures at the middle of April as they have been this year, especially those undrained and deficient of manure; more particularly Grass lands when poached with the feet of cattle, or winter Wheats, when they had been poached in ploughing and sowing, followed by imperfect water furrowing—examples presenting very remarkable contrasts in farming, when compared with adjoining fields properly managed. *Here*, for instance, is a large park, divided by railing into several Grass fields—one of which had been poached, and was, when we examined it on the 20th inst., as brown as if at midsummer, and rent in fissures, so that you might thrust in your arm to the elbow in them. A second had not been poached, the cows having been removed in time; it is also very much rent, but the Grass is, nevertheless, fresh and green, although short. A third, also free from poaching, is in high condition, being full of manure, and much less rent than the second; indeed, the fissures are hardly discernible, while the Grass is nearly as long as to exclude subsequent injury from drought. Now, these three fields abut upon each other, the one running alongside the other two, and only divided by railing, so that the contrast which they exhibit is very conspicuous. The three are composed of brick earth, and they are naturally equal in quality. *There*, again, are fields under arable culture which present similar contrasts of farming. On one, ploughed and sown in autumn in a very wet state, the Wheat plants are thin, and, although green, are fast preparing to shoot forth tender seed stems. Indeed, prior to the change of weather, they were assuming a stunted and dwarfish appearance, as it were, while a healthy crop of weeds is fast coming into sight. On an adjoining field, again, the young Wheat plants are of a dark green colour and tillering vigorously. Young seeds and Tares presenting similar contrasts might be quoted from the district, where some fields are so rent in fissures as to bring vegetation to a premature conclusion, while others have not, up to the late change in the weather, sustained any injury either from drought or cold easterly winds, with frequent frosts at night.

The season, so far as it has gone, has been, no doubt, a trying one for newly drained Grass-lands unaccompanied with top-dressing, to counteract the sudden transition experienced by Grasses accustomed to grow in a soil loaded with an excess of moisture; and the same may be said of arable lands, where the clod-crusher, grubber, &c., have not kept pace with the weather.

On the contrary, it has not only been highly favourable for draining, with other improvements and general management, and for crops on lands properly farmed, but also continues to be so. And the showers that have been falling in different places, ever since the afternoon of the 20th, although cold, have tended still further to improve appearances, so that even the scorched fields already referred to are recovering themselves, and may yet yield good crops; for, according to the old proverb, "it is May that makes the hay."

IN pursuing our remarks on ARTERIAL DRAINAGE we come now from foreign excursions to our English doings at home. And, like true drainers, we shall begin with the *outfalls*, although these have been, in actual practice, about the last points attended to. Our principal rivers discharge into shallow estuaries, where they are in danger of being choked with tidal sediment; these, therefore, will receive our chief attention. But we must also advert to the case of those streams which are contesting for a free outflow against the rough and stormy billows of a deep sea; threatened either by gathering shingle or insidiously accumulating sand. Persons acquainted with the Channel coast know the wonderful changes which the ocean there is continually making—even a single storm transforming the gently declining shingle beach into a terrace of pebbly cliffs. The stones torn or crumbled from one portion of the coast are carried eastward along the bed of the sea by the strong impulsion of the tides and waves; being unceasingly ground and rounded as they proceed, they are thrown up upon certain lines of the shore, forming immense banks and piles of material, ever changing in shape, and subjected to either incessant wear or addition. Sometimes the outflowing current of a river is able to divert this accumulation from forming at its mouth; in other places the minor estuaries have been or are gradually becoming blocked up with the beach, which defies all attempts to wash or scour it away by the force of the land-waters, speedily refilling any channels that may be mechanically excavated, and overwhelming or surrounding any barrier erected against its advance. In such a case the engineer, unable to overcome nature, succeeds by strategically assisting her. Observing the beach to gather most on the eastern or more sheltered side of a promontory, he sagaciously constructs an artificial

projection or jetty at a point considerably to the westward of the estuary he designs to screen; this, shooting off the boisterous breakers, provides a still-water cove behind it, in which the shingle bank may grow at will; and enticing the deposit to this spot, leaves the river mouth still clear and open. But as the beach when thrown upon the shore is not safely stranded, but is from time to time eroded from one wing of the shoal, and cast up against the other,—so that the deposit in fact travels slowly along the coast,—other precautions become necessary; and great perplexity and difficulty often arise in staying the stealthy progress of this blockading foe of the rivers. Mischief, however, is not the sole order of action of the beach; to the protection offered by it to the cliffs of soft material at the base of which it may gather, we owe the preservation of long reaches of our southern coast; and many large areas of low land have also been reclaimed from the sea mainly through the agency of this naturally-growing bulwark.

As an example of the great transmutations which are wrought on low shores and in river estuaries by the shingle beach and by a fierce ocean, we give the instance of *Romney Marsh*—including not only the 24,000 acres properly bearing this name, but also nearly 20 contiguous marshes and levels in Kent and Sussex, unitedly comprising a total of about 60,000 acres, won from the sea. Originally, all these formed one great bay of the English Channel, 20 miles wide at its mouth, between Fairlight Cliff, in Sussex, and the hills at Hythe, in Kent; with a depth of indentation of six miles. Four rivers, the Rother, Exden, Brede, and Tillingham, flowed into it; and the islands of Oxney, Rye, and Winchelsea rose from the waters off its western shore. During the Roman period of Britain, the shingle and alluvium had raised a small island in the middle of the bay—the present site of Old Romney; this was first embanked (in all probability by that people) on the north and east, being already naturally raised above the tides on the south, and was called Roman-ea, or the Island of the Romans. Deposits gradually accumulating, the bed of the bay became more or less bare at low water; the main stream, the Rother, together with the Exden, divided into two branches, one passing across its centre from Appledore by Romney to deep water, the other under the northern highlands to Hythe; while the Tillingham entered the sea south-west of Rye, and the Brede south-east of the rock on which Winchelsea stands. In the 13th century some violent storms and inundations destroyed "*Old Winchelsea*," one of the Cinque *Ports*, so that it never again emerged from the sea; united the island of Lyd with the mainland, by the influx of beach and sand; and diverted the main channel of the Rother to an outfall many miles west of the central outlet by Romney. By the middle of the 14th century, most part of Romney Marsh was inclosed, and the northern river channel was altogether lost. The rivers had no well-defined mouths, but spread at high water over the expanse of oozy shoals between the Sussex highlands and the lands already embanked in Romney Marsh. In the course of the sixteenth century Guldeford rose into existence, having the principal estuary between it and Rye. The harbour of Rye, before the year 1664, had no connexion with the Rother; and the Brede and the Tillingham had not sufficient strength of current to keep it open; so that it was choked up and lost. The "fulls" of beach have formed under Fairlight Cliff, and then travelled eastward until the outflow of the Rother checked their progress; when one range or ridge was thus stopped, another began at the first point, and continued outside along the same line—more and more threatening the harbour and estuary. Under an act of Parliament of 1722, a new channel was cut from the strand near Fairlight Cliff to receive the waters of the Tillingham river; and also of the Brede, which entered it nearer to the present Winchelsea. These streams not supplying a sufficient volume of water after a great expenditure of time and money, it was determined, in 1760, to turn the Rother also into the new harbour. Accordingly a dam was at once put across one of the branches by which this river then discharged; and in 1787 the other principal passage was similarly stopped. The landowners, however, complaining that their drainage was thus obstructed, the first dam was cut, and a channel made in its stead 130 feet wide at top; this caused the "old harbour" to improve and remain the present harbour of the town; while upwards of 60 years had elapsed, and 200,000*l.* had been expended in the construction of the "new harbour" to no useful purpose.

This illustration will show the magnitude of the difficulties attending the maintenance of estuaries upon a shingle shore, where we can only occasionally succeed in making use of the obstacles with which Nature shuts up our waters. *I. A. C.*

FARMING NEAR LIVERPOOL.

Whilst Lancashire is universally famous for its arts and manufactures, there is perhaps no county in the kingdom, the agricultural merits of which are so unappreciated. Satisfied with the reputation of its merchants and its manufacturers, it would seem willing to waive that consideration for the character and the position of its husbandmen which might so reasonably be demanded for them. Nevertheless, there is now much farming in Lancashire of the highest order. It is quite true that with all its advantages of roads, canals, and railways, with its insatiable markets, and inexhaustible supplies of manure, this part of the country has not hitherto progressed agriculturally to the extent which might have been expected from it. The time has, however, happily arrived when the farming of Lancashire promises soon to assume that character which ought to belong to it, and which a vast and rapidly increasing population requires. It may confidently be asserted that for the last 10 years, in many districts of the southern and the most populous portion of the county, agricultural produce has at least kept pace with the demand for it; and what more could be said for Lancashire farming? By draining and the improved modes of tillage, the fertility of the land has been greatly and permanently improved. The productive area, too, has been increased by many hundreds of acres—by the eradication of old and useless fences, the filling up of ditches, and the enclosure of waste land. This is particularly the case in the neighbourhood of Liverpool. For many years, now, Lord Derby the worthy proprietor of extensive estates in the neighbourhood, has wisely and vigorously carried on these improvements. Nor can less be said of his excellent neighbour Lord Sefton, on whose estates are now many first-rate farms; and besides these noblemen, the names of other local proprietors might be particularly mentioned as improvers. Unquestionably to the beneficial influence of the Manchester and Liverpool Agricultural Society, the agriculture of this part of the country is very largely indebted for the vast improvements already effected in the art, and for the great progress which is evidently taking place at the present time. But the farmers themselves are the parties to whose skill and enterprise these decided improvements are mainly due. The management and productiveness of many farms in this locality, though they may be equalled, are certainly not much surpassed by any in the kingdom. One of them I have just had the opportunity and pleasure of inspecting; it may be taken as a fair specimen of many in the district, cultivated for produce exclusively for the Liverpool markets; and as it is worthy of the highest commendation in every respect, some account of it may not be uninteresting to agricultural readers in general:—

The farm is Mr. John Lathbury's, in the township of Toxteth Park, and is occupied by him on a yearly tenure, under the Earl of Sefton; it lies about 130 feet above the level of the sea. The soil is a lightish sandy loam, from 12 to 18 inches deep, on a subsoil of white and, in some places, yellow sand; this is incumbent on a bed of clay and marl, from 6 to 8 feet deep, the whole resting upon the new red sandstone formation. Within the last five years the entire farm has been drained with common horse-shoe tiles, 13 inches long and $2\frac{1}{2}$ inches wide inside, and laid on slate soles; the drains were all laid on the parallel system, averaging from 4 to 5 feet deep, and 10 yards wide; cinders, to the depth of 9 inches, were placed over the tiles. The work has proved quite effective, as the land is now perfectly dry and in the most satisfactory condition. Within the same period the farm has been entirely remodelled as regards fences; the many old ones were eradicated, and new ones planted of White Thorn, and the farm is now divided into eight large regularly shaped fields; whilst before, it consisted of something like three times that number of enclosures. Many ponds and old pitsteads have been filled up, and there are now none on the estate, except two small ones, which are required for watering places. The ditches likewise have all been drained and filled up. Of these new fences, those which have been planted longest are but three years old, and are already what may be termed good sheep fences; and by the time they are five years old, will, probably, be fit for any purpose. Generally speaking the Quicks have been planted in a perfectly straight line, six plants to a yard, or in other words, 6 inches apart. This mode of planting seems to make a better fence, that is, a closer and thicker one (at the bottom especially), than when the Quicks are placed alternately in two parallel lines.

We may now proceed to notice more particularly the crops, and the general cultivation and management of the farm. The rotation commences (say), first year with Oats; 2d, Potatoes or Turnips; 3d, Wheat; 4th, Clover; 5th, Grass; 6th, ditto. Sometimes, however, the 4th year is Barley (after the Wheat); but in either case the three following years the land is laid down with Clover and Grass seeds, sown on the Wheat or the Barley the previous spring, and is then broken up again for Oats. This may be termed the Lancashire course, as it is the one now generally adopted, though perhaps with some little variation; at all events it is the practice about here. The following is the state of cultivation at the present time; Oats, 15 acres; Potatoes, $17\frac{1}{2}$; and Turnips, $4\frac{1}{2}$; Wheat, 20; Barley, 4; Clover, 18; Grass, 19; homestead and garden, 2; total, 100 acres.

The Oats are generally sown on one good furrow, which is all the tillage the land receives, save harrowing when first broken up for that crop. Five bushels per acre are sown at the latter end of March or the first week in April; and the crop generally averages 70 bushels per acre. Like all other grain crops on this farm, the Oats are sown with a drill machine; the crop requires no weeding, the ground having been made perfectly clean when laid down to Grass.

As soon as the Oats are harvested the land is fallowed or "skimmed" for the next year's crop—Potatoes. In that state it lies all winter, and early the following spring is grubbed or scarified and again ploughed; it is then well harrowed, and this brings it to a sufficiently good tilth and clean state, so as to allow of the next process—drilling, and the Potatoes are then planted. The quantity of manure used for this crop (Potatoes) is 20 tons per acre, and consists of horse, cow, and black manure (night soil), in equal proportions. The produce, including both large and small, averages about 250 measures of 90 lbs. each, per acre. The sets are placed from 8 to 9 inches apart, and the drills are 35 or 36 inches wide. This great width of drill is considered necessary, for the purpose of thoroughly working and cleaning the land, without interfering with the crop. When the drills are small, and the crop heavy, like the one above mentioned, a large portion of it becomes unmarketable by its exposure to the atmosphere during growth. This is avoided when there is sufficient soil, and the land can be constantly and thoroughly worked through summer. At the time of getting up the Potatoes, the ground is well forked, and the weeds carefully picked out, which, together with the tops, are burnt and spread over again.

We now come to the following crop, namely, Wheat. The Potatoes having been cleared off the land, the harrows are first used to level it, and to root up any remaining weeds; after this the plough goes over it once, and buts are formed about 15 yards wide. Then comes the sowing, which, if the weather permits, is done about the first week in November; the seed sown is 2 bushels per acre, and the average produce of the crop on this farm is from 45 to 50 imperial bushels per acre.

The succeeding crop is generally Clover, but, as already stated, Barley is sometimes sown after the Wheat. When such is the case, the land is ploughed or "skimmed" over as soon as the Wheat has been cleared off—immediately after if possible—as it is found to destroy the weeds much better. It thus remains fallow until the following spring or beginning of March, when the land being dry enough, it is well harrowed; it is afterwards ploughed again and "butted-up," and the seed sown about the usual time, the first week in April; 3 bushels per acre are sown, and the crop averages 50 bushels in fair seasons.

The Clover crop is, of course, sown on the Wheat or the Barley, the previous spring, *i.e.*, the latter end of March or first week in April. The following kinds and quantities of seed are sown per acre:—6 lbs. red Clover, 3 lbs. white Clover, 2 lbs. Rib-grass, 2 lbs. Trefoil, and $\frac{1}{2}$ bushel Pacey's perennial Rye-grass. The crop is generally mown twice in the season, and afterwards eaten off with sheep; the first crop, if a fair one, will be nearly 3 tons per acre; the second, half that weight. The two following years this same ground, which we have already stated lies three years in Clover and Grass, is manured in spring each year with guano at the rate of $2\frac{1}{2}$ cwt. per acre. It should also be stated that when a Barley crop is taken after the Wheat, and before the Clover, the same quantity of guano is sown on the Clover, as a compensation for the Barley crop. To conclude our notice of the culture and management of the various crops, it may here be stated that about 35 or 36 acres have been marled within the last seven or eight years with 128 cubic yards per acre. For this Mr. Lathbury recently obtained a prize from the Manchester and Liverpool Agricultural Society, having previously obtained prizes for draining and eradicating.

There is no stock kept constantly on this farm, but occasionally in autumn the aftergrass is let to Liverpool cattle dealers for the pasturing of sheep which have just arrived in town, and are intended for the market. There are of course horses kept for the farm work, and four is found to be the requisite number; though probably 30 acres more might be worked with them. As it is, however, these horses are constantly employed, and as they are at all times in excellent condition, it may be worth while shortly noticing their management. I find, then, that their provender consists of Oats, Barley, and bran, in the proportion of three sacks of Oats to one of Barley and one of bran. The Oats and Barley are first ground together and then mixed with the bran. Each horse receives from 60 to 70 lbs. per week of this mixture, and in addition thereto they get either boiled Potatoes or Turnips and Wheat chaff, which are all mixed up together and given to them warm. It is difficult to state the exact quantity of Potatoes and chaff used, but the proportions necessary to produce the requisite consistency (which is rather stiff) is easily ascertained in practice. When there are no Potatoes and Turnips to give them they receive an additional quantity of Barley, and this is boiled. The horses are fed three times a day, viz., at 6 A.M., 12.30 P.M., and 6 or 7 in the evening. After the hay harvest they are turned out to Grass for a season, both night and day, at which time no provender is given to them. The stables are two miles and a half from the farm, which is of course an inconvenience; it has, however, the advantage of bringing the horses constantly, and especially at nights, under the inspection of their owner, who wisely takes care that every attention is paid them. Successful

stable management is one of the first considerations in rural economy. Some pigs are kept on this farm for private use, but there is nothing respecting them which need be noticed.

Where so little stock is kept, it will very naturally be asked, whence comes that large supply of manure necessary for such a course of cropping as that pursued on this farm? This is easily explained: any description and any quantity can be had in Liverpool, which town is not more than two and a half miles distant from the farm. For this manure, the prices at the present time are—for horse and cow manure, 6s. per ton; and the black manure or night-soil, 1s. per square yard, or about 1s. 2d. per ton. The quantity purchased annually for this farm is 20 tons of horse, cow, and black manure, in equal proportions, per acre, for Potatoes and Turnips; and 2½ cwt. of guano, per acre, for Clover and Grass roots. This last mentioned valuable manure is nowhere more prized than by the farmers of this neighbourhood; and whilst it was never more sought after than at the present time, it has become exceedingly scarce, and every day becomes more expensive. The price is now 13*l.* per ton for Peruvian, and 10*l.* per ton for Bolivian, which is nearly 50 per cent. dearer than it was at this time last year.

Here we conclude our notice of this well-managed farm, and, in doing so, it may not be inappropriate to glance at the state of its farming operations and appearance of the crops at the present time. All the seeds are now sown except Turnips, and in a few days Potato planting will be finished. The Clover and Grass roots are looking well, and will, no doubt, be good crops, if the season proves favourable; but rain is now beginning to be much wanted everywhere. Wheat is looking well on this farm, perhaps better than many of the crops in the surrounding district; for, upon the whole, the appearance of this crop is not so satisfactory as could be wished; in some places it looks sickly, and seems to have lost its roots, either by the wireworm or some similar cause. There has, however, been a great deal more Wheat sown this season than there was last, and, upon the whole, we have much reason to be thankful at the present time for our agricultural prospects. *Thos. B. Ryder, Surveyor, &c., 2, Elliot Street, Clayton Square, Liverpool, April 17th.*

AGRICULTURAL METEOROLOGY.

(*Continued from page 259.*)

It appears to me that the perusal of this table suggests some very interesting inquiries. *What are straight winds?* For 63 hours, notwithstanding the steady fall of the barometer, the wind continued fixed almost in one quarter; South-east, South-South-east, South; and yet there seems to me to be no fact more clearly demonstrated than that this was a Rotatory and Progressive Storm. Again, *why was not this wind more violent?* How did it arise that the force of this South-easterly wind did not exceed a strong breeze in Dublin, at a time when in England it was blowing a strong gale at South-west and West-south-west? Again, *why should the temperature at Dublin have been so much higher by several degrees whilst the wind was Easterly,* which is a cold quarter, *than it was when the wind shifted round to the Westward,* which is a warm one? Each of these questions would offer interesting materials for discussion, and to each of them the Rotatory Theory would give a satisfactory solution.

Observatory, Trinity College, Dublin.

Aug.	Hour.	Bar.	Ther.	Wind.	Force.*
23	10p.m.	29,853	50.0	S.E.	1
24	10a.m.	,806	61.9	S.E.	2
	1p.m.	,760	63.0	S E.	2
	6	,698	58.8	S.S.E.	2
	10	,662	56.0	S.E.	1
25	10a.m.	,442	65.9	S.	1
	1p.m.	,412	67.5	S.E.	2
	6	,313	60.9	S.E.	2
	10	,153	58.3	S.E.	3
26	10a.m.	,038	63.6	S.E.	2
	1p.m.	,041	63.0	S.E.	2
	6	,061	58.5	E.	2
	10	,163	53.2	S.W.	2
27	10a.m.	,270	57.9	W.	3
	1p.m.	,327	59.5	W.	3
	6	,375	56 5	W.	3
	10	,456	53.3	S.W.	3
28	10a.m.	,571	—	W S.W.	3

* Force of wind is estimated in numbers from 0 to 6.

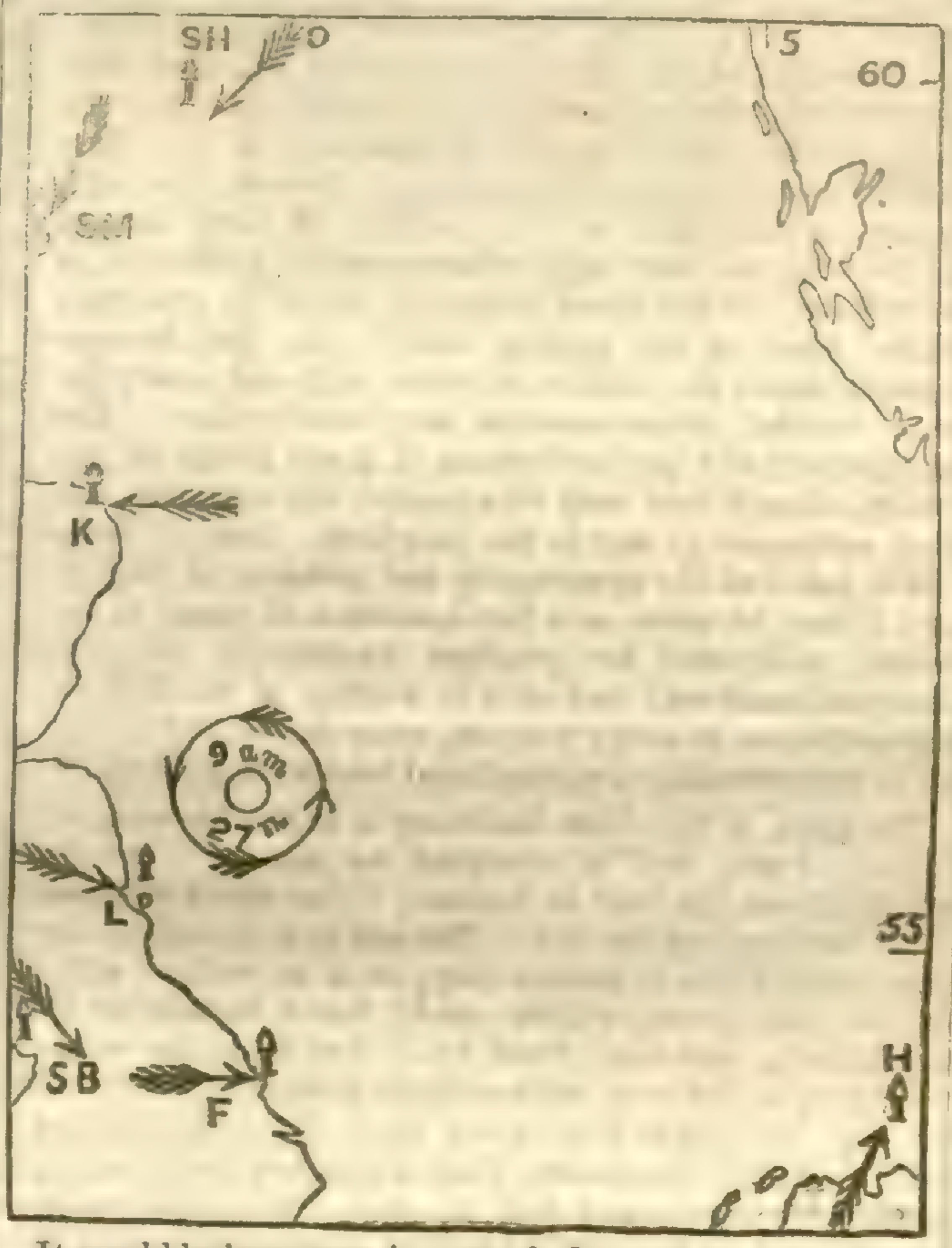
0, Calm. | 4, Moderate gale
1, Light breeze. | 5, Strong do.
2, Moderate do. | 6, Storm.
3. Strong do.

H. L.

But the reason which induces me to give in full this table of the Dublin observations is that your columns are dedicated to promote the interests of agriculture, and are chiefly studied by agriculturists. And I would ask who are more dependent on the vicissitudes of weather than they are? Though to the sailor a wet jacket may be less pleasant than a dry one, yet rain or damp is to him but a secondary object, provided he has but a sufficiency of wind. But to the farmer, with the fortunes of the entire season depending on the change which a few hours may bring in the elements, of what vital importance is it to elucidate the principles on which those fluctuations of the barometer may be explained which are to warn him of the approaching change. It is therefore to the *frequent record of barometrical readings* that we must trust for the indication of the rate of travelling of these phenomena of which they are such certain guides. If we examine the above details taken at Dublin during the 26th August, we shall perceive that they give us an observation for nearly every four hours; that at 1 P.M. the barometer was still falling and the wind still S.E.: at 6 P.M. it was rising and the wind had shifted to the East: at 10 P.M. it had risen still more, and the wind had shifted to the S.W. Had the observations at all the other stations been taken thus frequently, we might have traced this Storm's-Centre along its route hour by hour, as accurately as one can trace on a distant railway the progress of a locomotive by its jets of steam. With our network of electric telegraphs over these islands, and observations taken regularly at some of our principal railway stations, what a loss of life might be avoided in the case of vessels shipwrecked in bad weather, as recently was the *Tayleure*, shortly after leaving port; what an amount of damage might be saved to the farmer from his ruined crops left unhoused in the promise of the morrow's brightness! Let us conceive in the case of this very deluge of rain, which fell in England during the 25th and 26th August, what an amount of corn might have been wind-mowed in a few hours, which was irreparably soaked by remaining unprotected on the ground. Why should not we investigate closely the nature and causes of these rotatory and progressive winds, and learn to prognosticate their approach? But how is this to be effected, so long as we content ourselves with barometrical observations, alas, too like angels' visits, very few and very far between?

Having been enabled, from a comparison of the observations taken at *Dublin Observatory* and the *Bishop's Lighthouse*, to fix so accurately the position of the storm's centre at noon of the 26th, we might without much hesitation assign its position at 3 A.M. of that day to lat. 50 N., long. 10 W. (*i.e.*, the parallel of Scilly), and thus measure the area which was affected by this storm in its passage, as at that time the wind at Heligoland was south, with a falling barometer. The distance from the storm's axis to Sumburgh on the one side and to Heligoland on the other being compared with the fall of the barometer (see Diagram in page 259), we may reasonably infer that the barometer was affected as far as Munich, and possibly even to Reikiavitz in Iceland.

I annex a diagram showing the direction of the wind at different stations at 9 A.M. of the 27th.



It would be improper in a work devoted to agriculture to discuss nautical topics. The inquiry into individual storms having arisen from the interest excited by the *Bengal's* life-boat being washed ashore off Portland, I may be permitted to state that at the very time (viz., noon of the 26th) that she encountered this misadventure with a hurricane at South-west, the Annie Jane lost her masts with the wind at north-east off the north coast of Ireland. *F. P. B. M.*

(*To be concluded in our next.*)

THE MANAGEMENT OF FORWARD EWES AND LAMBS.

(*Concluded from page 259.*)

In the management of this kind of stock, or, indeed, of any sheep, it is advisable to have a catch coop in the field, for the purpose of driving the sheep into when required to be examined or drafted, either for treatment in disease or for the market; and in order that the coop may be clean and not contaminated by constant use, it should either be continually removed, or else kept supplied with litter, such as refuse straw, as cleanliness requires; after being used a given time the bedding will be converted into manure, and may be removed for that purpose.

I now propose to make a few remarks upon the state in which it is best to give certain feeding materials. When Peas are given to lambs it is desirable that they should be cracked, not ground into meal; for in this state it is not only objectionable to the lambs, but very wasteful, particularly in damp weather, as much of the finest portion becomes clotted and distasteful, and, consequently, useless for the purpose intended. It is, therefore, only necessary that the Peas should be broken, and this only up to the time of the lambs being two months old, for after that period they will readily eat them whole; and this, in fact, is the only state in which they can be given without some amount of waste, with this drawback, however, that those grains which may be dropped outside the troughs will be liable to vegetate amongst the succeeding corn crop.

Good hay may be given to ewes and lambs, either entire or cut into chaff. I prefer that fatting sheep (and particularly lambs) should receive their hay in the ordinary state, for they will then have the opportunity to select the best, and leave a portion, and afterwards it may be removed and given to the ewes or other stock; whereas if the hay be given in the state of chaff, the lambs cannot so readily select the best and the Clover leaf portion, nor can it be made so available for the removal of the residue to other stock.

I would here observe that the declared object of parties who advocate the feeding of stock with chaff is to mix it with cake or corn; and when it is given alone, it is intended to prevent waste, and induce the animals to eat the whole without distinction or selection. I think the former mode of mixing oil-cake or corn is objectionable, for I find the stock are apt to rout the chaff out of the troughs in searching for the better and more palatable food; and the latter mode of giving chaff alone I consider without advantage; for if we take the loss of good hay when given in the ordinary state at regular intervals, and in proper quantities, it will not amount to more than 1-20th part, or 1 cwt. in a ton; and it must be remembered that chaff is not always given without some loss, particularly in windy weather, when it is often blown out of the troughs. I will, therefore, put the loss on chaff feeding, at half a cwt. per ton, which will only leave an actual difference or loss against feeding in the ordinary state of 56 lbs. to the ton, and the wasted portion must be considered of some value to plough in as manure. I will, however, place the value of loss at 2s. per ton, which sum will not pay the cost of converting the hay into chaff, with other extra charges. I am willing to admit that chaff made of inferior hay is made more palatable for store sheep, and that in some instances they may be induced to eat a larger portion of the hay as chaff than they would if given entire. But for lambs, or fatting sheep, it can never answer a good purpose to offer them hay in the form of chaff which they would otherwise refuse as ordinary hay.

The selection of feeding materials is a matter of the greatest importance; for instance, it is commonly considered that white Peas are the best for feeding lambs, but my experience has taught me that the grey or Maple varieties are much better than the white. I had an excellent opportunity of proving this a few years ago; being out of the grey Peas, which I usually grew for feeding, I was induced to purchase some of the best white boiling Peas which I could get, being informed that they were the best sort for the purpose. About a week after I commenced feeding with them, my lambs, which had heretofore given good satisfaction, were now complained of by the butcher; nor did they die well, and in good condition, during the whole time they were eating white Peas. But, after a while, I fed them again with Maple Peas, when the lambs soon regained their former good quality, and maintained it until the end of the season. These facts, coupled with the chance which I had of seeing the lambs dead every week, were conclusive to my mind, and I have not since been induced to use White Peas for feeding lambs, nor should I do so if I were enabled to obtain them at a greatly reduced price. It may be considered that the astrigent property of the grey and Maple Pea acts very favourably (particularly in connection with oilcake) in the feeding of lambs, by conducing to the production of a good proportion of muscle and flesh, which is really essential in making up lambs of the best quality. Beans are not good for feeding lambs, as they contain the atringent property in excess of the Peas, and I have known, by their use in feeding, that the flesh has been made so hard as to render it unsaleable as lamb.

There is also a vast difference in oilcake for feeding purposes. The home-made and some of the Marseilles cake are very good for feeding ewes and sheep stock in general; but the superior sort of American cake is certainly the best for feeding lambs. This cake, when good in quality, always makes a higher price than other sorts of oilcake; yet it is much cheaper for the feeding of lambs, if we measure its value by results. In fact, I do not hesitate to state that so far as cake and corn are concerned, that American barrel cake and Maple Peas are the perfection of lamb food.

In the growth of Grasses intended to produce hay for feeding this kind of stock, it is desirable to select white Dutch Clover with Trefoil, and a small portion of Italian Rye-grass mixed for the lambs; and broad Clover with Trefoil, and Italian Rye-grass for the ewes. The former being intended as hay for the lambs, should be cut very early indeed; it will then, if well made, contain the greatest amount of nutrition; and this is especially necessary, because young lambs cannot under any circumstances be expected to eat more than a limited quantity. It is, therefore, requisite that the hay should be of the best quality; for not only will they be induced to eat the greatest bulk of the material, but, at the same time, the largest possible amount of nutrition will be conveyed into the system. The hay best calculated for feeding the ewes is, without doubt, the same as has been recommended for the lambs; but it often happens that a sufficiency is not grown to feed both with the same sort during the whole season. It is usual to grow the Clovers alternately, therefore the supply of either description is somewhat limited, and the broad Clover and Rye-grass hay is commonly resorted to for the feeding of ewes.

It has been previously recommended to feed the ewes with a certain quantity of oilcake each per day; it was, however, omitted that they should receive half a pint of Beans also, in addition during the last month of their fattening; this will render the flesh more firm, and they will sell better in the market, inasmuch as

the great objection to ewes which have been fattened during the time they suckled their lambs being that they are usually deficient in firmness and quality of meat.

I shall conclude this paper with an observation as to the great advantage of high feeding for the ewes, in which the lamb is also found to participate, owing to the extra quality of the milk induced by feeding upon highly nutritious materials, verifying the old saying, "a fat ewe makes a fat lamb."

Home Correspondence.

House-feeding Sheep.—Quite accidentally, in a local paper, I met this day with the request of Major M'Inroy that I would state how the small lot of hoggets were fed up to the time of their being placed upon boards: this with pleasure I comply with, and may inform him that they had all the sumptuous fare they could meet with upon very plain Grass land, at an altitude of 1100 feet, and this was all I ever gave them prior to their being housed, my best pastures being reserved for a dairy of about 30 cows. I am not aware that Major M'Inroy's calculation of the cost of my house-feeding the hoggets is incorrect, but I think I have given every particular appertaining to the subject, and, consequently, will not further enlarge; but must just add, that my opinion as to the "dismal price" his hoggets obtained, after house-feeding charges, remains unaltered. And to this time I do not know the month, or months, in which they left him, though I have given the dates on which mine quitted me, as also the butcher's address who had them. Rely upon this truth; both he and I act injudiciously if we permit Leicester blood in our sheep; the Cotswold is larger, and far more hardy, and much more suitable for us to cross our mountain flocks with. His breed, at about the same age as mine, returns 30*s.* 3*d.*, whilst mine, possessing a higher amount of gratitude, gives me 43*s.* 10½*d.*, leaving his a large margin for improvement. *G. W. Fowler, Prince Hall, Dartmoor.*

The Ninth Year of Wheat after Wheat, without Ploughing and Digging—one Acre:—

EXPENSES.	£.	s.	d.	RECEIPTS.	£.	s.	d.
Rent	2	0	0	8 Sacks 1½ bushel, at £21 per load ...	17	11	9
Tithes	0	7	0	Straw, sold at £2 per ton	2	15	0
Rates	0	3	0	Chaff	0	7	0
Hoeing	1	10	0		£20	13	9
Dibbling and Sowing	0	4	0	Expenses	9	0	0
Seed, 2 pecks	0	3	0				
Threshing, 9*s.* per qr.	1	16	0	Clear profit per acre	£11	13	9
Reaping	0	17	0				
Top Dressing, Soot, about 60 bushels ...	2	0	0				
	£9	0	0				

AVERAGES FOR THE LAST FIVE YEARS:—

		£.	s.	d.
Average quantity per acre, 9 sacks 3 bushels.	Profit, 5th year ...	6	6	3
	,, 6th ,, ...	7	3	3
	,, 7th ,, ...	3	5	3
Average price per Load, £12. 5*s.*	,, 8th ,, ...	4	11	0
	,, 9th ,, ...	11	13	9
Average profit per acre, for five years, £6 11s. 11d.		5)32	19	6
		£6	11	11

The reason why it cost so much for threshing is because I used a hand threshing machine. I was told that two persons could turn it; but when I got it to Colne, there wanted six Colne men, and then the work, they said, was so hard that they had to have elevens (luncheon) three or four times a day, and fours (tea-time) about as many. Then there was to board and lodge the manager, &c., &c. "This is the way the money goes." Then, again, the 30*s.* for hoeing—12*s.* of that was for hoeing after last harvest. *J. D. Piper, Colne Engaine, April,* 1854.

Paper and Bread.—In your No 15 are two articles on materials for paper, none of which (p. 238), the writer suggests. sawdust. That would hardly give length enough of fibre for the texture of the paper; and would do little more than add thickness and weight, without strength. A more fibrous material, refuse bark from the tan pits, was tried 10 years ago; but I have never learned with what success It would appear to be practicable; and I should think the supply would exceed 50,000 tons yearly. Does Mr. Patterson know anything of this?—The article on cheap bread (p. 243), and the experiments now making by a French company, producing 120 loaves per sack instead of 96—with the remarks thereon by Prof. Pepper, in your Newspaper of the same Number, p. 118—call to mind the old trick of boiling the water into paste with part of the flour, before making up the dough; by which means a much larger quantity of water is retained; of course without advantage to the nutritive power, though with injury to its keeping quality. But so many distinguished French names are quoted, in approbation of the new process, that the secret would appear to lie deeper than mere absorption of water. *J. Prideaux.*

An English Farmery.—In the erection of a farmery there may be a great improvement made in the connections of the buildings, and their relative proportions and position. I am persuaded of an advantage to be derived from judiciously adopting better arrangements for these purposes than are at present in general use. The day may not be distant when the profits of the agriculturists, like those of the manufacturers, will depend more upon the perfection of their machinery than extent of occupation. When the best principles are acknowledged, then all new buildings could be made according to the agreed proportions, so that the whole, whether in detail or as a whole, could be combined and scientifically completed. A farmer requires dwelling-house, barn, root and chaff-houses, as well as other houses and machinery. The dwelling I shall not now notice. The barn might be so placed that the dressing chamber would be elevated for the various purposes of loading, &c., being done easily; the root stores to comprise a separate place for each kind, and at harvesting stored at such an elevation of lodgment, that its future movements, to convey it through the washing, cooking, and mixing operations, may be facilitated, chiefly by means of a correct arrangement of the levels, giving to the same a tendency to move onwards; for every movement should be in connection with suitable contrivances, that the whole may co-operate easily. The inner floor of the mixing box might perhaps be in a line with the mangers. The best situation for a tank or tanks is, I fear, a matter of dispute, and unless placed on the premises to meet very particular disadvantages of locality, would be much better elsewhere. We need tanks in the fields as numerous as watering-places; indeed, field tanks may soon supersede all home filth-holes. When drainage pipes are manufactured in the "taper form," then our liquid manure, in numerous localities, might be conveyed to field tanks at much less expense than it is at present by man, horse, and cart, and made available when most required at any season, and in all weathers. *T.*

Societies.

AGRICULTURAL IMPROVEMENT, OF IRELAND, *April* 4.—*On Green Cropping.*—Mr. Ball proceeded to read a paper on this subject, from which we make a few extracts. 1st, in reference to the *purchase of artificial manures*:

"I may mention that a year or two ago I purchased a quantity of one of these artificial manures from a quarter in which I had every reason to suppose I should be supplied with a genuine article. I was willing to take it on character, and did not, at first, propose or even think of an analysis; subsequently, on the urgent advice of a friend, I determined to send a sample of it to our chemist, who pronounced it not to contain one particle of the substance it professed to be—namely, superphosphate of lime—and I ascertained the actual mercantile value of the substance at the then price of bones, to be from 2*l.* to 3*l.* 10*s.* per ton, whereas the price I was to pay for it was 7*l.* Upon bringing these facts under the notice of the agent of the vendor, and presenting him with the analysis, he attempted to question not merely its accuracy, but his statement went to this, that there was not one word of truth in it. Under these circumstances, the committee of the society determined to have the accuracy of their chemist further tested, and for that purpose submitted samples of the substance to Professor Way of the English Society, and Professor Anderson of the Highland Society, by whom, it is hardly necessary to add, the entire accuracy of the first analysis was placed still further beyond question. As a general rule, then, insist on seeing a properly certified analysis before purchasing, no matter from whom. Next, as to the selection of the manures for this season, and their method of preparation and application. Guano, of which we have lately heard so much, is not likely to be generally within the reach of farmers for the ensuing Turnip season, and I think it may be safely laid down that with the prospect of an increased supply of other manures of considerable fertilising power, which the rumoured deficiency of guano has, unquestionably stimulated, that we may safely reduce the quantity hitherto generally applied; and, further, I would urge my own experience of the last season, that under no circumstances should it be omitted to mix an equal weight of gypsum with the guano immediately on its being thrown out of the bags. As a general formula, I have found that a mixture of 2 cwt. guano, 2 cwt. of gypsum, and 2 cwt. of superphosphate (last season I used Lawes', and had every reason to be satisfied with it), mixed with from 18 to 24 cwt. of ashes, in conjunction with about 20 to 25 tons of farm-yard manure per Irish acre [the Irish acre is 1.86 statute acre] is a manuring that, upon most lands, should produce a full crop of Turnips. For Mangolds the farm-yard manure may be increased to 30 or 35 tons with advantage, and say 2 cwt. of common salt added to the above artificial manures."

2d. *On the Preparation of Land.*

"I must mention my experience of a late and imperfect attempt at the system of autumn cleaning, of which so much was said here in the course of last year. I was only able to accomplish the cleaning of about three or four acres when the weather broke, and I was for some time undecided whether to wait for a return of fine weather to finish even a part of my work to my satisfaction, or, as I eventually found myself obliged to do, to start the ploughs and make a regular winter fallow, while yet there was time. It was well for me I did so, as by that means I accomplished the turning over of about 12 Irish acres of fallows before the early and severe winter, with snow and frost, with which Providence favoured us last season, had set in, leaving me, however, about three acres of stubble still unturned; and I can only say I would not exchange the unquestionable advantage of the cleaning on the one three acres for the deterioration on the other three that lost the invaluable manuring of last winter's snow and frost, and which might have been three times over ploughed in the time that my men and horses were at work at the autumn cleaning of the other part. This, however, I freely admit, was my own fault, for not having commenced sooner, and must not be fairly visited on the system, although it cannot but be admitted that at best it is attended with some risk, and that not only with the best intentions, but the best exertions to back them, that you may suffer more by a sudden break in the weather than (at least upon strong land) you can ever gain by the saving of the additional spring work. What the acreable money value may be of last winter's frost and snow on the fallows of this country, I cannot say, and will leave every practical man who hears me to estimate it after his own fashion; but of this I am full sure that I would not now exchange an acre of winter fallow that had received a good deep furrow last October or November, notwithstanding a certain portion of Scutch Grass and annual weeds may be beginning to peep through it, for an acre of the same land as well worked on the surface and cleaned as Bental's broadshare and the most improved of grubbers could render it, but which has not received a winter furrow in proper time, and has lost the precious manuring of the last winter's frost. I have made these observations not because I suppose, for a moment, that it is held for a general rule that the winter furrow should be sacrificed to the autumn cleaning; but, on a late occasion, it was mentioned by Mr. Harkness, that a main feature of the system, as followed by Mr. Tenant—who has been, I believe I may say, one of the earliest and most successful promoters of it—was, that having accomplished the surface-cleaning of the land by one or more applications of the grubber, followed by the harrows, &c., that he then left the land for the winter, and, as I understood his observation, did not wish to use the plough until the following spring; not for a moment doubting the applicability of this system upon a light soil, and with a severe Scotch winter, I can only say that such management would never answer in Ireland, where our winters are generally green from one end to the other, and the amount of moisture that falls keeping up the vegetation of small weeds and grasses almost without interruption."

3d. *On the Distance between the Plants*:—

The following Table is the result of experiments on the effects of distance between plants upon the weight of crops:-

Name of Crop.	Distance in inches between the drills.	Distance in inches between the plants.	Weight of roots on one drill, 19 perches in length.	Weight of roots per acre Irish.	Average weight of each root grown.	Weight of tops on 19 perches of drill.	Weight of tops per acre Irish.	No. of roots grown on 19 perches of drill.	No. of roots grown per acre, Irish.	No. of roots that should stand on 19 perches of drill.	No. of roots that should stand on one acre, Irish.	Difference, + or −, between the last column and the number of roots actually grown.	Quantity and description of manures used per acre, Irish.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
			C. Q. lb.	T. C. Q. lb.	lbs.	C. Q. lb.	T. C. Q. lbs.						
Swede Turnips	28	18	11 2 5	41 11 0 24	4 13-16ths	2 2 7	9 4 2 0	269	19,368	266	19,152	+ 216	Farm-yd. manure, 40 tons
	,,	15	11 0 0	39 12 0 0	3 14-16ths	1 3 9	6 11 3 2	316	22,752	332½	23,940	−1188	Guano, 2 cwt.
	,,	12	10 2 7	38 0 2 0	2 15-16ths	1 2 26	6 4 2 24	405	29,160	399	28,728	+ 432	Gypsum, 2 ,,
	,,	9	10 3 12	39 1 2 24	2 7-16ths	2 0 25	8 0 0 8	495	35,640	532	38,304	−2664	Sphosphate, 2 ,,
	,,	6	10 2 0	37 16 0 0	1 10-16ths	2 1 24	8 17 1 20	729	52,488	798	57,456	−4968	Ashes, 24 ,,
Long Red Mangold	,,	18	7 0 7	25 8 2 0	2 10-16ths	3 2 0	12 12 0 0	300	21,000	266	19,152	+2448	
	,,	15	9 1 14	33 5 0 0	3 1-16ths	5 1 5	19 1 0 24	342	24,624	332½	23,940	+ 684	
	,,	12	9 1 12	33 3 2 24	2 8-16ths	5 0 18	18 11 2 8	388	27,936	399	28,728	− 789	Ditto.
	,,	9	9 2 21	34 7 2 0	2 4-16ths	5 2 23	20 10 3 2	480	34,560	532	38,304	−3744	
	,,	6	10 2 13	37 16 2 16	1 12-16ths	7 1 1	26 2 2 16	689	49,608	798	57,456	−7848	
Yel. globe Mangold	,,	18	8 1 7	26 18 2 0	3 6-16ths	4 1 22	16 0 0 16	257	17,504	266	19,152	−1648	
	,,	15	9 0 0	32 8 0 0	3 5-16ths	5 1 13	18 16 2 4	309	22,248	332½	23,940	−1694	
	,,	12	8 0 15	29 5 2 16	2 10-16ths	7 0 14	25 13 0 0	250	25,200	399	28,728	−3528	Ditto.
	,,	9	8 0 0	28 16 0 0	2 1-16th	5 0 10	18 6 1 20	429	31,488	532	38,304	−6816	
	,,	6	8 2 10	30 18 1 16	1 12-16ths	5 3 6	20 17 3 12	557	40,104	798	57,456	−17352	
Red Globe Mangold	,,	18	9 1 14	33 6 2 16	3 13-16ths	4 3 0	17 2 0 0	273	19,656	266	19,152	+ 504	
	,,	15	9 2 23	34 8 3 4	3 8-16ths	5 3 14	21 3 0 10	311	22,392	332½	23,940	−1548	
	,,	12	9 0 4	32 10 2 8	2 9-16ths	5 2 4	19 18 2 8	367	26,424	399	28,728	−2304	Ditto.
	,,	9	8 3 8	31 15 0 16	1 15-16ths	5 2 23	20 10 3 2	503	36,216	532	38,304	−2088	
	,,	6	9 1 12	33 3 2 24	1 11-16ths	5 2 16	20 6 1 2	607	43,704	798	57,456	−13752	

There is an element in the matter which should not be overlooked—namely, the comparative time occupied on each and every application. I am not furnished with any table to show the exact time occupied in the earlier operations, but in the raising of the crop, preparatory to the weighing (which took place on the 4th Dec. last), I noticed the marked difference in the time occupied in the topping and tailing of the different drills, and leaving them in readiness for the cart that was to carry them to the weighing machine, and, on taking time accurately, I found the following to be the result:—

Table Showing the Time Occupied in Topping and Tailing 19 Perches of a Drill.

Plants at 18 inches apart	... ...	11 minutes.
,, 15 ,,	... ...	13 ,,
,, 12 ,,	... ...	16 ,,
,, 9 ,,	... ...	20 ,,
,, 6 ,,	... ...	26 ,,

The early operations of hoeing and cleaning were in at least a similar proportion in favour of the large roots, even the simple matter of filling a cart in the field was true to the same principle. Again, on examination of the ground after the different lots were raised, while the places lately occupied by the 18, 15, and 12-inch drills were clean and without the appearance of a weed, the 9 and 6-inch drills, upon which I can safely say a far greater amount of time and trouble were expended in cleaning and hoeing, were thick with Chickweed and other weeds of various kinds; and after all my care and trouble, I should have been sorry indeed to have seen my whole field in the condition these several strips were left by the small-root and close-growing system. The experiments were made upon a farm at Malahide, lying upon a lime stone gravel—limestone being the geological formation—and yet the surface of the soil varies very much in depth. In the field where these were sown the limestone comes up in places to within 3 or 4 inches, or perhaps 6 inches of the surface; in other parts it is further down, but, on the whole, it is what is generally called an open bottom. It is a dry field, with considerable depth in some places of lime soil, with a mixture of sea-sand. On the whole, it is above the average of the class of soil that one would choose to grow green crops upon; but it was very much out of condition, and run out, and this accounts for the quantity of manure that I used."—Mr. Sproule said: "I do not impugn the accuracy of anything which has been done, but I maintain that it has not been done in a manner to test, in the best way, the difference between thick and thin planting. When the intervals were reduced from 18 inches to 6 inches, a corresponding reduction of some sort should have been made in the distance between the rows. It is not fair to test the matter without varying the width between the rows as well as between the plants; and an experiment carried out in the way this has been will not satisfactorily determine the question. No doubt it is valuable, so far as it goes, upon this kind of information, but it does not satisfactorily determine the question. There was one fact which I was rather surprised to hear—namely, that the effect of close growing is to make the plants run to seed. I take that as a novel fact; but there is one way in which a considerable number of the plants running to seed in the one case more than

in the other may be accounted for—in the one case the number of the plants is nearly double, and of course a greater proportion will run to seed."

Chemico-Agricultural of Ulster, *April* 7: *Experiments in Feeding with Fermented Food.*—Mr. Andrews, by whom, at the request of the council, a series of careful experiments in feeding cattle and pigs with pulped and fermented food, on the plan proposed by Messrs. Bushe and Barter, gave a statement of the results obtained in the comparative trials. Mr. Andrews' report of the progress of the experiment proved the correctness of the opinions which had been expressed at former meetings, with respect to the doubtful value of the proposed alteration in the methods of preparing roots for feeding. He stated that one fact of great importance had been ascertained, in the course of the investigation—viz., that Mangolds were much superior to Turnips in pig feeding; and that, while the farmer should give Turnips to his black cattle, he should keep the Mangolds for his pigs.

Report on Guano.—Dr. Hodges said that, since the last meeting, samples of guano, offered for sale in Belfast, had been analysed; of these only one was of good quality. The genuine sample had been forwarded by Mr. George Ash, of Waring-street, and its value, calculated from the selling price of its ingredients in the manure market, closely approached the price at which it was offered for sale. One of the samples of spurious guano which he had analysed had been offered for sale to a merchant, a member of the society, who was properly desirous that he should not be the means of victimising the farmers. The following was its composition, and, also, that of the sample forwarded by Mr. Ash. 100 parts of each, respectively, contained—

	Spurious Guano.		Genuine Guano.
Water	22.20	...	9.80
Organic Matter and Ammoniacal Salts	14.68	...	54.30
Alkaline Salts	7.60	...	9.02
Phosphate of Lime	0.64	...	24.64
Carbonate of Lime	47.16	...	0.72
Oxide of Iron	4.72	...	—
Insoluble Siliceous Matter	2.30	...	1.52
	100.00		100.00
Capable of yielding of Ammonia	0.48	...	16.15

Miscellaneous.

Improvements in Drying Malt. By W. Walker, Park Malt Kilns, Marlborough Street, Leeds. Patent granted April 4, 1853 (No. 801).—This invention consists in constructing an oven under the kiln, within which is a fireplace suitable to burn coal to heat the oven. Between the fire and the roof of the oven, metal or other flues or tubes are placed to be heated, and through these air is passed from the atmosphere to the drying-kiln. When wanted to dry with as little fire as possible, and pure air is not required, the fire-doors are left open and the dampers closed, which lets the air from the oven pass to the drying kiln. Air is also passed over the oven to the kiln. Cold air-passages are also employed for reducing and regulating the temperature. *Mechanics' Magazine.*

Experiments on Weeding.—1. Seven acres of light gravelly land were fallowed and sown broadcast; one acre was measured, and not a weed was pulled out of it; the other six were carefully weeded. The unweeded acre produced 18 bushels, the six weeded acres averaged 22½ bushels per acre—a gain of 25 per cent. 2. A six-acre field was sown with Barley in fine tilth, and well manured. The weeding, owing to a great abundance of charlock, cost 12*s.* per acre. The produce of an unweeded acre was 13 bushels; of the weeded, 28 bushels—difference in favour of weeding, 15 bushels per acre, besides the land being so much cleaner for the succeeding crop. 3. Of six acres sown with Oats, one acre, ploughed but once and unmanured, produced only 17 bushels; the rest, ploughed three times, manured, and weeded, produced 37 bushels per acre. Of this increase, at least 10 bushels may be attributed to the weeding, and 10 to the manure. *Journal of the Bath and West of England Society.*

Calendar of Operations.

APRIL.

South Devon, *April* 24.—The weather having been so very favourable for farming operations has enabled many to complete their Barley sowing much earlier than usual; and although we have been and are now suffering from easterly winds, the showers of rain which fell during the past week already show their beneficial effects. The young Barley is coming up well and looks healthy. Oats also appear very promising, and the Wheat plants, lately in many places looking so thin and delicate, are improving much, notwithstanding the want of warm and genial weather. The principal farming operation at present is the preparing for and sowing Mangold Wurzel, and a splendid time we have had so far. It is full early to speak of the Potato, but, judging from the garden culture, appearances are very favourable. Orchards are now claiming much attention, and certainly bid fair to be productive of a good crop of Apples; however, this is a crop depending so much on the weather, that it would be quite absurd to predict anything beyond the present time. Prices of all agricultural produce still continue well up. Store cattle may be quoted at 45*s.* per cwt.; fat cattle, 60*s.* per cwt.; sheep, from 6½*d.* to 7*d.* per lb. Corn as follows:—Wheat, 84*s.*; Barley, 38*s.*; and Oats, 28*s.* per quarter.

Notices to Correspondents.

Cow: *S G.* A collar so made that she cannot turn her head aside to the extent needed will effectually hinder her.

Fence against Pigs: *R F.* We know of no remedy which will not occur to "R. F." himself. If he has to keep the fence, it must be strengthened and thickened by him until it is efficient. What is the nature of the present fence? Strong hurdles of close enough build will be sufficient, if the evil be but temporary.

Timber: *Richmond & Chandler* ask how young Fir trees, cut now, may safely be made useful as roofing timber on farm-buildings.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

Priced lists of plant tubs and boxes forwarded on application.

BEEHIVES.

NEIGHBOUR'S IMPROVED COTTAGE BEE-HIVE, as originally introduced by George Neighbour & Sons, with all the recent improvements, glasses, thermometer, &c., price 35*s.*, securely packed for the country.

This unique hive has met with universal commendation, and may be worked with safety, humanity, and profit, by the most timid; its arrangements are so perfect, that the honey may be taken at any time of the gathering season without at all injuring the bees.

Early applications, addressed to Geo. Neighbour & Sons, 127, High Holborn, or 149, Regent Street, London, will receive prompt attention. Their newly arranged Catalogue of other improved Beehives, with Drawings and Prices, sent on receipt of two stamps.

Agents:—Manchester, Hall & Wilson, 50, King Street; Liverpool, James Cuthbert, 12, Clayton Square; Chester, Dickson & Sons, 16, Eastgate Street; Glasgow, Austen & M'Aslan, 186, Trongate Street; Dublin, J. Edmundson & Co., 61, Dame Street.

THE GUTTA PERCHA COMPANY'S TUBING FOR WATERING GARDENS, with Roses and Union Joints Fitted.—27, CITY ROAD, LONDON.

TO AMATEUR GARDENERS, LOCAL BOARDS OF HEALTH, & SANITARY WORKS.

PATENT SLUICE COCKS, Gutta Percha, Combinated ditto, Patent Flexible India Rubber Tubing, and every other Hose for Watering Gardens. The Hydraulic Ram, Fire, Garden, and every other kind of Pump, Hydrants, High Pressure Cocks, and all other articles to be had, Wholesale and Retail, of FREEMAN ROE, Hydraulic Engineer, 70, Strand, and Bridgefield, Wandsworth.

JOHN WARNER AND SONS,
Crescent, Jewin Street, London.
GALVANISED IRON TUB GARDEN ENGINE,
With Warner's Registered Spreader

Is strongly recommended, for durability and low price, viz., 2*l.* 19*s.*, to hold 10 gallons.

Larger sizes made either in wood or iron. May be obtained of any Ironmonger or Plumber in town or country, or of the Patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Syringes of various constructions and sizes from 9*s.* upwards. An extensive assortment kept.

JOHN WARNER and SONS, 8, Crescent, Jewin Street, London, Manufacturers of FIRE ENGINES, GARDEN ENGINES, PUMPS, and SYRINGES.

32.—Conservatory Pump, with Warner's Registered Spreador.—Price, 27*s.* 6*d.*

11.—Garden Engine, with Warner's Registered Spreader and Wrench.—Price, 3*l.*; with iron pail, 3*l.* 12*s.*

14.—Patent Conservatory Pump, with Warner's Registered Spreader. 2*l.* 13*s.*; with iron pail, 3*l.* 5*s.*

No. 32. No. 11. No. 14

Brass Syringes of all descriptions, from 8*s.* 6*d.* upwards. May be obtained of any ironmonger in town or country, at the above prices.

John Warner & Sons having been practical Horticulturists for many years, know exactly the requirements of both Amateurs and Gardeners. A gardener with a properly constructed pump will get through as much work in five minutes as he could with any Syringe in a quarter of an hour, and with half the labour to himself.

No establishment offers such a variety of effective machines for hydraulic purposes, whether to supply Gardens, Hothouses, Cottages, Farms, Mansions, or Boards of Health, with every requisite connected with the conveyance and distribution of liquids.

Fountains suitable for Conservatories, Lawns, or Drawing Rooms. Sheets of Engravings sent on application.

FOR WATERING GARDENS, DISTRIBUTING LIQUID MANURE, ETC.

JAMES LYNE HANCOCK'S VULCANISED INDIA-RUBBER TUBING is now manufactured especially for the above purposes, and is of greater flexibility than any other description of hose or tubing. It is also manufactured to resist great pressure, suitable for attaching to the mains of water works or to tanks, or water butts of high elevations. WATERING HOSE fitted up with brass joints, branches, stop-cocks, roses, and jets complete. Vulcanised India-rubber suction pipes for pumps any length or size to order; HOSE for brewers' use, fire engines, &c. VULCANISED INDIA-RUBBER WASHERS, for Steam and Water Joints, and VULCANISED RUBBER in sheets of any size and thickness. Solid vulcanised India-rubber Tubing and Cord, for the joints of glass-doors, sashes, frames, &c.—Prices and every information may be had on application at the Manufactory, Goswell Mews, Goswell Road, London.

(Fig. 1.) (Fig. 2.)

J. TYLOR and SON'S BARROW GARDEN ENGINE (Fig. 1), in best well painted oak tub, fitted with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 1 holds	10 gallons, throws	30 feet high	...	£4	10
No. 2 "	15 " "	45 "	...	5	10
No. 3 "	28 " "	45 "	...	6	18

J. TYLOR and SON'S BARROW GARDEN ENGINE (Fig. 2), in strong tinned iron tub, well painted inside and outside, with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 10 holds	8 gallons, throws	25 feet high	...	£2	15
No. 13 "	12 " "	30 "	...	3	5
No. 11 "	16 " "	40 "	...	4	0
No. 12 "	24 " "	45 "	...	5	0
No. 14 "	30 " "	45 "	...	5	18

A large assortment of every description of Garden Syringes Pail Engines, Conservatory Pumps, &c., kept in stock.

Full size Syringe, on Read's principle, of the very best quality and workmanship, with two roses and one jet, 21*s.*; Plain Syringes from 10*s.* 6*d.* upwards.

J. Tylor & Son's Horticultural Apparatus may be obtained at these prices from any respectable Ironmonger or Seedsman in town or country, through whom alone they will be supplied, and of whom Drawings and Prices may be had.

N.B. Cost of carriage, &c., not included in these prices.

J. Tylor & Son's Manufactory, Warwick Lane, Newgate Street, London.

J. TYLOR and SON'S REGISTERED GARDEN SYRINGE.—By a simple arrangement this Syringe is rendered more effective than any portable Conservatory or Garden Pump ever offered to the public. It is equally adapted for Garden or Conservatory use, and is capable of discharging twice as much water in a given time as any other Syringe now in use. The arrangement consists in attaching a small flexible suction tube to the barrel of the Syringe, through which it is filled with water at every discharge of the previous contents. By this means the Syringe is always charged, and the pull-up stroke of the piston rendered perfectly easy, it having, indeed, no work to do, the barrel being previously full of water. Being thus made self-supplying, a great saving of labour is effected; and the necessity of stooping to fill the Syringe at every discharge being done away with, the direction of the water can be maintained for any length of time. It is perfectly cleanly in its action, as it is not possible for any water to get on the outside of the barrel, which is a well-known inconvenience attendant on the use of every other Syringe. Its construction is perfectly simple, and cannot get out of order; the ground-in ball valves and fittings used for filling all other patent Syringes being entirely superseded. Price complete, with India-rubber suction tube, with galvanised spiral inside, and covered with cotton outside, 25*s.* each. To be had of any respectable Ironmonger or Seedsman in town or country.

J. Tylor & Sons, Manufacturers of Horticultural Apparatus, Warwick Lane, Newgate Street, London.

N.B. This price does not include carriage, package, or expenses of delivery in the country.

STEPHENSON and PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

COTTAM AND HALLEN,

2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.

APPLICATION is requested for their NEW HORTICULTURAL LIST, containing Illustrations, Descriptions, and Prices of

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Syringes	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.

AGRICULTURAL LIST UPON APPLICATION.

EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

HOSE PIPING.—Great Reduction in Price.

WAITHMAN'S PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense Pressure, and much more than Leather, vulcanised Rubber, or any other Hose; and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented Inventions, the cost of manufacturing it is now reduced at least 60 per cent., which advantage is offered to the Public.—London Agents, Burgess & Key, 103, Newgate Street, and 52, Little Britain, who on application will forward wholesale and retail prices.

IMPROVED WATERPROOF FLEXIBLE HOSE FOR WATERING GARDENS, AND AGRICULTURAL USES generally, at E. SPENCER & CO.'s, General Waterproofers, 116, Fenchurch Street, opposite Mark Lane, London.

THOMAS B. LAWRENCE and CO., Zinc Merchants and Manufacturers, No. 10, York Place, near the Orphan Asylum, Lambeth. Rain Pipes, 3-inch, $4\frac{1}{2}d.$ per foot; Eaves Gutters, 4-inch, *4d.* per foot; other sizes in proportion; Perforated Zinc, *4d.* per foot; Sheet Zinc, *33s.* per cwt.,; Plumbic Zinc, *42s.* per cwt.; Galvanised Iron, Corrugated or Plain, Lawrence's Fumi Porte; Patent Smoke Vents; Garden Lights, Frames and Glasses. Lawrence's Roses and Watering Pots. Wardian Cases.

MARQUEES ON HIRE.—A large Ball-Room fitted up with Chandelier Lamps, 100 Cushioned Rout Seats, floored and covered with Dancing Holland, and handsomely decorated, for *20l.*; Balconies enclosed, *30s.*; Awnings for Doors and Footpaths, *20s.* Any portion of 1000 feet in length of Marquees to let for Horticultural Shows, and other purposes, on moderate terms.—R. Richardson, 21, Tonbridge Place, New Road, London. N.B. One Circular Tent to Let, 100 feet in diameter, will hold 2000 people. Cheap Tents for Gardens and Cricket Grounds.

TENTS, MARQUEES, AND RICK CLOTHS.—Now on Sale, several second-hand Rick Cloths, Marquees, and Tents, of various sizes. Some of the Marquees are well adapted for Horticultural Societies. One 50 feet by 30, price *35l.*; one 70 feet by 30, *50l.*; and one 100 feet by 30, *65l.* These are almost new, and quite ready for use. Small Tents for the Wars or Emigrants, weighing 12 lbs., price 25s. each, new and waterproof. Small Tents for Gardens, *30l.* each.—R. Richardson, 21, Tonbridge Place, New Road, London.

SUMMER HOUSES in WOOD and IRON for Gardens, from *50s.* each, all made portable, so that they can easily be erected by any ordinary labourer. Drawings of 28 sent free. Small Rooms, 6 feet square, price *5l.*, with doors and windows, and painted.—R. Richardson, 21, Tonbridge Place, New Road, London. N. B. Maker of Iron and Wood Houses for Emigrants, drawings of 21 sent free.

SUBSTANTIAL POULTRY HOUSE 12 feet by 4, for *4l.*, consisting of House 4 feet square, and covered Run for Fowls 8 feet by 4. The above is painted, and delivered free within four miles of London. Drawings of several sent free. Large enclosures for Fowls and Pheasants very cheap.

R. Richardson, 21, Tonbridge Place, New Road, London.

N.B. The above are portable and can be erected by any ordinary labourer.

SECURITY TO PREMISES.

WIRE FENCING, 4 feet high, fixed on tops of walls, *1s. 6d.* per yard run, including Iron Standards and all expenses of fixing. This Fence has been approved, in many instances, by the Police. It is almost invisible. Iron Wire Fencing for Hares, Rabbits, Cats, Dogs, Deer, Sheep, and enclosing Fowls and Pheasants, $6\frac{1}{2}d.$ per square yard, in various widths, from 6 feet to 15 inches.—R. Richardson, 21, Tonbridge Place, corner of Judd Street, New Road.

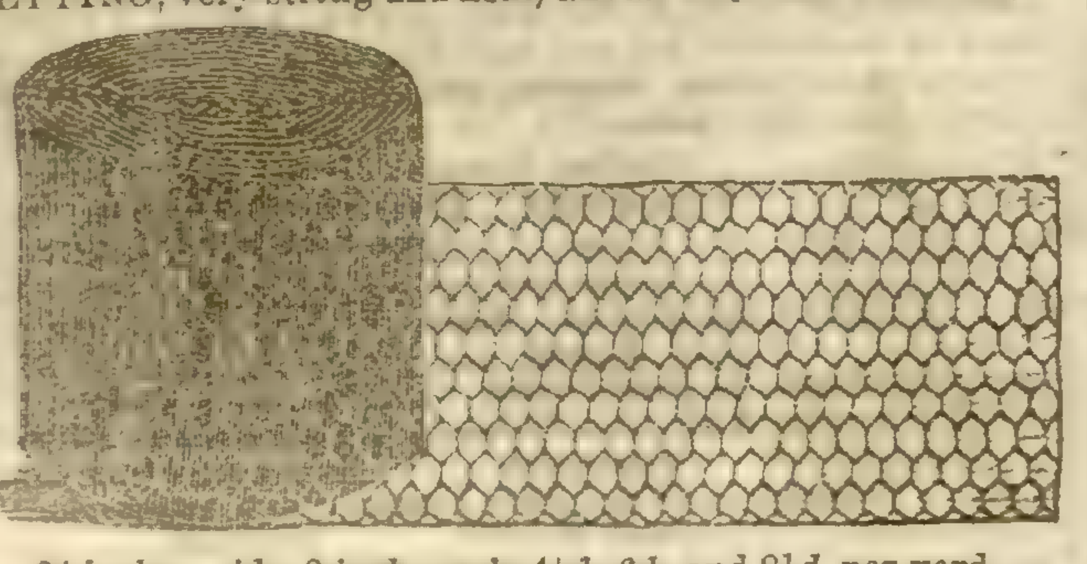
RIPE FRUIT, STRAWBERRIES, AND SEED BEDS.—New Twined Netting (tanned if required), 1 yard wide, $1\frac{1}{2}d.$ per yard; 2 yards wide, *3d.* per yard; 4 yards wide, *6d.* per yard; ½-inch mesh do., 2 yards wide, *6d.* per yard. The Elastic Hexagon Garden Netting, 76 meshes to the square inch, effectually excludes birds, wasps, flies, &c., from fruit trees, flower or seed beds, $4\frac{1}{2}d.$ per square yard. Tanned Netting, 2 or 3 yards wide, $1\frac{1}{2}d.$ per yard; 4 or 6 yards wide, *3d.* per yard, exactly the same as advertised by others at double the above prices. Coir or Hemp Sheepfolding Net, of superior quality, 4 feet high, *4d.* per yard. Lamb Net, *6d* per yard. Rabbit Net, $1\frac{1}{2}d.$ per yard, 4 feet wide; each edge Corded, *2d.* per yard, suitable for fowl fencing. Square Mesh Cricketing Net, fix its full width and length, made of stout cord, *3d.* to *4d.* per square yard; this is the best article made for fencing against fowls, cats, &c.

The largest, cheapest, and best stock in the world, at W. CULLINGFORD'S, 1, Edmund Terrace, Ball's Pond Road, Islington, London. The Trade supplied. Orders by Post punctually attended to. Fishing Nets of all kinds in stock.

HALL'S GARDEN NETTING, the best protection against FROST, STORMS, or SCORCHING HEAT.

GARDEN NETS, FISHING NETS, and SHEEP NETS made by Machinery at very low prices. New Nets, $1\frac{1}{2}d.$ per yard. Old Tanned Net, *6s. 3d.* per 100 yards. Nets to cover Pheasantries and for all purposes required.—R. Richardson, 21, Tonbridge Place, New Road, London.

H. J. MORTON and Co., 2, Basinghall Buildings, Leeds.—GALVANISED GAME AND POULTRY NETTING, very strong and neat, never requires painting.



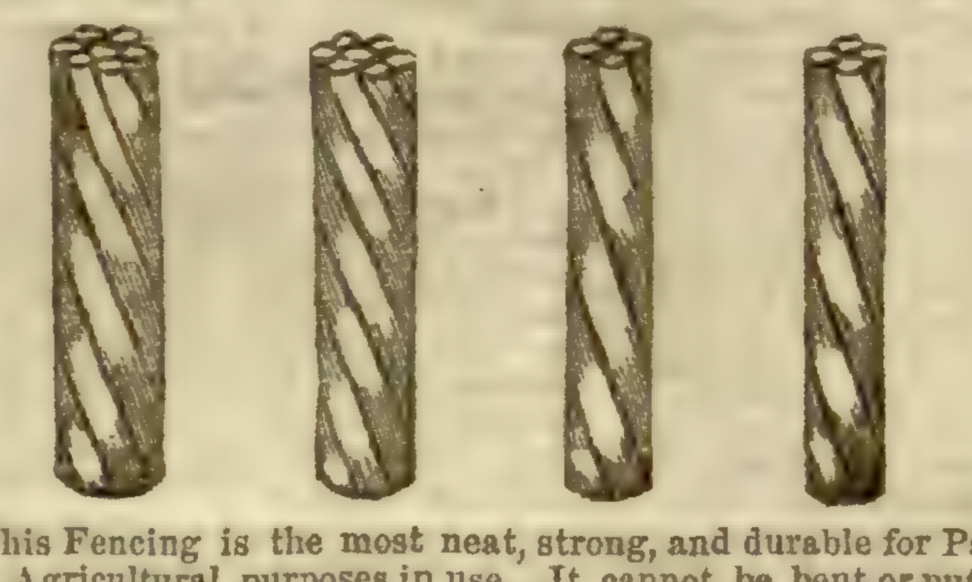
24 inches wide, 3-inch mesh, $4\frac{1}{2}d.$, *6d.*, and $8\frac{1}{2}d.$ per yard.
24 inches wide, 2-inch mesh, *7d.*, $9\frac{1}{2}d.$, and *1s.* per yard.

GALVANISED IRON SPOUTING, for Dwellings, Cottages, Farm Buildings, &c., never requires painting.

Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalte Roofing Felt, &c.

H. J. MORTON and Co., Galvanised Iron Roofing Works, 2, Basinghall Buildings, Leeds.

PATENT WIRE STRAND FENCING FOR PARKS, &c.

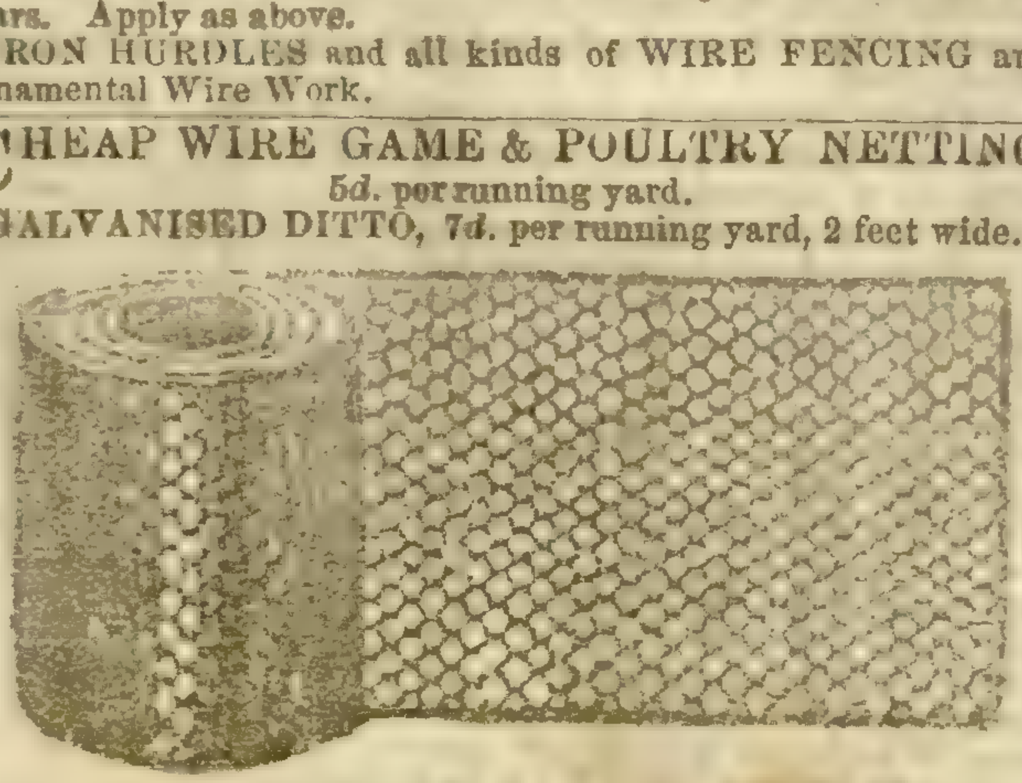


This Fencing is the most neat, strong, and durable for Parks and Agricultural purposes in use. It cannot be bent or put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply as above.

IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

CHEAP WIRE GAME & POULTRY NETTING, *5d.* per running yard.

GALVANISED DITTO, *7d.* per running yard, 2 feet wide.



	Galvanised.		Not Galvanised.
24 in. wide, 2 in. mesh,	*7d.* per yard.	... ...	*5d.* per yard.
30 in. „ 2 in. „	*9d.* „	... ...	$6\frac{1}{2}d.$ „
36 in. „ 2 in. „	$10\frac{1}{2}d.$ „	... ...	$7\frac{1}{2}d.$ „
48 in. „ 2 in. „	*1s. 2d.* „	... ...	*10d.* „

Sparrow Proof Netting, Galvanised, *3d.* per square foot, made to any size for the same proportionate price. This article was shown at the Great Exhibition, where it was so much admired for its light and durable appearance, and acknowledged to be the cheapest and best article of the kind ever offered. Extra strong Wire Sheep Netting, 3 feet high, *1s. 6d.* and *2s. 3d.* per yard. Also every description of Flower Trainers, Dahlia Rods, Garden Arches, Bordering, Flower Stands, Tying Wire, Trellis Work, Invisible Wire Fencing, Hurdles, and every description of Wire Work for Horticultural purposes.—Illustrated Catalogues of Patterns forwarded, post free, on application to T. H. Fox, City of London Wire Work and Iron Fence Manufactory, 44, Skinner Street, and 6 and 8, Snow Hill, London.

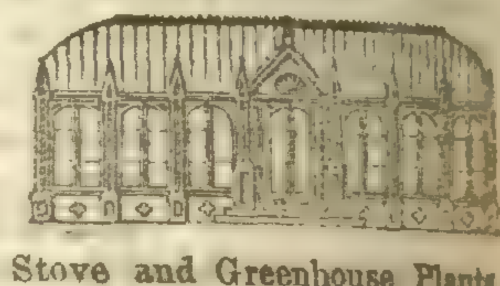
HORTICULTURE IN ALL ITS BRANCHES.

J. WEEKS & Co., King's Road, Chelsea,

HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.



The splendid collections of Stove and Greenhouse Plants, are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. Weeks & Co., King's Road, Chelsea, London.

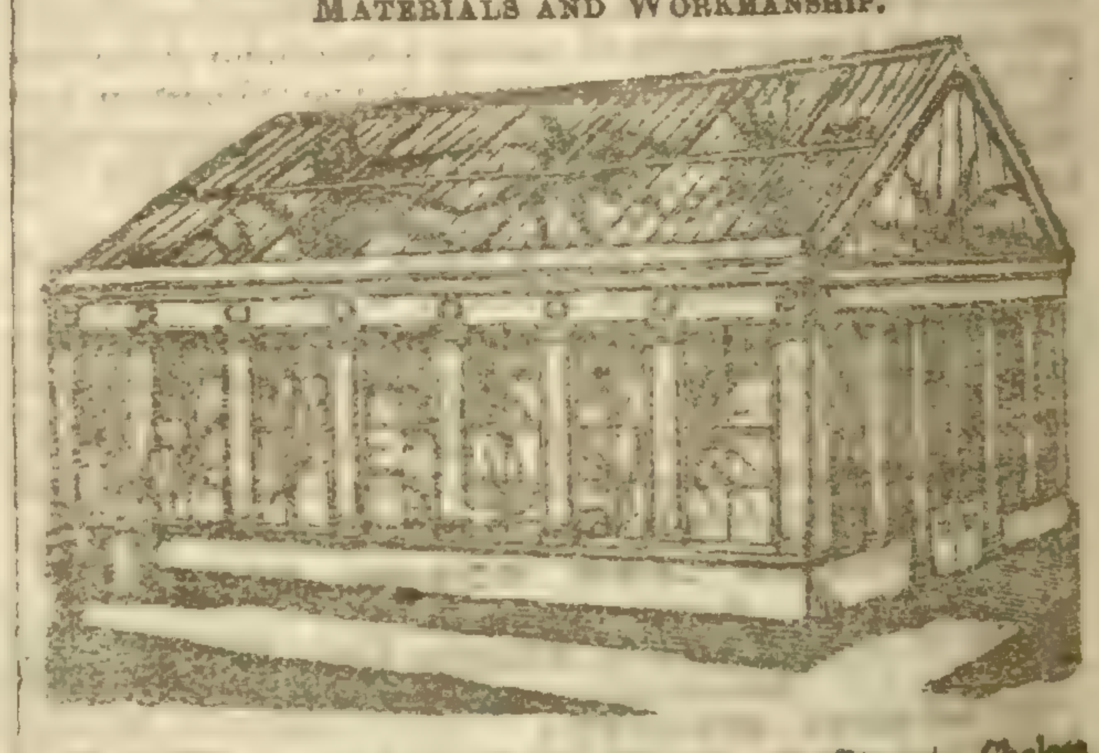
E. ELEY'S HOT WATER WORKS, and improved Hot Air Works, opposite the Eagle Tavern, City Road, London. Manufacturers of the various descriptions of HOT WATER APPARATUS for Heating Horticultural Works, Churches, and other Public Buildings, Mansions, Offices, Baths, &c., on the most Scientific principles. Manufactories requiring artificial heat fitted up with effective and economical apparatus by contract or otherwise. Old work taken down and remodelled. Architects, Surveyors, and the Trade attended to in any part of town or country.

E. E. being a practical and scientific workman defies competition. Parties by sending a rough sketch of their building can be supplied with the most improved Pipe Boilers, or any other description, with connection and piping fitted and marked with a plan, cement, &c. for joints, so that a gentleman's own tradesman or gardener can fix them.

N.B. Please to observe the Address. No connection with any other House in the Trade.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

At the Lowest Prices Consistent with Good Materials and Workmanship.



GRAY and ORMSON, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

BY HER MAJESTY'S ROYAL LETTERS PATENT

E. DENCH, PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

PATENT HOTHOUSES and excellent Glass at *1s. 3d.* per foot super., which are superior to all others for price with quality, and if known would supersede all others. (See Appendix, in "Book of the Garden," by Mr. M'Intosh.) A Range of Houses and Hot Water Apparatus, was erected by E. D. for E. L. Betts, Esq., Preston Hall, Kent. Mr. J. Frost, head gardener, has shown their efficiency by their produce at the Royal Botanic Gardens, Regent's Park, June 8, and Chiswick, June 11. The editor of the *Gardeners' Chronicle* says: "Beautiful examples of Black Hamburgh, large both in bunch and berry, and as black as Sloes, were furnished by Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall, Kent; these well deserved the first prize which was awarded them."—*Gardeners' Chronicle*, June 18th, 1853. The Grapes were considered the best shown at Regent's Park during the season, and the Houses are as superior for the growth of everything else in horticulture, which has been fully proved, and they have been extensively erected for the nobility and gentry in all parts of the kingdom.

GLAZING WITHOUT PUTTY.—Iron and Glass alone. E. D. has Roofed the Public Baths and Washhouses, Endell Street, on this principle, and others are in hand. Patent Sashes for Peach Walls, Pits, &c., *8d.* per foot super. Heating by Hot-water, on the most practical principles, and all the best materials used. Printed Price List sent on application.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES, GREENHOUSES, DWELLINGS, ETC.

ESTABLISHED MORE THAN ONE HUNDRED YEARS.

THOMAS MILLINGTON requests attention to his present prices of SHEET GLASS in 100 feet boxes.

Squares	6 by 4 and 6½ by 4½ } 7 by 5 and 7½ by 5½ }	13 6
"	8 by 6 and 8½ by 6½ } 9 by 7 and 9½ by 7½ } 10 by 8 to 12½ by 9½ }	16 3
"	12 by 10 to 24 by 14	19 0

Orchard House Squares on Mr. Rivers's approved plan, to whom I have sold some thousands of feet:—20 inches by 12, 20 by 13, 20 by 14, 20 by 15, 20½ by 12½, 20½ by 13½, 20½ by 14½, at 19*s.* per 100 feet.

200 feet cases at 42*s.*, and 300 feet case 63*s.*, in large sheets.

Boxes charged 1*s.* extra per 100 feet, and the same allowed if returned free of all charge.

HARTLEY'S PATENT ROUGH PLATE GLASS, Fern Shades, Striking Glasses, Milk-pans, Bee Glasses, Cucumber Tubes, Sheet and Rough Plate Glass Tiles, Wasp Traps; Plate, Patent Plate, Crown and Sheet Window Glass, in every thickness and quality, and Ornamental Glass, plain and coloured; pure white Shades for Ornaments, Crystal Glass for Pictures.

Warehouse, 87, Bishopsgate Street Without—same side as Eastern Counties Railway.

CLOCHES.

JAMES PHILLIPS AND CO. have the pleasure to inform their friends that they are prepared to supply

GLASS CLOCHES,

Similar to those at the Horticultural Society's Gardens at Chiswick, at the following prices, viz.:—

9 inches diameter ...	1*s.* 6*d.*	11 inches diameter ...	2*s.* 0*d.*
10 " ...	1 9	12 " ...	2 3
		14 " ...	2 6

CUCUMBER GLASSES.—Each.

24 inches long	2*s.* 0*d.*	16 inches long	1*s.* 4*d.*
22 " ...	1 10	14 "	1 2
20 " ...	1 8	12 "	1 0
18 " ...	1 6	Made to any length.	

FERN SHADES.—Each.

6 in. diam., with stands	2*s.* 9*d.*	12 in. diam., with stands	8*s.* 1*d.*
7 " "	3 6	13 " "	9 6
8 " "	4 1	14 " "	12 6
9 " "	4 9	15 " "	16 9
10 " "	5 9	16 " "	21 10
11 " "	6 8		

Bee Glasses, Lactometers, Lord Camoys' Milk Syphons, Tiles and Slates, Wasp Traps; Plate, Crown, and Ornamental Glass, Shades for Ornaments, and every article in the trade.

HARTLEY'S PATENT ROUGH PLATE GLASS, for Conservatories, Public Buildings, Manufactories, Skylights, &c.

JAMES PHILLIPS AND CO., Horticultural Glass Warehouse, 116, Bishopsgate Street Without, London.

Extract from *Gardeners' Chronicle*, April 21, 1854.

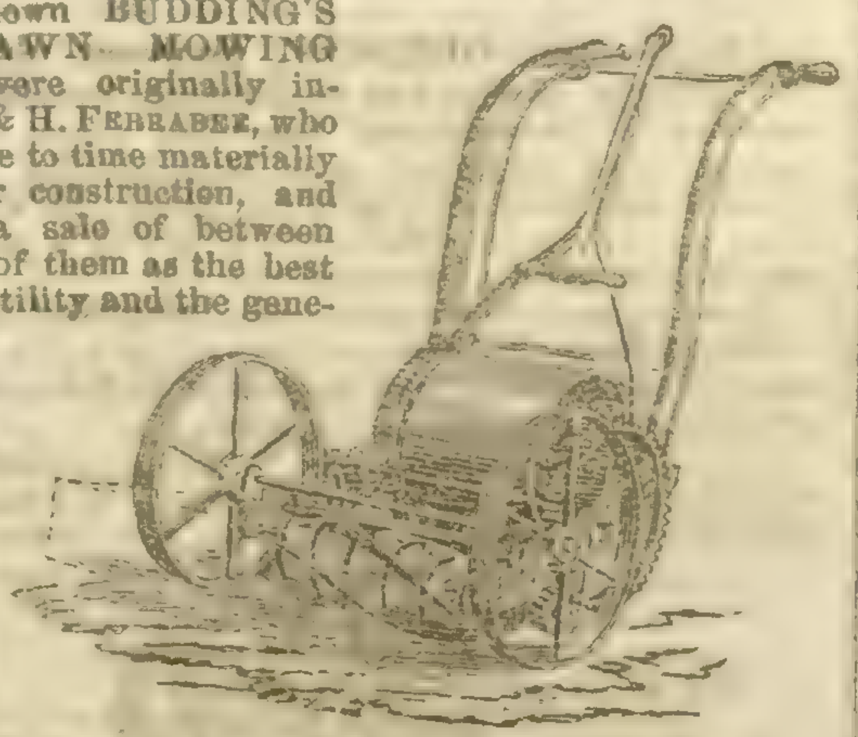
"The garden also supplied some Neapolitan Cabbage Lettuces, a portion of which had been grown under bell-glasses, which differ from the French cloche in having a ventilator at the top, in the shape of a neck or chimney, which can be left open or kept close as may be desired, by covering it over or not with another small bell glass, made for the purpose. The result of this trial has been very satisfactory."

BUDDING'S LAWN MOWERS, with SAMUELSON'S registered improvements, *lightening the draught fully one-half*, and enabling an unskilled labourer to make neat work; free from liability to choke, or get out of order. May be had of all ironmongers in town or country, or from the Works, Banbury; delivered free in a packing case to any station on the North-Western and Great Western Railways. Testimonials forwarded on application.—Britannia Works, Banbury.

THE IMPROVED LAWN MOWING MACHINE,

MANUFACTURED BY

J. AND H. FERRABEE, Phœnix Iron Works, near Stroud, Gloucestershire.



The well-known BUDDING'S PATENT LAWN MOWING MACHINES were originally introduced by J. & H. FERRABEE, who have from time to time materially improved their construction, and can refer to a sale of between 4000 and 5000 of them as the best proof of their utility and the general satisfaction which they have given.

The Machines offered this year by J. & H. FERRABEE are superior to any yet produced, being perfectly adapted for cutting the Grass on Lawns and Verges, and between flower beds; while their strength and durability have been increased and their management simplified. Any person can use them effectually without the least practice. They can be adjusted to cut various lengths of Grass, and will produce a more even and uniform surface than the most skilful mower. The Grass is cut best when dry, so that a machine can be employed at the most convenient time to the workman, and more than double the work may be done with the same manual labour that is requisite with a scythe.

SIZES AND PRICES.		£ *s.* *d.*
Hand Machine, for One Man,	cutting 16 inches wide	5 15 0
Ditto for Two Men,	" 22 ditto ...	6 10 0
Pony Machine,	" 28 ditto ...	10 0 0
Horse ditto	" 36 ditto ...	16 0 0

The Horse Machine will cut the longest and coarsest Grass usually met with on Lawns and Pleasure Grounds.

London Agents:—Messrs. BOULNOIS & SON, Baker Street Bazaar, Portman Square.

CLARKE'S PREPARATION FOR DESTROYING MEALY BUG, SCALE, THRIP, &c., without Injuring the Plants.

Report of the Horticultural Society in the *Gardeners' Chronicle*:—"Clarke's preparation for destroying Mealy Bug has succeeded perfectly; it has been tried on various plants, at different times, and has invariably answered."

In bottles, secured for travelling, with full directions for its application, on receipt of 5*s.* in postage stamps.

CHARLES CLARKE, Walham Green, Fulham.

FUCHSIA "TRENTHAM."

COLE AND SHARP, Aston Lane Nursery, near Birmingham, are prepared to send out the above fine new Seedling, for characteristics of which see previous advertisements. Plants 10*s.* 6*d.* each, with the usual allowance to the trade.

FANNY WEBB.—Plants of this new and attractive variety, 7*s.* 6*d.* each.

FIRST-CLASS DAHLIAS.

MITCHELL'S DUCHESS OF SUTHERLAND AND SULPHUREA ELEGANS.

JAMES MITCHELL will send out, early in May, his two unrivalled Seedling Dahlias—DUCHESS OF SUTHERLAND, white, mottled, and edged with crimson, the most beautiful and constant Show Flower ever offered; 24 blooms exhibited at the Surrey Gardens in September, 1853, and much admired; also First-class Prize at Maidstone, by Messrs. Neville and others; 4 feet, 10*s.* 6*d.* SULPHUREA ELEGANS, primrose-yellow, exquisite form, first-rate, and constant show flower, 4 feet, 10*s.* 6*d.*

MITCHELL'S NEW BLUE VERBENA ELEGANTISSIMA, an improvement on Mons. Paguin; the above magnificent Verbena at 2*s.* 6*d.* each. No discount, unless six are ordered.—Piltdown Nurseries, Maresfield, Sussex.

BEDDING OUT PLANTS FOR THE FLOWER GARDEN.

BURGESS AND KENT, Penkhule Nursery, Stoke-upon-Trent, Staffordshire, respectfully invite the attention of the Nobility, Gentry, and others about to furnish their Flower Gardens, to their extra large stock of fine established Plants of the under-mentioned varieties, which will vary in price according to the quality and quantity ordered. All communications will receive immediate attention.

TRENTHAM ROSY SCARLET GERANIUM, a beautiful variety, of compact habit and large trusser.

GOLDEN CHAIN GERANIUM, with fine gold band round the leaf; Tom Thumb, Trentham Scarlet, Victoria, and other Scarlets; Silver-striped and variegated Geraniums, in varieties; Yellow and Bronze Calceolarias, Salvias, Pentstemons, Cupheas, Petunias, Lobelias, Mimuluses, Antirrhinums, Heliotropes, Fuchsias, Double Purple Senecio, and Verbenas in great variety.

SUTTON'S GRASS SEEDS FOR PRESENT SOWING.—*The importance of procuring good Seeds will be proved more this season than usual, in consequence of the extreme drought which has prevailed so long.*

We are receiving very gratifying intelligence of the crops growing from the seeds we have supplied during the last few months. One of our customers (Mr. Joseph Newton) writing us from Biggleswade, on the 15th inst., says:—"*The Grass seeds I had from you have convinced our farmers that it is better to have your selected ripe seeds than to use the unripe hay seeds, from the cow-cribs and hay-lofts.*" Having a fine stock, we can still supply seeds, which may be sown now with certainty of success, viz., Permanent Pasture Grass Seeds; Seeds for Improving old Pastures; Turnip, Mangold, and other Agricultural Seeds. Priced Lists may be had, post free.

SUTTON & SONS, Seed Growers, Reading, Berks.

DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening Pursuits, are invited to examine DEANE, DRAY, AND CO.'s extensive Stock of GARDENING and PRUNING IMPLEMENTS, best London-made Garden Engines and Syringes, Colebrook Dale Garden Seats and Chairs.

Averuncators
Axes
Bagging Hooks
Bills
Borders, various patterns
Botanical Boxes
Brown's Patent Fumigator
Cases of Pruning Instruments
Daisy Rakes
Dibbles
Dock Spuds
Draining Tools
Edging Irons and Shears
Flower Scissors
" Stands in Wire and Iron
Fumigators
Galvanic Borders and Plant Protectors
Garden Chairs and Seats
" Loops
" Rollers

Garden Scrapers
Gidney's Prussian Hoe
Grape Gatherers and Scissors
Gravel Rakes and Sieves
Greenhouse Doors and Frames
Hammers
Hand-glass Frames
Hay Knives
Horticultural Hammers and Hatchets
Hoes of every pattern
Hotbed Handles
Ladies' Set of Tools
Labels, various patterns, in Zinc, Porcelain, &c.
Lines and Reels
Marking Ink
Mattocks
Menographs
Metallic Wire
Milton Hatchets
Mole Traps
Mowing Machines

Pickaxes
Potato Forks
Pruning Bills
" Knives, various
" Saws
" Scissors
" Shears
Rakes in great variety
Reaping Hooks
Scythes
Scythe Stones
Shears, various
Sickles
Sickle Saws
Spades and Shovels
Spuds
Switch Hooks
Thistle Hooks
Transplanting Tools
Trowels
Turfing Irons
Wall Nails
Watering Pots
Weed Hooks
Wheelbarrows
Youths' Set of Tools

DEANE, DRAY, AND CO. are sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with their Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom. Also wholesale and retail Agents for SAYNOR'S celebrated PRUNING KNIVES, used exclusively by the first Gardeners in the United Kingdom.

DEANE, DRAY AND CO. (Opening to the Monument), London Bridge. ESTABLISHED A.D. 1700.

MORNING FROSTS.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1*s.* 6*d.* per yard run, of E. T. ARCHER, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey. (Removing in May next to 112, Regent Street, London.)

CURE FOR MILDEW ON GRAPES, &c.—In consequence of the increased prevalence of mildew on the Vines, &c., during the last few seasons, G. TABER, of Rose Cottage, Rivenhall, practical Gardener, Seedsman, and Florist, has directed particular attention to the best mode of preventing it, or for curing the Vines that have been attacked, and he now begs to announce that he has succeeded in preparing a composition known as TABER'S ANTI-MILDEW COMPOSITION, which will effectually prevent or cure the disease without doing the slightest injury to the Vines; and any person, by the aid of the printed instructions, may use it without risk. It is also an invaluable remedy for preventing Mildew on Wall Trees, Roses, &c. Sold in packets containing 1 lb., 1*s.* 8*d.*; 3 lbs., 3*s.*; 6 lbs. 5*s.* 6*d.*, with directions for use. By enclosing two postage stamps, G. T. will send a circular with full particulars as to quantity required for a house for the season, and also testimonials of the success he has met with.

G. T. will personally attend gentlemen, and give instructions to their gardeners at a reasonable remuneration for time and travelling expenses. The trade supplied at the usual discount. Post Office orders to be made payable to GEORGE TABER, and drawn upon the Witham Post Office. Postage stamps received in payment of small orders. Packets delivered free to the Witham Station of the Eastern Counties line.—Address GEORGE TABER, Rose Cottage, Rivenhall, near Witham.

THE CHOLERA

PREVENTED BY THE DESTRUCTION OF ALL NOXIOUS EFFLUVIA.

CREWS'S DISINFECTING FLUID, Recommended by the College of Physicians. The Cheapest and Strongest Chloride of Zinc.—Quarts, 2*s.*; Pints, 1*s.*; Half-pints, 6*d.* Sold by all Chemists, Druggists, and Shipping Agents; and at Commercial Wharf, Mile End, London.

THE CHOLERA—ITS BEST ANTIDOTE.

SIR W. BURNET'S DISINFECTING FLUID, the original and genuine CHLORIDE OF ZINC.—Sold by all Chemists, Druggists, and Shipping Agents; and at the Office, 18, Cannon Street, London Bridge.

FENDERS, STOVES, AND FIRE-IRONS.—Buyers of the above are requested, before finally deciding, to visit WILLIAM S. BURTON'S SHOW ROOMS, 39, Oxford Street (corner of Newman Street), Nos. 1 and 2, Newman Street, and 4 and 5, Perry's Place. They are the largest in the world, and contain such an assortment of FENDERS, STOVES, RANGES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with bronzed ornaments and two sets of bars, 2*l.* 14*s.* to 5*l.* 10*s.*; ditto, with ormolu ornaments and two sets of bars, 5*l.* 10*s.* to 12*l.* 12*s.*; Bronzed Fenders complete, with standards, from 7*s.* to 3*l.*; Steel Fenders from 2*l.* 15*s.* to 6*l.*; ditto, with rich ormolu ornaments, from 2*l.* 15*s.* to 7*l.* 7*s.*; Fire irons from 1*s.* 9*d.* the set to 4*l.* 4*s.* Sylvester and all other Patent Stoves, with radiating hearth plates. All which he is enabled to sell at these very reduced charges,

1st,—From the frequency and extent of his purchases; and,

2dly,—From those purchases being made exclusively for cash.

TEA URNS, OF LONDON MAKE ONLY.—The largest assortment of London-made TEA URNS in the world (including all the recent novelties, many of which are registered) is on Sale at WILLIAM S. BURTON'S, from 30*s.* to 6*l.*

THE BEST SHOW OF IRON BEDSTEADS in the Kingdom is WILLIAM S. BURTON'S.—He has two very Large Rooms, which are devoted to the exclusive show of Iron and Brass Bedsteads and Children's Cots, with appropriate Bedding and Mattresses. Common Iron Bedsteads from 17*s.*; Portable Folding Bedsteads from 12*s.* 6*d.*; Patent Iron Bedsteads, fitted with dovetail joints and patent sacking, from 21*s.*; and Cots from 21*s.* each; handsome Ornamental Iron and Brass Bedsteads, in great variety, from 2*l.* 19*s.* to 13*l.* 13*s.*

PAPIER MACHE AND IRON TEA-TRAYS.—An assortment of Tea Trays and Waiters wholly unprecedented, whether as to extent, variety, or novelty.

Gothic shape Papier Maché Trays, per set of three	from 20*s.*	to 10 guineas.
Ditto, Iron ditto.	from 13*s.*	to 4 guineas.
Convex shape, ditto.	from 7*s.* 6*d.*	

A large quantity of small Papier Maché and Iron Trays, many of them executed in the highest style of art, at about a quarter of their original cost; being odd, or slightly out of condition. These are especially worthy the attention of tavern and coffee-house keepers. Round and Gothic Waiters, Cake and Bread Baskets equally low.

WILLIAM S. BURTON has TEN LARGE SHOW ROOMS (all communicating), exclusive of the shop, devoted solely to the show of GENERAL FURNISHING IRONMONGERY (including Cutlery, Nickel Silver, Plated and Japanned Wares, Iron and Brass Bedsteads, and Bedding), so arranged and classified that purchasers may easily and at once make their selections.

Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of.

No. 39, Oxford Street (corner of Newman Street); Nos. 1 and 2, Newman Street; and 4 and 5, Perry's Place.

DO YOU WANT LUXURIANT HAIR, WHISKERS, &c.? If so, use Miss GRAHAM'S NIOUKRENE, the most efficacious Hair generant ever introduced. It reproduces the Hair when lost either by disease or decay, prevents its falling off, effectually checks greyness, strengthens weak hair, and is guaranteed to produce those attractive ornaments, Whiskers, Moustachios, Eyebrows, &c., in three or four weeks. For nourishing and beautifying the hair, and sustaining its curling powers in all weathers, it has no equal. Price 2*s.*, and sent post free to any part of the kingdom, on receipt of 24 penny postage stamps, by ELLEN GRAHAM, 8, New Road, Hornsey, Middlesex.—"My hair is quite restored." Miss ORME.—"I have a full pair of Whiskers, thanks to your Nioukrene." H. ROBB, Esq.—"It has checked the greyness." Mrs. JONES.

QUANTITY AND QUALITY OF THE HAIR.

NO TOILET can be considered complete without a careful attention to that department which so materially affects the entire contour, viz., the Hair, which, both in quantity and quality, is susceptible of the most material alteration. That which is weak can be strengthened, and be made to receive a most beautiful gloss by artificial applications. It is to its extraordinary and valuable properties in these respects that is due the character of C. AND A. OLDRIDGE'S BALM OF COLUMBIA, for its invigorating, nutritious, and regenerative qualities. OLDRIDGE'S BALM causes Eyebrows to grow, prevents the Hair from turning grey, and the first application causes it to curl beautifully, frees it from scurf, and stops it from falling off. Price 3*s.* 6*d.*, 6*s.*, and 11*s.* per bottle. No other prices are genuine.—N.B. Ask for OLDRIDGE'S BALM, 13, Wellington Street North, Strand, London.

ECONOMY.

ECONOMY should be practised in all things, but more particularly in matters of medicine. The restoration to health has generally been purchased at a costly price; and certainly if health could not be procured at any other rate, a costly price should not be an object of scruple. But where is the wisdom, where is the economy in spending vast sums on a physician's attendance, when sound health and long life may be ensured by that cheap, safe, and simple remedy Parr's Life Pills? Sold by E. Edwards, 67, St. Paul's Churchyard; Barclay & Sons, Farringdon Street; Sutton & Co., Bow Churchyard; Hannay & Co., 63, and Sangar, 150, Oxford Street, London; and by all respectable Chemists and Medicine Vendors in town and country. In Boxes, price 1*s.* 1½*d.*, 2*s.* 9*d.*, and in Family Packets, 11*s.* each.

HOLLOWAY'S PILLS, AN ADMIRABLE REMEDY FOR INDIGESTION, FLATULENCY, AND BILIOUS COMPLAINTS.—The well-known properties of these excellent Pills are too highly appreciated in the present day to require any commendation; the test of years has proved their efficacy in curing Bile, Indigestion, Flatulency, Sick Headache, Nervousness, and debilitated Constitutions. They invigorate the body, strengthen the faculties of the mind, and increase the appetite. Old and young, rich and poor, resort to them when afflicted with any ailment, and none are disappointed in their effect upon the system. They may also be taken with perfect safety by persons of all ages, in every climate and at any season.—Sold by all Druggists, and at Professor HOLLOWAY'S Establishment, 244, Strand, London.

DEAFNESS, SINGING NOISES IN EARS.—SELF CURE.—Extraordinary discovery.—Just published, sent post free on receipt of 16 postage stamps, A STOP TO EMPIRICISM AND EXORBITANT FEES. Every deaf person can restore his own hearing, without absence from home or personal consultations. This book will cure thousands, and rescue them from the grasp of the extortionate empiric. By Dr. HOGHTON, M.R.C.S., London, 2d May, 1845; L. A. C., April 30th, 1846. Consultations every day, Free, from 12 till 4.—9, Suffolk Place, Pall Mall, London.

PRIZE MANGOLD WURZEL AND SWEDE SEED.

SUTTON AND SONS have a fine stock of Seeds of the best kinds of Swedes, Mangold Wurzel, Carrot, &c., similar to those they supplied last season, the produce of which gained prizes at all the principal root shows throughout the kingdom.

At the Annual Root Show, held at Basingstoke, Hants, on December 21, 1853, at which 16 prizes were awarded for root crops, 13 were gained with the produce of our seeds; and at the Reading Show, on the 1st of the same month, every prize was awarded to roots grown from our seeds.

A Priced List, with Hints on Cultivation, may be had, post free, in return for one penny stamp.

SUTTON & SONS, Seed Growers, Reading, Berks.

LAWN AND PASTURE GRASS, &c.—The Subscribers will be happy to forward prices of the above to the Trade and others. DAWE, COTTRELL, and BENHAM (successors to FREDERICK WARNER), Wholesale Seedsmen, 3, Lawrence Pountney Lane, and 36, Moorgate Street, London. Agents for Butcher's Black Barbarossa Grape Vine, &c.

MAY'S PARAGON CABBAGE.

THE Subscriber, in offering the above for the first time, guarantees it to be the finest Cabbage in existence; of dwarf habit; has never been known to run; attains a large size (having been grown to the great weight of 28 lbs.); of a most beautiful green, and boils tender as Asparagus, which it continues to do throughout the season; in flavour is as far superior to the ordinary Cabbages of the day as they are to the old Drumhead Scotch. In ¼ oz. packets, 1s. each, free by post. The usual allowance to the trade.

H. M. begs to inform the public that he is unable to supply any more of his MAGNUM BONUM LETTUCE, as the stock was only small and is completely sold out.

Address all orders and communications to HENRY MAY, the Hope Nurseries, near Bedale, Yorkshire.

TURNIP SEEDS! TURNIP SEEDS!

CARRIAGE FREE.

B. PAGE AND CO.'S Genuine Stock, saved from the finest transplanted Bulbs, will, as heretofore, gain the greatest number of Prizes at Root Exhibitions.

	Per lb.—s.	d.		Per lb.—s.	d.
Skirving's Improved Swede	1	0	White Belgian Carrot ...	1	8
Purple-top	1	0	Mangold Wurzel, Long Red	0	10
Green-top	1	2	Ditto, Yellow Globe ...	1	0
Ashcroft Hybrid... ...	1	2	Buckwheat (English growth), per bushel ..	6	6
Laing's ditto	1	2	Mustard, ditto ...	16	0
Aberdeen or Scotch Yellow	0	10	Dwarf Essex Rape, p. cwt.	28	0
Dale's Hybrid	1	2	Rye-grass, Italian, per bushel ... 4s. 6d. to	5	6
White Norfolk	1	0	Ditto, Perennial, per bushel ... 4s. 6d. to	5	6
" Globe	1	0	Fine mixed for lawns and permanent pasture ... 10s. to	15	0
Tankard, in sorts 1s. to	1	3			
Green Round	1	0			
Red Round	1	0			
Early Stone	1	0			

Offices, Oxford Street (ten yards from the Railway Terminus), and Above Bar, Southampton.

INGRAM'S PRINCE OF WALES STRAWBERRY.—This splendid new Strawberry, now so extensively grown at the Royal Gardens, Frogmore, both for forcing and out-door culture, may now be had of J. AND E. SMALL, at the following reduced prices:—Strong well-rooted Plants, 25s. per 100, or 15s. for 50. This is quite a distinct Strawberry to the Prince of Wales now being sent out by Mr. Cuthill, of Camberwell. Order Ingram's Prince of Wales.

The following new kinds can also be supplied at moderate prices:—Trollope's Victoria, Myatt's Superfine, do. Prolific, Nicholson's Ajax, do. Ruby, and Jackson's Britannia. The usual discount to the trade.—Agents, Messrs. NUTTING & SONS, Seedsmen, 46, Cheapside, London.

DILLISTONE AND CO. beg to offer the following:—

STRAWBERRY PLANTS.—Ten of the best kinds always on hand, 2s. 6d. to 3s. 6d. per 100.

HOLLYHOCKS saved from 20 of the best named kinds, and kept separate, 3s. per dozen: 20s. per 100.

BEDDING PLANTS.—Many thousands will be ready in May, 3s. to 6s. per dozen, or cheaper if 100 are taken.

ROSES.—Tea, Bourbon, and Hybrid Perpetuals, and new ones, on the Manetti stock.

HERBACEOUS PLANTS, fine and good, 20s. to 30s. per 100.

Orders above 20s. paid to London. Lists upon application, enclosing a stamp.—Nurseries, Sturmer, Halstead, Essex.

WILLIAM CUTBUSH DECEASED.

WILLIAM AND JAMES CUTBUSH having administered to the effects of their father, the late William Cutbush, Nurseryman, of Highgate, request that all persons having any claims upon the same may forward their statements, which, if found correct, will be forthwith discharged. And all persons indebted to the Estate to Christmas last, are solicited to pay the same immediately to JAMES CUTBUSH, Highgate Nurseries, London.

NOTICE.

THE ADMINISTRATORS of the late JOSEPH FAIRBAIRN, of Clapham, Nurseryman and Seedsman, beg most respectfully to call the attention of Noblemen, Gentlemen, Amateurs, and the Trade, to their varied and extensive Stock of STOVE and GREENHOUSE PLANTS, particularly to their Ericas, Azaleas, and Aphelexis, which are all now in high perfection: also their Shrubs and soft-wooded Plants for Parterre and Border Planting in every variety. They beg to return their grateful thanks for the patronage so long bestowed on the old established Firm of JAMES & JOSEPH FAIRBAIRN, and afterwards on JOSEPH FAIRBAIRN alone; and to state that all Orders will receive their prompt and best attention, and they are prepared to do Business on such liberal terms, for Cash, as they trust will insure a continuance of such patronage.

Clapham Nurseries, near London, April 29.

CALCEOLARIA AJAX.

LUCOMBE, PINCE, AND Co., will send out, on the 24th May next, the above splendid new Shrubby Bedding Calceolaria. Its fine, strong, healthy, robust, yet dwarf compact habit, combined with a profusion of large brilliant flowers, render it suitable either for the Parterre or Conservatory. The original Seedling Plant was exhibited by L., P., & Co., at the Horticultural Society's Rooms, Regent Street, in May, 1853, and again April 18th, 1854, when the Certificate of Merit was awarded to it. The following extracts from the *Gardeners' Chronicle* render further description unnecessary.

Extract from the report of the Horticultural Society's meeting, May 24th, 1853, page 342:—"Lucombe, Pince, & Co., exhibited a Calceolaria called Ajax (yellow with brown blotch), which, having a stiff good habit, and multitudes of showy blossoms, will doubtless make a good bedding plant."

Report of meeting, April 18th, 1854, in the *Gardeners' Chronicle*, page 255:—"Messrs. Lucombe and Pince received a Certificate of Merit for Calceolaria Ajax, a dwarf, shrubby, bedding kind, remarkable for its great trusses of brown and yellow blossoms, which require no sticks to support them, owing to its sturdy habit. It was stated to be from Sultan, crossed with some high-coloured shrubby variety."

Good small plants, 42s. per doz.; extra strong plants, 7s. 6d. each.

Exeter Nursery, Exeter, April 29.

GERANIUMS, CALCEOLARIAS, MIMULUS, CHRYSANTHEMUMS, ETC.

THE FLORAL NURSERY, ACTON ROAD, TURNHAM GREEN.

JOHN WESTWOOD, having now the largest and best selected stock of the above in the kingdom, including almost every variety known, is enabled to offer them for sale at prices unequalled.

None but healthy well-established Plants will be sent out, and all orders will meet with prompt attention, and so as to insure future support and recommendation.

J. W. has also for sale an immense quantity of Bedding and Soft-wooded Plants generally.

Catalogues sent (post free) to all parts.

N.B.—The Trade will be treated liberally and fairly.

TO NURSERYMEN, SEEDSMEN, AND FLORISTS.

TO BE LET, for a term of years, on lease, a BUSINESS in the above line now in full trade, and which has been conducted by the late proprietor's family for the last 60 years, and has always been a first-rate concern, as may be proved by the books and the trade generally. The Green and Forcing Houses are numerous and well appointed for all the purposes of business, the stock is all healthy, and can be taken by valuation, or an offer for the good-will and stock may be made, and the parties dealt liberally with.

For Particulars, and to treat, apply at Messrs. NUTTING & SONS, Seed Merchants, Cheapside, or DUNCAN HAIRS, Seed Merchants, St. Martin's Lane; or to A. P. HEWITT, Esq., Nicholas Lane, Solicitor to the Administrators.

TO BE LET, for a term of years, a sound Stock and well known compact Corn Farm, with water, and other Meadow Land, altogether about 514 acres, in a most eligible and healthy district in Hants. Good Markets around, and a Railway Station on a Metropolitan main-line within half a mile. Also adjoining and together with the above, or to be let separately, an Arable Farm, of about 200 acres, in a ring fence. Entry for preparations may be had forthwith on both farms.—For a view and to treat, apply to LAMB, BROOKS & Co., Solicitors, Basingstoke and Odiham, Hants.

TO MARKET GARDENERS.

TO BE SOLD, with immediate possession, the LEASE for an unexpired term of 10 years from Michaelmas next, of 7 acres of beautifully STOCKED MARKET GARDEN GROUND, in the parish of Isleworth, peculiarly situated for Irrigation, with a COTTAGE upon the land. The upper crop is all of the choicest kinds, and the principal part just in its prime. The un[illegible] crop consists of Raspberries and Black Currants, with about 2 acres of Violets.—Apply to MOSES ADAMS & SON, Auctioneers and Surveyors, Isleworth.

TO PIG AND CHICKEN FEEDERS.—Good Greaves may be had at 10l. per ton, upon application to TAYLOR & PEARS, 8, George Yard, Lombard Street, City.

WANTED, PURE WHITE SPANISH FOWLS.—Any persons having Eggs of the above Fowls to dispose of, are requested to communicate particulars of price, &c., to THOMAS AUNESS, Easton Lodge, near Norwich.

COCHIN CHINA POULTRY, ETC.

EGGS FROM PRIZE BIRDS.

MR. JOHN FAIRLIE, of Cheveley Park, Newmarket, in reply to the very urgent applications from numerous amateurs, is now prepared to dispose of a limited number of Eggs, from his celebrated prize Cochins, Brahma Pootras, Scotch Bakies, Dorkings, &c., according to the dates of the orders received.

BRAHMA POOTRA EGGS, from the choicest Birds of an Amateur, Brahmas of whose breeding have competed successfully at the first Shows in the Kingdom, viz., the Royal Agricultural, Great Metropolitan, Birmingham, Great Yarmouth, Doncaster, Norwich, Winchester, and Manchester. Price three guineas per dozen, warranted from the best prize and selected birds only.—W. C. G., Post Office, Sandbach, Cheshire.

BLACK COCHIN EGGS from the best birds in England, having always taken prizes at the best shows, at 18s. per dozen, including package. Apply at the city of London Wire Works, 44, Skinner Street, London. N.B. Fowl Houses, Chicken Coops, Poultry Hurdles, and Netting, of every size and description. Illustrated Catalogues forwarded, post free, on application. A few Spanish Pullets, sisters to those sent to her Majesty's yard at Windsor, for Sale.

TO POULTRY FANCIERS.

DUCK-WING GAME FOWLS' EGGS, from first-rate Prize Birds. Also White Bantams.—For particulars, price, &c., apply to JOHN MORRIS, jun., Ampthill, Beds.

EGGS FOR HATCHING, all from Prize Birds.—Silver Spangled Polands, 20s. per dozen; White Crested Black Poland, 15s. ditto; Golden Spangled Hamburgh, 10s. ditto; White Aylesbury Ducks, 5s. ditto, box included. Some Golden Spangled Hamburgh Fowls for Sale.

Post-office Orders payable to THOMAS P. EDWARDS, Lyndhurst, Hants.

EGGS from CAPT. HORNBY'S celebrated Spanish and Dorking Prize Fowls may be had on application to Mr. H. D. DAVIES, Spring Grove, Hounslow, to whom Capt. Hornby has transferred his whole stock. Spanish, 4l. 4s. per doz.; Dorking, 3l. 3s. per doz. Remittances to be made by post-office order, and to include 2s. for packing.

SPANISH AND DORKING FOWLS.—Captain HORNBY having transferred his whole Stock of celebrated POULTRY to Mr. H. D. DAVIES, of Spring Grove, Hounslow, a portion (for want of space) is for immediate sale.

TO BE SOLD, a very fine COCHIN CHINA COCK AND TWO PULLETS, chickens of 1853, price 2l. 2s. The Cock is not from the same strain as the Pullets, which were purchased from Sturgeon. Also three fine Aylesbury Ducks and Drake, price 1l. 5s. The fowls and ducks are all from prize strains, and are now laying.—Rev. R. M. T., Post Office, Atherstone, Warwickshire.

Sales by Auction.

MILCOTE, NEAR STRATFORD-ON-AVON.

IMPORTANT SALE OF SHORT-HORNED CATTLE.

MR. STRAFFORD has received instructions from Mr. J. C. Adkins to Sell by Auction, without any reserve, at Milcote, near Stratford-on-Avon, Warwickshire, on WEDNESDAY, the 3d of May next, his Herd of SHORT-HORNED CATTLE, consisting of about 50 head of Bulls, Cows, and Heifers, which possess remarkably pure and fashionable blood, being descended from the famed herds of the Earl of Carlisle, Earl Spencer, Sir C. Knightley, Messrs. Arbuthnot, Charge, Jaques, Stephenson, and other renowned breeders. They are in a healthy and prolific state, not having been made up for Sale. After which will also be Sold, without any reserve, 20 Head of choice SHORT-HORNS, the property of Mr. C. W. Goode, of Mickleton, that have been chiefly purchased and bred from the Stock of Mr. Adkins.—Catalogues with the pedigrees may be had of Mr. STRAFFORD, 13, Euston Square, London; or of Mr. Adkins, at Milcote, near Stratford-on-Avon, Warwickshire.

BRAMAH POOTRA, DORKING, SPANISH, COCHIN CHINA, AND OTHER CHOICE FANCY POULTRY.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, May 2, at 12 o'clock precisely, 50 BRAMAH POOTRA FOWLS, of the choicest quality, imported by Mr. Baily; first-class Dorkings, white and buff Cochins, from Dr. Allen and others; some well bred Spanish, Aylesbury Ducks, &c.—Catalogues by inclosing a stamped directed envelope to Mr. J. C. STEVENS, 38, King Street, Covent Garden, London.

ORCHIDS FROM GUATEMALA.

MR. J. C. STEVENS begs to notify that he will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on FRIDAY, 5th May, an IMPORTATION OF ORCHIDS, just received from Mr. Skinner, who is now in Guatemala, and under whose directions they have been collected; they comprise all the splendid varieties from that country, in magnificent masses, and in the best possible condition.—Catalogues are preparing and will be forwarded in due course.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, at the Mart, Bartholomew Lane, on THURSDAY, May 4th, at 12 o'clock, a first-rate collection of CARNATIONS, PICOTEES, and PINKS, a fine assortment of Fuchsias, Verbenas, and Dahlias, in dry roots; American Plants, Geraniums, and other Plants in Bloom, with a variety of Hardy Perennial and Rock Plants.—On view the morning of Sale; Catalogues had at the Mart; and of the Auctioneers, American Nursery, Leytonstone, Essex.

BLACKHEATH.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, FLORISTS, & OTHERS.

MESSRS. PROTHEROE AND MORRIS beg to intimate that they have received instructions from Mr. W. P. Ayres, Nurseryman (removing to a distant part of the country), to submit to public competition by Auction, in the Lecture Hall, adjoining the Blackheath Station of the North Kent Railway, on TUESDAY, 9th, and WEDNESDAY, 10th of May, at 11 o'clock, the whole of his unrivalled collection of Specimen FANCY PELARGONIUMS, fit for exhibition; also Stove and Greenhouse Plants, Bedding Plants, &c.; together with many thousands of the choicest Pelargoniums just coming into bloom, Fuchsias, Chrysanthemums, Roses, &c.—Catalogues are in preparation, and may be obtained (6d. each, returnable to purchasers) of the principal Seedsmen in London; of Mr. AYRES, and at the Lecture Hall, Blackheath; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will submit to public competition by Auction, on the premises, Rush Grove, Woolwich, on MONDAY, May 1st, at 12 o'clock, by order of Mr. J. Grisbrook, leaving the premises, the whole of the Greenhouse Plants, consisting of fine specimen Azalea indica, Erica, Epacris, Aphelexis, Pimelea, Chorozema, Corræa, Diosma, Acacia, Geraniums, Camellias, Cactus, Cinerarias; also Lilium lancifolium, rubrum, punctatum, and album; a quantity of Plants for bedding; 5 capital 1, 2, and 3-Light Boxes, 2 Thermometers, Rustic Seats, Tables, Flower Stands, and sundry effects.—May be viewed two days prior to the sale; Catalogues may be had (6d. each, returnable to purchasers), on the premises; of the principal seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO TULIP FANCIERS, GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction on the premises, Culley's Nursery, near the New Globe Tavern, Bow Road, Middlesex, on MONDAY, May 22d, at 2 o'clock, a Superb Collection of TULIPS, including about 400 varieties, and most of the choicest in cultivation, the property of Mr. Staines, comprising in the Bizarres Compton's Lord Lilford, Pilot, Duke of Devonshire, Competitor, Marcelles ex., Don Cossack ex., Dangerous, Jacomb's Perfection, ex. ex., Coronation, Fabius, &c.; among the Roses are Anastasia, Lady Stanley, Miss Catherine, Mary Lamb, Flora M'Donald, Zuill's Flora, Duchess of Sutherland, Rose Lac, Aglaia, Rose Magnificent (Betterell's), Brutante Ecletante (Aker's), Ponceau Brilliant; Franklin's Ariadne, Queen, Lord Brougham, Harriot, Lalla Rookh, the Byblœmens comprise Princess Royal, Maid of Orleans, Chellaston Beauty, Sable Monarch, Van Amburgh, Thalia, Louis XVI., Violet Quarto ex., Pandora, Lydes' Nora Creina, Wallace, Addison, Waterwitch ex. ex., &c.; together with the following Mile-end Seedlings, not yet known in many other collections, viz., Isabella ex. ex., Lord Lonsdale, Morning Star, Jupiter ex. ex., Leo Leoni ex. ex., Bizarre ex., and Sarah.—Catalogues ready one week prior to the sale, and may be had of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND EXHIBITORS.

ST. MARGARET'S, ISLEWORTH.—THE EARL OF KILMOREY'S MATCHLESS COLLECTION OF ORCHIDACEOUS, STOVE, AND GREENHOUSE PLANTS.

MR. CAIN is instructed to Sell by Auction, on the premises as above (in consequence of the Earl of Kilmorey having disposed of his interest in the premises), on TUESDAY, May 2d, and following days, at 12 for 1, this NOBLE COLLECTION OF PLANTS, consisting of specimens of unrivalled excellency, and comprising all the choice varieties of Orchids, viz., Aerides, Anæctochilus, Bletia, Brassia, Cattleya, Cœlogyne, Cypripedium, Dendrobium, Epidendrum, Miltonia, Oncidium, Peristeria, Phaius, Sobralia, Stanhopea, Vanda, and Zygopetalum. The Ericas comprise fine Exhibition specimens of Cavendishi (very fine), depressa, elegans, Hartnelli, jasminiflora alba, Massoni major, metulæflora bicolor, perspicua nana, tricolor, vestita, &c. &c. About 100 of the choicest varieties of Camellias, of fine handsome growth, with good show of bloom. Two fine specimens of Araucaria excelsa, or Norfolk Island Pine; one 12 ft. high, beautifully furnished, and one 6 feet 6 inches, a fine tree. The collection of Azaleas comprise some of the finest specimens of the most choice varieties. Rhododendrons consist of a splendid collection of rare species, Orange trees of fine and noble growth. The Stove Plants comprise fine specimens of Allamandas, Begonias, Dipladenias, Franciscea, Gardenia, Ixora, Stephanotis, &c. Large American and plated Aloes of the most choice species. The plants are in a healthy state, and present a fine show of bloom;—to noblemen and nurserymen an opportunity of possessing fine exhibition plants for the forthcoming shows. Sculptured Stone and other Pedestals, and Ornamental Vases; a fashionable Chariot, in excellent order; a perfectly new four-oared Racing Boat, by Salter; a Wager Boat, by Clasper; Garden Tools and Implements; a long, three-tier shaped, iron Flower Stage, and other effects.—May be viewed, by Catalogues, at 1s. each (returnable to purchasers), one week prior to the sale; to be had on the premises, and of the Auctioneer, King Street, Richmond, Surrey.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be Addressed to the Editor.—SATURDAY, APRIL 29, 1854.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley

No. 18.—1854.] SATURDAY, MAY 6. [PRICE 6*d*.

INDEX.

Agri. Soc. of England	292 *b*	Linnean Society	287 *a*
Calendar, horticultural	288 *a*	Manufacture v. farming	292 *a*
— agricultural	293 *a*	Meteorology, agri.	290 *c*
Cheese, colouring	292 *a*	New Zealand Flora, Dr. Hooker's	287 *a*
Cider, colouring	292 *a*	Oak, planting	286 *a*
Conifers, effects of winter on	286 *a*	Paper, materials for	285 *c*
Corn, new treatment of	293 *a*	Pathology, vegetable	284 *c*
Drainage, arterial	290 *a*	Plants, new	287 *b*
Eranthemum pulchellum	284 *c*	— hurt by frost	285 *a*—287 *b*
Farm balance sheet	289 *c*—291 *a*	— blights and diseases of	290 *a*
Farming v. manufacture	292 *a*	Potatoes, how to grow sound	285 *b*
— for the Million, rev.	293 *a*	Potato disease, preventive of	290 *a*
Forests, royal	283 *c*	Seats, garden	285 *b*
Frost of 25th ult.	285 *a*—287 *b*	Strawberries, mildewed	285 *c*
— — at Brussels	286 *c*	Textile materials	285 *c*
Fungi, American	286 *b*	Tulips, early	287 *c*
Garden seats	285 *a*	Vegetable pathology	284 *c*
Gloves, kid, to clean	288 *c*	Wallich, Dr., death of	284 *b*
Horticultural Society Anniversary	287 *a*	Walls, north	285 *b*
Horticultural Society's garden	287 *c*	Wall trees, protection of	285 *c*
Kew, effects of frost at	287 *b*	Winter, effects of, on Conifers	286 *a*
Labour, Morrison on, rev.	287 *a*	Woods and forests	283 *c*

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

In accordance with the wishes of Farmers, Millers, and others interested in the Corn Trade, an Edition is published in time for post every Monday afternoon, containing a FULL REPORT of the MARK LANE and SMITHFIELD MARKETS of the DAY.

In consequence of the Advertisement Duty having been taken off by the Government, the charges for Advertisements in *The Gardeners' Chronicle and Agricultural Gazette* have been reduced. Advertisements appear in both Editions without extra cost.

	£	s.	d.
Space of Four lines and under (body type)	£0	2	6
Each additional line up to Twenty	0	0	6
Every Five lines beyond	0	2	0
A Column	3	0	0
A Page	8	8	0

Advertisements of Bailiffs and Gardeners out of Place, if not more than Three lines, 1*s*. 6*d*. each.

From the Official Stamp Returns published April 5, 1854, it appears that during the three preceding years, 1851, 1852, and 1853, the Stamps supplied to each of the undermentioned Journals gave them an average sale of—

GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE	6277	St. James's Chronicle	2844
		Morning Post	2652
		Sun	2539
Era	5500	Morning Chronicle	2364
Wesleyan Times	5094	Britannia	2329
Magnet	4705	Express	2235
Examiner	4694	Leader	2140
Mark Lane Express	4500	Herapath's Journal	2066
Evening Mail	4488	John Bull	2020
Field	4409	Globe	1926
Morning Herald	4021	Weekly News	1709
Daily News	3910	United Service Gazette	1708
Guardian	3904	Railway Times	1641
Economist	3837	Atlas	1479
British Banner	3798	Standard	1456
Record	3736	Naval & Military Gazette	1313
Watchman	3681	Patriot	1304
Nonconformist	2987	Gardener's and Farmer's Journal	752
Spectator	2856		

OFFICE FOR ADVERTISEMENTS AND COMMUNICATIONS,
5, Upper Wellington Street, Covent Garden, London.

HORTICULTURAL SOCIETY OF LONDON.—Notice is hereby given, that the FIRST EXHIBITION of FLOWERS and FRUIT, in the SOCIETY'S GARDEN, will take place on SATURDAY, May 13, at 2 P.M.

Tickets, price 5*s*. each, can be procured at this Office, upon presenting the order of a Fellow, or on the day of the meeting, at Turnham Green, price 7*s*. 6*d*. each.—21, Regent Street, London.

ROYAL BOTANIC SOCIETY, REGENT'S PARK.—The days appointed for the EXHIBITIONS of PLANTS, FLOWERS, and FRUIT this season are WEDNESDAYS, May 24, June 21, and July 5; and of AMERICAN PLANTS, MONDAYS, June 12 and 19.

Tickets of Admission can be obtained at the Gardens by orders from Fellows of the Society. Price on or before May 13, 4*s*.; after that day, 5*s*.; or on the days of Exhibition, 7*s*. 6*d*. each.

The Plants will be arranged on a new plan, similar in form to the American Garden, and placed upon a series of terraces.

SOUTH LONDON SOCIETY OF AMATEUR FLORISTS.—The Second Exhibition for this season will be held at the HORNS TAVERN, Kennington, on TUESDAY, the 23d of May (instead of the 25th, as before advertised), when prizes will be awarded for the following productions, viz.:—Miscellaneous Plants, Pelargoniums and Fancy Varieties, Tulips, Heartsease, &c. In addition to the prizes offered by the Society, Mr. R. T. Lawrence, of Hampton, offers 5*l*. value in Tulips in prizes to Amateurs An efficient Band will be in attendance. Admission to non members from 2 till 6 o'clock, at One Shilling each. List of Prizes may be obtained at the Horns Tavern, and from JOHN BUSHELL, Esq., Secretary, *pro tem.*, Lower Kennington Lane, Lambeth, Surrey.

WEST KENT SECOND ANNUAL POULTRY AND FLOWER EXHIBITION, Under most distinguished Patronage, will take place on TUESDAY and WEDNESDAY, the 20th and 21st of June next, in the Market Field, Farningham.

Prizes will be awarded for Poultry, Pigeons, and Rabbits. Stove, Greenhouse, and Herbaceous Plants, Fruits, Vegetables, Roots, and Cut Flowers. Applications for Forms of Certificates of Entry, Prize Lists, and Regulations for Poultry, &c., to be made to the Secretary, and for Flowers, &c., to Mr ALFRED LOCKYER, Secretary, Farningham. By Order of the Committee of Management, BAPTISTE THOMAS, Secretary.

Committee Room, Lion Inn, Farningham, Kent.

MARLBOROUGH HOUSE, PALL MALL.—Professor EDWARD FORBES, F.R.S., will deliver a Course of Eight Lectures on "The Forms and Colours of Animals and Plants" at the above place, on Friday Afternoons, at 4 o'clock, viz., May 12th, 19th, and 26th; June 2d, 9th, 16th, 23d, and 30th.

EXHIBITION OF TULIPS.

HENRY GROOM, Clapham Rise, near London, by Appointment Florist to Her Majesty the Queen, and to His Majesty the King of Saxony, respectfully announces that his EXTENSIVE COLLECTION OF TULIPS is now in flower, and may be viewed every day from 9 o'clock until 6 (Sundays excepted).—Admittance 1*s*., Children half-price.

EXHIBITION OF TULIPS.

W. H. LAWRENCE, of the Red Lion, Hampton, begs to inform his friends and the public, that his unrivalled Collection of TULIPS is in bloom, and will continue to the end of the month.—Admittance Gratis.

EXHIBITION OF TULIPS, PELARGONIUMS, CINERARIAS, PANSIES, ETC.

C. TURNER'S extensive Collections of the above are now in fine bloom, and may be viewed, Sundays excepted, for the next three weeks.

Royal Nursery, Slough, May 6, 1854.

EXHIBITION OF SPECIMEN PLANTS.

J. AND J. FRASER beg to invite the attention of the Nobility and Gentry to an inspection of their fine collection of Specimen CHINESE AZALEAS and other plants, which are now in bloom. The plants are so arranged in various Greenhouses as to have a similar effect to that produced at the Metropolitan Flower Shows. The collection comprises those specimens which have been exhibited so often at the Regent's Park and Chiswick Gardens, at which places they have taken the leading prizes.

The Nursery is about 15 minutes' walk from the Lea Bridge Station on the Eastern Counties Railway. Trains leave London at 9 a.m., 9.30 a.m., 10 a.m., 10.40 a.m., 12.30 a.m., 1.40 p.m., 2.30 p.m., 3,20 p.m., and 4.45 p.m.—Admission Gratis.

Lea Bridge Road, Essex, May 6, 1854.

HOLLYHOCK "LIZZY."

A. PAUL AND SON have still on sale a few strong plants of this superb new Hollyhock (colour clear peach) which obtained ten first prizes last year, price 10*s*. 6*d*. each.—Nurseries, Cheshunt, Herts, 6th May, 1854.

BEDDING PLANTS.

JOHN HAYES, FLORIST, Farnham, Surrey, begs to say he is prepared to send out the above from 1*s*. to 4*s*. per dozen; the season being favourable, the plants are remarkably good. 50 Seeds of a good useful CUCUMBER sent for 12 stamps. Descriptive Catalogues sent for one postage stamp.

BEDFORD NURSERY, ACRE LANE, BRIXTON.

W. J. SANGSTER begs to say he is prepared to send out his admired New Seedling GERANIUM the "BEAUTY OF CLAPHAM," an excellent variety for pots and bedding culture, noticed in *Gardeners' Chronicle* as a beautiful rosy pink, and a very pretty variety. Good strong plants, 7*s*. 6*d*. each. Also a great variety of Bedding plants at 4*s*. per dozen, and every kind of Nursery Stock at very moderate prices.

TO THE SEED TRADE AND OTHERS.

BENJAMIN R. CANT, St. John's Street Nursery, Colchester, can supply in quantity the following Home-grown Seeds, of excellent quality:—

	Per lb.—*s*.	*d*.
WHITE BELGIAN CARROT	1	0
LONG RED ALTRINGHAM Do.	1	0
YELLOW GLOBE MANGOLD WURZEL	1	0
LONG RED Do.	1	0

Prices to the Trade on application.

JOHN HOLLAND offers superb named SHOW PANSIES, at 4*s*. per dozen Plants. Extra fine selected PANSY SEED, 1*s* and 2*s*. per packet.

Bradshaw Gardens, Middleton, near Manchester.

SAMUEL WALTERS begs to offer the following:—New and Choice GERANIUMS, New PETUNIAS, FANCY GERANIUMS, FUCHSIAS, VERBENAS, BEDDING PLANTS, &c. Orders of 1*l*. and upwards will be forwarded any distance not exceeding 100 miles, carriage free. See *Gardeners' Chronicle*, p. 250.—Hilperton and Trowbridge, Wilts.

WILLIAM BARNES begs to inform his friends and the public generally, that his SPRING CATALOGUE is now ready, and can be had on application: it contains all the leading and most approved varieties in cultivation, of Indian Azaleas, Cinerarias, Calceolarias, Verbenas, Fuchsias, Hollyhocks, Phloxes, Roses, Geraniums, Chrysanthemums, Perpetual blooming Carnations, Petunias, Delphiniums, and Liliums, with many other plants too numerous to insert here. W. B. has much pleasure in stating his stock is exceedingly healthy and clean, and warranted true to name.—Camden Nursery, Camberwell.

TURNIP SEEDS.

J. R. AND A. PEARSON, believing RED ROUND to be the best common Turnip for early sowing, and GREEN BARREL for late, are sending them out at 1*s*. per lb., including package, and warrant every seed to grow. As our firm have supplied the late Duke of Portland for between 40 and 50 years, and many of the largest farmers of Nottinghamshire and Lincolnshire, we think it unnecessary to add testimonials as to the character of our Seed, which is all grown by ourselves, on our own farm.—Chilwell, near Nottingham.

TO BE SOLD, 400 TULIPS, and 350 AURICULAS. Tulips, 2*s*. per dozen; Auriculas from 6*s*. per dozen.—Apply to Mr. HENRY CRANE, Southgate, Middlesex.

TO BE SOLD, at a moderate price, a fine specimen of FAN PALM, or CORYPHA UMBRACULIFERA, 9 feet high and 12 feet in circumference, some of its leaves 6 feet across.—For further particulars address to THOMAS COOLING, Mickleover, near Derby.

SOFT-WOODED PLANTS, in large variety; suitable for decorating the Flower Garden during Summer and Autumn. To be had at low prices from the subscribers,

HUGH LOW & Co., Clapton Nursery, London.

NEW ALSIKE CLOVER, Price Ten Guineas per cwt., or in small quantities at 2*s*. per lb., may be had on application to Mr. H. RAYNBIRD, Basingstoke, Hants. Also New Home-grown ITALIAN RYE-GRASS, of good and genuine Stock, at 30*s*. to 35*s*. per quarter.

FINE MANGOLD WURZEL SEED.

LONG RED MANGOLD WURZEL. Fine new Seed, 10*d*. per lb., or 70*s*. per cwt.

JOHN SUTTON AND SONS, Seed Growers, Reading, having a large Stock of the above, are now selling it at the low price here quoted. LARGE YELLOW GLOBE and other sorts, as see Priced List, which may be had in return for one postage stamp.

LARGE YELLOW GLOBE MANGOLD WURZEL, and all other kinds at low prices in large quantities. For particulars address (stating quantities required) JOHN SUTTON and SONS, Seed Growers, Reading, Berks.

GARDEN SEEDS FOR PRESENT SOWING.—Good Seeds of all the best kinds of Lettuces, Broccolies, Cauliflowers, Peas, and other Vegetables, may still be obtained of the undersigned. Priced Lists post free.—Address,

JOHN SUTTON AND SONS, Seed Growers, Reading, Berks.

NEW TURNIP SEEDS DIRECT FROM THE GROWERS.

WILLIAM E. RENDLE AND CO. have this season a very superior stock of all kinds of TURNIPS, and they recommend all who are in want of the best varieties to procure their "Farming Price Current and Agricultural Directory," to be had in exchange for six penny stamps.—Apply to

WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

DAHLIAS, GERANIUMS, FUCHSIAS, AZALEAS, BEDDING PLANTS, &c., can be had from WILLIAM E. RENDLE AND CO., NURSERYMEN, Plymouth, in any quantity. Their New Plant Catalogue is now out, and can be had in exchange for one penny stamp.—Apply to

WILLIAM E. RENDLE AND CO., Nurserymen, Plymouth.

FINE GRASS SEEDS FOR ORNAMENTAL PARKS, LAWNS, &c., *where a fine sward is required*, 1*s*. 3*d*. *per lb.*, 3*s*. *per gallon, and* 20*s*. *per bushel. Our mixtures for this purpose have given the greatest satisfaction.*

WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

LOBELIA ST. CLARE.

MESSRS. LAKE AND DYER, NURSERYMEN, &c., Bridgewater, are prepared to send out this truly beautiful plant (so universally admired last autumn), at 12*s*. per dozen.

Postage stamps or Post-office Order must accompany all orders from unknown correspondents.—N.B. The Trade supplied.

NEW DAHLIA MAGNET.

CHARLES KIMBERLEY is now sending out the above beautiful Dahlia; colour, ruby crimson, very constant, of first-rate form, one of the best flowers of the season; was awarded a Certificate at Brighton Open Show, September 14th, and National Society, London, September 22d. Strong Plants, 10*s*. 6*d*. each; usual allowance to the Trade. Catalogues of Dahlias and Miscellaneous Choice Plants may be had on application.—Stoke Nursery, near Coventry.

THOMAS HANDASYDE, Glen Nurseries, Musselburgh, by Edinburgh, is now prepared to send out Plants of his new Pansies: MARY BLANCHE, at 5*s*.; and GLEN BEAUTY, at 3*s*. 6*d*. each. These will prove equally good with his Duke of Perth, so well known. Also fine established Plants of all the leading sorts of DAHLIAS and other Florists' Flowers, priced Catalogues of which may be had on application.

BEDDING PLANTS.

J. WOOD AND SONS, NURSERYMEN, &c., Old Kent Road, and Bowyer Place, Camberwell, begs to inform their friends that they have a large quantity of bedding plants established in pots, at 3*s*. per dozen, comprising Pelargoniums, Scarlet Geraniums, Verbenas, Petunias, Ageratums, Salvias, Cupheas, double Senecios, Heliotropiums, Fuchsias, Lobelias, Calceolarias, Mimulus, Anagallis, &c. &c. Dahlias, good flowering sorts, 4*s*. to 6*s*. per dozen. Strong Rollisson's Unique Geraniums, 9*s*. per dozen.—Post-office orders made payable at Old Kent Road.

BEDDING PLANTS.—Many thousands of the above desirable Ornaments for the Flower Garden are now ready to be sent out, by JOHN SCOTT, of the Merriott Nurseries, near Crewkerne, Somerset, at the very low price of 2*s*. 6*d*. per dozen, consisting of

100 Sorts of VERBENAS	100 Sorts of FUCHSIAS
50 " GERANIUMS	12 " CALCEOLARIAS
12 " PETUNIAS	12 " LOBELIAS

With many other kinds too numerous to particularise. Nearly all are autumn-struck plants. Early application is solicited.

N.B.—All other kinds of Nursery Stock extensively grown.

MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS AND CO. beg to call attention to their MIXTURES OF GRASS SEEDS for laying Land down to Permanent Grass, price 30*s*. per acre.

Mixed sorts, for Improving Old Grass Land... 1*s*. 2*d*. per lb.
Fine sorts for Forming and Renovating Lawns 1 8 "

Directions for sowing accompany the seeds.

GEORGE GIBBS & Co. will be happy to forward their Priced Catalogues of Mangold Wurzel, Carrot, Swede, Turnip, and all Agricultural Seeds, free on application to GEORGE GIBBS & Co., Seedsmen, 26, DOWN STREET, Piccadilly, London.

EUGENIA OR MYRTUS UGNI.

MESSRS. VEITCH AND SON, of Exeter, and the Exotic Nursery, Chelsea, have much pleasure in offering to the Public the above beautiful evergreen flowering shrub, of THEIR OWN introduction, from Patagonia, through their collector, Mr. Wm. Lobb.

It has stood several winters in the open ground without shelter, producing its delightfully fragrant flowers in July, succeeded by its Strawberry-flavoured red berries, eaten in Chili as dessert. It is a plant of easy culture, flowering in a very small state, when not above 6 inches high, and is well adapted for pot culture. It is figured by Sir Wm. Hooker in Curtis's "Botanical Magazine" for January, 1852.

Strong blooming plants, in 48-sized pots, 21*s*. each.
Second size do. in 60-sized pots, 15*s*. each.

With the usual discount to the Trade, and one over on either class when three are taken.—Exeter, May 6.

CHOICE BEDDING PLANTS.

YOUELL AND CO.

BEG TO OFFER THE FOLLOWING :—

CALCEOLARIAS.—The following four very handsome varieties will be found the gems of the season for bedding purposes:—

CRIMSON KING (Henderson), deep crimson, very dark and rich, and does not fade; habit dwarf and robust, flowers large, and shape good. 12s. per dozen.

MAGNIFICENT (Henderson), rich crimson, with yellow crown; a large, fine-formed, and very splendid flower, quite distinct from anything yet out. 12s. per dozen.

GOLD CHAIN, fine golden yellow, of great substance and fine habit, with very stout foot-stalks. 12s. per dozen.

GOLD CAP (Garraway), rich dark maroon, the upper division of the flower deep gold colour, the flowers large and of fine compact habit. 12s. per dozen.

Also the following older favourites for bedding :—

BEAUTY OF MONTREAL, fine bright crimson, dwarf habit, 6s. per dozen.
WELLINGTON HERO, rich deep golden yellow, 6s. per dozen.
SULTAN, large rich crimson, 6s. per dozen.
MRS. BEECHER STOWE, fine canary, 9s. per dozen.
SULPHUREA SPLENDENS, fine yellow, dwf. habit, 6s. per doz.
Calceolarias (Seedlings not yet flowered) raised from "Benary's" superb spotted varieties, 5s. per dozen, post free.
GERANIUM—Boule de Neige, a pure white-flowering horse-shoe leaved variety, of compact habit, producing large trusses of well formed flowers, 18s. per doz.
" Kingsbury Pet, a bright rosy salmon, with dark horse-shoe leaf and of the same habit as the foregoing, 18s. per dozen.
" Flower of the Day, 9s. per dozen.
" Mountain of Light, 18s. per dozen.
" Fancy varieties, of fine kinds, 12s. per dozen.
" Shrubland Pet, 9s. per dozen.
" Scarlets, in fine variety, 6s. per dozen.
" Sweet-scented species, 9s. per dozen.
Verbenas, of the choicest kinds, including all the most approved of the Continental varieties, 4s. and 6s. per dozen.
Petunias, of the best kinds, 4s. to 6s. per dozen.
Oxalis rosea, one of our prettiest rose-coloured hardy bedding plants, of dwarf habit, and nearly always in flower, 6s. per doz.
Œnothera riparia, a pretty trailing plant, of dwarf habit, quite hardy, producing a profusion of canary-coloured blossoms throughout the year, 6s. per dozen.
Heliotropes, in fine variety, 6s. per dozen.
Anagallis rubra grandiflora, fine for bedding, 4s. per dozen.
Cuphea platycentra, 4s. per dozen.
Lobelia racemoides and lucida, 4s. per dozen.
Antirrhinums, of the finest kinds, 6s. and 9s. per dozen.
Pentstemons, do. do., 6s. per dozen.
Gorteria pavonia, a fine hardy plant, of trailing habit, producing throughout the year a gorgeous display of orange-coloured flowers, spotted with black, 9s. per dozen.
Campanula corallina, an extremely pretty dwarf hardy bedding plant, of compact habit, bearing a profusion of light-blue bell-shaped flowers from May till November; 6s. per dozen.
Neirembergia filicaulis, 6s. per dozen.
PHLOXES.—The following fine varieties, 9s. per dozen :—Spenceri, Imbricata, Abdel Medschid Khan, Anais, Captivation, Elegantissima, Eliza, Hydrangæformis, Imperialis major, Roi Leopold, Macrantha, Madame Courcelles, Madame Poivre, Napoleon, Nelsoni, Princesse de Cleves, Speciosissima, Villaret Joyeuse, Princesse Marianne, Speculum, &c.
Potentillas, of the handsomest varieties, by name, 6s. per dozen.
Mimulus Colei and purpurea maculata, two fine hardy varieties, forming bushy plants, 1½ ft. in height, the former producing bright red flowers, with dark maroon centre; the latter purple flowers, with crimson centre; 6s. per dozen.
Daisies, new Belgian, in 50 fine varieties; 4s. per dozen.
Saponaria ocymoides, a pretty hardy trailing plant, adapted for rockwork; flowers of a light rose colour; 6s. per dozen.
Salvia oppositifolia, 4s. per dozen.
Silene maritima plena, fine double white, very compact habit, 9s. per dozen.
Dielytra spectabilis, 9s. per dozen.
Funkia grandiflora, 2s. 6d. each.
Rockets, double white, 3s. per dozen; purple, 4s. per dozen; crimson, 1s. 6d. each.
Calystegia pubescens (double rose-coloured Convolvulus), quite hardy, 9d. each, or 6s. per dozen.
Herbaceous Plants, in fine variety, 25s. per 100.
FUCHSIAS.—Possessing a fine stock of the following new varieties, we offer them at 12s. per dozen, viz.:—Duchess of Lancaster, England's Glory, Incomparable, King Charming, Perfection, Globosa perfecta, Glory (Banks), Model, Premier, Commodore, Bride, Ariel, and Hendersoni; fine kinds of the older favourites, 6s. per dozen.
CARNATIONS AND PICOTEES.—Beautiful selections from our extensive collection, at 18s., 24s., and 30s. per dozen pairs; fine mixed, for borders, 9s. per dozen pairs. True Old Clove Carnation, 12s. per dozen pairs.
PINKS.—Extra fine sorts by name, 9s. to 12s. per dozen pairs.
PANSIES.—The following choice kinds, at 10s. per dozen varieties:—Alba Superba, Androcles, Blanche, Cæsar, Calysto, Caroline, Commander-in-Chief, Crystal Palace, Drusilla, Duchess of Rutland, Elegant, Emma, Euphemia, Glory, Helen, Heroine, Indian Chief, Isabella, Junius, Lady Carrington, Lady Franklin, Lady Harding, Lord Jeffery, Marchioness of Lothian, Masterpiece, Miriam, Miss Talbot, Mrs. Beck, Penelope, Polyphema, Post Captain, Prince Arthur, Princess, Queen of England, Rubens, Sambo, Smolensko, The Rajah, Uttoxeter Hero, Viceroy, Yellow Prince.
CHRYSANTHEMUMS, comprising the very best of the new kinds of large flowering and Pompon varieties, in strong plants, 9s. per dozen.

☞ Less quantities than those named above supplied at the same prices. Orders of 2l. and upwards are delivered Carriage Free to London, Hull, Newcastle-on-Tyne, or to any Railway Station within 150 miles of the Nursery.

YOUELL & CO., Royal Nursery, Great Yarmouth.

CAPE HEATHS AND NEW AZALEAS.

W. J. EPPS begs to call attention to his extensive and rare Collections of Heaths and Azaleas, which are in the finest condition possible; very bushy and well formed for specimens in 3, 4, and 6-inch pots, consisting of all the best varieties, such as Aristata ampullacea, tricolor, jasminiflora, ventricosa, Massoni, Webbiana, obbata, &c., &c. AZALEAS—Prince Albert, Gledstanesi, Excelsa, Murrayana, Alba magna Duke of Devonshire, Holderi, Toilette de Flora, Glory of Sunning Hill, Symmetry, Splendens, Ignescens, &c., &c., 9s., 12s., 18s., and 21s. per dozen; 5l. per 100 varieties, carriage paid to London. All the new Stove and Greenhouse Plants, Fuchsias, Verbenas, and Roses, equally moderate. Catalogues of the above sent on application.—Nurseries, Maidstone and Ashford.

YELLOW SEEDLING DAHLIA,
"MRS. H. N. FERGUSON."

DOWNIE AND LAIRD have much pleasure in intimating that they will send out the above-named Dahlia, raised by Mr. John Young, gardener, Archerfield. It has been successful wherever exhibited, viz.:—Letter of Commendation at Royal Caledonian Horticultural Society, in 1852 (one bloom); Ditto at ditto, in August, 1853 (two blooms); Certificate of Merit at ditto, September, 1853 (six blooms); one of 12 blooms, which gained the Silver Cup at ditto in September, 1853; one of 16 blooms, which gained the first prize at Haddington, September, 1853; one of 12 blooms, ditto at ditto, September, 1853. This flower was also submitted to Mr. Turner, Royal Nursery, Slough, for his opinion (see "Florist," September, 1853, under "J. Y."):—"A large and finely-formed yellow, very deep and full; if as good late as early, will be a great acquisition." Plants in May, 1854, 10s. 6d., with the usual discount to the trade.

D. and L. have also to intimate their stock of Florists' Flowers is now very complete, embracing all the newest and finest in cultivation, a new List of which, for 1854, may be had on application.
17, South Frederick Street, Edinburgh.

HONEYSUCKLE VERBENA.—So named for its delightful perfume, which is so near the odour of the Honeysuckle that it cannot be distinguished from it. Last season it was the constant inquiry of visitors at the Nursery Grounds if Honeysuckles were growing near, or what flower so much resembled them in fragrance, and on being informed it was the above new variety of Verbena, they were much surprised, and immediately ordered plants of it. Description—viz., compact habit, fine glossy foliage (will do excellently for bedding, or as a plant for pot culture), long stems to flowers, making it very useful for bouquets—blooms most abundantly; colour rich dark crimson, shaded lilac, very distinct eye; the truss of a fine globular shape, generally measuring 9 inches in circumference, all the pips fully expanded. It will force well during the winter, being a great advantage for cutting, or for its perfume in a greenhouse or conservatory at that season of the year; it will also stand the sun and rain during summer better than any other Verbena. A few blooms added to a bouquet will give it the scent of the sweetest Honeysuckle. Fine strong plants are now ready for sending out, at 5s. each.

LOBELIA LINDLEYANA.—The subscriber having purchased the whole stock of the above new Lobelia of Mr. Keynes, Salisbury, he begs to offer it to the public. It was awarded a Certificate of Merit at the Horticultural Society and National Society of London, June 1853. Description—viz.: Habit, dwarf and compact, flowering very freely, covering the whole surface of the plant; distinct in colour from all others yet out, being a bright rosy lilac. It is an excellent bedding variety, and will be sure to please every one who grows it, especially for its distinct colour and profusion of bloom. Strong plants now ready at 3s. 6d. each.

The usual allowance to the Trade when three plants of either are ordered. On receipt of a post-office order or penny postage stamps to the amount, the plant or plants will be sent postage and package free.—EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church Yard, Bath, Somerset.—May 6.

FLOWER SEEDS FOR PRESENT SOWING.

WILLIAM B. JEFFRIES, Arboretum Nurseries, Ipswich, begs to offer the following, which he is sure will give every satisfaction to purchasers :—

	s. d.		s. d.
100 packets select Flower Seeds	7 6	Forsythia viridissima, per dozen ... ... 6s. to	9 0
50 packets " "	4 6	Isolepis juncioides, per do.	6 0
Fine Hollow-crowned Parsnip, per lb., 1s.; or 6 lbs.	4 6	Dielytra spectabilis "	6 0
Escallonia macrantha, per dozen ... ... 4s. to	6 0	Herbaceous Plants, fine, per dozen ... ... 4s. to	6 0
Deutzia gracilis, p. do. 6s. to	9 0	Lychnis viscaria splendens, per dozen ... 4s. to	6 0
Mitraria coccinea, per do.	6 0		

Pompone and large-flowering Chrysanthemums, fine varieties, per dozen ... ... 4s. to 9s. 0d.
Strong Seedling Calceolarias (Seeds from Mr. Turner's celebrated Stock), per dozen ... ... 6s. to 9 0
Œnothera riparia, fine, for Bedding or Massing upon Lawns, per dozen ... ... 4s. to 6 0
Verbenas and Bedding Plants in great varieties, per dozen ... ... 2s. 6d. to 4 0
W. B. J.'s own Selection, per 100 ... ... 15s. to 20 0

GERANIUMS.
SEVERAL THOUSANDS OF THE BEST IN CULTIVATION, VERY FINE AND STRONG.

BASS AND BROWN *beg to refer purchasers who wish to make their own Selection to their advertisements in the* Gardeners' Chronicle, *of March 27th, page* 179; *and April 8th, page* 210, *of these and many other new Plants :—*

	s.	d.
18 Best new of last season	66	0
12 " "	44	0
30 Very choice, of previous date	45	0
12 " "	18	0
Fine vars., 6s. to 12s. per dozen.		
6 Best Fancy vars. of last season	18	0
12 Very choice of previous date	13	0
Fine vars., 9s. to 12s. per dozen.		
GLOXINIAS.		
9 Superb new vars.	33	0
12 Very choice "	20	0
12 Other fine "	12	0
ACHIMENES.		
4 Superb new vars., see previous advertisements	11	0
12 Beautiful and choice vars.	10	0
GREENHOUSE PLANTS.		
50 Fine and select species and vars.	45	0
25 " "	24	0
12 " "	12	0
12 Extra choice and select	25	0
STOVE PLANTS.		
25 Fine and select species and vars.	35	0

HERBACEOUS PLANTS.—In pots. Heights and colours, see Autumn Catalogue.

100 Distinct and showy vars.,	30s. 0d.,	or 50 for	20	17	6
25 "	10	6	or 12 for	0	6	0
100 Superior and new vars.,	50	0	or 50 for	1	10	0
25 "	17	6	or 12 for	0	9	0
25 Vars., best for Rockwork	12	0	or 12 for	0	7	6
DWARF ROCK CISTUS, 24 Beautiful vars.,				0	15	0
" 12 "				0	7	6

☞ An extensive assortment of Bedding Plants.

Goods Carriage free (not under 20s.) to all the London Termini and all Stations on the London and Norwich Colchester Line; and Plants added gratis with orders of 40s. and upwards.

Post-office Orders payable to BASS & BROWN, or to STEPHEN BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

BEAUTIFUL NEW BEDDING PLANT.
MILLER'S HYBRID MULE PINK.

ROBERT MILLER, Hartshill Nursery, Newcastle, Staffordshire, offers with confidence the above Pink, colour a bright crimson scarlet, double; grows from 9 to 15 inches high, branches out and forms a little bush, and flowers most abundantly from June to October, and perfectly hardy. See *Gardeners' Chronicle*, Sept. 24, 1853.

DIANTHUS R. M., very pretty, and being dwarf in habit, it will doubtless make a good bedding plant. Price 12s. per doz., package included. The usual discount to the Trade. To be let out the second week in April. Post-office orders from unknown correspondents made payable at Newcastle.

W. IVERY'S SPRING CATALOGUE can be had on application, post free; and he begs to offer a few good and select Plants for Bedding.

LOBELIA ERINUS and CÆRULEA ALBA, Seedlings of 1853; colour, bright sky-blue, with white throat, much larger flower than any of the Erinus tribe; strong grower, and very free bloomer, decidedly the best of the class, 2s. 6d. each, or 21s. per dozen, strong plants.

GERANIUM—Trentham Rosy Scarlet, a beautiful variety, compact habit, large trusser, quite distinct in colour; must become a great favourite for bedding, 2s. each, or 18s. per dozen.

GERANIUM—Golden Chain, fine healthy plants, 12s. per dozen; extra size, 2s. 6d. each.

GERANIUM—Flower of the Day, strong healthy plants, 9s. to 12s. per dozen.

CALCEOLARIAS—Beauty of Montreal, Brilliant, Crimson King, Magnificent, Model, Gold Cap; the above are splendid varieties for bedding, 18s. per dozen. Other good varieties from 6s. to 12s. per dozen.

Also a fine stock of VERBENAS, SCARLET GERANIUMS, PETUNIAS, and all other bedding plants, at moderate prices.

W. I. has a fine stock of the best Show, Fancy, and mixed GERANIUMS, FUCHSIAS, CINERARIAS, AZALEAS, Winter Flowering CARNATIONS, Pompone and large Flowering CHRYSANTHEMUMS, Herbaceous and other Miscellaneous Plants, too numerous to insert here.

Hanover Nursery, Peckham, near London, May 6.

STANDISH AND NOBLE, NURSERYMEN, SEEDSMEN, &c., Bagshot, Surrey, are now prepared to receive orders for the following new and beautiful varieties of AZALEAS, which will be ready for delivery in June next. The Advertisers can recommend them with the greatest confidence, as superior to any others of their kind.

AZALEA BEALII.—This very distinct variety was introduced by them from China. The flowers, which are of first-rate shape, are quite unique, being striped, like a Carnation, with rich vermilion on a pure white ground. It is of good habit, fine in foliage, and a most abundant bloomer; and although decidedly in the first rank as a greenhouse plant, it is quite hardy enough for the open border. Each, 21s.

AZALEA CRISPIFLORA, a species differing much from any other known Azalea, having a character entirely its own. No other kind approaches it in compactness of habit, and its foliage is very fine, abundant, and evergreen. The flowers are very large, and the edges of the petals have the appearance of being irregularly *gaufred*, like a lady's frill; the colour is a rich rose lake. From the fact of its blooming very late—much later than any other Azalea—it will be doubly valuable for many purposes. Each 21s.

MITCHELL AND CO., having a large Stock of the following, are enabled to offer good, strong, healthy Plants at the annexed prices.

FUCHSIAS.—The following fine varieties of 1853, viz.: Alba multiflora, Belle of Barton, Beauty (Smith's), Collegian (Banks'), Duchess of Lancaster (Henderson's), England's Glory (Harrison's), Glory (Banks'), Incomparable, (Maple's), L'Elegant, Lady Franklin, Mrs. Patterson (Patterson), Miniata, Premier (Henderson's), Purple Perfection (Henderson's). The collection of 14 for 12s. 6d. A choice selection of older varieties—Agnes, Beauty of Deal, Cartoni, Crystal Fountain, Flavescens, Gem of the Season, Globosa Perfecta, Hendersoni, Nonsuch, Peculiarity, Princess, Purity, Resplendens, Splendidissima, the collection of 14 for 9s. Fine Mixed Bedding Varieties, 4s. per dozen.

PHLOXES of the choicest varieties, by name, 6s., 9s., 12s., and 18s. per doz., strong plants.

Also their choice collection of TREE CARNATIONS, consisting of the most improved continental varieties, our own selection, by name, 9s., 12s., 18s., 24s. per doz.

GERANIUMS of 1853.—Any 12 of the following choice varieties may be selected for 42s.; our own selection for 36s.: or the collection of 17 for 54s. Strong healthy plants in 48 size pots:—Dobson's Harriott, Jupiter, Spot, Vulcan; Hoyle's Attica Albinia, Butterfly, Kulia, Lagoma, Leonora, Novelty, Portia, Zaria; Foster's Eleanor, Optimum, Rachel, Queen of May.

CHOICE HELIOTROPES.—Gem, Madame Boucharlet, Souvenir de Liege, Voltaireanum nanum, 6s. per doz.; mixed varieties of ditto, 3s.

Goods carriage free, for orders not under 20s., to all London terminuses, and to all stations on the London, Brighton, and South Coast Railway. Plants added gratis with all orders of 30s. and upwards. Post Office orders expected from unknown correspondents payable to MITCHELL & Co., or JOHN FAIRBROTHER, Brighton Post Office.

Bristol Nurseries, Kemptown, Brighton.

PAGE AND CO., SEED MERCHANTS TO THE AGRI-HORTICULTURAL SOCIETY OF BOMBAY.
SEEDS FOR EXPORTATION (free on board) AND HOME USE (carriage paid).

No. 1. A choice collection of Vegetable Seeds, suited to the climate (case included)	£5	0	0
No. 2. Do. Do. in smaller proportions	2	10	0
No. 3. Do. Do. Do.	1	0	0
No. 1. A selection of the most beautiful and showy Annuals (case included)	1	5	0
No. 2. Do. Do. Do. ...	0	15	0
No. 3. Do. Do. Do. ...	0	10	6

General Priced Catalogues free upon application.

In addition to our great experience, the port of Southampton affords us unrivalled facility for the almost daily shipment of SEEDS to all parts of the world; and as no greater test of genuineness and vitality than a long transit by sea can be applied to Seeds, we yield priority to none in supplying such for home growth as cannot fail to prove most satisfactory.

All parties desirous of taking or sending Seeds to the Peninsula, Mediterranean, East and West Indies, Australia, Brazil, Cape of Good Hope, China, America, &c., are particularly requested to state their wishes to us, whereby the annoyance and disappointment which too frequently happens by placing their orders in the hands of inexperienced persons will be prevented. We are continually receiving the warmest thanks of our consignees; only a few days since, a gentleman writes from Melbourne, "Your Seeds have proved excellent. The selection of Peas has afforded us the greatest delicacy in Australia." From Capt. H. J. Barr, Secretary to the Horticultural Society of Bombay: "*Gentlemen,—In acknowledging the receipt of your last supply of Vegetable and Flower Seeds, which reached me on the 8th of June by the overland route, I have the honour to inform you that they have all turned out so fresh and good that the demands on our Society have increased so much that I must now cancel my former order, and beg you to supply me according to the list now furnished.*"

PAGE & CO.'S BLIGHT COMPOSITION should be in the hands of all Plant and Fruit Cultivators. For testimonials see back leaf of *Gardeners' Chronicle*, March 11.

Oxford Street (adjoining Radley's Hotel, 20 yards from the Railway and Docks), Southampton.

GERANIUMS, CALCEOLARIAS, MIMULUS, CHRYSANTHEMUMS, ETC.

THE FLORAL NURSERY, ACTON ROAD, TURNHAM GREEN.

JOHN WESTWOOD, having now the largest and best selected stock of the above in the kingdom, including almost every variety known, is enabled to offer them for sale at prices unequalled.

None but healthy well-established Plants will be sent out, and all orders will meet with prompt attention, and so as to insure future support and recommendation.

J. W. has also for sale an immense quantity of Bedding and Soft-wooded Plants generally.

Catalogues sent post free to all parts.

N.B.—The Trade will be treated liberally and fairly.

FIRST-CLASS DAHLIAS.

MITCHELL'S DUCHESS OF SUTHERLAND AND SULPHUREA ELEGANS.

JAMES MITCHELL will send out, early in May, his two unrivalled Seedling Dahlias—DUCHESS OF SUTHERLAND, white, mottled, and edged with crimson, the most beautiful and constant Show Flower ever offered: 21 blooms exhibited at the Surrey Gardens in September, 1853, and much admired; also First-class Prize at Maidstone, by Messrs. Neville and others: 4 feet, 10s. 6d. SULPHUREA ELEGANS, primrose-yellow, exquisite form, first-rate, and constant show flower, 4 feet, 10s. 6d.

MITCHELL'S NEW BLUE VERBENA ELEGANTISSIMA, an improvement on Mons. Paguin; the above magnificent Verbena at 2s. 6d. each. No discount, unless six are ordered.—Piltdown Nurseries, Maresfield, Sussex.

ROSE NURSERIES, HERTFORD.

EDWARD P. FRANCIS offers the following ROSES in 48 size pots, strong, healthy vigorous plants on Manetti stocks, 1s. 6d. to 2s. each.

TEAS.—Anteros, Gonda, Marechal Bugeaud, Le Pactole, Abricote, Pauline Plantier, Goubault, Silene, Josephine Malton, Marie de Medicis, Madame de St. Joseph, Marie de Beaux, Eugene Desgaches, Mirabile, Princess d'Esterhazy.

HYBRID PERPETUALS.—Baron Prevost, Reine des Fleurs, Augustine Mouchelet, Louis Buonaparte, Leon des Combats, Sydonie, Baron Hallez, Madame Laffay, Mrs. Elliott, Géant des Batailles, William Jesse, Duchess of Sutherland.

BOURBON.—Gloire d'Rosamene.

CHINA.—Mrs. Bosanquet.

NOISETTE.—Lamarque, Jaune Desprez, La Biche.

E. P. F. has also a large Stock of all the leading kinds of Bedding-out Plants, strong and vigorous, in 60 size pots, fit for going to a distance, from 4s. to 6s. per dozen.

SUTTON'S GRASS SEEDS FOR PRESENT SOWING.—*The importance of procuring good Seeds will be proved more this season than usual, in consequence of the extreme drought which has prevailed so long.*

We are receiving very gratifying intelligence of the crops growing from the seeds we have supplied during the last few months. One of our customers (Mr. Joseph Newton) writing us from Biggleswade, on the 15th inst., says:—"*The Grass seeds I had from you have convinced our farmers that it is better to have your selected ripe seeds than to use the unripe hay seeds, from the cow-cribs and hay-lofts.*" Having a fine stock, we can still supply seeds, which may be sown now with certainty of success, viz., Permanent Pasture Grass Seeds; Seeds for Improving old Pastures; Turnip, Mangold, and other Agricultural Seeds. Priced Lists may be had, post free.

SUTTON & SONS, Seed Growers, Reading, Berks.

ABRAHAM STANSFIELD, NURSERYMAN, SEEDSMAN, and LANDSCAPE GARDENER, Todmorden, Lancashire, having a large Stock of the following, can supply them at the under-mentioned prices:—

50 species of the genus SAXIFRAGA, at 15s. per 100, or 4s. per dozen.

400 species of select Plants adapted for Rockwork, at 30s. per 100, or 4s. per dozen.

800 species and varieties of Alpine and Hardy Herbaceous Plants, 25s. per 100, or 4s. per dozen.

150 species of Hardy and Greenhouse FERNS and LYCOPODS, from 6s. to 24s. per dozen.

SCARLET GERANIUMS and other Bedding Plants, 4s. p. doz.

N.B. A few bushels of genuine Fluke Potato, at 8s. per bushel.

Catalogues on application.—A remittance or reference from unknown correspondents.

BEAUTIFUL NEW PETUNIA.

"MONTREAL PURPLE" (SMITH.)

W. F. SMITH, Riverhead Nurseries, near Sevenoaks, will be prepared to send out, on and after May 1st, strong plants of the above splendid Petunia, at 3s. 6d. each. This variety possesses a first-rate habit, and produces fine large bold flowers of good form, well above the foliage; and it has proved to stand the wind and rain better than any other variety.

W. F. S is confident that the above will give as much satisfaction as the Geranium "Lady Holmsdale," and Calceolaria "Beauty of Montreal," sent out by him in 1852. W. F. S. has also some splendid Plants for vases of Geraniums "Lady Holmesdale" and "Flower of the Day," from 20s. to 30s. per dozen—Catalogues of Stove, Greenhouse, and Bedding Plants may be had on application.

BEDDING OUT PLANTS FOR THE FLOWER GARDEN.

BURGESS AND KENT, Penkhule Nursery, Stoke-upon-Trent, Staffordshire, respectfully invite the attention of the Nobility, Gentry, and others about to furnish their Flower Gardens, to their extra large stock of fine established Plants of the under-mentioned varieties, which will vary in price according to the quality and quantity ordered. All communications will receive immediate attention.

TRENTHAM ROSY SCARLET GERANIUM, a beautiful variety, of compact habit and large trusser.

GOLDEN CHAIN GERANIUM, with fine gold band round the leaf; Tom Thumb, Trentham Scarlet, Victoria, and other Scarlets; Silver-striped and variegated Geraniums, in varieties; Yellow and Bronze Calceolarias, Salvias, Pentstemons, Cupheas, Petunias, Lobelias, Mimuluses, Antirrhinums, Heliotropes, Fuchsias, Double Purple Senecio, and Verbenas in great variety.

NEW DAHLIAS, ETC.

THOMAS BARNES begs most respectfully to announce that he is now prepared to send out fine healthy plants of the following, all of which will be found deserving a place in the most limited collections.

DAHLIAS.—Show Flowers; 10s. 6d. each.

INDISPENSABLE (BARNES).—Bright clear yellow; best ever offered.

JOHN W. HEDGE (BARNES).—Lilac and purple, distinct and fine; constant.

DANECROFT BEAUTY (BARNES).—Peach-tipped rose; fine shape and centre.

NEW CONTINENTAL VARIETIES.

EVA.—Pure white shaded peach.

LE DIVAN.—Scarlet and maroon shaded.

LE GRAND SULTAN.—Black crimson, shaded rose.

MENTOR.—Lilac, with metallic shade.

OMER PASHA AMARANTH.—Red bluish shade.

GOSSIP (Fancy).—Delicate lilac, white tips; 7s. 6d.

All the leading varieties of last season, 24s. per dozen.

Older sorts of approved merit, 9s. per dozen

Six new seedling PETUNIAS, 3s. 6d. each, or 18s. the set.

Three new seedling VERBENAS, 12s the set.

20 Continental varieties of VERBENA, quite new, 2s. 6d. each, or 24s. per dozen. Descriptive Catalogues on application.

Danecroft Nurseries Stowmarket.

TURNIP SEEDS! TURNIP SEEDS!

CARRIAGE FREE.

B. PAGE AND CO.'S Genuine Stock, saved from the finest transplanted Bulbs, will, as heretofore, gain the greatest number of Prizes at Root Exhibitions.

Per lb.—	s.	d.	Per lb.—	s.	d.
Skirving's Improved Swede	1	0	White Belgian Carrot ...	1	8
Purple-top	1	0	Mangold Wurzel, Long Red	0	10
Green-top	1	2	Ditto, Yellow Globe ...	1	0
Ashcroft Hybrid... ...	1	2	Buckwheat (English growth), per bushel ..	6	6
Laing's ditto	1	2	Mustard, ditto ...	16	0
Aberdeen or Scotch Yellow	0	10	Dwarf Essex Rape, p.cwt.	28	0
Dale's Hybrid	1	2	Rye grass, Italian, per bushel ... 4s. 6d. to	5	6
White Norfolk	1	0	Ditto, Perennial, per bushel ... 4s. 6d. to	5	6
" Globe	1	0	Fine mixed for lawns and permanent pasture ... 10s. to	15	0
Tankard, in sorts 1s. to	1	3			
Green Round	1	0			
Red Round	1	0			
Early Stone	1	0			

Offices, Oxford Street (ten yards from the Railway Terminus), and Above Bar, Southampton.

BASS AND BROWN'S NEW POTENTILLAS, so favourably noticed in the *Gardeners' Chronicle*, the "Florist," the "Cottage Gardener," also by Geo. Glenny and C. Turner, for which see descriptions and remarks in *Gardeners' Chronicle*, March 13, page 141, and April 1, page 208.

A great number of orders have already been received. Strong Plants will be sent out early in May.

	s.	d.
KING OF CRIMSONS	10s.	6d.
THEODORE	7	6
JULIA	7	6
SUDBURY GEM	10	6
SHYLOCK	10	6

The set for 42s. The usual allowance to the trade for two or more sets. The SECOND SET OF 7 VARIETIES, very fine, rich and showy, for 16s., with the same trade discount as first set.

Seed and Horticultural Establishment, Sudbury, Suffolk.

EAGLE AND HENDERSON, SEEDSMEN, NURSERYMEN, and FLORISTS to the QUEEN, from 81, George Street, Edinburgh, to the Seed Warehouse, at the Nursery Gate, Leith Walk. AGRICULTURAL SEEDS.

Per lb.—	s.	d.	Per lb.—	s.	d.
Broom	0	6	Timothy ... ... 6d. to	0	7
Carrot, fine large Altringham 1s. 6d. to	1	9	Turnip, Swede, Green-top ... ... 1s. to	1	2
Clover, Red ... 7d. to	0	9	Do. do. Purple-top 1s. to	1	2
" White, 8d., 10d., and	1	0	Do. do. Skirving's 1s. to	1	2
" Yellow ... 4d. to	0	5	Do. do. Laing's ... 1s. to	1	2
" Alsike, true, 2s. 6d. to	2	9	Do. Yellow, Green-top ...	0	9
Mangold Wurzel—Long Red	0	9	Do. do. Green-top Improved (Low's) ...	1	0
" Yellow Globe ...	1	2	Do. do. Purple-top ...	0	9
Parsnip, fine	1	6	Do. do. Skirving's ...	0	10
Rib-grass ... ... 6d. to	0	7	Do. do. Border Imperial	0	10
Per bushel.			Do. do. Hood's Improved	0	10
Rye-grass, fine Annual, 4s. to	5	6	Do. do. Gibbs'	1	0
" Perennial, fine, 4s. 6d. to	6	6	Do. do. Altringham, fine	1	6
" Pacey's Evergreen (28 to 32 lbs. per bushel) ... 8s. to	10	0	Do. do. Dale's Hybrid ...	0	9
" Moll's ... 7s. to	8	0	Do. White Globe ...	1	0
" Italian 4s. 6d. to	6	6	Do. Stone or Stubble ...	1	0
			Do. Green Globe ...	1	0
			Do. Red Globe	0	8
			Do. Woolton Hybrid ...	0	8
			Whin ... ... 9d. to	1	0

Natural Grasses, of sorts, at very moderate prices; Flower, Tree, and Kitchen Garden Seeds; Boiling and Split Peas, Bird Seeds, Double Superfine Mustard; Garden and Agricultural Implements, Saynor's Pruning Knives; Archangel Mats, Cuba Bast, Mushroom Spawn; fine Ornamental Vases, all sizes; Fruit, Forest, Ornamental Trees and Shrubs, Greenhouse, Herbaceous, and Alpine Plants, &c.

FINE SHOW PANSIES AND FUCHSIAS.

National (Turner)	Marchioness of Bath
Sir J. Paxton (do.)	Alfred the Great (do.)

Eva (Thomson). 10s. the five varieties.

Adela (Turner)	France Cycole (Grieve)
Mr. Beck (do.)	Polyphemus (Thomson)
Mrs. Beck (do.)	Almanzor (do.)
Queen of England (Fellowes)	Elegant (do.)
Sir P. Sydney (Turner)	Albion (do.)
Masterpiece (Hooper)	Criterion (Hooper)
Sultan (do.)	Commander-in-Chief
Lucidum (do.)	Lady Walsingham
Constance (Turner)	Androcles (Youell)
Euphemia (do.)	Blanche (Turner)

The set of 20 for 10s.; or other varieties if some are possessed.

FUCHSIAS.

Glory (Banks)	Commodore (Henderson)
Cartona (do.)	Duchess of Lancaster
Dr. Lindley (do.)	Queen of England
Lady Cavendish	Globosa Perfecta
Nil Desperandum	Beauty of Deal
Hendersoni	Crystal Fountain

9s. per doz. plants. The above can be sent through the Fost-office.

GERANIUM—Flower of the Day .. ... 9s. per dozen.
" Rollisson's Unique ... 9s. "
Fancy, fine, named ... ... 9s. "

Primula sinensis and fimbriata, and Antirrhinum Seed, each, 1s. per packet.

HART AND NICKLIN, 132, High Street, Guildford, Surrey.

NEW ROSES IN POTS, at reduced prices.

HYBRID PERPETUAL.	s.	d.	HYBRID PERPETUAL.	s.	d.
Archimede	5	0	Sephora	7	6
Colonel Lorry	5	0	Souvenir de Mdme. Lille	5	0
Docteur Reynaud ...	2	6	Triomphe de Paris ...	5	0
Duchesse d'Orleans ...	5	0	BOURBON.		
James Veitch	5	0	Beauté Lyonnaise ...	3	6
Lady Shelley (Mitchell's)	5	0	Madame Helfinbein ...	5	0
Lady Stuart	5	0	Souvenir de l'Arquebuse	5	0
Le General Jacqueminot	10	6	TEA.		
Leon Plee	3	6	Gloire de Dijon	10	6
Mdlle. Aline Gilbon ...	10	6	MOSS.		
Madame Harriet Stowe...	10	6	Princess Alice (Paul's)...	5	0
Madame Philip	5	0	HYBRID BOURBON.		
Rubens	3	6			
Salvator Rosa	3	6	President Pierce... ...	7	6

The following Choice Hybrid Perpetual Roses, at 30s. per doz.: Dr. Assas, Destigny, Diodore, Egerie, Genié de Châteaubriand, Inermis, La Seduisante, L'Enfant du Mont Carmel, Léon le Guay, Louise Odier, Laura Raymond, Louise Peronny, Ludovic Letaud, Madame Andry, Madame Flory, Madame Ducher, Madame Hilaire, Madame Rivers, Rose de Soil, Souvenir de la Reine des Belges.

BENJAMIN R. CANT, in offering the above, does so with the greatest confidence, as he has received several letters from customers stating that the plants sent are far better than those generally supplied by the Trade.

ST. JOHN'S STREET NURSERY, COLCHESTER.

Carriage paid to London and Norwich and all intermediate stations on the Line. Unknown Correspondents are requested to send a remittance or reference.

NEW BEDDING CALCEOLARIA "AJAX"

LUCOMBE, PINCE, AND CO. will send out, on the 24th of May next, the above splendid and new shrubby Bedding CALCEOLARIA. Its fine, strong, healthy, robust, yet dwarf compact habit, combined with a profusion of large brilliant flowers, makes it suitable either for the Parterre or Conservatory. The original Seedling Plant was exhibited by L., P., & Co., at the Horticultural Society's Rooms, Regent Street, in May, 1853, and again April 18, 1854, when the Certificate of Merit was awarded to it. The following extracts from the *Gardeners' Chronicle* render further description unnecessary:—

Extract from the Report of the Horticultural Society's Meeting, May 24, 1853, page 342.

"LUCOMBE, PINCE, & CO. *exhibited a Calceolaria called Ajax, (yellow with brown blotch), which, having a stiff good habit, and multitudes of showy blossoms, will doubtless make a good bedding plant.*"

Report of Meeting of April 18, 1854, in the *Gardeners' Chronicle*, page 255.

"MESSRS. LUCOMBE & PINCE *received a Certificate of Merit for Calceolaria Ajax, a dwarf, shrubby, bedding kind, remarkable for its great trusses of brown and yellow blossoms, which require no sticks to support them, owing to their sturdy habit. It was stated to be from Sultan crossed with some high coloured shrubby variety.*"

Good small plants, per doz. ... ... 42s. 0d.
Extra strong plants, each 7 6

Exeter Nursery, Exeter, May 6.

GRASS SEEDS, ETC.

THOMAS GIBBS AND CO. (the SEEDSMEN to the Royal Agricultural Society of England), corner of HALF-MOON STREET, Piccadilly, beg to draw attention to their Grass Seeds for Laying down Land to Permanent Grass. The Seeds which they employ in forming the Mixtures for various soils are well cleaned under their own superintendence.

Mixtures for Permanent Meadows and Pastures
" Parks or Pasturage in sight of Mansions
" Irrigation on Water Meadows
" Renovating Old Swards
" Fine Garden Lawns, Cricket Grounds, &c.
" two or three years' lay.

RYE-GRASS—Italian, very fine sample
" Dickinson's Italian do.
" Pacey's Perennial and Evergreen
" Annual or Common.

CLOVERS—Red, White, and Alsike
" Trefoil, Red Suckling, &c.

CARROTS—Large White Belgian
" Field, Altringham, &c.

MANGOLD WURZEL—Long Red
" Orange or Yellow Globe, and other sorts.

TURNIPS—Swedes, Purple Top, Skirving's, &c.
" Hybrids, Gibbs' Green Top
" Globes, Tankards, &c.

FARM SEEDS of all descriptions.

Priced Lists, Detail Catalogues, and other information can be obtained on application to THOMAS GIBBS & Co.

The Gardeners' Chronicle.

SATURDAY, MAY 6, 1854.

MEETINGS FOR THE ENSUING WEEK.

SATURDAY, May 13—Horticultural Gardens.......... 2 P.M.

COUNTRY SHOWS FOR THE MONTH OF MAY.—15th: Hammersmith Pansy.—18th and 19th: Exeter.—23d: Handsworth and Lozells.—24th: Nottingham and Colchester.—25th: Derby.—26th: Bury St. Edmunds.—29th: Hunslet.—30th: Truro.

THE appearance of a new Blue Book concerning the ROYAL FORESTS is, we presume, an indication that Mr. DRUMMOND'S promised motion upon the subject of their management is not likely to be long withheld. Under these circumstances our duty to the public will be best performed by reporting what it is that the new volume contains.

The return opens with a letter from Mr. KENNEDY to the Treasury, dated the 20th June last, urging the necessity of "a searching enquiry into the whole subject (of the forest management) by persons in no way influenced by previous opinion, or pledged to any line of proceeding either in defence or disapprobation of the present state of affairs." To this no answer has been given.

Next follows a Treasury minute calling Mr. KENNEDY to account for having presented to Parliament a report such as the Treasury does not approve of; together with Mr. KENNEDY'S reply, in which he endeavours to show that the Treasury had no ground for some of its assertions, and that he would not have fulfilled his public duty had his report been what the Treasury desired. These two letters should be carefully read; for they form the key to all which follows, through nearly 300 pages. A letter from Mr. WILSON, at p. 16, completes this matter.

Then come 20 pages of correspondence respecting the employment of Mr. JAMES BROWN, of Arniston, in enquiring into the state of the Royal Forests, and reporting thereupon. The substance is this. The Treasury complains that Mr. BROWN was employed without due authority, and objects to pay the charges incurred in consequence; Mr. KENNEDY replies that his employment was indispensable to the service; that he (Mr. K.) had no confidence in Mr. CLUTTON'S reports, upon which the Treasury was in the habit of relying; that he was satisfied that no such income as the Royal Forests are capable of yielding would ever be realised under their present management; and he proceeds to prove by figures that better advice and assistance than Mr. CLUTTON'S were required. He further objects to a Treasury doctrine that the Royal Forests and revenues "ought to be exempted from that searching supervision which they seem to require;" he declares his inability to perceive that the Royal Forests "enjoy any immunity from good management, or are privileged to be mismanaged," and he shows that it has not been considered necessary to obtain special authority

from the Treasury to engage persons professionally upon every occasion where they are required; in proof of which, he produces 48 instances of the practice since 1851, among which Mr. JOHN CLUTTON is paid 27*l*. 19*s*. 5*d*., and Messrs CLUTTON and DRIVER 975*l*. 12*s*. To this last view of the case the Treasury demurs. Next succeeds a long correspondence ending in the appointment of Mr. BROWN to the Deputy Surveyorship of Dean, "during pleasure," *vice* MACHEN resigned; he finding sureties, as recommended by Mr. KENNEDY, to the amount of 4000*l*. And this part of the Blue Book concludes with an order from the Treasury to pay to Mr. BROWN the 291*l*. 6*s*. 11*d*. to which he was entitled.

The third and fourth heads are called Mr. BROWN's and Mr. CLUTTON's reports upon Dean Forest and the New Forest. We despair of conveying any intelligible idea of this part of the return, filling 120 pages. For the present, therefore, we shall only say that in part the correspondence relates to forest squabbles between A.'s man and B.'s man; and in part to the way in which forests should be practically managed. To some of these points we shall doubtless advert hereafter. Messrs. CLUTTON and BROWN cannot agree; they each state their opinion at length, and among them may be elicited, by an arboricultural reader, much useful information. For ourselves we generally prefer the views of Mr. BROWN to those of Mr. CLUTTON "whose resolute defence of the mode of management which has brought about this inferiority" (in the New Forest) Mr. BROWN assigns "either to ignorance or to prejudice, and a desire to maintain the antiquated system of the forest."

A fifth chapter is occupied by Delamere. Mr. KENNEDY writes to the deputy surveyor, Mr. LIPSCOMBE, on the 10th January last, dismissing him from his office. Mr. L. expresses his astonishment, professes his inability to understand upon what ground he is discharged, and memorialises the Treasury. Mr. KENNEDY being called upon by the Treasury to explain does so at length, and shows that he could not possibly have acted otherwise.

Chapter 6 treats of Bere and Parkhurst. The remarks above made concerning Dean Forest and the New Forest apply in many respects to this, which, like them, will probably receive some attention from us hereafter. We must, however, at once say that the correspondence of the deputy-surveyor, Sir JAMES CAMPBELL, is not calculated to inspire much respect. He would do well to study Mr. HIGINBOTHAM's style.

At last we arrive at p. 207, and what concerns *Alice Holt* and *Woolmer Forests*. Here we have once more opinion *versus* opinion. Mr. BROWN and Mr. HIGINBOTHAM cannot agree. But at this point occurs a new incident. They not only cannot agree in opinion, but they are directly at variance about facts, which we should have thought easy enough to verify. B. declares that he finds 160 trees per acre, to which H. replies that they are fewer than 100. B. returns their average diameter at 7 inches, H. asserts that it is rather more than 10. B. says that the forests are undrained, or ill drained, or partially drained. H. rejoins that they are drained, well drained, thoroughly drained; that, in fact, he has 239¾ miles of drains in his forests. And so on. Of course B. is called upon to reply to H. But in the meanwhile, Mr. KENNEDY writes a very strong letter to the Treasury, pointing out what he conceives to be misrepresentations on the part of H. This letter goes to H., who maintains his entire accuracy, says that the Rt. Hon. gentleman's charges are serious and unfounded, and substantiates his assertions by a number of affidavits from woodmen, magistrates, and others; among whom are found Sir ARCHIBALD MACDONALD, and Mr. PAINE of Farnham. While this is going on Mr. BROWN revisits the scene of dispute, by command of the Treasury; and on his return repeats all his former assertions, with some additions (the letter will be found at p. 234), contradicting H. as flatly as words enable him. Among other things he repeats that H.'s (239 miles of) drains are comparatively worthless. Of course this elicits another reply from H., who holds to all his former statements, declares that B.'s mode of taking averages is fallacious, and supports himself as before, with a quantity of corroborative testimony. Among the new witnesses is found Mr. ROSS DONNELLY MANGLES, M.P.

This series of correspondence brings us down to the 28th February last. On the 2d March, Mr. KENNEDY proposed that the matter should be referred to some independent tribunal; thus reiterating a request he urged upon the Treasury without effect on the 20th June, 1853. At last, on the 31st March, we find a Treasury minute appointing Mr. MATHEWS of Edgbaston House, Birmingham; Mr. MURTON of Tunstall, Sittingbourne; and Mr. MENZIES, the deputy surveyor of Windsor Park, referees in the matters of fact included in the proceedings between Mr. KENNEDY and Messrs. BROWN and HIGINBOTHAM. The result of the reference is not given in the Blue Book before us. Who the two first gentlemen may be we do not know; Mr. MENZIES, a crown-officer, can scarcely be regarded in any other light than as a Treasury agent, which is unfortunate.

Since the above was written a rumour has reached us that the report of the referees is so entirely against the accuracy of the statements made by Mr. BROWN, that he has been removed from his office in Dean Forest. But of this the Blue Book says nothing. It is also announced by the *Daily News* that Mr. KENNEDY has resigned his Commissionership. What has led to this we shall doubtless know in due time.

IT is our melancholy duty to announce the decease of Dr. WALLICH, who expired, in the 68th year of his age, at his house in Gower Street, on the 28th ult., after a long illness. The name of our departed friend is so indissolubly associated with the history of modern horticulture, that we must be permitted to dwell, although for much too short a space, upon the sad event which has deprived science of one of her most ardent disciples

By birth a Dane, Dr. WALLICH entered the medical service of his country when very young, and was, in the year 1807, attached as surgeon to the Danish East Indian settlement of Serampore. When this place was taken possession of by the English, such of the Danish officers as desired it were permitted to enter the service of the East India Company, an advantage of which Dr. WALLICH availed himself, and this circumstance ultimately led to his arriving at the highest botanical position known in India. His extensive acquaintance with plants soon attracted the attention of the Indian Government, especially at a time when very few of the Company's servants had any knowledge of the subject. Upon Dr. HAMILTON's resigning charge of the important Botanical Garden at Calcutta, in 1815, Dr. WALLICH was appointed superintendent, and from that time forward his activity in collecting plants from all parts of our Indian empire, in describing them, causing them to be drawn, and in dispatching live specimens of them to his adopted country, was unexampled. From 1818 to 1828 there was scarcely an English garden of magnitude which was not much indebted to his liberality. In 1820 we find him, in conjunction with Dr. CAREY, commencing the publication of ROXBURGH's "Flora Indica," which was greatly augmented by his own discoveries. As soon as the new art of lithography was made available in India, it was seized upon as a ready means of bringing the world acquainted with the little known plants of Nepal, and the "Tentamen Floræ Nepalensis," a folio work with plates, made its appearance. For this, large materials had been accumulated during the author's official examination of that province in the year 1820. In 1825 he was deputed by the Government to inspect the timber forests of Western Hindostan. In 1826 and 1827 he was in Ava and the newly acquired Burmese territory. In 1828 the state of his health, which had become greatly impaired, rendered his return to Europe inevitable. Then it was that he brought with him visible proofs of his never tiring zeal in the pursuit of science. Eight thousand species of plants collected by himself, together with an incredible number of duplicates, safely arrived in London, and were speedily, at his recommendation, dispersed through the public and private herbaria of Europe and America. The East India Company sanctioned this great operation, with a noble spirit defraying the whole cost, in a manner most honourable to themselves. At the same time that the laborious work of distribution was going on, Dr. WALLICH's magnum opus, the "Plantæ Asiaticæ Rariores" was passing through the press, and eventually, in August 1832, formed three folio volumes, each containing 100 coloured plates.

Shortly afterwards Dr. WALLICH returned to his official duties in India, where he was appointed to the chief direction of a scientific party directed to explore the newly acquired province of Assam, especially with a view to determine the nature of the Tea cultivation that had been ascertained to exist there. Ill health still pursued him, and after a visit to the Cape of Good Hope, and a further attempt to struggle against a climate which had always proved his most dangerous enemy, he finally bade adieu to Hindostan, and reached England with his family in the year 1847, to enjoy—alas! for too brief a space—the repose and honours to which he had gained a just title by a most arduous life.

By those who knew him intimately he will be much regretted, for he was not only an enthusiastic botanist, and a learned man, but a charming companion, as well as a warm and steady friend.

VEGETABLE PATHOLOGY.—No. XVIII.

78. IT has been stated (No. 67) that the denuded surface of the alburnum, if protected from external agents, and we may add from minute fungi, is capable of originating a new growth of wood and bark, so that in the end, if no fresh injury arise, the wound is completely healed, and the growth of the tree proceeds as before. M. Trécul has lately shown (Annales des Sciences Naturelles, Oct. 1853) that the denuded surface of the young bark (in the Elm for example) is no less capable of giving rise to a similar growth, and this whether the strips of bark separated from the stem are torn upwards or downwards, and are connected therefore with the tree above or below. In either case new wood and bark were formed, so that each strip of bark comported itself like a distinct tree, with its centripetal and centrifugal mode of increase. The new surface was moreover thickly studded with adventitious buds.

79. Extensive decortication is not therefore necessarily destructive to trees, neither is a deep annular incision penetrating through several layers of wood, and cutting off all communication by the bark or infant wood. New wood also and bark may be formed where there is not a single leaf, as in the case of vigorous trees cut off level with the ground. Many such instances are on record, but none more remarkable than that described by Gœppert* in the Silver Fir (*Pinus picea*, &c.), in which case there was an inosculation with the roots of other trees. In some other described cases no such inosculation was possible.

80. Though the pith and its annular sheath perform a very important office in the early stage of growth of the branches, while some varieties of pith retain their vitality and doubtless some active functions for years, and though the destruction of the pith in young shoots is fatal in some cases, even after the first year's growth, still after a lapse of time the whole may be destroyed, together with the surrounding tissues, to a very considerable extent, without impairing the vitality of the trees considered as a whole; witness the enormous Chestnuts of Sicily, the ancient Yews in several of our churchyards, and instances without number of a similar kind in our fields and hedgerows. It is certain, too, that after a lapse of years, when the walls of the cells have become hardened with woody matter and their cavity almost obliterated, they retain a very low degree of vitality, though it is far from being the fact that heartwood is totally unable to transmit fluid matter, though it may not be sufficiently active by itself to satisfy the exigencies due to the rapid perspiration of the leaves when in full vigour, under a burning sun. The medullary sheath, then, except so far as its functions may be discharged by the rays which proceed from it, can only be regarded in any general view of the phenomena of vegetation, like the pith which it encloses, as a temporary structure, especially when we are considering the important question of the course taken by the nourishing fluid in vegetables, whether in its way upward to the leaves, or downward to the roots.

It is clear, then, that the fluid which is imbibed by the spongelets from the soil, and is carried upwards by the tissue of the roots to the stem, is not carried from thence by any exclusive set of organs. It may be carried in some cases by the pith or the surrounding tissue, by the alburnum or young wood, by the older rings where the more recent ones have been destroyed, or even by the bark itself, as appears by No. 78; and therefore we may safely conclude that all the tissues more or less concur to the production of the one great end, though some may be more active than others. Indeed, where fluid moves by the effect of endosmose and exosmose, wherever there is an ascending current, there must co-exist in some degree a reciprocal and simultaneous descending current. *M. J. B.*

ERANTHEMUM PULCHELLUM.

WHEN properly managed this is an extremely useful plant, forming, as it does, large compact specimens in a short time, and producing bright blue flowers for many weeks in succession during the winter months. It, however, requires the temperature of an intermediate house to have it in perfection; for unless it is afforded a heat of some 50° the flowers are never sufficiently numerous at one time to render it effective.

Cuttings made of young wood in a rather firm state, planted in sandy soil, and placed in a gentle heat, strike root readily. When sufficiently rooted, pot them off singly in small pots, placing them in a pit or frame, where a warm moist shady atmosphere is maintained, until they have become well established. Like all plants from a warm climate, this delights in a gentle bottom heat; and if that can be afforded to young plants, they will grow with astonishing vigour, forming fine broad healthy foliage, which no insect will venture to attack. They should, however, be placed near the glass, and afforded a moderate circulation of air on fine days, with all the light possible, except on the forenoons of very hot days, when a slight shade for a few hours will be beneficial. Attend to shifting as the pots become filled with roots, giving liberal shifts; and unless side shoots are formed near the base of the plant, pinch out its top; but the habit is such that this will seldom be necessary. It will be expedient, however, where the object is to grow large specimens quickly, to keep the shoots well

* "Annales des Sciences Naturelles," sér. 2. Vol. 19, p. [illegible] translated from the German, published at Bonn in the previous year.

tied out until a good foundation is secured; and even afterwards the use of a few sticks to regulate the main branches, so as to admit light and air among the foliage, and preserve the plants in form, will be useful. Syringe liberally on the mornings and afternoons of bright days, and be careful to keep the plants thoroughly moist at the roots, giving manure-water in a clear, rather weak state, frequently.

Plants intended for blooming should be so managed as to have their growth completed by the end of September, and should be kept rather dry at the root, and cool for a month, which will effectually check all tendency to the formation of wood, and prepare the specimens for blooming. After allowing a short period of rest, give them a liberal supply of water at the root, placing them in a temperature of 50° or 55° when flowers will soon be produced in abundance. Under the most favourable circumstances the individual blossoms are not of long duration, and care should be exercised to prevent their being injured by damp, and to remove them as soon as they fade, otherwise the decayed flowers will greatly detract from the beauty of the finest specimen. After blooming, cut back the shoots severely, leaving only sufficient wood to form a good foundation, and place the plants in any spare corner of a pit, or wherever they will be safe from frost, and give no more water to the soil than will suffice to prevent its becoming very dry. In the case of old plants, from which only a moderate growth is expected, it will be unnecessary to start them into growth until towards June; but young plants may be started after allowing them about a month's rest. Old plants should be turned out of their pots, reducing the ball, so as to be able to re-pot in fresh stuff in the same sized pots, placing them in a nice, moist, warm temperature, to induce free growth, but avoid over-watering at the root at this stage. If thrips make their appearance upon the plants, and they are somewhat liable to this pest during the early stages of their growth, apply tobacco smoke, in moderate doses, on two successive evenings, which will entirely destroy the thrips.

Good mellow turfy loam, mixed with a little well decayed cow-dung, or leaf soil, and a portion of clean sharp sand to keep it porous, will be found more suitable for the growth of this plant than a lighter compost. *Alpha.*

Home Correspondence.

The Frost on the 25th ult.—Ever since the spring of 1846, inclusive, we have had, in the south of England, more or less frost, so as to destroy in a great measure the crop of fruit, but we have scarcely had one so disastrous in its effects as that above alluded to. At this place, 25 miles to the east of London, Pears and Plums commenced to bloom about the second week in April; in the immediate neighbourhood of London they were 10 or 12 days earlier; the weather was dry and sunny (with cold nights the thermometer registering two to three and four degrees of frost), and apparently highly favourable for the setting of the blossoms of fruit trees; for Apricots, Peaches, and Nectarines against walls, and Plums, and Pears, on standards, had set the most abundant crop I have seen for very many years; Greengage and other Plums have bloomed most freely, and would have been plentiful as Blackberries. On the morning of the 24th there was a severe hoar frost—thermometer registering 28°, but not even the young leaves of the Fig and Walnut were injured. In the day some showers of sleet looked ominous, and on the morning of the 25th all the hopes of the fruit-growers in the south of England were destroyed. The thermometer registered 25°, or 7° of frost, and all the wall fruit, where not heavily covered, is destroyed, and the fruit of Pears, Plums, and Cherries, on standards, which had set, and were swelling rapidly, have turned black, and are dead; the Apple blossom, although not all expended, seems irreparably injured; and so another barren fruit year has to be added to our long list of failures, commencing in 1846, in which year the spring was remarkably early, so that Primroses and Violets were in bloom Feb. 7, and Roses showed their bloom buds on the 27th of the same month; on March 20th, 14 degrees of frost destroyed nearly all the fruit; the blossom buds were all frozen through, so that the bloom never expanded properly, and proved all barren. Allow me now to quote a few lines from my journal. "1847. April 16. Ten degrees of frost; the blossom buds of fruit trees not yet burst; are they injured? The Marie Louise and all the more delicate sorts of Pears were destroyed; of the hardy common Pears there was a good crop. 1848. April 1, 2, 3, 4. Most beautiful weather. Pears coming into full bloom, and everything rapidly advancing. April 27: Sharp hoar frost; thermometer registered 27°; Pears, Plums, and Cherries nearly all destroyed. 1849. March 16. An early spring; Crocuses and many spring flowers off bloom. April 18. Pear trees in full bloom. A sharp wind frost; thermometer registered 19°, or 13 degrees of frost; Pear and Plum blossom nearly all destroyed. 1850. April, cold, dry, and favourable for the fruit trees blooming. May 3. A sharp hoar frost; thermometer registered 23°, or nine degrees of frost; Pear, Plum, and Cherry blossoms all destroyed. 1851. Feb. 6. Crocuses in full bloom to the end of this month; the weather was mild, dry, and very agreeable. April 26, 27, and 28. Sharp hoar frosts; thermometer registered 25°, or seven degrees of frost; fruit blossoms which are not yet open seem uninjured. May 8. Pear trees of most sorts in full bloom. May 14. Severe frost; thermometer registered 25°, or seven degrees of frost; Pears, Plums, and Cherries all destroyed. 1852: April 19. Pear and Plum trees in full bloom; frost severe; thermometer registered 20°, or 12 degrees of frost; no Pears, no Plums, no Cherries—a perfect failure. 1853: May 16. Pear and Plum trees in full bloom; the weather cold, raw, and damp, but no frost; the blossoms all dropped off, after apparently setting their fruit; no Pears, no Plums, no Apples, no Cherries." 1854 has now to be added to the above melancholy catalogue. I wonder if we shall ever again have a good fruit season. I did hope that, after the seventh failure, we should this season have abundance. These failures in the fruit crop have not been confined to the south of England; it is years since they have had a good fruit season either in France or Belgium; and the frost of the 25th ult. has doubtless been as fatal there as here. [It is reported to have killed the young wood in all the Vineyards near Bourdeaux.]. To the market gardeners in the neighbourhood of London these eight consecutive failures must have been an enormous loss; let us hope that the failing cycle is now over. I remember, some years since, after several years of abundant crops of fruit, making the remark, "that I could not understand why the climate of England should be called precarious with regard to fruit culture, as every season gave us abundance." We have now therefore only to look forward to the good time coming. *T. R.*——The thermometer here on the night in question did not indicate more than 5° of frost at 11 p.m. I may mention, however, that we are situated on a slope to the south, and are well sheltered from the north. I never remember to have seen vegetation so advanced at this period. Nevertheless fruit trees have escaped wonderfully. Pears, Plums, Cherries, and Peaches, were all well set; many fruit of the latter are now as large as Walnuts, and many of the young shoots are 12 and 14 inches long. Apples, being in full bloom, are not quite so safe, but I have observed that many of the essential parts of the flower are quite uninjured, and I think we may expect an average crop. The young shoots of Vines, under the protection of glass alone, have been destroyed. The more tender kinds of Roses have been injured. Fuchsias just emerging from the soil have been cut off. Potatoes above ground have all been killed; the sun rose so fine while they were frozen, that they were withered and black by eight o'clock. Strawberries in the neighbourhood, in exposed places, have suffered severely, although our own have not. The young shoots of the common Fig are in many places killed. We have had a most unusually dry spring, which was in favour of May plants. *D. Pressly, Knockmaroon Lodge, near Dublin.*——The recent frost, which has injured, and in many cases destroyed, the blooms in the open air, which were not protected, has not done the slightest injury in my orchard-house—even Geraniums stood it. This is the general result in short spring night frosts; long winter frosts are very different. I lost all my Ixias this year, which were in pots, and far from the glass. *S. B.*——On the morning of the 25th ult. the thermometer stood at 22° on the ground—a dry border—exposed all day to the full sun; this was about half-past 4 o'clock. The blooms of the earlier kinds of Strawberries are ruined, and the young leaves quite black; some Belgian varieties given to me last autumn by Mr. Rivers, and Trollope's Victoria, were covered with a double thickness of Haythorn's net, but these have suffered as much or more than any others. The leaves of the later kinds are all brown at the edges. *H. Doubleday, Epping.*——The only things that have suffered here are Box edging and Spanish Chestnuts. Out of about 200 fruit trees, consisting of Pears, Apples, Apricots, Peaches, Nectarines, Plums, &c., not one has suffered the least damage. This place is about 400 feet above the level of the sea. *J. Daniels, Woodside, Frant, Sussex.*——In this part of Scotland we had only about 2° of frost on the night of the 24th ult. Our Apricots and Peaches, which are about the size of Pears, on the open wall, escaped unhurt, as did also Cherries and Plums, which were in blossom. Large bushes of Fuchsia globosa, which had wintered safely unprotected, have been greatly cut up, more especially this year's growth. A plant of Dielytra has been flowering beautifully with us in the open border for the last six weeks; it suffered but very little on the night in question. *John Macpherson, Castle Semple, Renfrewshire.*——All the Potatoes in this part of Ireland have been cut down to the ground. The young growths of the evergreen, Turkey, and weeping Oaks, Deodar, Pinus cephalonica and Brunoniana, common and Portugal Laurels, Box edgings, common Yews, Olea europæa, common and flowering Ash, and Weigela rosea, are also all destroyed, and the Gooseberry and Currant crop is very much injured. *J. O. H. Haycroft, Cork.*

Garden Seats.—Every one finds great difficulty in keeping garden seats more than a year without constant painting. Gutta-percha thinly laid on, and turned round the sides and nailed, will last for ever, and looks dull and garden-like, and costs no more than one painting. *Somerset.*

Walls.—An idea prevails that the north wall is least favourable for stone fruit trees, and requires the hardiest sorts; but it seems to me to catch more copious gleams of sun from the west than the east wall does from the east. My gardener (unaware what my impression was) expressed the like opinion, viz., that the north wall was preferable of the two. How is the fact? *A. H.*

How to obtain Potatoes free from Disease.—I have been successful in producing sound crops by the following course of culture:—I procure as early and good kinds of Potatoes for sets as I can get, omitting all the very latest varieties. My next object is to plant so that the crop can be properly protected and saved from blight when the tubers are grown; I therefore grow my Potatoes in beds, which I find to yield the heaviest and finest crop. The sets, which are cut, are sprouted on the hard floor of some sheltered shed, where they can have plenty of air and light. Here I cover them over with some dry mould or coal ashes, in order that they may grow and root, and they remain in this condition until the second or third week in May, when they are planted. After preparing the ground for them, mark out the beds 6 feet in width, and any length the land will afford, leaving the alleys between the beds 3 or 4 feet wide. The Potatoes are put in at 1 foot square, keeping the rows straight. The land being planted, growth will soon become strong, and a little earth will be required, which must be supplied from the alleys. When properly earthed, which should be done at twice, the plants may be left to grow undisturbed. Watch carefully for disease, and the moment it is perceived lose no time in cutting off the haulm and clearing it away. Then sprinkle lime, sulphur, soot, or salt over the beds, and cover them over with earth from the alleys, 5 inches deep, allowing the middle of the bed to be highest, in order to throw off rain, and keep the Potatoes as dry as possible. The whole may now be left with safety. In this way the tubers will keep as sound as possible, and a bad one will scarcely be found. *J. G. Knell.*

Spring Protection of Wall Trees by Means of Water.—For the information of your correspondent (see p. 269), I beg to say that I have tried the following plan with success; viz., to place a pailful of water on the coping or anywhere about the top. Then get a hay or straw rope, or, what would be much better, a strip of woollen cloth, one end of which put into the water, and the other fix in the border at 6 or 7 feet from the bottom of the wall, and right over the centre of the tree; the rope will keep itself sufficiently wet to attract the frost from 4 to 5 feet each side. *D. Pressly, Knockmaroon Lodge, Dublin.*

Mildewed Strawberries.—I am inclined to believe that soil as well as situation has much to do with this evil; and as to size of pot, I think 7-inch ones decidedly too large for early forcing. The Black Prince is not so strong a grower as Keens' Seedling, and it should only have one plant in a 5-inch pot; and even in the case of Keens' Seedling for very early work I would use the same size. I have forced the Black Prince from the time it first came out, and I find it most useful for early work, beating, as it does, Keens' Seedling by a month; in fact it will force at a time when the latter will not; this season I gathered my first fruit on new year's day; the plants were moved from the Melon frames in the beginning of November, and set along the back shelf of a Pine pit. They were soon in full blossom, and set a fine crop, which ripened well. To the inexperienced I would say, take the earliest runners. Pot them in 5-inch pots for early forcing, using nothing but good sound turfy loam. Pot rather firmly, and look to the drainage; when well rooted place them on a south border, with a view to induce early maturity. Do not set them so closely together as to obstruct a free circulation of air. Remove them under glass before heavy autumn rains set in, giving plenty of air on all favourable opportunities, but very little water till forcing begins. *M. Busby, Stockwood Park.*

New Materials for Paper, Linen, and Cordage.—The sample of fibrous matter which I sent you lately is the bark of a species of Mallow, a biennial plant, which stands unscathed our stormy ungenial climate all the year round, and at the present time (April) it is in full vigour and beauty, being almost the only green thing to be seen. It grows most luxuriantly in the very bleakest situations, close to the shore, upon poor bog or sandy soil, and even on raised banks, exposed to pitiless storms of hail, salt spray, and other disadvantages, except frost, of which we have very little. It grows from six to eight, and even ten, feet high, and from eight to ten and twelve inches in circumference, branching out, if it has room, like a shrub, and having a thick fibrous bark. If cultivated as a crop, however, it would grow straight and free from branches, to whatever height might be deemed best for the purposes for which it might be wanted. It might be cultivated easily and cheaply, and it produces seeds in abundance. If assisted to get ahead of the weeds it will afterwards take care of itself. If, then, it grows so well under such adverse circumstances, what might it not do if cultivated with care on good land and in a favourable climate. The fibrous part can be easily separated from the stem by children, after it has been cut or pulled up, and half macerated, as it were, or exposed to the dews. Of the exact average of fibrous matter I am uninformed, but, compared with other species of Mallows, Flax, or Nettles, it must be great indeed. Now, there are many thousand acres of unproductive bog in the Barony of Ennis, and other parts of Mayo, west of Ballina, which might be profitably employed in producing this plant, if it should turn out upon trial to answer the purposes of the rope, coarse linen, or paper manufactures. *William Billington, Roy, Belmullet, Mayo, Ireland.* [The plant referred to in this communication is the Tree Mallow, Lavatera arborea. The Spanish botanist, Cavanilles, obtained pretty good cordage from it, and it is stated that some experiments at Toulon resulted in the production of a similar quality. We have no idea that it can be used where much strength is required; but its long fibre, if white enough, would answer well for mixing with substances of shorter staple in paper making. What Mr.

Billington should do is to get a pound or two of the fibre prepared and sent to London for inspection by paper makers, who will then give him an idea of its market value.]——Several years ago you inserted in your journal a suggestion from me, in which I had the two-fold object of suggesting a material for the manufacture of paper, and of inducing the farmer to keep his land free from weeds, by finding a market for them. There is little doubt that many of our commonest weeds have a fibre well adapted for making paper; and now that the demand for that article is so much increased, it seems, from some late communications to your journal, that it may even be profitable to cultivate some of those weeds. A large supply, however, may be obtained for some time even from our roadsides, without resorting to their cultivation; and even our stagnant pools may supply some, for I have found in a dry summer the water of a shallow pond has evaporated and left the ground covered with a sheet of paper — for literally paste of the dried, bleached, and matted Confervæ, might have been at once used as such, as I will take an opportunity of showing you, having preserved a specimen of this natural paper; and doubtless the same substance might be adapted to the use of the paper-maker, who, it has struck me, on seeing the high-water mark on our shores white with bleached heaps of Zostera, might also meet with a large supply of material from that source. The roots of Quickens, and other Grasses, which are generally destroyed in this country when raked off tillage land, though when washed they might supply a nutritious fodder for stock, for which purpose they are sold in the markets in some parts of the south of Europe; judging from the toughness of their fibre, I should think they would also be found very useful for paper making. To show you that besides the well-known asbestos, other minerals might also be applied to paper making, I enclose you a sample of a natural paper which may be found in the fissures of the red marl rock of the south of Devon. It is, I believe, formed of sulphate of lime in minute interlacing fibrous crystals. This specimen I took out of the cliff at Seaton, in Devonshire, and I have deposited some in the British Museum. *W. C. Trevelyan, Wallington.*

Effects of the late Winter on Coniferous Plants.—I venture to subjoin my own experience of a collection commenced some four years ago. The subsoil of the district is chalk, but there is a very considerable depth of loam. The situation is high and rather exposed. Cedars of Lebanon quite untouched; of the Deodars, those sheltered have quite escaped, those more exposed have lost their leaves, but now (in May) they exhibit little traces of it. The variety of Deodar called viridis is, I fear, killed. Cedrus atlantica hardly touched. Cryptomeria japonica and C. Lobbi quite uninjured. The following are all looking very well. P. excelsa, Cembra, Laricio, Calabrica, Monspeliensis, monticola, apulcensis, Lindleyana, ayacahuite, Sabiniana, Lambertiana, tuberculata, ponderosa, mitis, macrocarpa, brutia, pumilio, Clanbrasiliana, Montezumæ, pyrenaica; Abies orientalis; Pinus rigida, pyrenaica, Lemoniana, and other varieties of Pinaster; Hamiltoniana, Escarena; Picea Pindrow, Webbiana, Pinsapo, cephalonica, Pichta, nobilis, grandis, morinda, Khutrow, taurica, and Nordmanniana. The following, somewhat in a sheltered position, have stood very well: Pinus Benthamiana, macrophylla, Teocote, Pseudo-strobus, Russelliana. P. halepensis, a little touched but recovering; P. Hartwegi, a little pale but does not seem hurt; of the P. insignis two or three are dead, but others sheltered look well; P. radiata is uninjured; P. muricata is much injured, but is recovering; P. Gerardiana, one injured and the other looking very well; P. Llaveana, just touched; Juniperus chinensis, J. excelsa, and J. Bedfordiana, quite unhurt. Of the Cupressus torulosa two are dead, and two do not seem materially injured; C. Uhdeana, two dead. The Thuja tribe has stood very well. Cupressus Goveniana has stood well, C. funebris not so well. Cunninghamia lanceolata looks satisfactorily. The Cedar tribe generally seemed to have escaped injury. Cypresses have mostly suffered; many are killed; some most exposed have escaped. Laurustinus, Arbutus, Bay, killed to the ground. Common Laurels uninjured here; in the lower situations killed to the ground. Ilexes, many killed, and all much injured. Yews, English and Irish, untouched. *W. P. Hamond, jun., Pampesford Hall, near Cambridge.* ——The following Conifers have proved themselves perfectly hardy in this district during the past winter: Abies Douglasi, Menziesi, morinda, orientalis, pumila, Wittmanni; Araucaria imbricata, Cedrus atlantica and Deodara, Cupressus funebris, Goveniana, Lambertiana, torulosa, and Uhdeana; Juniperus Bedfordiana, chinensis, excelsa, hibernica, and squamata; Picea cephalonica, nobilis, Nordmanniana, Pindrow, Pinsapo, and Webbiana; Pinus Cembra, cembroides, Edgariana, excelsa, Gerardiana, insignis, macrocarpa, radiata, and Sabiniana; Taxodium sempervirens, Taxus adpressa, Dovastoni, fastigiata fol. aureis and argenteis, and pyramidalis. *Youell & Co., Great Yarmouth.*

Planting Oak.—The discussions on the subject of planting which have appeared in your columns will be attended with the greatest public benefit, by spreading information which is greatly needed. The loss by injudicious planting and mismanagement of plantations must be reckoned by millions, besides the vexation and disappointment. Not 1 acre in 20 brings any trees to perfection; and yet planting is capable of being reduced to an exact science. Trees are susceptible of measurement while standing, and their rate of growth ascertained, and so a pretty accurate estimate of their age can be formed. On being cut down the annual circles may be counted, so that each tree may be said to contain within itself a record of its history. I will confine myself to a few remarks on Oak planting, and afterwards apply them to the Royal forests. All soils and exposures do not suit the Oak; the natural growth of the trees in the hedgerows and woods of the neighbourhood furnishes the best criterion. The next question is, what number of trees will an acre bring to perfection in a given period—say a century? Not that an Oak attains its full stature in that period, but it is a long time to look forward to, and will furnish a fine useful tree. My observation induces me to fix that number at 40. Then such a number should be planted as by thinning out half at a time will leave ultimately (at about 50 years) 40 standards. This number is 2560, at 4 feet 1½ in., or a quarter of a perch apart. At the first thinning they will be reduced to 1280, at the second to 640, at the third to 320, at the fourth to 160, at the fifth to 80, and at the sixth and last to 40. Now, as to nurses for them, where the site is well sheltered they need none; but if not, the Larch is by far the best; its light and delicate spray neither overshadows the Oak nor, when waved by the wind, does it break its succulent tender branches, as the Ash, Beech, Scotch Fir, &c., do, especially the leader, which retards its growth and spoils its form. It may be advantageous to plant a screen of the Pine and Fir tribes to afford shelter to the young Oaks from prevailing winds, but it is always injurious to mix them. Then as to the age of the Oaks. From some examples I have seen I am almost inclined to prefer sowing Acorns; but the younger the plant the better it succeeds: two-year-old seedlings perhaps are the best. I planted 10 acres with these and an adjoining piece, precisely similar in every respect, with plants of five or six years old and as many feet high. Both have taken very well, but in the intervening 30 years the younger plants have overtaken the larger ones. Some of them are a yard in girth; the average is perhaps 30 ins. at 3 feet from the ground. An inch annually is about the average growth of the Oak on a suitable soil, when it has had space enough for its natural expansion; but early and copious thinning is the great promoter of growth, and neglect of it, the great destroyer of woods. The forester should not say, "My trees are thin enough now," when he has just thinned them out; but he should be able to say, "My trees stand far enough apart not to interfere with each other, till the next period of thinning comes round." I consider that a young Oak requires 4 inches annually for its expansion in diameter. In about 12 years, therefore, his neighbour, having by that time become an evil, must be removed. In a few years more, half the Oak must follow, and so on when their tops meet. Now, as to our national forests, with what object should they be suffered to continue? Certainly not with a view to profit; for the nation is not more likely to grow Oaks with pecuniary advantage than Wheat. Their object is to have a supply of Oak timber available during time of war, when there may be a difficulty or impossibility of obtaining timber from abroad. They should be husbanded as a resource for such a contingency. The national existence may depend on it. The first step is to cut away all Beech, Ash, &c., and all ill-shaped, cankered Oaks, such as are not likely to be fit for naval use; for a bad tree should not occupy the place of a good one; both cannot grow on the same place at the same time. No land should be retained for forest, the soil of which is not capable of rearing the best timber, or which is not situated convenient to some great dockyard. Oak seemed to me to grow better about Dean Forest than any place I have ever seen; the New Forest also produces very good for about two-thirds of its extent; as to Chopwell Woods, Delamere Forest, and nearly all the rest, the sooner they are sold the better. On those which are retained, let not the annual profit, but the ultimate supply, be the consideration proposed. I applaud your efforts to promote the naturalisation of the Deodar and other hardy foreign trees of merit. I wish you would extend your advocacy to the Huon Pine of Van Diemen's Land, the foliage of which is very beautiful and the wood of superior quality, and the Kauri tree of New Zealand; both of which would flourish at least in the mild south-west of England, and prove highly ornamental and useful. *J. B., York.* [They both require a *very* mild climate.]

Common Things: Fungi.—Those persons who have had the privilege of inspecting the schools at Hitcham, under the guidance of Professor Henslow, have been much delighted and surprised at the accurate knowledge which has been acquired by the children, of the plants of their neighbourhood. The truth, however, is that there is nothing to which children can be so easily trained as any pursuit connected with natural history; and it would be a great benefit to the poor, were a knowledge of vegetable productions, together with their real virtues and properties, more generally diffused; for many a dangerous and fatal mistake would be thus avoided, not to mention any more immediate beneficial effects, or the mental improvements acquired by a habit of close and accurate comparison. Much of the success of Mr. H. Cuming, in the Phillippine islands, was due to his power of interesting the younger branches of the population in his researches, and we have just received a very interesting letter from the banks of the Rio Negro, one of the larger tributaries of the Amazon, far in the interior of South America, announcing the transmission of a valuable collection of fungi made principally by the young Indians. The following extract from the letter will be read with much interest:—"The Rio Uaupés is the first locality in which I have met with fungi in tolerable plenty, though the number of individuals is not at all to be compared with what I recollect having seen in England in Fir-woods and other places during the autumnal months; indeed of many of the species I did not succeed in finding more than one or two specimens; and of those gathered in greater quantity the specimens were mostly found growing widely apart, and were collected at several times. The most interesting species, and the greatest variety, are found in what the Indians call the Caá-guaçú, or great forest, where the trees are lofty and the soil good. Some of the fungi of the Caá-guaçú grow on the ground; more on dead trunks, standing or fallen; but perhaps the greatest number of species is found on dead leaves and twigs, being principally Agarics and Marasmii, some of the former being so minute and so deliquescent as to be impossible to preserve. On the Uaupés, as on the Alto Rio Negro, there is a very large proportion of low forest, on a soil of dry white sand, mostly thinly covering the granite rock, which, although equally a 'silva primæva' with the Caá-guaçú, produces only small trees of peculiar species found nowhere else, and shows here and there bare white places, destitute of all vegetation, from which the Indians of Brazil call it Caa-tinga, or the white forest; on the Venezuelan side of the frontier it is called simply Monte bajo, or low forest. The fungi of the Caa-tinga are chiefly terrestrial stipitate Polypori, growing subgregariously, and including a good many forms with differences so slight that they are probably all reducible to four or five species. The Gapó or periodically inundated forest afforded me a good many species growing chiefly on decayed wood. In the Mandiocca-roças and Capoeiras (deserted roças overgrown with young forest), several species occur on burnt logs, which have apparently a wide distribution in tropical America, and some of them are possibly cosmopolites. One of these, which seems to be P. sanguineus, I have seen in similar situations all the way up from Pará, and it is generally accompanied by two sessile Agarici. In the whole collection the genus Polyporus is vastly predominant, and I think it not impossible that if I could have remained at Panuré the whole winter I might have got 100 species in this genus alone. The collection would have been by no means so large had I not been aided in its formation by nearly all the juvenile population of Panuré, the boys being incited to the task by presents of fish-hooks and Jews' harps, and the girls by beads and looking-glasses. The girls were by far the most expert in the search, having, as it would seem, more patience than the boys. Their name for fungus is Dychtfbaki, in the language of the Tucana Indians, which is spoken throughout the lower half of the Uaupés, but in the Lingoa Geral, spoken throughout the Amazon and Rio Negro, it is Urupé. At the Jaguaraté-cachoeira [Tiger cataract], I am told that in the height of the wet season two species of fungi were eaten, and I was shown the place where they grew, which was under the shade of Umarí* trees such as the Uaupé Indians are accustomed to plant near their houses for the sake of the fruit, but at that time (Nov.) no trace of the fungi was visible, and I could only conjecture from the description given me that one of them was an Agaricus, and the other something like Fistulina." *M. J. B.*

Foreign Correspondence.

THE FROST OF THE 25TH ULT. AT BRUSSELS.—From the 14th March to the 22d April the weather was unusually dry, and the temperature kept rising, as with you. In spite of northerly and easterly winds the sun brought Peaches, Apricots, Plums, Pears, and Cherries into flower in the first fortnight of April. By the 22d April all the fruit trees except Apples and late Cherries had set, and commenced swelling their fruit. On that day we had a violent storm and heavy rain; after which the thermometer fell from 63° to 46°, and to 39° during the day of the 23d. On the 24th, about 11 P.M., the thermometer marked 29½°, and the next morning, about 5 A.M., 26°. Since the 26th there has been a constant succession of rain and violent wind from the N.N.E. and N.W. This morning the wind has shifted from W. to S. The thermometer has risen successively to 41°, 45½°, and 51° in the open air in the shade. I have waited till now to report the condition of our fruit gardens. Mine is beyond the city; the soil is light and deep; it is exposed to all winds. This is the result. All the varieties of Pear reputed to be hardy, and raised from seed in this climate, have preserved the fruit which had begun to swell before the frost. But delicate varieties, or such as had been raised from seed in a better climate, will most of them fail. The Apple crop, of which a part only had blossomed, is in a more doubtful state. The Plums and early Cherries, as well as the race of what are called Griottes, have cast their calyx [and are safe?] But of Bigarreaus and late Cherries as much cannot be said. Among a lot of Apricot trees, open standards, raised from seed of the Gros Abricot d'Hollande, two trees have saved all the fruit that was stoned; and the same has occurred to some open standard Peaches of the variety called here Pêche d'Oignie. Vines in the open ground have lost all their young wood, which was frozen. These facts seem to show the prudence, in this Belgian climate, which is as variable as your own, of growing in preference hardy varieties. And it has been towards obtaining the latter that

* Trees belonging to the genus Humirium, from whose bark a perfume is extracted, much esteemed in Brazil, and the wood used in house carpentry, especially for rafters.

the extensive experiments of Van Mons, Esperen, Bouvier and others have been directed. Their results have been fortunate and are beginning to be appreciated in this country, where the seasons are very like yours. In the gardens I have inspected, within and without the city, the facts appear to be of the same nature. I think too, that if the dry weather had lasted much longer, it would have committed more mischief among the young fruit than the frosts and heavy rains, which last are required to give the trees strength enough to carry their crops. It appears, moreover, that such fruit trees as had set and swelled their fruit, if grafted on wild stocks (*greffés sur franc*), and planted in a light soil, retain a sufficiently high internal temperature to resist 6° or 7° of frost. *J. de Jonghe, Brussels, May* 2.

Societies.

Horticultural, *May* 1 : Anniversary.—Sir Philip de Malpas Grey Egerton, Bart., M.P., in the chair. The following new members of Council were elected ; viz., General Fox, John Claremont Whiteman, Esq., and the Rev. W. B. L. Hawkins, *vice* the Duke of Northumberland, Sir Peter van Notten Pole, Bart., and R. S. Holford, Esq., retired. His Grace the Duke of Devonshire was re-elected President ; J. R. Gowen, Esq., Treasurer ; Dr. Royle, Secretary ; and as Auditors, Messrs. J. C. Stevens and Henry G. Bohn. The annual report from the Council was read, and, upon the motion of C. Wentworth Dilke, Esq., was adopted and ordered to be circulated among the Fellows.

Linnean, *May* 2.—The President in the chair. Professors Miquel, Van Beneden, and Duméril, and MM. J. D. Dana, C. A. Meyer, and J. F. C. Montagne, were elected foreign members of the Society. The necessary business of the meeting having been disposed of, the President proposed that, in consequence of the recent death of N. Wallich, M.D., Vice-President of the Society, and in consideration of his long connection with, and eminent services to, the Society and to Natural History, the meeting should adjourn ; which was unanimously agreed to.

Notices of Books.

Dr. Hooker's Flora of New Zealand.—Part V. is occupied by Cryptogamic Botany, and in part by Ferns. The same high talent manifested in the previous number is conspicuous in this. The learned author perseveres in the destruction of the so-called species of name-makers, and with constant success. Some of our German friends must shudder as much at the name of Joseph Hooker as red-tape men formerly did at that of Joseph Hume.

An Essay on the Relations between Labour and Capital. By C. Morrison. Longmans. 8vo, pp. 328.

The extreme desirableness of sound views amongst the working classes on the general principles of political economy, and particularly on those which govern the rate of wages, is too obvious to be doubted at any time, but most especially now that strikes and lock-outs have assumed so important an aspect. If working men were convinced, as they would necessarily be, if acquainted with such principles, that the rate of wages does not depend upon and cannot in the long run be controlled by acts of Parliament, awards of arbitrators, mediation of indifferent persons, or anything except the efficient demand for labour as compared with the amount of it which is to be had, strikes, and with them lock-outs, would cease to disturb society.

The object of the author of the present essay is to impress these important truths upon those who are disposed to doubt them, and to point out both what will not and what will relieve the poorer classes from the evils which oppress them. The writer's views, condensed into a few sentences, are as follows ; the lowest possible rate of wages, consistent with its continued supply, is that which barely suffices to maintain the labourer ; the highest possible rate is that which exhausts the funds applicable to the payment of wages. Between these two extremes alone can wages fluctuate. If the number of labourers requiring work is great as compared with the work for them to do, wages will approach the low limit ; if, on the other hand, there is much work to be done and few persons to do it, their wages will approach the high limit, and will be high in proportion as the number of labourers is few, and the funds for their payment are large. To improve wages, consequently, population should decrease and money accumulate. Emigration is an immediate and the only available mode by which the evils arising from excessive population can be quickly removed ; although, to prevent their recurrence, prudence in marrying seems still indispensable. These propositions are enforced by the author at considerable length, but he does not so clearly show how capital is to be increased, nor does he satisfactorily deal with the great question now at issue between masters and their men ; viz., the laws which determine the relation between wages and profits, or show that the views of strikers are altogether visionary when they suppose that the former are too small compared with the latter. The author reasons upon the assumption that all the funds available for the payment of wages are in every case so employed, whilst, if we mistake not, a belief, just or unjust, that the contrary is the fact, is very general among strikers. Their whole contention is that the masters subtract in the shape of profits too much from the funds which would otherwise be available for the payment of labour.

We point out what appear to us to be the main defects in the essay, in the hope that they may be supplied on some future occasion. Notwithstanding the omissions thus adverted to, the author has produced a work deserving careful perusal ; for his statements are clear, and his lengthened examination of the modes in which the condition of the poorer classes cannot and can be improved, is, in many respects, excellent. We do not believe that the working classes are aware of how much can be done by themselves for their own advancement, and books like that before us, which show them this in a kind spirit, cannot have too wide a circulation.

New Plants.

60. Cymbidium pendulum, *Swartz—var.* atropurpureum.

A Borneo plant, in the possession of John Knowles, Esq., of Manchester, which has lately produced its flowers, proves to be a narrow-leaved variety of this species, with deep purple sepals and petals, and yellow ribs to the lip. It is far handsomer than the older varieties. The same form is before us, collected by Cuming in the Philippines. The species seems to be a native of all the insular parts of Asia within the tropic.

61. Desfontainia spinosa, *Ruiz and Pav. Fl. Peruv. II.* 47, *t.* 186—*aliàs* D. splendens, *H. B. K.* ; *aliàs* D. Hookeri *Dunal* ; *aliàs* D. acutangula *Dunal*.

This most beautiful evergreen bush was introduced some years ago by Messrs. Veitch, but has only of late found its way into the channels of trade. Conceive a plant so like a Holly that one can scarcely believe it not to be one, bearing scarlet flowers between two and three inches long, tipped with bright yellow. It is now figured in the "Botanical Magazine," t. 4781, where it is well represented, except as regards the colour of the leaves, which are made glaucous, a tint we have never remarked. Here, again, we have an example of the preposterous habit of making species, with all the paraphernalia of learned names, out of nothing—literally nothing. Like other plants growing in different climates, and at various elevations, this Desfontainia, which grows wild from New Grenada to Staten Land, in 53° south latitude, may be found in herbaria in slightly different states, just as in any coppice you may find the common Holly in all sorts of forms. Out of this *nihility* three species have been produced. A more profitable employment than covering paper with unmeaning phrases would have been the determination of the affinity which this plant naturally bears to others, a point upon which there has been nothing as yet settled. It is commonly regarded as a doubtful Gentianaceous genus ; but its 5-celled ovary is fatal to the suggestion. Dunal puts it at the end of Solanaceæ, which is surely a very false step. Alph. De Candolle suggests Polemoniaceæ, to which its habit and the structure of the seeds are quite opposed. The writer of this notice once referred it with doubt to Aquifoliaceæ, but its many-seeded ovary and opposite leaves were great objections. Nevertheless, he regards it as certain that the genus must stand somewhere in the Gentianal alliance, and he would now suggest that it is really a connecting form between Aquifoliaceæ and Loganiaceæ, including Cassipoureæ, referable to the latter, however, on account of its polyspermous fruit. The anther is singularly like that of Fagræa morindæfolia, as given by Blume in his Rumphia.

Garden Memoranda.

Royal Botanic Garden, Kew.—The effects of the frost on the night of the 24th ult. have been here, as elsewhere, severely felt. The young leaves and tops of the Aucubas are black and quite dead, and even many of those of the common Laurel are little better. The flowers and young shoots of Ribes sanguineum have been destroyed, and the foliage of all the Himalayan Berberries, except Wallichi, which had not pushed, has been greatly injured. The young leaves of Magnolia purpurea are quite black, and the flowers have been injured so much that they will not open. The young shoots of Eucalyptuses, all of which had been sadly cut up last winter, and which had just begun to push afresh, have been killed. The young tops of the common Hydrangea are quite dead ; and the flowers of Wistaria chinensis have suffered severely. The Weigela, too, has not escaped unhurt. The young leaves of Spiræa Lindleyana have been killed, and Chimonanthus fragrans, against a wall, has been injured ; the same plant, in the shape of a bush on the open lawn, has been very much cut up ; the young leaves and tops of the common Walnut tree are quite black, and the shoots as soft for some distance back as if they had been boiled ; a fine specimen of Sophora japonica is in a similar condition ; and Turkey Oaks, Ornus europæa, Platanus orientalis, Laurus Sassafras, and Robinia Pseud-acacia are all more or less in the same state. The newly made wood of Deodars, more especially on very young trees, has been nearly all killed ; but that on large specimens which had pushed but little has suffered less, and some trees have even altogether escaped. The young growths of Abies Smithiana are killed, as are also those of Abies Webbiana ; which is, however, injured every year by even moderate spring frosts. The different species of Veratrum have had portions of their foliage frosted quite black, and Uvularia puberula has been greatly cut up, while U. grandiflora beside it has escaped unhurt ; Telekia cordifolia has had its leaves browned. The American Eupatorium purpureum and its associates verticillatum and maculatum have all been killed, and even young portions of the common E. cannabinum can scarcely be said to have altogether escaped. Polygonum Sieboldi against an east wall is unhurt, while in a west exposure it has been killed, as have also been P. cuspidatum, Brunonis, and speciosum ; Aralia nudicaulis is slightly injured ; Macleaya cordata has been destroyed. Some Epimediums and Clematis tubulosa have also suffered ; Arunda Donax, which had been pushing vigorously, has been killed down to the ground. Several of the Sikkim Rhododendrons, such as cinnabarinum, glaucum, ciliatum, Falconeri, Thomsoni, fulgens, and Wallichi, which had wintered safely out of doors, have been so greatly injured by the frost of the night in question, that it is doubtful if some of them will recover, and even the young leaves of Dalhousianum under glass have been browned a little, so very tender is this fragrant species. With this exception, however, no other plants under glass here have suffered. All young annuals and other things from seed that had made their appearance above ground have been killed completely.

At Ealing Park comparatively little injury has been done. Of the many fine specimen Deodars on the lawn, the young shoots of only three or four of them have been killed. The rest appear to be very slightly, if at all injured.

At Gunnersbury the young tops of Box edgings have been killed. Wall trees here have also sustained some amount of injury, but not so much as in many other places. Where Peaches had been protected by coping-boards 15 inches wide they appear to be safe ; but a few of them are killed where they had no protection. Of Cherries one half at least is dead. The early blooms of Strawberries have also been cut off. Figs are to all appearance safe.

In several small gardens in the neighbourhood of Twickenham we learn that the Potatoes have been killed down to the ground, and that young Cauliflower plants have also received considerable injury.

In the *Garden of the Horticultural Society*, at Chiswick, Moutans have not been injured. Pavia californica in full leaf is also uninjured ; P. indica has had all the young growth destroyed, and the Indian Acer caudatum is in a similar condition. Ceanothus verrucosus, in full bloom, is uninjured, as are also Berberis Darwini and empetrifolia ; Spiræa prunifolia flore pleno, in full bloom, is likewise uninjured ; Calycanthus occidentalis has had all the young growth killed ; the Assam Tea, although not hurt last winter, has had its young growth killed, as has also Taxodium sempervirens; the Chusan Palm has not been injured in the least ; the Sikkim Rhododendron ciliatum and cinnabarinum are uninjured in the foliage, but the flower-buds have been killed ; Magnolia purpurea and all the deciduous species have had their young growths and flowers destroyed ; the newly-made wood of Deodars has been partially injured, while Cryptomerias are not hurt in the least ; the old leaves of the Pampas Grass got browned by the winter, but the young ones are found to be growing, and have escaped uninjured ; Pinus Benthamiana, tuberculata, muricata, Fremontiana, Lindleyana, Montezumæ, and monticola, and Abies Nordmanniana and orientalis have not suffered in the least ; nor has Fitz-Roya patagonica or Cupressus Goveniana, macrocarpa, Uhdeana, thurifera, and funebris. Syringa Emodi has had all the young wood killed, as have also Azaleas ; Abies Brunoniana is nearly killed, and all the young growth of A. Webbiana has been destroyed. In a north aspect, Camellias have escaped ; Quercus Branti, infectoria, and two other Koordistan Oaks that were not injured in the least by the winter, have had all the young growths killed, and in all probability the plants down to the ground ; Quercus agrifolia has had its young wood killed, as have also common English Oaks ; Araucaria imbricata is unhurt ; Arbutus procera, which had had its leaves partially browned by the winter, although in full flower, has not been injured in the least by the last frost. Planes have had all their young growths destroyed, as have also common Laurels and Celtises.

FLORICULTURE.

Early Tulips.—In many places these are beautifully in bloom, and for the amateur of limited means they are a valuable tribe of spring-flowering plants. They are cheap, and easy to cultivate, requiring but little attention, and while they annually adorn the flower-clump, or sitting-room window, their numbers will increase, until the only difficulty will be to find room for them. During April and May they add an inexpressible charm to the flower-border, and do not withdraw their unequalled colours and sweet perfume until their place can be supplied with the usual bedding-out plants. What for instance, can be compared with a bed of the Tournesol for the regularity of surface, and the splendour of its two distinct colours ? Next in size and beauty is a single variety called Keizar Kroon, which is indeed a noble flower. It has a very bright yellow ground, flaked with a vivid scarlet, and is in every respect "Queen" of the single early Tulips. Rex Rubrorum is a double variety of a brilliant crimson, also very large ; a bed of it presents a very regular surface, and long continuance of bloom. Royal Standard is a pleasing flower, with a pure white ground, beautifully flaked with carmine, making a striking contrast. Belle Alliance is another single flower, very attractive, of a vivid red colour, a self. The new scarlet Van Thol is very similar to it, but it has this

difference, that is very often breaks into a flaked flower, orange and red. Grand-master of Malta and Bride of Haarlem are very similar in colours, having both pure white grounds, distinctly striped, and flaked with bright crimson. Alida Maria is a flower in the same style, but very dwarf in habit. Superintendent is a fine kind, white, with a violet flake; Conqueror is double and has the same colours. The best double pure white is La Candeur; as single whites, White Swan and Pottebakker are the best. Amongst yellows we have the yellow Van Thol, dwarf and showy, the yellow Pottebakker, and the old Double Yellow, which is rather later in flowering. From February till May they may be also easily had in flower for the window. In forming a small collection, the following varieties are suitable to begin with:—Van Thol, single and double; Rex Rubrorum, Tournesol, Florentine, and Mariage de ma Fille. The outlay for a dozen of each of these varieties will not exceed the cost of one dozen of first-class Hyacinths, and while the latter have to be bought annually, these will last for years. I would advise one-half the quantity obtained to be planted in autumn, in the flower-border, where they will bloom in spring, and will be in a fit state for potting for the window next season. The soil in which they are planted should be rather light and rich, and ought to be well loosened to the depth of 15 inches at least; for although they will grow and flower if stuck into any soil, they will yearly become weaker and fewer in number, until they ultimately disappear altogether. In planting, the roots should be placed about 5 inches apart, and covered with about 2 inches of soil. They require no protection, and no further care, except a few stakes to support the taller growing sorts, and to have the surface of the soil stirred occasionally. As soon as the leaves decay, the roots may be taken out of the ground, and placed in a dry place for a time, in order that they may get thoroughly dry before they are put into their winter quarters. Any cool dry place will answer for this purpose; but mice are apt to make sad havoc among them, so keep your eye upon them. I also find it necessary to guard them against the ravages of these vermin in the ground. It is often necessary to remove them as soon as they have done flowering; and in this case I lift carefully, retaining as much soil with their roots as I can, and place them in a shady situation, covering them with soil to about the depth they formerly occupied. If the weather is dry, give them a little water; here they will ripen their growth, and will receive little injury from their removal. These ought to change places with the portion which has flowered in the window, as they will be found apt to become weak under pot culture, and if the same roots are used two successive seasons, they will probably be of little account the second; this will not, however, be a necessary consequence, but is generally the result of using small pots, and otherwise treating the plants unnaturally. For window decoration, plant in pots as soon as the bulbs are procured, using 7-inch pots for the purpose; put in each five roots of Van Thol, or three of the other sorts. After potting, they should be placed in some spare corner out of doors, and covered about 2 inches deep with coal ashes, or any material which can be easily removed. Here they may be allowed to remain till about Christmas, when a portion may be removed to the greenhouse, to forward their blooming season. The Van Thol is the earliest, and ought to be treated as such, except variety is desired; in that case, take Rex Rubrorum and Tournesol; these will be in flower in February, and, if properly tended with water, &c., will retain their gaiety for at least a month. Of course provision must be made to keep up a succession of bloom. When done flower- early Tulips must not be turned out of doors, nor ...g, wise maltreated; they must be allowed a p... other- frame or greenhouse, where they can go ... ace in a rest. It will not be necessary to give the... gradually to after flowering; but do not allow ther... much water until the leaves show symptoms of d... to be without it withhold it altogether. After ...ecay, then gradually treatment directed to be given ...wards give them the border. ... those grown in the flower-

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Conservatory, &c.—Azaleas as they go out of bloom should have their seed-vessels picked off, and those that require more pot room should be shifted at once. Some persons recommend mixing a portion of loam in the soil for these; but strong rich fibry peat, with plenty of silver sand, forms the best compost for them. After potting, every plant should be neatly staked and tied before taking it out of the potting shed; for, besides that this is better done at once, it will not occupy half the time, as if deferred until the plants have made their growth. These beautiful plants are exceedingly subject to thrips, and unless a sharp war is carried on with these pests immediately they make their appearance, it will be difficult to subdue them. To avoid the nuisance of having to smoke houses or pits, have a light frame of a convenient size covered with oiled calico, in which to smoke the plants. This may be placed over the infested plants in any of the houses, or on a bed of coal-ashes out-doors, and filled with tobacco smoke by means of the fumigator, and allowed to remain for a few hours. If the calico is properly put upon the frame, every insect to which tobacco-smoke is inimical will be destroyed, for not a breath of the smoke can escape. We find this simple cheap contrivance very serviceable and economical, as very little tobacco serves when the smoke cannot escape, and it is a great comfort to be able to smoke plants without being obliged to inhale the disagreeable fumes. Go over the conservatory frequently, to regulate growth, and to see that the borders are kept moist, giving a thorough soaking when necessary, for mere surface waterings will not reach the roots; and although useful in keeping the atmosphere moist, will not serve to maintain the vigour of the plants after this season. Young stock of hard-wooded plants should now be growing freely, and will require assiduous attention to do them justice. Afford them a moist atmosphere, and as warm as they will bear, without making weakly growth, but aim at securing short-jointed strong compact wood, and regulate the temperature so as to secure this. Examine every plant closely two or three times a week, and keep them frequently turned round and stopped, &c., as may be necessary, and see that they are properly supplied with pot-room and water at the root. Any plant in middling health, if at all liable to the attack of red spider, must be closely watched, and syringed as may be necessary. It is better, however, to lay such plants on their sides, on a clean mat, giving them a good washing with the syringe, than to trust to ordinary syringings, which are apt to render the soil too wet, and in many cases fail to accomplish the desired end. Stove.—Let the inmates here have plenty of light, warmth, and moisture, and a moderate circulation of air whenever the weather will admit, and attend regularly to stopping and training as may be required, and do not allow young stock to suffer for the want of pot room. Give weak tepid manure water to all plants that enjoy it, but do not dilute it too much for Allamandas, Clerodendrons, Stephanotis, and similar rapid growing gross feeders.

FORCING DEPARTMENT.

Pinery.—Where a regular supply of fruit is required at all seasons of the year, it will be necessary to frequently examine the stock of plants, marking those desired to show fruit, so as to be able to keep them dry at the root for a month or so, which in most cases will have the effect of checking growth and throwing the plants into fruiting. The only effectual method, however, of securing a supply of fruit at the desired season, is foresight in the management of the stock, so as to have the plants strong and well matured, and be able to allow them a short season of comparative rest, after which there will be no difficulty about getting them to show fruit. With plenty of convenience this is easily enough managed, but where the accommodation is limited it is the most difficult part of the culture of the Pine. And in such cases it will be safer to grow the plants in pots, so as to secure perfect command over the roots, and also be able to move the plants from a warmer to a cooler pit, or otherwise, as may be necessary. Black Jamaicas and Cayennes are the best varieties for winter use, and the stock of these should receive every encouragement at the present season, to induce them to make free growth at present, and a portion of them should be shifted into their fruiting pots as soon as possible. Vineries.—In cases where Muscats are grown in the same house with Hamburghs, and other free setting varieties, the temperature must be kept sufficiently high during blooming, and until the berries are fairly set to s... ut the Muscats; for a crop of these cannot be depended upon from the most healthy Vines, unless they can be afforded a brisk temperature while in bloom and setting their fruit. It will be better, however, to risk having the Muscat bunches somewhat thin than to injure other varieties by maintaining a night temperature of 75°, which is the practice of some good growers: 68° or 70° will be found quite sufficient. Get the borders prepared for planting out young Vines, and if these are started into growth before planting do not keep them too warm, or it will be difficult to prevent their sustaining a check after planting out. Peaches.—Where the fruit is approaching maturity the atmosphere should be kept rather dry, with a free circulation of air, whenever the state of the external atmosphere will admit.

FLOWER GARDEN AND SHRUBBERIES.

Now that we have showery and somewhat mild weather, this department will afford ample employment for all the strength which in most cases can be concentrated upon it. Hardy annuals must be sown at once, covering them lightly with fine soil; Stocks, Pentstemons, Antirrhinums, Hollyhocks, &c., that have been properly hardened off, should be planted where they are to bloom, as also any remaining stock of biennials and perennials. If the removing of any large shrubs or trees has been delayed through the late unfavourable weather, this also should be done immediately. The planting of tender Roses should not be longer delayed, and those previously planted must be examined, replacing those that appear to be much injured by the weather. Get bedding stock hardened off as expeditiously as possible, but in removing them from the pits and frames place them where they can be covered at night in case of necessity, and also take care that they are not injured by too sudden exposure to bright sunshine. Be particularly careful that the stock is perfectly free from green-fly before removing it from under glass. Encourage any backward stock to make free growth, in order to get them strong before planting out time, for it is useless planting out until the plants are some size and well established. Take advantage of showery weather to give the Grass and walks a good rolling, and endeavour to maintain perfect neatness in this department.

HARDY FRUIT AND KITCHEN GARDEN DEPARTMENT.

Persevere in the destruction of insects, and use every means to prevent the young shoots being injured; for if they sustain any check at the present season they will not soon get over it, and the wood will be made late; and unless the autumn should prove favourable it will not be possible to get it well ripened. In cases where tobacco-water cannot be easily obtained, a mixture of flowers of sulphur and Scotch snuff applied with the sulphurating machine will be equally efficacious; but this should not be applied on a showery day, unless the trees can be covered to prevent its being washed off too suddenly. Do not be in too much haste to remove the covering, as a sharp frost is by no means unlikely while the present unsettled weather continues. A good bed of silver-skinned Onions should be sown on poor soil, in an open situation, making the ground firm, and sowing thick. These will afford a supply for Salads, and come in useful for pickling. Put in during showery weather Turnips for succession; also Beet, Salsafy, and Scorzonera, if not already done. See to keeping up a succession of Cauliflower plants; also Lettuce and small Salads.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending May 4, 1854, as observed at the Horticultural Gardens.

April and May.	Moon's Age.	Barometer.		Temperature.					Wind.	Rain.
				Of the Air.			Of the Earth			
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Friday 28	1	29.913	29.840	53	37	45.0	46	48½	N.	.00
Satur. 29	2	29.699	29.627	53	29	41.0	47½	49	N.	.04
Sunday 30	3	29.528	29.295	52	46	49.0	46½	48½	S.W.	.04
Mon. 1	4	29.192	29.128	57	42	49.5	47½	49	S.W.	.16
Tues. 2	5	29.467	29.167	60	41	50.5	48	49½	S.W.	.02
Wed. 3	6	29.482	29.437	60	37	48.5	49	50	S.W.	.01
Thurs. 4	7	29.663	29.540	65	27	46.0	49	51	S.W.	.00
Average		29.563	29.435	57.1	37.0	47.1	47.6	49.3		.27

April 28—Cloudy and cold, with brisk north wind; clear at night.
— 29—Rain; cloudy; clear; slight frost.
— 30—Rain; drizzly; uniformly overcast.
May 1—Overcast; cloudy; rain.
— 2—Rain; low white clouds; partially overcast.
— 3—Heavy clouds; fine; densely overcast.
— 4—Fine; very fine; clear; frosty at night.
Mean temperature of the week, 4½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending May 13, 1854.

May.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 7	62.5	41.1	51.8	9	0.24 in.	3	6	3	2	4	5	3	2
Mon. 8	62.3	41.3	51.8	11	0.37	—	5	5	—	5	4	6	3
Tues. 9	61.8	40.6	51.2	11	0.60	2	7	4	1	4	8	2	—
Wed. 10	61.8	39.4	50.6	11	0.10	4	4	4	1	2	6	4	3
Thurs. 11	62.4	41.2	51.8	10	0.26	5	6	3	1	5	4	2	2
Friday 12	63.3	41.7	52.5	12	0.40	3	5	8	1	3	4	1	3
Satur. 13	63.5	39.6	51.5	13	1.10	3	7	4	1	3	5	3	2

The highest temperature during the above period occurred on the 12th, 1833—therm. 81 deg.; and the lowest on the 11th, 1838—therm. 27 deg.

Notices to Correspondents.

Blight Composition: *A Dowling*. Your letter was an advertisement.‡

Books: *Lover of Botany*. The "best botanical book on Coniferæ" is Endlicher's "Synopsis Coniferarum," a systematical work in Latin, without figures.—*Flora*. We know of no such book as that you inquire for.

Cleaning Kid Gloves: *Alice*. The "Pharmaceutical Journal" recommends the following for this purpose:—Add 15 drops of strongest solution of ammonia to half a pint of spirits of turpentine. This should be applied with a brush, followed with some fine pumice powder.‡

Cyclanthera pedata: *H B*. It will succeed with you if you treat it as you would a Melon.‡

Fish: *J P Brecon* will feel obliged by some of our correspondents informing him what is the best food for fish in small ponds where they are kept for use, and must be had when wanted, often at a very short notice.

Hollies: *G W*. By no means fork up the roots. Place the manure over the latter, in the form of a mulch, and top dress with light soil.

Hotbeds: *S F*. Cinder-ashes put on the top of your bed will not assist fermentation; but they will help to keep the heat in the bed from escaping.‡

Insects: *Heckington*. The insects sent are the common Otiorynchus sulcatus, very injurious at this season, especially after such a long dry season, to buds on Vines, Roses, and other trees. See answers to correspondents in last week's paper for the best means of destruction. *W.—Shem*. Mr. Curtis's paper on the genus Myrmica and other ants, referred to in the report of the Linnean Society, will be printed in the Transactions of that Society, the parts of which are purchasable through the ordinary channels. *M.—T T A*. The little grubs within the withered Apple-blooms are those of the Apple weevil, Curculio (Anthonomus) Pomorum. The beetles will hatch in a few weeks. The best means of destruction are to pick off and burn the withered blooms, so as to destroy the insect before it arrives at the perfect state; or, if left till that time, the trees should be violently shaken, sheets having been laid on the ground, and the beetles which will fall should be collected and destroyed. *W.*

Lilies: *A H*. The hardiness of L. giganteum and Wallichianum is not as yet perfectly ascertained.

McGlashen's Transplanting Machines: *Tyro*. You will find full information as to prices, &c., of these machines in a pamphlet on the subject published by Messrs. Young, of Parliament Street, London. September, as we have often stated, is the best month for transplanting all kinds of evergreens.‡

Names of Plants: *J Randall*. Prunus Padus, the common Bird Cherry, and Cratægus Crus galli.—*A P*. The tree "from the East Indies" in the open ground, 15 to 20 feet high, in your grounds at Plymouth, and now in flower, is Edwardsia racemosa, a native of New Zealand.—*F D. & Co*. Prostanthera lasianthos.—*L L*. Adoxa Moschatellina.

Pawlownia imperialis: *P*. This has flowered several times in the Jardin des Plantes at Paris. If memory does not deceive us, the plant stands at the foot of the hill covered with Coniferous trees.

Villarsia: *A H*. We have no doubt that all the exotic part of this genus will live in the water out of doors, in a reasonably good climate here, during summer; but they will not bear our winters.

Misc.: *S B*. The question is more complicated than it appears to be. Light, warmth, and dryness, are no doubt material elements in causing fruitfulness; nevertheless, although a season be remarkably dark, cold, and wet, there may be an extraordinary bloom in the succeeding year, if there was no crop the previous year. Although spring water is sometimes injurious when used for watering plants, yet we suspect it is often less suitable than rain water, rather than positively injurious. This, perhaps, arises from the latter containing gaseous matter and ammonia in some abundance, while spring water has little or none. We are not aware that the sulphate of lime contained in hard water does harm, except to such plants as naturally dislike calcareous matter, such as Heaths, Rhododendrons, and the like.—*P G*. The numbers are out of print.

THE SEWAGE DEODORIZING AND PATENT MANURE COMPANY.

STOTHERT'S PATENT.

PROVISIONALLY REGISTERED UNDER 9TH AND 10TH VIC., CAP. 110.

CAPITAL £100,000, in Shares of £1 each.

(OF WHICH NOT MORE THAN 25,000 SHARES WILL BE ISSUED AT PRESENT), TO BE PAID IN FULL ON ALLOTMENT.
APPLICATION WILL HEREAFTER BE MADE FOR A CHARTER OF INCORPORATION.

PATRONS.

The Marquis of Breadalbane, K.T.
The Marquis of Stafford, M.P.
The Earl of Essex.
The Earl of Scarborough.
The Earl of Erne.
The Earl of Yarborough.
The Earl of Gifford.
The Earl of Mulgrave, M.P.
Lord Clarence Paget, R.N.
The Rt. Hon. R. A. Christopher, M.P.
Sir Arthur Aston, G.C.B.
George Tomline, Esq., M.P.
&c. &c. &c.

Directors.

The Hon. J. W. Fortescue, 17, Grosvenor Square (*Chairman*).
The Hon. R. E. Howard, Garden Court, Temple.
G. T. Braine, Esq., 8, Hyde Park Terrace, and 1, Royal Exchange [Buildings.
G. P. Irvine, Esq., 15, Pall Mall.
General Macdonald, C.B., 72, Onslow Square, Brompton.
John Carnac Morris, Esq., F.R.S., 10, Mansfield Street, Portland Place, late H.E.I.C.'s Civil Service.
Newton S. Scott, Esq., 6, Lowndes Street, Belgrave Square.
J. E. Stephens, Esq., 17, St. James's Place, Manager of the London and Eastern Bank.
With power to add to their number.

Bankers.

Messrs. Herries, Farquhar, & Co., St. James's Street.
The London and Eastern Bank, 36, King William Street, City.
Agricultural Chemist—William White, Esq.
Solicitors—Messrs. Vallance & Vallance, 20, Essex Street, Strand.
Brokers—Messrs. Medley Brothers, 15, Old Broad Street.
Secretary—Mr. W. F. Mould.
Temporary Offices—37, Charing Cross.
Model Works—Northumberland Wharf, Northumberland Street, Strand, where the experiments may be seen daily from 12 to 2 o'clock.

THIS COMPANY has been established for the purpose of carrying out the valuable invention patented by Mr. HENRY STOTHERT, for Deodorising the Sewage of towns, and for applying the same in the most approved form to agriculture.

The invention has for its objects:—

1st. The immediate deodorisation of all sewage matter, contents of cesspools, drains, &c.

2d. The conversion of these valuable matters into a light and portable manure, made up in the form of a dry brick, and perfectly free from odour.

This Company, therefore, seeks to improve the sanitary and agricultural condition of the country by the profitable use of that refuse which at present spreads disease and death around us.

The process by which these results are obtained being simple and inexpensive, the manure (the fertilising power of which is universally acknowledged) can be sold at a very moderate price.

Two objects are attained; for whilst the escape of offensive odours and consequent pollution of the atmosphere is prevented, the ammonia and other volatile principles are fixed, and placed in a condition most eligible for the food of plants.

It has long been admitted that these form the most important points in sanitary improvements, giving health where disease exists, and producing a revenue from those principles which are now wasted.

Before submitting these facts to the public, Mr. STOTHERT'S process has undergone a critical analysis by eminent chemists, and their reports fully bear out the assertions of the Patentee, as to the value of his invention and its advantages to society.

A Pamphlet can be obtained at the Offices of the Company, which explains generally the nature of the invention, and the steps which have been taken to test its usefulness and value, both in a sanitary and in an agricultural point of view, as also the practicability of its application.

Model Works have for some time past been erected over the great sewer at the Northumberland Wharf, in the Strand, where the Machine may be seen in operation daily. This simple Machine—which instantaneously deodorises the offensive sewage matter, precipitates the solid parts, and throws off the supernatant water as clear as crystal—has been inspected by many noblemen and gentlemen interested in sanitary and agricultural questions, who have testified to the completeness and efficiency of the process, and expressed their approval of the arrangements, both chemical and mechanical.

Favourable arrangements have been made for the purchase, by this Company, of the entire patents for the United Kingdom.

The Share Account of the Company will stand as follows:—

Total Capital		£100,000
Of which—To the Patentee in cash in reimbursement of expenses incurred	£6,500	
To the Patentee in Shares	6,500	
For present working capital	12,000	
		25,000
Reserved Shares—For the Patentee, but not to be issued until after payment of a dividend of 10 per cent. on the whole capital	12,000	
Ditto after 20 per cent.	12,000	
Ditto after 40 per cent.	13,000	
		37,000
Reserved capital		38,000
		£100,000

The Directors intend to confine their immediate operations to the erection of Model Establishments, to deodorise the refuse of one or more towns already selected, to apply the proceeds to the purposes of Agriculture, and thus practically to illustrate the many and great advantages gained by this new process.

With these views, an issue of 25,000 Shares is considered amply sufficient. The operations of the Company are intended to be—

1st. The granting of Licences to towns for the use of the invention at a moderate royalty.

2d. The supply of the deodorising and disinfecting powder for domestic use, and for application to manure heaps, cesspools, and liquid manure tanks; as also to public institutions, barracks, hospitals, &c.

3d. The supply of patent animal and vegetable charcoal for manure.

Assuming the royalty chargeable by this Company to be at the rate of 6*d*. per head of the population, the following Table will show the result (in round numbers) of the application to several towns in England, both as regards the sum to be received by this Company for royalty, and also the profit to the town working under a licence.

Name of the Town.	Population.	Annual Royalty payable to the Company, at 6*d*. per head.	Estimated gross profits, calculated upon the basis of 5000 tons *only* for every 100,000 inhabitants, at a profit of *only* 2*l*. 10*s*. per ton, and exclusive of the supernatant water.*
Manchester	316,000	£7,900	£39,000
Bristol	137,000	3,400	17,000
Hull	84,000	2,100	9,400
Brighton ...	70,000	1,700	7,500
Nottingham	57,000	1,400	6,800
Chester	27,000	690	3,300
Tamworth...	8,000	200	1,000
Chatham ...	40,000	1,000	5,000

It will be seen, therefore, that there are several sources of revenue to the Company. First, the royalty payable by towns:—and the application of the invention to only a limited number must produce a large annual income. Secondly, the sale, through a licensee or otherwise, of materials in a form applicable for use by private individuals for deodorising and disinfecting the contents of drains, cesspools, manure tanks, &c., as also the profit to be derived from the Patent Charcoal.

The composition will be sold at a price comparatively much less than that of any known disinfecting and deodorising agent, and considerable profits must arise from this branch of the undertaking.

Applications for shares (in the annexed form) to be addressed to the Directors, at the Offices of the Company, or to the Brokers.

FORM OF APPLICATION FOR SHARES.

TO THE DIRECTORS OF THE SEWAGE DEODORIZING AND PATENT MANURE COMPANY.

GENTLEMEN, 37, *Charing Cross, London.*

I request that you will allot me Shares of 1*l*. each in the above-named Company, and I undertake to accept the same, or such less number as you may allot to me, to sign the Deed of Settlement to the Company, and pay the sum of 1*l*. per Share when required.

Dated this day of 1854.

Name in full ....
Profession or Business ....
Residence in full ....
Reference ....

* Several eminent authorities, however, estimate the profit at the rate of 10*s*. per head of the population; this would, of course, give a much larger result than that stated in this table.

THE LONDON MANURE COMPANY'S WHEAT MANURE, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. EDWARD PURSER, Sec.
Bridge Street, Blackfriars.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7*l*. per ton; Superphosphate of Lime, 7*l*.; Sulphuric Acid and Coprolites, 6*l*.
Office, 69, King William Street, City, London.
N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

SEWAGE CHARCOAL MANURE.—This highly fertilising Manure, which is Peat Charcoal completely saturated with London Sewage, will be found most efficient for every species of crop; more especially for Peas, Beans, Turnips, Mangold Wurzel, and other root crops. It will produce a greater return for the outlay than Guano or any other Manure at an equivalent value: it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained at the SEWAGE MANURE WORKS, Stanley Bridge, Fulham, at 4*l*. per ton, and in quantities less than half a ton, at 5*s*. per cwt., for ready money only: and in quantities not less than a ton, will be delivered at the London Termini of the Railroads free of charge for cartage. No charge for sacks.
It may also be had from Messrs. G. GIBBS & Co., 26, Down Street, Piccadilly, Agricultural Seedsmen, Agents for London: and from all the other Agents of the Company.

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures.
WM. INGLIS CARNE, 10, Mark Lane, London.

GUANO (PERUVIAN) AND CHEMICAL FERTILISERS.—NITRATE OF SODA; PERUVIAN GUANO; SUPERPHOSPHATE OF LIME; AGRICULTURAL SALT; AND CONCENTRATED MANURE FOR TURNIPS.
The above articles are supplied on the lowest Cash Terms, for best qualities only, on application to Mr. JOHN CLARANCE, Agriculturist's London Agent, 1A, Bishopsgate Street Within.

TURNIP SOWING.

SUPERPHOSPHATE OF LIME, made from Bone, which is the best Manure for Root Crops (see the Royal Agricultural Society's Journal, Vol. vi., part 2). PERUVIAN GUANO, NITRATE OF SODA, BONE DUST, SULPHURIC ACID, and all other Manures of known value. The PEAT MOSS CHARCOAL COMPANY have appointed the undersigned Sole Agents for the Sale of this fixer and distributor of Ammoniacal matter. They are also Sole Agents (in London) of the Patent Sanitary Company for the sale of their "Nitrogenised Carbon."—Apply to MARK FOTHERGILL & Co., 204A, Upper Thames Street, London.

TURNIP SOWING, ETC.

GENUINE HALF-INCH BONES AND BONE-DUST may be had in any quantity of JARED TERRETT HUNT, Lambeth Wharf, Upper Fore Street, Lambeth, near Vauxhall Bridge. Also Superphosphate of Lime and Sulphuric Acid for dissolving Bones. J. T. H. also invites the attention of Gentlemen and Agriculturists in general, to his Superior Fine Bone-Dust for dressing Lawns, Parks, &c. Delivered to any Railway in London in Sacks.

PRIZE SWEDE SEED.

SUTTON AND SONS have a fine stock of Seeds of the best kinds of Swedes, Mangold Wurzel, &c., similar to those they supplied last season, the produce of which gained prizes at all the principal root shows throughout the kingdom.

At the Annual Root Show, held at Basingstoke, Hants, on December 21, 1853, *at which* 16 *prizes were awarded for root crops,* 13 *were gained with the produce of our seeds; and at the Reading Show, on the* 1st *of the same month, every prize was awarded to roots grown from our seeds.*—A Priced List may be had, post free.—Address,
SUTTON & SONS, Seed Growers, Reading, Berks.

RENDLE'S IMPROVED SWEDE TURNIP.—*The Stock of this excellent Swede has been grown for us this season by R. H. Watson, Esq., Dorsley, near Totnes. It is a most hardy and valuable variety. Price* 1s. 6d. *per lb. For further particulars and testimonials of its excellence see* "FARMING PRICE CURRENT," to be procured from
WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

AGRICULTURAL INSTRUCTION.—A Farmer has some accommodation for a Pupil or two who may require instruction in Practical Agriculture, according to the best modern system, combined with economy. Pupils would have an opportunity of seeing the latest improved implements in use, a new and economical system of Irrigation carried out, and also the extensive use of the chief Artificial Manures applied to Corn, Root, and Grass crops, in addition to the ordinary routine of farming operations. References will be given and required. Terms 100*l*. a year; if a horse is kept, 25*l*. extra.—Fuller particulars may be obtained on application to R. VALLENTINE, Leighton Buzzard, Bedfordshire.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.
LECTURES AND GENERAL MEETING.
Open to the admission of all members of the Society.

WEDNESDAY, May 10, at Twelve o'clock, Professor WAY'S Lecture: "On the Progress made in the Manufacture of Artificial Manures."
WEDNESDAY, May 17, at Twelve o'clock, Professor SIMONDS' Lecture: "On the particular indications of Age in Animals, as furnished by the structure of the Teeth and the general developments of growth in Cattle, Sheep, and Pigs."
MONDAY, May 22, at Twelve o'clock, GENERAL MEETING of the Society.
WEDNESDAY, May 24, at Twelve o'clock, Professor SIMONDS' Lecture, continued and concluded.
WEDNESDAY, May 31, at Twelve o'clock, Professor WAY'S Lecture: "On the nature and use of Peat Charcoal, and other deodorising substances, in reference to Agriculture."

At the Society's House, No. 12, Hanover Square.
By order of the Council, JAMES HUDSON, Secretary.
London, May 3, 1854.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—PRIZE SHEETS for the LINCOLN MEETING may be had on application to the SECRETARY of the Society, No. 12, Hanover Square, London.

THE THIRD CHELTENHAM SUMMER POULTRY SHOW will take place at that magnificent establishment PITTVILLE SPA, on the 14th and 15th of June. For Prize Lists and full particulars enclose a stamped directed envelope to JESSOP BROTHERS, Secretaries.

The Agricultural Gazette.

SATURDAY, MAY 6, 1854.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, May	10	Agricultural Society of England—Lecture by Professor Way.
THURSDAY, —	11	—Agricultural Imp. Society of Ireland.
WEDNESDAY, —	17	—Agricultural Society of England.
THURSDAY, —	18	—Agricultural Imp. Society of Ireland.

WE need not direct the attention of our readers to THE BALANCE SHEET in another page; for a *bonâ fide* article of that kind is rare enough always to excite sufficient curiosity. We have obtained permission to publish it, and do so, not with the view of urging any preconceived opinions, or drawing any partisan inference, but simply for the purpose of enforcing whatever truth it may, under the circumstances out of which it has arisen, be capable of teaching.

The profits of the farm were 150*l*. 11*s*. 9*d*. in 1852, and 167*l*. 4*s*. 3*d*. in 1853. Those of this year amount to 413*l*. 16*s*.; and that this is the result of agricultural prices rather than of agricultural produce, no one can doubt. That it is not wholly a question of price, however, is plain from the following figures, which state the produce and sales of the past three years, from which it will be seen how the quantity of stock kept, and the sales of mutton and other produce on the credit side of the sheep account, have increased year by year during the past three years, owing to the increased weight of the root crops, and the immensely increased produce of the Grass lands, under the improved treatment they have latterly experienced.

Year.	WHEAT CROP.					BARLEY.				SHEEP.		CATTLE.	
	Acres.	Bushels.	Price per Bushel.		Produce.	Acres.	Bushels.	Price per Bushel.	Produce.	Number of Stock.	Produce.	Number of Stock.	Produce.
			s.	*d.*	£				£		£		£
1851-2 ...	78	2144	5	9	610	25	1128	...	156	390	487	57	339
1852-3 ...	62	1624	5	3	425	20	580	...	109	405	696	56	317
1853-4 ...	60	1744	8	6	749	22	808	...	200	522	767	56	407

The farm consists of 164 acres of arable land and 93 acres of pasture.

THERE can be no more important subject for the consideration of the farmer than that which last Monday occupied the attention of the Central

Farmers' Club. Mr. Baker, of Writtle, read a very instructive paper at the monthly meeting of the club on that day, upon The Blights and Diseases of Plants, in which, without pretending to detail the connection, throughout its many steps, between the two, he pointed out the ordinary causes of the diseases termed blights, and the remedies, so far as they are known. This was, of course, for the most part, done in very general terms; and this, indeed, excepting a few particular cases, is the only way in which the subject can, as yet, be approached.

It seems a very unsatisfactory and insufficient thing, however true it may be, to say that the health of a plant depends simply upon its having food in the right quantity and of the right kind, administered to it under suitable conditions as to heat, light, and moisture; but this, the opening remark of Mr. Baker's paper, led, in his hands, to the practical discussion of the methods adopted by cultivators for insuring this supply of food for plants: and atmospheric causes—as influenced, if not in their force, at least in the scope given for their exercise, by thin sowing, by early sowing, and by the removal of hedgerows—were referred to; and those more direct influences which, by the cultivation of the soil, we bring to bear upon the plant—the use of mineral manures, as marl and chalk and lime—the application of farm manure to green crops instead of grain—the adoption of a proper rotation of cropping, all received attention.

It is to these general methods of insuring vegetable health, after all, that farmers direct their attention with the greatest reason to expect success. We confess to greater hopefulness on the ground of good drainage and good tillage, and good management as to the timing and succession of our crops, than to the absence of Berberry bushes, for exemption from mildew. So, no doubt, will the many speakers last Monday, who, nevertheless, insisted most confidently on the Berberry as being often the cause of mildew.

Besides mildew, which is less directly under the control of the cultivator, and rust also beyond his reach, smut and pepper-brand were referred to as preventible. The former attack the plant from without, their germs attaching themselves to the surface of the plant, in certain conditions produced by weather, luxuriance of growth, &c.; the latter are believed to attack the plant from within, their germs being introduced at a very early stage of the growth of the plant, ascending with the sap, and ultimately developing in the ear. They are accordingly preventible by the simple expedient of perfectly washing the seed, or subjecting it to some process of "pickling," by which the germs attaching to it may be destroyed. Instances were named which proved not only that diseased and infected grain contained, and would propagate, the malady—but that all parts of the diseased plant, the chaff, and straw, were similarly mischievous when applied as manure.

In reference to external vegetable parasites, it was remarked that while no such direct remedy or preventive was offered, as the attacks of the Uredo admitted of, yet that the judicious cultivator was less liable to their attacks than others; and that, while cure was impossible, the injury of the attack was diminished by an early cutting of the crop.

A considerable portion of Mr. Baker's paper was devoted to the discussion of the ravages of the Botrytis and other moulds affecting the Potato and other plants. The efficiency of sulphur as a perfect remedy for these attacks was referred to, and it was suggested, with, we fear, but little probability of truth, that gypsum and other sulphates might owe some of their power as manures to this quality of the sulphur present in their composition. The chairman stated, as *a fact*, which had held true for several years and over a considerable extent of land in his occupation, that lime and salt as a manure have proved a remedy for, or rather a preventive from, the Potato disease. On the lighter soils, on which alone the crop is grown, 40 bushels per acre of a mixture of lime and salt (in the proportion of 2 and 1 respectively) are applied broadcast before the sets are planted. The lime and salt are mixed several months before use, and no other manure is applied. The crop is healthy, and that this is due to the manure was proved in one plot of the field, where the application having been omitted the crop was diseased.

With the mention of this important matter of fact bearing on the subject, we must conclude this short notice of a very interesting discussion.

To exemplify the effects of accumulating sand and other more violent estuary obstructions upon the Outfalls of our Rivers, we shall next refer to the case of the Isle of Thanet. This is now scarcely a river peninsula; but, during the Roman ascendancy in Britain, it was a complete island, of a circular form; and the arm of the sea, then separating it from the mainland of Kent, was from $1\frac{1}{2}$ to at least 4 miles in breadth. There is explicit testimony to prove that the direct route and accustomed passage to London by sea, so late as the middle of the fourth century, lay through this channel. In the time of Bede, however, it had begun to grow up; it was then but three furlongs wide, and so shallow as to be fordable in two places. It continued a passable strait for vessels no longer than the time of the Norman Conquest, when the inhabitants perceiving that the tide flowed without much vigour, began to erect banks to keep it entirely out; in which object they at length succeeded. After this junction of the Isle to Kent, the sea, unable to find a passage through the strait which it had gradually filled up, began to throw up immense quantities of beach on the eastern shore, producing Stonar, originally a distinct island, but quickly united by a causeway to the Isle of Thanet. Thus, there may be many cases in which, with all our skill, we fail to preserve an ancient channel against oceanic opponents.

The influences to which we are adverting, while causing great trouble in the maintenance of open outfalls for our rivers, create great breadths of new land, as well as form a defence for the old; but in the case of littoral sand-hills instead of beach, the engineering difficulties of preserving a river channel through an estuary landed up into a low marsh, and issuing it through a sea-made wall of driven sand which has occasioned the growing of that marsh, are very great indeed; and the sand hills have to be combatted in a way different to that brought into play against the shingle beach, but often with little better success. Let us look at the shores of Norfolk and Suffolk. While cliffs with their crown of villages have been undermined and swept away—several manors having been swallowed up piece by piece, and their sites, some fathoms deep, now forming part of the bed of the German Ocean—considerable lengths of the coast are defended by hills of sand, 50 or 60 feet high, blown up by the winds and bound together by the *Arundo arenaria* and similar plants. A rampart of heavy materials is first thrown up to an unusual altitude by some extraordinary tide, attended with a violent gale; subsequent tides extend the base, and heap up lighter substances upon its summit, while sand is blown from the beach and fills the interstices. The *Arundo* and other marine plants by degrees obtain a footing; creep along the ridge, give solidity to the mass, and in some places cause a matted covering of turf: meanwhile, another mound is forming externally, and by the like process rises and gives protection to the first. After a while, the areas inclosed by these concentric natural embankments become pasturage: the marine plants are succeeded by a better species of herbage, the quality of which improves in each successive area, as step by step we approach from the latest to the earliest formed, at the base of the cliff. Becoming sufficiently firm, in many places, to support buildings, they are sometimes occupied by numerous dwellings, where it is still within recollection that the sea flowed. At a remote period, the river Alde entered the sea at Aldborough; but the formation of a "ness," in the manner described, has effectually barred its mouth, and transferred it to a point no less then *ten miles* to the south-west; where, being reinforced by the waters of a second river, it flows to sea in a line nearly parallel with the coast. A few miles south of Lowestoft, one of those natural barriers has been stretched across an ancient inlet of the sea, completely shutting out the tides from a low valley, now partly occupied by a small fresh-water lake. The drainage water of this valley is discharged by means of a sluice and tunnel carried under the shingle bank.

A more important case is that of Yarmouth haven. The area of drainage delivering at this point by the rivers Yare, Waveney, and Bure, amounts to about 1500 square miles—including a large part of Norfolk, with a portion of Suffolk. These rivers unwater 10 different valleys, and flow through narrow marshy flats, comprising about 150 square miles, or 100,000 acres—all which originally formed an arm or inlet of the sea. The streams in their winding courses frequently expand from their general width, of 100 or 150 feet, into small lakes—locally termed "broads"—of which there are more than sixty, of a depth of from 15 to 30 feet, and an extent varying from one to 1200 acres. The estuary (or ancient Garienis) has been closed by a natural barrier formed directly across its mouth; and on this the seaport of Yarmouth now stands. This has caused the ancient sea inlet to become an inland valley, and the rivers, now subject to only a slight influx of the tide, to be contracted into small dimensions; their formerly expanded beds to grow up with peaty and alluvial low grounds, now drained by machinery; and the remaining estuary waters (now named Lake Lothing) to struggle for exit by a channel diverted *four miles* round the narrow tongue of land on which Yarmouth is situated. This ground was formed by the accumulation of heavy materials, rolled by the action of the sea; by the deposit of oozy sediment from muddy waters; by the growth of "denes," or the external covering of sand from the operations of the winds; and also by the rise and decay of vegetable substances. Had it not been for the action of the tidal currents, which by their strength and velocity preserve a deep channel (locally called the "Roads"), parallel with the shore, the deposits would have entirely debarred the river water of all means of egress. From the time of Edward III., when the sea choked up the ancient northern channel, there has been a constant struggle between man and the ocean for the sake of navigation and drainage. In the course of the first two centuries, *seven* new havens in different situations were successively constructed at average intervals of about 30 years. Between the middle of the 16th and 17th centuries, after *five* successive havens had been formed and abandoned, above 70,000*l*. were expended in others. There is a constant effort on the part of Nature to stretch the barrier, already several miles long, completely across the estuary; and this is counteracted alone by artificial means—by the application of the back-water, and the employment of a forest of timber in fencing the shores. During the last 490 years, the barrier has *actually closed up eight times*, having cost in the same period about *a million and a half of money* to keep open a passage for shipping, and preserve a sufficient channel for the discharge of the rivers. The restraint upon the inflow of the tides is now such that the water, at high tide, is from one to three feet lower on the inland than on the sea side of Yarmouth, though only separated by the natural bank which is not half-a-mile across. The water, however, is very pure, so that the difficulty of sedimentary deposition is not added to the other accumulations, as in some rivers. As it is, the Yare and its sister streams resemble sluice-locked canals rather than free rivers; and a most expensive artificial drainage of their low-land district is thus rendered necessary, in addition to the burden of maintaining heavy mounds against the sea, at points where the natural barrier of "denes" or sand banks present intermitting gaps along the shore. *I. A. C.*

AGRICULTURAL METEOROLOGY.

(*Concluded from page* 275.)

There are several other topics arising out of the application of the rotatory theory, which I should be too glad to bring before your readers; but they are not immediately connected with this particular storm of the 25th-26th August last, and I feel that I have already encroached most unduly on your limits. There is, however, one objection that claims a few words from me, viz., that I have exaggerated the effect which *valleys* have upon the course of a rotatory storm as it approaches *terra firma*, be it insular or continental; and be that valley merely an indentation of the land, such as the Bristol Channel or the Solway Firth, or one of the narrow seas, such as the Irish Channel or the English Channel; for it is said, that, allowing the utmost width to such a valley, 500 or 600 miles, with mountains to bound it of the altitude of 3000 or 4000 feet, what are these in proportion to a rotatory column of atmosphere covering an area of 20 or 30 degrees of longitude, and having a height of 30 or 40 miles, be the same more or less? What resistance can so slight an obstacle present to the direction taken by such a mighty mass? I have endeavoured to state this objection fairly, in the hope that some of the kind friends who at different times have assisted me with their valuable suggestions, may aid me in elucidating the connection between the resistance of the earth and the pressure of the atmosphere.

It would be interesting also to trace the connection between this great law of nature and geology, the foster-mother of agriculture. It is a fact well established, that *coral* is found only in seas of tranquil waters and of a high temperature in modern days, analogous to which is the *chalk formation* of a bygone era. To pursue the parallel of detail would lead me into a fresh and inadmissible digression; but a perusal of Sir Charles Lyell's Chapters on Coral Formations, in his "Principles of Geology," forced upon my conviction the intimate relation between these submarine wonders of creation and the currents of the great deep, which owe their origin to the recurrence of the *storm waves* of Sir William Reid.

In conclusion, I have to offer my best acknowledgments to those gentlemen, whether they be private individuals or the official representatives of public bodies, who, on this present as well as on several other previous occasions, have so obligingly attended to my applications for information, and whose ready courtesy has so frequently lightened the trouble and expense necessarily attendant on my inquiries into the extent and nature of this law of storms. *F. P. B. M., Oxford and Cambridge Club, London.*

LEDGER AND BALANCE SHEET FOR 1853-4 OF A SOUTH HANTS FARM.

[We have been favoured with the following "true copy" of the past year's experience, as recorded in the account books of a South Hants farmer.]

COPY OF LEDGER.

Wheat

1853.—Dr.	Wheat.	£ s. d.
Mar. 25.	Wheat on hand, 125 qrs., at 44s.	£275 0 0
	Straw do.	70 0 0
	Seed sown on 64 acres	38 0 0
June 11.	Conveyance by rail	8 6 0
Sept. 17.	Coal for steam engine	9 0 0
Oct. 8.	Thatching	3 0 0
Nov. 28.	Gloves for the barn	0 1 2
Dec. 23.	6 brooms	0 2 6
10.	20 sacks, and 2 waggon ropes	2 7 0
	Tallow for engine	0 4 8
	3 lbs. tow	0 1 0
1854.		
Feb. 14.	Bluestone and oil	3 0 0
Mar. 4.	Brooms for barn	0 1 3
21.	Mending 60 sacks	0 6 0
	Manure	14 10 0
	Labour for the year	80 5 1
	Marketing	1 0 0
		£477 7 4

1853.	Contra. Cr.	£ s. d.
April 23.	R., 19½ qrs. of Wheat, at 40s.	£39 0 0
June 11.	Do., 19 " at 40s.	39 0 0
Aug. 27.	Do., 44 " at 56s.	123 4 0
Sept. 15.	Do., 40 " at 60s.	120 0 0
Oct. 1.	Do., 12½ " at 66s.	41 5 0
Nov.	M., 10 " at 72s.	37 0 0
Nov. 5.	R., 20 " at 74s.	74 0 0
12.	Do., 15 " at 78s.	58 10 0
19.	Do., 20 " at 74s.	74 0 0
1854.		
Jan. 14.	H., 10 " at 90s.	45 0 0
Feb.	R., 28½ " at 88s.	125 8 0
	House	2 10 0
Mar. 25.	Wheat in hand, 40 qrs., at 80s.	160 0 0
	For pigs, 6 qrs. of tail, at 25s.	7 10 0
	For poultry, 3 qrs. do., at 25s.	3 15 0
	Seed sown on 50 acres	37 10 0
	Straw	75 0 0
		£1062 12 0

Barley

1853.—Dr.	Barley.	£ s. d.
Mar. 25.	Barley in hand	£10 10 0
	Straw	4 0 0
	Coal for threshing	4 0 0
April.	H., 2 qrs. for seed	3 4 0
	M., 3 bushels do.	0 12 0
	Oil for machine	0 10 0
October.	Thatching	2 0 0
1854.		
	Market expenses, &c.	0 10 0
Mar. 24.	Labour for the year	27 14 10
		£53 0 10

1853.	Contra. Cr.	£ s. d.
Nov. 25.	S., 25 qrs. at 42s.	£52 10 0
Dec. 1.	Do., 13 qrs. at 42s.	31 10 0
	Do., 10 qrs. at 40s.	20 0 0
13.	Do., 25 qrs. at 40s.	50 0 0
	Do., 18½ qrs. at 40s.	37 0 0
	Do., 7 bushels tail	8 15 0
	To stock in hand, 8 qrs. at 35s.	14 0 0
	Straw	4 0 0
		£217 15 0

Clover

1853.—Dr.	Clover.	£ s. d.
Mar. 25.	Stock in hand, meadow hay	£45 0 0
	5 tons of Clover hay	10 0 0
	25 acres of Clover seeds, valued at	25 0 0
May 19.	S., 1 qr. of Vetches for seed	2 8 0
Oct. 8.	Thatching	3 0 0
	6 rakes	0 3 0
	4 bushels of salt	0 4 6
	Hay knife	0 3 0
	1 bushel Rye, 3 sacks of winter Oats, 1 sack Vetches for seed	6 11 0
	Clover and Rye-grass from Drummond's	11 16 8
	Labour for the year	44 15 2
		£149 0 11

1853.	Contra. Cr.	£ s. d.
April 28.	S., 1½ ton hay	£6 0 0
30.	B., ½ do.	2 0 0
May 14.	S., per keep of 10 sheep	0 7 0
Nov. 12.	Do., 32 rods of Vetches	1 12 0
19.	Do., rent of a field	8 10 0
Dec. 24.	P., rent of meadow	9 5 0
	The gardener's pony for the year	4 10 0
	Hay for horse stable	2 3 0
1854.		
Mar. 25.	Valuation of 22 acres of Clover seeds	22 0 0
	25 tons of Clover-hay, at 3l.	75 0 0
	5 tons of Meadow-hay	10 0 0
		£147 10 0

Beans

1853.—Dr.	Beans.	£ s. d.
Mar. 25.	Stock in hand:	
	2 qrs., at 35s.	£3 10 0
	Seed for 5½ acres	2 18 0
	Labour for the year	11 19 10
		£18 17 10

1853.	Contra. Cr.	£ s. d.
	Sold S. 13 qrs. of Beans, at 48s.	£24 10 0
	Do. store cattle, 4 qrs.	8 0 0
	Do. store pigs, 2 qrs.	4 0 0
	Do. seeds for 11 acres	7 0 0
		£43 10 0

Carrots

1853.—Dr.	Carrots.	£ s. d.
Mar. 25.	Stock in hand	£10 0 0
April 16.	12 lbs. of seed	0 18 0
	Labour for the year	3 7 1
		£14 5 1

1853.	Contra. Cr.	£ s. d.
Nov. 19.	B. ½ a ton	£0 15 0
Dec. 9.	M. 4 tons	6 0 0
16.	D. ½ ton	0 15 0
1854.		
	M. 1 ton	1 15 0
Mar. 25.	Stock in hand, 13 tons	10 0 0
		£19 5 0

Mangold Wurzel

1853.—Dr.	Mangold Wurzel.	£ s. d.
Mar. 25.	Stock in hand	£70 0 0
	Seed	2 2 0
	L., for guano, ½ ton	5 5 7
	Labour for the year ending March 25, 1854	28 8 8
		£105 16 3

1853.	Contra. Cr.	£ s. d.
May 21.	H., 20 tons	£14 0 0
June 11.	I.	10 13 6
	M.	4 2 0
	S.	1 6 0
1854.		
Mar. 25.	Stock in hand	70 0 0
		£100 1 6

Swedes

1853.—Dr.	Swedes.	£ s. d.
	Stock in hand	£10 10 0
	Seed	3 16 8
	Superphosph.	10 10 0
1854.		
Mar. 25	Labour for the year	59 7 5
		£84 4 1

1854.	Contra. Cr.	£ s. d.
Mar. 25.	Stock in hand	£10 10 0

Potatoes

1853.—Dr.	Potatoes.	£ s. d.
Mar. 25.	Stock in hand	£2 8 0
	Seeds	1 4 0
1854.		
Mar. 25.	Labour for the year	5 4 4
		£8 16 4

1853.	Contra. Cr.	£ s. d.
Mar. 25.	House, 6½ sacks	£4 15 0
	Sold to M.	4 2 6
	Sold to S.	1 10 0
1854.		
Mar. 25.	Value of stock	3 12 0
		£13 19 6

Cattle

1853.—Dr.	Cattle.	£ s. d.
Mar. 25.	Valuation, 19 cows & heifer	£228 0 0
(Dates not supplied.)		
	15 2-yr-olds	150 0 0
	10 year olds	50 0 0
	1 bull	16 0 0
	½ ton cake	4 10 0
	7 sacks tail Barley bought	4 7 6
	4 qrs. Beans	8 0 0
	½ ton of cake	4 5 6
	Cutting calves	0 4 0
	3½ lbs. treacle	0 1 0
	Expenses	0 16 6
	Candles, 10 lbs.	0 6 8
	Medicine	0 5 9
	Bought five heifers	51 0 0
	Bought 1 do.	5 5 0
	Marketing and petty expenses	1 0 0
	Coal for cutting chaff, and engine	1 0 0
	Grinding, &c.	1 10 0
	Pollards	1 0 0
	Labour for the year	53 18 2
		£561 10 1

1853.	Contra. Cr.	£ s. d.
(Dates not supplied.)		
	Sold L., three heifers	£39 0 0
	Do. H., 2 heifers, with calf	20 0 0
	Do. S., 1 do.	15 0 0
	Do. B., 5 steers	75 0 0
	Do. do., 1 heifer	11 0 0
	Do. S., 2 calves	6 10 0
	Do. do., 3 do.	10 0 0
	Do. H., 1 heifer in calf	8 10 0
	Do. C., a cow	12 0 0
	Do. S., 3 heifers	54 0 0
	Do. B., 2 cows	38 0 0
	House for the milk of 16 cows, at 8l. each, for the year. (See note * below.)	128 0 0
1854.		
Mar. 25.	Stock in hand:	
	19 cows & heifers, at 12l. each	228 0 0
	12 two-year-old steers & heifers, at 10l.	120 0 0
	14 yr.-olds, at 5l. each	70 0 0
	A bull	16 0 0
		£851 0 0

* The house account for milk is as follows:

	£ s. d.
Received 8473 gallons of milk; sold 2297 lbs. of butter, at 11d., 12d., 13d., and 14d.	£125 0 0
Skim milk	12 0 0
And 7000 gallons of skim milk given away to the poor. If this were sold at 1½d. per gallon	44 0 0
	£181 0 0
Paid for the cows' keep to the farm	128 0 0
	53 0 0
Deduct dairy-maid's wages	20 0 0
The clear profit on the milk may be said to be	£33 0 0

Sheep

1853.—Dr.	Sheep.	£ s. d.
Mar. 25.	Stock in hand:	
	7 wethers	£14 0 0
	184 couples	460 0 0
(Dates not supplied.)		
	39 extra lambs, at 10s. each	19 10 0
	Bought 58 ewes, at —— fair	104 10 0
	Do. 90	150 15 0
	Bought at —— fair, 50	75 0 0
	Bought at —— fair, 109	195 15 0
	One ton of cake	9 0 0
	2 baskets	0 1 6
	13 sheep cages for hay	0 15 0
	Medicine	1 12 0
	10 hurdles	1 5 0
	Oatmeal & treacle	0 2 8
	Hurdles, and cutting lambs	2 12 10
	M., 2 qrs. of Peas	4 2 0
	Sheep-shearing and food	4 16 0
	2 qrs. of Oats	2 8 0
	Petty expenses	1 0 0
	Labour for the year	37 12 5
	Shepherd, for lambing season	1 0 0
	Shepherd, 3d. each lambs over the number of ewes	0 17 0
		£1086 13 5

1853.	Contra. Cr.	£ s. d.
(Dates not supplied.)		
	S., 34 lambs, &c.	£49 18 8
	H., 10 ewes	20 10 0
	Do. 25 lambs	34 5 0
	Do. 10 ewes	20 0 0
	Do., 10 ewes	20 0 0
	S., 15 lambs	21 0 0
	B., for wool	70 15 0
	S. & H., 31 lambs	41 8 0
	H., 10 ewes	19 0 0
	S., 22 lambs	29 14 0
	H., 23 ewes	38 10 0
	S., 10 lambs	13 0 0
	Do., 27 ewes	44 12 0
	H., 11 lambs	13 10 0
	H., diseased lambs	3 5 0
	Do. 5 ewes	8 15 0
	Do., 17 lambs	17 12 0
	Do., 26 ewes	44 9 0
	S., 10 lambs	12 0 0
	H., 33 lambs, 24s.	39 12 0
	Do., 11 ewes, 41s.	22 11 0
	Do., for skins and diseased sheep	5 17 0
	B., 54 wethers	129 12 0
	S. B., 75 ewes	151 1 0
	House, 10 sheep and 3 lambs	26 5 7
	Skins and diseased sheep	2 10 0
1854.		
Mar. 25.	Stock in hand:	
	190 couples, 50s.	475 0 0
	60 extra lambs	30 0 0
	20 dry sheep, 35s.	35 0 0
		£1440 12 3

Horses

1853.—Dr.	Horses.	£ s. d.
Mar. 25.	Valuation	£180 0 0
(Dates not supplied.)		
	Bought a mare	17 0 0
	Harness	16 10 0
	Do., bought	1 16 0
	B., Vet. Surgeon.	0 19 6
	S., 20 qrs. Oats	24 0 0
	H., 15 qrs. Oats	17 0 0
	H., 14 qrs. Oats	16 7 6
	S., 20 qrs. Oats	26 0 0
	Candles	0 10 9
	H., 22½ qrs. Oats	30 17 6
	H., for bran	0 8 0
		£331 8 0

1854.	Contra. Cr.	£ s. d.
Mar. 25.	Valuation of horses	197 0 0
	Harness	18 10 0
	Labour for house, garden, & stable	14 3 8
	Oats to the house stables	2 0 0
		£231 13 0

Pigs

1853.—Dr.	Pigs.	£ s. d.
Mar. 25.	Stock in hand	£18 0 0
(Dates not supplied.)		
	Bought 2 sows (H.)	8 8 0
	7 sacks of Barley, tailing	4 7 6
	2 qrs. of Beans	4 0 0
	Grinding	1 0 0
	Cutting	0 6 0
	Grains	0 16 0
	Pollards (H.)	2 10 0
		£46 17 6

1853.	Contra. Cr.	£ s. d.
(Dates not supplied.)		
	6 labourers 6 pigs	3 6 0
	H., 8 pigs	10 0 0
	B. and C., 4 sows	17 0 0
	House, 1 pig	5 4 9
	H., 7 hogs, at 25s.	9 0 0
	5 hogs, at 33s.	8 5 0
1854.		
Mar. 25.	Stock in hand:	
	4 sows, 70s.	14 0 0
	33 hogs	16 0 0
	2 boars	6 0 0
		£88 15

Poultry

1853.—Dr.	Poultry.	£ s. d.
Mar. 25.	Stock in hand:	
	60 at 1s. 6d.	£4 10 0
	Young and eggs on hand	0 12 6
	6 sacks tailing Wheat	3 15 0
	Barley meal (H.)	0 13 7
	W., 2d. per doz. for eggs, and 2d. for each chick	2 16 6
		£12 7 7

1853.	Contra. Cr.	£ s. d.
	Eggs sold	£0 10 0
	8 couple chickens	1 8 0
	Eggs and chickens	3 12 0
	Do. do.	1 19 0
	C., 6 pair chickens	0 18 0
	Eggs and chickens	2 18 0
	Do. do.	2 15 0
	House, per account for the year	14 14 6
	Eggs	0 8 0
	Stock in hand, 60 at 1s. 6d.	4 10 0
		£33 10 6

General Account

Dr.	General Account.	£ s. d.
	L., Bailiff's salary	£80 0 0
	Bricklayer's bill	1 8 9
	Carpenter's bill	4 3 8
	Blacksmith's bill	17 0 0
	Engineer's bill	7 6 0
	Rick cloth	4 0 0
	Butter making	0 5 8
	Two shovels	0 7 0
	Shares, cast-iron	0 4 3
	Coal, 1½ ton	2 0 0
	Plumber and Glazier	2 0 0
	General farm labour book	14 7 8
		£113 3 0

Contra. Cr.

THE BALANCE SHEET.

Accounts in Ledger.	Debtor. £ s. d.	Creditor. £ s. d.	Profit. £ s. d.	Loss. £ s. d.
Wheat	477 7 4	1062 12 0		
		477 7 4		
			585 4 8	
Barley	53 0 10	217 15 0		
		53 0 10		
			164 14 2	
Clover & Meadow	149 0 11	147 10 0		
	147 10 0			
				1 10 11
Beans	18 17 10	43 10 0		
		18 17 10		
			24 12 2	
Carrots	14 5 1	19 5 0		
		14 5 1		
			4 19 11	
Mangold Wurzel	105 16 8	100 1 6		
	100 1 6			
				4 14 9
Swedes	84 4 1	10 10 0		
	10 10 0			
				73 14 1
Potatoes	8 16 4	13 19 6		
		8 16 4		
			5 3 2	
Cattle	561 10 1	851 0 0		
		561 10 1		
			289 9 11	
Sheep	1086 13 5	1440 12 3		
		1086 13 5		
			353 18 10	
Horses	331 8 0	231 13 0		
	231 13 0			
				99 15 0
Pigs	46 17 6	88 15 9		
		46 17 6		
			41 18 3	
Poultry	12 7 7	33 10 6		
		12 7 7		
			21 2 11	
General Account	113 3 0			113 3 0
			1491 4 0	
			1198 6 3	
				292 17 9
				1198 6 3
Deduct rent paid to landlord for 257 acres (164 arable and 93 pasture)	...	413 10 1		
" Poor rates	77 5 8			
" Highway rates	14 0 0			
" Church rates	3 19 10			
" Tithes	50 10 0			
" Tenant's income tax	8 17 0	154 12 6		
Gross rent for 257 acres, at 45s. p. acre	...	...	568 2 7	
Interest of capital invested:—				
10 per cent. on horses, 220l.	...	22 0 0		
10 per cent. on implements, 228l.	...	22 16 0		
5 per cent. on dormant capital, 413l. 16s.	...	10 12 0		
5 per cent. on farming capital, 1273l.	...	63 12 0		
5 per cent. on new building and machinery, 1400l.	...	70 0 0	199 0 0	767 2 7
The clear profit on the crop 1854 is	...	...	...	431 3 8

Observations.—The above is taken from the accounts in the ledger. The 40 quarters of Wheat in hand are valued at 80s. per quarter; this is too high; it should be threshed out immediately and sold, or there may be a considerable loss on it. The Mangold Wurzel and Swedes are given to the cattle and sheep, and these

should be debited with their value; but as this is not done, their value must be sought for in the profits of the live stock. The apparent loss on the horses is owing to their labour not being charged on the various crops; so that this loss is to be found in the profits of the crops on which horse labour was employed.

We append the following statement of stock on hand at the beginning and end of the year, and of the labour connected with the several accounts:—

	STOCK—1853. LADY-DAY.	STOCK—1854. LADY-DAY.	LABOUR.
Wheat	£383 0 0	£283 15 0	£80 5 1
Barley	14 10 0	18 0 0	27 14 10
Clover	80 0 0	107 0 0	41 15 2
Beans	6 8 0	7 0 0	11 19 10
Carrots	10 0 0	10 0 0	3 7 1
Mangold Wurzel	70 0 0	70 0 0	28 8 8
Swedes	10 10 0	10 18 0	59 7 5
Potatoes	2 8 0	3 12 0	5 4 4
Cattle	444 0 0	434 0 0	53 18 2
Sheep	493 10 0	540 0 0	40 9 5
Horses	213 10 0	215 10 0	
Pigs	18 0 0	36 0 0	
Poultry	5 2 6	4 10 0	
General labour ...	...	...	53 3 0
Bailiff	...	...	80 0 0
	£1750 18 6	£1739 17 0	£488 13 0 or 38s. per acre over 257 acres.

The capital wanted on this farm is stated as follows:—

Horses	£220 0 0
Implements	228 0 0
Farming capital	1273 0 0
Dormant capital	413 16 0
	£2034 16 0

Or 8*l*. per acre on 257 acres.

We may mention that the profits exhibited by the accounts of 1852 and 1853 are 150*l*. 11*s*. 9*d*., and 167*l*. 4*s*. 3*d*. respectively. *J. M.*

Home Correspondence.

False colouring of Cheese and Cider.—I have not observed that this subject has ever been noticed in the *Agricultural Gazette*, and yet it is well worth the consideration of the agricultural mind, and not less so of the gastronomic intelligence. Can any of your dairy correspondents prove that colouring matter is beneficial to cheese; that this improvement in quality is equal to the expense and trouble? Does it either hasten or retard the ripening process of cheese? Does it allow cheese to be kept longer? From the few inquiries I have made in a dairy country, I have found that those most agâte in cheese-making give an exactly contrary opinion. They say that giving this colour occasions considerable expense and trouble; they excuse themselves by saying that the factors would not buy their cheese without it; and I suppose the factors would say that the retail dealers would not look at it; and these latter, that their customers would not eat it. I am inclined to think that the consumer and retail dealer are the most answerable for the falsehood; for a lie it is, if beneficial or not, as long as the purchaser is allowed to believe that colour is a sign of richness. It only amounts to culpable ignorance in the consumer, while the dealer shores up this ignorance by lies; and the cheesemaker cannot entirely escape a charge of countenancing, through self-interest, a cowardly device. On the part of consumers, I affirm my own positive opinion that uncoloured cheese is by far preferable; pale cheese ripens better, and is of a better flavour than coloured. In these days of reform, when all falsities are scouted, why should this one linger, as an active lie, in the land of truth? Let the motto, "trust not to false appearances," descend to everyday life and practice, and be engraved on uncoloured cheese, and may the colour of shame be permanently fixed in the faces of those who use such uncolourable artifices. Are cheeses to be looked at or eaten? If I am told that I am to have the pleasure of eating a rich cheese, I would rather judge of it by my palate than my eyes. This reasoning, perhaps, may not seem quite so conclusive as regards cider, for Apples certainly have often a considerable colour, but their juice has not the same, or if so, not enough to give a deep tint to the cider. I have never seen the best natural cider of a dark colour, certain it is that colouring is very extensively used; and what is used would be very difficult of discovery, for it is a less delicate operation with cider than with cheese; the digestion of the former is of a more comprehensive nature; after a short internal disturbance it settles, and is corked submissively down till used, and we will not trace its consequences further. In colouring cheese a kind of vegetable paste, said to be imported from Spain, is, I believe, universally used; but in cider, though the colour may be often a vegetable dye and harmless, yet I should much doubt whether it be not often too mineral and unwholesome. Let the *Lancet* decide. Are we just then in blaming the Chinese, whom we are prepared to suspect of colouring their teas, while our own honest tradesmen do the same in a home production? I should be glad to see a confutation of these allegations in the *Agricultural Gazette*. I should be glad to be resolved (for it may be an erroneous idea) that all consumers of rich (looking) cheese, and strong bodied cider, are not, so far forth, fools; and the sellers of the same, to the same extent, knaves. *J. C. Leyhart, Lapstew.*

Manufacture versus *Farming.*—Agriculturists have been frequently regarded as lacking a guiding principle of action in their business, and have been often twitted with a want of adaptation in their farming to the land they cultivate, and of a due regard to the requirements of the markets they supply, their conduct in this respect being contrasted with that of the manufacturer, by which the superior intelligence of those engaged in commerce over those whose pursuits are agricultural are somewhat boastfully asserted. Most gladly do we accord to our merchant princes, and generally to those engaged in commercial and manufacturing transactions, the meed of praise which is manifestly due to their enterprise and skill; but ere they are contrasted with the farmers of England, in order to determine the respective merits of the parties, let an impartial view be taken of the relative positions which they occupy; for the merits of conquest must be computed not only by the trophies won, but also by the difficulties which first must be surmounted. The particular phase under which we propose at this time to exhibit the difference between manufacturing and farming, has more especial reference to the position of the tenant farmer, as contrasted with that of the manufacturer who is not the owner of the buildings he may occupy. The latter rents his premises, and provided he suffers no dilapidation to occur, he is free to use them in what manner, and for such purposes, as he thinks best; or not to use them at all, should he deem it desirable to remain inactive. His connexion with his landlord consists merely in payment of rent and keeping his hire in tenantable repair. For the raw material on which to expend his capital and exercise his skill—"The world is all before him where to choose." He is independent of all men, has an open market to go to, and may purchase as much or as little as he pleases of whatever commodity may suit his purpose, and having done so, work it up in the way most suitable to meet the existing markets. Should a period arrive when his business could be carried on only with positive loss, he may close his factory, and, "holding his own," may wait the return of more prosperous times. Not so, however, with the farmer. He hires not only his premises, but his raw material also—that material of a certain kind and in unvarying quantity. He must keep his factory going at whatever disadvantage, and cannot (to continue the simile) vary his mode of manufacture to meet the exigencies of the times, as his landlord has his signature to an agreement to work up the material in a specific manner, any breach of which is attended with heavy pains and penalties. The manufacturer or retail trader rents the place merely, the farmer both the place and the material, of business. In this view of the subject it will be at once apparent that whilst competition or demand excites, in the one case, to larger purchases of the material on which manufacturing skill is to be exercised, as well as to improved and more economical methods of accomplishing this result; in the other, it can only have the latter of these effects, for the waste and uncultivated tracts that yet remain form but a very fractional part of England's soil; indeed, the success of farmers has been so universally allowed to consist in the production of greater results from the same area (the same quantity of raw material), as to have become proverbial and given rise to the aphorism, that "He is a benefactor to his species who makes two blades of Grass to grow where but one grew before." I do not now discuss the merits of the question (which, perhaps, may form the subject of a separate article), but merely mention the fact as bearing upon the matter in hand, that the majority of tenant farmers are not allowed the free and full exercise of their agricultural skill to manage their land according to their best judgment or as changing circumstances might require, being bound to pursue a certain course and treat the soil in a specific manner. No wonder that a man reduced well nigh to the state of an automaton, loses the elastic spring and buoyant energy and quick perception of advantage displayed by his fellows in commercial life. There is fault in the system as well as in the man. Yet, as a parting word, surely in these days of chemical appliances and geological disclosures, farmers would be wise in emulating the anxiety displayed by rising manufacturers, to gain such scientific knowledge as, combined with practical experience, might point the road to victory, and evince that they subscribe to, and carry out, the worthy motto of their great society, "Practice with Science!" *Clathrus Celatus.*

Societies.

ROYAL AGRICULTURAL SOCIETY.

MONTHLY COUNCIL, *May* 4.—Col. CHALLONER, Trustee, in the Chair. Thirty-five new Members were elected.

FINANCES.—Mr. Raymond Barker, Chairman of the Finance Committee, submitted the report of the accounts, and the usual quarterly balance-sheets of the several branches of receipts and expenditure; the current cash-balance in the hands of the bankers being 1447*l*.

COUNTRY MEETING OF 1855.—Mr. Raymond Barker, Mr. Fisher Hobbs, and Mr. Brandreth Gibbs, laid before the Council the Report of the Inspection Committee which had visited the localities proposed by the authorities of Carlisle for the meeting of next year. The Mayor of Carlisle, Hon. C. Howard, M.P., Mr. Marshall, M.P., and Mr. Irving, attended as a deputation from that city, and received the thanks of the Council for the local information they kindly supplied. The question of the final decision of the place of meeting was postponed until the ensuing monthly Council, when the deputation would be enabled to present a report on the railway facilities that would be afforded to the Society's exhibitors of live stock and implements at the meeting proposed to be held at Carlisle.

COUNTRY MEETING OF 1858.—The district for the Country Meeting of this year being situate in the mid-eastern part, and that of next year in the northern part of England; that of 1856 north of London; and that of 1857 in the mid-southern part of England; the Council had that day, according to established custom, to determine the district for the Country Meeting of 1858. A deputation waited on the Council for the purpose of representing the agricultural claims of the county of Chester and of North-Wales, to be included in the new district about to be formed. This deputation included Visct. Combermere, Earl Grosvenor, Hon. H. Cholmondeley, Hon. Col. Douglas Pennant, M.P.; Sir Philip Egerton, Bart., M.P.; Sir Watkin Wynn, Bart., M.P.; Mr. Tollemache, M.P.; Mr. Cornwall Legh, M.P.; Col. Biddulph, M.P.; Major Pugh, M.P.; Mr. Egerton, M.P.; Mr. Meyrich, M.P.; Mr. West, M.P.; the Mayor of Chester, Mr. Humbeston, Mr. Roberts, Mr. George Chivas, Mr. John Churton, and Mr. H. Churton. They presented memorials from the landowners, magistrates, &c., in the counties of Anglesea, Caernarvon, Denbigh, and Flint; from the magistrates, landowners, agriculturists, &c., in the county of Chester; and from the Mayor, Aldermen, and burgesses of the city of Chester. The deputation having submitted these memorials, and explained at length the peculiar claims which the county of Chester and North Wales generally had upon the favourable consideration of the Royal Agricultural Society of England, on the motion of Sir John Shelley, Bart., M.P., a vote of the best thanks of the Council was offered to these noblemen and gentlemen for the warm interest they had expressed in the promotion of the objects of the Society, and the kind trouble they had taken in attending the Council on that occasion.—On the motion of Sir John Shelley, seconded by Mr. Raymond Barker, the Council then decided that the district for the country meeting of 1858 should consist of the whole of North Wales, including the counties of Chester, Stafford, and Salop.

REDUCTION OF EXPENDITURE.—Mr. Thompson, on the part of the Duke of Richmond, Sir John Shelley, Col. Challoner, and Mr. Fisher Hobbs, who, with himself, had presided over the meetings of the Reduction of Expenditure Committee, presented the final report of that committee; which being adopted by the Council, was referred to the several standing-committees of the Society, connected with the reductions proposed, in order that they might report the practical form in which such reductions could be carried into operation in the most satisfactory manner, without impairing the efficiency of the particular departments to which they respectively belong.

PRIZE ESSAYS.—Mr. Pusey reported from the Journal Committee the following awards:—

I.—To THOMAS GEORGE BELL, L.L.D., of Bellevue House, Gateshead, the Prize of Fifty Pounds for the best Report on the Farming of Durham.

II.—To JOHN COLEMAN, of Deene, near Wansford, the Prize of Thirty Pounds for the best Account of Under-Drainage. The Judges commended the Essay in this class bearing the motto "Res facta."

III.—To JAMES BUCKMAN, Professor of Botany in the Royal Agricultural College, Cirencester, the Prize of Twenty Pounds, for the best Essay on Agricultural Weeds.

IV.—To ISAAC SEAMAN, Veterinary Surgeon, Saffron Walden, the Prize of Ten Pounds, for the best Essay on Giddiness in Ewes at Lambing.

The author of the essay, "Woodman spare that Tree," was requested to communicate his present address to the secretary of the Society.—Mr. Pusey also communicated suggestions for the subjects of the Essay Prizes for next year, to be determined at the ensuing monthly meeting.

ANALYTICAL CHEMISTRY.—Sir John Johnstone, Bart., M.P., presented the report of the chemical committee, which was adopted. Mr. Thompson gave an interesting detail on the value of this privilege of chemical analysis to the members of the Society, and the reduced rates at which results were furnished to them for their guidance in the purchase of manures.—Mr. Fisher Hobbs hoped that the committee would suggest some uniform system for the enunciation of these results, when different chemists stated the analysis of the same substance, in order that a comparison might be instituted and a practical inference deduced. At present he thought theoretical considerations led chemists too much away from the simple statement of fact in their results of analysis, and rendered their analyses intelligible only to scientific men, the simple element or the base into which that element entered, or the resulting salt, being furnished in many cases as equivalent exponents, while the general terms, organic or inorganic matter, &c., were considered sufficiently definite in others.—Mr. Paine stated his large outlay annually in the purchase of manures, and the corresponding large saving that he constantly effected by the assurance he gained on the one hand, or the warning on the other, from Professor Way's analyses of samples before purchased.

LINCOLN MEETING.—The Hon. Leslie Melville presented the report of the general Lincoln Committee, which was confirmed. The Council decided on the erection of a pavilion at the Lincoln Meeting, to accommodate 800 persons at dinner.

HOUSE-LIST.—The Council agreed to their house-list for the general meeting on the 22d inst., agreeably with the terms of the bye-laws.

STEWARD OF IMPLEMENTS.—On the motion of Mr. Fisher Hobbs, seconded by Mr. Hamond, Chandos Wren Hoskyns, Esq., of Wroxhall Abbey, Warwickshire, was unanimously appointed the steward-elect of implements at the Lincoln Meeting; in succession, on the retirement by rotation, of Sir Matthew White Ridley, Bart., the senior steward of implements at the Gloucester Meeting.

Communications were received from Viscount Palmerston, on the measures taken, on the representation of the Society, to arrest the progress of rabies among dogs; and on the analysis of sewerage matter: and from the Earl of Clarendon, on the occurrence of deposits of alkaline and earthy nitrates in Mexico. The Council ordered their best thanks for these communications. Adjourned to May 10th.

Notices of Books.

Farming for the Million. By George Glenny. Eyre and Williams, Bouverie Street.

"THE MILLION" are, of course, cottagers. The chapter on farm implements refers to churns, pig troughs, wheelbarrows, pumps, and self-adjusting scythes; and one of its ten pages is occupied with the drawing of a rick "settle," which would hold all the corn grown on twenty such farms as the book is, we presume, intended for.

We have a chapter on draining, too, consisting of four pages, and a good portion of this space is occupied with the account of the author's own experience, which appears to have extended to the laying of drains which, if they did not lead the water directly out of the plot of land, conveyed it at any rate to a hole, a deepish pit or pond, *in* it, whence it could be pumped at intervals into a surface channel, which should carry it away; but on this we must quote the author's own words:—"Fanciful drainage is all nonsense."

The remaining 40 chapters of the work we need not characterise; it may suffice to say that they consist in the whole of 74 small pages.

Poultry.

ANNA. We consider the ducklings sufficiently old to have access to a running stream or pond, and confidently advise that the old one be placed in a coop on dry turf, a little distance from the water, and be there confined for a day or two, after which we should not hesitate to give her liberty during a part of the day, lengthening by degrees her leave of absence. We find no fault whatever with the manner of feeding, but suggest that the ducklings be given plenty of Barley meal, and a little whole corn, the latter to be gradually increased. We consider this plan will prove not only a preventive but even a cure, should the disease have already appeared. With regard to the proper pronunciation of "Cochin," we advise you to pronounce it neither "cotchin," "cōshin," or "cōsheen," but simply as it is spelt, "cō-chin."

Miscellaneous.

Certain Improvements in the Treatment of Corn and other Grains, and more especially in all that concerns Washing, Drying, Grinding, Curing, and Preserving them; by N. A. E. Millon and L. Mouren, of Algiers. Patent granted March 12, 1853. (No. 625.)—The object of this invention is to expel from grain the moisture absorbed during the washing process, and also a portion of that naturally contained in it, so as to reduce the amount present to a uniform per centage. This is accomplished by the use of a hot-air stove in conjunction with that of the centrifugal machine, by which means the grain is prepared in a manner that renders it better adapted for the production of flour than when treated in the ordinary manner. *Mechanics' Magazine.*

Calendar of Operations.

APRIL.

WEST SUSSEX, *May* 2.—We have been waiting rather anxiously for an April shower, but have hardly had one, and though among the hills they seem to have now and then had a few drops, here on the flat coast land we have had none to lay the dust till yesterday, when we had the finest fall that we could have wished; it came so gradually, and the air was so mild, that everything seemed really to enjoy it. Many were beginning to fear that the cattle would be badly off, as the winter food is all but gone. Most of the couples have got upon the young Clovers. Now we are thinking ourselves all right. We not only wanted rain for the growing crops, but also for the fallow lands, some of them have got very hard, and we have had lumps to defy the clod-crusher, which is not often the case; but the worst of this is past. Barley has come up very irregularly; in parts where the moisture could rise from below, it has done pretty well, but in other parts, close to this, where the moisture could not get up through the hard tenacious subsoil, the Barley that has been sown for a month still lies unvegetated, and as hard as when it was put in; is not this a lesson for us to break the bottom up a little better and deeper? Oats that were sown earlier and upon land that was ploughed in the winter, so as to have the action of the frost upon it, have not done so badly, as the well pulverised top has prevented the too sudden action of the drought. Wheat has done and is doing well, retaining a very good colour. Peas and Beans are healthy, but, as might be expected, have not grown fast. The markets for lean stock have been dull, and little has been sold lately, but now we may expect a more lively demand. But all fat stock are a ready sale, at good prices; we have not had many fat Down lambs in the market yet, but what have been have sold well, at from 30*s*. to 32*s*., or about 10*d*. per pound. There are few of the horned breed offered here, they being mostly sent direct to London. We shall be employed getting in Mangold Wurzel as fast as possible, which ought to have been in before this, but the land has required so much more labour to break it down, and in fact hardly any amount was sufficient to pulverise it properly till the rain came. But in light working land a good deal has been done in the way of clearing, and work generally may be said to be well advanced. *G. S.*

Notices to Correspondents.

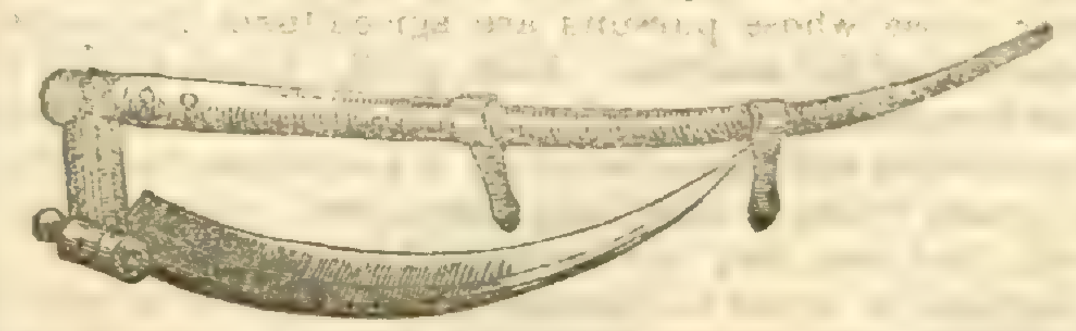
GEOLOGICAL SOCIETY: *R T C.* You must make known your wishes to any friends you may have among its members; and they may introduce you.

SALT: *W T B.* We would flag the Wheat with the sickle or scythe, and sow about 1 cwt. per acre of fine salt, in wet weather, on it. And if you have an opportunity of a rainy day a week afterwards, sow another cwt. then.

SMALL FARMS. Blacker's "Essay on Small Farms" will probably assist you. "Agricultural Economy the Antidote to Agricultural Distress" is another work bearing on the subject.

WHEAT, BARLEY, OATS, INDIAN CORN: *Sub.* See "Johnston's Agricultural Chemistry." We will extract the information next week.

SCYTHES.



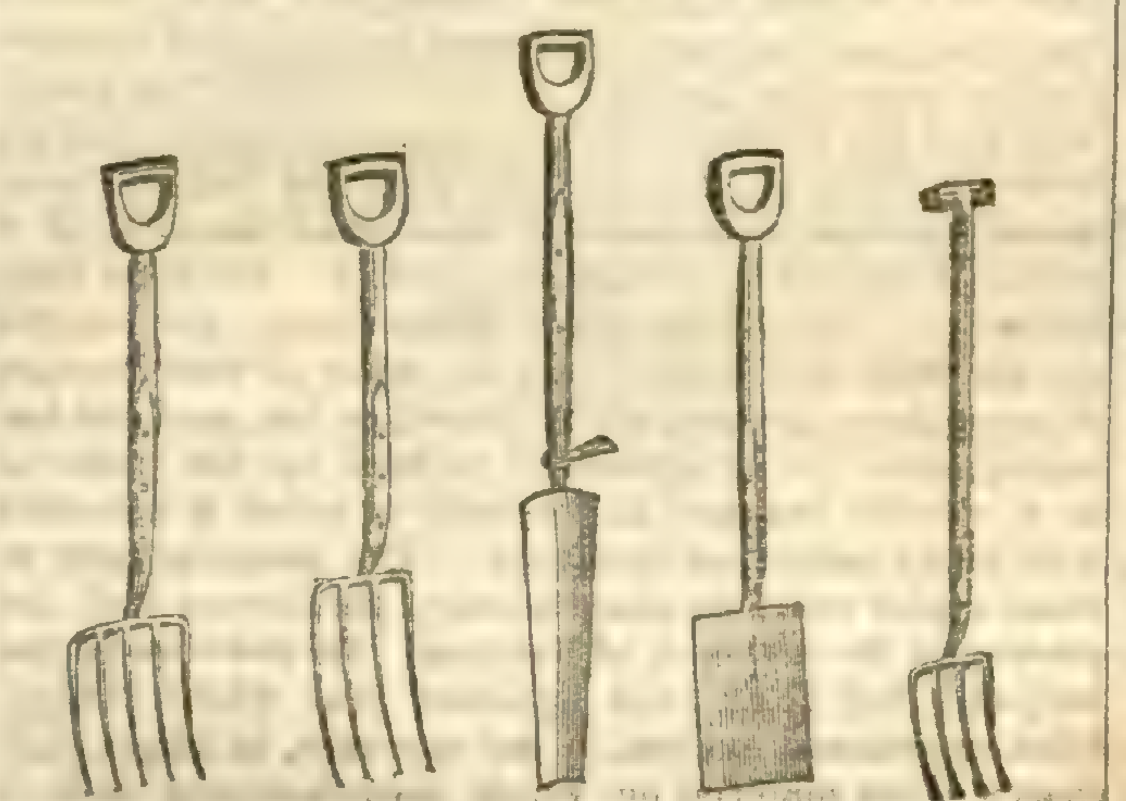
BOYD'S PATENT SELF-ADJUSTING SCYTHE will last out three of the ordinary sort, and is always ready for use.

"We have seen this Scythe at work, and can strongly recommend it."—See *Mark Lane Express*, May 16, 1853.

To be had of every Ironmonger and Nurseryman in the kingdom; and wholesale and retail of WM. DRAY AND CO., Agricultural Implement Makers, Swan Lane, London.

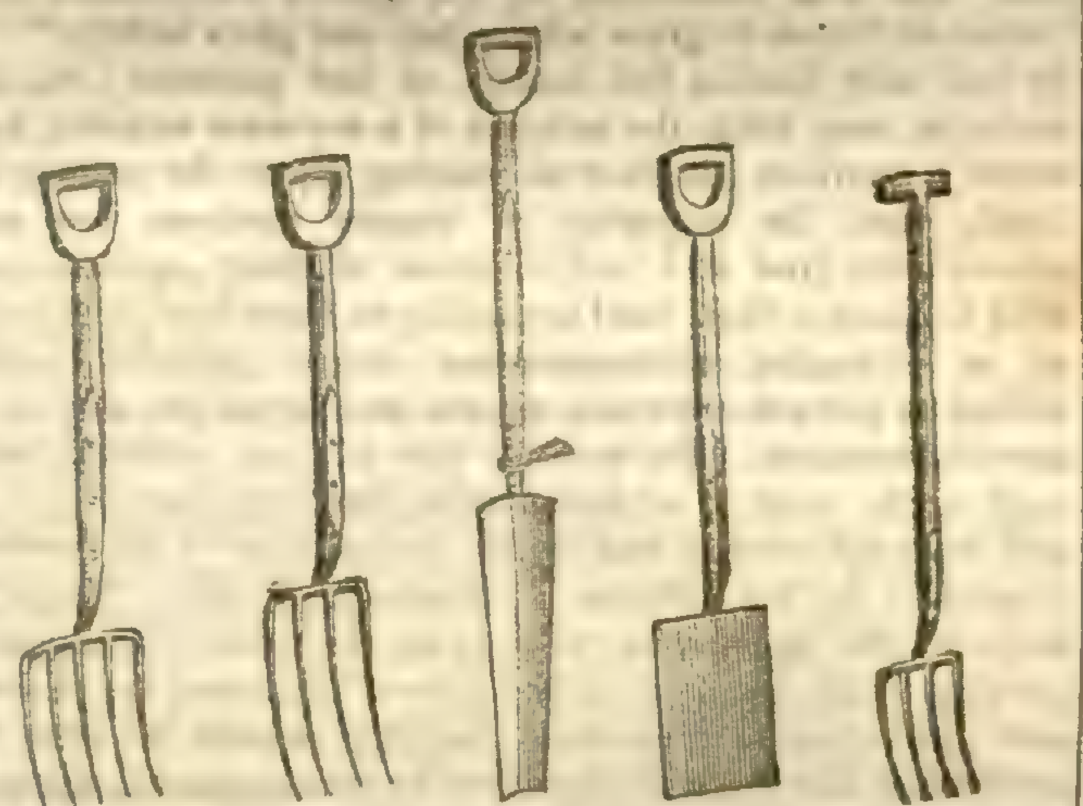
ANTHONY'S PATENT AMERICAN CHURN.—Extract from the Royal Agricultural Society's Report of the trial of Churns at the Gloucester meeting in July last. "In this trial the American Churn not only maintained its character in producing butter rapidly, but in producing a greater quantity from the like amount of cream." It made from 4 quarts of cream 4 lbs. 6 oz. of butter, being 8 oz. more than any of the other Churns from the same quantity and quality of cream. Price Lists of Churns and Implements by the best makers sent free, and Illustrated Catalogues on receipt of eight postage stamps. BURGESS & KEY, 103, Newgate Street, and 52, Little Britain, London, who have always a large stock of Steam-engines, Ploughs, Harrows, Diggers, Waggons, Carts, Threshing and Dressing Machines, Mills, Oat and Grain Bruisers, Oilcake Breakers, Reaping Machines, Haymakers, Horse-rakers, Turnip Cutters, Liquid Manure Carts, Parkes' celebrated Steel Digging Forks and Draining Tools, Pumps for Manure, Farm Fire Engines, and for Garden Purposes, &c. &c.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.



MESSRS. BURGESS AND KEY, as Mr. PARKES' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.
103, Newgate Street, and 52, Little Britain, London.

TO AGRICULTURISTS, GARDENERS, ETC.



BENNETT AND NAYLOR, GENERAL IRONMONGERS, and FACTORS, Sole West End Agent for PARKES', late WINTON PARKES' CELEBRATED STEEL DIGGING FORKS and TOOLS. Also for the only efficient Stove, with or without a flue, suited particularly for Conservatories and Greenhouses, Patronised by her Majesty. Price 12*s*., and upwards, at the Great Western General Ironmongery Warehouse, 255, Oxford Street, between Park Street and North Audley Street, Established for the sale of all descriptions of Ironmongery at Wholesale Prices. Sheet, Hoop, Rod, and Bolt Iron; Locksmiths and Bell-hangers. Patent Fuel, to be used with the Stove, 2*s*. 3*d*. per bushel.

SAMUELSON'S PRIZE FORKING or DIGGING MACHINE, as applied to Spring Cultivation, serves to thoroughly pulverise land which has been trodden by sheep or autumn ploughed, deepening the staple, leaving no pan, dragging up the Couch Grass, and preparing a finely divided seed-bed.

Extracts of Testimonials and references to persons using it.

"Answers thoroughly; brings everything to the surface."—*E. W. Wilmot, Congleton.*

"The very best a man can have upon a mixed or stiff soil, it so thoroughly pulverises it."—*Joseph Cooper, Acton Burnel, Salop.*

"I inform you, with the greatest satisfaction, of its success."—*Francis Hamilton, Friars Place, Middlesex.*

"Attached horses at half-past 8, on 5½ acres, finished at a quarter past 3, making first-rate work."—*J. Kirby, Bodicott, Oxon.*

"Has been working every day."—*T. Cardus, Barwell, Surrey.*

"Will do a given amount of labour, not only cheaper but better than the plough."—*J. J. Mechi, Tiptree, Essex.*

"Let me have one at your earliest convenience."—*Earl of Essex, Cassiobury, Herts.*

"Send to Exton Park one of Samuelson's Forking Machines for *Earl of Gainsborough, Oakham.*"

"Besides improved tillage, economises ploughmen."—*P. Gener, Cuba.*

"Been digging all the week; the *champion* of all implements in England; should be very sorry to be deprived of it."—*Thomas Lawrence, Thurlaston, Dunchurch.*

"Well satisfied last year. Turnips were a superior crop."—*C. Brickwell, Overthorpe, Northamptonshire.*

Price 24*l*. 10*s*., the general purpose size; and 27*l*. 10*s*. large size, Cash; at the Works, Banbury.

PURVEYORS OF LIVE BIRDS
BY SPECIAL APPOINTMENT TO HER MAJESTY AND H.R.H. PRINCE ALBERT.

BAKER'S POULTRY RESTORATIVE.—Ten years' experience of its success, in all Diseases of Poultry, justifies them in recommending it with the greatest confidence; one among its many advantages being the facility with which (in its liquid form) it is administered, obviating the troublesome necessity of handling the birds, and speedily imparting such vigour and high condition that can be acquired by no other means. Price 2*s*. 6*d*., either in Liquid or in Pills, with directions for Roup, &c. By all Chemists.

BAKER'S REGISTERED FOUNTAINS, for Poultry, Pheasants, and Pigeons, supplant all others. Four quarts, 6*s*. 6*d*.; nine quarts, 8*s*. 6*d*.—Messrs. BAKER, City; and the Pheasantry, Beaufort Street, Chelsea.

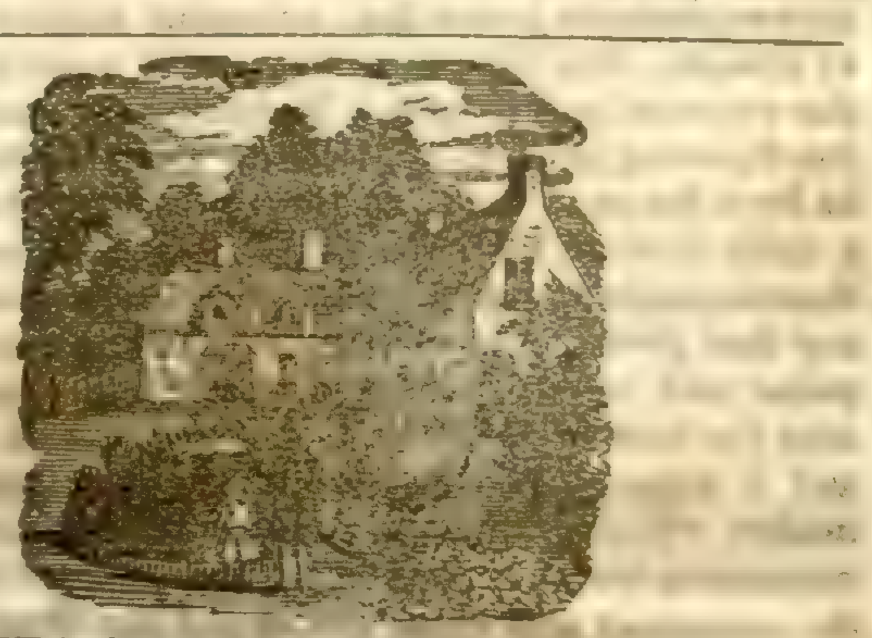
IMPROVED WATERPROOF FLEXIBLE HOSE FOR WATERING GARDENS, AND AGRICULTURAL USES generally, at E. SPENCER & CO.'s, GENERAL WATERPROOFERS, 116, Fenchurch Street, opposite Mark Lane, London.

HOSE PIPING.—GREAT REDUCTION IN PRICE.

WAITHMAN'S PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense Pressure, and much more than Leather, vulcanised Rubber, or any other Hose; and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented Inventions, the cost of manufacturing it is now reduced at least 60 per cent., which advantage is offered to the Public.—London Agents, BURGESS & KEY, 103, Newgate Street, and 52, Little Britain, who on application will forward wholesale and retail prices.

FOR WATERING GARDENS, DISTRIBUTING LIQUID MANURE, ETC.

JAMES LYNE HANCOCK'S VULCANISED INDIA-RUBBER TUBING is now manufactured especially for the above purposes, and is of greater flexibility than any other description of hose or tubing. It is also manufactured to resist great pressure, suitable for attaching to the mains of water works or to tanks, or water butts of high elevations. WATERING HOSE fitted up with brass joints, branches, stopcocks, roses, and jets complete. Vulcanised India-rubber suction pipes for pumps any length or size to order: HOSE for brewers' use, fire engines, &c. VULCANISED INDIA-RUBBER WASHERS, for Steam and Water Joints, and VULCANISED RUBBER in sheets of any size and thickness. Solid vulcanised India-rubber Tubing and Cord, for the joints of glass-doors, sashes, frames, &c.—Prices and every information may be had on application at the Manufactory, Goswell Mews, Goswell Road, London.



THE GUTTA PERCHA COMPANY'S TUBING FOR WATERING GARDENS, WITH ROSES AND UNION JOINTS FITTED.—27, CITY ROAD, LONDON.

WEIR'S IRRIGATORS, LIQUID MANURE PUMPS, FIRE AND GARDEN ENGINES.

	£	s.	d.
Single Cylinder (as engraving) ...	8	8	0
Double Cylinder ...	10	10	0
Horse power size ...	15	15	0

Exclusive of Suction and Delivery Pipes.

Illustrated Catalogues free per post.

Terms Cash on Delivery.

EDWARD WEIR, Agricultural Engineer, 16, Bath Place, New Road, London, removed from Oxford Street.

WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

	£	s.	d.
Patent Pump	1	15	0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing	3	0	0

Larger sizes if required.

The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,
8, CRESCENT, JEWIN STREET, LONDON.

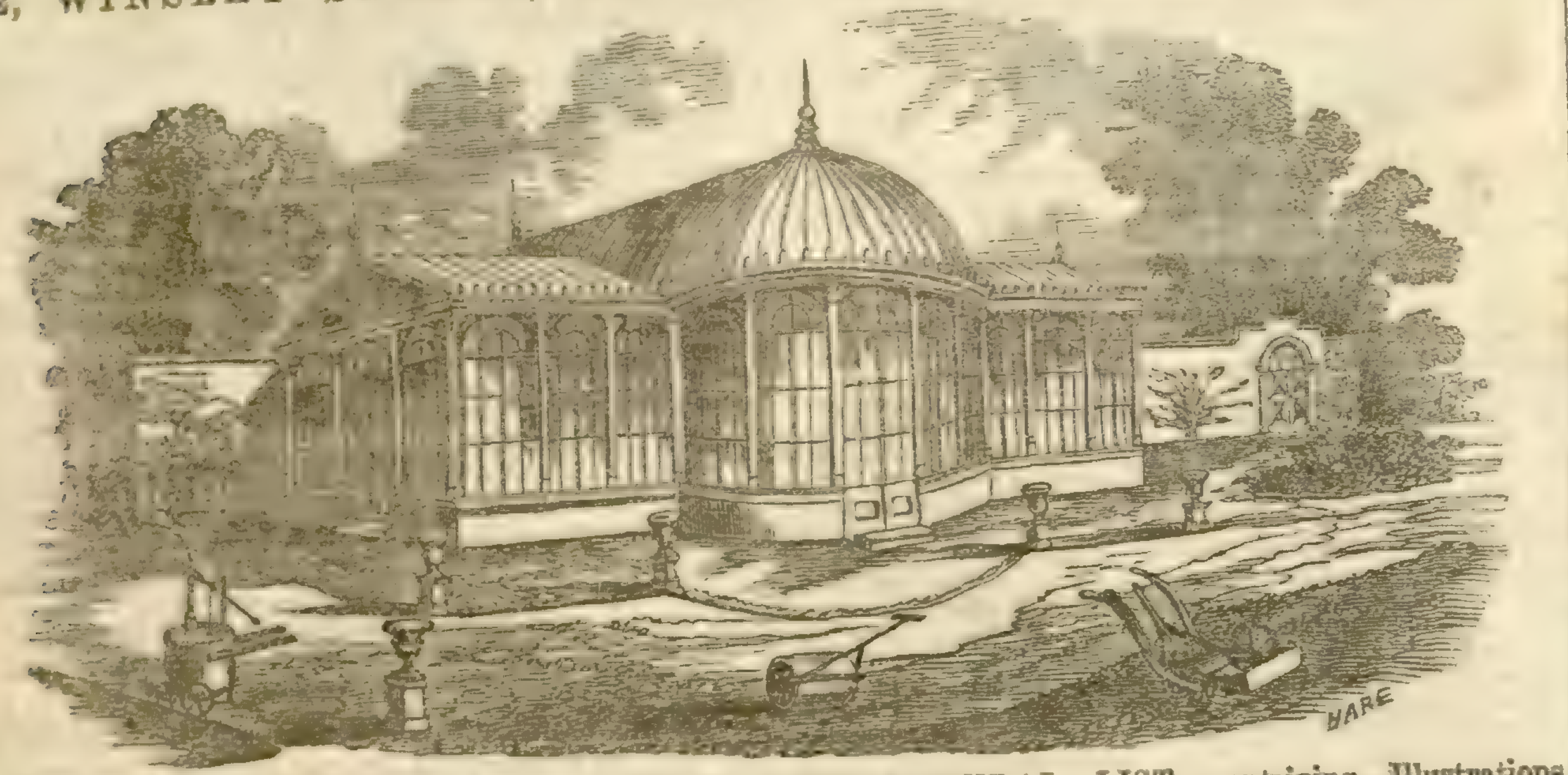
Every description of Machinery for Raising Water: Fire Engines, &c.

JOHN WARNER AND SONS,
CRESCENT, JEWIN STREET, LONDON.
GALVANISED IRON TUB GARDEN ENGINE,
With Warner's Registered Spreader,

Is strongly recommended, for durability and low price, viz., 2*l*. 19*s*., to hold 10 gallons.

Larger sizes made either in wood or iron. May be obtained of any Ironmonger or Plumber in town or country, or of the Patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Syringes of various constructions and sizes from 9*s*. upwards. An extensive assortment kept.

COTTAM AND HALLEN,
2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.



APPLICATION is requested for their NEW HORTICULTURAL LIST, containing Illustrations, Descriptions, and Prices of

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Syringes	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.

AGRICULTURAL LIST UPON APPLICATION.

EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

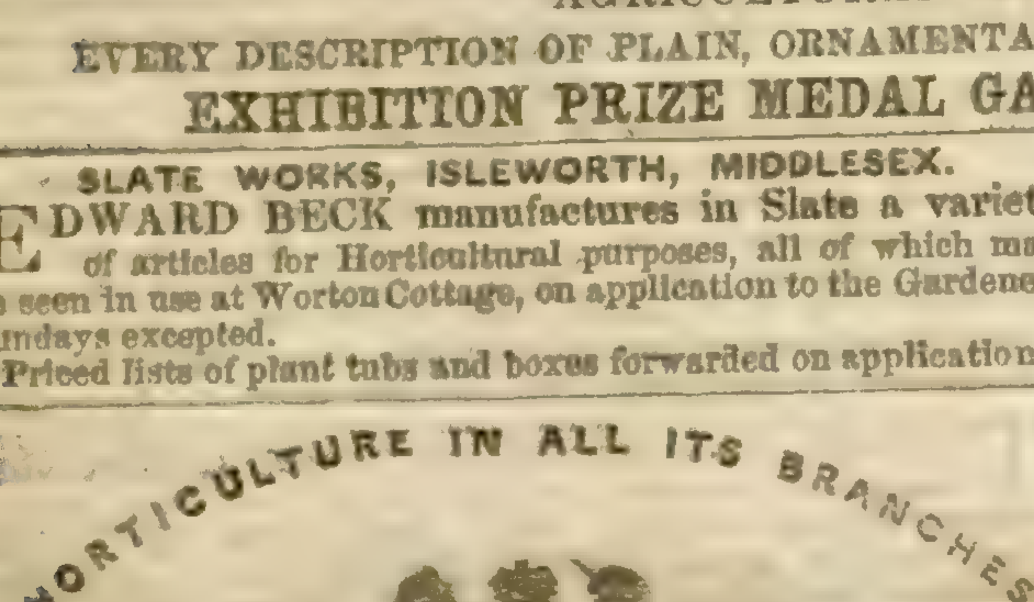
SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

Priced lists of plant tubs and boxes forwarded on application.

HORTICULTURE IN ALL ITS BRANCHES.

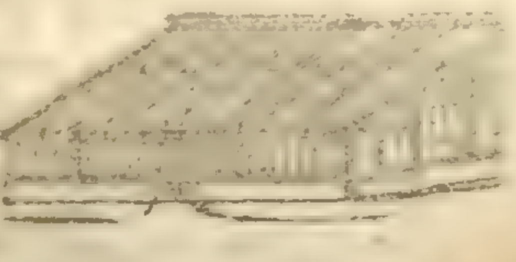
J. WEEKS & Co., King's Road, Chelsea,



HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Buildings, or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.



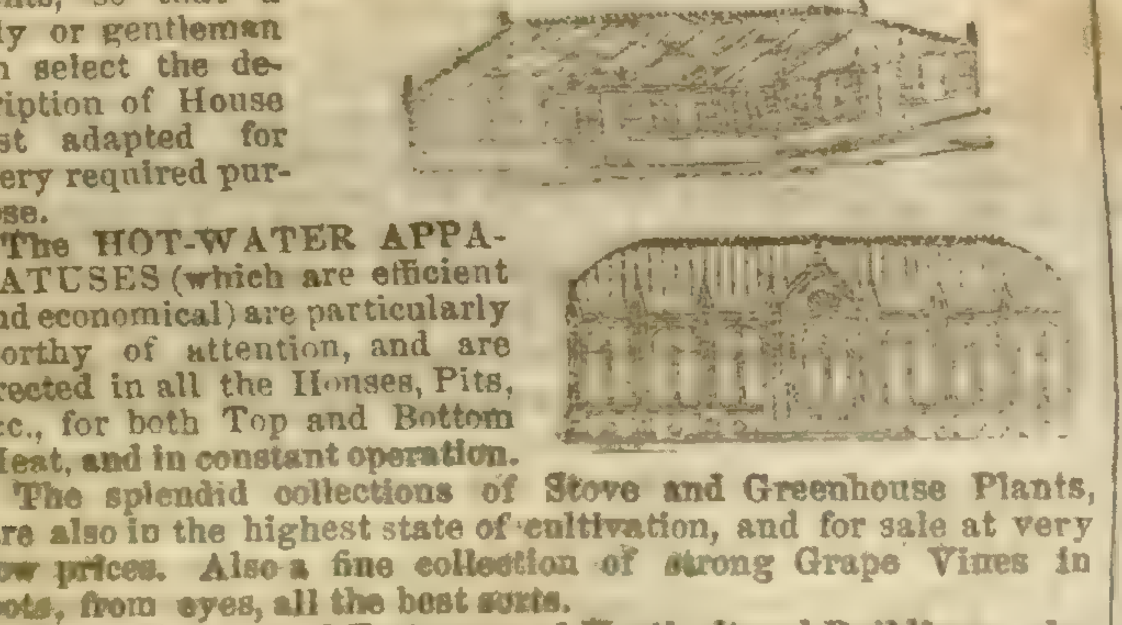
The splendid collections of Stove and Greenhouse Plants, are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. WEEKS & Co., King's Road, Chelsea, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



GRAY AND ORMSON, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

BY HER MAJESTY'S ROYAL LETTERS PATENT

E. DENCH, PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

PATENT HOTHOUSES and excellent Glass at 1*s.* 3*d.* per foot super., which are superior to all others for price with quality, and if known would supersede all others. (See Appendix, in "Book of the Garden," by Mr. M'Intosh.) A Range of Houses and Hot Water Apparatus, was erected by E. D. for E. L. Betts, Esq., Preston Hall, Kent. Mr. J. Frost, head gardener, has shown their efficiency by their produce at the Royal Botanic Gardens, Regent's Park, June 8, and Chiswick, June 11. The editor of the *Gardeners' Chronicle* says: "Beautiful examples of Black Hamburgh, large both in bunch and berry, and as black as Sloes, were furnished by Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall, Kent; these well deserved the first prize which was awarded them."—*Gardeners' Chronicle*, June 18th, 1853. The Grapes were considered the best shown at Regent's Park during the season, and the Houses are as superior for the growth of everything else in horticulture, which has been fully proved, and they have been extensively erected for the nobility and gentry in all parts of the kingdom.

GLAZING WITHOUT PUTTY.—Iron and Glass alone. E. D. has Roofed the Public Baths and Washhouses, Endell Street, on this principle, and others are in hand. Patent Sashes for Peach Walls, Pits, &c., 8*d.* per foot super. Heating by Hot-water, on the most practical principles, and all the best materials used. Printed Price List sent on application.

BEES AND HIVES.

MARRIOTT'S HUMANE COTTAGE BEE-HIVE, for taking honey without killing the Bees, is the best for practical use. Newly illustrated Catalogue forwarded for penny stamp.—MARRIOTT, Apiarian, Surrey Zoological Gardens; City Warehouse, 24, Fish Street Hill, London Bridge.

BEEHIVES.

NEIGHBOUR'S IMPROVED COTTAGE BEE-HIVE, as originally introduced by GEORGE NEIGHBOUR & SONS, with all the recent improvements, glasses, thermometer, &c., price 35*s.*, securely packed for the country.

This unique hive has met with universal commendation, and may be worked with safety, humanity, and profit, by the most timid; its arrangements are so perfect, that the honey may be taken at any time of the gathering season without at all injuring the bees.

Early applications, addressed to GEO. NEIGHBOUR & SONS, 127, High Holborn, or 149, Regent Street, London, will receive prompt attention. Their newly arranged Catalogue of other improved Beehives, with Drawings and Prices, sent on receipt of two stamps.

Agents:—Manchester, HALL & WILSON, 50, King Street; Liverpool, JAMES CUTHBERT, 12, Clayton Square; Chester, F. & A. DICKSON & SONS, 106, Eastgate Street; Glasgow, AUSTEN & M'ASLAN, 186, Trongate Street; Dublin, J. EDMUNDSON & Co., 61, Dame Street.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

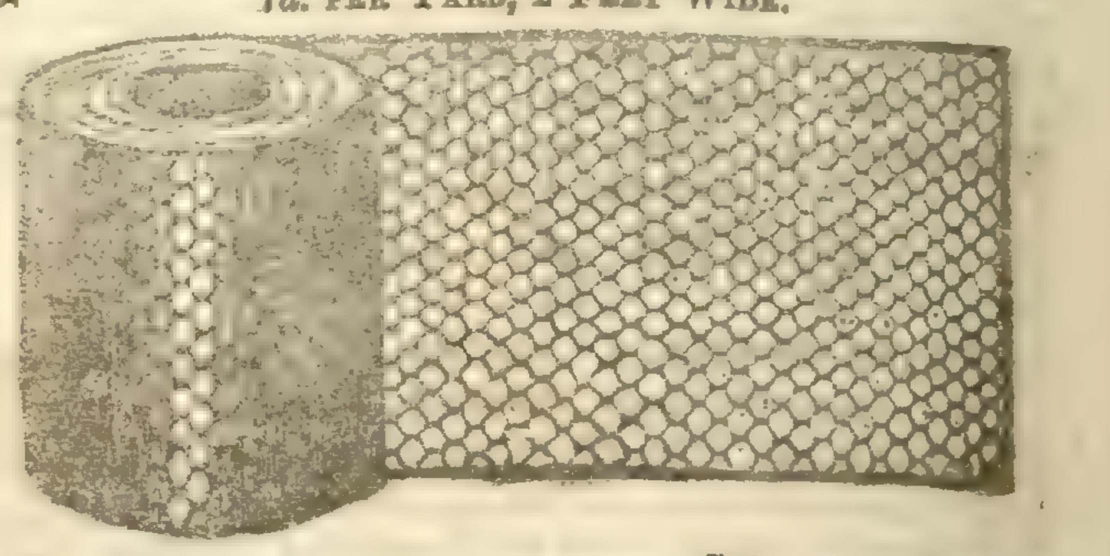
THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

HALL'S GARDEN NETTING, the best protection against FROST, STORMS, OR SCORCHING HEAT.

GALVANISED WIRE GAME NETTING.—*7d.* PER YARD, 2 FEET WIDE.



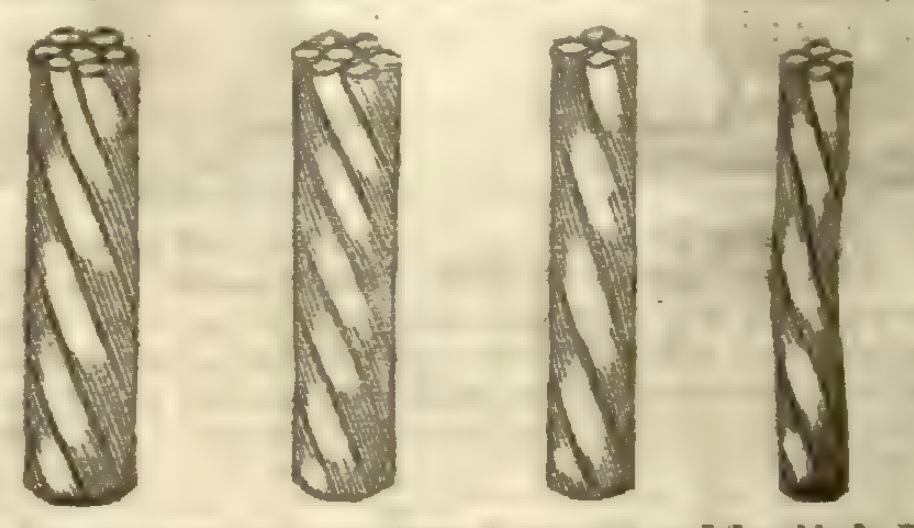
		Galvanised.	Japanned iron.
2-inch mesh, light, 24 inches wide	...	7*d.* per yd.	5*d.* per yd.
2-inch " strong "	...	9 "	$6\frac{1}{4}$ "
2-inch " extra strong "	...	12 "	9 "
$1\frac{5}{8}$-inch " light "	...	8 "	6 "
$1\frac{5}{8}$-inch " strong "	...	10 "	8 "
$1\frac{5}{8}$-inch " extra strong "	...	14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasantries, 2*d.* per square foot. Patterns forwarded post free.

Manufactured by BARNARD & BISHOP, Market Place, Norwich; and delivered free of expense in London, Peterborough, Hull, or Newcastle.

H. J. MORTON AND Co., Galvanised Iron Roofing Works, 2, Basinghall Buildings, Leeds.

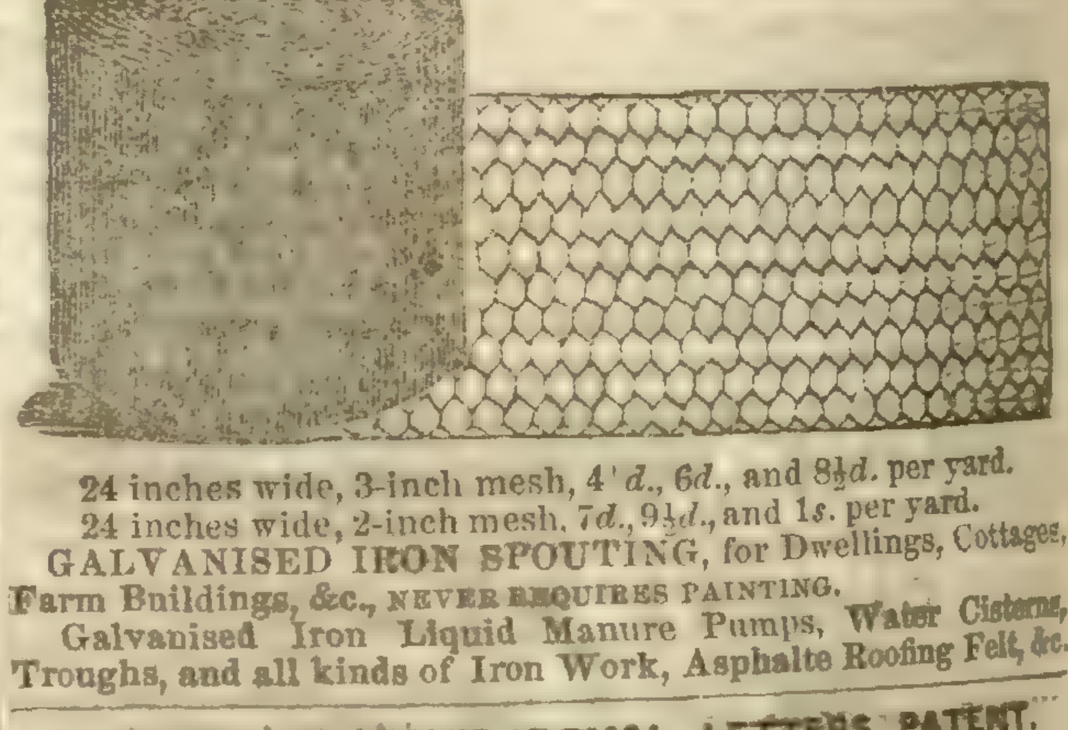
PATENT WIRE STRAND FENCING FOR PARKS, &c.



This Fencing is the most neat, strong, and durable for Parks and Agricultural purposes in use. It cannot be bent or put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply as above.

IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

H. J. MORTON AND Co., 2, Basinghall Buildings, Leeds.—GALVANISED GAME AND POULTRY NETTING, very strong and neat, NEVER REQUIRES PAINTING.



24 inches wide, 3-inch mesh, $4\frac{1}{2}$*d.*, 6*d.*, and $8\frac{1}{2}$*d.* per yard.

24 inches wide, 2-inch mesh, 7*d.*, $9\frac{1}{2}$*d.*, and 1*s.* per yard.

GALVANISED IRON SPOUTING, for Dwellings, Cottages, Farm Buildings, &c., NEVER REQUIRES PAINTING.

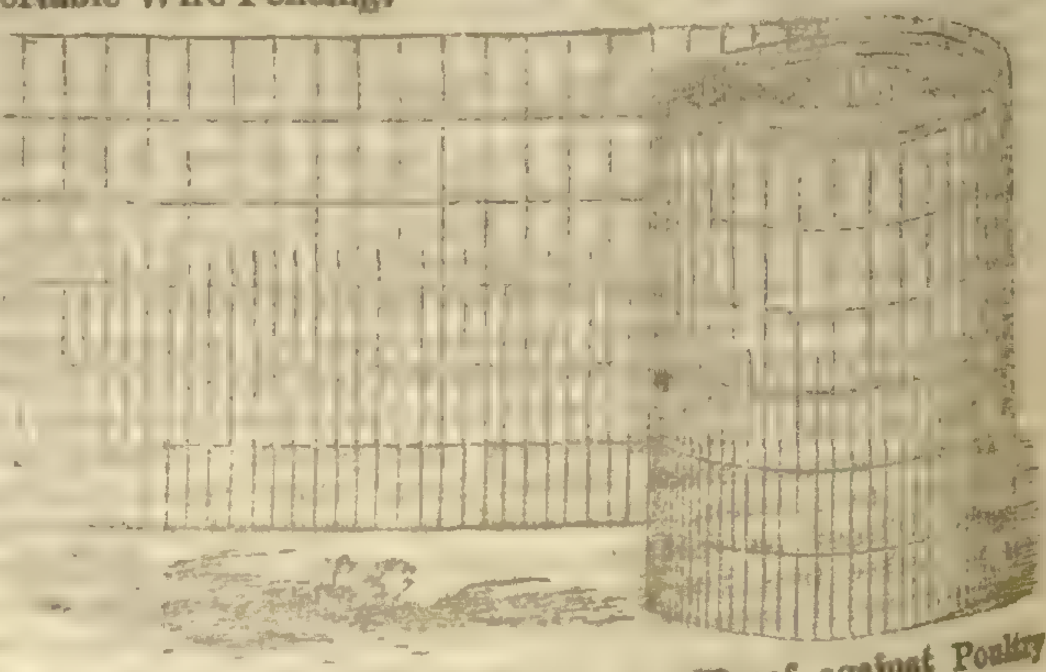
Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalte Roofing Felt, &c.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

AGRICULTURAL AND POULTRY FENCING, MANUFACTURED BY PATENT MACHINERY.

The great increase in the number and quality of POULTRY in the United Kingdom within the last few years has created a demand for an efficient Poultry Fence, which has called into existence every possible contrivance and adaptation of the Wire and Cord Netting, all of which have more or less proved failures.

B. GREENING & CO. have succeeded in supplying this acknowledged deficiency, by the introduction of a variety of their Portable Wire Fencing.



No. 11. PATENT DOUBLE FENCING (Proof against Poultry and Chickens).

This Fencing (which they manufacture by machinery, patented last year) is light, portable, and elegant in appearance, yet stronger and more durable than any Fence before the public. It requires few standards, and is fixed with the utmost facility by a labourer or gardener.

The following are the principal other varieties:—CATTLE FENCING, SHEEP AND LAMB FENCE, HARE AND RABBIT PROOF FENCING, ORNAMENTAL FENCING FOR GARDENS, TRAINERS FOR PEAS, GARDEN BORDERING, EXPORT FENCING, &c. &c., manufactured by Patent Machinery by BENJAMIN GREENING & CO.

1 and 3, CHURCH GATES, and 2, CATEATON STREET, MANCHESTER,

From whom every information, together with Prospectuses and Engraved Sheets of Patterns may be obtained gratis.

IMPROVED MOWING AND ROLLING MACHINE.

ALEXANDER SHANKS AND SON, Arbroath, Forfarshire, Inventors and Sole Manufacturers, respectfully solicit the attention of the Nobility, Gentry, and Gardeners to this improved Machine for Mowing and Rolling Lawns. The Machine is in operation in the Royal Gardens at Windsor Palace, Buckingham Palace, and at Osborne, in the Botanical Gardens at Kew, Regent's Park, Manchester, Sheffield, &c.; at Blenheim Palace, Trentham, Cliveden, Elvaston, Broadlands, Woburn Abbey, Clumber, Lilleshall, Castle Howard, Shrubland, Eridge Castle, Enville Hall, Tiptree Hall, Chatsworth, and in many other of the principal gardens in the kingdom, as well as in the United States, British America, and on the Continent, where its merits have been fully proved, and its success established.

The Machine is made to cut the breadths of 42, 30, 20, and 15 inches respectively, is exceedingly durable, easily managed, and adjusted to cut to the length required. The execution of the work is far superior to what may be attained by the most skilful mower, while at the same time a great saving of labour is effected. By the largest machine a Scotch acre may be mowed, rolled, and the Grass collected in one hour.

Further particulars, with prices, may be had on application.

(Fig. 1.) (Fig. 2.)

J. TYLOR AND SON'S BARROW GARDEN ENGINE (Fig. 1), in best well painted oak tub, fitted with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 1	holds 10 gallons,	throws 30 feet high	...	£4	10
No. 2	,, 15 ,,	,, 45 ,,	...	5	10
No. 3	,, 25 ,,	,, 45 ,,	...	6	18

J. TYLOR AND SON'S BARROW GARDEN ENGINE (Fig. 2), in strong tinned iron tub, well painted inside and outside, with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 10	holds 8 gallons,	throws 25 feet high	...	£2	15
No. 13	,, 12 ,,	,, 30 ,,	...	3	5
No. 11	,, 16 ,,	,, 40 ,,	...	4	0
No. 12	,, 24 ,,	,, 45 ,,	...	5	0
No. 14	,, 30 ,,	,, 45 ,,	...	5	18

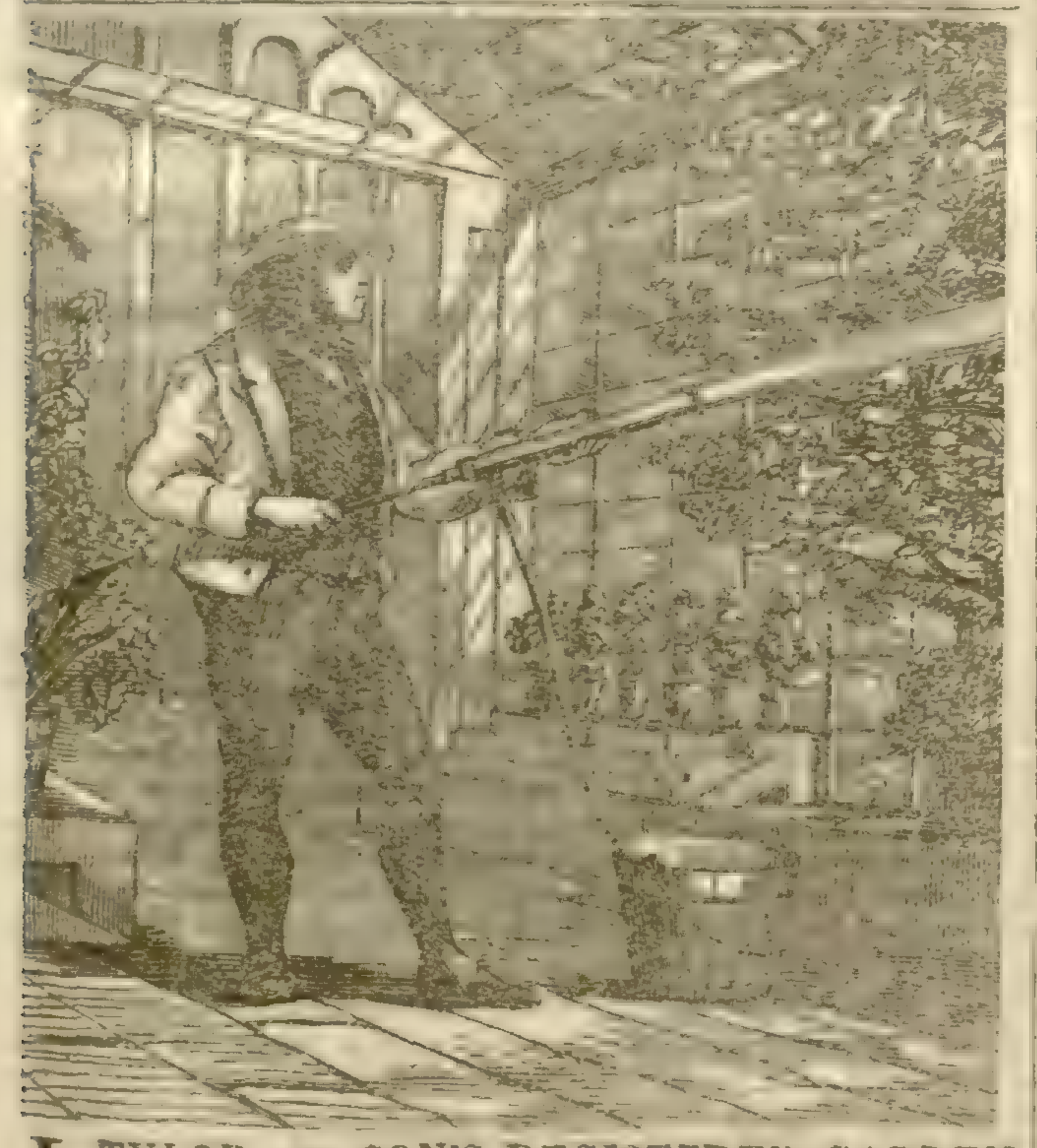
A large assortment of every description of Garden Syringes Pail Engines, Conservatory Pumps, &c., kept in stock.

Full size Syringe, on Read's principle, of the very best quality and workmanship, with two roses and one jet, 21*s.*; Plain Syringes from 10*s.* 6*d.* upwards.

J. TYLOR & SON'S Horticultural Apparatus may be obtained at these prices from any respectable Ironmonger or Seedsman in town or country, through whom alone they will be supplied, and of whom Drawings and Prices may be had.

N.B. Cost of carriage, &c., not included in these prices.

J. TYLOR & SON'S Manufactory, Warwick Lane, Newgate Street, London.



J. TYLOR AND SON'S REGISTERED GARDEN SYRINGE.—By a simple arrangement this Syringe is rendered more effective than any portable Conservatory or Garden Pump ever offered to the public. It is equally adapted for Garden or Conservatory use, and is capable of discharging twice as much water in a given time as any other Syringe now in use. The arrangement consists in attaching a small flexible suction tube to the barrel of the Syringe, through which it is filled with water at every discharge of the previous contents. By this means the Syringe is always charged, and the pull-up stroke of the piston rendered perfectly easy, it having, indeed, no work to do, the barrel being previously full of water. Being thus made self-supplying, a great saving of labour is effected; and the necessity of stooping to fill the Syringe at every discharge being done away with, the direction of the water can be maintained for any length of time. It is perfectly cleanly in its action, as it is not possible for any water to get on the outside of the barrel, which is a well-known inconvenience attendant on the use of every other Syringe. Its construction is perfectly simple, and cannot get out of order: the ground-in ball valves and fittings used for filling all other patent Syringes being entirely superseded. Price complete, with India-rubber suction tube, with galvanised spiral inside, and covered with cotton outside, 25*s.* each. To be had of any respectable Ironmonger or Seedsman in town or country.

J. TYLOR & SONS, Manufacturers of Horticultural Apparatus, Warwick Lane, Newgate Street, London.

N.B. This price does not include carriage, package, or expenses of delivery in the country.

GLASS.

THOMAS MILLINGTON, Importer of Foreign Sheet Glass, requests attention to the present Prices of Glass and Stock sizes, which are cheaper and better than those of English manufacture:—

PACKED IN ONE HUNDRED FEET BOXES, THIRDS QUALITY, BOXES INCLUDED.

Inches.	Per 100 ft.	Inches.	Per 100 ft.	Inches	Per 100 ft	Inches.	Per 100 ft.	Inches.	Per 100 ft.	Inches.	Per 100 ft.
6 by 4	12*s.*	12 by 10		14 by 11		16½ by 12½		18 by 13		18 by 14	
6½ ,, 4½		12½ ,, 10½		14½ ,, 11½		17 ,, 12		18½ ,, 13½		18½ ,, 14½	
7 ,, 5		13 ,, 10		15 ,, 11		17½ ,, 12½		19 ,, 13		19 ,, 14	
7½ ,, 5½	14*s.* 6*d.*	13½ ,, 10½		15½ ,, 11½		18 ,, 12		19½ ,, 13½		19½ ,, 14½	
8 ,, 6		14 ,, 10		16 ,, 11		18½ ,, 12½		20 ,, 13		20 ,, 14	
8½ ,, 6½		14½ ,, 10½		16½ ,, 11½		19 ,, 12		20½ ,, 13½		20½ ,, 14½	
9 ,, 7		15 ,, 10	20*s.*	17 ,, 11	20*s.*	19½ ,, 12½	20*s.*	21 ,, 13	20*s.*	21 ,, 14	20*s.*
9½ ,, 7½		15½ ,, 10½		17½ ,, 11½		20 ,, 12		21½ ,, 13½		21½ ,, 14½	
10 ,, 8		16 ,, 10		14 ,, 12		20½ ,, 12½		22 ,, 13		22 ,, 14	
10½ ,, 8½		16½ ,, 10½		14½ ,, 12½		16 ,, 13		16 ,, 14		22½ ,, 14½	
11 ,, 9	17*s.* 3*d.*	17 ,, 10		15 ,, 12		16½ ,, 13½		16½ ,, 14½		23 ,, 14	
11½ ,, 9½		17½ ,, 10½		15½ ,, 12½		17 ,, 13		17 ,, 14		23½ ,, 14½	
12 ,, 9		18 ,, 11		16 ,, 12		17½ ,, 13½		17½ ,, 14½		24 ,, 14	
12½ ,, 9½		18½ ,, 11½									

IMPROVED PATENT ROUGH PLATE, PLAIN, FLUTED, AND IN QUARRY PATTERNS.

British Plate, Patent Plate, Sheet, Crown, and Coloured Window Glass. Pure White Shades for Ornaments. Pumps, Water Closets, and Plumbers' Brass Work. Genuine White Lead, Paint, Colours, Varnishes, Brushes, &c. Tariffs of the above on application to

T. MILLINGTON, 87, Bishopsgate Street Without, London.

CLOCHES.

JAMES PHILLIPS AND CO. have the pleasure to inform their friends that they are prepared to supply

GLASS CLOCHES,

Similar to those at the Horticultural Society's Gardens at Chiswick, at the following prices, viz.:—

9 inches diameter ...	1*s.* 6*d.*	11 inches diameter ...	2*s.* 0*d.*
10 ,, ...	1 9	12 ,, ...	2 3
		14 ,, ...	2 6

CUCUMBER GLASSES.—Each.

24 inches long	2*s.* 0*d.*	16 inches long	1*s.* 4*d.*
22 ,, ...	1 10	14 ,, ...	1 2
20 ,, ...	1 8	12 ,, ...	1 0
18 ,, ...	1 6	Made to any length.	

FERN SHADES.—Each.

6 in. diam., with stands	2*s.* 9*d.*	12 in. diam., with stands	8*s.* 1*d.*
7 ,, ,,	3 6	13 ,, ,,	9 6
8 ,, ,,	4 1	14 ,, ,,	12 6
9 ,, ,,	4 9	15 ,, ,,	16 9
10 ,, ,,	5 9	16 ,, ,,	21 10
11 ,, ,,	6 8		

Bee Glasses, Lactometers, Lord Camoys' Milk Syphons, Tiles and Slates, Wasp Traps; Plate, Crown, and Ornamental Glass, Shades for Ornaments, and every article in the trade.

HARTLEY'S PATENT ROUGH PLATE GLASS, for Conservatories, Public Buildings, Manufactories, Skylights, &c.

JAMES PHILLIPS AND CO., Horticultural Glass Warehouse, 116, Bishopsgate Street Without, London.

Extract from *Gardeners' Chronicle*, April 21, 1854.

"The garden also supplied some Neapolitan Cabbage Lettuces, a portion of which had been grown under bell-glasses, which differ from the French cloche in having a ventilator at the top, in the shape of a neck or chimney, which can be left open or kept close as may be desired, by covering it over or not with another small bell glass, made for the purpose. The result of this trial has been very satisfactory."

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

HETLEY AND CO. are supplying 16-oz. Sheet Glass of British Manufacture, packed in boxes, containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

Sizes.—Inches.		Inches.		Per foot.		Per 100 feet
	Under	6 by 4	at	1½*d.*	is	£0 12 6
From 6 by 4	,,	7 ,, 5	,,	2*d.*	,,	0 16 8
7 ,, 5	,,	8 ,, 6	,,	2¼*d.*	,,	0 18 9
8 ,, 6	,,	10 ,, 8	,,	2½*d.*	,,	1 0 10
10 ,, 8	,,	12 ,, 9	,,	2¾*d.*	,,	1 2 11

Larger sizes, not exceeding 40 inches long.

16 oz. from 3*d.* to 3½*d.* per square foot, according to size.
21 oz. ,, 3½*d.* to 5*d.* ,, ,, ,,
26 oz. ,, 3¾*d.* to 7½*d.* ,, ,, ,,

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern, either in sheet or Rough Plate Glass.

Propagating Glasses, Beehive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in Glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the excise duty, reduced one-half. List of Prices and Estimates forwarded on application to

JAMES HETLEY & Co., 35, Soho Square, London.

MORNING FROSTS.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1*s.* 6*d.* per yard run, of E. T. ARCHER, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey. (Removing in May next to 112, Regent Street, London.)

PRIZE MEDAL—1851.

AT A VERY ECONOMICAL RATE.

SAMUEL CUNDY, MASON and BUILDER, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Lower Belgrave Place, Pimlico, London.

Marble Chimney-pieces manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price. A good Marble Chimney-piece for 40*s.* Marble Work in all its branches at a remarkably cheap rate for Halls, Dairies, Larders, &c. Circulars sent on application.

N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank.

STEPHENSON AND PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

CHAFF-CUTTERS, of the best workmanship, 25*s.*; Two-Knifed Chaff Engines, from 68*s.*; Mills for Bruising Oats and Beans, from 45*s.*

WILLIAM DRAY AND CO., Agricultural Implement Manufacturers, Swan Lane, Upper Thames Street, City.

RICHMOND AND CHANDLER'S No. 1 CORN CRUSHER (Price 5*l.* 5*s.*) was first introduced a few years ago, as a decided improvement upon others theretofore made. Subsequent time and experience have served to render it more perfect, and to greatly extend the pre-eminent patronage of members of the Royal Agricultural Society, and distinguished scientific authorities throughout the world.—Address, RICHMOND & CHANDLER, Implement Works, Salford, Manchester; and 32, South John St., Liverpool. Export orders completed on the shortest notice.

BUDDING'S LAWN MOWERS, with SAMUELSON'S registered improvements, *lightening the draught fully one-half*, and enabling an unskilled labourer to make neat work; free from liability to choke, or get out of order. May be had of all ironmongers in town or country, or from the Works, Banbury; delivered free in a packing case to any station on the North-Western and Great Western Railways. Testimonials forwarded on application.—Britannia Works, Banbury.

THOMAS B. LAWRENCE AND CO., ZINC MERCHANTS and MANUFACTURERS, No. 10, York Place, near the Orphan Asylum, Lambeth. Rain Pipes, 3-inch, 4½*d.* per foot; Eaves Gutters, 4-inch, 4*d.* per foot; other sizes in proportion; Perforated Zinc, 4*d.* per foot; Sheet Zinc, 33*s.* per cwt.; Plumbic Zinc, 42*s.* per cwt.: Galvanised Iron, Corrugated or Plain. Lawrence's Fumi Porte; Patent Smoke Vents; Garden Lights, Frames and Glasses. Lawrence's Roses and Watering Pots. Wardian Cases.

PROTOXIDE ANTI-CORROSION PAINT, for all external purposes, on iron, wood, brickwork, or stucco, is cheaper, and more durable, than any similar article.—Manufactured by CHARLES FRANCIS & SONS, Cement Works, Nine Elms, London.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the nobility, gentry, and clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out-door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice.

Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to WALTER CARSON & SON, 9, Great Winchester Street, Old Broad Street, Royal Exchange, London. No Agents. All orders are particularly requested to be sent direct.

THE CHOLERA—ITS BEST ANTIDOTE.

SIR W. BURNET'S DISINFECTING FLUID, the original and genuine CHLORIDE OF ZINC.—Sold by all Chemists, Druggists, and Shipping Agents; and at the Office, 18, Cannon Street, London Bridge.

THE CHOLERA

PREVENTED BY THE DESTRUCTION OF ALL NOXIOUS EFFLUVIA.

CREWS'S DISINFECTING FLUID, Recommended by the College of Physicians. The Cheapest and Strongest Chloride of Zinc.—Quarts 2*s.*; Pints, 1*s.*; Half-pints, 6*d.* Sold by all Chemists, Druggists, and Shipping Agents: and at Commercial Wharf, Mile End, London.

BLAIR'S GOUT AND RHEUMATIC PILLS. Price 1*s.* 1½*d.* and 2*s.* 9*d.* per box.—Mr. William Courtney, of Barton, Stacey, Hants, says:—"I had resort to your Pills, and within two hours I was quite easy. The use of these Pills ought really to be known all over the world." Among the many discoveries, none have conferred such a boon on suffering humanity as that of Blair's Gout and Rheumatic Pills, they require neither attention nor confinement, and are certain to prevent the disease attacking any vital part. Sold by all medicine vendors. Observe that "THOMAS PROUT, 229, Strand, London," is impressed upon the Government stamp.

FRAMPTON'S PILL OF HEALTH.—"For upwards of nine years (writes Mr. Thomas Province, of Winchmore Hall, Middlesex), I have experienced the efficacy of this excellent medicine, and I have the happiness of saying that I never had a better state of health. I beg further to add that this medicine is in general use by my family, and we know of nothing to equal it." For females these pills are truly excellent, removing all obstructions, the distressing headaches so very prevalent with the sex, depression of spirits, dulness of sight, nervous affections, blotches, pimples, and sallowness of the skin, and gives a healthy juvenile bloom to the complexion. Sold by all medicine vendors, price 1*s.* 1½*d.* per box.—Observe that "THOMAS PROUT" is on the Government stamp.

HOLLOWAY'S OINTMENT AND PILLS WONDERFULLY EFFICACIOUS IN CURING BAD LEGS.—Extract of a letter from Mr. John Perkins, of Long Lawford, near Rugby, dated Feb. 11, 1854. "To Professor Holloway.—Sir: My wife suffered for four years with a frightfully ulcerated leg, accompanied by dropsical swellings, and profuse watery discharges. She consulted several medical men, and had recourse to a variety of remedies, but without deriving any benefit. At last she tried your Ointment and Pills, and after persevering with them for about six weeks, the wounds on her leg entirely healed, and she was thoroughly restored to health—a blessing quite unexpected to all her acquaintance."—Sold by all Druggists; and at Professor HOLLOWAY'S Establishment, 244, Strand, London.

SEEDS TO IRELAND.—*Plymouth is admirably situated for supplying our sister country with some English Seeds. The Subscribers can refer to some of the leading families in Ireland, who have for many years obtained the whole of their supplies of Garden and Farm Seeds. Seeds delivered free to many of the Irish ports. See Price Current.*

WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

MORTON'S YELLOW GLOBE MANGOLD WURZEL, *saved by Thomas Bennett, Esq., Gloucester, from the Stock originally grown by J. C. Morton, Esq., the Editor of the Agricultural Gazette.*

Seed of this most excellent variety can now be obtained from WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth, who have purchased the whole of the Stock.

SUTTON'S EARLY SIX-WEEKS TURNIP, AND THE LINCOLNSHIRE RED GLOBE, *two of the largest and best Turnips for early sowing, to feed off previous to Wheat sowing*: Six-weeks, 1s. 4d. per pound; Lincolnshire Red, 1s. 6d.

A priced List of Swedes and other Turnips post free.—Address, JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

BEAUTIFUL NEW VARIEGATED-LEAVED PLANT, "APHELANDRA LEOPOLDI."

JAMES VEITCH, JUN., of the Exotic Nursery, Chelsea, begs to inform all collectors of plants with Striped and Variegated Foliage, that Mr. L. Van Houtte, of Ghent, has appointed him his agent in this country, for the sale of this fine and distinct Plant. The foliage is of a light glossy green colour, regularly and distinctly marked with white stripes, not fading or running with age. In addition to its lovely foliage, it has beautiful Flowers; thus rendering it a decided acquisition to every stove; indeed, no collection of variegated-foliaged plants will be complete without it.

J. V., jun., has fine Plants ready for delivery at 21s. each, with one over to the trade when three are taken.—Chelsea, May 6.

N.B.—A beautiful Plate will be sent, without charge, to persons taking three Plants.

DILLISTONE AND CO. beg to offer the following:—STRAWBERRY PLANTS.—Ten of the best kinds always on hand, 2s. 6d. to 3s. 6d. per 100.

HOLLYHOCKS saved from 20 of the best named kinds, and kept separate, 3s. per dozen; 20s. per 100.

BEDDING PLANTS.—Many thousands will be ready in May, 3s. to 6s. per dozen, or cheaper if 100 are taken.

ROSES.—Tea, Bourbon, and Hybrid Perpetuals, and new ones, on the Manetti stock.

HERBACEOUS PLANTS, fine and good, 20s. to 30s. per 100.

Orders above 20s. paid to London. Lists upon application, enclosing a stamp.—Nurseries, Sturmer, Halstead, Essex.

MAY'S PARAGON CABBAGE.

THE SUBSCRIBER, in offering the above for the first time, guarantees it to be the finest Cabbage in existence; of dwarf habit; has never been known to run; attains a large size (having been grown to the great weight of 28lbs.); of a most beautiful green, and boils tender as Asparagus, which it continues to do throughout the season; in flavour is as far superior to the ordinary Cabbages of the day as they are to the old Drumhead Scotch. In ¼ oz. packets, 1s. each, free by post. The usual allowance to the trade.

H. M. begs to inform the public that he is unable to supply any more of his MAGNUM BONUM LETTUCE, as the stock was only small and is completely sold out.

Address all orders and communications to HENRY MAY, the Hope Nurseries, near Bedale, Yorkshire.

EDWARD GEORGE HENDERSON AND SON, Wellington Nursery, St. John's Wood, London, are now prepared to send out the following new plants:—

		s.	d.
FUCHSIA.—Monarch	... ...	10	6
GLOXINIA.—Duke of Wellington	... ...	7	6
,, Lady Franklin	... ...	7	6
GERANIUM.—Silver Queen	... ...	7	6
,, (Fancy) Bonnie Lassie	... ...	15	0
,, (Fancy) The Fornarina	... ...	10	6
,, (Fancy) Loveliness	... ...	10	6
HYBRID BEDDING VARIETIES.			
,, Picturata	... ...	3	6
,, Etoile de Vaise (Ivy-leaf)	... ...	3	6
,, Quercifolium eximium	... ...	7	6

The above three hybrid bedding Geraniums are also beautiful plants for pot culture, as they continue covered with flowers the whole of the season.

VERBENAS:—

	s.	d.		s.	d.
Robin Hood	3	6	Beauty	5	0
Marie Antoinette ...	3	6	Matchless	3	6
Attraction	3	6	Diadem	3	6
Ariosto	3	6	Ne Plus Ultra	5	0
Madonna	5	0	Sulphur Model	5	0
Orion	3	6	Beauty of the Garden ...	5	0

The Set, 42s.

The above twelve distinct Verbenas have been Bedded out and proved the second season; the raisers are Messrs. Banks, Stewart, and Fozard. For descriptions of the above New Plants see back numbers of this paper.—May 6.

STAR NURSERY, SLOUGH.

WILLIAM BRAGG begs to inform the Floral world that his Catalogue of DAHLIAS for 1854 is now ready, and can be had gratis on application. "The Beauty of Slough," which was figured in last month's "Florist," is now ready to send out. Likewise his choice new set of Nine VERBENAS, which has taken several First-class Certificates at the National and other Floricultural Societies. Also the new dark Horseshoe-leaved Geranium "Glory," which obtained a Certificate at the National, is now ready. This splendid variety will prove a great acquisition as a pot or bedding plant.

W. B. has still on hand a good Stock of Hollyhocks, Geraniums, Fancy Geraniums, Pansies, including his four new ones; several hundred dozens of Bedding Plants, Chrysanthemums, Verbenas, Fuchsias, Phloxes, Roses, &c. Choice Pink, Pansy and Hollyhock Seeds, in packets 2s. 6d. each, post free.

All Parcels carriage paid to London, and plants given to compensate for carriage.—May 6.

NOTICE.

THE ADMINISTRATORS of the late JOSEPH FAIRBAIRN, of Clapham, Nurseryman and Seedsman, beg most respectfully to call the attention of Noblemen, Gentlemen, Amateurs, and the Trade, to their varied and extensive Stock of STOVE and GREENHOUSE PLANTS, particularly to their Ericas, Azaleas, and Aphelexis, which are all now in high perfection; also their Shrubs and soft-wooded Plants for Parterre and Border Planting in every variety. They beg to return their grateful thanks for the patronage so long bestowed on the old established Firm of JAMES & JOSEPH FAIRBAIRN, and afterwards on JOSEPH FAIRBAIRN alone; and to state that all Orders will receive their prompt and best attention, and they are prepared to do Business on such liberal terms, for Cash, as they trust will insure a continuance of such patronage.

Clapham Nurseries, near London, May 6.

ROLLISSON'S UNIQUE.

JAMES JENNER begs to announce that he has a large Stock of the above GERANIUM now in bloom. Also large plants of Tom Thumb for vases, &c.

Priory Grove, South Lambeth.

PAGE AND CO.'S

BLIGHT COMPOSITION should be in the hands of all Plant and Fruit Cultivators. 4s. per gallon, sufficient to make four. For testimonials see back leaf *Gardeners' Chronicle*, March 11, 1854.

GARDEN AND AGRICULTURAL SEEDS, first quality, and lowest market price.

Oxford Street (adjoining Radley's Hotel, 20 yards from the Railway and Docks), Southampton.

MR. GLENNY requests that REPORTS of all the HORTICULTURAL and FLORAL EXHIBITIONS may be sent to him for publication, and that specimens of Fruit, Flowers, Plants, and Vegetables, as well as other subjects for his opinion, may be addressed, Mr. GLENNY, 420, Strand.

QUALITY THE TEST OF ECONOMY.—First Class DRESS COATS, 3l.; BOY'S SUIT, 11d. per inch, according to height, &c. The Best Article the Cheapest. The well-known VENTILATING WATERPROOF LIGHT OVER-COAT, 45s. W. B. trusts the established character of his business for half a century will prove a satisfactory guarantee.—W. BERDOE, 96, New Bond Street, and 69, Cornhill (only).

GLENFIELD PATENT STARCH, used in her Majesty's Laundry, and WOTHERSPOON'S machine-made CONFECTIONARY, MARMALADE, JAMS, JELLIES, &c., which gained the Prize Medal of 1851, may be had of all Grocers; Wholesale of WOTHERSPOON, MACKAY, & Co., 66, Queen Street, Cheapside, London; and ROBERT WOTHERSPOON & Co., Glasgow.

DEVONSHIRE CYDER.—A three dozen case (large bottles), of the very best DEVONSHIRE CHAMPAGNE CYDER, will be forwarded to any address on receipt of a Post-office order for 21s., payable to JOHN E. RENDLE, Martin Street, Octagon, Plymouth. Case and bottles, value 9s., included.

TO PIG AND CHICKEN FEEDERS.—Good Greaves may be had at 10l. per ton, upon application to TAYLOR & PEARS, 8, George Yard, Lombard Street, City.

THE ST. MARGARET'S ESTATE, RICHMOND. The magnificent Mansion and picturesque Park at St. Margaret's, opposite Richmond Gardens, may be viewed daily between the hours of 12 and 5 o'clock (Sundays excepted), by cards only, to be had of the Executive Committee of the CONSERVATIVE LAND SOCIETY. The allotment of this valuable Estate on the banks of the Thames has been fixed for Wednesday, the 1st of June. Cards will be duly forwarded on application. Plans of the Estate, price 6d., or 10d. to cover postage. The Eighteenth Public Drawing on the 13th inst., at noon. CHARLES LEWIS GRUNEISEN, Secretary.

Offices, 33, Norfolk Street, Strand, London, May 6.

NOTICE TO FLORISTS AND GARDENERS.

TURF.—Her Majesty's Commissioners for the Exhibition of 1851 are prepared to receive TENDERS for the TURF on a portion of their estates at Kensington Gore.—Particulars can be obtained by applying personally to Mr. WADE, between the hours of 10 and 4, at the Office of the Commissioners, Grove House, Kensington Gore, near London.

GARDEN MOULD.

TO BE SOLD, about 400 loads of capital fine black MOULD, parties desirous of having the same, or any portion, may send a proposition to Mr. DUDLEY, 1, Garnault Place, Clerkenwell (near the locality).

TO BE SOLD, A PONY PHAETON, VELOCIPEDE, AND YARD DOG. The first, little used, has turn-over seat, and brilliant lamps, 15l.; the second, in good condition, with all the latest improvements, 5l.; the dog is a powerful noble animal, and excellent guard, with kennel, 2l. 10s. The property of a gentleman left the country.—Apply at 10, Roseberry Villas, Maiden Lane, Camden Town, behind Brecknock Arms Tavern, London.

TO HORTICULTURISTS AND OTHERS.

TO BE SOLD, a PORTABLE GREENHOUSE, 16 feet by 8 feet, 25l.; others at the following low rates:—10 feet by 6 feet, 12l.; 12 feet by 8 feet, 20l.; 12 feet by 10 feet, 24l.; 20 feet by 12 feet, 35l.—JAMES RHODES, Greenhouse Builder, 6, Macclesfield Street, City Road.

TO BE SOLD, a HORSE MILL, price £10. The Advertiser being about to erect a Steam Engine, wishes to dispose of a nearly new and improved Horse Mill, complete. Can be seen at work any day at 50, New Cut, Lambeth, Surrey.

COCHIN CHINA POULTRY, ETC.
EGGS FROM PRIZE BIRDS.

MR. JOHN FAIRLIE, of Cheveley Park, Newmarket, in reply to the very urgent applications from numerous amateurs, is now prepared to dispose of a limited number of Eggs, from his celebrated prize Cochins, Brahma Pootras, Scotch Bakies, Dorkings, &c., according to the dates of the orders received.

SPANISH AND DORKING FOWLS.—Captain HORNBY having transferred his whole stock of celebrated POULTRY to Mr. H. D. DAVIES, of Spring Grove, Hounslow, a portion (for want of space) is for immediate sale.

EGGS from CAPT. HORNBY'S celebrated Spanish and Dorking Prize Fowls may be had on application to Mr. H. D. DAVIES, Spring Grove, Hounslow, to whom Capt. Hornby has transferred his whole stock. Spanish, 4l. 4s. per doz.; Dorking, 3l. 3s. per doz. Remittances to be made by post-office order, and to include 2s. for packing.

BLACK COCHIN EGGS from the best birds in England, having always taken prizes at the best shows, at 18s. per dozen, including package. Apply at the city of London Wire Works, 44, Skinner Street, London. N.B. Fowl Houses, Chicken Coops, Poultry Hurdles, and Netting, of every size and description. Illustrated Catalogues forwarded, post free, on application. A few Spanish Pullets, sisters to those sent to her Majesty's yard at Windsor, for Sale.

TO BE SOLD, EGGS from Prize Birds, from the Yard of CHRISTOPHER RAWSON, Esq., The Hurst, Walton-on-Thames:—Buff Cochins, Spanish, Coloured and White Dorkings, Gold and Silver Spangled, and Pencilled Hamburghs, Gold and Silver Bantams, and Aylesbury Ducks, 12s. per dozen; White and Black Cochins, Gold, Silver, and Black Polands, 21s. per dozen; Brahma Pootra Eggs, from imported birds of the best strains, 2l. 2s. per dozen.—Post-office orders (including 1s. for packing), to be sent with the order. The Eggs will be sent out in rotation according to the date of order.

TO BE SOLD, fresh laid GOLDEN PHEASANTS' EGGS.—Apply, post-paid, X., Messrs. W. & F. Gregory, Grocers, Yatton, Somerset.

SUMMER OR CAROLINA DUCKS.

WANTED, a DUCK and DRAKE, or a DRAKE and two DUCKS of the above breeds.—Price and particulars sent to A. B., Post Office, Brecon, South Wales.

CLAPHAM NURSERIES.
THE STOCK OF PLANTS OF THE LATE MR. JOSH. FAIRBAIRN.

MR. J. C. STEVENS is instructed by the Administrators to announce for Sale by Auction, on the Premises, on MONDAY, 22d; TUESDAY, 23d; and THURSDAY, 25th May, at 12 for 1 o'clock, without reserve, the first portion of the valuable Stock of Plants at the above Nurseries; it includes the Collection of Heaths, for which this establishment has been so long celebrated; fine specimens of Azaleas, Aphelexis, Epacris, and a general selection of Greenhouse Plants, all of which are cultivated in the best possible manner, and are in excellent health. They will be lotted to suit the Trade and private buyers.—May be viewed on Friday and Saturday before the Sale, and Catalogues had on the premises, and of Mr. J. C. STEVENS, 38, King Street, Covent Garden; if for the country, by enclosing four postage stamps.

STOCKWELL GREEN.

MESSRS. PROTHEROE AND MORRIS will submit to public competition by Auction, on the Premises, Stockwell Nursery, Stockwell Green, on TUESDAY, May 16th, at 11 o'clock, by order of Mr. Tooley (leaving the premises), about 20,000 GREENHOUSE PLANTS, consisting of Geraniums, Fuchsias, Verbenas, Calceolarias, Heliotropes, Salvias, Petunias, &c.; also a strong useful Horse, Tumbril Cart, &c.—May be viewed three days prior to the Sale. Catalogues may be had on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

BLACKHEATH.

MESSRS. PROTHEROE AND MORRIS beg to intimate that they have received instructions from Mr. W. P. Ayres, Nurseryman (removing to a distant part of the country), to submit to public competition by Auction, in the Lecture Hall, adjoining the Blackheath Station of the North Kent Railway, on TUESDAY, May 9, at 11 for 12 o'clock precisely, in consequence of the number of lots, the whole of his unrivalled collection of Specimen FANCY PELARGONIUMS, fit for exhibition; also Stove and Greenhouse Plants, Bedding Plants, &c.; together with many thousands of the choicest Pelargoniums just coming into bloom, Fuchsias, Chrysanthemums, Roses, &c.—May be viewed one day prior to the Sale; Catalogues may be obtained of the principal Seedsmen in London; of Mr. AYRES, and at the Lecture Hall, Blackheath; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, NURSERYMEN, FLORISTS, & OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, at the Mart, Bartholomew Lane, on THURSDAY, May 11, at 12 o'clock, a first-rate collection of Carnations, Picotees, and Pinks. A fine assortment of Fuchsias, Verbenas, and Dahlias in dry roots; Geraniums, and other plants, in bloom, with a variety of plants for bedding.—On view the morning of sale. Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO TULIP FANCIERS AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are directed by Mr. Staines to sell by Auction, on the premises, Culley's Nursery, near the New Globe Tavern, Bow Road, Middlesex, on MONDAY, May 22d, at 2 o'clock, his superb collection of TULIPS, including about 400 varieties, and most of the choicest in cultivation, together with Seedlings of his own raising, not to be found in many other collections.—May be viewed three days prior to the Sale. Catalogues may be had on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO TULIP FANCIERS.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. Goldham to submit to public competition by Auction, on the premises, Ilynder Cottage, Merton Lane, Mitcham, Surrey, on FRIDAY, May 26, at 1 o'clock, a portion of his costly and unrivalled collection of TULIPS. No comment on this magnificent Stock will be equal to an inspection of its striking beauties, for which an opportunity is now offered to the Amateur Florist, &c. New Flowers and Seedlings of Mr. Goldham's raising—the result of more than 30 years' successful cultivation and competition, and which, for the first time, are now offered.—May be viewed two days prior to the sale; Catalogues may be obtained, 1s. each (returnable to purchasers), on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO TULIP FANCIERS.

W. BRAGG will cause to be sold by Auction, about the 18th, or, at latest, the 25th of MAY, his choice and superb bed of 128 rows of TULIPS, including some scarce varieties. Further Notice will be given in this Paper and by Catalogues.—Star Nursery, Slough, May 6, 1854.

TO NURSERYMEN, FLORISTS, AND GARDENERS.

MESSRS. CRAWTER will Sell by Auction, at Garraway's Coffee House, Change Alley, Cornhill, London, on TUESDAY, May 23, at 1 o'clock precisely, without reserve, unless previously disposed of by private contract, the desirable Leasehold Estate, with possession, called PERCY CROSS NURSERY, in a commanding situation on the high road at Walham Green, Fulham, adjoining the mansion and grounds of Lord Ravensworth, comprising a convenient Residence, containing seven Rooms, Shop and appendages, Conservatory, Hot-houses, Sheds, and other Buildings, with about 1 Acre of rich productive Nursery or Garden Ground.—May be viewed by application at the Premises, and particulars had 10 days before the Sale at Garraway's, the Inns in Fulham, and the surrounding neighbourhood; also of Messrs. Hanslip & Conworth, Solicitors, 12, Hatton Garden, and of Messrs. CRAWTER, Land-agents, Surveyors, &c., No. 5, Bedford Row, London, and Cobham, Surrey.

CHOICE AND VALUABLE COLLECTION OF TULIPS.

TO BE SOLD by Auction, without the least reserve, on the premises, Cooper's Lane, Leyton (near the Church) on FRIDAY, May 26th, at 1 o'clock, comprising among Bizarres Apelles, Marcellus, Strong's King, Pompe Funebre, Everard, Achilles, Vivid, Sphynx, Willison's King, Norman's Royal Albert, Alexander's Monarch, Sir E. Knatchbull, Sir George Whitmore, Charles Jeffrey, Emperor, Rembrandt, Charles Baron, Coftan, Grace Kossuth, Paganini, Waterston's Midas, Grisewood's Grace Darling, Morning Star, Headley's King Richard. The Byblœmens comprise Pandora, Salvator Rosa, Rutley's Queen, Brown's Magnificent, Duke of Northumberland, Dixon's Democrat, Parmegiano, Byzantium, Nora Creina, Lord Bloomfield, Thalia, Louis XVI., Godet Parfait, Patty, Zuill's George Glenny, Flora, Father Gavazzi, Reid's Duke of Argyll, Thomas Maxwell, Lord J. Russell, Sir H. Smith, Wylie's Rob. Wylie, &c. Among the Roses are Rose Lac, Sans Egale, Camuse de Craix, Brulant Ecletant, Dixon's Arlette, Bion, Alexander's Gem, Jenny Lind, Jeffrey's Elizabeth, Maid of Honour, Village Maid, Flora M'Donald, Mary Lamb, Miss O'Neil, Mrs. Zuill, John Waterston, Munroe's Mount Hecla, &c.; also many new flowers only in this collection the property of Mr. James Alexander.—May be viewed two days prior to Sale; Catalogues had at the Mart; of Messrs. Dawe, Cottrell, and Benham, Seedsmen, Moorgate Street; White Swan, West Ham; on the premises; and of Mr. Henry Alexander, Auctioneer, Shacklewell.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, MAY 6, 1854.

THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 19.—1854.] SATURDAY, MAY 13. [PRICE 6*d*.

INDEX.

Agricultural College garden .. 306 *b*
Agri. Soc. of England .... 307 *b*
Agri. Imp. Society, Irish ...... 307 *c*
Bees, queen .... 302 *a*
Calendar, horticultural .... 304 *a*
— agricultural .... 309 *a*
College garden, agricultural .. 306 *b*
Conifers, affected by frost .... 302 *c*
Corn, rust of .... 303 *b*
Forests, royal .... 300 *a*—302 *c*
Frosts, late spring .... 301 *c*
Funckia grandiflora .... 303 *a*
Hollyhock seed .... 304 *a*
Ireland, improved culture of .. 303 *a*
Maclura aurantiaca .... 299 *c*
Manures, artificial .... 305 *c*
— Prof. Way on .... 307 *b*
Measurement, timber .... 301 *c*
Microscopical Society .... 303 *b*
Museum, trade .... 305 *c*
Osage Orange .... 299 *c*
Paper, material for ...... 300 *c*—302 *b*
Pathology, vegetable .... 301 *a*
Pelargoniums, scarlet .... 303 *c*
— fancy .... 304 *a*
Plants, new .... 303 *c*
— economic .... 306 *b*
— medicinal .... 306 *b*
Potato disease, sulphur a cure for .... 302 *b*
Royal Hort. Soc. of Ireland .. 303 *a*
Rust in corn, by Dr. De Bary, rev. .... 303 *b*
Salsify, to cook 304
Sheep, management of .... 307 *c*
Simmond's Commercial products of Vegetable Kingdom, rev. .... 303 *b*
Sollyas .... 301 *b*
Sulphur v. Potato disease .... 302 *b*
Timber, how to measure ...... 301 *c*
Tulips, Groom's .... 303 *c*
Wheat, Lois Weedon .... 307 *a*
Winter, effects of .... 302 *c*
Woods and forests .... 300 *a*—302 *c*
Wools, British, &c. .... 305 *c*

ROYAL SOUTH LONDON FLORICULTURAL SOCIETY.—The Exhibitions of the above Society will be held as usual at the ROYAL SURREY ZOOLOGICAL GARDENS, in JUNE, JULY, and SEPTEMBER.—Particulars may be had of the Secretary, J. T. NEVILLE, Ebenezer House, Peckham.—May 13.

WEST KENT SECOND ANNUAL POULTRY AND FLOWER EXHIBITION, Under most distinguished Patronage, will take place on TUESDAY and WEDNESDAY, the 20th and 21st of June next, in the Market Field, Farningham.
Prizes will be awarded for Poultry, Pigeons, and Rabbits. Stove, Greenhouse, and Herbaceous Plants, Fruits, Vegetables, Roots, and Cut Flowers. Applications for Forms of Certificates of Entry, Prize Lists, and Regulations for Poultry, &c., to be made to the Secretary, and for Flowers, &c., to Mr ALFRED LOCKYER, Secretary, Farningham. By Order of the Committee of Management, BAPTISTE THOMAS, Secretary.
Committee Room, Lion Inn, Farningham, Kent.

PROFESSOR EDWARD FORBES' LECTURES on the FORMS and COLOURS of ANIMALS and PLANTS will not take place at the Normal School of Art, Marlborough House, Pall Mall, in consequence of his Appointment to the Regius Professorship of Natural History at Edinburgh.

EXHIBITION OF TULIPS.

HENRY GROOM, Clapham Rise, near London, by Appointment Florist to Her Majesty the Queen, and to His Majesty the King of Saxony, respectfully announces that his EXTENSIVE COLLECTION OF TULIPS is now in flower, and may be viewed every day from 9 o'clock until 6 (Sundays excepted).—Admittance 1*s*., Children half-price.

EXHIBITION OF TULIPS.

W. H. LAWRENCE, of the Red Lion, Hampton, begs to inform his friends and the public, that his unrivalled Collection of TULIPS is in bloom, and will continue to the end of the month.—Admittance Gratis.

EXHIBITION OF TULIPS, PELARGONIUMS, CINERARIAS, PANSIES, ETC.

C. TURNER'S extensive Collections of the above are now in fine bloom, and may be viewed, Sundays excepted, for the next three weeks.
Royal Nursery, Slough, May 13, 1854.

EXHIBITION OF SPECIMEN PLANTS.

J. AND J. FRASER beg to invite the attention of the Nobility and Gentry to an inspection of their fine collection of Specimen CHINESE AZALEAS and other plants, which are now in bloom. The plants are so arranged in various Greenhouses as to have a similar effect to that produced at the Metropolitan Flower Shows. The collection comprises those specimens which have been exhibited so often at the Regent's Park and Chiswick Gardens, at which places they have taken the leading prizes.
The Nursery is about 15 minutes' walk from the Lea Bridge Station on the Eastern Counties Railway. Trains leave London at 9 a.m., 9.30 a.m., 10 a.m., 10.40 a.m., 12.30 a.m., 1.40 p.m., 2.30 p.m., 3.20 p.m., and 4.45 p.m.—Admission Gratis.
Lea Bridge Road, Essex, May 13, 1854.

JOHN HOLLAND offers superb named SHOW PANSIES, at 4*s*. per dozen Plants. Extra fine selected PANSY SEED, 1*s* and 2*s*. per packet.
Bradshaw Gardens, Middleton, near Manchester.

BEAUTIFUL NEW VARIEGATED-LEAVED PLANT, "APHELANDRA LEOPOLDI."

JAMES VEITCH, JUN., of the Exotic Nursery, Chelsea, begs to inform all collectors of plants with Striped and Variegated Foliage, that Mr. L. Van Houtte, of Ghent, has appointed him his agent in this country, for the sale of this fine and distinct Plant. The foliage is of a light glossy green colour, regularly and distinctly marked with white stripes, not fading or running with age. In addition to its lovely foliage, it has beautiful Flowers; thus rendering it a decided acquisition to every stove; indeed, no collection of variegated-foliaged plants will be complete without it.
J. V., jun., has fine Plants ready for delivery at 21*s*. each, with one over to the trade when three are taken.—Chelsea, May 13.
N.B.—A beautiful Plate will be sent, without charge, to persons taking three Plants.

BEAUTIFUL NEW PETUNIA.
"MONTREAL PURPLE" (SMITH.)

W. F. SMITH, Riverhead Nurseries, near Sevenoaks, will be prepared to send out, on and after May 1st, strong plants of the above splendid Petunia, at 3*s*. 6*d*. each. This variety possesses a first-rate habit, and produces fine large bold flowers of good form, well above the foliage; and it has proved to stand the wind and rain better than any other variety.
W. F. S. is confident that the above will give as much satisfaction as the Geranium "Lady Holmsdale," and Calceolaria "Beauty of Montreal," sent out by him in 1852. W. F. S. has also some splendid Plants for vases of Geraniums "Lady Holmesdale" and "Flower of the Day," from 20*s*. to 30*s*. per dozen.—Catalogues of Stove, Greenhouse, and Bedding Plants may be had on application.

TO TURNIP GROWERS.

TURNIP GROWERS *who have not yet procured their supply of Seeds are recommended to peruse* MESSRS. SUTTON'S *Descriptive List of new Turnip Seeds, at page 298 of the present Number of this Paper.*

NEW TURNIP SEEDS DIRECT FROM THE GROWERS.

WILLIAM E. RENDLE AND CO. have this season a very superior stock of all kinds of TURNIPS, and they recommend all who are in want of the best varieties to procure their "Farming Price Current and Agricultural Directory," to be had in exchange for six penny stamps.—Apply to
WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

DAHLIAS, GERANIUMS, FUCHSIAS, AZALEAS, BEDDING PLANTS, &c., can be had from WILLIAM E. RENDLE AND CO., NURSERYMEN, Plymouth, in any quantity. Their New Plant Catalogue is now out, and can be had in exchange for one penny stamp.—Apply to
WILLIAM E. RENDLE AND CO., Nurserymen, Plymouth.

FINE GRASS SEEDS FOR ORNAMENTAL PARKS, LAWNS, &c., *where a fine sward is required*, 1s. 3*d*. *per lb*., 3*s*. *per gallon, and* 20*s*. *per bushel. Our mixtures for this purpose have given the greatest satisfaction.*
WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

BASS AND BROWN'S NEW POTENTILLAS.—In consequence of the limited stock of King of Crimsons, we regret we must decline receiving more orders. The following are now ready to send out:—

Potentilla Sudbury Gem, each ...	10*s*. 6*d*.	Potentilla Theodore, each	7*s*. 6*d*.
„ Shylock, do. ...	10 6	„ Julia, do.... ...	7 6

The following, 16*s*. the set of seven varieties:—

Floral Beauty	3*s*. 6*d*.	Scarlet Gem	3*s*. 6*d*.
Napoleon	2 0	Primrose	2 0
Defiance...	2 0	Argo	2 0
Negress	3 6		

For descriptions and editorial remarks, see *Gardeners' Chronicle* of March 13, p. 144, and April 1, p. 208.
Seed and Horticultural Establishment, Sudbury, Suffolk.

HOME GROWN FIELD TURNIP SEEDS.

MR. JACKSON having grown Seeds of some of the best kinds of Swedish and other Field TURNIPS, will be glad to furnish Agriculturists in any part of the kingdom. Descriptive priced Catalogues may be had on application to Mr. JACKSON, Bedale, Yorkshire.

GENUINE CATTLE DRUMHEADS.

THOMAS WELLAND, Surrey Gardens, near Godalming, Surrey, offers the above at 3*s*. 9*d*. per 1000; also TRUE EARLY BATTERSEA PLANTS at 5*s*. per 1000. Both packed and delivered at the Godalming Station.

ROSE NURSERIES, HERTFORD.

EDWARD P. FRANCIS offers for Sale a fine large Stock of all the leading kinds of BEDDING-OUT PLANTS (Lists of which will be forwarded on application), strong and vigorous, in 60 size pots, fit for going to any distance, 4*s*. to 6*s*. per dozen. Carriages of all parcels paid to London.

LADY HOLLAND AND PURPLE KING VERBENAS.

J. REEVES begs to state that he intends sending out the two foregoing Verbenas, of which he has the entire Stock, on the 20th May, at 5*s*. per plant.—Sadbroke Nursery, Notting Hill. Post-office Orders on Bayswater.—May 13.

FLOWERING PLANTS.—A variety of Flowering Plants for decorating Conservatories and Drawing Rooms. Also a large stock of Bedding-out Plants, and the best sorts of Chrysanthemums, are now ready for sending out by CHANDLER & SONS Nursery and Seedsmen, Wandsworth Road, Surrey.

SOFT-WOODED PLANTS, in large variety; suitable for decorating the Flower Garden during Summer and Autumn. To be had at low prices from the subscribers,
HUGH LOW & Co., Clapton Nursery, London.

NEW ALSIKE CLOVER, Price Ten Guineas per cwt., or in small quantities at 2*s*. per lb., may be had on application to Mr. H. RAYNBIRD, Basingstoke, Hants. Also New Home-grown ITALIAN RYE-GRASS, of good and genuine Stock, at 30*s*. to 35*s*. per quarter.

TO INCIPIENT BOTANISTS AND OTHERS.

TO BE SOLD, the following Collections of BRITISH PHÆNEROGAMIC and CRYPTOGAMIC PLANTS, carefully dried, beautifully mounted, scientifically named, and systematically arranged.

A Collection of 900 Flowering Plants	£4 10*s*. 0*d*.
A Collection of 400	2 0 0
A Collection of Elegant Ferns	0 10 6
A Collection of 80 Mosses	0 8 0

Rare Species on hand for supplying Desiderata. Respectable references and testimonials given on application to WILLIAM FOGGITT, Market Place, Thirsk.

TO BE SOLD, at a moderate price, a fine specimen of FAN PALM, or CORYPHA UMBRACULIFERA, 9 feet high and 12 feet in circumference, some of its leaves 6 feet across.—For further particulars address to THOMAS COOLING, Mickleover, near Derby.

WANTED, GRAPES.—Growers having Good Grapes fit for market, will please forward the Price, Quality, and Quantity to GEORGE TAYLOR, jun., Fruit Salesman, St. John's Market, Liverpool, Contractor and Salesman for Choice Garden Produce. Terms, Cash on receipt of Goods.

PINUS GERARDIANA.

WANTED, by a Lady, who is particularly desirous of receiving good Seeds of the above Pinus, and would feel obliged to any party possessing the same for a supply.—Particulars respecting quantity and price to be addressed to Mr. JAMES CARTER, 238, High Holborn, London.
Seeds of other rare Coniferous Plants as Araucaria, Cedrus, Pinus, &c., might also be acceptable.

HOLLYHOCK "LIZZY."

A. PAUL AND SON have still on sale a few strong plants of this superb new Hollyhock (colour clear peach) which obtained ten first prizes last year, price 10*s*. 6*d*. each.—Nurseries, Cheshunt, Herts. 6th May, 1854.

LOBELIA ST. CLARE.

MESSRS. LAKE AND DYER, NURSERYMEN, &c., Bridgewater, are prepared to send out this truly beautiful plant (so universally admired last autumn), at 12*s*. per dozen.
Postage stamps or Post-office Order must accompany all orders from unknown correspondents.—N.B. The Trade supplied.

BEDDING PLANTS.

JOHN HAYES, FLORIST, Farnham, Surrey, begs to say he is prepared to send out the above from 1*s*. to 4*s*. per dozen; the season being favourable, the plants are remarkably good. 50 Seeds of a good useful CUCUMBER sent for 12 stamps. Descriptive Catalogues sent for one postage stamp.

NEW DAHLIAS—ARIEL AND GLORY.

E. SPARY begs to direct attention to the above, Plants of which are ready to send out, with the leading new and old Standard Show varieties; Hothouse Grapes, and extensive stock of Plants for the Dressing-room; Greenhouse and Flower Garden Seeds, &c., &c.
Queen's Graperies, 176, Western Road, Brighton.

SAMUEL WALTERS begs to offer the following:—New and Choice GERANIUMS, New PETUNIAS, FANCY GERANIUMS, FUCHSIAS, VERBENAS, BEDDING PLANTS, &c. Orders of 1*l*. and upwards will be forwarded any distance not exceeding 100 miles, carriage free. See *Gardeners' Chronicle*, p. 250.—Hilperton and Trowbridge, Wilts.

WILLIAM BARNES begs to inform his friends and the public generally, that his SPRING CATALOGUE is now ready, and can be had on application; it contains all the leading and most approved varieties in cultivation, of Indian Azaleas, Cinerarias, Calceolarias, Verbenas, Fuchsias, Hollyhocks, Phloxes, Roses, Geraniums, Chrysanthemums, Perpetual blooming Carnations, Petunias, Delphiniums, and Liliums, with many other plants too numerous to insert here. W. B. has much pleasure in stating his stock is exceedingly healthy and clean, and warranted true to name.—Camden Nursery, Camberwell.

NEW DAHLIA—MAGNET.

CHARLES KIMBERLEY is now sending out the above beautiful Dahlia; colour, ruby crimson, very constant, of first-rate form, one of the best flowers of the season; was awarded a Certificate at Brighton Open Show, September 14th, and National Society, London, September 22d. Strong Plants, 10*s*. 6*d*. each; usual allowance to the Trade. Catalogues of Dahlias and Miscellaneous Choice Plants may be had on application.—Stoke Nursery, near Coventry.

MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS AND CO. beg to call attention to their MIXTURES OF GRASS SEEDS for laying Land down to Permanent Grass, price 30*s*. per acre.

Mixed sorts, for Improving Old Grass Land...	1*s*. 2*d*. per lb.
Fine sorts for Forming and Renovating Lawns	1 3 „

Directions for sowing accompany the seeds.
GEORGE GIBBS & Co. will be happy to forward their Priced Catalogues of Mangold Wurzel, Carrot, Swede, Turnip, and all Agricultural Seeds, free on application to GEORGE GIBBS & Co. Seedsmen, 26, DOWN STREET, Piccadilly, London.

BEDDING PLANTS.

J. WOOD AND SONS, NURSERYMEN, &c., Old Kent Road, and Bowyer Place, Camberwell, begs to inform their friends that they have a large quantity of bedding plants established in pots, at 3*s*. per dozen, comprising Pelargoniums, Scarlet Geraniums, Verbenas, Petunias, Ageratums, Salvias, Cupheas, double Senecios, Heliotropiums, Fuchsias, Lobelias, Calceolarias, Mimulus, Anagallis, &c. &c. Dahlias, good flowering sorts, 4*s*. to 6*s*. per dozen. Strong Rollisson's Unique Geraniums, 9*s*. per dozen.—Post-office orders made payable at Old Kent Road.

NEW VARIEGATED GERANIUMS,
ATTRACTION AND SILVER KING.

JOHN AND CHARLES LEE are now sending out strong plants of these elegant novelties, which they can recommend as surpassing anything of the kind hitherto introduced.
ATTRACTION has a decided crimson horse-shoe, on a finely variegated foliage, which greatly enhances its beauty. The flowers are light scarlet. Price 10*s*. 6*d*. each.
SILVER KING is of a dwarf free habit, the leaves perfectly flat, with a very broad silver margin; flowers intense scarlet. Price 7*s*. 6*d*. each, or 70*s*. per dozen.
Nursery and Seed Establishment, Hammersmith, near London.

DILLISTONE AND CO. beg to offer the following:—STRAWBERRY PLANTS.—Ten of the best kinds always on hand, 2*s*. 6*d*. to 3*s*. 6*d*. per 100.
HOLLYHOCKS saved from 20 of the best named kinds, and kept separate, 3*s*. per dozen; 20*s*. per 100.
BEDDING PLANTS.—Many thousands will be ready in May, 3*s*. to 6*s*. per dozen, or cheaper if 100 are taken.
ROSES.—Tea, Bourbon, and Hybrid Perpetuals, and new ones, on the Manetti stock.
HERBACEOUS PLANTS, fine and good, 20*s*. to 30*s*. per 100.
Orders above 20*s*. paid to London. Lists upon application, enclosing a stamp.—Nurseries, Sturmer, Halstead, Essex.

FIRST-CLASS DAHLIAS.
MITCHELL'S DUCHESS OF SUTHERLAND AND SULPHUREA ELEGANS.

JAMES MITCHELL will send out, early in May, his two unrivalled Seedling Dahlias—DUCHESS OF SUTHERLAND, white, mottled, and edged with crimson, the most beautiful and constant Show Flower ever offered: 24 blooms exhibited at the Surrey Gardens in September, 1853, and much admired; also First-class Prize at Maidstone, by Messrs. Neville and others; 4 feet, 10*s*. 6*d*. SULPHUREA ELEGANS, primrose-yellow, exquisite form, first-rate, and constant show flower, 4 feet, 10*s*. 6*d*.
MITCHELL'S NEW BLUE VERBENA ELEGANTISSIMA, an improvement on Mons. Paguin; the above magnificent Verbena at 2*s*. 6*d*. each. No discount, unless six are ordered.—Piltdown Nurseries, Maresfield, Sussex.

CHOICE BEDDING PLANTS.

IN THE "GARDENERS' CHRONICLE" OF LAST WEEK

YOUELL AND CO.

Advertised a SELECT LIST of the above for present Planting, to which they beg to refer.

Royal Nursery, Great Yarmouth.

SUTTON & SON'S GENUINE NEW TURNIP SEEDS.

ONE of the finest Exhibitions of Turnips and other Roots (open to all England), was held at the Reading Cattle Show, on December 1, 1853. The Editor of the *Reading Mercury*, in alluding to this Show, made the following remarks:— "The Turnips exhibited on the 1st inst. in this town by J. B. Kiteat, Esq., to which prizes were awarded by the Reading Farmers' Club, were SUTTON'S Lincolnshire Red Globe. These roots were much admired for their extraordinary size (being nearly a yard in circumference and globular shape. J. B. Monck, Esq., produced some splendid specimens of Swedes, and R. Fellowes, Esq., some Yellow Globe Mangold, of equally fine quality."—See *Reading Mercury*, Dec. 3 and 10, 1853.

The following remarks are by the Editor of the *Berkshire Chronicle*, at the conclusion of his report of the above Show:—"No doubt the excellence of these roots must be mainly attributed to the cultivation; but it is worthy of remark that every prize was won by roots grown from Messrs. SUTTON'S seeds."

At the Annual Root Show held at Basingstoke, Hants, on December 21, at which a large number of prizes was awarded for root crops, the whole of the prizes (except two), were gained with the produce of our seeds; and we are constantly hearing from our customers in other parts of the kingdom of their similar success."

The following are the principal sorts exhibited at the above Shows:—

SECTION I.—SWEDISH TURNIPS.

ASHCROFT SWEDE.—We have great confidence in recommending this as the largest and one of the best Swedes in cultivation. Price 1s. 6d. per lb., or 9s. per gallon.

GREEN-TOPPED YELLOW SWEDE.—A very hardy variety, well known. Price 1s. per lb., 6s. per gallon, or 40s. *per bushel.*

SKIRVING'S LIVERPOOL SWEDE.—Our seed of this excellent Swede is particularly true, having been grown last summer from selected roots, which were raised from seed procured from Mr. Skirving. Price 1s. 3d. per lb., or 7s. per gallon.

RIVERS' STUBBLE SWEDE.—So called, because from its habit of rapid growth it may be sown later than other kinds. Price 1s. 6d. per lb., or 9s. per gallon.

SUTTON'S HARDY PURPLE-TOPPED SWEDE.—*Fine globe-shaped, with small top and one tap root, will stand the most severe winter, and is one of the best for storing.* It was selected from the East Lothian Purple-topped Swede, but is larger. Price 1s. 4d. per lb., or 8s. per gallon.

YELLOW TANKARD SWEDE.—A very heavy cropper, and of quick growth (leaves similar to common Turnip). Price 1s. 3d. per lb., or 7s. per gallon.

(For EARLIEST sowing we would recommend the Ashcroft or the Skirving's; for LATEST Rivers' Stubble; and for the MAIN CROP our Hardy Purple-topped.)

SECTION II.

YELLOW HYBRID, SCOTCH, AND BULLOCK TURNIPS.

SUTTON'S PURPLE-TOPPED YELLOW HYBRID.—The hardiest, largest, and most nutritious of all Hybrid Turnip. Although the leaf of this is similar to common Turnip, the bulb is similar and equal in value to a fine Yellow Swede. Time for sowing, June and early in July. Price 1s. 4d. per lb., or 8s. per gallon.

SUTTON'S GREEN-TOPPED YELLOW HYBRID, particularly adapted for poor soils and for late sowing, possesses same good properties as our Purple-topped Hybrid. Price 1s. 4d. per lb., or 8s. per gallon.

SKIRVING'S PURPLE-TOPPED YELLOW BULLOCK, grown from seed received from Mr. Skirving. Price 1s. per lb., or 6s. per gallon.

YELLOW SCOTCH (Aberdeen), Green-topped or Purple-topped, price 1s. per lb., or 6s. per gallon.

CHIVAS'S ORANGE JELLY, a most excellent sort for late sowing. We have a fine choice stock grown from seed received from Mr. Chivas, which we can recommend as perfectly true and strong growing seed. Price 2s. per lb. We can also supply, if preferred, seed direct from Mr. Chivas, who has appointed us Agents for the sale of his Orange Jelly Turnip Seed. Price same as at Chester.

SUTTON'S CRUICKSFIELD HYBRID SWEDE, a valuable new Hybrid, between Kohl Rabi and Skirving's Swede. To be sown at the same time and cultivated in the same manner as Swedes. *Peculiarly adapted for poor soils, and stands the driest summer without mildewing. It is also useful for transplanting to mend other crops or fill up headlands and corners.*

SECTION III.—WHITE-FLESHED TURNIPS.

YORKSHIRE PARAGON TURNIP.—A fine new White Globe Turnip, as solid and nearly as large as Lincolnshire Red. Price 1s. 6d. per lb., or 7s. per gallon. Mr. Stratten, one of the most successful breeders of stock, who has had great experience in fattening cattle, particularly recommends this sort.

SUTTON'S LINCOLNSHIRE RED GLOBE TURNIP.—A superior variety, presented to us by Philip Pusey, Esq., being more solid and larger than any other. Price 1s. 6d. per lb., or 9s. per gallon.

From Mr. Albert Edmonds, Steward to Philip Pusey, Esq., November 23, 1853.

"By the desire of Mr. Pusey, I beg to inform you that he had a very fine crop of the Red Lincolnshire Turnip, weighing 30 tons 10 cwt. 1 qr. 24 lbs. per acre."

From Mr. T. Chandler, Manufacturer of Liquid Manure Drills, Aldbourne, Hungerford, November 11, 1853.

"The Lincolnshire Red Turnip, the seed of which I had from you, has produced the heaviest crop I ever grew."

SUTTON'S IMPERIAL GREEN GLOBE TURNIP.—Shape of Matson's, much larger and quite hardy. *This should be sown for the main winter crop, instead of the Common Green Round Turnip.* Price 1s. 4d. per lb., or 8s. per gallon.

COMMON GLOBE TURNIPS, True White, and Red Globe; two large early sorts, well known. Price 1s. per lb., or 6s. per gallon.

TANKARD TURNIPS, Red, White, and Green, either sort may be had separate. Price 1s. per lb., or 6s. per gallon.

NORFOLK ROUND TURNIPS, Red, White, and Green, useful sorts, well known. Price 1s. per lb., or 6s. per gallon.

SUTTON'S EARLY SIX-WEEKS.—The quickest Turnip known, very sweet and solid, the best for sowing very early or very late. Price 1s. 4d. per lb., or 8s. per gallon.

Our Turnip Seeds are all of home growth, from selected roots, and being genuine new seeds, may be sown moderately thin, with certainty of a crop.

The following are extracts from a few of the many letters we receive to the same effect from our customers:—

From J. Hanson, Esq., Gulgaith, Penrith, Cumberland, Jan. 10, 1854.

"The Turnip Seeds I had from you last season answered beyond my expectation, and exceeded by far any that I procured elsewhere. I should have been many pounds in pocket if I had procured all I wanted from you."

From Charles Hayward, Esq., Bromhill, near Taibach, Jan. 7, 1853.

"The seeds I had from you were entirely satisfactory; several of the Ashcrofts, when trimmed, weighed 12 lbs., and I saw none surpassing them in Baker Street last month."

From G. Churchward, Esq., Stoke Gabriel, January 13, 1854.

"I had Turnip seed of you last year, which answered very well. The Lincolnshire Red Globe is a very good Turnip, and so is your Purple-top Yellow Hybrid."

From Marchbank Woods, near Moffat, N.B., March 16, 1853.

"The crop of Sutton's Purple-topped Yellow Swede last year has kept better than any other Turnip."

From H. F. Cotton, Esq., Quex Park, near Margate, March 26, 1853.

"The Six Weeks' Turnip answered admirably."

Orders by Post addressed JOHN SUTTON & SONS, Seed Growers, Reading, Berks, will have immediate and careful attention.

CAPE HEATHS AND NEW AZALEAS.

W. J. EPPS begs to call attention to his extensive and rare Collections of Heaths and Azaleas, which are in the finest condition possible: very bushy and well formed for specimens in 3, 4, and 6-inch pots, consisting of all the best varieties, such as Aristata ampullacea, tricolor, jasminiflora, ventricosa, Massoni, Webbiana, obbata, &c., &c. AZALEAS—Prince Albert, Gledstanesi, Excelsa, Murrayana, Alba magna, Duke of Devonshire, Holderi, Toilette de Flora, Glory of Sunning Hill, Symmetry, Splendens, Iguescens, &c., &c., 9s., 12s., 18s., and 21s. per dozen; 5l. per 100 varieties, carriage paid to London. All the new Stove and Greenhouse Plants, Fuchsias, Verbenas, and Roses, equally moderate. Catalogues of the above sent on application.—Nurseries, Maidstone and Ashford.

BEAUTIFUL NEW BEDDING PLANT.

MILLER'S HYBRID MULE PINK.

ROBERT MILLER, Hartshill Nursery, Newcastle, Staffordshire, offers with confidence the above Pink, colour a bright crimson scarlet, double: grows from 9 to 15 inches high, branches out and forms a little bush, and flowers most abundantly from June to October, and perfectly hardy. See *Gardeners' Chronicle*, Sept. 24, 1853.

DIANTHUS R. M., very pretty, and being dwarf in habit, it will doubtless make a good bedding plant. Price 12s. per doz., package included. The usual discount to the Trade. To be let out the second week in April. Post-office orders from unknown correspondents made payable at Newcastle.

ABRAHAM STANSFIELD, NURSERYMAN, SEEDSMAN, and LANDSCAPE GARDENER, Todmorden, Lancashire, having a large Stock of the following, can supply them at the under-mentioned prices:—

50 species of the genus SAXIFRAGA, at 15s. per 100, or 4s. per dozen.

400 species of select Plants adapted for Rockwork, at 30s. per 100, or 4s. per dozen.

800 species and varieties of Alpine and Hardy Herbaceous Plants, 25s. per 100, or 4s. per dozen

150 species of Hardy and Greenhouse FERNS and LYCOPODS, from 6s. to 24s. per dozen.

SCARLET GERANIUMS and other Bedding Plants, 4s. p. doz.

N.B. A few bushels of genuine Fluke Potato, at 8s. per bushel.

Catalogues on application.—A remittance or reference from unknown correspondents.

MAY'S PARAGON CABBAGE.

THE SUBSCRIBER, in offering the above for the first time, guarantees it to be the finest Cabbage in existence; of dwarf habit; has never been known to run; attains a large size (having been grown to the great weight of 28 lbs.); of a most beautiful green, and boils tender as Asparagus, which it continues to do throughout the season: in flavour is as far superior to the ordinary Cabbages of the day as they are to the old Drumhead Scotch. In ¼ oz. packets, 1s. each, free by post. The usual allowance to the trade.

H. M. begs to inform the public that he is unable to supply any more of his MAGNUM BONUM LETTUCE, as the stock was only small and is completely sold out.

Address all orders and communications to HENRY MAY, the Hope Nurseries, near Bedale, Yorkshire.

GRASS SEEDS, ETC.

THOMAS GIBBS AND CO. (the SEEDSMEN to the Royal Agricultural Society of England), corner of HALF-MOON STREET, Piccadilly, beg to draw attention to their Grass Seeds for Laying down Land to Permanent Grass. The Seeds which they employ in forming the Mixtures for various soils are well cleaned under their own superintendence.

Mixtures for Permanent Meadows and Pastures
" Parks or Pasturage in sight of Mansions
" Irrigation on Water Meadows
" Renovating Old Swards
" Fine Garden Lawns, Cricket Grounds, &c.
" two or three years' lay.
RYE-GRASS—Italian, very fine sample
" Dickinson's Italian do.
" Pacey's Perennial and Evergreen
" Annual or Common.
CLOVERS—Red, White, and Alsike
" Trefoil, Red Suckling, &c.
CARROTS—Large White Belgian
" Field, Altringham, &c.
MANGOLD WURZEL—Long Red
" Orange or Yellow Globe, and other sorts.
TURNIPS—Swedes, Purple Top, Skirving's, &c.
" Hybrids, Gibbs' Green Top
" Globes, Tankards, &c.
FARM SEEDS of all descriptions.

Priced Lists, Detail Catalogues, and other information can be obtained on application to THOMAS GIBBS & CO.

SEEDLING VERBENAS.

W. J. EPPS has great confidence in recommending the following Seedlings, raised by Mr. Philpot, of Aldington, being without exception the most distinct and splendid flowers in their class yet offered to the public. The following are the opinion and description given by Mr. Neville, editor of the *Gardeners' Record;* they were exhibited at Ashford open Show, in September last, and received first-class certificates.

No. 1. SULTAN.—Dark velvety maroon; large white eye; petals stout; pip, full size; truss, medium; a beautiful variety.

No. 2. BLUE BELL.—Dark velvety blue, with white eye; truss very large and well formed.

No. 4. INDIAN CHIEF.—Crimson puce, very rich in colour; yellow eye; very attractive.

No. 6. DELICATISSIMA.—Pale lavender, with large primrose eye; very beautiful and novel; petals, stout; pips, well formed; truss, medium.

No. 8. RUFUS.—Plum colour purple; velvety texture; dark disc; with a clear white margin; immense flower and trusser.

No. 20. DISTINCTUS.—Cherry lavender grey disc; distinctly margined with dark crimson purple; fine bold truss and large flowers.

The whole of the above are exceedingly free flowering, and excellent habits—well suited for bedding or other purposes: 12s. 6d. the collection.

SEEDLING PHLOXES.

These are, without exception, the most lovely things in their way possible; they have been much admired by all who have seen them, and have merited the high opinion of the editors of the leading floricultural works. The following is the description from the *Gardeners' and Farmers' Journal*, Sept. 21st, 1853:—

"SEEDLING PHLOXES.—The collection of Seedling Phloxes received is remarkable for novelty and superiority of form.

No. 1. MARIA.—Rose peach, with white eye.
No. 3. ASTROSANGUINEA.—Fine crimson.
No. 4. DISTINCTUS.—Light purple, white eye.
No. 5. CARMINATA.—Deep rose, white eye.
No. 7. SPLENDENS.—Large lilac, white eye.
No. 8. CONSPICUA.—Very deep rose, white eye."

10s. 6d. the collection.—Nurseries, Maidstone.

NEW AND CHEAP PLANTS.

HENRY WALTON, FLORIST, &c., Edge End, Marsden, near Burnley, Lancashire, begs to offer the following, in strong and healthy Plants. Most of the GERANIUMS are set with flower buds:—

GERANIUMS of 1853.—Queen of May, National, Eleanor, Rachel, Heroine, Leonora, Lagoma, Cordelia, Rolla, Butterfly, Commander, and Jupiter: the above 12 for 1l. 8s., hamper included.

GERANIUMS—Ariadne, Ambassador, Beatrice, Bride of Abydos, Chloe, Chieftain, Cristine, Claudiana, Enchantress, Elise, Flying Dutchman, First of May, Herald, Jullien, Lablache, Lavinia, Little Nell, Lord Gough, Lancashire Witch, Monteith, Purple Standard, Pulchra, Painter Improved, Rubens, Rosa, and Surprise; the above 16s. per dozen, or the set of 26 for 30s., package included.

The following older varieties, 9s. per dozen:—Alonzo, Beauty of Montpellier, Belle of the Village, Brilliant, Constance, Conspicuum, Crispina, Christobel, Exquisite, Emily, Fire Ball, Flavia, Forget Me Not, Falstaff, Flying Dutchman, Gaines, Generalissimo, Lord Stanley, May Queen, Nectar Cup, Nandee, Nonsuch, Ondine, Prince Arthur, Prince of Orange, Pearl, Rowena, Silk Mercer, Sir R. Peel, Sparkler, Satisfaction, Village Maid, and Virgin Queen.

FUCHSIAS.—Beauty, Brilliant, Beauty of Devonshire, Collegian, Dr. Lindley, Duchess of Lancaster, England's Glory, Banks' Glory, Incomparable, King Charming, Lady Franklin, Lady Emily Cavendish, Mrs. Patterson, Perfection, Premier, Purple Perfection, and Princess; the above 1s 6d. each, or 10s. per doz.

Older varieties, to include the following and several others, 6s. per dozen.—Clapton Hero, Cartona, Elect, Expansion, Game Boy, Gaiety, Gem of the Season, Joan of Arc, &c. &c.

VERBENAS.—Orestes, Elizabeth, Mrs. Kirkpatrick, Gray, Vesta, Garland, Lady Franklin, Middlesex Rival, Discount, La Camago, Camilla, Princesse Marianne, Casanova, Fulgorie, Mons. Derouit, Zenobia, Madame Ivery, Caroline Colmans, Madame Lemonier, Rosea, Beauty of Danecroft, Purity, Madame Rougier, Zelia, Mademoiselle Gonnet, Madame Denis, Racine, Comtesse de Belleville, Rosetta, Emma Bannerman, Madame Boucharlet, Purple King, and Princess Matilda; the above 1s. each, or 7s. 6d. per dozen, post free. Older varieties, 3s. 6d. per dozen: ditto Scarlets, White, Purple, &c. &c., per dozen of one variety, 4s. 6d.

CHOICE PETUNIAS, selected varieties, 4s. 6d. and 6s. per dozen.

CHRYSANTHEMUMS, Show and Lilliputian varieties, 4s. 6d. and 6s. per dozen.

Thirty choice LILLIPUTIENNE VARIETIES, recommended in Turner's "Florist" for January last, 1l. post free.

BEDDING PLANTS in great variety, including Mimulus, Phlox, Pansies, Cupheas, Scarlet and other Geraniums, Heliotropes, Belgian Daisies, &c. &c., equally cheap.

Catalogues of the above may be had for one postage stamp.

It is respectfully requested that all orders be accompanied by a Post-office Order (unless reference is given), payable at Marsden, Lancashire.

PAGE AND CO., SEED MERCHANTS TO THE AGRI-HORTICULTURAL SOCIETY OF BOMBAY.

SEEDS FOR EXPORTATION (free on board) AND HOME USE (carriage paid).

No. 1.	A choice collection of Vegetable Seeds, suited to the climate (case included)	£5 0 0
No. 2.	Do. Do. in smaller proportions	2 10 0
No. 3.	Do. Do. Do.	1 0 0
No. 1.	A selection of the most beautiful and showy Annuals (case included)	1 5 0
No. 2.	Do. Do. Do. ...	0 15 0
No. 3.	Do. Do. Do. ...	0 10 6

General Priced Catalogues free upon application.

In addition to our great experience, the port of Southampton affords us unrivalled facility for the almost daily shipment of SEEDS to all parts of the world; and as no greater test of genuineness and vitality than a long transit by sea can be applied to Seeds, we yield priority to none in supplying such for home growth as cannot fail to prove most satisfactory.

All parties desirous of taking or sending Seeds to the Peninsula, Mediterranean, East and West Indies, Australia, Brazil, Cape of Good Hope, China, America, &c., are particularly requested to state their wishes to us, whereby the annoyance and disappointment which too frequently happens by placing their orders in the hands of inexperienced persons will be prevented. We are continually receiving the warmest thanks of our consignees; only a few days since, a gentleman writes from Melbourne, "Your Seeds have proved excellent. The selection of Peas has afforded us the greatest delicacy in Australia." From Capt. H. J. Barr, Secretary to the Horticultural Society of Bombay: "*Gentlemen,—In acknowledging the receipt of your last supply of Vegetable and Flower Seeds, which reached me on the 6th June by the overland route, I have the honour to inform you that they have all turned out so fresh and good that the demands on our Society have increased so much that I must now double my former order, and beg you to supply me according to the list now furnished.*"

PAGE & CO.'S BLIGHT COMPOSITION should be in the hands of all Plant and Fruit Cultivators. For testimonials see back leaf of *Gardeners' Chronicle*, March 11.

Oxford Street (adjoining Radley's Hotel, 20 yards from the Railway and Docks), Southampton.

GERANIUMS.

SEVERAL THOUSANDS OF THE BEST IN CULTIVATION, VERY FINE AND STRONG.

BASS AND BROWN *beg to refer purchasers who wish to make their own Selection to their advertisements in the* Gardeners' Chronicle, *of March 27th, page 179; and April 8th, page* 210, *of these and many other new Plants:—*

	s.	d.
18 Best new of last season ...	66	0
12 " " ...	44	0
30 Very choice, of previous date ...	45	0
12 " " ...	18	0
Fine vars., 6s. to 12s. per dozen.		
6 Best Fancy vars. of last season ...	18	0
12 Very choice of previous date ...	18	0
Fine vars., 9s. to 12s. per dozen.		

GLOXINIAS.

9 Superb new vars. ...	33	0
12 Very choice " ...	20	0
12 Other fine " ...	12	0

ACHIMENES.

4 Superb new vars., see previous advertisements	11	0
12 Beautiful and choice vars. ...	10	0

GREENHOUSE PLANTS.

50 Fine and select species and vars. ...	45	0
25 " " ...	24	0
12 " " ...	12	0
12 Extra choice and select ...	25	0

STOVE PLANTS.

25 Fine and select species and vars. ...	35	0

HERBACEOUS PLANTS.—In pots. Heights and colours, see Autumn Catalogue.

100 Distinct and showy vars.,	30s. 0d.,	or 50 for	£0	17	6
25 " "	10 6	or 12 for	0	6	0
100 Superior and new vars.,	50 0	or 50 for	1	10	0
25 " "	17 6	or 12 for	0	9	0
25 Vars., best for Rockwork	12 0	or 12 for	0	7	6
DWARF ROCK CISTUS, 24 Beautiful vars.			0	15	0
" 12 "			0	7	6

☞ An extensive assortment of Bedding Plants.

Goods Carriage free (not under 20s.) to all the London Termini and all Stations on the London and Norwich Colchester Line; and Plants added gratis with orders of 40s. and upwards.

Post-office Orders payable to BASS & BROWN, or to STEPHEN BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

MESSRS. J. AND H. BROWN offer the following SELECTED PLANTS, &c., which they will forward to any part of the Kingdom.

	s.	d.
25 Azaleas, new Hardy Belgian Varieties, on their own roots, with flower-buds, one of a sort by name ...	20	0
25 American Azaleas " " ...	15	0
25 Hardy American Plants, one of a sort by name ...	10	6
12 Hardy Heaths and Kalmias ...	6	0
12 Rhododendrons, including Scarlet, White, and Rose ...	12	0
12 Fine Hardy Scarlet Rhododendrons ...	18	0
Climbing Roses of choice sorts in pots, per dozen ...	6	0
Passifloras, Clematis, Jasmines and others, in pots, per dozen ...	10	0
6 Fine Hardy Magnolias, one of a sort ...	10	6
12 Greenhouse Azaleas of the leading sorts ...	20	0
24 Choice Ericas, one of a sort by name ...	16	0
12 Orchidaceous Plants, choice species and good plants, 40s. to	50	0
50 Choice Greenhouse Plants, one of a sort ...	45	0
Verbenas, Petunias, and Calceolarias, best sorts, p. doz. 4s. to	6	0
Yellow Picotees, Carnations, and Pinks, per dozen ...	10	0
6 Tree Carnations, new sorts ...	6	0
6 Alstremerias, in fine varieties ...	10	0
6 New Potentillas, one of a sort ...	5	0
Anagallis, Large Blue and Large Red, per dozen ...	6	0
Antirrhinums and Pentstemons, best sorts, per dozen ...	6	0
12 New Phloxes, Perennial, Belgian varieties ...	10	0
6 Mimulus, best new varieties ...	5	0
Lobelias, tall and Dwarf varieties, per dozen ... 4s. to	8	0
12 Fancy Geraniums, best new sorts ...	18	0
Mountain of Light do., 2s. 6d. each, or, per dozen ...	20	0
Flower of the Day, and all the best Scarlets, per dozen	12	0
12 Fine new sorts of Show Geraniums ...	15	0
12 Best new Fuchsias, including Glory, &c. ...	10	0
Achimenes and Gloxinias, 6 best of each ...	10	0
Oxalis floribunda, and Dielytra spectabilis, per dozen ...	8	0

New Greenhouses, Conservatories, &c., furnished with all the best new Climbing Plants, &c. For price, &c., see Catalogue.

A Selection of the most approved Flower Seeds, 18 Papers, 5s.; 36 Papers, 10s., sent free by post.

Albion Nursery, Stoke Newington, London.—May 13.

STANDISH AND NOBLE, NURSERYMEN, SEEDSMEN, &c., Bagshot, Surrey, are now prepared to receive orders for the following new and beautiful varieties of AZALEAS, which will be ready for delivery in June next. The Advertisers can recommend them with the greatest confidence, as superior to any others of their kind.

AZALEA BEALII.—This very distinct variety was introduced by them from China. The flowers, which are of first-rate shape, are quite unique, being striped, like a Carnation, with rich vermilion on a pure white ground. It is of good habit, fine in foliage, and a most abundant bloomer; and although decidedly in the first rank as a greenhouse plant, it is quite hardy enough for the open border. Each, 21s.

AZALEA CRISPIFLORA, a species differing much from any other known Azalea, having a character entirely its own. No other kind approaches it in compactness of habit, and its foliage is very fine, abundant, and evergreen. The flowers are very large, and the edges of the petals have the appearance of being irregularly *gaufred*, like a lady's frill: the colour is a rich rose lake. From the fact of its blooming very late—much later than any other Azalea—it will be doubly valuable for many purposes. Each 21s.

W. IVERY'S SPRING CATALOGUE can be had on application, post free; and he begs to offer a few good and select Plants for Bedding.

LOBELIA ERINUS CÆRULEA ALBA, Seedling of 1853; colour, bright sky-blue, with white throat, much larger flower than any of the Erinus tribe; strong grower, and very free bloomer, decidedly the best of the class, 2s. 6d. each, or 21s. per dozen, strong plants.

GERANIUM—Trentham Rosy Scarlet, a beautiful variety, compact habit, large trusser, quite distinct in colour; must become a great favourite for bedding, 2s. each, or 18s. per dozen.

GERANIUM—Golden Chain, fine healthy plants, 18s. per dozen; extra size, 2s. 6d. each.

GERANIUM—Flower of the Day, strong healthy plants, 9s. to 12s. per dozen.

CALCEOLARIAS—Beauty of Montreal, Brilliant, Crimson King, Magnificent, Model, Gold Cap; the above are splendid varieties for bedding, 18s. per dozen. Other good varieties from 8s. to 12s. per dozen.

Also a fine stock of VERBENAS, SCARLET GERANIUMS, PETUNIAS, and all other bedding plants, at moderate prices.

W. I. has a fine stock of the best Show, Fancy, and mixed GERANIUMS, FUCHSIAS, CINERARIAS, AZALEAS, Winter Flowering CARNATIONS, Pompone and large Flowering CHRYSANTHEMUMS, Herbaceous and other Miscellaneous Plants, too numerous to insert here.

Hanover Nursery, Peckham, near London, May 13.

TO FLORISTS.

ROBERT M. STARK begs to intimate that he will send out early in April the under-noted FLOWERS, which he is confident will be useful additions to any collection.

PANSY "TELEGRAPH" (STUART'S).—A fine dark plum-coloured self, of great substance; was a conspicuous flower in stands which gained 10 first prizes last season. Price 5s. each.

VERBENA "LEUCOSTEMMA" (MEIN'S).—Pure white, very large compact truss. Certificate of Merit from Caledonian Horticultural Society in 1853. Price 5s. each.

Edgehill Nursery, Dean, Edinburgh, May 13.

TO THE SEED TRADE AND OTHERS.

BENJAMIN R. CANT, St. John's Street Nursery, Colchester, can supply in quantity the following Home-grown Seeds, of excellent quality:—

	Per lb.—s.	d.
WHITE BELGIAN CARROT ...	1	0
LONG RED ALTRINGHAM Do. ...	1	0
YELLOW GLOBE MANGOLD WURZEL ...	1	0
LONG RED Do. ...	1	0

Prices to the Trade on application.

TURNIP SEEDS! TURNIP SEEDS!

CARRIAGE FREE.

B. PAGE AND CO.'S Genuine Stock, saved from the finest transplanted Bulbs, will, as heretofore, gain the greatest number of Prizes at Root Exhibitions.

	Per lb—s.	d.		Per lb.—s.	d.
Skirving's Improved Swede ...	1	0	White Belgian Carrot ...	1	8
Purple-top ...	1	0	Mangold Wurzel, Long Red ...	0	10
Green-top ...	1	2	Ditto, Yellow Globe ...	1	0
Ashcroft Hybrid ...	1	2	Buckwheat (English growth), per bushel ..	6	6
Laing's ditto ...	1	2	Mustard, ditto ...	16	0
Aberdeen or Scotch Yellow ...	0	10	Dwarf Essex Rape, p.cwt.	28	0
Dale's Hybrid ...	1	2	Rye-grass, Italian, per bushel ... 4s. 6d. to	5	6
White Norfolk ...	1	0	Ditto, Perennial, per bushel ... 4s. 6d. to	5	6
" Globe ...	1	0	Fine mixed for lawns and permanent pasture ... 10s. to	15	0
Tankard, in sorts 1s. to	1	3			
Green Round ...	1	0			
Red Round ...	1	0			
Early Stone ...	1	0			

Offices, Oxford Street (ten yards from the Railway Terminus), and Above Bar, Southampton.

EDWARD GEORGE HENDERSON AND SON, Wellington Nursery, St. John's Wood, London, are now prepared to send out the following new plants:—

	s.	d.
FUCHSIA.—Monarch ...	10	6
GLOXINIA.—Duke of Wellington ...	7	6
" Lady Franklin ...	7	6
GERANIUM.—Silver Queen ...	7	6
" (Fancy) Bonnie Lassie ...	15	0
" (Fancy) The Fornarina ...	10	6
" (Fancy) Loveliness ...	10	6
HYBRID BEDDING VARIETIES.		
" Picturata ...	3	6
" Etoile de Vaise (Ivy-leaf) ...	3	6
" Quercifolium eximium ...	7	6

The above three hybrid bedding Geraniums are also beautiful plants for pot culture, as they continue covered with flowers the whole of the season.

VERBENAS:—

	s.	d.		s.	d.
Robin Hood ...	3	6	Beauty ...	5	0
Marie Antoinette ...	3	6	Matchless ...	3	6
Attraction ...	3	6	Diadem ...	3	6
Ariosto ...	3	6	Ne Plus Ultra ...	5	0
Madonna ...	5	0	Sulphur Model ...	5	0
Orion ...	3	6	Beauty of the Garden ...	5	0

The Set, 42s.

The above twelve distinct Verbenas have been Bedded out and proved the second season; the raisers are Messrs. Banks, Stewart, and Fozard. For descriptions of the above New Plants see back numbers of this paper.—May 13.

FINE SHOW PANSIES AND FUCHSIAS.

National (Turner)	Marchioness of Bath
Sir J. Paxton (do.)	Alfred the Great (do.)

Eva (Thomson). 10s. the five varieties.

Adela (Turner)	France Cycole (Grieve)
Mr. Beck (do.)	Polyphemus (Thomson)
Mrs. Beck (do.)	Almanzor (do.)
Queen of England (Fellowes)	Elegant (do.)
Sir P. Sydney (Turner)	Albion (do.)
Masterpiece (Hooper)	Criterion (Hooper)
Sultan (do.)	Commander-in-Chief
Lucidum (do.)	Lady Walsingham
Constance (Turner)	Androcles (Youell)
Euphemia (do.)	Blanche (Turner)

The set of 20 for 10s.; or other varieties if some are possessed.

FUCHSIAS.

Glory (Banks)	Commodore (Henderson)
Cartona (do.)	Duchess of Lancaster
Dr. Lindley (do.)	Queen of England
Lady Cavendish	Globosa Perfecta
Nil Desperandum	Beauty of Deal
Hendersoni	Crystal Fountain

9s. per doz. plants. The above can be sent through the Post-office.

GERANIUM—Flower of the Day .. ... 9s. per dozen.
" Rollisson's Unique ... 9s. "
Fancy, fine, named ... 9s. "

Primula sinensis and fimbriata, and Antirrhinum Seed, each, 1s. per packet.

HART AND NICKLIN, 132, High Street, Guildford, Surrey.

NEW ROSES IN POTS, at reduced prices.

HYBRID PERPETUAL.	s.	d.	HYBRID PERPETUAL.	s.	d.
Archimede ...	5	0	Sephora ...	7	6
Colonel Lorry ...	5	0	Souvenir de Mdme. Lille	5	0
Docteur Reynaud ...	2	6	Triomphe de Paris ...	5	0
Duchesse d'Orleans ...	5	0	BOURBON.		
James Veitch ...	5	0	Beauté Lyonnaise ...	3	6
Lady Shelley (Mitchell's)	5	0	Madame Helfinbein ...	5	0
Lady Stuart ...	5	0	Souvenir de l'Arquebuse	5	0
Le General Jacqueminot	10	6	TEA.		
Leon Plee	3	6	Gloire de Dijon ...	10	6
Mdlle. Aline Gilbon ...	10	6	MOSS.		
Madame Harriet Stowe ...	10	6	Princess Alice (Paul's) ...	5	0
Madame Philip ...	5	0	HYBRID BOURBON.		
Rubens ...	3	6			
Salvator Rosa ...	3	6	President Pierce ...	7	6

The following Choice Hybrid Perpetual Roses, at 30s. per doz.: Dr. Assas, Destigny, Diodore, Egerie, Genié de Châteaubriand, Inermis, La Seduisante, L'Enfant du Mont Carmel, Léon le Guay, Louise Odier, Laura Raymond, Louise Peronny, Ludovic Letaud, Madame Andry, Madame Flory, Madame Ducher, Madame Hilaire, Madame Rivers, Rose de Soil, Souvenir de la Reine des Belges.

BENJAMIN R. CANT, in offering the above, does so with the greatest confidence, as he has received several letters from customers stating that the plants sent are far better than those generally supplied by the Trade.

ST. JOHN'S STREET NURSERY, COLCHESTER.

Carriage paid to London and Norwich and all intermediate stations on the Line. Unknown Correspondents are requested to send a remittance or reference.

EUGENIA OR MYRTUS UGNI.

MESSRS. VEITCH AND SON, of Exeter, and the Exotic Nursery, Chelsea, have much pleasure in offering to the Public the above beautiful evergreen flowering shrub, of THEIR OWN introduction, from Patagonia, through their collector, Mr. Wm. Lobb.

It has stood several winters in the open ground without shelter, producing its delightfully fragrant flowers in July, succeeded by its Strawberry-flavoured red berries, eaten in Chili as dessert. It is a plant of easy culture, flowering in a very small state, when not above 6 inches high, and is well adapted for pot culture. It is figured by Sir Wm. Hooker in Curtis's "Botanical Magazine" for January, 1852.

Strong blooming plants, in 48-sized pots, 21s. each.
Second size do. in 60-sized pots, 15s. each.

With the usual discount to the Trade, and one over on either class when three are taken.—Exeter, May 13.

STAR NURSERY, SLOUGH.

WILLIAM BRAGG begs to inform the Floral world that his Catalogue of DAHLIAS for 1854 is now ready, and can be had gratis on application. "The Beauty of Slough," which was figured in last month's "Florist," is now ready to send out. Likewise his choice new set of Nine VERBENAS, which has taken several First-class Certificates at the National and other Floricultural Societies. Also the new dark Horseshoe-leaved Geranium "Glory," which obtained a Certificate at the National, is now ready. This splendid variety will prove a great acquisition as a pot or bedding plant.

W. B. has still on hand a good Stock of Hollyhocks, Geraniums, Fancy Geraniums, Pansies, including his four new ones; several hundred dozens of Bedding Plants, Chrysanthemums, Verbenas, Fuchsias, Phloxes, Roses, &c. Choice Pink, Pansy and Hollyhock Seeds, in packets 2s. 6d. each, post free.

All Parcels carriage paid to London, and plants given to compensate for carriage.—May 13.

PAGE AND CO.'S

BLIGHT COMPOSITION should be in the hands of all Plant and Fruit Cultivators. 4s. per gallon, sufficient to make four. For testimonials see back leaf *Gardeners' Chronicle*, March 11, 1854.

GARDEN AND AGRICULTURAL SEEDS, first quality, and lowest market price.

Oxford Street (adjoining Radley's Hotel, 20 yards from the Railway and Docks), Southampton.

RENDLE'S IMPROVED SWEDE TURNIP.—*The Stock of this excellent Swede has been grown for us this season by R. H. Watson, Esq., Dorsley, near Totnes. It is a most hardy and valuable variety. Price* 1s. 6d. *per lb. For further particulars and testimonials of its excellence see* "FARMING PRICE CURRENT," to be procured from

WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

SEEDS TO IRELAND.—*Plymouth is admirably situated for supplying our sister country with some English Seeds. The Subscribers can refer to some of the leading families in Ireland, who have for many years obtained the whole of their supplies of Garden and Farm Seeds. Seeds delivered free to many of the Irish ports. See Price Current.*

WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

SUTTON'S GRASS SEEDS.

EXTRACT OF A LETTER FROM DR. LINDLEY:— "Messrs. SUTTON,—*We have already made trial of your Lawn Grass Seeds, and it is but justice to say they have proved the best we have sown for many years.*

(*Signed*) "JOHN LINDLEY.

"*Horticultural Society*, 21, *Regent Street, London, Nov.* 9, 1853."

Messrs. SUTTON are continually receiving similar letters of commendation of their Lawn Grass Seeds. Price of seed, 1s. 3d. per lb., 3s. per gallon, or 21s. per bushel, CARRIAGE FREE, except very small quantities. The quantity required is 40 lbs. per acre, for forming new lawns, or from 10 to 20 lbs. per acre for improving old lawns.

SUTTON'S GRASS SEEDS *for forming Permanent Pasture*, 24s. *to* 30s. *per acre;* SUTTON'S RENOVATING MIXTURE *for Improving Old Pastures*, 1s. *per lb.*

JOHN SUTTON AND SONS, Seed Growers, Reading, Berks.

The Gardeners' Chronicle.

SATURDAY, MAY 13, 1854.

COUNTRY SHOWS FOR THE MONTH OF MAY.—15th: Hammersmith Pansy—18th and 19th: Exeter.—23d: Handsworth and Lozells—24th: Nottingham and Colchester.—25th: Derby.—26th: Bury St. Edmunds.—29th Hunslet.—30th. Truro.

INQUIRIES are beginning to be made respecting a plant which is called in the United States the OSAGE ORANGE. An American newspaper informs its readers that the Illinois railway company has contracted for hedging, with the Osage Orange, a hundred miles of their line. Another American journal declares it to be the best hedge plant that has been discovered in this or any other country. Prof. TURNER, of Jacksonville, says—"Our hedges are indeed splendid; when three or fours years old they will turn anything. I wish you could see them in all their glory, bidding a sweet defiance to man, pig, and fowl of all sorts."

Seed has now begun to reach the English market, as we see from Messrs. CHARLWOOD & CUMMIN's circular, where it is quoted at 4s. per pound; and we know that parcels are in some private hands. We must therefore explain what this Osage Orange is, and what the probability of its succeeding in this country.

In the first place it is not an Orange at all. It is so called because its fruit is round and yellow; but it is worthless as a fruit tree, and is more nearly allied to a Fig or Mulberry than to any plant common among us. Botanists call it *Maclura aurantiaca*. It has been for many years in cultivation, but has met with no attention here, because it neither flowers nor fruits. It appears, however, to be perfectly hardy; as indeed it must be, when we remember that it supports the winters of Ohio, where the thermometer sinks to 20° *below zero*.

As a hedge plant it may be expected to merit

among us all that is told of it in the United States; unless, indeed, we except the rate of growth, which is said to be 5 or 6 feet in a season in North America. With our cold soil it cannot be expected to grow faster than Whitethorn. After a few years, when it may be supposed to have formed a hedge, its growth is extremely slow, both in the United States and here.

It is a sturdy, deciduous tree, or rather bush, with strong hooked spines, through which it would be extremely difficult for any living thing to find its way if the branches are once interlaced, as in a well-shaped hedge. The mode of compelling it to do this is described at length in a pamphlet now before us, from which we extract the more important practical details :—

"If the seeds are procured in spring, planting may be deferred until the ground has become warm. In the latitude of New England, any time during the month of May has been found to answer. In order to have them vegetate quickly, they should be put to soak in soft warm water, and allowed to remain three, four, or five days, or until they are very much swollen, and the germ has begun to appear. Keep the water constantly warm by allowing the vessel to stand in a warm place covered with a cloth, and change the water daily, to avoid fermentation ; mix with a little dry earth or sand when you get ready to plant. The ground for the nursery should be a rich sandy loam, deeply worked and finely pulverised. Proceed to lay it out in drills 18 inches apart, and drop the seed at intervals of half an inch in the row ; cover firmly with fine earth a few inches deep. They should be well attended to throughout the season, in order to secure as large a growth as possible. A quart of seed will produce 3000 or 4000 plants. It sells in America for a dollar a quart. It will take 10,000 or 12,000 plants for a mile of hedge.

"In preparing for the hedge, unless the soil is very mellow and rich, a trench not less than 2 feet wide, and as deep, should be dug on the line where the hedge is to stand, and filled up with equal parts of well-rotted manure or compost, and rich earth. Planting may be done after warm weather has commenced in spring. The plants should be prepared for setting by shortening the roots to within 8 or 9 inches, and the top to within 1 inch of the root. Select those of a uniform size as the best to be planted together ; stretch a line where the row is to stand, and set out the plants not more than 10 inches apart, in a single line thus— * * * * or diagonally, thus—* * * * * * * making them a foot apart in each row. It is recommended never to set the plants further apart than stated above, as at greater intervals the stalks must grow larger and the roots extend proportionally; besides, it requires much more labour in pruning, for which the saving in plants is by no means adequate. As regards the single or double row, Prof. Turner and others maintain that a single line is all that is necessary or desirable, while some are inclined to the latter method. Either undoubtedly answers the purpose well.

"The Osage Orange will bear almost any amount of trimming, and a hedge sufficiently firm and compact at the base can be made in no other way than by regular and severe cutting down. The spring succeeding, or one year from the setting, cut all down to within 4 inches of the ground. In consequence of the first pruning at the time of setting each plant will have thrown out three or four shoots. The second cutting will cause these to multiply to six or eight, which will nearly fill the space between the plants. A second trimming should be given when the plants are making a vigorous growth, from the middle to the last of June, cutting off the tops smooth and even to within 4 inches of the ground. The next spring cut to within 5 inches of the preceding cutting, and in June likewise. Continue these spring and June prunings, increasing the distance an inch every year until the hedge shall reach the height desired. The side and lateral branches may be pruned and thickened so as to render it impenetrable to a bird. As regards the shape of the hedge, the taste of the grower will dictate. A neat and most convenient shape for a strong hedge is about 5 feet high and 3 feet wide at the bottom, gradually narrowing so as to render the top like the ridge of a house. The growth after a few years is quite slow, and the shoots so fine that one can scarce believe it to be the same plant. One trimming a year will probably be all that will be necessary, except for ornamental hedges.

"The Osage Orange will be found a most efficient protection to orchards as gardens, as it is much easier to scale any kind of board fence that can be made, than an Osage Orange hedge 5 feet high. It is highly ornamental, and will also be found very suitable and appropriate for enclosing churchyards and cemeteries."

WE were in error when we reported, last week, upon the authority of a morning paper, that Mr. KENNEDY had resigned the office of COMMISSIONER OF WOODS AND FORESTS. It now appears from the proceedings in Parliament that the right hon. gentleman has been DISMISSED. So violent a measure as this requires such a justification as we are unable to believe possible. Mr. KENNEDY is a very old public servant ; Parliamentary records show that he has fulfilled with untiring zeal what he supposed to be his duties. That in the performance of these he should give offence to the gentlemen who brought the Royal forests to their present condition was inevitable, unless, indeed, he chose to follow in their steps. The moment that he was found to be independent, he became insufferable ; and, we should say, from the evidence afforded by the Blue Books, that his removal has been for some time decided upon. The difficulty was to find the opportunity ; but that opportunity was sure to occur where the reformation of a great branch of the public service had to be conducted without support, and in the face of resistance at all points. We earnestly hope, for the sake of public men, that the rumour is groundless which declares that the hostility to Mr. KENNEDY was actively promoted by powerful persons resolved, at all hazards, to force one of the old deputy surveyors into the surveyorship of the Forest of Dean, which Mr. KENNEDY thought the public interest required to be placed in charge of an experienced forester of known abilities.

It may be inferred, in the absence of official information, that the removal of Mr. KENNEDY is, like that of Mr. BROWN, in some way connected with the unpublished report of the referees appointed to inquire into the conflicting statements respecting Alice Holt Forest. We are not for a moment prepared to defend some of the expressions which led to the inquiry in question ; on the contrary, we condemn them as much as any man ; but it is evident that they arose out of zeal for the public service, and surely of themselves could form no ground for the recent act of the Treasury. If every public officer who allows his sense of duty to betray him into the use of strong language—unjustifiable language, if that sounds better—is to be removed from the public service, we shall indeed be handed over to the oligarchy of what Mr. DISRAELI audaciously calls Tadpoles and Tapers.

What the report of the referees may be we care not to know. We shall assume that it forms a justification of the removal of Mr. BROWN. But is it possible to believe that any value can be attached to a document prepared as we now know was the case with that report ? We have already objected to the constitution of the tribunal ; one of this triumvirate was an agent of the Treasury, and that alone throws discredit upon the whole transaction. But the manner in which the enquiry was conducted was very much more objectionable. The referees were to enquire into the truth of certain statements and counterstatements made by A and B. The statements related mainly to the number and dimensions of the trees standing in a Royal forest. Such an enquiry is not the easiest to conduct, and the best men living may make serious errors in carrying it out. But what was the course which the referees pursued ? They met ; they sent for the wood men, that is to say for the servants of A, and with their assistance, and under their guidance, they proceeded to the examination of the ground. We believe that A was not examined by the referees ; but his servants, his own partizans, parties to the dispute, and, moreover, menial dependents, who knew that their bread depended upon the breath of A, are taken as guides and assistants in the investigation. B, on the other hand, against whom most undoubtedly the examination was directed, was not sent for by these referees ; although he was within a few miles of the seat of the enquiry. Upon writing to them to ask if he could be of assistance he was told that he was not wanted. And in this most unfair manner the materials for the report were collected. In such a report, be it what it may, an impartial person can place no confidence ; and we cannot believe that it will find favour with the House of Commons.

Had the referees been all independent of the Treasury ; had they requested A. to explain on the ground how he arrived at his averages ; had they called upon B. in like manner to show them his way of arriving at results ; had they moreover strictly examined both parties upon the letters sent by them respectively to the Treasury ; and had they then drawn up their report, the public would have been satisfied. But as matters have been managed the whole affair is discreditable—it has been a secret inquisition, not an open enquiry—and the report, appear when it may, will be a piece of waste paper.

We have no desire to screen B., or any other person, be his station high or low. When men commit faults they must expiate them. But they must first be proved to have committed them ; not by petty star-chamber tribunals, but by fair and open trial. No such trial has taken place in this case, and we enter an indignant protest against the un-English way in which the enquiry in question has been conducted by the Treasury. If such proceedings are tolerated, no public officer is for a moment safe, but may expect to become the victim of official intrigue as soon as he becomes disagreeable to the powers in Whitehall.

HAVING seen that in India and China some of the most common plants are employed for MAKING PAPER, it is obvious that the same or similar materials may be used in Europe for the same purposes; and this, notwithstanding that it is sometimes stated that the difficulty is considerable in making paper from fibres that have not been previously woven, because the material does not draw easily through the machinery in use. But as this difficulty has been overcome, both in the case of the paper made from straw and in that made from wooden shavings, it can be so in other instances.

As there is no doubt that many of our colonies could supply material fit for paper making, it is only necessary to inquire whether this can be done at a sufficiently cheap rate. We believe that it is possible to do so, from the rate at which a product like cotton, forming but a small portion, as it does, of a large plant, can be supplied by the Indian agriculturist, and the low price at which a fibre like that of Corchorus olitorius (the Jute of India), can be cultivated, prepared, and sent to market solely on account of its fibre.

In climates similar to that in which the Jute is so easily cultivated, there are other plants which grow as large and without any culture, or are cultivated for other purposes, and their fibre is now only refuse. Some, at least, of these, we believe, might be collected and sent to this country with profit both to the Indian farmer and to the English merchant.

The Chinese, for instance, make paper of Rice straw, as well as of Bamboos, and the Hindoos make ropes of different Grasses. Some of these belong to the genus Saccharum, of which there are, in many parts of India, extensive jungles, which the natives every year burn down, in order that the young Grass may spring up, and afford pasturage for their cattle. It is possible that in some situations, as near navigable rivers, this Grass jungle might be cut down and converted into half-stuff for paper.

Among cultivated plants, there is probably not one so well calculated to yield a large supply of material for paper as the Plantain (Musa paradisiaca). It is so common throughout all tropical countries, growing in rank luxuriance along rivers and at the foot of hills, concealing the humblest hut, or forming avenues in the gardens of the rich, or plantations round their boundaries. Every root stock that is planted will, besides the central stem, throw up from six to eight or ten similar stems, which consist, in fact, of the central flower stalk surrounded by the sheathing leaves. Each producing its bunch of 30 or 40 lbs. weight of fruit requires to be cut down to make room for fresh shoots. The fruit when fully ripe is bland and nutritious, supplying, in some measure, the place of bread ; if more is cultivated than can be consumed, the fruit can be preserved, or its meal separated. Each stem contains from 3 to 4 lbs. of fibre, fit for cordage or for paper making ; and that excellent paper can be made from it, was lately shown at the meeting in Regent Street, both for packing and for drawing-paper, and also of a fine quality for note-paper. We believe that the refuse stems of this plant, which are too watery to burn, and contain too much fibre to rot readily into manure, would of themselves supply a great part of what is required. The tow, moreover, of some Agaves, Yuccas, Bromelias, and Sansevieras, might be similarly employed.

Some Malvaceous plants are cultivated as articles of diet ; for instance, Hibiscus esculentus, the *okhro* of the West Indies and of the United States, of which the mucilaginous fruit is esteemed as a vegetable, and as an addition to soup. It abounds in fine fibre. So also H. longifolius, the *ram turai* of India, is similarly employed. The cultivation of these plants might be extended in the neighbourhood of towns, where there would be a demand for their fruit. H. Sabdariffa, again, esteemed for its acid calyces. The edible and other species of Grewia also abound in useful fibres.

The family of Malvaceæ and its allies, moreover, contain many plants of quick growth and large size, which abound in fibres, and might, on this account, be collected, or even cultivated, and the tow employed for paper making. Species of Hibiscus and of Sida are already cultivated on account of their fibres, of which the refuse is converted into paper in India and China.

Flax is too valuable to be sacrificed for paper making, but there are countries, such as India, which grow enormous quantities of the plant, on account of its seed (Linseed), which is exported in thousands of maunds, but of which the fibre is nowhere made any use of. Though this, from the nature of the climate, may not form the best Flax, yet there is very little doubt of its being sufficiently good for conversion into paper, and the expenses of culture are already paid by the profits on the Linseed.

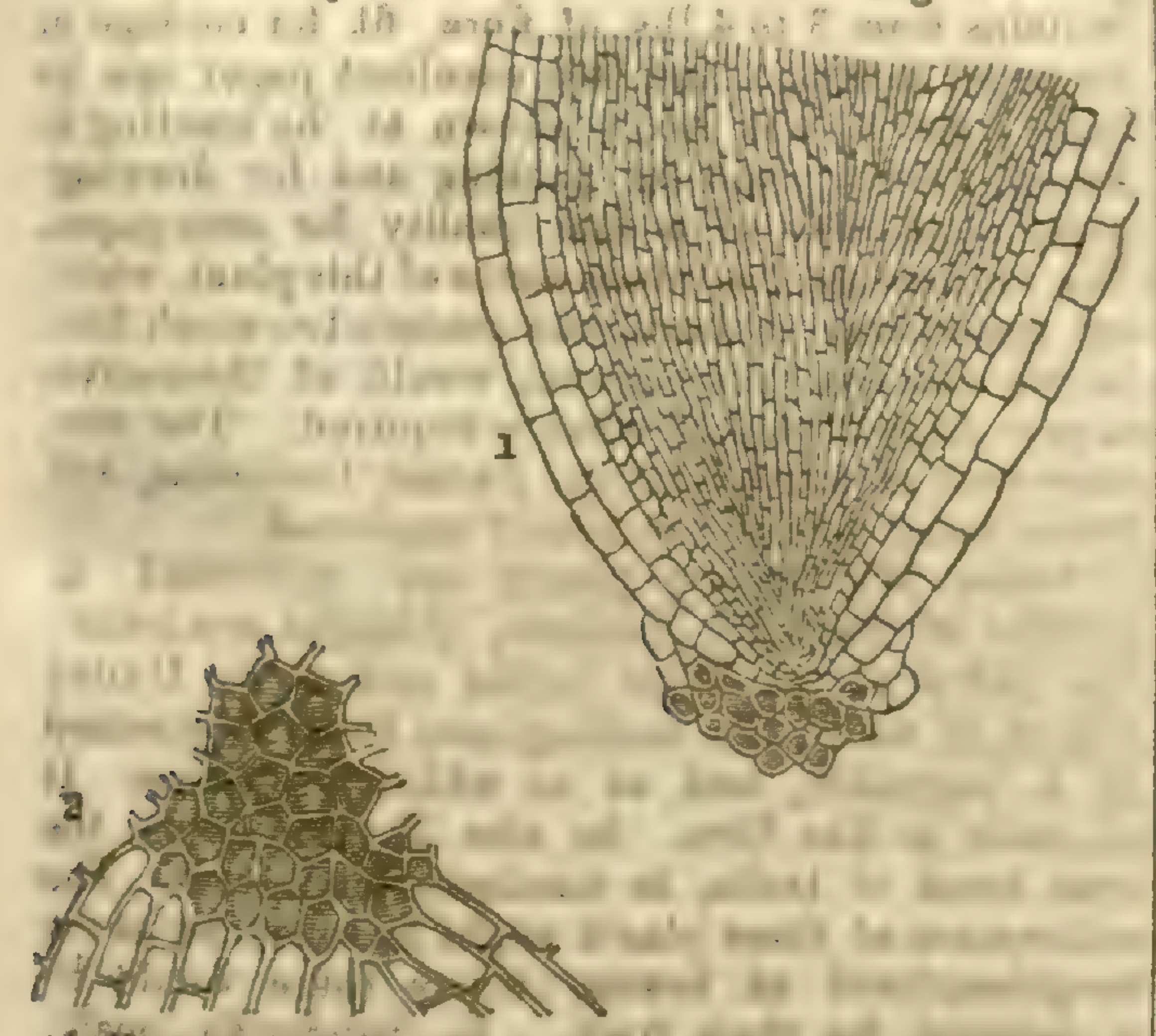
Among the Nettle and bread-fruit tribes various plants are cultivated for their fruit or for other purposes, which also abound in fibre well fitted for making paper. The Chinese, we know, employ Broussonetia, formerly Morus papyrifera, for this purpose; we believe that the refuse cuttings of the bush cultivation of the Mulberry in India might be turned to useful account. The barks of many species of Artocarpus are covered with a thick layer of fibrous material. The stinging and the stingless Nettles (Boehmeria) abound in fibres which rival the hemp in strength, and much of their tow might be converted into paper, if not employed for mixing with wool. The Hop Vines of Europe ought, moreover, to be turned to some account.

Without noticing the weeds of tropical countries which grow in such rank luxuriance, and among which are species of Sida, of Urena, Grewia, Corchorus, Triumfetta, all abounding in fibrous matter, there is evidently a great abundance of similar material in plants cultivated for other purposes, and which is at present thrown away. Some very simple machinery would greatly facilitate operations, and the expense of freight might be lessened by compression, or the rough material might be used as dunnage among cargo. This, with the cheapness of labour and of everything else in many of these countries, would enable material for paper-making to be brought thence in great abundance, and at a sufficiently cheap rate. But paper-makers must not expect that colonists are to make sacrifices to supply their wants, nor are the latter to expect better prices for their goods than what they are really worth, but they have a right to expect that not less than the full value should be given for even a new article. Remunerative prices will be not only for his advantage, but also for that of the consumer, as securing continued supplies of the raw material for his manufacture.

VEGETABLE PATHOLOGY.—No XIX.

81. Though, however, there is a constant interchange, as long as they are endowed with life, between every cell which enters into the structure of a plant, and the ascending and descending current are not confined to any special organs, there is doubtless a particular course taken by the main current which it is on many accounts important if possible to ascertain.

82. If the structure could be verified which was figured by M. Decaisne in the rootlets of Madder (Rubia tinctorum), in the Transactions of the Academy of Brussels in 1837, there would be great reason for asserting positively that the primary course was along the tissue which occupies the centre of the roots, the cells of which are represented as projecting at the tip and forming the spongelets. The structure, however, of young madder roots appears to us as represented in the annexed woodcut, in which the spongelet, as in other cases, is connected quite as much with the external as central tissue. The cells of the spongelet are very large, and when their protoplasm has assumed the proper madder tint, resemble closely those of some floridious Algæ.



1. Vertical section of the tip of a young rootlet, in which the vascular tissue is not yet formed. 2. Tip of rootlet, as seen from above; the central cells of which are dark madder red, the next to them reddish yellow, and the outer yellow. The figure is taken from a short thick rootlet, which gave greater facility than the ordinary fine rootlets for making a thin section. The structure, however, is essentially the same in both, only in the latter the external cells are much longer.

83. In some true roots, however, lately communicated by Dr. Hooker, the external cells resemble closely the outer cells in the air roots of Orchids, and, after a time, like them, contain only air, being separated, moreover, from the central fascicle by tissue which appears almost impermeable, that of the centre itself being in part identical with that of the wood; it is probable, therefore, that the central fascicle is the more active agent for transmitting the ascending column of sap, which thus passes directly into the younger woody tissue, and from thence by their vascular bundles into the leaves, a lateral interchange in passing taking place between the woody tissue and the medullary rays, woody parenchym, amylyferous ducts, &c., in which matter is deposited for the future exigencies of the plant.

84. In the leaves, the sap which has already become more or less modified in passing, and has been more or less aerated by means of the vascular tissue, which, in all probability, not only is analogous to the Tracheæ* of insects, but very similar in function, is exposed to the more immediate influence of light and air, imbibing fresh elements from the atmospheric moisture, though parting at the same time with much aqueous matter by evaporation, and passing meanwhile into the surrounding parenchym, and from thence into the young bark, with which the parenchym is in immediate connection, from whence it is carried downwards, supplying materials in its way for the cambium, and finally restoring to the soil such excretory matter as would prove prejudicial if retained.

85. When the regular channel is deranged the course may vary for a time, but the effect of every new growth is to produce tissues which may restore matters to their ordinary condition; and even in such anomalous cases as new wood produced from the exposed surface of the youngest and most active tissues of the bark, adventitious buds appear, which at once establish the normal relations between the two new formations. *M. J. B.*

SOLLYA.

Two varieties of this genus, viz., heterophylla and linearis, although not deserving to be classed amongst the most showy inmates of our plant houses, are nevertheless worthy of a place in even limited collections. They are exceedingly easy to manage, soon form large specimens, and produce their pretty blue flowers long and profusely during the summer months, when a variety of flowering specimens of hard-wooded plants is much wanted.

Cuttings of short-jointed bits of the young wood in a half-ripe state, if planted in light peaty very sandy soil, and placed in a gentle bottom-heat, will be found to root freely, and both varieties seed freely. Cuttings are generally preferred; but whether obtained from seeds or cuttings, the young plants should be potted singly in small pots, as soon as they are sufficiently strong to bear handling, placing them in a rather warm, close, moist situation till they get established. It is always advisable to endeavour to have such things rooted early in the season, in order to allow of getting them strong and well established before winter. A cold frame will form the best situation for the growth of the young plants during summer, to which they should be removed as soon as the weather will permit, for there is nothing gained by keeping these plants in heat. The frame should be kept rather close and moist, and slightly shaded on the forenoons of bright warm days. Frequent stoppings will be necessary during the first season's growth, in order to get the plants well furnished at the base, and they must also be afforded plenty of pot room, and carefully supplied with water. In the case of persons not having had much experience in the management of such things it will, however, be advisable to avoid repotting later in the season than will allow of getting the pots moderately filled with roots before winter; for it requires some experience to properly supply recently potted plants with water. After about the middle of September the atmosphere should be kept less moist, and a free circulation of air afforded on fine days, in order to ripen the wood before the approach of winter. And the plants should be removed to their winter quarters before they are injured by the effects of damp or frosty weather. During that season they should be afforded a temperature of 35° to 40°, giving water carefully, and they should occupy a light airy position.

If large specimens are wanted without loss of time, growth should be induced early in spring, by removing the plants to a moist temperature of about 45°, allowing it to rise 10° or 15° higher with sunshine and air, and affording them all the light possible. Examine the state of the roots, and if more pot room is necessary, give a liberal shift, and keep rather close and moist, until the roots lay hold of the fresh soil; and as soon as this is observed to be the case cut the shoots back, removing any indications of bloom, and train them so as to induce the lower buds to start into growth. If all goes on well vigorous growth will soon commence; and if green-fly makes its appearance apply tobacco smoke. Until the plants can be shifted into their flowering pots, and a proper trellis used, the shoots should be trained to stakes. In May remove the specimens to a cold frame, and treat them during the season as recommended for last, only that air may be given more freely, and on mild settled nights the lights may be left off altogether, so as to give the plants the benefit of the night dews. With ordinary management good sized specimens in 9-inch pots will be obtained by the end of the season, and these may be allowed to bloom the following summer, or cut back sufficiently to remove the flower, and repot in good sized pots, say 13-inch, which will be sufficiently large to produce fine bushes. Water must be applied very cautiously after giving a large shift, and the atmosphere kept rather close and moist, to induce the roots to strike into the fresh soil. Apply the trellis on which the plants are to bloom directly after potting, and train the shoots to it, taking care to get the lower part well furnished first. Keep the plants clear of insects, and properly supplied with water, and afford them a cool airy position as soon as they have got hold of the fresh soil, and they will make very rapid progress, and by giving a small shift about every other year, they will bloom finely in the greenhouse or conservatory for many summers.

For soil use rich turfy peat carefully broken up into small pieces, and well intermixed with about one-fourth its bulk of sharp silver sand. The addition of a small portion of sandy turfy loam will be advisable in the case of having to use poor sandy peat. *Alpha.*

* Dr. Hooker has very lately shown me facts which seem to prove the continuity of the vascular system between the matrix and certain parasitic plants. The analogy above mentioned may be illustrated by the notion expressed by the late Mr. Newport, in a memoir in the Linnean Transactions, vol. 20, p. 346. "The larva of Ichneumon atropos, in which I have found that there certainly is no outlet to the alimentary canal, and which subsists on the adipose tissue and fluids of the caterpillar, has true but extremely minute spiracles and air vessels, and although completely inclosed in the body of the caterpillar, seems to respire the air directly, perhaps, from the injured air vessels of its victim."

HOW TO MEASURE TIMBER.

Easy as it is for those acquainted with the principles of mensuration to ascertain the cubic contents of timber, there are many persons who, not having had their attention particularly drawn to such matters, are at a loss how to set about the operation, and who yet occasionally wish to perform it. The following rules may be of use to such persons.

The precise form of the trunk of a tree, when felled, lopped, and cut fit for squaring is that of a right cone; but the cone becomes more or less like a cylinder, according as the difference between the diameters of the two ends of the tree is small or great. Before measuring a tree it is necessary to determine whether it shall be treated as a truncated cone or as a cylinder; hence there are two cases to be considered.

I. If the trunk is taken as a cone, the following formula must be used:—

Let R = the radius of the large end of the tree
R' = the radius of the small end of the tree
L = the length of the trunk to be measured.

Then the cubical contents of the tree are equal to

$$\tfrac{1}{3}\, 3{\cdot}142\, L\, (R^2 + R'^2 + R \times R')$$

So that if the length be 9 feet, the diameter of the large end 3 feet, and its radius consequently 18 inches, and the diameter of the small end 2 feet 6 inches, and its radius consequently 15 inches, we have $\tfrac{1}{3}\, 3.142 \times 9 \times (2.25 + 1.5625 + 1.5 \times 1.25)$ which gives for the solid contents of the trunk 9.426×5.6875, or about $53\tfrac{1}{2}$ cubic feet.

II. If the trunk is considered a cylinder, the best way to obtain its contents is to find by measurement its circumference half way between the two ends. If the length of this circumference be called C, the area of a section of the trunk where the circumference is measured will be $= \frac{C^2}{4 \times 3.142}$, and the radius R at the same point will be $\frac{C}{2 \times 3.142}$. If, then, L represent the length of the trunk as before, its cubical contents will be equal to $L \times \frac{C^2}{4 \times 3.142}$.

$$\text{or } L \times 3.142\, R^2$$

So that if the length of a trunk be 9 feet, and its circumference at its middle be 6.482 feet, the radius will be $\frac{6.482}{2 \times 3.142}$, or 1 foot, and the cubical contents of the trunk will be $9 \times \frac{6.482^2}{4 \times 3.142}$ or $9 \times 3.142 \times 1^2$, either of which gives about $28\tfrac{1}{4}$ cubic feet.

The number 3.142, it is hardly necessary to observe, is the length of the circumference of a circle whose diameter is 1.

If it be desired to make allowance for bark and sap wood, the radius R in the above formulæ may be diminished accordingly; or the whole contents of the trunk, including bark and sap wood, may be found as above, and some fractional part of the result be afterwards deducted. *Archon.*

Home Correspondence.

Late Spring Frosts.—I can fully confirm the statement of your correspondent "T. R.," as to the disastrous effects of late spring frosts upon the fruit blossoms in this county during the last 11 years. To begin with 1843.—During the first week in April the fruit-buds were considerably advanced by the frequent warm rains after a very dry March; but on the 8th and five consecutive mornings the thermometer registered as follows: 8th, 28°; 9th, 28°; 10th, 24°; 11th, 20°; 12th, 24°; 13th, 24°. These frosts proved more than sufficient to destroy all the Plums, Peaches, Cherries, and early Pears. The month of May was very cold, and much of the young fruit dropped from the trees. 1844.—April 9th, therm. 29°, and again on 28th, 29°; the latter frost severely injured the fruit blossom; again, so late as May 18th, the temperature fell to 27°, or 5° of frost. Fortunately the atmosphere was very dry at this period, in consequence of an unusual prevalence of N.E. winds, or the frost must have produced most disastrous effects. The crop this year was very deficient. 1845.—April 7th, therm. 26°, when the Plums and Cherries were much injured. On the 9th the maximum temperature in the shade was not more than 37°; but on 23d, 74°, so fickle is our climate. On May 6, therm. 30°, and placed on Grass it fell on 6th to 26°; 9th, 29°; 10th, 28°; 15th, 27°; 18th, 25°; 20th, 28°. The low mean temperature of this month was very unfavourable for the Apple bloom, the crop of which was very deficient. 1846.—On March 18th, 19th, 20th, 21st, and 30th, the temperature fell to 28°, 24°, 26°, 27°, 2[illegible] respectively; the greater part of the buds on wall trees was almost entirely destroyed. The later fruit was severely injured by frosts on the four last mornings of

April, when a thermometer on Grass fell to 26°, 29°, 26° and 25° respectively. The Hop plant was much injured at this time. 1847.—On the mornings of April 1st, 2d, and 3d, there were severe hoar frosts; and on 16th, 17th, 18th, 20th, 23d, and 28th, the temperature fell to 28°, 23°, 24°, 27°, 27°, and 28° respectively. All the Plums, Cherries, and Pears, were most severely injured. The Apple blossom was much destroyed by a frost on May 1st, thermometer 29°. 1848.—On April 27th the temperature fell to 29°, and on the Grass to 25°, just as all the fruit was in full blossom. The injury was the more severe in consequence of the bloom being very wet after the heavy showers on the previous day. 1849.—All the fruit blossom was severely injured by the frost on April 12th, 14th, 18th, and 21st, the temperature falling to 27°, 28°, 25°, and 26 respectively. A very heavy rain and snow (amounting to 1.40 inch in 24 hours) fell on 19th, rendering an early vegetation very sensitive to frost. 1850.—Only 1° of frost was registered in April, but on May 3d the temperature fell to 25°, and on the Grass to 21°, and the blossom of Plum, Cherry, and Pear, was almost entirely destroyed. 1851.—Slight frosts occurred on 26th, 27th, 28th, 29th, and 30th of April, but without doing much mischief, nevertheless the crop of Plums was very deficient. We had no frost on May 14th, as registered by "T. R.," and only 1° was observed throughout the month, which was on the 16th. 1852.—I registered 11° of frost on the morning of March 27th, which almost entirely destroyed the early wall fruit, and in some instances even the trees themselves died under the influence of the subsequent dry weather and hot sun of April. There were frosts, more or less, on 11 days in April; but on 10th, 20th, 21st, and 28th, the temperature fell to 28°, 24°, 26°, and 27° respectively, which did immense mischief to all the fruit blossom. The Apple bloom was much injured by a frost on May 3d, when the temperature fell to 28°, and on the Grass to 22°. 1853.—On March 25th, 26th, and 27th, the temperature fell to 21°, 24°, and 19° respectively, and severely injured the advancing blossom of the Cherry, Pear, and Plum. The Apple-blossom was again injured by frosts on the mornings of April 27th and May 9th, when the temperature fell to 28°. 1854.—With respect to the current season, although the nights have been cold and dry throughout the months of March and April, the frosts have been slight. On April 4th, thermometer 27°; 5th, 29°; and on the morning of 25th ult., there were only 28°, or 4° of frost; when at Chiswick, 14° of frost were registered, and the fruit entirely destroyed. In some low grounds in this locality the blossom is slightly injured; but on more elevated spots the frost was scarcely felt, and the trees promise a most abundant crop. In some gardens, the Gooseberry trees are dreadfully infested with caterpillars. *C. Leeson Prince, Uckfield, Sussex.*——On the 24th ult., at 6 A.M., thermometer 38°; on the 25th, 30°, but not lower. Ribes sanguineum, flowers then declining; Magnolia purpurea, budding out; common Hydrangea, buds burst; Moutans, sprouted 6 inches, and preparing to flower; flower bunches of Wistaria, some opened; Walnut trees bursting bud; Sophora japonica, budding; Laurus Sassafras, budding; Platanus orientalis, budding; Deodars, buds burst; Abies Brunoniana, budding; Abies Webbiana, Pindrow, and morinda, budding; Fitz-Roya patagonica, budding; Saxe-Gothæa, budding; Libocedrus chilensis, budding;—all unhurt. Taxodium sempervirens, Cryptomerias, Pinus insignis, Hartwegi, Montezumæ; Picea ovata, grandis; Abies Jesoensis, Cupressus macrocarpa, and hibernica, Arbutus procera, Camellias in shade, Chamærops excelsa, and Aucubas, all quite unhurt. Camellia abroad does not bear the hot sun of spring. Araucaria imbricata is always growing summer and winter, though faster in summer, and never has had a leaf injured here by any frost. I need not speak of Abies Pinsapo and cephalonica, Pinus excelsa of Nepaul, or Pichta; they never suffer here in any winter. Arbutus Unedo has lost its flowers and fruit: Laurustinus, both kinds are tarnished. Bays yellowed a little by sun. Moutan rosea has just opened a flower; foliage of our three Moutans—common, papaveracea, and rosea—quite uninjured this spring. Apricots, a most abundant crop on walls; standard Greengage now white with flower; Olive of Nikita, shoots of last year killed. *Charles Monck, Belsay, May 7.*—— The frost on the night of the 24th, and the morning of the 25th ult., has done much damage here to Apples, Pears, Plums, Cherries, Figs, Walnuts, Gooseberries, Currants, and Potatoes; I do not think that the wall-fruit has suffered much, or I cannot yet see that it has. Azaleas suffered much; likewise Magnolias, Paulovnia imperialis, Abies Webbiana, Smithiana, and cephalonica, and Taxodium sempervirens, have suffered in the spring shoots of this year; the Bamboo is doing well. The only plants of importance that suffered from the frost in January were Cupressus Uhdeana and torulosa. On the night of April 24th we had 9° of frost. This week we have had some fine rain, with thunder and hail. This morning (May 5th), between 9 and 10 o'clock, we had a tremendous hail-storm, with thunder, for about half an hour; the hail measured more than 1¾ inch round one way, and 2½ inches the other; in form it resembled a boy's peg-top; it has done much damage—the leaves and young shoots of the trees and plants being completely riddled, and the ground beneath nearly covered with the ruin. I never saw such destruction. *Charles Elworthy, Gardener, Nettlecombe, Somerset.*

Bees.—Will some of your bee-keeping readers afford me information as to what may be the cause of a difficulty I have found in raising a queen by the transformation of the larvæ of the workers. I have by this means, at various times, supplied a vacant throne, but I find the practice cannot be relied on with certainty. In the present instance I have twice presented comb containing the larvæ and eggs of workers to a queenless stock, and each time the brood has been hatched, but no attempt has been made to raise a queen. On a previous occasion, in summer, the bees refused the first time, but immediately constructed royal cells on a second piece of comb. An instance of similar indifference is related by Dr. Bevan in the "Honey Bee." It cannot be supposed that the community is unconscious of its loss, as the dead queen was brought out under great excitement, and on the hive being opened immediately afterwards nearly the whole population was on the wing. It seems one of those cases which would teach us that the proceedings of these small people are not always to be bound down by laws of instinct, though the reason which guides them may not be apparent. As it is, the extinction of the family must soon take place. I should be much obliged for any suggestions which may enable me to save the hive, whose small population can scarcely linger out till swarming time, and singularly enough there have been drones in an adjoining hive since the beginning of March. *C. H.*

Sulphur a Preventive of Potato Disease.—Permit me to mention a fact in corroboration of the statement made at p. 290 of your last week's Paper. At the small harbour of Axmouth is a kiln for burning the blue lias for lime; the vapour from it is very strongly impregnated with sulphur. Near this kiln is a house in which a cargo of Potatoes had been stored; several diseased ones had been thrown out; the man who burns the lime planted them on a rough piece of ground, over which the sulphuric vapour was continually passing. The Potatoes suffered to a great extent all round this neighbourhood, and the few near the lime-kiln were forgotten, when, about the end of November, a stray donkey, seeing something very green, and not being over nice, began to brouse on the stalks, in doing which he dragged up some Potatoes; the yield was very large, and not a diseased one was found. The Potatoes were not planted till the end of March. *Thomas Sibbeld, Axmouth.*

New Materials for the Manufacture of Paper.—Would not the fibre from the stem of the Jerusalem Artichoke prove a good material for paper? In this would be combined strength and length of fibre; and the root, which is too much neglected, would of itself pay for growing, and requires little trouble. *Tonbridgensis.*——Would it be worth while to collect Pea-shells for materials for paper-making? What thousands of bushels are thrown to the dust-bin in towns! and when given to pigs they chew the shells, but do not swallow the inside tough fibrous part of the shell. Would not also the stripped bark of Osier rods do for paper material? I think both of these properly prepared and bleached would answer for fine writing-paper, especially the fibre of Pea-shells for perhaps bank post-paper. There is a sort of indigenous Grass (Crested Dog's-tail), which sown or transplanted on rich ground, or ground made rich as a market-garden, would grow straws 4 feet in height, and if cut before past bloom, would not have its outside very silicious; as far as I have observed, it is the toughest indigenous Grass and full of fibre; and this, too, could be properly prepared and bleached, and would probably make fine paper. Suppose that an acre would produce 2 or 2½ tons of dry Grass, and that to produce only three-quarters of a ton of material. I also suppose that three-quarters of a ton would be of equal value to the best rags. Probably a great part of the toughness of paper is owing to the quality of the size or gelatine or glutinous material used with the prepared pulp. *J. C. X., Weybridge, Surrey.*——There are many coarse weeds which might probably be rendered useful for paper making, if some easy mode of giving them a saleable value were generally circulated. If thrown in heaps they would speedily ferment, so as to destroy the tenacity of their fibres. The first requisite, therefore, towards giving them a value, is the general dissemination of instructions for so storing or preparing them as to be fitted for the market. I may instance as examples of such weeds, not only the Nettle, but Hemlock, which is so great a pest in many meadows, whence at the mowing season it has to be separated from the hay, which it would otherwise cause to heat or ferment injuriously, from the slow drying of its coarse stalks. The coarse yellow Rag-weed, which infests the fallow fields of Ireland, is another example. Thousands of tons of this vile weed—the disgrace of Irish farming—might be collected and it would probably supply a fitting material, if the cottiers were directed how to make it available. *P. S.* [In this and all such cases the persons interested in utilising such materials should render a sample marketable, and then ascertain its value.]——It is not probable that refuse bark from tan-pits would answer for paper making, the fibre being very coarse in quality, and not white enough. The inner bark from Larch, Spruce Fir, Scotch Pine, Elm, and some other kinds of wood, are capable of being reduced to a mass of very fine fibre. I have tried what sort of fibre the common Bramble (Rubus fruticosus) would produce, by pounding it in a stone trough with a large wooden pestle; it furnished about 30 per cent. of fibre, but it was of very coarse quality. My experiment, however, might have been imperfect. *A. Patterson.*——Would not the refuse of the Irish scutching mills answer for paper making? An acre of Flax yields, on the average, about 15 cwt. of this refuse, of which, at least 3 cwt. would contain enough of fibre to give it the requisite coherence. At present, it is used as fuel where peat is scarce, and thrown in the river where it is plenty. We grow about 140,000 acres of Flax in Ireland annually, and have waste water-power in abundance. Indeed, the very mills which make the refuse are, for the most part, only worked during five or six months in the year; and during the remainder their water-power might be profitably employed in making paper. *W. S.*

The Forest of Dean.—You assumed in your reply to my last letter that I had not read the evidence collected by Lord Duncan's committee. It was rather a bold assumption. You speak next of the vast sum laid out on the Forest of Dean, and the returns made at the period of 1848, which, pardon me, proves to my mind more convincingly than ever, that you have lashed the forest on *ex parte* statements alone, without that just knowledge of the whole subject which one ought to look to, and which I wish to look to, in a publication like the *Gardeners' Chronicle.* I hear to-day that Mr. Machen has been requested to resume office, by the Treasury, for a few weeks, until a successor be appointed, which he has done. They decline to trust Mr. Brown any longer. Indeed, one of his statements has been found so utterly wrong that he could not be allowed to retain his situation, and an order was sent to Mr. Kennedy from the Treasury to dismiss him. That has been done; and I hear, also, to-day, that Mr. Kennedy himself has resigned. I hope, in candour and honesty, that you will admit that, as far as the Forest of Dean is concerned, you have been misinformed, or informed below the mark; and that, with the freeness of a gentleman's mind, you will allow it without reserve. Twenty years hence will prove that forest to be the most productive in the kingdom. The truth is, that Mr. Kennedy came red-hot with the Scotch system to "boulverse" the forest. There have been other systems in former times—the Duke of Portland's system amongst the rest. One system was to let all the trees fight it out amongst themselves, and cut down all but the toppers. Mr. Kennedy's first plan was to employ men to cut down all the brushwood, and clean the stems of all the trees, on about 15,000 acres of unproductive Oak; *i. e.* wood from 15 to 25 years' growth. I have no doubt you can count the cost of that labour. I have nothing to do with other forests; but the Forest of Dean, in my opinion, has not had justice from you. Σοφ, *May* 4.

Effects of the Winter and of the Frost on the 24th ult. at Bayfordbury.—It is scarcely yet possible to ascertain the full effect of the late severe winter on many of our recently introduced Conifers, as, for instance, in P. patula, a fine specimen of which I had hoped was but comparatively little injured—its branches appeared healthy, and the young shoots were pushing freely—but on examining the stem I found it completely dead, and black in the inner bark down to the very root. The same thing occurred in 1844, and my present specimen is actually a graft taken from the former tree in the same state as the one I now describe, and from which I have now again taken grafts. P. Teocote presents nearly the same appearance, but I do not find that the main stems of the other Mexican Pines are injured in the same way, except in P. Hartwegi and macrophylla, which are both killed. P. apulcensis, and a fine unknown species from Mexico of 15 years' growth, are much injured; P. Russelliana is only brown in the points of the leaves; P. muricata, tuberculata, Benthamiana, Lindleyana, and Montezumæ are quite uninjured; P. Lindleyana may perhaps be considered the handsomest and hardiest of all our new Conifers. I have never seen it damaged by wind or frost. All the other Pines have escaped unhurt, including P. insignis, Gerardiana, palustris, &c.; all the above stand much exposed, and are never protected. The young wood of some of the Pines has, I fear, suffered from the late spring frost of the 24th ult., of which there is no doubt in the case of P. excelsa, and others of the Strobus family. Most of the Abies and Deodars, which had stood the winter unhurt, are injured from the same cause, including A. Brunoniana, Cryptomeria japonica, and Taxodium sempervirens, which have the young shoots cut, especially the former; the latter is pushing through the apparently injured buds. All Cupressus are more or less damaged, and some are killed, as C. Uhdeana, thurifera, and Mexicana. The two which are the handsomest, and most hardy (and of which I should be obliged for further information as regards their history, &c.) are C. Knightii and majestica; these have stood in a very exposed situation, and are very slightly injured. Junipers are not much damaged, with the exception of J. Gossainthanis and Bedfordiana. Araucaria imbricata is also unhurt by the winter. I take this opportunity of mentioning a singular circumstance which occurred to the Cedars of Lebanon here during the last summer, and I should be glad to know if the same has been noticed elsewhere. The Cedars to which I allude are very fine trees, nearly 100 years old, with others of a younger growth, some of each of which were suddenly struck by some cause, either of blight or atmosphere, which gave them the appearance of being singed; very soon after which those which were so affected either partially or wholly lost their leaves, and were to all appearance dead. Two have since died, but the others are now putting out new shoots and seem likely to recover. Some Scotch Firs in the park were also affected in the same way. These trees were in different situations and in some cases at the distance of half a mile from each other, whilst in

other instances of two trees similarly situated, and close to each other, the one was struck and the other remained perfectly healthy. The Cedars of Lebanon here seem also to have felt the effects of the winter more than the Deodar, as upon the breaking up of the frost the green leaves of the former came off in such quantities as completely to cover the ground for a considerable distance, leaving some of the trees half bare; they are now, however, breaking out again freely, and the young growth of the Cedar of Lebanon is uninjured by the spring frost, whilst the Deodar suffered from that cause most severely. The effects of this frost upon other trees and plants seem to be much the same here as has been noticed in many other places. Among the forest trees the Oaks, Walnuts, and Spanish Chestnuts have suffered the most; the Beeches are scarcely damaged in any instance, and are getting into leaf with full vigour. *W. R. Baker, Bayfordbury, May 8.*

Funkia grandiflora.—The case of this plant is a curious one. Your remarks made on September 24th, 1853, do not meet its difficulties. The strange havoc made of its foliage evidently arises from some animal with appropriate mandibles. But it proceeds from an animal unseen by any eye, from morn till dewy eve. The invisibility of the enemy is the mystery. Therefore it can hardly be "some caterpillar" in the popular sense of the term. My only conjecture is that the leaves are devoured by some larva that rises from out of the earth at a later hour of the night than my observations have extended to, and who vanishes at cock-crow. I have spread a layer of soot round the plants, thinking the animal might dislike to pass through it. As yet nothing but the late frosts has meddled with the foliage. I should be glad to learn what is observed of this plant elsewhere. *A. H.*

Royal Horticultural Society of Ireland: Value of Horticultural Knowledge in Irish Improvements.—It is now nearly five-and-thirty years since I commenced the study of horticulture, practically and scientifically, in my native county, called "the model county," of Wexford. It is bordering on 30 years since I first went to Dublin to study my profession in the high spheres. Though very young then, and inexperienced in the world, I soon saw that the Royal Horticultural Society of Ireland, then some 10 or 15 years in existence, needed reformation. Having made the acquaintance of the then president and principal members of the managing committee, I suggested to them the idea of opening their "close borough" to all men of merit on a "clear stage and no favour," without distinction of county or creed. This, through some notions of selfishness or false aristocratic pride, they refused to do. Knowing the value of "legitimate agitation" and of "passive resistance," I began both, and without much personal influence or a name, and without the aid of the press—we then had neither horticultural nor agricultural press in Ireland. A few years brought on the first dawn of reform in their mode of procedure; and step by step, year after year, reforms of a salutary kind have crept in, and the Society is now, I am happy to say, as far advanced towards perfection as the most sanguine of its supporters could be led to expect under the trying circumstances of this (for horticultural as well as agricultural purposes), fine but ill-fated country. During the late "visitation," it was believed by many that the higher branches of horticulture would suffer more by the famine than would be suffered by agriculture in the rude operations of the farm. Such belief has unfortunately been but too well founded, as we now see in many places the once fine gardens and parterres converted into calf paddocks and sheep pastures, the conservatories into poultry-houses, the Pine stoves into piggeries, and the mansion houses into pauper bastiles. But as good sometimes comes out of evil—the evil should not be committed with the view of extracting good out of it—the evil just hinted at has had its corresponding advantages. Thus, the men who superintended and studied their professions in such places, were the men who have made the first advances, aye, and through the agency of the Royal Horticultural Society too, towards the preservation of the people's lives, and have proved themselves the most successful farm crop growers and general land improvers—of which more hereafter. Despite the ravages of the famine, the evils of emigration, or the preponderating influence of the Encumbered Estates Court, horticulture not only holds its place, but, to a certain extent, improves to a high degree in Ireland, as evidenced by the productions and attendance at the Royal Horticultural Society's spring exhibition, in the Rotunda, Dublin, on the 27th ult., where I had the pleasure of seeing the best plants and flowers in their respective classes I have ever seen before during my 30 years' acquaintance with its exhibitions. The vegetables were also exceedingly fine, considering the unfavourable season for their growth, through which we have passed. Fruits, it is to be regretted, were not very abundant, except in the case of Apples, and these were very fine. There was but one dish of Pears, which were good of their kinds; one Pine, a very good one; two bunches only of Grapes, and one of these scarcely ripe. This paucity of fruits was owing to some of the causes already alluded to. I observed a fine collection of forced Strawberries, things rather unusual on such occasions in Ireland. They were very fine in appearance, but the very best were badly flavoured. On the whole, the exhibition reflected credit on the Society for its arrangements, and on the exhibitors generally for their productions. It is also gratifying to state that there was a good attendance, notwithstanding the unfavourable aspect of the morning. My object in noticing this exhibition is less with the view of complimenting those who act for and support it than of stimulating others, who may be careless or apathetic in such matters, to "go and do likewise." Horticulture, as is well known to those who have studied and understand it, has been the parent, and is the sponsor and nurse, of improved agriculture, now more than ever the mainstay of Ireland. To the Royal Horticultural Society do we owe the first successful display of these monster green crops, now the admiration of the agricultural world. To it are we indebted for the first display of our natural as well as artificial Grasses and other cereals, for the growth of which Ireland has of late become so conspicuous. To the horticulturist do we owe the first successful attempts at reclaiming the deep bog, the *perished* moorland, and mountain heaths of Ireland. To the horticulturist do we owe our improved system of drill cropping and seed sowing. To the horticulturist do we owe the most successful methods of draining our wet soils and deepening our shallow ones. To the horticulturist do we owe the judicious, cheap, and economical application of liquid manures, the compounding of artificial, the preservation of home-made, and encouragement of foreign ones. To the horticulturist do we owe the beautifying of our landscape, the sheltering of our hills and homesteads, as well as the vast profits now derived in Ireland from the sale of timber for railway purposes, not alone in Ireland, but in many other parts of her Majesty's dominions, as evidenced by our export trade in this particular, and above all, and before all, to the horticulturist do we owe the judicious training of our skilled labourers, so as to enable them to give "a fair day's work for a fair day's wages;" for skilled labour, no matter what the price, is, after all, the cheapest, whether "man earns his bread by the sweat of his brow" or his brains. Is it, therefore, too much for me to beg of your readers in this country to rally round and support the Royal Horticultural Society of Ireland, both with their money and mind, in order to enable its directors to carry out their contemplated objects, namely, to increase the wealth and luxuries of the affluent, and to increase the food of the pauper by enabling him to support himself. *Edward Carrol, Clare Hotel, Limerick.*

Societies.

Entomological, *May* 1.—H. T. Stainton, Esq., V.P., in the chair. Amongst the donations to the library received since the last meeting were various publications presented by the Royal Society, the Society of Arts, the Philosophical Society of Liverpool, and Messrs. Guérin-Meneville, Th. Lacordaire, Duval, and Migneau. The Rev. Jos. Greene exhibited specimens of the rare Notodonta cucullina and N. trepida, both recently reared from the caterpillar; Mr. Edwin Shepherd, beautiful specimens of Ephyra pictaria, recently reared from the larvæ; and Mr. F. Bond, some curious specimens of Anticlea berberata, also reared from the larvæ, the fore wings on each side differing in their markings. Mr. Douglas exhibited the larvæ of two species of Elachista, found burrowing in the leaves of Poa aquatica and a species of Reed. Mr. S. Stevens exhibited specimens of Notodonta Dictæoides and Carmelita, the latter being a female still alive and laying her eggs; also specimens of the curious beetle Hylocœcetus dermestoides in all its stages, all from Sherwood forest. Mr. Curtis communicated a list of rare insects captured in 1852 at Tunbridge Wells and Dover. Mr. Stainton communicated some notes on the larvæ of various Microlepidoptera. A conversation ensued on the increasing difficulties experienced by collectors of insects near London, owing to the encroachment of landed proprietors on the old public footpaths. The Secretary announced that the council had resolved to co-operate with and aid Prof. Edward Solly in the formation of the trade museum of the Society of Arts, on which he is now occupied, in matters connected with insects and insect produce (as silks, honey, wax, &c.); and that any duplicates of injurious or beneficial insects in the Society's collection should be presented thereto.

Reviews.

The Commercial Products of the Vegetable Kingdom. By P. L. Simmonds. 8vo, Day, pp. 668.

Had this important volume been more to our taste, it would have been less suited to the class of readers for which it is intended. We regard its diffuseness and want of condensation as a fault; but experience tells us that by "colonists, manufacturers, merchants, and consumers," for whose information it is written, it will be prized the more, because of its repetition of minute details. The object of the author is to afford information respecting tropical and sub-tropical husbandry; and he has gathered that information from all sorts of sources. The consequence is, that his volume has the faults and merits of a Blue Book. Nobody would think of reading it; but many will consult it when in search of the kind of knowledge it contains.

Hitherto, a very indifferent book, called "Porter's Tropical Agriculturist," has been the only accessible authority upon the details of colonial husbandry, a circumstance not particularly creditable to a nation of colonists, as the United Kingdom may well be called. It would be most unjust to Mr. Simmonds not to declare at once that he has entirely superseded his predecessor, both in the quality, quantity, and variety of his information, to say nothing of the abundant statistical details which have been diligently collected in the work before us, and which are extremely valuable. The statistics of Wheat culture alone occupy nearly 40 closely printed pages.

Two faults, however, though of very different importance, require to be pointed out. The lesser includes the botanical inaccuracies which disfigure the pages; the greater is the surprising circumstance that in a volume on tropical agriculture there is not one word about textile materials. Cotton, with all its kindred imports, is entirely forgotten! As is, also, the numerous race of timber trees! We should have hoped to find some account of, at least, Mahogany, Sabicu, Rosewood, and Teak.

On the Rust of Corn and other Agricultural Plants, and its consequent Diseases.—(*Untersuchungen über die Brandpilze und die durch sie verursachten Krankheiten der Pflanzen mit Rücksicht auf das Getreide und andere Nutzpflanzen.*) Von A. de Bary, M.D. 8vo, pp. viii. and 144; tab. lith. 8. Berlin, 1853.

It was matter of considerable regret that when Léveillé published his excellent paper on the generic characters of Uredines, he did not illustrate his precise meaning in some points of minute structure by clear and definite figures. Many useful and distinctive facts are indicated in the paper, but we have never been able to verify what he says of the structure of the receptacle in some genera, nor of the mode of origination of the spores, partly perhaps from not perfectly understanding his precise meaning. The work of M. de Bary, now before us, who happily did not write in ignorance of Léveillé's paper, after the example of too many of his countrymen in similar matters, has in some measure supplied the deficiency to which we have alluded, but he no more than ourselves has succeeded in verifying all the observations of Léveillé, and figures illustrative of most of the genera proposed by Léveillé, will shortly appear in the article Uredineæ, of the "Encyclopædia of Agriculture." Those who are interested in the subject of epiphyllous parasites will find much in this unpretending volume to instruct them, and the more so, because M. de Bary has followed out the example set by M. Tulasne, of referring to their proper place, as secondary forms of fruit, many epiphyllous productions which have been published by authors as autonomous species, though not indeed as matters of novelty, of which there could be no pretension, for the subject was perfectly within the cognisance of many mycologists, and only waiting for some one who had the necessary leisure to follow it out. Of the correctness of the author, a singular instance occurred almost on the very day in which we received the volume. A species of *Lecythea*, without name, was figured as produced on a species of Grass, almost the last place in which the presence of the genus could be suspected, but the next morning's post brought specimens of something new on *Brachypodium pinnatum*, discovered in Warwickshire by Mr. Bloxam, a glance at which was sufficient to show that it was M. de Bary's unnamed Lecythea, which now is registered as *L. Baryi*. This little volume, which bears a very reasonable price, should certainly be in the hands of everyone who wishes to understand accurately the structure of these productions—a matter, as we can speak from personal experience, attended with far greater difficulty, because of the greater dexterity requisite to make sections sufficiently thin for the microscope, than might at first sight be supposed, and without such sections it is quite impossible to arrive at anything certain; nor is this the only difficulty, for if the section be sufficiently delicate, it is a thousand chances to one if the spores remain perfectly undisturbed.

New Plants.

62. Gonolobus pyrrhotrichus. *Decaisne in Decand. Prodr.* VIII. 594.

A fine specimen of this striking plant has flowered with Messrs. Weeks and Co., of the King's Road, Chelsea. It is a coarse climber, all covered with long shaggy tawny hair. The leaves are dark green, 6—7 inches long, cordate at the base. The flowers appear in shaggy umbels on pedicels 2½ inches long. They are 1½ inch in diameter, dull green, with obscure netting, and five bright yellow 3-lobed coronal teeth. The plant is Brazilian and requires a stove. Messrs. Weeks received it under the name of Gonolobus crispiflorus, which is quite a different species.

63. Aphelandra squarrosa Leopoldi, *Van Houtte.*

A year or two ago Mr. Van Houtte sent to our exhibitions a very handsome stove shrub, whose deep green polished opposite leaves, marked with well defined broad whitish veins, attracted much attention. We have now before us a coloured plate of this plant in blossom, from which we learn that the flowers are bright yellow, as large as those of Aphelandra cristata, and seated in broad greenish-yellow crimped bracts, so as to form a bright yellow cone, of considerable beauty. It appears to be a vigorous grower, and to be a real acquisition, not only because of its fine variegated leaves but its noble showy inflorescence. We understand that the stock of the plant is in the possession of Messrs. Veitch & Son.

Garden Memoranda.

Mr. Groom's Tulips.—These are just now in perfection, and we can promise our readers that a sight of them will amply repay a visit. The best bed, 120 feet long, and containing not less than 2000 flowers, is as fine as we have ever seen it. We observed the following favourite sorts in good condition, viz.:—Byblœmens.—Victoria Regina, Addison, Captain Cook, Roi de Siam, and Violet Alexander. Roses.—Duchess of Sutherland, Countess of Wilton, Fleur de Marie, Michael Angelo, Claudiana, and Catalani. Bizarres.—Duke of Devonshire, Marshal Soult, Polyphemus, William the Fourth, Prince of the Netherlands, Catafalque, Dr. Horner, and Prince of Wales. Among novelties were Miss E. Seymour, a good rose; Themis, a byblœmen; and Mr. F. Perkins, Duke of Wellington, and Marquess of Bristol, bizarres. Of these and a few others we hope to give some account hereafter. The beds in the open ground are now at their best, and being spread over a large surface of ground they make a fine display. They have not been injured in the least by frost, and of failures there are scarcely any. A fine bed of Rose Eclatante, a deep red double kind and scented, was especially remarkable; this is a sort which should not be lost sight of by growers of early Tulips.

FLORICULTURE.

Scarlet Pelargoniums.—If brilliancy of colour, free blooming, and compactness of growth are desirable, then scarlet Pelargoniums deserve a prominent position in every collection of soft-wooded plants. I will, however, at present confine my remarks to the variety called Tom Thumb. In order to secure good specimens of this, about the middle of March cuttings should be taken off any old plants you may happen to have. In choosing cuttings, secure the strongest, cutting them close to a joint, then insert them in a light compost of sand and leaf soil, giving them a liberal watering with a fine watering-pot, so as not to disturb the soil round the neck of the cutting. The pot may now be plunged in the propagating pit, where there is a brisk moist bottom heat; if all goes well, in four weeks they will be sufficiently rooted to bear potting off singly in 4-inch pots, in a fine sifted compost of maiden loam, leaf soil, and sand. This should be done carefully, so as not to bruise and injure any of the young tender roots, for if these are

injured it retards the growth of the plant greatly, and is a great drawback to its future well being. They may be again plunged where they were struck, for four or five days, which will enable them to make a start. They may then be taken to a warm Vinery, and kept as near the glass as possible, where they will soon push away strongly. When once it is found that the pots are full of roots, give a shift into a 6-inch pot, using a good rich compost of two-thirds turfy loam and one-third decomposed cow droppings and sand, well intermixed; this shift will be sufficient for them this season. They may be kept in a cool house during winter till about the middle of February, when they should be potted into 10-inch pots, in which they should be bloomed. The soil which I find best for this shift is two-thirds rich fibry loam, one-third rotten cow-dung, and a little sandy peat and river sand; after potting, tie the shoots close down to the rim of the pot, as regularly as possible all round, so as to balance the plant; cut the ends off the shoots, and fasten them down to the rim of the pot; this will make them break out at all the joints. They may now be placed where there is a temperature of from 55° during night to 60° in the day-time. Here they will soon show symptoms of growth. As they progress, keep the outside shoots tied close down to the level of the rim of the pot, letting the rest rise gradually, so as to form a good shaped plant. All that is now required is regulating the shoots and syringing over-head occasionally till the latter end of June, when they should be removed to a cold pit or frame, admitting as much air as possible. The flowers should be all picked off till the middle of July, when the plants may then be permitted to flower. By the second week in August they may be removed to the plant house, where they will become objects of admiration, and will remain for at least two months in the highest possible perfection. They will be much benefited by watering twice a week with liquid manure. *W. F.*

FANCY PELARGONIUMS.—These are almost without exception regarded as pot-plants only, and treated as such; planting them in the open ground is very seldom thought of, much less using them largely as bedding plants. The scarlet and variegated sorts, it need scarcely be observed, are necessary to every flower-garden; but the more beautiful fancy kinds, except one or two varieties, are but rarely indulged with a place there. It is the more remarkable that this is the case, when it is remembered how exquisitely beautiful they become, in good hands, when grown in pots under glass. It might be thought, if they only succeeded proportionately well in the open ground, which they will do, that they merit a trial there, at least; and the fact is, it is the want of this trial, in the majority of cases, that prevents their admittance to the flower garden. At Trentham, however, and a few other places, the fancy varieties are placed on the same footing as the scarlet, variegated, and Ivy-leaved kinds, and the effect the whole creates is such as to render the site they occupy the most attractive feature in the grounds. If, then, by dealing with fancy Pelargoniums as with other flower-garden plants, they can be made equally useful, what might not be done with them if the same principle were carried out in preparing plants for turning into the open ground that produces such gratifying results with those cultivated in pots? The fancy Pelargonium grows exceedingly rank when planted in rich flower-garden soil, branching very strongly, and bearing leaves twice their usual size; but few flowers, and those few neither of the proper size, shape, nor colour. Providing soil meagre in quality and quantity in which to grow them is, therefore, required to bring about the desired result; if, in conjunction with its provision, aged plants were also employed, the end in view will be more effectually gained. This last precaution would of itself suffice, and better effect the object than almost any combination of measures. Every one is familiar with the practice of lifting scarlet Pelargoniums year after year from the open garden because they are more serviceable for future use than young plants, by bearing flowers instead of growing exuberantly; and what is successful in their case, is assuredly equally so in regard to the fancy kinds. As the planting season is at hand I would commend these observations on this popular flower to the attention of your readers, trusting that many of them will give the plant a trial in the way I have mentioned. The kinds I have found to succeed the best are Anais, Queen Victoria, Hero of Surrey, and Defiance. *A.*

SEEDLINGS.

AZALEAS: *T M.* A pretty variety, well worth taking care of.—*J H.* Greatly injured by travelling; can you furnish us with another bloom?—*A S Y.* Too much spoiled for us to offer any opinion on them.

CINERARIAS: *R M.* Not so good as many now in cultivation.

GLOXINIAS: *J D.* No improvement on kinds we already have.

HEATHS: *J H.* Very pretty, but not distinct enough.

PELARGONIUMS: *R J L.* Good in colour and shape, but too small.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Although a slight shade is indispensable on the forenoons of bright warm days, this must be used sparingly when the weather proves unsettled; for, without abundance of light, flowers never colour properly, and they soon fade if kept in too shady a position. Air should also be admitted freely whenever the weather will admit. Where it can be accomplished, watering should be done in the morning, in order to get the superfluous moisture dried up before evening, so as to avoid night damps, from which there is some danger during the present state of the weather. The New Holland twiners, when done flowering, should have their shoots well trimmed in before growth commences, thinning the main branches where necessary by cutting out weakly ones, always having an eye to secure plenty of young wood towards the bottom. If the plants are at all infested with scale, they will be most conveniently cleaned, and, where necessary, the paint washed, &c., immediately after pruning, so as to have all clean before the plants start into growth.

FORCING DEPARTMENT.

PINERY.—For plants intended for winter fruiting, we would recommend using a somewhat lighter soil than is generally employed for Pines, as there will not be so much danger of over-watering in this as when strong tenacious loam is used. We prefer a compost consisting of two-thirds mellow turfy loam with one-third of turfy peat, to which we would add a liberal sprinkling of clean sharp sand and small charcoal, or crushed bones in preference, where they can be obtained. In this the plants will root vigorously, and they can be freely supplied with manure-water, without any danger of soddening the soil. But the great advantage of a light soil is that it soon parts with its moisture, and the plants are more easily managed in it in the way of getting them to show fruit at the proper time, and also to secure this of prime quality. Avoid a too liberal use of shading during unsettled weather, such as we have lately experienced. VINERIES.—See that inside borders are properly supplied with water, giving sufficient quantities to thoroughly moisten the whole mass of soil. The Vine is a gross feeder, and absorbs vast quantities of water. Also give a liberal supply of manure water from the stable tank to Vines in pots swelling their fruit, first diluting it slightly with warm water to bring it to about the temperature of the house. Attend to the regulation of the growth, and timely thinning of the bunches and berries. Look sharply after spider, and use every means to keep clear of this pest. MELONS.—Maintain a somewhat moist atmosphere to young plants until they are fairly started into growth, but plants in free growth must be kept cooler, so as to induce a stocky fruitful habit of growth. Those setting their fruit should be afforded a rather dry atmosphere, as the young fruit is apt not to swell, if the Vines are kept growing too rapidly. Be very careful that insects are not allowed to establish themselves on the foliage; for if this occurs there will be little prospect of a crop. Remove decaying leaves immediately they are perceived, and pay the utmost regard to cleanliness; also apply quicklime, if damp is perceived on the stems.

FLOWER GARDEN AND SHRUBBERIES.

Except in favoured localities, it will be unsafe to commence planting out the bedding stock until we experience a decided change of weather. Meantime get the plants nicely hardened off and arranged, so that when planting out is commenced, it can be done expeditiously. Also decide upon what is to occupy each bed, and have everything in readiness. Push forward late propagated stock, and endeavour to keep the whole healthy, and growing slowly in their pots. It is a common and very bad practice to allow bedding stock to remain in small p ts, exposed to the sun and wind, and very scantily supplied with water, until they get almost dried up, and such plants are rightly considered to be hardened. They should be exposed to the weather as freely as circumstances will admit, but never to such an extent as to brown the foliage and dry up the tissues. Endeavour to get mowing and other work here in a forward state, so as to be able, when bedding out can be safely commenced, to command sufficient strength to properly care for the plants in the way of watering, protecting, &c., as may be necessary.

FLORISTS' FLOWERS.

Now will be the time for the amateur to make the necessary additions to his collections of Tulips; and we would advise all intending purchasers to visit various beds and select for themselves. It is a much more satisfactory plan than buying them in dry roots; for the Tulip is so sportive that a change of soil and situation will make them come in wholly a different character the succeeding season. Awnings must be put up, giving all the air possible at the sides to prevent their being drawn. Mark in the book all which are defective, particularly those having a stained base or stamens; an inferior form may be tolerated for a while, but impurity never. Plant out Dahlias, place their supports to them, mulch the surface of the ground, and water regularly when they require it. Hollyhocks, too, may be treated in the same manner. Old plants which are throwing up four or five stems should be reduced to two or three, and these should be nicely tied out to short stout stakes, so that each spike may stand free of its neighbour. Tie up Pinks, and remove the superfluous shoots. Part Polyanthuses, planting them in a very shady cool spot; where this is not to be had naturally, artificial shade must be made, as this is essential to their well doing.

HARDY FRUIT AND KITCHEN GARDEN DEPARTMENT.

Proceed with the disbudding of Peach and Apricot trees, leaving for the present, however, any shoot the leaves of which overhang and shelter fruit; but the points of such should be pinched out, in order to afford those intended to be left at the final disbudding every encouragement. It will also be necessary to go over Pear, Plum, and Cherry trees to remove gross shoots, and to stop those not wanted for laying in. This, repeated as may be necessary during summer is greatly preferable to the old practice of allowing the shoots to remain upon the trees till midsummer, and then cutting them back to two or three eyes. This showery weather seems to be very favourable for the increase of insects, and nothing must be allowed to interfere with the destruction of these pests. Ground from which Broccoli and other winter greens have been cleared should be manured and trenched, or dug, as may be requisite, for the succeeding crop; or, if it is intended for Celery, the trenches should be got out at once, so as to be able to get a crop of Lettuce or Spinach between the trenches. See to getting Tomatoes prepared for planting out, also sweet Basil, &c., with ridge Cucumbers and Vegetable Marrows; also make a sowing of Sweet Basil, Marjoram, Savory, &c., on a light warm border; and get the early Celery prepared for planting out as speedily as possible, and attend to the plants for succession crops.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending May 11, 1854, as observed at the Horticultural Gardens.

May.	Moon's Age.	Barometer.		Temperature.					Wind.	Rain.
				Of the Air.			Of the Earth			
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Friday 5	☽	29.694	29.666	63	28	45.5	49	50	S.W.	.04
Satur. 6	9	29.591	29.505	59	42	50.5	50	51	S.	.09
Sunday 7	10	29.595	29.512	61	44	52.5	50	51	S.	.39
Mon.. 8	11	29.558	29.448	58	32	45.0	50	51	S.W.	[illegible]
Tues. 9	12	29.861	29.676	60	34	47.0	49	51	N.	[illegible]
Wed. 10	13	30.039	29.992	58	41	49.5	50	51	N.E.	.10
Thurs. 11	14	30.075	29.939	56	30	43.0	50	51	W.	.09
Average.		29.773	29.677	59.3	35.8	47.5	49.7	50.8		1.22

May 5—Frosty; foggy; white clouds, with deep-blue intervals; very fine; clear.
— 6—Cloudy and fine; dense clouds; uniformly overcast.
— 7—Fine; rain; cloudy throughout.
— 8—Fine; rain; clear at night.
— 9—Showery; heavy thunder storms, especially between 5—6 P.M.
— 10—Cloudy; fine; heavy clouds; clear at night.
— 11—Uniformly overcast; cloudy; fine; clear; slight frost.

Mean temperature of the week, 3¾ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending May 20, 1854.

May.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 14	63.3	40.9	52.1	11	0.66 in.	3	5	6	1	3	5	4	1
Mon. 15	64.7	40.7	52.7	7	0.41	2	7	2	2	8	4	2	1
Tues. 16	66.3	44.0	55.1	10	0.34	5	4	6	—	2	8	2	1
Wed. 17	65.7	42.8	54.3	11	0.58	1	5	4	1	3	7	4	3
Thurs. 18	65.1	43.8	54.4	13	0.17	1	6	5	3	2	7	4	1
Friday 19	65.6	44.4	55.0	11	0.50	2	5	6	3	2	7	3	—
Satur. 20	65.1	44.3	54.7	14	0.64	1	5	7	3	3	5	1	3

The highest temperature during the above period occurred on the 15th and 17th, 1833—therm. 86 deg.; and the lowest on the 15th, 1850—therm. 25 deg.

Notices to Correspondents.

DISEASES: *M R.* The disease in your Passion-flowers is confined to the bark, but is so extensive as to make the death of the affected shoots inevitable. It would be worth your while to examine whether the diseased spots may not have arisen from the contact of the wire trellis. If such was the case, be so good as to write a line to that effect, addressed—Rev. M. J. Berkeley, King's Cliff, Wansford; and at the same time inclose one or two specimens, for the case is very curious. At present there are not sufficient data to enable any one to form a correct opinion.—*P S.* Your Melons are affected with the same disease which was prevalent in Cucumbers in 1847, and of which you will find a detailed account, with figures, in our volume for 1847, p. 355. As a tendency to such diseases, in all probability, *exists already* in the seeds themselves in certain seasons, it is impossible always to guard against them, even by the best principles of cultivation; and in general they admit of little remedy when once established. The cold weather of the last five weeks has, however, been very unfavourable to both Melons and Cucumbers, as it has been almost impossible to give them as much air as they require. *M. J. B.*

FUNGI: *C D.* The production on Pinus longifolia is Æcidium Pini, a fungus which is common on young plants of Scotch Fir, but which seldom does material injury, except it attacks the shoots themselves. It is impossible to guard against the attacks of so common a parasite in the first instance, because any breeze may introduce the spores, but where it breaks out it may be prudent to remove the affected plants; or, if they are not of considerable value, to destroy them altogether. The allied species, which attack Fir trees on the continent, are far more formidable enemies. *M. J. B.*

HIGHCLERE CASTLE: *A B.* We regret to say that the beauty of this fine place is very greatly impaired by the recent frosts, which have either destroyed or disfigured the magnificent American plants for which it is famous.

MANURE FOR A NEWLY-SOWN LAWN: *R V.* Soot is one of the best kinds of manure to use to encourage the growth of fine Grass. We hear sewage charcoal well spoken of, but have had no experience with it.

NAMES OF PLANTS: *J A.* 1, Fumaria bulbosa; 2, Rhaphis flabelliformis; 3, Saxifraga Geum; 4, Sanguinaria canadensis.—*R C R.* Luzula sylvatica. No doubt the leaves contain good fibre, if it can be got out.—*R. Yates.* Cattleya intermedia.—*Ezeroum.* 649, Geranium ibericum; 648, G. sanguineum; 237, this Cicer seems to be C. songaricum, not arietinum.—*C L P.* Dendrobium aureum, the pale variety; Cyrtochilum hastatum, a variety of Gongora maculata, and what appears to be the small variety of Oncidium ampliatum.—*J R.* We cannot render you any assistance. What relation have Algæ to horticulture?—*Diss.* 1, *Boconnoc.* Prunus Padus, the common Bird Cherry. Doronicum Pardalianches; 2, D. plantagineum; 3, Cornus mascula; 4, Euonymus europæus.—*J. Weeks & Co.* We do not see how it differs from the common Dipteracanthus strictus.

SALSIFY: *Y H.* It is the roots (which are long, tapering, and fleshy) that are used. Wash them, and scrape the skin gently off them; cut them into lengths of 3 or 4 inches, put them into boiling water with a little salt, a small bit of butter, and a couple of spoonsful of white vinegar, or the juice of a lemon; boil them for an hour, then drain and serve with white sauce, rich brown gravy, or melted butter. Scorzonera is dressed in precisely the same manner.‡

SEEDS: *J W H.* Cassia mimosoides is a well known plant, and your pods perhaps belong to it. This climate is, however, too cold for it in the open air.

STRAWBERRIES: *J P.* The leaf of your seedling, raised between Keens' Seedling and the British Queen, is broad and roundish, like that of Keens' Seedling. The fruit is large, roundish-ovate, flesh red next the outside, paler than that of Keens' Seedling at the core, and its quality is certainly good, even after enduring carriage. When fresh gathered it will probably be found excellent.‖

TIMBER MEASURING: *T S.* As you seem not to understand this process, we have given you two methods, which you will find in another column. If you do not comprehend the rules there given, you must study arithmetic till you do. As to your question, we are wholly unable to comprehend what it means.

WEEDS: *H A.* The best material to be used in a liquid state for killing Grass and Moss between pavement stones is corrosive sublimate dissolved in water.‡

WOODS AND FORESTS: *Quercus.* The Blue Book is entitled "Return — Royal Forests. H. C. No. 99."

TURNIP SOWING, ETC.

GENUINE HALF-INCH BONES AND BONE-DUST may be had in any quantity of JARED TERRETT HUNT, Lambeth Wharf, Upper Fore Street, Lambeth, near Vauxhall Bridge. Also Superphosphate of Lime and Sulphuric Acid for dissolving Bones. J. T. H. also invites the attention of Gentlemen and Agriculturists in general, to his Superior Fine Bone-Dust for dressing Lawns, Parks, &c. Delivered to any Railway in London in Sacks.

TURNIP SOWING.

SUPERPHOSPHATE OF LIME, made from Bone, which is the best Manure for Root Crops (see the Royal Agricultural Society's Journal, Vol. vi., part 2). PERUVIAN GUANO, NITRATE OF SODA, BONE DUST, SULPHURIC ACID, and all other Manures of known value. The PEAT MOSS CHARCOAL COMPANY have appointed the undersigned Sole Agents for the Sale of this fixer and distributor of Ammoniacal matter. They are also Sole Agents (in London) of the Patent Sanitary Company for the sale of their "Nitrogenised Carbon."—Apply to MARK FOTHERGILL & Co., 204A, Upper Thames Street, London.

THE LONDON MANURE COMPANY'S WHEAT MANURE, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. EDWARD PURSER, Sec.
Bridge Street, Blackfriars.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7*l*. per ton; Superphosphate of Lime, 7*l*.; Sulphuric Acid and Coprolites, 6*l*.
Office, 69, King William Street, City, London.
N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

GUANO (PERUVIAN) AND CHEMICAL FERTILISERS.—NITRATE OF SODA; PERUVIAN GUANO; SUPERPHOSPHATE OF LIME; AGRICULTURAL SALT; AND CONCENTRATED MANURE FOR TURNIPS.
The above articles are supplied on the lowest Cash Terms, for best qualities only, on application to Mr. JOHN CLARANCE, Agriculturist's London Agent, 1A, Bishopsgate Street Within.

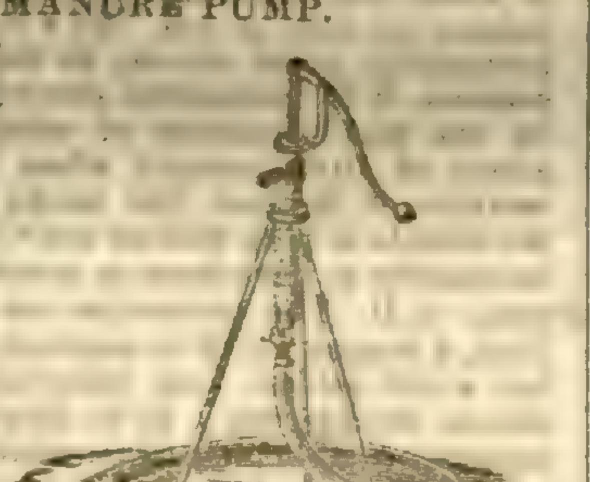
PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures.
WM. INGLIS CARNE, 10, Mark Lane, London.

FOR WATERING GARDENS, DISTRIBUTING LIQUID MANURE, ETC.

JAMES LYNE HANCOCK'S VULCANISED INDIA-RUBBER TUBING is now manufactured especially for the above purposes, and is of greater flexibility than any other description of hose or tubing. It is also manufactured to resist great pressure, suitable for attaching to the mains of water works or to tanks, or water butts of high elevations. WATERING HOSE fitted up with brass joints, branches, stop-cocks, roses, and jets complete. Vulcanised India-rubber suction pipes for pumps any length or size to order; HOSE for brewers' use, fire engines, &c. VULCANISED INDIA-RUBBER WASHERS, for Steam and Water Joints, and VULCANISED RUBBER in sheets of any size and thickness. Solid vulcanised India-rubber Tubing and Cord, for the joints of glass-doors, sashes, frames, &c.—Prices and every information may be had on application at the Manufactory, Goswell Mews, Goswell Road, London.

REDUCTION IN PRICE.

WEIR'S IMPROVED GALVANISED WROUGHT IRON LIQUID MANURE PUMP.



The Fittings of these Pumps are wholly of Brass, and there is no leather or other matter which can be affected by the manure.

Price, complete, with 10 feet of Flexible Suction Pipe, 4*l*. 15*s*. Terms, cash on delivery.

EDWARD WEIR, Agricultural Engineer, 16, Bath Place, New Road, London. Removed from Oxford Street.

Catalogues, with Illustrations, sent free by post.

WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

	£	s.	d.
Patent Pump	1	15	0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing	3	0	0

Larger sizes if required.

The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.

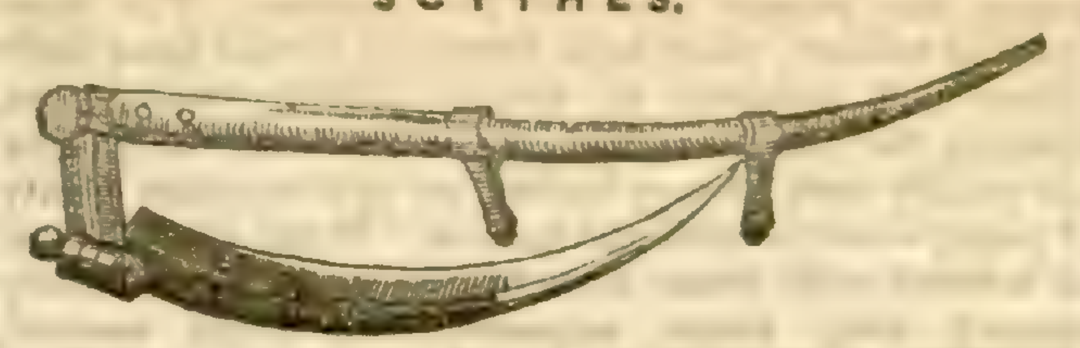
May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,
8, CRESCENT, JEWIN STREET, LONDON.
Every description of Machinery for Raising Water; Fire Engines, &c.

BARTON'S PATENT STABLE FITTINGS, AND ENAMELLED MANGERS.

THESE FITTINGS have all the newest improvements, and are the only patented invention of this description. Improved Stable Fittings with Manger, Rack, and Water Trough attached. New Pattern Manger and Water Trough combined; also Corner and Straight Mangers, Plain, Enamelled, and Galvanised Stable Furniture of every description, Iron Gates, Railing, Hurdles, Sheep and Game Wire Netting, Registered Poultry Troughs, Fountains, Feeders, &c.—JAMES BARTON, IRONMONGER, &c., Manufactory and Warehouse, 370, Oxford Street, a few doors east of the Pantheon.

SCYTHES.



BOYD'S PATENT SELF-ADJUSTING SCYTHE will last out three of the ordinary sort, and is always ready for use.
"We have seen this Scythe at work, and can strongly recommend it."—See *Mark Lane Express*, May 16, 1853.
To be had of every Ironmonger and Nurseryman in the kingdom; and wholesale and retail of WM. DRAY AND CO., Agricultural Implement Makers, Swan Lane, London.

RICHMOND AND CHANDLER'S No. 1 CORN CRUSHER (Price 5*l*. 5*s*.) was first introduced a few years ago, as a decided improvement upon others theretofore made. Subsequent time and experience have served to render it more perfect, and to greatly extend the pre-eminent patronage of members of the Royal Agricultural Society, and distinguished scientific authorities throughout the world.—Address, RICHMOND & CHANDLER, Implement Works, Salford, Manchester; and 32, South John St., Liverpool. Export orders completed on the shortest notice.

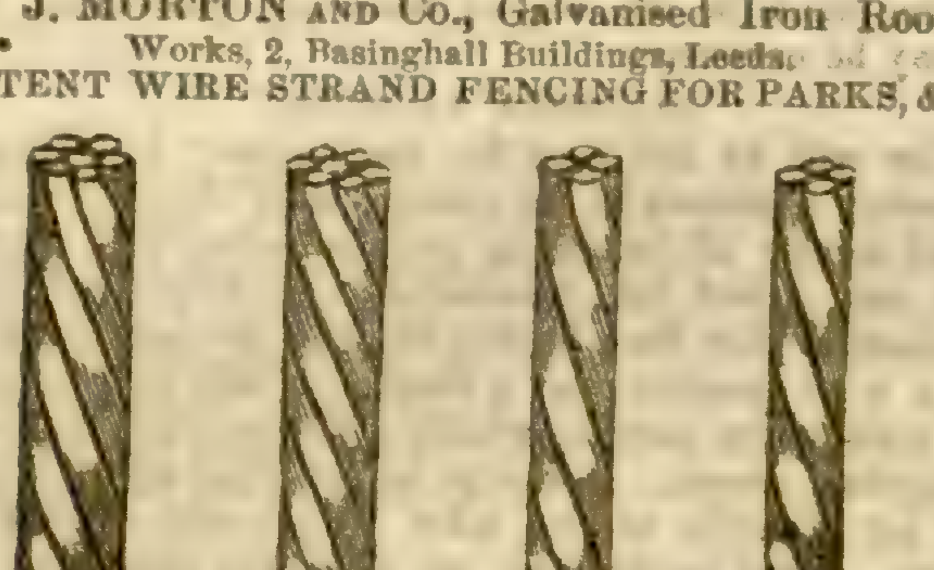
STEPHENSON AND PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.
From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

ANTHONY'S PATENT AMERICAN CHURN.—Extract from the Royal Agricultural Society's Report of the trial of Churns at the Gloucester meeting in July last. "In this trial the American Churn not only maintained its character in producing butter rapidly, but in producing a greater quantity from the like amount of cream." It made from 4 quarts of cream 4 lbs. 6 oz. of butter, being 8 oz. more than any of the other Churns from the same quantity and quality of cream. Price Lists of Churns and Implements by the best makers sent free, and Illustrated Catalogues on receipt of eight postage stamps. BURGESS & KEY, 103, Newgate Street, and 52, Little Britain, London, who have always a large stock of Steam-engines, Ploughs, Harrows, Diggers, Waggons, Carts, Threshing and Dressing Machines, Mills, Oat and Grain Bruisers, Oilcake Breakers, Reaping Machines, Haymakers, Horse-rakers, Turnip Cutters, Liquid Manure Carts, Parkes' celebrated Steel Digging Forks and Draining Tools, Pumps for Manure, Farm Fire Engines, and for Garden Purposes, &c. &c.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.

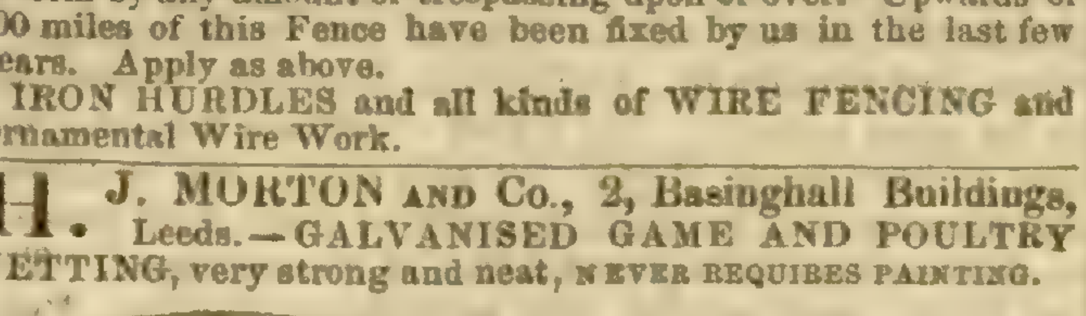
MESSRS. BURGESS AND KEY, as Mr. PARKES' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.
103, Newgate Street, and 52, Little Britain, London.

H. J. MORTON AND Co., Galvanised Iron Roofing Works, 2, Basinghall Buildings, Leeds.
PATENT WIRE STRAND FENCING FOR PARKS, &c.



This Fencing is the most neat, strong, and durable for Parks and Agricultural purposes in use. It cannot be bent or put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply as above.
IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

H. J. MORTON AND Co., 2, Basinghall Buildings, Leeds.—GALVANISED GAME AND POULTRY NETTING, very strong and neat, NEVER REQUIRES PAINTING.



24 inches wide, 3-inch mesh, 4½*d*., 6*d*., and 8½*d*. per yard.
24 inches wide, 2-inch mesh, 7*d*., 9½*d*., and 1*s*. per yard.
GALVANISED IRON SPOUTING, for Dwellings, Cottages, Farm Buildings, &c., NEVER REQUIRES PAINTING.
Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalte Roofing Felt, &c.

MORTON'S YELLOW GLOBE MANGOLD WURZEL, *saved by Thomas Bennett, Esq., Gloucester, from the Stock originally grown by J. C. Morton, Esq., the Editor of the Agricultural Gazette.*
Seed of this most excellent variety can now be obtained from WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth, who have purchased the whole of the Stock.

AGRICULTURAL INSTRUCTION.—A Farmer has now accommodation for a Pupil or two who may require instruction in Practical Agriculture, according to the best modern system, combined with economy. Pupils would have an opportunity of seeing the latest improved implements in use, a new and economical system of Irrigation carried out, and also the extensive use of the chief Artificial Manures applied to Corn, Root, and Grass crops, in addition to the ordinary routine of farming operations. References will be given and required. Terms 100*l*. a year; if a horse is kept, 25*l*. extra.—Fuller particulars may be obtained on application to R. VALLENTINE, Leighton Buzzard, Bedfordshire.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—PRIZE SHEETS for the LINCOLN MEETING may be had on application to the SECRETARY of the Society, No. 12, Hanover Square, London.

THE THIRD CHELTENHAM SUMMER POULTRY SHOW will take place at that magnificent establishment PITTVILLE SPA, on the 14th and 15th of June. For Prize Lists and full particulars enclose a stamped directed envelope to JESSOP BROTHERS, Secretaries.

The Agricultural Gazette.

SATURDAY, MAY 13, 1854.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, May	17	—Agricultural Society of England.
THURSDAY —	18	—Agricultural Imp. Society of Ireland.
WEDNESDAY, —	24	—Agricultural Society of England.
THURSDAY, —	25	—Agricultural Imp. Society of Ireland.

THE references which have been made in past numbers of the *Agricultural Gazette* to the Museum of Animal Products, which Mr. SOLLY is engaged in organising and collecting, will prepare our readers for the following address, which is being now issued in reference to the most important of such products:—

"COLLECTION OF BRITISH AND IRISH WOOLS.—In carrying out the duty confided to me by her Majesty's Commissioners for the Great Exhibition of 1851, conjointly with the Society of Arts, and in forming the commencement of the intended Trade Museum, I am now occupied in collecting specimens of every variety of raw and manufactured animal produce. As amongst animal products wool stands pre-eminent in importance, it is desirable that a very full and complete series of specimens should be obtained; it has consequently been deemed right to apply to all the leading sheep breeders in the kingdom, and I therefore venture to solicit your aid in the contribution of samples of wool of the clip of 1854. Specimens of every kind or variety of wool, and from every locality, are desirable. In the case of distinct or peculiar breeds, two entire fleeces would be preferable to a smaller sample; and where only a portion of the fleece is sent, the part selected should be specified. It is also of the first importance that all specimens should be accompanied by accurate information as to age, time of clip, &c."

We add to this the schedule of inquiries relating to the different points on which information is desired; and we hope that those who are disposed to contribute specimens to the series which will be collected, will at once make known their intention to Mr. SOLLY, Trade Museum, Society of Arts, Adelphi, London.

SAMPLES OF WOOLS.

Contributed by ——, of ——, Parish of ——, County of ——.
Mark or number of sample..
Breed or variety ....
Age of sheep ....
Sex of sheep ....
Breed of sire and of dam, if a cross breed ....
Time when last shorn ....
Time of clip..
How and when dressed..
How and when washed ....
On what fed..
If fed on Turnips, how folded..
Whether sheltered or not, and if so, how ....
Has the character of the wool recently changed, and if so, how...
Altitude of farm ....
Nature of soil and substratum ....
Remarks ....

WE quite agree with Professor WAY in the remark with which he commenced a very instructive lecture on artificial manures, to members of the English Agricultural Society last Wednesday, that the absence of any novelty on the subject does not diminish the importance, and indeed the need, of bringing it again and again under the notice of the farmer. It was not, however, so directly to its agricultural as to its commercial bearings that our attention was directed. A lecture on artificial manures, from considering the wants of the land in order to its fertility, and the ordinary sources of supply for these wants at the command of the farmer, might have proceeded to discuss the deficiency thus apparent, which must be supplemented by artificial means—or from reference to the necessities of individual crops, it might have considered the nature of the artificial application which each must receive in order to its greatest productiveness; but neither of these courses was pursued in the present instance. The *manufacture* and the sources of its raw material were the subject; and the way in which the interests of the farmer in the matter came up for notice arose incidentally rather than directly out of such points as the following—(1), a scarcity, inducing adulteration; (2), concentrated manures, though actually costlier, being relatively cheaper, both in use and in result; (3), the competition of

other manufactures being generally fatal to that of manures, as regards the market value so created for the various offals and refuse matters in which the latter finds its raw material.

The two main ingredients whose sources were considered are nitrogen in its combined forms, as ammonia and nitric acid, and phosphoric acid or phosphate of lime. Among the sources of both, of course, is guano, the costliness and scarcity of which Professor WAY informed us have induced excessive adulteration during the present season—gypsum, salt, and sand and chalk being used very often, so as to convert one ton of genuine guano into three tons of saleable material. An impression, it was said, appears to have arisen that some new guano has been imported this year, and of this the dealers in these *manufactured* articles have not been slow to avail themselves in effecting sales. The other sources of nitrogen referred to are blood, flesh, fish, —nitrate of soda—woollen refuse of all kinds—urine, night-soil, and soot. It was to the first and the last of these that our attention was principally directed. The difficulties connected with the use of blood arose in the first place from the value of the article for the manufacture of prussiate of potash, which makes it in the dried state worth 8*l*. a ton, when it is beyond the use of the farmer — and in the next from the difficulty of getting rid of the water which it contains. The latter difficulty, however, might be evaded if not overcome by using the liquid blood to dilute the oil of vitriol employed in dissolving bones, which it would easily do, at the same time that a valuable nitrogenous ingredient would thus be added to the superphosphate manufactured. Refuse fish, too, it was suggested might be pulped and used in a similar manner, for it contained as much water as the liquid blood.

On coal as a source of nitrogen, a good deal of even startling information was given. It appears that coal, on an average, contains 2 per cent. of nitrogen, and that thus at least half a million pounds worth of ammonia (at 5*d*. a lb.) is driven into the air through the chimneys of the metropolis alone—nearly as great a loss as is suffered by the waste flowing into the Thames through its sewers. Professor WAY suggested that though manufacturers of coke and consumers of coal will do nothing, and manufacturers of gas but little, to save this ammonia, yet that it might be possible in certain cases to conduct the distillation of coal profitably, with ammonia as the principal end in view, and coke and gas as subsidiary considerations; and where coal, as at the pit mouth, can be had for 4*s*. or 5*s*. a ton, and can be made to yield by distillation 20*s*. worth of ammonia, it was believed that the manufacture of the latter product in this way might be profitably conducted.

The manufacture of ammonia by the direct combination of its elements was referred to as one great object of the agricultural chemist—to which, however, as yet he could hardly look with hope or expectation. Certain steps leading that way had indeed been taken with success, but they were matters of curious laboratory experiment rather than capable of profitable imitation on the large scale.

The sources of phosphoric acid, the other principal material of manure, namely, bones in their several forms, coprolites and phosphorite, were then referred to; and under this head a remark was made upon the dilution with gypsum of the only valuable ingredient in the superphosphate of the manure market, which is an unavoidable result of the manufacture as at present conducted. It was suggested as possible, and in those cases especially where liquid manure drills—an increasingly frequent implement—were employed, and as a desirable thing, to extract the comparatively soluble ingredient and leave the comparatively useless one. The gypsum at present does little more than increase the weight of the manure when it is used dry, and clog and impede the action of the drill when used in so-called solution.

Mr. WAY'S concluding remarks related to the subject of the sewage waste of large towns. He believes that the economical and profitable utilisation of this material is as yet impracticable. And when, as we know to be the case, the chemist of the Royal Agricultural Society of England, and the intelligent and enterprising Borough engineer of Liverpool—the best representatives probably that can be named, of English knowledge on questions of value and cost in connection with this subject—arrive at one conclusion on the matter, we believe that for the present it must be considered a *conclusion*; and that the various deodorising and desiccating processes which have been patented will not succeed in carrying us past it. Professor WAY put the thing on its right footing, when he said that nothing was more likely to postpone the solution of the problem than the dissemination of exaggerated opinion—not of the agricultural importance of the question, but—of the agricultural value of the material in its present form. The question is one for the consideration of the town rather than the country; and sanitary commissioners, not sewage manure companies, are the people to whom the matter must be addressed. The thing must be considered a nuisance to be got rid of at an expense before it can become a property to be profitably utilised.

We have in the above short account given a description rather than a report of a most substantial and instructive lecture.

NOTES ON EXPERIMENTS
IN THE BOTANICAL GARDEN OF THE ROYAL AGRICULTURAL COLLEGE.
By PROFESSOR J. BUCKMAN, F.G.S., F.L.S.

IN this paper I purpose to give notes on 10 species of plants, six of which may be termed economic plants, and four medicinal plants, as follows:—*Economic Plants*: Pastinaca sativa, Parsnip; Daucus carota, Carrot; Cichorium Intybus, Chicory, Succory; Helianthus annuus, Sunflower; Linum usitatissimum, Linseed; and Polygonum fagopyrum, Buckwheat. *Medicinal Plants*: Carum carui, Carraway; Coriandrum sativum, Coriander; Hiosciamus niger, Henbane; and Papaver somniferum, Poppy. My plots of Parsnips and Carrots are derived from wild examples which were brought into the garden for experiment in 1848, and, as the results are somewhat curious and interesting, I shall here describe my proceedings somewhat in detail.

In the spring of 1848 I planted in my experimental plots some seeds of these plants, which were gathered from wild specimens growing in an uncultivated portion of the garden; the result, in as far as the *Parsnip* is concerned, being pretty much as follows. The seed was drilled in rows about 18 inches apart; and as it came up tolerably well, there was a number of plants for observation, which, as they advanced and perfected their leaves, presented some most marked differences in many individuals. It is known that the wild Parsnip leaves are of a dark-green colour, and thickly clothed with hairs of a greater or less length, while the cultivated plant possesses foliage of a light yellowish green hue, and totally devoid of hairs, being, as the botanists describe it, glabrous. Now it is curious to remark that a first year's cultivative process, consisting in gathering the seeds in autumn and planting them in the spring, had the effect of changing the wild foliage to the aspect of the cultivated plant of about 15 per cent. of the specimens that came up here; then as the object was to mark the advance of wild plants under cultivation, the examples with the hairy leaves were destroyed, and the smooth ones left to grow.

In the autumn of the same year the roots were taken up and carefully examined, when it was found that they had greatly increased in size when compared with wild examples, this increase being not merely confined, to the enlargement of the tissues of the top root, but to that of the lateral shoots; however, there were some specimens with a cleaner and smoother outline than others, these were reserved for the growth of seed. The seed of the following year was sown in the spring of 1850, in a newly prepared bed, the result of which was a crop of tolerably good and succulent roots, some examples of which were however far more what a Parsnip should be than others. The same process was again adopted in the growth of seed, and a third sowing took place of seed in 1852; but here the results, instead of showing a further advance, proved a retrogression to the state of the second sowing. The reason for this is obvious; here was I sowing the same seed, year after year, under the same circumstances of soil, situation, and climate, and hence the process of cultivation so well begun, and so successfully going on, with repetition tended to degeneration. These experiments seemed valuable, as pointing out the circumstances attending the conversion of wild plants into cultivated vegetables; and, at the same time, show us that when a change is once attained, there is ever a tendency to revert to the wild state, which can only be averted by constantly keeping up the cultivative process—cultivation, indeed, consisting, not in suiting the natural requirements of plants, but in submitting them to circumstances as opposite as possible. But more, the observed facts as respects the Parsnip seemed to point out to me a way to the solution of the mystery connected with the forked method of growth of cultivated roots, known by the name of finger-and-toes; and I have come to the conclusion that this so-called disease is the result of degeneration of seed, arising from many circumstances, the most prominent of which are the repeated sowing in the same locality of own ground seed, the using seed from degenerate specimens, and the using of seed on a poor soil which has been grown on a rich land. In the experiments just quoted, my second crop of roots were fleshy, but, having fleshy forks, they were, indeed, roots in the condition of finger-and-toes; here, then, finger-and-toes may be considered, firstly, as a consequence of the half way advanced from wildness to cultivation, and, secondly, in reversion from cultivation to wildness.*

As respects the *Carrots*, it may be stated that their cultivation was followed out in the same manner as that of the Parsnips, and though the results were satisfactory, as exhibiting a great change, yet the change was not so marked as that observed in the Parsnips, though the same result followed a continuation of the process.

The *Chicory* grows well on poor soils, especially if of a calcareous nature; it is indeed a wild native on our oolites; it lasts a considerable time, sending its roots deeper and deeper into the soil, and growing year by year larger and more succulent herbage. The herbage is eaten with tolerable appetite by cattle; and if the plant be cultivated for feed, it should be cut off before seeding, as allowing the seeds to perfect themselves weakens the plants and shortens their duration. The roots grow to a large size, and contain a bitter extractive matter similar to that of the Dandelion, and may medicinally be used for the same purposes; it has been much used for adulterating and mixing with coffee; and notwithstanding it is even used knowingly with coffee in families, it is a vicious practice, as it contains none of the refreshing properties of the berry; and, indeed, substitutes a medicine for a salubrious aliment.

My plot of Chicory occupied a position between a plot of Sunflowers on the left, and of Linseed on the right, and it was curious to observe that this vicinage, though it affected the former so as to cause them to grow but a few inches high, the growth of the large roots spreading in like manner far under the Linseed plot had not the slightest influence on its growth. From this we see that the roots of a plant may take up matters from the soil which would be required by one species which succeeded and not by another. In the case before us the Chicory and Sunflower, being both plants of the great natural order Compositæ, may be expected to live upon a like pabulum; the Linseed, however, being perfectly different in its nature and structure, requires to a considerable extent a different food.

The Sunflower usually grows to a large size even without manuring, and I think is capable of becoming a valuable and profitable plant to those who keep poultry, as it requires no expense for culture; the corner of a field or waste place may be turned over, and the seeds be planted even in a rude manner, and if merely thinned and hoed at the same time, to free them from weeds, they require no further care.

Linseed.—As respects my experimental plots, I have been surprised to find this plant succeed so well in poor soils. I have grown it on the thin brashes of the great oolite and on the thick clay bed of the Botanical Garden; in all cases without manure, and after almost every kind of experimental crop, and my samples have always been very good; one great difficulty, however, attendant upon the cultivation of Linseed, which can more readily be overcome in small plots than in field cultivation, is that of the prevalence of weeds; the Linseed is, at first, a small and delicate plant, and is easily overgrown by weeds, and if this be so in its early stage it never recovers. In my plots this difficulty is got over by drilling, which allows the hoe to be used, and this could perhaps be done with advantage in field cultivation. That weeds may be expected to prevail in this crop will at once be seen, when, in addition to the facilities offered for their germination by the preparation and fine pulverisation of the soil, in its cultivation the smallness of the seed renders it exceedingly difficult to separate it from seeds of weeds; and, hence, with Linseed we usually find enough of weeds associated to furnish a tolerable crop from this source alone; hence, then, the purest or cleanest seed should always be employed, even at additional cost, as it will, in the end, be an incomparable saving. A few years since some foreign Flax seed was introduced to the College farm, and the crop was spoiled by Sinapis nigra, which has been ever since almost as common as the S. arvensis Charlock, though it scarcely existed there before.*

Buckwheat usually grows short with us, but seeds tolerably well; I imagine that the oolites would form good soils for the growth of this plant for seed. I have had little experience of it in an economic point of view; but if found useful, from the facility with which it can be grown, it might become a profitable plant for the corner of a garden or field, or an occasional headland.

Medicinal Plants.—The few plants of this kind which have been introduced into my garden serve the purpose of instructing my class as to their nature, and are not grown with a view of testing their agricultural merits; at the same time such specimens as Carraway or Coriander often form a part of field culture in the neighbourhood of London, their seeds being much employed as a medicine or as a spice, as also for the distillation of their essential oil; they are easily grown, a light pulverisable soil being best adapted for them. Henbane is much used as a medicine, for which purpose it is largely grown in the physic gardens. It requires a rich soil for the production of large and vigorous herbage; wanting this, however, in my garden, causes it to seed all the better, so that while with me the leaves are always small, it produces an enormous quantity of its peculiarly formed seed cases filled with seeds.

Poppies.—Three years since I introduced some of the opium Poppy into the garden, and grew tolerable heads for the first crop. My plot, however, has been kept up with seed from them, in which case the flower has gradually got very small, and the capsules are scarcely as large as a Walnut; indeed, so changed is the plant from its first estate as hardly to appear the same species, thus affording a good practical lesson in the physiological fact attendant upon the growth of seed. Poppies as a crop may be seen in the neighbourhood of most large towns. They grow best in deep rich land. I have seen enormous heads on some of the well-drained lias soils in the vale of Gloucester. *Cirencester, April* 22.

* This subject will be found more fully worked out in a paper in the forthcoming number of the Royal Agricultural Society's Journal.

Home Correspondence.

Lois Weedon Wheat-Culture.—The cavillers against this system do not remember that great feature in in it which gives a value to it even beyond the prominent one of making the country independent of foreign supply for its bread, by making it equally so for its meat. I do not throw away my straw, says Mr. Smith, by seizing for the grain on the natural supplies of manures. Mr. Smith is able to apply all his made manures to the land which produces his cattle food, thus doubling or trebling the usual acreage amounts of those crops which cannot do without it. High manuring is the backbone of high farming; but this high manuring, under our present system, cannot become general, it must be carried out by some at the expense of others; and it is also very generally considered as buying the whistle too dear: but the Lois Weedon system places this within the reach of every man, by enabling him to grow grain on all land which he cannot highly manure, or that he has not capital to lay stock on. Were the system of grain fallow adopted generally, the expense of farming would be much lessened, and such an increase of produce would be raised from our lands as would make us exporters instead of importers of food. Mr. Harkness, the secretary to our Agricultural Society, at much pains, lately brought forward a crowd of evidences on the autumn cleaning and tillage of land; this has been favourably noticed in these columns; but were a system of grain fallows adopted, the possibility of cleaning our lands in autumn, which, indeed, in our dripping climate is very much a matter *in nubibus*, would lose all interest, for we should have no weeds to destroy in autumn. It is much a subject of regret with me, that I have not been in position for the last 26 years to prove the practicability of growing grain crop after grain crop on the same ground in continued succession; but we know that land will produce every second year a crop of grain; that this is the perfection of our modern system of alternation, and on Mr. Smith's plan, and on the one which I have for more than 30 years experimented on, and long advocated, the ground is not called on to do more; the half of the land is in fallow, and I have never known an instance in which the acre of land thus half cropped did not produce equal to, nay exceed, that of the acre whole cropped. With us in Ireland, where labour ever forms a strong obstacle to progress, they are shocked at the additional expense they suppose is incurred by working the ground between the rows of grain; but little ought this to cause apprehension, for the saving of seed (though here I shock an Irishman still more) will cover the extra expense of keeping the ground clean and open, and this, even, where all the operations are manual. As confirmatory of this, I will state the additional expenses incurred in the tillage of an acre of land last year, in rows 18 inches apart, and the saving effected in seed. It is very usual here to sow 14 stones of Oats to the acre broadcast; indeed, I may say it is the average. In my drilled acre I sowed only 4 stones 3 lbs. of Bere, Barley, and Oats, at 1*s.* 6*d.* per stone; I have then a saving of nearly 10 stones of seed. I opened the drills with the garden hoe, which cost 3*s.*, and I gave the land two hand hoeings with the scuffle hoe, and one hand weeding of the rows at a cost of 3*s.* each; altogether, 12*s.* This acre was part of a field of a little over 3 acres, the remaining 2 acres being sown with Oats broadcast, the preceding crop Potatoes and Turnips, foul and badly tilled. It was all sown with clover and Italian Rye-grass, the sowing of the seeds being deferred till after the second hoeing in the drilled crop, and till the grain was shot into ear. While the Clover is most miserable in the broadcast crop, having been much smothered up with weeds, and is now a most foul crop, that in the drills is as fine as could be expected from so late a sowing, and is very clean. The crop of grain I cannot give in bushels, for it is not threshed out, nor am I so situated as to be able to give a very exact statement of it, but it evidently far exceeded the broadcast crop, I certainly think one-third better at least; its superiority was admitted by all who saw it, yet I have no expectation any one individual will adopt the practice on the lowest possible scale, all are too ready to find excuses for indolence—to fancy, with "Critic," any imaginary cause of success, rather than be compelled to acknowledge a self-evident one which tends against their prejudices; to cavil at anything their fathers did not do before them, to seek for difficulties wherewith to apologise for their inertness, their abhorrence of change. In the hoeings I found the earlier the first hoeing took place after the line of braird was sufficiently defined the better, some that was hoed thus early (the scuffle hoe was employed) took the lead within five days of the rest and kept it all along, even to the harvesting; for 24 drills of black Bere of this earliest hoed gave 22 stooks, while 16 rows that were not hoed till 14 days after gave only 11 stooks. I sustain the Lois Weedon system of grain tillage as being the only effectual grain fallow brought into a somewhat wide practice, but I am still disposed to prefer the plan I have so often recommended of sowing single rows, when grain alone is cultivated, at wide hoeing distances. And I do not consider all the conditions insisted on by Mr. Smith as absolutely necessary to the successful issue of our joint purpose—full crops of grain in continuous succession—so tilled as to allow of clean working and constant exposure of the soil to aerial influences. I think the annual bringing up of fresh soil may be dispensed with. I should be disposed, in the first two years, to double dig to the full depth, without throwing the subsoil to the top. I think this double digging advisable, as giving immediately a great depth of broken soil, pervious to air action and to root extension, and I think that this alone, without throwing to the top any more of the subsoil than incidentally reaches it, will bring up sufficient crude soil to supply fresh alkalies, &c., for some years to come, and that afterwards it will only be necessary occasionally to bring up a little of the cruder subsoil to the top, or when the subsoil becomes again consolidated. I think it would also be more beneficial and safer to hoe by hand in the first instance between the rows, going as close as possible to them, so soon as they are distinctly defined, and to follow this up with the double digging, which is a work of more time; the first operation would be run over very quickly, and ought to take place before the young plant has consumed the food contained in the seed, and become alone dependent on the soil and atmosphere—what may be called the weaning time; this would break up the surface, more or less incurated and puddled, and admit a free flow of oxygen to operate on the carbon about the roots of the young plants at the very moment when they most require assistance. If we wait for the double digging being effected, the surface will remain too long unmoved. I submit these observations not with any view of obstructing the progress of Mr. Smith's system. It is the best we have that is sustained by several years of successful practice, and I should be glad to see it become general. My own plans, although they have had a small and desultory practice of over 20 years, sufficient to satisfy myself, are deficient in that continuous and more extensive practice sufficient to satisfy others. The principles upon which they rest, the conditions on which their success depends, are the same as Mr. Smith's; the main difference lies in his sets of treble rows and mine of single rows. In mine all the rows equally participate in some advantages, which in his are limited to the outer rows, and even in them restricted to their outer sides. Future experiments will decide whether these advantages are imaginary or not. Others may try them if they please. I will when opportunity permits me. *J. M. Goodiff.*

Societies.

ROYAL AGRICULTURAL SOCIETY.

Lecture on Manures, *May* 10.—Sir John Villiers Shelley, Bart., M.P., Trustee, in the Chair.—Professor Way, the consulting-chemist of the Society, delivered before the members a lecture "On the progress made in the manufacture of artificial manures," for which, on the motion of Lord Camoys, seconded by Lord Berners, he received the best thanks of the meeting. In the course of this lecture, Prof. Way offered suggestions, founded on scientific reasoning, for the increased efficiency and economy in the manufacture of artificial manures; and detailed, under the following heads, important and interesting facts connected with their respective production: viz., I. Sources of Ammonia: 1, Guano; 2, nitrate of soda and nitric acid; 3, bones; 4, blood; 5, flesh; 6, fish; 7, woollen rags, shoddy, and hair; 8, gas-refuse; 9, coal and soot; 10, urine; 11, elements of ammonia by electric or other agency (?). II. Sources of Phosphoric Acid: 1, Guano; 2, bones; 3, animal charcoal; 4, coprolites, green sand, and phosphorite. III. Preparation of Manures. IV. Sewage. V. Superphosphate of Lime. He referred to the new modes adopted for obviating the inconvenient presence of a large proportion of water in blood and fish by working up those substances into manure; the importance of fishy matter as a substitute for guano, and the desirableness of commencing operations at once near home, instead of taking Newfoundland or other distant stations as an essential element into the arrangements; the plans proposed for separating ammonia from gas-liquor; the large amount of that alkali in coal and soot; the conditions under which the urine of towns may be most advantageously rendered available; the production of ammonia from the generation of nitric acid resulting from electricity passed through common air in contact with an alkali, and an account of the enormous amount of electricity given off by the hydro-electric battery; the unprecedented amount of adulteration at present existing in artificial manures, in many cases reaching 75 per cent. of adulterating matter, and particularly in supplies of guano sold to farmers as "new sorts" recently imported (these "guanos" in reality consisting of a small proportion of real guano, with a large proportion of gypsum, sand, ochre, chalk, and other adulterations); the bad economy of purchasing a bad article at an apparently cheap rate, instead of a genuine article at a fair price; the mode of preparing guano and superphosphate for the Turnip crop; the consideration of sewage, not as a farmer's but as a townsman's question, its importance in a sanitary point of view being considerably greater than in an agricultural one, it being unadvisable to purchase at a low rate inferior sewage compounds, which would require a high-priced manure like sulphate of ammonia to give them the requisite efficiency for agricultural purposes; a statement of the best conditions under which superphosphate could be made.—Mr. Dyce Nicols referred to the importance of butchers' offal, and to the increased value of fishing villages on the north-eastern coast of Scotland, on account of their capability of supplying manuring-matter.—Lord Berners stated that he had obtained a manure which had constantly yielded him results equal to those obtained on trial, side by side, with the best guano, formed of saw-dust mixed with sheep dung and urine, and then suffered to undergo fermentation.—The Earl of Essex inquired the proportion of soluble phosphate in superphosphate, when Prof. Way replied that the superphosphate yielding 12 per cent. was not bad, but that it often amounted to 16 or 17 per cent.—The chairman remarked that no subject was at the present moment so interesting to all farmers as that of manures generally; that they were more dependent upon them day by day as agricultural improvement proceeded; although, as it appeared from what they had then heard, it was not always the best to buy the cheap article.—Mr. Raymond Barker agreed with their chairman to a certain extent, but he hoped, at the same time, that the members would not leave that room with the impression that manure of any kind *must* be good *because* it was high-priced.

Prof. Simonds's lecture on the ages of animals, as deduced from the structure of the teeth and the general developments, was announced to stand for delivery at 12 o'clock on Wednesday next.

Agricultural Improvement of Ireland, *May* 2.—*Feeding of Sheep: General Management.*—Mr. F. Hamilton read a paper on this subject, from which, as reported in the *Irish Farmers' Gazette*, we make a few extracts:—

The first thing I would call the particular attention of the breeder to, is to consider the paramount importance of not making up his mind to adopt or continue any particular breed till he has first carefully studied the nature and locality of his farm, the quality of his pasture, and the winter keep he is about to provide for his flock; as, according to the good or bad quality of his land, and according to his liberality or stinginess of winter keep, so must the breed he is about to continue or commence upon be regulated. A man with an indifferent pasture, and but scanty winter keep, embarking in a stock of high-bred Leicester sheep, would soon find he had made a mistake fatal to his hopes. A similar fate awaits him who with good, sound, and rich pasture, and abundance of winter keep, throws it away upon Cheviots or black-faces; yet I have often met with these two classes of breeders, and often thought how much it would have been to their mutual advantage, had they stood in each other's shoes on the day on which they made their purchases.

The pure-bred Leicesters will never prove the most profitable, unless their perfections are taken proper advantage of. The first of these is their early maturity; and, by a proper system of feeding and sheltering in winter, they can be brought into market at least five months sooner than any other breed. This enables the farmer to keep much greater numbers of sheep on a limited space, as the young wedders will all be disposed of as soon as they are shorn in the month of May; and as they have been artificially kept during the winter, the entire Grass of the farm is given up to the ewes, which can thus be kept in much greater numbers: and if they are supplied with a liberal supply of keep in the spring, it is quite wonderful the numbers that can be kept to advantage. It is quite obvious that the sheep breeder who has dry limestone land, and fine sweet herbage, and who is supplied for the winter with a sufficient stock of Turnips, and who is not afraid of embarking some of his capital in a few tons of oil-cake, or other artificial food—or he who has provided shelter sheds, where the land and the locality may not be so well suited to this breed of sheep—can keep a Leicester flock in greater quantities, and to greater advantage than he can any other; as the true view to take of the matter is, that it is, and always has been, a notorious fact, that a much greater weight of mutton can be produced per acre by Leicesters than by any other breed, and in this way they will pay better than any other, though they may not command so high a price per lb. as those sheep that may have taken a longer time to come to maturity, and consumed a greater amount of food. But the chief value of the Leicesters will be for crossing the various breeds of the country, and producing an animal with as many perfections as can be arrived at, whilst retaining the hardihood of these different breeds, until our general system of sheep farming has attained the height towards which it is making such wide and rapid strides: and good feeding and a quick return more fully appreciated than they are at present, and men have found, by experience, the benefits to be derived from keeping the best breed, and feeding them in the best manner. The improvements of the various breeds, then, by crossing in the manner which may best suit the circumstances of the country, should be our next care. The cross with the Leicester tup, and many of the other varieties, are most valuable sheep. I have often heard people assert that one cross of the Leicester was good, but that subsequently crossing the produce with Leicester blood did not answer so well. In this opinion I could not coincide, as, I believe, every cross with a superior animal tends to the improvement of the breed; and whenever it was found to be otherwise, must have been owing to an injudicious choice of the sizes or dams, or some such circumstance. The Cheviot sheep are crossed with the Leicester tup by the farmers on Tweedside and in Teviotdale, till they are eight or nine parts, or even more, pure Leicester. Yet, each cross is found to be an improvement on the former; still the Cheviot blood retained, though in so small a degree, enables these sheep, so near being Leicesters, to exist and fatten on elevations where the pure Leicester would perish: and there is no more thrifty or excellent sheep for exposed situations, or for folding on Turnips, than this often-crossed breed; and it is no uncommon occurrence to hear a Roxburghshire farmer, in speaking of the improvements made by drainage or otherwise, on his farm, that it had enabled him to bring upon it an extra cross or two of Leicester blood upon the Cheviot ewe. Nothing can exceed the profit to be derived from the Leicesters in favourable localities, or under careful and skilful management; and, therefore, they must hold the first position, as they have always done, and will be found invariably to do, by those who will give themselves the trouble of paying attention to them.

Next to them I would place the cross between the Leicester and Ballinasloe sheep, as being superior to any other breed but the Leicesters themselves for the sound pastures of this country—and far superior to the pure-bred Leicester where but little attention has been paid to forcing the young sheep into an early market; of the early origin of these sheep we know but little. The old sheep of the west of Ireland were distinguished by big heads, long necks, slack behind the shoulders, inclined to a narrow chest, and flat sides, with a deep belly, the inside fat of which, and the time it took to place it there, made them more of a butcher's than a grazier's sheep. On the introduction of Bakewell's sheep, and their far-spread fame, the Leicester tup found his way to the West, and to Mr. Dexter (the first importer of Leicesters) we are indebted for the breed of sheep to which he at first gave his name, and which are now the pride of the far-famed fair in the Park of Garbally, the breed of sheep in Connaught were thus wonderfully improved. The quantity of the old wool

being considerably increased by the cross, and the quality of the Leicester wool improved by both the soil and climate. These sheep have continually since then been crossed with the Leicester blood; and although many flocks are still to be found, bearing too many of the characteristics of former days to place them as being second in value to the Leicesters, still requiring a further and judicious crossing with the pure breed, yet, on the whole, the Ballinasloe sheep are not to be surpassed for the good sound pastures where high farming is not carried on, and that the owner can afford to keep them until they are 20 months or two years old, or even more But it must be borne in mind that it is only under these circumstances that they are to be preferred, and that the more they are crossed with the Leicesters, the more profitable will they become for this system. The Leicester then, first, and the crosses of the Leicester with the Ballinasloe, second, are the only breeds that should put their foot on land capable of supporting them to advantage. The pure-bred Cotswold never would be very profitable in our country, their appetites being far too good, and their propensity to fatten too slow in proportion. They are well suited to the system of farming carried on in Gloucestershire, which is eaten off Turnips to manure for a Barley crop, to which the farmer looks for his payment, and the Turnips are grown on the soil on which they have eaten off a stolen crop of Vetches, with the addition of a little superphosphate of lime, so that it is to the manure they look more than to the early maturity of the sheep.

Next to the two first breeds I would place the Southdown, or rather the Shropshire Down, which is by far the best of this breed; these seem to be much run upon now in England, and the specimens that were exhibited at the late cattle show at Gloucester excited universal admiration; they carry with them, to all appearance, many of the perfections of the Leicesters. Their symmetry is very perfect, and they are said to possess a greater proportion of lean meat than any other sheep. But until their flesh sells in the market at a much higher price even than it has yet done, and that the Leicester and other long-woolled muttons falls much lower in proportion, it could never pay to keep them on good land, except when folding was required, and for this purpose I believe they are superior to any other sheep; for if the object be to manure the land and look to the Barley crop as the chief profit, so that in this way the farmer can afford to keep on his sheep for a longer period, without suffering a greater loss by it than this manure is able to repay them, the Southdown are the best sheep he can have. Should the breeder have made up his mind that his farm was unsuited to the production of the two first breeds, and that folding was requisite to his land, and that in this way a flock of Southdowns was desirable, I should advise him to get the best ewes he can procure of the Shropshire downs, and annually import the best tups, and keep up a breed of his own, but never attempt to import the rejected ewes of an English flock in a crowded vessel, perhaps where many of them contract the seeds of disease, the progress of which is hurried on by the change from the dry and genial downs they are accustomed to, to the rank pastures and variable climate of this country. This is a system which must invariably lead to grievous disappointment.

The Cheviot ranks fourth in value, but it never can be profitable to breed these sheep unless the object is to raise a flock which are capable of thriving where others would starve. The hardihood of the Cheviot, and the propensity to fatten of their cross with the Leicester, render them very valuable for arable farms, where there is mountain or moory land sufficiently dry for a summer's run. We have much land unstocked in Ireland, particularly in the mountains of the far west, where Cheviot sheep would not only exist, but thrive and pay; and if a little care was taken to raise Cabbages and Turnips at the foot of the mountains for their winter keep, and sheds erected for shelter in snow-storms and at lambing time, they would be turned to much profit; and then, when they were naturalised to the climate and properly wintered, we should hear of less losses in districts where they may have been tried than we do at present; but it is only on lands incapable of producing a superior breed that they could be profitably kept, although their cross with the Leicester are, no doubt, thrifty and good sheep to purchase for fattening purposes, from those who have been induced, from the peculiar situations of their farms, to raise them. But they must be bought in, as they frequently may be, at a price that would never pay a high rent for the breeder, or they will be purchased too dear; and consequently never could be profitably bred on any but very inferior land, where no better sheep could be kept. In naming these four varieties, I think I have mentioned all that are at all worthy of notice for this country.

The breeder, having determined on the system that he is steadily about to follow, and having accordingly fixed on such a breed as may best suit his farm, locality, shelter, and winter keep, his next care must be to see that his system is fully carried out; and bear continually in his mind, that more money can be lost by keeping sheep *too badly* than by keeping them *too well*.

The great thing to remember is, that in this, as in all else, "whatever is worth doing at all is worth doing well;" and, therefore, if we keep sheep at all, they should be kept in the best possible way. A few words will now suffice on the subject of feeding, the first principle of which is, never to allow the animal to lose a moment from the hour he is born until he goes to the butcher; and it will not merely do that he does not lose ground, but he must not lose any time in which we could possibly be obtaining any improvement in his growth, or in his condition, as every hour he stands still or retrogrades he is robbing his owner, not only of the food he is consuming, but of the ground he is standing upon. In feeding sheep to force them into the market at an early age, a little care must be given them from the time they are able to pick it up. This they will do at about seven or eight days old. The cake being ground very fine, is placed in a covered trough in the field with them, surrounded by hurdles, which admit the lamb but excludes the ewe: this is not only a very great help to the milk of the ewe, which is generally scarce enough at an early season, which is the only time to have a really good lamb, and to rear them safely, but it also teaches them to feed from the trough, and obviates the great difficulty of getting them to eat Turnips or cut hay when the season arrives. This is a matter of the greatest importance to the sheep breeder, and I would impress the value of it upon him, as lambs often fall away in the beginning of winter, from not knowing how to eat what may be set before them; and once they are out of condition, not only is it more than difficult to bring them on again, but their digestion becomes impaired, from want of a proper supply of food—dysentery sets in—and when at last they do take to feed they are unable to digest that food which their nature is repugnant to from the first. From this cause arises many a loss in the flock, which a little foresight and care might have avoided. As the quantity of cake consumed at this early age is very inconsiderable, it will cost but little to bring the lambs to the 1st of October; and if they are of the pure breed, they can be put on artificial food and Turnips, and be fattened off by May; but even if they are intended for stores, their treatment must be the same; as, if lambs are not well kept, they never can prove to be profitable. All through the month of September they should have a few Cabbages thrown on their pasture, to accustom them to this sort of food before the Grass begins to fail; and it will be well at this time also to give them a few Swedish Turnips to pick the tops off. But as soon as October comes, they should at once be put up in a small enclosure of Cabbages and Turnips, or put in a field of growing Rape; for either of these is indispensable at this season, as unless every care is taken to learn them to eat without letting them fall off in condition, the losses may prove to be very serious, and those that remain will never rightly recover. If these rules are strictly attended to, the young sheep will eat almost anything you put before them by the end of October; and now they must be housed, or put into small dry enclosures, which are either naturally or artificially sheltered, and put at once on Turnips and cake, and chopped hay, with a little corn, or whatever food may be found to be most economical, and which may be best obtained according to circumstances, observing that the greatest variety you can give them the better they will thrive; and if they are properly cared, they will come to very early maturity if purely-bred Leicesters; and even should they only be intended for stores, this treatment will not be thrown away upon them. As much Turnips as they can consume at one meal should be given them the first thing in the morning; but no more. They must then be left in perfect silence and quiet until noon, when they should get a feed of chopped hay or straw, steamed, with oil-cake or corn mixed through it, which has been finely ground and boiled previously in water; half a pound of cake or corn for the first three months, and one pound for the remaining three, will suffice, making an average of three-quarters of a pound per day for each sheep for six months; another feed of Turnips the last thing in the evening will be quite sufficient. On an average, about $1\frac{1}{4}$ stone of Swedish Turnips per diem will be consumed in the house by hoggets; but I believe in the field they will not eat so much. I am fully convinced, from experiments I have tried, that there would be no difficulty in bringing Leicesters on keep to 24 lbs. per quarter on an average for a large flock, and getting them all off by the beginning of May, or, at all events, before the end of the month. I fed three hogget rams for the Dublin Society's show last year of the pure Leicester breed, on the proportions I have given above, with the exception of half a pound of cake and corn extra, which they got at nine o'clock at night, in addition to what they had in the chopped food; and about the 25th of March, when barely a year old, they were valued as mutton by two Smithfield salesmen, well competent to judge their weights, and whom I asked to tell me what they would have brought as mutton in the Smithfield market on the day previous to the show; and they considered that they would weigh nearly 30 lbs. per quarter if killed, and that they would have fetched *3l. 5s.* each readily. Of course these were not the worst sheep I had, nor the worst cared. I only mention the circumstance to show what might be done. This year I exceeded those weights in putting forward hoggets for the cattle show on the same food and treatment; so that by May the whole of the young sheep could be readily brought to 24 lbs. per quarter at least; and if they were disposed of at this time of year, the number of ewes kept on a farm might easily be doubled, or cattle or sheep fed to advantage on the Grass that otherwise would have been consumed by these young sheep. 24 lbs. per quarter in May would, in most years, produce at least *48s.* per head, without the fleece, which would be worth, on an average, at all events, *7s.*, if the sheep had been well sheltered; so that *55s.* might safely be calculated upon, besides the very great value of the manure. In all food prepared for the use of sheep there should be a good deal of salt used, and they should also have access to lumps of rock salt, which they will greedily lick. They should also be fed each day at exactly the same hour, as, if the least variation is made in the hours of feeding, they suffer almost incredibly from it—rest and quiet being the most essential helps to good feeding. If they be neglected for a quarter of an hour after the usual time, they spend that time in watching about and bleating in an unsatisfied manner, which should never be the case. It is also of much importance to provide them with water, so that they should have constant access to it, whether in or out of the house. Cleanliness, too, in preparing the food, is of paramount importance. The Turnips should be very cleanly washed, and the troughs very well cleaned before putting in the food, and every particle of old food removed, so as to make their meal as palatable as possible, the great object being to get them to fill themselves and lie down to rest as soon as possible. Strict attention to these rules will make all the difference as to whether the sheep pay or not; and neglecting any one of them—which to some might not appear very important—would most probably be the means of destroying the whole of the anticipated profits. Having tried house-feeding tolerably largely last winter, I am of opinion that sheep do better by far in the house than out during the months of December, January, and February; but that by the first of March they should be let out in the daytime. My house-fed sheep increased in weight as much as I could wish during the first three months after I put them in, but about the end of February they began to diminish their pace; but the moment I found them checked I turned them out into a small enclosure for a few hours in the daytime, and they again began to thrive apace. I do not think that house-feeding is of much advantage to the farmer who has good dry limestone land, and who can keep his stock in good condition out of doors all the winter, and whose object may not be to fatten them very greedily, or who may derive more benefit by folding his sheep on Turnips than by bringing them into an early market; but I look upon it as an immense advantage in the wool, a great economy of food, and a means of keeping sheep successfully on farms that are too rank and moist for wintering sheep, but which answer very well for summer feeding; and of this description a good deal of land in Ireland can be found. In feeding sheep, either in the house or out, one of the most important things to attend to is never to have many together; small lots of from 12 to 20 is as many as should be kept in one enclosure, and these must be matched according to their size and strength, as it is of much importance to guard against the weaker members of the flock being bullied by the stronger. Turnips in winter must form their chief food, but Mangold Wurzel and Carrots will be found a great addition. The feed of chopped food in the middle of the day is quite sufficient, if properly prepared, for forcing them on, but a little dry cake or corn late at night is of great service in finishing them off. In calculating the quantity of artificial food to be an average of $\frac{3}{4}$ lb. ground and boiled, and mixed with the steamed hay, I mean that that quantity should be made up of cake and corn mixed, and the more variety that is used the better. Pea-meal, bruised oats, ground beans, or Indian corn, may all be used with the cake, as they may be procured, to the best advantage; and I find much use in also mixing some bran with their food occasionally, as it serves to preserve them in good health. When the improvement of the land is the main object in keeping sheep—and no greater means of improving land exists—folding is the best means that can be adopted; but where this is an object, Rape is the best crop that can be sown; it is cheaper than Turnips to put in; it can be done at a later season, and the manure made from it and trod in by the sheep is of more value than any other. I am quite surprised that any one should attempt folding on Turnips in this country for this purpose, where Rape grows so well. A large field of Rape, with a piece of pasture joining it, for the sheep to lie at night, is far better for both sheep and land than Turnips, but then the Rape will not last longer than two or three months to advantage, and so can only be used to fatten off bought sheep. A little ashes and guano secure a good crop of Rape, on almost any soil. A stolen crop of Vetches may be eaten off the land by sheep during the months of June and July, and Rape or Turnips put in after to much advantage. A small portion of Vetches being cut, the sheep are netted in the stubble, and the Vetches mown and thrown over the net to them.

Mr. Harkness said: Mr. Hamilton has hardly put the Cheviots at the standard at which they are entitled to be estimated. Within the last 15 years, perhaps no breed of sheep has improved more than the Cheviots. It is, as has been described, an animal of great hardihood, having a close wool, and able to stand severe weather, and Mr. Hamilton might have added that the Cheviot is, probably, the best nurse in existence; in this respect far superior to the Leicester.

I have a memorandum here which was sent to me by a friend, and which shows the progress of improvement in this class in a single locality in Scotland. I do not refer to it merely for the purpose of proving what the Cheviot breed may be brought to, but more particularly to show how, by careful and judicious management, all stocks may be improved. No man ever improved any kind of stock without great observation and careful watching of the different qualities of the animals, males and females, noticing the great variety of success which attends the production of their offspring, and trying to supply the defects he sees in one by the excellences which he finds in another, in the male. Such is the case with the Cheviots in Scotland. This memorandum gives the progressive weight of the Lockerby Cheviots from the year 1839. I need scarcely say that Lockerby is pretty famous for its development of Turnips and Mangolds; but it is not merely to these crops that gentlemen there have paid attention, for they are equally successful with regard to sheep.

Mr. Harkness, in illustration of the marked improvement which good management has brought the Cheviot, half-bred or cross sheep, to within the last 15 years, read the following report of the Lockerby Farming Society:—

"In 1839, the average weight of six half-bred (Cheviot ewe and Leicester), taken out of the premium lot, was $115\frac{3}{4}$ lbs. In 1840, the average weight of the two best and two worst of the premium lot of that year was $139\frac{1}{2}$ lbs.

	Half-bred.	Pure Cheviot.
1841	130 9-10ths	"
1842	128 1-5th	"
1843	128 3-4ths	"
1844	142	"
1845	175	115
1846	167 2-5ths	122 7-10ths
1847	157	109
1848	170	116
1849	165 3-10ths	104 1-4th
1850	164	106 4-5ths
1851	147	111 7-20ths
1852	155	123
1853	146 3-10ths	116 1-5th
1854	165 one-half	121 7-10ths."

Now, it is a matter of importance to see how, by a little attention and care, this stock has been improved. These sheep, a cross between the Leicesters and pure Cheviots, with an average per quarter of 22 lbs., I am informed, by my correspondent, were sold the other day, in the Liverpool market, at *48s.*, after the wool was clipped off, or about *55s.* in the wool. Their age was 13 months. I must observe, however, that they were not from the crossed Leicester, but were a cross between the purest bred Leicester and the purest Cheviot.

Mr. Charles W. Hamilton: There is one subject upon which I wish to touch. I have a strong opinion that our whole prospect of success in any department of agriculture depends in a great measure upon our knowing accurately, to a penny, what that which we sell has cost us to produce, and on that account I must beg to ask my brother for some information as to the actual cost of the hoggets which he raised to an average of 24 lbs. a quarter, and for which he got *55s.* a sheep.—Mr. F. Hamilton: I gave them three-quarters of a pound of oil-cake, and a quarter stone of Turnips in the day, for six months. The price of cake last year was about *8l.* per ton. The hay I gave them, and the cost of attendance, I put against the manure—which, indeed, I think far more valuable. It is easy, then, to calculate the cost.

Mr. Rogerson said—

My impression is, with reference to Cheviot ewes and Ballinasloe ewes, that if you buy the Cheviot at *25s.*, and the Ballinasloe at *34s.*, *35s.*, or *38s.*, put them on the same piece of land, and cross them with the same Leicester ram, I think the Cheviot will pay as well as the other. I do not for a moment contend, that if you want to create a new breed, and improve your stock still further, the Cheviot is the proper mother to breed from. I do not know whether the Cheviot or Ballinasloe ewes are better adapted for the circumstances of the country. That I will endeavour to find out; but as far as my own experience goes at home, in the south of Scotland, we consider ourselves exceedingly well paid, upon what we call our good land, by getting Cheviot ewes, at five years old, from the highlands, where they only breed Cheviots, and have no cross, from which we breed what we call our half-bred lambs—that is a cross between the improved Leicester ram and the Cheviot. The moment we take the produce of these from the mother we put them into a field of fresh pasture, and from that into Rape, which is generally sown in land which is not very good, and which people cannot overtake to put into Turnips. If we have not Rape, we give them white globe Turnips, and after that we put them out to "foggage," at a rate not exceeding *3d.* a week each. The hoggets are fed, at a rate of *3d.* per head, by those who grow Turnips. When they go into the Turnips, it may be a week or 10 days before they fairly begin to eat them. The hoggets to which Mr. Harkness alluded were bred in the neighbourhood of Lockerby. They were taken home on the 13th or 14th of August, and put upon Oat stubble, and what we then call seeds until the beginning of October, after that upon white Turnips until about the beginning of January, when they were put upon the yellow Turnip, and after that upon the Swede, until about the 1st of February, when they got something like half a pound of oilcake from that until they were shown as hoggets. You may calculate them at a cost of half a pound of oilcake each from the 1st of February until the middle of April, and about *3d.* a week each, on an average, for Turnips, from the 1st of October until the 15th of May. They cost exactly *1l. 1s.* when they were bought on the 13th of August, having been lambed in the month of April previous, and they were sold the other day at Liverpool, after being clipped, at *48s.* I may observe that in the Highlands of Scotland the Cheviots are altogether superseding the black-face sheep; and I think a great deal of the land in Ireland would pay better by putting Cheviots than Leicesters on it, but that is merely my opinion—I do not know so from experience.

***May* 3.—At the half-yearly meeting of this Society, Mr Harkness read the Report, from which we learn that:—**

"During the past year 217 new members have been added to the society. The Council is happy to state that the local farming societies are on the increase; and as the support of these valuable associations form a prominent object of the society, the Council confidently appeals to the landed proprietors of every class, and to the friends of agriculture throughout Ireland, to become members of this institution, which will enable the Council still further to increase their sphere of usefulness. The monthly evening meetings, for the discussion of subjects of scientific and practical importance to husbandry, continue to attract much public attention, and thereby to promote another prominent object of this institution—the diffusion of the knowledge of sound and economic principles of husbandry. The Society's Cattle Show for 1854 will be held in the city of Armagh, for the province of Ulster, during the week commencing Monday, the 7th of August next, as has been already fully announced through the public press. In making this arrangement the Council has had special regard to the periods at which the national shows of England and Scotland are to be held in the months of July and August, thereby affording ample time to breeders and exhibitors from Great Britain to convey their stock to the show at Armagh, which, from the favourable arrangements effected by the local committee with various railway and steam-boat companies will, we trust, be

accomplished with much facility. These favourable circumstances, as also the large amount of premiums, exceeding 1200*l*., now offered for the improvement of stock, in addition to the convenient locality selected for the show, induces the Council to expect increased competition, not only from Irish, but also from eminent English and Scotch breeders."

Calendar of Operations.

MAY.

Border of the Fens, *May* 6.—Three months of uninterrupted fine weather have not exhausted our tillage operations; our horses have still their daily tasks, but our range of labour becomes restricted every day within narrower limits, and we are now confined to the Turnip land, which progresses fast towards cleanliness and adaptation to its intended purposes; Potatoes, Carrots, and Mangolds are disposed of, and though the two former are rather late in making their appearance, yet the recent very seasonable showers will no doubt soon bring them forward, and the excellent preparation that the remarkably dry spring has enabled industrious husbandmen to give to their arable land, will, in all probability, meet with ample reward in the future vigour and fruitfulness of their crops. Some persons complain of the spring sown corn not having vegetated well, owing to the extreme dryness of the bed; this, however, is not our case, Oats and Barley looking thick enough, and healthy. The Beans are making their appearance regular and well. We observe a considerable breadth of spring Beans in the fen, which is rather surprising, as they are scarcely ever a productive crop on fen land; one reason assigned by a friend is, that he is certain of 5 quarters of Wheat an acre the next year after a crop of Beans. The Winter Beans on high land do not look promising at present; the tops were so much injured by the severe frost of winter, and the plant was thinned previously (query—by the slugs?). We are proceeding rapidly with Wheat hoeing at 2*s*. 6*d*. per acre. Some farmers affect to question the utility of hoeing Wheat, there cannot be a doubt this year of that operation being highly beneficial, as is shown by the immediate improvement of the plant; for, although Wheat likes dry weather, yet, on poor light soils it got starved, and has been rather extensively ravaged by wireworms. On heavy land and good loams the Wheat has not at all suffered, but, on the contrary, is very strong and stocky, and has come forward very rapidly during the last fortnight. We are getting our stock out of the yards, although the pastures are rather backward; but Turnips and Mangolds being consumed, and the hay and fodder getting scant, and cake still very high, there is a general gaol delivery; besides, the manure is wanted, and is about to be first turned over in the yards themselves, as the speediest way to throw the heaps into a sufficient fermentation. I observed last week a very bulky lot carted from a straw yard into a field; it was dry and partly mouldy, and would not improve by such a very inefficient process—very different to another heap I noticed a mile distant from the former one, where the carts were drawn up a mound as high as a house, and so trampled and pressed some very good stuff, which only wanted, as it appeared to me, a little more moisture to be speedily reduced to "spit manure," which (if used before too great an escape of ammoniacal gases) will make itself felt for a year or two after application. We think the best plan is to turn the manure over in the yard into heaps at least 6 feet high, mixing that from the stables, piggery, and other sources in layers as you proceed. This mode we adopted with a heap for Mangolds put together only a fortnight before using it, and it loaded into the carts short and pungent, and ridged capitally. Dry weather proverbially suits sheep; and the lambing season, though not a very productive one, has been attended by fewer losses than usual in this neighbourhood, the last very wet year did not occasion such a prevalence of the "rot" as is heard of elsewhere, principally, we believe, in the West of England. This diminution of that serious calamity is to be attributed to the immense extent to which drainage of land has been carried, of which not the least good derived has been the more healthy habit, induced among sheep, which are also much improved by all other kinds of improved management of land; for instance, how common it used to be to see sheep turned among foul land to pick up some of the rubbishy Grass and weeds, as well as upon fallows allowed to remain too long before being stirred; this is a false economy, only permissible in poor barren spots; for where the land is fertile the farmer cannot afford to let such a "superfluity of naughtiness" accumulate—enough for a middling flock to work hard upon for a living. This is rather a slack time of year for labourers, who are earning commonly 15*s*. a week. *J. W., Peterborough.*

Wester Ross, *May* 8.—Agricultural labour is further advanced now than it ordinarily is at this season of the year. The continued drought throughout last month, which bade fair to alarm the proverbially excitable agriculturist, was particularly conducive to agricultural progress. Cleaning of land was proceeded with with great facility. Spring seeds fell into a dry and auspicious bed; and as, in this quarter, there was abundance of sap, the braird now appears regular and strong. The anticipations of the farmers are, in the spring season, invariably in advance of the season of the year, and fortunate it is that these anticipations are not realised. We would like to have summer weather with corresponding vegetation in the month of April, forgetting that the "gab of May" would cut off all such premature growth. A few fields of early sown and far advanced Oats have, by easterly winds and frosty nights, been deprived of their beautiful green colour, and are now farther behind than fields that were sown much later. Wheat and Grass throve well, and were far advanced until towards the end of April; the frosty winds checked their growth and changed their colour. We have had within these eight days abundance of seasonable showers, which, with warmer weather, is speedily setting to rights discoloured Wheat and stinted Grass. Wheat is strong and broad-bladed, and (if not premature to venture an opinion), is likely to be well strawed. The quantity of Barley and Oats sown this year is probably under the average, as Wheat has somewhat encroached on the space ordinarily growing Barley, and Potatoes on that in which Oats used to be grown. Last year's crop of Oats was a miserably poor one, and now they are selling at 36*s*. per quarter, and can scarcely be had at any price. There were good prices for cattle at last Muir of Ord market, although, on account of the continued drought, the demand was not so brisk as at the corresponding market last year. The price of sheep, although still high, has fallen a good deal since last year. With these seasonable showers and abundant keep, the demand for cattle is likely to increase. Wages of servants and labourers are higher than usual, with abundance of employment.

Notices to Correspondents.

Agricultural Societies: *G H.* Agricultural Society of England at Lincoln, July 17; Highland and Agricultural at Berwick, first week in August; Agricultural Improvement Society of Ireland at Armagh, August 7. As to the other societies, we have no information.

Bones, &c.: *B R B.* If you can procure charcoal dust sufficient to absorb all the drainage from the pig-sties, &c., then you had better let them run into a receptacle large enough, to which a daily addition of charcoal, and a weekly addition of the bone-dust, which you say you can procure, is to be made; and the whole being removed at intervals and thoroughly mixed, will form the best possible artificial guano.

Buckwheat: *L P* asks if Buckwheat will answer as food for horses. We know of no experience on the subject. Perhaps some one will supply it.

Cider Must: *A Subscriber.* It would furnish food for plants: and you will probably make it undergo putrefaction, by mixing it with hot farm dung, or by turning it over, and soaking it with liquid manure.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

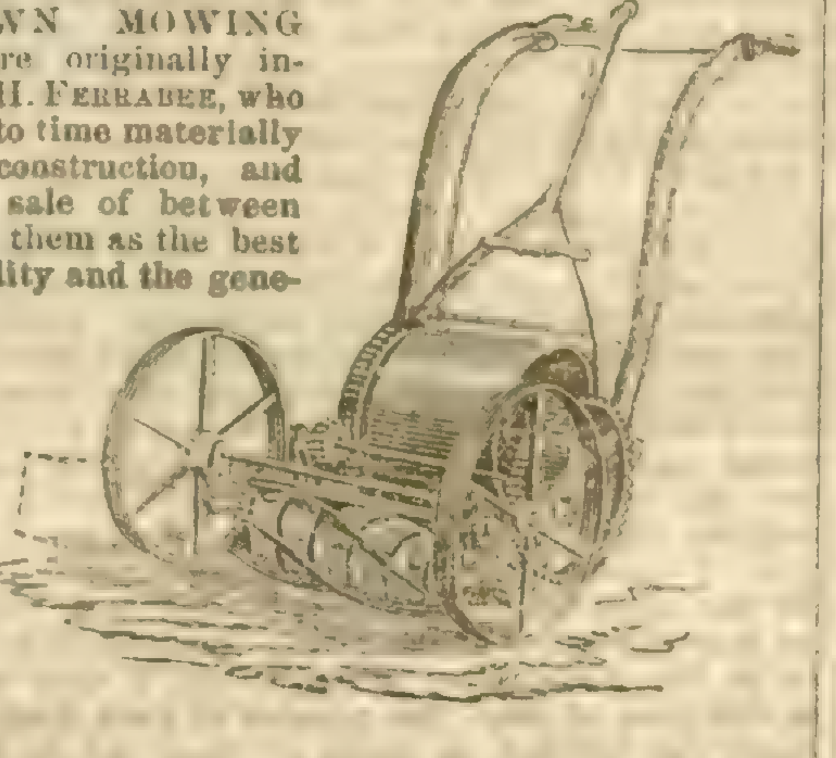
Priced lists of plant tubs and boxes forwarded on application.

BUDDING'S LAWN MOWERS, with Samuelson's registered improvements, *lightening the draught fully one-half*, and enabling an unskilled labourer to make neat work; free from liability to choke, or get out of order. May be had of all ironmongers in town or country, or from the Works, Banbury; delivered free in a packing case to any station on the North-Western and Great Western Railways. Testimonials forwarded on application.—Britannia Works, Banbury.

THE IMPROVED LAWN MOWING MACHINE,

MANUFACTURED BY

J. AND H. FERRABEE, Phœnix Iron Works, near Stroud, Gloucestershire.



The well-known BUDDING'S PATENT LAWN MOWING MACHINES were originally introduced by J. & H. Ferrabee, who have from time to time materially improved their construction, and can refer to a sale of between 4000 and 5000 of them as the best proof of their utility and the general satisfaction which they have given.

The Machines offered this year by J. & H. Ferrabee are superior to any yet produced, being perfectly adapted for cutting the Grass on Lawns and Verges, and between flower beds; while their strength and durability have been increased and their management simplified. Any person can use them effectually without the least practice. They can be adjusted to cut various lengths of Grass, and will produce a more even and uniform surface than the most skilful mower. The Grass is cut best when dry, so that a machine can be employed at the most convenient time to the workman, and more than double the work may be done with the same manual labour that is requisite with a scythe.

Sizes and Prices.

				£	s.	d.
Hand Machine, for One Man, cutting	16 inches wide			5	15	0
Ditto for Two Men,	„	22 ditto	...	6	10	0
Pony Machine,	„	28 ditto	...	10	0	0
Horse ditto	„	36 ditto	...	16	0	0

The Horse Machine will cut the longest and coarsest Grass usually met with on Lawns and Pleasure Grounds.

London Agents:—Messrs. Boulnois & Son, Baker Street Bazaar, Portman Square.

JOHN WARNER AND SONS, Crescent, Jewin Street, London.

GALVANISED IRON TUB GARDEN ENGINE,

With Warner's Registered Spreader,

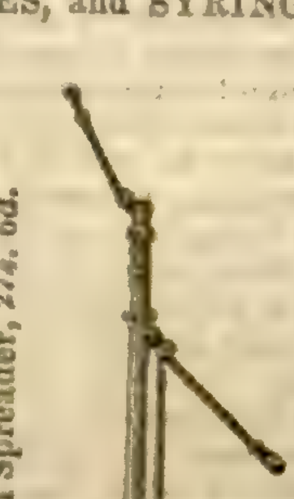
Is strongly recommended, for durability and low price, viz., 2*l*. 19*s*., to hold 10 gallons.

Larger sizes made either in wood or iron. May be obtained of any Ironmonger or Plumber in town or country, or of the Patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Syringes of various constructions and sizes from 9*s*. upwards. An extensive assortment kept.

JOHN WARNER AND SONS, 8, Jewin Crescent, London, Manufacturers of FIRE ENGINES, PUMPS, GARDEN ENGINES, and SYRINGES.

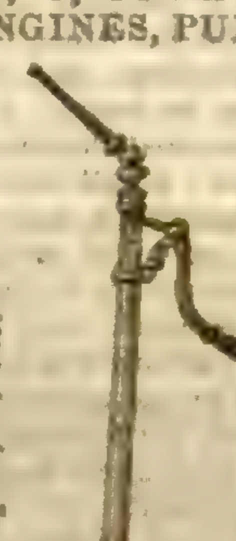
Conservatory Pump, with Warner's Registered Spreader, 27*s*. 6*d*.

No. 32.



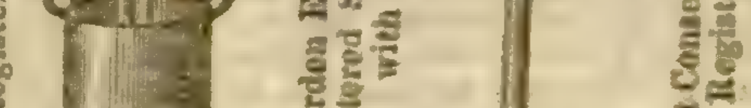
Garden Engine, with Warner's Registered Spreader and Wrench 3*l*.; with iron pail, 3*l*. 12*s*.

No. 11.



Patent Conservatory Pump, with Warner's Registered Spreader, 3*l*. 13*s*.; with iron pail, 3*l*. 5*s*.

No. 14.



Brass Syringes, 9*s*. to 18*s*.

All articles of John Warner & Sons' manufacture may be obtained of any Ironmonger or Plumber in town or country, at the advertised prices.

John Warner & Sons having been practical Horticulturists for many years, know exactly the requirements of both Amateurs and Gardeners. A gardener with a properly constructed pump will get through as much work in five minutes as he could with any Syringe in a quarter of an hour, and with half the labour to himself. Syringes are economical only for small houses.

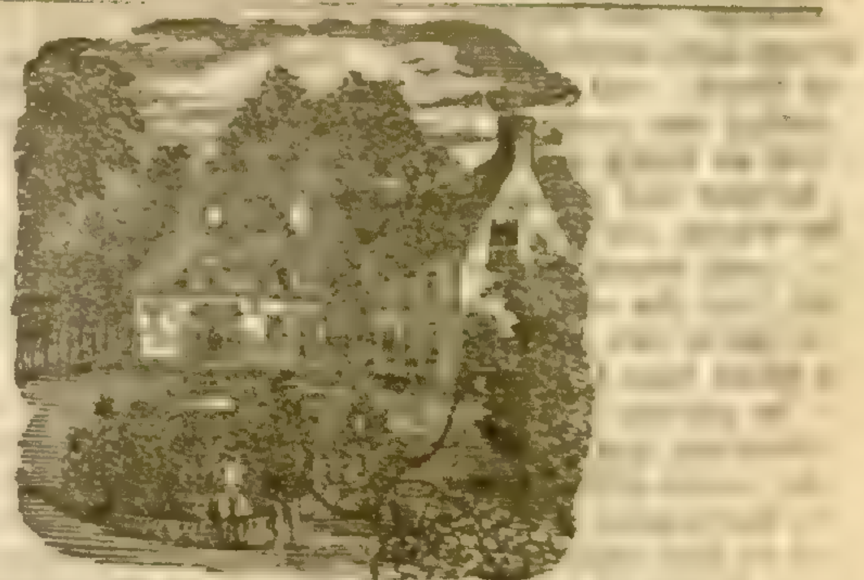
No establishment offers such a variety of effective machines for hydraulic purposes, whether to supply Gardens, Hothouses, Cottages, Farms, Mansions, or Boards of Health, with every requisite connected with the conveyance and distribution of liquids.

Fountains suitable for Conservatories, Lawns, &c.

Sheets of Engravings sent on application.

HOSE PIPING.—Great Reduction in Price.

WAITHMAN'S PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense Pressure, and much more than Leather, vulcanised Rubber, or any other Hose; and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented Inventions, the cost of manufacturing it is now reduced at least 60 per cent., which advantage is offered to the Public.—London Agents, Burgess & Key, 103, Newgate Street, and 52, Little Britain, who on application will forward wholesale and retail prices.



THE GUTTA PERCHA COMPANY'S TUBING for WATERING GARDENS, with Roses and Union Joints Fitted.—27, CITY ROAD, LONDON.

IMPROVED WATERPROOF FLEXIBLE HOSE for WATERING GARDENS, and AGRICULTURAL USES generally, at E. SPENCER & CO.'s, General Waterproofers, 116, Fenchurch Street, opposite Mark Lane, London.

(Fig. 1.)

Fig. 2.

J. TYLOR AND SON'S BARROW GARDEN ENGINE (Fig. 1), in best well painted oak tub, fitted with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 1 holds	10 gallons, throws	30 feet high	...	£4	10
No. 2 „	15 „ „	45 „	...	5	10
No. 3 „	28 „ „	45 „	...	6	18

J. TYLOR AND SON'S BARROW GARDEN ENGINE (Fig. 2), in strong tinned iron tub, well painted inside and outside, with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 10 holds	8 gallons, throws	25 feet high	...	£2	15
No. 13 „	12 „ „	30 „	...	3	5
No. 11 „	16 „ „	40 „	...	4	0
No. 12 „	24 „ „	45 „	...	5	0
No. 14 „	30 „ „	45 „	...	5	18

A large assortment of every description of Garden Syringes Pail Engines, Conservatory Pumps, &c., kept in stock.

Full size Syringe, on Read's principle, of the very best quality and workmanship, with two roses and one jet, 21*s*.; Plain Syringes from 10*s*. 6*d*. upwards.

J. Tylor & Son's Horticultural Apparatus may be obtained at these prices from any respectable Ironmonger or Seedsman in town or country, through whom alone they will be supplied, and of whom Drawings and Prices may be had.

N.B. Cost of carriage, &c., not included in these prices.

J. Tylor & Son's Manufactory, Warwick Lane, Newgate Street, London.

J. TYLOR AND SON'S REGISTERED GARDEN SYRINGE.—By a simple arrangement this Syringe is rendered more effective than any portable Conservatory or Garden Pump ever offered to the public. It is equally adapted for Garden or Conservatory use, and is capable of discharging twice as much water in a given time as any other Syringe now in use. The arrangement consists in attaching a small flexible suction tube to the barrel of the Syringe, through which it is filled with water at every discharge of the previous contents. By this means the Syringe is always charged, and the pull-up stroke of the piston rendered perfectly easy, it having, indeed, no work to do, the barrel being previously full of water. Being thus made self-supplying, a great saving of labour is effected; and the necessity of stooping to fill the Syringe at every discharge being done away with, the direction of the water can be maintained for any length of time. It is perfectly cleanly in its action, as it is not possible for any water to get on the outside of the barrel, which is a well-known inconvenience attendant on the use of every other Syringe. Its construction is perfectly simple, and cannot get out of order; the ground-in ball valves and fittings used for filling all other patent Syringes being entirely superseded. Price complete, with India-rubber suction tube, with galvanised spiral inside, and covered with cotton outside, 25*s*. each. To be had of any respectable Ironmonger or Seedsman in town or country.

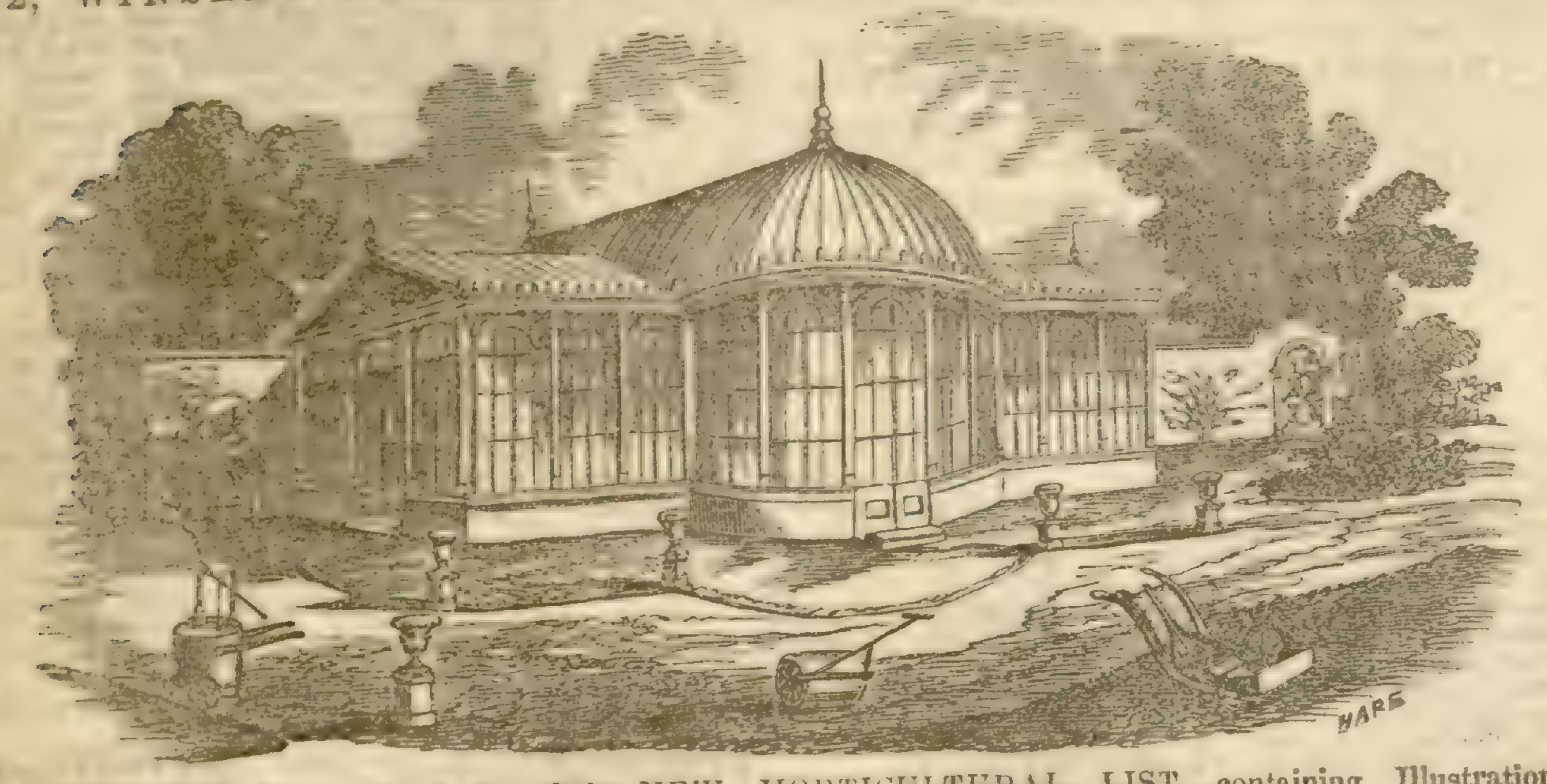
J. Tylor & Sons, Manufacturers of Horticultural Apparatus, Warwick Lane, Newgate Street, London.

N.B. This price does not include carriage, package, or expenses of delivery in the country.

PROTOXIDE ANTI-CORROSION PAINT, for all external purposes, on iron, wood, brickwork, or stucco, is cheaper, and more durable, than any similar article.—Manufactured by Charles Francis & Sons, Cement Works Nine Elms, London.

COTTAM AND HALLEN,

2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.



APPLICATION is requested for their NEW HORTICULTURAL LIST, containing Illustrations, Descriptions, and Prices of

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Syringes	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.

AGRICULTURAL LIST UPON APPLICATION.

EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES, GREENHOUSES, DWELLINGS, ETC.

ESTABLISHED MORE THAN ONE HUNDRED YEARS.

THOMAS MILLINGTON requests attention to his present prices of SHEET GLASS in 100 feet boxes.

Squares	6 by 4 and 6½ by 4½ ; 7 by 5 and 7½ by 5½	13	6
„	8 by 6 and 8½ by 6½ ; 9 by 7 and 9½ by 7½ ; 10 by 8 to 12½ by 9½	16	3
„	12 by 10 to 24 by 14 ...	19	0

Orchard House Squares on Mr. Rivers's approved plan, to whom I have sold some thousands of feet:—20 inches by 12, 20 by 13, 20 by 14, 20 by 15, 20½ by 12½, 20½ by 13½, 20½ by 14½, at 19*s.* per 100 feet.

200 feet cases at 42*s.*, and 300 feet case 63*s.*, in large sheets.

Boxes charged 1*s.* extra per 100 feet, and the same allowed if returned free of all charge.

HARTLEY'S PATENT ROUGH PLATE GLASS, Fern Shades, Striking Glasses, Milk-pans, Bee Glasses, Cucumber Tubes, Sheet and Rough Plate Glass Tiles, Wasp Traps; Plate, Patent Plate, Crown and Sheet Window Glass, in every thickness and quality, and Ornamental Glass, plain and coloured; pure white Shades for Ornaments, Crystal Glass for Pictures.

Warehouse, 87, Bishopsgate Street Without—same side as Eastern Counties Railway.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

JAMES PHILLIPS AND Co. have the pleasure to hand their present prices of Glass for Cash:—

	SHEET SQUARES. In Boxes of 100 feet. £ s. d.	CROWN SQUARES. In Boxes of 100 feet. s. d.
Under 6 by 4	0 12 6	8 6
6 by 4, and 6½ by 4½	0 13 0	12 6
7 „ 5, — 7½ „ 5½ ; 8 „ 6, — 8½ „ 6½	0 15 0	14 0
9 „ 7, — 10 „ 8, 12 by 9, 12 by 10, 14 by 10	1 0 0	

Larger Sizes, not exceeding 40 inches long.

16 oz. from 3*d.* to 3½*d.* per square foot, according to size.
21 oz. „ 4½*d.* to 5*d.* „ „ „
26 oz. „ 6*d.* to 7½*d.* „ „ „

SHEET GLASS OF ENGLISH MANUFACTURE FOR ORCHARD HOUSES, THE SAME QUALITY AS WE SUPPLY TO Mr. RIVERS, and of various dimensions, always on hand.

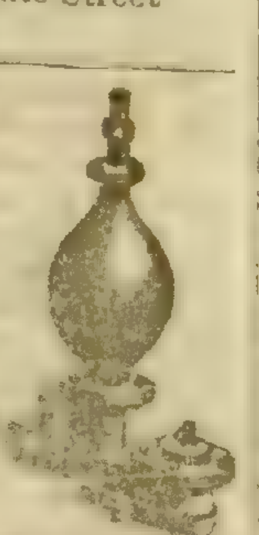
London Agents for the Sale of HARTLEY'S PATENT ROUGH PLATE GLASS.

Glass Tiles, ¼ of an inch thick, packed in cases, containing 50, at 1*l.* 17*s.* 6*d.* per case. Packages 2*s.* each extra, but allowed for when returned.

Glass Milk Pans, 21*s.* per dozen; Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoys' Milk Syphons, Wasp Traps; Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the trade.

Horticultural Glass Warehouse, 116, Bishopsgate Street Without, London.

TO AMATEUR GARDENERS, LOCAL BOARDS OF HEALTH, & SANITARY WORKS



PATENT SLUICE COCKS, Gutta Percha, Combinated ditto, Patent Flexible India Rubber Tubing, and every other Hose for Watering Gardens. The Hydraulic Ram, Fire, Garden, and every other kind of Pump, Hydrants, High Pressure Cocks, and all other articles to be had, Wholesale and Retail, of FREEMAN ROE, HYDRAULIC ENGINEER, 70, Strand, and Bridgefield, Wandsworth.

GLENFIELD PATENT STARCH, used in her Majesty's Laundry, and WOTHERSPOON'S machine-made CONFECTIONARY, MARMALADE, JAMS, JELLIES, &c., which gained the Prize Medal of 1851, may be had of all Grocers; Wholesale of WOTHERSPOON, MACKAY, & Co., 66, Queen Street, Cheapside, London; and ROBERT WOTHERSPOON & Co., Glasgow.

BEES AND HIVES.

MARRIOTT'S HUMANE COTTAGE BEE-HIVE, for taking honey without killing the Bees, is the best for practical use. Newly illustrated Catalogue forwarded for penny stamp.—MARRIOTT, Apiarian, Surrey Zoological Gardens; City Warehouse, 24, Fish Street Hill, London Bridge.

BEEHIVES.

NEIGHBOUR'S IMPROVED COTTAGE BEE-HIVE, as originally introduced by GEORGE NEIGHBOUR & SONS, with all the recent improvements, glasses, thermometer, &c., price 35*s.*, securely packed for the country.

This unique hive has met with universal commendation, and may be worked with safety, humanity, and profit, by the most timid; its arrangements are so perfect, that the honey may be taken at any time of the gathering season without at all injuring the bees.

Early applications, addressed to GEO. NEIGHBOUR & SONS, 127, High Holborn, or 149, Regent Street, London, will receive prompt attention. Their newly arranged Catalogue of other improved Beehives, with Drawings and Prices, sent on receipt of two stamps.

Agents:—Manchester, HALL & WILSON, 50, King Street; Liverpool, JAMES CUTHBERT, 12, Clayton Square; Chester, F. & A. DICKSON & SONS, 106, Eastgate Street; Glasgow, AUSTEN & M'ASLAN, 186, Trongate Street; Dublin, J. EDMUNDSON & Co., 61, Dame Street.

DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening Pursuits, are invited to examine DEANE, DRAY, AND CO.'s extensive Stock of GARDENING and PRUNING IMPLEMENTS, best London-made Garden Engines and Syringes, Colebrook Dale Garden Seats and Chairs.

- Averuncators
- Axes
- Bagging Hooks
- Bills
- Borders, various patterns
- Botanical Boxes
- Brown's Patent Fumigator
- Cases of Pruning Instruments
- Daisy Rakes
- Dibbles
- Dock Spuds
- Draining Tools
- Edging Irons and Shears
- Flower Scissors
- „ Stands in Wire and Iron
- Fumigators
- Galvanic Borders and Plant Protectors
- Garden Chairs and Seats
- „ Loops
- „ Rollers
- Garden Scrapers
- Gidney's Prussian Hoe
- [Scissors
- Grape Gatherers and
- Gravel Rakes and Sieves
- Greenhouse Doors and Frames
- Hammers
- Hand-glass Frames
- Hay Knives
- Horticultural Hammers and Hatchets
- Hoes of every pattern
- Hotbed Handles
- Ladies' Set of Tools
- Labels, various patterns, in Zinc, Porcelain, &c.
- Lines and Reels
- Marking Ink
- Mattocks
- Menographs
- Metallic Wire
- Milton Hatchets
- Mole Traps
- Mowing Machines
- Pickaxes
- Potato Forks
- Pruning Bills
- „ Knives, various
- „ Saws
- „ Scissors
- „ Shears
- Rakes in great variety
- Reaping Hooks
- Scythes
- Scythe Stones
- Shears, various
- Sickles
- Sickle Saws
- Spades and Shovels
- Spuds
- Switch Hooks
- Thistle Hooks
- Transplanting Tools
- Trowels
- Turfing Irons
- Wall Nails
- Watering Pots
- Weed Hooks
- Wheelbarrows
- Youths' Set of Tools

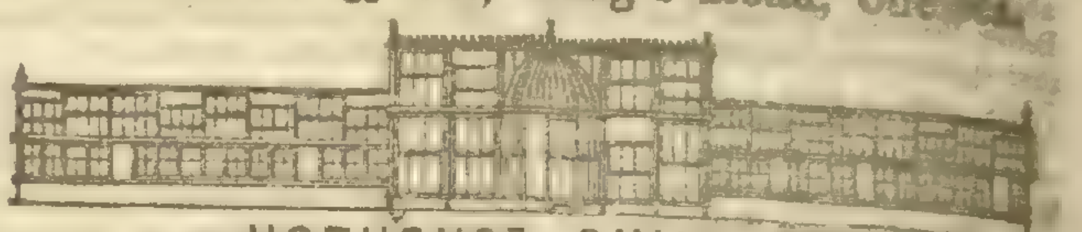
DEANE, DRAY, AND CO. are sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with their Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom. Also wholesale and retail Agents for SAYNOR'S celebrated PRUNING KNIVES, used exclusively by the first Gardeners in the United Kingdom.

DEANE, DRAY AND CO. (Opening to the Monument), London Bridge. ESTABLISHED A.D. 1700.

METCALFE AND CO.'S PERFUMERY DEPARTMENT.—PROPRIETARY ARTICLES.—METCALFE'S celebrated ALKALINE TOOTH POWDER is acknowledged as the safest and most efficient now in use. Dupuytren's Medicated Pomade is the most certain remedy for preventing the hair prematurely falling off, and for restoring it when baldness has already commenced. Dupuytren's Medicated Balm strengthens, cleanses, and improves the growth, and is generally acknowledged as the best wash for the hair.—Manufacturers of British and Importers of Foreign Soaps, Perfumery, and J. M. Farina's genuine Eau de Cologne, at METCALFE, BINGLEY, & Co.'s only Establishment, 130B and 131, Oxford Street, second and third doors west from Holles Street.

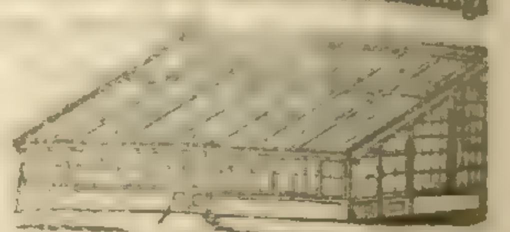
HORTICULTURE IN ALL ITS BRANCHES.

J. WEEKS & Co., King's Road, Chelsea.



HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Buildings or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.



The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. WEEKS & Co., King's Road, Chelsea, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.

GRAY AND ORMSON, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

BY HER MAJESTY'S ROYAL LETTERS PATENT

E. DENCH, PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

PATENT HOTHOUSES and excellent Glass at 1*s.* 3*d.* per foot super., which are superior to all others for price with quality, and if known would supersede all others. (See Appendix, in "Book of the Garden," by Mr. M'Intosh.) A Range of Houses and Hot Water Apparatus, was erected by E. D. for E. L. Betts, Esq., Preston Hall, Kent. Mr. J. Frost, head gardener, has shown their efficiency by their produce at the Royal Botanic Gardens, Regent's Park, June 8, and Chiswick, June 11. The editor of the *Gardeners' Chronicle* says: "Beautiful examples of Black Hamburgh, large both in bunch and berry, and as black as Sloes, were furnished by Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall, Kent; these well deserved the first prize which was awarded them."—*Gardeners' Chronicle*, June 18th, 1853. The Grapes were considered the best shown at Regent's Park during the season, and the Houses are as superior for the growth of everything else in horticulture, which has been fully proved, and they have been extensively erected for the nobility and gentry in all parts of the kingdom.

GLAZING WITHOUT PUTTY.—Iron and Glass alone. E. D. has Roofed the Public Baths and Washhouses, Endell Street, on this principle, and others are in hand. Patent Sashes for Peach Walls, Pits, &c., 8*d.* per foot super. Heating by Hot-water, on the most practical principles, and all the best materials used. Printed Price List sent on application.

MORNING FROSTS.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1*s.* 6*d.* per yard run, of E. T. ARCHER, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey. (Removing in May next to 112, Regent Street, London.)

TO GENTLEMEN'S GARDENERS.

VILLAGE INN, WITH 10 ACRES OF LAND.

TO BE LET, a VILLAGE INN, situated near Great Yarmouth, with large Garden and pretty Grounds (2½ acres), besides Arable and Meadow Land, &c. (7½ acres). The House, which a few years ago was a gentleman's residence, is capacious and well arranged, and in excellent repair, with Stables, Coach-house, Sheds, &c. Possession at Michaelmas next. The above is eminently adapted for a gentleman's gardener desirous of retiring from private service, with small capital. Unexceptionable references required.—Apply to the Rev. T. G. F. Howes, Belton Rectory, Great Yarmouth, who desires it to be understood that applications which remain unanswered are declined.

TO BE LET, with immediate possession, a NURSERY and FLORIST'S BUSINESS, three miles west of Hyde Park Corner, containing a convenient Dwelling House, Five Greenhouses, Frames, an Acre and a Quarter of Ground, Sheds, &c., together with the Stock. A good jobbing connection. —Apply to Mr. Hughes, near the Church, Hammersmith.

N.B.—A Lease if required.

TO BE LET, a good DWELLING HOUSE and NURSERY GARDEN, with Greenhouses, and stocked with the best kinds of Plants, Shrubs, and Fruit Trees, to be taken at a valuation. Immediate possession. Rent reduced from 65*l.* to 40*l.* per annum.—Apply to William Harris, Gardener, 23, Montpellier Walk, Cheltenham.

COCHIN CHINA POULTRY, ETC.

EGGS FROM PRIZE BIRDS.

MR. JOHN FAIRLIE, of Cheveley Park, Newmarket, in reply to the very urgent applications from numerous amateurs, is now prepared to dispose of a limited number of Eggs, from his celebrated prize Cochins, Brahma Pootras, Scotch Bakies, Dorkings, &c., according to the dates of the orders received.

BRAHMA POOTRA EGGS, from the choicest Birds of an Amateur. Brahmas of whose breeding have competed successfully at the first Shows in the Kingdom, viz., the Royal Agricultural, Great Metropolitan, Birmingham, Great Yarmouth, Doncaster, Norwich, Winchester, and Manchester. Price three guineas per dozen, warranted from the best prize and selected birds only.—W. C. G., Post Office, Sandbach, Cheshire.

BLACK COCHIN EGGS from the best birds in England, having always taken prizes at the best shows, at 18*s.* per dozen, including package. Apply at the city of London Wire Works, 44, Skinner Street, London. N.B. Fowl Houses, Chicken Coops, Poultry Hurdles, and Netting, of every size and description. Illustrated Catalogues forwarded, post free, on application. A few Spanish Pullets, sisters to those sent to her Majesty's yard at Windsor, for Sale.

EGGS FOR SITTING, of the Choicest Varieties.— Most of the Birds have taken Prizes at Winchester, Southampton, Surrey Gardens, and Salisbury Exhibitions. White and Black Cochins, White Polands, and Ptarmigans, 21*s.* per dozen; Pure Buff Cochins, 15*s.* per dozen. Post-office Orders payable to Frederick Flight, 72, High Street, Winchester.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement, J. B. White & Brothers, Millbank Street, Westminster.

THE GRAPE BLIGHT.—This disease having reappeared in England this season, Cultivators desirous of saving their fruit should apply immediately for its only effectual preventive and cure, McAdam's ANTI-GRAPE BLIGHT COMPOSITION. Half pound packets (sufficient for 70 square yards of Vine) with printed directions, 5*s.* each.—London Agent, Mr. J. Hayne, 8, Liverpool Street, Bishopsgate. Paid orders forwarded.

CURE FOR MILDEW ON GRAPES, &c.—In consequence of the increased prevalence of mildew on the Vines, &c., during the last few seasons, G. Taber, of Rose Cottage, Rivenhall, practical Gardener, Seedsman, and Florist, has directed particular attention to the best mode of preventing it, or for curing the Vines that have been attacked, and he now begs to announce that he has succeeded in preparing a composition known as TABER'S ANTI-MILDEW COMPOSITION, which will effectually prevent or cure the disease without doing the slightest injury to the Vines; and any person, by the aid of the printed instructions, may use it without risk. It is also an invaluable remedy for preventing Mildew on Wall Trees, Roses, &c. Sold in packets containing 1 lb., 1*s.* 3*d.*; 3 lbs., 3*s.*; 6 lbs. 5*s.* 6*d.*, with directions for use. By enclosing two postage stamps, G. T. will send a circular with full particulars as to quantity required for a house for the season, and also testimonials of the success he has met with.

G. T. will personally attend gentlemen, and give instructions to their gardeners at a reasonable remuneration for time and travelling expenses. The trade supplied at the usual discount. Post Office orders to be made payable to George Taber, and drawn upon the Witham Post Office. Postage stamps received in payment of small orders. Packets delivered free to the Witham Station of the Eastern Counties line.—Address George Taber, Rose Cottage, Rivenhall, near Witham.

THE CHOLERA—ITS BEST ANTIDOTE.

SIR W. BURNET'S DISINFECTING FLUID, the original and genuine CHLORIDE OF ZINC.—Sold by all Chemists, Druggists, and Shipping Agents; and at the Office, 18, Cannon Street, London Bridge.

THE CHOLERA

Prevented by the Destruction of all Noxious Effluvia.

CREWS'S DISINFECTING FLUID, Recommended by the College of Physicians. The Cheapest and Strongest Chloride of Zinc.—Quarts 2*s.*; Pints, 1*s.*; Half-pints, 6*d.* Sold by all Chemists, Druggists, and Shipping Agents; and at Commercial Wharf, Mile End, London.

FRAMPTON'S PILL OF HEALTH.—"For upwards of nine years (writes Mr. Thomas Province, of Winchmore Hall, Middlesex), I have experienced the efficacy of this excellent medicine, and I have the happiness of saying that I never had a better state of health. I beg further to add that this medicine is in general use by my family, and we know of nothing to equal it." For females these pills are truly excellent, removing all obstructions, the distressing headaches so very prevalent with the sex, depression of spirits, dulness of sight, nervous affections, blotches, pimples, and sallowness of the skin, and gives a healthy juvenile bloom to the complexion. Sold by all medicine vendors, price 1*s.* 1½*d.* per box.—Observe that "Thomas Prout" is on the Government stamp.

OPENING OF THE CRYSTAL PALACE, 1854. It is intended to OPEN the CRYSTAL PALACE and PARK on the 10th of JUNE, after which they will be open daily, Sundays excepted.

The following are the arrangements for the Admission of the Public:—

Five Shilling Days.—On Saturdays the public will be admitted by payment at the doors, by tickets of 5*s.* each, and by tickets to include conveyance by railway.

Half-Crown Days.—On Fridays the Public will be admitted by payment at the doors, by tickets of 2*s.* 6*d.* each, and by tickets to include conveyance by railway.

Shilling Days.—Mondays, Tuesdays, Wednesdays, and Thursdays will be 1*s.* days. At the gates, a payment of 1*s.* each will admit the public, or tickets entitling the holder to admission to the Palace and Park, and also to conveyance along the Crystal Palace Railway, from London Bridge Station to the Palace and back, will be issued at the following prices:—

Including first class carriage	... ...	2*s.* 6*d.*
Including second ditto	... ...	2*s.* 0*d.*
Including third ditto	... ...	1*s.* 6*d.*

Children.—Children under twelve years of age will be admitted at half the above rates.

Hours of Opening.—The Palace and Park will be opened on Mondays at 9 o'clock, on Tuesdays, Wednesdays, and Thursdays, at 10 o'clock, a.m., and on Fridays and Saturdays, at 12 o'clock, and close every day an hour before sunset.

Season Tickets.—Season Tickets will be issued on and after Monday the 15th May, at two guineas each, to admit the proprietor to the Palace and Park on the day of opening, and on all other days when the building is open to the public, up to the 30th April, 1855.

No Season Ticket will be transferable or available except to the person whose signature it bears.

Family Season Tickets.—Members of the same family who reside together have the privilege of taking Season Tickets for their own use with or without Railway conveyance on the following reduced terms:—On two tickets a discount of 10 per cent. on the gross amount; three tickets, a discount of 15 per cent.; four tickets, a discount of 20 per cent., and five tickets and upwards a discount of 25 per cent. Families claiming the above privilege, and desiring to avail themselves of it, must apply in a prescribed form, which may be had at the Office, 3, Adelaide Place, and at the other offices for tickets. These tickets will be available only to the persons named in such application.

Railway Season Tickets, including conveyance along the Crystal Palace Railway from London Bridge to the Palace and back, are issued by the London and Brighton Company, at their Offices, London Bridge. Single Tickets, 4*l.* 4*s.* each; Family Tickets at the same reduction as above.

Special Regulations and Bye-Laws.—All the General Provisions and Regulations mentioned above are to be understood as being subservient to such Special Provisions, Regulations, and Bye-Laws on the part of the Railway Company and the Palace Company as may be found necessary to regulate the traffic, and to meet special occasions and circumstances which may from time to time arise. By order of the Board,

G. Grove, Secretary.

Adelaide Place, London Bridge, May 13, 1854.

Schedule of Prices of Family Season Tickets.

Without Railway Conveyance.	£	s.	d.	Including Railway Conveyance.	£	s.	d.
Two Tickets	3	16	0	Two Tickets	7	11	6
Three "	5	7	6	Three "	10	14	6
Four "	6	15	0	Four "	13	9	0
Five "	7	17	6	Five "	15	15	0
Six "	9	9	0	Six "	18	18	0
Seven "	11	0	6	Seven "	22	1	0
Eight "	12	12	0	Eight "	25	4	0
Nine "	14	3	6	Nine "	28	7	0
Ten "	15	15	0	Ten "	31	10	0

Note.—Application for Family or other Season Tickets must be addressed to the Secretary, and accompanied by a remittance for the full amount of the Tickets asked for, according to the above Schedule, in favour of George Fasson, 3, Adelaide Place. Cheques must be on a London Banker, and be crossed with the words "Union Bank of London."

And no application, unless so accompanied, will be attended to.

CRYSTAL PALACE.—SEASON TICKETS will be ready for delivery on and after MONDAY, the 15th May, and may be had at the Palace; at the Offices, 3, Adelaide Place, London Bridge, and 14, Regent Street; at the Brighton Railway Terminus, London Bridge; at Sams', 1, St. James's Street; Mitchell's, Bond Street; Gunter, Lowndes Street; Westerton's, Knightsbridge; Keith, Prowse, & Co., Cheapside; and the Royal Baths, Brighton. Tickets to include conveyance by Railway can be had only at the Office of the Secretary to the Brighton Railway, London Bridge.

BOARD OF TRADE.

DEPARTMENT OF SCIENCE AND ART.— The Exhibition of the Advanced Studies of the following Schools of Art will be opened on Saturday, the 20th of May, at Gore House, Kensington.—

Aberdeen	Metropolitan, including
Belfast	Central Male
Birmingham	Central Female and
Chester	Finsbury district.
Cork	Newcastle-on-Tyne
Coventry	Paisley
Dublin	Potteries (Staffordshire)
Dudley	Sheffield
Durham	Stourbridge
Glasgow	Warrington
Limerick	Worcester
Macclesfield	York

The works belong to the following Stages of Instruction, Stage 9, Anatomical Studies;—11, Painting ornament from the flat, or copies;—14, Painting general, direct from nature;—15, Painting compositions of colour;—16-17, Painting the human figure from casts and in colour;—18, Modelling ornament;—19, Modelling the human figure or animals;—20, Modelling flowers, &c., from nature;—22, Elementary design;—23, Technical studies in Architectural Design, Surface, Decoration, Plastic Design, Moulding, Lithography, Wood Engraving, and Porcelain Painting.

Marlborough House, 10th May, 1854.

MR. GLENNY requests that REPORTS of all the HORTICULTURAL and FLORAL EXHIBITIONS may be sent to him for publication, and that specimens of Fruit, Flowers, Plants, and Vegetables, as well as other subjects for his opinion, may be addressed, Mr. Glenny, 420, Strand.

DUNN'S TAILORS' LABOUR AGENCY invites public attention to the principles on which it is conducted, and by which it offers unusual advantages both to the producer and the consumer, combining high wages to the one with low charges to the other. Conducted by the Agent at small cost, it secures the best labour and pays the best price for it; while it appropriates a part of its trading profits to the moral and social elevation of its operatives, and has provided, at a cost of nearly One Thousand Pounds, Schools for the Education of their Children, Lecture Hall, Library, Warm Baths, &c. See a more lengthened statement in the *Times* of any Wednesday, or send for a Prospectus. A useful Dress Coat, 28*s.*; Wages paid for Making, 16*s.* 6*d.* A first-class Dress Coat, 2*l.* 16*s.*; Wages paid for Making, 15*s.*—Nos. 16 and 14, Newington Causeway, and 39 and 40, Bridge House Place, Opposite. No connection with any other House.

FENDERS, STOVES, AND FIRE-IRONS.— Buyers of the above are requested, before finally deciding, to visit William S. Burton's SHOW ROOMS, 39, Oxford Street (corner of Newman Street), Nos. 1 and 2, Newman Street, and 4 and 5, Perry's Place. They are the largest in the world, and contain such an assortment of FENDERS, STOVES, RANGES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with bronzed ornaments and two sets of bars, 2*l.* 14*s.* to 5*l.* 10*s.*; ditto, with ormolu ornaments and two sets of bars, 5*l.* 10*s.* to 12*l.* 12*s.*; Bronzed Fenders complete, with standards, from 7*s.* to 3*l.*; Steel Fenders from 2*l.* 15*s.* to 6*l.*; ditto, with rich ormolu ornaments, from 2*l.* 15*s.* to 7*l.* 7*s.*; Fire-irons from 1*s.* 9*d.* the set to 4*l.* 4*s.* Sylvester and all other Patent Stoves, with radiating hearth plates. All which he is enabled to sell at these very reduced charges,

1st, From the frequency and extent of his purchases; and,

2dly, From those purchases being made exclusively for cash.

TEA URNS, OF LONDON MAKE ONLY.— The largest assortment of London-made TEA URNS in the world (including all the recent novelties, many of which are registered) is on Sale at William S. Burton's, from 30*s.* to 6*l.*

THE BEST SHOW of IRON BEDSTEADS in the Kingdom is William S. Burton's.—He has two very Large Rooms, which are devoted to the exclusive show of Iron and Brass Bedsteads and Children's Cots, with appropriate Bedding and Mattresses. Common Iron Bedsteads from 17*s.*; Portable Folding Bedsteads from 12*s.* 6*d.*; Patent Iron Bedsteads, fitted with dovetail joints and patent sacking, from 21*s.*; and Cots from 21*s.* each; handsome Ornamental Iron and Brass Bedsteads, in great variety, from 2*l.* 19*s.* to 13*l.* 13*s.*

PAPIER MACHE and IRON TEA-TRAYS.—An assortment of Tea Trays and Waiters wholly unprecedented, whether as to extent, variety, or novelty.

Gothic shape Papier Mache Trays, per set of three	... ...	from 20*s.*	to 10 guineas.
Ditto, Iron ditto.	... ...	from 13*s.*	to 4 guineas.
Convex shape, ditto.	... ...	from 7*s.* 6*d.*	

Round and Gothic Waiters, Cake and Bread Baskets equally low.

William S. Burton has TEN LARGE SHOW ROOMS (all communicating), exclusive of the shop, devoted solely to the show of GENERAL FURNISHING IRONMONGERY (including Cutlery, Nickel Silver, Plated and Japanned Wares, Iron and Brass Bedsteads, and Bedding), so arranged and classified that purchasers may easily and at once make their selections.

Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of.

No. 39, Oxford Street (corner of Newman Street); Nos. 1 and 2, Newman Street; and 4 and 5, Perry's Place.

HEAL and SON'S SPRING MATTRESSES.— The most durable Bedding is a well-made SPRING MATTRESS: it retains its elasticity, and will wear longer without repair than any other mattress, and with *one* French Wool and Hair Mattress on, it is a most luxurious Bed. Heal & Son make them in three varieties. For prices of the different sizes and qualities, apply for HEAL and SON'S ILLUSTRATED CATALOGUE OF BEDSTEADS and priced LIST OF BEDDING. It contains designs and prices of upwards of 100 Bedsteads, and prices of every description of Bedding, and is sent free by post.

Heal & Son, 196, Tottenham Court Road, London.

TYLOR and PACE have removed from 313, Oxford Street, to larger and more commodious premises, 104, New Bond Street, which will enable them to keep a much larger stock in all the different branches of their manufacture, including a very extensive assortment of Iron and Brass Bedsteads, Children's Cots, Portable Bedsteads, and Chair Bedsteads, with suitable Bedding and Mattresses. A Large Show Room is entirely appropriated to the exhibition of Baths and Toilette Ware of every description, all at the most moderate prices. An increased assortment of Venetian and all other Window Blinds, Outside Blinds, and Transparencies. Illustrated Catalogues of Bedsteads, Baths, and Window Blinds, are published separately, and will be forwarded post free on application by naming the description of article required.

Tylor & Pace, 104, New Bond Street, London.

DEVONSHIRE CYDER.—A three dozen case (large bottles), of the very best DEVONSHIRE CHAMPAGNE CYDER, will be forwarded to any address on receipt of a Post-office order for 21*s.*, payable to John E. Rendle, Martin Street, Octagon, Plymouth. Case and bottles, value 9*s.*, included.

ANOTHER CURE of COUGH and HOARSENESS by Dr. LOCOCK'S PULMONIC WAFERS.

"Epsom, Feb. 6, 1854.

"Gentlemen,—For some time past I was afflicted with a most distressing Cough and Hoarseness, and which I thought, from various symptoms I observed, would conduce to Consumption. After having tried several remedies, and finding little or no relief, I determined to try a small box of your Dr. Locock's Pulmonic Wafers, and, to my surprise, in less than two days I found myself perfectly restored; and it is with deep-felt gratitude I return my sincere thanks to you and Providence that I am by means of your invaluable medicine thus perfectly restored.—I am, gentlemen, yours thankfully, G. Wyatt."

TO SINGERS and PUBLIC SPEAKERS they are invaluable for strengthening the voice. Price 1*s.* 1½*d.*, 2*s.* 9*d.*, and 11*s* per box. Sold by all medicine vendors.

DEAFNESS.—NEW DISCOVERY.—The Organic Vibrator, an extraordinarily powerful, small, newly invented instrument, for Deafness, entirely different from all others, to surpass anything of the kind that has been, or probably ever can be produced; being of the same colour as the skin is not perceptible. It enables deaf persons to hear distinctly at church and at public assemblies; the unpleasant sensation of singing noises in the ears is entirely removed, and it affords all the assistance that possibly could be desired. Invaluable newly-invented Spectacles. The most powerful Patent Telescopes, possessing such extraordinary power, that some, 3½ inches, with an extra eye-piece, will show distinctly Jupiter's Moons, Saturn's Ring, and the Double Stars. Opera, Camp, Race-course, and Perspective Glasses to know the distances. Also a very small, powerful, Waistcoat Pocket Glass, the size of a walnut, to discern minute objects at the distance of from four to five miles. —S. & B. Solomons, Aurists and Opticians, 39, Albemarle Street, Piccadilly; observe, opposite the York Hotel.

DEAFNESS, SINGING IN EARS, & NERVOUS DEAFNESS.—New mode of instantly restoring hearing without operation, pain, or use of instruments.—By one consultation, a permanent cure is guaranteed to any sufferer, although partially or totally deaf for 40 or 50 years. This extraordinary discovery is known and practised only by Dr. Hoghton, the eminent Aurist of the Suffolk Place Institution, and is applied by him daily on numbers of deaf applicants with perfect success in every case, enabling deaf persons instantly to hear conversation with ease and delight. Testimonials can be seen from the most eminent physicians in England; also certificates from all the London Hospitals and Dispensaries, and numbers of letters from patients cured, in all grades of society, from the peer to the peasant. Dr. Hoghton, Member of the London Royal College of Surgeons, May 2, 1845; L.A.C., April 30, 1845. Consultations every day from 12 till 4, without payment of fee, at his residence, 9, Suffolk Place, Pall Mall, London.

Just published, Self-cure of Deafness, for Country Patients; a Stop to Empiricism, Quackery, and Exorbitant Fees. Sent on receipt of seven stamps, free.

NEW SIPHOCAMPYLUS.

W. J. EPPS has much pleasure in offering the following, feeling they cannot fail to give the highest satisfaction. Strong plants are now ready for delivery.

SIPHOCAMPYLUS NE PLUS ULTRA—Very dwarf habit, with bright green foliage, producing flowers of the most brilliant scarlet in threes and fours at the axle of every leaf; the best of the genus, 10*s.* 6*d.*

BICOLOR ROSEA—Deep crimson, tipped with pale rose, very distinct and beautiful, very dwarf and compact habit; 10*s.* 6*d.* The usual discount to the Trade.—Nurseries, Maidstone.

NEW SEEDLING DAHLIAS.

N. GAINES begs to inform his Friends, both Amateurs and Nurserymen, he is now sending out his new SEEDLING DAHLIAS, viz., Alba Superba, Primrose Perfection, and King of the Yellows, at 10*s.* 6*d.* per plant. He can supply a quantity of his Dwarf Dahlias, Prince Arthur and the Dwarf; the two latter are well adapted for beds upon the lawn, not growing more than 18 inches high. He has a large quantity of Bedding Plants, such as Yellow Calceolarias, Tom Thumb Geranium, Verbenas, Petunias, Geranium Unique; Scarlet, White, and Crimson Fuchsias, Liliums, &c. His Show and Fancy Pelargoniums are now in flower, filling 10 houses, containing one of the largest collections in the country. May be seen gratis every day, Sundays excepted, at the Nursery, Surrey Lane, Battersea.—May 13.

HONEYSUCKLE VERBENA.—So named for its delightful perfume, which is so near the odour of the Honeysuckle that it cannot be distinguished from it. Last season it was the constant inquiry of visitors at the Nursery Grounds if Honeysuckles were growing near, or what flower so much resembled them in fragrance, and on being informed it was the above new variety of Verbena, they were much surprised, and immediately ordered plants of it. Description—viz., compact habit, fine glossy foliage (will do excellently for bedding, or as a plant for pot culture), long stems to flowers, making it very useful for bouquets—blooms most abundantly; colour rich dark crimson, shaded lilac, very distinct eye; the truss of a fine globular shape, generally measuring 9 inches in circumference, all the pips fully expanded. It will force well during the winter, being a great advantage for cutting, or for its perfume in a greenhouse or conservatory at that season of the year; it will also stand the sun and rain during summer better than any other Verbena. A few blooms added to a bouquet will give it the scent of the sweetest Honeysuckle. Fine strong plants are now ready for sending out, 3*s.* 6*d.* each.

LOBELIA LINDLEYANA.—The subscriber having purchased the whole stock of the above new Lobelia of Mr. Keynes, Salisbury, he begs to offer it to the public. It was awarded a Certificate of Merit at the Horticultural Society and National Society of London, June 1853. Description—viz.: Habit, dwarf and compact, flowering very freely, covering the whole surface of the plant; distinct in colour from all others yet out, being a bright rosy lilac. It is an excellent bedding variety, and will be sure to please every one who grows it, especially for its distinct colour and profusion of bloom. Strong plants now ready at 3*s.* 6*d.* each.

The usual allowance to the Trade when three plants of either are ordered. On receipt of a post-office order or penny postage, stamps to the amount, the plant or plants will be sent postage and package free.—EDWARD TILEY, Nurseryman, Seedsman and Florist, 14, Abbey Church Yard, Bath, Somerset.—May 13.

ARTHUR HENDERSON AND CO. take the earliest opportunity of informing their friends and the public, that their CATALOGUES No. 3 and No. 6 are now ready, and can be had, post free, upon application.

No. 3 contains descriptive lists of Geraniums, Verbenas, Fuchsias, Calceolarias, Cinerarias, Chrysanthemums, &c., amongst which will be found all the best novelties of the season, also the choicest selections from former years.

No. 6 contains descriptive lists of all the newest and best Stove, Greenhouse, and Hardy plants, amongst which will be found many new and desirable plants.

The following new plants are now on sale:

SEEDLING GLOXINIAS.

ELEANOR.—Ground colour pure white, blotched with rose, and shaded with purple.

ELEGANTISSIMA.—Ground colour French white, of great substance, centre pale lavender, spotted with buff.

EUGENIE.—Ground colour rosy pink, centre creamy white, spotted with rose.

EXQUISITE—Ground colour pure white, with broad belt of puce, throat creamy white, spotted with puce.

MAGNET.—Ground colour clear rose, with blotch of purple in the throat, flowers large, of fine form.

PRINCE OF WALES.—Ground colour white, shading off to lavender.

SIR C. NAPIER.—Ground colour deep rosy crimson, throat blotched with intense rose, dwarf habit.

The above seven Gloxinias will all be found to be fine varieties, with large well-formed flowers standing well up above the foliage. 7*s.* 6*d.* each, or 42*s.* the set.

CINERARIA EVA.—Ground colour pure white, with narrow margin of purple, dark disc, fine form and substance; received a Certificate at the National Floricultural Society. 10*s.* 6*d.*

GERANIUMS.

DIADEMATUM REGINA.—Ground colour deep shining rose, upper petals veined with dark purple and white, with blotch of bright orange crimson; very dwarf habit, and abundant bloomer; a fine variety for bedding. 7*s.* 6*d.*

DIADEMATUM SIDONIUM MULTIFLORUM.—Lower petals rosy purple, shaded with crimson; upper petals orange crimson, veined with dark maroon; trusses large, habit dwarf and compact, abundant bloomer; a fine variety for bedding. 10*s.* 6*d.*

PRINCESS.—Ground colour blush white, veined and shaded with carmine, dark horse-shoe foliage, large globular-shaped trusses, and most abundant bloomer. 7*s.* 6*d.*

CETERACH MARANTA (syn. Nothoclena maranta).—A new hardy Fern from the Alps of Switzerland; fronds bipinnate, about 8 inches in length, densely coated with golden brown scales on the under side. 15*s.*

Pine-apple Place, London, May 13.

CHAFF-CUTTERS, of the best workmanship, 25*s.*; Two-Knifed Chaff Engines, from 63*s.*; Mills for Bruising Oats and Beans, from 45*s.*

WILLIAM DRAY AND CO., Agricultural Implement Manufacturers, Swan Lane, Upper Thames Street, City.

Sales by Auction.

PLANTS AND FLOWERS.

NORLAND NURSERY, NOTTING HILL.

MESSRS. HAMMOND AND EILOART will sell by Auction, on the premises, as above, on TUESDAY, May 16th, at 12 o'clock, the entire stock of 1500 Geraniums, 400 Chrysanthemums, 500 Heaths, 300 very fine Azaleas, 200 Camellias, 8,000 Bedding Plants in every variety, a few Trees, Shrubs, &c.—On view the day prior and morning of Sale. Catalogues on the premises, and at the Auction offices, 28, Chancery Lane.

FANCY POULTRY.—PERIODICAL SALE.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, 16th May, at 12 o'clock precisely, a selection of BRAHMAS, COCHINS, &c., from the yard of John Fairlie, Esq., of Cheveley, including some of his best brood stock; Brahmas from Mr. Cannon, of Great Marlow; choice birds from C. Rawson, Esq., Mr. G. Griggs, Mr. Eason, and others, many of which are first-class specimens. Also a SPRING VAN, built for conveying Poultry to the exhibitions, but equally adapted for Plants.—Catalogues by enclosing a stamped directed envelope to Mr. J. C. STEVENS, 38, King-Street, Covent Garden.

PINE CONES.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on SATURDAY, May 20, at 2 o'clock, 30 CONES of the PINUS SABINIANA, or Great Hooked Pine of California. These magnificent specimens are from 8 to 10 inches in length, and 14 to 15 inches in circumference, and are full of fresh seeds—about 200 in each. May be seen on the morning of Sale, and Catalogues had.

SPECIMEN AZALEAS.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on SATURDAY, May 20, at 12 for 1 o'clock, 50 AZALEA INDICA, Specimen Plants, from 3 to 4 feet high, in full bloom; varieties Lateritia, Gledstanesi, and Variegata, all grafted with two or three sorts on each. The property of H. LANE & SON, of Great Berkhampstead, who part with them for want of room.—May be viewed on the morning of Sale and Catalogues had.

CLAPHAM NURSERIES.

THE STOCK OF PLANTS OF THE LATE MR. JOSH. FAIRBAIRN.

MR. J. C. STEVENS is instructed by the Administrators to announce for Sale by Auction, on the Premises, on MONDAY, 22d; TUESDAY, 23d; and THURSDAY, 25th May, at 12 for 1 o'clock, without reserve, the first portion of the valuable Stock of Plants at the above Nurseries; it includes the Collection of Heaths, for which this establishment has been so long celebrated; fine specimens of Azaleas, Aphelexis, Epacris, and a general selection of Greenhouse Plants, all of which are cultivated in the best possible manner, and are in excellent health. They will be lotted to suit the Trade and private buyers. —May be viewed on Friday and Saturday before the Sale, and Catalogues had on the premises, and of Mr. J. C. STEVENS, 38, King Street, Covent Garden; if for the country, by enclosing four postage stamps.

TO NURSERYMEN, FLORISTS, AND GARDENERS.

MESSRS. CRAWTER will Sell by Auction, at Garraway's Coffee House, Change Alley, Cornhill, London, on TUESDAY, May 23, at 1 o'clock precisely, without reserve, unless previously disposed of by private contract, the desirable Leasehold Estate, with possession, called PERCY CROSS NURSERY, in a commanding situation on the high road at Walham Green, Fulham, adjoining the mansion and grounds of Lord Ravensworth, comprising a convenient Residence, containing seven Rooms, Shop and appendages, Conservatory, Hothouses, Sheds, and other Buildings, with about 1 Acre of rich productive Nursery or Garden Ground.—May be viewed by application at the Premises, and particulars had 10 days before the Sale at Garraway's, the Inns in Fulham, and the surrounding neighbourhood; also of Messrs. Hanslip & Conworth, Solicitors, 12, Hatton Garden, and of Messrs. CRAWTER, Land-agents, Surveyors, &c., No. 5, Bedford Row, London, and Cobham, Surrey.

TO GENTLEMEN, FLORISTS, AMATEURS, ETC.

MR. WILMER will sell by Auction, on THURSDAY, May 25, at 1 o'clock, without reserve, a collection of TULIPS, the property of Mr. C. Woolnough, now growing in the garden Grounds of Mr. Selby, New North Road, Hoxton; also the Tulip Stage, with Iron Roof, Top Cloth and Rollers, Boxes, Irons, &c. Among the flowers are Shylock, General Jackson, Pompe Funebre, Man of Kent, Archer's Unique, Lucullus, Polyphemus, Mehemet Ali, Marshal Soult, Coronation, Walker's and Dixon's Dukes of Devonshire, Franklin's Superb, Glory, Invincible, Lord Brougham, Ariadne, Victory, and Favourite; Rose Camuze, Camuze de Craix, Greig's Rose, Bacchus, Emily, Goldham's Mary and Maria, Reine d'Espagne, Violet's Quarto, Precoce, Cook, Louis XVI., Godet Parfait, La Vandyke, Brulante Ecletante, Osiris, Timandra, Duc de Bordeaux, &c.—May be viewed two days previous and morning of sale. Catalogue on application to Mr. Tebbutt, Hoxton Nursery, New North Road; Mr. I'ons, Swan Inn, West Ham; C. Woolnough, 6, Bateman's Row, Shoreditch; and of the Auctioneer, Sunbury, Middlesex.

SURREY.

STURTWOOD FARM, Newdigate, a Freehold Estate of 108 acres of superior Meadow and Arable Land, 6 miles from Dorking Station, about 8 miles from Reigate and Redhill Station; also BUILDING GROUND near Dorking.

MR. JAMES WHITE will Sell by Auction, at the Mart, London, on THURSDAY, June 1, at 12 o'clock, a desirable FREEHOLD ESTATE, Land Tax redeemed, called STURTWOOD FARM, situate at Newdigate, in Surrey, within two hours' journey of London, consisting of 108 acres, nearly one-fourth of which is excellent Meadow, lying in a ring fence, well Timbered, and comprising a large substantial Farm House, two Barns, Stables, Feeding Sheds and Yards, and other suitable Farm Buildings, and a Bailiff's Cottage on the Estate. One-half of the Farm has been tile drained. It is now in the occupation of the vendor, and immediate possession may be had. Also a piece of FREEHOLD LAND, containing 2 acres and 3 roods, situate on Bunt's Common, about three miles from Dorking, commanding a beautiful prospect, and offering a desirable site for the erection of one or more villas; and also another piece of FREEHOLD LAND, containing 1 acre and 21 perches, situate on Shellwood Common, about four miles from Dorking, and five miles from Reigate.—The above property can now be viewed, and particulars, with plan, may be had of C. J. Graham, Esq., Solicitor, 3, Plowden Buildings, Temple, London; at the Mart; and of the Auctioneer, Dorking, or by post.

CHOICE AND VALUABLE COLLECTION OF TULIPS.

TO BE SOLD by Auction, without the least reserve, on the premises, Cooper's Lane, Leyton (near the Church) on MONDAY, May 29, at 1 o'clock, comprising among Bizarres Marcellus, Strong's King, Pompe Funebre, Everard, Apelles, Vivid, Sphynx, Willison's King, Norman's Royal Albert, Achilles, Sir E. Knatchbull, Sir George Whitmore, Alexander's Monarch, Emperor, Rembrandt, Charles Baron, Coftan, Charles Jeffrey, Kossuth, Paganini, Waterston's Midas, Grisewood's Grace Darling, Morning Star, Headley's King Richard. The Byblœmens comprise Pandora, Salvator Rosa, Rutley's Queen, Brown's Magnificent, Duke of Northumberland, Dixon's Democrat, Parmegiano, Byzantium, Nora Creina, Lord Bloomfield, Thalia, Louis XVI., Godet Parfait, Patty, Zuill's George Glenny, Flora, Father Gavazzi, Reid's Duke of Argyll, Thomas Maxwell, Lord J. Russell, Sir H. Smith, Wylie's Rob. Wylie, &c. Among the Roses are Rose Lac, Sans Egale, Camuse de Craix, Brulant Ecletant, Dixon's Arlette, Bion, Alexander's Gem, Jenny Lind, Jeffrey's Elizabeth, Maid of Honour, Village Maid, Flora M'Donald, Mary Lamb, Miss O'Neil, Mrs. Zuill, John Waterston, Munroe's Mount Hecla, &c.; also many new flowers only in this collection the property of Mr. James Alexander.—May be viewed two days prior to Sale; Catalogues had at the Mart; of Messrs. Dawe, Cottrell, and Benham, Seedsmen, Moorgate Street; White Swan, West Ham; on the premises; and of Mr. Henry Alexander, Auctioneer, Shacklewell.

STOCKWELL GREEN.

MESSRS. PROTHEROE AND MORRIS will submit to public competition by Auction, on the Premises, Stockwell Nursery, Stockwell Green, on TUESDAY, May 16th, at 11 o'clock, by order of Mr. Tooley (leaving the premises), about 20,000 GREENHOUSE PLANTS, consisting of Geraniums, Fuchsias, Verbenas, Calceolarias, Heliotropes, Salvias, Petunias, &c.; also a strong useful Horse, Tumbril Cart, &c.—May be viewed three days prior to the Sale. Catalogues may be had on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

BOW.

TO GENTLEMEN, NURSERYMEN, FLORISTS, & OTHERS.

MESSRS. PROTHEROE AND MORRIS will submit to an unreserved Sale by Auction, on the Premises, Mile-end Nursery, Bow Road, Bromley, Middlesex, near the Bow Railway Station, on TUESDAY, May 23, at 12 o'clock, a collection of GREENHOUSE PLANTS, consisting of Fine Show and Scarlet Geraniums, Genista, Cactus, Hydrangeas, Myrtles, Calla, Fuchsias, Verbenas, Heliotropium, Salvia, Calceolaria, Petunia, Mimulus, Neirembergia, Lobelia, Erinus, Phlox, Cuphea, Ageratum, Gaillardia, Chrysanthemums, Intermediate Stock, Tropæolum canariensis, Cobæa, &c.—May be viewed three days prior to the Sale. Catalogues may be had on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction, at the Mart, Bartholomew Lane, on THURSDAY, May 18, at 12 o'clock, a first-rate Collection of CARNATIONS, PICOTEES, and PINKS; a fine assortment of FUCHSIAS, VERBENAS, DAHLIAS in dry roots; GERANIUMS, and other Plants in bloom; with a variety of Plants for Bedding.—On view the morning of Sale; Catalogues had at the Mart; and of the Auctioneers, American Nursery, Leytonstone, Essex.

PECKHAM.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed to Sell by Auction, without reserve, on the Premises, Cambden Grove, Peckham, near the Rosemary Branch, on SATURDAY, May 20th, at 1 o'clock, the valuable Collection of TULIPS, of the late James Davidson, Esq., which are believed to include the most approved varieties in cultivation, and Seedlings not in possession of any other grower; together with the Tulip Stage, Canvas and Roller, Cabinet, &c.—May be viewed three days prior to the Sale. Catalogues may be had on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex,

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS beg to intimate that they have received instructions from the executors of the late Mr. Samuel Dark, deceased, to sell by Auction, without reserve, on the premises, North Street, East India Road, Poplar, on THURSDAY, May 25th, at 2 o'clock, a very rare and costly collection of TULIPS, the study of 40 years of the deceased's life, whose judgment and taste were universally admitted; also a choice collection of Ranunculuses, Rose trees, Gladiolus, Chrysanthemums, Pinks, Carnations, Lilies, &c.; together with the Iron-work Fittings, Netting, Canvas, Fencing, &c.—May be viewed the morning of Sale; Catalogues had of Mr. Year, Park Road, Old Ford; at the White Swan, West Ham; City of Canton, East India Road, Poplar; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO TULIP FANCIERS AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are directed by Mr. Staines to sell by Auction, on the premises, Culley's Nursery, near the New Globe Tavern, Bow Road, Middlesex, on MONDAY, May 22d, at 2 o'clock, his superb collection of TULIPS, including about 400 varieties, and most of the choicest in cultivation, together with Seedlings of his own raising, not to be found in many other collections.—May be viewed three days prior to the Sale. Catalogues may be had on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO TULIP FANCIERS.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. Goldham to submit to public competition by Auction, on the premises, Ilynder Cottage, Merton Lane, Mitcham, Surrey, on FRIDAY, May 26, at 1 o'clock, a portion of his costly and unrivalled collection of TULIPS. No comment on this magnificent Stock will be equal to an inspection of its striking beauties, for which an opportunity is now offered to the Amateur Florist, &c. New Flowers—Breeders and Seedlings of Mr. Goldham's raising—the result of more than 30 years' successful cultivation and competition.—May be viewed two days prior to the sale; Catalogues may be obtained, 1*s.* each (returnable to purchasers), on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

WOOLWICH.

TO TULIP FANCIERS AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are commissioned by Mr. Norman to sell by Auction, without reserve, on the premises, Bull Fields, Woolwich, two minutes' walk from the Arsenal Station, on MONDAY next, May 15th, 1854, at One o'clock, the whole of his costly collection of TULIPS, comprising all the favourite flowers in cultivation, as well as many New Seedlings not to be found in any other collection, viz., in the Roses—Norman's Princess Helena, Miss Bowles, Mrs. Crisp, Mrs. Lutman, Mrs. Ibbett, Zuill's Flora Macdonald, John Waterson, Slater's Naomi, Headley's Helen, Crook's Fanny, Don Juan, Brulante Ecletante, Camuze de Craix, Elizabeth, Lovely Ann, Lady Stanley, &c. &c. In Byblœmens—Mrs. Norman, Mr. Smith, Mrs. Bowles, Lord Raglan, Mr. Bowles, Col. Gordon, Mrs. Wells, Sir C. Napier, Mr. Webb, Col. Robe, Lord Bloomfield, Thalia, Juliet, Zuill's Flora, George Glenny, Dr. Lindley, and Sir R. Peel. In the Bizarres—Norman's Earl of Derby, Duke of Cambridge, Admirable, Mr. Newhall, John Norman, Capt. Dacre, Royal Albert, Achilles, Admiral Dundas, Sir R. Peel, Peter Rolt, Esq., Emperor of the French, Charles Jeffery, Midas, Hardstone's King Vivid, Strong's King, Wizard of the North, Sir James Boswell, &c. Also a capital Tulip Stage, complete; Iron Hoops, Tulip Boxes, Carnation Pots, and sundry effects.—May be viewed prior to the Sale. Catalogues may be had (6*d.* each, returnable to purchasers) on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO TULIP FANCIERS.

W. BRAGG will cause to be sold by Auction, the 25th of MAY, at 1 o'clock precisely, his choice and superb bed of 128 rows of TULIPS, including some scarce varieties. A quantity of Bedding Plants will be sold prior to the Tulips. Further Notice will be given in this Paper and by Catalogues.—Star Nursery, Slough, May 13, 1854.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be Addressed to the Editor.—SATURDAY, MAY 13, 1854.

THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley

No. 20.—1854.] SATURDAY, MAY 20. [PRICE 6*d*.

INDEX.

Agricultural Chemistry ...... 328 *c*
— statistics .... 325 *c*—328 *a*
— Society, Irish .... 326 *a*
— tour, Irish .... 326 *c*
— Soc. of England .... 330 *a*
Animals, indications of age in 330 *a*
Antipodes, memoranda from.. 320 *c*
Apples, to store .... 320 *c*
Bot. Soc. Edinburgh .... 322 *c*
Bran, Wheat .... 331 *c*
Calendar, horticultural........ 324 *a*
— agricultural .... 332 *a*
Carnations, tree .... 323 *c*
Cereus, night blowing .... 320 *c*
Chemistry, agricultural ...... 328 *c*
Chiswick exhibition .... 317 *a*
— report of .... 331 *b*
Cotton Mite .... 318 *c*
Deutzia scabra .... 320 *c*
Draining, warming effects of .. 325 *b*
Farm, Myremill .... 331 *a*
Flax question .... 329 *b*
Forests, Royal .... 318 *a*—319 *c*
Frost of the 25th ult. .. 320 *b*—329 *c*
Geology of Oxfordshire......... 330 *a*
Gorse crushing................... 324 *c*
Hedaroma tulipiferum .... 323 *b*
Hort. Society's show .... 317 *a*
— — — report of.. 321 *b*
Leptospermum grandiflorum .. 318 *b*
M'Adams' Blight Composition 320 *a*
Machines, sowing .... 325 *b*
Mangold Wurzel, to sow ...... 325 *b*
Manuring, liquid .... 327 *b*
— when to apply .... 329 *c*
Mechi's (Mr.) farm .... 326 *b*
Micrographic Dictionary, rev. 323 *b*
Mildew, Vine..................... 319 *a*
— — cure for .... 320 *a*
Myremill farm .... 331 *a*
Oxford farmers' club .... 330 *a*
Pathology, vegetable .... 318 *b*
Pea, Page's Prodigy .... 320 *a*
Plants, new .... 323 *b*
— effect of low temperature on 320 *c*
Rhododendrons, Sikkim .... 320 *a*
Root crops, to sow .... 325 *b*
Salisburia adiantifolia .... 317 *c*
Sowing machines .... 325 *b*
Statistics, agri. .... 325 *c*—328 *a*
Temperature, low, effect of, on plants .... 320 *c*
Tiptree, visit to .... 326 *b*
Vegetable pathology .... 318 *b*
Vine Mildew .... 319 *a*
— cure for .... 320 *a*
Wales, History of, rev. .... 330 *c*
Ward's cases .... 317 *b*
Wheat bran .... 331 *c*
Woods and forests .... 318 *a*—319 *c*

ERRATUM.—In Mr. Tiley's Advertisement "*Honeysuckle Verbena,*" inserted last week, the price was by mistake made 3*s*. 6*d*. instead of 5*s*.

HORTICULTURAL SOCIETY OF LONDON.—The QUEEN having been graciously pleased to name Saturday, June 10, as the day on which her Majesty will open the Crystal Palace, Notice is hereby given that the Meeting of this Society, announced for the same day, will be held on SATURDAY, JUNE 3, instead of Saturday, June 10, as previously intended. All Tickets issued for June 10 will be available for June 3.—21, Regent Street.

ROYAL BOTANIC SOCIETY, REGENT'S PARK. — The First EXHIBITION OF PLANTS, FLOWERS, AND FRUIT, this season, will take place on WEDNESDAY next, May 24. Tickets of admission can be obtained at the Gardens by orders from Fellows of the Society, price 5*s*.; or on the day of Exhibition, 7*s*. 6*d*. each.

The Plants will be arranged on a new plan, similar in form to the American Garden, and placed upon a series of terraces.

Gates open at 2 o'clock.

VALE OF TAUNTON DEANE HORTICULTURAL AND FLORICULTURAL SOCIETY.—The FIRST EXHIBITION of the above Society will be held in the Vivary Park, Taunton, on WEDNESDAY and THURSDAY, the 21st and 22d days of June next. HANDSOME PRIZES will be awarded to Nurserymen.

The Society have resolved to hold, in conjunction with the same, a GRAND POULTRY EXHIBITION. Upwards of EIGHTY PRIZES will be given. Schedules, for both Exhibitions and all further information may be obtained of the Honorary Secretary, Mr. JOHN KINGSBURY, 10, Hammet Street, Taunton, Somersetshire.

WEST KENT SECOND ANNUAL EXHIBITION OF POULTRY, &c., AND MISCELLANEOUS FLOWER SHOW (Open to all England), under most distinguished Patronage, will take place in the Market Field, Farningham, on TUESDAY (private view), June 20, 1854, and following day. Subscription Tickets of Admission, available on both days, 5*s*. each. List of Prizes and Certificates of Entry for Poultry, &c., are now ready, and may be had on application, post paid, to the Secretary, B. THOMAS. For Schedules of Prizes for Flowers, &c., apply to Mr. ALFRED LOCKYER, Hon. Secretary, Farningham. The Entries will close on June 5. By Order of the Committee of Management, BAPTISTE THOMAS, Sec.

Committee Room, Lion Inn, Farningham, Kent.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—The 11th Anniversary Festival of this Institution will take place at the London Tavern, Bishopsgate Street, on MONDAY, the 12th June next.

THOMAS GRISSELL, Esq., in the Chair.

Stewards.

The Baron Lionel Rothschild, M.P.

General Sir John Wilson, K.C.B. Sir Joseph Paxton.

John Jackson Blandy, Esq.	George Spencer Ridgway, Esq.
Henry G. Bohn, Esq.	J. H. Schröder, Esq.
Wm. B. Booth, Esq.	Chas. Henry Spratt, Esq.
Edward Denyer, Esq.	James Thomson, Esq.
Robert Field, Esq.	Charles Thorne, Esq.
James Garraway, Esq.	James Thorne, Esq.
Robert Glendinning, Esq.	J. H. Tuck, Esq.
Charles Howell, Esq.	Charles Turner, Esq.
Wm. Spencer Johnson, Esq.	James Veitch, Jun., Esq.
Samuel Laing, Esq., M.P.	Anthony Waterer, Esq.
J. J. Mechi, Esq.	Josiah Wilkinson, Esq.
Charles Palmer, Esq.	Richard Wood, Esq.

Tickets, 21*s*. each, to be obtained of the Stewards and of the Secretary. E. R. CUTLER, Sec., 97, Farringdon Street.

MR. GEORGE USHER, formerly of South Dalton, if he will communicate with his brother, Mr. J. USHER, of Appleby, will hear something to his advantage.

RENDLE'S IMPROVED SWEDE TURNIP.—*The Stock of this excellent Swede has been grown for us this season by R. H. Watson, Esq., Dorsley, near Totnes. It is a most hardy and valuable variety. Price 1s. 6d. per lb. For further particulars and testimonials of its excellence see* "FARMING PRICE CURRENT," to be procured from

WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

MORTON'S YELLOW GLOBE MANGOLD WURZEL, *saved by Thomas Bennett, Esq., Gloucester, from the Stock originally grown by J. C. Morton, Esq., the Editor of the Agricultural Gazette.*

Seed of this most excellent variety can now be obtained from WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth, who have purchased the whole of the Stock.

TO TURNIP GROWERS.

SEVERAL New Sorts of TURNIPS, *of superior feeding properties, are described in* Messrs. SUTTON'S LIST, *which is given at the second page of last week's* GARDENERS' CHRONICLE (page 298.)

A Copy of Messrs. SUTTON'S Descriptive Priced List of Turnip Seeds may be had post free.

JOHN SUTTON & SONS, SEED GROWERS, Reading, Berks.

SUTTON'S HARDY PURPLE-TOPPED SWEDE.—Fine globe-shaped, with small top and one tap root, will stand the most severe winter, and is one of the best for storing. It was selected from the East Lothian Purple-topped Swede, but is larger. Price 1*s*. 4*d*. per lb., or 8*s*. per gallon.

A Priced List of other new Turnip Seeds will be sent, post free, on application, addressed J. SUTTON & SONS, Seed Growers, Reading, Berks.

NEW TURNIP SEEDS DIRECT FROM THE GROWERS.

WILLIAM E. RENDLE AND CO. have this season a very superior stock of all kinds of TURNIPS, and they recommend all who are in want of the best varieties to procure their "Farming Price Current and Agricultural Directory," to be had in exchange for six penny stamps.—Apply to

WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

DAHLIAS, GERANIUMS, FUCHSIAS, AZALEAS, BEDDING PLANTS, &c., can be had from WILLIAM E. RENDLE AND CO., NURSERYMEN, Plymouth, in any quantity. Their New Plant Catalogue is now out, and can be had in exchange for one penny stamp.—Apply to

WILLIAM E. RENDLE AND CO., Nurserymen, Plymouth.

FINE GRASS SEEDS FOR ORNAMENTAL PARKS, LAWNS, &c., *where a fine sward is required*, 1*s*. 3*d*. *per lb.*, 3*s*. *per gallon, and* 20*s*. *per bushel. Our mixtures for this purpose have given the greatest satisfaction.*

WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

HOME GROWN FIELD TURNIP SEEDS.

MR. JACKSON having grown Seeds of some of the best kinds of Swedish and other Field TURNIPS, will be glad to furnish Agriculturists in any part of the kingdom. Descriptive priced Catalogues may be had on application to Mr. JACKSON, Bedale, Yorkshire.

LOBELIA ST. CLARE.

MESSRS. LAKE AND DYER, NURSERYMEN, &c., Bridgewater, are prepared to send out this truly beautiful plant (so universally admired last autumn), at 12*s*. per dozen.

Postage stamps or Post-office Order must accompany all orders from unknown correspondents.—N.B. The Trade supplied.

JOHN HOLLAND offers superb named SHOW PANSIES, at 4*s*. per dozen Plants. Extra fine selected PANSY SEED, 1*s*. and 2*s*. per packet.

Bradshaw Gardens, Middleton, near Manchester.

SAMUEL WALTERS begs to offer the following:—New and Choice GERANIUMS, New PETUNIAS, FANCY GERANIUMS, FUCHSIAS, VERBENAS, BEDDING PLANTS, &c. Orders of 1*l*. and upwards will be forwarded any distance not exceeding 100 miles, carriage free. See *Gardeners' Chronicle*, p. 250.—Hilperton and Trowbridge, Wilts.

NOTICE.

TO GARDENERS AND THEIR EMPLOYERS having Surplus CHOICE FRUITS to dispose of during the season, will meet with a CASH PURCHASER by applying to GEORGE TAYLOR, JUN., FRUIT SALESMAN, St. John's Market, Liverpool.

NEW ALSIKE CLOVER, Price Ten Guineas per cwt., or in small quantities at 2*s*. per lb., may be had on application to Mr. H. RAYNBIRD, Basingstoke, Hants. Also New Home-grown ITALIAN RYE-GRASS, of good and genuine Stock, at 30*s*. to 35*s*. per quarter.

TO BE SOLD, at a moderate price, a fine specimen of FAN PALM, or CORYPHA UMBRACULIFERA, 9 feet high and 12 feet in circumference, some of its leaves 6 feet across.—For further particulars address to THOMAS COOLING, Mickleover, near Derby.

TO THE SEED TRADE AND OTHERS.

BENJAMIN R. CANT, St. John's Street Nursery, Colchester, can supply in quantity the following Home-grown Seeds, of excellent quality:—

	Per lb.—s.	d.
WHITE BELGIAN CARROT	1	0
LONG RED ALTRINGHAM Do.	1	0
YELLOW GLOBE MANGOLD WURZEL... ...	1	0
LONG RED Do.	1	0

Prices to the Trade on application.

BASS AND BROWN'S NEW POTENTILLAS.—In consequence of the limited stock of King of Crimsons, we regret we must decline receiving more orders. The following are now ready to send out:—

Potentilla Sudbury Gem, each	10*s*. 6*d*.	Potentilla Theodore, each	7*s*. 6*d*.
" Shylock, do.	10 6	" Julia, do.	7 6

The following, 16*s*. the set of seven varieties:—

Floral Beauty	3*s*. 6*d*.	Scarlet Gem	3*s*. 6*d*.
Napoleon	2 0	Primrose	2 0
Defiance...	2 0	Argo	2 0
Negress	3 6		

For descriptions and editorial remarks, see *Gardeners' Chronicle* of March 13, p. 144, and April 1, p. 208.

Seed and Horticultural Establishment, Sudbury, Suffolk.

MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS AND CO. beg to call attention to their MIXTURES OF GRASS SEEDS for laying Land down to Permanent Grass, price 30*s*. per acre.

Mixed sorts, for Improving Old Grass Land... 1*s*. 2*d*. per lb.
Fine sorts for Forming and Renovating Lawns 1 3 "

Directions for sowing accompany the seeds.

GEORGE GIBBS & Co. will be happy to forward their Priced Catalogues of Mangold Wurzel, Carrot, Swede, Turnip, and all Agricultural Seeds, free on application to GEORGE GIBBS & Co. Seedsmen, 26, DOWN STREET Piccadilly, London.

EXHIBITION OF SPECIMEN PLANTS.

J. AND J. FRASER beg to invite the attention of the Nobility and Gentry to an inspection of their fine collection of Specimen CHINESE AZALEAS and other plants, which are now in bloom. The plants are so arranged in various Greenhouses as to have a similar effect to that produced at the Metropolitan Flower Shows. The collection comprises those specimens which have been exhibited so often at the Regent's Park and Chiswick Gardens, at which places they have taken the leading prizes.

The Nursery is about 15 minutes' walk from the Lea Bridge Station on the Eastern Counties Railway. Trains leave London at 9 a.m., 9.30 a.m., 10 a.m., 10.40 a.m., 12.30 a.m., 1.40 p.m., 2.30 p.m., 3.20 p.m., and 4.45 p.m.—Admission Gratis.

Lea Bridge Road, Essex, May 20, 1854.

EUGENIA OR MYRTUS UGNI.

MESSRS. VEITCH AND SON, of Exeter, and the Exotic Nursery, Chelsea, have much pleasure in offering to the Public the above beautiful evergreen flowering shrub, of THEIR OWN introduction, from Patagonia, through their collector, Mr. Wm. Lobb.

It has stood several winters in the open ground without shelter, producing its delightfully fragrant flowers in July, succeeded by its Strawberry-flavoured red berries, eaten in Chili as dessert. It is a plant of easy culture, flowering in a very small state, when not above 6 inches high, and is well adapted for pot culture. It is figured by Sir Wm. Hooker in Curtis's "Botanical Magazine" for January, 1852.

Strong blooming plants, in 48-sized pots, 21*s*. each.
Second size do. in 60-sized pots, 15*s*. each.

With the usual discount to the Trade, and one over on either class when three are taken.—Exeter, May 20.

NEW SIPHOCAMPYLUS.

W. J. EPPS has much pleasure in offering the following, feeling they cannot fail to give the highest satisfaction. Strong plants are now ready for delivery.

SIPHOCAMPYLUS NE PLUS ULTRA—Very dwarf habit, with bright green foliage, producing flowers of the most brilliant scarlet in threes and fours at the axle of every leaf; the best of the genus, 10*s*. 6*d*.

BICOLOR ROSEA—Deep crimson, tipped with pale rose, very distinct and beautiful, very dwarf and compact habit; 10*s*. 6*d*. The usual discount to the Trade.—Nurseries, Maidstone.

NEW VARIEGATED GERANIUMS, ATTRACTION AND SILVER KING.

JOHN AND CHARLES LEE are now sending out strong plants of these elegant novelties, which they can recommend as surpassing anything of the kind hitherto introduced.

ATTRACTION has a decided crimson horse-shoe, on a finely variegated foliage, which greatly enhances its beauty. The flowers are light scarlet. Price 10*s*. 6*d*. each.

SILVER KING is of a dwarf free habit, the leaves perfectly flat, with a very broad silver margin; flowers intense scarlet. Price 7*s*. 6*d*. each, or 70*s*. per dozen.

Nursery and Seed Establishment, Hammersmith, near London.

PLANTS FOR BEDDING OUT.

THE SUBSCRIBER is desirous of receiving Offers in the Trade, per 1000, for a Supply of the above, and other FLORIST FLOWERS for the Season.

WILLIAM SMITH, Aberdeen. May 20.

SOFT-WOODED PLANTS, in large variety; suitable for decorating the Flower Garden during Summer and Autumn. To be had at low prices from the subscribers,

HUGH LOW & Co., Clapton Nursery, London.

BEDDING PLANTS, in pots, at 2*s*. per dozen.—Geraniums, Scarlet; Do. Horseshoe-leaved; Do. Ivy-leaved. Salvia (blue), Heliotropes of sorts; Petunia Duplex, Shrubland Rose; Do. White. Fuchsia Voltigeur; Verbena White Perfection, Favourite, St. Margaret's. Strong plants, turned out of pots, 1*s*. 6*d*. per dozen. Calceolaria; Dark Fuchsia Globosa, Corallina, Gracilis; Salvia variegata, Ageratum, Cuphea, Heliotrope, Groundsel, Phloxes of sorts, and Pentstemons.

THOMAS PERKINS, HORTICULTURAL BUILDER, Atherstone, Warwickshire.

CAMDEN NURSERY, CAMDEN TOWN.

THOMAS ANSELL begs to inform the Trade and the Public generally, that he has a few plants on hand of his new and splendid Dahlia, "Mrs. Charles Dickens," a beautiful fancy; colour scarlet, tipped with pure white, of remarkable dwarf habit, and fine form. Price per plant, 10*s*. 6*d*.

EVERGREEN GRASSES FOR CHURCHYARDS, ETC.

SUTTON AND SONS have had the honour of supplying many Clergymen and others with Grass Seeds for Churchyards and Cemeteries, which have given great satisfaction. Price of Seed, 1*s*. per lb., or 18*s*. per bushel. From many similar letters we present the following:—

From Mr. C. Judd, Gardener to his Grace the Archbishop of Canterbury.

"The Grass Seeds received from you succeeded admirably, and, although sown late, the growth was such that we were enabled to mow the Churchyard in the autumn, and it has now the appearance of an established lawn of some years' standing; my employer, the Archbishop of Canterbury, is quite satisfied with its appearance."—Addington Park, January 7th, 1853.

NEW SEEDLING DAHLIAS.

N. GAINES begs to inform his Friends, both Amateurs and Nurserymen, he is now sending out his new SEEDLING DAHLIAS, viz., Alba Superba, Primrose Perfection, and King of the Yellows, at 10*s*. 6*d*. per plant. He can supply a quantity of his Dwarf Dahlias, Prince Arthur and the Dwarf; the two latter are well adapted for beds upon the lawn, not growing more than 18 inches high. He has a large quantity of Bedding Plants, such as Yellow Calceolarias, Tom Thumb Geranium, Verbenas, Petunias, Geranium Unique; Scarlet, White, and Crimson Fuchsias, Liliums, &c. His Show and Fancy Pelargoniums are now in flower, filling 10 houses, containing one of the largest collections in the country. May be seen gratis every day, Sundays excepted, at the Nursery, Surrey Lane, Battersea.—May 20.

BEAUTIFUL NEW BEDDING PLANT.
MILLER'S HYBRID MULE PINK.

ROBERT MILLER, Hartshill Nursery, Newcastle, Staffordshire, offers with confidence the above Pink, colour a bright crimson scarlet, double; grows from 9 to 15 inches high, branches out and forms a little bush, and flowers most abundantly from June to October, and perfectly hardy. See *Gardeners' Chronicle*, Sept. 24, 1853.

DIANTHUS R. M., very pretty, and being dwarf in habit, it will doubtless make a good bedding plant. Price 12*s*. per doz., package included. The usual discount to the Trade. To be let out the second week in April. Post-office orders from unknown correspondents made payable at Newcastle.

SEEDS TO IRELAND.—*Plymouth is admirably situated for supplying our sister country with some English Seeds. The Subscribers can refer to some of the leading families in Ireland, who have for many years obtained the whole of their supplies of Garden and Farm Seeds. Seeds delivered free to many of the Irish ports. See Price Current.*

WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

DILLISTONE AND CO. beg to offer the following:—
STRAWBERRY PLANTS.—Ten of the best kinds always on hand, 2*s*. 6*d*. to 3*s*. 6*d*. per 100.

HOLLYHOCKS saved from 20 of the best named kinds, and kept separate, 3*s*. per dozen; 20*s*. per 100.

BEDDING PLANTS.—Many thousands will be ready in May, 3*s*. to 6*s*. per dozen, or cheaper if 100 are taken.

ROSES.—Tea, Bourbon, and Hybrid Perpetuals, and new ones, on the Manetti stock.

HERBACEOUS PLANTS, fine and good, 20*s*. to 30*s*. per 100. Orders above 20*s*. paid to London. Lists upon application, enclosing a stamp.—Nurseries, Sturmer, Halstead, Essex.

ABRAHAM STANSFIELD, NURSERYMAN, SEEDSMAN, and LANDSCAPE GARDENER, Todmorden, Lancashire, having a large Stock of the following, can supply them at the under-mentioned prices:—

50 species of the genus SAXIFRAGA, at 15*s*. per 100, or 4*s*. per dozen.

400 species of select Plants adapted for Rockwork, at 30*s*. per 100, or 4*s*. per dozen.

800 species and varieties of Alpine and Hardy Herbaceous Plants, 25*s*. per 100, or 4*s*. per dozen.

150 species of Hardy and Greenhouse FERNS and LYCOPODS, from 6*s*. to 24*s*. per dozen.

SCARLET GERANIUMS and other Bedding Plants, 4*s*. p. doz.

N.B. A few bushels of genuine Fluke Potato, at 8*s*. per bushel.

Catalogues on application.—A remittance or reference from unknown correspondents.

EDWARD GEORGE HENDERSON AND SON, Wellington Nursery, St. John's Wood, London, are now prepared to send out the following new plants:—

		s.	d.
FUCHSIA.—Monarch	... ...	10	6
GLOXINIA.—Duke of Wellington	... ...	7	6
" Lady Franklin	... ...	7	6
GERANIUM.—Silver Queen	... ...	7	6
" (Fancy) Bonnie Lassie	... ...	15	0
" (Fancy) The Fornarina	... ...	10	6
" (Fancy) Loveliness	... ...	10	6
HYBRID BEDDING VARIETIES.			
" Picturata	... ...	3	6
" Etoile de Vaise (Ivy-leaf)	... ...	3	6
" Quercifolium eximium	... ...	7	6

The above three hybrid bedding Geraniums are also beautiful plants for pot culture, as they continue covered with flowers the whole of the season.

VERBENAS:—

	s.	d.		s.	d.
Robin Hood	3	6	Beauty	5	0
Marie Antoinette ...	3	6	Matchless	3	6
Attraction	3	6	Diadem	3	6
Ariosto	3	6	Ne Plus Ultra	5	0
Madonna	5	0	Sulphur Model	5	0
Orion	3	6	Beauty of the Garden ...	5	0

The Set, 42*s*.

The above twelve distinct Verbenas have been Bedded out and proved the second season; the raisers are Messrs. Banks, Stewart, and Fozard. For descriptions of the above New Plants see back numbers of this paper.—May 20.

VANDA CŒRULEA.

MESSRS. MAULE AND SONS having received, the two last seasons, from their collector in the district of the Khasia Hills, a good supply of this most beautiful and charming Orchidaceous Plant, which stands unrivalled amongst the family of Vanda, from its abundant blooming, easy culture, great length of flower spike, and large number of blooms, which are of the most brilliant sky blue, lasting a long time in beauty, flowering from September until January, and in every respect is a first-class Plant of the justly admired tribe of Orchidaceous Plants. There is little doubt that this Plant after cultivation will flower at almost every season, as V. suavis, tricolor, &c. They have also received other esteemed kinds from this of Flora's favoured district of India, which they at the same time offer.

VANDA CŒRULEA 21*s*., 42*s*., 63*s*.; a few extra large, 105*s*.
AERIDES affine or roseum ... ... 21*s*., 42*s*., 63*s*.
" odoratum ... ... 10*s*. 6*d*., 15*s*.
" Fox brush, a splendid species, flower spikes in its native habit at 3 feet long, with laterals, 84*s*., 105*s*.
DENDROBIUM transparens, a beautiful new, upright, free-flowering dwarf species, flowers of a delicate transparent pink ... ... 84*s*., 105*s*.
" Devonianum ... ... 7*s*. 6*d*., 10*s*. 6*d*.
" chrysanthum... 7*s*. 6*d*. each, or four for 21*s*.
" densiflorum ... ... 7*s*. 6*d*., 10*s*. 6*d*.
" Farmeri ... ... 10*s*. 6*d*., 15*s*.
" Gibsoni (true) ... ... 10*s*. 6*d*.
" formosum ... ... 7*s*. 6*d*., 10*s*. 6*d*.

The Nurseries, Bristol.

MR. GLENNY requests that REPORTS of all the HORTICULTURAL and FLORAL EXHIBITIONS may be sent to him for publication, and that specimens of Fruit, Flowers, Plants, and Vegetables, as well as other subjects for his opinion, may be addressed, Mr. GLENNY, 420, Strand.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

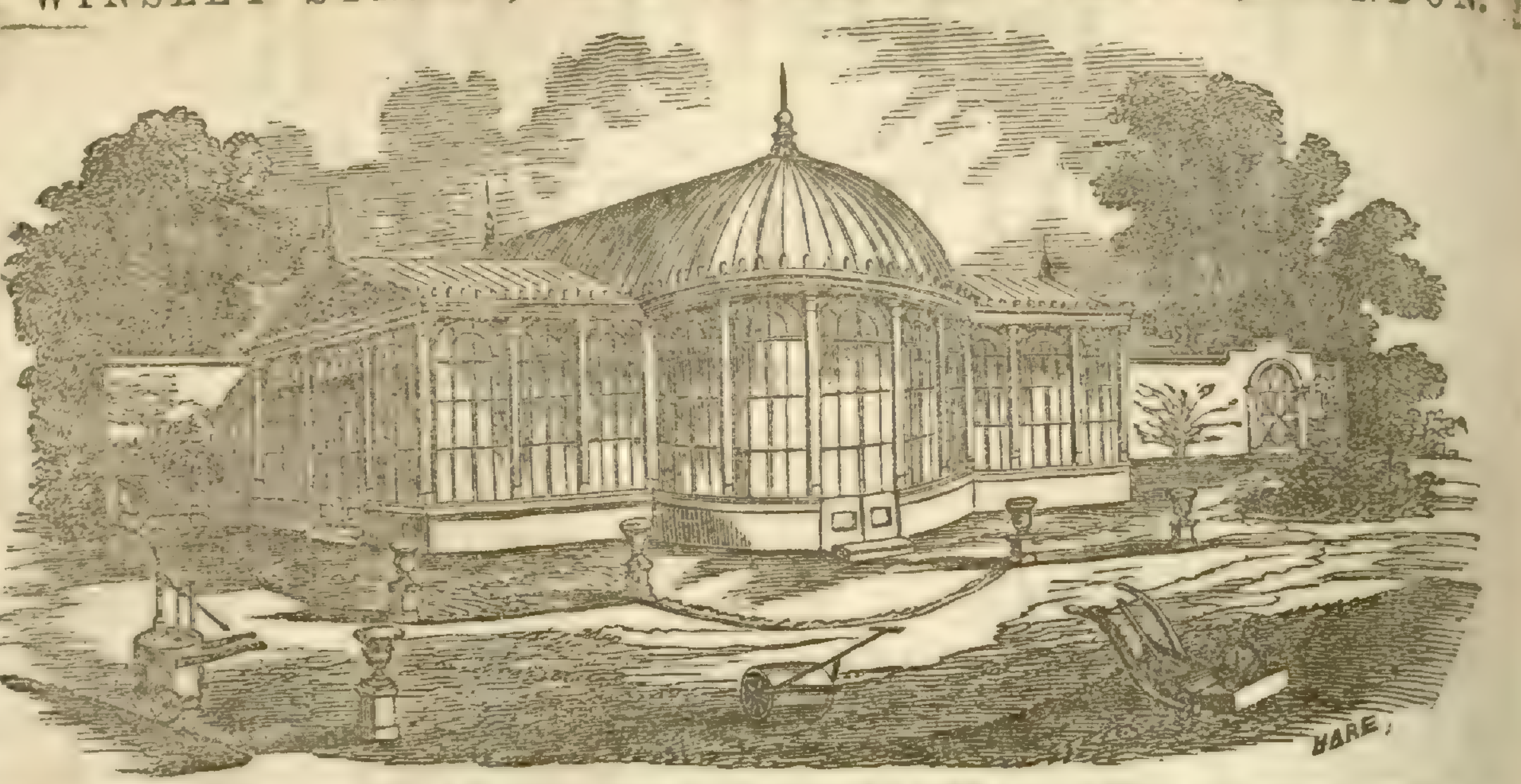
Priced lists of plant tubs and boxes forwarded on application.

DEVONSHIRE CYDER.—A three dozen case (large bottles), of the very best DEVONSHIRE CHAMPAGNE CYDER, will be forwarded to any address on receipt of a Post-office order for 21*s*., payable to JOHN E. RENDLE, Martin Street, Octagon, Plymouth. Case and bottles, value 9*s*., included.

GLENFIELD PATENT STARCH, used in her Majesty's Laundry, and WOTHERSPOON'S machine-made CONFECTIONARY, MARMALADE, JAMS, JELLIES, &c., which gained the Prize Medal of 1851, may be had of all Grocers; Wholesale of WOTHERSPOON, MACKAY, & Co., 66, Queen Street, Cheapside, London; and ROBERT WOTHERSPOON & Co., Glasgow.

COTTAM AND HALLEN,

2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.



APPLICATION is requested for their NEW HORTICULTURAL LIST, containing Illustrations, Descriptions, and Prices of

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Syringes	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

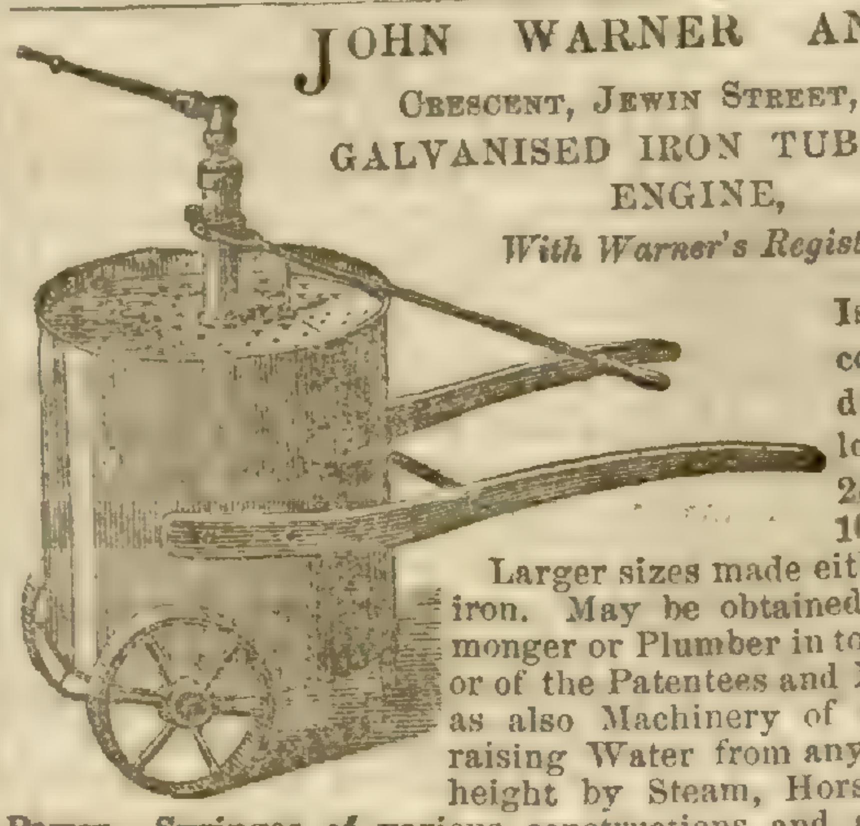
IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.

AGRICULTURAL LIST UPON APPLICATION.

EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

JOHN WARNER AND SONS,
CRESCENT, JEWIN STREET, LONDON.
GALVANISED IRON TUB GARDE ENGINE,
With Warner's Registered Spreader,



Is strongly recommended, for durability and low price, viz., 2*l*. 19*s*., to hold 10 gallons.

Larger sizes made either in wood or iron. May be obtained of any Ironmonger or Plumber in town or country, or of the Patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Syringes of various constructions and sizes from 9*s*. upwards. An extensive assortment kept.

WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

	£	s.	d.
Patent Pump	1	15	0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing	3	0	0

Larger sizes if required.

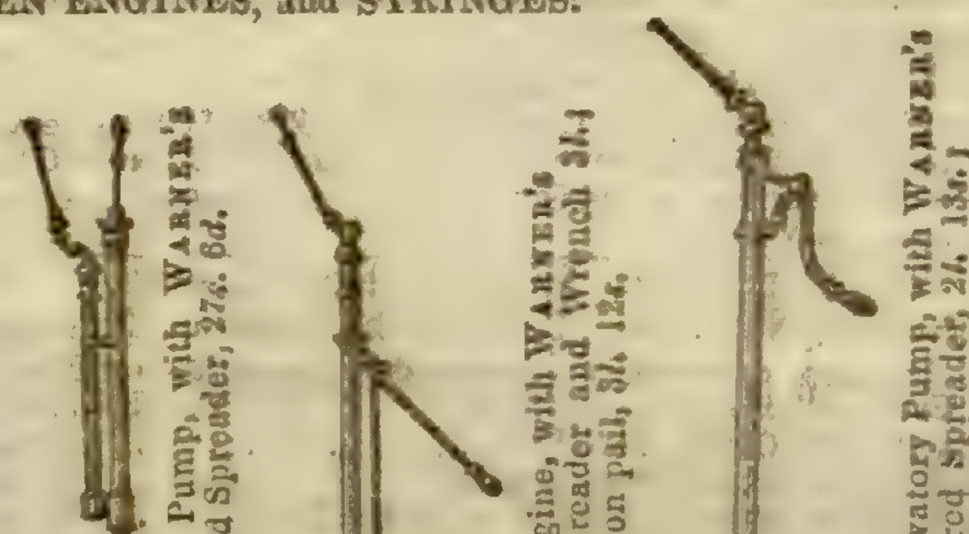
The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

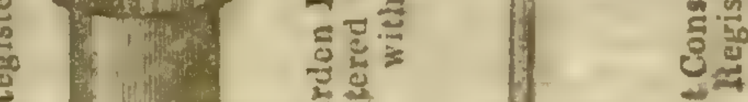
JOHN WARNER & SONS,
8, CRESCENT, JEWIN STREET, LONDON.

Every description of Machinery for Raising Water; Fire Engines, &c.

JOHN WARNER AND SONS, 8, Jewin Crescent, London, Manufacturers of FIRE ENGINES, PUMPS, GARDEN ENGINES, and SYRINGES.



No. 32. No. 11. No. 14.



Brass Syringes, 9*s*. to 18*s*.

All articles of JOHN WARNER & SONS' manufacture may be obtained of any Ironmonger or Plumber in town or country, at the advertised prices.

JOHN WARNER & SONS having been practical Horticulturists for many years, know exactly the requirements of both Amateurs and Gardeners. A gardener with a properly constructed pump will get through as much work in five minutes as he could with any Syringe in a quarter of an hour, and with half the labour to himself. Syringes are economical only for small houses.

No establishment offers such a variety of effective machines for hydraulic purposes, whether to supply Gardens, Hothouses, Cottages, Farms, Mansions, or Boards of Health, with every requisite connected with the conveyance and distribution of liquids.

Fountains suitable for Conservatories, Lawns, &c.

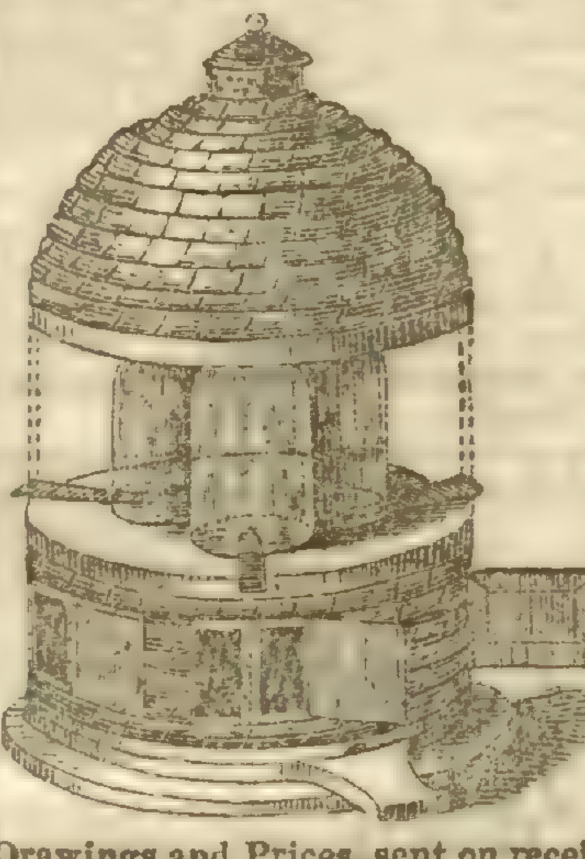
Sheets of Engravings sent on application.

BEES AND HIVES.

MARRIOTT'S HUMANE COTTAGE BEE-HIVE, for taking honey without killing the Bees, is the best for practical use. Newly illustrated Catalogue forwarded for penny stamp.—MARRIOTT, Apiarian, Surrey Zoological Gardens; City Warehouse, 24, Fish Street Hill, London Bridge.

BEEHIVES.

NEIGHBOUR'S IMPROVED COTTAGE BEE-HIVE, as originally introduced by GEORGE NEIGHBOUR & SONS, with all the recent improvements, glasses, thermometer, &c., price 35*s*., securely packed for the country.

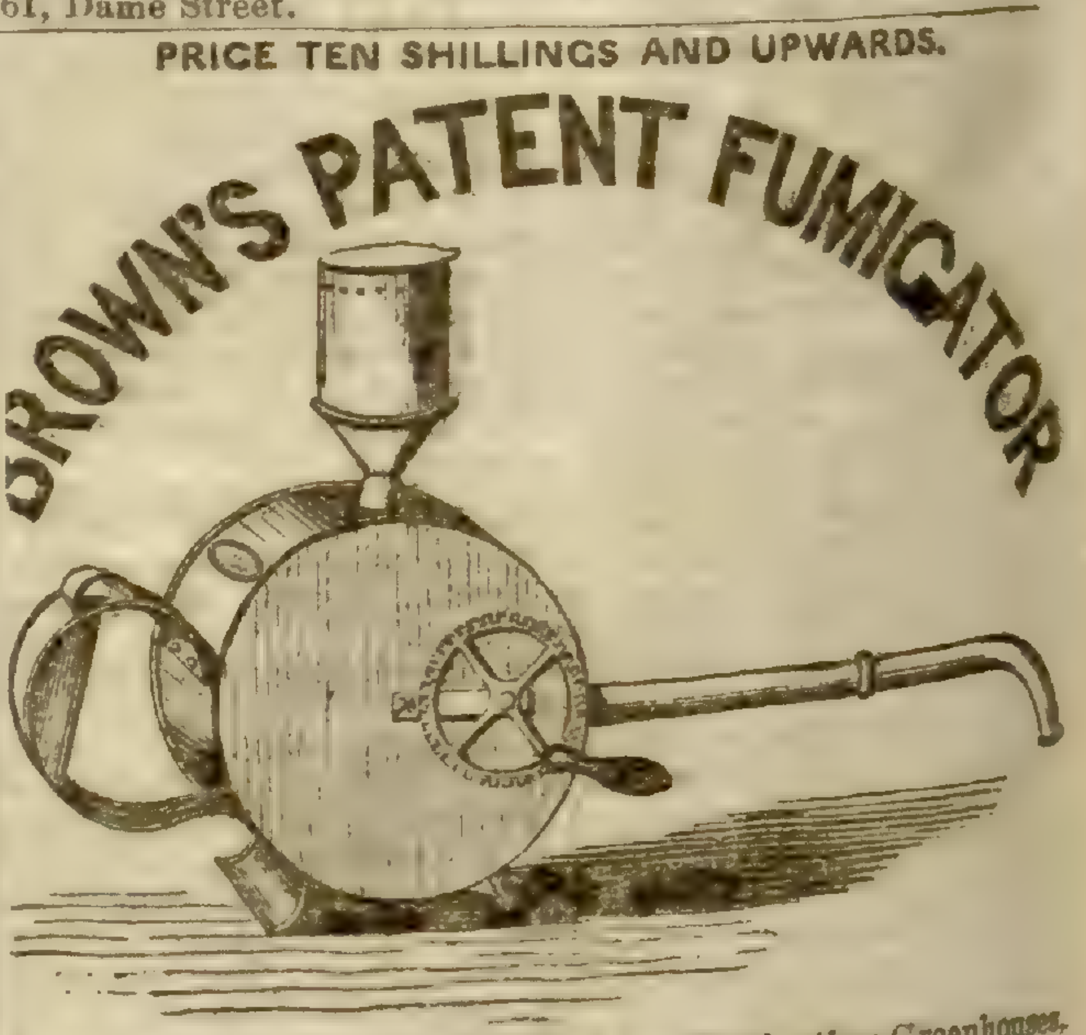


This unique hive has met with universal commendation, and may be worked with safety, humanity, and profit, by the most timid; its arrangements are so perfect, that the honey may be taken at any time of the gathering season without at all injuring the bees.

Early applications, addressed to GEO. NEIGHBOUR & SONS, 127, High Holborn, or 149, Regent Street, London, will receive prompt attention. Their newly arranged Catalogue of other improved Beehives, with Drawings and Prices, sent on receipt of two stamps.

Agents:—Manchester, HALL & WILSON, 50, King Street; Liverpool, JAMES CUTHBERT, 12, Clayton Square; Chester, F. & A. DICKSON & SONS, 106, Eastgate Street; Glasgow, AUSTEN & M'ASLAN, 186, Trongate Street; Dublin, J. EDMUNDSON & Co., 61, Dame Street.

PRICE TEN SHILLINGS AND UPWARDS.



A PORTABLE INSTRUMENT for Fumigating Greenhouses, Stoves, and Frames, or Shrubs and Flowers, in the open air more effectually, in conjunction with SANGSTER'S FLORUMBRA, without injuring the most delicate plant; delivering the smoke cool, in a dense mass, and effecting a great saving of Tobacco.

Manufactured and supplied to the Trade by Messrs. BARBER and GROOM, London; and may be had of all Ironmongers, Seedsmen, and Florists.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

MORNING FROSTS.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1*s.* 6*d.* per yard run, of E. T. Archer, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey. (Removing to 112, Regent Street, London.)

HOSE PIPING.—Great Reduction in Price.

WAITHMAN'S PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense Pressure, and much more than Leather, vulcanised Rubber, or any other Hose; and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented inventions, the cost of manufacturing it is now reduced at least 60 per cent., which advantage is offered to the Public.—London Agents, Burgess & Key, 103, Newgate Street, and 52, Little Britain, who on application will forward wholesale and retail prices.

(Fig. 1.) (Fig. 2.)

J. TYLOR and SON'S BARROW GARDEN ENGINE (Fig. 1), in best well painted oak tub, fitted with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 1	holds	10 gallons,	throws	30 feet high	...	£4 10
No. 2	„	15 „	„	45 „	...	5 10
No. 3	„	28 „	„	45 „	...	6 18

J. TYLOR and SON'S BARROW GARDEN ENGINE (Fig. 2), in strong tinned iron tub, well painted inside and outside, with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 10	holds	8 gallons,	throws	25 feet high	...	£2 15
No. 13	„	12 „	„	30 „	...	3 5
No. 11	„	18 „	„	40 „	...	4 0
No. 12	„	24 „	„	45 „	...	5 0
No. 14	„	30 „	„	45 „	...	5 18

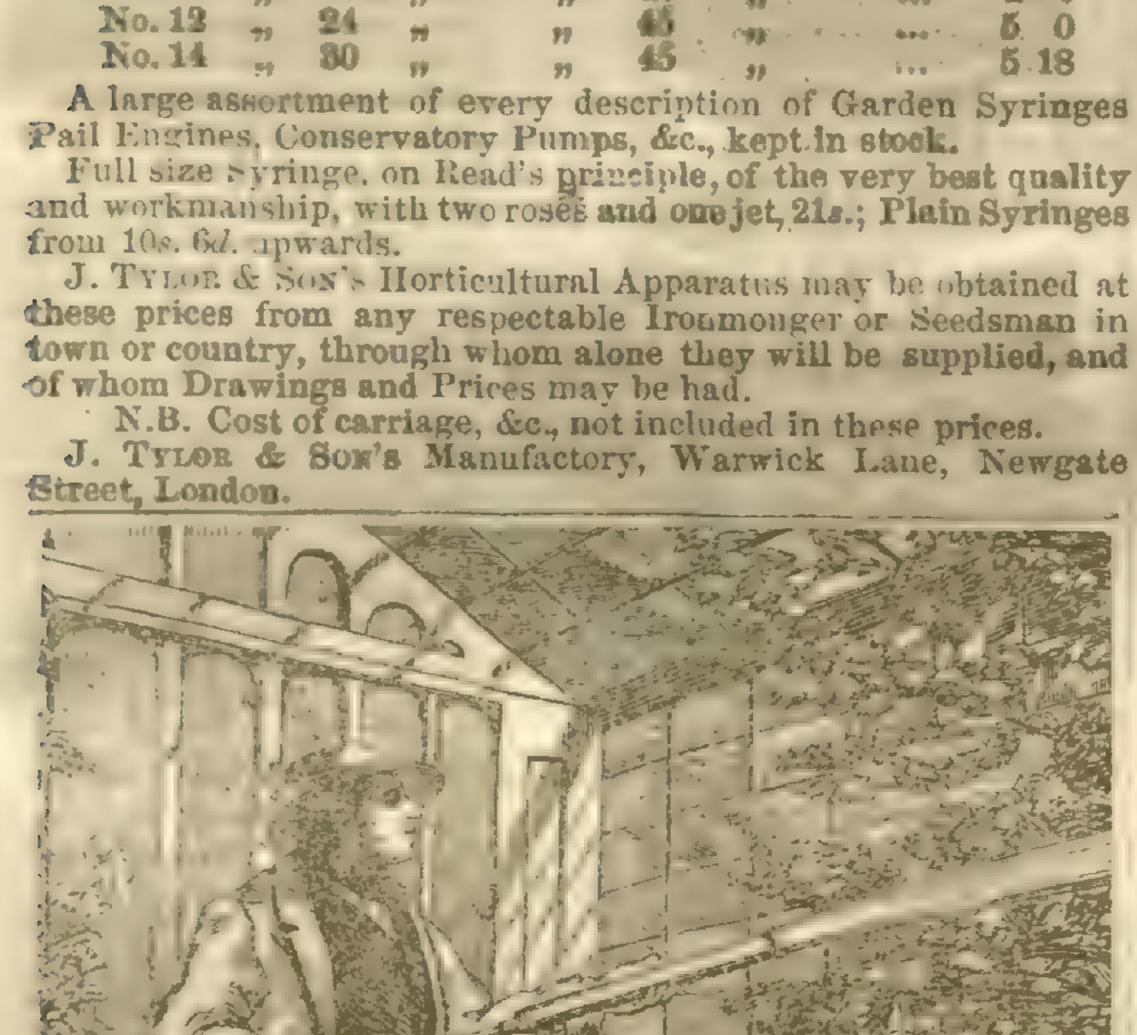
A large assortment of every description of Garden Syringes Pail Engines, Conservatory Pumps, &c., kept in stock.

Full size Syringe, on Read's principle, of the very best quality and workmanship, with two roses and one jet, 21*s.*; Plain Syringes from 10*s.* 6*d.* upwards.

J. Tylor & Son's Horticultural Apparatus may be obtained at these prices from any respectable Ironmonger or Seedsman in town or country, through whom alone they will be supplied, and of whom Drawings and Prices may be had.

N.B. Cost of carriage, &c., not included in these prices.

J. Tylor & Son's Manufactory, Warwick Lane, Newgate Street, London.



J. TYLOR and SON'S REGISTERED GARDEN SYRINGE.—Small size, for Amateur use, **21s.** each; Large size, for Gardeners' use, **25s.** each.

By a simple arrangement this Syringe is rendered more effective than any portable Conservatory or Garden Pump ever offered to the public. It is equally adapted for Garden or Conservatory use, and is capable of discharging twice as much water in a given time as any other Syringe now in use. The arrangement consists in attaching a small flexible suction tube to the barrel of the Syringe, through which it is filled with water at every discharge of the previous contents. By this means the Syringe is always charged, and the pull-up stroke of the piston rendered perfectly easy, it having, indeed, no work to do, the barrel being previously full of water. Being thus made self-supplying, a great saving of labour is effected; and the necessity of stooping to fill the Syringe at every discharge being done away with, the direction of the water can be maintained for any length of time. It is perfectly cleanly in its action, as it is not possible for any water to get on the outside of the barrel, which is a well-known inconvenience attendant on the use of every other Syringe. Its construction is perfectly simple, and cannot get out of order; the ground-in ball valves and fittings used for filling all other patent Syringes being entirely superseded. To be had of any respectable Ironmonger or Seedsman in town or country.

J. Tylor & Sons, Manufacturers of Horticultural Apparatus, Warwick Lane, Newgate Street, London.

N.B. These prices do not include carriage, package, or expenses of delivery in the country.

FOR WATERING GARDENS, DISTRIBUTING LIQUID MANURE, ETC.

JAMES LYNE HANCOCK'S VULCANISED INDIA-RUBBER TUBING is now manufactured especially for the above purposes, and is of greater flexibility than any other description of hose or tubing. It is also manufactured to resist great pressure, suitable for attaching to the mains of water works or to tanks, or water butts of high elevations. WATERING HOSE fitted up with brass joints, branches, stopcocks, roses, and jets complete. Vulcanised India-rubber suction pipes for pumps any length or size to order; HOSE for brewers' use, fire engines, &c. VULCANISED INDIA-RUBBER WASHERS, for Steam and Water Joints, and VULCANISED RUBBER in sheets of any size and thickness. Solid vulcanised India-rubber Tubing and Cord, for the joints of glass-doors, sashes, frames, &c.—Prices and every information may be had on application at the Manufactory, Goswell Mews, Goswell Road, London.

IMPROVED WATERPROOF FLEXIBLE HOSE for WATERING GARDENS, and AGRICULTURAL USES generally, at E. SPENCER & CO.'s, General Waterproofers, 116, Fenchurch Street, opposite Mark Lane, London.

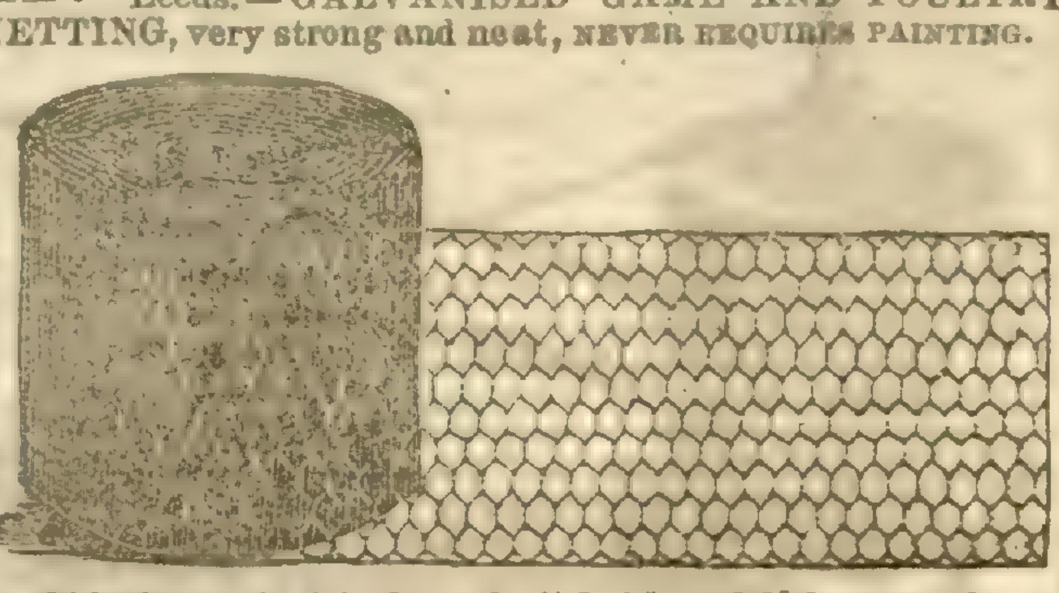
H. J. MORTON and Co., Galvanised Iron Roofing Works, 2, Basinghall Buildings, Leeds.

PATENT WIRE STRAND FENCING FOR PARKS, &c.

This Fencing is the most neat, strong, and durable for Parks and Agricultural purposes in use. It cannot be bent or put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply as above.

IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

H. J. MORTON and Co., 2, Basinghall Buildings, Leeds.—GALVANISED GAME AND POULTRY NETTING, very strong and neat, never requires painting.

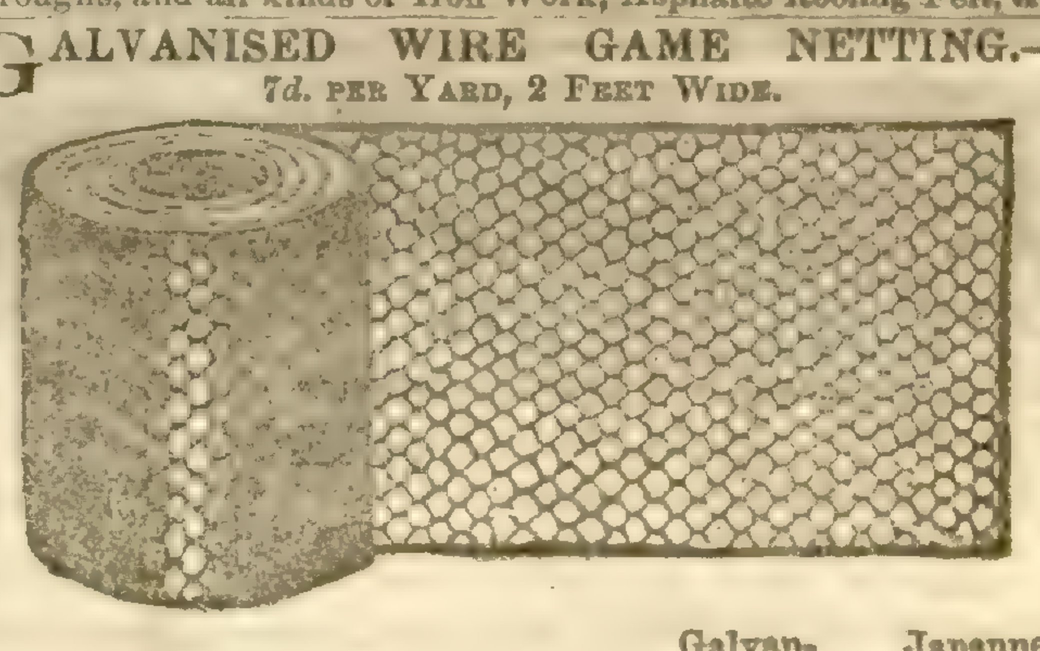


24 inches wide, 3-inch mesh, 4½*d.*, 6*d.*, and 8½*d.* per yard.
24 inches wide, 2-inch mesh, 7*d.*, 9½*d.*, and 1*s.* per yard.

GALVANISED IRON SPOUTING, for Dwellings, Cottages, Farm Buildings, &c., never requires painting.

Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalte Roofing Felt, &c.

GALVANISED WIRE GAME NETTING.—7*d.* per Yard, 2 Feet Wide.



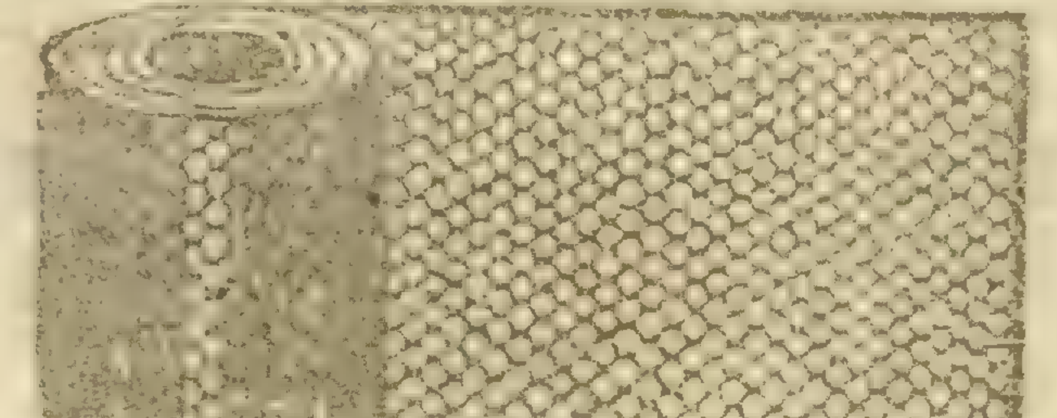
		Galvanised.	Japanned iron.
2-inch mesh, light, 24 inches wide	...	7*d.* per yd.	5*d.* per yd.
2-inch „ strong „	...	9 „	6½ „
2-inch „ extra strong „	...	12 „	9 „
1⅝-inch „ light „	...	8 „	6 „
1⅝-inch „ strong „	...	10 „	8 „
1⅝-inch „ extra strong „	...	14 „	11 „

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasantries, 3*d.* per square foot. Patterns forwarded post free.

Manufactured by Barnard & Bishop, Market Place, Norwich; and delivered free of expense in London, Peterborough, Hull, or Newcastle.

CHEAP WIRE GAME & POULTRY NETTING, 5*d.* per running yard.

GALVANISED DITTO, 7*d.* per running yard, 2 feet wide.



	Galvanised.		Not Galvanised.
24 in. wide, 2 in. mesh,	7*d.* per yard.	... ...	5*d.* per yard.
30 in. „ 2 in. „	9*d.* „	... ...	6½*d.* „
36 in. „ 2 in. „	10½*d.* „	... ...	7½*d.* „
48 in. „ 2 in. „	1*s.* 2*d.* „	... ...	10*d.* „

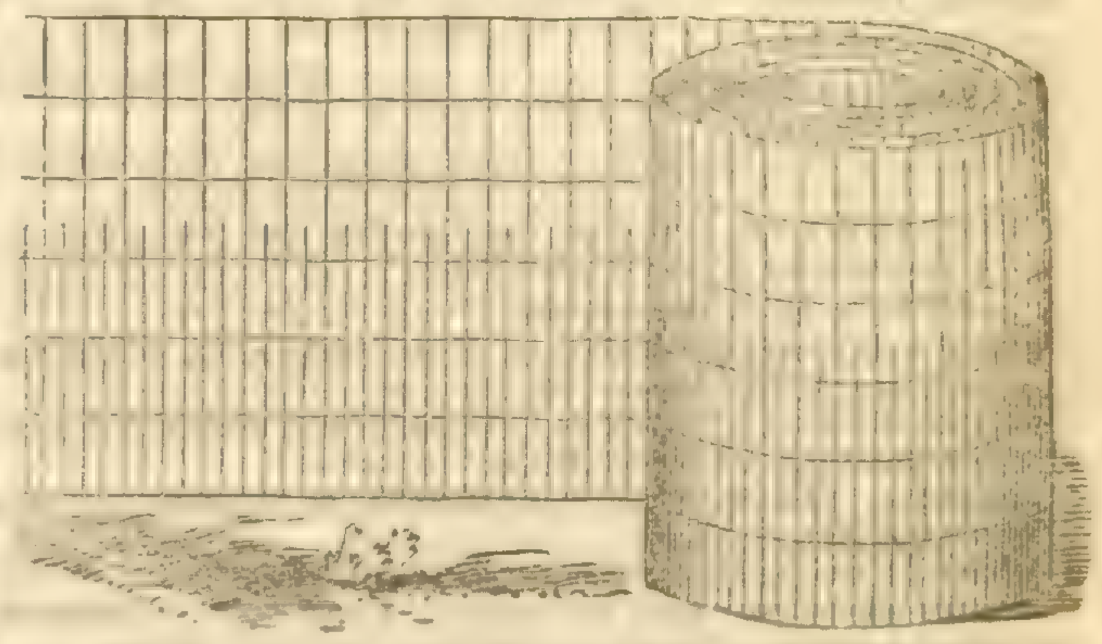
Sparrow Proof Netting, Galvanised, 3*d.* per square foot, made to any size for the same proportionate price. This article was shown at the Great Exhibition, where it was so much admired for its light and durable appearance, and acknowledged to be the cheapest and best article of the kind ever offered. Extra strong Wire Sheep Netting, 3 feet high, 1*s.* 6*d.* and 2*s.* 3*d.* per yard. Also every description of Flower Trainers, Dahlia Rods, Garden Arches, Bordering, Flower Stands, Tying Wire, Trellis Work, Invisible Wire Fencing, Hurdles, and every description of Wire Work for Horticultural purposes.—Illustrated Catalogues of Patterns forwarded, post free, on application to T. H. Fox, City of London Wire Work and Iron Fence Manufactory, 44, Skinner Street, and 6 and 8, Snow Hill, London.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

AGRICULTURAL AND POULTRY FENCING, MANUFACTURED BY PATENT MACHINERY.

The great increase in the number and quality of POULTRY in the United Kingdom within the last few years has created a demand for an efficient Poultry Fence, which has called into existence every possible contrivance and adaptation of the Wire and Cord Netting, all of which have more or less proved failures.

B. GREENING & CO. have succeeded in supplying this acknowledged deficiency, by the introduction of a variety of their Portable Wire Fencing.



No. 11. Patent Double Fencing (Proof against Poultry and Chickens).

This Fencing (which they manufacture by machinery, patented last year) is light, portable, and elegant in appearance, yet stronger and more durable than any Fence before the public. It requires few standards, and is fixed with the utmost facility by a labourer or gardener.

The following are the principal other varieties:—CATTLE FENCING, SHEEP and LAMB FENCE, HARE and RABBIT PROOF FENCING, ORNAMENTAL FENCING for GARDENS, TRAINERS for PEAS, GARDEN BORDERING, EXPORT FENCING, &c. &c., manufactured by Patent Machinery by BENJAMIN GREENING & CO.

1 and 3, CHURCH GATES, and 2, CATEATON STREET, MANCHESTER,

From whom every information, together with Prospectuses and Engraved Sheets of Patterns, may be obtained gratis.

GLASS FOR CONSERVATORIES, ETC.

HETLEY and CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES, GREENHOUSES, DWELLINGS, ETC.

Established more than One Hundred Years.

THOMAS MILLINGTON requests attention to his present prices of SHEET GLASS in 100 feet boxes.

Squares	6 by 4 and 6½ by 4½ } 7 by 5 and 7½ by 5½ } 8 by 6 and 8½ by 6½ }	... ...	13 6
„	9 by 7 and 9½ by 7½ } 10 by 8 to 12½ by 9½ }	... ...	16 3
„	12 by 10 to 24 by 14	... ...	19 0

Orchard House Squares on Mr. Rivers's approved plan, to whom I have sold some thousands of feet:—20 inches by 12, 20 by 13, 20 by 14, 20 by 15, 20½ by 12½, 20½ by 13½, 20½ by 14½, at 19*s.* per 100 feet.

200 feet cases at 42*s.*, and 300 feet case 63*s.*, in large sheets.

Boxes charged 1*s.* extra per 100 feet, and the same allowed if returned free of all charge.

HARTLEY'S PATENT ROUGH PLATE GLASS. Fern Shades, Striking Glasses, Milk-pans, Bee Glasses, Cucumber Tubes, Sheet and Rough Plate Glass Tiles, Wasp Traps; Plate, Patent Plate, Crown and Sheet Window Glass, in every thickness and quality, and Ornamental Glass, plain and coloured; pure white Shades for Ornaments, Crystal Glass for Pictures.

Warehouse, 87, Bishopsgate Street Without—same side as Eastern Counties Railway.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

JAMES PHILLIPS and Co. have the pleasure to hand their present prices of Glass for Cash:—

	SHEET SQUARES. In Boxes of 100 feet. £ s. d.		CROWN SQUARES. In Boxes of 100 feet. s. d.
Under 6 by 4	0 12 6	...	8 6
6 by 4, and 6½ by 4½	0 13 0	...	12 6
7 „ 5, — 7½ „ 5½ } 8 „ 6, — 8½ „ 6½ }	0 15 0	...	14 0
9 „ 7, —10 „ 8, 12 by 9. } 12 by 10, 14 by 10 }	1 0 0		

Larger Sizes, not exceeding 40 inches long.

16 oz. from 3*d.* to 3½*d.* per square foot, according to size.
21 oz. „ 4½*d.* to 5*d.* „ „ „
26 oz. „ 6*d.* to 7½*d.* „ „ „

SHEET GLASS OF ENGLISH MANUFACTURE FOR ORCHARD HOUSES, the same quality as we supply to Mr. Rivers, and of various dimensions, always on hand.

London Agents for the Sale of HARTLEY'S PATENT ROUGH PLATE GLASS.

Glass Tiles, ¼ of an inch thick, packed in cases, containing 50, at 1*l.* 17*s.* 6*d.* per case. Packages 2*s.* each extra, but allowed for when returned.

Glass Milk Pans, 21*s.* per dozen; Propagating and Bee Glasses Cucumber Tubes, Lactometers, Lord Camoys' Milk Syphons, Wasp Traps; Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the trade.

Horticultural Glass Warehouse, 116, Bishopsgate Street Without, London.

STEPHENSON and PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

CHOICE BEDDING PLANTS.

IN THE "GARDENERS' CHRONICLE" OF THE 6th MAY

YOUELL AND CO.

Advertised a SELECT LIST of the above for present Planting, to which they beg to refer.

Royal Nursery, Great Yarmouth.

HORTICULTURAL SOCIETY OF LONDON.

EXHIBITION AT THE GARDEN, MAY 13, 1854.

AWARD OF THE JUDGES.

THE FIRST LARGE GOLD MEDAL.

1. To Mr. Green, Gardener to Sir E. Antrobus, Bart., F.H.S., for a collection of 20 Stove and Greenhouse Plants.
2. To Mr. Williams, Gardener to C. B. Warner, Esq., F.H.S., for 20 species of Exotic Orchids.

THE SECOND LARGE GOLD MEDAL.

1. To Mr. Gilham, Gardener to J. R. Scott, Esq., of Leyton, Essex, for a collection of 20 Stove and Greenhouse Plants.
2. To Mr. Blake, Gardener to J. H. Schröder, Esq., F.H.S., for 20 species of Exotic Orchids.

THE FIRST GOLD KNIGHTIAN MEDAL.

1. To Mr. Hamp, Gardener to J. Thorne, Esq., of South Lambeth, for a collection of 15 Stove and Greenhouse Plants.
2. To Mr. Woolley, Gardener to H. B. Ker, Esq., of Cheshunt, for 20 species of Exotic Orchids.

THE SECOND GOLD KNIGHTIAN MEDAL.

1. To Mr. Rhodes, Gardener to J. Phillpot, Esq., of Stamford Hill, for a collection of 15 Stove and Greenhouse Plants.
2. To Mr. Carson, Gardener to W. F. G. Farmer, Esq., F.H.S., for 20 species of Exotic Orchids.
3. To Messrs. Lane, of Great Berkhampstead, for 12 distinct varieties of Greenhouse Azaleas.

THE FIRST GOLD BANKSIAN MEDAL.

1. To Mr. Dods, Gardener to Sir J. Cathcart, Bart., F.H.S., for 10 species of Exotic Orchids.
2. To Messrs. Rollisson, of Tooting, for 15 species of Exotic Orchids.
3. To Mr. Dods, Gardener to Sir J. Cathcart, Bart., F.H.S., for a collection of 6 Stove and Greenhouse Plants.
4. To Messrs. Rollisson, of Tooting, for 10 varieties of Cape Heaths.
5. To Mr. Green, Gardener to Sir E. Antrobus, Bart., F.H.S., for 12 distinct varieties of Greenhouse Azaleas.
6. To Mr. Dobson, of Woodlands Nursery, Isleworth, for a collection of 12 Pelargoniums in 8-inch pots.
7. To Messrs. Lane, of Great Berkhampstead, for 12 varieties of Roses in pots.
8. To Mr. Busby, Gardener to J. Crawley, Esq., F.H.S., for the same.
9. To Mr. Fleming, Gardener to the Duke of Sutherland, F.H.S., at Trentham, for a collection of Fruit.

THE SECOND GOLD BANKSIAN MEDAL.

1. To Mr. Green, Gardener to Sir E. Antrobus, Bart., F.H.S., for 10 species of Exotic Orchids.
2. To Mr. Carson, Gardener to W. F. G. Farmer, Esq., F.H.S., for a collection of 6 Stove and Greenhouse Plants.
3. To Mr. Jarvis, Gardener to J. Ruck, Esq., of Croydon, for 10 varieties of Cape Heaths.
4. To Mr. Over, Gardener to W. McMullen, Esq., of Clapham, for 12 varieties of Greenhouse Azaleas.
5. To Mr. Francis, F.H.S., of Hertford, for 12 varieties of Roses in pots.
6. To A. Rowland, Esq., F.H.S., for the same.
7. To Mr. Clements, of Oak Hill, East Barnet, for a collection of Fruit.

THE SILVER GILT MEDAL.

1. To Mr. Clarke, of Highgrounds, Hoddesden, for 10 species of Exotic Orchids.
2. To Mr. Peed, Gardener to T. Tredwell, Esq., of St. John's Lodge, Norwood, for a collection of 6 Stove and Greenhouse Plants.
3. To Mr. Taylor, Gardener to J. Coster, Esq., of Streatham, for a collection of 6 Stove and Greenhouse Plants.
4. To Mr. Peed, Gardener to T. Tredwell, Esq., of Norwood, for 10 varieties of Cape Heaths.
5. To Mr. Taylor, Gardener to J. Coster, Esq., of Streatham, for 6 varieties of Greenhouse Azaleas.
6. To Messrs. Paul, of Cheshunt, for 12 varieties of Roses in pots.
7. To Mr. Sage, Gardener to W. R. Robinson, Esq., of Acton, for the same.
8. To Messrs. Veitch, F.H.S., for a new Indian Rhododendron.
9. To Mr. Martin, Gardener to Sir H. Fleetwood, Bart., F.H.S., for a collection of Grapes.
10. To Mr. Smith, of Twickenham, for British Queen Strawberries, gathered and in pots.

THE LARGE SILVER MEDAL.

1. To Mr. Morris, Gardener to Coles Child, Esq., of Bromley, for a collection of 6 Stove and Greenhouse Plants.
2. To Mr. Over, Gardener to W. McMullen, Esq., of Clapham, for 6 Stove and Greenhouse Plants in 13-inch pots.
3. To Mr. Roser, Gardener to J. Bradbury, Esq., F.H.S., for 6 varieties of Cape Heaths.
4. To the same, for 6 varieties of Greenhouse Azaleas.
5. To Mr. Mockett, Gardener to J. Allnutt, Esq., F.H.S., for 6 fancy Pelargoniums.
6. To Mr. Green, Gardener to Sir E. Antrobus, Bart., F.H.S., for 6 varieties of Tall Cacti.
7. To Messrs. Veitch, F.H.S., for Cypripedium villosum.
8. To Mr. Breadley, Gardener to S. M. Peto, Esq., F.H.S., for a collection of Grapes.
9. To Mr. Turnbull, Gardener to the Duke of Marlborough, for a Cayenne Pine-apple weighing 4 lbs. 14 oz., and a Lemon Queen Pine-apple weighing 3 lbs. 13 oz.
10. To the same, for British Queen and Keens' Seedling Strawberries.

THE SILVER KNIGHTIAN MEDAL.

1. To Mr. Dods, Gardener to Sir J. Cathcart, Bart., F.H.S., for 6 Stove and Greenhouse Plants in 13-inch pots.
2. To Mr. Over, Gardener to W. McMullen, Esq., of Clapham, for 6 varieties of Cape Heaths.
3. To Mr. Peed, Gardener to T. Tredwell, Esq., of Norwood, for 6 varieties of Greenhouse Azaleas.
4. To Mr. Gaines, F.H.S., of Battersea, for 6 Fancy Pelargoniums.
5. To Mr. Taylor, Gardener to J. Coster, Esq., of Streatham, for 6 Helichrysums.
6. To Messrs. Veitch, for Vanda suavis.
7. To Messrs. Garaway, of Bristol, for Hedaroma tulipiferum.
8. To Mr. Jennings, Gardener to the Earl of Derby, for a collection of Grapes.
9. To Mr. Jones, Gardener to the Lady Charlotte Guest, for a Ripley Queen Pine-apple, weighing 4 lbs.
10. To Mr. Ivison, Gardener to the Duke of Northumberland, F.H.S., for Keens' Seedling Strawberries.
11. To Mr. Shuter, Gardener to the Earl of Wilton, for May Duke Cherries.

THE SILVER BANKSIAN MEDAL.

1. To Mr. Jarvis, Gardener to J. Ruck, Esq., of Croydon, for 6 Stove and Greenhouse Plants in 13-inch pots.
2. To Messrs. Pamplin, of Lea Bridge Road, for the same.
3. To the same, for 6 varieties of Cape Heaths.
4. To Mr. Dods, Gardener to Sir J. Cathcart, Bart., F.H.S., for Gompholobium polymorphum.
5. To Messrs. Veitch, F.H.S., for Hexacentris lutea.
6. To Messrs. Lee, of Hammersmith, for Azalea Indica Iveryana.
7. To Mr. Forbes, Gardener to the Duke of Bedford, F.H.S., for Black Hamburgh Grapes.
8. To Messrs. Mitchell, of Brighton, for the same.
9. To Mr. Spencer, Gardener to the Marquis of Lansdowne, for Black Hamburgh Grapes and Chasselas Musqué Grapes.
10. To Mr. Spary, of Brighton, for Black Hamburgh Grapes.
11. To Mr. Dods, Gardener to Sir J. Cathcart, Bart., F.H.S., for the same.
12. To Mr. Jennings, Gardener to the Earl of Derby, for a Black Jamaica Pine-apple weighing 3 lbs. 5 oz.
13. To Mr. Ironmonger, Gardener to S. R. Heseltine, Esq., F.H.S., for British Queen Strawberries.
14. To Mr. Busby, Gardener to J. Crawley, Esq., F.H.S., for Brown Turkey Figs.
15. To Mr. Jennings, Gardener to the Earl of Derby, for May Duke Cherries.
16. To Mr. Scrogie, of Southill Gardens, Beds., for Snow's Prolific Melon.

THE FIRST CERTIFICATE.

1. To Mr. Clarke, Gardener to Mrs. Webb, of Hoddesdon, for Ixora coccinea.
2. To Messrs. Henderson, of Wellington Road, St. John's Wood, for Eucharis candida.
3. To I. Anderson, Esq., of Edinburgh, for Rhododendron Gibsoni hirsutum.
4. To Messrs. Veitch, for Rhododendron formosum elegans.
5. To Mr. McEwen, Gardener to the Duke of Norfolk, F.H.S., for British Queen Strawberries.
6. To Mr. Dew, of Ham, for Keens' Seedling do.
7. To Messrs. Jackson, of Kingston, for May Duke Cherries.
8. To Mr. Grant, Gardener to G. H. Simms, Esq., of Bath, for Victory of Bath Melon.

THE SECOND CERTIFICATE.

1. To Messrs. Jackson, of Kingston, for Clematis monstrosa.
2. To Mr. Busby, Gardener to J. Crawley, Esq., F.H.S., for Oncidium Papilio.

HONEYSUCKLE VERBENA.—So named for its delightful perfume, which is so near the odour of the Honeysuckle that it cannot be distinguished from it. Last season it was the constant inquiry of visitors at the Nursery Grounds if Honeysuckles were growing near, or what flower so much resembled them in fragrance, and on being informed it was the above new variety of Verbena, they were much surprised, and immediately ordered plants of it. Description—viz., compact habit, fine glossy foliage (will do excellently for bedding, or as a plant for pot culture), long stems to flowers, making it very useful for bouquets—blooms most abundantly; colour rich dark crimson, shaded lilac, very distinct eye; the truss of a fine globular shape, generally measuring 9 inches in circumference, all the pips fully expanded. It will force well during the winter, being a great advantage for cutting, or for its perfume in a greenhouse or conservatory at that season of the year; it will also stand the sun and rain during summer better than any other Verbena. A few blooms added to a bouquet will give it the scent of the sweetest Honeysuckle. Fine strong plants are now ready for sending out, at 5s. each.

LOBELIA LINDLEYANA.—The subscriber having purchased the whole stock of the above new Lobelia of Mr. Keynes, Salisbury, he begs to offer it to the public. It was awarded a Certificate of Merit at the Horticultural Society and National Society of London, June 1853. Description—viz.: Habit, dwarf and compact, flowering very freely, covering the whole surface of the plant; distinct in colour from all others yet out, being a bright rosy lilac. It is an excellent bedding variety, and will be sure to please every one who grows it, especially for its distinct colour and profusion of bloom. Strong plants now ready at 3s. 6d. each.

The usual allowance to the Trade when three plants of either are ordered. On receipt of a post-office order or penny postage, stamps to the amount, the plant or plants will be sent postage and package free.—EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church Yard, Bath, Somerset.—May 20.

TURNIP SEEDS! TURNIP SEEDS!

CARRIAGE FREE.

B. PAGE AND CO.'S Genuine Stock, saved from the finest transplanted Bulbs, will, as heretofore, gain the greatest number of Prizes at Root Exhibitions.

	Per lb—s.	d.
Skirving's Improved Swede	1	0
Purple-top	1	0
Green-top	1	2
Ashcroft Hybrid... ...	1	2
Laing's ditto	1	2
Aberdeen or Scotch Yellow	0	10
Dale's Hybrid	1	2
White Norfolk	1	0
,, Globe	1	0
Tankard, in sorts 1s. to	1	3
Green Round	1	0
Red Round	1	0
Early Stone	1	0

	Per lb.—s.	d.
White Belgian Carrot ...	1	8
Mangold Wurzel, Long Red	0	10
Ditto, Yellow Globe ...	1	0
Buckwheat (English growth), per bushel ..	6	6
Mustard, ditto ...	16	0
Dwarf Essex Rape, p.cwt.	28	0
Rye-grass, Italian, per bushel ... 4s. 6d. to	5	6
Ditto, Perennial, per bushel ... 4s. 6d. to	5	6
Fine mixed for lawns and permanent pasture ... 10s. to	15	0

Offices, Oxford Street (ten yards from the Railway Terminus), and Above Bar, Southampton.

BEDDING PLANTS.

J. WOOD AND SONS, NURSERYMEN, &c., Old Kent Road, and Bowyer Place, Camberwell, beg to inform their friends that they have a large quantity of bedding plants established in pots, at 3s. per dozen, comprising Pelargoniums, Scarlet Geraniums, Verbenas, Petunias, Ageratums, Salvias, Cupheas, double Senecios, Heliotropiums, Fuchsias, Lobelias, Calceolarias, Mimulus, Anagallis, &c. &c. Dahlias, good flowering sorts, 4s. to 6s. per dozen. Strong Rollisson's Unique Geraniums, 9s. per doz.; strong Commander-in-Chief Geraniums, 6s. per doz. Post-office orders made payable at Old Kent Road, London.

GERANIUMS.

SEVERAL THOUSANDS OF THE BEST IN CULTIVATION, VERY FINE AND STRONG.

BASS AND BROWN *beg to refer purchasers who wish to make their own Selection to their advertisements in the* Gardeners' Chronicle, *of March 27th, page* 179; *and April 8th, page* 210, *of these and many other new Plants:—*

		s.	d.
18	Best new of last season	66	0
12	,, ,, ...	44	0
30	Very choice, of previous date	45	0
12	,, ,, ...	18	0
	Fine vars., 6s. to 12s. per dozen.		
6	Best Fancy vars. of last season	18	0
12	Very choice of previous date	18	0
	Fine vars., 9s. to 12s. per dozen.		
	GLOXINIAS.		
9	Superb new vars.	33	0
12	Very choice ,, ...	20	0
12	Other fine ,, ...	12	0
	ACHIMENES.		
4	Superb new vars., see previous advertisements	11	0
12	Beautiful and choice vars.	10	0
	GREENHOUSE PLANTS.		
50	Fine and select species and vars.	45	0
25	,, ,, ...	24	0
12	,, ,, ...	12	0
12	Extra choice and select	25	0
	STOVE PLANTS.		
25	Fine and select species and vars.	35	0

HERBACEOUS PLANTS.—In pots. Heights and colours, see Autumn Catalogue.

					£	s.	d.
100	Distinct and showy vars.,	30s.	0d.,	or 50 for	£0	17	6
25	,, ,,	10	6	or 12 for	0	6	0
100	Superior and new vars.,	50	0	or 50 for	1	10	0
25	,, ,,	17	6	or 12 for	0	9	0
25	Vars., best for Rockwork	12	0	or 12 for	0	7	6

	£	s.	d.
DWARF ROCK CISTUS, 24 Beautiful vars.,	0	15	0
,, 12 ,,	0	7	6

☞ An extensive assortment of Bedding Plants.

Goods Carriage free (not under 20s.) to all the London Termini and all Stations on the London and Norwich Colchester Line; and Plants added gratis with orders of 40s. and upwards.

Post-office Orders payable to BASS & BROWN, or to STEPHEN BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

NEW ROSES IN POTS, at reduced prices.

HYBRID PERPETUAL.	s.	d.
Archimede	5	0
Colonel Lorry	5	0
Docteur Reynaud ...	2	6
Duchesse d'Orleans ...	5	0
James Veitch	5	0
Lady Shelley (Mitchell's)	5	0
Lady Stuart	5	0
Le General Jacqueminot	10	6
Leon Plee...	3	6
Mdlle. Aline Gilbon ...	10	6
Madame Harriet Stowe...	10	6
Madame Philip	5	0
Rubens	3	6
Salvator Rosa	3	6

HYBRID PERPETUAL.	s.	d.
Sephora	7	6
Souvenir de Mdme. Lille	5	0
Triomphe de Paris ...	5	0
BOURBON.		
Beauté Lyonnaise ...	3	6
Madame Helfinbein ...	5	0
Souvenir de l'Arquebuse	5	0
TEA.		
Gloire de Dijon	10	6
MOSS.		
Princess Alice (Paul's)...	5	0
HYBRID BOURBON.		
President Pierce... ...	7	6

The following Choice Hybrid Perpetual Roses, at 30s. per doz.: Dr. Assas, Destigny, Diodore, Egerie, Genié de Châteaubriand, Inermis, La Seduisante, L'Enfant du Mont Carmel, Léon le Guay, Louise Odier, Laura Raymond, Louise Peronny, Ludovic Letaud, Madame Andry, Madame Flory, Madame Ducher, Madame Hilaire, Madame Rivers, Rose de Soil, Souvenir de la Reine des Belges.

BENJAMIN R. CANT, in offering the above, does so with the greatest confidence, as he has received several letters from customers stating that the plants sent are far better than those generally supplied by the Trade.

ST. JOHN'S STREET NURSERY, COLCHESTER.

Carriage paid to London and Norwich and all intermediate stations on the Line. Unknown Correspondents are requested to send a remittance or reference.

ARTHUR HENDERSON AND CO. take the earliest opportunity of informing their friends and the public, that their CATALOGUES No. 3 and No. 6 are now ready, and can be had, post free, upon application.

No. 3 contains descriptive lists of Geraniums, Verbenas, Fuchsias, Calceolarias, Cinerarias, Chrysanthemums, &c., amongst which will be found all the best novelties of the season, also the choicest selections from former years.

No. 6 contains descriptive lists of all the newest and best Stove, Greenhouse, and Hardy plants, amongst which will be found many new and desirable plants.

The following new plants are now on sale:

SEEDLING GLOXINIAS.

ELEANOR.—Ground colour pure white, blotched with rose, and shaded with purple.

ELEGANTISSIMA.—Ground colour French white, of great substance, centre pale lavender, spotted with buff.

EUGENIE.—Ground colour rosy pink, centre creamy white, spotted with rose.

EXQUISITE—Ground colour pure white, with broad belt of puce, throat creamy white, spotted with puce.

MAGNET.—Ground colour clear rose, with blotch of purple in the throat, flowers large, of fine form.

PRINCE OF WALES.—Ground colour white, shading off to lavender.

SIR C. NAPIER.—Ground colour deep rosy crimson, throat blotched with intense rose, dwarf habit.

The above seven Gloxinias will all be found to be fine varieties, with large well-formed flowers standing well up above the foliage. *7s. 6d.* each, or 42s. the set.

CINERARIA EVA.—Ground colour pure white, with narrow margin of purple, dark disc, fine form and substance; received a Certificate at the National Floricultural Society. 10s. 6d.

GERANIUMS.

DIADEMATUM REGINA.—Ground colour deep shining rose, upper petals veined with dark purple and white, with blotch of bright orange crimson; very dwarf habit, and abundant bloomer; a fine variety for bedding. 7s. 6d.

DIADEMATUM SIDONIUM MULTIFLORUM.—Lower petals rosy purple, shaded with crimson; upper petals orange crimson, veined with dark maroon; trusses large, habit dwarf and compact, abundant bloomer; a fine variety for bedding. 10s. 6d.

PRINCESS.—Ground colour blush white, veined and shaded with carmine, dark horse-shoe foliage, large globular-shaped trusses, and most abundant bloomer. 7s. 6d.

CETERACH MARANTA (syn. Nothoclena maranta).—A new hardy Fern from the Alps of Switzerland; fronds bipinnate, about 8 inches in length, densely coated with golden brown scales on the under side. 15s.

Pine-apple Place, London, May 20.

CAPE HEATHS AND NEW AZALEAS.

W. J. EPPS begs to call attention to his extensive and rare Collections of Heaths and Azaleas, which are in the finest condition possible; very bushy and well formed for specimens in 3, 4, and 6-inch pots, consisting of all the best varieties, such as Aristata ampullacea, tricolor, jasminiflora, ventricosa, Massoni, Webbiana, obbata, &c., &c. AZALEAS—Prince Albert, Gledstanesi, Excelsa, Murrayana, Alba magna, Duke of Devonshire, Holderi, Toilette de Flora, Glory of Sunning Hill, Symmetry, Splendens, Ignescens, &c., &c., 9*s*., 12*s*., 18*s*., and 21*s*. per dozen; 5*l*. per 100 varieties, carriage paid to London. All the new Stove and Greenhouse Plants, Fuchsias, Verbenas, and Roses, equally moderate. Catalogues of the above sent on application.—Nurseries, Maidstone and Ashford.

STANDISH AND NOBLE, NURSERYMEN, SEEDSMEN, &c., Bagshot, Surrey, are now prepared to receive orders for the following new and beautiful varieties of AZALEAS, which will be ready for delivery in June next. The Advertisers can recommend them with the greatest confidence, as superior to any others of their kind.

AZALEA BEALII.—This very distinct variety was introduced by them from China. The flowers, which are of first-rate shape, are quite unique, being striped, like a Carnation, with rich vermilion on a pure white ground. It is of good habit, fine in foliage, and a most abundant bloomer; and although decidedly in the first rank as a greenhouse plant, it is quite hardy enough for the open border. Each, 21*s*.

AZALEA CRISPIFLORA, a species differing much from any other known Azalea, having a character entirely its own. No other kind approaches it in compactness of habit, and its foliage is very fine, abundant, and evergreen. The flowers are very large, and the edges of the petals have the appearance of being irregularly *gaufred*, like a lady's frill; the colour is a rich rose lake. From the fact of its blooming very late—much later than any other Azalea—it will be doubly valuable for many purposes. Each 21*s*.

PAGE AND CO.'S

BLIGHT COMPOSITION should be in the hands of all Plant and Fruit Cultivators. 4*s*. per gallon, sufficient to make four. For testimonials see back leaf *Gardeners' Chronicle*, March 11, 1854.

GARDEN AND AGRICULTURAL SEEDS, first quality, and lowest market price.

Oxford Street (adjoining Radley's Hotel, 20 yards from the Railway and Docks), Southampton.

GRASS SEEDS, ETC.

THOMAS GIBBS AND CO. (the SEEDSMEN to the Royal Agricultural Society of England), corner of HALF-MOON STREET, Piccadilly, beg to draw attention to their Grass Seeds for Laying down Land to Permanent Grass. The Seeds which they employ in forming the Mixtures for various soils are well cleaned under their own superintendence.

Mixtures for Permanent Meadows and Pastures
" Parks or Pasturage in sight of Mansions
" Irrigation on Water Meadows
" Renovating Old Swards
" Fine Garden Lawns, Cricket Grounds, &c.
" two or three years' lay.
RYE-GRASS—Italian, very fine sample
" Dickinson's Italian do.
" Pacey's Perennial and Evergreen
" Annual or Common.
CLOVERS—Red, White, and Alsike
" Trefoil, Red Suckling, &c.
CARROTS—Large White Belgian
" Field, Altringham, &c.
MANGOLD WURZEL—Long Red
" Orange or Yellow Globe, and other sorts.
TURNIPS—Swedes, Purple Top, Skirving's, &c.
" Hybrids, Gibbs' Green Top
" Globes, Tankards, &c.
FARM SEEDS of all descriptions.

Priced Lists, Detail Catalogues, and other information can be obtained on application to THOMAS GIBBS & CO.

SEEDLING VERBENAS.

W. J. EPPS has great confidence in recommending the following Seedlings, raised by Mr. Philpot, of Aldington, being without exception the most distinct and splendid flowers in their class yet offered to the public. The following are the opinion and description given by Mr. Neville, editor of the *Gardeners' Record*; they were exhibited at Ashford open Show, in September last, and received first-class certificates.

No. 1. SULTAN.—Dark velvety maroon; large white eye; petals stout; pip, full size; truss, medium; a beautiful variety.

No. 2. BLUE BELL.—Dark velvety blue, with white eye; truss very large and well formed.

No. 4. INDIAN CHIEF.—Crimson puce, very rich in colour; yellow eye; very attractive.

No. 5. DELICATISSIMA.—Pale lavender, with large primrose eye; very beautiful and novel; petals, stout; pips, well formed; truss, medium.

No. 8. RUFUS.—Plum colour purple; velvety texture; dark disc; with a clear white margin; immense flower and trusser.

No. 20. DISTINCTUS.—Cherry lavender grey disc; distinctly margined with dark crimson purple; fine bold truss and large flowers.

The whole of the above are exceedingly free flowering, and excellent habits — well suited for bedding or other purposes: 12*s*. 6*d*. the collection.

SEEDLING PHLOXES.

These are, without exception, the most lovely things in their way possible; they have been much admired by all who have seen them, and have merited the high opinion of the editors of the leading floricultural works. The following is the description from the *Gardeners' and Farmers' Journal*, Sept. 21st, 1853:—

"SEEDLING PHLOXES.—The collection of Seedling Phloxes received is remarkable for novelty and superiority of form.

No. 1. MARIA.—Rose peach, with white eye.
No. 3. ASTROSANGUINEA.—Fine crimson.
No. 4. DISTINCTUS.—Light purple, white eye.
No. 5. CARMINATA.—Deep rose, white eye.
No. 7. SPLENDENS.—Large lilac, white eye.
No. 8. CONSPICUA.—Very deep rose, white eye."

10*s*. 6*d*. the collection.—Nurseries, Maidstone.

The Gardeners' Chronicle.

SATURDAY, MAY 20, 1854.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY,	May 23	—Horticultural	3 P.M.
WEDNESDAY,	— 24	Linnean (Anniversary)	1 P.M.
		Royal Botanic Gardens	2 P.M.

COUNTRY SHOWS FOR THE MONTH OF MAY.—23d: Handsworth and Lozells.—24th: Nottingham and Colchester.—25th: Derby.—26th: Bury St. Edmunds.—29th: Hunslet.—30th: Truro.

NOTHING could be more brilliant than the EXHIBITION of FLOWERS and FRUIT at CHISWICK last Saturday. It was a beautiful day, and four or five thousand visitors would have been present had not the presence of the Queen at Woolwich carried off all except 1764. To those who did attend, the exhibitors offered a eal treat. Such Roses and such Azaleas have rarely been seen; and when it is stated that those two classes nearly filled the largest tent on the ground, it will be understood that that part of the exhibition must have been a terrestrial paradise. The Orchids were abundant and excellent, notwithstanding the absence of Mrs. LAWRENCE and Mr. RUCKER; and the greenhouse plants, especially those from Lady ANTROBUS, were models of cultivation. Let us hope that huge unwieldy plants will be seen no more; for they cost so much for carriage, and are in all respects so inferior to beautiful specimens like those of Mr. GREEN, that exhibitors will surely now discover that it is entirely contrary to their interest to persevere in their production.

The new arrangements for rewarding fruit have evidently found favour among gardeners; for no May show in our remembrance has produced so great an abundance of such remarkable excellence.

Novelties among plants were few. The most striking was a new salmon-coloured *Indian Rhododendron*, in the way of javanicum, produced by Messrs. VEITCH, and a very fine thing. The next was the woolly-stemmed *Cypripedium villosum*, from Borneo, from the same great importers; and third in merit was a species of *Hedaroma*, called by the ambitious title of *Genetyllis tulipifera*, of which a detailed account appears in another column.

We may add that the general effect of the exhibition was greatly improved by the absence of some unimportant classes of plants, to which, in previous years, undue prominence was given. This change, brought about by an attempt on the part of a little clique of exhibitors to climb into consequence upon the shoulders of the good old race of sterling gardeners, enabled the Society to reward more amply those plants which most deserve encouragement, and in which English gentlemen more especially take interest. It was a pitiable sight to behold some of the authors of this abortive intrigue wandering round the brilliant tables, like DANTE's souls in Purgatory,

> ——poor and wretched ones!
> That, feeble in the mind's eye, lean their trust
> Upon unstaid perverseness.——Their blind life
> So meanly passing, that all other lots
> They envy.

It is to be hoped they will find contentment in another place.

OUR reason for bringing once more into prominent notice, a few weeks since, the contrivance called a WARD'S CASE was not so much to point out its real but only value, as to found upon it some considerations having a general bearing upon cultivation under glass. Of course we mean by "cultivation" the preservation of plants in the most perfect health, and in the most entire possession of all their functions.

Old gardeners committed the grievous fault, among many others, of neglecting the atmosphere of their houses. Their notion was that a greenhouse was to keep plants warm, and a hothouse to keep them hot. These conditions secured, their duty seemed to be accomplished. Light itself did not enter much into their estimation; and that was fortunate. It is doubtful whether they knew that air held moisture suspended in the form of invisible vapour; at all events they proceeded as if it were beneath a thought.

At last Professor DANIELL and others drew attention to the great fact, not merely that the atmosphere is everywhere more or less charged with moisture, but that differences in the amount which is present constitute some of the most important distinctions between climates and seasons; and moreover that tropical vegetation, more especially, demands at certain times an atmosphere in almost a state of saturation. Then arose, among the intelligent class of cultivators, the question how the air was to be maintained artificially in such a condition. Recourse was had to syringing, to shutting up houses, and deluging their soft tiled floors with water, or to loading the flues with evaporating pans; and in this way, a wonderful change was speedily wrought in the aspect of exotic vegetation under glass.

Results so satisfactory appeared to sanction the idea that the great conditions to attend to in hothouse cultivation were heat and moisture. And it was believed by many growers, of repute in their day, that the WARD's case would render those conditions more easy to fulfil than any plan previously discovered. Accordingly, houses were constructed in imitation of WARD's cases; care was taken to make them what men called air-tight; sashes were fixed, and doors were opened with as much caution and infrequency as if they led to a treasure vault. It was, however, found, before long, that we had sailed from Scylla to Charybdis. Plants were no longer roasted, indeed, but they were par-boiled; desiccation ceased to be a great horticultural blunder, but its place was taken by humefaction; plants did not shrivel and shrink up from want of water, but they swelled and rotted from excess; dropsy succeeded thirst; and the ancients laughed in their sleeves at the innovators.

But here, as in all things else, a middle course was found better than extremes. If the WARD's house turned out a failure, it only became so by applying a sound principle unskilfully. It was no mistake to say that heat and moisture were alike necessary to plants; that remained incontestable; but it was a grand mistake to suppose that heat and moisture, however skilfully proportioned, were sufficient. We might have known that by a more exact investigation of natural phenomena. Nature no more causes plants to grow in half air-tight rooms than amidst rays of coloured light. In the natural world vegetation subsists in its greatest activity in the presence of white light; red light, and yellow light, and blue light are unknown; and if green light occurs, it is only in the recesses of deep forests, where little is to be found except fungi, or Mosses and Ferns. So it is with unventilated places; they are the exception to the natural law, which declares that living things shall have access to air. The lowest orders of animals and the lowest of plants thrive indeed in such localities, for all places seem to have their allotted inhabitants; but the great world of vegetation knows of no healthy existence except where the air moves freely around it. In suffocated places we find lean and sickly races, too weak to stand alone, and struggling to reach a better atmosphere; these places are the WARD's cases of the wilderness; natural accidents from which all things endeavour to escape. But it is in the open plain, or the exposed hill side, that vegetation most robust and rude in health is produced by nature.

Hence the true principle of plant management is in diametrical opposition to that observed in the construction of a WARD's case. The last depends on the exclusion of air; or at least the maintenance of air in a state of perfect quietude. The first rests upon the freest possible admission of air, and upon the continual presence of all those rapid currents which exist everywhere in the open fields. It must be admitted, indeed, that this natural condition is not always observed; at present we want the art of maintaining the air of plant houses in a state of perpetual ingress, egress, and interior motion. But it is certain that the health of plants improves in proportion as the condition in question is fulfilled, and *vice versâ*. The fault of bad gardeners is their not attending to it; the defect of good gardeners is that even they neglect it more than is necessary in the present imperfect state of the mechanical contrivances with which they work. But the day will come when there will be no difference as to motion between the interior and exterior atmosphere of plant houses; and then men will look back with wonder at the delusion which led them to act upon the principle of a WARD's case.

IN the scramble after novelties there is a risk that one of the most valuable of the exotic Coniferous trees grown in Europe may be forgotten. It would be interesting to know what proportion the sale of the GINGKO TREE, or SALISBURIA ADIANTIFOLIA, bears to that of such plants as Taxodium sempervirens. We suspect that the demand for it is almost nothing, judging from the very few places in which it is ever seen. And yet it is a noble tree, of singular as well as beautiful aspect, as hardy as a Poplar, and, when old, of gigantic stature. Its only fault is being deciduous. Here and there large trees may be met with, looking in mid-winter like vigorous Pear trees. But to growers in general the plant is scarcely known.

An interesting account of the tree as it now exists near Montpellier, for which we are indebted to M. CHARLES MARTINS, has drawn attention once more to the peculiarities of Salisburia, and we hasten to avail ourselves of some of his facts.

In Japan, of which it is a native, as well as of some of the coldest parts of China, it is looked upon as a kind of Walnut, and acquires very considerable dimensions. A specimen, growing by a Pagoda in the neighbourhood of Pekin, is recorded by the Russian traveller BUNGE to measure 13 yards in circumference, and to have a prodigious stature. In the Botanic Garden of Pisa is one about 25 yards high, and a yard in diameter at its base; and near Montpellier grows another, of which the following is the history, abridged from M. MARTINS' report.

In the year 1788 BROUSSONET, who was then in London, sent to Prof. GOUAN, of Montpellier, a plant of this species, for which he was indebted to Sir JOSEPH BANKS. In 1812, 24 years after being planted, the tree flowered. At that time it was 9½ yards high. In June, 1835, it was rather more than 17½ yards high. On the 7th December, 1853, its stature was determined by careful measurement to be 19¾ yards, or a trifle more. From this it appears that it lengthened on an average not quite

a foot annually; but it in reality grew nearly three times as fast in the first 47 years as in the last 18.

The spread of the branches was rather more than 7¾ yards in 1812, 11¾ in 1835, and 14½ in 1853.

The diameter just above the roots increased at the following rate:—

In 1788 it was	3 millimetres		(1 year old).
In 1812	239	"	(29 years old).
In 1835	605	"	(47 years old).
In 1853	887	"	(65 years old).

In another case, in the Garden of Plants at Montpellier, a Salisburia gained in 58 years a diameter of 672 millimetres.

The annual growth of the first in diameter is thus seen to have been about 13.64 millimetres; that of the second to have been about 11.6.

In comparing this rate of growth with what has been observed in other Conifers, M. Martins records some very interesting facts. In the Botanic Garden of Montpellier, within a hundred yards of the last named Salisburia, grew a noble Spruce, which had been planted in 1688. Circumstances led to the removal of the tree when 160 years old. A round of the butt having been preserved, showed that its diameter had increased thus:—

When 24 years old its diameter was	152 millim.
" 47 " " "	272 "
" 58 " " "	316 "
" 65 " " "	350 "

It therefore had not grown half so fast as the first Salisburia mentioned above.

The Scotch Pine (Pinus sylvestris) affords similar means of comparison. We here translate M. Martins literally:—"In every latitude comprehended between 49° and 70° N., that is to say, from Haguenau on the lower Rhine, as far as Kaafiord in Lapland, the annual layers of the Scotch Fir diminish in thickness from the centre to the circumference. This decrease is rapid, in proportion as the trees are more and more northern. As a term of comparison, I give below, in millimetres, the mean thickness of the layers, up to 100 years, of a large number of Pines observed at Kaafiord, in Finmark (lat. 70°); at Pello, in Lapland (lat. 67°); Geffle, in Sweden (lat. 61°); Halle, in Germany (lat. 51°); and Haguenau, in France (lat. 49°).

At Kaafiord the mean annual thickness of the layers of wood is ...	0·0009 m.
Pello	0·0011
Geffle	0·0018
Halle	0·0019
Haguenau	0·0032

The mean thickness of the two Salisburias above referred to being 0·0065 m., it is clear that they grow much more rapidly than the Scotch Fir, even in Haguenau, in the climate of Alsace. It would be a great mistake to suppose that there is no parallel between the growth of the Scotch Fir in the north of Europe and that of Salisburia at Montpellier. In reality, it is in the middle of Sweden that the Scotch Fir attains its greatest magnitude. Near Geffle and Upsal, the tree becomes colossal, because it finds itself in a climate that suits it. The summer is, however, too short to enable the annual layers of wood to gain great thickness, and in winter, vegetation is totally suspended."

Thus, facts seem to show that Salisburia deserves to be much more generally cultivated than it is. According to M. Martins, and others, the wood is dense and strong—not unlike that of the Orange tree, and by no means resinous; and when the female trees have a male branch grafted upon them, which is easily done, they produce their fleshy fruit in abundance, which, if not of value for useful purposes, have, at least, the merit of being ornamental.

The following members of the House of Commons have been appointed a select committee to enquire into the propriety of selling some of the Royal Forests, and into other matters connected therewith:—

Henry Drummond, Esq., member for West Surrey.
Lord Edward Howard, member for Arundel.
Colonel Clifford, member for Hereford.
Right Hon. R. Vernon Smith, member for Northampton.
Henry C. Compton, Esq., member for South Hants.
Lord Harry Vane, member for South Durham.
W. R. S. V. Fitzgerald, Esq., member for Horsham.
The Earl of Shelburne, member for Calne.
Melville Portal, Esq., member for North Hants.
John Evelyn Denison, Esq., member for Malton.
Chichester S. Fortescue, Esq., member for Louth, and a Lord of the Treasury.
Lord Hotham, member for East Yorkshire.
The Hon. H. Brand member for Lewes.
Sir William Heathcote, Bart., member for Oxford.
John Tollemache, Esq., member for South Cheshire.

Pending the sittings of the committee it is our intention to abstain from editorial remarks upon the disputes connected with these possessions of the Crown. But we must take this opportunity of directing the attention of the Committee to a letter in another column from Mr. Brown, who, as we anticipated, refuses to acknowledge the truth of the report made by the referees of the Treasury, and offers to prove on the ground the substantial exactness of his own statements. We are persuaded that the House of Commons will never permit an honest man to become the victim of what the *Press* does not hesitate to call "a base intrigue," because he chances to be unbefriended.

VEGETABLE PATHOLOGY.—No. XX.

86. Except in a very early stage of growth, and at the very tip of the young stem or branchlet, the tissue of the bark is perfectly distinct from that of the wood; before, however, this distinction takes place, and while the vegetative apex consists of one uniform or nearly uniform parenchymatous tissue, little swellings, more or less symmetrically arranged, are given off from the sides, either on one side only, or, in the case of sheathing leaves, all round the nascent stem, which by their expansion and the addition of new swellings at the sides, in various orders of development, produce the organs known by the name of leaves, whether really such, or assuming their form and functions.

87. These swellings at first consist of the same nearly uniform tissue as the vegetative apex, and are formed previous to the existence of any vascular tissue; nodules, however, spring from the main vascular fascicle, or are in contact with it, as seen in the figure under No. 76, which ultimately extend into the young leaves, and by their ramification produce nerves. Many fascicles frequently enter into the same leaf, being often symmetrically arranged, as is very visible on a careful examination of the scars left by fallen leaves, or cross sections of their petioles.

88. The parenchymatous tissue of the leaf is therefore a direct continuation of the young green bark, while the vascular tissue is in connection with that of the young wood or medullary sheath, and is accompanied by elongated tissue derived from it, though frequently more or less modified. As new leaves are only formed on the youngest parts of plants, their vascular fascicles must be evidently in more or less intimate connection with the pith, which sometimes penetrates the petiole, and be most favourably placed for the absorption of the ascending sap. The normal buds, too, must clearly be in direct communication with the pith. Where, therefore, the buds are formed on the surface of the medullary sheath, though remaining latent for a longer or shorter series of years, the fascicles which supply the leaf may be traced down through several annual rings of growth quite down to the pith; but in the case of adventitious buds this connection cannot always be traced.

89. Leaves have constantly one or more buds in their axils, which may or may not be developed; though, however, they may remain latent for years, especial circumstances may call them into action. Buds so produced must not be regarded as truly adventitious, but as deferred developments of already existent organisms.

90. Leaves, then, consist of parenchym, frequently presenting enormous intercellular cavities, and composed of cells very variously arranged, and of very different characters, threaded and traversed by fascicles, often branched and anastomising, of vascular and elongated cellular tissue. The cells on the upper side are generally arranged vertically, while those of the lower side affect a more horizontal position, with, however, very various conformation, the whole being covered with a very thin but highly resistent membrane, which is known by the name of cuticle. Beneath this there is generally a stratum, or occasionally more than one layer, of vertical cells. Both are perforated by little apertures, but more especially the lower surface, which are known by the name of stomates. In some cases, as in Alstrœmeria, where the true upper surface has the ordinary structure of the lower side, the anomaly is remedied by a twist of the petiole, by which the upper becomes the lower surface. The respiratory and evaporative powers are in direct relation with the number of stomates; plants, therefore, which inhabit arid exposed spots, and which are obliged in consequence to economise their provisions, have but few stomates, with a thick impervious cuticle; while those which live in the shade, and in the midst of abundant moisture, have a thin delicate cuticle and abundant stomates. Modifications, of course, occur, but the normal condition is much as stated above. It will be found also that the stomates are comparatively small in succulent plants. In many instances where true leaves do not exist, or if so are reduced to very minute dimensions, their functions are performed by the stem, which is furnished with stomates. *M. J. B.*

LEPTOSPERMUM GRANDIFLORUM.

This plant is easily managed, and is a very free bloomer, producing its prettily-shaped white blossoms for many weeks in succession. Persons intending to commence its culture should procure a good healthy young plant, having strong, close-jointed shoots. It will cost but a trifle, and to propagate it from cuttings would require more time and attention than the saving is worth. It is, however, easily propagated by means of cuttings treated in the same way as those of greenhouse plants generally, and, with proper attention, nice little plants will be obtained in the course of two seasons. If plants, however, are obtained from the nursery at once, they should be placed in a cold frame, which will be the most suitable situation for them during the summer, as their wants will be much more easily supplied here than in a greenhouse. If on examination the pots are found to be moderately well filled with healthy roots, shift at once into others, one or two sizes larger, being guided in this by the vigour of the plants. The ball should be in a moist state at the time of shifting, as also the soil to be used. As newly potted plants are more liable to suffer from the careless application of water than at any other stage of their growth, this must be carefully administered till the roots strike into the fresh soil. The safest way of avoiding either excess is to sprinkle the plants over-head morning and evening, keeping the atmosphere rather close, and shading on the forenoons of bright days. If all goes on well the roots will have got hold of the fresh soil in the course of about a fortnight after potting, but this will be readily known by the increased vigour and active growth, and where this is the case, air must be freely admitted, to prevent weakly growth, keeping the atmosphere as moist as can be done. A slight shade on the forenoons of bright hot days will be very beneficial, but this should not be over done.

As the plants advance in growth, attend to regulating the shoots, stopping and training them as may be necessary to secure close compact specimens of the desired form. Where the plants have become well established after potting, they will be greatly benefited by exposure to the night dews on mild warm nights, but they should be protected from drying winds or heavy rains, and the lights should be replaced every morning, and the plants syringed over-head, in order to secure a moist atmosphere. Inure the young plants to full exposure to air and sunshine from about the middle of September, so as to get the wood well ripened before the occurrence of damp foggy weather, and remove them to a light airy part of the greenhouse in time to avoid their being injured by damp or frost. Water carefully during winter, but give enough to keep the soil in a properly moist state, and keep the foliage free from dust, &c. The plants may be encouraged to make growth early in spring, by placing them near the glass, in a house where the temperature may be kept at about 45° by fire-heat, allowing it to rise some 10° with sunshine and air. Attend to shifting as may be necessary, to afford the roots plenty of space, and otherwise attend to the plants as directed for last season, taking care not to subject them to too much artificial heat, and to secure close strong growth; and if all goes on well they will be nice-sized specimens by the end of the growing season. The flowering season is May, and while in bloom they should be screened from bright sunshine, in order to prolong the duration of the flowers. After blooming examine the plants and shift into larger pots if necessary, and also stop and tie out the shoots in order to admit light and air amongst the branches and induce a close bushy habit. Let the plants remain in the greenhouse and treat them rather kindly until they get into free growth, when they may be removed to a sheltered situation out of doors, but care must be observed not to expose them rashly to the sun and wind, which would check their growth and cause irreparable damage.

Good rich turfy peat, nicely broken up into small pieces and liberally intermixed with sharp silver sand, forms the best soil for the growth of this plant. Care should be used in potting to secure perfect drainage, as the roots are very impatient of stagnant moisture. *Alpha.*

ENTOMOLOGY.

The Mite Destructive to Young Cotton Plants.

As any circumstance connected with the welfare of the Cotton plant, especially in its early state, is of importance at the present time, when attempts are being made, on an extensive scale, to grow it in our own colonies, so to render us independent, to a certain extent, of our transatlantic cousins, we are induced to publish a communication which we have received from the Rev. Henry Hare, of Cartesknowle, Totnes, respecting the destruction of a crop of young Cotton plants by great numbers of minute insects, which we have ascertained to belong to a species of Acaridæ. Our correspondent says:—"I beg to enclose you a few seeds of the Cotton plant which I received two years since from New Orleans, being very desirous of raising the plant in my hothouse. I have found the seeds vegetate very rapidly, but no sooner are they above-ground than they are infested with insects which very speedily destroy them; it appears quite evident that these insects, or the ova from which they spring, were deposited in the seeds from their first formation in the pod of the Cotton plant. I have lately sowed some seeds in a hot-bed; some vegetated, some decayed—the latter I send you, on opening them you will find an infinite mass of living insects, which heat has brought to life, visible even by the naked eye, but a glass will show them most distinctly. The species of insect appears different from any I have ever seen, and it has occurred to me that your experience in such matters may enable you to form an opinion as to the character of these insects, and the

cause or origin of their existence in seeds the shell of which is too hard to allow of their entering it after being sowed in the earth. I send you a few seeds which have not been sowed, and on cutting them you will find the germ of the seedling leaf (which on first opening is exactly like the Beech) with some slight dark-coloured spots, which perhaps are the ova of these insects, which lie dormant until brought to life by the decay of the seed in heat; in those decayed pods which I have opened, the whole mass appears to be insects rolling over each other."

Unfortunately the insects were dead when the packet arrived, so that it is only from an examination of dried up specimens that we can determine the species. It however clearly belongs to the family of the mites Acaridæ, and to the restricted genus Tyroglyphus; and from the most careful examination which we could make of our materials, it appears to be either identical with, or very closely allied to, the Tyroglyphus farinæ (Acarus farinæ De Geer, Mémoires Vol. 7, pl. 5, f. 15), except that the body is shorter and more like that of the cheesemite (Tyrogl. Siro. = Acarus domesticus De Geer, tab. cit. fig. 1—8), our figure represents it very highly magnified (its natural size not being larger than a full stop), and seen on the under side. The mouth is short and pointed, formed of two divisions, below which is a strong forked muscle visible with reflected light, and

similar muscles run from the median line of the body towards the base of each of the legs, which are short and thick with very short joints, terminated by a hooked tarsus. The body is terminated by several long hairs, and there are a few hairs scattered on the legs, one on the upper side longer than the rest at the base of the penultimate joint.

The account given by our correspondent of the habits of this species of congregating in masses, the insects rolling over each other, agrees with those of the cheese and flour mites, but the question of their origin, and the fact of their devouring young growing plants, are deserving of considerable attention. Our correspondent's suggestions that the eggs from which they are produced were deposited in the seeds, and that the small brown specks visible on making a section of one of the latter are in fact the eggs, do not appear to us to be tenable. A microscopic examination of the seed (see magnified figure) shows these spots to be irregular both in size and shape, and to be a portion of the texture of the layers of the embryo plants. On the other hand we know, from the observations of Lyonnet, that in hot weather these mites produce living young instead of eggs. But our correspondent himself seems to furnish an answer to the question under consideration, since he states that the seeds had been kept two years before they were sown, and it seems quite probable to us that during that period they had become infested with these mites in the cupboard or drawer where they had been deposited, the downy envelope of the seeds affording a shelter for them till planted, and even till the young plant had sprung up. But still we are met by the objection that the allied species do not attack growing plants, and we are even inclined to suggest that the mischief is attributable to some other animal. We can hardly, in fact, doubt that if this species of Acarus were the natural attendant of the Cotton plant, we should, long ago, have been made acquainted with its economy by some of the many observers of natural history in North America, where of course the greatest facilities must occur for such an investigation. *J. O. W.*

VINE MILDEW.

The mildew known by the name of Oïdium Tuckeri, which proves so destructive to Grapes, consists of a network (spawn, *thallus, mycelium*) of white and very fine filaments, which cover the green and healthy parts of the Vine, and occasion the formation of brown or black blotches. From these filaments, which are all on the surface of the epidermis of the vegetable nourishing them, arises a forest of small, simple, erect, cellular stems, of which the last articulation quickly becomes a large oval cell, capable of propagating the Oïdium like a seed.

Independent of these reproductive bodies, the Oïdium Tuckeri possesses brown fruits, usually pedicellate, the coatings of which are membranes composed of cells, and containing an immense number of very small seeds, which likewise readily germinate. These fruits are usually larger than the terminal seeds just spoken of; but their size often does n exceed that of the latter; resembling them in form, they are frequently borne on the same footstalk, so that one might imagine they resulted from the transformation of the primitive seeds. M. Cesati was the first that I know of who recognised the existence of these fruits, but he did not suspect that they belonged to the Oïdium, and he took them for the reproductive organs of a distinct sort of mildew, which he called Ampelomyces quisqualis. M. Amici has since attributed them to the Oïdium Tuckeri, of which he thinks they are the most perfect organs of generation. I have myself seen the organs in question on diseased Vines in the neighbourhood of Paris. I have not only seen hem as other observers have, sometimes elongated, sometimes globular, but I also perceived that among the globular there were some large ones which were perfectly spherical and sessile on the byssus which produces them. These observations have led me to conceive quite another idea of the Oïdium Tuckeri than that admitted by those authors, who up to the present time have been considered as authorities on the subject.

There is a sort of mildew common in our country which, in its first stage, is not in any way different from the fungus nourished by the diseased Vine. The Erysiphes, as they are now called, present, for the most part, ovoid terminal seeds, and also brown many-seeded conceptacles similar to those above mentioned. By means of numerous observations, made principally on the E. pannosa, Knautiæ, guttata, adunca, holosericea, Berberidis, Prunastri, lamprocarpa, and Martii, I ascertained that the fruits in question assume various forms in the same species of Erysiphe; that they are cylindrical, elongated, simple or two-celled, naked, or surmounted with beaded cells, which are ovoid, roundish, or even perfectly spherical; that among the latter some are without any filiform appendages, whilst others are furnished with the same distinctive hairs as the thecigerous fruits, and resemble them so much as not to be distinguishable by their external characters only.

Many mycologists still doubt whether the ovoid seeds which cover with a white dust the thread-like thallus, on which, at a later period, the ascophorous conceptacles of the Erysiphe appear, do really belong to these fungi. They believe that these seeds, and the white byssus which produces them, constitute together a distinct and complete plant, a fertile Oïdium, of which the Erysiphe is only a parasite, or a subsequent companion. They maintain that fungi have only one set of reproductive organs; but this opinion is every day losing credit.

Several very strong reasons are now opposed to Erysiphes being considered as parasites, or the usual companions of various kinds of Oïdium.

In the first place, the association of existence observed in the case of Erysiphe and the so-called Oïdium—for instance, between E. pannosa and O. leucoconium, and between E. graminis and O. monilioïdes, &c.—is so constant that it would imply a necessary relation between these minute plants; so that if the Oïdium is a different plant from Erysiphe, the latter must certainly be a parasite on the former. Besides, one cannot distinguish in the mycelium which bears at the same time the necklace beads of the Oïdium, and the fruits of the Erysiphe, filaments peculiar to either; for, by careful examination, it will be perceived that the conceptacles of the Erysiphe actually proceed from the same threads which elsewhere give rise to the generating pedicels of the naked spores.

In the second place, in order to be certain that there is no real parasitism in the case, and that there are not two distinct plants associated together, but only one endowed with several organs of generation, it is sufficient to consider the many-seeded fruits before spoken of, which vary so much in their form that they present every possible intermediate stage between the spores of the so-called Oïdium and the ascophorous conceptacles of Erysiphe, the most perfect reproductive organs which nature has given to these fungi.

These many-seeded fruits being thus present in the Oïdium in the shape of the separate articulations of the necklaces of spores, and on fertile Erysiphe as conceptacles exteriorly identical with their perithecia, evidently unite Oïdium to Erysiphe, and furnish the best proof that they are one and the same genus. In other words, the organs in question do not, as M. Amici would induce us to believe, solely constitute the reproductive apparatus of Oïdium, supposed to be a peculiar genus, but they really belong to Erysiphe as much as the naked spores of Oïdium, and represent a mode of propagation intermediate between that by spores and that by thecigerous conceptacles.

From this fact it may be concluded that Erysiphes, like many other fungi, possess at least three distinct modes of propagation, and three special sets of organs for that purpose. In the order of their successive development, the first and most simple is that which consists in naked spores, disposed in necklace-like rows, which I call CONIDIA; then come conceptacles of various forms, full of innumerable and very fine seeds, and to which I have given the name of PYCNIDIA; and finally, the more perfect, globular, black SPORANGIA are produced, in which one or more few-seeded thecæ are engendered.

This being admitted, it is evident that the Oïdium Tuckeri, with its naked terminal spores and its many-seeded fruits, represents an Erysiphe reduced to its two secondary modes of propagation; so that the most important blank remaining to be filled up in the history of this enemy of the Vine consists in determining to what species of Erysiphe it belongs. Now, until its ascophorous fruits shall have been observed, the determination of its species cannot be made in a satisfactory manner, for its two other organs of reproduction are insufficient to distinguish it from a great many other congenerous plants, possessing identical organs.*

If the fungus on the Vine is an Erysiphe, we need not be surprised at the damage which it does. Erysiphes are all true parasites;† and they always cause diseases more or less serious in the plants which nourish them.

No one is ignorant of the injurious effects produced by Erysiphe Humuli on the Hop, or how prejudicial E. bicornis is to the Maple, as well as E. clandestina to the common Hawthorn, and E. Pisi to late Peas, &c.

The disease, usually called the mildew, so formidable to the Peach tree, is apparently caused by nothing else than Erysiphe pannosa, a species which is also prejudicial to the Rose tree; this mildew is likewise rich in conidia, pycnidia, and sporangia. There has never been any hesitation, so far as I know, in attributing to these various Erysiphes the atrophy, the organic malformation, and the sterility with which their victims have been afflicted; wherefore then should the Erysiphe which attacks the Vine be less capable of inflicting injury than its fellows, and why should we seek to explain otherwise than by its action the disorganisation of the Vines thus attacked? If the Vine were supposed to be diseased before the appearance of the parasite, the same supposition, notwithstanding its improbability, must be made not only in the case of all the other plants, wild or cultivated, which nourish Erysiphes, but also as regards those at whose expense Uredo, Ustilago, Rhytisma, and a host of other parasites live.

It may undoubtedly be admitted that these do not attack indiscriminately all the individuals of the species on which they live, and that the physiological condition of the individuals, varying with age, situation, seasons, and other circumstances, exercises some influence in the development of fungi; but this general proposition, which would in several respects be justified by the mode of life proper to many of these fungi, appears no longer to hold good when their enormous increase assumes the character of an universal plague, which constitutes a phenomenon as far beyond our explanation as it is above our comprehension. *M. Tulasne, in Comptes Rendus, Oct. 17th,* 1853.

The following facts were at the same time mentioned by M. Payen in support of the foregoing observations of M. Tulasne:—

Mr. F. Mallot, of Montreuil, employed, in 1851, the flowers of sulphur with success against the mildew on the Peach tree. Several arboriculturists, and especially M. Orbelin, have had recourse to the same means, and these have always proved efficacious. M. Verdier likewise succeeded in freeing Rose trees from the species of mildew which attacks them, by dusting them with flowers of sulphur. Thus the remedy which has been most successfully employed to combat the Grape mildew is the same as the one which appears to be the most efficacious in curing similar diseases in Peach and Rose trees. These facts appear to agree perfectly with the opinion of M. Tulasne, who attributes the diseases in Vines, Peach trees, and Roses to Erysiphe.

Home Correspondence.

The Woods and Forests.—My attention having been drawn to two articles in the *Gardeners' Chronicle*, dated respectively the 6th and 13th inst., on the subject of Alice Holt Forest, I beg to forward you the following statement of the facts, as far as I am concerned. On the 12th of March, 1853, I gave in a report on that forest, in which, among other particulars, were stated certain averages of sizes of trees and their number per acre in the various enclosures of it. These averages were struck by the method usually employed in the profession; they were struck with all fairness on my part, and I am prepared to maintain their substantial accuracy, and that they would be found substantially correct by any unprejudiced and uninterested referees. In a counter report by the deputy-surveyor of the forest, my results were in almost every case denied; diameters were asserted much larger, and numbers of trees much less than those which I had stated. In conformity with instructions given me, I again proceeded to the forest to revise my statements, accompanied by a gentleman from the office of Woods and Forests to assist and check me in my calculations. The results were such as, with no more of variation than inevitably occurs in every such case, completely bore out my former estimates, and set aside those of the deputy-surveyor. Three gentlemen are now sent down by the Treasury; of two of these I know nothing; the third is one of the present deputy surveyors in the Royal forests, and therefore hardly to be regarded as altogether an uninterested witness. The report of these gentlemen completely bears out Mr. Higinbotham's statements—indeed, with a degree of closeness and precision itself suspicious. The differences between us are not such trifling ones as could have accidentally arisen; they run, as regards the number of trees, from 60 to 100 per cent.; and as

* To whatever species of Erysiphe the one which lives on the Vine be referred, its barrenness in ascophorous fruits cannot be a special character; for several are known, such as E. Martii, E. communis, E. lamprocarpa, &c., which are frequently the same in this respect, either owing to the plants which bear them, or the situations where these plants are growing, or to other circumstances which have escaped our observation.

† It will be readily understood that, among several species, the filaments of the mycelium are provided with small rounded appendages, which are probably organs of suction. We have more especially observed them in Erysiphe Martii, and in E. communis. M. Gasparini, and afterwards M. Mohl, have seen several such in the Vine mildew, where, in fact, they can be readily found.

regards their diameter, from 15 to 50 per cent. I am prepared to stand by the substantial accuracy of my results, and to prove it on the spot to any disinterested referees who may be appointed; but in the mean time I am condemned, and Mr. Kennedy is in some degree included in my condemnation. There are one or two other points in the report of the referees, which, though of minor importance, seem to betray the general animus actuating them. For instance, it is objected to me that I give the entire age of one division of an enclosure at 40 years, while they, apparently by cutting down trees here and there, find that only a portion of it is of that age, and the remainder from 35 to 38. I can only say in answer to this that I founded my statement, as I conceive I was quite entitled to do, on the account given me by the deputy-surveyor and his foreman, and that this can hardly be fairly attributed to me as a fault. The only other point to which I need refer is the question of drainage. This I assert to be on the whole inefficient and comparatively worthless; the referees are of a different opinion, though some of their admissions bear out that, in parts at least, it is as I have called it. This, however, is very greatly a matter of opinion. What would have been considered efficient drainage 30 years ago, would hardly now be regarded as such. What may be regarded as sufficient in Alice Holt Forest might in more advanced localities be looked on as an exploded barbarism. *James Brown, Edinburgh, May* 16.

Page's Prodigy Pea.—Seeds of this very dwarf and early variety were obtained from Messrs. Page and Co., of Oxford Street, Southampton, whose name it bears, and were sown side by side with many others in the first week of December last. It has proved equally early as the Frame and Danecroft Rival, and much more so than the Long-pod Dwarf, to which it bears some resemblance; but it differs from that variety in the leaves being somewhat smaller, and the plant of a more dwarf habit. I send raw specimens of both sorts, to show their difference, and the precocity and prolific habit of the Prodigy Pea. I have found it an admirable variety for cultivating on the beds of the large fruit house at this place, and I consider it well adapted either for pot or frame culture, or for growing at the bottom of fruit-tree walls, where a protection could readily be afforded it from the inclemency of the weather. *James Duncan, Basing Park, May* 14. [The Prodigy was covered with small pods, containing on an average four Peas each, while the pods on the Long-pod had scarcely formed, and of course contained no Peas fit for use.]

Sikkim.—The Rhododendrons of this district have been represented, previous to this last winter, as all hardy, save only Dalhousiæ and argenteum. Can any of your correspondents favour us with a state of the case now, after the recent severe experience? It would be very acceptable. *A. H.*

McAdam's Anti-Grape Blight Composition.—The Grape blight pestilence, which appeared again in the Channel Islands about a month since, has again visited us in the West of England in a most virulent form, and from past experience there can be little doubt of its again rapidly spreading through the length and breadth of the land. It is for this reason (and I speak very feelingly upon the subject, from having lost large quantities of fruit myself from the Vine disease) that I would earnestly draw the attention of the Grape growing community to the advertisement of an "Anti-Grape Blight" composition in your last number of the *Chronicle* by a Mr. M'Adam, which, from experience during the last season and the present, I have found to be as effectual as a preventive as it is in destroying the disease after it has made its appearance; and that without the slightest injury to the Vines, which, on the contrary, appear to grow more vigorously after the application of this remedy. One most decided advantage of this over all others that I have heard of is that it is applied in a liquid state (prepared from a powder by simple ebullition) by a common garden engine or syringe, by which not only a vast deal of time and trouble are saved (about 10 minutes being sufficient to go over a large Vinery), but the annoyance and inconvenience of having the Vines covered with sulphur powder (a common application) throughout the summer, and from which a continued and disagreeable odour so given out, is avoided; but I will proceed now in a few words to state the results of the application of this, as I have found it, valuable composition. I should mention in the first place that I have two rather large Vineries close to each other, in which I have been a successful grower until visited by the Vine disease, by which, the year before last, my crops were entirely destroyed, notwithstanding the trial of several proposed nostrums. Last season, by the advice of a gardening friend, I determined to try M'Adam, and the result fully justified his recommendation. I proceeded, of course, according to the given directions, by syringing the Vines (in one of my houses) thoroughly with the diluted liquid, as soon as the foliage was fully expanded, about a fortnight before the Vines were in bloom, and again after the berries had attained the size of a small Pea, and after this, nothing could exceed the health of the Vines and fruit, which arrived at full maturity, without any trace of disease being observed in this house during the season, which, from what followed, fully proved, I think, the preventive properties of this composition. Now, I beg you to remark what happened in my remaining Vinery, which was, of course, exposed to precisely the same influences. This house I purposely omitted (by way of experiment) to syringe with M'Adam's liquid in the earlier part of the season, and the consequence was that the berries, when about half the full size, were attacked with the blight, as in the preceding season, but, fortunately, I found the application of the liquid destroy it completely, and it did not appear again; but the property of this liquid in destroying the Grape blight I have again had an opportunity of proving this season; for, upon arriving at home, after being some time absent, on the 1st inst., I found (by the neglect of my man, I am satisfied, in not syringing my Vines) both my houses inundated with blight—to such a degree, indeed, that I almost feared they had got past recovery; not so, however, as it turned out, for vigorous syringing, as before, has quite destroyed it, as you will perceive by the small bunch of Grapes I beg to send for your inspection, on which even the bloom is uninjured, although the blight has left its mark upon the fruit, where it for a time vegetated. I also enclose a small phial of the saturated liquid prepared from M'Adams' composition (a quart of which is directed to be mixed with 12 gallons of water). There is clearly sulphur largely present in chemical solution, but it would be hardly fair to the inventor to analyse it too closely, as it can be obtained at a moderate cost. *Devoniensis, Exeter.* [The effect of the wash in question had undoubtedly been remarkable on the specimen sent; but the mildew was still discoverable among the berries.]

Effects of the Frost on the Nights of the 24th, 25th, and 26th ult.—My register thermometer being deranged, I was not able to ascertain the minimum temperature of these nights; but a common thermometer, hanging on a pole 5 feet from the ground, indicated 8° of frost at 6 o'clock in the morning of the 25th; 6° at the same time on the 26th; and 10° on the morning of the 27th. Water in tanks and pools had ice upon it as thick as a penny. The blossoms on all the standard Pears, Plums, and Cherries, which were as fine as I ever saw them, are all killed; and the Apple blossom that was expanded, and what was not, I find has been much injured. Gooseberries, which were larger than large Peas, suffered materially, and the main crop is now falling. Black and Red Currants and Raspberries appear to have escaped; Peaches, Nectarines, Pears, and Cherries against south-east and west walls, where the young fruits were in contact with the wall, are saved, while the fruit upon spurs projecting from the walls has been killed, as well as the points of the shoots of Peaches and Nectarines. The leaves of Figs against a south wall are all turned black, &c. The fruit, which was as large as Filberts, has shared the fate of that of other wall trees. Strawberry blossoms, although not then expanded, have, I fear, been all killed. All the spring-sown Broccoli, Cauliflower, Cabbage, Brussels Sprouts upon south borders, both first and second sowings, have been killed; young Turnips have been all swept off, and so has every head of Asparagus that was above ground. Linnæus and Prince Albert Rhubarb suffered considerably, while Victoria upon the same quarter was uninjured. Young shoots of Box edging look as if they had been scalded. Peas of different sowings, even those in bloom, do not exhibit signs of injury. Abies cephalonica, Webbiana, and Deodara, 3 feet high, in a low situation, surrounded with a belt of forest trees of 50 years' growth, had all their young shoots killed, although they were protected with mats; Abies Pinsapo and Menziesia in the same situation escaped. The same kinds, with Abies Morinda, Smithiana, Pinus excelsa, and maritima, upon high grounds in the park, were uninjured, although they had pushed considerably. Oaks, Sycamore, and Beech, in several parts of the park, particularly upon low situations, have had all their young shoots killed to the height of 12 and 16 feet, above which line they are uninjured, except one Sycamore tree, a very early variety, standing at the head of a piece of water sheltered all round, except from the north-east, through a narrow channel over the pond; this tree, a large one, 30 feet high, has all its leaves blackened and its shoots killed. In many parts of the park, especially in low places, the Grass has been killed over large patches of from 20 to 50 feet square. Such a destructive frost at this season has never been remembered by the oldest inhabitant. *Henry Bundy, Dynevor Castle, Llandilo, South Wales.* —— On the night of the 24th ult., the self-registering thermometer at Worcester, on the Grass (100 feet above the level of the sea), sunk to 22°. There was ice on the pools more than one-eighth of an inch thick. Its effect on vegetation has been very disastrous—Pears, Cherries, and Plums, are all cut off; Black Currants and Gooseberries injured; but my Red Currants have escaped. I do not yet know its effect on the Apples. The Gooseberry caterpillar is devastating all the gardens of this neighbourhood; and, being the second year, its effects are likely to be most serious, if not promptly stopped. I have tried nearly all the receipts given in your back numbers, but find none of them effective, except the white hellebore. Since dusting the trees with that, I have been almost free; it not only kills the caterpillar, but, I think, prevents the fly from settling on the leaves to lay its eggs. My bushes are about two years old, and the cost for labour and powder is about 2*s.* 6*d.* or 3*s.* per 1000. *R. Varden, Seaford Grange, near Pershore.* —— Mr. M'Pherson states (see p. 285) that at Castle Semple, they had only 2° of frost on the 24th ult. How can that be accounted for when there was so much more over the country in general? Where I live is about 10 miles from Castle Semple, and we had 10° at half-past 4 o'clock that morning, and still an average crop of fruit is left on the wall trees, although they were not protected, and since that time I have visited gardens in the county of Renfrew and in the adjoining one of Ayr, and found not only the fruit but also the foliage, and, in one case, the young wood of Apricots, killed partly back, and that with 12° of frost. I have no doubt that many of your readers, as well as myself, are at a loss to understand what Mr. M'Pherson means by saying that his Apricots and Peaches on the open wall are about the size of Pears; will he be so good as explain? *B., Renfrew.* [The word Pears, we learn from Mr. M'Pherson, was a misprint for Beans.]

Deutzia scabra.—By the aid of a pocket lens, numerous beautiful starry bodies may be seen on both the upper and under side of the leaves of this Deutzia. They are not hairs, I think, but have more the appearance of crystals, perhaps of silica. I cannot find them on the leaves of any other plant with which I am acquainted, and have searched in Dr. Lindley's "Introduction to Botany," but without being able to satisfy myself as to their exact nature; nothing under the head of Raphides or that of Biforines appearing to include these very beautiful objects. Will you, therefore, kindly communicate what is known of these interesting little stars. *G. M.* [These are generally understood to be stellate hairs, hardened by some siliceous (?) secretion.]

Storing Apples.—A London merchant, whose fruit, when freshly gathered from the tree, could scarcely have a more crisp and juicy appearance than some which he had preserved for the best part of a year, gives his system of storing as follows:—"I provide a number of wide-mouthed earthenware jars, no matter of what size, so that they will contain each not less than a gallon, which size, however, I consider most convenient. If I have the least apprehension of their being damp, I have them put, for two or three days, in a warm place in my kitchen, or, for one or two days consecutively, in a slow oven, which, perhaps, is the better mode. Conjointly with this jar-drying process, I procure a bushel or so of sharp clean white sand, which I thoroughly bake. Thus much for the preliminaries; now to business. When the Apples which I wish to preserve are perfectly ripe, not dead ripe, but sufficiently so to be full flavoured, I carefully go over the trees myself on a fine sunny day, which I devote wholly to this little hobby of mine, selecting only the handsomest and best fruits. These I very carefully separate from the tree by slightly raising each in a direction contrary to that in which it has grown; for, if they are ripe, they will readily separate without damaging the stem; if they do not, I leave them for another opportunity. As I pick them one by one, they are cautiously deposited in a wide shallow basket, which my man carries for me, in the bottom of which is a layer of thick wadding, to prevent the possibility of bruising, a contingency which every precaution must be taken to prevent. Well, I have enough for one jar, and the process of filling that will illustrate my system as well as a hundred. I first strew a layer of the dried sand over the bottom of the jar, about half-an-inch thick. Upon this I place as many Apples, with their stems uppermost, as the space will contain without the Apples touching each other (they should be half-an-inch apart), or the sides of the jar. I hold perfect isolation, with respect to each other, as an essential item in my system. Upon this first layer of fruit I strew sand sufficient to fill in the spaces between them, and to form a layer half-an-inch thick above them. Then another layer of Apples then sand again, and so on, to within 3 inches of the top: that space I fill with sand. To insure the thorough filling in between and around the Apples, as each layer is placed gently tap the sides of the jar; this will also consolidate the whole, as it were, into one mass. When the filling is completed, place the jar in a cool dry room, where the temperature is tolerably uniform, and where they will not be disturbed until wanted. An ordinary store-room, if a proper one, will do very well. It will be observed that I lay great stress upon careful handling, to prevent bruising, upon the fruit being perfectly ripe, and upon perfect isolation with respect to each other when in the jars. That the fruit should be without the slightest bruise I hold to be highly essential to the success of my plan as regards preservation, and that they should be fully ripe, to insure the natural flavour of the variety. As regards the separation of each from the other, that, too, is also important, for should one by chance become rotten, which, however, rarely happens, the contagion is confined to where it originated. Their being, as it were, hermetically sealed and uninfluenced by variations of temperature, the fluids of the fruit have little to contend with from external agency. *Crayon.*

Cereus.—A friend of mine in Gloucestershire informs me of a successful experiment on the night-flowering Cereus, which, by cutting off the pistil (stigma?), is kept in flower to the next day. I am not aware whether the case is known, or whether there is any general principle known, to which it can be referred. The words "to the next day" are perhaps not quite unambiguous, therefore I send them to you as I received the statement. *A. H.*

Foreign Correspondence.

MEMORANDA FROM THE ANTIPODES.—*On the Effects of Low Temperature upon Plants of Delicate Habit in respect of cold under certain conditions.*—A winter of unusual severity succeeded an autumn which had been dry and unfavourable to vegetation. The frosts commenced with the month of May, nearly a month sooner than usual, and continued until late in September, broken only by four several periods of deluging heavy rain. During the latter, great floods were experienced in the rivers, and vast tracts of the interior laid under water; whilst, on some of the more elevated and exposed

sheep runs, the snow was lying several feet thick, the flocks having been nearly starved before it melted. I was not at home during the more intense frosts, and I regret that means were not taken to ascertain, by observation, the minimum open air temperature, where no impediment to free radiation existed. A correct thermometer, under the shelter of the roof of an out-building, open in front, but much sheltered and enclosed by walls and other out-buildings, on several mornings showed 18° Fahr. The site is well sheltered by trees upon a moderately sloping hill 100 to 120 feet above the neighbouring plain and valleys, 20 miles distant from the open sea, and 236 feet above its level. Excepting under a calm, bright, transparent sky, the night temperature rarely or never descends below 50 or 55°; and when this condition does occur, it is customary to find several degrees difference produced in the night temperature by the slightest description of shelter. Careful observations during several winters with good instruments indicated a difference on calm clear nights of from 5° to 10° and 12°, between the neighbouring low grounds and the site 120 feet higher, where a sheltered thermometer indicated 18°, the cold in the valleys being always greatest. After thus stating the result of numerous former observations, my estimate of the external minimum temperature will not appear too low at 15° for the higher level, and 10° for the lower. I believe these estimates to fall short of the fact. Now, very sharp white frosts are almost always succeeded by bright warm sunshine; it appears from actual observation that the mid-day temperature in the shade reached 63°, and 64° during the intervals between the coldest nights. As we cultivate many plants, the larger specimens wholly unprotected, which are subjected to stove and greenhouse treatment in England, it may be instructive to practical men to be told how some well-known species have borne so severe a trial in a climate where their season's growth becomes perfectly matured before winter. I subjoin the names of a portion, therefore, with the condition in which they were found on the return of warm weather. It is remarkable that some intra-tropical specimens from Brazil, and sub-tropical plants from the coast about Moreton Bay, appear to endure cold better than some which are found growing wild within a mile or two of the site, but in well sheltered situations.

Plants growing in the Higher Temperature, where the extreme Range during 24 hours appears to have been from 15° (fully exposed) to 64° in the shade.

Stephanotis floribundus
Combretum purpureum
Bignonia cherere
Cantua pyrifolia
Luculia gratissima (since dead)
Bougainvillea spectabilis
Bouvardia triphylla, and two others
Strelitzia augusta
Hedychium coronarium
Pelargoniums
Hibiscus heterophyllus
Ficus australis
Tecoma sp.
Kennedyas
Indigoferas
} Indigenous to the neighbourhood, some of them to the very spot. [Hibiscus … Indigoferas]

} All fully exposed to the alternations of temperature, and killed to the ground; healthy below.

Bougainvillea spectabilis, very large specimen, stem 25 inches round, trained against a high wall exposed to morning sun—leaves and young shoots killed, flowering for the season prevented, old wood uninjured.
Ditto, smaller plant, against wall, northern (mid-day sun) exposure—not so much nipped.
Petrea volubilis, same situation—slightly injured.
Bignonia venusta, close adjoining, but without the reach of radiation from the wall—a little more nipped.
Bauhinia scandens, fine large specimen, stem 8 inches in circumference, southern exposure, no sun—uninjured.
Passiflora racemosa, against wall, eastern exposure—a little nipped.
" kermesina, " western exposure—much nipped.
Ficus macrophylla, large specimen, about 35 feet high, congeries of roots and stem at 2 feet from the ground, 10 feet in circumference—shoots killed for 4 or 5 feet back, leaves quite destroyed.

Stadmannia sp.
Brachychiton acerifolium
{ Indigenous within 15 miles—plants of 15 feet high killed nearly to the ground.

Oranges
Lemons
Limes
Shaddocks
} In full bearing—much nipped on the sides exposed to the sun, fruit of Oranges acid and inferior.

Citrons—killed nearly to the ground.
Araucaria Cooki, 3 feet high—a little nipped.
Dammara nov. sp., from Wide Bay
" " New Caledonia
} A little affected only.
Araucaria Braziliensis, 18 feet 6 in. high—uninjured.
" Bidwilli, 12 feet 6 in. high—uninjured. A most beautiful species, far excelling any of the others.
" Cunninghami, 28 feet high—uninjured.
" excelsa, 12 " "
Lagunaria Patersoni 25 " "

Plants cultivated at the Lower Level, where the Night Temperature is estimated to have been as low as 10°, and the Day Temperature up to 64° in the shade.

Camellias, a great variety of all sizes, the blossoms about to expand, were injured; but as soon as the severe frosts passed, they recommenced flowering without appearing to have suffered.
Azalea indica—many varieties wholly uninjured.
Olives, from 15 to 25 feet high—wholly uninjured.
Magnolia grandiflora, "
Brugmansia arborea
Erythrina Crista-galli
} Killed to the ground.

A Deodar planted in 1841, about 18 inches high, is now 27 feet 6 in. high, with the stem beneath the lower tier of branches 3 feet from the ground, 12 inches in diameter. The leader was broken four years back by a large bird. The tree has formed a fresh leader this season, but has lost 3 or 4 feet growth at least.
A layer from the above, planted out six years, is just 17 feet high.
Cupressus torulosa, planted at same time, 4 feet high, is 21 feet 6 inches, and a magnificent pyramid.
Pinus canariensis, planted same time, 3 feet high, is 23 feet.
" macrophylla, " " 20 feet 6 in.
Cedrus Libani, a layer, nine years planted, is 16 feet 6 in.
There are only a few instances of remarkable growth in a large collection of Conifers growing here.

—*W. McArthur, Camden, N. S. Wales.*

Societies.

Horticultural: Garden Exhibition, *May* 13.—As the leading features of this excellent display of fruits and flowers are given in another column, we will at once proceed here to particularise the various matters exhibited.

In collections of 20 Stove and Greenhouse Plants, the First Large Gold Medal was awarded to Mr. Green, gr. to Sir E. Antrobus, Bart., of Cheam, for the following, viz.:—

Aphelexis macrantha purpurea rosea	Franciscea confertiflora
Azalea Iveryana	Gardenia Fortuni
" variegata	Gompholobium grandiflorum
Daviesia latifolia	" barbigerum
Dillwynia ericifolia	Ixora crocata
Erica depressa	Leschenaultia formosa
" propendens	Pimelea Hendersoni
Eriostemon intermedium	" spectabilis
Franciscea acuminata	Polygala acuminata
	" cordifolia

Azalea variegata, in the shape of a huge bush, profusely covered with blossoms in the best possible condition, was certainly the most striking plant of this group; but a smaller plant of A. Iveryana was also very fine, being one mass of white flowers, which were all the more admired because they were occasionally striped with pink. The greatest favourite of the whole, however, was evidently Gardenia Fortuni, which was one of the best plants of the kind we have seen; the numerous large wax-like flowers with which it was thickly ornamented being beautifully fresh, and delightfully fragrant. Pimelea spectabilis, though not to be compared, as regards size, with the large specimens of this plant which were wont to be furnished from Ealing Park, was nevertheless an admirable specimen, and, being covered with flowers, it was very effective. The purple-blossomed Polygala acuminata was also in fine condition; and there were beautiful bushes of Leschenaultia formosa, and that best of Everlastings called Aphelexis macrantha purpurea. The worst plants in the group were Erica propendens and Gompholobium barbigerum, the former of which was badly coloured, and the latter was scarcely in bloom, and evidently enjoying but indifferent health. With these two exceptions, however, the exhibition was an extremely good one.

Mr. Gilham, gr. to R. Scott, Esq., of Leyton, Essex, was second. His plants were—

Allamanda cathartica	Eriostemon buxifolium
" neriifolia	" neriifolium
Aphelexis macrantha purpurea	Ixora coccinea
Azalea, Double Red	Leschenaultia Baxteri
" Duke of Devonshire	Pimelea decussata
Chorozema varium nanum	" Hendersoni
Clerodendron Kæmpferi	Polygala Dalmaisiana
Epacris paludosa	Statice Holfordi
Erica Cavendishi	Vinca oculata
" vestita alba	" rosea

The double flowered red Azalea in this collection was a noble plant, and being well flowered was one of the most effective of the group. The Oleander-leaved Allamanda, though not so large in the flower as A. cathartica, is nevertheless a species of very considerable beauty, and being compact in growth it is extremely well suited for those who have but limited accommodation. The Kæmpfer Clerodendron was well grown, and its noble panicle of brilliant scarlet flowers, well elevated above the broad massive foliage in which this plant is clothed, had a capital effect. The Holford Statice, a sort very much in the way of macrophylla, was also much admired, being one of the very best of the larger growing kinds. The Cavendish Heath was very skilfully grown and flowered, and the same may be said of the Ixora, whose large scarlet heads were both numerous and well coloured.

In collections of 15 Stove and Greenhouse Plants, the first prize was awarded to Mr. Hamp, gr. to J. Thorne, Esq., of Mawbey-house, South Lambeth. This group consisted of—

Aphelexis humilis	Erica Cavendishi
Azalea, Duke of Devonshire	" ventricosa densa
" triumphans	Eriostemon myoporoides
Boronia spathulata	" scabrum
Cyrtoceras reflexum	Pimelea decussata angusta
Dracophyllum gracile	" Hendersoni
Epacris grandiflora	Polygala oppositifolia

Of these the Azalea triumphans was finely in flower, as was also the variety called the Duke of Devonshire, which is striking in colour. Of the Eriostemons, scabrum is best suited for small collections; but where there is room, myoporoides, when well bloomed, as this was, is greatly the most showy. Boronia spathulata, though a profuse flowering species, is too dull in appearance ever to make a good exhibition plant. The Hoya-like Cyrtoceras reflexum was small and scarcely so well bloomed as it should have been. Its healthy fresh green foliage, however, helped very much to compensate for the defect.

Mr. Rhodes, gr. to R. Philpots, Esq., of Stamford Hill, produced—

Aphelexis humilis	Erica Alberti
" macrantha purpurea	" Brunioides
Boronia spathulata	Eriostemon neriifolium
" tetrandra	Leschenaultia Baxteri
Chorozema Lawrenceanum	Oxylobium pultenæa
Cyrtoceras reflexum	Pimelea linifolia
Epacris grandiflora	Tetratheca verticillata
" miniata	

Among these the Lawrence Chorozeme was in all respects a first-class specimen, being finely in flower, and staked just sufficiently to support the shoots gracefully, without making the plant stiff or formal. The Oxylobe was especially conspicuous for its numerous large heads of rich yellow flowers; but the plant which was deservedly most admired was an example of Tetratheca verticillata, which was so thickly set with deep purple or rather violet blossoms as to nearly hide the pretty Heath-like foliage with which they were intermixed.

Collections of 6 Stove and Greenhouse Plants, in 20-inch pots, were contributed by Mr. Dods, gr. to Sir J. Cathcart, Bart.; Mr. Carson, gr. to W. F. G. Farmer, Esq.; Mr. Peed, gr. to J. Treadwell, Esq.; and Mr. Morris, gr. to C. Child, Esq., of Bromley.—Mr. Dods had large and fine specimens of Erica Cavendishi, Eriostemon neriifolium, Azalea lateritia, Polygala acuminata, Boronia pinnata, and Chorozema ilicifolium.—Mr. Carson sent Ixora coccinea, Gardenia Fortuni, Epacris grandiflora, Double red Azalea, Polygala oppositifolia, and Chorozema Lawrenceanum. Both of these groups contained plants which for size and beauty were not surpassed by any in the whole exhibition. From Mr. Peed came Azalea optima, Erica ventricosa, Adenandra speciosa, Clerodendron Kæmpferi, Pimelea spectabilis, and Chorozema Henchmanni. Mr. Morris produced Stephanotis floribunda, Pimelea decussata, Hoya imperialis, Allamanda neriifolia, White Indian Azalea, and the Siebold Mediuilla. Though large and fine, these plants were scarcely sufficiently advanced in bloom.—Groups of 6 in 13-inch pots came from Messrs. Taylor, Over, Dods, Jarvis, and Pamplin. Among these we remarked Everlastings, Boronias, Azaleas, Leschenaultias, Polygalas, Heaths, Epacrises, Coleonemas, Hoyas, Oxylobes, Eriostemons, Cyrtoceras reflexum, and good plants of Chorozema.

A collection of Everlastings was exhibited by Mr. Taylor, gr. to J. Coster, Esq., of Streatham. It consisted of Aphelexis speciosa, sesamoides rosea, s. superba humilis, macrantha purpurea, and macrantha rosea.

Orchids.—These, as might have been expected from the liberal rewards offered for them, were numerous, and being unusually fresh and beautiful, which they always are in May, we need not say that they were universally admired. In collections of 20 plants, Mr. Williams, gr. to C. B. Warner, Esq., of Hoddesdon, received the highest award for:—

Aerides crispum	Dendrobium macrophyllum
" virens	" nobile
Barlingtonia fragrans	Epidendrum aurantiacum
Calanthe veratrifolia	Oncidium ampliatum majus
Cattleya intermedia	Phalænopsis amabilis
" Mossiæ	" grandiflora
" Skinneri	Phaius Wallichi
Chysis bractescens	Saccolabium retusum
Cypripedium barbatum	Trichopilia coccinea
" Lowei	Vanda tricolor

Of these the most conspicuous was certainly the white blossomed Calanthe, which was a noble plant with some 18 flower spikes well elevated above its ample Veratrum-like foliage. The Moss Cattleya was one of the best forms of that plant, and the handsome purple blossoms of Cattleya Skinneri were unusually brilliant and attractive. Dendrobium nobile was a fine example of that useful species in its best state, being quite 3 feet high and as much through, and covered with flowers. The Cypripedium Lowei furnished two of its singular blossoms, and the Trichopilia coccinea was beautifully flowered, and a well grown example of that comparatively new species. In short, the collection altogether was extremely good, and well deserved the high position the judges assigned to it.

Mr. Blake, gr. to J. H. Schröder, Esq., to whom the second prize was awarded, produced—

Cattleya intermedia	Oncidium phymatochilum
" Skinneri	Phaius Wallichi
Calanthe veratrifolia	Phalænopsis amabilis
Cypripedium barbatum	" grandiflora
Dendrobium densiflorum	Saccolabium retusum
" densiflorum album	Schomburgkia tibicinis
" Pierardi	Trichopilia tortilis
Epidendrum bicornutum	Vanda cristata
Lælia cinnabarina	" teres
Oncidium Papilio	" tricolor

The Wallich Phaius was a fine plant, but considerably the best feature of the group was Lælia cinnabarina, whose 6 spikes of brilliant orange scarlet flowers well merited the attention they received. The Twisted Trichopil was as compact and finely-flowered as we have ever seen it in former years, and the Skinner Cattleya was covered with blossoms, large in size and beautifully coloured. Dendrobium Pierardi was not elevated sufficiently to let its spikes hang down, and consequently the effect they would otherwise have produced was thus greatly impaired. Dendrobium densiflorum was a fine specimen of that showy yellow kind. The variety called D. d. album resembled very much a highly coloured example of D. Farmeri.

From Mr. Woolley, gr. to H. B. Ker, Esq., came—

Brassia verrucosa	Odontoglossum citrosmum
Cattleya intermedia	Oncidium ampliatum majus
" Mossiæ	" phymatochilum
" Skinneri	" sphacelatum
Cypripedium barbatum	Phalænopsis grandiflora
Cyrtochilum maculatum	Phaius Wallichi
Dendrobium Farmeri	Vanda tricolor
" nobile	Warrea tricolor
" Paxtoni	Zygopetalum crinitum
Epidendrum crassifolium	" rostratum

The large variety of Oncidium ampliatum in this group was strikingly beautiful, its clear yellow flowers being just in perfection, and no more. The Farmer Dendrobe was scarcely sufficiently advanced in bloom, which was to be regretted, for it was one of the best specimens we have seen of this fine and somewhat scarce kind. Cattleya intermedia, with its bright purple tipped lip, was a charming plant, as was also the Paxton Dendrobe, which is one of the handsomest of the dark spotted yellow sorts. The Warrea was an object of interest on account of its rarity. The Odontoglossum was good; but scarcely, perhaps, so highly coloured as we have seen it in former years.

Mr. Carson, gr. to W. F. G. Farmer, Esq., produced—

Burlingtonia fragrans	Epidendrum aloefolium
Brassia verrucosa	,, crassifolium
Cœlogyne asperata	,, longipetalum
Calanthe veratrifolia	Maxillaria tenuifolia
Camarotis [p]urpurea	Odontoglossum hastatum
Cattleya Mossiæ	Phalænopsis amabilis
Cypripedium barbatum	,, grandiflora
Dendrobium Devonianum	Saccolabium guttatum
,, fimbriatum	,, retusum
,, nobile	Zygopetalum rostratum

Of these the Purple Camarote was a large and finely grown plant, but it was not sufficiently in bloom to be effective; in this respect it was greatly excelled by the spotted Saccolabe, which was just at its best, its charming flower spikes, some 14 in number, being in beautiful order. The uncommon colour, rather than the beauty of the Long-petalled Epidendrum, attracted the attention of many; the Aloe-leaved species of this genus was a good specimen of a somewhat common plant. The Moss Cattleya was very finely flowered.

A collection of 15 Orchids, shown by Messrs. Rollisson, consisted of—

Aerides virens	Dendrobium nobile
Anguloa Ruckeri, var. sanguinea	Epidendrum crassifolium
Brassia maculata	Odontoglossum hastilabium
Cattleya Aclandiæ	,, nævium
,, Mossiæ	Oncidium sphacelatum
Dendrobium Dalhousianum	Phalænopsis grandiflora
,, fimbriatum	Sobralia macrantha
	Vanda teres

The Anguloa was the beautiful variety which was fully described a week or two ago at p. 271. One of the most remarkable plants in this group was the Moss Cattleya, whose large blossoms were both numerous and fine, the lip possessing more orange yellow than is to be found in some of the many varieties of this species. Oncidium sphacelatum was also a noble example of what this Oncid is when "well done;" and the spotted Brassia, though not generally considered handsome, was really so in this instance, on account of the profusion and clearness of colour of its blossoms. The Sobralia had five large purple flowers on it. Dendrobium nobile was a good specimen, as was also the Epidendrum crassifolium, which had on it, altogether, some 15 flower spikes.

In groups of 10 Orchids, Mr. Dods, gr. to Sir J. Cathcart, Bart., was first with—

Brassia caudata	Oncidium altissimum
Dendrobium densiflorum	,, ampliatum majus
,, nobile	Phalænopsis grandiflora
,, Paxtoni	Saccolabium retusum
Epidendrum primulinum	Vanda tricolor

The Oncidium altissimum was a large specimen, but badly coloured. Vanda tricolor was a fair example of that species; but perhaps the most skilfully grown plant of the whole was Dendrobium densiflorum, which was ornamented with some 12 large bunches of its beautiful yellow flowers.

Mr. Green, gr. to Sir E. Antrobus, Bart., who gained the second prize, sent—

Calanthe veratrifolia	Epidendrum crassifolium
Cattleya Mossiæ	,, macrochilum
Dendrobium Calceolare	Oncidium ampliatum majus
,, nobile	,, [s]phacelatum
,, pulchellum	Maxillaria Harrisoniæ

In this collection, the Harrison Maxillaria was a good specimen, and well bloomed, as were also the two Oncids and the Dendrobium nobile.

Mr. Clarke, gr. at Highgrounds, Hoddesdon, was third. He sent—

Cattleya intermedia	Oncidium ampliatum majus
Cyrtochilum maculatum	,, luridum guttatum
Dendrobium densiflorum	Saccolabium retusum
,, fimbriatum	Vanda insignis
,, Paxtoni	,, teres

These were for the most part small plants, among which the most remarkable were perhaps the fringed Dendrobe and the intermediate Cattleya.

Azaleas nearly filled one side of a long tent; and as the plants were mostly large and well flowered, the effect of such a bank of floral beauty of almost every tint and colour may be well conceived. The first prize was awarded to Messrs. Lane, of Great Berkhampstead, for 12 excellent plants of Perryana, Fielder's White, speciosissima, triumphans, conspicua purpurea (a very large flowered kind), Double red, exquisita, alba magna, punctata, grandis, mirabilis, and Broughtoni. These had been grown in the "natural style," and therefore there was a half constrained yet charming wild beauty about them which the next collection from Mr. Green did not possess, though it must be admitted that the flowers on the plants in the second group were better expanded and finer than those on the Berkhampstead collection. Mr. Green sent lateritia, coronata, Gledstanesi, decora, Perryana, Rawsoni, variegata, optima, triumphans, Symmetry, Prestantissima, and sinensis. The last named plant was literally a mass of yellow blossom. Mr. Over had also 12 good plants.—In the class of 6 varieties, Mr. Taylor was first, Mr. Roser second, and Mr. Peed third. Among these we remarked prettily flowered plants of Dilecta, Murrayana, Iveryana, a white kind with occasionally a purple stripe in it; semi-duplex maculata, Broughtoni (both Knight's and Smith's varieties), variegata, lateritia, Minerva, and Grieswoodiana.

A small group of yellow Rhododendrons was produced by Messrs. E. G. Henderson, of the Wellington Road Nursery. Among these the most conspicuous were Burlingtoni, aureum superbum, and Broughtoni. The latter was, however, not yellow but buff, shaded with pink.

Of Tall Cacti, a small group was contributed by Mr. Green. It consisted of Epiphyllum coccineum, Jenkinsoni, speciosum elegans, crenatum, Ackermanni, and Greeni.

Roses in pots, both from nurserymen and amateurs, were unusually fine. Those from Messrs. Lane, to whom the first prize was awarded, were extremely well grown, and the flowers were just in perfection, their proper colours being beautifully brought out. Among these the most striking were Paul Ricaut, particularly for colour; La Reine, Viscomtesse Decazes, the best yellow; Chenédolé, and Souvenir d'Un Ami. The best specimens in Mr. Francis's group, which was second, were Coupe d'Hébé, Juno, Adam, Pauline Plantier, Bougère, and Souvenir de la Malmaison. Among Messrs. Paul's plants we remarked Alette, Paul Perras, Lamarque, Coupe d'Hébé, and Madame Campbell, of Islay, in good condition. From the last-named firm also came a seedling something like Duchess of Sutherland, but more double, and very sweet.—Messrs. Standish and Noble had also two examples of new Hybrid Perpetual Roses—one named Gloire de France, the other Jules Margottin, both good kinds, but not distinct enough from varieties we have already.—In the class of private growers, Mr. Busby had Géant des Batailles, very good, but past its best; also Solfaterre and Paul Perras, good; but the best, perhaps, was Coupe d'Hébé.—From A. Rowland, Esq., of Lewisham, came Paul Perras and Coupe d'Hébé, rather in advance of the rest, all of which were very evenly and well grown.—Mr. Sage, gr. to Mrs. Robinson, sent a group of small but compact plants, in which the most conspicuous were Géant des Batailles, Duchess of Sutherland, Louis Bonaparte, and Baronne Prevost.

Cape Heaths were numerous, and generally beautifully in flower. Excellent large plants were furnished by Messrs. Rollisson, Jarvis, and Peed, and smaller ones by Messrs. Roser, Over, and Pamplin. Among the different varieties we remarked Hartnelli, denticulata moschata, ventricosa coccinea minor, intermedia Sindryana (a fine upright-growing kind, which is not so well known as it should be), propendens, perspicua nana, vestita rosea, elegans, vasiflora, Beaumonti, dilecta, favoides, elegans, Cavendishi, suaveolens, Macnabiana, mundula, fastigiata lutescens, nitida, several varieties of tricolor, aristata, and other sorts, the flowers on all of which, owing to the late sunny weather, were extremely well coloured, and therefore they were altogether unusually attractive.

Of Single Specimens, the best were Vanda suavis, in beautiful condition, from Messrs. Veitch; Gompholobium polymorphum, from Mr. Dods; and Ixora coccinea, from Mr. Clarke. We also remarked an Everlasting from Mr. Carson, a large Rhynchospermum jasminoides from Mr. Gilham; Adenandra fragrans and Erica depressa from the Exotic Nursery, Chelsea, and the last named variety of Cape Heath from Mr. Busby, gr. to J. Crawley, Esq.

Novelties were few. The most remarkable were a pale salmon-coloured Indian Rhododendron, and the woolly-stemmed Lady's Slipper (Cypripedium villosum), from Messrs. Veitch; and Hedaroma (Genetyllis) tulipiferum, from Messrs. Garaway & Co., of Bristol. Others consisted of the Yellow Hexacentris (H. lutea), from Messrs. Veitch; small examples of Eucharis candida, Boronia Drummondi, and a pink Clerodendron called Bungei, from Messrs. E. G. Henderson; Rhododendron Gibsoni, hirsutum, a small-leaved hybrid with little white flowers tinged with pink, from I. Anderson, Esq., of Edinburgh; Clematis monstrosa, a large white-flowered kind, and also a pale blue variety in the way of C. azurea grandiflora, from Messrs. Jackson. A variety of Cattleya Mossiæ, from Mr. Carson; well-flowered examples of Cantua dependens, and Rhododendron javanicum, from Messrs. Lane; and the Edgeworth Rhododendron, and small plants of Azalea narcissiflora, from Messrs. Standish and Noble.

Among Miscellaneous Single Plants, the best were a Geranium-coloured Rhododendron, called formosum elegans, from Messrs. Veitch; the white pink-striped Azalea Iveryana, from Messrs. Lee; and Oncidium Papilio from Mr. Busby.

A collection of Miscellaneous Plants, chiefly variegated, or otherwise remarkable for fine foliage, was contributed by Messrs. E. G. Henderson. It consisted of various Jacarandas, Rhopala magnifica and complicata; Cibotium glaucum, Asplenium Belangeri, Darea diversifolia, Nephrolepis Davalloides, a variegated Hoya, Plectranthus concolor pictus, Caladium pictum, variegated Yuccas, Mussænda frondosa, Maranta albo-lineata, variegated Pine-apple, Pavetta borbonica, Pandanus javanicus variegatus, the red-streaked Dracæna ferrea, and nobilis; Dieffenbachia maculata, and the orange-veined Cossignia borbonica.

From the last-named firm also came an interesting group of soft-wooded plants, consisting of variously coloured Tree Carnations; examples of the Pompone Chrysanthemums Andromeda, Regulus, and Orion, as finely in bloom now as they usually are in September; different kinds of Variegated and Fancy Pelargoniums, and a variety of Hydrangea, with leaves blotched and striped with white. Mr. Twigg showed some Mimuluses, all good and showy kinds.

Pelargoniums were few; but on no former occasion have we seen them in better condition. Those produced by Mr. Dobson, of Woodlands Nursery, Isleworth, were in all respects very excellent examples of skilful cultivation, the plants being neither too large nor yet too small, very symmetrical in shape, and the flowers all fresh and most beautifully coloured. This group received, as it well deserved, the first Gold Banksian Medal. The varieties were Ambassador, Rosamond (with 150 expanded trusses), Delicatum (fine white, with nearly the same quantity of trusses), Vanguard, Gulielmus, Arethusa, Glowworm, Governor, Purpureum, Harriot (one mass of bloom), Leah, and Vulcan. The last-named flower was greatly admired for its fine colour. In Fancy Pelargoniums Mr. Mockett, gr. to J. Allnutt, Esq., of Clapham, was 1st, with nicely flowered plants of Richard Cobden, Cleopatra, Defiance, Jehu Improved, Princess Alice Maude, and Captivation.—Mr. Gaines, of Battersea, was 2d with the following, which were not fully in bloom—Signora Castoni, Defiance, Queen Superb, Madame Rosati, Delicatum, and Electra.

Of Fruit there was a display on this occasion, such as we have never seen before in May, and with very few exceptions all of it was quite ripe and well coloured.

The first Gold Banksian Medal was awarded to Mr. Fleming, gr. to the Duke of Sutherland at Trentham, for a very fine collection consisting of Black Hamburgh and Muscadine Grapes, a Black Jamaica Pine-apple, May Duke Cherries, very large and beautifully coloured; Elruge and Murray Nectarines, Royal George Peaches, and Trentham Hybrid white-fleshed and green-fleshed Melons. The second Gold Banksian Medal was awarded to Mr. Clements, market gardener, Oak Hill, East Barnet, for Sweetwater and Black Hamburgh Grapes, the latter remarkably large and well coloured; four Queen Pine Apples weighing respectively 3 lbs. 2 oz., 2 lbs. 12¾ oz., 2 lbs. 9 oz., 2 lbs. 7¼ oz.; and four Providences weighing 7 lbs., 6 lbs. 11½ oz., 6 lbs. 4 oz., and 6 lbs.

Of Pine-apples, Mr. Turnbull, gr. to the Duke of Marlborough at Blenheim, sent a very fine Cayenne weighing 4 lbs. 14 oz., and a Lemon Queen 3 lbs. 13 oz. Mr. Jones, gr. to Lady Charlotte Guest, had a Ripley Queen 4 lbs., and Mr. Jennings, gr. to the Earl of Derby at Knowsley, a Jamaica 3 lbs. 5 oz. Other sorts consisted of a Queen, 3 lbs. 8 oz., from Mr. Barron, gr. to J. H. Vivian, Esq.; two Providences, each 6 lbs. 12 oz., from Mr. Gray, gr. to the Earl of Zetland; a Providence from Mr. Stewart, gr. to the Marchioness of Londonderry; a Moscow Queen from Mr. Smith, Market Gardener, Isleworth; and a Black Jamaica from Mr. Ogle, gr. to the Earl of Abergavenny, at Eridge Castle, Tunbridge Wells.

Grapes.—Mr. Martin, gr. to Sir H. Fleetwood, Bart., sent beautiful bunches of Black Frontignans, Sweetwater, and Black Hamburgh. Mr. Breadley, gr. to S. M. Peto, Esq., had Black Hamburgh and White Frontignans, both good. Mr. Jennings sent Black Hamburgh and Dutch Sweetwater. Mr. Forbes, gr. to the Duke of Bedford, at Woburn, Black Hamburgh; Mr. Mitchell, of Brighton, a fine basketful of the same variety, beautifully coloured; and Mr. Spencer, gr. to the Marquis of Lansdowne, at Bowood, Mr. Spary, of Brighton, and Mr. Dods also had Black Hamburgh, in excellent condition. Other examples of this Grape came from Mr. Henderson, gr. to Sir Geo. Beaumont, Bart.; Mr. Stewart; Mr. Ivison, gr. to the Duke of Northumberland, at Syon; Mr. Ogle; Mr. Jackson, gr. to G. Beaufoy, Esq.; and Mr. Kately. Of other Grapes, Mr. Spencer sent good bunches of Chasselas Musqué; Mr. Turnbull, Grizzly Frontignan; Mr. Breadley, White Frontignan; and Mr. Jackson, Sweetwater.

Peaches.—A dish of Noblesse was exhibited by Mr. Stewart, gr. to the Marchioness of Londonderry, and another of Royal George by Mr. Wingfield, gr. to W. H. Bracebridge, Esq.

Strawberries were numerous, large, and finely coloured. The sort which attracted most attention was a seedling called Sir Charles Napier, an extremely fine looking fruit, conical in shape, and about as large as the British Queen, which it greatly excelled in colour, being one uniform glowing red, even to the very point. We understand, however, that it proved to be so badly flavoured, that the judges could not give it any award. It was exhibited by Mr. Smith, of Isleworth, who had also excellent examples of British Queen, both gathered and in pots. Mr. Turnbull, gr. to the Duke of Marlborough, had British Queen and Keens' Seedling; Mr. Ivison, Keens' Seedling; Mr. Ironmonger, gr. to S. R. Heseltine, Esq., and Mr. M'Ewen, gr. to the Duke of Norfolk at Arundel, British Queen; Mr. Dew, of Ham, Keens' Seedling; and Mr. Simpson and Mr. Goodall, Keens' Seedling. Mr. Bucktrout, gr. to W. L. Gower, Esq., had Princess Alice Maude; Mr. Judd, gr. to Earl Spencer, British Queen; Mr. Breadly, British Queen, and Mr. Hibbins, gr. to E. C. Seaman, Esq., Keens' Seedling in pots. From Mr. Patterson, of Thame Park, Oxon, came a seedling called Patterson's Scarlet Nonpareil, which looked as if it would be an acquisition.

Cherries.—Very good dishes of May Duke were contributed by Mr. Shuter, Mr. Jennings, Mr. Jackson, Mr. Fleming, Mr. McEwen, and Mr. Wilson, of Warwick. These were all large and well coloured.

Figs were produced by Mr. Busby and Mr. Judd, both exhibitors showing Brown Turkey.

Of Melons, the best were Snow's Prolific Green-fleshed, from Mr. Scrogie, Southill Gardens, Bedfordshire; and Victory of Bath, from Mr. Grant. Other sorts were Austin's Incomparable, and Knight's Hybrid Green-fleshed.

Of rare fruits, Mr. Ivison furnished a dish of Loquats.

Botanical of Edinburgh, *March* 9.—The President in the chair.—Dr. Balfour exhibited under the microscope specimens of porous and true punctated tissue in coal, and he noticed the formation of coal by Sigillarias, and the presence of scalariform tissue in such coal.

Mr. M'Nab exhibited various cut roots of trees which had been transplanted by Mr. M'Glashen's apparatus a year ago, and which showed tufts of fibrils varying from 7 or 8 inches to 1½ foot in length, produced from the cut extremities. Dr. Balfour remarked that this plan of transplanting had been very successful, that cutting the roots did not appear to operate in arresting growth, and that the objection urged by some, that plants were likely in such circumstances to exhaust their energies in the production of flowers and fruit, had not been verified. The plan of at once transplanting the trees after their roots were cut, and allowing them to form young rootlets in their permanent position, seemed preferable to the plan of cutting the roots the previous season by trenches, to induce the formation of roots, and then running the risk of injuring these by the after removal. The following papers were read, viz. :—1. *On the Pollen of Zamia horrida.* By Dr. Balfour. 2. *Notice of the Muscology of the East Coast of Fife.* By Rev. T. Brown. 3. *Note on the supposed Antheridia of the Rhamneæ.* By J. S. B. Sanderson, M.D. Dr. Sanderson, after a careful examination of the buds of various species of Rhamnus, particularly of R. catharticus, considered that the bodies supposed by Grisebach to be antheridia were not so, and that the club-shaped organs described by him differed from antheridia in not being developed from a single special mother cell, in not possessing a central cavity at any period of their growth, and in containing a resinous secretion. He could not detect the "long-tailed globules enclosed in minute spherical cells" described by Grisebach as oscillating in a very lively manner. 4. *Register of the flowering of certain hardy plants in the Royal Botanic Garden from 9th February to 7th March, 1854.* By Mr. M'Nab. Feb. 12, Alnus glutinosa; Feb. 14, Galanthus plicatus, Tussilago alba, Sisyrinchium grandiflorum, Crocus susianus; Feb. 15, Arabis albida, Leucojum vernum; Feb. 18, Rhododendron atrovirens, Daphne Mezereum; Feb. 20, Erica herbacea, Daphne Laureola; Feb. 21, Cornus mascula; Feb. 23, Garrya elliptica; Feb. 24, Potentilla fragariastrum; Feb. 27, Primula denticulata; Feb. 28, Knappia agrostidea, Ranunculus ficaria; March 1, Lamium garganicum, Nordmannia cordifolia; March 2, Rhododendron nobleanum; March 3, Symplocarpus fœtidus; March 4, Primula nivalis; March 7, Vinca minor. Mr. Evans stated that the Apricot opened its first flowers in the Experimental Garden on the 4th inst. 5. *On the Anatomical Structure of Coniferæ and other Gymnogens.* By Mr. G. Lawson. The author remarked that he had recently been engaged in the examination of the minute anatomy of Gymnogens, and after alluding to the peculiarities of structure that had drawn towards these plants the attention of all physiologists, he proceeded more particularly to detail his observations on the anatomy of their wood cells. The structure and development of the wood cell had been well elucidated by Hugo von Mohl in various papers in the "Annales des Sciences Naturelles," and in his work on the "Vegetable Cell," but there was one aspect in which the subject had not been so fully viewed as appeared desirable. Mr. Lawson's examinations had been undertaken principally for the purpose of ascertaining in how far the peculiarities in the minute anatomy of the Coniferæ coincided with their general structure, and might be depended upon in the determination of their orders, genera, and species—an inquiry from which fossil botany and investigations relative to timber were likely to derive advantage. After detailing the general structure of the wood cells of Coniferæ, and pointing out peculiarities that occurred in various plants of the order, he described a remarkable modification which had been noticed in the Yew, viz., the presence in the wood cell of what appeared to be a spiral fibre, but which had been shown by Harting to be a connected pellicle with thickened ridges arranged in a spiral manner. Mr. L. had found this structure to be by no means so rare as had been supposed, and although principally confined to plants belonging to Taxaceæ, it was stated not to be universal in that order, nor peculiar to it. He had observed it in the following plants :—Cephalotaxus Fortuni, C. pedunculata, C. tardiva, Torreya taxifolia, T. nucifera, Taxus baccata, T. canadensis, Podocarpus japonica, P. koraiana, Abies Douglasi, Fitz-Roya patagonica. It also occurred in a specimen of Pine wood from N. California, which presented interesting microscopical characters, but which he had been unable as yet to identify. This structure was not to be confounded with the faint spiral streaks seen under a high power on the secondary membrane of the wood cells of many Coniferæ. It had been long a question whether true punctated tissue was strictly confined to Gymnogens. A careful examination of Drimys granatensis and other plants had led Mr. L to believe that the discs which occurred in aromatic trees were essentially the same as those of Coniferæ, and indeed accorded in a remarkable manner with those of many Araucariæ and Taxaceæ, in which the central dot was not circular, but formed by two elliptical slits crossing each other. The manner in which this appearance arose was fully explained by a reference to the spiral arrangement of the slits, which also seemed to account for the alternation of the discs in Araucaria. In the determination of fossil plants and of unknown timbers, Mr. Lawson believed that valuable characters were afforded by the peculiarities of the wood cell, such as its general size, presence or absence of a spiral tertiary membrane, arrangement of discs (alternate or opposite), their distance from each other in different directions, and whether in single, double, treble, or quadruple rows on each cell; absolute size of the disc, and its breadth as compared with that of the cell; form of disc, whether circular, elliptical, or angular, or a combination of these forms; form of central dot, and (if not circular) direction of the same. The cells of the medullary rays, and the pits in connection with them, also afforded useful marks of distinction. By aid of the above characters, to which many more might be added, Mr. L. had been able to mark distinctions between timbers whose appearances to the naked eye presented no definite characters. It was of great importance, however, in adopting such distinctions that we should also retain the other means of investigation we possess, and his present attempt was meant not to displace but to supplement these. Specimens of timber were exhibited, including Wellingtonia gigantea, which Messrs. Veitch of Chelsea had kindly sent through Mr. Evans; under the microscope it presented a double row of opposite discs, which, as well as their central dot, were elliptical. 6. *On Ophioglossum lusitanicum Linnæus.* By Mr. T. Moore, F.L.S. The author remarked :—"The discovery of the Ophioglossum lusitanicum L., within the politico-geographical limits of Great Britain, so soon after that of the Gymnogramma leptophila, another S. European Fern, is a fact of much interest. The existence of this curious little plant in Guernsey was first discovered in January of the present year by Mr. Wolsey, who met with it above the rocks bordering on Petit Port Bay, in that island. The first public notice of its discovery was by Mr. J. Smith, of Kew, in the *Gardeners' Chronicle* of January 28, 1854. One remarkable feature of the plant is the very early period of the year at which its growth is made. By the middle of January Mr. Wolsey found it to be fully developed, and the fronds no doubt perish early in the spring. The range of this Ophioglossum appears to be extensive; for it is recorded to inhabit the sandy coasts, both of Europe and Africa, washed by the Mediterranean Sea, including those of Sardinia, Sicily, Greece, Naples, France, Spain, Portugal, and Algeria; and to extend to the Canary Islands and Madeira in the Atlantic Ocean. It is not improbable that a diligent search might be rewarded by its discovery in the western counties of England or in Ireland. Its early development and speedy decay should, however, be borne in mind by those who may undertake the search."—An extract was read from a letter by Mr. D. Menzies, gardener, Gala House, relative to a *Norway Spruce tree* recently struck by lightning :—"It was 63 feet high and 4½ feet in circumference, at 13 feet from the ground. The stem was broken through at about 27 feet from the ground, and, with the exception of splintering on one side, was broken pretty nearly across. The broken ends, upon examination, appeared as if severely crushed, and very open. The other parts of the trunk were uninjured, and no difference was observed on the branches. The day was perfectly calm, and I cannot conceive the tree to have been broken by any other means, having seen it immediately after the thunder-storm."

Notices of Books.

The Micrographic Dictionary: by Dr. Griffith and Mr. Henfrey. Van Voorst. Part I.—This, if well executed, may be useful to the numerous amateurs who are now-a-days indulging in the use of the microscope. In such a work, however, the purchaser has a right to expect the illustrative plates to consist of original figures, unless he is expressly warned to the contrary. This is not the case; and of the wood-cuts we presume to say that while that of Adiantum (p. 13) is execrable, some of the others are not such as we looked for in a work published by Mr. Van Voorst. Nor can we say that we are quite satisfied with the letter-press. What, for instance, have Acrocarpi, Acaulon, Acroperus, Acrosticheæ, &c., to do with Micrography in the proper sense of that needless term!

New Plants.

64. Hedaroma tulipiferum. Genetyllis tulipifera *of gardens.*

H. tulipiferum: foliis oblongis obtusis sessilibus decussatis margine cartilagineo denticulato cinctis, involucro sessili obovato cernuo petaloideo multifloro basi foliaceo stigmatibus barbatis longiore, filamentis sterilibus minimis acutis.

A bush of this remarkable plant was exhibited at the last meeting of the Horticultural Society by Messrs. Garaway and Co., of Bristol, who received a silver medal for it. In appearance, when out of flower, it much resembles some broad-leaved *Diosma*, or rather, perhaps, *Pimelea decussata.* Its apparent flowers are terminal, drooping, greenish white, sessile cups, about 1½ inch deep, stained with dull red, and passing at the base into leaves; but the real flowers stand in a crowd within the base of the cup, which is an involucre. Each flower is enclosed by a pair of broad, carinate, fragrant scales, stained with deep crimson over the upper half. They have the same structure as those of *Hedaroma latifolium* (*Appendix to Bot. Register*, p. vi.), except that their tube is marked by five furrows; the calyx lobes are minute, rounded, and obsolete, and the sterile stamens mere crimson points. It is a New Holland plant, introduced by Mr. James Backhouse, of York. The flowers of the specimen exhibited were as dull in colour as *Clematis cirrhosa,* but we incline to believe that in the hands of some of our great cultivators the white would become clear, and the dull red brilliant, in which case this would really deserve the name of the "Tulip-bearer." It should be compared with *Genetyllis macrostegia* of Turczaninoff.

FLORICULTURE.

The Perpetual or Tree Carnation.—The appearance of a few plants of this charming flower at the exhibition of the Horticultural Society at Chiswick on Saturday last, reminds me that a few remarks respecting it at this season may possibly prove useful. This variety is commonly called the Winter-flowering Carnation, from the desirable characteristic it possesses of blooming throughout that season. The name of Tree Carnation may be familiar to some, as the plant itself is not of recent introduction, although very few varieties seem originally to have been known, and those have now been entirely superseded by sorts lately imported; for it is our continental neighbours who have been so successful in raising them, and to whom we are principally indebted for these invaluable acquisitions; for not only are the varieties now more diversified in colour, but their growth and habit are altogether improved. In addition to their bright and varied colours, they are deliciously fragrant, a desideratum which cannot be too highly appreciated, some of the varieties being equal in perfume to the common Clove. Persons desirous of cultivating this tribe of Carnations should procure nice young plants, say in March, and keep them in a cool frame until the weather permits them to be exposed entirely to the open air; but, even in spring the lights should be taken off whenever it is practicable. Those who have old plants should strike cuttings about the middle of March, as young plants grow rapidly throughout the summer, and make by far the best specimens for winter blooming. Before taking cuttings, the plants should be put into a warm house, or one that is kept rather close; and those who have not this convenience should put them in the warmest part of the greenhouse; if this is done, the plants are excited to grow, and if the cuttings are then taken off, they will strike root more readily. Care should be taken to strike only from vigorous plants, and to select strong and healthy cuttings; for if this is not done, and the cuttings are taken from delicate and cankery plants, the colours of some of the varieties are inclined to run, besides which, the plants always maintain a sickly appearance. Tree Carnations will supply an abundance of cuttings, as most of the varieties continually throw out a profusion of laterals, which can be taken off at any season without injury to the parent plant; indeed, taking a few of them off in autumn has rather a tendency to strengthen the flowering shoots than otherwise. To insure cuttings taking root, either late in autumn or in spring, they must be struck in a little heat, but the cutting pots should not be covered with a glass, for if this is done, the cuttings will fog or damp off; besides which it is not necessary; and if no glass be used, they will want occasionally looking over, and any Grass carefully removed that is likely to create damp. After the cuttings are well rooted they should be potted singly into, say, 4-inch pots, and kept in a rather close and moist atmosphere until fully established, when they should be gradually hardened off in a cool frame. At this stage the tops may be pinched out, which will greatly assist the formation of nice plants. To those who have not the convenience of supplying warmth for striking cuttings during winter, I should recommend their being struck at the latter end of summer, to be potted off and kept in a cool frame during the winter, care being taken to keep them rather dry—a rule which should always be observed in wintering Carnations. The cutting pots should be prepared by first giving a good drainage of any sherds of a porous nature, then a few rough pieces of turfy loam to prevent the soil from being carried through the sherds; after this, take equal proportions of loam and silver sand, mix together, and fill until within a quarter of an inch of the rim, then complete by filling up with silver sand. Tree Carnations will thrive luxuriantly in a good maiden soil or loam mixed with a little silver sand, to which may be added a slight sprinkling of leaf-mould; the same soil may be used throughout the season, except when the plants are first shifted from the store pot, when a little more silver sand should be used. In spring the plants should be removed from the frame, and placed upon an open border, in any favourable situation; but first prepare it by spreading a thin layer of ashes, which will prevent worms from entering the pots. If at this time the plants require potting, a shift should be given them, but care must be taken not to over-pot them. I find that many varieties thrive better if gradually shifted into their blooming pots, say first from 3-inch into a 6-inch pot, and so on in proportion. The plants are comparatively no trouble during summer; they merely want watering, and sometimes stirring up the surface soil; but as they grow, care must be taken to secure the stems nicely with some neat sticks. The principal insects that attack them are green fly; which is easily removed by sprinkling with a little tobacco-water. If the weather and situation prove excessively hot in the summer, the plants may be removed with advantage to a border that is slightly shaded from the mid-day sun. If the above mode of treatment is followed, by the autumn the plants will have thrown up from three to eight stems each, and be laden with a profusion of buds, which, if the plants are removed to a greenhouse as soon as the weather is beginning to get damp and cold, will expand, and afford a continuance of blossoms throughout the winter. These Carnations are not only valuable for their display in the greenhouse, but are, I may say, unequalled as a winter flower for the bouquet and

other purposes to which cut flowers are applied. The following are the names and colours of 12 of the best and most distinct varieties :—Attila, scarlet and white flake ; Belle Zora, salmon pink, striped and mottled with crimson ; Cassandra, bright cerise ; Gertrude, lavender, mottled with white ; Incomparable, deep rose, striped with crimson ; La Sermi, blush white, mottled with rose ; La Vestale, scarlet self ; Le Zephir, purple ; Madonna, blush, striped, and mottled with crimson ; Proserpine, large dark crimson ; The Baron, white, mottled with rose on the edge ; Union, crimson, mottled with white. *W. B.*

SEEDLINGS.

Cinerarias : *J R.* 1 is a large bold flower, in the way of Cerito ; and, although the petals are perhaps a little too ribby, it deserves cultivation. 2 is not so good as many white sorts we already have.

Pelargoniums : *R J L.* Good in colour, but too small, and otherwise defective, ever to be a favourite.

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

Conservatory, &c.—As the New Holland plants go out of bloom the seed pods should be picked off, the shoots cut back and arranged in the form most favourable to secure a compact growth, placing them in an airy part of the greenhouse until they fairly start into growth. When the buds have fairly started will be the proper time for shifting such as require more pot room, as they can then be kept somewhat close for a fortnight to encourage a free root action, without incurring the risk of the buds breaking scantily. Look well to the stock of plants for summer and autumn decoration, and do not allow them to sustain any check through want of pot room, or carelessness in watering. The Croweas are first-rate subjects for this purpose, remaining longer in beauty than almost any other hard-wooded plant which we possess, and are not nearly so much used as they should be. Fuchsias for late blooming must not be kept too warm, but should be placed in a moist, cool, shady house, where they will grow much more freely than in a high temperature. Stove.—The plants here will now be growing very freely, and will require frequent attention as to stopping, training, &c. Keep them properly supplied with pot room, and afford them all the sunshine that they will bear without scorching, with a moist atmosphere, admitting air freely on mild days. Also afford them sufficient space for the perfect development of their foliage. Carry on an incessant war with insects, and attend to cleanliness, washing the house, pots, &c., as may be necessary to ensure this. Go over creepers frequently, so as to direct their growth and prevent their getting into interminable confusion, which, without attention, will soon be the case. Syringe and shut up early on the afternoons of bright days, and be as sparing as possible in the use of artificial heat. Orchids.—Afford those in growth a thoroughly moist atmosphere, giving them a good steaming every bright afternoon, by syringing and shutting up early. Admit air in moderate quantities on mild soft days, but carefully avoid currents of drying wind. Examine the plants individually every other day, and water such as require it, but be careful not to give too much to those starting into growth, and a cool atmosphere will greatly assist in prolonging the beauty of those in bloom.

FORCING DEPARTMENT.

Pinery.—Plants swelling their fruit should be divested of all suckers except as many as may be absolutely wanted for stock. This will throw more of the energies of the plant into the fruit, and will also tend to strengthen the suckers left. Guard against any decline of the bottom-heat, or allowing the soil to become either too dry or too wet, so as to avoid any check which would be highly injurious to the swelling of the fruit. Give manure water liberally whenever the soil becomes dry, and maintain a regularly moist atmosphere. Vineries.—Go over the Vines frequently, for the purpose of stopping the laterals, and preventing their shading or interfering with the more valuable foliage. Where there exists a necessity for growing plants under the Vines, the latter should be kept sufficiently thin to allow of a moderate share of light reaching the plants. Keep a sharp look-out for red spider, and use every possible means to eradicate it the moment it is perceived. Where plants are grown under the Vines, see that they are not infested with black thrips, which, if once allowed to get upon the Vines, is vastly more destructive and difficult to eradicate than red spider. Attend to the thinning of the fruit in succession houses immediately the berries are fairly set, and thin bunches and berries freely ; for, depend upon it that a moderate crop of first-rate fruit will be more creditable to the gardener, and satisfactory to the owner, than a larger quantity would be if obtained at the expense of quality. The proper quantity to be left must, however, be regulated entirely by the strength of the Vines, &c. Peaches.—There is no fruit which is so deficient in flavour and so thoroughly worthless, if ripened in a close moist atmosphere, as Peaches and Nectarines ; therefore admit air freely whenever the ripening process is observed to be commencing ; and unless the fruit is fully exposed to light and sunshine they will be deficient in colour, hence the shoots should be neatly tied in previous to the ripening period, in order to fully expose the fruit to the free action of the sun's rays. Endeavour to have the border in a healthy state as to moisture, while the fruit is ripening.

FLOWER GARDEN AND SHRUBBERIES.

Recently transplanted shrubs and trees must be carefully attended to with water until they get fairly established. It is frequently the case, however, that too much water is given at the root, thereby souring the soil and rendering it uncongenial to the young rootlets and the aftergrowth of the plants. The soil should be kept moist, but not to saturation, and the plants should be watered over-head with the engine on the evenings of bright days, which will be of vastly more service in repairing the loss sustained by evaporation than if given in excess to the soil while there is a deficiency of active rootlets to absorb it. Where Roses are infested with the grub, it will be necessary to go over the plants frequently, to destroy this pest. Green-fly is also sometimes very troublesome at this season ; a good washing with the garden engine on two or three successive evenings will greatly assist in getting rid of these destructive vermin. With the wind due north, and a fair prospect of a sharp frost any night, there is no irresistible temptation to commence bedding out in good earnest. It is to be hoped, however, that we shall have experienced a favourable change before the appearance of this notice, and that the planting of all properly prepared stock may be proceeding under favourable auspices. Begin with Calceolarias, Verbenas, Scarlet Geraniums, &c., leaving Heliotropes, Lantanas, Anagallis, and such things as are easily injured by frost, until planting of the more hardy kinds is completed. Branches of evergreens are easily enough obtained about most places, and a sprinkling of these stuck into the beds after planting will be of great service in protecting the plants from the drying effects of bright sunshine, and will also ward off a degree of frost which, to unprotected plants, would be destructive. All shoots which are long enough to be injured through being blown about by the wind, should be pegged down immediately on planting out, and a good watering should be given to the bed to settle the soil about the roots ; this, however, will be better done early in the morning, if there is any reason to fear frost.

FLORISTS' FLOWERS.

The warm dry weather hastens the bloom of Tulips. If for exhibition careful shading will be requisite ; on the main bed the awning of course will be sufficient ; but on side beds, where individual flowers only require it, a wooden or glass shade should be put over them, covering with a large Rhubarb leaf. To retard the flower, a little moss may be placed on the surface of the soil and kept moist. Attend to cross breeding. Choose clean finely shaped flowers, but never cross a yellow with a white ground variety. Carnations and Picotees will require constant attention as to water, and tying up the shoots regularly as they spindle, and relieving any previously tied which may be too tight. Water Ranunculuses between the rows in the evening ; also Dahlias. Pinks require a good deal just now ; it aids their lacing. Place Auriculas and Polyanthuses in their summer quarters.

HARDY FRUIT and KITCHEN GARDEN DEPARTMENT.

Persevere in the destruction of insects on fruit trees, in order to afford the young shoots a fair chance to make healthy growth ; also proceed with disbudding and stopping gross shoots. See that recently transplanted trees are not allowed to suffer through want of water. Look after the caterpillar on the Gooseberry trees. The quickest way of getting rid of this pest is to give the trees a heavy washing with a powerful engine, throwing the water against the under sides of the leaves, which will wash off the caterpillars, and they are readily killed on the ground by means of an iron rake. Get trenches filled with some fermenting material in readiness for Cucumbers, &c., and expose the plants rather freely to light and air, to prepare them for planting under the protection of the hand-glasses. If not already done, see to sowing plenty of Sweet Basil, Savory, &c., on a warm border of light rich soil. Persevere in the destruction of weeds, and keep the surface of the ground frequently stirred among growing crops.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending May 18, 1854, as observed at the Horticultural Gardens.

May.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind.	Rain.
Friday 12	○	30.186	30.118	67	39	53.0	50	51	S.	.00
Satur. 13	16	30.110	30.085	67	37	52.0	52	52	N.W.	.00
Sunday 14	17	30.139	30.112	67	47	57.0	53	53	N.E.	.00
Mon.. 15	18	30.120	30.097	66	43	54.5	54	53½	N.	.00
Tues. 16	19	30.136	30.125	61	30	45.5	54	54	N.E.	.00
Wed. 17	20	30.163	30.032	69	40	54.5	53	52½	N.E.	.00
Thurs. 18	21	30.140	30.040	56	30	43.0	54	54	N.E.	.01
Average		30.142	30.[illegible]86	64.7	38.0	51.3	52.8	52.8		.01

May 12—Foggy ; very fine, with bright sun ; clear at night.
— 13—Fine ; cloudy and fine ; clear at night.
— 14—Fine ; very fine ; partially overcast
— 15—Very fine throughout ; clear at night.
— 16—White clouds ; partially overcast ; very clear ; frosty.
— 17—Slight frost early A.M. ; uniform haze ; clear, very dry air ; partially overcast.
— 18—Overcast ; slight shower ; very clear at night ; frosty.
Mean temperature of the week, 2 deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending May 27, 1854.

May.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 21	65.8	45.0	55.4	11	0.36 in.	3	5	9	2	3	3	1	2
Mon. 22	65.7	44.2	55.0	12	0.20	5	6	3	3	3	5	2	1
Tues. 23	67.9	46.1	57.0	7	0.53	1	5	5	4	1	3	4	5
Wed. 24	68.2	46.0	57.1	9	0.54	3	6	7	1	4	4	3	1
Thurs. 25	66.2	45.4	55.8	10	0.64	1	11	2	1	1	6	5	1
Friday 26	66.3	43.3	54.8	12	0.35	2	10	3	1	2	5	3	2
Satur. 27	68.1	45.5	56.8	14	0.44	2	9	6	1	1	5	2	2

The highest temperature during the above period occurred on the 23d, 1847—therm. 89 deg. ; and the lowest on the 25th, 1839—therm. 29 deg.

Notices to Correspondents.

Azaleas : *South Derbyshire.* We have no means of ascertaining why your plant has not flowered. The leaves seem to be healthy. It is always best to pull off the young fruit from all American plants ; this should be done as soon as the flowering is over. Probably, your Azalea will flower all the better next year, from having missed this, unless it is out of health. Your plant is Saxifraga granulata.

Books : *J J M.* Endlicher's "Synopsis Coniferarum" was published in 1847, by Scheitlin and Zollikofer, and may be procured through any foreign bookseller. We suppose its price to be about 10*s.* You will find the nomenclature by which we abide in the Journal of the Horticultural Society, vol. v., p. 1[illegible]9. Abies, Cedrus, Larix, and Picea, are mere sections of the genus Abies.

Calceolarias : *L K W H.* We have not received the specimens in question, nor indeed any Calceolarias of any kind. ‡

Conifers : *Tyro.* They should not be tied up at all. Let them alone and they will straighten themselves, except such as are naturally weepers, and you would not wish to alter their natural habit.

Diseases : *H W B.* All the cuttings which you have forwarded seem to be affected in the same way, the portion only which is plunged in the soil exhibiting symptoms of decay. We do not find the slightest trace of any fungus, nor is it probable that the injury is due to such a cause, as the aërial portions of the plants are unaffected. The sand appears to be unobjectionable, but we observe that leaves of Sphagnum are attached to the base of every specimen, and if you are in the habit of mixing comminuted Moss with your compost it is a very hazardous plan, and extremely likely to retain water in the soil in a state prejudicial to vegetation. The presence of the Moss, however, may be merely accidental, and we know that out of a number of pots drained in the same way and filled with the same compost, a number will be perfectly pervious to moisture, while the rest will always be water-logged, and the surface overgrown with Vaucheria or Microcoleus, to the destruction of everything that is placed in them. If your soil is really covered with the mycelium of some fungus, it must be because there is some imperfectly decomposed vegetable matter mixed up with it ; but perhaps you speak only in popular terms, and the Spider's-web belongs to some other division of Cryptogams. The fault will most probably be found to rest either on something in your compost, or on impervious or uncleansed pots.—*J G.* The disease with which the leaves of your Black Hamburgh Grapes are attacked is very singular. As far as we can judge from the single specimen which you have forwarded, the vascular bundles of the leaf are first attacked where they enter into it from the leaf-stalk, from whence the disease spreads through every ramification, affecting the parenchym in different points as it passes along. It is, therefore, probably the ascending sap which is in fault, and you must examine the state of the roots, and of the soil with which they are in contact, in order to detect the cause. If they are in communication with highly putrescent matter, whether animal or vegetable, there will be some reason to presume that the remedy is in your own power. It is impossible, however, to do more than suggest a cause, without the means of personal inspection.—*Rowland.* Your Cucumbers are affected precisely in the same manner as those adverted to in the *Gardeners' Chronicle*, 1847, p. 356, and the Melons, respecting which information was lately communicated by "P. S." Nothing can be more likely to produce such dropsical specimens than the comparative deficiency of light during the present spring, and yours is by no means a solitary case. You have, however, suffered before from the same disease, and if your seed is derived from the same stock, you will be likely to suffer again, however complete your arrangements may be, for nothing is more certain than that seed from a diseased source has a tendency to propagate disease, and that even where the malady is not simply constitutional, but dependent on parasitic fungi.—*C D.* The production on the leaves of Pinus Pinaster is Æcidium Pini. Such diseases, when once produced in perennial or arboreous plants, are very difficult of removal, and generally reappear for many years, as in the case of the Pear rust and many others. Your best consolation is that the disease is seldom injurious, except to young trees, and that not very frequently. *M. J. B.*

Heating : *Sub.* We should certainly prefer 4-inch iron pipes to tanks, as a means of furnishing bottom-heat for Pines. They may be laid in shingle or rough gravel, over which the soil for the Pines should be placed. One or two short earthenware pipes may be put down through the soil to the gravel, in order to afford means of moistening the latter when necessary. ‡

Insects : *J W G.* The moth sent is the common puss moth, Cerura Vinula.—*Abel (something).* The "scale" on the Pear leaves are not scale insects, but the pupæ of the Pear hopper, Psylla pyri. Wash the leaves well with gas tar water, or tobacco water, and then syringe with fresh water. At a later period shake the branches or leaves over sheets of paper smeared with bird-lime, to which the winged insects will stick. The insect which injured the young shoots of your Dahlias is a millepede, Julus subterraneus. Entrap them by placing cuttings of vegetables on sticks underground, and examining them every other morning. *W.*

Messrs. John Weeks and Co. : *Sandgate.* It is not true that this respectable firm has found its way into the *Gazette.* The report is the very reverse of truth. The firm of Edward and Alfred Weeks is bankrupt, but those persons were not in any way whatever, directly or indirectly, connected in business with Messrs. John Weeks and Co. We trust that this statement will put an end at once to all misconception.

Names of Plants : *William Dickson.* 1, Listera cordata, a great rarity ; 2. Draparnaldia glomerata, a Conferva, not a Moss. (N.B. We cannot undertake to name any Cryptogamous plants except Ferns).—*Mary Anne.* 1, Cattleya Forbesi ; 2, Epidendrum cuspidatum ; 3, Oncidium confragosum.—*T B M.* Oncidium cornigerum, a fine thing.—*R F.* It is Kæmpferia pandurata.—*J S.* Eccremocarpus scaber.—*Norma.* 1, Bromus mollis ; 2. Anthoxanthum odoratum ; 3, Carex intermedia ; 4, Holcus mollis. — *Mary.* Phytolacca icosandra. — *Flora.* Ranunculus parnassiifolius.

Prepayments : *A Constant Reader* complains, like others, of some of our advertisers, who, he says, "find it very convenient to stipulate for prepayment, but do not find it equally so to remember the obligations they thus lay themselves under." If a "Constant Reader" will favour us with his name in confidence, we will publish his letter, should he still find it necessary to complain. We trust, however, that the cases to which he alludes are susceptible of explanation.

Villarsias : *A H.* It is true that reniformis and lacunosa are what you say ; but what then ? Unless you can give them a N. Jersey summer they are not likely to bear an English winter.

Woods and Forests : *Southampton.* We are as much in the dark as yourself as to the two persons, called referees, employed by the Treasury in its late proceedings. They are named in the Blue Book as Mr. Mathews, of Edgbaston House, Birmingham ; and Mr. Murton, of Tunstall, Sittingbourne. Can you or anybody else tell us who and what they are ? That there is something to be learned about them, important with a view to the public interests, we entertain no sort of doubt. Who recommended them to the Treasury ?

Misc. : *Amateur.* An amateur is one who does not deal in plants.—*A C.* Will you kindly favour us with your name and address ?

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

TURNIP SOWING, ETC.

GENUINE HALF-INCH BONES AND BONE-DUST may be had in any quantity of JARED TERRETT HUNT, Lambeth Wharf, Upper Fore Street, Lambeth, near Vauxhall Bridge. Also Superphosphate of Lime and Sulphuric Acid for dissolving Bones. J. T. H. also invites the attention of Gentlemen and Agriculturists in general, to his Superior Fine Bone-Dust for dressing Lawns, Parks, &c. Delivered to any Railway in London in Sacks.

TURNIP SOWING.

SUPERPHOSPHATE OF LIME, made from Bone, which is the best Manure for Root Crops (see the Royal Agricultural Society's Journal, Vol. vi., part 2). PERUVIAN GUANO, NITRATE OF SODA, BONE DUST, SULPHURIC ACID, and all other Manures of known value. The PEAT MOSS CHARCOAL COMPANY have appointed the undersigned Sole Agents for the Sale of this fixer and distributor of Ammoniacal matter. They are also Sole Agents (in London) of the Patent Sanitary Company for the sale of their "Nitrogenised Carbon."—Apply to MARK FOTHERGILL & Co., 204A, Upper Thames Street, London.

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures.

WM. INGLIS CARNE, 10, Mark Lane, London.

GUANO (PERUVIAN) AND CHEMICAL FERTILISERS.—NITRATE OF SODA; PERUVIAN GUANO; SUPERPHOSPHATE OF LIME; AGRICULTURAL SALT; AND CONCENTRATED MANURE FOR TURNIPS.

The above articles are supplied on the lowest Cash Terms, for best qualities only, on application to Mr. JOHN CLARANCE, Agriculturist's London Agent, 1A, Bishopsgate Street Within.

THE LONDON MANURE COMPANY'S WHEAT MANURE, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. EDWARD PURSER, Sec.

Bridge Street, Blackfriars.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7l. per ton; Superphosphate of Lime, 7l.; Sulphuric Acid and Coprolites, 6l.

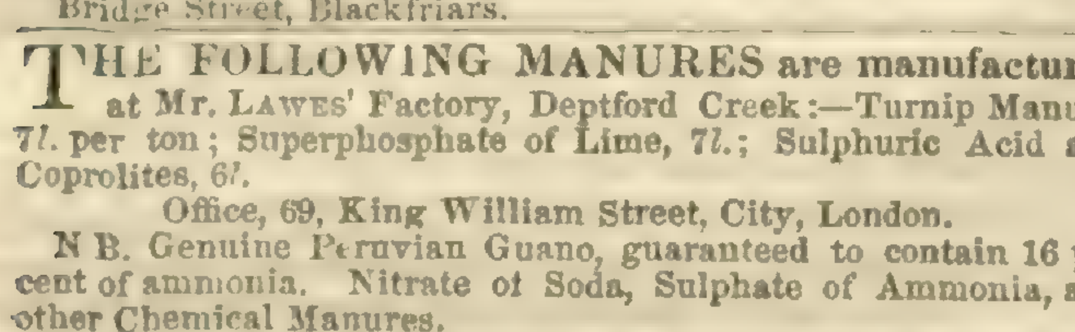
Office, 69, King William Street, City, London.

N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

SEWAGE CHARCOAL MANURE.—This highly fertilising Manure, which is Peat Charcoal completely saturated with London Sewage, will be found most efficient for every species of crop; more especially for Peas, Beans, Turnips, Mangold Wurzel, and other root crops. It will produce a greater return for the outlay than Guano or any other Manure at an equivalent value: it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained at the SEWAGE MANURE WORKS, Stanley Bridge, Fulham, at 4l. per ton, and in quantities less than half a ton, at 5s. per cwt., for ready money only; and in quantities not less than a ton, will be delivered at the London Termini of the Railroads free of charge for cartage. No charge for sacks.

It may also be had from Messrs. G. GIBBS & Co., 26, Down Street, Piccadilly, Agricultural Seedsmen, Agents for London: and from all the other Agents of the Company.

SCYTHES.



BOYD'S PATENT SELF-ADJUSTING SCYTHE will last out three of the ordinary sort, and is always ready for use.

"We have seen this Scythe at work, and can strongly recommend it."—See *Mark Lane Express*, May 16, 1853.

To be had of every Ironmonger and Nurseryman in the kingdom; and wholesale and retail of WM. DRAY AND CO., Agricultural Implement Makers, Swan Lane, London.

ADVERTISEMENT.

"BOYD'S SELF-ADJUSTING SCYTHE.—In your number dated April 29, I perceive a complaint from Mr. Henry Bailey, of Nuneham, Oxford, to the following effect:—'That having worn out the first set of blades while the handles were in all respects perfect, he desired his Ironmonger to procure more blades to attach thereto, but to his dismay was told that the patentees will not sell one part without the other.'

"As Inventor and Proprietor of the Scythe in question, I beg to inform your readers that although this regulation was adopted by me as necessary in the first instance (much to the opposition of my agents Messrs. W. Dray & Co.) I have lately been induced to alter the arrangement, in verification of which I beg to refer you to the Horticultural Society of Regent Street, who have recently received a supply of *two dozen blades* for the purpose of renewing those worn out.

"I take this opportunity of stating that my agents, Messrs. W. Dray & Co., of Swan Lane, will be happy to attend to the orders of Mr. Bailey, or any one else who may favour them with their commands, either for *blades* or handles, separately, or the implement in its complete state.—I am, Sir, your obedient servant,

"JAMES BOYD."

70, Lower Thames Street, May 20, 1854.

CHAFF-CUTTERS, of the best workmanship, 25s.; Two-Knifed Chaff Engines, from 63s.; Mills for Bruising Oats and Beans, from 45s.

WILLIAM DRAY AND CO., Agricultural Implement Manufacturers, Swan Lane, Upper Thames Street, City.

PROTOXIDE ANTI-CORROSION PAINT, for all external purposes, on iron, wood, brickwork, or stucco, is cheaper, and more durable, than any similar article.—Manufactured by CHARLES FRANCIS & SONS, Cement Works, Nine Elms, London.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the nobility, gentry, and clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out-door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice.

Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to WALTER CARSON & SON, 9, Great Winchester Street, Old Broad Street, Royal Exchange, London. No Agents. All orders are particularly requested to be sent direct.

IMPROVED MOWING AND ROLLING MACHINE.

ALEXANDER SHANKS AND SON, Arbroath, Forfarshire, Inventors and Sole Manufacturers, respectfully solicit the attention of the Nobility, Gentry, and Gardeners to this improved Machine for Mowing and Rolling Lawns. The Machine is in operation in the Royal Gardens at Windsor Palace, Buckingham Palace, and at Osborne, in the Botanical Gardens at Kew, Regent's Park, Manchester, Sheffield, &c.; at Blenheim Palace, Trentham, Cliveden, Elvaston, Broadlands, Woburn Abbey, Clumber, Lilleshall, Castle Howard, Shrubland, Eridge Castle, Euville Hall, Tiptree Hall, Chatsworth, and in many other of the principal gardens in the kingdom, as well as in the United States, British America, and on the Continent, where its merits have been fully proved, and its success established.

The Machine is made to cut the breadths of 42, 30, 20, and 15 inches respectively, is exceedingly durable, easily managed, and adjusted to cut to the length required. The execution of the work is far superior to what may be attained by the most skilful mower, while at the same time a great saving of labour is effected. By the largest machine a Scotch acre may be mowed, rolled, and the Grass collected in one hour.

Further particulars, with prices, may be had on application.

THE MOST PERFECT HAY-MAKING MACHINE YET MADE, which has been greatly increased in strength, durability, and lightness, weighing considerably less than other Haymakers, consequently the labour of the horse is much reduced. These qualities have been secured by substituting wrought iron for cast. The Machine is mounted on wrought-iron wheels, and is under the entire control of the person who drives. By merely pressing a spring lever, it is instantly thrown into or out of gear, or the action reversed; and, by a very simple contrivance, the Machine is adjusted to suit every description of crop. Agriculturists should order early, to prevent disappointment.—Address, RICHMOND AND CHANDLER, IMPLEMENT WORKS, Salford, Manchester, and 32, South John Street, Liverpool.

MAKE YOUR HAY WHILST THE SUN SHINES.

HAY-MAKING MACHINES & HORSE RAKES, on the most improved and approved principles, are now ready for the approaching season at RICHMOND, CHANDLER, AND NORTON'S AGRICULTURAL IMPLEMENT DEPOT, 32, South John St., Liverpool.

N.B.—A Two-roomed Galvanised Iron HOUSE, lined, celled, and floored with Wood, to be SOLD very cheap.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—PRIZE SHEETS for the LINCOLN MEETING may be had on application to the SECRETARY of the Society, No. 12, Hanover Square, London.

THE THIRD CHELTENHAM SUMMER POULTRY SHOW will take place at that magnificent establishment PITTVILLE SPA, on the 14th and 15th of June. For Prize Lists and full particulars enclose a stamped directed envelope to JESSOP BROTHERS, Secretaries.

The Agricultural Gazette.

SATURDAY, MAY 20, 1854.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY,	May	24—Agricultural Society of England
THURSDAY	—	25—Agricultural Imp. Society of Ireland
THURSDAY,	June	1—Agricultural Imp. Society of Ireland.

A SATISFACTORY illustration of the influence of a dry soil on the temperature of the air has been communicated to us in connection with the history of improvements which are being effected on an estate in Hertfordshire. The farm referred to occupies the highest ground in that neighbourhood, and would have continued to be, what it hitherto has been, one of the coldest spots in the district; but, says our correspondent — "We felt the benefit of being drained this season—our thermometer indicating 6 or 8, and, in some instances, 10 degrees more heat than those of our neighbours; and this is one of the effects of draining which is often overlooked." It may be overlooked and neglected by those who write on such subjects, but plants record it visibly and faithfully enough in the more vigorous and more early growth which they manifest under its influence.

Life is more sensitive to the influence of temperature than any other of the forces which animate matter, and thus indications of an altered climate are to be seen more immediately and readily in the appearance of the vegetable world, and in the dates of the several successive facts which constitute the progress of the seasons, than in the observed expansion of so much mercury or spirit within the bulb and tube of a thermometer.

The report, just presented, of the British Meteorological Society takes notice of this fact in order to request from the members, in addition to the more usual meteorological observations, "full particulars relating to the leafing, budding, and flowering of hardy plants, forest trees, &c.; also the time of Wheat or grain generally first appearing in flower, when in ear, time of commencement of harvest operations and their completion; arrival and departure of migratory birds," &c.

The increasing earliness of maturity which a series of observations of this kind will, we have no doubt, indicate in the vegetable world, is to be understood as having an agricultural cause, originating not in the permanent change of any of those more general formers of climate which it is the province of meteorology to investigate, but in that improved drainage and cultivation which accelerate the growth and maturity of our crops.

THE successful getting in of Mangolds, Swedes, &c., amid thunder-showers is one of the nicest operations the farmer puts his hand to, as many an example has doubtless lately proved. On some porous soils no sooner is the storm over than the sowing machine may be started. Indeed on such lands that is the time for sowing, and for rolling in the "sap" so as to secure a crop. In years of extreme drought a braird cannot be got on them unless the spring sap is retained, and this in our southern provinces is hardly possible—hence the value of the liquid manure drill, or the hose and jet, prior to drilling. To obtain healthy plants is a most important point, for they soon establish themselves, from the great depth to which they send their fibrous roots.

The majority of soils, however, even of this class, are more or less adhesive, and cannot be sown immediately after a thunder-storm, considerable skill being then required to avoid harm. If the ground is ridged up and ready for sowing when the storm commences, then the shower may fall faster, as it generally does, than the drills can imbibe it; so that the greater portion is lost between them, especially in close subsoils, flowing in streams to the headlands, while the seed bed is left comparatively dry. A greater quantity of rain may not have fallen than is required to moisten the drill properly, and of this two-thirds may be lost, and before the machine can be started the little absorbed is again evaporated. Under such circumstances, plants come up late and weakly, yielding probably at the rate of several tons less weight per acre than rows on either side in which the drills may have been rolled flat on the top, or where ground had not been ridged up.

If the drills have been opened for farm-yard manure, the facts of the case will be of a somewhat different nature. If the manure has not been applied, it cannot successfully be so now until the land has attained to a uniform state of dryness, otherwise the surface poaches, and will bake in the first drought. If the manure is spread and ready for covering, there will be less danger of poaching; but ploughing in cold thunder-showers, such as have been experienced in some districts lately, seldom does well.

Clay soils present a different variety of circumstances, for they are not only liable to poach in a greater degree, and suffer injury from cold, but also to concrete, as it were, into a solid mass, in which nothing will vegetate.

Thorough draining, subsoiling, scarifying, &c., under ordinary circumstances as to weather, will reduce the most tenacious clays, so that root crops can now be grown with artificial manures. The surface is reduced to a sufficiently fine mould by the winter frosts; and if the subsoil is properly wrought between the wet and dry, so can it also; but this latter, including the getting in of the seed and manure, requires the greatest circumspection; for, if the farmer but ventures upon the soil immediately after a thunder-shower, the portion below every footprint is consolidated as if moulded for the brick-kiln. If, however, it is allowed to remain loose and open until a uniform state of dryness has been obtained, the work may be prosecuted with a better chance of success. When soils of this class are reduced to a mould by ploughing, harrowing, and rolling, it is hardly possible to prevent them running together after very heavy thunder-showers, and the finer the mould the more certain the result. The difficulty of growing root crops on such soils, and the general practice of summer fallowing, arises more out of this liability, after this reduction to a mould, than out of the difficulty of attaining so fine a tilth in the beginning.

Of each of these cases the present season has already furnished numerous illustrations. The sowing of root crops is generally accompanied either with thunder-showers or extreme drought; and although the former is not the best condition of things for the farmer, yet it has its advantages when compared with the latter, especially on the first class of soils; and even on clay soils we have seen that their concretion and the other evils involved may be greatly ameliorated, if not wholly arrested, by drainage and improved management. *B.*

THE reports on the STATISTICS OF NORFOLK and HAMPSHIRE AGRICULTURE have just been presented to Parliament. The forms prepared and used by Mr. HALL MAXWELL for the counties of Sutherland, Roxburgh, and Haddington, have been used for the English counties also, so that the results admit of comparison in detail. The methods employed were different, but the difference in the gross results, *i. e.* as to their completeness and trustworthiness, must be held to indicate rather the character of the occupiers than that of the methods of enumeration and calculation employed in England and Scotland respectively. Probably both points have had some influence—the former inquiry coming direct from a Government department was less likely to command confidence than the latter, which was con-

ducted by the Highland and Agricultural Society. And when the indications which the relative success of the two portions of the inquiry affords as to the character of the tenant-farmers in the two districts are spoken of, this must certainly be taken into account. This "character," too, is not the professional standing of the men—it relates rather to individual suspiciousness, and probably selfishness. We have heard men, known for general intelligence and professional skill, justify a refusal of the information sought, on the ground that the Government which sought it, as it had done no good to the farmer on past occasions, could mean no good to him on this—on the ground that deputations on the subject to the Minister, of London merchants, *Times'* commissioners, and corn merchants, must represent an interest altogether antagonistic to that of agriculture (!)—on the ground that the inquiry was inquisitorial, a mere meddling with private and personal affairs. All this, it would seem, may be held without interfering with professional character as agriculturists, and the 17 per cent. of blank schedules returned to the Norfolk enumerators, may have passed through the hands of those who stand high among the many good farmers of that county for aught we know—though we do not suppose it probable; but whether the professional standing of the Norfolk agriculturists be affected by it or not, we cannot but think those of Haddington, for instance, will feel that they stand higher in the estimation of intelligent men, for the fuller, franker, heartier response which they have made to the inquiries which they have received. The number of unfilled schedules in Hampshire amounts to 21 per cent. of those issued. It is satisfactory to learn that of these blank schedules, nearly all were filled by the enumerators themselves, from other trustworthy sources; so that $2\frac{3}{4}$ per cent. in Norfolk, and $3\frac{1}{4}$ per cent. in Hampshire, alone remain unfilled. It is proper, too, to add, that in Norfolk by far the most frequent instances of refusal occur in three unions out of the 19 within the county. In 16 of the unions, more than 10,000 occupiers of nearly a million acres filled the schedules that were sent them, 1163 refusing to do so, all the blank schedules in these cases being filled from other sources. In the Depwade, Downham, and Thetford unions, however, comprising 245,000 acres, and 3500 occupiers, upwards of 1400 were returned unfilled, and of these 400 remain unfilled still. In Hampshire, the default is less irregularly spread, if we except the case of the Isle of Wight, with its 1088 occupiers, of whom no fewer than 424 are recusants. We observe also, by the way, that the Alresford union, to which Lord Ashburton addressed his well-known letter on the subject, is remarkable for its refusal. It contains 235 occupiers, and of these only 59 have co-operated, the particulars regarding 176 being obtained by the enumerators from other sources.

We add the totals of Norfolk and Hampshire, omitting fractions, placing those of the three Scottish counties alongside, in order to facilitate comparison.

	Norfolk.	Hampshire.	Roxburgh.	Haddington.	Sutherland.
	Acres.	Acres.	Acres.	Acres.	Acres.
Total	1,206,462	895,410	358,943	149,173	810,903
Arable	1,031,271	603,219	146,818	107,269	22,022
Wheat	189,882	96,228	5,181	15,339	627
Barley	172,261	62,380	14,615	12,809	3,682
Oats	37,658	57,075	28,862	16,802	6,121
Rye	4,467	1,907	14	46	8
Peas and Beans ...	21,829	14,096	1,642	4,8 9	89
Tares or Vetches .	3,165	13,868	380	1,011	139
Potatoes	2,751	2,801	1,454	4,246	2,279
Turnips and Rape	165,478	83 847	23,809	16,260	2,212
Carrots	841	388	6	107	1
Mangold Wurzel .	13,618	1,515	16	48	...
Cabbages	725	355	10	15	2
Clover, &c. ...	167,869	100,114	44,558	26,885	4,977
Meadow & Pasture	228,703	123,519	23,658	6,228	1,779
Irrigated Meadows	...	...	925	87	38
Flax	176	73	2	...	...
Chicory	...	...	...	...	...
Hops	12	1,711	...	...	...
Other crops* ...	4,095	4,260	43	157	1
Fallow	17,796	39,076	966	2,127	23
Woods	50,245	105,839	17,679	9,313	10 812
Sheep Walks ...	...	...	186,895	28,630	599,710
Commons & Waste	40,070	89,630	3,320	1,660	176,104
Holdings under two acres ...	12,759	17,382	...	...	...
Land unaccounted for	72,114	79,338	4,900	2,568	2,290
Amount of Stock	No.	No.	No.	No.	No.
Horses	48,985	24,076	4 975	4,450	2,794
Milch Cows ...	25,500	19,350	4,762	2,377	6,547
Other Cattle ...	80,393	13,148	12,058	7,576	6,[illegible]45
Sheep & Lambs	663,111	489,227	278,763	66,576	168,179
Swine	104,078	61,860	4,607	5,580	1,310

* Turnip seed in Scotland.

We can at present only remark on the fitness of the term Norfolk rotation to the four-years succession of crops, as strikingly brought out by the returns from that county. We may also refer to the great extent comparatively in Mangold Wurzel in that county. Several other points must remain for discussion hereafter.

We are glad to see from the annual election meeting of the Royal Agricultural Improvement Society of Ireland, just held and shortly reported in last week's paper, that in every department the society is rapidly recovering in its resources and usefulness. Within the last two and a half years the subscribers have been increased nearly three-fold; and a spirit has been awakened among the agriculturists of Ireland by means chiefly of the Society's Journal, edited by the secretary, Mr. Harkness, aided by the monthly discussions. A spirit of a most enterprising and promising nature is wide spread in Ireland, which, with the physical advantages of soil, climate, &c., must soon elevate Ireland to a first-class agricultural position.

VISIT TO TIPTREE HALL.

It having been represented to Mr. Mechi that a party of farmers, and gentlemen connected with agriculture in Hampshire, were desirous of seeing his farming operations at Tiptree Hall, they in consequence received a very kind invitation from Mr. Mechi to go and view the system of management adopted there. The writer was induced to make one of the party, in order that he might be able to judge for himself of the practical value of the system of agriculture carried out upon this farm, very contradictory statements having been published for some years past respecting the land and its management, which reports have certainly made Tiptree Hall notorious in the agricultural world. After having seen general commendations and approval of Mr. Mechi's farming on the one hand, and sweeping condemnation or censure on the other, I felt a strong desire to inform myself as to the merits of many points in connection with the practice there, and also to ascertain how far the farming of Hampshire may be improved by the aid of some of the novel and original appliances in operation there. It may be thought by some parties that any further report of this farm would be superfluous; but, judging from what I have previously read about Mr. Mechi's farming, extreme opinions have been expressed, without in some instances giving satisfactory reasons for their expression.

In taking up the pen upon this subject, it is my intention to endeavour to offer a fair and impartial statement of the many and interesting practices noticed at this farm; and, as I visited it not for self-instruction only, I shall therefore give a statement of what I saw, with a view of benefiting, if possible, the agricultural community, and exhibiting in plain terms what I consider may be adopted as sound practice; and, at the same time, to point out that which I think ought to be viewed with caution, and considered speculative and uncertain. I feel certain that Mr. Mechi himself will appreciate my motives, and therefore proceed with much pleasure to the task before me. I must first observe that upon our arrival at the farm we were met by Mr. Mechi, and treated most courteously and hospitably; we then proceeded to view the crops, buildings, &c., headed by our host, who, with the greatest alacrity and kindness, explained the different modes of culture adopted for each crop. The first object that attracted my attention near the homestead was a pond, or reservoir for water, used in the process of liquid manuring, and supplied from the drainage of a large field, a considerable area of which had been originally bog or quicksands.

The first field inspected near the house was a large one, part of which was in Wheat, drilled, and it certainly looked strong and promising, being however too thin of plant in some parts; the furrows also were deep and bare throughout the field, the outside rows being 18 inches apart, and the ridges only 7 feet in width, thus leaving a very considerable blank. I found one part of this field under Italian Rye-grass, being a second year's layer—it having been fed or cut several times during the previous year; a large portion of this crop has been already folded off with sheep, which were still upon it, and, judging from the stubble where fed, and the portion yet remaining, there has been a most abundant crop—the Grass being, on the day I saw it (May 2), upwards of 18 inches in height, very strong and thick, affording a most nutritious food for the hoggets, which were of the half-bred Down and Leicester cross, then feeding on it.

This crop certainly demonstrates, in a season like the past, the great advantage of the application of liquid manure to Grass crops upon arable land; for although I had recently seen crops of this variety of Grass growing upon good land under superior management in Hampshire, and where all circumstances were favourable to its growth (the climate in particular), yet this crop at Tiptree Hall was immeasurably before anything I had seen during the present season; and, I must confess, that I am quite convinced of the efficacy of liquid manure for this crop, believing as I do that no amount or sort of manure applied in a dry state as a top-dressing, upon this land, would have produced the like results. The liquid manure was being distributed by the hose over that portion of the land where the crop had been fed off, and it was very interesting to see the great power of dispersion, and the distance to which the liquid could be thrown by the steam pressure applied to it, although the work going on was a long distance from the huge tank where the manure is manufactured or retained until required for use.

A considerable portion of the same field was sown with Barley, which had evidently vegetated evenly, but had suffered rather severely from the wire worm, leaving some doubt in my mind whether the plant would recover sufficiently to produce a full crop; and I remarked in passing over this crop that the land had been somewhat imperfectly tilled, the furrow had not been sufficiently broken by the harrows, nor had the land been cross-harrowed or rolled enough to obtain the necessary pulverisation and firmness. In one part of this crop a marked difference was to be seen, and, upon inquiry, I found that on the portion on which the crop looked healthy and strong, the previous Turnips had been eaten upon the land by sheep, and that the Turnip crop had been removed from that part which had an indifferent appearance. This fact I must say raised ideas in my mind as to the general advantages of consuming the Turnip crop upon the land; and in connection with the management of this farm I intend to allude to it hereafter.

The next field which came to view exhibited a splendid crop of Italian Rye-grass in the first year of its growth, full 2 feet in height, very thick, the flag very broad, and of a dark green colour. It is difficult to conceive how this crop could be surpassed upon any soil, and under any treatment, if we recollect the date at which it was viewed, and it must indeed be considered a triumph in vegetable production through the agency of liquid manure. Some little objection, however, may be taken to the mode of disposing of this crop; bullocks and horses were feeding upon it, a portion being partitioned off daily, and I thought it would have been better if the Grass had been cut and given in racks, or else carried to the homestalls for soiling. There would have been less waste, and a close shaven stubble will always prove best for the succession, and it is an important point that nothing may impede the progress of the succeeding crop, where, by the liquid application, it is sure to come so quickly and in such abundance.

The next field noticed was in fallow, and in a forward state of tillage for the next root crop.

We now passed into a piece of six acres, the only pasture upon the farm, which had been laid down about eight years; and it was stated that much difficulty had arisen before a good turf could be obtained, but that the application of liquid manure had given it the appearance under which I saw it; the land had certainly a good bite of Grass upon it, and some natural Grasses I noticed looking strong—the Yarrow in particular bearing evidence that this soil is naturally suited for pasture. I found on inquiry that this piece of land was originally seeded in a corn crop, the advantages of which practice I doubt, for I have noticed that the best Grasses peculiar to the soil will come naturally several years earlier when the land is seeded down out of fallow in the summer season. *J. B.*

(To be continued.)

NOTES OF A RECENT AGRICULTURAL TOUR IN IRELAND. By Martin Doyle.

Kilmallock.—This is in the county of Limerick, and within 16 miles of the city. It would be a fine agricultural district, if managed in the English style. The vestiges of former grandeur remain in the ruins of castellated mansions, military strongholds, a Dominican monastery, and other ecclesiastical antiquities. A modern poor-house contrasts, yet not inappropriately, with the traces of the religious houses which formerly fed the hungry and the naked. When will the poor cease in the land? That the number of inmates of poor-houses is diminishing rapidly is certain, and a legitimate subject of congratulation; but that the condition of the rural labourers is much amended is very questionable, and this is one of the most surprising of the numerous anomalies which characterise Irish proceedings. The poor peasantry have been emigrating in shoals, and yet the wages of labour have not increased.* In the counties of Tipperary and Cork, for example, 8*d.* a day is the ordinary price of a man's daily work; the same pittance is his payment in Connaught. Though the average annual amount of emigration from Ireland during the last three years has been 250,000, yet no perceptible rise in wages has been the result, generally speaking. Two or three principal causes seem to have occasioned this:—

1. The great redundancy of labour in the market, relatively with the degree of actual employment, has not been even yet sufficiently reduced in the over-populous districts to cause any sensible difficulty among the employing classes in providing the necessary supply of labour.

2. The employing classes have been hitherto unable to pay for labour, under the depressing influences of poor-rates, &c., with little rent received to meet such demands, and debts almost necessarily accumulated under the late and long-continued calamitous condition of the country.

3. The consolidation of small farms on their surrender by the occupiers, and the tendency to convert arable into pasture land, from various and obvious influential agencies. Therefore, unless where a railroad is to be formed, or some great work, public or private, is to be executed, the demand for labourers is inconsiderable, and as yet easily supplied. But this state of things cannot continue; the home labour will be rapidly absorbed in the market, and even the orphan boys and girls of the union-houses will be objects of demand before long, in consequence of the unabated and perhaps increasing emigration to the States of America of the able-bodied labourers with their families. The short state-

* It is to be recollected that this tour was made in April and May last year.

ment of a single case within my own knowledge will tend to prove the high degree in which an Irish labourer's condition may be improved by emigration; and this admitted, it follows that a shrewd people are likely to benefit themselves still more extensively by such evidences, which are of constant recurrence. One of my friends had for many years an active, intelligent labourer, who, having an unthrifty and rather sickly wife, and some children, was always in debt and difficulties. He had 10*d*. a day and a cabin rent free. Deducting holidays and other interruptions to labour, his own yearly earnings could not have exceeded 12*l*. 10*s*., and the profits on a pig, with the wages of a few weeks' labour by his wife in harvest, might have added 3*l*. more to this sum. His employer, finding him and his family a dead weight on him, lent him money sufficient to defray his passage to New York about two years ago, and allowed his wife and children to remain in their cabin, and struggle on as they best might, in the absence of any poor-rate allowance in Ireland to extern paupers. When I was with my friend I saw this poor woman, condoled with her on the little probability of her ever seeing her husband again, and advised her to go into the union house, as the last resource for the destitute. I had scarcely left the place when a letter from her unexpectedly faithful husband arrived to my friend, with a draft for 17*l*. 10*s*., to pay the expenses of the transatlantic voyage for his family, and the amount of the money he had borrowed. This man had no doubt been well fed, well clothed, and well housed during his two years of labour in America, and has probably remitted only a portion of the capital he has already realised by his industry. It is notorious that a vast amount of money is arriving weekly in Ireland for similar purposes. If he had been in the enjoyment of decent comforts in Ireland he would not have emigrated; the love of country is keenly felt by the Irishman, even in his most isolated condition; the mere thirst of gold would not send him forth; but Providence, no doubt with wise and beneficent designs, is now rendering his semi-starvation, and flight from it, the foundation of much prospective good both to those who depart and those who remain to profit by the vacancies and opportunities that are and will be increasingly afforded to them.

Much apprehension is entertained by persons very competent to form an opinion on the subject, that the number of land cultivators is alarmingly diminishing through the process of emigration. Shortly before my arrival in Dublin, Doctor Ellis read an able and interesting paper before a section of the Royal Dublin Society on this subject. He has considered it in two principal aspects. First, the causes of the emigration. The famine and flight from starvation were of course the primary motives. He considers that if anything like the comforts and necessaries of life had remained within the poor Irishman's reach, he would not have left the land which he has so much loved; and even now it is not the pursuit of gold, as it is influencing the people of other countries, which carries such multitudes away—it is the desire of rejoining the relatives who are gone. This, no doubt, is a strong motive with the warm-hearted Irishman; but I may fairly ask, would he follow his people to the New World, or elsewhere, if there were not very decisive testimony that the preceding emigrants find comparative wealth and happiness there? and is it not desirable that these poor people should better their condition by the continued exodus? Dr. Ellis lays great stress upon another primary cause (arising no doubt from their experiences and disappointed hopes), which is very likely to be highly impulsive, viz., "want of confidence in the sufficiency of the soil to yield rent and support as long as the growth of the Potato crop continues to be precarious."

The counteracting influences which this gentleman would excite to revive confidence in the capabilities of the soil, are to show the small holder that by rearing animals for the market, in humble imitation of the landowners who are raising live stock as much as possible on the lands which they are taking into their own possession, instead of cultivating the precarious Potato, they may prosper. He would still have small farms as a means of arresting the tide of emigration, and encourage the rearing of pigs and poultry at least, and the culture of such feeding materials as are suitable. Among these he places cattle Beet foremost. Turnips will keep pigs alive, but Mangold Wurzel fattens them, especially when mixed with a little meal or corn. This I have seen practised with great effect on the small farms of some Irish amateur cultivators, one of whom has a steam apparatus for the purpose of reducing the Beet to a pulp. But will the Irish peasant give up the culture of the Potato while there is a chance of success? Successful experience of the other system, just noticed, might induce him to do so. An intelligent man, says Dr. Ellis, arrived at the conclusion that "the quantity of Indian meal and other wholesome food which he could purchase by the sale of pigs fed from half an acre (? Irish) of Mangold Wurzel, would go farther in the support of his family than the quantity of Potatoes he could raise from the same extent of land even in the best seasons."

The Mangold Wurzel keeps well until July. Flax and Sugar Beet will also become staple products of the small holder's land. A system of tillage by which various feeding crops would be raised is, in the rational judgment of Dr. Ellis, far better than any exclusive system, as the chances of success from different kinds of produce are more equal; and, as a warning to landowners who would convert large arable tracts into pasturage (on the plea, I suppose, for I am now quoting Mr. Ellis from recollection, of dispensing with human labour, or avoiding the risks of insolvent or dishonest tenants), he refers to the epizootic diseases which in England and Holland have produced, as the disease of the Potato in Ireland, such ruinous consequences—30,000 cattle being destroyed within six months in a single county of England—Cheshire, and 200,000 in Holland. Great mortality among sheep has prevailed in Ireland within a short time. He recommends, then, a system of mixed agriculture, and the encouragement of small farms, but not in minute subdivisions. Yet pasturage, with such artificial green and root crops for their support as will bear the storms and blights from the Atlantic on the western coast, should be the rule. Corn-growing there, as a part of the system, cannot succeed in such a climate; and fortunately there is not actual necessity for it for the sake of providing cattle-bedding. Heaths, Rushes, dry peat, mould, and sea-sand will, in many such exposed localities, afford the materials for littering cattle, and thus supply elements for the dung-heap; and the system of which Mr. Huxtable and others have for several years been the advocates and practisers, in substituting open-boarded floors without bedding for sheep and pigs, is a final and effective resource where the mixed system cannot be fully carried out; where grain crops cannot be successfully cultivated. The raising of Turnips, Rape, Cabbages, and Vetches, might be pushed to a vast extent in the ungenial and ruder parts of Ireland, where some spirited Scotsmen and others have already established themselves; but in the milder and properly arable portions, the combined system is certainly the most desirable; and this seems to prevail on the line from Dublin to Skibbereen, which was the extreme southern point of my journey and observation.

LIQUID MANURING.

[The following are the conclusions arrived at by Mr. Home on the subject, after examining sundry farms in which the practice had been carried out.]

In the previous reports, I have endeavoured to abstain from any intimation of my own opinions or impressions, desiring only to communicate such information as I procured when visiting the several farms referred to. It will be for the practical farmers of the club to say, whether the system of husbandry reported on, which so materially differs from anything known in Berwickshire, is one which should be encouraged, or whether it affords any hints for at least modifying our own practice. I shall listen with much interest to the opinions which may be expressed on these points, being assured that there are many present, who, from their experience and intelligence, are far more able than I to judge of the utility of the system which I have been describing. I confess that the impression formed on my own mind from what I saw and heard, during an inspection of the four farms which I have reported on, and from what I have since read of other places where a like system is practised, is favourable to its more general adoption; and but for that impression, I would not have brought the subject before the Club. But it is an impression only, and one which it would neither grieve nor surprise me, if I give up, after hearing the matter fully and fairly discussed at such a meeting as the present. With the view of giving a character of relevancy and precision to our discussion, I may conclude by mentioning the different points which, as it strikes me, are the most material to be considered.

I. On the one hand, account must be taken of the expense of the process, consisting of the wages of the persons employed to manage the distribution, the fuel necessary for working the engine, and the interest on capital. From what has been before stated in regard to Myremill, it appears that though the expense of irrigating by pipes and steam power is estimated by the Board of Health Commissioners at 14*s*. per acre, the amount should not be stated at more than 10*s*. or 12*s*. per acre; a conclusion which is confirmed by the fact that at the farm of Halewood, near Liverpool, containing 350 acres, the working expenses annually amount to 9*s*. 9¾*d*., and that at Mr. Littledale's farm, near Birkenhead, containing 450 acres, the expense is only 9*s*. 0¾*d*. per acre.

II. The other side of the account, which shows the advantages of the system, may be divided into two heads—one connected with liquid manuring, and the other with stall feeding of sheep.

(1.) Under the first of these heads, account may be taken of the greater economy of transporting manure out to the land. It is shown very clearly in the Board of Health Report that the cost of transmitting liquid manure through pipes and hose is twopence per ton, within a distance of three quarters of a mile. Now what is the cost of conveying a ton of manure by carts and horses? To take it out by a water barrel, would be ruinous. But in the simplest way, which is in the form of farm-yard dung, the cost for half a mile, when filling and spreading are included, cannot be stated at less than sixpence a ton; so that for every ton there is a saving of fourpence by piping. Now it is stated in the Board of Health Report, that "one lot of Swedes (on the farm of Myremill) dressed with 10 tons of solid farm manure, and about 2000 gallons of the liquid having six bushels of dissolved bones along with it, was ready for hoeing 10 or 12 days earlier than another dressed with double the amount of solid manure without the liquid application, and were fully equal to those in a neighbour's field which had received 30 loads of farm-yard dung, together with 3 cwt. guano and 16 bushels of bones per acre. The yield was estimated at 40 tons the Scotch acre." The cost of manuring these Swedes by the pipes was, according to the above data, 6*s*. 6*d*. per acre; and by carts and horses 10*s*. in the one case and 11*s*. 6*d*. in the other—showing a saving therefore of from 3*s*. 6*d*. to 5*s*. per acre on the Turnip break. Had the manuring been heavier, or the transport farther, the economy of piping would have been proportionally greater. Applying these results to the farm of Myremill as an example, it will be remembered that there were this year 157 imperial acres of green crops, on the manuring of which by pipes instead of by carts and horses, there must have been a saving of 35*l*. 6*s*. There were 87 acres of Italian Rye-grass, which after every cutting has between 4000 and 5000 gallons applied to each acre. This is at the rate of 22 tons an acre, and supposing it cut five times, 110 tons per acre would be applied during the season, at a cost of 18*s*.; whereas if that quantity of manure had to be applied in the cheapest way by carts and horses, it would have cost 55*s*. per acre. On these 87 acres therefore a saving of 37*s*. per acre was effected, amounting to 160*l*. 19*s*.

(2). The next item for consideration is the quantity of produce raised. That the produce is greater, both of Grass and of green crops, seems to be scarcely deniable. The cause of this seems to be partly in the greater efficacy of manure when in a liquid form, and partly in the nature of the ingredients composing it. It should be remembered that the tank liquid contains a larger proportion of salts—particularly urea—than farm-yard dung. Of urea, Professor Johnston remarks that, "it is far richer in nitrogen than flesh, blood, or any of those other richly fertilising substances, of which the main efficacy is supposed to depend upon the large proportion of nitrogen they contain." My position is that 10 tons of farm-yard dung, and 10 tons of tank manure, form together a richer compound than 20 tons of farm-yard manure alone. Then there is this other consideration, that the liquid being soluble, the whole of it can at once be appropriated by the roots of plants. Hence there need be no surprise at the facts already referred to, which is stated in the Board of Health Report (p. 69), that 10 tons of farm-yard dung, with 2000 gallons of liquid manure, with 6 bushels of dissolved bones in it per acre, produced as good a crop of Swedes, as 22½ tons of farm-yard dung, with 3 cwt. of guano, and 16 bushels of bones. Without attempting to estimate the excess of the several crops of Turnips, Cabbages, Mangolds, and Carrots at Myremill, over those obtained by the ordinary system of manuring, I will assume that overhead the excess is equivalent to 10 tons per acre of Swedes on the whole green crop break, which at Myremill is 157 acres, and estimating the value of Swedes at 10*s*. per ton, which seems a very moderate price, especially when the nature of some of the crops is considered, the profit under this head will be 785*l*. In regard to the additional produce from the Grass break, my estimate is as follows:—About 40 tons of food per acre are raised, by sowing Italian Rye-grass, cutting and manuring it five or six times during the months of summer and autumn; whereas by raising ordinary Rye-grass and Clover about 16 tons are got—showing an excess therefore of 24 tons per acre, and which at the price of 10*l*. per ton would give 13*l*. per acre. But rom this return must be deducted the cost of cutting and carrying these 24 tons, and of manuring the land after every cutting. The cutting would probably amount to 4*s*. and the carrying to 6*s*. The cost of manuring depends on circumstances. At Enterkine Farm, as we have seen, where milk cows only are kept during the summer, Mr. Bell, to supply the deficiency of liquid manure, gives to each acre 16 cwt. of guano. But a feeding bullock gives a much larger supply of liquid manure—it is believed about 10 gallons daily; so that the seven bullocks which Mr. Kennedy says can be supported on 1 acre of Italian Rye-grass would during six months give altogether 12,600 gallons, which diluted with three waters amount to 50,400 gallons, being equal to what is required for the whole five cuttings in the course of the season. The only expense therefore is sending this liquid through the pipes, which at 2*d* per ton is 1*l*. 17*s*. 6*d*. This, and the cost of cutting and carrying, amounting altogether to 2*l*. 7*s*. 6*d*., leave a profit of 10*l*. 12*s*. 6*d*. for every acre of ground cropped with Italian Rye-grass, and yielding on the whole break 924*l*. To these items, there might be added, the larger crops of corn which are said to be raised; but as no precise data were obtained by me for estimating this item, I pass it over. The foregoing calculations are connected with the system of liquid manuring. Those which follow are dependent on the system of feeding sheep on sparred boards, and under cover.

(1.) The saving of manure is one item, which Mr. Kennedy estimates at 2*s*. 6*d*. per sheep, amounting to 57*l*. 10*s*. on 460 sheep. (2.) The additional weight and improved quality of the wool is another. An addition of 2 lbs. to each fleece would probably add to the value of each sheep 2*s*., amounting to 46*l*. To these should be added, the improved health of the sheep, and their more rapid fattening, especially during the winter and spring months; but I am unable to put a money value on these. Putting together all the other items which I have attempted to estimate—

1. Economy of transporting manure						
For green crops	£35	0	0			
—— Italian Rye-grass	160	19	0			
				195	19	0
2. Additional produce						
From green crops	785	0	0			
—— Italian Rye-grass	924	0	0			
				1709	0	0
3. Sheep stall-fed						
From manure	57	10	0			
—— wool	46	0	0			
				103	10	0
				£2008	9	0

This sum, when divided by the number of acres on the farm, which is under the system referred to, give a return of rather more than 5*l.* to meet the expense of 10*s.* per acre. I owe an apology for even attempting to offer calculations which only a practical farmer can accurately make. I am quite prepared to have errors pointed out in them, as I pretend not to a personal knowledge of the prices and expenses which I have assumed. What is more, I shall feel indebted to the practical members of the club, if they will point out the errors which I have committed, being in this matter most sincerely desirous of expiscating only the truth, and of ascertaining whether the favourable impression I entertain of the system reported on, be or be not founded on sound principles. These calculations I ventured on as at all events the best way of indicating the point which, as it occurs to me, should be chiefly embraced in our discussion, and with the view of drawing out the practical members of the club on grounds which they are so well qualified to occupy. The tenantry cannot do a greater service to proprietors than by correcting their mistakes in such matters; and it is one of the peculiar advantages of such a club as ours, that it affords to both classes an opportunity of discussing in a free and friendly way subjects which are of the utmost interest and importance, not to them only but to the country generally. *Mr. Home's Report to the East Berwick Farmers' Club.*

AGRICULTURAL STATISTICS.

I would suggest, as desirable, returns for each county of the kingdom, given in by farmers themselves to the Board of Trade, printed schedules and envelopes being supplied them, so that they have only to make the necessary extracts from the books (generally figures), insert them in the respective columns, and forward their returns to the London office, under the seal and stamp of the Board. Let this be done as soon as farmers can say with certainty the probable amount of their present crops. Let there be two sets of columns on each schedule, or two schedules, one for the statistics of the present crop (say 1855) by inspection, and the other for the actual statistics of the past crop (1854) after being threshed; and when a farmer forwards his returns to the office of the Board of Trade, let him then sign a declaration in some local office that he had complied with the demands of the statute, which would entitle him to a copy of the returns, when printed by government, *gratis.*

At first sight this double system, as it may be called, may appear superfluous in one sense, and inadequate in another; but a little inquiry into the facts of the case will show the contrary, for the report 1855 is required to enable corn merchants to make the necessary purchases of foreign corn in time, and 1854 to regulate corn averages, and the actual consumption of the country; while the two conjoined would check each other, requiring little more labour, upon the whole, than would the former alone, if not less. The amount of labour would not be more than is now demanded in the case of fiars prices in Scotland, and not one-fourth part of that required by the weekly averages of England, no longer required; while in neither case would it be more inquisitorial or liable to subject tenants to consequences; for the idea of a landlord going to the office of the Board of Trade to inquire after his tenant's statistics, for the purpose of screwing up his rent, is of too fictitious a character to deserve serious attention, as the door could easily be barred against him.

The statistics of old corn on hand are as necessary to be known at the commencement of every season as the produce of harvest, for unless they are so, the consumption and wants of the country cannot be ascertained. If the produce of harvest, for instance, is 5,000,000 qrs. short of that of last year, who can tell from this what the consumption is, or the stock on hand to meet it? for farmers and the corn trade may have 6,000,000 qrs. of old corn on hand more than they had last year. A country dependent upon foreign corn to the extent of 5,000,000 qrs. annually can never be in any great danger of having a stock on hand to this amount, and when we consider the profits realised when a short crop is harvested, as that of last year, it is not unreasonable to suppose that large stocks of this kind will generally be found in our stackyards and granaries after seasons of over-flowing plenty. For aught that can yet be said to the contrary, no more imports may be required, taking this year as an example, than were purchased last year, if so many. Much as has been said of the deficiency of crop in 1853, and the inadequacy of foreign resources to make up the balance, our imports, stackyards, and granaries may yet tell, as they did in 1847, that our dependence upon foreign agriculture is less than generally imagined. In short, the statistics of old corn on hand at the commencement of the season may have been such as would have quieted the public mind, and prevented much extravagant speculation in the markets of Europe and America, as to the prices to be realised in France and England, had they been known in time. In drafting schedules, therefore, provision must be made for collecting the statistics of old corn on hand, and it would be desirable to include the whole *et ceteras* of the home and foreign provision trade also. In other words, the food of man, of beasts, and of plants (manures), form distinct and separate branches of statistical science, yet so dependent upon each other and of so much importance to farmers and the public, that every exertion should be used in the construction of machinery for their immediate collection and control.

I might add many reasons for the double system of collecting statistics proposed, and also point out not a few difficulties in the way of its reduction to practice, until farmers learn to keep accurate books and form correct estimates of growing crops; but our limits will not permit us at present doing so. All that we can say on the present occasion is, statistical science demands facts which farmers, corn-merchants, &c., alone can give, not only in respect to corn averages, but also as to inspection returns of crops prior to being threshed or harvested, for corn fields require to be more closely examined than any other person but the farmer has a right, or even time and opportunity to do. Potatoes and Carrots, again, require to be dug up, while dairies, poultry-yards, piggeries and gardens, require daily examination, as also the consumption of corn and other produce by live stock before the most distant approximations can be obtained. Even were it possible for the most intelligent valuations to do so, what would be the value of their returns to corn merchants; for unless they had the actual returns of the previous crops, in order to enable them to judge what the consumption had been under certain circumstances, what the quantities farmers sold compared to what they grew, and what the difference between facts and opinions, or between inspection and actual returns determined by the balance and bushel, they could not arrive at satisfactory conclusions; and it is manifest, therefore, that farmers and the public must submit to a little schooling in accordance with the familiar old maxim of paying "an apprentice fee," and the sooner they begin the sooner they will finish their apprenticeships. *B.*

ON SOWING MACHINES.

It is undoubtedly of great importance that the land be prepared for the seed in the most efficient manner—that, by the use of other machines, it be cleaned, tilled, and left in the state in which it shall be most economical of its own resources, and most active in appropriating those which atmospheric influences offer to its use; but it must not be forgotten that it is only as it is thus made an efficient nurse and mother of the growing plant, that the valuable qualities it has thus acquired are of any use to man. In order, therefore, that these qualities may best be utilised, the seed which is to benefit by them must be placed in the most fitting circumstances with reference to them. All the previous labours of the farmer go for nothing if the seed be not properly sown; and thus the necessity of efficient sowing machines obviously becomes greater, the greater the skill and the cost which have been spent upon the previous tillage of the land. Hence it will probably be found that no class of implements has been more abundantly multiplied in the land within the last few years. Mr. Smyth, who, contemporaneously with the late Mr. R. Garrett, was the original maker of the Suffolk drill, now has competitors in every county in the kingdom; and, while the extent of his own manufacture and sale in this particular class of implements is no doubt many times what but few years ago it was, we are told that that of Messrs. Garrett & Son amounts to nearly 10 a week. On a first consideration, it certainly appears that the ultimate position of the plants in the field ought to be equidistant—thus giving to each equal shares in soil, air, sunshine, &c.—and that they ought to be placed at such intervals that the number of plants in connection with the produce of each shall yield a maximum per acre. This is obviously enough correct in theory, and the determination for each class of circumstances, whether of soil or climate, of the exact distance for each kind of plant, at which neighbourhood shall, by increasing the number of plants, best compensate for the diminished produce per plant which it also occasions; at which, in short, this produce per plant, multiplied by the number of plants per acre, shall be a maximum, is a point of very great agricultural importance. But a theory which puts out of regard some of the most obvious facts in the farmer's experience, cannot lead to correct agricultural practice. Were the soil, the air, and the seeds of the wished-for crop the only matters claiming attention, the equidistant plan would be correct; unfortunately, however, seeds of many kinds exist self-sown in the soil, and these spring up, and, if allowed, will compete with the cultivated plants, to the great detriment of the latter; and thus it is that, in practice, and in order to facilitate the destruction of the natural produce of the soil, we generally modify this equidistance of the plants; so that, instead of each being in the centre of its own little square, they shall grow in lines, nearer to one another in those lines, but farther from one another across them; and thus, while their number per acre remains unaltered, the interlinear spaces give opportunity for the use of fallow implements, by which the land may be tilled and cleaned during the growth of the crop.

But the position of the seed *on* the soil is not the only point requiring attention; its position *in* the soil is of equal importance. If by broadcasting seed, which is still a common practice in the case of Grass seeds, Clover, and even the Cereal Grasses, we could insure a perfect equidistance of the individual seeds upon the surface, that would still be an imperfect result, not only because absolute equidistance in a weedy soil is not desirable, but also, and far more, because no method would then present itself of insuring the uniform covering of the seed. In practice, the farmer sows an additional bushel or more of Wheat, and even more of other grains per acre, when he sows it broadcast, than when he sows in rows, for he knows that the use of the harrow is a very imperfect plan of covering the seed—some seeds being thus buried too deeply, some not deep enough, and a good deal not at all; and for the additional risks it thus undergoes, a large margin has to be provided in the sowing.

An uneven sower should be provided with more seed than a good one will need, because the latter will, at all events, insure over the whole surface a tolerably equable distribution of seed; while the former, wasting his allowance in some places, will need an extra quantity for those which otherwise would not have their proper share; and a machine for sowing broadcast will require less than either, because it will scatter perfectly; but those machines, which not only place their seed upon the surface, but at the required depth beneath it, will evidently require less still, for with them uniformity in all respects is insured, and no waste by unevenness, and therefore occasional excess, either in surface distribution or in distribution through the depth, is incurred. Dibbling machines and drills are thus the most efficient and economical of our sowing machines. Their cost is, no doubt, considerable, but the saving of seed effected by them, and still more the vigorous growth of the seed they deposit with such uniformity, is more than a sufficient return for the investment.

In every sowing machine two contrivances are required, the one for taking successive equal portions, or a uniformly continuous portion from the store of seed; and the other, for distributing it evenly over the surface, or placing it properly beneath it. In ordinary sowing by hand, the first of these requirements is answered by the right hand, which, keeping time with the right foot, finds its way regularly to the seed bag hung at the left side of the sower; and the second is also answered by the practised skill of the sower, when, keeping time with the left foot, having cast back his right arm till it is at least square with the line of his progress, he regulates the opening of the hand, and the direction and force of its forward cast, so as to insure the even distribution of its contents over a space equal in one direction to two of his own paces, and in another (supposing him to go up one side of a perch-wide land and down the other), in effect to some two or three yards of breadth. The uniformity of all these movements, in reference to the time spent on them, is immaterial, provided it be preserved in relation to the space traversed during their performance; the sower may go fast or slow, but if, whatever the speed, his paces be of uniform length, and the other parts of the process be skilfully performed, the result will be the even distribution of the seed over the surface.

Now, just as every motion of the arm is made to depend on that of the leg of the sower, while the latter can easily be preserved uniform by a very little practical skill, so, in sowing machines, every step in the process of delivery, whatever its plan may be, is made dependent on the revolutions of the driving-wheel; and as these are necessarily of equal length as regards the space passed over, the uniform delivery of the seed in relation to space is preserved, whatever be the rate of motion at which the machine is driven. This, indeed, is not absolutely true in some of the modes of delivery which are adopted, because their efficiency is in some degree dependent on the rate of movement; but it is in practice true of such variations of rate as are likely to occur in the field, and it may be considered absolutely true in the case of the better methods of delivery.

I will [next week] describe some of the principal methods of delivery adopted, and then consider the various contrivances which have been devised for conducting the seed to its resting place, going over incidentally such illustrations of both as our different sowing machines afford. *J. C. M., in Blackie's Cyclopedia of Agriculture.*

AGRICULTURAL CHEMISTRY.

SESSIONAL EXAMINATION—ROYAL AGRICULTURAL COLLEGE.

[We publish in a somewhat condensed form the replies of Mr. J. M. Davis to the following questions:—]

2. State the reasons why a mechanical and mineralogical examination of a soil is attended with greater practically useful results than a minute chemical analysis of a soil.

3. What is the reason that some marls possess much greater fertilising properties than others?

4. Give a short account of Professor Way's recent discoveries relating to the power of soils of absorbing manuring substances, and illustrate by some examples the practical tendency of this discovery.

5. From whence is the nitrogen in plants derived?

6. Is the proportion of nitrogen in the various feeding stuffs a sufficiently trustworthy guide for estimating their respective feeding values?

7. What are the advantages of preparing home manure in boxes?

8. What are the effects of nitrate of soda on plants, and to what crops and in what way is it most beneficially applied?

9. How do you ascertain the strength and commercial value of gas-liquor?

2. A mechanical and mineralogical examination of a soil is of much greater practical value than a minute chemical analysis, because it gives you the state of division of a soil, and the nature of the rock from whic

such soil was formed, which is of great utility; thus, on a soil formed from the decomposition of felspar, &c., certain manures would be unnecessary—their application would be an unnecessary expense, because the same purpose would be better effected by exposing the soil as much as possible to the action of the atmosphere, by means of which the felspar would get decomposed, and decomposition would furnish to the soil soluble alkalies. It is well known that the fertility of a soil is dependent upon the amount of potash, ammonia, and phosphoric acid, which it contains; hence, in analysing a soil, our object is to find out the relative quantities in which these constituents exist in the soil; this we attempt to do by chemical analysis, but it is not done in reality, as the limits of variation in the determination of those substances is greater than the whole amount present in the soil. Again, chemical analysis does not tell us the state in which substances exist in the soil—whether they are in a soluble or an insoluble form, &c.; hence, the utility of chemical analysis of a soil is not of so much importance as is generally given to it. But it has its advantages, as well as its disadvantages; thus, it enables you to recognise the presence of an excess of any poisonous substances in the soil, such as sulphate of iron, or an excess of common salt, &c., and also whether there is a superabundance of humus substances (organic matters) present in the soil, thereby showing whether the soil requires liming. It will also tell you whether a clay soil would be benefited by thorough burning, as this is dependent upon the silicate in the clay, many clays not containing much silicates of the alkalies would not be benefited by burning; whereas, others, in which they existed in an insoluble state in abundance, would well repay for burning, as by means of it the alkaline salts would be liberated in a soluble form.

3. Some marls possess much greater fertilising effects than others, because they contain more phosphoric acid; and also some red marls contain a good deal of silicate of potash, and the fertilising effects of marls is greater or less, according to the amount of the above constituent which they contain.

4. Professor Way was led to his discovery relating to the descriptive powers of soil by some observations made by Mr. Huxtable, and also by Mr. Thompson, who remarked that when liquid manure was passed through a soil, that it was deprived of its colour, smell, and also of its fertilising constituents. Prof. Way then inquired into this absorption, and to what substance it could be due; he thought that it might be due to the organic matters in the soil, or to the carbonate of lime in the soil, or to the clay itself, &c.; however he proved that it was not due to the organic matters, or to the carbonate of lime, but to the clay itself, or to some compounds contained in it; he also found that when he passed through a soil a solution of chloride of ammonium, that the ammonia was retained, and that the chlorine passed in solution in combination with another base, generally lime, being most frequently present in the soil. He also found that the same change was effected by merely shaking the soil with the solution of chloride of ammonium, or with a solution of caustic ammonia. He then traced this absorption to the double silicates in the soil; this he proved by preparing artificially, without the aid of heat, double silicates from felspar, by adding to a solution of this double silicate a solution of soda. By these means he obtained a double silicate of alumina and soda; and on passing a solution of caustic ammonia, or of some salt of ammonia, through a soil containing the silicate of soda, he found that the salt was decomposed—the ammonia displacing the soda and combining with the silicate of alumina, to form a double silicate of alumina and ammonia; and the soda in combination with the acid of the ammonia salt passed in solution. He also prepared other double silicates artificially, and found the same effect produced. Having tried a series of experiments, he discovered that there was a certain order in which these substances replaced each other; thus, silicate of soda, being the weakest, is displaced from its combination if lime is passed through a soil containing it. Again, a silicate of lime would be decomposed by potash, *i. e.*, the potash would displace the lime and enter in combination itself; and ammonia had the same effect on potash. Hence if placed in the order in which they would displace each other, putting the weakest first, it would be as follows:—Soda, lime, potash, ammonia. Lime will displace soda, potash will displace lime, and ammonia will displace potash. The practical tendency of this discovery is to prove that a farmer need not be particular as to the time he applies his manure to the land, provided his land is a clay and contains these double silicates; that winter manuring may be pursued with advantage, and without fear of any waste of manure; and that a system of irrigation is beneficial even to heavy land, if it is well drained, as the alkaline salts, &c., held in solution by the water would, in passing through the soil, be retained by the double silicates existing in such soils.

5. The nitrogen in plants may be derived from several sources, viz., from—

(1). The ammonia as well as free nitrogen in the atmosphere.

(2). The free ammonia, and also the ammonia obtained in decomposition of the organic matters in the soil.

(3). The nitrogen in manures.

(4.) The nitrogen in the seed.

There have been great disputes as to the sources of nitrogen in plants; with one view we find Liebig, and with another, Mulder, and with a third, old agriculturists and vegetable physiologists. Liebig says that the whole of the nitrogen in plants is drawn from the ammonia in the atmosphere, and he denies the use of ammonia manure in the soil. Mulder, taking a more moderate view, does not deny the use of the ammonia in the atmosphere, but he is also of opinion that the organic matters in the soil and the ammoniacal manures are also of great utility in furnishing plants with nitrogen. The organic matters are also of use, because in decomposition hydrogen is given off, which in a nascent state combines with the free nitrogen of the atmosphere to form ammonia, so that the free nitrogen in the atmosphere is a source of it in plants. Old agriculturists and vegetable physiologists were of opinion that the whole of the nitrogen in plants was derived from the ammonia in the soil, manures, &c. Of the various opinions as to the nitrogen theories, that entertained by Mulder seems to be most consistent with practical experience. Yet the views of Liebig are correct as regards certain classes of plants, as Mr. Lawes of Rothamsted has proved by his experiments that the cereals and Grasses only are benefited by the ammonia in the manures, and that leguminous plants, Peas, Beans, Clover, &c., are not benefited by the ammonia in manures, but that they derive it nearly altogether from the atmosphere; so that both views are correct, but with regard to different classes of plants.

6. The proportion of nitrogen in the various feeding stuffs is a guide as to their values only to a certain extent. It has been supposed that the richer in nitrogen any food was, the greater would be its feeding effects, but this has lately been shown to be a fallacy. The results of experiments made by Mr. Lawes at Rothamstead, and also by Dr. Voelcker, on the Royal Agricultural Society's farm last year, go far to prove that the value of food is not dependent upon the amount of nitrogen it contains, but upon the amount of carbonaceous matter it contains. And after a certain stage of the growth of an animal, it does not require much nitrogenised food, but merely enough to keep up the animal system; and if any more nitrogen than is sufficient for that purpose is taken into the system, it is rejected and carried off in the manure; therefore, much nitrogen in food does more harm than good, as it has to be rejected at the expense of the system. The carbonaceous food is by far the most valuable for feeding, as shown in the effect produced by oilcakes in feeding, and, no doubt, the value of a food for feeding is more dependent upon the amount of carbonaceous matter which it contains, than upon the amount of nitrogen. In Turnips, for example, the leaves contain more nitrogen than the roots, and yet they are not so good for feeding. However, the amount of nitrogen present in the form of albuminous compounds is, to a certain extent, a guide as to the value of the food, because it is the most expensive article in the food.

7. The advantages of preparing home-made manure in boxes are, 1st, That all the liquid manure is preserved—it is taken up by the straw of the litter and thus retained; 2d, That the manure is prevented from entering into fermentation by the continual soaking with liquid from the beast. And in boxes the liquid is preserved without losing any of its fertilising constituents; and as it is the most valuable portion of a manure, its relation in the manure very greatly increases the value of that manure.

8. The effects of nitrate of soda on plants seems to be chiefly in furnishing the plants with nitrogen in the form of nitric acid; it is most beneficially applied as a top-dressing for young Wheat, and also on Grass land, on both of which it has very stimulating action.

9. The strength and the commercial value of gas liquor are dependent on the amount of carbonate of ammonia which it contains. To ascertain this, take a quart or more of gas liquor, add to it hydrochloric acid, and evaporate on a water bath to dryness, and weigh as chloride of ammonia, and from this calculate the quantity of ammonia.

10. Oily or fatty matters not only have no fertilising effect as manure, but they have a decidedly injurious action, as they retard the decomposition of animal and vegetable matters in the soil, and do not themselves decompose for a long time; even if they did not retard the decomposition of sulsates in the soil, and if they decomposed rapidly, they would be of no use, as their only products are carbonic acid and water, which are not regarded as manure, as the atmosphere and water supply plants with both in abundance.

Home Correspondence.

The Flax Question.—The importance which the flax question has lately assumed is daily increasing by the existing state of our political affairs with Russia, upon which country we depend for two-thirds of our foreign supply of flax. The imports of flax of the different foreign States into the United Kingdom, during nine months ending the 5th of October, 1853, reach already 62,264 tons; and, as the imports of the last three months of each year are generally the most extensive, it may be stated, without exaggeration, that the imports during this year will, at least, amount to 100,000 tons; and, at the exorbitant price of 100*l.* per ton—to which the average price of foreign flax has already risen—will show a sum of 10,000,000*l.* which will be paid in cash for foreign flax fibre this year. Upon Russia we are also depending for half of our supply of sowing flax-seed. Already, 75,000 barrels have been shipped for us at the different Baltic ports, at the high price of 45*s.* per barrel, or 15*s.* per bushel. The imports of flax-sowing seed, crushing seed, and oilcake, will not amount to less than 4,000,000*l.* during 1853; so that the two above items will make a round sum of 14,000,000*l.*, which will go into the coffers of foreign nations, as they take nothing in exchange from us. The United Kingdom is the emporium of the four great textile manufactures of the globe—flax, cotton, silk, and wool—for the supply of the raw material of each of which we are depending upon foreign nations. With the two latter, however, we can be abundantly supplied from many countries; but not so with cotton, and much less so with flax; Russia, Belgium, and Holland, being the only quarters from whence it can be obtained to any considerable extent; and, consequently, if those supplies were intercepted, one of our great branches of national manufacture and commerce would be at a stand-still. Of all the aliments required for our four great textile manufactures, flax is the only one which our soil can produce in abundance. *F. Deman.* [Mr. Deman is about to publish the results of his experience in a work on the cultivation and management of flax. The above is extracted from a printed circular in which the contents and design of this work are advertised.]

Proper time to apply Lime and Manures.—How does lime answer, applied as a top-dressing to first year's Grass, say immediately on the removal of the white crop in September or October? This question is of great importance to Scotch farmers, and indeed an article on the proper time to apply lime in light as well as heavy soils would be of great interest and utility. That, and the question of when we ought to apply manures, whether on lea, with Turnips, or after them, are, in fact, the great practical problems of the north countrymen. Each system has its advocates, and some adopt all the three—manuring for lea crop, for Turnips, and after them; but this needs a long purse. If you can find time and space to give any information on these points, please give us experience to back science, otherwise some may sneer; not so—*Jock o' Scot.* [Will any of our friends in the north give us the experience here asked for? People must be guided by experience acquired in their own localities.]

Gorse Crushing.—Your correspondent "B. Blackburn," whose valuable suggestion on the application of the fibre of Gorse to paper making appeared in No. 17 of your journal, would confer a favour upon the subscriber, and perhaps upon others, if he would state what machine and what process he uses for reducing the Gorse into horse food; and, also, whether he cuts over the same Gorse plant annually, and with what implement or tool? These may appear to him trifling questions; but there is full evidence that the Gorse is a valuable fodder plant, if we can manage to use it economically. I have used it this winter for cows and fatting stock, by cutting it with a chaff-cutter into half-inch lengths, and then (adopting a suggestion of a correspondent of yours) spreading it upon uncut straw, and so passing it a second time through the chaff-cutter. In this form it was then incorporated in the mass of cut Mangold Wurzel, straw, chaff, cake, and meal, with which I usually feed, and was eaten without difficulty. But the process of chaff-cutting seemed to involve too much wear and tear, and too much labour; and I shall be glad to hear Mr. Blackburn's plan. *Alexander Hall Hall, Watergate.*

Notable Effects of the Frost of April 25.—Those who take interest in the meteorology of seasons can hardly have failed to notice the singular beauty of the weather during the four first months of the present year. There have been many and surprising contrasts, however, and among these was the extraordinary change of temperature which occurred on the night of the 21st. Previously, the mean heat of every day had been above the usual average, that of the 19th, 20th, and 21st being 14°, 13.6° and 11.6°. At 10 o'clock, P.M., my night thermometer was read off at 58.8° Fahr., the wind E.N.E. At that point or at N.E. it remained, and every day became colder. On the 24th I found the instrument at the freezing point, 32°, and on the 24th night it fell to 26° (*i. e.*, 6° of frost), but 1½° below Mr. Glaisher's register. In my long experience, I have frequently known and observed the effects of keen night frosts, but I never saw so much arbitrary damage done in a garden before. The catalogue might be extended very far, but as it is my object to confine my remarks to subjects chiefly connected with agriculture, I restrict them to one subject, and that is the present condition of the Oaks and Ash trees, as this has of late years been thought to furnish an index of the weather of the coming summer. Until the change of temperature on the 21st, the Oaks generally appeared to be in advance, the buds swelling, and in many cases having expanded; whereas, the Ash evidently lingered, though here and there one observed a few weak blossoms. After the 26th, the Oaks became perfectly deformed, the leaves burnt up, and the young shoots killed back. On the 13th inst. I had opportunity to inspect Oaks of several varieties in different localities. All had suffered; but while in many instances verdure had been reproduced, yet in others great torpidity prevailed. As to the Ash, it gave no signs. Life itself in several young trees might be supposed to be extinct. I cannot refrain from calling attention to that extraordinary and peculiar electrical condition of the earth and atmosphere, which must have prevailed at the point of time above alluded to. *J. T., May* 17.

Societies.

ROYAL AGRICULTURAL SOCIETY.

LECTURE ON ANIMAL DEVELOPMENT AS INDICATING AGE, *May* 17: Mr. RAYMOND BARKER, V.P. (chairman of the veterinary committee), in the chair. The secretary having announced a communication from the Earl of Clarendon, informing the Society that a French Imperial decree had been issued abolishing the export duty on the manure manufactured in Paris, under the name of *Poudrette*; and a present from the East India Company of a supply of fresh Deodara Pine seeds from the Himalayan district of India, well adapted for growing useful and ornamental timber on the poor hilly, or well-drained soils of this country; Professor Simonds, the Veterinary-Inspector of the Society, proceeded to deliver the first part of his Lecture on the Indications of Age, furnished by the structure of the teeth and the general developments of growth in cattle, sheep, and pigs. On this occasion he confined himself to the indications furnished by cattle, reserving for his second lecture the consideration of those connected with sheep and pigs. The discussion of the various points brought forward was of the highest interest in a scientific and practical point of view, and their elucidation strikingly promoted by the lecturer's continual reference to a great number of coloured diagrams on a large scale. He particularly alluded to two of the results of his own investigations on the structure of the teeth, as being, he believed, perfectly new to physiologists. 1. After describing the dentine enamel and crusta petrosa as the constituents of the teeth, and also explaining the so-called ostro-dentine, he remarked that the latter substance did not fill the pulp-cavity in an old tooth of any of the domestic Herbivora. The obliteration of this cavity is effected by the pulp continuing to form dentine, and not by its ossification or conversion into ostrodentine, as stated by writers on the structure of the teeth. 2. In proportion as the pulp diminished, so was the supply of nutrition to the tooth cut off from the inside, and to provide for this the dentinal tubes in the fang became changed into bone-cells; or in other words, the crusta increased at the expense of the dentine, and thus the tooth drew its nourishment from the blood sent to the sockets in which the teeth are embedded.

In reply to a question by Sir John Johnstone, Professor Simonds had no doubt that the teeth of horses would, to a certain degree, be affected by the same general forcing system; but at that time, no data connected with that point had been collected, and he was consequently unable to give more than a general opinion of the probable result of the adoption of such a course in the case of the horse. On the motion of Mr. Towneley, seconded by Sir John Johnstone, the best thanks of the meeting were then voted to Prof. Simonds, for the very able and interesting discussion of facts he had submitted to them.—The Chairman announced that the concluding part of the lecture would take place at 12 o'clock on Wednesday next; and that Prof. Way's lecture, fixed for the 31st of May, would be postponed, in consequence of the Derby-day at Epsom falling on that date.

Farmers' Clubs.

OXFORD, *May* 10: *The Geology of the District.*—The Rev. Mr. Clutterbuck, of Long Wittenham, delivered a lecture on this subject. Mr. Clutterbuck said it must be an interesting thing in Oxford, and among farmers, to remember that the first great laws of geology were discovered by the son of an Oxfordshire yeoman living in the neighbourhood of Chipping Norton. This was a person of the name of William Smith. The great leading principle by which the order and positions of the strata were determined was laid down by him in a way that could not be controverted. To his exertions might be said to be due that upon which the fame and fortunes of English geologists were built. The great law in English geology which he discovered, and which had not until then been ascertained or fixed, was this, that all the strata of the earth—those different bands or layers, as they might be called, whether of limestone or sand, or clay, lay upon each other in a regular order of succession. It was by the observation of this fundamental law, and being enabled to perceive how invariable it was, that they were enabled to lay down those great principles which made geology practically useful. Mr. Clutterbuck then referred to diagrams and sections illustrative of the geology of the district, describing the arrangement of the beds between the upper chalk and great oolite, comprising the greensand and gault and Kimmeridge clay, and the upper beds of the oolitic series. No county in England, perhaps, had a greater variety of geological formations than Oxfordshire, and this circumstance materially affected the character of the agriculture in different parts of it. Thus in the vale of Aylesbury they had the fattening of cattle, and the production of butter, carried on to a great extent, which was owing to that tract being upon the Kimmeridge clay and the Oxford clay. In another part of the county sheep farming prevailed extensively, which was owing to the healthiness of the Downs, and the oolite districts, which were naturally drained. If, therefore, a person asked why is Oxfordshire a great sheep-breeding county in one place, and a great dairy and butter-producing county in another, the answer would be, because the geological formations are adapted to this variety. Below the chalk he came to what was called the greensand formation, and there was none in this district more interesting than that. He thought it was perhaps the most fertile of all. The greensand formation was known in the district by the name of rubble. It contained an immense quantity of what was called the soluble silicate, which was quarried and largely used as a manure on the upper green sand formation at Farnham. It was found in that district which extended from the Chiltern Hills at Watlington to Ardington in Berkshire. Mr. Paine discovered that band of green to be a most fertile soil. He found he could grow Hops, Wheat, and most other crops upon it. This was due to the presence in it of phosphatic nodules containing phosphate of lime. He believed it was one of those formations which, if properly managed, would be found most valuable to the agriculturist. It extended, as he had said, from Watlington all down the vale of Berks. He thought it might answer very well to be used for mixing with other land in manuring. Passing on from that, they came to the gault clay; it was a good strong clay—and when properly cultivated had its advantages. The Nuneham gravel was found to be totally different from the gravel found on the Dorchester gault. That gravel covered a great portion of the gault clay. To pass on to the next soil, in the lower greensand, there was a feature ruled by geological conditions bearing strongly upon agriculture. Where the soil consisted of this lower greensand there was a disease of the Turnips prevalent, known as "fingers-and-toes." Why was that? It was because of the absence of lime. Now, he had before him some of the dirt which he gathered from the road as he came along that morning—it was produced simply by the pounding of the road. It had been found that the application of that road dirt, consisting of the gravel pounded up, did much towards curing the tendency of the lower greensand soils to produce the disease he had mentioned. The reason of this was obvious—it contained 50 per cent. of lime, and if put upon that land it cured the disease by affording the material in which the land was deficient. He had once told a farmer to put the whole of the road-dirt he could scrape together upon his land. If he were put anywhere in that country he could undertake to show where they would have that disease, merely because he knew the composition of the soil. The practical application was plain. If he were a young farmer, proposing to take a farm on land of that description, he would insist upon having an allowance on account of that tendency in the soil, or he would not take the farm. The importance of such knowledge was therefore very evident; for they all knew the value of the Swede crop. Those gravels were important, because they indicated that wherever they existed, persons would find the clay if they dug deep enough. But there was another question connected with the clays which ought to be borne in mind, because it was essential. He (Mr. Clutterbuck) was accustomed to write letters to the *Gardeners' Chronicle and Agricultural Gazette* touching any new point he might alight upon in the course of his investigations, merely putting his initials to his letters; and it sometimes happened that in this way a lengthy and interesting correspondence was elicited. Now, the point he was about to allude to was one upon which he had written to that paper, and his letter brought out an interesting and important correspondence on the part of Mr. Bailey Denton and Mr. Trimmer. It was found by Mr. Trimmer in his draining operations—and it was a point of which agriculturists should be well aware—that there was a wavy condition on the surface of the clays; in other words, that the clays were in waves. Mr. Trimmer had to drain land of that description in the Keythorp drainage. He found that it was necessary to cut across these waves—because if he did otherwise, if he drained lengthwise with the waves, he carried off only that water which was in their troughs, whereas, if he cut across them he had water from a number of channels flowing into the drain. All the clays covered by the gravel were wavy; therefore, if they did not make trial holes, to ascertain how the waves lay, they might happen to be cutting along these waves instead of across them. Coming up by Rosehill this condition of the clay was plainly to be seen; it had the appearance as of a ditch which had been cut and filled up with gravel; he had seen it at Thame particularly; and he found it on his own land, where, if he cut in one direction, he drained only partially, while, if he cut in another direction, he drained all that was required. He had seen it on the Kimmeridge clay, and on the Oxford clay. It was remarked by Mr. Trimmer that the Oxfordshire great oolite, the stone brash and forest marble, and inferior strata, cropped out at different levels; that in fact there was a series of croppings out of these strata; and Mr. Trimmer said, that the influence of the rock formations on the agriculture of the county was here at its maximum; that is to say, agriculture was here more dependent upon the original state of the soil than upon any other cause; and this was owing solely to the breaking up and intermixture of the laminæ or bands of different soils or rock formations. They became rubbed up as in a mortar, and produced a tolerably good soil. That was the process continually going on in nature; and every man who had a farm in a district of this condition must have observed the variations, though he might not be aware of their value to the soil. Therefore the influence of the natural rock on agriculture was at its maximum where that variety and intermixture of soils prevailed; so that if there was any part where people should be *au fait* at geology, it ought to be there. It was there where Wm. Smith lived; it was there the great father of geology learnt his first lesson, as in a book, the leaves of which he had opened and studied; he saw all this cropping out and mixing of soils, and thus he arrived at the defining of those laws upon which the world was constructed.

Reviews.

The History of Wales. By B. B. Woodward, B.A. Virtue, Hall, & Virtue, London.

WITH much of this work, however interesting it may be to the antiquarian and admirer of legendary lore, we do not reckon that the readers of an agricultural periodical can have any very great sympathy. The origin of the Welsh, as a people distinct and almost alien to their Saxon neighbours—their numerous and arduous struggles, first to uphold, and, failing this, to regain their national independence — their final subjugation by Edward I. completed by Henry VIII. in his Act of 1536, professing to abolish all distinctions either of laws, customs, religion, and even language, between his English and Welsh subjects—the history of the bards and bardism; these and other topics, directly or indirectly connected with them, we pass over, contenting ourselves with a general reference to the work itself, merely premising that the perusal will amply repay the trouble to all who are curious in such pursuits.

The work opens with a description of the geographical and geological features of the country, the most conspicuous of which are its mountain ridges — "That of Snowdon covers nearly the whole of Caernarvonshire. It rises 3571 feet above the sea." (P. 2.) Various others follow, of heights fluctuating between 1500 and 3000 feet, the highest being found in North Wales, though there are instances in the South of considerable elevations; for instance, "one on the borders of Caermarthenshire of 2598 feet; and the Beacon of Brecon, 2862 feet high." (P. 3.)

We thought to have dwelt awhile on the geology of this very singular and interesting portion of the empire, but we find that, to do so with any effect, would occupy a larger space than we can devote to it; and therefore must leave Mr. Woodward to propound his own theory of the various formations in his own way. (See pp. 7—19.)

A few brief remarks on the agriculture of Wales occupy the concluding part of "the History." We could have wished this subject had formed a more prominent feature of the work, even at the expense of some of the legendary and somewhat obscure traditions therein narrated. In common with almost every one who has treated of the subject, our author speaks but slightingly of Welsh farming, and we fear with too much truth; for most certainly, as a general rule, it cannot be denied that "want of capital is perceptible at every turn; the farms generally small; * * * there are very many small landholders; and not only is the husbandry, generally, of the rudest description, but drainage, artificial manures, and improved implements, are almost wholly unknown." (P. 584.) Welsh mutton is justly appreciated by every epicure; and, whatever may be said of the wool, nobody will question the excellence of Welsh flannels, wigs, and mittens.

The neglect of, and even antipathy to, the most obvious improvements, if costing money (and what improvements do not cost money?) border upon the ludicrous; as, for instance, the objection to drainage by one sapient agriculturist, because it would rob him of Rushes for thatching! (P. 584.) Scotch and Norfolk farmers will stare at the following specimen of Welsh arable management—"Oats, Potatoes, Barley, with Grass or Clover, Oats, Potatoes, Barley, Oats, and then left to chance." (P. 584.)

It is useless, and not very agreeable, to expatiate on the sins of omission and commission but too often exhibited by our Cambro-British brethren of the soil; in justice to whom we are bound to observe that, as there are no rules without exceptions, so in Welsh farming, however imperfect it may be as a whole, we could adduce instances both in North and South Wales of an energy and skill in cultivation which would not disgrace our most celebrated agricultural districts. Our acquaintance with the principality is of more than 50 years' standing, during which period our opportunities of observation have been frequent. We do not therefore speak without book when we deliver it as our opinion, that a change for the better is slowly but surely going on; and that both in quality and quantity the crops, both of corn and Turnips, are often such as any farmer in any county might be proud of. Nothing surprised us more than the extension of the growth of Barley and the general excellence of the crops. The mowers and reapers of Wales may serve as models for those of far more enlightened districts; and there are many points in their harvest management well deserving the imitation of all practical farmers. We close our observations on this subject with a few words calculated, as we hope, to mitigate the severity of criticism on these matters, though we by no means seek to justify wilful ignorance or narrow prejudice. The farming tourist should take into account the natural disadvantages with which the Welsh, in common with the inhabitants of all hilly countries, have to contend. Not only is the expense of tillage much heavier than that of more level land, but the work cannot be so effectually performed. The required depth of soil can never be obtained, or, if obtained, is constantly liable to be carried off the hill-sides to the valley beneath, not only to the detriment of the field, but often to the partial loss of the crop itself. For this natural defect there can be no adequate remedy. Another annoyance to which the mountain farmer is

particularly liable is the superabundance of moisture in the atmosphere, occasioning not only present injury, but often deteriоration by their backwardness in ripening. Even when rain is not actually falling, the hills are frequently enveloped in thick mist ("*niwl*," they call it), which penetrates one's clothing, and is often a serious impediment to the operations of the harvest*. This moisture will sufficiently explain the reason why Grass preponderates so largely over arable land. In drier and more level situations there is often as good farming as can be found in any district; but, then, it must be borne in mind that these spots are selected by men of capital and enterprise, leaving the mountain sides to the aborigines—men of but slender capital, and for the most part little above the condition of farm-labourers.

We have deemed it but fair to say thus much of the natural obstacles in the way of Welsh agriculture; and shall only add, in conclusion, our conviction that as railroads increase, and the influence and exertions of the Royal Agricultural Society are extended thereby, so will the progress of knowledge in rural affairs; and a general, though probably a very gradual, application of mechanical skill to the cultivation, even of mountain lands.

* A friend of ours once took a farm (a great prize as he thought it) in South Wales. He had splendid crops, but such difficulty in harvesting them that he was literally obliged to cut and run.

Farm Memoranda.

FARM OF MYREMILL.—[The following is the account of a visit paid by Mr. Home many months ago which appeared in the *Berwick Warder* of last year and which we publish now, as bearing upon the subject of liquid manuring, which has again come up for discussion.]—Visited this farm, and had the good fortune to find Mr. Kennedy at home. Spent several hours walking over the farm, and inspecting minutely all his arrangements for distributing liquid manure. Received also from him, most freely and frankly, information on every point which it occurred to me to put to him. The whole extent of his farm is about 800 acres imperial; nearly one-half is tilled, so as to be capable of being irrigated with liquid manure. Hydrants—one or more are in each field, to which he attaches a gutta percha hose, for distribution. He considers that there should be a hydrant for every two acres imperial. It is only to the part of his farm under irrigation, to which my remarks will apply; and to give practical farmers an idea of the nature of the crops grown on it, and of the stock which it supports under the above system, I may state the following particulars, kindly furnished to me by Mr. Kennedy:—

I. Corn crops	Wheat ...	125	imperial acres.
	Oats ...	187	do.
II. Green crops	Turnips ...	125	do.
	Cabbages	12	do.
	Carrots ...	12	do.
	Mangolds	6	do.
III. Grass	Italian Rye-grass	87	do.
	Clover, &c.		

The following are the quantities of these several crops in so far as I ascertained them:—Oat crop last year (1851), produced 10 quarters per imperial acre; Swedes last year 30 tons ditto; Cabbages last year 44 tons, this year 40 tons; Carrots last year 23 tons, this year 16 tons; Mangolds this year 25 tons per imperial acre. Mr. Kennedy mentioned, that last spring the weather was particularly unsuitable in Ayrshire, for both Carrots and Cabbages. The latter he would have lost altogether had not the land been piped. Italian Rye-grass yields a crop of about 40 tons per imperial acre—when there are six cuttings. This year, however, owing to the drought, he had only four cuttings. The following is his mode of management for this Grass. He sows from the middle of March to the middle of April—waiting till severe frosts are all over—at the rate of 4 bushels to the imperial acre. Mr. Kennedy allows his Italian Rye-grass to stand for two years, the second year's crop producing a larger and an earlier produce than the first year's. Immediately after every cutting, he gives to the land what he terms a slushing with liquid manure, at the rate of about 4000 gallons per acre, the manure being diluted. In regard to the preparation of the land for this crop, it is ploughed in the previous autumn, and dunged. Whenever the plant brairds, it is irrigated with tank manure. Mr. Kennedy had his first cutting of Italian Rye-grass this year on the 13th of April. On ground well prepared and well manured, he has seen this crop grow in the four summer months at the rate of 1¼ inch per day.

IV. In regard to stock, Mr. Kennedy informs me, that at the time of my visit he had on the farm 376 cattle, 1000 Cheviot wethers, 400 clipped hogs, 1000 lambs, 300 ewes, 200 pigs. During the last two years he has fed and sold on an average 560 cattle and very nearly 3000 sheep. In regard to the mode adopted at Myremill for feeding stock, I may explain: 1. As to cattle, that most of them are tied up in byres—that there is a considerable number in boxes; two in each, and a few only in sheds with open yards in front. 2. As to sheep, that a certain proportion pasture in the usual way during summer on common Rye-grass and Clover, and a considerable number in pens, under covered sheds, there being 10 in each pen. I saw 460 in these pens. 3. As to pigs that they are in pens also under cover—there being a row of pens, both for them and the sheep, on each side of a long passage, from which food is conveniently put into their troughs or cribs. The cattle and sheep which are confined for feeding, are fed during the summer chiefly on Italian Rye-grass—a little Rape-cake being added for both. When the Rye-grass fails, which is the case about the middle of October, the Cabbages take their place; from the end of November to January the Globe Turnips are used—the Swedes succeed till March, and after them the Mangolds, till the Italian Rye-grass again commences the series. Mr. Kennedy considers Italian Rye-grass superior to red Clover, for feeding, not only as being more nourishing, but as never producing any coursing effects. The same remark applies to Cabbages. He considers them more valuable than even Swedes for both cattle and sheep; moreover, with them Rape-cake will be freely eaten by any animal when it would be refused with other things. A little molasses is occasionally mixed with the Rape-cake to make it palatable—when larger quantities are given. He mentioned that whenever Rape-cake is given to either cattle or sheep, water should be freely supplied. The cattle which are fattening off, are thus treated—During summer—besides the Italian Rye-grass which they get morning and evening—they have about mid-day, a compound of Rape-cake, Bean-meal, and molasses, at a cost never exceeding 5*s*. a-month for each animal, with hay or straw chopped and steamed. In winter each animal—weighing from 6 to 7 cwt. gets at 6 A.M. about 80 lbs. of roots; at noon, a feed (weighing about 16 lbs.) of the above-mentioned compound, which is given warm, and afterwards some Oat-straw. At 8 P.M. they get another supply of Turnips, viz., 80 lbs. for each animal and more Oat-straw. The sheep are treated much in the same way; the maximum cost of fattening them is 1*s*. 2*d*. per month for each animal. Mr. Kennedy gave me some interesting particulars as to the quantity of stock which can be supported by an acre of Italian Rye-grass during the six months of summer and autumn. The result of his experiments has been to satisfy him that 1 Scotch acre of this crop will support seven bullocks, or five cows, or 70 sheep. One year he fatted 80 sheep from 1 Scotch acre, with the help of ½ lb. of Rape-cake daily to each. These results he ascertained by weighing the quantities given. During the early part of last summer, the 460 half-bred hogs which I saw in pens consumed each daily about 12 lbs. of Italian Rye-grass; during the next two months, 11 lbs.; and latterly, when they were getting fat, about 9 lbs. The total quantity thus obtained from the four cuttings during last season was, as already stated, found to be about 50 tons per Scotch acre. Mr. Kennedy informed me that, in the summer of 1851, he put sheep into his pens on the 1st June, and sold them fat in October with a good profit; and that this year the 460 which I saw, were put in about the end of May, having been purchased at a price of 19*s*. each. I have learned that he, about the middle of November last, had been offered for them 37*s*., which he had declined, feeling satisfied that he would probably get 40*s*. for them. Mr. Kennedy considers that there is no part of his system so likely to yield a good return as the feeding of sheep under cover, and on sparred boards, through which the whole dung, both solid and liquid, falls into gutters. These are flushed from time to time with water, and thus the contents are swept into the tanks. He estimates the value of this manure at 5*s*. to 6*s*. yearly for each sheep. He believes that it contains more ammonia than the dung of other animals, as it ferments more rapidly in the tanks. As Mr. Kennedy feeds some of his sheep out of doors, he is able, and has endeavoured to ascertain precisely the points in which the one mode of management is superior to the other. One point is that already noticed, as to manure, a great part of which—about a half, he thinks, is lost when it is voided on the land in pasturing. Another point of superiority he conceives to be in the better health of the animals and their greater rapidity in fattening, especially during winter. If it be supposed that in summer, sheep would suffer from the heat by being confined under cover in pens, I may mention that Mr. Kennedy lost only one sheep last summer and autumn from inflammation, out of the 460 confined. Effectual means of ample ventilation are taken in the construction of the sheds. One very curious fact was stated to me, by Mr. Kennedy, that the fleeces of the sheep confined in these pens weigh on an average nearly 2 lbs. more than those which have pastured during the previous year out-of-doors; besides being improved in the staple of the wool; and he added, that Mr. Mangles, M.P., who had visited his farm, on the morning of the day when I was there, had informed him of his having ascertained the same thing, in his own experience, as he follows the plan in Essex, of keeping sheep under cover. Mr. Kennedy, I have said, pastures some of his sheep out-of-doors. He this year tried to discover how many sheep could be in this way kept on Italian Rye-grass. He put a certain number of half-bred hogs into a field, confining them by hurdles to a measured portion, until it was eaten bare, and then moved them with the hurdles to another portion. The result was that he found 20 sheep could in this way be fed by 1 acre. They were put into the field on the 1st of June, and were sold fat in the end of October. This experiment seems to prove that Italian Rye-grass when pastured, will yield nearly four times the amount of food which is generally afforded by our Rye-grass and Clover, but that when cut and taken to stock in the farmyard, it will yield more than 12 times what is generally afforded by our Rye-grass and Clover fields. I believe that the ordinary calculation is that 1 acre of our Grass land will support on an average only five or six sheep. In regard to the quantity and kinds of manure applied by Mr. Kennedy to produce the heavy green crops which I saw on his farm, I learned the following particulars:—For Cabbages, he prepares the land in the previous autumn by ploughing in about 18 tons per Scotch acre (or 30 loads) of farmyard dung. He also sows 3 cwt. of Peruvian guano, and 4 bushels of superphosphate of lime, followed up by several slushings of tank manure. Mr. Kennedy does not rear his own Cabbage plants; he buys them in spring wherever he can get them, paying at the rate of 2*s*. 6*d*. to 3*s*. for each thousand. They are dibbled in during the month of March, at a distance of 20 inches apart every way. For Swedes, Mr. Kennedy prepares the land by ploughing in 7½ tons per Scotch acre of farmyard dung, followed in spring by 6 bushels of superphosphate of lime, and about 3000 gallons of tank manure. Mr. Kennedy considers that the manuring thus given, may be extended, with the effect of increasing his root crops, in a degree which will more than compensate the outlay, and for this purpose he wishes to have additional tanks. His only fear is, that the subsequent corn crops may lodge from rankness and softness of straw; to obviate which, he intends to lay on the land a mixture of lime and salt, to be dissolved in his tanks with water, and distributed by means of his pipes. The only green crops which Mr. Kennedy has sold off his farm, are a portion of his Carrots; and he got for them last year 2*l*. a ton. Mr. Kennedy has four separate tanks, capable of holding about 75,000 gallons each. The object of having so many is to allow of the manure remaining long enough to undergo fermentation, before it is applied to the land, and also to keep the manure, till such time as the land is prepared for receiving it. The only other remark which I have to make in regard to Myremill, is as to the expense of irrigating; I called Mr. Kennedy's attention to a report recently published by the Board of Health in London, where it is stated that the capital required for these arrangements amounts to 3*l*. 19*s*. per acre. He remarked that this was made out by taking into account the whole expense of the steam-engine, which was not fair, as this engine performed many other things besides—such as threshing corn, cutting straw, slicing Turnips, &c. Moreover I may observe, that a considerable expense was incurred in bringing water to the homestead; it had to be raised from a burn situated 400 yards off, and 70 feet below the level of the steading, by very expensive machinery. Making due allowance for these items, the amount of capital which was really required for irrigation may be stated at 3*l*. 10*s*. per acre. In regard again to the annual expenses, the Report of the Board of Health states it at 14*s*. per acre; but the result is brought out by charging 7½ per cent. on a capital of 1586*l*.,—which is 86*l*. too much; by charging the whole wages of the farm servants, whereas only one-fourth should be imputed to the irrigation arrangements; and by charging the whole fuel for the engine instead of a half. If a deduction is made for those items, the annual cost per acre would be 10*s*. instead of 14*s*., as alleged.

Miscellaneous.

Wheat Bran.—M. Mouriès has presented to the Academy of Sciences a memoir on the proximate principles contained in Wheat bran, and on the part they play in bread-making and in animal nutrition. Bran contains starch, azotised matter, and a coloured pellicle which is considered to be ligneous. Flour from which the bran has not been separated is known to furnish a sort of bread which many physicians prescribe in cases of habitual constipation, and where there is a tendency to congestions on the brain. It is also known, on the authority of Majendie, that dogs live when fed on brown bread, whilst they die when fed exclusively on white bread. What is the reason of this difference? What part does bran play in alimentation. It cannot be solely owing to the nitrogen of its proximate principles; for the relative quantity of the former is small compared with that found in the fine flour. M. Mouriès has discovered that the internal surface of bran contains several azotised principles, the characters and species of which are still to be determined. But these principles combined dissolve in tepid water, and, like diastase,* possess the remarkable property of liquefying starch, converting it into dextrine and sugar; it is therefore principally by inducing a sort of fermentation that bran acts in a peculiar manner in bread making, and afterwards in digestion. Let a certain quantity of common starch heated to between 104° and 113° Fahr. be divided into two parts. Let water in which bran has been steeped when the water was tepid be added to the first portion, and an equal quantity of distilled water to the second, it will be found that the greater part of the first half of the starch, that to which the bran water was added, will dissolve, whilst the second half will not undergo any change. Water containing iodine will colour the first portion purple, and the second blue. One thousand grains of starch in 15,000 grains of water, mixed with 1000 grains of water in which 200 grains of bran had been steeped when tepid, became liquefied in 20 minutes at the temperature of 104°. After two hours, the solid residue was 151.3 grains; and the water when evaporated left 850 grains of dextrine and sugar. The active matter of bran-water differs from that of Barley or of diastase, inasmuch as its action is destroyed when it is precipitated by alcohol; whereas that of diastase is not. Moreover, to produce the same effect on the former, a temperature of 167° is sufficient; whereas the latter requires

* The substance contained in malt which converts starch into dextrine and grape sugar. It is said that 1 part of diastase will convert into sugar 2000 parts of starch.]

from 208° to 212°. The effect of bran in bread is in conformity with the preceding: for 130 parts by weight of this bread, supposed to be dry, pounded with 520 parts of water, readily divides, and at the expiration of three hours, in a temperature of 104°, the mixture assumes a milky appearance and may be filtered. The following are the proportions of soluble and insoluble matter contained in the brown bread:—

Soluble matter dried at 212°	59·35
Insoluble matter	69·75

One hundred and thirty parts of white bread, supposed to be dry, pounded with 520 parts of water, only form, after long trituration, at a temperature of 104°, a half solid mass, represented as follows:—

Soluble matter	9·03
Insoluble matter	120·25

It appears that the action of the bran on the fine flour commences when the paste is being formed, increases whilst the bread is being baked, and is only completed in the stomach. The experiments of M. Mouriès, therefore, explain the difference between brown and white bread by the action of the bran on the starch, the bran being present in the brown bread, and absent in the white bread. *Comptes Rendus, Nov.* 21.

Calendar of Operations.

MAY.

Forfarshire Glens, *May* 9.—The winter has passed over with less than average severity. The storm which commenced at Christmas continued unabated until January 16, when a thaw set in with a westerly wind; during the remainder of the winter the weather was unusually fine, generally breezy, often blowy with several heavy gales, the direction of the wind generally westerly. All spring phenomena appeared unusually early; frogs were abroad by the middle of February, and immigratory birds generally anticipated their ordinary time of returning by several weeks. Vegetation came also considerably in advance, fertile spots began to wear a verdant aspect by the beginning of March, and everything both in field and garden bore testimony to the mildness of the season. Last year, up to March 25, all surrounding objects were cold and white as a winding sheet. Field operations are in a forward state; sowing of Oats commenced about the second week of March, and was generally concluded by the end of the month. Here, the crops which follow a March seed time are both best matured and best secured; the time from sowing to ingathering is seldom less than between five and six months, and when the seed time is cast back into April, the harvest is generally into October. With the day short, and the night long and cold, the corn is imperfectly ripened, and there is but little drought to prepare the sheaves for the stackyard. April was a dry month, and favourable for sowing Barley, planting Potatoes, and preparing Turnip land. Since May began the weather has been more genial, showers frequent, and vegetation progressing. Winter provender has, with the utmost economy, been barely sufficient to bring forward the usual stock, but Grass appearing early was a relief, and had an animating effect upon the spring markets. Fed stock, both cattle and sheep, still command high prices, and, notwithstanding the reiterated assertions of some crack farmers to the contrary, do pay; in fact here, the live stock is by many considered the best paying department of the farm; but we do not give oxen 8, 10, or 12 lbs. of oilcake daily at 1*d.* per lb., besides other food, and expect that to pay, while the increase of the animal is not more than 1 lb. of beef during the same period. They are allowed as much straw, or hay and Turnips, as they can consume, and sometimes, but not generally, a little bruised light corn for a few weeks before being turned off; and cattle so fed, the pure Angus *doddies*, seldom fail to command the highest prices in the London markets. Here also we can make pigs and poultry to pay, but we do not feed them upon marketable produce, but keep them in the position which they are obviously intended to occupy, viz., the scavengers of the farm: as such, if their numbers are kept in due proportion to the other parts of the establishment, they will always be found profitable. The flocks have come well through the winter; for three weeks they had little but whins, but where there is plenty of that kind of food a storm of short duration is considered advantageous rather than otherwise, causing them to take to the rougher herbage, which otherwise would be neglected. The dead list is shorter than usual; where ordinary care has been bestowed, none have fallen victims to poverty; the season of braxy has also passed over with much less than the usual mortality. The lambing season commences about April 9, the greater proportion being dropped between the 15th and 30th. A few lambs have fallen after being eight or ten days old, from some unknown cause, but ewes being in good condition, and other circumstances generally favourable, the crop is likely to be fair. The season has been highly favourable for heather burning, yet but little advantage has been taken of it; few tenants are now allowed to burn at will. Sportsmen finding their game generally among long heather, have rather rashly concluded that the more heather the better sport, and therefore when it can be prevented, do not allow the necessary amount of burning. When a wide district is left for a series of years unburned, the grouse invariably leave it; and for good reason, although they have abundance of cover, they have no food. In the arrangements of Providence, the interests of one class of animals are never opposed to those of another; and, as might be anticipated, what is best for the flocks is also best for the grouse, namely, to have a fair proportion of the moors burned every season: and were that always attended to, neither sport nor pasture would ever be wanting. The young heath and the small Fescue Grass afford the principal food of the grouse, as well as of the sheep, upon high districts, and both are in greatest perfection on newly-burned ground. *S.*

Notices to Correspondents.

Food: . We should prefer oilcake at 10*l.* and Beans at 11*l.* per ton to Oats at 10*l.* and Barley at 9*l.* 12*s.* 10*d.* We have had no experience of Indian Corn, but should not be inclined to buy it at 8*l.* 12*s.* per ton, when good oilcake was to be had at 10*l.* You will see boarded floors for cattle at Tiptree, near Kelvedon.

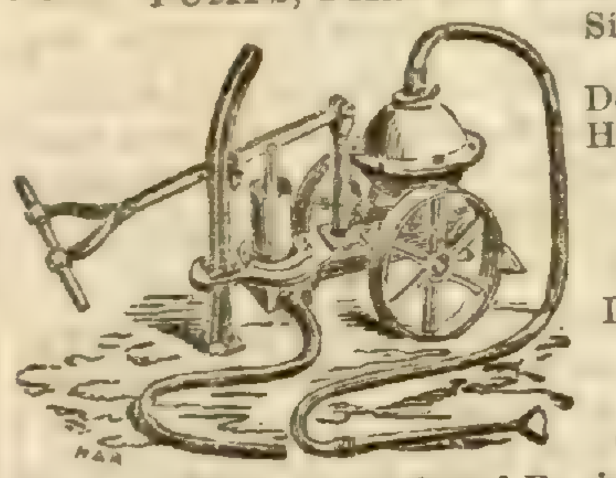
Mangold Drill: *Chilwell.* We do not remember having received a question on the subject. We believe the best way to plant Mangolds is to send the Turnip drill up the rows, so as to make a furrow along the top of each ridgelet, and dibble the seed in these furrows, employing a stick about 14 inches long to mark the intervals, and to move the earth sufficiently to make a place for the seed.

Tanks: *J M A.* It depends on the quantity of liquid you collect in a week. A large sunk cask might be as good as any, and if baled out once a week and thrown upon a heap of vegetable matter, charcoal, &c., close by, the whole would be absorbed, and ready for use at any time.

Turnip Hoe: *H W W.* We have heard nothing further of the revolving horse hoe; we look upon it as not likely to be a generally successful implement. If any of our readers have had any experience we should be much obliged for it. It is made by Garrett and Son, Saxmundham. The catalogue says that the inventor hoed 120 acres of Turnips with it last year. We presume that the most it can do is to "bunch" the plants. Sawdust is perfectly good and satisfactory litter for cattle. We have seen it used in a house of 60 or 80 cattle with perfect success.

THE GUTTA PERCHA COMPANY'S TUBING FOR WATERING GARDENS, with Roses and Union Joints Fitted.—27, CITY ROAD, LONDON.

WEIR'S IRRIGATORS, LIQUID MANURE PUMPS, FIRE and GARDEN ENGINES.



	£	s.	d.
Single Cylinder (as engraving) ...	8	8	0
Double Cylinder ...	10	10	0
Horse power size ...	15	15	0

Exclusive of Suction and Delivery Pipes.

Illustrated Catalogues free per post.

Terms Cash on Delivery.

Edward Weir, Agricultural Engineer, 16, Bath Place, New Road, London, removed from Oxford Street.

LADDERS, BARROWS, ETC.

G. ELL invites the attention of Agriculturists, Builders, and Decorators, to the large stock of LADDERS, EXCAVATORS, BRICKMAKERS, and GARDEN BARROWS, TRESTLES, STEPS, &c., he has always on hand at a very low scale of charges. A list of prices will be forwarded on application.—Manufactory, 3, Tottenham Court New Road, opposite Hampstead Road.

SAMUELSON'S PRIZE FORKING or DIGGING MACHINE, as applied to Spring Cultivation, serves to thoroughly pulverise land which has been trodden by sheep or autumn ploughed, deepening the staple, leaving no pan, dragging up the Couch Grass, and preparing a finely divided seed-bed.

Extracts of Testimonials and references to persons using it.

"Answers thoroughly; brings everything to the surface."—*E. W. Wilmot, Congleton.*

"The very best a man can have upon a mixed or stiff soil, it so thoroughly pulverises it."—*Joseph Cooper, Acton Burrel, Salop.*

"I inform you, with the greatest satisfaction, of its success."—*Francis Hamilton, Friars Place, Middlesex.*

"Attached horses at half-past 8, on 5½ acres, finished at a quarter past 3, making first-rate work."—*J. Kirby, Bodicott, Oxon.*

"Has been working every day."—*T. Cardus, Barwell, Surrey.*

"Will do a given amount of labour, not only cheaper but better than the plough."—*J. J. Mechi, Tiptree, Essex.*

"Let me have one at your earliest convenience."—*Earl of Essex, Cassiobury, Herts.*

"Send to Exton Park one of Samuelson's Forking Machines for *Earl of Gainsborough, Oakham.*"

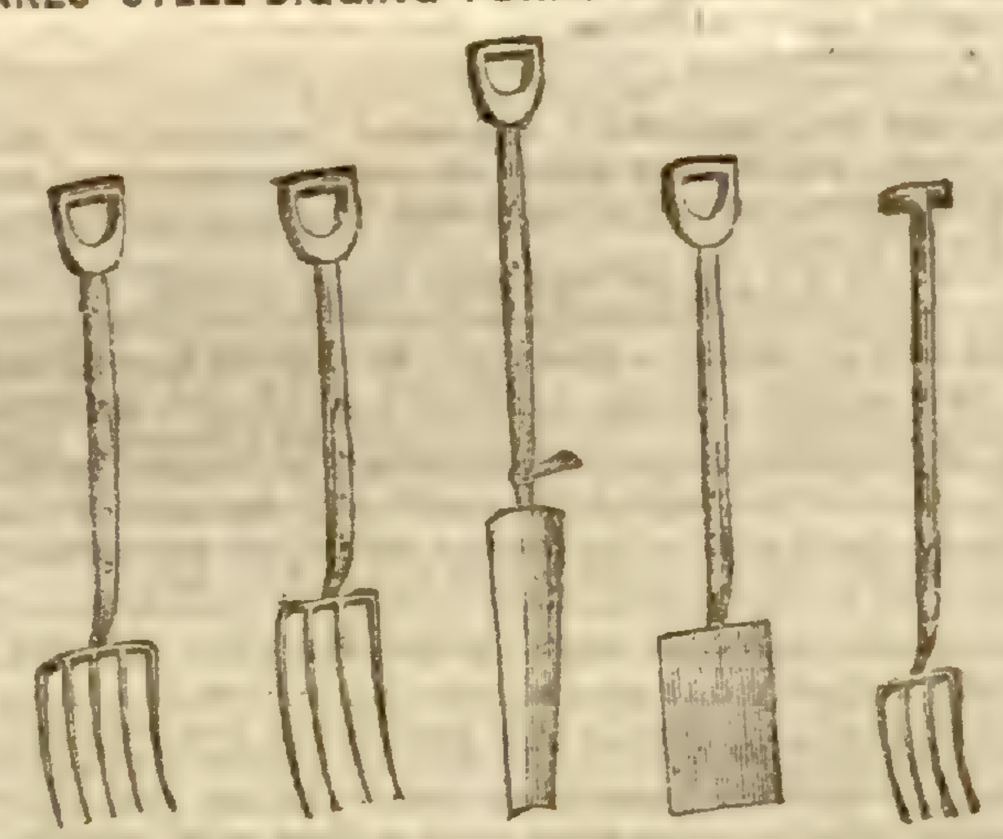
"Besides improved tillage, economises ploughmen."—*P. Gener, Cuba.*

"Been digging all the week; the *champion* of all implements in England; should be very sorry to be deprived of it."—*Thomas Lawrence, Thurlaston, Dunchurch.*

"Well satisfied last year. Turnips were a superior crop."—*C. Brickwell, Overthorpe, Northamptonshire.*

Price 24*l.* 10*s.*, the general purpose size; and 27*l.* 10*s.* large size, Cash; at the Works, Banbury.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.



MESSRS. BURGESS and KEY, as Mr. Parkes' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.
103, Newgate Street, and 52, Little Britain, London.

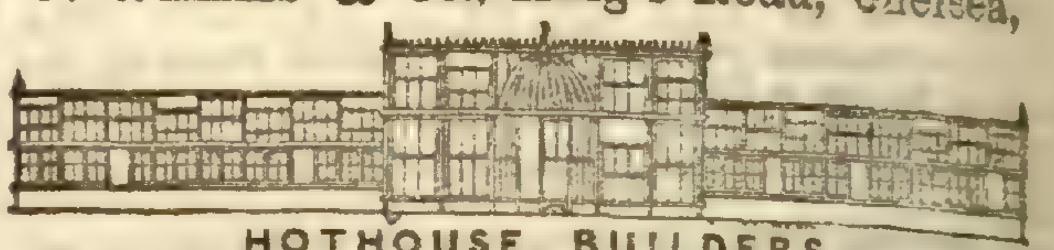
ANTHONY'S PATENT AMERICAN CHURN.—Extract from the Royal Agricultural Society's Report of the trial of Churns at the Gloucester meeting in July last. "In this trial the American Churn not only maintained its character in producing butter rapidly, but in producing a greater quantity from the like amount of cream." It made from 4 quarts of cream 4 lbs. 6 oz. of butter, being 8 oz. more than any of the other Churns from the same quantity and quality of cream. Price Lists of Churns and Implements by the best makers sent free, and Illustrated Catalogues on receipt of eight postage stamps. Burgess & Key, 103, Newgate Street, and 52, Little Britain, London, who have always a large stock of Steam-engines, Ploughs, Harrows, Diggers, Waggons, Carts, Threshing and Dressing Machines, Mills, Oat and Grain Bruisers, Oilcake Breakers, Reaping Machines, Haymakers, Horse-rakers, Turnip Cutters, Liquid Manure Carts, Parkes' celebrated Steel Digging Forks and Draining Tools, Pumps for Manure, Farm Fire Engines, and for Garden Purposes, &c. &c.

BUDDING'S LAWN MOWERS, with Samuelson's registered improvements, *lightening the draught fully one-half*, and enabling an unskilled labourer to make neat work; free from liability to choke, or get out of order. May be had of all ironmongers in town or country, or from the Works, Banbury; delivered free in a packing case to any station on the North-Western and Great Western Railways. Testimonials forwarded on application.—Britannia Works, Banbury.

JOHN WEEKS and CO., Horticultural Builders, King's Road, Chelsea, think it now necessary to inform the Nobility, Gentry, and Public in general, that they have NOT HAD ANY CONNECTION WHATEVER with the Edward and Alfred Weeks who LATELY carried on business at Chelsea.
May 20th.

HORTICULTURE IN ALL ITS BRANCHES.

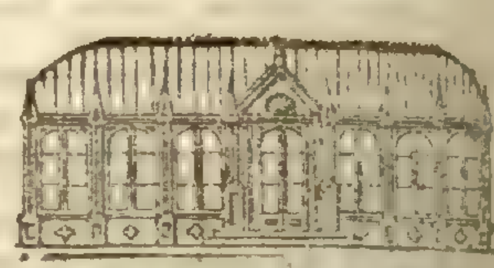
J. WEEKS & Co., King's Road, Chelsea,



HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Building or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

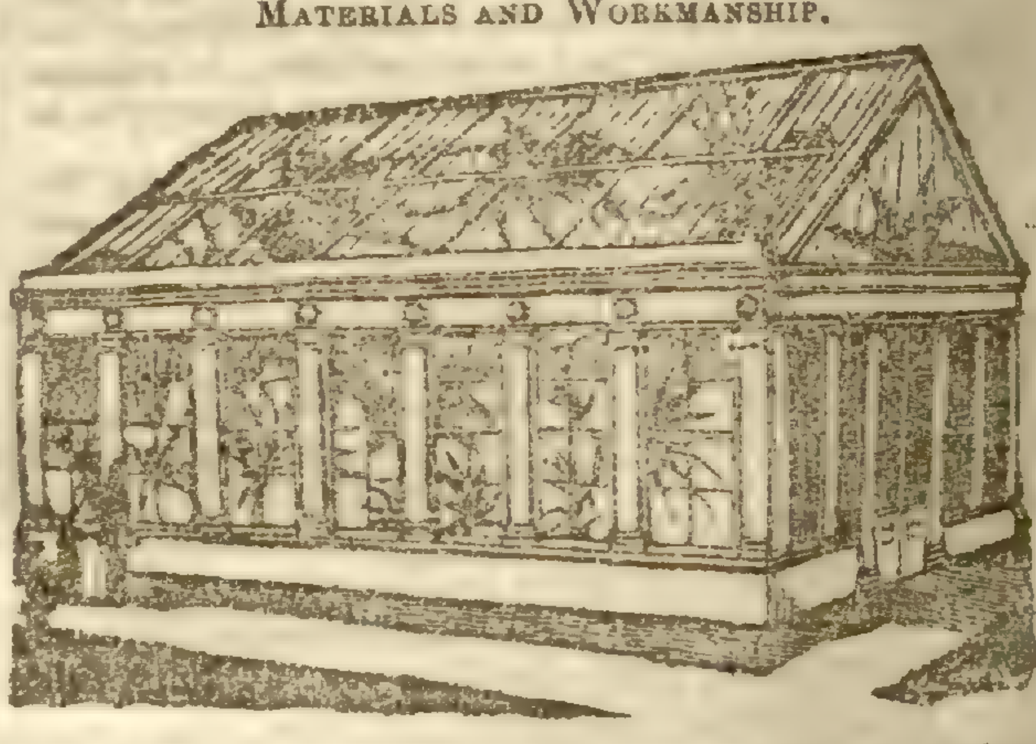


The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings: also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.
J. Weeks & Co., King's Road, Chelsea, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

At the Lowest Prices Consistent with Good Materials and Workmanship.



GRAY and ORMSON, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

BY HER MAJESTY'S ROYAL LETTERS PATENT

E. DENCH, PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

PATENT HOTHOUSES and excellent Glass at 1*s.* 3*d.* per foot super., which are superior to all others for price with quality, and if known would supersede all others. (See Appendix, in "Book of the Garden," by Mr. M'Intosh.) A Range of Houses and Hot Water Apparatus, was erected by E. D. for E. L. Betts, Esq., Preston Hall, Kent. Mr. J. Frost, head gardener, has shown their efficiency by their produce at the Royal Botanic Gardens, Regent's Park, June 8, and Chiswick, June 11. The editor of the *Gardeners' Chronicle* says: "Beautiful examples of Black Hamburgh, large both in bunch and berry, and as black as Sloes, were furnished by Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall, Kent; these well deserved the first prize which was awarded them."—*Gardeners' Chronicle*, June 18th, 1853. The Grapes were considered the best shown at Regent's Park during the season, and the Houses are as superior for the growth of everything else in horticulture, which has been fully proved, and they have been extensively erected for the nobility and gentry in all parts of the kingdom.

GLAZING WITHOUT PUTTY.—Iron and Glass alone. E. D. has Roofed the Public Baths and Washhouses, Endell Street, on this principle, and others are in hand. Patent Sashes for Peach Walls, Pits, &c., 8*d.* per foot super. Heating by Hot-water, on the most practical principles, and all the best materials used. Printed Price List sent on application.

PRIZE MEDAL—1851.
AT A VERY ECONOMICAL RATE.

SAMUEL CUNDY, Mason and Builder, Pimlico Marble and Stone Works, Belgrave Wharf, Lower Belgrave Place, Pimlico, London.

Marble Chimney-pieces manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price. A good Marble Chimney-piece for 40*s.* Marble Work in all its branches at a remarkably cheap rate for Halls, Dairies, Larders, &c. Circulars sent on application.

N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank.

OPENING OF THE CRYSTAL PALACE.— The Opening of the Crystal Palace is definitely fixed to take place on SATURDAY, June 10, on which occasion her MAJESTY has graciously signified her intention of honouring the Inauguration with her presence.

SEASON TICKETS.—Season Tickets may now be had at the Palace; at the Offices, 3, Adelaide Place, London Bridge, and 14, Regent Street; at the Brighton Railway Terminus, London Bridge; at Sams', 1, St. James's Street; Mitchell's, Bond Street; Gunter's, Lowndes Street; Westerton's, Knightsbridge; Keith, Prowse, & Co., Cheapside; Brill's Royal Baths, Brighton; Mr. Wm. Brooks, of No. 2, High Street, Southampton; and at Messrs. Smith & Son's Book Stalls on the Railway. Tickets, to include conveyance by Railway, can be had only at the Office of the Secretary to the Brighton Railway, London Bridge, and at 14, Regent Street.

HOLDERS of SEASON TICKETS ONLY will be admitted to the Opening of the Palace.

OPENING OF THE CRYSTAL PALACE, 1854. It is intended to OPEN the CRYSTAL PALACE and PARK on the 10th of JUNE, after which they will be open daily, Sundays excepted.

The following are the arrangements for the Admission of the Public:—

FIVE SHILLING DAYS.—On Saturdays the public will be admitted by payment at the doors, by tickets of 5s. each, and by tickets to include conveyance by railway.

HALF-CROWN DAYS.—On Fridays the Public will be admitted by payment at the doors, by tickets of 2s. 6d. each, and by tickets to include conveyance by railway.

SHILLING DAYS.—Mondays, Tuesdays, Wednesdays, and Thursdays will be 1s. days. At the gates, a payment of 1s. each will admit the public, or tickets entitling the holder to admission to the Palace and Park, and also to conveyance along the Crystal Palace Railway, from London Bridge Station to the Palace and back, will be issued at the following prices:—

Including first class carriage ... ... 2s. 6d.
Including second ditto ... ... 2s. 0d.
Including third ditto ... ... 1s. 6d.

CHILDREN.—Children under twelve years of age will be admitted at half the above rates.

HOURS OF OPENING.—The Palace and Park will be opened on Mondays at 9 o'clock, on Tuesdays, Wednesdays, and Thursdays, at 10 o'clock, a.m., and on Fridays and Saturdays, at 12 o'clock, and close every day an hour before sunset.

SEASON TICKETS.—Season Tickets are now issued at two guineas each, to admit the proprietor to the Palace and Park on the day of opening, and on all other days when the building is open to the public, up to the 30th April, 1855.

No Season Ticket will be transferable or available except to the person whose signature it bears.

FAMILY SEASON TICKETS.—Members of the same family who reside together have the privilege of taking Season Tickets for their own use with or without Railway conveyance on the following reduced terms:—On two tickets a discount of 10 per cent. on the gross amount; three tickets, a discount of 15 per cent.; four tickets, a discount of 20 per cent., and five tickets and upwards a discount of 25 per cent. Families claiming the above privilege, and desiring to avail themselves of it, must apply in a prescribed form, which may be had at the Office, 3, Adelaide Place, and at the other offices for tickets. These tickets will be available only to the persons named in such application.

Railway Season Tickets, including conveyance along the Crystal Palace Railway from London Bridge to the Palace and back, are issued by the London and Brighton Company, at their Offices, London Bridge. Single Tickets, 4l. 4s. each; Family Tickets at the same reduction as above.

SPECIAL REGULATIONS AND BYE-LAWS.—All the General Provisions and Regulations mentioned above are to be understood as being subservient to such Special Provisions, Regulations, and Bye-Laws on the part of the Railway Company and the Palace Company as may be found necessary to regulate the traffic, and to meet special occasions and circumstances which may from time to time arise. By order of the Board,

G. GROVE, Secretary.

Adelaide Place, London Bridge, May 20, 1854.

SCHEDULE OF PRICES OF FAMILY SEASON TICKETS.

Without Railway Conveyance.	£	s.	d.	Including Railway Conveyance.	£	s.	d.
Two Tickets	3	16	0	Two Tickets	7	11	6
Three "	5	7	6	Three "	10	14	6
Four "	6	15	0	Four "	13	9	0
Five "	7	17	6	Five "	15	15	0
Six "	9	9	0	Six "	18	18	0
Seven "	11	0	6	Seven "	22	1	0
Eight "	12	12	0	Eight "	25	4	0
Nine "	14	3	6	Nine "	28	7	0
Ten "	15	15	0	Ten "	31	10	0

NOTE.—Applications for Single or Family Season Tickets must be addressed to the Secretary, and accompanied by a remittance for the full amount of the Tickets asked for, according to the above Schedule, in favour of GEORGE FASSON, 3, Adelaide Place. Cheques must be on a London Banker, and be crossed with the words "Union Bank of London."

And no application, unless so accompanied, will be attended to.

THE EDUCATIONAL EXHIBITION will OPEN at ST. MARTIN'S HALL, the last week in JUNE. Parties intending to exhibit should apply forthwith for space and particulars to the Secretary of the Society of Arts.

(By order.) P. LE NEVE FORSTER, M.A., Sec.
Society's House, Adelphi, London, May 20.

THE CHOLERA—ITS BEST ANTIDOTE.

SIR W. BURNET'S DISINFECTING FLUID, the original and genuine CHLORIDE OF ZINC.—Sold by all Chemists, Druggists, and Shipping Agents; and at the Office, 18, Cannon Street, London Bridge.

THE CHOLERA

PREVENTED BY THE DESTRUCTION OF ALL NOXIOUS EFFLUVIA.

CREWS'S DISINFECTING FLUID, Recommended by the College of Physicians. The Cheapest and Strongest Chloride of Zinc.—Quarts, 2s.; Pints, 1s.; Half-pints, 6d. Sold by all Chemists, Druggists, and Shipping Agents; and at Commercial Wharf, Mile End, London.

ASTROLOGY.—Persons residing in London or elsewhere can send any Address, Christian and Surname, and Age, in a letter containing 13 postage stamps, to Professor MELVILLE, Prince's Road, Lambeth, London (the only Acrostic Astrologer in the universe), and they will receive by return of post, special Poems on their names, in which their destinies will be revealed.

METCALFE AND CO'S NEW PATTERN TOOTH BRUSH, PENETRATING HAIR BRUSHES, AND SMYRNA SPONGES.—The Tooth Brush performs the highly-important office of searching thoroughly into the divisions and cleansing in the most extraordinary manner—hairs never come loose. Peculiarly penetrating Hair Brushes, with durable unbleached Russian bristles, which will not soften like common hair, and immense stock of genuine unbleached Smyrna Sponge, with every description of British and Foreign Perfumery, at METCALFE, BINGLEY, & Co.'s only Establishment, 130 B and 131, Oxford Street, second and third doors west from Holles Street.

CAUTION.—Beware of the word "from" Metcalfe's, adopted by some houses. Metcalfe's Alkaline Tooth Powder, 2s. per box.

FENDERS, STOVES, AND FIRE-IRONS.— Buyers of the above are requested, before finally deciding, to visit WILLIAM S. BURTON'S SHOW ROOMS, 39, Oxford Street (corner of Newman Street), Nos. 1 and 2, Newman Street, and 4 and 5, Perry's Place. They are the largest in the world, and contain such an assortment of FENDERS, STOVES, RANGES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with bronzed ornaments and two sets of bars, 2l. 14s. to 5l. 10s.; ditto, with ormolu ornaments and two sets of bars, 5l. 10s. to 12l. 12s; Bronzed Fenders complete, with standards, from 7s. to 3l.; Steel Fenders from 2l. 15s. to 6l.; ditto, with rich ormolu ornaments, from 2l. 15s. to 7l. 7s.; Fire-irons from 1s. 9d. the set to 4l. 4s. Sylvester and all other Patent Stoves, with radiating hearth plates. All which he is enabled to sell at these very reduced charges,

1st,—From the frequency and extent of his purchases; and,
2dly,—From those purchases being made exclusively for cash.

TEA URNS, OF LONDON MAKE ONLY.— The largest assortment of London-made TEA URNS in the world (including all the recent novelties, many of which are registered) is on Sale at WILLIAM S. BURTON'S, from 30s. to 6l.

THE BEST SHOW OF IRON BEDSTEADS in the Kingdom is WILLIAM S. BURTON'S.—He has two very Large Rooms, which are devoted to the exclusive show of Iron and Brass Bedsteads and Children's Cots, with appropriate Bedding and Mattresses. Common Iron Bedsteads from 17s.; Portable Folding Bedsteads from 12s. 6d.; Patent Iron Bedsteads, fitted with dovetail joints and patent sacking, from 21s.; and Cots from 21s. each; handsome Ornamental Iron and Brass Bedsteads, in great variety, from 2l. 19s. to 13l. 13s.

PAPIER MACHE AND IRON TEA-TRAYS.—An assortment of Tea Trays and Waiters wholly unprecedented, whether as to extent, variety, or novelty.

New oval Gothic Papier Mache Trays,
per set of three ... ... from 20s. to 10 guineas.
Ditto, Iron ditto. ... ... from 13s. to 4 guineas.
Convex shape, ditto. ... ... from 7s. 6d.

Round and Gothic Waiters, Cake and Bread Baskets equally low.

WILLIAM S. BURTON has TEN LARGE SHOW ROOMS (all communicating), exclusive of the shop, devoted solely to the show of GENERAL FURNISHING IRONMONGERY (including Cutlery, Nickel Silver, Plated and Japanned Wares, Iron and Brass Bedsteads, and Bedding), so arranged and classified that purchasers may easily and at once make their selections.

Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of.

No. 39, Oxford Street (corner of Newman Street); Nos. 1 and 2, Newman Street; and 4 and 5, Perry's Place.

ONE THOUSAND BEDSTEADS TO CHOOSE FROM.

HEAL AND SON'S Stock comprises a large assortment of handsomely Japanned and Brass-mounted IRON BEDSTEADS, CHILDREN'S CRIBS and COTS of new and elegant designs; MAHOGANY, BIRCH, and WALNUT-TREE BEDSTEADS, of the soundest and best manufacture, many of them fitted with Furnitures, complete; and every variety of SERVANTS' and PORTABLE BEDSTEADS. They have also a large assortment of

BED-ROOM FURNITURE, comprising WARDROBES, both in Japanned Wood and Mahogany, from 4 feet to 8 feet long, fitted with every variety of arrangement; DRESSING TABLES and GLASSES, WASH-STANDS, DRAWERS, and every article for the complete furnishing of a Bed-room.

HEAL & SON'S ILLUSTRATED CATALOGUE OF BEDSTEADS and priced List of Bedding, containing designs and prices of upwards of One Hundred Bedsteads (representing a stock of upwards of One Thousand), sent free by post.

HEAL & SON, 196, Tottenham Court Road, London.

TYLOR AND PACE have removed from 313, Oxford Street, to larger and more commodious premises, 104, New Bond Street, which will enable them to keep a much larger stock in all the different branches of their manufacture, including a very extensive assortment of Iron and Brass Bedsteads, Children's Cots, Portable Bedsteads, and Chair Bedsteads, with suitable Bedding and Mattresses. A Large Show Room is entirely appropriated to the exhibition of Baths and Toilette Ware of every description, all at the most moderate prices. An increased assortment of Venetian and all other Window Blinds, Outside Blinds, and Transparencies. Illustrated Catalogues of Bedsteads, Baths, and Window Blinds, are published separately, and will be forwarded post free on application by naming the description of article required.

TYLOR & PACE, 104, New Bond Street, London.

QUALITY THE TEST OF ECONOMY.—First Class DRESS COATS, 3l.; BOY'S SUIT, 11d. per inch, according to height, &c. The Best Article the Cheapest. The well-known VENTILATING WATERPROOF LIGHT OVERCOAT, 45s. W. B. trusts the established character of his business for half a century will prove a satisfactory guarantee.—W. BERDOE, 96, New Bond Street, and 69, Cornhill (only).

BLAIR'S GOUT AND RHEUMATIC PILLS. Price 1s. 1½d. and 2s. 9d. per box.—Mr. William Courtney, of Barton, Stacey, Hants, says:—"I had resort to your Pills, and within two hours I was quite easy. The use of these Pills ought really to be known all over the world." Among the many discoveries, none have conferred such a boon upon suffering humanity as that of Blair's Gout and Rheumatic Pills, they require neither attention nor confinement, and are certain to prevent the disease attacking any vital part. Sold by all medicine vendors. Observe that "THOMAS PROUT, 229, Strand London," is impressed upon the Government stamp.

THE SUCCESSFUL RESULTS OF THE LAST HALF CENTURY HAVE PROVED BEYOND QUESTION THAT

ROWLAND'S MACASSAR OIL possesses singularly nourishing powers in the growth, restoration, and improvement of the human Hair, and when every other specific has failed. This celebrated Oil is now universally acknowledged to be the cheapest, and superior to all other preparations for the hair. It prevents it from falling off or turning grey, strengthens weak hair, cleanses it from scurf and dandriff, and makes it beautifully soft, curly, and glossy. Its operation in cases of baldness is peculiarly active; and in the growth of the Beard, Whiskers, Eyebrows, and Moustachios, it is unfailing in its stimulating operation. For children it is especially recommended, as forming the basis of a beautiful head of hair. Price 3s. 6d. and 7s.; Family Bottles (equal to four small), 10s. 6d.; and double that size, 21s. CAUTION.—On the wrapper of each bottle are the words, Rowlands' Macassar Oil, in two lines. The same are engraven on the back of the wrapper nearly 1500 times, containing 29,028 letters.—Sold by A. ROWLAND & SONS, 20, Hatton Garden, London, and by Chemists and Perfumers.

This day, Seventh and Cheaper Edition, with numerous Illustrations, 2s. 6d.,

DOMESTICATED ANIMALS.

By MARY ROBERTS.

By the same Author, Third Edition, with Illustrations, 3s. 6d., gilt edges,

WILD ANIMALS.

London: JOHN W. PARKER & SON, West Strand.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

In accordance with the wishes of Farmers, Millers, and others interested in the Corn Trade, an Edition is published in time for post every Monday afternoon, containing a FULL REPORT of the MARK LANE and SMITHFIELD MARKETS of the DAY.

In consequence of the Advertisement Duty having been taken off by the Government, the charges for Advertisements in *The Gardeners' Chronicle and Agricultural Gazette* have been reduced.

Advertisements appear in both Editions without extra cost.

	£	s.	d.
Space of Four lines and under (body type)	£0	2	6
Each additional line up to Twenty	0	0	6
Every Five lines beyond	0	2	0
A Column	3	0	0
A Page	8	8	0

Advertisements of Bailiffs and Gardeners out of Place, if not more than Three lines, 1s. 6d. each.

From the Official Stamp Returns published April 5, 1854, it appears that during the three preceding years, 1851, 1852, and 1853, the Stamps supplied to each of the undermentioned Journals gave them an average sale of—

GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE	6277	St. James's Chronicle	2844
		Morning Post	2652
		Sun	2530
Era	5500	Morning Chronicle	2364
Wesleyan Times	5094	Britannia	2329
Magnet	4705	Express	2235
Examiner	4694	Leader	2140
Mark Lane Express	4500	Herapath's Journal	2066
Evening Mail	4488	John Bull	2020
Field	4409	Globe	1926
Morning Herald	4021	Weekly News	1709
Daily News	3910	United Service Gazette	1708
Guardian	3904	Railway Times	1641
Economist	3837	Atlas	1479
British Banner	3798	Standard	1456
Record	3736	Naval & Military Gazette	1313
Watchman	3681	Patriot	1304
Nonconformist	2987	Gardener's and Farmer's	
Spectator	2956	Journal	752

OFFICE FOR ADVERTISEMENTS AND COMMUNICATIONS,
5, Upper Wellington Street, Covent Garden, London.

DR. HOOKER'S HIMALAYAN JOURNALS.

This day, with Maps, Plates, and 80 Woodcuts, 2 vols., 8vo, 36s.,

NOTES OF AN ORIENTAL NATURALIST, IN BENGAL, THE SIKHIM AND NEPAL HIMALAYAS, THE KHASIA MOUNTAINS, &c. By JOSEPH DALTON HOOKER, M.D., R.N., F.R.S.

London: JOHN MURRAY, Albemarle Street.

New and cheaper Edition, in fcp. 8vo, price 3s. 6d.

RIVERS'S ROSE AMATEUR'S GUIDE:— Containing ample Descriptions of all the fine leading Varieties of Roses, regularly classed in their respective Families; their History and Mode of Culture. Fifth Edition, corrected and improved; including a full account of the Author's experience in the Culture of Roses in Pots.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

PROFESSOR LINDLEY'S INTRODUCTION TO BOTANY, 4th Edition, with Corrections and Additions, now ready, in 2 vols. 8vo, with Six Copper Plates and numerous Wood Engravings. Price 24s. cloth.

London: LONGMAN, BROWN, GREEN, & LONGMANS.

PORTRAIT OF THE LATE DR. WALLICH, F.R.S., &c.—The last Portrait taken of this distinguished Botanist, large India Paper, copies 10s. 6d. each.

GEORGE ROWNEY & Co., 51, Rathbone Place, London.

PRICE FOURPENCE OF ANY BOOKSELLER.

CONTENTS OF THE NUMBER FOR SATURDAY LAST, MAY 13, OF

THE ATHENÆUM.

JOURNAL OF ENGLISH AND FOREIGN LITERATURE, SCIENCE, AND THE FINE ARTS.

Thirty-two large Quarto Pages.

Reviews OF, WITH EXTRACTS FROM—

History of the War between Frederick the First and the Communes of Lombardy. By G. Batista Testa.
Duchess Eleanor: a Tragedy.
Journal of a Cavalry Officer; including the memorable Sikh Campaign. By Captain Humbley.
Counterparts; or the Cross of Love.
Angelo; a Romance of Modern Rome.
Westminster Abbey; or the Days of the Reformation.
Exploration of the Valley of the Amazon. By Lieutenant Herndon.
Nicholas I. By the Rev. H. Christmas.
The Last Days of Alexander and the First Days of Nicholas. By Dr. Lee.
Cobbett's Reasons for War against Russia in Defence of Turkey.

WITH SHORTER NOTICES OF

Julian, or the Close of an Era. By L. F. Bungener.
Voltaire and his Times. By L. F. Bungener.
Trials and Confessions of an American Housekeeper.
Central Route to the Pacific. By G. H. Heap.
Nineveh. By R. G. Pote.
The New Testament in Greek. By the Rev. J. F. Macmichael.
Du Pouvoir et de la Liberté. By Pierre Mancel.
The Ministry and Polity of the Christian Church. By the Rev. A. Barrett.
Pamphlets, &c.

Original Papers.—Temperature of Alten, Norway. By Professor J. D. Forbes. Obituary:—William Pickering—Arthur Aiken.

Foreign Correspondence.—Pitigliano.

Weekly Gossip.—Foreign Contributions to the Trade Museum—Letter from Col. Chesney on the Attack on Algiers—American Association—Professor Edward Forbes' Appointment to the University of Edinburgh—Flügel's Dictionary—The French Crystal Palace—Architectural Publication Society—Dumas' Les Mousquetaires—Roman Catholic University of Ireland—Camden Society's Report—New Panoramas—French and English Festival—Lord Advocate's Bill for Scotland—Educational Exhibition—Lending Libraries for the Million.

Societies.—Reports of the Proceedings of the Geographical, Antiquaries, Chemical, Civil Engineers, Royal Institution, and Society of Arts.

Fine Arts.—The Royal Academy.

Fine Art Gossip.—Scheffer's Francesca da Rimini—Wooster's Monument—Sale of Mr. Wadmore's Collection.

Music and the Drama.—Philharmonic Concerts. Concerts of the Week. Royal Italian Opera ('Il Barbiere di Siviglia,' 'Don Giovanni').

Musical and Dramatic Gossip.—Drury Lane Opera—Mathilda di Shabran—Rotterdam Festival—Musical Copyright—French and English Theatricals.

Miscellanea.—Prof. Jameson — The Author of 'Susan Hopley'—Telegraphs in Spain.

The Athenæum may be ordered of any Bookseller.

Just published, the Second Edition, with Additions, price 5s. 6d. cloth,

ORNAMENTAL AND DOMESTIC POULTRY:

THEIR HISTORY AND MANAGEMENT.

BY THE REV. EDMUND SAUL DIXON, M.A., RECTOR OF INTWOOD WITH KESWICK.

THE BIRDS TREATED OF ARE—

- Domestic Fowl in general
- The Guinea Fowl
- The Spanish Fowl
- The Speckled Dorkings
- The Cochin China Fowl
- The Malay Fowl
- The Pheasant Malay Fowl
- The Game Fowl
- The Mute Swan
- The Canada Goose
- The Egyptian or Cape Goose
- The Musk Duck
- The Grey China Goose
- The White Fronted or Laughing Goose
- The Wigeon
- The Teal, and its congeners
- The White China Goose
- The Tame Duck
- The Domestic Goose
- The Bernicle Goose
- The Brent Goose
- The Turkey
- The Pea Fowl
- The Golden and Silver Hamburgh Fowls
- The Cuckoo Fowl
- The Blue Dun Fowl
- The Lark-crested Fowl
- The Poland Fowl
- Bantam Fowls
- The Rumpless Fowl
- The Silk and Negro Fowls
- The Frizzled or Friesland Fowls

"It will be found a useful and intelligent guide to the poultry-keeper; while the lively and often amusing manner in which it is written, gives it a claim upon the attention of the general reader."—*Midland Counties Herald.*

"This book is the best and most modern authority that can be consulted on the general management of poultry."—*Stirling Observer.*

Published by JAMES MATTHEWS, at the Office of the GARDENERS' CHRONICLE and AGRICULTURAL GAZETTE, 5, Upper Wellington Street, Covent Garden; and may be ordered of any Bookseller.

Price 3s. 6d. (post free),

THE TREE ROSE.—Practical Instructions for its Formation and Culture. Illustrated by 24 Woodcuts. Reprinted from the GARDENERS' CHRONICLE, with additions.

CONTENTS.

- Annual pruning time, principle of execution, &c.
- Binding up
- Budding knife
- Budding, time of year, day, time of day, state of the plant, care of buds
- Budding upon body
- Bud, insertion of, into stock
- Bud, preparation of, for use
- Buds, dormant and pushing
- Buds, failing
- Buds, securing a supply of
- Caterpillars, slugs, and snails, to destroy
- Causes of success
- Dormant buds, theory of replanting with, explained
- Guards against wind
- Labelling
- Loosing ligatures
- March pruning
- Mixture for healing wounds
- Pruning for transplantation
- Planting out, and arrangement of trees
- Pushing eye, spring treatment of dwarf shoots from
- Roses, different sorts on the same stock
- Roses, short list of desirable sorts for budding with a pushing eye
- Sap-bud, treatment of
- Shape of trees
- Shoots and buds, choice of
- Shoots for budding upon, and their arrangement
- Shoots, keeping even, and removing thorns
- Shortening wild shoots
- Stocks, planting out for budding upon; the means of procuring; colour, age, height; sorts for different species of Rose; taking up, trimming roots, sending a distance, shortening heads, &c.; saw proper for the purpose.

GRAFTING.

- Aphides, to keep down
- Free-growers, remarks on
- Graft, binding up and finishing [of
- Grafting, advantage
- Grafting, disadvantage of
- Operations in different months
- Preliminary observations
- Roses, catalogue and brief description of a few sorts
- Scion, preparation and insertion of
- Scion, choice and arrangement of
- Stock, preparation of.

APPENDIX.

- A selection of varieties
- Comparison between budding and grafting.

AMES MATTHEWS, 5, Upper Wellington Street, Covent Garden.

Price 3*d.* each, or 5*s.* for 25 copies for distribution among Cottage Tenantry, delivered anywhere in London, on a Post-office order being sent to the Publisher, JAMES MATTHEWS, at the office of the *Gardeners' Chronicle.*

In consequence of the new postal arrangements, parties in the country who desire it can have copies sent by post; six stamps, in addition to the cost of the numbers, will pass 10 copies free by post.

The cost of a single copy, free by post, is therefore 7*d.*; and of ten, free by post, is 3*s.*

THE COTTAGER'S CALENDAR OF GARDEN OPERATIONS.

By Sir JOSEPH PAXTON.

Reprinted from the GARDENERS' CHRONICLE; above 87,000 have already been sold.

CONTENTS.

- African Lilies
- Agapanthus
- Anemones
- Annuals
- Apples
- Apricot
- Auriculas
- Beans
- Beet
- Biennials
- Black Fly
- Books for Cottagers
- Borage
- Borecole
- Box Edgings
- Broccoli
- Brussels Sprouts
- Budding
- Bulbs
- Cabbage
- Cactus
- Calceolarias
- Californian Annuals
- Campanulas
- Carnations
- Carrots
- Cauliflowers
- Celery
- Cherries
- China Asters
- China Roses
- Chrysanthemums, Chinese
- Chives
- Clarkias
- Clematis
- Collinsias
- Colewort
- Cress
- Creepers
- Crocus
- Crown Imperials
- Cucumbers
- Cultivation of flowers in windows
- Dahlias
- Daisies
- Dog's-tooth Violets
- Exhibitions, preparing articles for
- Ferns, as protection
- Fruit
- Fuchsias
- Gentianella
- Gilias
- Gooseberries
- Grafting
- Green-fly
- Heartsease
- Herbs
- Herbaceous Perennials
- Heliotrope
- Hollyhocks
- Honeysuckle
- Horse-radish
- Hyacinths
- Hydrangeas
- Hyssop
- Indian Cress
- Iris
- Kidney Beans
- Lavender
- Layering
- Leeks
- Leptosiphons
- Lettuce
- Lobelias
- London Pride
- Lychnis, double
- Marigold
- Marjoram
- Manures
- Marvel of Peru
- Mesembryanthemums
- Mignonette
- Mint
- Mustard
- Narcissus
- Nemophilas
- Œnothera bifrons
- Onions
- Pæonies
- Parsnip
- Parsley
- Peaches
- Pea-haulm
- Pears
- Peas
- Pelargoniums
- Perennials
- Persian Iris
- Petunias
- Phlox
- Pigs
- Pinks
- Planting
- Plums
- Polyanthus
- Potatoes
- Pruning
- Privet
- Propagate by cuttings
- Pyracantha
- Radishes
- Ranunculus
- Raspberries
- Rhubarb
- Rockets
- Roses
- Rue
- Rustic Vases
- Sage
- Salvias
- Savoys
- Saxifrage
- Scarlet Runner Beans
- Seeds
- Sea Daisy or Thrift
- Seakale
- Select Flowers
- Select Vegetables and Fruit
- Snails and Slugs
- Snowdrops
- Spinach
- Spruce Fir
- Spur Pruning
- Stocks
- Strawberries
- Summer Savory
- Sweet William
- Thorn Hedges
- Thyme
- Tigridia Pavonia
- Transplanting
- Tree Lifting
- Tulips
- Turnips
- Vegetable Cookery
- Venus's Looking-Glass
- Verbenas
- Vines
- Virginian Stocks
- Wallflowers
- Willows
- Zinnias

J. MATTHEWS,
5, Upper Wellington Street, Covent Garden, London.

Just published, price 2*d.*, free by post 3*d.*,

COMPARATIVE TABLES OF FRENCH AND ENGLISH MEASURES, WEIGHTS, &c., Reprinted from the *Gardeners' Chronicle and Agricultural Gazette.*

CONTAINING—

- Measures of Length
- Square Measure
- Cubic Measure
- Measures of Capacity for Liquid and Dry Substances
- Weights
- Old French Measures of Capacity for Liquids
- Do. for Dry Substances
- Old French Weights reduced to English Avoirdupois
- Thermometers
- Various Conversion Tables.

JAMES MATTHEWS, 5, Upper Wellington Street, Covent Garden.

Price 2*s.* 6*d.*,

FOLIA ORCHIDACEA.—Part V. By Professor LINDLEY. Containing MILTONIA, BRASSIA, ADA, POLYCHILOS, COBYMBIS, SOBRALIA, CŒLOGYNE, PANISEA.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden, London.

Price 1*s.* 6*d.*, free by post 1*s.* 10*d.*

LABELS FOR THE HERBARIUM, CONSISTING OF THE NAMES OF THE

CLASSES, ALLIANCES, ORDERS, AND SUB-ORDERS,

OF

PROFESSOR LINDLEY'S "VEGETABLE KINGDOM."

So printed in large type, that they can be cut out and pasted into THE HERBARIUM.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden London.

BY WILLIAM KIDD, OF HAMMERSMITH.

KIDD'S SONG BIRDS: THE CANARY.— This beautiful little volume, price only 6*s.*, profusely illustrated and bound in cloth of gold, is now ready. It forms a complete Domestic Encyclopædia in all that appertains to the Canary as a CAGE, OPEN AIR, and CHAMBER BIRD, and is the ONLY practical work on the Rearing, Breeding, Feeding, Taming, Keeping, &c., of this universal Pet ever published. For less than the cost of a common Canary, it discloses ALL the secrets of a long life of the most attentive observation. The Nightingale, Blackcap, Skylark, Woodlark, &c., will follow shortly.

GROOMBRIDGE & SONS, 5, Paternoster Row, London.

GREATLY REDUCED IN PRICE.

PAXTON'S (Sir J.) MAGAZINE OF BOTANY AND FLOWERING PLANTS. A complete set of this elegant and valuable work from its commencement, embellished with upwards of 700 splendid engravings, beautifully coloured from nature, 16 large vols., royal 8vo. Half morocco, gilt leaves, new, price only 14*l.* 14*s.*—Published at 28*l.* 15*s.*

The advertiser having purchased, on favourable terms, from the proprietors, the few remaining copies of the above beautiful and esteemed work, begs to call the attention of the public to its present reduced price. As the number for sale is very small, early application is desirable.

The merits of this work are so well known that it seems only necessary to call attention to the fact of its containing articles from the first writers on Botany, Floriculture, Horticulture, Arboriculture, Landscape Gardening, Natural Science, Rural Affairs, and every other subject connected directly or indirectly with the vegetable creation.

G. WILLIS, Great Piazza, Covent Garden.

Now publishing, Part V., containing the genus Epidendrum, with nine large and beautifully coloured plates, price 5*s.*

ILLUSTRATIONS of ORCHIDACEOUS PLANTS, comprising figures of the most interesting and beautiful Genera, Popular Descriptions of all the Cultivated Species, and Directions for their Cultivation. Edited by T. MOORE, F.L.S., Curator of the Botanic Garden, Chelsea.

Part I. Genus STANHOPEA. Part II. The genus ODONTOGLOSSUM. Part III. The genera CORYANTHES and SARCOPODIUM. Part IV. The genus VANDA. Each containing five large and beautiful plates, rice 3*s.* 6*d.* per part.

"The genera in this work will be published nearly in the order in which they occur in Dr. Lindley's 'Folia Orchidacea;' so that the book may be considered as exhibiting illustrations of that important publication."—*Hooker's Journal of Botany, Jan.* 1854.

London: G. WILLIS, Great Piazza, Covent Garden.

ON MARRIAGE.

Just published (to be had free, by enclosing 1*s.* or Twelve Postage Stamps, to Mr. WATSON, Clerical Agent, Robert Street, Adelphi, London).

MATRIMONY.— A Pamphlet on Matrimonial Alliances, which merits the attention of those who wish to settle honourably in life. By a Clergyman.

Just published, New Edition, price 1*s.*; or, by post, for 1*s.* 6*d.*

THE SCIENCE OF LIFE; OR, How TO LIVE, AND WHAT TO LIVE FOR. With ample Rules for Diet, Regimen, and Self-Management; together with Instructions for securing perfect health, longevity, and that sterling state of happiness only attainable through the judicious observance of a well-regulated course of life. By a PHYSICIAN.

Also, by the same Author, price 2*s.* 6*d.*; by post, 3*s.* 6*d.*,

A MEDICAL TREATISE ON NERVOUS DEBILITY AND CONSTITUTIONAL WEAKNESS, with Practical Observations, illustrated with Anatomical Plates, on Health and Disease.

This work, emanating from a qualified Member of the medical profession, the result of many years' practical experience, is addressed to the numerous classes of persons who suffer from the various disorders acquired in early life. In its pages will be found the causes which lead to their occurrence, the symptoms which indicate their presence, and the means to be adopted for their removal.

London: JAMES GILBERT, 49, Paternoster Row; HANNAY, 63, Oxford Street, MANN, 39, Cornhill; and all Booksellers.

CRYSTAL PALACE, 1854.
GENERAL PUBLICATIONS.

Preparing for Publication, and will be issued on the Day of Opening, the following

GUIDES AND HANDBOOKS, ILLUSTRATIVE OF THE CONTENTS OF THE EXHIBITION.

1. GENERAL GUIDE-BOOK TO THE PALACE AND PARK. With numerous Illustrations. By SAMUEL PHILLIPS.
2. HANDBOOK TO THE EGYPTIAN COURT. With Illustrations. By OWEN JONES and SAMUEL SHARPE.
3. HANDBOOK TO THE GREEK COURT. With Illustrations. By GEORGE SCHARF, Jun.
4. HANDBOOK TO THE ROMAN COURT. With Illustrations. By GEORGE SCHARF, Jun.
5. HANDBOOK TO THE ALHAMBRA COURT. With Illustrations. By OWEN JONES.
6. HANDBOOK TO THE NINEVEH COURT. With Illustrations. By A. H. LAYARD, M.P.
7. HANDBOOK TO THE BYZANTINE COURT. With Illustrations. By M. DIGBY WYATT and J. B. WARING.
8. HANDBOOK TO THE MEDIÆVAL COURT. With Illustrations. By M. DIGBY WYATT and J. B. WARING.
9. HANDBOOK TO THE RENAISSANCE COURT. With Illustrations. By M. DIGBY WYATT and J. B. WARING.
10. HANDBOOK TO THE ITALIAN COURT. With Illustrations. By M. DIGBY WYATT and J. B. WARING.
11. HANDBOOK TO THE POMPEIAN COURT. With Illustrations. By GEORGE SCHARF, Jun.
12. HANDBOOK TO THE SCHOOLS of MODERN SCULPTURE. By MRS. JAMESON.
13. HOW TO SEE THE SCULPTURE IN THE CRYSTAL PALACE. By RAFFAELE MONTI.
14. THE PORTRAIT GALLERY OF THE CRYSTAL PALACE. Described by SAMUEL PHILLIPS.
15. HANDBOOK TO THE ETHNOLOGICAL and ZOOLOGICAL DEPARTMENTS. With Illustrations. By PROFESSOR EDWARD FORBES and DR. LATHAM.
16. THE EXTINCT ANIMALS AND GEOLOGICAL ILLUSTRATIONS DESCRIBED. With Plan and Drawings. By PROFESSOR OWEN.
17. THE CRYSTAL PALACE INDUSTRIAL DIRECTORY.

These Books, written in a popular style, with a strictly instructive and educational aim, are to be published separately at a very low price, in order to bring them within the reach of all visitors.

Advertisements for one or all of these publications will be received, from this date, by MESSRS. BRADBURY AND EVANS, Printers and Publishers to the Crystal Palace Company, at their Office, 11, BOUVERIE STREET, FLEET STREET, where all necessary information relating to these works may be obtained.

POPULAR WORKS ON BOTANY BY DR. LINDLEY.

SCHOOL BOTANY; or, THE RUDIMENTS OF BOTANICAL SCIENCE. 400 Illustrations. 8vo. Price 5*s.* 6*d.* half-bound.

BRADBURY & EVANS, 11, Bouverie Street.

Lately Published,

THE ELEMENTS OF BOTANY, STRUCTURAL AND PHYSIOLOGICAL. With a Glossary of Technical Terms, and numerous Illustrations. 12*s.* cloth.

This completes the series of Elementary Botanical Works by Professor LINDLEY, of which "School Botany," and "The Vegetable Kingdom," form the other parts.

The first two Parts of THE ELEMENTS OF BOTANY, comprising Structural and Physiological Botany, and a Glossary of Technical Terms, are published in one octavo volume, price 12*s.*

These three parts form a complete manual of Botany for Medical and other Students who have made themselves acquainted with the author's "School Botany."

N.B. The Glossary may be had separately, price 5*s.*

BRADBURY & EVANS, 11, Bouverie Street.

This day is published, in one vol. 8vo, with numerous woodcuts, price 11*s.*,

MEDICAL AND ŒCONOMICAL BOTANY; or An Account of the Principal Plants employed in Medicine or Domestic Œconomy.

EXTRACT FROM THE AUTHOR'S PREFACE.

"The Vegetable Kingdom contains, among a large quantity of plants of no known importance to man, various useful species employed in medicine, the arts, or in the many branches of domestic œconomy. The principal part of those which can be brought by teachers in Europe under the notice of students, or which, from their great importance, deserve to be among the earliest subjects of study, are mentioned in the following pages, where they are arranged in the manner proposed in the 'VEGETABLE KINGDOM' of the author, with the sequence of matter departed from in a few instances, when it was believed that the convenience of younger students would be consulted by doing so. The author trusts that this selection will be found to have been made in such a way that all teachers who possess reasonably extensive means of illustrating their lectures, and all Botanic Gardens, may furnish the larger part of the species which are mentioned. A small selection was indispensable; firstly, because a greater work would have been beyond the reach of the majority of purchasers; and secondly, because experience shows us that those who have to study a science of observation, such as Botany, require to concentrate their attention, in the first instance, upon a limited number of objects."

BRADBURY & EVANS, 11, Bouverie Street.

THE HORTICULTURAL JOURNAL and FARM and GARDEN ADVERTISER. (Garden Department by Mr. GLENNY.) Every Saturday. Price 2*d.*; Stamped, 3*d.* Communications and Advertisements to F. DILLON, at the Publishing Office, 14, York Street, Covent Garden, London.

Price 1*s.*, or handsomely bound as a Pocket Book, 2*s.* 6*d.* post free, 6*d.* extra,

THE ANGLER'S ALMANAC, with 20 Illustrations. London: GEORGE COX, King Street, Covent Garden. Sold by Booksellers and Tackle-makers.

Just published, price 2*s.*

A PLAIN AND EASY ACCOUNT OF BRITISH FERNS, wherein each Species is described under its respective Genus; and the Characteristics of those Genera given in words of common use. With a Glossary of Technical Terms. By the Rev. E. BOSANQUET.

"A useful little book for those who wish to begin the study or cultivation of British Ferns."—*Spectator.*

"The simplest treatise that has yet been published on the subject."—*Weekly Times.*

London: ROBERT HARDWICKE, 38, Carey Street, Lincoln's Inn.

THE EXHIBITION OF THE ADVANCED WORKS OF STUDENTS of the following Schools of Art, will be opened on Monday, the 22d of May, at Gore House, Kensington.

Aberdeen	Metropolitan, including
Belfast	Central Male
Birmingham	Central Female, and
Chester	Finsbury district.
Cork	Newcastle-on-Tyne
Coventry	Paisley
Dublin	Potteries (Staffordshire)
Dudley	Sheffield
Durham	Stourbridge
Glasgow	Warrington
Limerick	Worcester
Macclesfield	York
Manchester	

Admission Daily from 10 till 5.—Free.

DEPARTMENT OF SCIENCE AND ART, 10th May, 1854.

HANTS.

WANTED, a FARM, of about 100 Acres, with comfortable House and suitable Out-buildings, in the neighbourhood of Andover, Winchester, Basingstoke, Alresford, or thereabouts.—Address W. F., 45, George Street, Ryde, Isle of Wight.

OVERTON, HANTS.

TO BE LET, for a Term of Years, COURT FARM, 500 Acres, subject to Tithe Commutation Rent Charge. Near to the celebrated Annual Sheep Fair in Overton, and within a quarter of a mile from a Railway Station to London and the West of England. It consists of Arable, Water Meadow, and Pasture, and is well known as a sound Stock and Corn Farm.—Tenders for the same, stating amount of yearly Rent, to be forwarded to LAMB, BROOKS & Co., Solicitors, Basingstoke, Hants, on or before the 14th day of June next.

TO GENTLEMEN'S GARDENERS.
VILLAGE INN, WITH 10 ACRES OF LAND.

TO BE LET, a VILLAGE INN, situated near Great Yarmouth, with large Garden and pretty Grounds ($2\frac{1}{4}$ acres), besides Arable and Meadow Land, &c. ($7\frac{1}{2}$ acres). The House, which a few years ago was a gentleman's residence, is capacious and well arranged, and in excellent repair, with Stables, Coach-house, Sheds, &c. Possession at Michaelmas next. The above is eminently adapted for a gentleman's gardener desirous of retiring from private service, with a small capital. Unexceptionable references required.—Apply to the Rev. T. G. F. HOWES, Belton Rectory, Great Yarmouth, who desires it to be understood that applications which remain unanswered are declined.

TO BE LET, a good DWELLING HOUSE and NURSERY GARDEN, with Greenhouses, and stocked with the best kinds of Plants, Shrubs, and Fruit Trees, to be taken at a valuation. Immediate possession. Rent reduced from 65*l.* to 40*l.* per annum.—Apply to WILLIAM HARRIS, Gardener, 23, Montpellier Walk, Cheltenham.

TO BE SOLD, THREE GREENHOUSES, and PLANTS to be taken at a valuation or private contract, with sundry other useful articles—Frames, Pit Tools, and Mould; with House and Fixtures, 28*l.* a year, with three years' agreement.—For further particulars apply at 6, Alpha Road, Regent's Park, London.

TO BE LET, a FLOUR MILL, worked by Steam, driving Five Pair of Stones, newly built, upon the most approved principle of machinery, situate about 20 miles from London, close to a Railway Station, and adjoining a Canal.—Further particulars of Messrs. REE and SON, Estate Agents, Ware, Herts.

TO PIG AND CHICKEN FEEDERS.—Good Greaves may be had at 10*l.* per ton, upon application to TAYLOR & PEARS, S. George Yard, Lombard Street, City.

COCHIN CHINA POULTRY, ETC.
EGGS FROM PRIZE BIRDS.

MR. JOHN FAIRLIE, of Cheveley Park, Newmarket, in reply to the very urgent applications from numerous amateurs, is now prepared to dispose of a limited number of Eggs, from his celebrated prize Cochins, Brahma Pootras, Scotch Bakies, Dorkings, &c., according to the dates of the orders received.

CHICKENS, POULTRY AND EGGS, to be disposed of by an Amateur.—First-rate Brahma Pootras, Silver, Cinnamon, Lemon, White, and Black Cochins, pure White Poland and Silver Pencilled ditto, Guinea Fowls, Dorking and Aylesbury Ducks, and some very curious Silk Fowls; splendid large young Grey Turkeys (Cambridgeshire), also pure Black Norfolk, White and Buff, all still laying. Some Hens with broods of young Chickens; of these birds, also February Chickens of first-rate Brahmas, Grouse, Lemon and White Cochins. Several sittings of the Eggs of these first-rate birds, which may be strictly relied upon as good in every way.—To be had on application to M. M. M., care of Mr. W. HAWES, Poulterer, 4, Wade's Place, Hackney Road.

BLACK COCHIN EGGS from the best birds in England, having always taken prizes at the best shows, at 18*s.* per dozen, including package. Apply at the city of London Wire Works, 44, Skinner Street, London. N.B. Fowl Houses, Chicken Coops, Poultry Hurdles, and Netting, of every size and description. Illustrated Catalogues forwarded, post free, on application. A few Spanish Pullets, sisters to those sent to her Majesty's yard at Windsor, for Sale.

EGGS FOR SITTING, of the Choicest Varieties.—Most of the Birds have taken Prizes at Winchester, Southampton, Surrey Gardens, and Salisbury Exhibitions. White and Black Cochins, White Polands, and Ptarmigans, 21*s.* per dozen; Pure Buff Cochins, 15*s.* per dozen. Post-office Orders payable to FREDERICK FLIGHT, 72, High Street, Winchester.

EGGS AND EARLY CHICKENS.—Brahma Pootra, Dorking, White-faced Spanish, Cochin China (white and buff), White Spanish (Andalusian), Hamburghs, and Bantams; all from prize and selected Birds.—Apply to Mr. SAUNDERS, Cowes, Isle of Wight.

DORKING EGGS, from the produce of Prize Birds, at 7*s.* 6*d.* the setting; Chickens 10 weeks old, from above, 10*s.* the pair.—Address W. DINGLEES, Sand Fields, Charlton Pershore, Worcestershire.

Sales by Auction.

CLAPHAM NURSERIES.

THE STOCK OF PLANTS OF THE LATE MR. JOSH. FAIRBAIRN.

MR. J. C. STEVENS is instructed by the Administrators to announce for Sale by Auction, on the Premises, on MONDAY, 22d; TUESDAY, 23d; and THURSDAY, 25th May, at 12 for 1 o'clock, without reserve, the first portion of the valuable Stock of Plants at the above Nurseries; it includes the Collection of Heaths, for which this establishment has been so long celebrated; fine specimens of Azaleas, Aphelexis, Epacris, and a general selection of Greenhouse Plants, all of which are cultivated in the best possible manner, and are in excellent health. They will be lotted to suit the Trade and private buyers.—May be viewed on Friday and Saturday before the Sale, and Catalogues had on the premises, and of Mr. J. C. STEVENS, 38, King Street Covent Garden; if for the country, by enclosing four postage stamps

ORCHIDS—FROM THE BRAZILS.

MR. J. C. STEVENS begs to announce that he is instructed by Mr. De Jonghe, of Brussels, to announce for Sale, on an early day, which will be named in the next number of the *Gardeners' Chronicle*, a CONSIGNMENT OF ORCHIDS received per last mail steamer, from his collector in the Brazils, including three species of Burlingtonia (two new), five or six species of Cattleya, amongst them C. Leopoldi, and new Coryanthes, Epidendrums, Oncidiums, and other novelties from the Provinces of St. Paul and St. Catherina.

Important Sale by Auction of the whole of the remaining copies of that splendid national work, known as "FINDEN'S ROYAL GALLERY OF BRITISH ART," THE ENGRAVED PLATES of which WILL BE DESTROYED during the progress of the sale, and in the presence of the purchasers.

SOUTHGATE AND BARRETT have received instructions from Mr. HOGARTH of the Haymarket, to sell by Public Auction at their Fine Art and Book Auction Rooms, 22, Fleet Street, London, on WEDNESDAY Evening, June 7th, and following Evenings, the whole of the remaining copies of the very celebrated work, known as FINDEN'S ROYAL GALLERY OF BRITISH ART, consisting of a limited number of artists' and other choice proofs, and the print impressions, which are all in an exceedingly fine state. The work consists of 48 plates, the whole of which are engraved in line by the most eminent men in that branch of art, and the pictures selected will at once show that the great artists—Turner, Eastlake, Landseer, Stanfield, Webster, Roberts, Wilkie, Maclise, Mulready, and more than thirty other British Masters, are represented by the works which established and upheld them in public favour, and by themes which appeal to universal sympathy and happiest affections, or which delineate the peculiar glories of our country, and commemorate its worthiest and most honourable achievements. The attention of the public is also particularly directed to the fact that all the engraved plates from which the impressions now offered have been taken, will be destroyed in the presence of the purchasers, at the time of sale. By thus securing the market from being supplied with inferior impressions at a future time, and at a cheaper rate, the value of the existing stock will be increased, and it will become the interest of all who wish to possess copies of these eminent works of art, at a reduced price, to purchase them at this sale, which will be the only opportunity of obtaining them. Under these circumstances, therefore, SOUTHGATE and BARRETT presume to demand for this sale the attention of all lovers of art—the amateur, the artist, and the public;—believing that no opportunity has ever offered so happily calculated to promote taste and to extend knowledge, while ministering to the purest and best enjoyments which the artist conveys to the hearts and homes of all who covet intellectual pleasures. Frame Copies of the work can be seen at Mr. Hogarth's, 5, Haymarket; Messrs. Lloyd, Brothers, and Co., 22, Ludgate Hill; and at the Auctioneers, 22, Fleet Street, by whom all communications and commissions will be promptly and faithfully attended to. *.* Catalogues of the entire sale will be forwarded on receipt of 12 postage-stamps.

Sale by Auction of the Stocks of extremely Valuable Modern Engravings, the engraved plates of which will be destroyed in the presence of the purchasers at the time of sale.

SOUTHGATE and BARRETT beg to announce that they will include in their Sale by Auction of "FINDEN'S ROYAL GALLERY," and other valuable Works of Art of a similar character, to take place at their Fine Art and Book Auction Rooms, 22, Fleet Street, London, on Wednesday Evening, June 7th, and seventeen following Evenings (Saturdays and Sundays excepted), the whole of the STOCKS OF PROOFS AND PRINTS of the following highly important engravings, published by Mr. HOGARTH and Messrs. LLOYD and Co.:—"Ehrenbreitstein," painted by J. M. W. Turner, R.A., engraved by John Pye. "Ecce Homo," from the picture by Correggio, engraved by G. T. Doo. "The Dame School," painted by T. Webster, R.A., engraved by L. Stocks. "Eton Montem," two views illustrative of, from pictures by Evans of Eaton, engraved by Charles Lewis. "Portrait of Mrs. Elizabeth Fry," engraved by Samuel Cousins, A.R.A., from a picture by George Richmond. "Portraits of Eminent Persons," by George Richmond and C. Baugniet. "Portrait of W. C. Macready, Esq., as Werner," painted by D. Maclise, R.A., engraved by Sharpe. Flowers of German Art, a series of 20 plates by the most eminent engravers. Cranstone's Fugitive Etchings, 17 plates. Turner and Girtin's River Scenery, 30 Plates. "Cottage Piety," painted by Thomas Faed, engraved by Henry Lemon (unpublished). "See Saw," painted by T. Webster, R.A., engraved by Holl (unpublished). "Village Pastor," painted by W. P. Frith, R.A., engraved by Holl. "The Immaculate Conception," painted by Guido, engraved in line by W. H. Watt. "Harvey demonstrating to Charles the First his Theory of the Circulation of the Blood," painted by Hannah, engraved by Lemon. "The Origin of Music," printed by Selous, engraved by Wass. "The First Step," painted by Faed, engraved by Sharpe. "The Prize Cartoons," published by Messrs. Longmans and Co. And numerous other highly interesting and valuable works of Art. All the engraved plates of the above-mentioned engravings will be destroyed in the presence of the purchasers at the time of sale, which will thereby secure to the purchasers the same advantages as are mentioned in the advertisement given above, of the sale of the remaining copies of "Finden's Royal Gallery." Framed impressions of each of the plates can be seen at Mr. Hogarth's, 5, Haymarket; of Messrs. Lloyd, Brothers, and Co., 22, Ludgate Hill; and at the Auctioneers, 22, Fleet Street, by whom all communications and commissions will be promptly and faithfully attended to. *.* Catalogues of the entire sale will be forwarded on receipt of 12 postage-stamps.

The very extensive, highly important, and extremely choice Stock of Modern English and Foreign Engravings, Water-Colour Drawings, and expensive Books of Prints of Mr. Hogarth of the Haymarket.

SOUTHGATE and BARRETT will Sell by Auction at their Fine Art and Book Auction Rooms, 22, Fleet Street, on WEDNESDAY Evening, June 7th, and seventeen following Evenings (Saturdays and Sundays excepted), in the same sale as the "FINDEN'S ROYAL GALLERY OF BRITISH ART," this extremely valuable and highly interesting Stock. Amongst the engravings will be found in the best states of artists' and other choice proofs, nearly all the popular plates that have been published during the last quarter of a century; also an Important Collection of Foreign Line Engravings in the best states; a large variety of Portraits and other subjects after Sir Joshua Reynolds, some very rare; an extensive series of Prints by Hogarth, in early proofs and with curious variations; a most complete series of artists' proofs of the Works of George Cruikshank, including nearly all his early productions, many unique; a number of scarce Old Prints, and a series in fine states by Sir Robert Strange. The Stock is peculiarly rich in the Works of J. M. W. Turner, R.A., and comprises artists' proofs and the choicest states of all his important productions, and matchless copies of the England and Wales and Southern Coast. The Collection of High-class Water-Colour Drawings consists of examples of the most eminent artists, (particularly some magnificent specimens by J. M. W. Turner), as well as a great variety of the Early English School, and some by the Ancient Masters; also a most interesting Collection by Members of the Sketching Society. Of the Modern School are examples by—Absolon, Austin, Barrett, Cattermole, Collins, C. Fielding, Holland, Hunt, E. Landseer, Leslie, J. Lewis, Liversege, Maclise, Muller, Nesfield, Prout, F. Tayler, Uwins, Webster, Wilkie. Catalogues of the entire sale will be forwarded on receipt of 12 postage stamps, and all communications and commissions promptly and faithfully attended to. 22, Fleet Street, London.

TO TULIP FANCIERS AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are directed by Mr. Staines to sell by Auction, on the premises, Culley's Nursery, near the New Globe Tavern, Bow Road, Middlesex, on MONDAY, May 22d, at 2 o'clock, his superb collection of TULIPS, including about 400 varieties, and most of the choicest in cultivation, together with Seedlings of his own raising, not to be found in many other collections.—May be viewed three days prior to the Sale. Catalogues may be had on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO TULIP FANCIERS.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. Goldham to submit to public competition, by Auction, on the premises, Ilynder Cottage, Merton Lane, Mitcham, Surrey, on FRIDAY, May 26th, at 1 o'clock, a portion of his costly and unrivalled collection of TULIPS. No comment on this magnificent stock will be equal to an inspection of its striking beauties, for which an opportunity is now offered to the Amateur Florist, &c. New Flowers, Breeders, and Seedlings of Mr. Goldham's raising, the result of more than 30 years' successful cultivation and competition. May be viewed two days prior to the sale: Catalogues may be obtained, 1*s.* each (returnable to purchasers) on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex. N.B. Those gentlemen who may desire to view Mr. Goldham's Tulips, grown at Forest Hill, Sydenham, Kent, the parent bulbs of those about to be sold by Auction, at Mitcham, Surrey, are informed that the same may be seen on the Monday and Wednesday previous to the day Sale, between the hours of 11 and 6 o'clock.

BOW.—10,000 GREENHOUSE AND BEDDING PLANTS.

MESSRS. PROTHEROE AND MORRIS will submit to an unreserved sale by Auction, on the premises, Mile-end Nursery, Bow Road, Bromley, Middlesex, near the Bow Railway Station, on TUESDAY, May 23d, at 12 o'clock, a collection of GREENHOUSE PLANTS, consisting of fine Show and Scarlet Geraniums, Genista, Cactus, Hydrangeas, Myrtles, Calla, Fuchsias, Verbenas, Heliotropium, Salvia, Calceolaria, Petunia, Mimulus, Nierembergia, Lobelia, Erinus, Phlox, Cuphea, Ageratum, Gaillardia, Chrysanthemums. Intermediate Stocks, Tropaeolum canariensis, Cobæa, &c.—May be viewed three days prior to the sale. Catalogues may be had on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction, at the Mart, Bartholomew Lane, on WEDNESDAY, May 24, at 12 o'clock, a first-rate collection of Dahlias, Fuchsias, Verbenas, Geraniums, and other plants in bloom, with a large assortment of plants for bedding. On view the morning of sale.—Catalogues had at the Mart: and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS beg to intimate that they have received instructions from the executors of the late Mr. Samuel Dark, deceased, to sell by Auction, without reserve, on the premises, North Street, East India Road, Poplar, on THURSDAY, May 25th, at 2 o'clock, a very rare and costly collection of TULIPS, the study of 40 years of the deceased's life, whose judgment and taste were universally admitted: also a choice collection of Ranunculuses, Rose trees, Gladiolus, Chrysanthemums, Pinks, Carnations, Lilies, &c.; together with the Iron-work Fittings, Netting, Canvas, Fencing, &c.—May be viewed the morning of Sale: Catalogues had of Mr. Year, Park Road, Old Ford; at the White Swan, West Ham; City of Canton, East India Road, Poplar; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AMATEURS, ETC.

MR. WILMER will sell by Auction, on THURSDAY, May 25, at 1 o'clock, without reserve, a collection of TULIPS, the property of Mr. C. Woolnough, now growing in the garden Grounds of Mr. Selby, New North Road, Hoxton; also the Tulip Stage, with Iron Roof, Top Cloth and Rollers, Boxes, Irons, &c. Among the flowers are Shylock, General Jackson, Pompe Funebre, Man of Kent, Archer's Unique, Lucullus, Polyphemus, Mehemet Ali, Marshal Soult, Coronation, Walker's and Dixon's Dukes of Devonshire, Franklin's Superb, Glory, Invincible, Lord Brougham, Ariadne, Victory, and Favourite; Rose Camuze, Camuze de Craix, Greig's Rose, Bacchus, Emily, Goldham's Mary and Maria, Reine d'Espagne, Violet's Quarto, Precoce, Cook, Louis XVI., Godet Parfait, La Vandyke, Brulante Ecletante, Osiris, Timandra, Duc de Bordeaux, &c.—May be viewed two days previous and morning of sale. Catalogue on application to Mr. Tebbutt, Hoxton Nursery, New North Road; Mr. Fons, Swan Inn, West Ham; C. Woolnough, 6, Bateman's Row, Shoreditch; and of the Auctioneer, Sunbury, Middlesex.

Desirable Freehold Farm for investment or occupation, 4 miles from the Higham Station on the Newmarket and Bury St. Edmund's Railway.

MESSRS. DAVIES AND VIGERS are directed by the Executors of the late Stephen Spencer, Esq., to SELL BY AUCTION, at the Mart, on TUESDAY, June 6, at twelve o'clock, the EASTYWOOD FARM, situate in the parish of Wickham-brook, Suffolk, eight miles from Newmarket and Bury St. Edmund's, on the high road between these important market towns. It comprises 251A. 1R. 0P. of level arable, pasture, and wood land, in convenient enclosures, and lying well for game, with a commodious cottage residence, pleasantly and conveniently situate beside the high road and in the centre of the farm, suitable farm buildings, and six labourers' tenements. The ponds afford fishing, and the situation is favourable for all kinds of sporting. The late owner occupied the farm to the time of his decease, and made it most desirable for occupation. It is now farmed by the executor, who is willing to rent it, or immediate possession will be given. The estate may be viewed on application, and particulars and conditions of sale, with plans, may be had of Mr. Cawston Stutter, at the farm; of Wm. Salmon, Esq., solicitor; and at the Old Bell Inn, Bury St. Edmund's; at the Rutland Arms, Newmarket; at the Mart; and at the Auctioneers' Offices, 3, Frederick's Place, Old Jewry.

CHOICE AND VALUABLE COLLECTION OF TULIPS.

TO BE SOLD by Auction, without the least reserve, on the premises, Cooper's Lane, Leyton (near the Church) on MONDAY, May 29, at 1 o'clock, comprising among Bizarres Marcellus, Strong's King, Pompe Funebre, Everard, Apelles, Vivid, Sphynx, Willison's King, Norman's Royal Albert, Achilles, Sir E. Knatchbull, Sir George Whitmore, Alexander's Monarch, Emperor, Rembrandt, Charles Baron, Coftan, Charles Jeffrey, Kossuth, Paganini, Waterston's Midas, Grisewood's Grace Darling, Morning Star, Headley's King Richard. The Byblœmens comprise Pandora, Salvator Rosa, Rutley's Queen, Brown's Magnificent, Duke of Northumberland, Dixon's Democrat, Parmegiano, Byzantium, Nora Creina, Lord Bloomfield, Thalia, Louis XVI., Godet Parfait, Patty, Zuill's George Glenny, Flora, Father Gavazzi, Reid's Duke of Argyll, Thomas Maxwell, Lord J. Russell, Sir H. Smith, Wylie's Rob. Wylie, &c. Among the Roses are Rose Lac, Sans Egale, Camuse de Craix, Brulant Ecletant, Dixon's Ariette, Bion, Alexander's Gem, Jenny Lind, Jeffrey's Elizabeth, Maid of Honour, Village Maid, Flora M'Donald, Mary Lamb, Miss O'Neil, Mrs. Zuill, John Waterston, Munroe's Mount Hecla, &c.: also many new flowers only in this collection the property of Mr. James Alexander.—May be viewed two days prior to Sale; Catalogues had at the Mart; of Messrs Dawe, Cottrell, and Benham, Seedsmen, Moorgate Street; White Swan, West Ham; on the premises; and of Mr. Henry Alexander, Auctioneer, Shacklewell.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

THE "ECONOMICAL" MANURE,

SO CALLED, BECAUSE

$1\frac{1}{4}$ to $1\frac{1}{2}$ cwt. per Acre, costing 15s. to 18s., is ample, and fully equal to 3 cwt. of the best Peruvian Guano; thus saving at least 50 per cent., besides Carriage, &c.

THIS quantity is quite sufficient, and must on no account be exceeded, as injury instead of benefit arises if more is used, the Manure having been purposely manufactured in a highly concentrated state. It will be seen from the Testimonials below—

1. That "at a cost of 12s. per acre the Turnips were a most extraordinary crop."
2. With $1\frac{1}{4}$ cwt. per acre they (the Turnips) "are equally as good as where I applied $3\frac{1}{2}$ cwt. of superphosphate of lime per acre."
3. An expense of 23s. per Scotch acre for this manure produced Turnips "equally as good as those growing in the same field with 6 cwt. per Scotch acre of guano, at 10s. 6d. per cwt.;" making three guineas against 23s.
4. "I can see little difference in the two, where 1 cwt. per acre of this Manure was used against 3 cwt. of guano."
5. $7\frac{1}{2}$ cwt. to 6 acres gave "a splendid crop of Turnips" from the Economical Manure alone, which cost 15s. per acre.
6. "The effect has been surprising on Turnips."
7. "Where I applied it the Turnips are much finer than usual."
8. "The fly has not taken them (the Turnips) so much as where guano was used."
9. On Mangold Wurzel, 1 cwt. per acre produced "the best crop I ever have grown."
10. In $1\frac{1}{2}$ cwt. per acre against 3 cwt. of superphosphate, "the 'Economical' was superior."
11. Where guano and the Economical Manure were used, "it is impossible to tell one from the other."
12. "My Swedish Turnips are capital—the best, people tell me, in the whole parish."

N.B.—The following few Testimonials from the Company's pamphlets are given, because they are considered to embrace almost all parts of the United Kingdom, and although they refer only to the use of the Manure for Turnips and Root Crops, it has produced the most wonderful results last year on every kind of crop, and on all soils, far surpassing the expectations of the purchasers: and no one reading the Company's pamphlet can doubt its being by far the cheapest of all manures, as in fair comparative trials with guano, dung, and other long recognised fertilisers, it will be seen the "ECONOMICAL" was superior; that it is most valuable for fruit trees, shrubs, and garden purposes, and produces the most astonishing effects upon manure heaps, applied in solution, decomposing in 15 days all vegetable matter, peat included, and that it is a perfect deodoriser for liquid manure, besides enhancing its fertilising properties.

It is a chemical compound in a highly concentrated state, providing the plants with a large proportion of ammonia, which it has the property of attracting from the atmosphere and fixing in the soil, as well as the carbonic acid—two of the most energetic agents of vegetation. It is sold in a dry powdered state, and is the result of many years' labour of an eminent Foreign Agriculturist, the Director of the Government Schools of Agriculture in his own country, and of high reputation as a chemist. It is patented, and is one of the most useful and greatest discoveries of the day.

PRICE 12*l*. PER TON, Packages included, and delivered free on Rail or Wharf in London.

A pamphlet, containing further Testimonials (more cannot be given here), including those from France, Belgium, and Spain, with directions for use, samples, and all particulars, to be had at the Offices of the British Economical Manure Company, 10, Mark Lane, London; or sent gratis on applying to

BENJAMIN COVENEY, Manager.

TESTIMONIALS.

Mungalhead, Falkirk, Stirlingshire, N. B., Oct. 14, 1853.

I used the Economical Manure as follows:—I weighed it out at the rate of 210 lbs. per Scotch acre (a Scotch acre is about one acre and one-fifth English), bruised it very small, then properly mixed it with, say twice its bulk of light earth, the land a good loam, cleansed and ready for drilling; the mixture was then sown broadcast, the land drilled up double; we then sowed the Turnip seed, which brairded well, and they are now equally as good as those growing in the same field sown with 6 cwt. of guano per acre, at 10s. 6d. per cwt. What I would suggest is, if you think proper, that you insert an advertisement in our local papers, and refer to the Turnips now growing at Mungalhead, for inspection of the merits of the Manure. I think any one seeing its effects should be satisfied. WM. MORRISON.

Cublington Madley, Hereford, Jan. 2, 1854.

I used the Economical Manure for common Turnips, planted the first week in June; it was sown broadcast on the flat, and afterwards ridged up 20 inches wide. I put about $1\frac{1}{2}$ cwt. per acre, and on the other parts of the field 3 cwt. of superphosphate, and I am of opinion, with most persons who have seen the crop (which is a very good one), that the Economical is superior to the phosphate. GEORGE PYE.

Little Genoch, by Glenluce, Wigtownshire, N.B., Dec. 9th, 1853.

I applied about 4 cwt. of Economical Manure in a liquid state to about 60 cart-loads of farm-yard dung, which I used along with a small quantity of bones to my Turnip crop, and found the crop to be superior to that to which I had applied guano and bones. The Turnips are all grown in the same field alongside of each other. JAMES M'MASTER.

Carlisle, Dec. 5, 1853.

Mr. John Graham, farmer, Beaumont, near Carlisle, has a splendid crop of Turnips, grown entirely from the Economical Manure. He used $7\frac{1}{2}$ cwt. to 6 acres, mixed with three parts earth to one part Manure. The mixture lay three days before it was put upon the ground. THOMAS BLACKLOCK.

Soham, Cambridgeshire, Oct. 4, 1853.

I used your Manure for Mangold Wurzel, broadcast; it was about the first week in May. I put about 1 cwt. per acre mixed with earth. I have the best crop I ever have grown, they looked so strong and growing all through the season. WM. C. PEEK.

Albion Foundry and Iron Works, Rugeley, Staffordshire, July 1, 1853.

"I got a friend to test some on a Turnip crop against guano, and he says that his Turnips look best in that part of the field where he sowed the Economical Manure, and that the fly has not taken them so much as those where guano was used. He is a person well known in the neighbourhood; and when this becomes known I have no doubt I shall succeed in selling a good quantity.

THOMAS HATFIELD.

Alwalton Lodge, Peterborough, Northamptonshire, Nov. 30, 1853.

Relative to the Economical Manure, I have to observe that I have not noticed it sufficiently to speak definitely as to the attendant results. The season was unfavourable, and I did not get the whole I ordered applied to my Turnips; but where I did apply it they are much finer than usual. The remaining portion I have sown broadcast on Wheat. I am so well satisfied as to its utility, that I shall be a customer on a rather larger scale another year. JOHN POLES.

Cairnsmore, Newton Stewart, Wigtownshire, N.B., Oct. 21, 1853.

I used your Manure for Turnips. I sowed at about 1 cwt. per acre, together with about 20 bushels of bones, and about 3 cwt. of guano, with the same quantity of bones in the same field, and I can see little or no difference between the two.

JAMES CARFRAE, Farm Manager to James Stewart, Esq.

Bodrhyddan, Denbighshire, N.W., Oct. 13, 1853.

I used your Manure for Turnips about the 20th of May. I applied $1\frac{1}{2}$ cwt. per acre, together with about 2 tons of farm-yard manure. I likewise applied on every 20 alternate rows 2 cwt. of Peruvian guano, together with the above-mentioned quantity of farm-yard manure. The result in both cases is an excellent crop, and as near equal as I can judge. I may add, the land is a mixture of gravel and sand. WILLIAM BELL.

Cleves Cross, Durham, Oct 11, 1853.

I have used the Economical Manure on nothing except Turnips. I sowed about $1\frac{1}{2}$ cwt. per acre alone, and about $2\frac{1}{2}$ cwt. of Peruvian guano in the same field, and I cannot perceive much difference in the two. The soil is limestone gravel.

THOMAS THOMPSON.

Stoke Golding, Leicestershire, Dec. 10, 1853.

I tried the Economical Manure for Turnips, and the effect has been surprising. I manured some land equally with rotten dung, upon one part of which I put the Economical Manure. Where I did so, the Turnips are very large, while on that part which received the dung I have scarcely any Turnips at all. I consider the Manure most valuable. My crop will well repay for the extra outlay in the Economical Manure. S. LAW.

Shelford Manor, Bingham, Notts, Nov. 8, 1853.

Through the recommendation of Mr. E. S. Gisborne, Land Agent, Derby, I was induced to try the Economical Manure on a Turnip crop; and, for the purpose of giving it a fair trial, I selected a field of 30 acres, in a good state of cultivation and equal quality. This field I divided into three lots; one third was dressed with the Economical Manure, at the rate of 1 cwt. per acre: one third with kiln-dust of equal value; and one third with soot of equal value. I now have the pleasure of stating that the Turnips on the portion dressed with the Economical Manure are a most extraordinary crop, and surpass in size and vigour in a remarkable degree those on the land dressed with kiln-dust and soot. JOHN HASSALL,

Agent to the Right Hon. the Earl of Chesterfield.

Plascoch, Ruthin, Denbighshire, N. W., November 2, 1853.

I sowed $1\frac{1}{2}$ cwt. of the Economical Manure to the acre for Turnips on the flat, afterwards ridged up for sowing; but before it was covered the weather changed, and it lay exposed I dare say for a week, which no doubt would have a very injurious effect upon it. The Turnips, on some patches of it, are very strong; I have no doubt, had I been fortunate in its application, it would have answered well. I have a very good opinion of it.

FRANCIS CLARKE.

North Walsham, Norfolk, October 26, 1853.

I used your Economical Manure upon half an acre of land for Turnips (1 cwt. of it), and my Swedish Turnips are capital—the best, people tell me, in the whole parish. EDWARD MEADE.

Penkridge, Staffordshire, December 8, 1853.

Although the season has been very unfavourable for the trial of manures, I am quite satisfied that the Economical Manure is a valuable manure. The roots of the Turnips grown by it are equal to any I have grown this season with artificial manure.

CHARLES STUBBS.

Barley, near Royston, Herts, December 16, 1853.

The Economical Manure I ordered did not arrive in time to be used upon Swedish Turnips; I therefore used it upon Greentops. The way I tested it was this: the 12 cwt. was mixed with 80 bushels of cinder-ashes, and 4 quarters of malt-chimes, and that was put upon nearly 8 acres, making the expense, including carriage, &c., about 29s. per acre. There was no other manure used, except some burnt ashes from the Grass, &c., round the field; and there is a fine crop of Turnips. There is no doubt about the manure being good, as the difference of the deposit between the up and down-hill works plainly shows its utility.

T. C. WALBY.

West Bilney, Swaffham, Norfolk, October 13, 1853.

I applied your Economical Manure as a top dressing for Barley, at the rate of $1\frac{1}{4}$ cwt. per acre, mixed with 20 bushels of burnt earth, and sown broadcast. I was quite satisfied with the result. I likewise drilled the same quantity for Turnips and find they are equally good as where I applied $3\frac{1}{2}$ cwt. of superphosphate of lime per acre, at a cost of 1*l*. 1s.

R. H. WALPOLE.

Chilvers Coton, Warwickshire, Dec. 12, 1853.

I beg to say that the Economical Manure has given me great satisfaction. I used some for Turnips, and the result has been most satisfactory. I have no doubt it will be in great use here as soon as its good qualities become more generally known.

JAMES HANKINSON.

Hafod-y-Green, near Denbigh, N. W., Nov. 7, 1853.

The following is the manner in which I applied the Economical Manure:—A portion of a Turnip field was manured with about 20 tons per acre of the best stable and cattle dung, made during the winter; upon the remainder I put about the same quantity of inferior stuff, such as road-scrapings, cinder-ashes, &c.; to this I added about 1 cwt. of your Manure to the acre, hoping to equalise the crop; and at this time there is no difference to be seen in the field. I therefore consider your Manure made up the deficiency. The soil is a cold wet clay; but the crop is quite equal to my expectations. C. H. (Bailiff to J. Blew, Esq.)

Antingham, near North Walsham, Norfolk, Oct. 3, 1853.

I feel satisfied of the utility of your Economical Manure, in promoting the growth of Turnips. HENRY WRIGHT.

Lyde, Herefordshire, January 14, 1854.

I used one barrel of the Economical Manure for common Turnips, planted in July: it was sown broadcast on the flat, and afterwards ridged up 20 inches wide; about $1\frac{1}{2}$ cwt. per acre. I perceived very little good for the first six weeks; afterwards the Turnips progressed very fast. But the land was not drained, and was very wet; yet I find them a fair crop. I have no doubt if the land had been drained I should have had double the quantity.

RICHARD EDWARDS.

Cosby Lodge, Lutterworth, Leicestershire, Dec. 15, 1853.

I used your Economical Manure at the rate of $1\frac{1}{2}$ cwt. per acre, to a crop of Swede Turnips. I applied it broadcast, and ridged the soil up afterwards with a small quantity of farm-yard manure. I am perfectly satisfied with the result, having a very good crop. Should I live till next year, I intend using it again.

JOHN DRAYCOTT.

Witton, North Walsham, Norfolk, November 1, 1853.

I used your Manure against two others, on the 30th of June, for Turnips, and have a splendid crop, beating both the others.

THOMAS CUBITT.

Moorgate House, East Retford, Notts, February 14, 1854.

I have been over to Mr. Johnson's, a large farmer in this neighbourhood, and find that in his Turnips, where guano and the Economical Manure were used, to the same amount in money, it was impossible to tell one from the other; in fact, neither he nor I could tell which was which, the crop from both being extraordinarily good. W. BOWER.

The Company have the satisfaction to state, that they are in receipt of most favourable reports of the effect of the Manure this year; two or three are subjoined:—

Cambridge, May 15, 1854.

I applied some of your Economical Manure to various crops this spring:—on two different fields of Wheat, a piece of Barley, 2 acres of Clover, and on some Autumn-set Cabbages. All I can say (and as it is the first year of my using the article), all I ought to say, is, that so far, the improvement in all the crops is most manifest, more especially in the Clover. But even on the Wheat and Barley, although applied invariably where the crop was weakest, its effects are so striking, that a person riding along the road cannot but perceive it. I have used it for Mangold Wurzel and shall do so for Turnips, but as yet, in the former instance, the Mangold is not up, and therefore nothing can be said of it. It is but fair also to add, that I have applied it to two compost heaps in reducing Twitch, Cabbage Stalks, and such like, to a useful compound for the land, with layers of horse dung, and with the exception of the windward side of the heaps, where the Couch Grass or Twitch was laid quite on the outside, the heaps, in three weeks, became excellent manure. So far, I have never expended 18s. per acre on any crops, after 40 years' experience, with so much effect. I think the agriculturists to whom I am known will give me credit for not intentionally misleading them. I write only the result of my own experience. You will immediately send me another ton, for my own use, and one for a neighbouring farmer. P.S.—I find 2 heaping bushels per acre of the manure, with the like quantity of ashes, seems to cost about 18s. per acre, and in this manner we have so far used it.

WILLIAM BENNETT.

[This gentleman is the well-known and practical Agriculturist formerly of Lewsey, Bedfordshire.]

Manea, near Chatteris, Cambridgeshire, May 17.

I beg to inclose an order for 24*l*. 19s., the amount of your account against me for Manure. I should have forwarded this a little earlier, but having used the manure on 12 acres of Hemp, I waited to see if it had any immediate visible effect. I am happy to say I think it has, as the plant is vigorous and strong.

MICHAEL L. SEARS.

Halvergate Mills, Acle, near Norwich, May 18.

I am happy to give you an excellent account of the Manure. Mr. Smith, of Reedham, top-dressed a field of Wheat in the beginning of April, it was very thin and weak; he did not expect a quarter of a crop. The other day he was telling me it was wonderfully improved, and he did not think there was any in the parish looking better: so well satisfied is he with it, that he has given me an order for half a ton more for top-dressing Barley, also an order for a friend of his. You are quite at liberty to advertise this, as you cannot speak too highly of it. I shall require 2 tons instead of 1. JOHN HEWITT.

GOOD AGENTS WANTED.—AN ALLOWANCE TO THE TRADE.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, MAY 20, 1854.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley

No. 21.—1854.] SATURDAY, MAY 27. [PRICE 6*d*.

INDEX.

Agri. meteorology	347 *b*
— Soc. of England	347 *c*
Animals, ages of	348 *b*
Aquariums, Crystal Palace	344 *a*
Aquilegia glandulosa	341 *b*
Biddulph Grange, effects of frost at	341 *c*
Butter, rancid	349 *a*
Calceolarias, culture of	343 *c*
Calendar, horticultural	344 *b*
— agricultural	349 *a*
Collodion, spoiled	342 *b*
Crystal Palace, aquariums at	344 *a*
— agri. products in	345 *c*
Drains, roots in	339 *b*
Dropmore, frost at	341 *c*
Dublin Chemico-Agri. Soc.	348 *c*
Ferns in Ward's cases	341 *c*
Food, organic composition of	349 *a*
Forests, crown	341 *a*
Forrester's Essay on Portugal, rev.	343 *b*
Frost, plants injured by	340 *c*
— at Biddulph Grange	341 *c*
— at Dropmore	341 *c*
— late spring	342 *a*
Geometry, Lund's, rev.	343 *c*
Guano trade	345 *a*
Horticultural Society	342 *b*
— garden exhibition	339 *b*
Laburnum sports	342 *a*
M'Adam's blight composition	342 *a*
Manure, influence of shelter on	348 *c*
Melons	342 *a*
Meteorology, agricultural	347 *b*
Mildew, cure for	341 *c*
— M'Adam's composition for	342 *a*
Paper, material for	340 *a*
— Plantain	340 *a*
Pathology, vegetable	340 *a*
Pea, Prodigy	341 *c*
Pigs, to feed	348 *c*
Pine-apple fibre	340 *a*
Plants injured by frost	340 *c*
Plantain paper	340 *a*–341 *c*
Potato disease	341 *c*
Portugal, Forrester on, rev.	343 *b*
Rain gauges	341 *b*
Roots in drains	339 *b*
Rose, introduction of the China	344 *a*
Royal Botanical Society	342 *c*
Sowing machines	347 *a*
Tabernæmontana, Double	340 *b*
Textile materials	340 *a*
Tiptree, visit to	346 *b*
Vegetable pathology	340 *a*
Vines, disleafing *v.* mildew	341 *c*
Ward cases	341 *c*
Winter at Biddulph Grange	340 *c*
Woods and forests	341 *a*

HORTICULTURAL SOCIETY OF LONDON.—The QUEEN having been graciously pleased to name Saturday, June 10, as the day on which her Majesty will open the Crystal Palace, Notice is hereby given that the Meeting of this Society, announced for the same day, will be held on SATURDAY, JUNE 3, instead of Saturday, June 10, as previously intended. All Tickets issued for June 10 will be available for June 3.—21, Regent Street.

VALE OF TAUNTON DEANE HORTICULTURAL AND FLORICULTURAL SOCIETY.—The FIRST EXHIBITION of the above Society will be held in the Vivary Park, Taunton, on WEDNESDAY and THURSDAY, the 21st and 22d days of June next. HANDSOME PRIZES will be awarded to Nurserymen.

The Society have resolved to hold, in conjunction with the same, a GRAND POULTRY EXHIBITION. Upwards of EIGHTY PRIZES will be given. Schedules for both Exhibitions and all further information may be obtained of the Honorary Secretary, Mr. JOHN KINGSBURY, 10, Hammet Street, Taunton, Somersetshire.

CHELTENHAM GREAT EXHIBITION. HORTICULTURAL SECTION.—The days appointed for the British and Foreign Exhibitions are TUESDAY and WEDNESDAY, the 20th and 21st of June, when upwards of 362*l.* will be offered in Prizes. Notice of space required by Exhibitors must be given on or before Tuesday, June 6. *Judges.*—Mr. GORDON, Chiswick; Mr. C. M'INTOSH, Dalkeith Palace; Mr. IVISON, Syon Gardens; Mr. GLENDINNING, Chiswick; Mr. EDWARDS, Wace Cottage, Holloway; Mr. DAVIDSON, Shrubland Park; Mr. KIMP, Rockbier.—THOMAS VOILE, Hon. Secretary; HENRY J. COCHRANE, Secretary.

Committee Room 128, High Street.

MANCHESTER BOTANICAL AND HORTICULTURAL SOCIETY.—The Second Exhibition of PLANTS, FLOWERS, FRUITS, and VEGETABLES, will be held at the Society's Gardens, Old Trafford, on Wednesday next, May 31.

Orders for the Admission of Ladies and Strangers may be had from any of the Members, or at the Office of the Secretary, 40, Princes Street, Manchester.

By order of the Council,

May 27, 1854. JOHN SHAW, Secretary.

MR. GEORGE USHER, formerly of South Dalton, if he will communicate with his brother, Mr. J. USHER, of Appleby, will hear something to his advantage.

EXHIBITION OF PELARGONIUMS, ETC.

JOHN DOBSON begs to announce that his Annual Exhibition will take place on THURSDAY next, June 1, when his unrivalled collection of the above will be arranged the same as at the exhibitions at Chiswick. A military band will be in attendance. Admission free, by tickets only, which may be had on application at the Nursery only. Applications enclosing one stamp will be attended to. Trains from Waterloo station to Isleworth a few minutes after every hour.

Woodlands Nursery, Isleworth.

EXHIBITION OF AMERICAN PLANTS AT KNAP HILL NURSERY, WOKING.—The American plants at this Nursery are now in bloom, and may be seen daily gratis. The Knap Hill Nursery is within an hour's ride of London, by South Western Railway to Woking, where all trains stop, and from whence capital conveyances may be obtained.—WATERER & GODFREY, late HOSEA WATERER.

EXHIBITION OF SPECIMEN PLANTS.

J. AND J. FRASER beg to invite the attention of the Nobility and Gentry to an inspection of their fine collection of Specimen CHINESE AZALEAS and other plants, which are now in bloom. The plants are so arranged in various Green-houses as to have a similar effect to that produced at the Metropolitan Flower Shows. The collection comprises those specimens which have been exhibited so often at the Regent's Park and Chiswick Gardens, at which places they have taken the leading rizes.

The Nursery is about 15 minutes' walk from the Lea Bridge Station on the Eastern Counties Railway. Trains leave London at 9 a.m., 9.30 a.m., 10 a.m., 10.40 a.m., 12.30 a.m., 1.40 p.m., 2.30 p.m., 3.20 p.m., and 4.45 p.m.—Admission Gratis.

Lea Bridge Road, Essex, May 27, 1854.

NEW VARIEGATED GERANIUMS,
ATTRACTION AND SILVER KING.

JOHN AND CHARLES LEE are now sending out strong plants of these elegant novelties, which they can recommend as surpassing anything of the kind hitherto introduced.

ATTRACTION has a decided crimson horse-shoe, on a finely variegated foliage, which greatly enhances its beauty. The flowers are light scarlet. Price 10*s.* 6*d.* each.

SILVER KING is of a dwarf free habit, the leaves perfectly flat, with a very broad silver margin; flowers intense scarlet. Price 7*s.* 6*d.* each, or 70*s.* per dozen.

Nursery and Seed Establishment, Hammersmith, near London.

NEW TURNIP SEEDS DIRECT FROM THE GROWERS.

WILLIAM E. RENDLE AND CO. have this season a very superior stock of all kinds of TURNIPS, and they recommend all who are in want of the best varieties to procure their "Farming Price Current and Agricultural Directory," to be had in exchange for six penny stamps.—Apply to

WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

RENDLE'S IMPROVED SWEDE TURNIP.—*The Stock of this excellent Swede has been grown for us this season by R. H. Watson, Esq., Dorsley, near Totnes. It is a most hardy and valuable variety. Price 1s. 6d. per lb. For further particulars and testimonials of its excellence see* "FARMING PRICE CURRENT," to be procured from

WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

THE CRUICKSFIELD HYBRID SWEDE.

MESSRS. SUTTON AND SONS, SEED GROWERS, Reading, have much confidence in recommending this new Agricultural Root, both for early and late sowing.

It partakes of the nature of the Kohl Rabi in its extreme hardiness, capability of enduring summer drought, and may be transplanted while young, if required to mend other crops. Sheep prefer it to other Swedes.

The cultivation is the same as common Swedish Turnips. This is the first year of its being offered to the public. Price 5*s.* per pound. Three pounds of seed sufficient per acre.

THE LARGEST AND BEST TURNIP FOR EARLY SOWING.

SUTTON'S LINCOLNSHIRE RED GLOBE TURNIP.—A superior variety, presented to us by Philip Pusey, Esq., being more solid and larger than any other. Price 1*s.* 6*d.* per lb., or 9*s.* per gallon. Carriage free.

From Mr. Albert Edmonds, Steward to Philip Pusey, Esq., November 23d, 1853.

"By the desire of Mr. Pusey, I beg to inform you that he had a very fine crop of the Red Lincolnshire Turnip, weighing 30 tons 10 cwt. 1 qr. 24 lbs. per acre."

From Mr. T. Chandler, Liquid Manure Drill Maker, Aldbourne, November 11th, 1853.

"The Lincolnshire Red Turnip, the seed of which I had from you, has produced the heaviest crop I ever grew."

JOHN SUTTON AND SONS, Seed Growers, Reading, are receiving many orders daily for this Turnip Seed, with similar remarks to the above, relative to last year's crop. *Orders will be executed in rotation, in strict accordance with priority in our receiving them.*

TURNIP SEEDS! TURNIP SEEDS!
CARRIAGE FREE.

B. PAGE AND CO.'S Genuine Stock, saved from the finest transplanted Bulbs, will, as heretofore, gain the greatest number of Prizes at Root Exhibitions.

	Per lb.—*s.*	*d.*		Per lb.—*s.*	*d.*
Skirving's Improved Swede	1	0	White Belgian Carrot	1	8
Purple-top	1	0	Mangold Wurzel, Long Red	0	10
Green-top	1	2	Ditto, Yellow Globe	1	0
Ashcroft Hybrid	1	2	Buckwheat (English growth), per bushel	6	6
Laing's ditto	1	2	Mustard, ditto	16	0
Aberdeen or Scotch Yellow	0	10	Dwarf Essex Rape, p. cwt.	28	0
Dale's Hybrid	1	2	Rye-grass, Italian, per bushel ... 4*s.* 6*d.* to	5	6
White Norfolk	1	0	Ditto, Perennial, per bushel ... 4*s.* 6*d.* to	5	6
" Globe	1	0	Fine mixed for lawns and permanent pasture ... 10*s.* to	15	0
Tankard, in sorts 1*s.* to	1	3			
Green Round	1	0			
Red Round	1	0			
Early Stone	1	0			

Offices, Oxford Street (ten yards from the Railway Terminus), and Above Bar, Southampton.

SEEDLING VERBENAS.

W. J. EPPS has great confidence in recommending the following Seedlings, raised by Mr. Philpot, of Aldington, being without exception the most distinct and splendid flowers in their class yet offered to the public. The following are the opinion and description given by Mr. Neville, editor of the *Gardeners' Record*; they were exhibited at Ashford open Show, in September last, and received first-class certificates.

No. 1. SULTAN.—Dark velvety maroon; large white eye; petals stout: pip, full size; truss, medium; a beautiful variety.

No. 2. BLUE BELL.—Dark velvety blue, with white eye; truss very large and well formed.

No. 4. INDIAN CHIEF.—Crimson puce, very rich in colour; yellow eye; very attractive.

No. 5. DELICATISSIMA.—Pale lavender, with large primrose eye; very beautiful and novel; petals, stout; pips, well formed; truss, medium.

No. 8. RUFUS.—Plum colour purple; velvety texture; dark disc; with a clear white margin; immense flower and trusser.

No. 20. DISTINCTUS.—Cherry lavender grey disc; distinctly margined with dark crimson purple; fine bold truss and large flowers.

The whole of the above are exceedingly free flowering, and excellent habits—well suited for bedding or other purposes: 12*s.* 6*d.* the collection.

SEEDLING PHLOXES.

These are, without exception, the most lovely things in their way possible; they have been much admired by all who have seen them, and have merited the high opinion of the editors of the leading floricultural works. The following is the description from the *Gardeners' and Farmers' Journal*, Sept. 21st, 1853:—

"SEEDLING PHLOXES.—The collection of Seedling Phloxes received is remarkable for novelty and superiority of form.

No. 1. MARIA.—Rose peach, with white eye.
No. 3. ASTROSANGUINEA.—Fine crimson.
No. 4. DISTINCTUS.—Light purple, white eye.
No. 5. CARMINATA.—Deep rose, white eye.
No. 7. SPLENDENS.—Large lilac, white eye.
No. 8. CONSPICUA.—Very deep rose, white eye."

10*s.* 6*d.* the collection.—Nurseries, Maidstone.

GERANIUMS.

WILLIAM HUSSEY begs to offer the under-named Collection for 14*s.*, fine flowering plants, package included, viz., Cuyp, Emily, Chloe, Lavinia, Constance, Gulielma, Magnificent, Belle of the Village, Major Domo, Nectar Cup, Rosamond, Conspicua, Symmetry, Governor, Generalissimo, Fair Maid of Perth, Lalla Rookh, Alonzo, May Queen, Lord Mayor.

Horticultural Gardens, Norwich, May 22, 1854.

NEW SIPHOCAMPYLUS.

W. J. EPPS has much pleasure in offering the following, feeling they cannot fail to give the highest satisfaction. Strong plants are now ready for delivery.

SIPHOCAMPYLUS NE PLUS ULTRA—Very dwarf habit, with bright green foliage, producing flowers of the most brilliant scarlet in threes and fours at the axle of every leaf; the best of the genus, 10*s.* 6*d.*

BICOLOR ROSEA—Deep crimson, tipped with pale rose, very distinct and beautiful, very dwarf and compact habit; 10*s.* 6*d.* The usual discount to the Trade.—Nurseries, Maidstone.

PAGE AND CO.'S

BLIGHT COMPOSITION should be in the hands of all Plant and Fruit Cultivators. 4*s.* per gallon, sufficient to make four. For testimonials see back leaf *Gardeners' Chronicle*, March 11, 1854.

GARDEN AND AGRICULTURAL SEEDS, first quality, and lowest market price.

Oxford Street (adjoining Radley's Hotel, 20 yards from the Railway and Docks), Southampton.

DOWNIE AND LAIRD beg to intimate that their superb Collections of CALCEOLARIAS, PANSIES, &c., are now in full bloom, and may be seen any day at their Nursery (Sunday excepted).—Edinburgh, May 26.

NEW ALSIKE CLOVER, Price Ten Guineas per cwt., or in small quantities at 2*s.* per lb., may be had on application to Mr. H. RAYNBIRD, Basingstoke, Hants. Also New Home-grown ITALIAN RYE-GRASS, of good and genuine Stock, at 30*s.* to 35*s.* per quarter.

BEDDING PLANTS sent free by post, securely packed, at the annexed prices:—Verbenas, Cupheas, Ageratums, Anagallis, &c., 2*s.* 6*d.* per dozen; Salvias, Lantanas, Heliotropiums, &c., 3*s.* 6*d.* per dozen; Calceolarias, Petunias, &c., 4*s.* per dozen; Double Daisies, 3*s.* per dozen; Mimulus, fine, 4*s.* to 6*s.* per dozen; 12 fine varieties hardy perennial Flower Seeds, from America, 3*s.*; Choice Hardy Perennial and Biennial Flower Seeds, 30 fine varieties, 2*s.* 6*d.*; 20 ditto, 2*s.*; 12 ditto, 1*s.* 2*d.*, post free.

WILLIAM KNIGHT, FLORIST, 67, High Street, Battle, Sussex.

DAHLIAS, GERANIUMS, FUCHSIAS, AZALEAS, BEDDING PLANTS, &c., can be had from WILLIAM E. RENDLE AND CO., NURSERYMEN, Plymouth, in any quantity. Their New Plant Catalogue is now out, and can be had in exchange for one penny stamp.—Apply to

WILLIAM E. RENDLE AND CO., Nurserymen, Plymouth.

FINE GRASS SEEDS FOR ORNAMENTAL PARKS, LAWNS, &c., *where a fine sward is required, 1s. 3d. per lb., 3s. per gallon, and 20s. per bushel. Our mixtures for this purpose have given the greatest satisfaction.*

WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

SEEDS TO IRELAND.—*Plymouth is admirably situated for supplying our sister country with some English Seeds. The Subscribers can refer to some of the leading families in Ireland, who have for many years obtained the whole of their supplies of Garden and Farm Seeds. Seeds delivered free to many of the Irish ports. See Price Current.*

WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

MORTON'S YELLOW GLOBE MANGOLD WURZEL, *saved by Thomas Bennett, Esq., Gloucester, from the Stock originally grown by J. C. Morton, Esq., the Editor of the Agricultural Gazette.*

Seed of this most excellent variety can now be obtained from WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth, who have purchased the whole of the Stock.

NEW ROSES IN POTS, at reduced prices.

HYBRID PERPETUAL.	*s.*	*d.*	HYBRID PERPETUAL.	*s.*	*d.*
Baronne de Kermont	5	0	Souvenir de Mdme. Lille	5	0
Comte de Nanteuil	5	0	Triomphe de Paris	5	0
James Veitch	5	0	Volta	5	0
Lady Stuart	5	0	BOURBON.		
Lady Shelley	5	0	Beauté Lyonnaise	3	6
Le General Jacqueminot	10	6	Madame Helfinbein	5	0
Madame Harriet Stowe	10	6	Sir Joseph Paxton	3	6
Madame Phelip	5	0	TEA.		
Paul Dupuy	7	6	Gloire de Dijon	10	6
Prince Chipetowzikof	5	0	MOSS.		
Prince Leon Kotchouby	7	6	Princess Alice (Paul's)	5	0
Salvator Rosa	3	6	HYBRID BOURBON.		
Sephora	7	6	President Pierce	7	6
			Vivid	5	0

The following choice Hybrid Perpetual Roses, at 30*s.* per doz., Baronne Hallez, Destigny, Egerie, Inermis, Laura Raymond, La Seduisante, L'Enfant du Mont Carmel, Louise Peyronny, Ludovic Letaud, Madame Audry, Madame Ducher, Madame Fremion, Madame Hilaire, Miss Meymott, Souvenir de la Reine des Belges.

BENJAMIN R. CANT, in offering the above, does so with the greatest confidence, as he has received several letters from customers stating that the plants sent are far better than those generally supplied by the Trade.

ST. JOHN'S STREET NURSERY, COLCHESTER.

Carriage paid to London and Norwich and all intermediate stations on the Line. Unknown Correspondents are requested to send a remittance or reference.

MEADOW AND PASTURE GRASS SEEDS.

GEORGE GIBBS AND CO. beg to call attention to their MIXTURES OF GRASS SEEDS for laying Land down to Permanent Grass, price 30s. per acre.

Mixed sorts, for Improving Old Grass Land... 1s. 2d. per lb.
Fine sorts for Forming and Renovating Lawns 1 3 "

Directions for sowing accompany the seeds.

GEORGE GIBBS & Co. will be happy to forward their Priced Catalogues of Mangold Wurzel, Carrot, Swede, Turnip, and all Agricultural Seeds, free on application to GEORGE GIBBS & Co. Seedsmen, 26, DOWN STREET, Piccadilly, London.

CINERARIA SEED.

EDWARD GEORGE HENDERSON & SON, Wellington Nurseries, St. John's Wood, London, are now prepared to forward, by post, newly saved seed of 1854, which, if sown now, will give strong plants for winter flowering. More care than usual has been bestowed in gathering the seeds from the finest named sorts, even the newest varieties sent out last year, and all pale coloured flowers have been destroyed, so that the most brilliant colours may be expected.

N.B.—Orders for the Calceolaria seed can now be booked for sending as soon as ready.

ROYAL BOTANIC GARDENS, REGENT'S PARK.

LIST OF PRIZES AWARDED AT THE EXHIBITION, HELD ON WEDNESDAY, MAY 24, 1854.

PLANTS.

EXTRA GOLD MEDAL.

To Mr. J. May, Gardener to H. Colyer, Esq., Dartford, Kent, for 16 Stove and Greenhouse Plants.
To Mr. B. S. Williams, Gardener to C. B. Warner, Esq., Hoddesdon, Herts, for 20 Exotic Orchids.

LARGE GOLD MEDAL.

To Mr. Green, Gardener to Sir E. Antrobus, Bart., Lower Cheam, Surrey, for 16 Stove and Greenhouse Plants.
To Mr. Woolley, Gardener to H. B. Ker, Esq., Cheshunt, Herts, for 20 Exotic Orchids.

MEDIUM GOLD MEDAL.

To Mr. Speed, of Edmonton, for 16 Stove and Greenhouse Plants.
To Messrs. Fraser, Nurserymen, &c., Lea Bridge Road, Leyton, Essex, for 12 Stove and Greenhouse Plants.
To Mr. Dingle, Gardener to A. Lawrence, Esq., 2, Devonshire Place, Bath, for 10 Stove and Greenhouse Plants.
To Messrs. Lane & Son, Nurserymen, &c., Great Berkhampstead, Herts, for 8 Greenhouse Azaleas.
To Messrs. Rollisson, Nurserymen, Tooting, for 16 Exotic Orchids.
To Mr. Carson, Gardener to W. F. G. Farmer, Esq., Nonsuch Park, Cheam, for 12 Exotic Orchids.
To Messrs. Lane & Son, Nurserymen, Great Berkhampstead, for 10 Roses.

GOLD MEDAL.

To Mr. Nye, Gardener to E. Foster, Esq., Clewer, near Windsor, for 10 Pelargoniums.
To Messrs. Rollisson, Nurserymen, Tooting, Surrey, for 12 Stove and Greenhouse Plants.
To Mr. Carson, Gardener to W. F. G. Farmer, Esq., Nonsuch Park, Cheam, Surrey, for 10 Stove and Greenhouse Plants.
To Messrs. Rollisson, Nurserymen, Tooting, for 10 Cape Heaths.
To Mr. J. May, Gardener to H. Colyer, Esq., Dartford, Kent, for 8 Cape Heaths.
To Messrs. Fraser, Nurserymen, Lea Bridge Road, Leyton, Essex, for 8 Greenhouse Azaleas.
To Mr. Turner, Royal Nursery, Slough, for 12 Pelargoniums.
To Mr. Francis, Nurseryman, Hertford, for 10 Roses.
To Mr. Clarke, Gardener to Mr. Webb, Hoddesdon, Herts, for 12 Exotic Orchids.

LARGE SILVER GILT MEDAL.

To Mr. Gilham, Gardener to J. R. Scott, Esq., Leyton, Essex, for 16 Stove and Greenhouse Plants.
To Mr. Clarke, Nurseryman, Orleans House, Streatham, Surrey, for 12 Stove and Greenhouse Plants.
To Mr. Williams, Gardener to Miss Traill, Hayes' Place, Bromley, Kent, for 10 Stove and Greenhouse Plants.
To Mr. Taylor, Gardener to J. Coster, Esq., Hill House, Streatham, Surrey, for 6 Stove and Greenhouse Plants.
To Mr. Green, Gardener to Sir E. Antrobus, Lower Cheam, Surrey, for 8 Greenhouse Azaleas.
To Mr. Carson, Gardener to W. F. G. Farmer, Nonsuch Park, Cheam, Surrey, for 6 Greenhouse Azaleas.
To Mr. Summerfield, Gardener to J. S. Venn, Esq., Highbury Park, Islington, for 12 Exotic Orchids.
To Mr. Green, Gardener to Sir E. Antrobus, Bart., Lower Cheam, Surrey, for 6 Exotic Orchids.
To Mr. Dobson, Nurseryman, Isleworth, for 12 Pelargoniums.
To Mr. Winsor, Gardener to F. Steele, Esq., Kiddepore Hall, Hampstead, for 10 Pelargoniums.
To Messrs. Paul, Cheshunt, for 10 Roses.
To A. Rowland, Esq., Lewisham, Kent, for 6 Roses in pots.

LARGE SILVER MEDAL.

To Mr. Roser, Gardener to J. Bradbury, Esq., Bedford House, Streatham, Surrey, for 6 Stove and Greenhouse Plants.
To Mr. Green, Gardener to Sir E. Antrobus, Bart., Lower Cheam, Surrey, for 6 Plants of Tall Cacti.
To Messrs. Fraser, Nurseryman, Lea Bridge Road, Leyton, Essex, for 10 Cape Heaths.
To Mr. Williams, Gardener to Miss Traill, Hayes' Place, Bromley, Kent, for 8 Cape Heaths.
To Mr. Roser, Gardener to J. Bradbury, Esq., Bedford House, Streatham, Surrey, for 6 Cape Heaths.
To Mr. Barter, Gardener to A. Bassett, Esq., Stamford Hill, for 6 Greenhouse Azaleas.
To Mr. Jarvis, Gardener to J. Ruck, Esq., Croydon Lodge, Croydon, for 6 Exotic Orchids.
To Mr. Turner, Royal Nursery, Slough, for 6 Fancy Pelargoniums.
To Mr. Winsor, Gardener to F. Steele, Esq., Kiddepore Hall, Hampstead, for 6 Fancy Pelargoniums.
To Mr. Roser, Gardener to J. Bradbury, Esq., Bedford House, Streatham, Surrey, for 6 Greenhouse Azaleas.

SILVER GILT MEDAL.

To Mr. Rhodes, Gardener to J. Philpotts, Esq., Stamford Hill, for 16 Stove and Greenhouse Plants.
To Messrs. Pamplin & Son, Nurserymen, &c., Lea Bridge Road, Leyton, Essex, for 12 Stove and Greenhouse Plants.
To Mr. Clarke, Gardener to Mrs. Webb, High Grounds, Hoddesdon, for 10 Stove and Greenhouse Plants.
To Mr. Over, Gardener to W. M'Mullen, Esq., Clapham, for 6 Stove and Greenhouse Plants.
To Mr. Gillham, Gardener to J. R. Scott, Esq., Leyton, Essex, for 6 plants of Tall Cacti.
To Mr. Peed, Gardener to T. Tredwell, Esq., St. John's Lodge, Norwood, for 8 Cape Heaths.
To Mr. Over, Gardener to W. M'Mullen, Esq., Clapham, for 6 Cape Heaths.
To Mr. Gaines, Nurseryman, Battersea, for 12 Pelargoniums.
To Mr. Taylor, Gardener to J. Coster, Esq., Streatham, for 6 Greenhouse Azaleas.
To Mr. Carmichael Gardener to G. C. Tugwell, Esq., Crowe Hall, Bath, for 6 Calceolarias.
To Messrs. Henderson, Pine-apple Place, for 6 Cinerarias.
To Mr. Ward, Gardener to G. Bishop, Esq., Regent's Park, for 6 Cinerarias.
To Mr. Robinson, Gardener to J. Simpson, Esq., Thames Bank, Pimlico, for 10 Pelargoniums
To Mr. Gaines, Nurseryman, Surrey Lane, Battersea, for 6 Fancy Pelargoniums.
To Mr. Smith, Gardener to — Newdegate, Esq., Dartmouth House, Blackheath, for 6 Fancy Pelargoniums.
To Mr. Turner, Slough, for 12 Pansies.
To Mr. Holder, Gardener to the Rev. E. Coleridge, Eton College, for 12 Pansies.
To Mr. Busby, Gardener to J. Crawley, Esq., Stockwood Park, Luton, Beds, for 6 Roses in pots.
To Messrs. Fraser, Nurserymen, &c., Lea Bridge Road, Essex, for 6 Greenhouse Azaleas.

SILVER MEDAL.

To Mr. Barter, Gardener to A. Bassett, Esq., Stamford Hill, Middlesex, for 10 Stove and Greenhouse Plants.
To Mr. Taylor, Gardener to J. Coster, Esq., Hill House, Streatham, Surrey, for 6 Cape Heaths.
To Mr. Lawrence, Farnham Castle, for a plant of Gongora Cymbiformis.
To Messrs. Veitch & Son, Nurserymen, &c., Exeter and Chelsea, for a plant of Impatiens Jerdoniæ.
To Messrs. Henderson, Nurserymen, Pine-apple Place, Edgeware Road, for a plant of Pultenæa Hendersoni.
To Mr. Williams, Gardener to C. B. Warner, Esq., Hoddesdon, Herts, for 30 British Ferns.
To Mr. Gilham, Gardener to J. R. Scott, Esq., Leyton, Essex, for 6 Greenhouse Azaleas.
To Messrs. Lane, Nurserymen, Berkhampstead, for 6 Rhododendrons.
To Mr. Constantine, Gardener to C. B. Mills, Esq., Hillingdon, Uxbridge, for 6 Calceolarias.
To Mr. Clarke, Nurseryman, Streatham, for 6 Cinerarias.
To Mr. Todman, Gardener to Mrs. Buckmaster, Clapham Park, Clapham, for 6 Cinerarias.
To Mr. Graver, Gardener to J. Taylor, Esq., Highgate Rise, for 10 Pelargoniums.
To Messrs. Henderson, Pine-apple Place, for 6 Fancy Pelargoniums.
To Mr. Robinson, Gardener to J. Simpson, Esq., Thames Bank, Pimlico, for 6 Fancy Pelargoniums.
To Mr. Sage, Gardener to W. R. Robinson, Esq., Hill House, Acton, for 6 Roses.
To Mr. James May, Gardener to H. Colyer, Esq., Dartford, Kent, for a specimen plant, Pimelea spectabilis.
To Mr. Taylor, Gardener to J. Coster, Esq., Streatham, for 6 Greenhouse Azaleas.

SMALL SILVER MEDAL.

To Mr. Peed, Gardener to J. Tredwell, Esq., St. John's Lodge, Norwood, for 10 Stove and Greenhouse Plants.
To Mr. Morris, Gardener to Coles Child, Esq., the Palace, Bromley, Kent, for 10 Stove and Greenhouse Plants.
To Mr. Carmichael, Gardener to G. C. Tugwell, Esq., Crowe Hall, Bath, for 8 Cape Heaths.
To Mr. Jarvis, Gardener to J. Ruck, Esq., Croydon Lodge, Croydon, for 6 Cape Heaths.
To Mr. Woolley, Gardener to H. B. Ker, Esq., Cheshunt, Herts, for a plant of Bletia species.
To Messrs. Veitch and Son, Nurserymen, &c., Exeter and Chelsea, for a plant of Gesnera Donkelaari.
To Messrs. E. G. Henderson, Nurserymen, &c., Wellington Road, St. John's Wood, for a plant of Eucharis candida.
To Mr. Woolley, Gardener to H. B. Ker, Esq., Cheshunt, Herts, for 12 Exotic Ferns.
To Mr. Smith, Gardener to J. Anderson, Esq., The Holme, Regent's Park, for 30 British Ferns.
To Mr. Clarke, Nurseryman, Streatham, Surrey, for 6 Calceolarias.
To Mr. Parker, Stanmore, for 6 Fancy Pelargoniums.
To Mr. Weir, Gardener to G. Hodgson, Esq., The Elms, Hampstead, for 6 Fancy Pelargoniums.
To Mr. Bragg, Star Nursery, Slough, for 12 Pansies.
To Mr. Turner, Royal Nursery, Slough, for 36 Cut Pansies.
To Mr. Holder, Gardener to Rev. E. Coleridge, Eton College, for 24 Cut Pansies.
To Mr. Smith, Gardener to J. Anderson, Esq., The Holme, Regent's Park, for Correct Labels.
To Mr. Dingle, Gardener to A. Lawrence, Esq., 2, Devonshire Place, Bath, for Correct Labels.

BRONZE MEDAL.

To Mr. Jarvis, Gardener to J. Ruck, Esq., Croydon Lodge, Croydon, Surrey, for 10 Stove and Greenhouse Plants.
To Mr. Hamp, Gardener to J. Thorn, Esq., Mawbey House, South Lambeth, for 10 Stove and Greenhouse Plants.
To Mr. Barter, Gardener to A. Bassett, Esq., Stamford Hill, for 8 Cape Heaths.
To Mr. Woolley, Gardener to H. B. Ker, Esq., Cheshunt, Herts, for a plant of Diothenia species.
To Messrs. Fraser, Nurserymen, Lea Bridge Road, Leyton, Essex, for 3 plants of Brilliantasia owariensis.
To Messrs. Henderson, Nurserymen, Pine-apple Place, Edgeware Road, for a plant of Gompholobium species.
To Mr. Barter, Gardener to A. Bassett, Esq., Stamford Hill, for 6 Fancy Pelargoniums.
To Mr. Bray, Gardener to Sir I. L. Goldsmid, St. John's Lodge, Regent's Park, for 6 Fancy Pelargoniums.
To Mr. Dobson, Nurseryman, Isleworth, for 12 Pansies in pots.
To Mr. Bragg, Slough, for 36 Cut Pansies.
To Mr. Barter, Gardener to A. Bassett, Esq., Stamford Hill, for Correct Labels.
To Mr. Carson, Gardener to W. F. G. Farmer, Esq., for Correct Labels.
To Messrs. Fraser, Nurserymen, Lea Bridge Road, Leyton, Essex, for Correct Labels.

CERTIFICATE.

To Mr. Turner, for Seedling Petunias.
To Messrs. Lane, for Seedling Azalea Laneii.
To Messrs. Ivery, Dorking and Reigate, for Seedling Azalea Gem and Rhododendron ponticum coccineum.
To Mr. Price, Gardener to L. Lloyd, Esq., Hampstead, for Calceolaria Chest

VANDA CŒRULEA.

MESSRS. MAULE AND SONS having received, the two last seasons, from their collector in the district of the Khasia Hills, a good supply of this most beautiful and charming Orchidaceous Plant, which stands unrivalled amongst the family of Vanda, from its abundant blooming, easy culture, great length of flower spike, and large number of blooms, which are of the most brilliant sky blue, lasting a long time in beauty, flowering from September until January, and in every respect is a first-class Plant of the justly admired tribe of Orchidaceous Plants. There is little doubt that this Plant after cultivation will flower at almost every season, as V. suavis, tricolor, &c. They have also received other esteemed kinds from this of Flora's favoured district of India, which they at the same time offer.

VANDA CŒRULEA 21s., 42s., 63s.; a few extra large, 105s.
AERIDES affine or roseum ... ... 21s., 42s., 63s.
" odoratum ... ... 10s. 6d., 15s.
" Fox brush, a splendid species, flower spikes in its native habit at 3 feet long, with laterals, 84s., 105s.
DENDROBIUM transparens, a beautiful new, upright, free-flowering dwarf species, flowers of a delicate transparent pink ... ... 15s., 21s.
" Devonianum ... ... 7s. 6d., 10s. 6d.
" chrysanthum... ... ... 5s. each
" major ... ... 7s. 6d. each
" densiflorum ... ... 7s. 6d., 10s. 6d.
" Farmeri ... ... 10s. 6d., 15s.
" Gibsoni (true) ... ... 10s. 6d.
" formosum ... ... 7s. 6d., 10s. 6d.

The Nurseries, Bristol.

ARTHUR HENDERSON AND CO. take the earliest opportunity of informing their friends and the public, that their CATALOGUES No. 3 and No. 6 are now ready and can be had, post free, upon application.

No. 3 contains descriptive lists of Geraniums, Verbenas, Fuchsias, Calceolarias, Cinerarias, Chrysanthemums, &c., amongst which will be found all the best novelties of the season, also the choicest selections from former years.

No. 6 contains descriptive lists of all the newest and best Stove, Greenhouse, and Hardy plants, amongst which will be found many new and desirable plants.

The following new plants are now on sale:

SEEDLING GLOXINIAS.

ELEANOR.—Ground colour pure white, blotched with rose, and shaded with purple.
ELEGANTISSIMA.—Ground colour French white, of great substance, centre pale lavender, spotted with buff.
EUGENIE.—Ground colour rosy pink, centre creamy white, spotted with rose.
EXQUISITE—Ground colour pure white, with broad belt of puce, throat creamy white, spotted with puce.
MAGNET.—Ground colour clear rose, with blotch of purple in the throat, flowers large, of fine form.
PRINCE OF WALES.—Ground colour white, shading off to lavender.
SIR C. NAPIER.—Ground colour deep rosy crimson, throat blotched with intense rose, dwarf habit.

The above seven Gloxinias will all be found to be fine varieties, with large well-formed flowers standing well up above the foliage. 7s. 6d. each, or 42s. the set.

CINERARIA EVA.—Ground colour pure white, with narrow margin of purple, dark disc, fine form and substance: received a Certificate at the National Floricultural Society. 10s. 6d.

GERANIUMS.

DIADEMATUM REGINA.—Ground colour deep shining rose, upper petals veined with dark purple and white, with blotch of bright orange crimson; very dwarf habit, and abundant bloomer; a fine variety for bedding. 7s. 6d.
DIADEMATUM SIDONIUM MULTIFLORUM.—Lower petals rosy purple, shaded with crimson; upper petals orange crimson, veined with dark maroon; trusses large, habit dwarf and compact, abundant bloomer; a fine variety for bedding. 10s. 6d.
PRINCESS.—Ground colour blush white, veined and shaded with carmine, dark horse-shoe foliage, large globular-shaped trusses, and most abundant bloomer. 7s. 6d.

CETERACH MARANTA (syn. Nothoclena maranta).—A new hardy Fern from the Alps of Switzerland; fronds bipinnate, about 8 inches in length, densely coated with golden brown scales on the under side. 15s.

Pine-apple Place, London, May 27.

NEW AND CHEAP PLANTS.

HENRY WALTON, FLORIST, &c., Edge End, Marsden, near Burnley, Lancashire, begs to offer the following, in strong and healthy Plants. Most of the GERANIUMS are set with flower buds:—

GERANIUMS of 1853.—Queen of May, National, Eleanor, Rachel, Heroine, Leonora, Lagoma, Cordelia, Rolla, Butterfly, Commander, and Jupiter: the above 12 for 1l. 8s., hamper included.

GERANIUMS.—Ariadne, Ambassador, Beatrice, Bride of Abydos, Chloe, Chieftain, Cristine, Claudiana, Enchantress, Elise, Flying Dutchman, First of May, Herald, Jullien, La-blache, Lavinia, Little Nell, Lord Gough, Lancashire Witch, Monteith, Purple Standard, Pulchra, Painter Improved, Rubens, Rosa, and Surprise: the above 16s. per dozen, or the set of 26 for 30s., package included.

The following older varieties, 9s. per dozen:—Alonzo, Beauty of Montpellier, Belle of the Village, Brilliant, Constance, Conspicuum, Crispina, Christobel, Exquisite, Emily, Fire Ball, Flavia, Forget Me Not, Falstaff, Flying Dutchman, Gaines, Generalissimo, Lord Stanley, May Queen, Nectar Cup, Nandee, Nonsuch, Ondine, Prince Arthur, Prince of Orange, Pearl, Rowena, Silk Mercer, Sir R. Peel, Sparkler, Satisfaction, Village Maid, and Virgin Queen.

FUCHSIAS.—Beauty, Brilliant, Beauty of Devonshire, Collegian, Dr. Lindley, Duchess of Lancaster, England's Glory, Banks' Glory, Incomparable, King Charming, Lady Franklin, Lady Emily Cavendish, Mrs. Patterson, Perfection, Premier, Purple Perfection, and Princess: the above 1s. 6d. each, or 10s. per doz.

Older varieties, to include the following and several others, [illegible] per dozen.—Clapton Hero, Cartona, Elect, Expansion, Game Boy, Gaiety, Gem of the Season, Joan of Arc, &c. &c.

VERBENAS.—Orestes, Elizabeth, Mrs. Kirkpatrick, Gray Vesta, Garland, Lady Franklin, Middlesex Rival, Discount La Camago, Camilla, Princesse Marianne, Casanova, Fulgorite, Mons. Derouit, Zenobia, Madame Ivery, Caroline Colmans, Madame Lemonier, Rosea, Beauty of Danecroft, Purity, Madame Rougier, Zelia, Mademoiselle Gonnet, Madame Denis, Racine, Madame Comtesse de Belleville, Rosetta, Emma Bannerman, Madame Boucharlat, Purple King, and Princess Matilda; the above 1s. each, or 7s. 6d. per dozen, post free. Older varieties, 3s. 6d. per dozen; ditto Scarlets, White, Purple, &c. &c., per dozen of one variety, 4s. 6d.

CHOICE PETUNIAS, selected varieties, 4s. 6d. and 6s. per dozen.

CHRYSANTHEMUMS, Show and Lilliputian varieties, 4s. 6d. and 6s. per dozen.

Thirty choice LILLIPUTIENNE VARIETIES, recommended in Turner's "Florist" for January last, 1l. post free.

BEDDING PLANTS in great variety, including Mimulus, Phlox, Pansies, Cupheas, Scarlet and other Geraniums, Heliotropes, Belgian Daisies, &c. &c., equally cheap.

Catalogues of the above may be had for one postage stamp.

It is respectfully requested that all orders be accompanied by a Post-office Order (unless reference is given), payable at Marsden, Lancashire.

CHOICE BEDDING PLANTS.

YOUELL AND CO.

BEG TO OFFER THE FOLLOWING :—

CALCEOLARIAS.—The following four very handsome varieties will be found the gems of the season for bedding purposes :—

CRIMSON KING (Henderson), deep crimson, very dark and rich, and does not fade: habit dwarf and robust, flowers large, and shape good. 12s. per dozen.

MAGNIFICENT (Henderson), rich crimson, with yellow crown; a large, fine-formed, and very splendid flower, quite distinct from anything yet out. 12s. per dozen.

GOLD CHAIN, fine golden yellow, of great substance and fine habit, with very stout foot-stalks. 12s. per dozen.

GOLD CAP (Garraway), rich dark maroon, the upper division of the flower deep gold colour, the flowers large and of fine compact habit. 12s. per dozen.

Also the following older favourites for bedding :—

BEAUTY OF MONTREAL, fine bright crimson, dwarf habit, 6s. per dozen.

SULTAN, large rich crimson, 6s. per dozen.

MRS. BEECHER STOWE, fine canary, 9s. per dozen.

Calceolarias (Seedlings not yet flowered) raised from "Benary's" superb spotted varieties, 5s. per dozen, post free.

GERANIUM.—Boule de Neige, a pure white-flowering horse-shoe leaved variety, of compact habit, producing large trusses of well formed flowers, 18s. per doz.

" Kingsbury Pet, a bright rosy salmon, with dark horse-shoe leaf and of the same habit as the foregoing, 18s. per dozen.

" Flower of the Day, 9s. per dozen.

" Fancy varieties, of fine kinds, 12s. per dozen.

" Shrubland Pet, 9s. per dozen.

" Scarlets, in fine variety, 6s. per dozen.

" Sweet-scented species, 9s. per dozen.

Verbenas, of the choicest kinds, including all the most approved of the Continental varieties, 4s. and 6s. per dozen.

Petunias, of the best kinds, 4s. to 6s. per dozen.

Oxalis rosea, one of our prettiest rose-coloured hardy bedding plants, of dwarf habit, and nearly always in flower, 6s. per doz.

Œnothera riparia, a pretty trailing plant, of dwarf habit, quite hardy, producing a profusion of canary-coloured blossoms throughout the year, 6s. per dozen.

Heliotropes, in fine variety, 6s. per dozen.

Anagallis rubra grandiflora, fine for bedding, 4s. per dozen.

Cuphea platycentra, 4s. per dozen.

Lobelia racemoides and lucida, 4s. per dozen.

Antirrhinums, of the finest kinds, 6s. and 9s. per dozen.

Pentstemons, do. do., 6s. per dozen.

Gorteria pavonia, a fine hardy plant, of trailing habit, producing throughout the year a gorgeous display of orange-coloured flowers, spotted with black, 9s. per dozen.

Campanula corallina, an extremely pretty dwarf hardy bedding plant, of compact habit, bearing a profusion of light-blue bell-shaped flowers from May till November; 6s. per dozen.

Neirembergia filicaulis, 6s. per dozen.

PHLOXES.—The following fine varieties, 9s. per dozen :—Spenceri, Imbricata, Abdel Medschid Khan, Anais, Captivation, Elegantissima, Eliza, Hydrangæformis, Imperialis major, Roi Leopold, Macrantha, Madame Courcelles, Madame Poivre, Napoleon, Nelsoni, Princesse de Cleves, Speciosissima, Villaret Joyeuse, Princesse Marianne, Speculum, &c.

Potentillas, of the handsomest varieties, by name, 6s. per dozen.

Mimulus Colei and purpurea maculata, two fine hardy varieties, forming bushy plants, 1½ ft. in height, the former producing bright red flowers, with dark maroon centre; the latter purple flowers, with crimson centre; 6s. per dozen.

Daisies, new Belgian, in 50 fine varieties; 4s. per dozen.

Salvia oppositifolia, 4s. per dozen.

Silene maritima plena, fine double white, very compact habit, 9s. per dozen.

Statice maritima rosea, a fine hardy plant, of dwarf habit, producing throughout the year numerous heads of bright rose pink flowers, 6s. per dozen.

Dielytra spectabilis, 9s. per dozen.

Funckia grandiflora, 2s. 6d. each.

Rockets, double white, 3s. per dozen; purple, 4s. per dozen; crimson, 1s. 6d. each.

Calystegia pubescens (double rose-coloured Convolvulus), quite hardy, 9d. each, or 6s. per dozen.

Herbaceous Plants, in fine variety, 25s. per 100.

FUCHSIAS.—Possessing a fine stock of the following new varieties, we offer them at 12s. per dozen, viz.:—Duchess of Lancaster, England's Glory, Incomparable, King Charming, Perfection, Globosa perfecta, Glory (Banks), Model, Premier, Commodore, Bride, Ariel, and Hendersoni; fine kinds of the older favourites, 6s. per dozen.

CARNATIONS AND PICOTEES.—Beautiful selections from our extensive collection, at 18s., 24s., and 30s. per dozen pairs; fine mixed, for borders, 9s. per dozen pairs. True Old Clove Carnation, 12s. per dozen pairs.

PANSIES.—The following choice kinds, at 10s. per dozen varieties:—Alba Superba, Androcles, Blanche, Cæsar, Calysto, Caroline, Commander-in-Chief, Crystal Palace, Drusilla, Duchess of Rutland, Elegant, Emma, Euphemia, Glory, Helen, Heroine, Indian Chief, Isabella, Junius, Lady Carrington, Lady Franklin, Lady Harding, Lord Jeffery, Marchioness of Lothian, Masterpiece, Miriam, Miss Talbot, Mrs. Beck, Penelope, Polyphema, Post Captain, Prince Arthur, Princess, Queen of England, Rubens, Sambo, Smolensko, The Rajah, Uttoxeter Hero, Viceroy, Yellow Prince.

CHRYSANTHEMUMS, comprising the very best of the new kinds of large flowering and Pompon varieties, in strong plants, 9s. per dozen.

☞ Less quantities than those named above supplied at the same prices. Orders of 2l. and upwards are delivered Carriage Free to London, Hull, Newcastle-on-Tyne, or to any Railway Station within 150 miles of the Nursery.

YOUELL & CO., Royal Nursery, Great Yarmouth.

BEDDING PLANTS.

BASS AND BROWN have a large Stock of the following, VERY STRONG and FINE :—

VERBENAS, in 50 choice varieties, 30s. per 100; 3s. 6d. per doz.
" 20 best new varieties of 1853, 20s.

PETUNIAS, 32s. per 100, in 30 choice varieties; 4s. per dozen.
" 10 best new, of 1853, 10s.

FUCHSIAS, 32s. per 100, in 50 choice varieties; 4s. to 6s. per doz.
" 15 best new varieties of 1853, 35s.

ANAGALLIS GRANDIFLORA, COCCINEA, AND CÆRULEA, 35s. per 100; 4s. per dozen.

HELIOTROPES, 4s. per dozen, or, in 9 fine varieties, 6s. per doz.

DWARF ROCK CISTUS, 24 splendid new varieties, 15s. per doz.

ANTIRRHINUMS, in varieties, very fine and select, 7s. 6d. p. doz.

PENTSTEMONS, in 6 very fine and select varieties, 7s. 6d. p. doz.

PHLOX, 50s. per 100; 50 choice hardy varieties, 6s. to 9s. per doz.
" 6 fine new varieties of 1853, 12s.

CHRYSANTHEMUMS, 42s. per 100; in 100 choice large flowering and Pompone varieties, 5s. to 7s. 6d. per doz.
" 10 best new large flowering varieties, 10s.
" 21 best Pompone new varieties, 20s., or 12 for 12s.

HERBACEOUS PLANTS, 100 fine and showy varieties, 30s.
" 100 varieties, including new, 50s.

ROCK PLANTS, 25 fine varieties, 12s.

HARDY CLIMBING PLANTS, fine varieties, 12s. per dozen.

GERANIUMS.—SEVERAL THOUSANDS OF THE BEST IN CULTIVATION, VERY FINE AND STRONG.

We beg to refer purchasers who wish to make their own Selection to Advertisements in the GARDENERS' CHRONICLE *of March 27th, page 179; and April 8th, page 210, of these and many other new Plants :—*

18 Best new of last season	66s.	0d.
12 " "	44	0
30 Very choice, of previous date	45	0
12 " "	18	0
Fine vars., 6s. to 12s. per dozen.		
6 Best Fancy vars. of last season	18	0
12 Very choice of previous date	18	0
Fine vars., 9s. to 12s. per dozen.		

Complete Catalogues free by post for six penny stamps.

Goods Carriage free (not under 20s.) to all the London Termini and all Stations on the London and Norwich Colchester Line; and Plants added gratis with orders of 40s. and upwards.

Post-office Orders payable to BASS & BROWN, or to STEPHEN BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

STANDISH AND NOBLE, NURSERYMEN, SEEDSMEN, &c., Bagshot, Surrey, are now prepared to receive orders for the following new and beautiful varieties of AZALEAS, which will be ready for delivery in June next. The Advertisers can recommend them with the greatest confidence, as superior to any others of their kind.

AZALEA BEALII.—This very distinct variety was introduced by them from China. The flowers, which are of first-rate shape, are quite unique, being striped, like a Carnation, with rich vermilion on a pure white ground. It is of good habit, fine in foliage, and a most abundant bloomer; and although decidedly in the first rank as a greenhouse plant, it is quite hardy enough for the open border. Each, 21s.

AZALEA CRISPIFLORA, a species differing much from any other known Azalea, having a character entirely its own. No other kind approaches it in compactness of habit, and its foliage is very fine, abundant, and evergreen. The flowers are very large, and the edges of the petals have the appearance of being irregularly *gaufred*, like a lady's frill; the colour is a rich rose lake. From the fact of its blooming very late—much later than any other Azalea—it will be doubly valuable for many purposes. Each 21s.

FUCHSIA DUKE OF WELLINGTON.

J. MOORE AND SON beg to offer a few fine young plants of the above, which are from 1½ to 2½ feet high, well furnished with branches, and calculated to make fine specimens for the July Exhibitions. Price, 15s. to 21s. each. Also smaller plants, at 10s. 6d., with usual discount to the trade.

Perry Barr Nursery, near Birmingham, May 27.

The Gardeners' Chronicle.

SATURDAY, MAY 27, 1854.

MEETINGS FOR THE ENSUING WEEK.

FRIDAY,	June	2—Botanical	8 P.M.
SATURDAY,	—	3—Horticultural Gardens	2 P.M.

COUNTRY SHOWS FOR THE MONTH OF MAY.—29th: Hunslet.—30th: Truro.

WE beg to direct attention to the announcement in our advertising columns that in consequence of the QUEEN having been graciously pleased to name Saturday, June 10, as the day on which Her Majesty will open the Crystal Place, the next meeting of the Horticultural Society at Chiswick, previously announced for the same day, will be held on Saturday, June 3, instead of Saturday, June 10.

FEW circumstances occasion greater annoyance in gardens than OBSTRUCTIONS produced IN DRAINS by the roots of trees or other plants. After great expense has been incurred in leading off water, and all possible precautions taken to secure the permanance of the action, it is suddenly discovered that the drains refuse to draw. Pipes of considerable diameter are choked up, water is dammed back, and land thought to be secured against any possible inundation threatens to become a swamp once more.

Of this a striking example has just occurred at Florence Court, the seat of the Earl of ENNISKILLEN, in consequence of the intrusion of the roots of a large tree of Salix alba, which in the short space of 18 months did its work most effectually. The pipe-tiles of 4-inch bore were laid in a drain 4 feet deep, and covered up in July 1852; in January of the present year the drain was observed not to be acting, and was in consequence opened; the pipe was completely choked with roots, to the distance of 51 feet, and the mass of roots so interwoven as to resemble a thick rope.

Two circumstances more especially deserve notice in this case. In the first place, the pipes were collared; that is to say, each joint in a line of pipes was secured by an external short pipe. Hence it appears that collaring does not offer an effectual barrier to the passage of roots into drains. Secondly, the position and distance of the Willow tree in question seemed to render the introduction of its roots improbable. It stood upon the top of a bank between 6 and 8 feet above the level of the drained ground, while the drain that was choked was sunk 4 feet below the level, and was 9 feet in a direct line from the tree. Nevertheless, the roots, after passing 7 or 8 feet perpendicularly down the embankment, and then travelling somewhat obliquely 9 feet further, reached a depth of 4 feet, and then having insinuated themselves into some crevice, in 18 months spread above 50 feet further, filling in their course a 4-inch bore as completely as if they had been rammed into the space.

This will be a warning not to trust the white Willow anywhere in the neighbourhood of drains. The tree before possessed a very bad reputation, which the present case will not assist to clear.

An extract from the second edition of the "Theory of Horticulture," now passing through the press, may be taken to illustrate further this phenomenon.

"Roots being furnished with the power of perpetually adding new living matter to their points, are thus enabled to pierce the solid earth in which they grow, to insinuate themselves between the most minute crevices, and to pass on from place to place as fast as the food in contact with them is consumed. So that plants, although not locomotive, like animals, do perpetually shift their mouths in search of fresh pasturage, although their bodies remain stationary.

"Many examples of this might be adduced. The following are, however, sufficient. In a garden at Turnham Green, a Populus monilifera (Canadian Poplar), was found to have sent a root 30 feet horizontally, including its dip beneath the foundations of a wall, and then to have passed into an old well to the depth of 18 feet, having then broken up into a mass of fibres so finely divided as to resemble yarn. In another case, a root of the Deciduous Cypress was found by the author, 11 feet long, which had passed nearly to that length without division in search of water.

"Mr. Tyso, of Wallingford, mentions the case of a Mignonette plant which had penetrated through several courses of bricks, and descended far into a wine cellar. Over the cellar, which was outside the dwelling-house, was a brick pavement, between the joints of which Mignonette seed had been sown from year to year. At the extreme end a small portion of soil was allowed, and here a plant or two grew more vigorously than the rest, though not so luxuriantly as is often found in a common border. The roots of these plants had penetrated through 18 inches of brickwork, and some of them were hanging inside the arched roof, nourished by the damp atmosphere only. A few, more favourably situated, were attached to the end wall of the cellar, and had descended 5 feet 5 inches down the wall into the decaying sawdust of the wine-bin. Others were beautifully spread over the wall, with a thousand ramifying rootlets, bespangled with minute crystal-like damp drops, and extending over a space of 5 feet in width. It was difficult to trace the brittle roots that had penetrated the sawdust, but he measured some upwards of 7 feet below the surface of the brickwork on which the plants were growing. It is this peculiarity which renders it so difficult to keep drains or wells in working order where roots have access. A well 6 feet wide has been known to be filled with roots by a common Laurel bush. Turnips and Mangold Wurzel, as well as mere weeds, have great power in this way. PATRICK NEILL mentions an instance of a plant of Ragwort (Senecio Jacobæa) which had insinuated the point of its roots into a drain, and had then extended them so much as to fill the drain completely for about 20 feet. And thus it is seen that it is by the point that roots extend, with an indefinite power of branching, and that the finest thread once introduced into a drain-pipe will rapidly become the origin of most extensive mischief, provided the plant is perennial. A still more remarkable case is mentioned in the *Gardeners' Chronicle* for 1849, of a line of pot pipes from 40 to 50 feet long, socketed and cemented, and thought to be perfectly closed, having become so choked by roots as to be unserviceable in 15 years. In the side of one of the pipes there had been *one* mere chink; and through that chink some tree had insinuated the point of some root. Once inserted, the point lengthened and divided, and lengthened and divided over and over again, till at last the drain-pipe was filled by an entangled mass of fibres, which had pressed so firmly against each other as to form in some places a tolerably perfect mould of the cavity.

"Roots lengthen, as already stated, not by extension, but by perpetual additions of very soft cellular matter to their points. That matter is, in fact, in the beginning mere mucilage, capable of organisation. A small portion of this mucilage finds itself in contact with a minute cleft; conditions, the real nature of which is unknown, cause the mucilage to press against the

cleft; the mucilage is introduced, it organises, solidifies, and the point of a root is established in the cleft. The point forms more mucilage in advance; that also solidifies, and a further lodgment is made; and thus the growth goes on, through all the sinuosities of the narrow passage that it traverses."

THE great question as to how and where more materials are to be procured, on the one hand for dispensing with Russian HEMP, and on the other for the manufacture of PAPER, is apparently approaching a solution. The specimens of textile substances from British colonies, for a knowledge of which the mercantile community is mainly indebted to Dr. ROYLE, show conclusively that the Russian trade in hemp may be annihilated for ever if we have but spirit and sense enough to employ our own resources. Come what may of the present war, this at least seems certain, that it will do us the service of compelling our merchants and manufacturers to transfer their trade to the tropical possessions of the British crown, instead of contributing to the luxury of Russian nobles.

The Rheea fibre of Assam can be sold cheaper in London than Russian hemp, and is far more fit for all purposes of strength. Nor do we despair of seeing it some day quoted among the staple products of South-Western Ireland, in which country we observe with satisfaction that trials of its culture are actually in progress. To the quantity of Pine-apple fibre of all degrees of fineness, from what will make a cable for the Royal Albert, to such as is fit for a cambric handkerchief, there is no assignable limit. The wild plant swarms in every part of the tropics; although a native of South America, it already overruns the forests of humid Africa, and every island in the Indian Ocean. Specimens of its fibre were produced last Tuesday before the Horticultural Society, by Dr. ROYLE, from Madras, Singapore, Java, and Celebes, the whiteness and fineness of some, and the toughness of all of which attracted great attention. We observed a tent-making acquaintance pulling at the delicate threads of fine yarn with equal surprise and satisfaction. With this valuable material the Pine-apple leaf is filled; and there is no difficulty in the separation. If merchants do not acquire this and similar materials in such abundance as would satisfy every demand of commerce, it will be owing to their own *laisser aller* system, and to nothing else.

Among the novelties produced on the occasion referred to, was one from JOSEPH BUDWORTH SHARP, Esq., of 44, Myddelton Square, Pentonville, which more especially deserves mention. There is no more common plant in the hot damp parts of the tropics of America, growing wild and forming impenetrable thickets, than what botanists call the Bromelias Penguin and Karatas, with some other allied species. These plants furnish fibre in even more abundance than the Pine-apple itself. We have now before us a portion of bleached yarn prepared by Mr. SHARP, which appears to possess scarcely less strength than the Rheea or China Grass itself. The plants that yield it are to the tropics what Thistles and Docks are to our own ill-cultivated fields. They are to be had for the gathering, and are in all senses mere waste productions; no skill is wanted to cultivate them, and no more labour to gather them than can be performed by women with long-handled sickles or a Scotch bill. Colonists must be uncommonly blind to their own interests if they do not speedily bring them on the English market, provided they can find a broker who knows how, or cares, to escape from the narrow routine of selling sugar, coffee, cocoa, rum, and molasses.

As regards paper, the anticipations in which we and others have ventured to indulge as to the fitness of the Musa or Plantain stems for that manufacture are already realised. Mr. SHARP produced on Tuesday both first-class writing-paper and coarse packing paper, the quality of which cannot, we venture to believe, be approached in the market. The first was all that could be desired in whiteness, and for face even photographers would admire it; while both possessed the toughness of vellum rather than of paper. We had the pleasure to be informed, in addition, that this Plantain stuff can compete advantageously in price with rags, and that enormous quantities may be soon expected in England,—a fact which we respectfully submit to the paper manufacturers, for whose convenience we have given above the address of Mr. SHARP himself.

VEGETABLE PATHOLOGY.—No. XXI.

91. As the parenchym of the leaf is confluent with the young green bark, so the cuticle is a continuation of that of the bark, though by no means constantly of the same duration. The rapid growth of the latter, in many instances, soon causes the cuticle to be ruptured, and then the immediate contact of the exposed tissues with the external atmosphere favours decomposition, in consequence of which the cuticle is liberated or destroyed, and is never renewed. The cuticle of leaves is seldom ruptured except by accident, but in the species of *Diospyros*, lately figured in this journal as illustrative of MM. Huc and Gabet's tree of ten thousand images, such a rupture had taken place from some peculiar condition of the parenchym. It is this comparative indestructibility of the cuticle of leaves which enables many to survive more than a single season, but even in those whose duration is confined to a few months, the decay does not arise from the undue admission of external elements, but from the vitality of the cells which compose the parenchym being exhausted, consequent on the consummation of their especial functions.

92. It is probable that the true cuticle is, in most cases,* quite impervious to both air and moisture, which can act in consequence only by the intervention of the stomates. By these, both air and moisture, whether combined with the air or in a fluid state, are brought into direct contact with the walls of the cells, in consequence of which a reciprocal action takes place, which, by reason of some vital phenomena, varies greatly in energy according to attendant circumstances. The perspired moisture is, in most cases, in the form of invisible vapour, which is readily condensed against the cold walls of a bell-glass covering the plant; but, in many instances, the discharge of fluid is so energetic that it does not assume the form of vapour, but drips from the tips of the leaves on their serratures, as from those of Canna, or the common Vine. In all cases where perspiration is extremely active, the plant must suffer materially, if the root, with its ramifications, does not bear a due relation to the foliage. Hence, in many cases, injudicious root-pruning, or excessive destruction of the foliage, are equally injurious.

93. This perspiration is not a mere evaporation arising from atmospheric or other evident physical causes, but must be regarded as due, in a greater or less degree, to vital agency. It is very materially increased by direct exposure to solar light, and comparatively small where light is feeble; and, as the health and nutriment of a plant depend very greatly on the rapidity and completeness of the perspiration, and other concomitant phenomena dependent on the presence of light, it follows that, with certain exceptions, plants cannot exist in a healthy state in a dark shady situation, or except in species peculiarly constituted when immersed in water, which must entirely prevent perspiration.

94. Newly transplanted vegetables must not therefore be too rapidly exposed to the direct rays of the sun, even where moisture can be supplied without stint, and hence the advantage of covering young cuttings with a shaded bell-glass, securing at once a moist atmosphere, especially where the bell is double, and a feeble light. That the moisture is really absorbed by the stomates seems almost demonstrated by the beneficial effects of syringing, especially when the air is dry, for the benefit is scarcely due to decreased perspiration arising from the depression of temperature incident to the contact or evaporation of the water sprinkled on their leaves.

95. Where, however, a plant is in full vegetation, defect of light from this cause, and from another to be mentioned presently, is sure to cause a dropsical and debilitated state of the health, and it is the difficulty attendant on the due regulation of light, heat, and moisture, which in some cases, as in the Melon, makes even the best cultivation so uncertain. Some plants, however, will not thrive when exposed to the sun, and therefore a northern border is the situation in which alone they can be expected to flourish. Whether this impatience of light is due to any peculiarity of the cuticle, or to an extreme irritability of the tissues of the leaf, does not appear at present to have been ascertained. *M. J. B.*

* Aquatic plants probably absorb moisture by their whole surface, and are therefore far more rapidly withered when exposed to the air than other vegetables. In some cases, where there are no stomates, and in many cryptogamic plants, water certainly penetrates extensively by the outer surface, but frequently causes those parts only to revive with which it is in immediate contact.

TABERNÆMONTANA CORONARIA FLORE PLENO.

ALTHOUGH this fine stove shrub has long been common in well-managed collections, it is not so generally cultivated as it deserves to be. Its large white flowers are hardly inferior to those of the Gardenia in fragance, and last longer in beauty, and are produced very thickly under proper management.

Being a native of the East Indies, it requires a warm moist temperature while growing, with a liberal supply of water at the root, but when the wood is formed, from which flowers are expected, it must be subjected to a period of cool dry treatment, to thoroughly ripen the wood, which is essential if a good display of blossom is wished for. By the exercise of a little forethought and attention, to get the wood properly ripened, and allow the plant a period of rest, it may be had in bloom at any time from March to November, as properly ripened wood will never fail to produce flowers.

Young plants should be placed in a moist growing temperature of about 65° by night, and 75° by day as early in spring as circumstances will admit; and if they can be afforded a bottom-heat of about 85°, this will greatly assist in promoting active growth. At this season the plants should be kept near the glass, and afforded all the light possible, admitting air whenever the state of the weather will permit, in order to prevent long-jointed weakly growth. If dwarf short-jointed plants have been selected, the points of the shoots may be pinched out, tying the latter down to induce the lower buds to start, but if the plants are straggling they had better be sufficiently cut back to secure a close habit. Shifting must be attended to as soon as the pots are moderately well filled with healthy roots, using pots one or two sizes larger, according to the vigour of the plants. If in bottom heat, great caution will be necessary, for a fortnight or so after potting, to apply water properly; for when the pots are plunged, it is not so easy to judge of the state of the soil as when they are exposed; and so little is required in this case, that beginners are very apt to water too frequently, and many a promising plant is thus ruined. Care should always be exercised to ascertain the state of the soil before giving water, and there should be no dribbling, or mere surface watering, but enough should be given to thoroughly moisten the ball, giving no more until it is absolutely wanted. As the season advances, it will probably be necessary to afford a slight protection against bright sunshine, but only a thin shade should be used, and this as sparingly as can be safely done. As soon as the pots are found to be well filled with roots, give a second shift, unless that should not be the case until towards the end of the growing season, when it will be better to avoid shifting till the following spring. Maintain a thoroughly moist atmosphere, and syringe the plants over-head on the mornings and evenings of bright days in summer; and also keep the shoots regularly tied out and stopped, as may be necessary to secure a compact bushy habit; but in the case of plants intended to bloom the following spring, stopping must not be practised later in the season than will allow of getting the young wood properly matured before winter. If the plants can be placed in a pit or house where the temperature may range about 55°, this will form a suitable situation for them in winter, and if proper care has been exercised to get the wood well ripened in autumn, the night temperature may be allowed to fall as low as 45° in hard weather. Give very little water to the soil at this period, only just sufficient to preserve the roots in a healthy state, but draw the syringe over the foliage occasionally on the morning of a bright day, so as to clear it of dust, &c. If it is intended to grow large specimens before allowing the plants to flower, place them in a moist temperature of about 65°, by fire heat, as early in spring as circumstances will permit, and afford them a brisk bottom heat, to induce a vigorous root action. See to the state of the roots, and shift before these suffer for want of pot room, also keep the shoots tied out and stopped as may be necessary to secure bushy growth, and otherwise treat the plants as recommended for last season. While in bloom the specimens may be placed in a cool house, but they must be carefully guarded from damp in the atmosphere, and after flowering they should be cut back as may be required, and re-potted, but with an occasional watering with manure water during the growing season, they may be kept in good health for several seasons without re-potting. For soil use good fibry peat and loam, in the proportion of three parts of the former to one of the latter, adding a sufficient quantity of silver sand to ensure a free percolation of water through the ball after the decay of the fibre. Cuttings of moderately young wood soon root if planted in sandy soil, covered with a bell glass, and afforded a sharp bottom heat of 80° or 90°. *Alpha.*

EFFECTS OF THE WINTER AT BIDDULPH GRANGE.

ABOUT the middle of February, I had drawn up a short paper with the above heading, but withheld it, in consequence of a wish expressed in the *Gardeners' Chronicle* that all such contributions should be postponed till the middle of May. The wisdom of such postponement is strongly borne out by my own experience, for several plants returned as alive in the former paper must now be numbered with the dead. I would observe, at the outset, that Biddulph Grange is about 30 miles in a direct line from the sea, and about 300 feet above the sea level; the situation rather exposed, and the climate cold and damp.

Conifers (none of these received the slightest protection), the following killed:—Pinus Russelliana, P. Llaveana, P. patula, P. Teocote, some specimens of P. insignis and P. californica (others have escaped), P. Pinea; Abies Brunoniana, Juniperus tetragona, Cupressus elegans (this, I believe, is the same as C. Knighti of some nurseries), C. funebris, C. torulosa, C. Uhdeana, and C. thurifera.

Among varieties that have escaped with slight injury I am happy to be able to reckon Fitz-Roya Patagonica, Saxe-Gothæa conspicua (the former with me is the tenderer of the two) and Libocedrus chilensis. The following are quite unscathed:—Abies Jesoensis, A. orientalis, A. grandis, A. nobilis, A. Nordmanniana (this Abies is so late in pushing, and therefore so secure from injury from late frosts as this) Pinus Massoniana (a fine species from Japan), P. Lindleyana (a most lovely kind, and quite distinct from the next, with which it is frequently confounded) P. Montezumæ, P. Hartwegii, P. Fremontiana, P. Benthamiana, P. cembroides, P. Lambertiana, P. monticola, P. ayacahuite, P. muricata.

Cryptomerias have stood well, especially such as face the north (those to the south are browned). C. Lobbi is a decided improvement on C. japonica, for it has retained its fresh green colour unimpaired through the winter; and this, too, by the side of plants of C. japonica which have turned perfectly brown.

Cephalotaxus Fortuni (male and female) has proved

itself perfectly hardy—withstanding, not the winter only, but the pinching frost of the 24th ult., although its shoots were then much advanced. This promises to be a great ornament to our Pinetums. C. Harringtoni and C. drupacea are also unharmed.

Araucarias were uninjured by the winter, but some of the young shoots have suffered slightly from the terrible April frost.

Berberis Darwini, perfectly hardy and flowered freely, though some of its blossoms were cut by the April frost.

Libocedrus chilensis hardy and highly ornamental, though some of its later autumnal growth is slightly injured.

Juniperus drupacea, which will, I think, prove a beautiful species, is uninjured; as is also the lovely Chinese plant known in the nurseries under the absurd name of J. oblonga pendula, a species which bids fair to rival C. funebris, even in localities where the latter will thrive. But of all the Junipers, I most admire the blue Juniper of the Himalaya, plants of which are here already assuming something of the character portrayed by Dr. Hooker, in one of those exquisite vignettes that adorn his "Journals," and to which allusion has been already made in your pages. One of my plants has nuts or berries upon it of the size and colour of green Gooseberries.

The mention of Dr. Hooker and the Himalaya necessarily brings to mind the phalanx of extraordinary Rhododendrons that he was so fortunate as to discover in Sikkim; of these I only ventured to expose two, viz., R. glaucum and R. niveum, both of which have stood the winter well. R. glaucum has even retained its flower buds in spite of January and April fr sts. All these plants should, I am convinced, face the north, and should be planted at the foot of walls, or—which is much more in character—perpendicular faces of rock. In the latter position I am now turning out about 20 species, and hope to report progress next year. I think it is not generally known that Mr. Nuttall, that veteran botanist and traveller (now of Rainhill, near Liverpool), has in his possession living plants of many perfectly new Rhododendrons, collected by his nephew, Mr. Booth, in the Bhotan Alps, some of which promise to rival, if not to surpass, even Dr. Hooker's most brilliant discoveries. R. eximium, which stood the last winter without any protection, has leaves 2 ft. long! R. Nuttallii has larger heads of flowers, and the flowers individually are larger, than those of R. Dalhousiæ! This is probably the finest plant of the tribe; but it requires the protection of a cool greenhouse. While upon this subject, I cannot avoid remarking that a rich Rhododendron harvest probably still awaits the adventurous traveller in Nepaul. If you look at the map of India you will find Sikkim occupying nearly the centre of the vast Himalayan range. Here Dr. Hooker discovered about 30 new species. On the right of Sikkim come the Bhotan Alps, where Mr. Booth detected nearly 20 species distinct from those previously discovered in Sikkim by Dr. Hooker. But if Bhotan on the right of Sikkim be thus rich in new Rhododendrons, why should not Nepaul on its left have an equal amount of novelty in store for the first botanical collector who explores the interminable valleys of its interior?

Among miscellaneous plants, I am glad to report Laurus regalis (the Californian Bay), as quite safe; the common Bay having nearly perished. The lovely little Mexican Gaultheria (G. nummularia) is scarcely touched, and is now shooting freely; the Koordistan Oaks stood the winter bravely, but were pinched by the April frost. They are now, however, pushing again most vigorously.

Cordyline (Dracæna) indivisa has been killed down to the ground, but is throwing up suckers. In former winters I have secured this plant from harm by merely tying up its leaves in a bundle, and so preventing snow or wet from lodging in its heart. The Pampas Grass is pushing freely. Garrya macrophylla in a sheltered situation is uninjured. Quercus sclerophylla killed to the ground. The Koordistan Oaks quite safe, and now breaking freely, although slightly affected by the April frost. The following Lilies have got well through the winter without any other protection than wooden shutters open at the ends, and a few coal-ashes strewed over their roots:—L. giganteum, L. venustum, L. testaceum, L. colchicum, L. Thomsonianum, L. tenuifolium, L. Catesbæi, L. sanguineum, L. lancifolium, L. californicum, &c. Lilium Wallichianum appears to be more tender, it having died under the preceding treatment. *J. B., Biddulph Grange, May 23.*

Home Correspondence.

Woods and Forests.—Being one of those who see the great value of the reports written by Mr. Brown, on the public forests, and who feels disgusted by the treatment which he has received at the hands of the underlings of the Treasury, through an intrigue unworthy of the English character, I beg permission to inform you that Mr. Brown's abilities and unblemished character are valued by those who act from purer motives than the Treasury, and that Mr. Brown has been instantly sought for, and taken into the employment of a noble lord, with emoluments more advantageous to him than if he had remained in the employment of the Woods and Forests. The Treasury will speedily discover that injustice and low intrigue cannot prosper, and public resentment will overtake those tapers and tadpoles who exercise enormous power, to the infinite injury of the public interests. *A Spectator, near Gloucester.*

Rain Gauges.—The following are all weights of rain taken from the large gauge when none was obtained from the other. The large gauge is made of thin lead, resting upon wood, and I do not think that the weight of metal it contains is greater than that in the small gauge, the area of one being taken as 226¼ more than the other. I have, besides, but little doubt that if the small gauge and bottle were weighed in accurate scales, before and after a damp night, or after a very slight rain, that it wou d give a distinct increase. The object I had in view in putting up the large gauge was not to ascertain the relative accuracy of large and small gauges; but to catch a large quantity of pure rain-water for the purpose of analysis; and while doing so I thought I might as well test the accuracy of the common rain gauges.

Weights of Rain in Pounds, Ounces, and Tenths of an Ounce, during One Year, taken from Large Gauge when none was found in Small One.

Feb.		March.		April.		May.		June.		July.		August.		Sept.		October.		Nov.		Dec.		Jan.	
lbs.	oz.	lbs.	oz.	lbs.	oz.	lbs.	oz.	lbs.	oz.	lbs.	oz.	lbs.	oz.	lbs.	oz.	lbs.	oz.	lbs.	oz.	lbs.	oz.	lbs.	oz.
0	11	1	14.5	0	5.5	0	10.5	0	12.9	1	11.2	1	14.7	0	13.5	3	12.4	0	13.3	2	5.2	2	7.7
0	12.5	2	8.8	1	1.7	0	6.2	0	14.3	2	6	2	7.5	1	15.8	3	10.1	1	1.2	1	3.3	0	10.9
0	11	1	15	1	0	0	12.1	0	8.3	0	6.4	2	11	4	10.5	1	14.2	1	12.5	4	8.4	0	11
1	5	...		0	1.7	1	2.3	0	14.1	0	11.6	1	5	0	12.7	0	9	1	14	0	2.4	0	9.9
...		...		0	3.8	0	4.5	0	7.1	1	6.4	3	15.5	1	1.8	1	8	0	11.2	1	14.8	1	14.2
...		...		2	4.5	1	6	0	3.1	1	8.9	...		1	14.5	2	0.9	1	6.1	2	12	2	1.3
...		...		...		0	12.5	1	4.5	...		...		1	4.4	1	12.8	0	2.8	2	8.3	1	3.9
...		...		...		0	9.2	0	4.6	...		...		0	8.1	1	10.5	2	7.2	1	10.3	2	13
...		...		...		1	2.4	0	15.7	...		...		0	13.8	1	1.5	2	9.5	...		1	15.7
...		...		...		...		1	2.8	...		...		1	5.3	0	14.9	1	11.5	...		1	0.3
...		...		...		...		0	7.4	...		...		0	13.8	0	14	1	11.9	...		1	7.8
...		...		...		...		0	9.2	...		...		1	11.5	...		2	4.4	...		2	9.3
...		...		...		...		1	3.4	...		...		1	15.3	...		3	9.4	...		0	10.8
...		...		...		...		0	15.9	...		...		1	4.2	...		2	6.5	...		2	9.8
...		...		...		...		...		...		...		0	5.5	...		1	15.1	...		2	11.8
...		...		...		...		...		...		...		...		...		1	12.7	...		...	
...		...		...		...		...		...		...		...		...		0	4.6	...		...	
2	7.5	6	6.3	5	1.2	7	1.7	10	11.3	8	2.5	12	5.7	21	6.7	19	12.3	28	9.9	17	0.7	25	9.4

Total per annum, 164 lbs. 11.2 oz. Equal to 72.8 or nearly three-quarters of an inch.

The weights are taken at 9 A.M. and 4 P.M. daily; 58 are entered as dew, frost, or mist, 40 rain, and to 15 there are no remarks—making 113. *J. B. Lawes, Rothamsted, St. Albans.*——In your leading article of the 22d ult. you refer to my observations taken here (Pembroke dockyard), which show a greater quantity of rain caught by my 8-inch gauge than the 5-inch one receives. In confirmation of this I now beg to forward you an account of the difference observed during the whole time since the gauges were first put up—viz., from September, 1849, to March, 1854, both inclusive. You will observe that during the first 17 months of that period, while the 8-inch gauge was 37 feet 6 inches above the 5-inch gauge, the former showed an excess over the latter of 4.160 inches. I had not expected this result, as, from Professor Phillips' experiments with gauges on the top and at the foot of the Tower of York Minster, I concluded that the gauge nearest the ground would receive the most. I therefore reversed the positions of the two gauges for a year, at the end of which the 8-inch gauge still showed an excess over the smaller one. I then placed them side by side on the same level, 5 feet from the ground, where they have remained for two years, and still, as you perceive, the 8-inch gauge receives rather more than 2 inches more than the other.

Total Quantities of Rain in 8-inch and 5-inch Gauges at certain Heights from the Ground.

Dates.	Height from Ground.	Total Quantity.		Remarks.
		8-inch Gauge.	5-inch Gauge.	
	in. ft. in.			
Between Sept., 1849, and March, 1851, inclusive ...	8—42 6 / 5— 5 0	51.041	46.881	Difference 4.160 in 17 months
Between April, 1851, and March, 1852, inclusive ...	8— 5 0 / 5—42 6	28.350	25.684	2.666 in 12 months
Between April, 1852, and March, 1854, inclusive ...	Both 5 ft. from the ground	71.184	66.227	4.957 in two years
		150.575	138.792	11.783

Mr. Thompson, I observe, thinks that the thickness of the material of Mr. Lawes' gauges may have something to do with the matter, from increased condensation, and that the thicker metal of the larger gauge would condense more moisture; but in my case the 5-inch gauge is of thicker material than the 8-inch one, the former being of cast mixed metal, while the latter is of copper sheet. *T. S. P., Pembroke Dockyard, May 10.*

Aquilegia glandulosa.—A correspondent last year inquired whether the obstacles to the general cultivation of this beautiful flower were insuperable. I procured from Mr. Grigor some of the plants which he sends out in tight-kneaded balls of the earth in which he grows them. They arrived at Christmas time, when I was leaving home, and the earth was hard frozen. I made holes in it and planted them, with the moss round them, and the bass ligaments, just as they came out of his basket. From the luxuriant crown of leaves they have sent up, I judge that Mr. G. has solved the problem of their transplantation, although the flowers freely produced on them all are not so large or so tall in the stem as he describes them to be in his garden. But that could hardly be expected this season. I surrounded them with the common soil, mixed with leaf-mould, or rotten wood from stumps of trees. Being full-grown plants, perhaps the balls as they relax will suffice for them without their ever penetrating very far into the compost. *A. H., Cambridgeshire.*

Prodigy Pea.—The parentage of this Pea, like that of most things of its class, cannot be exactly traced, but we believe it to have been a cross between Spanish Dwarf and Bishop's; its peculiarly compact habit first attracted our attention, and its fruitfulness and precocity being so distinctly apparent, we determined to perpetuate it, and are now gratified by having contributed the means whereby gardeners may furnish a dish of Peas at any season of the year, as its low growth renders its cultivation in boxes, upon shelves (in addition to Vinery and Peach-house borders), extremely simple; but to those who possess such a noble house as that at Basing Park (which bids defiance to our treacherous seasons), as well as orchard-houses, its cultivation needs no explaining. *B. Page & Co., Southampton.*

Potato Disease.—I fear, from the specimens in my frames, that the disease will be more severe this year than ever. The soil had been salted, well exposed to the action of the frost, and the Potatoes (Ash-leaved Kidneys) planted in it alone, with a gentle warmth underneath, in the usual frame way, the second week in February. They came up well and looked healthy till about 10 days ago, when they began to show unmistakeable signs of disease. *Volusenus, Nantwich, Cheshire.*

Disleafing Vines a Cure for Mildew.—I cannot refrain from informing you that my treatment of the Vine blight has for this third year been successful. The same Vine, under the same side of the rafter, was attacked some weeks back; a lateral (or, rather, a young branch), together with every diseased leaf, was removed, and the Vines and fruit are now most promising. *Anne.*

Ferns.—Your article on Ward's cases (see p. 317) induces me to ask some of your correspondents for information as to the best mode of managing them. I am on the point of fitting one up for the growth of Ferns, and as, like most people, I desire to grow them successfully, I shall be thankful for any suggestion which will prevent my committing a gross error. My Fern glass measures in length 32 inches, and is of proportionate height; it has a door at either end to open at pleasure, which will tell that I have never intended to keep them perfectly air-tight. *Philo-Pteris, May 22.*

Effects of the Frost at Dropmore, during the past Winter and Spring.—Pinus Pinea, old trees injured in the year 1838, have again been much browned; while young plants from 6 to 8 feet high are uninjured. Of Pinus Russelliana, the shoots on the east side are mostly killed in exposed situations, but, where sheltered, it is not much hurt. Pinus patula, a fine plant facing the east, has been much cut up; while a plant more sheltered has been but slightly injured. On the east side, Pinus Teocote has only been slightly injured. Pinus Lambertiana is slightly touched on the east side; while a plant more sheltered, and on the Pinus Cembra stock, is unhurt. Pinus Sabiniana has had its lower branches nearly all killed; but the top shoots are uninjured. Of Pinus macrocarpa, a few of the lower branches are killed, and the leaves much browned. Of Pinus californica a few branches only have been damaged; and one plant is not injured in the least. Old plants of Pinus insignis have not had a leaf browned; but young plants, from 1 to 3 feet high, have had their leaders killed. Pinus apulcensis, Grevilleæ, Montezumæ, Hartwegi, Devoniensis, and other Mexican species, have been destroyed some years since. Cryptomeria japonica has had its leader killed in an exposed situation; but in sheltered places it is not even browned. Cunninghamia sinensis, near a pond, has had its leader killed; but others are not damaged, except by snow. Taxodium sempervirens has had a few branches slightly hurt towards the top; but near the ground they are not touched. Arbutus trees have been much damaged, and of young plants 5 feet high some have been killed, while others are not injured. Of trees injured by the frost of the 24th ult., I have to mention that the young shoots of Spanish Chestnuts are all killed. Plane trees the same, and Oaks, in exposed situations, are much damaged, while of Walnut trees, all the young shoots are quite destroyed. The young wood of Deodars is much injured, of Abies Smithiana all the shoots which were 3 inches long are quite killed; those of Abies Brunoniana are all killed back to the old wood, Cupressus funebris is only slightly injured. The blossoms of the Glycine were killed, as were also those of Laburnums, and hybrid Rhododendrons have had nearly all their blossoms cut off. Ghent Azaleas have likewise been injured in like manner. Of Magnolia Hammondi the young shoots and blossom are all destroyed; M. Soulangeana against a south wall has been much injured. The coldest night was on the 3d of January, when the thermometer fell 28° below the

freezing point, and on the 24th of April, when it fell 13°. *P. Frost.*

Melons.—Can any one inform me, through your journal, the cause of my Melons not swelling their fruit? Having grown them with remarkable success for these last 16 years, I am now at a loss to know the cause. The plants in question are grown in a 3-light pit, and heated with dung under the plants, with a hot water pipe all round, to keep the pit to one temperature. I duly fertilise all the female flowers, of which upwards of 150 have been done, and out of that number I have only four Melons swelling. The plants are in the best possible health; neither have I observed a single insect on the leaves. I allowed the Vines to reach the sides of the pit before I stopped them; and now I give them plenty of air, and keep them rather dry; but as soon as the flower closes, the fruit turns yellow. The plants are not too luxuriant (as is so often the case with young hands), mine being planted in some nice maiden loam, the same kind as I have always grown them in. *G. Batchelor, Castle Malwood, near Lyndhurst, Hants.*

M'Adam's Anti-Blight Composition.—I, as well as some of my neighbours, have used this composition with very great success; but to attain the desired end some care is undoubtedly necessary in applying it, as it is important that all the foliage and fruit should be thoroughly wetted with it, otherwise a partial failure will probably ensue; for unless you bring all parts affected with the mildew under the direct action of this, or indeed of any other remedy, you have a source from which, sooner or later in the season, mildew will in all probability be again developed. This, indeed, was the case to a certain extent in my own Vinery last year, in which the blight got so diffused before I happened to observe it, that by penetrating the half grown and partly closed bunches of fruit (the berries not having been properly thinned), some of the mildew had doubtless got beyond reach; the consequence was, that several times during the season I observed traces of it again in the Vinery; but, to use your correspondent's expression, "a vigorous syringing" with the mixture promptly destroyed the fungus, which, I am satisfied, may always be easily kept under in this simple way. I believe, however, notwithstanding the undoubted property M'Adam's sulphuretted solution has in destroying Grape mildew, if carefully and diligently used, it will be found more valuable as a preventive. It should be applied by a good syringe in the early part of the season, before the Vines come into bloom, and should be continued at about monthly intervals throughout the growing season, so that the action of the composition may be sustained; for if the slight sulphuretted deposit (or whatever else the solution may contain) is allowed to pass off entirely by evaporation before another application of the liquid takes place, its preventive properties may not, I think, be so effectual. I have adopted the plan of monthly syringing with this mixture myself this season, and have not discovered a trace of mildew in my Vinery, although other houses in the neighbourhood have certainly been attacked by it. There is one recommendation also in M'Adam's directions respecting the syringe, which, although simple, may be useful when a powerful jet is required, and which is obtained (the rose of the garden engine being preferred) by filling up all the outer apertures of the rose with white-lead or wax, leaving open only two or three in the centre; by adopting this contrivance I find that a very powerful and continuous stream is obtained, fully sufficient for the purpose, and with so little exertion that a lady may use the engine this way without the slightest fatigue. *Vigneron, Torquay.*

Laburnum Sports.—Having some time since noticed in your columns remarks on the sporting freaks of the purple Laburnum, I am inclined to add another notice of (I believe) a more rare occurrence than the appearance of the Cytisus Juniperus. I have this week been amused at seeing flowers of the yellow Laburnum appearing high up among the tufts of Cytisus Juniperus, which have from time to time shown themselves on the purple Laburnum. Is this usual? [Yes.] *E. T. W., Chepstow.*

Late Spring Frosts, &c.—The frost of the 24th and 25th ult. was much more destructive in its operation than that of the 2d and 3d of January. The thermometer in the night of the 24th stood at 23°, on the night of January 2d, at 5°. The only thing particularly injured by the first of these frosts were—Benthamia fragifera, Garrya elliptica, Colletia spinosa, Cupressus torulosa, Photinia serrulata, Quercus suber, Vaccinium Myrsinites; Aloysia citriodora killed, though it has stood five years. By the last frost the following have severely suffered—Azaleas, Box edgings, Laburnums, Paulownia imperialis, Pavia rubra and macrocarpa, Tulip tree, Rhododendrons (early sorts), Spiræa Lindleyana, S. barbata (nearly killed), Wistaria (all the flower buds killed). The summer Roses are dropping nearly all their buds, and the young shoots of most of the forward trees are black and dead. Of herbaceous plants, the two Funckias Sieboldi and cærulea are very much injured; but I think they are the only two of what I class as hardy that have suffered. Now, of things which are untouched, I must say somewhat, for I think this more worthy of record:—Eccremocarpus scaber, in the open ground, without even a covering of ashes, is shooting strongly. Unhurt are—Caprifolium longiflorum and C. Youngi, Cistus formosus, Erica mediterranea, Forsythia viridissima, Buxus balearica, Quercus Turneri (an excellent evergreen Oak), Rhododendron campanulatum hybridum, quite uninjured; Weigela rosea and Lonicera splendidissima. Of herbaceous plants unhurt are—Chilian Alstrœmerias, Dianthus fulgens, Epimedium colchicum, E. violaceum, E. Muschianum, E. macranthum, E. grandiflorum, E. pinnatum elegans, Silene Schafta, Spigelia marilandica, Tritoma media, and T. uvaria. Against a wall, unhurt, are—Clematis azurea grandiflora, Cistus ladaniferus, and Jasminum nudiflorum. Looking over my lists again, I find I have omitted, as killed by the January frost, Veronica Lindleyana and Armeria formosa. And by the late frost are much injured — Cedrus Deodara, Dielytra spectabilis, cut to the ground; Jasione Campanula pyramidalis, injured in the leaves; Jasione perennis, Agapanthus umbellatus, under a south wall, but coming up again strongly; Lilium lancifolium rubrum and L. testaceum, lower leaves browned, but plants not much hurt; L. superbum and L. venustum, uninjured. Cherries and Plums are all destroyed. Pears and Apples will give, I think, a moderate crop; Currants and Gooseberries plentiful; Strawberries safe, except the blooms which were open. The thermometer was at 30° on the night of the 16th of May. *A. R., Bromley, Kent.*——The frost on the night of the 24th ult. was a trifle in comparison with the one we had last Thursday night, which was full 6°. The Potato crop is quite cut down; I saw a field of 10 acres black. All the newly bedded-out plants and Dahlias are quite destroyed. The havoc is disheartening in the extreme. *Charles Hudson, Saundby, near Retford.*

Collodion.—Can any of your correspondents inform me of any way of recovering the adhesive properties of spoiled collodion? I purchased a bottle of a respectable chemist, and the price of half a pint of collodion is of some consideration, but upon attempting to use it for horticultural purposes I found it totally useless. I have myself spoiled some before by too frequently redissolving it in fresh ether; but he assured me it had never had any fresh ether put to it since he had it from London, so I thought I was safe, especially as it looked as good as any I ever saw. But *fronti nulla fides.* It is worthless. Can it be restored? *Iota, Alford Vicarage.*

Societies.

Horticultural, *May* 23.—J. R. Gowen, Esq., Treasurer, in the chair. J. T. Brooks, Esq., E. Akroyd, Esq., J. Blyth, Esq., J. Vickers, Esq., and Mr. Alderman Muggeridge, were elected Fellows. Two general collections of vegetables were contributed: one of foreign growth from Mr. Lewis Solomon, of Covent Garden Market; the other from Mr. Smith, gr. to Mrs. Reay, of Wanstead, Essex. Mr. Solomon had a bundle of excellent looking white Asparagus, 75 heads of which weighed 9 lbs. 13 oz.; very fine Kidney Potatoes, green Peas and French Beans, four beautiful large Cauliflowers, Globe Artichokes, admirable Early Horn Carrots, and a punnet of large and highly coloured Tomatoes. For these a Silver Knightian Medal was deservedly awarded. A similar award was also made to Mr. Smith for the English collection. The latter, though, as a matter of course, very inferior to the foreign produce just mentioned, was a good example of skilful gardening, considering the very unfavourable winter and spring we have experienced. Of Plants, Messrs. Ivery, of Dorking, sent some charming Azaleas, for which a Certificate of Merit was awarded. Three of them—Beauty of Reigate, Barclayana, and Iveryana, were white, with some of the flowers stained and spotted with pink. The others were Gem, a glowing rosy kind, and Novelty, a salmon-coloured sort. The same firm also contributed two seedling Cinerarias, a Calceolaria, and a hybrid Rhododendron called ponticum coccineum, for which a Certificate of Merit was awarded. This variety had the deep crimson flowers of the red tree Rhododendron, which was evidently one of its parents, and the foliage of R. ponticum, which it resembled in all respects except in colour, thus uniting the brilliant flowers of the tender Indian kind with the hardy vegetation of the Black Sea. Of Orchids, Lady Dorothy Nevill, sent the rare Odontoglossum cordatum, a Guatemala species, for which a Certificate of Merit was awarded.—Half a dozen Royal George Peaches and as many Elruge Nectarines were furnished by Mr. Hill, gr. to R. Sneyd, Esq. A Banksian Medal was awarded for the latter, which were highly coloured, and very fine fruit for the time of year. From W. Everett, Esq., of Enfield, came a new garden implement, which, it was stated, might, in some cases, form a substitute for a rake. It had a long handle, on the end of which was a small roller or revolving cylinder, in which knives, or rather blunt plates of iron, were set lengthwise all round it, about 2 inches apart, and protruding from the roller about an inch. These were said to break clods quickly, and leave the ground in small ridges fit for sowing; it was mentioned that the rollers could be made of any length that might be most useful.—The Hon. W. Fox Strangways contributed specimens of an anomalous development of the wood of Arbutus Unedo, which looked exactly as if that species had been grafted near the ground on A. Andrachne. The stem had bulged out at the place in question till a large round excrescence had been formed; the health of the tree became impaired, and ultimately it was cut down, when, on splitting the part affected down the middle, the two distinct kinds of wood presented themselves; and what was most remarkable, the wood of A. Andrachne was evidently formed *below* that of A. Unedo.—From the garden of the Society came a well-flowered plant of the Chilian Mitraria coccinea, and an example of the Sikkim Primrose, a singular form of Cowslip found in that district of the Himalayas by Dr. Hooker. It has long slender stalks, surmounted by bunches of pale-yellow sweet-scented flowers. Among other plants, the same establishment also furnished two kinds of Cacti, both crosses between the flat-stemmed C. crenatus and the well-known C. speciosissimus. The effect of this cross has been in the one case to substitute the violet-shaded red of C. speciosissimus for the white colour of C. crenatus; and in the other, to replace it with pale salmon; while both have the advantage of possessing a very hardy constitution, which renders them easy to manage. Examples of Myatt's Linnæus Rhubarb also came from the garden, and some Lettuces, which were sent to show that sowing this kind of vegetable in autumn, and wintering it in frames, is not so advantageous as sowing it early in February in heat, hardening it gradually off, and planting it out in the end of March. Of the kinds thus treated, the spring sown ones were nearly twice as large and far more succulent than those sown in autumn. The attention of the meeting was now directed to some examples of textile materials furnished by Dr. Royle. They chiefly consisted of bundles of threads or prepared fibre from the leaf of the Pine-apple, from which it was stated the beautiful Manilla Muslins are made, and which was shown to yield fibre readily of great length and strength, and in any quantity. Of the specimens exhibited, some of which came from Madras and other places, one of the whitest and best came from Singapore. There was also shown some fibre prepared by Mr. Sharp from the long leaves of Bromelia Penguin, a plant plentiful in tropical America; and two specimens of paper, one white and of most beautiful quality, the other coarse and intended for packing, both manufactured for Mr. Sharp from the fibre of the West Indian Plantain or Musa.

Royal Botanic, Regent's Park, *May* 24.—This Society had an excellent exhibition on this occasion, and the day, although showery in the morning, kept dry in the afternoon. The effect of the new arrangement of placing the plants on Grass terraces, as described by us at p. 271, was very good, more especially in the morning, before the company entered; but, after the place had become full of people, the more striking features were very much lost, and the continually crowded state of the terrace-walk kept the persons below from seeing the plants above it. Nevertheless, the alteration must certainly be looked upon as a move in the right direction.

Stove and Greenhouse Plants, in collections of 16, were produced by Mr. May, gr. to H. Colyer, Esq.; Mr. Green, gr. to Sir E. Antrobus, Bart.; Mr. Speed, of Edmonton; Mr. Gillham, and Mr. Rhodes. In Mr. Colyer's group we remarked an excellent plant of the Willow-leaved Ixora (I. salicifolia), with foliage not drooping so much as usual, and covered with handsome orange flowers; also a very fine Clerodendron Kæmpferi; a large Everlasting, a capital example of the charming Cape Heath called E. tricolor Wilsoni, two Azaleas not over-abundantly flowered, Boronia pinnata, and a well-grown Dillwynia rubra sanguinea.—Mr. Green had admirable plants of Acrophyllum venosum and Franciscea confertiflora, the latter one of the very best of the genus, and the former a favourite with everybody. The beautiful Gardenia Fortuni, which was shown so fine at Chiswick, was still in good condition, the half-decaying flowers having assumed a delightful yellow hue; the little, slender-growing, yellow Gompholobium grandiflorum, and some excellent examples of Heaths, Everlastings, and Azaleas.—Mr. Speed sent the Java Ixora, beautifully flowered and finely grown; the blue Leschenaultia, in equally good condition; a well-bloomed Stephanotis, Azaleas lateritia, variegata, and Gledstanesi, all united in one plant, the different colours producing a fine effect; and an example of the very pretty, though rarely seen, pink-flowered Hypocalymma robustum.—The more striking plants from Mr. Gillham were Stephanotis floribunda, Rhynchospermum jasminoides, Clerodendron splendens, Gardenia Fortuni and Statice macrophylla. Mr. Rhodes had Stephanotis floribunda, and the buff-coloured Erica Alberti, in unusually good condition.

Stove and Greenhouse Plants, in collections of 12, were furnished by Messrs. Fraser, Rollisson, Clarke, and Pamplin. In Messrs. Fraser's group, which contained well-grown medium-sized plants, were two nice Everlastings, Azalea optima, Leschenaultia Baxteri, and Pimelea Nieppergiana, the latter a handsome white-flowered species, very suitable for persons of limited accommodation. Among Messrs. Rollisson's plants were Cyrtanthera magnifica, a gay Justicia-like plant, each shoot terminating in a showy head of rosy flowers, the Acrophyllum venosum, Adenandra fragrans, the Oleander-leaved Allamanda, and Erica ventricosa magnifica, which is universally considered to be one of the handsomest of its class. In one of the other two groups we remarked a charming example of the pretty Erica tortuliflora, a Heath which must ever remain a favourite.

In Collections of 10 Stove and Greenhouse Plants there were no fewer than nine exhibitions. These were contributed by Messrs. Dingle, Carson, Williams, Clarke, Barter, Peed, Morris, Jarvis, and Hamp. Mr. Dingle, who is gr. to A. Lawrence, Esq., of Bath, sent two good Everlastings, Azalea rosea punctata, quite a pyramid of flowers; Acrophyllum venosum, in good condition; also the Cavendish Heath, Pimelea Hendersoni, and Franciscea calycina, the latter beautifully flowered. Mr. Carson produced a good Allamanda cathartica, Adenandra fragrans, conical in shape and well grown, but insufficiently in bloom; Gardenia Fortuni, and very conspicuous plants of the Azaleas variegata and lateritia, the former representing, as it were, a column of

bloom some 5 feet in height, the latter equally full of blossom, but more spreading. Mr. Williams (gr. to Miss Traill) showed good plants of Azalea Murrayana, a glowing crimson-flowered kind; a very large Erica Cavendishi; also Franciscea acuminata and Pimelea decussata, the latter handsomely grown, but insufficiently in bloom. In the other groups we remarked Clerodendron Kæmpferi and splendens, Pimelea spectabilis; the yellow flowered New Holland Hibbertia Cunninghami, Ixora coccinea, Javanica, and Griffithi, all well flowered; various Polygalas, Euphorbia splendens, different kinds of Azalea, a very highly coloured Erica, Westphalingia, Hoya imperialis, and the charming little Hoya Paxtoni; the Oleander-leaved Allamanda, and Medinilla Sieboldi.

Groups of 6 Stove and Greenhouse Plants were shown by Messrs. Taylor, Roser, and Over. Mr. Taylor had Ixora crocata in a young state, and not more than a foot high; but, nevertheless, covered with orange flowers; Erica elegans in good condition, and a Leschenaultia. Mr. Roser contributed some well-grown Azaleas, Heaths, and Everlastings; and Mr. Over furnished a small but good Hoya imperialis.

Azaleas were shown in great quantities; but they were scarcely so fully in flower as they were at Chiswick. Collections of 8 plants came from Messrs. Lane, Fraser, and Green. The lion of Messrs. Lane's group was undoubtedly his noble plant of Perryana, whose thickly set, large, well-formed, glossy flowers commanded universal attention. Messrs. Fraser also showed a good plant of the same variety; a specimen of Double-red, badly coloured; variegata, violacea superba, and magniflora, all well grown and flowered. The most striking of Mr. Green's plants were the Chinese yellow and Iveryana, the former of which was a magnificent specimen, quite covered with bloom. Groups of six plants were contributed by Messrs. Carson, Barter, Taylor, and Gillham. Among these were good examples of variegata, sinensis, Double-red, Murrayana, exquisita, præstans, a semi-double sort, of a striking purple colour; Smith's Broughtoni, and Minerva, a fine kind, and very brilliant. Plants in 11-inch pots were contributed by Messrs. Roser, Fraser, and Taylor. The first group consisted of alba magna, Aurora, variegata, and lateritia, united in the same plant; optima, variegata, and formosa. The other collections contained Gledstanesi and variegata in the shape of standards, semi-duplex maculata, Iveryana, delicata, and Broughtoni. Mr. Ivery, of Dorking, reproduced the plants described in our report of the Horticultural Society's meeting in another column.

Some tall Cacti were shown by Messrs. Green and Gillham, but we did not find that the varieties were very different from what were exhibited at Chiswick.

Of Rhododendrons Messrs. Lane contributed plants of delicatum, delicate pink; aureum superbum, a good yellow; carneum, buff slightly suffused with pink; Javanicum, and Sabinianum, the latter in the way of, but not so good as delicatum.

Orchids.—Collections of 20 were contributed by Mr. Williams and Mr. Woolley. The former had two Cattleyas, three species of Aerides, the charming Saccolabium præmorsum, Vanda tricolor and V. suavis, Dendrobium Pierardi, Trichopilia suavis, beautifully flowered; and large and fine plants of the Wallich Phaius, and the Veratrum-leaved Calanthe. Mr. Woolley produced the same Dendrobium Farmeri which he had at Chiswick, but this time in better condition; also Barkeria spectabilis, and Vanda suavis, scarcely so highly coloured as Mr. Williams' plant; the singular looking canary-coloured Peristeria cerina, and Cattleyas Skinneri, Mossiæ, and intermedia.

A group of 16 plants came from Messrs. Rollisson, in which were examples of Arpophyllum giganteum, a small plant, poorly flowered; Anguloa Ruckeri sanguinea, the yellow Cattleya citrina, Cypripedium caudatum with two flowers, each furnished with very long tails, Odontoglossum nævium, two large Sobralias, a beautiful Phalænopsis grandiflora, a Cymbidium, and Dendrobium moschatum.

Collections of 12 Orchids were contributed by Messrs. Carson, Clarke, and Summerfield. Mr. Carson had Anguloa Ruckeri with one bloom, the handsome Oncidium Lanceanum, a good specimen of Dendrobium nobile; Scuticaria Steeli, with two large pale yellow, brown spotted flowers; and Aerides Larpentæ; the latter scarcely out enough. Among Mr. Clarke's plants the best were Phalænopsis grandiflora, Odontoglossum læve, a pretty little Oncidium ampliatum majus, Cattleya intermedia, and a small plant of Vanda insignis. Mr. Summerfield sent Odontoglossum hastatum, Phalænopsis amabilis, Cattleya Mossiæ, and Oncidium leucochilum in good condition.

Orchids in sixes were shown by Mr. Green and Mr. Jarvis. The former sent good examples of Aerides crispum and Epidendrum macrochilum, and the latter had the handsome Dendrobium chrysanthum and Brassia verrucosa. Mr. Lawrence, gr. to the Bishop of Winchester, at Farnham Castle, produced a plant of Gongora cymbiformis, with a noble spike of pale yellow, brown-spotted flowers. This was elevated on a stake so as to allow its long pendant spike to hang down, and shown in this way it was very much admired. Mr. Woolley had a white Bletia, which promises to be worth attention.

Roses in Pots were again produced in first-rate order. The best plants came from Messrs. Lane, and nothing in their way could certainly be finer than they were; Mr. Francis was second, and Messrs. Paul third. Among the different varieties we remarked Géant des Batailles, Paul Perras, Coupe d'Hébé, Nephetos, Baronne Prevost, Souvenir d'Un Ami, Juno, Chenédolé, and other well known favourites.—In the Amateurs' Class, A. Rowland, Esq., was first, Mr. Busby second, and Mr. Sage third. In these collections, the plants were smaller than those of the nurserymen; but they were all of them skilfully cultivated, and extremely well bloomed.

About Cape Heaths there is little to report beyond what was said of the plants at Chiswick. Collections of them came from Messrs. Rollisson, Fraser, May (gr. to Mr. Colyer), Williams (gr. to Miss Traill), Peed, Carmichael (of Bath), Barter, Roser, Over, Taylor, and Jarvis. They were all very finely in bloom; and though not so showy as some other kinds of plants, they, nevertheless, had many admirers.

Novelty there was scarcely any. Messrs. Veitch sent Impatiens Jerdoniæ; Messrs. E. G. Henderson, Eucharis candida; Messrs. Henderson, Pine-apple Place, a dwarf shrubby orange Gompholobium; and Messrs. Fraser, Brilliantaisa owariensis, a plant with blue Sage-like flowers.

One or two collections of Ferns, and some variegated and other plants remarkable for fine foliage, were staged; but among them we did not observe anything that has not been previously reported on.

Pelargoniums occupied two sides of the lower series of terraces, and being generally well grown they made a good display. Among Nurserymen, Mr. Turner was first, with large and fine plants of Sanspareil, Colonel of the Buffs, Challenger, Exactum, Mochanna, Magnificent, Lablache, Rosamond (a very fine plant), Queen of May, Enchantress, Virgin Queen, and Magnet; 2d, Mr. Dobson, with Governor, Leah, Purpureum, Vanguard, Guhelma, Arethusa, Pasha, Delicatum, Glow-worm, Empress, Rosamond, and Ambassador. Mr. Gaines also exhibited 12 varieties, for which a Silver Medal was awarded. Fancies, six varieties: 1st, Mr. Turner, with beautifully grown and flowered plants of Madame Sontag, Madame Rosati, Defiance, Delicatum, Anaïs, and Princess Maria Galitzin; 2d, Mr. Gaines, with Defiance, Fairy Queen, Delicatum, Signora Casolini, and Odoratum magnificum; 3d, Messrs. Henderson, Pine-apple Place. Amateurs: 1st, Mr. Winser, with excellent plants of John Bull, Duchesse d'Aumale, Fairy Queen, Statuiski, Madame Meillez, and Princess Maria Galitzin; 2d, Mr. Smith, Hampstead, with Advancer, Jenny Lind, Empress, Alboni, Triumphant, and Hero of Surrey; 3d, Mr. Robinson, with Mirandum, Jenny Lind, Fairy Queen, Delicatum, Advancer, and Princess Maria Galitzin. This class consisted of no fewer than nine collections, all of which were very creditable to their respective growers.—Amateurs: 1st, Mr. Nye, gr. to E. Foster, Esq., with compact and uniform plants of Purple Perfection, Alibi, Lucy, Enchantress, National, Ariel, Eleanor, Queen of May, and Rosa. These, as will be seen, were mostly new sorts; 2d, Mr. Winsor, gr. to F. Steel, Esq., with Constance, Clio, Norah, Emily, Forget-me-Not, Lalla Rookh, Virgin Queen, Ariadne, Prince of Orange, and Enchantress; 3d, Mr. Robinson. Two other collections were also exhibited in this class.

Among Seedling Pelargoniums were Grand Sultan (Turner), a sort with dark top and rich red lower petals, each of the latter having a dark spot—a striking kind, with a good habit. Pandora (Foster), similar, but less attractive, and without spot on the lower petals. Una, a good useful white, in the way of Pearl. Petruchio (Foquette), a large showy crimson; but coarse and thin. Conqueror (Beck), like the Grand Sultan and Pandora in colour, and good in quality and attractive. Wonderful (Hoyle), a large flower of fine colour and form, throat white. Serena, dark, with pale centre, very promising. Lord Raglan, in the way of Salamander, and therefore very showy; and Topsy, top petals very dark.

Of Calceolarias there were four collections. The 1st prize was awarded to Mr. Carmichael, of Bath; but on what grounds we could not discover; for the group from Mr. Constantine, to whom the 2d prize was given, contained plants nearly twice as large and far better grown than those from Bath. They were half shrubby kinds, with which no fault could possibly be found, except that they were, perhaps, a little too much alike. Mr. Clarke and Mr. Gaines also showed Calceolarias. Mr. Price, gr. to L. Lloyd, Esq., Hampstead, had a seedling which was bright reddish brown in colour, and which looked as if it would make an extremely good bedding plant.

Cinerarias were not in such good condition as we have seen them. Messrs. Henderson, of Pine-apple Place, had Mrs. Sidney Herbert, Lady Camoys, Marianne, Lady Hume Campbell, Beauty, and Mrs. Beecher Stowe; 2d, Mr. Clarke. Amateurs: 1st, Mr. Ward, with Newington Beauty, Cerito, Vicar of Wakefield, Rosetta, David Copperfield, and Estelle.

Pansies, in pots, were numerous and fine. 1st, Mr. Turner, with Earl of Mansfield, Marion, Pandora, Sir John Cathcart, National, Emperor, Monarch, Memnon (a fine dark self); 2d, Mr. Bragg; 3d, Mr. Dobson. There were also several stands of cut flowers, the best of which came from Mr. Turner, of Slough. Of Seedlings there were one or two promising flowers, the most conspicuous being Lord Palmerston. Lord John Russell, a yellow ground sort, is also a good flower; as is also Royal Albert, a richly-shaded plum-coloured kind. Satisfaction and Duchess of Sutherland are also good flowers.

The Great National Tulip Exhibition was held in the Royal Botanic Society's Museum on this occasion. There was a large and fine display of this favourite flower, and altogether we understand that the meeting was eminently successful. The exhibition of this Society for 1855 is, we learn, to take place at Cambridge.

Notices of Books.

The Prize Essay on Portugal, &c. By J. J. Forrester, Wine-grower in the Alto Douro. 2d edition. 8vo, pp. 290. Weale.

This volume, written to meet an offer made some time since by Mr. Oliveira, M.P., of a premium of fifty guineas for the best essay on Portugal, in connection with the objects of the Great Exhibition in 1851, is one of the most important of its class which has appeared for many years. The Great Exhibition showed distinctly the natural wealth of Portugal—how abundant are its resources, and what varied means the people possess for raising their country from its present state to that of wealth and independence. But the Exhibition did not explain the reasons why such great natural advantages are inoperative. Everybody believed, indeed, that monopoly was the incubus which weighed down the nation and stifled its energies; but it was by no means understood in what way monopoly acted, or by what other evils it was accompanied. Mr. Forrester's work explains the matter fully; he is intimately acquainted with the country and the people; possesses, we believe, considerable property in Portugal, and has access to whatever there is of authentic among the national records. As a wine-grower of the first rank, the facts connected with the greatest of Portuguese products are familiar to him. He has, moreover, the courage to speak out respecting abuses which demand correction, as we know from his celebrated exposure of the port wine trade,* and of the causes which are rapidly leading to its expulsion from the tables of English gentlemen.

It is no part of our duty to open the question of free trade in wine, or to deal with the general statistics of Portugal. Of the first it is enough to say that the only wines which a low duty could make acceptable in this country are those of Portugal and Spain; and that it would be of little use to introduce even these into competition with ale, porter, and spirits, unless they were of better quality than the "black strap" and brandied drenches which form the low-priced rubbish current here under the name of port and sherry. In this respect Mr. Forrester entertains the same opinion as ourselves. As to the second point, when it is known that there are no public conveyances of any kind in the interior of Portugal, that the whole post-office expenditure is under 17,000*l.* a year, that the rate of mail travelling is three miles an hour, that Portuguese coasting vessels require twice as many hands in proportion to the tonnage as British, and finally that agriculture is at a very low ebb, the most primitive customs prevailing, all modern improvements being carefully eschewed, and the hoe, with "a very rude wooden plough, is about the only agricultural implement in use," it is needless to seek for the further causes of Portuguese depression.

To the readers of our columns the most interesting part of the work will be that which treats of the cultivation of the Vine, and the mode of making the wines, upon which Mr. Forrester treats succinctly, but with abundance of practical knowledge. The minutes of his evidence given before a select committee of the House of Commons in 1852 are also of great importance. He fully confirms the accuracy of the information we had ourselves published respecting the prevalence of the Vine disease in the Vineyards of the Alto-Douro. In October last he looked for a speedy cessation of the malady, but we believe that his opinion upon that point is very greatly changed for the worse by the evidence of the present spring. That the evil will be transitory, like the Potato rot, we are justified in hoping: but experience leads us also to the conviction that the Portuguese, as well as other wine makers, have very evil days before them.

Want of space forbids us to extend our notice of Mr. Forrester's able work, further than to find room for the following extract relating to the situations in which the Vineyards of the Alto-Douro were most or least affected in 1853 by the disease in question:—

"From the autumn of 1852 until near midsummer of this year (1853), continued rain, sleet, hail, and bleak winds prevailed in the north of Portugal. Spring there was none. The Vines became super-abundant in sap and vigour, but lacked sufficient heat for the development of their properties, and gentle breezes for the evaporation of the excessive moisture from the soil around them. In the exposed situations (on the heights or in the Ramo district), even if the waters were evaporated, the cold bleak winds nipped the fruit in the bud, so that the Grapes which at first gave indications of great abundance, grew no larger than Peas, were covered with mildew, and eventually decayed. In the low grounds the water remained stagnant; the land could not drain itself, and the current of air ran too high to produce beneficial effects upon it. The Vineyards were full of wood, and bore abundantly. The Grapes grew to their full size and ripened; but, with very few exceptions, the bunches and stalks were covered, more or less, with mildew, and every Grape contained from three to four seeds. On the slopes of the mountains, the rocky banks of rivers, or of rivulets, on either margin of the Douro, the waters naturally ran off, and the breezes ventilated the Vineyards. On these slopes (of which the real Port-wine district is chiefly composed, and which in all years are the finest situations), the Vines were not only vigorous and healthy, but altogether free from the blight, so general on the heights and low grounds, and the Grapes were beautifully formed, ripe, and delicious, producing fine and wholesome wine."

How like the Potato disease!

We should add that the volume is accompanied by a very valuable map of the wine district of the Alto Douro.

Elements of Geometry and Mensuration. Part I. *Geometry as a Science*, by Thomas Lund, B.D. 12mo., pp. 87, is well adapted to the wants of those for whom it is written, *e. g.* persons desirous of learning both the elementary principles of theoretical geometry and their practical application to the purposes of common life. For self-teaching it appears excellent.

FLORICULTURE.

Culture of the Calceolaria.—Admirers of this flower could not fail to have been highly pleased with the beautiful exhibitions of it, which were produced at the Royal Botanic Society's show in Regent's Park, on Wednesday last; and as I have myself been a very successful grower and exhibitor of this useful plant, I

* A Word or Two on Port Wine, &c., showing how and why it is adulterated, &c. Richardson, Cornhill, 1844; a shilling pamphlet which every one should read.

beg to furnish you with my mode of managing it. I make my first sowing about the middle of July, and another about the 1st of August, in pans half filled with drainage, and then filled up with a mixture of about two-thirds light loam, the rest peat and leaf-mould in about equal proportions, with a good sprinkling of silver sand, all sifted tolerably fine; the pans must then be thoroughly watered, so as to wet every particle of soil, and allowed sufficient time to drain before sowing; the seed may then be sown thinly, and a little finely-sifted soil scattered very lightly over it. The pans may be placed beneath a hand-glass under a north wall, or in any other shady situation, and kept tolerably close until the plants make their appearance. The pans must be kept moist, merely sprinkling with a very fine-rosed pot; great care is required here, for if they are at all heavily watered, the seed, being so very fine, is all carried away with the water. When the plants make their appearance, more air may be given them; as soon as they will bear handling, they should be pricked out into other pans (prepared in the same manner), about 2 or 3 inches apart. They will soon make nice little plants, and may then be potted off singly into 3-inch pots, using a mixture of about two-thirds tolerably light turfy loam (not sifted), the rest leaf-mould and dung from an old Mushroom-bed, in about equal proportions, with a good sprinkling of sand; they may then be placed in a cold pit, and allowed plenty of air. The plants will soon progress rapidly; as they fill their pots with roots they must be shifted into larger sizes, until they are in 8-inch and 11-inch pots, which are large enough for any Calceolaria; they must be frequently fumigated, to keep down green-fly; all they require through the winter will be to keep the frost from them; let them have plenty of air, and at the same time keep them rather dry at the root than otherwise. As the spring advances, and as the plants fill their pots with roots, more water may be given, occasionally using weak clear manure-water. As the plants increase in growth, let the shoots be pegged down on the soil; they will root into it, and help the plants considerably. According to the time they are wanted to be in flower, let the shoots be stopped, or otherwise those that are not stopped will be in flower early in May, while those that are stopped will come into flower probably a month later; and now comes the time to repay us for our trouble. No plant can be more gay than Calceolarias while they are in flower; one only regrets that they are so soon gone. A cool, airy greenhouse is the place for them while they are in flower; they must be kept shaded from the sun, and at no time are they fond of too much light. If seed is required, it must be looked after, setting aside a few of the best marked and best formed flowers for that purpose; these must be carefully fertilised, otherwise it is in vain to look for seed; and even then it frequently ends in disappointment. The best flowers are not the best seeders; on the contrary, they are generally the worst; they not unfrequently die off altogether without ripening a single seed. If you wish to propagate certain varieties, they should not be allowed to seed at all, but should be cut down directly they are done flowering, fresh surfaced, and set in a shady situation; they will soon throw up some cuttings, which may be taken off and struck under a hand-glass in a shady situation. When struck, they may be treated the same as recommended for seedlings; but unless you have got something very first-rate, it is hardly worth while to try to save them at all, as they seldom make such fine plants as those raised from seed. If proper care is used in saving the seed from the best varieties, the generality of the plants so raised may be expected to be equal, and probably a few superior to the varieties they are raised from. I think we must thus admit that the soft-wooded varieties must be treated almost as annuals. The above treatment is recommended for soft-wooded varieties; but it will also apply equally to shrubby kinds, in which we must allow there is a great deal to be done; by carefully crossing the soft-wooded with the shrubby varieties some first-rate things may be obtained. The shrubby habit may be obtained with the large fine flowers of the soft-wooded sorts. Such plants may be perpetuated from cuttings; but every one who has grown the soft-wooded kinds must admit that it is a matter of no small difficulty to save a variety from one year to another. Besides, varieties from crosses so obtained are more perpetual flowers; they keep growing and flowering a much longer time, and are splendid things for the greenhouse and conservatory. *E. H.*

CHRYSANTHEMUM: *Anon.* Your plant of Hendersoni proves that there is no difficulty in having Chrysanthemums in flower in May, if that is desired; for it is quite as full of pretty little yellow blossoms now as it could possibly be in September.

Miscellaneous.

Crystal Palace Aquariums. — It may interest our practical readers to learn what material is being used for the lining of the bottom of the great basins, or aquariums, one at each end of the building. Portland cement concrete is employed. Large slabs are cast in iron moulds, from which the slabs can be raised by a travelling crane. They are then laid on a floor of iron girders, and the joints are set and run with cement. *Builder.*

Introduction of the China Rose.—"I was delighted with Haarlem. We remained there several hours to admire the beautiful garden, and to see the gardener, who is celebrated throughout Europe. The gardener showed us different kinds of plants with which we were unacquainted; amongst others, a shrub that produces magnificent flowers, of which the petals are soft as velvet, but odourless. He told us that it was called the Chinese Rose, and had been imported within the last year with great care. Roses of this species may, in fact, be seen delineated on screens and in the corners of fans." *Memoirs of Baroness D'Oberkirch*, vol. ii., p. 118. *Haarlem, July* 17, 1782.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Now that the cold pits and frames will be cleared of the bedding stock, they will form excellent places during summer for the growth of many things for the autumn and winter decoration of the conservatory. Indeed, many of our most useful plants for this purpose will do better for the next three months in cold frames than in larger houses, where the state of the atmosphere is not so much at command, nor the plants so readily examined, as in these humble structures. Roses are, perhaps, more generally admired than any other class of plants, and bloom freely in the conservatory in autumn and early winter, if properly attended to at the right time. Young plants of the perpetual flowering kinds, as Teas, Bourbons, Hybrid and Damask Perpetuals, if placed in a cold frame and properly attended to with pot room, and liberally supplied with manure water, will soon form nice-sized specimens. But in order to secure their blooming freely in autumn and early winter, the flowers must be picked off as they make their appearance, and strong stocky growth secured by giving abundance of air, exposing the plants to the night dews, and keeping the shoots stopped and tied out as may be required, and otherwise attending to the habit of the variety.

FORCING DEPARTMENT.

PINERY.—There must be no lack of attention at this season in supplying the wants of succession stock. Never allow plants to remain any longer in want of pot room than can be avoided; for allowing them to remain in a pot-bound state at this season will be sure to cause them to fruit prematurely; therefore, if only a few are observed to be in want of repotting, these should be got out at once and attended to. Be very particular to have the balls properly moist at the time of repotting; for if this is neglected, it will be difficult to properly attend to it afterwards. Use good fresh turfy loam and peat, in the proportion of two parts of the former to one of the latter, and add a sprinkling of crushed bones and some clean sharp sand, in which the plants will be found to root more freely than in heavier soils, and richness can be added by using manure water. Let plants growing in open beds have a proper supply of water, and maintain a steady bottom heat of about 85°. VINERIES.—Keep the atmosphere of houses in which the fruit is ripe as equable and cool as possible so as to prevent the increase of insects, and preserve the foliage in a healthy state as long as possible. Give every attention to the state of the borders of houses where the fruit is colouring, and endeavour to keep them in a medium state as to moisture. Borders of latter houses, from which the covering has been lately removed, must also be carefully examined, for it is frequently found, on removing the covering, that the border is dry a few inches below the surface. If this is found to be the case, give water, sparingly at first, as a liberal supply given at once would probably cause many of the berries to split, particularly if the borders have been rather dry for any length of time. It will be much safer to give two or three gentle waterings at intervals of a few days, and this will also moisten the border more effectually. PEACHES.—Attend to former directions, keeping the borders and atmosphere moist until ripening commences, when the treatment should be rather dry, admitting air very freely, to assist in flavouring the fruit.

FLOWER GARDEN AND SHRUBBERIES.

That the proper keeping of the garden may be as little interfered with as possible, through the litter and confusion consequent on "turning out," use every dispatch to bring this work to a finish. But if any portion of the stock is not sufficiently prepared, allow it to remain under glass as much longer as may be necessary, and plant out nothing but strong plants that have been carefully inured to the sun and air; for weakly ill-prepared stuff is so much at the mercy of the weather that it is folly to depend upon its covering the ground in any reasonable time. Give sufficient water to settle the soil about the balls of the plants the first warm morning after planting, and give no more until the soil becomes dry, unless warm drying weather should set in, and then a gentle sprinkling every morning will greatly benefit the plants.

HARDY FRUIT AND KITCHEN GARDEN DEPARTMENT.

Asparagus beds will be greatly benefited by liberal waterings with manure-water from the stable or farm-yard tank, especially where the "Grass" is weakly. Attend to recently planted beds, and water as frequently as may be necessary to keep the soil moist. Get in a good breadth of Knight's Dwarf Green Marrow Pea, or some other suitable variety for late crops. Situation has doubtless much to do with the proper selection of a variety for late bearing, but we have found nothing among the many new varieties which we have tried equal to this for resisting the attacks of mildew, and very few surpass it in quality. Get Tomatoes planted out against the walls, and Vegetable Marrows and ridge Cucumbers under the shelter of hand-glasses, also French Beans that have been raised under glass. Sow Cauliflower for late use, and attend to keeping up a regular succession of Spinach, Turnips, &c., and such things as are preferred in a young state, and do not overlook Lettuce, &c., for salad. Where the Gooseberry trees are badly infested with the caterpillar, if a quantity of Foxglove leaves can be procured and steeped in boiling water, and the water, when cold, strained through a cloth sieve, a syringing with this will effectually destroy the pest. But the fruit must not be used until after the trees have been well washed with rain. Attend to regulating the growth of trees designed to be trained in any particular form, stopping useless shoots, to throw more strength into those that are wanted.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending May 25, 1854, as observed at the Horticultural Gardens.

May.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Min.	Mean	Of the Earth 1 foot deep.	2 feet deep.	Wind.	Rain.
Friday 19	[illegible]	30.229	30.199	64	30	47.0	52	53	N.E.	[illegible]
Satur. 20	23	30.162	29.989	71	41	56.0	53	54	S.	[illegible]
Sunday 21	24	29.884	29.706	64	47	55.5	54	54	S.	[illegible]
Mon. 22	25	29.581	29.492	62	44	53.0	54	54	S.W.	[illegible]
Tues. 23	26	29.654	29.514	62	38	50.0	53½	53½	S.W.	[illegible]
Wed. 24	27	29.760	29.669	62	30	46.0	53	53	S.W.	[illegible]
Thurs. 25	28	29.802	29.760	63	40	51.5	53	54	S.W.	[illegible]
Average.		29.868	29.761	64.0	38.5	51.3	53.2	53.6		[illegible]

May 19—Slight frost early A.M.; fine; very clear at night.
— 20—Cloudless; very fine, with extremely dry air; clear; rain.
— 21—Cloudy and fine; rain.
— 22—Densely clouded; heavy rain.
— 23 Constant rain in the morning; fine; very clear at night.
— 24—Rain; heavy clouds and showers in forenoon; fine; clear; slight frost.
— 25—Fine; showery, with some hail; clear at night.
Mean temperature of the week, 4½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending June 3, 1854.

May and June.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 28	67.4	45.4	56.4	11	0.97 in	—	8	7	1	4	6	2	—
Mon. 29	66.3	45.2	55.8	11	0.97	2	10	1	2	4	5	4	—
Tues. 30	68.1	45.5	56.8	9	0.22	2	5	6	—	3	[illegible]	3	3
Wed. 31	69.5	45.5	57.5	9	0.38	1	6	5	—	3	[illegible]	4	2
Thurs. 1	70.4	46.6	58.5	10	0.27	1	8	2	—	5	4	2	2
Friday 2	69.7	46.6	58.1	12	0.33	1	4	2	2	3	[illegible]	[illegible]	[illegible]
Satur. 3	70.8	45.3	58.1	10	0.91	—	2	4	1	3	[illegible]	5	4

The highest temperature during the above period occurred on the 29th 1847—therm. 91 deg.; and the lowest on the 29th, 1843, and 31st, 1852—therm. 34 deg.

Notices to Correspondents.

BOOKS: *Ballandyne.* The last supplement to Loudon was published in 1850.

DISEASES: *E W.* Your Rhododendron leaves exhibit dark brown spots with a paler cloudy border. The latter has clearly been caused by the infiltration of the diseased or decomposing matter of the darker central spots, however they may have been caused. We are inclined to think, however, that they do not arise from any constitutional disorder; but from the effect of some of the late spring frosts, for we have frequently seen leaves spotted from frost, while the rest of the surface remained uninjured; and there is no indication of any fungous growth in your leaves, which will probably fall; and if the injury is not very extensive, the plant will recover. If all the leaves are as badly affected as the specimens sent, the health of the plant may suffer materially. We fear that no other remedy can be suggested than to await the result with patience.—*M R.* The account you give of the state of the house in which your Passion-flower became diseased, during the months of October and November last, is such as to make it matter of surprise if many of your plants do not suffer. It might have been very possible then to have ascertained the origin of the disease, whether arising directly from damp, or indirectly from accidental circumstances, favoured by a cold, humid atmosphere. An earlier application of heat will probably prevent the recurrence of the malady, if the root is sound. —*J D.* Your Veronica leaves exhibit traces of disease on either surface. On the upper, the cuticle is separated from the subjacent parenchym in numerous distinct patches, while on the under surface, parallel with the midrib, the whole parenchym is disorganised and filled with colourless globules of various sizes, which are certainly not starch globules, though a few are intermixed, and, we believe, not the spores of fungi. At the same time the leaves are wasted in patches, with a dense varnish of honey-dew. The whole appearance seems to indicate too rich a supply of nutriment. The affection is, however, curious, and worthy of closer observation.—*W H L.* Your Vine leaves are affected with a disease very closely resembling that form of Geranium spot which is characterised by the presence of transparent tubercles amongst the withered specks. The fault lies probably partly in the state of the roots, and partly in the absence of the due intensity of light combined with low temperature during the past ungenial spring. We do not see any decided trace of mildew upon the leaves, but there are some specks which have a suspicious appearance, and we should strongly recommend you to be upon your guard. *M. J. B.*

INSECTS: *W B H.* The little beetles found in the seeds of a West Indian Ipomœa are a pretty species of Bruchus, apparently new. Their habits agree perfectly with those of the common Pea Bruchus, and other English species.—*H R C.* The blight on the Oleander leaf consists of vast numbers of specimens of different ages of the Oleander scale, Aspidiotus nerii (see *Gardeners' Chronicle* 1843, p. 588, for figure and description. We know of no surer mode for its destruction than brushing the leaves over with oil. The insects will certainly attack other trees.—*J H.* We found no trace of insects in your Apple leaves, and scarcely think the three you mention, like aphides, can have produced such an effect on them. *W.*

MOWING MACHINES. *A B C.* Shanks', we believe, does its work well; or, if you want a smaller one, try the Improved Ferrabee represented in our advertising columns at p. 39.

NAMES OF PLANTS: *Clifton.* Some kind of Saxifrage not determinable without leaves.—*Constant Reader.* The Christ Thorn is Paliurus aculeatus, common enough in all large collections of plants. The Thorn you have sent is the American Cratægus punctata.—*H W H.* Halesia tetraptera.

ORCHIDS: *Corehouse.* Your Oncidium altissimum must have been a fine specimen. The flowers of your Moss Cattleya are certainly remarkable for size, and the Dendrobium densiflorum, with the number of blossoms you mention, must also be set down as a good example of skilful cultivation.

VALUATIONS: *Great Yarmouth.* We do not answer legal questions.

VINE LEAVES: *Vitis.* Your "scales" are dead places of the leaf itself, how caused we are unable to say; certainly not by the hot water pipes.

MISC.: *W E.* Is a botanist a florist? We really cannot tell. A surgeon may be a horse-dealer; a grocer may be a stock-jobber. The connection between such occupations is possible, but not exactly necessary. White Hellebore powder will kill the Gooseberry caterpillar certainly.—*Ballandyne.* We believe the Patagonian Beech is not in cultivation. No dead parts should be allowed to remain upon any living things; plants suffer less than animals, but they do suffer after their kind.

THE LONDON MANURE COMPANY'S WHEAT MANURE, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. EDWARD PURSER, Sec.
Bridge Street, Blackfriars.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7l. per ton; Superphosphate of Lime, 7l.; Sulphuric Acid and Coprolites, 6l.
Office, 69, King William Street, City, London.
N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

GUANO (PERUVIAN) AND CHEMICAL FERTILISERS.—NITRATE OF SODA; PERUVIAN GUANO; SUPERPHOSPHATE OF LIME; AGRICULTURAL SALT; AND CONCENTRATED MANURE FOR TURNIPS.
The above articles are supplied on the lowest Cash Terms, for best qualities only, on application to Mr. JOHN CLARANCE, Agriculturist's London Agent, 1A, Bishopsgate Street Within.

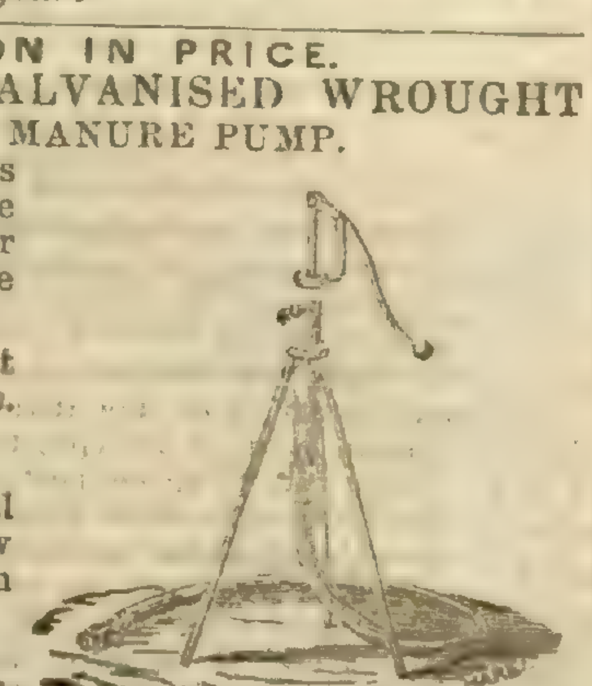
PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures.
WM. INGLIS CARNE, 10, Mark Lane, London.

TURNIP SOWING, ETC.
GENUINE HALF-INCH BONES AND BONE-DUST may be had in any quantity of JARED TERRETT HUNT, Lambeth Wharf, Upper Fore Street, Lambeth, near Vauxhall Bridge. Also Superphosphate of Lime and Sulphuric Acid for dissolving Bones. J. T. H. also invites the attention of Gentlemen and Agriculturists in general, to his Superior Fine Bone-Dust for dressing Lawns, Parks, &c. Delivered to any Railway in London in Sacks.

TURNIP SOWING.
SUPERPHOSPHATE OF LIME, made from Bone, which is the best Manure for Root Crops (see the Royal Agricultural Society's Journal, Vol. vi., part 2). PERUVIAN GUANO, NITRATE OF SODA, BONE DUST, SULPHURIC ACID, and all other Manures of known value. The PEAT MOSS CHARCOAL COMPANY have appointed the undersigned Sole Agents for the Sale of this fixer and distributor of Ammoniacal matter. They are also Sole Agents (in London) of the Patent Sanitary Company for the sale of their "Nitrogenised Carbon."—Apply to MARK FOTHERGILL & Co., 204A, Upper Thames Street London.

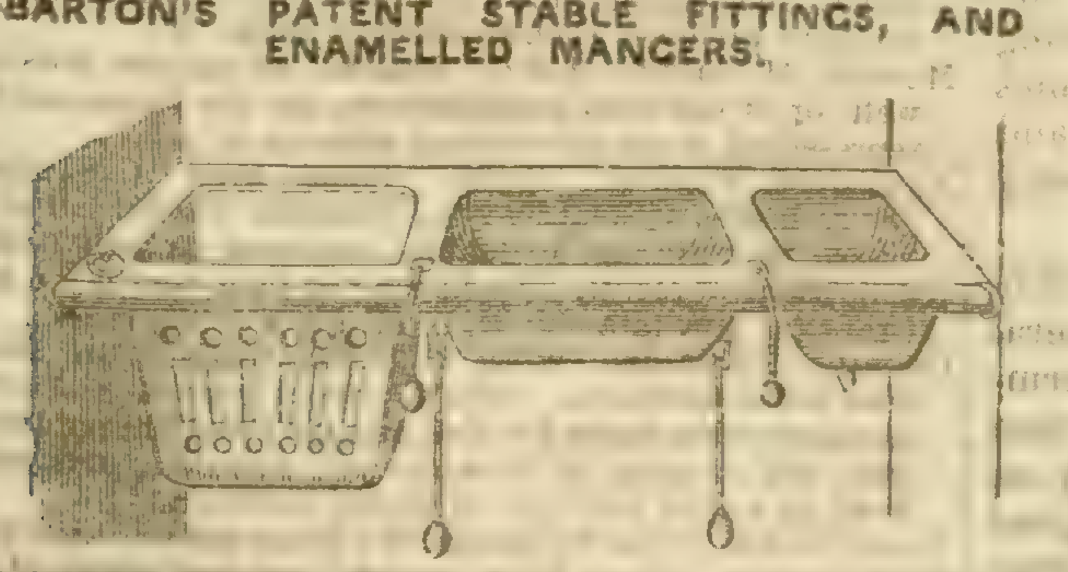
THE "ECONOMICAL MANURE."—A complete and by far the cheapest substitute for Guano; $1\frac{1}{4}$ to $1\frac{1}{2}$ cwt per acre of this powerful Manure, costing 15s. to 18s., is ample (more must not be used), and equals 3 cwt. of the best Peruvian Guano, thus saving at least 50 per cent., besides carriage, &c.
The agricultural world is respectfully urged to read the hundreds of Testimonials from all parts of ENGLAND, SCOTLAND, and WALES, FRANCE, BELGIUM, and SPAIN, to be convinced that this Manure warrants especial and immediate attention. They prove that it gave most wonderful results last year on every soil and crop, far surpassing the expectations of the purchasers, the dampness of this climate and the coldness of the soil peculiarly favouring its action on the vegetation. No one reading the Company's pamphlet can doubt its being by far the cheapest of all Manures. In fair comparative trials on every kind of soil and crop with guano, dung, and other long recognised fertilisers, it will be seen the "ECONOMICAL" was superior, that it proved most valuable for fruit trees, shrubs, and garden purposes, and produced the most astonishing effects upon manure heaps, applied in solution, decomposing in 15 days all vegetable matter, peat included, and that it is a perfect deodoriser for liquid manure, besides enhancing its fertilising properties. It is the result of many years' labour of an eminent Foreign Agriculturist, the Director of the Government Schools of Agriculture in his own country, and of high reputation as a chemist. It is patented, and is one of the most useful and greatest discoveries of the day.
Price 12s. per Cwt., packages included, and delivered free on rail or wharf in London.
The Company's pamphlet, containing the Testimonials, directions for use, and all particulars, also samples, to be had at the Offices of the British Economical Manure Company, 10, Mark Lane, London; or sent on applying to B. COVENEY, Manager.
Good Agents wanted.—An Allowance to the trade.
N.B.—Attention is called to the advertisement of the Company in this Paper of last week (p. 336), where numerous Testimonials in favour of the Manure, from all parts of the kingdom, both from this year's as well as last year's customers were given.
NOTE.—The letters received daily at the Offices from this year's customers, fully support the high character this Manure obtained last year.

REDUCTION IN PRICE.
WEIR'S IMPROVED GALVANISED WROUGHT IRON LIQUID MANURE PUMP.
The Fittings of these Pumps are wholly of Brass, and there is no leather or other matter which can be affected by the manure.
Price, complete, with 10 feet of Flexible Suction Pipe, 4l. 15s. Terms, cash on delivery.



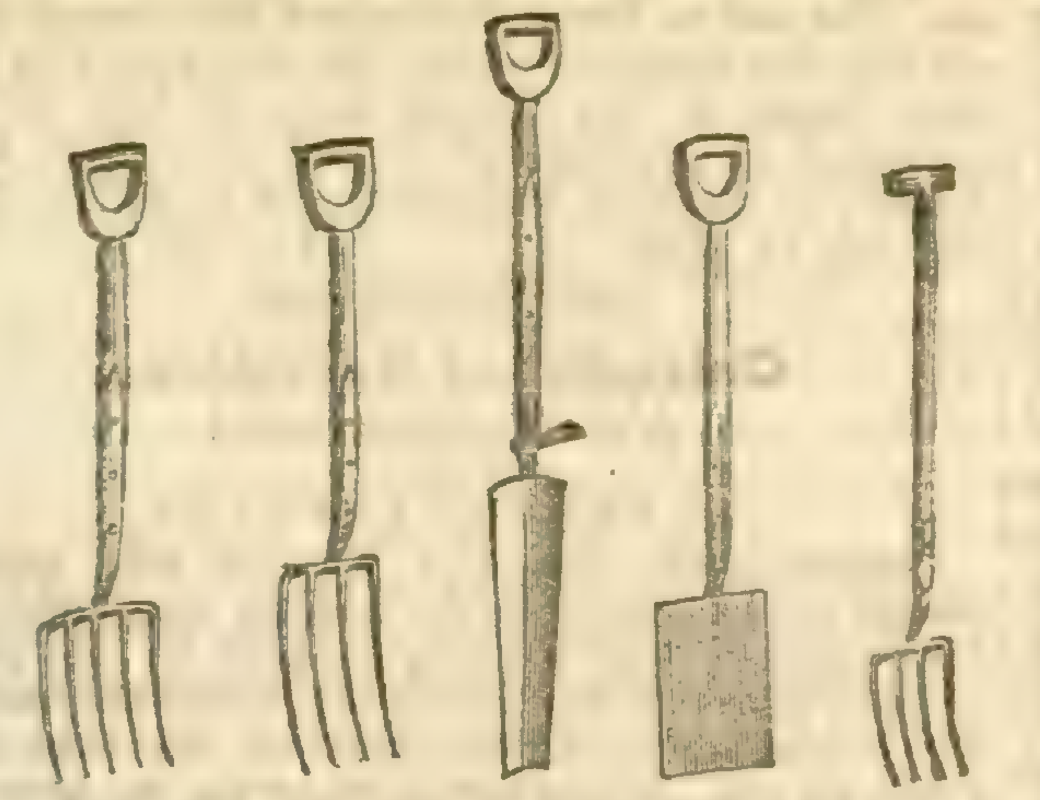
EDWARD WEIR, Agricultural Engineer, 16, Bath Place, New Road, London Removed from Oxford Street.
Catalogues, with Illustrations, sent free by post.

BARTON'S PATENT STABLE FITTINGS, AND ENAMELLED MANGERS.



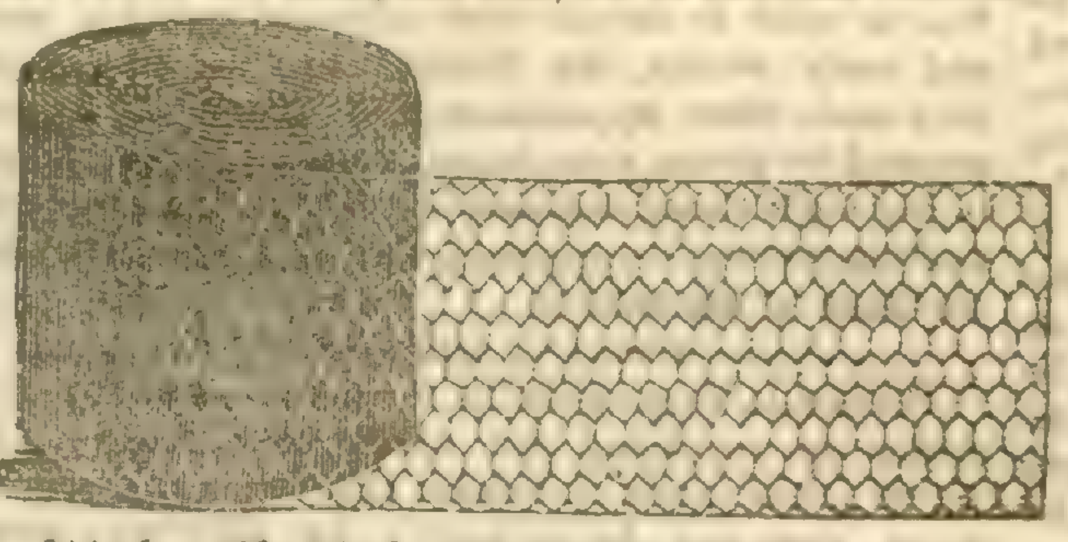
THESE FITTINGS have all the newest improvements, and are the only patented invention of this description. Improved Stable Fittings with Manger, Rack, and Water Trough attached, New Pattern Manger and Water Trough combined; also Corner and Straight Mangers, Plain, Enamelled, and Galvanised Stable Furniture of every description, Iron Gates, Railing, Hurdles, Sheep and Game Wire Netting, Registered Poultry Troughs, Fountains, Feeders, &c.—JAMES BARTON, Ironmonger, &c., Manufactory and Warehouse, 370, Oxford Street, a few doors east of the Pantheon.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.



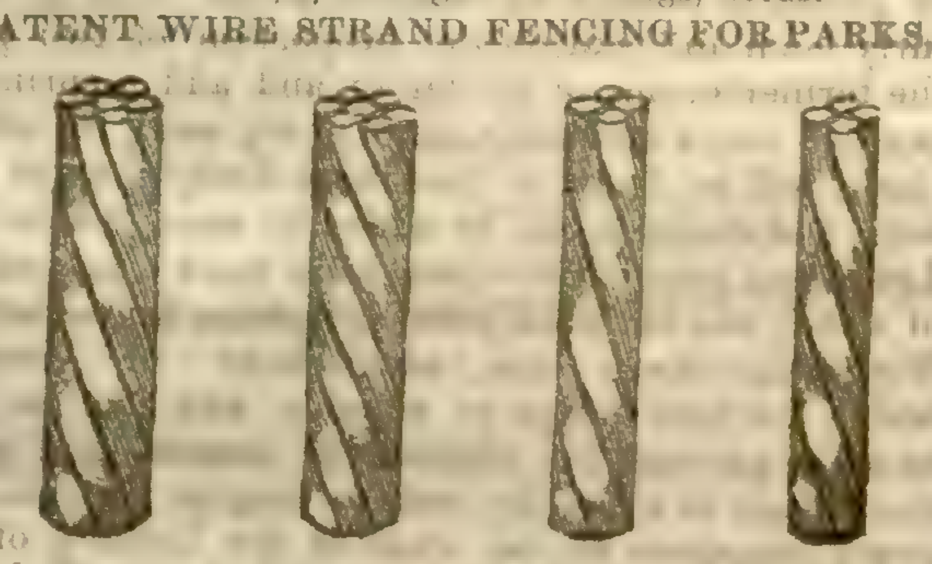
MESSRS. BURGESS AND KEY, as Mr. PARKES' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.
103, Newgate Street, and 52, Little Britain, London.

H. J. MORTON AND Co., 2, Basinghall Buildings, Leeds.—GALVANISED GAME AND POULTRY NETTING, very strong and neat, NEVER REQUIRES PAINTING.



24 inches wide, 3-inch mesh, 4½d., 6d., and 8½d. per yard.
24 inches wide, 2-inch mesh, 7d., 9½d., and 1s. per yard.
GALVANISED IRON SPOUTING, for Dwellings, Cottages, Farm Buildings, &c., NEVER REQUIRES PAINTING.
Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalte Roofing Felt, &c.

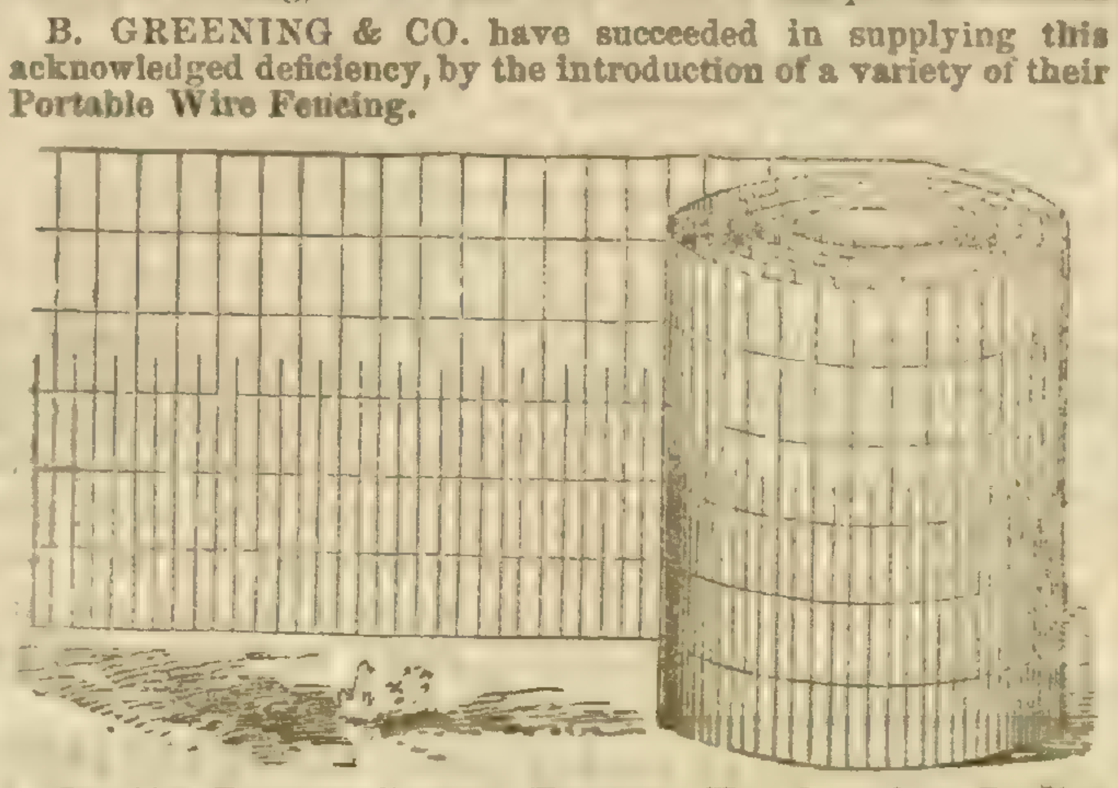
H. J. MORTON AND Co., Galvanised Iron Roofing Works, 2, Basinghall Buildings, Leeds.
PATENT WIRE STRAND FENCING FOR PARKS, &c.



This Fencing is the most neat, strong, and durable for Parks and Agricultural purposes in use. It cannot be bent or put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply as above.
IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

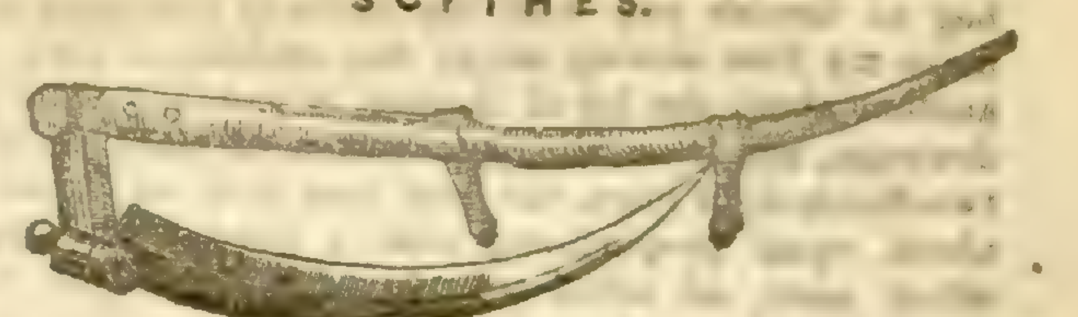
BY HER MAJESTY'S ROYAL LETTERS PATENT.

AGRICULTURAL AND POULTRY FENCING, MANUFACTURED BY PATENT MACHINERY.
The great increase in the number and quality of POULTRY in the United Kingdom within the last few years has created a demand for an efficient Poultry Fence, which has called into existence every possible contrivance and adaptation of the Wire and Cord Netting, all of which have more or less proved failures.
B. GREENING & CO. have succeeded in supplying this acknowledged deficiency, by the introduction of a variety of their Portable Wire Fencing.



No. 11. PATENT DOUBLE FENCING (Proof against Poultry and Chickens).
This Fencing (which they manufacture by machinery, patented last year) is light, portable, and elegant in appearance, yet stronger and more durable than any Fence before the public. It requires few standards, and is fixed with the utmost facility by a labourer or gardener.
The following are the principal other varieties:—CATTLE FENCING, SHEEP AND LAMB FENCE, HARE AND RABBIT PROOF FENCING, ORNAMENTAL FENCING FOR GARDENS, TRAINERS FOR PEAS, GARDEN BORDERING, EXPORT FENCING, &c. &c., manufactured by Patent Machinery by BENJAMIN GREENING & CO.
1 and 3, CHURCH GATES, and 2, CATEATON STREET, MANCHESTER,
From whom every information, together with Prospectuses and Engraved Sheets of Patterns, may be obtained gratis.

SCYTHES.



BOYD'S PATENT SELF-ADJUSTING SCYTHE will last out three of the ordinary sort, and is always ready for use.
"We have seen this Scythe at work, and can strongly recommend it."—See *Mark Lane Express*, May 16, 1853.
To be had of every Ironmonger and Nurseryman in the kingdom; and wholesale and retail of WM DRAY AND CO., Agricultural Implement Makers, Swan Lane, London.

CHAFF-CUTTERS, of the best workmanship, 25s.; Two-Knifed Chaff Engines, from 63s.; Mills for Bruising Oats and Beans, from 45s.
WILLIAM DRAY AND CO., Agricultural Implement Manufacturers, Swan Lane, Upper Thames Street, City.

ST. MARGARET'S (NEAR RICHMOND) CONSERVATIVE LAND SOCIETY.—Rights of Choice on this valuable Estate are now on sale at the Offices, 33, Norfolk Street, Strand. The Register of the Rights to be disposed of is open daily for public inspection. The Allotment is fixed for WEDNESDAY, June 7.
CHARLES LEWIS GRUNEISEN, Secretary.

THE THIRD CHELTENHAM SUMMER POULTRY SHOW will take place at that magnificent establishment PITTVILLE SPA, on the 14th and 15th of June. For Prize Lists and full particulars enclose a stamped directed envelope to JESSOP BROTHERS, Secretaries.

THE BIRMINGHAM CATTLE AND POULTRY SHOW, 1854.—THE SIXTH GREAT ANNUAL EXHIBITION of STOCK and DOMESTIC POULTRY will be held in BINGLEY HALL, on the 12th, 13th, 14th, and 15th DECEMBER next. The Prize List, and any further information, may be obtained from JOHN MORGAN, Jun.,
Office—38, Bennett's Hill, Birmingham. Secretary.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—PRIZE SHEETS for the LINCOLN MEETING may be had on application to the SECRETARY of the Society, No. 12, Hanover Square, London.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—The Royal Agricultural Society of England desires to receive Tenders from Innkeepers or others to Contract for the supply of a COLD DINNER, at LINCOLN, on WEDNESDAY, the 19th of July next, in the Society's Pavilion, constructed to accommodate 800 persons. Printed forms of Tender may be obtained on application to the Secretary, 12, Hanover Square, London, and must be returned to him, filled up, on or before SATURDAY, the 10th of June, the Society not binding itself to take the lowest Tender.
By order of the Council,
London, May, 1854. JAMES HUDSON, Secretary.

The Agricultural Gazette.

SATURDAY, MAY 27, 1854.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

THURSDAY,	June	1—Agricultural Imp. Society of Ireland.
MONDAY,	—	5—Central Farmers' Club.
WEDNESDAY,	—	7—Agricultural Society of England.
THURSDAY	—	8—Agricultural Imp. Society of Ireland.

IT is satisfactory to find that agriculture is to have a place among the professions, arts, and sciences which are to be illustrated in the CRYSTAL PALACE. They will not be all Londoners who shall crowd its passages and courts—instruction is to be offered to country folk as well as citizens—the various forms of manufacture, of which substances used as food and other agricultural products are susceptible, will be so arranged as to form "eye lectures" as perfect and detailed as those on any other of the manufactures represented there. Of this we have as yet no earnest in the building itself: indeed, that portion which is to be devoted to this department (the north wing) is still in an unfinished state. The agricultural department will be classed amongst the useful rather than the ornamental; and it is the latter rather than the former that is now being hastened to completion by the 10th of June. But we have a sufficient pledge of what the agricultural department is to be in the known ability of those who have the charge of it.

The plan of this department of the exhibition, which is due to Professor WILSON, to whom its execution also is deputed, involves the full representation of all the sections into which, as we lately (p. 202) stated, the subject naturally falls. Jermyn Street and Kew, as well as the intended museum of animal products, will all be represented in the Crystal Palace. The museum of economic geology, so far as agriculture is concerned—and, of course, in its other departments also—will be amply represented. Rocks, subsoils, soils, and their produce—vegetable and animal—will be exhibited so as to teach as strikingly as possible the connection existing throughout the whole, and their relation to the localities of which the several specimens are characteristic.

From the rock on which the whole is built up, to the most finished products—cheese or wool, that the farmer sends to market—no step in the progress, no collateral offshoot from any of these steps, will be left unillustrated. The student may wish to ascertain the agricultural wealth of England. Well!—beside every suite of specimens he will find a map of the country, coloured geologically for that particular produce, so that whether it be the district of any particular limestone, any mineral manure (as chalk, or coprolite, or marl), or possibly the district

of any peculiar crop, or of any breed of animal, its limits and extent shall at once appear. A quiet half-hour's study and examination will thus instruct more perfectly than a whole series of geo-agricultural lectures.

Or the student may wish to trace the soil through all its products, so that the whole agricultural produce of any one district shall be ascertained. Well!—he will find specimens arranged with this particular end in view, and the rock, subsoil, soil, the manure used to fertilise it, and the implements used to cultivate—it the seeds that are sown in it, the weeds which infest it, and the crops which are grown upon it—will all be represented. Sheaves of the various grains, wax models and actual specimens of the various roots, will be exhibited. Messrs. Lawson, of Edinburgh, have largely aided in providing these; and those of us who remember their contributions to the Exhibition in 1851, can have no doubt of the value of their contribution to the Exhibition now. Every variety of the Grasses and the grains in seed and straw will have its representative; and pursuing any one of these, as Wheat, for instance, to its ultimate purposes, we shall see the several products—of the miller, the starch manufacturer, the straw-bonnet maker, and even the paper manufacturer spread out before us. The higher products of the district, arising out of the consumption of its vegetable produce, will be exhibited in specimens of the animals so fed, of the cheese and wool they yield while living, and the skin, bones, glue, and other products of their carcases and skeletons.

Or the student may wish to trace any one of these ultimate products backwards through every stage of the process which its atoms must have traversed since they came from air and soil respectively. Let him take the article wool; he will find a series of specimens for his inspection, which, we are assured, is already marvellous for its completeness; he will also find specimens of all the different breeds of sheep in this country and in others—the names best known as breeders in the Southdown, Leicester, Cotswold, and Cheviot districts are contributors; and these specimens will be stuffed and otherwise prepared better than the scarecrows in the galleries of the British Museum. He will have an opportunity of studying the anatomy as well as the outer characters of the several breeds of sheep and cattle, for skeletons as well as stuffed specimens will be presented for his study. And travelling backwards further still, he will have to trace his way through specimens of all imported foods, and of foods prepared and grown at home; and thence to British soils, with the implements by which they are tilled, the manures by which they are fertilised, the rocks on which they rest.

Who shall say that the interests of agriculture fail of being represented here? A commercial company has seen the importance of an agricultural department, the management of it has been placed in first-rate hands, and that the importance of our national agriculture, the skill of our farmers, the interests of the agricultural student, will all be fully represented and attended to is plain from this imperfect sketch of the plan of operations; and also, though that is not yet apparent to the visitor at Sydenham, from the progress which we are informed has been already made towards its completion.

It is very clear that neither London societies nor London newspapers can put down roguery in the guano trade. The necessity of purchasing manures has spread much faster than the need of reading books and journals. We believe that the whole agricultural press of the country might unite in perpetual warning on the subject, and yet that there would be a very large number of farmers whom the warning would not reach—a very large extent of land over which the guano *manufacturer* should have unquestioned freedom to expatiate and deceive. What we call *publication* amounts, after all, to little better than confidential communication to a few of the more intelligent of the class addressed—precisely those of them, by the way, who least require the information given.

In adding another, therefore, to the many published instances of roguery in the guano trade, we are not particularly sanguine as to the good likely to be done. There was some good done in previous years when roguery was exposed, because then but few were purchasers, and those the more enterprising among farmers who were readers of our agricultural journals and newspapers; but now that every one who cultivates the land is a buyer in the guano market, a large proportion of them are beyond the reach of writers on the subject.

Perhaps local agency may be successful in disseminating information on the subject, though central agencies have failed. We were lately in a locality where the agricultural labourers and smaller farmers have been successfully induced to meet at monthly intervals during the winter to listen to a "reading" by one of the gentlemen of the neighbourhood, who on their part had undertaken in succession the task of selection and of preparation needed for the communication of information on such subjects as Australia—China—selections from MACAULAY—the Geology of the locality. No better labourers' friend society could be devised than this—and if in every considerable district some among the more intelligent occupiers and landowners could be induced thus to attempt the instruction and amusement of their neighbours, they would, we are persuaded, prove one of the most efficient agencies in agricultural as well as in social progress. We believe that such institutions would be more efficient than newspapers and journals in the thorough dissemination of information of importance to the farmer. And in case any one at any of the ensuing monthly meetings of the Bitton village reading society to which we have referred, shall be disposed to take "the manure market" for his subject, we give the following letter as furnishing a suitable text for his discourse. It is addressed to us by Mr. H. J. TURNER, Land Agent, Richmond, Yorkshire.

"Will you allow me to call your serious attention to the extensive adulteration which is just now being practised by the dealers in guano? Few people are aware to what an extent this nefarious business is carried on, nor how deeply many credulous farmers are fleeced. It is true that some of them are becoming awake on the subject, and show a good deal of skill in protecting themselves; but the bulk of them suffer unsuspectingly. I knew a case where two brothers bought of one dealer out of the same cargo; one used all his quantity, the other kept a bag. When pay-day came, the first-named paid in full; the other demurred, expressed doubts about the genuineness of the guano, thought he should have it analysed. I need not pursue the story further than to say, that, rather than have any inquiry instituted, the scoundrel of a dealer took *half* the amount of the bill and settled it in full.

"Another course has recently been adopted. Rascally firms in London get respectable tradesmen to become their agents in the country, and through them distribute worthless trash for Peruvian guano. Recently a friend of mine bought a parcel in this way, price 12*l.* per ton, cash down. Some doubts having arisen as to the article being genuine, it was submitted to Professor WAY, and his analysis was as per copy inclosed.

23, Holles Street, May 10, 1854.

ANALYSIS OF A SAMPLE OF GUANO.

Moisture	9.12
Organic matter and salts of ammonia ...	14.19
Sand and clay	48.87
Phosphates of lime and magnesia ...	16.10
Hydrated sulphate of lime	7.97
Alkaline salts	3.75
	100

Nitrogen, 3.14 per cent., equal to ammonia, 3.81 per cent.

(Signed) J. THOMAS WAY.

It is anything but a genuine article, and contains half of its weight in sand and clay. It is worth less than 4*l.* per ton.

"I could multiply cases; but I trust I have said enough to justify my request that you will use your influence to rouse farmers to a sense of the risk they run in buying guano—no matter how respectable the vendor may be—if they do not get it analysed."

Professor WAY and the English Agricultural Society would do good service if they would cause to be published in detail every instance which passes through their hands of adulteration in manures. Such facts might not directly reach the more easily cheated among guano buyers, but they would rouse others to spread such information, so that at second hand it might reach those who needed it.

VISIT TO TIPTREE HALL.

(*Continued from page 326.*)

ADJOINING the pasture is a field cropped partly with Wheat and partly with Oats. The Oats were sown after a crop of Mangold, liquid manure, and 2 cwt. of guano per acre, having been applied. This application, in addition to the tillage for Mangold, is certainly high farming, for under ordinary circumstances 2 cwt. guano alone must be considered a good dressing, the land being previously in a good state of tillage. The crop looked very promising, the land being well tilled, the corn drilled with great regularity, no deep wide furrows, but the plant of Oats good and even throughout—in fact there is every prospect of a full crop.

On the part adjoining, in Wheat, the plants looked strong and healthy, but very thin on the ground, the furrows bare, there being no plant of Wheat in the furrows for a space of 18 inches, and this must prove a great drawback upon the crop, when it is considered that the land is made up into 7-feet ridges. I can readily conceive that in strong land like this when undrained, small ridges may be requisite, but not deep furrows; here I find no mere slope of the soil, but a plain deep furrow or trench, exposing the bare subsoil, showing that the seed would not have grown had it been deposited therein. This is, however, evidently the fault of the ploughman, because in soils requiring small ridges in the undrained state, the best practice is to make the furrows shallow and narrow, and the ridges not too high backed, but only just sufficient to shed the surface water. The land now under consideration is not generally flat, but has a gradual incline, rendering the subsoil easy to drain, whilst the surface is not liable to wash or waste by the action of rain.

A piece of land with winter Tares growing, next attracted attention, and it was remarked that they were a fair crop, yet they were certainly not so gross as the winter Tares in general seen in Hampshire, and other parts of the country where no manure had been applied for that crop.

In passing out of the piece of Tares an open ditch was noticed, dividing it from the adjoining field, and it was asked what was the object of retaining an open dyke? The reason given was that the diagonal or cross drains emptied into it, and the adjoining field may be considered as only partially drained, but that it was intended to drain this land down the furrows, and in addition to the present cross drains, which it appears have not proved entirely efficient, and hence it was considered necessary to retain the small 7-feet ridges. These open ditches must have proved very disadvantageous in the tillage of the land; they might, however, have been in-laid with tiles, and made the leaders for the diagonal drains.

The next field was under Wheat, drilled, and it was certainly somewhat thicker in plant than the last field alluded to, yet in many parts it was very thin, and the ridges were of the same size as before mentioned. Inquiry was now made as to the quantity of seed Wheat used in the past seed-time, and it was stated that 6 pecks per acre only were used. This I consider too little by 2 pecks per acre, and in consequence I estimate the deficiency of produce at the next harvest at 8 bushels per acre upon the whole of the land under this crop. Part of this field was in fallow, intended for root crops, and it was in a forward state of tillage. On one side of this field was a heap of stable manure, &c., which had been cast up lightly, and, it must be admitted, would have been preserved in a more efficient state with less loss, had it been carted upon or covered with earth.

A piece of Beans came under observation next, and they were certainly a good plant, and well tilled, but a portion of this field showed that the draining done in it was not entirely effective, although it was said that the drains were placed 12 feet apart, and at the depth of 32 inches. I am of opinion that they have been placed in the wrong direction. The adjoining field was in Wheat, not looking so strong as that before noticed, but with a better plant upon the land. It was stated this field had not been in hand long, and it also required draining.

A field of Clover was next examined; it was thin of plant. The land looked poor, and was encumbered with Couch Grass. Here the liquid manure was being applied; but the land being undrained it was not expected that it would receive the full advantage from the application. This field, also, has only been a short time in Mr. Mechi's occupation. The next field seen was partly in Beans and partly Tares with Winter Barley mixed, both of which crops looked fairly, but not forward; the Tares and Winter Barley, it was noticed, had received an application of liquid manure to the growing crop, but the ridges being small and the furrows deep, they were calculated to draw the liquid away from the crop, whereas had the ridges been of a somewhat greater width, it might have been retained long enough to soak into the soil, and benefit the crop to a much greater extent. The advantage of a liquid application in this case was not exhibited, for the crop was decidedly backward, and not so good as the Tares in general in different parts of the country under ordinary management.

In returning towards the homestead, a field in finely tilled state was noticed, and it was ascertained that Mangold Wurzel had been recently drilled therein, at a distance of 2 feet apart between the rows, upon the flat; the preparation for this crop was stated to have been stable or box manure, forked into the land early in the autumn, at a cost of $2\frac{1}{2}d.$ per pole, and the work appeared to have been nicely executed. On approaching the farm buildings a pit was noticed containing a considerable quantity of stable and other straw-made manures, which had been recently turned over, and was in a state of excessive fermentation; this was said to be intended for application to the root crops; and, to render it advantageous for the purpose, it demanded more economy in its management; for the most volatile and valuable portion of the manure was rapidly escaping in the form of ammonia. I am not certain that every field upon the farm was seen; but quite enough was viewed to enable me to judge of the system adopted; and, taking the farm upon the whole, the general appearance showed that it was comparatively free from Couch Grass and root weeds.

It did not appear that any definite or regular rotation of cropping was pursued. The succession of crops, however, seemed to be judiciously arranged—the Italian Rye-grass being followed by a Pulse crop rather than cereals; the Wheat being sown after Beans, Clover, and root crops; the Lent grain, also, succeeding the root crop. The early sown root crops, such as Mangold Wurzel and forward Swedes, were prepared for by a winter fallow, and autumn tillage; but the later sowings of Turnips are preceded by a crop of Tares, &c. It was also stated that for some seasons past, half the farm had been sown to Wheat annually, and

although about the same proportion of land was now under cereal crops, yet about one-third was in Barley and Oats, about 12 acres of Beans and Peas being taken in addition.

Having arrived at the farm buildings, the first object which attracted attention was a capacious circular brick tank, with domed covering, stated to be 30 feet in depth by 30 feet in diameter; this, it appears, is made the receptacle for nearly all the manuring substances which accumulate on the farm—the manure from the bullock sheds and sheep-feeding apartments, from the fatting-pig sheds, and also the liquid drainage from the cart-horse stables, and pig-sties. Dead animals are also thrown in here, and their bones removed once in two years. In connection with this tank is an excellent and never-failing supply of spring water. Whenever the above manures are insufficient, guano is cast into the tank, and distributed over the land, being diluted as may be desirable. The means of distribution are certainly admirably contrived, and well adapted for the purpose. The contents of the tank are agitated, and propelled by steam power to any part of the farm, through pipes buried in the soil, and connected with a stop-cock, in or near the centre of each field, and it only remains to apply the gutta percha hose, which is of great length, and turn the stop-cock, when the liquid manure is driven with such force by the aid of steam, that it is raised high in the air, and falls like a shower of rain at a distance of 50 yards in advance of the conductor, who at pleasure walks across the field in any direction, insuring a regular supply to every part. *J. B., May* 14.

ON SOWING MACHINES.

(*Continued from p.* 328.)

1. When the seed is round, as in that of the Turnip tribe, or sufficiently round to admit of free movement among one another, as in that of some others of our cultivated plants, round holes of the requisite size in the circumference of a cylindrical vessel containing the seed, are all that is needed, with the gradual revolution of this vessel, to insure a tolerably even delivery of the seed. The machine is drawn over the land, and its wheels give motion to the cylinder, and the seed drops continuously, scattering evenly over the line of its progress. Two things, however, are needed to insure uniformity here; first, that the vessel be kept at a uniform degree of fulness, otherwise the passage of the hole under the body of seed, which of course preserves its position in the revolving vessel, will be longer at one time than another, and more will come out in a given number of revolutions, that is, over a given space of land traversed, at one time than another. This is dexterously insured in Moodie's Turnip sower, described in the sequel, by keeping the revolving seed cylinder always half full, the supply being kept up from a reservoir, connecting with the cylinder at its axis, and being, of course, possible only when the seed in the latter falls below the level of that axis. The second requisite for uniform delivery in this case, is a tolerably uniform and slow motion of revolution; when this becomes too fast, a centrifugal tendency is generated, and the seed flies out all round the cylinder; while, when slow, it can escape, as it is intended it should, only while the holes are below the seed.

2. The next method of delivery is by holes in the bottom of a fixed seed box, which holes are covered either by a revolving pinion, a revolving cylinder, or a revolving brush, inside. It is obvious that this method may be applied to a machine for a single line of seed, as it is in the ordinary Bean barrow, or to machines which are intended to cover a great width of land, and sow many rows at greater or smaller intervals alongside of one another; for the box may be very short, and have only one hole, with one brush, pinion, or cylinder for it; or it may be as long as you please, with holes at any intervals in its bottom, with a shaft lying over them, carrying pinions, brushes, or cylinders, placed so as to cover every hole, and so connected with the driving wheel, as that it shall revolve, and of course cause every brush to revolve with it, and thus insure a constant delivery of seed at every one of these holes. It is hardly correct to describe these holes as being in the bottom of the box; they are placed generally on one side of the box, and of course as low down as possible, in order that all the seed in the box may find its way out of them. In the cylinder plan, which may be taken first, each hole is perfectly covered; and were the cylinder unbroken, with a uniform surface, of course its revolution would not permit egress to the seed; but, instead of that, the surface is indented at regular intervals, the indentations being large enough to contain one or more of the seeds that are being sown. In the case of Bean sowers, where this plan is adopted, the holes or cups on the surface of the cylinder are large; in the case of Turnip seed they are very small; but whatever their size, it will be obvious, that, working as they do, not only in front of the exit hole, but in front of a small and stiff brush, which sweeps the surface of the cylinder as it revolves, successive cupsful, and no more, of the seed, whatever it be, are continuously carried round, and, presenting themselves at the open hole, fall out. This is a very excellent and regular method of delivery, insuring great uniformity and almost entire independence of such variations of speed as are likely to occur in the field. It is very commonly adopted in sowing machines. The pinion, when it is used in place of this cylinder, is, properly considered, a cylinder with larger cups or holes than ordinary; it is used for large seeds, or for abundant sowing, it is adopted in broadcast-sowing machines, where abundant seeding is deemed advisable and in machines for sowing Beans. The revolving brush, again, is used in the case of small seeds, such as Grass seeds. The rate of delivery per one revolution of the driving wheel is in ordinary cases regulated by the intervention of multiplying wheels of various power, so that the shaft shall revolve oftener or slower, and so a greater or smaller number of cupsful of seed be delivered over a given length of land; but in the case of the brush, whose efficiency as a deliverer of seed is not very materially, or at least not very uniformly, increased by increased velocity, the delivery of seed is regulated by increasing or diminishing the size of the exit holes behind which the brushes revolve; in this manner this brush may be used to sow Turnip-seed, even but 1 lb. per acre, Grass-seed 1 bushel, and larger seeds, 2 or 3 bushels per acre, without any alteration of velocity by multiplying wheels. And in one of the neatest broadcast sowing machines that we know, for Turnip and Grass seeds, this is the plan adopted.

3. The third mode of delivery is decidedly the best for regularity and uniformity of action, and it too is adapted for seeds of any size, and for any quantity per acre that may need to be sown. It is adopted in what are called Suffolk drills; and, generally described, it acts by cups attached to the projecting arms on a revolving disc, which cups, dipping into the seed, lift successive portions, each of which, falling from them as they attain the height of their revolution, is received into a funnel properly placed for its removal to the ground. On looking into the seed-box, the shaft carrying the revolving discs is seen across it, and with the discs strung upon it, and revolving in depressions in the seed-box. It may be observed here that this part is supplied with seed from a larger store in the box behind it. The discs revolve with the shaft, and as they revolve, little cupsful, at the end of the little cross arms, are dipped up from the store of seed, lifted, and fall into the open mouth of the funnel.

This disc may be similarly armed on both sides, and so supply two exit holes. It will be obvious that the shaft which carries it may be as long as you like, and carry any number of discs at any distance from one another, and so as long a box may be worked, and as great a width of land sown by one machine, as may be desired. It is also obvious that by the intervention of multiplying wheels of various power, any number of revolutions of the disc, that is, any number of cupsful, may be delivered down the funnel for every revolution of the driving-wheel; and it is plain that by the use of different "barrels," as they are called, that is, of different shafts, with cups of different sizes, the machine may be fitted for the sowing of any sort of seed. This, then, is the method of delivery adopted in our best sowing machines, and we believe it to be the best plan of delivery that has been devised. *J. C. M., in Blackie's Cyclopedia.*

(*To be continued.*)

Home Correspondence.

Agricultural Meteorology.—I have read the able defence of the rotatory theory of storms, which lately appeared in several successive numbers of the *Agricultural Gazette*, with the greatest pleasure. A very plausible explanation has been made out of those continual whirlings of the wind, that have been observed from very early times. It would be entirely out of the question to discuss this subject at length in this place, and therefore I refrain from continuing the explanation which "F. P. B. M." has given of the storm of 26th August, 1853. For my own part, however, I must say that the evidence led does not appear to me to prove the case. The rotatory theory, no doubt, as I have often admitted, gives a plausible but not a true solution of the phenomena of storms. And what is rather singular, I have scarcely met two individuals who hold the same opinion in regard to the explanation of some of the most common and characteristic phenomena of British storms. I consider that "a rotatory column of atmosphere, covering an area of 20° or 30° of longitude, and having a height of 30 or 40 miles," never occurs in our latitude. There is one point to which I would direct my friend's particular attention, viz., that South-east winds rarely extend more than *one mile* from the earth's surface in Britain; they are, in general, mere surface-adjusting currents that play a secondary part altogether in the atmospheric disturbances of the moment. The ordinary South-east winds bear about the same proportion to the total height of the atmosphere (say 50 miles) as the last *three* lines at the foot of this column in the *Gazette* bear to the column itself. Why, this very day (May 22) we have had a brisk South-east breeze, with rain, but this current is confined to a height little more than 2000 feet from the ground. Let "F. P. B. M." observe the next South-east wind which blows, and I dare say he will find that the same phenomenon will present itself. There is also another point worthy of being stated for the consideration of those who are satisfied with the rotatory hypothesis, that the closing North wind in storms usually extends to a height of four to five miles at least from the surface of the earth. These may be relied upon as facts, explain them best who can. With the greatest deference to those who hold an opposite opinion, I consider the rotatory theory has retarded the progress of meteorology. The mere veerings of the wind is not the prime difficulty; they can be much more satisfactorily accounted for by another supposition far more consistent with actual facts. I hope I shall be enabled before long to give my views on this subject in a far more extended form than it is possible to do in this place. I will take a leaf out of "F. P. B. M.'s" book, in the way of illustrating the facts by means of diagrams. If it was not trespassing too much on his kindness, which I have already more than once experienced, it would be a favour if he would state what are the causes and particular phenomena of the "storm's eye." How is the calm in the centre produced? Some will think that it is a pity that the Government of the day has not gone a little more heartily into the scheme of the United States, which has been so zealously prosecuted by Lieutenant Maury, to obtain a combination of meteorological observations. No doubt our own Government has aided the collection of observations, for a considerable sum appears to have been expended last year for this purpose; but we suspect it in some measure resembles the slothful man of old, who would not roast the meat which he took in hunting; in so far as there does not appear to be any proper provision made for having the results of so many observations turned to the best use in elucidating the laws which govern atmospheric phenomena. To reduce these observations to a simple form, in order that the results might be seen at a glance, would not be a very difficult matter, if it was done day by day; but on the other hand, if a great accumulation of materials is allowed to take place, no one would have the courage to encounter such a mass. This is an interesting subject in relation to agricultural statistics, and glad were we to see that it was not forgotten in the discussions on that question. At a future period we may recur to this particular point more in detail. *R.*

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

Audit of Accounts, *May* 19.—The accounts were examined, audited, and certified as correct, by Mr. Raymond Barker, V.P., the Chairman of the Finance Committee, and by Mr. Knight, Mr. George Raymond Barker, and Mr. Dyer, the Auditors on the part of the Society.

Special Council, *May* 19.—Sir John V. Shelley, Bart., M.P., Trustee, in the Chair. On the motion of Mr. Raymond Barker, seconded by Mr. Thompson, the report of the Council to the ensuing general meeting of the Society was taken into consideration and agreed to.

General Meeting.

The half-yearly General Meeting was held at the Society's House in Hanover Square, on Monday last, the 22d of May, Mr. Raymond Barker, V.P., in the chair.

On the motion of Mr. Raymond Barker, seconded by Mr. Fisher Hobbs, William Miles, Esq., of Leigh Court, M.P., was unanimously elected the President of the Society for the year ensuing the Lincoln Meeting.

The Trustees and Vice-Presidents were re-elected, and the house-list of the Council unanimously adopted. The following new members of Council were elected:—Sir Watkin Williams Wynn, Bart., M.P., Sir Charles Gould Morgan, Bart., Sir Stafford Henry Northcote, Bart., Sir Archibald Keppel Macdonald, Bart., and Chandos Wren Hoskyns, Esq.

The Secretary read the following report from the Council:—

REPORT.

The Council have to report to the Society at its present half-yearly meeting, that, since December last, the names of 88 members have been removed from its list by resignation or death, while, during the same period, 175 new members have been elected from the following localities:—

Lincolnshire	29	Cumberland	2
Middlesex	19	Dorsetshire	2
Gloucestershire	16	Essex	2
Lancashire	6	Herefordshire	2
Surrey	6	Hertfordshire	2
Hampshire	5	Leicestershire	2
Kent	5	Monmouthshire	2
Northamptonshire ...	5	Rutlandshire	2
Suffolk	5	Staffordshire	2
Sussex	5	Cheshire	1
Yorkshire	5	Cornwall	1
Derbyshire	4	Huntingdonshire	1
Devonshire	4	Shropshire	1
Norfolk	4	Westmoreland	1
Nottinghamshire	4	Worcestershire	1
Oxfordshire	4		
Somersetshire	4	Wales	4
Berkshire	3	Scotland	4
Warwickshire	3	Ireland	5
Bedfordshire	2		

The Society now consists of a total amount of 5177 members, comprising—

88 Life-Governors,
146 Annual Governors,
771 Life-Members,
4152 Annual Members, and
20 Honorary Members.

The Council have elected Sir John Villiers Shelley, Bart., M.P., to fill the vacancy in the class of Trustees occasioned by the lamented decease of the Hon. Robert Henry Clive; and they have taken measures for extending to the principality of Wales, and to the counties of Lancaster, Warwick, and Monmouth, that representation in the Council to which they would seem to be entitled, on account of the large proportion of members of the Society residing within their respective districts.

The invested capital of the Society consists of 10,764*l.* Stock in the Three-and-a-Quarter per Cents.; every claim against the Society presented in a complete form for payment has been discharged; and the arrears of subscription have assumed during the last few years a much more reduced and manageable shape. The subscriptions remaining unpaid from the 1st of January, 1853, amount to 840*l.*, and are now in the course

of collection; while those which remain unpaid from the 1st of January in the present year, amount to 2994*l.*, and wil no doubt in a short time be duly paid up and available for the current purposes of the Society. The Council appointed in February last a special committee for the purpose of conferring with the Finance Committee on the best means to be adopted for placing the financial arrangements of the Society under a more economical system. That committee, having instituted a searching inquiry into every branch of the Society's expenditure, has this month made its report to the Council, who have the satisfaction to find that no unnecessary outlay appears to have been incurred in carrying out, under the orders of the Council, the various operations of the Society. As a large amount of shedding, however, has frequently been provided, at great expense to the Society, for the express accommodation of stock and implements which have not been sent to the show according to their original entry, the Council have adopted the special recommendation of the committee, that all persons who shall neglect to pay in due course the stated fines incurred for such non-exhibition, shall be debarred from exhibiting at the future country meetings of the Society.

At the Lincoln Meeting, to be held in the week commencing Monday the 17th of July, the Council anticipate a large and important agricultural assemblage. The entries of implements and machinery are as numerous as in former years; and their trial will on that occasion for the first time be open, under certain regulations, to the public, from the noon of Thursday in the previous week. The dinner of the Society will take place in a pavilion constructed to accommodate 800 persons. The Council last year appointed a committee to report suggestions on the subject of that over-fed condition of animals which, in many instances at previous meetings, had been animadverted upon as being inconsistent with their value as stock intended for breeding purposes. The arrangements, however, made by that committee have not attained the object in view. The disqualifications pronounced at Gloucester were not eventually confirmed in every case; animals apparently over-fed at the time having subsequently been proved to be breeding stock. The Council have, therefore, reverted to the Society's original rule of placing on the judges of the show the responsibility of awarding the prizes to those animals which, in their opinion, are best adapted for the purposes of breeding. Professor Simonds, the veterinary-inspector of the Society, having instituted at its country meetings a complete comparison between the certified ages of the cattle, sheep, and pigs exhibited on those occasions, and the developments of their growth, has recently delivered before the members the first part of his lecture on that subject, in which he has shown within what high feeding and other causes will accelerate the development of the teeth in cattle, and has thus furnished us with the ready means of clearing up doubts, that have hitherto frequently arisen at the country meetings, in reference to the exact age of animals competing for the prizes of the Society. The subject of the feeding of animals continues to engage the attention of Mr. Lawes, whose recent experiments, placed on record in the pages of the Journal, supply still further evidence of the labour and expense attending investigations of that kind, and which can only be duly estimated by those who, like Mr. Lawes, have undertaken them on a large scale for the public good.

The district for the country meeting of the Society in 1858 has been decided by the Council, on representations made to them by large and influential deputations from North Wales and the county and city of Chester, to be comprised of the whole of North Wales and the counties of Chester, Stafford, and Salop.

The Council feel deeply indebted to the Earl of Clarendon, H.M. Principal Secretary of State for the Foreign Department, for the personal interest he has taken in promoting the objects of the Society, by instituting such inquiries abroad as might lead to the discovery of supplies of guano, or of the alkaline and earthy nitrates in Mexico and other tropical districts; also, to Sir James Graham, who, as first Lord of the Admiralty, has directed extensive search to be made by her Majesty's ships cruising within the tropics, for those or any other natural deposits that might prove advantageous as manuring matter. They have at the same time to acknowledge the continued interest evinced in their proceedings by Viscount Palmerston, H.M. Principal Secretary of State for the Home Department, and his lordship's kindness in communicating to the Society, from time to time, whatever information may appear in any degree conducive to the advancement of agriculture in this country. The Council have reason to hope that the public attention, which 17 months ago was called to the importance of a substitute for guano, by the prize offered by the Society, has not been entirely unavailing; for such a discovery, although within the range of physical possibility, was not to be expected at once to reward the investigation of the chemist, or the extended research of the naturalist. The general consideration, however, which this subject has now received has led to the closer study of the action of manuring matter, and to a more exact estimate of the conditions under which such a substitute may most favourably be produced. These inquiries have confirmed the essential importance of phosphoric acid and ammonia, and pointed out sources from which it is hoped that cheaper supplies of the latter substance may be obtained. One hundred and forty-three applications have already been received from different parts of the United Kingdom and foreign countries, claiming the prize offered by the Society. Each of these claimants professes to supply a manure equal in fertilising properties to Peruvian guano, at a price not exceeding 5*l.* per ton, and in quantities sufficient for all demands. Before, however, the Council can proceed to the consideration of these claims, they require a compliance with all the conditions under which the prize was offered; and until the most undeniable evidence of the true value of any competing manure has been produced, and subsequently tested if necessary by special trials, the Society may feel assured that the Council will take no step on this important subject that may tend in any degree to mislead its members. Professor Way, the consulting chemist to the Society, has recently delivered before the members a lecture on the manufacture of artificial manures, highly suggestive of sources whence supplies of manuring matter may be derived, and of improved modes of its manufacture into artificial mixtures for special crops. He reports from his own experience that the amount of adulteration in guano and other manures at the present time is greater than at any former period since his connexion with the Society, the adulterating material amounting in many cases to three-fourths of the whole compound sold to farmers as genuine manure.

The Council, in conclusion, congratulate the members on the clear gain of 254 more names on its list at the present time than at the same date in last year; and they are assured that the Society will not, on this occasion, review its own prosperity, and the gradual fulfilment of its practical and scientific objects, with less satisfaction, when informed that the collateral progress of the same national cause of agricultural improvement is advancing with equal steps in the sister-kingdoms of the empire.—By order of the Council,

James Hudson, Secretary.

On the motion of Mr. Wingate, seconded by Mr. Barugh Almack, the report was received and adopted. The business of the meeting was then concluded by the usual votes of thanks to the auditors, to Professors Way and Simonds, and to the chairman.

Weekly Council, *May* 24: Mr. Raymond Barker, V.P., in the chair. Prof. Simonds, the veterinary inspector of the Society, resumed and concluded his lecture on the ages of animals as indicated by their teeth. He confined himself on that occasion to the teeth of the sheep and the pig. This subject, as before, was elucidated by reference to admirably coloured diagrams on a large scale, and to a considerable number of anatomical specimens, exhibiting the structure and relative position of the teeth of those animals, at different stages of their development, as well as to tabular statements of age at different periods of growth. Having entered into interesting details connected with the distinctive character of the teeth in those animals, and described the mechanical provisions affecting the chewing of the cud in ruminants, he gave the result of his examinations in reference to the tusks of the pig, and the influence of breed, sex, or castration, in modifying their development, which, taken alone, he considered a very uncertain criterion of age in that animal. He dwelt on the peculiar character of simple and compound, and the temporary permanent teeth in sheep and pigs. He pointed out the remarkable effects of breeding and feeding in forcing the growth of teeth, and the total incorrectness of the rules hitherto given on that subject. He referred to the great importance of exact data on that point in guarding agricultural societies from fraud when prizes were intended to be awarded to animals of distinctly assigned ages. The results he then laid before the Society were deduced from a comparison of 2000 examinations, and it was only from the opportunities he had possessed, as the Society's Veterinary Inspector, that he had been enabled to make so extensive and satisfactory an investigation. He believed the facts he had obtained in the case of the pig to be perfectly new. He referred to the singular circumstance of the pig being born with a certain number of teeth already developed; to the peculiar formation of its tongue, which by means of a fringe had the power of retaining the nipple strongly in its mouth, without injury from the teeth, while in the act of sucking; to the particular ages at which the pig loses and gains certain teeth; to the errors connected with the ordinary modes of estimating the age of pigs by the tusks alone; and to the importance of connecting both the tusks and the incisors in forming a just conclusion on that point. He cited striking instances how accurately a person might now determine the age of pigs from the new data his researches had furnished. He concluded by stating that he believed the facts he had been enabled, as one of the officers of the Society, to submit to the members, had not only been justly deduced from the numerous investigations he had made, and were therefore founded on natural circumstances, but that they were nearly altogether novel in a physiological point of view; and that the development of the teeth of cattle, sheep, and pigs, arising from superior food and improvement in their breed, as well as greater care and attention bestowed generally upon their management, was much earlier than had hitherto been supposed.

Mr. Miles, M.P., in moving a vote of the best thanks of the meeting to Professor Simonds, for his admirable lecture, remarked, that nothing could show more clearly the advantage of a society like their own, than the opportunity it had afforded to their veterinary inspector, to collect, from numerous original sources, the great amount of valuable practical information that had resulted in the important data then submitted to them, in reference to the age of the sheep, and especially in the novel, striking, and connected facts illustrating that subject, hitherto so little understood, the dentition and age of the pig. He had not been able to be present at the first part of the lecture given last week, but if that had been as good as the one he had then heard, he had no hesitation in saying that Prof. Simonds had fully maintained, and still further confirmed, his high character for scientific attainment. Sir Robert Price, Bart., M.P., seconded the vote, which was carried unanimously; the Chairman remarking that the members would perceive that no assertions were made uncorroborated by evidence; and that he, as the chairman of the Veterinary Committee of the Society, entertained at all times the fullest appreciation of Prof. Simonds's services.

Dublin Chemico-Agricultural: *Feeding for Pigs.*—Mr. John Andrews read a valuable paper, giving an account of some interesting experiments which he had undertaken, in conjunction with his brother, for the purpose of testing the relative advantages of cooked and fermented food for pigs. The result of the experiment showed that cooked food was decidedly preferable to fermented food, as prepared according to the plan of Messrs. Bushe and Barter, who have patented machinery for the purpose. In the intestines of the pigs fed upon the fermented food, after they were killed, myriads of white worms were found, some of them being as thick as a quill, and three-quarters of an inch long. The worms, it was believed, retarded the growth of the pigs.—Mr. Anderson: I think the fuel used in preparing the food a very expensive item. During the last season, I fed 375 pigs. I use turf in the beginning of the season, but coal latterly. I have the advantages of steam and good troughs, but, notwithstanding all, the item of coal is very expensive. The coal costs me 22*s.* per ton, but I am sure it would be much cheaper here. We import the coals at Portrush, and have to cart them nine or ten miles. Turf, latterly, has been very dear; and, in consequence of the number of people who have left the country, there is little cut in our neighbourhood.—Dr. Hodges said he might mention, in connection with Mr. Andrew's paper, that an elaborate series of experiments had been conducted on the subject by Mr. Lawes, assisted by Dr. Gilbert, and the results were published in the Journal of the Royal Agricultural Society of England. The experiments were instituted for the purpose of discovering the relative value of mixtures of certain approved foods of different kinds in feeding, such as Beans, Bran, and Indian Corn. The results extended over 80 pages, and they were exceedingly valuable as facts relative to feeding. Mr. Andrews' paper, he believed, was one of very great importance in connection with them; and to no two gentlemen in this country could the investigation of such a subject have been intrusted with more propriety than to Mr. Andrews and his brother.

Guano.—Six samples of guano, which had been sent for examination by parties retailing it, were then brought under the inspection of the meeting. They had been analysed by Dr. Hodges, and only two of them turned out to be genuine. One of the samples was of a kind that was sold at the rate of 13*l.* per ton, but was only value for about 3*l.* per ton; another contained 54 per cent. of adulteration. Dr. Hodges said it was the "very perfection of adulteration;" neither by smell nor by the colour could its spurious composition be detected.

Miscellaneous.

Influence of Shelter on quality of Manure.—A steading entirely covered in effects a great saving in farm produce, which must otherwise be exposed to the injurious effects of the weather, while the amount consumed and destroyed by the stock is considerably less; but the most remarkable result of my experience is in the value of the manure. In October 1850 the yards were filled with 14 feeding bullocks, getting the same quality of food as another lot of 18, tied up in the byre, and whose manure was put out into an open court. In the open court were 12 young animals, getting a full allowance of Turnips. The feeding beasts were all of the same age, viz., two off and rising three years old; fed twice a day on Turnips, of which each got about 1 cwt., and once a day on steamed Swedes mixed with cut chaff, and 2 lbs. of Barley-meal mixed with a little Linseed, or 3 to 4 lbs. of oilcake—of this mess each got 22 lbs. Both byres and courts were littered twice a day; and, as near as we could judge, each animal got the same allowance of straw, and all had a constant supply of Oat straw in their racks. From the foregoing particulars it will be seen that the manure thus made should have been about equal. During the winter of 1850-1 the manure in the open yard was carted to the field selected for the experiment, and put in one large heap of 200 loads, well pressed down by the carts driving over it when emptying, and then covered top and sides with earth and road-scrapings. It lay thus till a week before using, when it got a turn over in the usual way. The dung in the covered yard had been allowed to collect all winter, was carried direct to the field, and put into the drills, without any turnings, being quite well enough made for the crops intended. A field of 20 acres, of very equal quality, being a rich loam lying on the trap, naturally dry, and in good heart, exposed to the south, at an elevation of from 80 to 100 feet above the sea, was selected for the experiment, and divided into two equal portions. The manure applied was at the rate of 20

cart-loads per acre. The whole field was planted with Potatoes; the seed all of one kind, from one field (Regents): planted first and part of second week of April. All brairded well, and showed no difference in growth till the first week of July, when a decided superiority began to manifest itself in the half of the field manured out of the covered yards. The shaws on the portion of the field manured by the dung from the open courts began to decay by the latter end of July, and by the second week in August were nearly all gone, whilst the other portion of the field still retained its strong dark green. The crops were taken up on the 1st to 4th of October, after two separate portions in each half had been carefully measured and weighed, the result being as follows. I may mention that disease showed itself more especially in the heavy crop.

Uncovered Dung.

	Tons.	cwt.	lbs.	
1st measurement.—1 acre produced ...	7	6	8	of Potatoes.
2d measurement.—1 acre produced ...	7	18	99	"

Covered Dung.

	Tons.	cwt.	lbs.	
1st measurement.—1 acre produced ...	11	17	56	of Potatoes.
2d measurement.—1 acre produced ...	11	12	26	"

As soon as possible after the Potatoes were lifted, the field was cleaned, ploughed, and (on the 22d to 25th of October) Fenton Wheat was drilled in, at the rate of 3 bushels per acre. The same portions of each half measured in the Potato experiment were marked off for trial with Wheat. As soon as the weather suited in spring the whole field got a dressing of 3 cwt. of Peruvian guano per acre. During the winter very little difference was apparent; but, shortly after the application of the guano, the crop on that portion manured by the covered dung took a decided lead, which it retained all summer. The whole field was cut the 26th of August, 1852; the portion manured by the uncovered dung being at least 4 days earlier than the other. As before, the two separate portions in each half of the field were measured, cut, and stooked separately; on the 4th of September each portion was threshed, the grain carefully measured, and the straw weighed. The weather having been rather wet, the grain was soft, and not in good order; this will account for the light weight per bushel. The light crop beat the heavy crop in quality by ½ lb. per bushel.

Wheat on uncovered Dung.

Acre.	Produce in Grain. Bush.	lbs.	Weight per Bush. lbs.	Produce in Straw. Stones
1st ...	41	19 ...	61½ ...	152 of 22 lbs.
2d ...	42	38 ...	61½ ...	160 "

Wheat on covered Dung.

Acre.	Produce in Grain. Bush.	lbs.	Weight per Bush. lbs.	Produce in Straw. Stones
1st ...	55	5 ...	61 ...	220 of 22 lbs.
2d ...	53	47 ...	61 ...	210 "

Lord Kinnaird, in the Eng. Ag. Soc. Journal.

Calendar of Operations.

MAY.

Lammermuir Sheep Farm, *May* 16.—The lambing season is now over, and, from the fine weather, has been an unusually favourable one. Seldom in this range of hills has it been got over with so little trouble or anxiety. During the whole time we had a course of bright sunny weather, and weakly lambs, after basking a short while, were on their feet and vigorous. The ewes had abundance of milk, and so we have scarcely had an instance of one refusing or appearing careless about her lamb. Though on upland farms the number of twins has not been above an average, yet from the casualties having been so small, the crop of lambs is full. Cheviot lambs are usually castrated at the age of three or four weeks, and their tails cut to the proper length. A long tail is a great improvement to the appearance of the Cheviot sheep. It should be long enough to touch and dangle on the hock. Black-faced lambs are not castrated till they are about six weeks old. The object of this is to let the horns bud properly, for when done sooner the growth is checked. For this operation a moist day is the most suitable, and great care must be taken, in putting the lambs into the sorting folds, not to hurry or overheat them. Some farms are much more liable to inflammation than others, and on these there is sometimes a considerable loss of lambs. The weather continues fine, and hill pastures now look fresh. Grass was fully a month earlier in this district than it was last year. Prices of lean stock are advancing, and at a market held in Dunse yesterday, hogs met a good demand. *Lammermuir.*

Notices to Correspondents.

Average Organic Composition of Food: *Sub.*

	Water.	Husk.	Starch, Gum, Sugar.	Gluten, Albumen, &c.	Fatty Matter.	Mineral Matter.
Wheat	15	15	55	10 to 19	2 to 4	2
Barley	15	15	60	12 to 15	2 to 3	3
Oats..	16	20	60	14 to 19	5 to 7	4
Indian Corn	14	6	70	12	5 to 9	1½

This is taken from Johnston. The figures are intended to represent per centages, but in the case of some there is an obvious inaccuracy. In the case of Oats, for instance, 120 parts are given instead of 100, and the number probably ought to be—water, 14; husk, 17+; starch, 50; gluten, 11 to 16; fatty matter, 4 to 6; mineral matter, 3½.

Butter: *A B C.* Rancidity is due either to the cheesy part of the butter or to the oxygen of the air. The fatty part of the butter and the milk sugar present in it become, simply by contact with decaying curd, converted into butyric and other offensive acids. To preserve butter, therefore, the milk should be separated perfectly by washing in perfectly pure water. And as the tendency of the curd to decay, on which almost all the mischief depends, is checked or retarded by the presence of saturated solutions of salt, sugar, &c., about 1 of salt to 25 of butter should be thoroughly incorporated, so that there shall be no particles of the cheesy part of the butter which shall not be in contact with salt. If you exclude the air, the presence of a saturated solution of salt will not only preserve the cheesy matter from itself undergoing decay, but will render it also unable to induce decay in the sugar and the fat in contact with it. (*See Johnston's Agricultural Chemistry.*)

To put a Cow Dry: *J L.* The plan is to avoid succulent food, and gradually to cease milking; at first diminishing the frequency of the milkings, and ultimately entirely discontinuing them.

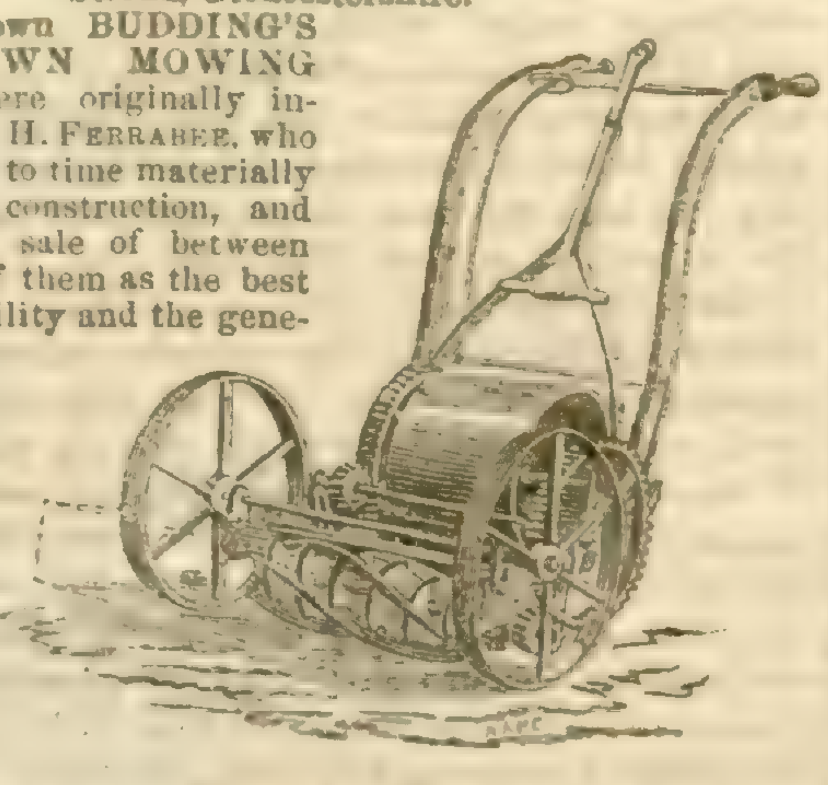
Erratum.—For "salsates," line 21 from the bottom of column *b*, page 329, read "sulphates."

PROTOXIDE ANTI-CORROSION PAINT, for all external purposes, on iron, wood, brickwork, or stucco, is cheaper, and more durable, than any similar article.—Manufactured by Charles Francis & Sons, Cement Works, Nine Elms, London.

THE IMPROVED LAWN MOWING MACHINE,

MANUFACTURED BY

J. and H. FERRABEE, Phœnix Iron Works, near Stroud, Gloucestershire.



The well-known BUDDING'S PATENT LAWN MOWING MACHINES were originally introduced by J. & H. Ferrabee, who have from time to time materially improved their construction, and can refer to a sale of between 4000 and 5000 of them as the best proof of their utility and the general satisfaction which they have given.

The Machines offered this year by J. & H. Ferrabee are superior to any yet produced, being perfectly adapted for cutting the Grass on Lawns and Verges, and between flower beds; while their strength and durability have been increased and their management simplified. Any person can use them effectually without the least practice. They can be adjusted to cut various lengths of Grass, and will produce a more even and uniform surface than the most skilful mower. The Grass is cut best when dry, so that a machine can be employed at the most convenient time to the workman, and more than double the work may be done with the same manual labour that is requisite with a scythe.

Sizes and Prices.				£ s. d.
Hand Machine, for One Man,	cutting	16 inches wide		5 15 0
Ditto for Two Men,	"	22 ditto	...	6 10 0
Pony Machine,	"	28 ditto	...	10 0 0
Horse ditto	"	36 ditto	...	16 0 0

The Horse Machine will cut the longest and coarsest Grass usually met with on Lawns and Pleasure Grounds.

London Agents:—Messrs. Boulnois & Son, Baker Street Bazaar, Portman Square.

WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

	£ s. d.
Patent Pump	1 16 0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing	3 0 0

Larger sizes if required.

The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,

8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water: Fire Engines, &c.

JOHN WARNER AND SONS

Crescent, Jewin Street, London.

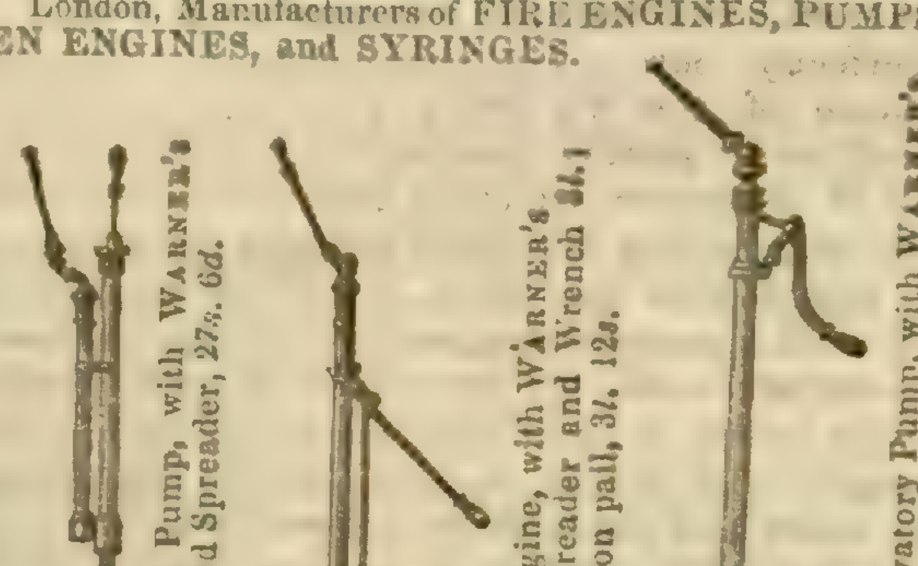
GALVANISED IRON TUB GARDE ENGINE,

With Warner's Registered Spreader,

Is strongly recommended, for durability and low price, viz., 2l. 19s., to hold 10 gallons.

Larger sizes made either in wood or iron. May be obtained of any Ironmonger or Plumber in town or country, or of the Patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Syringes of various constructions and sizes from 9s. upwards. An extensive assortment kept.

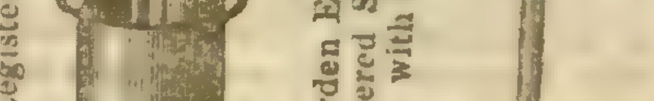
JOHN WARNER and SONS, 8, Jewin Crescent, London, Manufacturers of FIRE ENGINES, PUMPS, GARDEN ENGINES, and SYRINGES.



Conservatory Pump, with Warner's Registered Spreader, 27s. 6d.
No. 32.

Garden Engine, with Warner's Registered Spreader and Wrench [illegible]l., with iron pail, 3l. 12s.
No. 11.

Patent Conservatory Pump, with Warner's Registered Spreader, 2l. 13s.; with iron pail, 3l. 5s.
No. 14.



Brass Syringes, 9s. to 18s.

All articles of John Warner & Sons' manufacture may be obtained of any Ironmonger or Plumber in town or country, at the advertised prices.

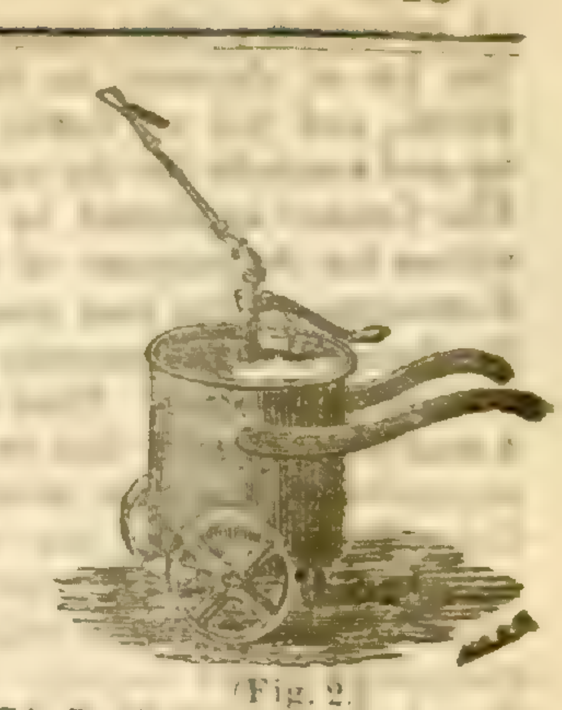
John Warner & Sons having been practical Horticulturist for many years, know exactly the requirements of both Amateurs and Gardeners. A gardener with a properly constructed pump will get through as much work in five minutes as he could with any Syringe in a quarter of an hour, and with half the labour to himself. Syringes are economical only for small houses.

No establishment offers such a variety of effective machines for hydraulic purposes, whether to supply Gardens, Hothouses, Cottages, Farms, Mansions, or Boards of Health, with every requisite connected with the conveyance and distribution of liquids.

Fountains suitable for Conservatories, Lawns, &c.

Sheets of Engravings sent on application.

(Fig. 1.)



(Fig. 2.)

J. TYLOR and SON'S BARROW GARDEN ENGINE (Fig. 1), in best well painted oak tub, fitted with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 1 holds	10 gallons,	throws	30 feet high	...	£4 10
No. 2 "	15 "	"	45 "	...	5 10
No. 3 "	28 "	"	45 "	...	6 18

J. TYLOR and SON'S BARROW GARDEN ENGINE (Fig. 2), in strong tinned iron tub, well painted inside and outside, with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 10 holds	8 gallons,	throws	25 feet high	...	£2 15
No. 13 "	12 "	"	30 "	...	3 5
No. 11 "	16 "	"	40 "	...	4 0
No. 12 "	24 "	"	45 "	...	5 0
No. 14 "	30 "	"	45 "	...	5 18

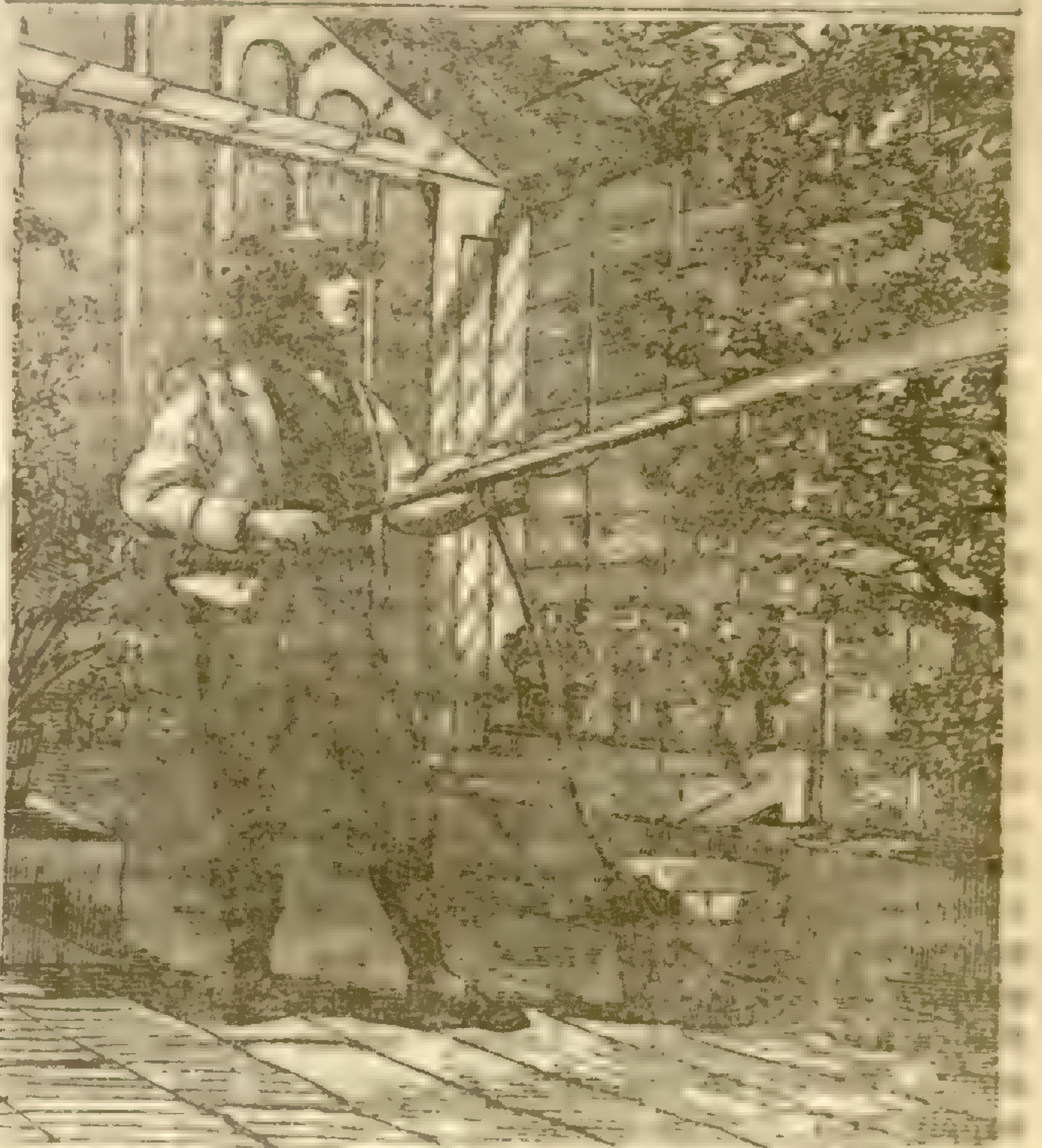
A large assortment of every description of Garden Syringes Pail Engines, Conservatory Pumps, &c., kept in stock.

Full size Syringe, on Read's principle, of the very best quality and workmanship, with two roses and one jet, 21s.; Plain Syringes from 10s. 6d. upwards.

J. Tylor & Son's Horticultural Apparatus may be obtained at these prices from any respectable Ironmonger or Seedsman in town or country, through whom alone they will be supplied, and of whom Drawings and Prices may be had.

N.B. Cost of carriage, &c., not included in these prices.

J. Tylor & Son's Manufactory, Warwick Lane, Newgate Street, London.



J. TYLOR and SON'S REGISTERED GARDEN SYRINGE.—Small size, for Amateur use, **21s.** each; Large size, for Gardeners' use, **25s.** each.

By a simple arrangement this Syringe is rendered more effective than any portable Conservatory or Garden Pump ever offered to the public. It is equally adapted for Garden or Conservatory use, and is capable of discharging twice as much water in a given time as any other Syringe now in use. The arrangement consists in attaching a small flexible suction tube to the barrel of the Syringe, through which it is filled with water at every discharge of the previous contents. By this means the Syringe is always charged, and the pull-up stroke of the piston rendered perfectly easy, it having, indeed, no work to do, the barrel being previously full of water. Being thus made self-supplying, a great saving of labour is effected; and the necessity of stooping to fill the Syringe at every discharge being done away with, the direction of the water can be maintained for any length of time. It is perfectly cleanly in its action, as it is not possible for any water to get on the outside of the barrel, which is a well-known inconvenience attendant on the use of every other Syringe. Its construction is perfectly simple, and cannot get out of order; the ground-in ball valves and fittings used for filling all other patent Syringes being entirely superseded. To be had of any respectable Ironmonger or Seedsman in town or country.

J. Tylor & Sons, Manufacturers of Horticultural Apparatus, Warwick Lane, Newgate Street, London.

N.B. These prices do not include carriage, package, or expenses of delivery in the country.

HOSE PIPING.—Great Reduction in Price.

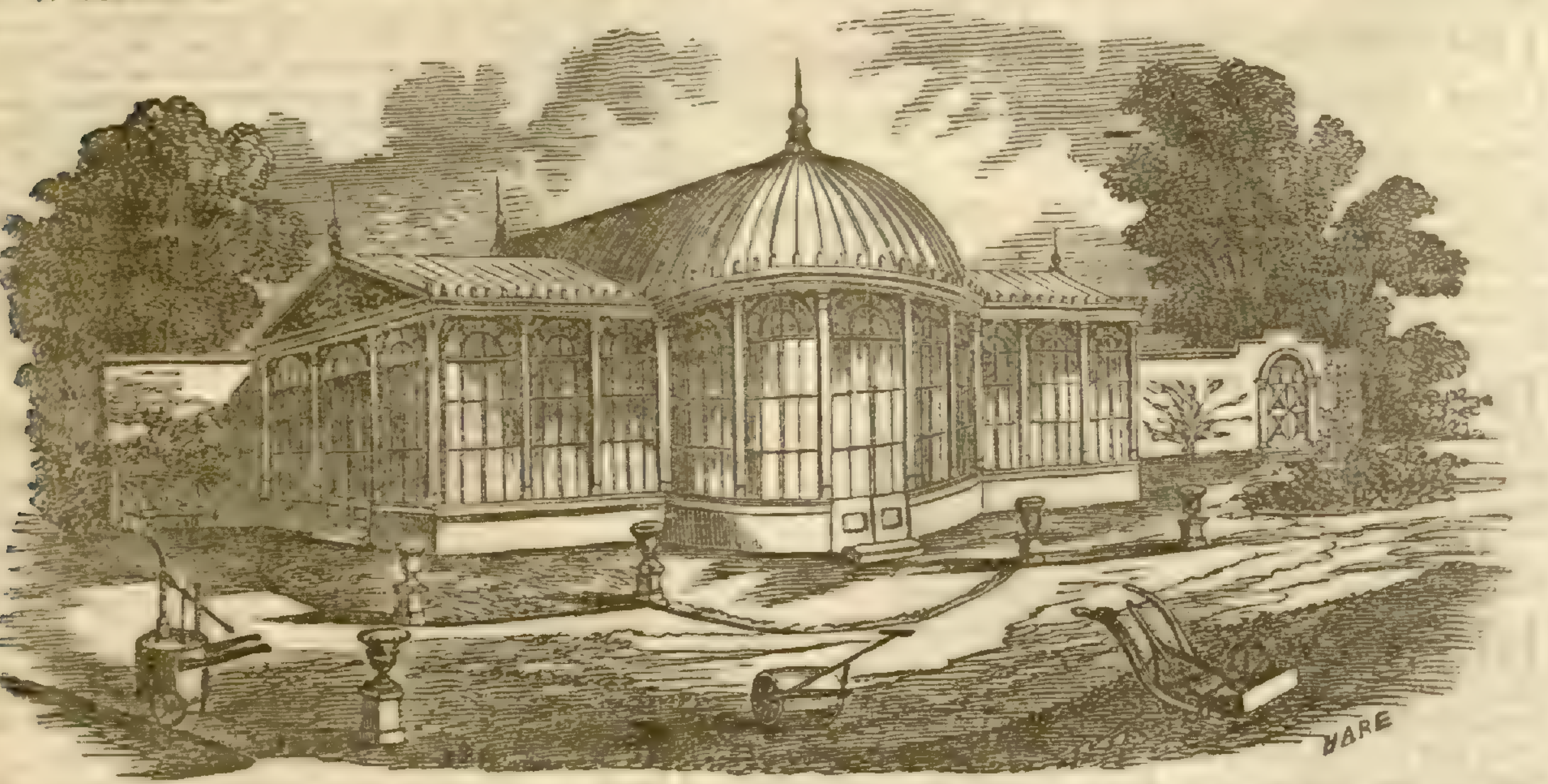
WAITHMAN'S PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense Pressure, and much more than Leather, vulcanised Rubber, or any other Hose; and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented Inventions, the cost of manufacturing it is now reduced at least 60 per cent., which advantage is offered to the Public.—London Agents, Burgess & Key, 103, Newgate Street, and 52, Little Britain, who on application will forward wholesale and retail prices.

FOR WATERING GARDENS, DISTRIBUTING LIQUID MANURE, ETC.

JAMES LYNE HANCOCK'S VULCANISED INDIA-RUBBER TUBING is now manufactured especially for the above purposes, and is of greater flexibility than any other description of hose or tubing. It is also manufactured to resist great pressure, suitable for attaching to the mains of water works or to tanks, or water butts of high elevations. WATERING HOSE fitted up with brass joints, branches, stop-cocks, roses, and jets complete. Vulcanised India-rubber suction pipes for pumps any length or size to order; HOSE for brewers' use, fire engines, &c. VULCANISED INDIA-RUBBER WASHERS, for Steam and Water Joints, and VULCANISED RUBBER in sheets of any size and thickness. Solid vulcanised India-rubber Tubing and Cord, for the joints of glass-doors, sashes, frames, &c.—Prices and every information may be had on application at the Manufactory, Goswell Mews, Goswell Road.

COTTAM AND HALLEN,

2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.



APPLICATION is requested for their NEW HORTICULTURAL LIST, containing Illustrations, Descriptions, and Prices of

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Syringes	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.
AGRICULTURAL LIST UPON APPLICATION.
EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.
EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

THE GUTTA PERCHA COMPANY'S TUBING FOR WATERING GARDENS, WITH ROSES AND UNION JOINTS FITTED.—27, CITY ROAD, LONDON.

TO AMATEUR GARDENERS, LOCAL BOARDS OF HEALTH, & SANITARY WORKS.

PATENT SLUICE COCKS, Gutta Percha. Combinated ditto, Patent Flexible India Rubber Tubing, and every other Hose for Watering Gardens. The Hydraulic Ram, Fire, Garden, and every other kind of Pump, Hydrants, High Pressure Cocks, and all other articles to be had, Wholesale and Retail, of FREEMAN ROE, HYDRAULIC ENGINEER, 70, Strand, and Bridgefield, Wandsworth.

RIPE FRUIT, STRAWBERRIES, AND SEED BEDS.—New Twined Netting (tanned if required), 1 yard wide, 1½d. per yard; 2 yards wide, 3d. per yard; 4 yards wide, 6d. per yard; ½-inch mesh do., 2 yards wide, 6d. per yard. The Elastic Hexagon Garden Netting, 76 meshes to the square inch, effectually excludes birds, wasps, flies, &c., from fruit trees, flower or seed beds, 4½d. per square yard. Tanned Netting, 2 or 3 yards wide, 1½d. per yard; 4 or 6 yards wide, 3d. per yard, exactly the same as advertised by others at double the above prices. Coir or Hemp Sheepfolding Net, of superior quality, 4 feet high, 4d. per yard. Lamb Net, 6d. per yard. Rabbit Net, 1½d. per yard, 4 feet wide; each edge Corded, 2d. per yard, suitable for fowl fencing. Square Mesh Cricketing Net, fix its full width and length, made of stout cord, 3d. to 4d. per square yard; this is the best article made for fencing against fowls, cats, &c.

The largest, cheapest, and best stock in the world, at W. CULLINGFORD'S, 1, Edmund Terrace, Ball's Pond Road, Kingsland, London. The Trade supplied. Orders by Post punctually attended to. Fishing Nets of all kinds in stock.

BEES AND HIVES.

MARRIOTT'S HUMANE COTTAGE BEE-HIVE, for taking honey without killing the Bees, is the best for practical use. Newly illustrated Catalogue forwarded for penny stamp.—MARRIOTT, Apiarian, Surrey Zoological Gardens; City Warehouse, 24, Fish Street Hill, London Bridge.

BEEHIVES.

NEIGHBOUR'S IMPROVED COTTAGE BEE-HIVE, as originally introduced by GEORGE NEIGHBOUR & SONS, with all the recent improvements, glasses, thermometer, &c., price 35s., securely packed for the country.

This unique hive has met with universal commendation, and may be worked with safety, humanity, and profit, by the most timid; its arrangements are so perfect, that the honey may be taken at any time of the gathering season without at all injuring the bees.

Early applications, addressed to GEO. NEIGHBOUR & SONS, 127, High Holborn, or 149, Regent Street, London, will receive prompt attention. Their newly arranged Catalogue of other improved Beehives, with Drawings and Prices, sent on receipt of two stamps.

Agents:—Manchester, HALL & WILSON, 50, King Street; Liverpool, JAMES CUTHBERT, 12, Clayton Square; Chester, F. & A. DICKSON & SONS, 106, Eastgate Street; Glasgow, AUSTEN & M'ASLAN, 186, Trongate Street; Dublin, J. EDMUNDSON & Co., 61, Dame Street.

LADDERS, BARROWS, ETC.

G. ELL invites the attention of Agriculturists, Builders, and Decorators, to the large stock of LADDERS, EXCAVATORS, BRICKMAKERS, AND GARDEN BARROWS, TRESTLES, STEPS, &c., he has always on hand at a very low scale of charges. A list of prices will be forwarded on application.—Manufactory, 3, Tottenham Court New Road, opposite Hampstead Road.

DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening Pursuits, are invited to examine DEANE, DRAY, AND CO.'s extensive Stock of GARDENING and PRUNING IMPLEMENTS, best London-made Garden Engines and Syringes, Colebrook Dale Garden Seats and Chairs.

Averuncators	Garden Scrapers	Pickaxes
Axes	Gidney's Prussian Hoe	Potato Forks
Bagging Hooks	[Scissors	Pruning Bills
Bills	Grape Gatherers and	„ Knives, various
Borders, various patterns	Gravel Rakes and Sieves	„ Saws
		„ Scissors
Botanical Boxes	Greenhouse Doors and Frames	„ Shears
Brown's Patent Fumigator	Hammers	Rakes in great variety
Cases of Pruning Instruments	Hand-glass Frames	Reaping Hooks
	Hay Knives	Scythes
Daisy Rakes	Horticultural Hammers and Hatchets	Scythe Stones
Dibbles		Shears, various
Dock Spuds	Hoes of every pattern	Sickles
Draining Tools	Hotbed Handles	Sickle Saws
Edging Irons and Shears	Ladies' Set of Tools	Spades and Shovels
	Labels, various patterns, in Zinc, Porcelain, &c.	Spuds
Flower Scissors		Switch Hooks
„ Stands in Wire and Iron		Thistle Hooks
	Lines and Reels	Transplanting Tools
Fumigators	Marking Ink	Trowels
Galvanic Borders and Plant Protectors	Mattocks	Turfing Irons
	Menographs	Wall Nails
Garden Chairs and Seats	Metallic Wire	Watering Pots
	Milton Hatchets	Weed Hooks
„ Loops	Mole Traps	Wheelbarrows
„ Rollers	Mowing Machines	Youths' Set of Tools

DEANE, DRAY, AND CO. are sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with their Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom. Also wholesale and retail Agents or SAYNOR'S celebrated PRUNING KNIVES, used exclusively by the first Gardeners in the United Kingdom.

DEANE, DRAY AND CO. (Opening to the Monument), London Bridge. ESTABLISHED A.D. 1700.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

Priced lists of plant tubs and boxes forwarded on application.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

MORNING FROSTS.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard run, of E. T. ARCHER, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey. (Removing to 112, Regent Street, London.)

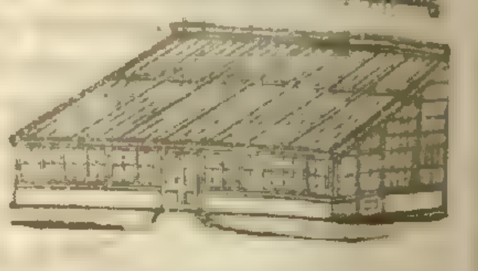
JOHN WEEKS AND CO., HORTICULTURAL BUILDERS, King's Road, Chelsea, think it now necessary to inform the Nobility, Gentry, and Public in general, that they have NOT HAD ANY CONNECTION WHATEVER with the Bankrupts Edward and Alfred Weeks, who LATELY carried on business at Chelsea.—May 27, 1854.

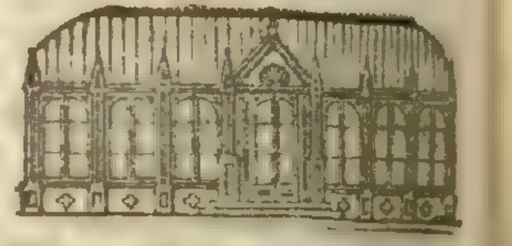
HORTICULTURE IN ALL ITS BRANC[HES]

J. WEEKS & Co., King's Road, Chelsea,

HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Building or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.





The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

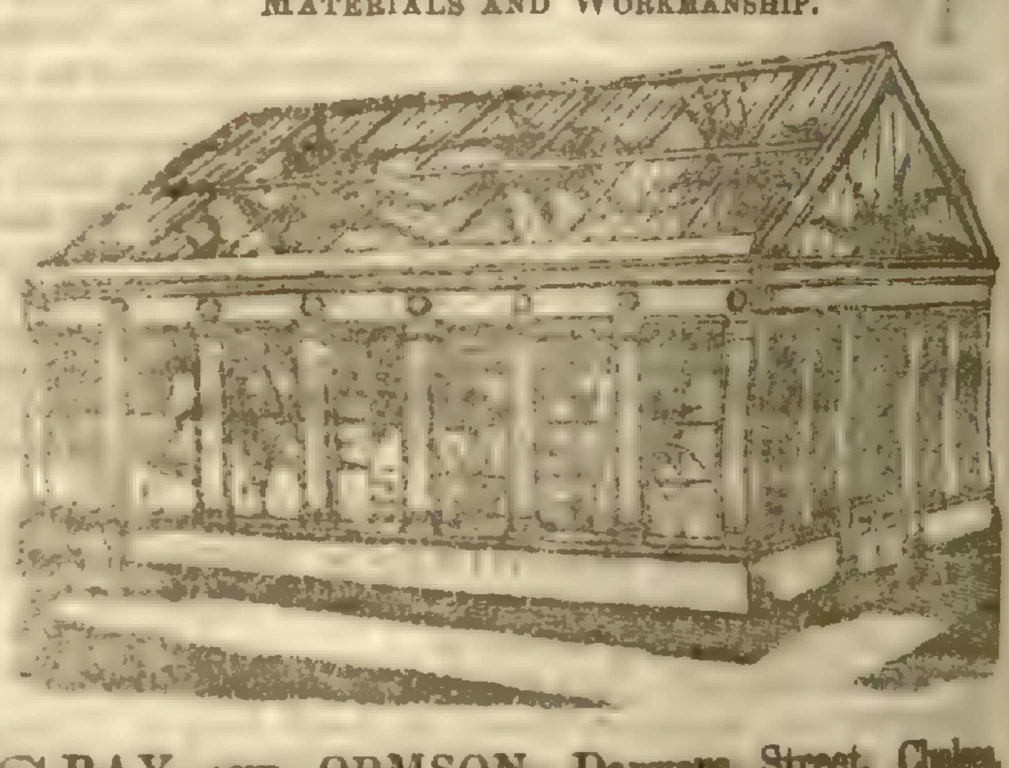
The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. WEEKS & Co., King's Road, Chelsea, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



GRAY AND ORMSON, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER, and HOT WATER APPARATUS MANUFACTURER, Triangle, Hackney begs to solicit the attention of the Gentry to his prices for cash. Good substantially built Greenhouses, fixed in any part of the kingdom, 42 feet long, 13 feet wide, 90l.; 21 feet by 13 feet, 50l.; 12½ feet by 10 feet, 30l. A large assortment of Melon and Cucumber boxes, summer houses, &c. Estimates for any branch in the above line either in iron or wood, or park fencing.

BY HER MAJESTY'S ROYAL LETTERS PATENT

E. DENCH, PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

PATENT HOTHOUSES and excellent Glass at 1s. 3d. per foot super., which are superior to all others for price with quality and if known would supersede all others. (See Appendix, in "Book of the Garden," by Mr. M'Intosh.) A Range of Houses and Hot Water Apparatus, was erected by E. D. for E. L. Betts, Esq. Preston Hall, Kent. Mr. J. Frost, head gardener, has shown their efficiency by their produce at the Royal Botanic Gardens Regent's Park, June 8, and Chiswick, June 11. The editor of the Gardeners' Chronicle says: "Beautiful examples of Black Hamburgh, large both in bunch and berry, and as black as Sloes were furnished by Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall, Kent; these well deserved the first prize which was awarded them."—*Gardeners' Chronicle*, June 18th, 1853. The Grapes were considered the best shown at Regent's Park during the season, and the Houses are as superior for the growth of everything else in horticulture, which has been fully proved, and they have been extensively erected for the nobility and gentry in all parts of the kingdom.

GLAZING WITHOUT PUTTY.—Iron and Glass alone. E. D. has Roofed the Public Baths and Washhouses, Endell Street, on this principle, and others are in hand. Patent Sashes for Peach Walls, Pits, &c., 8d. per foot super. Heating by Hot-water, on the most practical principles, and all the best materials used. Printed Price List sent on application.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2*d*. to 3*d*. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

HARTLEY'S PATENT ROUGH PLATE GLASS, 1-8th thick, or 2 lbs. to the foot; 3-16ths, or 3 lbs.; and 1-4th, or 4 lbs. to the foot, for Ridge and Furrow Roofs, Greenhouses, Railway Stations, Engine Sheds, Mills, Market Halls, and Public Buildings generally.

For further information apply to JAMES PHILLIPS and Co., 116, Bishopsgate Street Without.

"Rough Plate has never been, and never can be, prejudicial to the colouring of Grapes; though we can easily believe that it has been charged with such a fault by persons who have not skill enough to manage Grapes under glass."—*Gardeners' Chronicle.*

"There *can be no question now* that Rough Plate Glass is the most beautiful as well as the most useful kind of glass that can be employed in horticulture. It is free from all the faults of transparent glass, and has many advantages peculiar to itself, *without a single disadvantage as a set off*."—*Gardeners' Chronicle.*

"Rough Plate Glass.—We should have no hesitation in using this for a Vinery—indeed we should select it."—*Cottage Gardener.*

GLASS FOR CONSERVATORIES, GREENHOUSES, DWELLINGS, ETC.

ESTABLISHED MORE THAN ONE HUNDRED YEARS.

THOMAS MILLINGTON requests attention to his present prices of SHEET GLASS in 100 feet boxes.

Squares	6 by 4 and 6½ by 4½		
"	7 by 5 and 7½ by 5½	... 13	6
"	8 by 6 and 8½ by 6½		
"	9 by 7 and 9½ by 7½		
"	10 by 8 to 12½ by 9½	... 16	3
"	12 by 10 to 24 by 14	... 19	0

Orchard House Squares on Mr. Rivers's approved plan, to whom I have sold some thousands of feet:—20 inches by 12, 20 by 13, 20 by 14, 20 by 15, 20½ by 12½, 20½ by 13½, 20½ by 14½, at 19*s*. per 100 feet.

200 feet cases at 42*s*., and 300 feet case 63*s*., in large sheets.

Boxes charged 1*s*. extra per 100 feet, and the same allowed if returned free of all charge.

HARTLEY'S PATENT ROUGH PLATE GLASS, Fern Shades, Striking Glasses, Milk-pans, Bee Glasses, Cucumber Tubes, Sheet and Rough Plate Glass Tiles, Wasp Traps; Plate, Patent Plate, Crown and Sheet Window Glass, in every thickness and quality, and Ornamental Glass, plain and coloured; pure white Shades for Ornaments, Crystal Glass for Pictures.

Warehouse, 87, Bishopsgate Street Without—same side as Eastern Counties Railway.

THE MOST PERFECT HAY-MAKING MACHINE YET MADE, which has been greatly increased in strength, durability, and lightness, weighing considerably less than other Haymakers, consequently the labour of the horse is much reduced. These qualities have been secured by substituting wrought iron for cast. The Machine is mounted on wrought-iron wheels, and is under the entire control of the person who drives. By merely pressing a spring lever, it is instantly thrown into or out of gear, or the action reversed; and, by a very simple contrivance, the Machine is adjusted to suit every description of crop. Agriculturists should order early, to prevent disappointment.—Address,

RICHMOND AND CHANDLER, IMPLEMENT WORKS, Salford, Manchester, and 32, South John Street, Liverpool.

MAKE YOUR HAY WHILST THE SUN SHINES.

HAY-MAKING MACHINES & HORSE RAKES, on the most improved and approved principles, are now ready for the approaching season at

RICHMOND, CHANDLER, AND NORTON'S AGRICULTURAL IMPLEMENT DEPOT, 32, South John St., Liverpool.

N.B.—A Two-roomed Galvanised Iron HOUSE, lined, ceiled, and floored with Wood, to be SOLD very cheap.

ANTHONY'S PATENT AMERICAN CHURN.—Extract from the Royal Agricultural Society's Report of the trial of Churns at the Gloucester meeting in July last. "In this trial the American Churn not only maintained its character in producing butter rapidly, but in producing a greater quantity from the like amount of cream." It made from 4 quarts of cream 4 lbs. 6 oz. of butter, being 8 oz. more than any of the other Churns from the same quantity and quality of cream. Price Lists of Churns and Implements by the best makers sent free, and Illustrated Catalogues on receipt of eight postage stamps. BURGESS & KEY, 103, Newgate Street, and 52, Little Britain, London, who have always a large stock of Steam-engines, Ploughs, Harrows, Diggers, Waggons, Carts, Threshing and Dressing Machines, Mills, Oat and Grain Bruisers, Oilcake Breakers, Reaping Machines, Haymakers, Horse-rakers, Turnip Cutters, Liquid Manure Carts, Parkes' celebrated Steel Digging Forks and Draining Tools, Pumps for Manure, Farm Fire Engines, and for Garden Purposes, &c. &c.

STEPHENSON AND PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

DUNN'S TAILORS' LABOUR AGENCY invites public attention to the principles on which it is conducted, and by which it offers unusual advantages both to the producer and the consumer, combining high wages to the one with low charges to the other. Conducted by the Agent at small cost, it secures the best labour and pays the best price for it; while it appropriates a part of its trading profits to the moral and social elevation of its operatives, and has provided, at a cost of nearly One Thousand Pounds, Schools for the Education of their Children, Lecture Hall, Library, Warm Baths, &c. See a more lengthened statement in the *Times* of any Wednesday, or send for a Prospectus. A useful Dress Coat, 28*s*.; Wages paid for Making, 10*s*. 6*d*. A first-class Dress Coat, 2*l*. 16*s*.; Wages paid for Making, 15*s*.—Nos. 13 and 14, Newington Causeway, and 39 and 40, Bridge House Place, Opposite. No connection with any other House.

BLAIR'S GOUT AND RHEUMATIC PILLS. Price 1*s*. 1½*d*. and 2*s*. 9*d*. per box.—Mr. William Courtney, of Barton, Stacey, Hants, says:—"I had resort to your Pills, and within two hours I was quite easy. The use of these Pills ought really to be known all over the world." Among the many discoveries, none have conferred such a boon upon suffering humanity as that of Blair's Gout and Rheumatic Pills, they require neither attention nor confinement, and are certain to prevent the disease attacking any vital part. Sold by all medicine vendors. Observe that "THOMAS PROUT, 229, Strand London," is impressed upon the Government stamp.

THE GRAPE BLIGHT having re-appeared, Cultivators should apply immediately for its best Preventive and Cure—M'ADAM'S "COMPOSITION." Packets, sufficient for a large Vinery, with full directions, 3*s*.—Agent, J. HAYNE, 8, Liverpool Street, Bishopsgate, London. Paid orders for two packets forwarded.

DEVONSHIRE CYDER.—A three dozen case (large bottles), of the very best DEVONSHIRE CHAMPAGNE CYDER, will be forwarded to any address on receipt of a Post-office order for 21*s*., payable to JOHN E. RENDLE, Martin Street, Octagon, Plymouth. Case and bottles, value 9*s*., included.

GLENFIELD PATENT STARCH, used in her Majesty's Laundry, and WOTHERSPOON'S machine-made CONFECTIONARY, MARMALADE, JAMS, JELLIES, &c., which gained the Prize Medal of 1851, may be had of all Grocers; Wholesale of WOTHERSPOON, MACKAY, & Co., 66, Queen Street, Cheapside, London; and ROBERT WOTHERSPOON & Co., Glasgow.

BRECKNELL'S SKIN SOAP.—Recommended as the best for producing a clear and healthy skin, being the OLD YELLOW SOAP, made expressly for the purpose, of the best materials and not scented. Sold only in Shilling Packets, of either four rounded tablets or eight squares.—Observe each tablet and square is stamped "Brecknell's Skin Soap."

BRECKNELL, TURNER, & SONS, Wax and Tallow Chandlers, Soap and Oil Merchants, &c., to Her Majesty, Beehive, 31, Haymarket.

BERDOE'S VENTILATING WATERPROOF LIGHT OVER-COATS resist any amount of rain, without confining perspiration, the fatal objection to all other waterproofs, air-tight materials being unfit and dangerous for clothing, and being free from vulgar singularity are adapted for general use equally as for rainy weather. Price 45*s*. and 50*s*. A large stock for selection. Also of Capes, Shooting Jackets, Ladies' Mantles, Habits, &c.—W. BERDOE, Tailor, &c., 96, New Bond-street, and 69, Cornhill (only).

HEAL AND SON'S SPRING MATTRESSES.—The most durable Bedding is a well-made SPRING MATTRESS: it retains its elasticity, and will wear longer without repair than any other mattress, and with *one* French Wool and Hair Mattress on, it is a most luxurious Bed. HEAL & SON make them in three varieties. For prices of the different sizes and qualities, apply for HEAL AND SON'S ILLUSTRATED CATALOGUE OF BEDSTEADS and priced LIST OF BEDDING. It contains designs and prices of upwards of 100 Bedsteads, and prices of every description of Bedding, and is sent free by post.

HEAL & SON, 196, Tottenham Court Road, London.

TYLOR AND PACE have removed from 313, Oxford Street, to larger and more commodious premises, 104, New Bond Street, which will enable them to keep a much larger stock in all the different branches of their manufacture, including a very extensive assortment of Iron and Brass Bedsteads, Children's Cots, Portable Bedsteads, and Chair Bedsteads, with suitable Bedding and Mattresses. A Large Show Room is entirely appropriated to the exhibition of Baths and Toilette Ware of every description, all at the most moderate prices. An increased assortment of Venetian and all other Window Blinds, Outside Blinds, and Transparencies. Illustrated Catalogues of Bedsteads, Baths, and Window Blinds, are published separately, and will be forwarded post free on application by naming the description of article required.

TYLOR & PACE, 104, New Bond Street, London.

DR. DE JONGH'S

LIGHT BROWN COD-LIVER OIL, PREPARED FOR MEDICINAL USE IN THE LOFFODEN ISLES, NORWAY, AND PUT TO THE TEST OF CHEMICAL ANALYSIS. THE MOST EFFECTUAL REMEDY FOR CONSUMPTION, ASTHMA, GOUT, CHRONIC RHEUMATISM, AND ALL SCROFULOUS DISEASES.

Approved of and recommended by Berzelius, Liebig, Woehler, Jonathan Pereira, Fouquier, and numerous other eminent medical men and scientific chemists in Europe.

Specially rewarded with medals by the Governments of Belgium and the Netherlands.

Has almost entirely superseded all other kinds on the Continent, in consequence of its proved superior power and efficacy, effecting a cure much more rapidly.

Contains iodine, phosphate of chalk, volatile acid, and the elements of the bile; in short, all its most active and essential principles, in larger quantities than the pale oils made in England and Newfoundland, deprived mainly of these by their mode of preparation.

A Pamphlet by Dr. de Jongh, with detailed remarks upon its superiority, directions for use, cases in which it has been prescribed with the greatest success, and testimonials, forwarded gratis on application.

The subjoined testimonial of Baron Liebig, Professor of Chemistry at the University of Giessen, is selected from innumerable others from medical and scientific men of the highest distinction:—

"SIR,—I have the honour of addressing you my warmest thanks for your attention in forwarding me your work on the chemical composition and properties, as well as on the medicinal effects, of various kinds of Cod Liver Oil. You have rendered an essential service to science by your researches, and your efforts to provide sufferers with this medicine in its purest and most genuine state must ensure you the gratitude of every one who stands in need of its use.—I have the honour of remaining, with expressions of the highest regard and esteem, yours sincerely,

"Giessen, Oct. 30, 1847. "DR. JUSTUS LIEBIG.

"To Dr. de Jongh, at the Hague."

Sold wholesale and retail, in bottles, labelled with Dr. de Jongh's stamp and signature, by ANSAR, HARFORD, & Co., 77, Strand, Sole Consignees and Agents for the United Kingdom and British Possessions; retail, at their West End Branch, 96, New Bond Street: and by all respectable chemists and vendors of medicine in town and country, at the following prices:—

IMPERIAL MEASURE, half pints, 2*s*. 6*d*.; pints, 4*s*. 9*d*.

WANTED, the Sweepings of a Granary or Barn, as food for chickens.—Apply, stating price, quality, and quantity, to Messrs. COLLIER, Post Office, Thrapstone.

HANTS.

WANTED, a FARM, of about 100 Acres, with comfortable House and suitable Out-buildings, in the neighbourhood of Andover, Winchester, Basingstoke, Alresford, or thereabouts.—Address W. F., 45, George Street, Ryde, Isle of Wight.

OVERTON, HANTS.

TO BE LET, for a Term of Years, COURT FARM, 500 Acres, subject to Tithe Commutation Rent Charge. Near to the celebrated Annual Sheep Fair in Overton, and within a quarter of a mile from a Railway Station to London and the West of England. It consists of Arable, Water Meadow, and Pasture, and is well known as a sound Stock and Corn Farm.—Tenders for the same, stating amount of yearly Rent, to be forwarded to LAMB, BROOKS & Co., Solicitors, Basingstoke, Hants, on or before the 14th day of June next.

TO BE SOLD or LET, on LEASE, a DETACHED COTTAGE and GARDEN, situated in a rural district on the borders of Surrey and Hants. The House has recently been put into repair, and contains five or six Bedrooms, two Sitting-room, Water Closet, Kitchen, &c., and a Walled Garden.—For terms, &c., apply to E. KEMMOCK, Surveyor and Land Agent, Kingston-on-Thames.

TO GENTLEMEN'S GARDENERS.

VILLAGE INN, WITH 10 ACRES OF LAND.

TO BE LET, a VILLAGE INN, situated near Great Yarmouth, with large Garden and pretty Grounds (2½ acres), besides Arable and Meadow Land, &c. (7½ acres). The House, which a few years ago was a gentleman's residence, is capacious and well arranged, and in excellent repair, with Stables, Coach-house, Sheds, &c. Possession at Michaelmas next. The above is eminently adapted for a gentleman's gardener desirous of retiring from private service, with a small capital. Unexceptionable references required.—Apply to the Rev. T. G. F. HOWES, Belton Rectory, Great Yarmouth, who desires it to be understood that applications which remain unanswered are declined.

TO BE LET, a FLOUR MILL, worked by Steam, driving Five Pair of Stones, newly built, upon the most approved principle of machinery, situate about 20 miles from London, close to a Railway Station, and adjoining a Canal.—Further particulars of Messrs. REE and SON, Estate Agents, Ware, Herts.

COCHIN CHINA POULTRY, ETC.

EGGS FROM PRIZE BIRDS.

MR. JOHN FAIRLIE, of Cheveley Park, Newmarket, in reply to the very urgent applications from numerous amateurs, is now prepared to dispose of a limited number of Eggs, from his celebrated prize Cochins, Brahma Pootras, Scotch Bakies, Dorkings, &c., according to the dates of the orders received.

GOLD-LACED BANTAMS.

TO BE SOLD, a COCK and Two HENS, price 50*s*.; also a COCHIN COCK, price 50*s*., all last year's birds, and very fine.—Apply to Mr. BAKER, Portchester, Hants.

FANCY PIGEONS.—Jacobins, Fantails, Helmets, Trumpeters, Owls, Tumblers, Nuns, Jackdaws, Pouters, &c., in all colours. The owner, removing from the country to London, will part with the above; they are most beautiful birds; and very tame. Will be sold at one-third of their cost. Most of the old birds have now nests. Particulars will be sent on receipt of a stamped envelope.—F. P., care of Mr. STIMSON, 6, Red Lion Passage, Red Lion Square. Written applications only attended to. Also a very handsome Double Rose Comb White Dorking Cock, 3 years old, and four Coloured Dorking Hens and ditto Cock, in full profit. Can be seen by appointment.

BRAHMA POOTRA EGGS, from the choicest Birds of an Amateur, Brahmas of whose breeding have competed successfully at the first Shows in the Kingdom, viz., the Royal Agricultural, Great Metropolitan, Birmingham, Great Yarmouth, Doncaster, Norwich, Winchester, and Manchester. Price three guineas per dozen, warranted from the best prize and selected birds only.—W. C. G., Post Office, Sandbach, Cheshire.

EGGS FOR SITTING from fine single-combed Speckled Dorkings, weighing 16 lbs. the pair, at 6*s*. per doz. From well-feathered pure White Cochins, 10*s*. per doz., careful package included. Also for sale, a pair of fine Grey Dorking Pullets, 1*l*. the pair. A pair of first-rate White Cochins (cock and hen), 2*l*. per pair. A pair of fine Buff Cochins (cock and hen), 12*s*. per pair; all from 10 to 12 months old.—JOHN G. WRIGHT, St. John Street, Bury St. Edmund's.

BLACK COCHIN EGGS from the best birds in England, having always taken prizes at the best shows, at 18*s*. per dozen, including package. Apply at the city of London Wire Works, 44, Skinner Street, London. N.B. Fowl Houses, Chicken Coops, Poultry Hurdles, and Netting, of every size and description. Illustrated Catalogues forwarded, post free, on application. A few Spanish Pullets, sisters to those sent to her Majesty's yard at Windsor, for Sale.

Sales by Auction.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, at the Mart, Bartholomew Lane, on FRIDAY, June 2d, at 12 o'clock, a first-rate collection of DAHLIAS, FUCHSIAS, VERBENAS, GERANIUMS, and other plants in bloom, with a large assortment of Plants for bedding.—On view the morning of Sale; Catalogues had at the Mart; and of the Auctioneers, American Nursery, Leytonstone, Essex.

ORCHIDS FROM THE BRAZILS.

THE MOST IMPORTANT AND VALUABLE COLLECTION EVER MADE IN THAT COUNTRY.

MR. J. C. STEVENS begs to announce that he is instructed by Mr. de Jonghe, of Brussels, to Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on MONDAY, June 5, at 12 for 1 o'clock, a Consignment of ORCHIDS, received, per last mail-steamer, from his collector in the Brazils, including magnificent specimen plants of Cattleyas Leopoldi, crispa superba, candida, intermedia, and several supposed new species; Burlingtonias, Coryanthes, Epidendrums, Oncidiums, Lælias (probably purpurata), &c., from the provinces of St. Paul and St. Catherine; they have arrived in first-rate condition. Catalogues are preparing, and will be forwarded in due course.

FARNLEY HALL, NEAR OTLEY, YORKSHIRE.

ANNUAL SALE OF SHORT-HORNED BULLS.

MR. STRAFFORD is again favoured with instructions from F. H. Fawkes, Esq., of Farnley Hall, to announce that the Annual Sale of young BULLS from this celebrated Herd will take place on WEDNESDAY, June 7, when their quality will be found such as to maintain the high reputation gained for them at former sales. They combine good size with great substance and excellent quality; their colours are particularly rich and good. The whole were bred by Mr. Fawkes, being descended from the most fashionable blood, and will be sold, as in former sales, without the slightest reserve.—Catalogues, with the pedigrees and other particulars, may be had upon application to Mr. STRAFFORD, 13, Euston Square, London; or of Mr. SCOTT, the Agent, at Farnley Hall, near Otley, Yorkshire.

CHOICE AND VALUABLE COLLECTION OF TULIPS.

TO BE SOLD by Auction, without the least reserve, on the premises, Cooper's Lane, Leyton (near the Church) on MONDAY, May 29, at 1 o'clock, comprising among Bizarres Marcellus, Strong's King, Pompe Funebre, Everard, Apelles, Vivid, Sphynx, Willison's King, Norman's Royal Albert, Achilles Sir E. Knatchbull, Sir George Whitmore, Alexander's Monarch, Emperor, Rembrandt, Charles Baron, Coftan, Charles Jeffrey Kossuth, Paganini, Waterston's Midas, Grisewood's Grace Darling, Morning Star, Headley's King Richard. The Byblœmens comprise Pandora, Salvator Rosa, Rutley's Queen, Brown's Magnificent, Duke of Northumberland, Dixon's Democrat, Parmegiano, Byzantium, Nora Creina, Lord Bloomfield, Thalia, Louis XVI., Godet Parfait, Patty, Zuill's George Glenny, Flora, Father Gavazzi, Reid's Duke of Argyll, Thomas Maxwell, Lord J. Russell, Sir H. Smith, Wylie's Rob. Wylie, &c. Among the Roses are Rose Lac, Sans Egale, Camuse de Craix, Brulaat Eclatant, Dixon's Arlette, Bion, Alexander's Gem, Jenny Lind, Jeffrey's Elizabeth, Maid of Honour, Village Maid, Flora M'Donald, Mary Lamb, Miss O'Neil, Mrs. Zuill, John Waterston, Munroe's Mount Hecla, &c.; also many new flowers only in this collection the property of Mr. James Alexander.—May be viewed two days prior to Sale; Catalogues had at the Mart; of Messrs. Dawe, Cottrell, and Benham, Seedsmen, Moorgate Street, White Swan, West Ham; on the premises; and of Mr. HENRY ALEXANDER, Auctioneer, Shacklewell.

GOOD FREE FLOWERING ORCHIDS.

THOMAS JACKSON AND SON beg to offer the following:—Acineta Barkeri, Acropera Loddigesi, Cypripedium insigne, Dendrobium chrysanthum, D. Jenkinsi, D. moschatum, D. nobile, D. Pierardi, D. pulchellum, Epidendrum aurantiacum, E. ciliare, Lælia autumnalis, Lycaste cruenta, L. Skinneri, Maxillaria Harrisoni, M. picta, Oncidium altissimum, O. Cebolleti, O. flexuosum, O. leucochilum, O. macropterum, Phaius albus, P. grandifolius, Rodriguezia planifolia, Stanhopea insignis major, S. oculata, S. tigrina major.

T. J. & SON, having a fine Stock of healthy plants of good Orchids suited for amateurs commencing a collection, will be glad to furnish 12 distinct kinds from the above, selected by T. J. & Son, for 42*s.*; 12 selected from the above by the purchaser, 63*s.* Many of the more rare Orchids at equally low prices.

Kingston, near London.

BASS AND BROWN'S NEW POTENTILLAS.—In consequence of the limited stock of King of Crimsons, we regret we must decline receiving more orders. The following are now ready to send out:—

Potentilla Sudbury Gem, each ...	10*s.* 6*d.*	Potentilla Theodore, each	7*s.* 6*d.*
„ Shylock, do. ...	10 6	„ Julia, do.... ...	7 6

The following, 16*s.* the set of seven varieties:—

Floral Beauty	3*s.* 6*d.*	Scarlet Gem	3*s.* 6*d.*
Napoleon	2 0	Primrose	2 0
Defiance...	2 0	Argo	2 0
Negress	3 6		

For descriptions and editorial remarks, see *Gardeners' Chronicle* of March 13, p. 144, and April 1, p. 208.

Seed and Horticultural Establishment, Sudbury, Suffolk.

RICK CLOTHS, MARQUEES, TENTS, ETC.,

NEW OR SECOND-HAND, FOR SALE OR HIRE.

BENJAMIN EDGINGTON has, for the ensuing season, an extensive assortment of Marquees, &c., for Horticultural Societies, Fêtes, Cricket Clubs, &c. Rick Cloths, with poles, pulleys, and lines complete. A variety of Emigration Tents erected on the premises, No. 2, Duke Street, Southwark. Netting and Bunting for Fruit Trees.

Warehouse, 32, Charing Cross, where Tents are erected. Address by post, No. 2, Duke Street, Southwark.

BUDDING'S LAWN MOWERS, with SAMUELSON'S registered improvements, *lightening the draught fully one-half*, and enabling an unskilled labourer to make neat work; free from liability to choke, or get out of order. May be had of all ironmongers in town or country, or from the Works, Banbury; delivered free in a packing case to any station on the North-Western and Great Western Railways. Testimonials forwarded on application.—Britannia Works, Banbury.

MR. GLENNY requests that REPORTS of all the HORTICULTURAL and FLORAL EXHIBITIONS may be sent to him for publication, and that specimens of Fruit, Flowers, Plants, and Vegetables, as well as other subjects for his opinion, may be addressed, Mr. GLENNY, 420, Strand.

Just published, price 2*d.*, free by post 3*d.*,

COMPARATIVE TABLES OF FRENCH AND ENGLISH MEASURES, WEIGHTS, &c., Reprinted from the *Gardeners' Chronicle and Agricultural Gazette.*

CONTAINING—

Measures of Length	Old French Measures of Capacity for Liquids
Square Measure	Do. for Dry Substances
Cubic Measure	Old French Weights reduced to English Avoirdupois
Measures of Capacity for Liquid and Dry Substances	Thermometers
Weights	Various Conversion Tables.

JAMES MATTHEWS, 5, Upper Wellington Street, Covent Garden.

THE GARDENERS' CHRONICLE.—One shilling will be given for the following Number:—1853, No. 11.—Apply to Mr. W. DUFOUR, 17½, Great George Street, Westminster.

THE POULTRY CHRONICLE (the first Number of which appeared on the 1st of March, 1854) published every Wednesday, price 2*d.*, stamped 3*d.*; Monthly Parts, in a wrapper on the 1st of every month, one penny extra. This paper treats of all subjects connected with Poultry, and is now the acknowledged organ of Breeders, Amateurs, and Exhibitors.

Published by GEORGE CLEMENTS, 1, York Street, Covent Garden, London, to whom Orders and Advertisements are to be addressed, and Post-office orders made payable; sold wholesale by G. ROUTLEDGE, Farringdon Street; and to be had of all respectable booksellers in Town and Country.

Communications for the Editor to be addressed to MONK BARNS, Hampstead, London.

New and cheaper Edition, in fcp. 8vo, price 3*s.* 6*d.*,

RIVERS'S ROSE AMATEUR'S GUIDE:—Containing ample Descriptions of all the fine leading Varieties of Roses, regularly classed in their respective Families; their History and Mode of Culture. Fifth Edition, corrected and improved; including a full account of the Author's experience in the Culture of Roses in Pots.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

BY WILLIAM KIDD, OF HAMMERSMITH.

THE CANARY: A CAGE, OPEN AIR, and CHAMBER BIRD. Price, with 52 beautiful Illustrations, 6*s.* bound.

This perfectly original and thoroughly practical Treatise is well adapted as a GIFT BOOK from a Parent to a Child, or from an affectionate Brother to a fond Sister. It combines philosophy with philanthropy, and is penned *con amore* throughout.

London: GROOMBRIDGE & SONS, 5, Paternoster Row.

ON MARRIAGE.

Just published (to be had free, by enclosing 1*s.* or Twelve Postage Stamps, to Mr. WATSON, Clerical Agent, Robert Street, Adelphi, London).

MATRIMONY.—A Pamphlet on Matrimonial Alliances, which merits the attention of those who wish to settle honourably in life. By a Clergyman.

Just published, New Edition, price 1*s.*; or, by post, for 1*s.* 6*d.*

THE SCIENCE OF LIFE; OR, HOW TO LIVE, AND WHAT TO LIVE FOR. With ample Rules for Diet, Regimen, and Self-Management; together with Instructions for securing perfect health, longevity, and that sterling state of happiness only attainable through the judicious observance of a well-regulated course of life. By a PHYSICIAN.

Also, by the same Author, price 2*s.* 6*d.*; by post, 3*s.* 6*d.*,

A MEDICAL TREATISE ON NERVOUS DEBILITY AND CONSTITUTIONAL WEAKNESS, with Practical Observations, illustrated with Anatomical Plates, on Health and Disease.

This work, emanating from a qualified Member of the medical profession, the result of many years' practical experience, is addressed to the numerous classes of persons who suffer from the various disorders acquired in early life. In its pages will be found the causes which lead to their occurrence, the symptoms which indicate their presence, and the means to be adopted for their removal.

London: JAMES GILBERT, 49, Paternoster Row; HANNAY, 63, Oxford Street, MANN, 39, Cornhill; and all Booksellers.

Now ready, in fancy boards, price 2s. 6d.; cloth, elegant, 3s.,

ORR'S CIRCLE OF THE SCIENCES. VOLUME I.

CONTAINING:—

INTRODUCTORY TREATISE: ON THE NATURE, CONNECTION, AND USES OF THE GREAT DEPARTMENTS OF HUMAN KNOWLEDGE. By the EDITOR.

PHYSIOLOGY OF ANIMAL AND VEGETABLE LIFE. By the EDITOR.

PRINCIPAL FORMS OF THE SKELETON.—PRINCIPAL FORMS AND STRUCTURES OF THE TEETH. By Professor OWEN.

VARIETIES OF THE HUMAN SPECIES. By ROBERT GORDON LATHAM, M.D., F.R.S.

Copious Explanatory and Glossarial Index, &c., and upwards of 400 highly-finished Engravings.

WILLIAM S. ORR AND CO., AMEN CORNER, LONDON.

In small 8vo, price 2s. 6d., cloth, elegant,

HOUSEHOLD MEDICINE AND SURGERY,

SICK-ROOM MANAGEMENT, AND DIET FOR INVALIDS.

BEING THE FIRST VOLUME OF

ORR'S HOUSEHOLD HANDBOOKS;

A Series of Works intended to impart plain and practical information on subjects connected with the comforts and refinements of home.

WILLIAM S. ORR AND CO., AMEN CORNER, LONDON.

NEW ILLUSTRATED JOURNAL.

Published Weekly, price 1½d., or 2½d., Stamped.

THE CRYSTAL PALACE AND PARK:

A COMPLETE ACCOUNT OF THE CRYSTAL PALACE AND ITS OBJECTS, WITH NUMEROUS ILLUSTRATIONS FROM PHOTOGRAPHS BY M. DELAMOTTE, WILL BE GIVEN IN

THE HOME COMPANION, NO. XXIV.,

Which will be a DOUBLE NUMBER (32 Pages), without increase of price. As none will be printed beyond the usual number, unless ordered previous to the day of publication, immediate orders should be given to any Bookseller.

WILLIAM S. ORR AND CO., AMEN CORNER, LONDON.

NEW TALE BY MR. CHARLES DICKENS.

On the 31st May will be published, price Ninepence,

PART 50 OF "HOUSEHOLD WORDS,"

CONTAINING FOUR WEEKLY PORTIONS OF

A NEW WORK OF FICTION

CALLED

"HARD TIMES,"

BY CHARLES DICKENS.

OFFICE, 16, WELLINGTON STREET NORTH, STRAND.

CRYSTAL PALACE, 1854.

☞ TO ADVERTISERS.—ADVERTISEMENTS *intended for insertion in the various* HANDBOOKS *to the Contents of the Exhibition, will be received by* Messrs. BRADBURY & EVANS, *the Publishers to the* COMPANY, 11, *Bouverie Street, until the 31st of May.*

On the 31st inst. will be published, price 1*s.*, the Fourteenth Number of

HANDLEY CROSS; OR, MR. JORROCKS'S HUNT. By the Author of "MR. SPONGE'S TOUR." Illustrated with Coloured Plates and Numerous Woodcuts by JOHN LEECH, uniformly with "SPONGE'S TOUR."

London: BRADBURY & EVANS, 11, Bouverie Street.

BY THE AUTHOR OF VANITY FAIR.

On the 31st inst. will be published, price One Shilling, No. IX. of

"THE NEWCOMES." By W. M. THACKERAY, Author of "Vanity Fair," "Pendennis," &c. &c. With Illustrations by RICHARD DOYLE.

London: BRADBURY & Evans, 11, Bouverie Street.

On the 31st May will be published, price 2*s.*,

THE ENGLISH CYCLOPÆDIA, PART XIII., extending in the NATURAL HISTORY DIVISION from ENTOZOA to FALCONIDÆ, and in the GEOGRAPHICAL DIVISION from CORK to DERBYSHIRE, including articles on Corsica, Cossacks, Costa Rica, Courland, Cracow, Cremona, Crimea, Croatia, Cronstadt, Cuba, Cyprus, Czernigof, Dacia, Daghestan, Dahomy, Dalmatia, Danube, Dardanelles, Dead Sea, Deccan, Delaware, Denmark, Derbend, &c.

London: BRADBURY & EVANS, 11, Bouverie Street; and to be had, by order, of all Booksellers.

L'ILLUSTRATION HORTICOLE, published by A. VERSCHAFFELT, NURSERYMAN, Ghent, Belgium.

Every Month there appears a Number with Three fine coloured Plates, representing the best Trade Plants, accompanied with their Description, Culture, &c., &c. The five first numbers are out, and contain:—

No. 1.
Rhododendron album speciosum.
Oncidium Barkerii
Philesia buxifolia

No. 2.
Epidendrum vitellinum
Abies bracteata
Sciadocalyx Warscewiczi

No. 3.
Maranta Warscewiczi
Azalea indica Bealli
Impatiens Jerdoniæ
Ilex cornuta
Wellingtonia gigantea.

No. 4.
Monochætum umbellatum
Odontoglossum Cervantesi
Skimmia japonica

No. 5.
Clematis lanuginosa
Dendrobium fimbriatum var. oculatum
Gloxinia Princesse de Prusse.

L'ILLUSTRATION HORTICOLE can be obtained of Mr. R. SILBERRAD, 5, Harp Lane, Great Tower Street, London.

Price 15 francs.

DR. HOOKER'S HIMALAYAN JOURNALS.

This day, with Maps, Plates, and 80 Woodcuts, 2 vols., 8vo, 36*s.*,

NOTES OF AN ORIENTAL NATURALIST, IN BENGAL, THE SIKHIM AND NEPAL HIMALAYAS, THE KHASIA MOUNTAINS, &c. By JOSEPH DALTON HOOKER, M.D. R.N., F.R.S.

London: JOHN MURRAY, Albemarle Street.

Just published, in One Volume, fcp. 8vo, bound in cloth, with Frontispiece, price 3*s.* 6*d.*, or in cloth, gilt edges, 4*s.* 6*d.*,

FEMALE HAPPINESS, OR THE LADY'S HANDBOOK OF LIFE, with Preface, by the Rev. JOHN EDMUND COX, M.A., F.S.A., Vicar of St. Helen's, Bishopsgate.

London: WILLIAM TEGG & Co., 85, Queen Street, Cheapside.

NEWMAN'S "BRITISH FERNS."

This day is published, the Third Edition of

A HISTORY OF BRITISH FERNS. By EDWARD NEWMAN. With 136 Illustrations. Price 18*s.*, demy 8vo, cloth lettered.—A very few copies in royal 8vo, price 36*s.*

London: JOHN VAN VOORST, 1, Paternoster Row.

THE CABINET OF BRITISH ENTOMOLOGY.—"The natural history of insects is now becoming an interesting study, and a work like this cannot fail to make it increasingly so."—*Kidd's Own Journal.*

Number IV. will be published on June 1, containing 13 highly coloured Illustrations of WATER BEETLES, with their descriptions, and numerous Wood-cut Figures of entomological apparatus.

London: SIMPKIN, MARSHALL, & Co.; and of all booksellers.

DR. MADDOCK'S NEW WORK.

This day, 8vo, price 5*s.* 6*d.*,

ON MENTAL AND NERVOUS DISORDERS; comprising a selection of interesting cases of Melancholy, Lunacy, Sleeplessness, Despondency, Groundless Anxiety, Inaptitude for Mental or Corporeal Labour, Nervous Excitement, and Debility, &c. By ALFRED B. MADDOCK, M.D., formerly Resident Physician of the Malling Asylum.

"Evidently the results of a sound judgment and extensive observation." *Asylum Journal.*

"Full of matter interesting to the general reader." *Sunday Times.*

London: SIMPKIN, MARSHALL, & Co., Stationers' Court; H. BAILLIERE, 219, Regent Street.

NEW WORK BY DR. WILSON, OF MALVERN.

Just published, 8vo, cloth, 10*s.* 6*d.*,

THE PRINCIPLES AND PRACTICE OF THE WATER CURE, AND HOUSEHOLD MEDICAL SCIENCE, in Conversations on Physiology, on Pathology, on the Nature of Disease, and on Digestion, Nutrition, Regimen, and Diet. By JAMES WILSON, M.D.

London: JOHN CHURCHILL. Malvern: HENRY LAMB.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, MAY 27, 1854.

THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley

No. 22.—1854.] SATURDAY, JUNE 3. [PRICE 6*d*.

INDEX.

Aeration ... 357 *b*
Bees ... 358 *c*
Books noticed ... 359 *a*—364 *a*
Calendar, horticultural ... 360 *b*
— agricultural ... 365 *a*
Canada, condition of ... 355 *c*
Cattle, sale of ... 364 *c*
— feeding ... 362 *b*
Churns, improvement in ... 365 *a*
Collodion ... 357 *c*
Crops in East Lothian ... 364 *c*
Cucumber disease ... 356 *b*
Dartmoor, cultivation of ... 364 *a*
Digger, Samuelson's ... 363 *b*
Drains, stoppage of ... 358 *c*
Ealing Park ... 358 *b*
Eggs, vitality of ... 364 *c*
Emigrants, Canada for ... 355 *c*
Farm managers ... 361 *c*
Ferns in Ward's cases ... 358 *b*
Flower gardening, villa ... 357 *c*
Fuchsia, the ... 357 *c*
Gardening, villa ... 357 *c*
Grafting, March ... 358 *c*
Horticultural Society's garden 359 *b*
Ireland, state of ... 363 *b*
Kelvedon Farmers' Club ... 363 *c*
Labourers' friends ... 363 *b*
Linnean Society ... 359 *a*
Manures, various ... 362 *a*
Medinilla magnifica ... 357 *a*
Mechi's (Mr.) farm ... 362 *c*
Melons, disease in ... 356 *b*
Meteorology, agri. ... 363 *b*
Mildew, Vine ... 357 *a*—358 *b*
Orchids, sale of ... 356 *b*
Pathology, Vegetable ... 356 *c*
Plants, new ... 359 *a*
— effects of the winter on ... 358 *a*
Portugal, Vine disease in ... 358 *c*
Potatoes, autumn planting ... 360 *a*
Rhododendrons, Sikkim ... 357 *b*
Seeding, thick ... 363 *b*
Slugs, to kill ... 358 *c*
Tiptree Hall ... 362 *c*
Tusser's life and writings ... 363 *c*
Vegetable pathology ... 356 *c*
Villa gardening ... 357 *c*
Vine mildew ... 357 *a*—358 *b*
— in Portugal ... 358 *c*
Winter, effects of ... 358 *a*
— in Westmoreland ... 357 *a*

ROYAL BOTANIC SOCIETY, REGENT'S PARK.—EXHIBITIONS OF PLANTS, FLOWERS, AND FRUIT, WEDNESDAYS, June 21st and July 5th; and of AMERICAN PLANTS, MONDAYS, June 12th and 19th. Tickets of admission can be obtained at the Gardens, by orders from Fellows of the Society, price 5*s*.; or on the days of Exhibition, 7*s*. 6*d*. each.

The Plants will be arranged on a new plan, similar in form to the American Garden, and placed upon a series of Terraces.

The value of the Prize Medals has been raised to above 150*l*.

BRIGHTON FLORICULTURAL AND HORTICULTURAL SOCIETY.

President.—His Grace the Duke of Devonshire.

Vice-Presidents.

His Grace the Duke of Richmond.
The Most Noble the Marquess of Bristol.
The Right Hon. the Earl of Chichester.
Admiral Sir G. B. Pechell, Bart., M.P.
Lord Alfred Hervey, M.P.
The Hon. A. Macdonald.
Baron de Goldsmid.

General Superintendent of the Exhibition.—Mr. E. Spary.

The ANNUAL SUMMER EXHIBITION OF PLANTS, FLOWERS, and FRUITS, will be held in the ROYAL PAVILION, Brighton, on WEDNESDAY and THURSDAY, the 28th and 29th of June next. Upwards of 200 Guineas are offered as prizes, Schedules of which can be had of the Secretary.

The Band of the Coldstream Guards, by permission of Colonel the Hon. A. Upton, will attend, under the direction of Mr. Godfrey; and the entire suite of rooms, and the eastern lawn, will be thrown open on the occasion.—EDWARD CARPENTER, Sec., Lavender Street, Brighton, to whom all communications are to be made.

CHELTENHAM GREAT EXHIBITION. HORTICULTURAL SECTION.—The days appointed for the British and Foreign Exhibitions are TUESDAY and WEDNESDAY, the 20th and 21st of June, when upwards of 362*l*. will be offered in Prizes. Notice of space required by Exhibitors must be given on or before Tuesday, June 6. *Judges*.—Mr. GORDON, Chiswick; Mr. C. M'INTOSH, Dalkeith Palace; Mr. IVISON, Syon Gardens; Mr. GLENDINNING, Chiswick; Mr. EDWARDS, Wace Cottage, Holloway; Mr. DAVIDSON, Shrubland Park; Mr. KIMP, Rockbier.
THOMAS VOILE, Hon. Sec.
HENRY J. COCHRANE, Sec.
Committee Room, 128, High Street.

EXHIBITION OF AMERICAN PLANTS,
ROYAL BOTANIC GARDENS, REGENT'S PARK.

JOHN WATERER begs to announce that his unrivalled Collection of RHODODENDRONS, &c., is now in bloom, and may be viewed by tickets to be obtained of Fellows of the Society. The Plants at the Nursery are also in perfection, and may be seen gratis.

American Nursery, Bagshot, Surrey, near Farnborough Station, South Western Railway.—June 3d, 1854.

EXHIBITION OF AMERICAN PLANTS AT KNAP HILL NURSERY, WOKING.—The American plants at this Nursery are now in bloom, and may be seen daily gratis. The Knap Hill Nursery is within an hour's ride of London, by South Western Railway to Woking, where all trains stop, and from whence capital conveyances may be obtained.—WATERER & GODFREY, late HOSEA WATERER.

NEW VARIEGATED GERANIUMS,
ATTRACTION AND SILVER KING.

JOHN AND CHARLES LEE are now sending out strong plants of these elegant novelties, which they can recommend as surpassing anything of the kind hitherto introduced.

ATTRACTION has a decided crimson horse-shoe, on a finely variegated foliage, which greatly enhances its beauty. The flowers are light scarlet. Price 10*s*. 6*d*. each.

SILVER KING is of a dwarf free habit, the leaves perfectly flat, with a very broad silver margin; flowers intense scarlet. Price 7*s*. 6*d*. each, or 70*s*. per dozen.

Nursery and Seed Establishment, Hammersmith, near London.

GERANIUMS.—Large Surplus Stock of Choice Varieties. Any of the following 9*s*. per dozen, or the set of 24 for 16*s*.; strong for immediate flowering.—Alderman, Beauty of Montpelier, Belle of the Village, Centurion, Crusader, Conspicuum, Commissioner, Elegans, Emily, Falstaff, Field Marshal, Generalissimo, Gulielma, Gustavus, Herald, Norah, Magnificent, Nandee, Prince of Orange, Pearl, Rosa, Star, Tyrian Queen, Virgin Queen, Windsor Castle.

FANCY VARIETIES.—Any of the following, 9*s*. per dozen, or the set of 20 for 14*s*.—Beauty of Winchester, Delicata, Electra, Exquisite, Fairy Queen, Jehu Improved, Jenny Lind, Le Belle de Africana, Lady F. Hastings, Maid of Anjou, Magnifica, Mazeppa Superb, Marian, Ne Plus Ultra, Odorata Superba, Prince Albert, Reine de Fleurs, Statiaski, Village Maid, Zelia.

BASS AND BROWN,
Seed and Horticultural Establishment, Sudbury, Suffolk.

JOHN WEEKS AND CO., HORTICULTURAL BUILDERS, King's Road, Chelsea, think it now necessary to inform the Nobility, Gentry, and Public in general, that they have NOT HAD ANY CONNECTION WHATEVER with the Bankrupts Edward and Alfred Weeks, who LATELY carried on business at Chelsea.—June 3, 1854.

ONE THOUSAND POUNDS REWARD.—The Proprietors of a leading Metropolitan Journal OFFER the above REWARD to any person who shall first succeed in INVENTING or DISCOVERING the means of using a CHEAP SUBSTITUTE for the COTTON and LINEN MATERIALS now USED by PAPERMAKERS, subject to the following conditions:—

1. The material must be practically unlimited in quantity, and be capable of being converted into pulp of a quality equal to that which is at present used in manufacturing the best description of newspaper, and at a cost, *cæteris paribus*, not less than 10 per cent. lower.

2. It must be tested, approved, and adopted by three eminent manufacturers of paper (two of them to be named by the Advertiser), whose Certificate shall entitle the inventor to the payment of the reward.

3. This offer will be in force only for a period of 12 months from the 26th of May, 1854.

Apply by letter to A. B., Messrs. Smith & Son's, 136, Strand.

GOOD FREE FLOWERING ORCHIDS.

THOMAS JACKSON AND SON beg to offer the following:—Acineta Barkeri, Acropera Loddigesi, Cypripedium insigne, Dendrobium chrysanthum, D. Jenkinsi, D. moschatum, D. nobile, D. Pierardi, D. pulchellum, Epidendrum aurantiacum, E. ciliare, Lælia autumnalis, Lycaste cruenta, L. Skinneri, Maxillaria Harrisoni, M. picta, Oncidium altissimum, O. Cebolleti, O. flexuosum, O. leucochilum, O. macropterum, Phaius albus, P. grandifolius, Rodriguezia planifolia, Stanhopea insignis major, S. oculata, S. tigrina major.

T. J. & SON, having a fine Stock of healthy plants of good Orchids suited for amateurs commencing a collection, will be glad to furnish 12 distinct kinds from the above, selected by T. J. & Son, for 42*s*.; 12 selected from the above by the purchaser, 63*s*. Many of the more rare Orchids at equally low prices.

Kingston, near London.

BASS AND BROWN'S NEW POTENTILLAS.—In consequence of the limited stock of King of Crimsons, we regret we must decline receiving more orders. The following are now ready to send out:—

Potentilla Sudbury Gem, each ...	10*s*. 6*d*.	Potentilla Theodore, each	7*s*. 6*d*.
„ Shylock, do. ...	10 6	„ Julia, do.... ...	7 6

The following, 16*s*. the set of seven varieties:—

Floral Beauty	3*s*. 6*d*.	Scarlet Gem	3*s*. 6*d*.
Napoleon	2 0	Primrose	2 0
Defiance... ...	2 0	Argo	2 0
Negress	3 6		

For descriptions and editorial remarks, see *Gardeners' Chronicle* of March 13, p. 144, and April 1, p. 208.

Seed and Horticultural Establishment, Sudbury, Suffolk.

NEW ROSES IN POTS, at reduced prices.

HYBRID PERPETUAL.		HYBRID PERPETUAL.	
Baronne de Kermont ...	5*s*. 0*d*.	Souvenir de Mdme. Lille	5*s*. 0*d*.
Comte de Nanteuil ...	5 0	Triomphe de Paris ...	5 0
James Veitch	5 0	Volta	5 0
Lady Stuart	5 0	BOURBON.	
Lady Shelley	5 0	Beauté Lyonnaise ...	3 6
Le General Jacqueminot	10 6	Madame Helfinbein ...	5 0
Madame Harriet Stowe	10 6	Sir Joseph Paxton ...	3 6
Madame Phelip ...	5 0	TEA.	
Paul Dupuy	7 6	Gloire de Dijon ...	10 6
Prince Chipetowzikof	5 0	MOSS.	
Prince Leon Kotchouby	7 6	Princess Alice (Paul's)	5 0
Salvator Rosa	3 6	HYBRID BOURBON.	
Sephora	7 6	President Pierce ...	7 6
		Vivid	5 0

The following choice Hybrid Perpetual Roses, at 30*s*. per doz., Baronne Hallez, Destigny, Egerie, Inermis, Laura Raymond, La Seduisante, L'Enfant du Mont Carmel, Louise Peyronny, Ludovic Letaud, Madame Audry, Madame Ducher, Madame Fremion, Madame Hilaire, Miss Meymott, Souvenir de la Reine des Belges.

BENJAMIN R. CANT, in offering the above, does so with the greatest confidence, as he has received several letters from customers stating that the plants sent are far better than those generally supplied by the Trade.

ST. JOHN'S STREET NURSERY, COLCHESTER.

Carriage paid to London and Norwich and all intermediate stations on the Line. Unknown Correspondents are requested to send a remittance or reference.

TURNIP SEEDS! TURNIP SEEDS!
CARRIAGE FREE.

B. PAGE AND CO.'S Genuine Stock, saved from the finest transplanted Bulbs, will, as heretofore, gain the greatest number of Prizes at Root Exhibitions.

Skirving's Improved Swede .. per lb. ...	1*s*. 0*d*.	Mangold Wurzel, Long Red, per lb.	0*s* 10*d*.
Purple-top	1 0	Ditto, Yellow Globe ...	1 0
Green-top	1 2	Buckwheat (English growth), per bushel .	6 6
Ashcroft Hybrid ...	1 2	Mustard, ditto ...	16 0
Laing's ditto	1 2	Dwarf Essex Rape, per cwt.	28 0
Aberdeen or Scotch Yellow	0 10	Rye-grass, Italian, per bushel ... 4*s*. 6*d*. to	5 6
Dale's Hybrid	1 2	Ditto, Perennial, per bushel ... 4*s*. 6*d*. to	5 6
White Norfolk... ...	1 0	Fine mixed for lawns and permanent pasture ... 10*s*. to	15 0
„ Globe	1 0		
Tankard, in sorts 1*s*. to	1 8		
Green Round	1 0		
Red Round	1 0		
Early Stone	1 0		
White Belgian Carrot	1 8		

Offices, Oxford Street (ten yards from the Railway Terminus), and Above Bar, Southampton.

THOMAS WELLAND, Surrey Gardens, Godalming, Surrey, has to offer the following:—True CATTLE DRUMHEADS; also Fine Spring-sown EARLY BATTERSEA PLANTS, packed and delivered at Godalming Station, at 3*s*. 9*d*. per 1000, and sent to order into any county in England, Scotland, Ireland, and Wales.

WELLINGTONIA GIGANTEA.

MESSRS. VEITCH AND SON are now prepared to supply healthy young established Seedling Plants of the above magnificent Tree. For terms, &c., see the Advertisement of their New Plants in another part of this Paper.

Exeter and Chelsea.—June 3, 1854.

LILIUM GIGANTEUM.

JAMES VEITCH, JUN., begs to announce that he has now in bloom a fine specimen of the above noble Lily, which it will be a pleasure to him to show to all lovers of flowers who may be pleased to visit his Nursery.

Exotic Nursery, Chelsea, June 3, 1854.

PLANTS OF CABBAGE, SAVOY, KALE, BROCCOLI, CAULIFLOWER AND CELERY.

JOHN CATTELL, Westerham, Kent, begs respectfully to inform the public that he has a plentiful supply of Plants of his superior true sorts of the above, which will be forwarded to order on receipt of Postage Stamps or Post Office Order made payable here at the following prices, package included:—All the sorts of Early Cabbage, Savoy, and Kale, including Brussels Sprouts, 6*d*. per 100; 4*s*. 6*d*. per 1000. All the sorts of Autumn and Spring Broccoli, and all the sorts of Celery, 8*d*. per 100; 5*s*. 6*d*. per 1000. Cauliflower, Early and Late, 10*d*. per 100. Red Cabbage, 1*s*. per 100; Drumhead, or Cattle Cabbage, 4*s*. per 1000. Packages of 1000 and upwards delivered free of Carriage to London, and to the Edenbridge Station of the South Eastern Rail.

Seed of Cattell's Dwarf Barnes, and of his superior Dwarf Reliance Cabbage, may be had in packets by post for 12 Penny Stamps per packet; the former containing one ounce as usual, and the latter half an ounce.

VANDA CŒRULEA.

MESSRS. MAULE AND SONS having received, the two last seasons, from their collector in the district of the Khasia Hills, a good supply of this most beautiful and charming Orchidaceous Plant, which stands unrivalled amongst the family of Vanda, from its abundant blooming, easy culture, great length of flower spike, and large number of blooms, which are of the most brilliant sky blue, lasting a long time in beauty, flowering from September until January, and in every respect is a first-class Plant of the justly admired tribe of Orchidaceous Plants. There is little doubt that this Plant after cultivation will flower at almost every season, as V. suavis, tricolor, &c. They have also received other esteemed kinds from this of Flora's favoured district of India, which they at the same time offer.

VANDA CŒRULEA 21*s*., 42*s*., 63*s*.; a few extra large, 105*s*.
AERIDES affine or roseum ... ... 21*s*., 42*s*., 63*s*.
„ odoratum ... ... 10*s*. 6*d*., 15*s*.
„ Fox brush, a splendid species, flower spikes in its native habitat, 3 feet long, with laterals, 84*s*., 105*s*.
DENDROBIUM transparens, a beautiful new, upright, free-flowering dwarf species, flowers of a delicate transparent pink ... ... 15*s*., 21*s*.
„ Devonianum ... ... 7*s*. 6*d*., 10*s*. 6*d*.
„ chrysanthum... ... ... 5*s*. each
„ major ... ... 7*s*. 6*d*. each
„ densiflorum ... ... 7*s*. 6*d*., 10*s*. 6*d*.
„ Farmeri ... ... 10*s*. 6*d*., 15*s*.
„ Gibsoni (true) ... ... 10*s*. 6*d*.
„ formosum ... ... 7*s*. 6*d*., 10*s*. 6*d*.

The Nurseries, Bristol.

TO AMATEURS, FLORISTS, GARDENERS, ETC.

H. COLES & CO. beg to inform Floriculturists, &c., that their celebrated POT MANURE, which has given general satisfaction for so many years, may be obtained of the following Agents in packages, at 20*s*., 10*s*., 5*s*., 2*s*. 6*d*., 1*s*., and 6*d*. each. For Amateur, Rose, Fuchsia, and Chrysanthemum Growers it will be found one of the best Manures yet introduced. Agents:—Mr. G. Lawrence, Seedsman, Piccadilly; Mr. Hooper, Centre Avenue, Covent Garden; Mr. Gaines, Herbalist, Covent Garden; Mr. Wood, Seedsman, High Street, Marylebone; Mr. J. H. Tuck, Florist, Sloane Street, Chelsea; Mr. Rickets, Corn Chandler, Victoria Road, Pimlico; and Mr. Gibbs, 14, Portland Road.—Albert Wharf, 10, Wilton Road, Pimlico.

NEW FANCY PELARGONIUMS.

WM. BARNES, Camden Nursery, Camberwell, begs to announce to his Friends and the Public, that he has purchased the Stock of the following first-rate Fancy Pelargoniums from Mr. W. P. Ayres, and being such as Mr. Ayres has proved to be improvements upon existing varieties, W. B. has much pleasure in recommending them to his friends.

⁂ The usual discount to the trade.

BOUQUET PARFAIT (Ayres).—A perfect bouquet, of dwarf and very compact habit, and a most profuse bloomer. Colour soft bright rosy lilac, with white centre, and distinct margin of clean white. Height, 12 to 18 inches; size medium; form exquisite. 21*s*.

CRAMOISIE SUPERIEURE (Ayres).—A Cape cross, with deeply laciniated foliage, of a very distinct character. Colour brilliant scarlet crimson of most intense cast; lower petals a little lighter. Habit dwarf and compact; size medium; form very good. A very distinct variety. 15*s*.

DIADEM (Ayres).—A light variety of very desirable quality. Habit dwarf, compact, and of very free growth. Colour, upper petals rich purplish plum, with broad margin of white; lower petals white, slightly pencilled; size large; form excellent. 21*s*.

EUPHROSINE (Ayres).—An improvement upon Beauty of Blackheath, and of free and robust growth. Colour, upper petals soft rosy crimson margined with white; lower petals white, distinctly spotted with crimson; size medium, form excellent; 21*s*.

KATHLEEN MAVOURNEEN (Ayres).—It is sufficient to say this is an improvement upon Formosissimum (one of the only two fancy Geraniums which ever took a first-class prize as a seedling). Colour, scarlet crimson, slightly pencilled with lilac in the upper petals; lower petals a broad belt of the same colour and distinctly margined with clear white. Size large, form first-rate. An excellent grower. 21*s*.

VICTRIX (Ayres).—This is considered by Mr. Turner and equally competent judges as an improvement upon Celestial, and it has certainly the most perfect lower petal of any Geranium in cultivation, but is a little deficient in the top petals. Colour, soft lilac rose; size, extra large; habit, free and strong; form, nearly perfect. 21*s*.

W. B. would beg to observe that strong plants of the above are now ready for delivery, and most of the kinds may be seen in bloom at his nursery.—Camberwell, June 3.

SEEDLING VERBENAS.

W. J. EPPS has great confidence in recommending the following Seedlings, raised by Mr. Philpot, of Aldington, being without exception the most distinct and splendid flowers in their class yet offered to the public. The following are the opinion and description given by Mr. Neville, editor of the *Gardeners' Record*; they were exhibited at Ashford open Show, in September last, and received first-class certificates.

No. 1. SULTAN.—Dark velvety maroon; large white eye; petals stout; pip, full size; truss, medium; a beautiful variety.

No. 2. BLUE BELL.—Dark velvety blue, with white eye; truss very large and well formed.

No. 4. INDIAN CHIEF.—Crimson puce, very rich in colour; yellow eye; very attractive.

No. 5. DELICATISSIMA.—Pale lavender, with large primrose eye; very beautiful and novel; petals, stout; pips, well formed; truss, medium.

No. 8. RUFUS.—Plum colour purple; velvety texture; dark disc; with a clear white margin; immense flower and trusser.

No. 20. DISTINCTUS.—Cherry lavender grey disc; distinctly margined with dark crimson purple; fine bold truss and large flowers.

The whole of the above are exceedingly free flowering, and excellent habits — well suited for bedding or other purposes; 42*s.* 6*d.* the collection.

SEEDLING PHLOXES.

These are, without exception, the most lovely things in their way possible; they have been much admired by all who have seen them, and have merited the high opinion of the editors of the leading floricultural works. The following is the description from the *Gardeners' and Farmers' Journal*, Sept. 21st, 1853:—

"SEEDLING PHLOXES.—The collection of Seedling Phloxes received is remarkable for novelty and superiority of form.

No. 1. MARIA.—Rose peach, with white eye.
No. 3. ASTROSANGUINEA.—Fine crimson.
No. 4. DISTINCTUS.—Light purple, white eye.
No. 5. CARMINATA.—Deep rose, white eye.
No. 7. SPLENDENS.—Large lilac, white eye.
No. 8. CONSPICUA.—Very deep rose, white eye."

10*s.* 6*d.* the collection.—Nurseries, Maidstone.

ARTHUR HENDERSON AND CO. take the earliest opportunity of informing their friends and the public, that their CATALOGUES No. 3 and No. 6 are now ready and can be had, post free, upon application.

No. 3 contains descriptive lists of Geraniums, Verbenas, Fuchsias, Calceolarias, Cinerarias, Chrysanthemums, &c., amongst which will be found all the best novelties of the season, also the choicest selections from former years.

No. 6 contains descriptive lists of all the newest and best Stove, Greenhouse, and Hardy plants, amongst which will be found many new and desirable plants.

The following new plants are now on sale:

SEEDLING GLOXINIAS.

ELEANOR.—Ground colour pure white, blotched with rose, and shaded with purple.

ELEGANTISSIMA.—Ground colour French white, of great substance, centre pale lavender, spotted with buff.

EUGENIE.—Ground colour rosy pink, centre creamy white, spotted with rose.

EXQUISITE—Ground colour pure white, with broad belt of puce, throat creamy white, spotted with puce.

MAGNET.—Ground colour clear rose, with blotch of purple in the throat, flowers large, of fine form.

PRINCE OF WALES.—Ground colour white, shading off to lavender.

SIR C. NAPIER.—Ground colour deep rosy crimson, throat blotched with intense rose, dwarf habit.

The above seven Gloxinias will all be found to be fine varieties, with large well-formed flowers standing well up above the foliage. 7*s.* 6*d.* each, or 42*s.* the set.

CINERARIA EVA.—Ground colour pure white, with narrow margin of purple, dark disc, fine form and substance; received a Certificate at the National Floricultural Society. 10*s.* 6*d.*

GERANIUMS.

DIADEMATUM REGINA.—Ground colour deep shining rose, upper petals veined with dark purple and white, with blotch of bright orange crimson; very dwarf habit, and abundant bloomer; a fine variety for bedding. 7*s.* 6*d.*

DIADEMATUM SIDONIUM MULTIFLORUM.—Lower petals rosy purple, shaded with crimson; upper petals orange crimson, veined with dark maroon; trusses large, habit dwarf and compact, abundant bloomer; a fine variety for bedding. 10*s.* 6*d.*

PRINCESS.—Ground colour blush white, veined and shaded with carmine, dark horse-shoe foliage, large globular-shaped trusses, and most abundant bloomer. 7*s.* 6*d.*

CETERACH MARANTA (syn. Nothoclena maranta).—A new hardy Fern from the Alps of Switzerland; fronds bipinnate, about 8 inches in length, densely coated with golden brown scales on the under side. 15*s.*

Pine-apple Place, London, June 3.

STANDISH AND NOBLE, NURSERYMEN, SEEDSMEN, &c., Bagshot, Surrey, are now prepared to receive orders for the following new and beautiful varieties of AZALEAS, which will be ready for delivery in June next. The Advertisers can recommend them with the greatest confidence, as superior to any others of their kind.

AZALEA BEALII.—This very distinct variety was introduced by them from China. The flowers, which are of first-rate shape, are quite unique, being striped, like a Carnation, with rich vermilion on a pure white ground. It is of good habit, fine in foliage, and a most abundant bloomer; and although decidedly in the first rank as a greenhouse plant, it is quite hardy enough for the open border. Each, 21*s.*

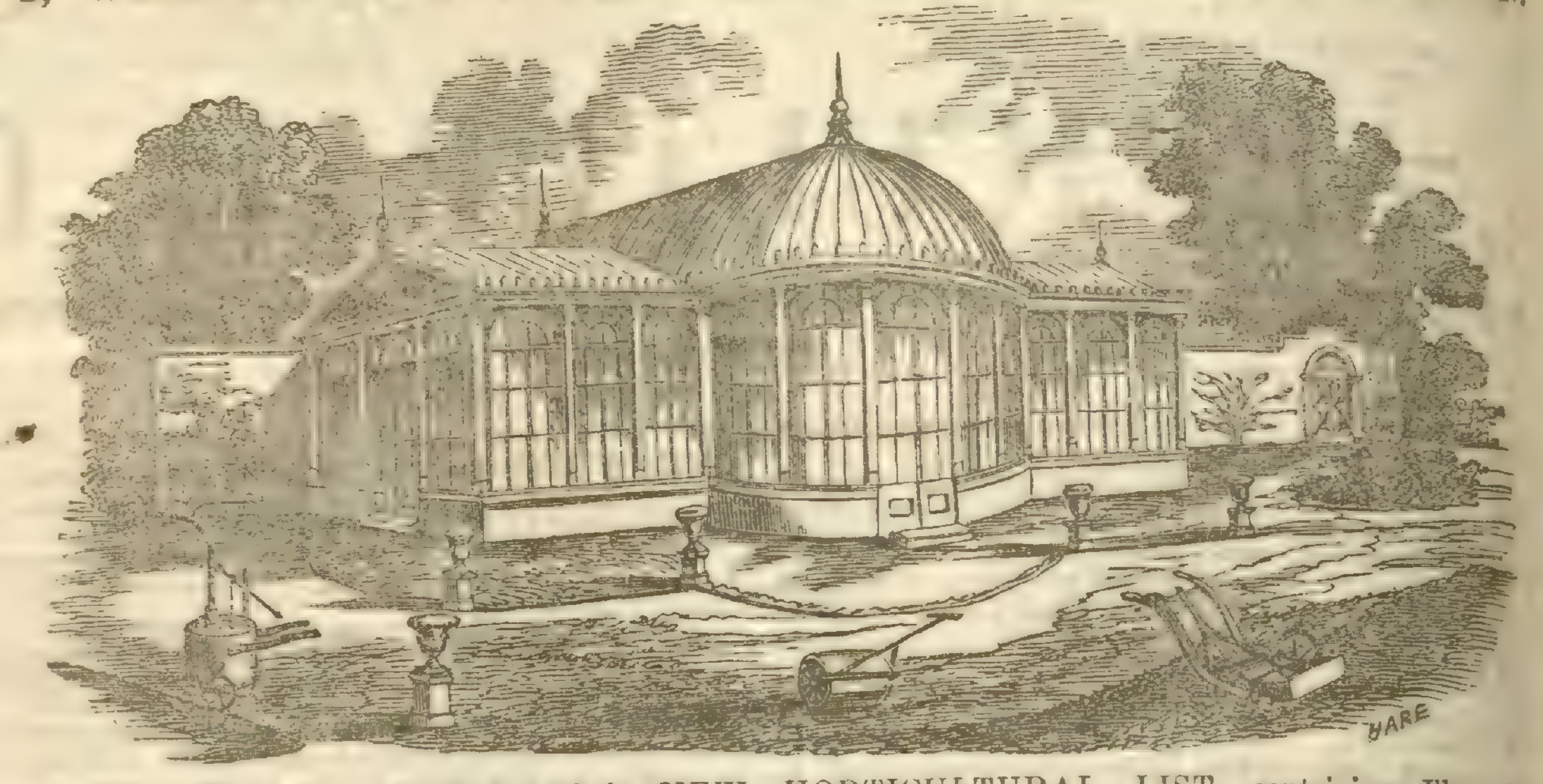
AZALEA CRISPIFLORA, a species differing much from any other known Azalea, having a character entirely its own. No other kind approaches it in compactness of habit, and its foliage is very fine, abundant, and evergreen. The flowers are very large, and the edges of the petals have the appearance of being irregularly *gaufred*, like a lady's frill; the colour is a rich rose lake. From the fact of its blooming very late—much later than any other Azalea—it will be doubly valuable for many purposes. Each 21*s.*

THE GRAPE BLIGHT.—To bring M'ADAM'S "ANTI-GRAPE BLIGHT COMPOSITION," an effectual preventive and cure for Mildew (see *Gardeners' Chronicle*, May 27), within reach of all Growers, the 1 lb. packet, sufficient for 18 gals. of liquid wash, has been reduced to the standard price of 3*s.* 6*d.*, with printed directions for use. London Agent: JOHN HAYNE, 8, Liverpool Street, Bishopsgate, London. Paid Orders forwarded.

PAGE AND CO.'S COMPOSITION FOR THE DESTRUCTION OF MILDEW UPON VINES, BLIGHT UPON ROSES, WALL-FRUIT TREES, CUCUMBERS, MELONS, AND STOVE AND GREENHOUSE PLANTS.—Extra strong, 4*s.* per gallon, sufficient to make four (jars and barrels extra; in bottles, 1*s.* 3*d.* and 2*s.* 6*d.* each. 10 gallons and upwards carriage free to London. Directions for use and copies of testimonials upon application. For testimonials see whole page *Gardeners' Chronicle*, March 11, 1854, describing the SATISFACTORY RESULTS derived from its use in cases of Vine Mildew, Thrip, Scale, Green Fly, Red Spider, Mealy Bug, &c., not only without injuring the most delicate flowers or foliage, but promotes a vigorous growth; it is highly appreciated at the Royal Gardens, Osborne Palace, the Royal Gardens, Claremont, and by the principal nobility and gentry in the United Kingdom.

Finest Grasses for Lawns and Parks, and every variety of Garden and Farm Seeds, at B. PAGE & Co.'s, Seed Merchants, Oxford Street, Southampton.

COTTAM AND HALLEN,
2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.



APPLICATION is requested for their NEW HORTICULTURAL LIST, containing Illustrations, Descriptions, and Prices of

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Syringes	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

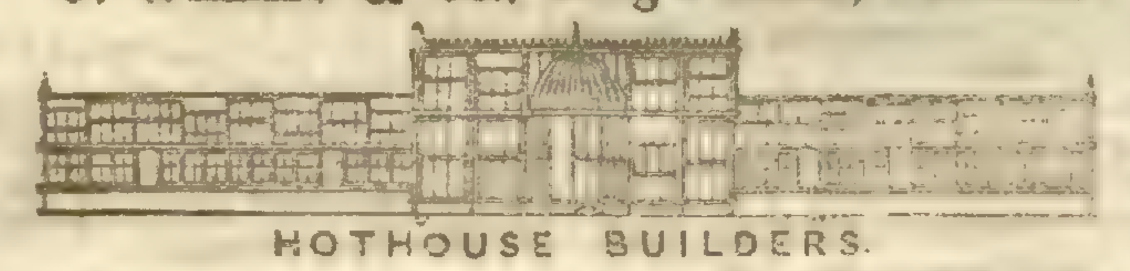
IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.
AGRICULTURAL LIST UPON APPLICATION.
EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.
EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

GREENHOUSES.

HENRY FREEMAN, Hothouse Builder, and Hot Water Apparatus Manufacturer, Triangle, Hackney, begs to solicit the attention of the Gentry to his prices for cash. Good substantially built Greenhouses, fixed in any part of the kingdom, 42 feet long, 13 feet wide, 90*l.*; 21 feet by 13 feet, 50*l.*; 12½ feet by 10 feet, 30*l.* A large assortment of Melon and Cucumber boxes, summer houses, &c. Estimates for any branch in the above line either in iron or wood, or park fencing.

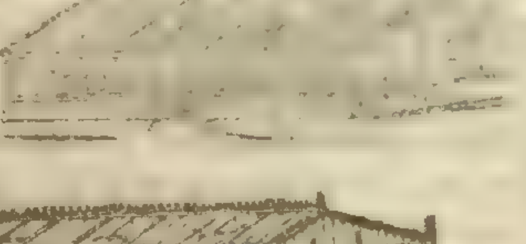
HORTICULTURE IN ALL ITS BRANCHES.

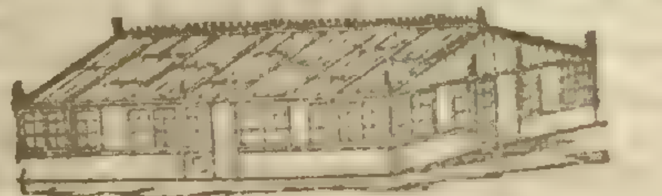
J. WEEKS & Co., King's Road, Chelsea.

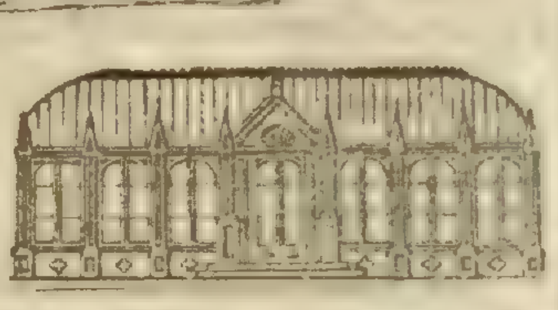


HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Building, or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.







The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. WEEKS & Co., King's Road, Chelsea, London.

BY HER MAJESTY'S ROYAL LETTERS PATENT

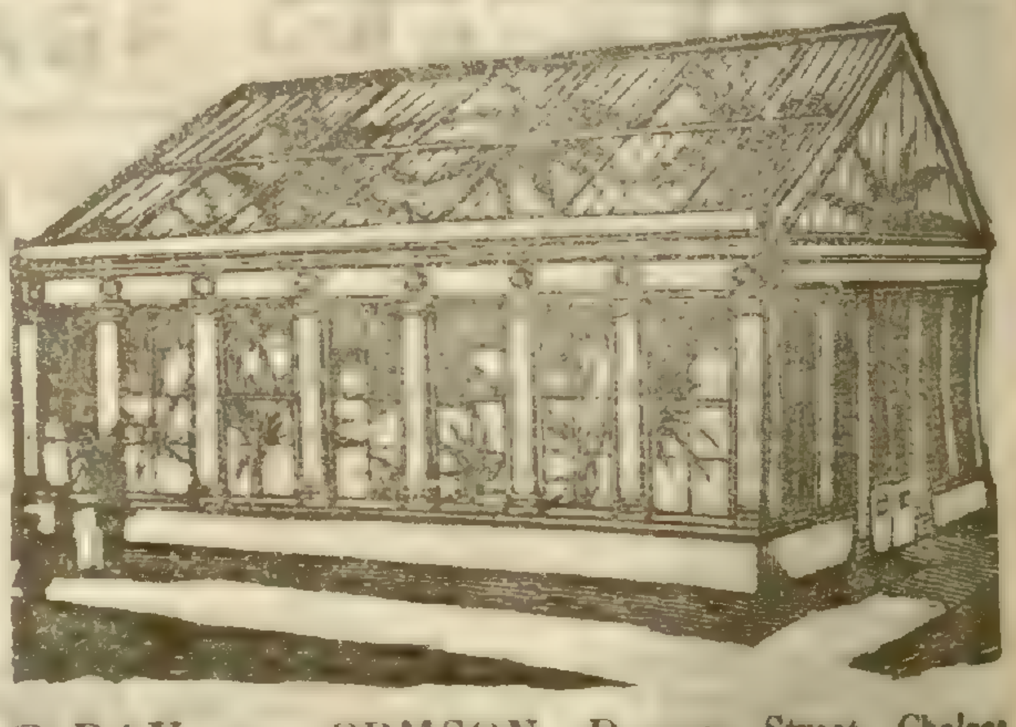
E. DENCH, PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

PATENT HOTHOUSES and excellent Glass at 1*s.* 3*d.* per foot super., which are superior to all others for price with quality, and if known would supersede all others. (See Appendix, in "Book of the Garden," by Mr. M'Intosh.) A Range of Houses and Hot Water Apparatus, was erected by E. D. for E. L. Betts, Esq., Preston Hall, Kent. Mr. J. Frost, head gardener, has shown their efficiency by their produce at the Royal Botanic Gardens, Regent's Park, June 8, and Chiswick, June 11. The editor of the *Gardeners' Chronicle* says: "Beautiful examples of Black Hamburgh, large both in bunch and berry, and as black as Sloes, were furnished by Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall, Kent; these well deserved the first prize which was awarded them."—*Gardeners' Chronicle*, June 18th, 1853. The Grapes were considered the best shown at Regent's Park during the season, and the Houses are as superior for the growth of everything else in horticulture, which has been fully proved, and they have been extensively erected for the nobility and gentry in all parts of the kingdom.

GLAZING WITHOUT PUTTY.—Iron and Glass alone. E. D. has Roofed the Public Baths and Washhouses, Endell Street, on this principle, and others are in hand. Patent Sashes for Peach Walls, Pits, &c., 8*d.* per foot super. Heating by Hot-water, on the most practical principles, and all the best materials used. Printed Price List sent on application.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



GRAY AND ORMSON, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

SCYTHES.

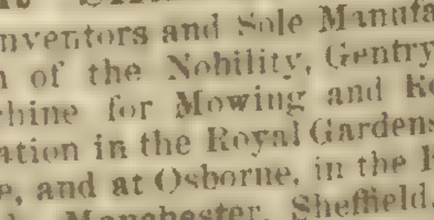
BOYD'S PATENT SELF-ADJUSTING SCYTHE will last out three of the ordinary sort, and is always ready for use.

"We have seen this Scythe at work, and can strongly recommend it."—See *Mark Lane Express*, May 16, 1853.

To be had of every Ironmonger and Nurseryman in the kingdom; and wholesale and retail of WM. DRAY AND CO. Agricultural Implement Makers, Swan Lane, London.

BUDDING'S LAWN MOWERS, with SAMUELSON'S registered improvements, *lightening the draught fully one half*, and enabling an unskilled labourer to make neat work free from liability to choke, or get out of order. May be had of all ironmongers in town or country, or from the Works, Banbury, delivered free in a packing case to any station on the North Western and Great Western Railways. Testimonials forwarded on application.—Britannia Works, Banbury.

IMPROVED MOWING AND ROLLING MACHINE.



ALEXANDER SHANKS AND SON, Arbroath, Forfarshire, Inventors and Sole Manufacturers, respectfully solicit the attention of the Nobility, Gentry, and Gardeners to this improved Machine for Mowing and Rolling Lawns. The Machine is in operation in the Royal Gardens at Windsor Palace, Buckingham Palace, and at Osborne, in the Botanical Gardens at Kew, Regent's Park, Manchester, Sheffield, &c.; at Blenheim Palace, Trentham, Cliveden, Elvaston, Broadlands, Woburn Abbey, Clumber, Lilleshall, Castle Howard, Shrubland, Bridge[illegible], Chatsworth, and in many [illegible] Castle, Enville Hall, Tiptree Hall, as well as in many other of the principal gardens in the kingdom, as well as in the United States, British America, and on the Continent, where its merits have been fully proved, and its success established.

The Machine is made to cut the breadths of 42, 30, 20, and 15 inches respectively, is exceedingly durable, easily managed, and adjusted to cut to the length required. The execution of the work is far superior to what may be attained by the most skilful mower, while at the same time a great saving of labour is effected. By the largest machine a Scotch acre may be mowed, rolled, and the Grass collected in one hour.

Further particulars, with prices, may be had on application.

NEW SIPHOCAMPYLUS.

W. J. EPPS has much pleasure in offering the following, feeling they cannot fail to give the highest satisfaction. Strong plants are now ready for delivery.

SIPHOCAMPYLUS NE PLUS ULTRA—Very dwarf habit, with bright green foliage, producing flowers of the most brilliant scarlet in threes and fours at the axle of every leaf; the best of the genus. 10s. 6d.

BICOLOR ROSEA—Deep crimson, tipped with pale rose, very distinct and beautiful, very dwarf and compact habit; 10s. 6d. The usual discount to the Trade.—Nurseries, Maidstone.

HONEYSUCKLE VERBENA.—So named for its delightful perfume, which is so near the odour of the Honeysuckle that it cannot be distinguished from it. Last season it was the constant inquiry of visitors at the Nursery Grounds if Honeysuckles were growing near, or what flower so much resembled them in fragrance, and on being informed it was the above new variety of Verbena, they were much surprised, and immediately ordered plants of it.—Description—viz.: Compact habit, the glossy foliage (will do excellently for bedding, or as a plant for pot culture), long stems to flowers, making it very useful for bouquets—blooms most abundantly; colour rich dark crimson, shaded lilac, very distinct eye; the truss of a fine globular shape, generally measuring 9 inches in circumference, all the pips fully expanded. It will force well during the winter, being a great advantage for cutting, or for its perfume in a greenhouse or conservatory at that season of the year; it will also stand the sun and rain during summer better than any other Verbena. A few blooms added to a bouquet will give it the scent of the sweetest Honeysuckle. Fine strong plants are now ready for sending out, at 5s. each.

LOBELIA LINDLEYANA.—The Subscriber having purchased the whole stock of the above new Lobelia of Mr. Keynes, Salisbury, he begs to offer it to the public. It was awarded a Certificate of Merit at the Horticultural Society and National Society of London, June 1853. Description—viz.: Habit, dwarf and compact, flowering very freely, covering the whole surface of the plant; distinct in colour from all others yet out, being a bright rosy lilac. It is an excellent bedding variety, and will be sure to please every one who grows it, especially for its distinct colour and profusion of bloom. Strong plants now ready at 3s. 6d. each.

The usual allowance to the Trade when three plants of either are ordered. On receipt of a post-office order or penny postage stamps to the amount, the plant or plants will be sent postage and package free.—EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church Yard, Bath, Somerset.—June 3.

BEDDING PLANTS.

BASS AND BROWN have a large Stock of the following, VERY STRONG and FINE:—

VERBENAS, in 50 choice varieties, 30s. per 100; 3s. 6d. per doz.
 „ 20 best new varieties of 1853, 20s.
PETUNIAS, 32s. per 100, in 30 choice varieties; 4s. per dozen.
 „ 10 best new, of 1853, 10s.
FUCHSIAS, 32s. per 100, in 50 choice varieties; 4s. to 6s. per doz.
 „ 15 best new varieties of 1853, 25s.
ANAGALLIS GRANDIFLORA, COCCINEA, AND CÆRULEA, 35s. per 100; 4s. per dozen.
HELIOTROPES, 4s. per dozen, or, in 9 fine varieties, 6s. per doz.
DWARF ROCK CISTUS, 24 splendid new vars., 15s. the collection.
ANTIRRHINUMS, in varieties, very fine and select, 7s. 6d. p. doz.
PENTSTEMONS, in 6 very fine and select varieties, 7s. 6d. p. doz.
PHLOX, 50s. per 100; 50 choice hardy varieties, 6s. to 9s. per doz.
 „ 6 fine new varieties of 1853, 12s.
CHRYSANTHEMUMS, 42s. per 100; in 100 choice large flowering and Pompone varieties, 5s. to 7s. 6d. per doz.
 „ 10 best new large flowering varieties, 10s.
 „ 21 best Pompone new varieties, 20s., or 12 for 12s.
HERBACEOUS PLANTS, 100 fine and showy varieties, 30s.
 „ 100 varieties, including new, 50s.
ROCK PLANTS, 25 fine varieties, 12s.
HARDY CLIMBING PLANTS, fine varieties, 12s. per dozen.

GERANIUMS.—SEVERAL THOUSANDS OF THE BEST IN CULTIVATION, VERY FINE AND STRONG.

We beg to refer purchasers who wish to make their own Selection to Advertisements in the GARDENERS' CHRONICLE *of March 27th, page* 179; *and April 8th, page* 210, *of these and many other new Plants:—*

18	Best new of last season	66s. 0d.
12	„ „	44 0
30	Very choice, of previous date	45 0
12	„ „	18 0
	Fine vars., 6s. to 12s. per dozen.	
6	Best Fancy vars. of last season	18 0
12	Very choice of previous date	18 0
	Fine vars., 9s. to 12s. per dozen.	

Complete Catalogues free by post for six penny stamps.

Goods Carriage free (not under 20s.) to all the London Termini and all Stations on the London and Norwich Colchester Line; and Plants added gratis with orders of 40s. and upwards.

Post-office Orders payable to BASS & BROWN, or to STEPHEN BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

CINERARIA SEED.

EDWARD GEORGE HENDERSON AND SON, Wellington Nursery, St. John's Wood, London, are now prepared to forward, by post, new Cineraria Seed saved this season. More than usual care has been bestowed in gathering from the choicest named varieties, including the new ones sent out last year; all the light varieties have been discarded, consequently from the above seed we anticipate none but high coloured flowers. Per packet, 2s. 6d. and 5s. each.

Our beautiful collection of CALCEOLARIAS can now be seen in flower at the Nursery, and orders for seed booked, to be sent when ready. Per packet, first quality, 5s.; second quality, 2s. 6d.

NEW AND BEAUTIFUL PLANTS.

MESSRS. VEITCH & SON,

OF EXETER, AND THE EXOTIC NURSERY, CHELSEA,

HAVE much pleasure and confidence in offering the following novelties. Never, perhaps, have they had the opportunity of presenting at one time so many really VALUABLE and STERLING PLANTS as they do on this occasion, believing them all to be Plants that will give general satisfaction, and tend to increase that confidence and support which have so long and so liberally been bestowed upon them.

The Plants are well established; and all Orders will be executed in the rotation in which they are received.

WELLINGTONIA GIGANTEA.

Ample description of this noble tree having lately appeared in the *Gardeners' Chronicle*, the *Times*, the *Illustrated London News*, Curtis's *Botanical Magazine*, the *Florist*, and other publications, it is only necessary now to say that it is a perfectly hardy Coniferous tree, of immense dimensions and great beauty.

Fine established seedling plants are now ready to send out on the following terms:—

One plant, 2 guineas	Eight plants, 10 guineas
Four do., 6 „	Twelve do., 12 „

DESFONTAINIA SPINOSA.

A fine hardy evergreen flowering shrub, with glossy Holly-like foliage, introduced from the Andes of Patagonia by Mr. W. Lobb, *who discovered it in the region of snow.*

It produces beautiful tubular-shaped blossoms, often 2 inches in length, and of a rich scarlet colour tipped with yellow. (See figure in Curtis's Bot. Magazine for May, 1854.)

This plant having been fully exposed in the open ground during the three last winters may, consequently, be declared to *be perfectly hardy.*

It will certainly be a great acquisition.

Fine established plants, in three sizes, 21s., 42s., and 63s. each.
One over on three to the trade.

CERATOSTEMA LONGIFLORUM.
(Fig. in Curtis's Bot. Mag. for April, 1854.)

A beautiful dwarf evergreen Greenhouse Shrub, introduced through Mr. W. Lobb, from the Andes of Peru.

It bears bunches of large tubular-shaped flowers, of a rich orange scarlet colour, of a stout waxy texture, and which are of great duration.

It was exhibited at Chiswick in July 1853, and obtained the first prize for new and rare plants.

Good established plants, of two sizes, 21s. and 31s. 6d. each.
One over on three to the trade.

LOMATIA FERRUGINEA.

This fine Evergreen Shrub was found in Chiloe and Patagonia by Mr. W. Lobb.

It attains a height of from 6 to 8 feet, and is remarkable for its beautiful Fern-like foliage.

As a fine leaved Conservatory Plant it is perhaps without a rival, and no collection of fine foliaged plants should be without it.

It has but to be seen to be admired.

Fine established plants of two sizes, 31s. 6d. and 42s. each.
One over on three to the trade.

EUGENIA, OR MYRTUS UGNI.
(Figured in Curtis's "Botanical Magazine" for Jan., 1852.)

This very interesting evergreen flowering shrub was obtained from Patagonia through Mr. W. Lobb.

It has stood several winters in the open ground without shelter, producing its delightfully fragrant flowers in July, succeeded by Strawberry-flavoured berries, eaten in Chili as dessert.

It is a plant of easy culture, and blooming freely in a small state, is well adapted for growing in pots.

Strong blooming plants in 48-sized pots, 21s. each.
Second-sized do., in 60-sized pots, 15s. each.
One over on three to the trade.

IMPATIENS JERDONIÆ.

This beautiful new Balsam is figured in "The Florist" of January last, and is certainly one of the most interesting of recent introductions.

It is of a dwarf neat habit, of easy cultivation, requiring the temperature of a warm greenhouse or stove, and an abundant bloomer, continuing in flower at least three months.

The flowers are in colour bright red and yellow. It was exhibited in the Hort. Soc. rooms, 21, Regent Street, on the 18th October last, and had the highest prize for new plants awarded.

This is a lovely little plant.

Fine Established Plants ... ... 10s. 6d. each.
A few extra-sized do. ... ... 21s. „
One over on three to the trade.

HEXACENTRIS LUTEA.

A fine Stove Climber, introduced from the Neilgherry Hills, of easy culture, and great beauty.

It produces its flowers in abundance, on elegant pendulous racemes, of from 15 to 18 inches in length, of a clear bright yellow, unmixed with any other colour.

The effect produced when seen drooping from the roof of the conservatory or a trellis is most striking.

It was exhibited at Chiswick on the 13th May last, and obtained the Silver Banksian Medal.

Strong Established Plants ... ... 21s. 0d. each.
Second sized „ ... ... 10s. 6d. „
One over on three to the Trade.

VERONICA VARIEGATA.

This lovely hybrid Veronica was raised by J. Anderson, Esq., of Maryfield, Edinburgh, between V. Andersoni and V. salicifolia.

In character it is intermediate between the two parents, having a bushy compact habit, and small glossy foliage.

It is an abundant bloomer.

The racemes of flowers on first appearing are a clear bright pink, and gradually shade off to a pure white, producing a very pretty and striking effect.

It is really a most useful and attractive plant.

It was exhibited at Chiswick in July, 1853, and was awarded a Medal and greatly admired.

Fine bushy plants, 10s. 6d. each. Three for 21s., to the Trade.

AZALEA INDICA.
Striata formosissima (Taylor).

This beautiful new Azalea is now offered for the first time. It is a seedling raised by Mr. Taylor, gardener to J. Coster, Esq., of Streatham. It is a pure white, flaked and spotted with light purple, fine form, good substance, and first-rate habit.

It was exhibited at the National Floricultural Society, on the 16th June, 1853, and received a Certificate of Merit.

It was also exhibited at the June exhibitions of the Royal Botanical Society, Regent's Park, and the Horticultural Society, at Chiswick, on both which occasions it received prizes.

Worked plants are now ready at 21s. each. One over on three to the Trade.

MESSRS. VEITCH & SON can also supply the following good and popular Plants:—

Abies bracteata (seedlings)...	63s. each.
Aphelandra Leopoldi	21s. „
Azalea indica, Beauté de l'Europe ...	3s. 6d. to 21s. each.
Begonia Thwaitsi	10s. 6d. „
Camellia, Countess of Orkney	21s. „
„ Storyii	10s. 6d. „
Hoya fraterna	10s. 6d. to 21s. each.
Ixora Lobbi	10s. 6d. to 21s. „
Lilium giganteum	21s., 42s., 63s. „
Philesia buxifolia	21s. each.
Rhododendron jasminiflorum	21s. to 63s. each.
Rhodoleia Championi	7s. 6d. to 21s. „
Streptocarpus biflorus	3s. 6d. „

Detailed Lists are now preparing, and will be forwarded on application.

NURSERIES, EXETER AND CHELSEA.—June 3, 1854.

The Gardeners' Chronicle.

SATURDAY, JUNE 3, 1854.

MEETINGS FOR THE ENSUING WEEK.

WEDNESDAY, June 6—Linnean	....	8 P.M.
SATURDAY, — 10—Royal Botanic	....	3½ P.M.

We are not anxious to give advice to emigrants, although continually solicited to do so. A man's temperament, means, habits, and peculiarities, exercise so great an influence upon his destiny, that it requires a considerable acquaintance with him for even the most sagacious friend to know where, in the wide world he is more likely to be successful than at home. It will, therefore, be easily understood why we shrink from the responsibility of saying that which may determine, whether for good or for evil, the future destiny of any correspondent. Nor is it easy to know what value to attach to the reports which reach Europe concerning distant colonies. That statements are very often over-coloured—unintentionally, perhaps—is certain. Nor can it well be otherwise; for if it is natural for a man to eulogise the country in which he has created his fortune, it is equally his interest to say whatever will attract thither the population which will increase the value of his property. And, on the other hand, he who fails assigns his want of success to anything rather than his own unskilfulness, imprudence, or lethargy. The one exaggerates what is good, and overlooks the reverse; the other exaggerates what is evil, and forgets the unquestionable good.

Men of skill and energy will succeed in any colony. To them advice is needless. It is those who have no confidence in themselves, no judgment, no self-reliance, but need to be sustained by continual reference to others who require to be told, if not where they may most certainly succeed, at least where they are least likely to fail.

Without depreciating any other colony, for nearly all have their peculiar advantages, we may safely say that no part of the world now presents such undoubted opportunities of acquiring rapid independence as the BRITISH POSSESSIONS IN N. AMERICA, and more especially CANADA. The natural wealth and colonial industry in the latter country was attested in 1851 by the rich collections which Canadians sent to the Great Exhibition of all Nations, and which placed it above all parts of the Empire except India. And we have now a perfectly trustworthy account of its resources in the statistical and social details lately published by Mr. WM. HUTTON*, a gentleman who is well known in this country, and whose exactness is unquestionable.

It was only the other day, on the occasion of a public dinner given to the Earl of ELGIN, that Lord JOHN RUSSELL, in speaking of the noble Lord, took the opportunity of saying that it had been Lord ELGIN's duty to act the part of a constitutional king over a province which has been continually prospering and increasing under his care; which has risen from little more than a million to two millions of revenue, which has increased in a short time from 600,000 to 1,200,000 population, and the imports and exports of which have shown year by year the symptoms of increasing trade and improving industry. Such a declaration, from such a quarter, was no unmeaning phrase, but the announcement of a great Colonial fact, the knowledge of which cannot be too widely dispersed.

The reply of the noble lord, to whom the destiny of Canada is once more confided, deserves a far more permanent record than the fleeting columns of a daily journal.

"I have had the good fortune," said Lord ELGIN, "within the last two or three months, to be present twice at great banquets held in honour of governors of East Indian presidencies, and attended by many distinguished persons in this country. I confess that when I listened to the glowing pictures of the prospects of India submitted to those audiences, and duly spread over the country through the instrumentality of the press, I could not help feeling something of jealousy and regret that no similar opportunity was given for calling the attention of the people of this country to that great western dependency which, though it is no doubt inferior in wealth and importance to India, and though its condition in many respects even contrasts strikingly with the condition of India, is not inhabited by native

* Canada; its Present Condition, Prospects, and Resources fully described for the Information of Intending Emigrants. STANFORD, Charing Cross. (A Pamphlet.)

tribes, but by a population drawn from the most energetic and active races, Englishmen, Frenchmen, Irishmen, and Scotchmen, and is bordered, not by effete and decayed empires, but by a youthful and vigorous republic, whose distinguished representative has honoured us with his company this evening, and between whose country and the people of Canada generally, give me leave to say that nothing but feelings of mutual respect and gratitude are entertained. (Hear, hear, hear.) Well, gentlemen, your great kindness to me personally has provided such an opportunity, and I believe that very few persons without the walls of this room form any adequate conception of the magnitude of the question with which we are dealing, when we talk of the interests and the future of Canada. (Cheers.) This Canada, of which we speak so glibly, is the great heart of British America, and the greater part of the northern continent of America is still British. True, a large portion of that region is barren and inhospitable, but as to Canada—and I may join with it the sister provinces—it is notorious that it contains a territory capable of sustaining many millions of inhabitants, and is inferior in salubrity, fertility, and everything that can make residence desirable to persons of our race, to no part of the American continent. (Cheers.) And as to its being the more northern part of the continent, I am obliged sometimes to say to our Canadian fellow-subjects, when, with that modesty and diffidence which distinguish them, they vaunt of the great qualities of their southern neighbours, that in England, when we say that a man is too far north for another, we do not mean to say that he is not likely to be his match; and that if the Canadian people only make the most of their great resources and advantages, this proverb will become quite as significant in America as it is in Britain. (Cheers.) This magnificent country, the noble inheritance of the British people, and *which is now brought by the agency of steam within a week's distance of our shores*, is at this moment in a condition of prosperity altogether unexampled, and is affording, to an extent to which its previous history furnishes no parallel, a profitable field for the investment of English capital, and a congenial home for the subjects of her Majesty of all ranks of life. (Cheers.) I can add that a spirit of loyalty and attachment to the Queen pervades all classes of the colonists, whose institutions, as far as circumstances will permit, are now happily a faithful imitation of those of the mother country. (Hear, hear.) The people of Canada, divided as they are into different races and religions, and notwithstanding their party disputes, yet recognise the fact that the common interests which unite them are greater than the causes of division."

It is seldom that a more eloquent description of colonial prosperity has been given; nor was its truth undeserving the brilliant language in which it was conveyed. The cheers of those who surrounded Lord ELGIN, proceeded from eminent personages perfectly conversant with the facts. Had it been otherwise the statements now published by such an authority as Mr. HUTTON, who is the secretary to the Government Board of Statistics in Canada, more than confirm all that was said on the occasion. He is himself, we understand, an instance of the success which may attend the Canadian emigrant: having in 20 years risen to rank and fortune from a very small beginning, he is intimately acquainted with the country, knows its advantages and disadvantages, and indicates the one with the same unreserve as the other.

That Mr. HUTTON's book will be very extensively read we entertain no doubt; without, therefore, attempting to deal with its details, which would be impossible in the space we can afford, we must be contented with selecting a few of the more striking facts. Although 5*s.* to 6*s.* 3*d.* currency are paid per day to harvest-men, yet such is the excellence of the climate that Wheat can be housed for 6*s.* sterling per acre, including all expenses; in fact the sheaves can be carried as soon as they are made up. Hay costs about 2*s.* an acre to cut, averages about 1½ ton per acre, and is worth 35*s.* currency per ton. Timber, as is well known, forms one of the great sources of Canadian wealth; the black Walnut wood of the country is exported to the United States. Land heavily timbered costs for clearing and fencing in about 3*l.* 5*s.* sterling an acre, and is immediately ready for a crop of Wheat. "This cleared land is raised in value to the extent of the cost of clearing and fencing, and will generally sell freely for that sum extra the price of the same land wild. The upset price of the best Government land is 6*s.* 6*d.* sterling per acre; but on the one hand, while excellent land may be had even at 1*s.* 3*d.* to 3*s.* 6*d.* sterling, many lots cannot be had under 30*s.*, and wild land in excellent situations has been known to sell for 2*l.* 10*s.* The taxes on a farm of 250 acres (175 cleared and 75 wild), are *in all* 4*l.* 10*s.*; and in exchange for this trifling impost the Government supplies good roads, good bridges, and excellent free schools. The number of pupils in schools of all kinds, in a population of 950,000, has increased in ten years from 66,000 to about 180,000. Crime is so rare, that on a late occasion in three counties containing 80,000 inhabitants the judge had not a criminal to try.

We cannot pursue this matter further for the present: nor is it necessary, for Mr. HUTTON's pamphlet is so cheap as to be within any one's reach. It will be sufficient to quote what he says respecting the class of men best suited for emigration, among whom, if he does not name gardeners, it is no doubt because he classes them with farmers or labourers.

"Canada is the country, perhaps, above all others where the diligent practical man, no matter to which of these callings (capitalist, farmer, merchant, manufacturer, mechanic, or labourer) he belongs, reaps an ample reward for his industry. Wages of labour, in fact, are so high that none but working men, in the wide sense given to that word, can possibly prosper —mere *overseers* cannot breathe in our atmosphere.

"The chief profit that the farmer makes is by doing his own work by himself and family, and thus not only saving outlay of cash for wages, but earning those wages for himself; thus, for instance, the man who hires another to do his work, say at 5*s.* per day, and remains idle himself, loses the 5*s.* which might have been the reward of his personal industry, and is tempted by that very idleness to spend still more; and his neighbour, perhaps, who performs his own work himself, is 10*s.* richer than he when night comes. It is thus that Canadian farmers, who are a most industrious class, soon accumulate means to pay for their holdings and render them freeholds.

"In the Upper Province there is scarcely such a thing known as a tenant farmer; we are almost all our own landlords, or working our way up to that proud position; not one farmer in 500 pays *rent so called.*"

DISEASE appears to be very common again this year amongst Cucumbers and Melons, assuming rather different forms, but ending equally in the distortion and decay of the fruit, and ultimately, in many cases, in the destruction of the plants themselves. In some instances, indeed, the plants show symptoms of disease from their earliest stage of growth. One of the most serious cases which has yet fallen within our notice has just been communicated from the garden of Lord DELAWARR, in which the greater part of the tissues present a peculiar transparent aspect, accompanied for the most part by chlorosis. Little elevated specks gradually become distinguished from the rest of the tissue, and at length burst; gum is poured out, the superficial tissues die, and the taint is soon communicated to the whole plant. As regards the cause, it is as obscure as ever. The atmospheric conditions of the present year have indeed been very unfavourable for such plants, and might well induce a gouty state, especially where there was a previous tendency to disease, but it is impossible to assert with any degree of certainty that the disease has been produced under such influences. The fact is that where disease has once been generated the taint remains through many generations. It is very generally admitted that as regards the maladies to which the human frame is subject, disease has been greatly modified since the invasion of the influenza of 1837, and the subsequent cholera of 1842; and those whose experience reaches beyond those dates, for the most part readily admit that the treatment of disease has in consequence of this modification undergone great alterations. If this notice be applied to the vegetable world, we may perhaps learn a useful lesson. The most probable method of combatting the malady in question, which appears to admit of little relief when it is once established, will be to fall back upon seed which was produced before its first general invasion, which it is often possible to do, as the seeds of such plants are amongst those which retain their vitality the longest, and it is the practice of many gardeners to retain the seeds of good varieties for years. But if this is to be done with any chance of success, all recent seed must be strictly excluded, for there is no knowing what a powerful influence the slightest cross of a diseased stock may have. The pollen of a Pea will affect the colour of the seeds, even in the first year, so as to make it impossible to recognise the variety from the seed, and in like manner very powerful modifications of the tissue may be affected, even before the hybridising power has given rise to a new form. In the absence of all knowledge as to any other material relief, the hint above given may possibly prove useful, and there are many other cases to which the principle may be applied. *M. J. B.*

THERE is a wonderfully fine set of BRAZILIAN ORCHIDS to be sold by Mr. STEVENS next Monday. Probably thay are the noblest wild specimens that ever reached this country. A Cattleya Leopoldi, a beautiful variety of C. guttata, as fresh as when growing at Parahyba, is 4 feet high and has 26 stems. The condition of many others is of the same kind, and the whole, chiefly consisting of Cattleyas and Lælias, are such as can be obtained by process of cultivation only after years of patient and costly labour.

VEGETABLE PATHOLOGY.—No. XXII.

96. BESIDES the imbibition of moisture from the air and rain, and the perspiration by which superfluous moisture is separated from the plant, the air itself is a most important element in the question, and light is of no less importance as regards the separation of gaseous matter, than that of aqueous vapour from the plants.

97. In animals the great object of respiration is to eliminate the carbon from the system, while in plants, the stability of the matter of which they are built up, and their consequent durability, depend on the fixation of carbon in the system; besides which, carbon enters very largely into all the ternary and quaternary products of vegetation, without which, indeed, the life of the plant would not be supported for one hour. Carbonic acid is partly imbibed by means of the roots, and partly absorbed from the air which enters by the stomata, but probably on a far larger degree from the former cause. Be this, however, as it may, under the influence of light, carbon is deposited in the system and oxygen given out, as may be ascertained by collecting the air so eliminated in a proper receiver. In the absence of light, on the contrary, little or no carbon is fixed, and the surrounding atmosphere is therefore impregnated with carbonic acid. It is not, however, to be supposed that no other component portion of the air penetrates into the plant, only the different gaseous matters enter at different rates of penetration, under different degrees of light, according as the exhaled gases are different. Oxygen, therefore, is inhaled in smaller portions in the day, and carbonic acid in the night, and consequently a room in which many plants are inclosed becomes unwholesome at night, at once by reason of the strong imbibition of oxygen and the exhalation of carbonic acid. Where light has not access, every part becomes bleached and colourless, while the tissues remain tender, and the peculiar secretions greatly diminished, circumstances of which the cultivator takes advantage in the production of many useful and delicious vegetables, which would be uneatable either from toughness of texture or predominance of peculiar flavour, and noxious matters, if grown in circumstances which admitted of the due course of vegetation. The vegetable pathologist has constantly to estimate such circumstances in the production of disease; for such blanched conditions, though answering certain necessary ends to the cultivator, can only be regarded as serious diseases, which, like the "foie gras" of Strasburg, must ultimately end in death. Fungi are a remarkable exception to the general rule, for they absorb oxygen under the influence of light, and give out carbonic acid. The circumstances under which sulphuretted hydrogen is eliminated by Charas have not, as far as we are aware, been at present accurately examined.

98. Air is not, however, the only source of the oxygen, which, combining with carbon, carries carbonic acid into the intimate parts of plants; for a portion, doubtless, arises from the decomposition of water. Neither is pure oxygen the only gas which is exhaled under the influence of light.

99. One of the most striking effects of light on the foliage of plants is the production of their characteristic green colour, which is due to the formation of chlorophyll. Leaves are thus made so many magazines from which, so long as their vitality continues, a supply of nutriment, stored up when their vegetation was most active, is constantly derived at the very time that the intrinsic powers of vegetation, so far as the elaboration of new matter is concerned, begin to fail, or when the exigencies of the ripening fruit are greatest. Starch is more commonly deposited where light is feeble, chlorophyll to a great extent only where it is comparatively strong, and both are equally needful for the supply of proper nutriment.

100. Light is not, however, always capable of promoting the production of chlorophyll. In variegated plants, direct exposure to light will not overcome the natural constitutional tendencies of the plant, nor in seedlings or plants deeply affected with chlorosis is it always capable of restoring health. In some cases, however, as in Wheat crops, where the healthy green tint has been materially impaired by an absence of light combined with cold and moisture, a few bright genial days will effect a complete restoration. There is, however, a limit to its restorative powers, and when the effect has been too long continued, or where there is no staple in the ground, or rather in the sap derived from the ground to work upon, the malady is beyond control, and the consequent fruitfulness of the crop materially impaired.

101. The colour of flowers depends upon the contents of the parenchym of which they are composed, and a species of chlorosis takes place in these modified leaves as certainly as in the leaves of which they are a modification. The different tints assumed by the flowers of some of the Sikkim Rhododendrons, according to the degree in which they are exposed to the light, as visible lately in one of the stoves at Kew, affords a good example. *M. J. B.*

MEDINILLA MAGNIFICA.

The noble foliage and immense drooping racemes of gay-coloured flowers belonging to this plant render it both striking and attractive; and blooming, as it does, in early spring, and very freely, it is well deserving of a place in every collection. It is, however, of a strong robust habit, and requires a warm moist atmosphere to grow it successfully, so that it is hardly suitable for persons of very limited accommodation; but, where it can be afforded sufficient space, it forms a truly magnificent object, and its flowers remain long in perfection.

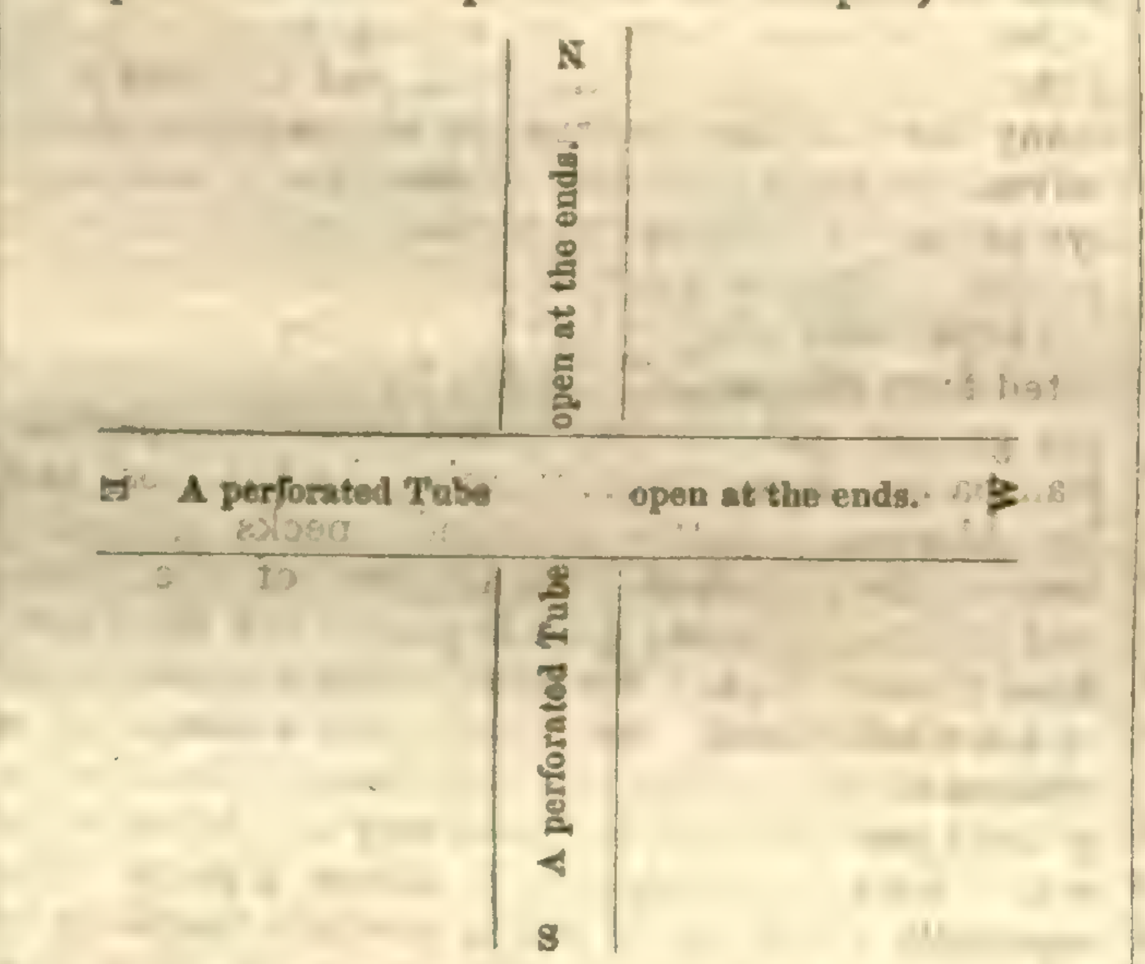
Cuttings selected of rather firm bits of the young wood root freely if planted in sandy peat, afforded a brisk bottom heat, and covered with a bell-glass, to prevent their being injured by excessive evaporation. When fairly rooted they must be potted singly, in small pots, placing them in gentle bottom heat, in a warm moist situation, and shading them from bright sunshine till well established in their pots. But beginners will probably prefer procuring young plants from the nursery to propagating for themselves, and this cannot be done at a more favourable season of the year than the present. Supposing plants to be obtained in this way, on receiving them examine the state of the roots, clearing away all sour or unkind soil, and repotting in convenient sized pots according to the state of the roots, &c. Use good strong fibry peat, carefully broken up, and intermixed with a liberal quantity of sharp silver sand, to ensure perfect drainage. Place the plants in a close, moist, warm temperature, shading them from bright sunshine, and giving water at the roots very carefully until they become well established, but syringe lightly morning and evening, shutting up the house early in the afternoon—and if convenient to afford the plants a gentle bottom-heat during the growing season, this will greatly assist in securing a vigorous root action and rapid growth. If all goes on well the roots will soon be found to have filled the pots, and shifting should be attended to before the growth is checked, regulating the size of the shift by the time that the plants will have for making growth before winter. Use the same compost as recommended above, with the addition of a small portion of sandy turfy loam. It is not desirable to force this plant into a low bushy habit, at least I consider that its large racemes of flowers are seen to more advantage when somewhat elevated, and this is more conveniently done by allowing the plant to assume rather an erect habit, than by keeping it tied out in the form of a dwarf bush, and having to keep the pot on a pedestal while the plant is in bloom. If the plant is kept in vigorous health it will throw out side shoots freely with very little attention to stopping or training. Every care must be exercised to preserve the foliage in perfect health, as upon this the beauty of the specimen largely depends. The matured leaves are liable to be disfigured by black thrips, and green-fly seems to have an especial liking for the buds and young leaves, and will soon do irreparable damage, unless destroyed by the prompt application of tobacco smoke. The plants must be prepared for winter by gradually lessening the amount of moisture in the atmosphere, affording a freer circulation of air, &c., to ripen the young wood. In winter they should be placed in a house where the night temperature may average about 55°, giving water sparingly to the soil, and taking every care to protect the foliage from being injured by damp or insects. To secure large specimens it will doubtless be necessary to afford the plants another season's growth before blooming them, and in this case they may be treated as recommended above, taking care to get the growth completed early in autumn, in order to get the wood well matured before winter, for unless this is attended to there will be little chance of the plants blooming freely. If it is desirable to have a plant in flower early in spring, it must be plunged in bottom-heat, and should not be too freely supplied with water until the flower-buds are perceptible. Keep the plants well supplied with water at the root while in bloom, and shade them from bright sunshine. In this stage they may be removed to a close part of the conservatory, or show house, provided a rather dry atmosphere, and a temperature of from 45° to 55° can be maintained. After blooming, the plants should be removed to a growing temperature, slightly cut back if necessary, repotted, and encouraged to make active growth. *Alpha.*

Home Correspondence.

Effects of the Winter in Westmoreland.—Cryptomeria japonica has suffered slightly, Cupressus funebris has had its leading shoots injured. As regards double red and Warratah Camellias, planted in the shrubbery in the autumn of 1853, without any protection, the double red at this moment is covered with flowers, while the Warratah is looking a little yellow from cold. The double white, planted against a south-west wall, is now in full flower without any protection. Scarlet hybrid Rhododendrons without protection are looking well, and are now opening their flowers. Anemones, Auriculas, Polyanthuses, Russian Violets, double and single Wallflowers, are in the height of perfection, covered with flowers. Rhododendrons, Laurels, Kalmias, and all other hardy shrubs, are looking as if there had been no winter on them. Buddlea Lindleyana has been killed; Garrya elliptica, Gaultheria procumbens and Shallon Berberis aquifolium, Pinus insignis, and Cedrus Deodara, are not in the least injured. *B., Windermere, April 7.*

Mildew on Out-door Vines.—It is possible that, in consequence of the singular frost of April 25th, there may be an almost total failure of the Vines, yet, as this is the seventh year since the fruit upon the open walls has to a great extent been destroyed, and the clusters rendered objects of deformity, I have been induced to offer the following suggestions. Sulphur is considered as an effectual—perhaps the only—antidote when used in Vineries or houses under glass. But how can it be employed with any good effect in the open air? That is the question. Three methods present themselves as worthy of notice. The first and most simple consists in syringing the trees with water; and then, while wet, dusting them over every part with sulphur by a flour dredger. But to do this great patience and caution will be required; and, after all, the sulphur might be washed off by the first driving shower. The second method is to prepare a sulphuret of lime by thoroughly blending about eight parts of fresh slaked hot lime with one part of sulphur and a quantity of boiling water sufficient for the quantity of liquid required. When cold and settled a clear yellow solution will be produced, which consists of sulphur dissolved by lime. With this clear solution let the trees be frequently syringed in every part, so soon as the bloom shall be set. If kept only a few days the yellow colour will be lost, and with it the whole efficacy of the fluid. The third, and in my opinion the best plan to be adopted, is to blend in a Wedgwood mortar an ounce or two of sulphur, with a small quantity of powdered gum tragacanth (called gum dragon), adding soft water, drop by drop, till, by triture, a soft and compact paste be obtained, which then can be easily diluted to any extent. The sulphur will, in time, fall as a sediment, but never float on the surface, as it does in the vain attempt to unite it with water alone. A common tin syringe (which costs a mere trifle) is preferable to the more expensive syringe now in vogue. I would recommend well levigated stone brimstone, rather than the lighter flowers of sulphur for the above processes. The sulphuret No. 2 is an excellent and long approved wash for the scale, or turtle coccus of the Pine-apple plant. *J. T., Croydon.*

Aëration.—I beg to furnish a new plan for admitting air into a house or conservatory. Let tubes be perforated (except the ends) and placed along the roof of the building (inside) from east to west, and across from north to south. The mouths of the tubes should be open to the four points of the compass, so as to



admit the air from whatever quarter it may blow, and diffuse it constantly to all parts of the house. The ends of the tubes can have lids to close over during rough or frosty weather. This simple plan I think will be efficient and remove the desideratum (so long complained of) of not having fresh air always, as plants enjoy it out of doors. *A Gardener.*

Hardiness of the Sikkim Rhododendrons.—The condition of a few of these after the 26th April, in a high situation in the neighbourhood of Keswick, may be useful in settling this question. The ten species in this garden are small plants, supplied by Messrs. Standish and Noble in the spring of 1853. Two plants of R. ciliatum had flowered beautifully in March and the beginning of April. R. glaucum was in full bloom, forming a pretty plant hung with its rose coloured bell-like flowers, when the frost of the 26th withered every flower. The leaf-buds of R. fulgens, which were opening, were killed; as were also those of Thompsoni, Wallichi, Wighti, and one plant of niveum; the other, being later, was not injured. Though the leaf-buds of the above have all been killed, the plants are pushing out fresh shoots, and look quite healthy. Falconeri and æruginosum were supposed to have escaped; but, on trying their leaf-buds, they seem all unsound. Edgworthi ought not to have been out, it was in a drooping condition before, and now looks rather hopeless. The flowers of early tender Azaleas have been much injured; one flower of A. amœna has escaped. The flowers of a fine plant of Dielytra were greatly injured. A rose-coloured Moutan stood well, and is now in full flower. Nothing in the garden has suffered equally with the Arbutus. The Oaks, Spanish Chesnuts, and Walnuts all lost their young leaves, so that in this respect the Sikkim Rhododendrons seem on a par with them. *Anon.*——There can be no doubt that reports drawn up in different localities will vary greatly from each other; for some of the species have braved the winter in one of my gardens, and have been much injured or killed in the other, and yet the two gardens are separated from each other by scarcely a mile. But by collecting and comparing the data from different localities, some approximation to a solution of the question can be obtained. As a general rule, those grown in peat have withstood the severity of the winter better than those grown in sandy loam, and, as might be predicted, the growth of those in the peat bed far exceeded those of a similar age in the loam. The R. glaucum was sent in two papers, the seeds of the one being collected at much greater altitude than the other; both have passed the winter unscathed in both nurseries, without any other covering than the snow. This plant appears to vary much in its habit, for some raised from the larger growing plant seem inclined to the habit of the more Alpine variety, and from both are variations in the size and intensity of colour in the flowers, passing from nearly white to pink, and to rose colours of several shades. Some of the flowers are nearly double in size those of others; but however various the leaves may be, they all emit that delicious aromatic perfume that alone would give a warranty for its cultivation. Not at all inferior in capacity of resisting the cold of our winters is the R. campylocarpum, which has, like the glaucum, stood in both exposures uninjured. The plant is of robust habit, and the flower being of a delicate lemon colour, will cause it to be much cultured. The R. niveum is of similar habit and hardihood, and has equally, in both exposures, proved itself able to resist our variable clime; for the same recent frosts that have killed the young shoots of our Ash and Chestnut plants have done no injury to the growing shoots of any of the three named species. It will be a joy for cultivators to know that R. fulgens, one of the most brilliant of the scarlet kinds, is quite as hardy as the ponticum in peat, but in loam has suffered a little. The spring frost has not injured this kind, for it commences growth later than any of those before mentioned. Of the R. æruginosum I can report equally favourably, for they appear to resemble each other in all the particulars of habit and power of endurance, for the five sorts named had no other covering but snow. The deliciously perfumed R. Edgeworthi appears to shrink from our damp cold atmosphere, and with us positively refuses to be a living habitant of the garden, in either soil or situation. But in a brick pit it thrives well, and will amply repay the grower, as well by the singularity and great departure in leaves and stems from the rest of its family, as for its large and deliciously perfumed blossoms. We may almost prophetically assert that it is destined to be as commonly cultivated as a Gardenia. R. ciliatum has delighted all cultivators, and surprised them too, for, out of the many hundreds that have blown, not one, as far as I am aware of, has opened of the bluish-lilac colour of the plate, which was coloured from freshly gathered specimens in its native wild. All are either pure white or tinted with pale rose-colour on the outer part of the tube, and more especially near the confluence of the nerves or veins which distribute the highly elaborated sap to the delicate texture of the flower. This plant has stood with us in peat, but died in loam. It is, however, a charming pot plant for cold frame culture, flowering as it does most abundantly, and upon plants scarcely 4 inches high. In its foliage it differs from all other known kinds, and we have produced blossoms double the size of that figured in Dr. Hooker's magnificent work. R. cordatum, the Alpine, 14,000 feet, and the fine scarlet, 12,000 feet, have all stood the winter in peat, but can scarcely be said to be alive, certainly not happy in loam. R. Thompsoni, which must be considered the prince of scarlets, has borne the winter satisfactorily in peat, but is quite lost in loam. This species appears often to make a late second growth; in all such cases the last has been killed, but without injuring that first formed. Many of the other kinds, as Falconeri, Hodgsoni, Dalhousiæ, Aucklandii, Maddeni, although I possess, are not in sufficient quantity to warrant the risk; but anthopogon, setosum, and lepidum, have died in the same cold pits that preserved the fine species that are just enumerated. *William Masters, Exotic Nursery, Canterbury.*

Collodion.—I am now in a condition to answer my own question, which appeared at p. 342, respecting spoiled collodion. When I wrote to ask it, I had commenced a process in which I own I had but little confidence; but it has perfectly succeeded. I took the mass out of the bottle in transparent jelly-like lumps, without the least trace of adhesiveness remaining on the fingers when handled. I then drained it carefully for three days, squeezing the lumps afterwards through muslin, and finally drying it by moderate heat, which must be done carefully, as it retains all its combustible and part of its explosive properties. I then redissolved it in pure fresh ether, and it is now as good as ever. A chemical change had certainly taken place, which I regret now I did not sacrifice the collodion to investigate; the ether which drained from it having a peculiar nitrous smell, and at first no tendency to evaporate more than water would have had. But after standing in an open cup before the fire for two days it began to evaporate, and in an hour or two after that it was dry, leaving a lemon-coloured residuum, which exploded on being touched with a red-hot coal. *G. Jeans, Alford Vicarage.*

The Villa Flower Garden.—I am desirous of doing away with the necessity of trusting entirely to my greenhouse to supply the requirements of my flower garden. The present system of "massing plants" is now being introduced into small gardens, I think injudiciously. The nakedness apparent during eight months in every year being one defect—a sameness of colouring arising from the limited number of beds I conceive to

be another. Now, this sameness does not confine itself to the outside of the house, but is observable in the nosegay in the drawing-room. This defect in gardening has arisen, in a measure, from the villa and its occupiers striving to effect the same results as that produced at the mansion. What is grandeur in the one case dwindles into nothingness in the other. I wish one of our writers could be persuaded to put pen to paper, and write a good article on the subject. I have heard the matter discussed among gardeners, and am convinced it would be no waste of time. In the interim, would some one be good enough to furnish a list of good useful plants, of compact habit, to assist me in carrying out the end I have in view, that of having my flower garden look furnished during the greater portion of the year? *Giles Marshall, Whitchurch.*

Effects of the Frost During the Winter of 1853-4, *and Spring of* 1854, *upon certain Plants at Bagshot.*—The effects of the frost upon plants in our nursery, up to the 25th April last, was comparatively trifling. To say, therefore, that any given plant is not hardy, because it was materially injured by that very late and unusually severe frost, would be calculated to mislead, for vegetation, then, was in a very active state. Azaleas were bursting into flower and making young growths; the Apple trees were in full flower, and most of the Abies, many Pines, and the greater part of our ordinary trees and shrubs, were pushing vigorously, the greater part of which were more or less injured. The Oak, the Spanish Chestnuts, and the Walnut, among the latter, suffered severely. In many instances every leaf and shoot were destroyed. All the Azalea flowers that were the least advanced, as well as Rhododendrons in a similar state, were cut off. In fact, almost every kind of plant that had made any progress in vegetation—and there were few that were not tempted to anticipate a too early summer from the succession of warm days that preceded the frost in question—but suffered in some degree. The plants—confining our observations to the rarer kinds—which received the largest amount of injury in the winter with us, are Cupressus Goveniana, C. thurifera elegans, C. funebris, Cryptomeria japonica, and Pinus halepensis; the latter being, in most instances, killed. It is, however, worthy of observation, that well established plants invariably suffered less than others that were transplanted in the previous autumn. But again, specimens of the same genus growing side by side, and under precisely the same apparent circumstances, are in very numerous instances very differently affected; or, rather, some are not affected at all, while their companions are seriously injured. Of these the plants named in the preceding paragraph furnish many examples. As a general rule it will be found that such plants as continue to grow late in the autumn suffer more severely than others that mature their wood comparatively early, all other circumstances being similar. The chances of injury from such causes are, of course, in a great degree under the control of the planter, whose permanent specimens are concerned; for by judiciously selecting situations for such trees, comparative earliness of maturity may be ensured. Appended we give a list of plants, in which is indicated the extent to which they have suffered. Such indications, however, must be taken in a general sense, and not individually, for, as we have before observed, many specimens of the kinds there set down as injured have escaped altogether. In the first part of the lists are named the plants injured by the winter's frost, and which, as will be seen, are comparatively few. The injury sustained by the plants named in the second part must be understood as referring solely to the young spring growths; and, as such, cannot be considered as indicating them to be tender. If so, our common Oak is equally a tender plant; for as a general rule, it suffered much more than the majority of plants named. The Common Silver Fir, too, received in most instances more injury in its young shoots than the other Abies named. I. PLANTS INJURED IN THE WINTER:—Cupressus thurifera, elegans, and Goveniana, branches and leaders killed; many plants wholly uninjured; Cryptomeria japonica, do., do.; Cerasus ilicifolia, nearly killed; Pinus halepensis and Wincesteriana, killed; P. Russelliana, slightly browned; Taxodium sempervirens, leaders and tips of the branches destroyed; Escallonia macrantha, much injured; Myrica californica, foliage slightly injured in a young plant placed out of doors late in the autumn; Podocarpus montana and Quercus sclerophylla, injured; Thuja orientalis, compacta, and aurea, a few branches killed; Laurus regalis, foliage browned. II. The injuries referred to in the following relate solely to the SPRING GROWTHS, or, at least, to injuries sustained from the plants having been excited previous to the very severe frost of the 25th April, when we experienced 10° Fahrenheit. During the winter they were not affected at all:—Abies nobilis, Nordmanniana, and grandis, untouched; A. obovata and orientalis, very slightly injured; archangelica, untouched: this species does not start into growth till very late in the season—a valuable quality; A. (Larix) Griffithi, slightly injured; A. Pinsapo and (Cedrus) atlantica, not touched; A. Cedrus (Cedar of Lebanon), side by side with the preceding, has its young shoots injured; A. Jezoensis, not touched; A. (Larix) species new, from China, with very large leaves, slightly injured; A. Deodara, much injured; A. amabilis, not touched; Abies Webbiana, injured; Berberis Darwini, japonica, Beali, and intermedia, uninjured; Fitz-Roya patagonica, of two plants, one planted out two seasons ago, the other last autumn the former is uninjured, and the latter has lost its leader and the tips of a few of its upper branches; Ilex cornuta, microcarpa, leptacantha, furcata, and Taraga, uninjured; Indigofera, a new species from China, and Juniperus sphærica, uninjured; Lycopodium Willdenovi: this very pretty plant, having been in full leaf, had its foliage destroyed; Lagerstrœmia indica, slightly injured; Laurus regalis, foliage browned; Libocedrus chilensis, untouched; Abelia uniflora, Bletia, sp. from China, Cupressus Corneyana, Chamærops excelsa, Cephalotaxus Fortuni mas, C. Fortuni fem., C. pedunculata, and Pinus monticola, Lambertiana, Ayacahuite, Benthamiana, Lindleyana, insignis, and Montezumæ, uninjured; P. radiata, young growths injured; P. muricata, (?) Californica, Fordi (a species from North-west America), Sabiniana, and Hartwegi, uninjured; Podacarpus Makoyi, nubigena, and Chilina, Quercus glabra and inversa, and Retinospora ericoides, uninjured; Saxe-Gothæa conspicua, injured slightly; S. gracilis, injured; Taxus monstrosa and baccata ericoides, uninjured; Skimmia japonica, uninjured in any way till April 25, when the flowers, with which it was covered, were destroyed; Symplocos japonica, Thuja orientalis, variegata, and intermedia; Trollius Chinensis (new from China), and Viburnum plicatum and macrocephalum, uninjured. Pæonias: All the new Moutans from China have escaped injury, both during winter and spring. Sikkim Rhododendrons: There can now be no doubt that the greater part of these beautiful plants are very hardy. The following list shows how they have been affected with us. A few of them that had commenced growing had their young shoots damaged by the severe frosts in April; but this circumstance does not in reality prove them to be otherwise than hardy, as all we have tried, with the exception of Edgeworthi, which was all but killed, survived the winter perfectly uninjured. Those given in the following list may all be considered as hardy. Those that were injured in April are distinguished by an asterisk. *Foliis cordatis, *Alpine (shrubby), glaucum, ciliatum, calyculatum, Alpine (red), *fulgens, *lanatum, *Wighti, *Wallichi, *æruginosum, dwarf glaucum (very fine scarlet), Falconeri niveum, campylocarpum, cinnabarinum, lepidotum, Thompsoni, setosum, anthopogon, lancifolium, barbatum. We may observe that the injury spoken of is very trifling; all are now making vigorous growths. Of Aucklandi, Campbelli, Maddeni, Hodgsoni, and argenteum, we are not prepared to speak as regards their hardiness, not having planted out any for experiment. *Standish and Noble, Bagshot, May* 22.

Ealing Park.—Many have doubtless lamented the breaking up of the once unrivalled collection of exotics at this place, now spread all over the country; those, however, who imagine that Mrs. Lawrence has given up gardening, a pursuit to which she has devoted so much energy, time, and money, are quite mistaken. It must not be supposed that Ealing Park has no charms beyond its glass structures. Those who have quietly and reflectively traversed these grounds must have arrived at a different conclusion. The park abounds with noble trees, grouped on gently swelling land. The Elms and Cedars of Lebanon are extremely grand. The grounds contiguous to the house are planted with all the newly introduced ornamental trees and shrubs, scores of splendid Deodars, Araucarias, Cryptomerias, &c., are already producing a very magnificent effect. When we consider its contiguity to the metropolis, one of the most striking features of Ealing Park is that as soon as you pass the gates you may fancy yourself 100 miles in the country, so completely do the huge Elms and other massive trees shut out the nearest buildings, and at the same time by no means obscure the Surrey hills, rising in the distance. It has been erroneously reported that this charming suburban residence is shortly to be brought to the hammer; such a thing, I can state, however, on the best authority, has never been thought of; on the contrary, a large amount of land has just been added to it by a recent purchase. There is about as much truth in the report just alluded to as there is in that that Mrs. Lawrence is giving up the culture of plants. Those who may be permitted to view Ealing Park in six weeks' time will see, independently of a number of her best houses retained, a splendid range on the site of the old stoves; and all these houses, when finished, will be filled with one of the most choice and valuable private collections of plants in the vicinity of London. *R. G.*

Ferns.—If your correspondent "Philo-Pteris" desires to grow Ferns in a Ward's case, he must observe the following rules:—He must put some soil into the case; peat and sand are best. He must make the soil damp, which is usually done by adding some water; he must get some Ferns, and having obtained them, he must open the door of the case and put them in, taking care, in the first place, to cover the roots with the soil aforesaid; and in the next place, to shut the door. Having done this, and placed the Ward's case where it is exposed to light, he will have done all that is usually found necessary to induce Ferns to grow. *Nitrogen.*

Sulphur v. *Mildew.*—The articles in your columns on the Vine mildew have attracted much of my attention, as I have a greenhouse with Vines in it, and last season there were unmistakeable signs of the disease, but not to any great extent. Those Vines that were attacked I washed over in the winter with a mixture of sulphur and soft soap, but still the disease made its appearance this season on the leaves, and I dusted them with the sulphur. I was absent a few days, and on my return I found the disease was not only on the leaves but also among the Grapes, and apparently spreading with great rapidity; I thought, therefore, more vigorous measures were required. I recollected that some of your correspondents had recommended the heating the flues very hot, and washing them with sulphur, so as to sublime it. As my greenhouse was full of plants, and I did not wish to apply an intense heat to them, I thought if I put a little sulphur upon some hot coals it would answer the same purpose; I therefore got two small saucers and put a little live coal in each, and on them sprinkled some sulphur. When I again visited the house I found the leaves of the Vines all drooping, and the next morning it was quite evident that all the leaves were killed. Every plant in the greenhouse, of various kinds, suffered in the same way, with the exception of Camellias; but the flowers were little injured. Neither did it kill the green-fly or scale. I was afraid the Vines would be killed, especially as every shoot and lateral had been stopped, but I am happy to say the Vines are again breaking out, and the Grapes are growing, so far as I can judge, as if nothing had happened. With the growth of the Grapes the mildew proceeds. I am now thinning out the worst of the berries, and dusting the rest. It appears to be only the Black Hamburghs which are attacked; some Muscats and Sweet Waters have scarcely any symptoms of the disease. Why I trouble you with this is, that perhaps you may think it worth while to publish it, as a warning to others who, like myself, may happen to be ignorant of the powerful effects of this remedy, for I do not recollect throughout your volumes a single warning against the danger of applying too strong a dose at once. I may also allude here to the pernicious effects of tobacco fumigation in damaging tender plants, and causing the fall of leaves, &c., when, as I presume, the fumigation is too powerful. *An Amateur, Rotherfield.* [Sublimation is one thing, combustion another. The bad effects of *burning* sulphur are notorious.]

Bees.—These seem to do well this year; out of a little stock of three skeps I have already had three swarms, and parent and offspring stocks are strong and active. The old saw, "A swarm of bees in May is worth a load of hay," though not possible to be realised, yet speaks favourably for our present season in the honey line; and if our boxes and glasses yield product this summer in June and July, we shall covet honey from neither Hymettus nor Hybla. *W. Mason, Necton, Norfolk, May* 31.

Stoppage of Drains by Roots.—It is impossible to over-estimate the importance of determining the conditions under which drains are most likely to be obstructed by roots, whether of trees, root, or corn crops. My own experience tends to show that the chief mischief is when there is a perennial flow through the drains. Some time since I communicated the fact of Mangold Wurzel roots entirely choking a drain for at least 50 yards. This drain was cut through the gault clay to its conjunction with the rubble beds of the upper green-sand, tapping a spring at that point; into this main drain, which was cut directly down the slope, a number of transverse drains are led, cut solely in the gault, and not tapping the spring, consequently only carrying water after heavy rains, and usually quite dry during the period of vegetation; these drains were not stopped by roots. Now that the question has been taken up it should be sifted; it is clear that the depth of the drain is no safeguard. It often happens, as in the case before mentioned, when impervious clays underlie pervious strata, under the slope of hills, &c., that open drains might be cut to carry off the perennial water, and that other drains might be so arranged as to carry the water running at intervals. Under all circumstances, I believe that further investigation will prove that the great mischief by roots is confined to drains carrying perennial water, and that it will be found necessary, as far as may be, to keep such drains distinct from those carrying intermittent water. *J. C. C.*

Slugs, or Snails.—I have been annoyed beyond measure by these pests; but now I have been instructed how to deal with them. Scatter a little oatmeal where they abound an hour or two before dusk, and by making a survey later in the evening, you will find a goodly array of them congregated; this answers best after rain. Last night I made the first trial on a Strawberry bed, and I do not think I over estimate in saying, that in half an hour I captured 5000. I swept them up in lots of from 30 to 50 in the space of a few inches. *R. R. R.*

Grafting in March.—Not till I was about to graft some Pears on Quince Stocks in March did I remember your saying, in the volume for last year, that they will not take unless the stocks are headed down in January. However, as I had cuttings of two sorts which I might not be able to procure next year, I tried a couple of each, selecting those stocks which were most forward in the flow of sap; and it may be worth your knowing that out of the four two have taken, and are in full growth, one of each sort, and the other two are not dead, and may possibly take. *Iota, Alford Vicarage.*

Foreign Correspondence.

THE VINE DISEASE IN PORTUGAL.—This disease having first commenced at Oporto and in the neighbouring gardens, has now appeared in the Alto-Douro, over a country several leagues in extent. The show of fruit is most abundant. The farmers, with the fate of Madeira before them, are waiting anxiously for the arrival of the month of July next, when it must be tested whether the disease is really radical or only atmospheric, and whether this is a second blight, or only the residue of the disease of last year. The greatest

anxiety is also manifested as to whether or not any practical remedy has been found out for the checking the baneful germination of the Oïdium in the vineyards of the Alto-Douro. *Alto-Douro, May* 22.

Societies.

LINNEAN, *May* 24:—ANNIVERSARY. The President in the chair.—The following is the list of office-bearers for the year ensuing:—Professor Bell, Esq., President; W. Yarrell, Esq., Treasurer; J. J. Bennett, Esq., Secretary; *R. C. Alexander, Esq., F. Boott, M.D.; R. Brown, Esq.; *G. B. Buckton, Esq.; *C. J. F. Bunbury, Esq.; W. J. Burchell, D.C.L.; *J. Curtis, Esq.; J. D. Hooker, M.D.; W. Spence, Esq.; *T. Thomson, M.D.; F. Walker, Esq.; R. Wight, M.D., members of Council. Those marked * being newly elected. Since the last anniversary meeting 17 Fellows, six Foreign Members, and two Associates had been elected; and the Society had lost by death the following Fellows, namely, A. Aikin, Esq.; Earl Brownlow; F. T. H. Foster, Esq.; Professor Jameson; G. Newport, Esq.; C. Stokes, Esq.; C. B. Wall, Esq.; N. Wallich, M.D., and also the following Foreign Members:—Dr. Fischer de Waldheim, M. Gaudichaud M. Adr. de Jussieu, Professor Reinwardt, M. Aug. de St. Hilaire, and Dr. Schwægrichen. The accounts showed a balance in hand of 312*l.* 19*s.* 11*d.*, including a donation from the President of 100 guineas.

Notices of Books.

More Worlds than One, the Creed of the Philosopher, and the Hope of the Christian. By Sir David Brewster. Murray. Fcp. 8vo, pp. 259.

WHETHER the earth is the only one of the heavenly bodies inhabited by intellectual, moral, and religious beings, or whether beings more or less similar to ourselves exist in the sun, moon, and stars, are questions upon which most persons have speculated, and but few, perhaps, have given an answer satisfactory to themselves. Reasoning from analogy can alone form the basis of any opinion not founded on the wildest hypothesis, or on the most arbitrary assumptions. An anonymous author has lately, in an essay called "Of a Plurality of Worlds," endeavoured to show that in all probability the earth alone is inhabited, and in answer to that work, and for the purpose of vindicating the contrary opinion, the present volume from the pen of Sir David Brewster has appeared. The subject is one upon which we confess we have formed no opinion, and must refer those who are anxious to learn what can be said in support of the position, that the inhabitants of this world are not the only intellectual, moral, and religious creatures in the universe, to the fascinating book now before us, merely observing, by the way, in the language of Mr. Mill, that the value of an analogical argument, inferring one resemblance from other resemblances, without any antecedent evidence of a connection between them, depends upon the extent of ascertained resemblance, compared first with the amount of ascertained difference, and next with the extent of the unexplored region of unascertained properties.

Hooker's Icones Plantarum (Pamplin). We see with real regret that this most useful work has terminated with the last half of the tenth volume, now before us. No English publication contains so long a series of uniformly good figures of plants, especially of such as are rarities even among botanists. If the last figures are better than the first, it is only because the art of lithography has much improved since the year 1837, when the Icones were commenced. This, the tenth volume, which contains Ferns only, is sold separately, with a separate title-page and index, forming "a Century of Ferns," which many lovers of this class of plants will gladly place in their libraries. We also recommend it to the attention of artists, for the sake of the beautiful suggestive forms in which it abounds.

New editions have just appeared of *Rivers' Orchard House* and *Rose Amateurs' Guide*, from which it will be seen what interest the public takes in the subjects to which they relate; as well may be the case when the badness of our springs on the one hand, and the beauty of English-grown Roses on the other, come to be considered. Mr. Rivers is enthusiastic in his description of the capabilities of his Orchard-houses, and we have no doubt that he is justified by the result. The new edition contains new and important suggestions for their management—the result of that best of all teachers—continued experience. That we shall end in universally covering large areas with glass roofs, we entertain no doubt, as we suggested years before orchard-houses were thought of. The great obstacle to their employment is their cost; but it seems coming to this, that we must either have complete spring shelter for fruit trees, or we must give up growing them. The Rose Guide also contains new matter, but we must refer to that on a future occasion.

New Plants.

65. GOMPHRENA COCCINEA. *Decaisne in Rev. Hort.* 1854, *p.* 161, *fig.* 9.

The pretty Amaranth known by this name is quite a new acquisition to our gardens. M. Vilmorin was the first to offer it for sale in 1853. The seeds were sent from Mexico, and named Gomphrena Hoveyana (var. superba), and G. Haageana, for which was substituted, in the last edition of the "Bon Jardinier," the name of G. coccinea, which recalls at once its most striking feature, viz., the brilliant orange colour of its flower heads. Although somewhat like G. globosa, the present plant may be known by the form of its flowers, which at once distinguishes it from certain varieties of globosa, with similarly coloured capitula.

G. coccinea is an annual herbaceous plant, about half a yard high, and a little stronger than G. globosa. Its branches are cylindrical, slightly hairy, pale green, and look as if speckled with white; the leaves are so too, and are opposite, oblong, or linear-lanceolate, pointed at the apex, and vanishing at their lower end into a short petiole; they are, moreover, from 0.07m. to 0.08m. long, and 0.08m. to 0.015m. broad. The capitula are terminal, solitary, oval, about the size of a pigeon's egg, and are composed of small flowers regularly imbricated. The peduncles are long, and quite at the top carry two or three large bracts, differing but little from true leaves, and forming a sort of involucre spread out below the inflorescence. The flowers are small, insignificant when looked at separately, and are besides almost entirely hidden by three scarious-pointed oval bracts, which surround each of them. Of these bracts the lower, one-half as short as the other two, is flat, and nearly colourless; the lateral ones, on the contrary, are concave, keeled, ciliated externally on the medial nerve, and of a brilliant orange red colour—they constitute the ornamental part of the plant. The flowers are composed of a calyx, with five pointed divisions, having but little colour, except, perhaps, at their apex, and of a staminal tube with 10 teeth or divisions, below which are, inside the tube, five sessile, elongated, unilocular anthers. At the bottom of the same tube is a single-seeded ovary, surmounted by a style and a bifid stigma.

As regards cultivation, G. coccinea is like a Cock's-comb. Although the native of a tropical country, its annual character places it amongst the plants which can be grown in the open air in the climate of Paris, but it requires a hot place, and to be sheltered from cold during the early stages of its growth. The seeds should be sown in March, in a hotbed, and afterwards placed out in beds, or pots sunk in the bed, and carefully covered up from the least cold. The flowers appear early or late, from June to November, according to the time of sowing. *Decaisne.*

Garden Memoranda.

HORTICULTURAL SOCIETY'S GARDEN, TURNHAM GREEN.—By the time this notice shall have been published, the bustle and activity connected with the Society's second great exhibition of fruits and flowers, fixed for this day, will have commenced; and it is gratifying to be able to state that, notwithstanding the severity of the late spring frosts, which made such havoc everywhere, the garden will be in excellent order to receive the gay throng that may be expected to occupy it on the occasion. The late rains have refreshed vegetation wonderfully, and, owing to its now undulated surface, the turf of the arboretum is delightfully soft, without being too damp, and beautifully green. Many of the ornamental trees, such as Chestnuts, Pyruses, &c., are also now in full bloom, and Azaleas and Rhododendrons, both in the American garden and elsewhere, promise to be very nearly, if not quite, at their best; even in front of the orchestra, those in the clump which has lately been so much altered, will be sufficiently forward to be as effective as shrubs so recently transplanted can possibly be expected to be; so that both in and out of the tents, we need not say, the scene cannot fail to be one of great brilliancy and gaiety.

Notwithstanding the general unscathed appearance of the garden, however, here and there the ill effects of last winter are unmistakeably apparent. Some of the Pinuses more especially have been very much cut up. Among the worst are P. Devoniana, Russelliana, and patula; these have been all but killed, and have been obliged to be pruned back till scarcely any foliage remains on them. P. Lindleyana has stood well, the ends of a few of its long leaves on the north-east side only having been browned. P. leiophylla has been cut down; but is pushing again from the bottom, as is also a plant of P. Hartwegi. P. Ayacahuite and Teocote have wintered safely; P. apulcensis has been greatly cut up; and P. macrophylla has had the ends of its long leaves browned. P. pinsapo is uninjured; P. radiata has had the points of its leaves browned a little; P. muricata and monticola are uninjured, as are also Nordmanniana, Montezumæ, and Fremontiana. Pinus Orizabæ has been killed down to the ground; as has been Abies Brunoniana. Abies orientalis and Pinus tuberculata are untouched. The Mount Atlas Cedar is also unhurt. Deodars have been browned by the spring frost, and, in some cases, lost their young shoots. Fitz-Roya has wintered well; but Saxe-Gothæa has been killed. Cupressus funebris has sustained very little damage, and C. Uhdeana is everywhere unhurt, as is macrophylla and Goveniana. The Mexican Juniper has likewise stood well, as have Cryptomeria Lobbi and japonica.

Ceanothus dentatus and papillosus, in a somewhat sheltered corner, are now in full bloom, and have stood the winter unscathed, as have also C. rigidus, integerrimus and verrucosus. A bad variety of Indigofera decora has likewise stood unhurt. The Van Diemen's Land Swammerdamia antennaria, a fine bush in the open garden, is now in full flower; it has only had one or two of its branches injured by frost. Catalpa Bungeana has had its unripe points cut back, but it is pushing afresh; Weigela rosea is in full bloom, and is perfectly free from injury, as are also various Moutans, which are now coming into flower. Elæagnus parvifolius is in full blossom and unhurt, as are also the Russian Pyracanth and Ribes speciosum, whose red Fuchsia-like flowers are very handsome. The Chusan Palm has also wintered safely; Syringa emodi has been very much hurt; Pavia indica has been injured by spring frosts, but P. californica has escaped. Acer caudatum has had its young shoots very much cut up by the late spring frosts.

As has already been stated, the Rhododendrons in the American garden are coming finely into flower, and the rockwork at its entrance is now gay with large patches of the white Iberis gibraltarica, Dianthus suavis, Woodruff, Cerastium grandiflorum, &c., intermixed with Ferns. On the banks we remarked Orchis speciosus in flower. Taxodium sempervirens, a good specimen of which stands among the Rhododendrons, has wintered safely, but some of the branches near its top have been injured by the frost of the 24th of April. It may be worthy of mention that a small plant of Assam Tea stood this frost (14°) unhurt. It is growing on a point of rockwork near the west entrance to the great conservatory.

The frost just alluded to did considerable damage in Mr. Ewing's glass wall, both to plants and fruit trees; a Peach tree in it, which was loaded with blossoms, having lost them all, and several other things having also been injured. Abelia triflora, though hurt a little, has stood in it tolerably well. New Holland Metrosideros lanceolatus has succeeded perfectly. Viburnum suspensum, Lindleya mespiloides, Edwardsia chilensis, and Tea Roses, also do well in it; while the young wood of Fuchsias, which were some 18 inches high, has been killed down to the root by the spring frost in question.

Some experiments as to the advantage, or otherwise, of using collodion for striking cuttings have been made in the propagating house. Of a potful of cuttings of Luculia gratissima, one half of which had been treated with collodion, the half so treated has begun to push, while the others which had nothing done to them, as yet show no symptoms of moving. Abelia uniflora, put in in a similar manner, showed the good effects of the collodion, even in a more remarkable degree. It is reported, however, that it does not suit plants having a milky juice, or soft-wooded things, which throw out roots from their stems—a cutting of Gesnera ulmifolia, coated with collodion, as far as it was inserted in the soil, having refused to root except at the surface of the mould, and above where the collodion had been applied; but for hard-wooded plants that callus and root in that way, it has been found to be invaluable, promoting the formation of roots very greatly.

Some of the young Pear trees in pots in the orchard-house, which was formerly a Rose-house, are bearing fruit, and all other kinds of trees in it are thriving satisfactorily. Some Strawberry plants, too, lifted out of the open border this spring, potted and placed there, are flowering abundantly and bearing good fruit.

Out of doors the first blooms of Strawberries have been killed, but there are still enough left for a crop. Pears, Apples, Plums, and Cherries, both on walls and standards have suffered so much from the frost of the 24th of April as to be a failure. Of Pears, the only sorts that promise to yield anything like a crop are, Duchesse d'Angoulême and Forelle or Trout Pear, both against walls. Of Peaches and Nectarines there will be a crop, though not so heavy as it otherwise would have been.

FLORICULTURE.

THE FUCHSIA.—Now, that we have got in our best varieties of this flower all the properties it may be expected to be made to possess, it behoves us to exert ourselves to grow specimens in the shortest possible time, worthy of the fine blooms which many of the kinds produce. If pyramidal plants are wanted (and if they are not grown in this way their beauties are not seen to advantage), cuttings should be taken from the short-jointed wood of the present year's growth, but not in too tender a state; for when the wood is too soft they are apt to shrivel and damp off. Use 4-inch pots well drained; then fill up with a compost of leaf-soil and sand, pressing firmly and surfacing with silver sand; then plant the cuttings all round the sides of the pot. Water gently with a fine watering-pot, and finish by plunging the pots in a mild moist bottom-heat in the propagating pit or frame, where they will soon emit fine young rootlets. Shade on warm sunny days to prevent their drooping and getting scorched. When they can stand handling with safety, pot singly in 3-inch pots into a lightish compost of loam, leaf-soil, and a little sand to keep it open. Plunge again for a few days where they were before, which will assist them in taking hold of the new soil. Then remove them to a warm pit or Vinery, where the temperature will range between 60° at night and 70° by day; the atmosphere should be kept moist, so as to induce them to make short-jointed wood. When the pots are full of roots, give a shift into a 6-inch pot, using a rather rich compost of nearly two-thirds strong fibry loam, and one-third of old cow droppings, leaf-soil, and sand, mixing all the parts well, so as to thoroughly incorporate them. Care must be taken to secure good open drainage by placing a large potsherd

over the hole in the pot, with smaller pieces over that and around it, and a little Moss over all to keep it from getting choked up. The plants will now be pushing vigorously, and laterals will be breaking forth freely. The main stem must now be tied to a neat stick, to keep it upright. When the laterals have grown a little past their first joint pinch them back to it; they will now push a couple of fresh shoots. Let this pinching be confined to the four lower tiers of laterals, the rest may be allowed to grow. The plants may now get a slight mulching of sheep dung, and be permitted to come into bloom, when they should be removed to the front table in the plant house, where they will flower freely for some time. It will now be December, therefore they should be allowed a season of rest, say in a cold pit, after they have been permitted to ripen their wood. They should be protected from frost, and should receive little water until the middle or end of February, when they may get a more liberal supply. They may be taken to a warm pit or Vinery in March, where they will soon show indications of rapid growth. After they have made a start they should be turned out of their pots and their roots examined, re-potting into 10-inch pots, in which they should be flowered. For soil, use strong rich fibry loam, with about a third of well decomposed cow droppings, and a little leaf-soil and sand to keep the soil porous. They should be pruned back to the last joint, from which they will push two strong shoots, and if kept pinched, as directed for last season, they will soon form handsome plants. Secure a good leader now, as they will be growing rapidly. By the middle of April a mulching of sheep dung will be found beneficial; but this should be used so as not to look unseemly. The bottom branches should be permitted to attain the length of a couple of joints before pinching, so as to get a good broad basis. After the laterals have broken out again, they should then be pinched back, stopping regularly as the plant grows, so as to secure a well formed specimen. They should not be stopped after the second week in June, and by the latter end of that month they should be set in a conspicuous place in the greenhouse or conservatory, where, by the middle of July, they will be coming into fine bloom, and will continue in that condition until October, provided a shade be applied on hot sunny days, which also preserves the colour. Bees are often very destructive to the flowers, and should therefore be excluded. When their beauty is nearly exhausted they should be removed to a cold pit, to afford room for the winter inmates of the house. The same treatment during this winter as was recommended for last, will be all they will require till spring, when they may be pruned and started according to the time they are required to be in bloom. They should be re-potted, as last season, in 10-inch pots, for which the roots should be cut back, so as to admit plenty of fresh soil. The middle of March will be found a very good season for propagating Fuchsias. A few oldish plants should be started early in the season for this purpose. Cuttings struck at this period will enable you to get nice little plants the same season for specimens the following year. *W. F.*

POLYANTHUS: *E S.* You should inquire for Addis's Kingfisher, a bold, finely formed, and rich red kind. We should be glad to see flowers of this style more patronised, as they contrast so well with the darker varieties.

SEEDLINGS.

PELARGONIUMS: *Vectis.* A clean looking flower, but a little deficient in shape.

CACTI: *P G.* Both very handsome; but of the two, No. 1 is the best, on account of the fine violet tinge which it possesses.

Miscellaneous.

Autumn Planting of Potatoes.—Although it is pretty generally acknowledged that autumn planting is the best means of preserving the Potato from the disease, still another example of the good effects of this method may prove useful. I will therefore describe my mode of proceeding in as few words as possible. In May the ground intended to receive the Potatoes is manured; after the manure has been dug in, French Beans are planted, the crop from which pays the expense of the first digging. In September the French Beans are removed, and the ground is again dug deeply. It is then allowed to remain in that state till the end of October. At this period it is laid out in beds 3 feet 3 inches wide, and in these beds holes 10 inches deep and 2 feet apart are made with the spade. After the sets have been deposited in the holes, the latter are filled up two-thirds of their depth with well decomposed vegetable mould; the other third is filled in with earth from the field. On the first appearance of frost in November the ground is covered with a layer of long dung about 6 inches in thickness and the whole is left undisturbed till March. At this period the dung is removed and the ground stirred. When the Potatoes come up they are treated in the usual way, with this difference, that in June, after they have flowered, all the stems are cut off as close to the ground as possible. The whole of the haulm is removed to a distance from the field, in order that the tubers may not be affected by the diseased leaves. This method has been employed for several years, and it is worthy of remark that the Potatoes thus grown are almost entirely free from disease, whilst those from which the leaves had not been removed were much diseased, even though grown in the same ground as the others. Lastly, there is another advantage in autumn planting, namely, that of the crop being earlier than by the usual method, and this is a point which no cultivator should neglect. *Chardon Régnier, in Rev. Hort.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Many of the New Holland plants and other greenhouse subjects will soon be getting past their best, and some foresight and care will be necessary to avoid being short of specimens in bloom with which to supply their places. If former directions have been attended to, many things in the stove (as Allamandas, Clerodendrons, Croweas, Achimenes, Gloxinias, &c.) should now be in a forward state; but these must be carefully prepared for removal to the cooler and drier atmosphere of the conservatory, otherwise there will be great risk of injuring the foliage, &c. Where circumstances will admit, plants that have been grown in a warm moist atmosphere should be removed to an intermediate house about a fortnight previous to their being taken to the conservatory, and gradually inured to a free circulation of air, &c. By attention to this, and placing the plants in the warmest corners in the conservatory, the Clerodendrons, Allamandas, Achimenes, &c., will continue growing slowly and blooming for some three months; whereas, if this is neglected, their beauty may be very short-lived. Aim at maintaining an even temperature in the conservatory, after removing thence plants that have been grown in the stove, and avoid allowing the atmosphere to become very dry on bright warm days. Also see that every plant is perfectly clean before placing it in this house, and that the creepers, &c., are not infested with insects. Go over the house every morning, and remove decaying flowers and leaves as they make their appearance. Until we experience more settled weather, valuable specimens of greenhouse plants should not be placed out of doors, unless where it cannot be avoided; and everything in a growing state should be shaded from the forenoon's sun for some weeks after removal to the open air. Young stock in pits and frames will now be making rapid growth, and must be carefully attended to as to watering, stopping, and training, &c. Examine Heaths frequently for mildew, and apply sulphur the moment it is perceived, some of the soft-foliaged varieties being very liable to be attacked by this pest at this season. The best preventive is keeping the plants in vigorous health, and affording them a free circulation of air. Attend to supplying healthy vigorous plants with pot room as they may require it, and avoid allowing them to sustain any check at this season.

FORCING DEPARTMENT.

PINERY.—Where the quality of the fruit is of first importance, care must be observed to have the soil in a healthy rather dry state, during the period of ripening; for there is no reasonable hope of obtaining high-flavoured fruit from plants growing in wet sour soil. And in the case of plants growing in pots, the trouble necessary to collect and place together those approaching ripeness, so as to be able to afford them a rather dry atmosphere, and avoid touching them with the syringe after they begin to colour, will be well repaid. Suckers that are not very strong will be benefited by being left on the stool for a month after the fruit is cut; but this will seldom be necessary in the case of healthy vigorous plants. Any neglect in the way of watering and maintaining a moist atmosphere in the case of succession stock may lead to their fruiting prematurely; therefore, let there be no lack of attention at present. Plants swelling their fruit should be encouraged with plenty of liquid manure, and a moist high temperature, shutting up early in the afternoon after syringing. VINES.—If spider makes its appearance on the foliage after the fruit has commenced colouring, no time should be lost in coating the hot-water pipes with sulphur. The sulphur should be mixed in water, with about equal quantities of lime and soot, and applied with a brush. The lime serves to prevent the sulphur being washed or rubbed off, and the soot helps to prevent the disagreeable appearance. The temperature of late houses, where the fruit is now showing, must not be allowed to fall too low at night, if good sized bunches are expected; and where Muscats are grown for a late crop, there will be but little chance of securing a good crop of these, unless a temperature of 70° is maintained. Attend carefully to young Vines recently planted, keeping the border in a healthy, moist, state; maintaining a moist atmosphere, and shading, if necessary, until the Vines get a fair start. Proceed diligently with thinning the berries, &c., immediately they are ready, for they progress rapidly at this season; also stop all laterals in time, and allow no confusion. MELONS.—Where the fruit is swelling, the soil should be kept in a properly moist state, and every means should be used to preserve the foliage in perfect health, as there is no possibility of obtaining good flavoured fruit unless the foliage is kept in health. Keep the Vines thin, and prevent their being encumbered with useless laterals, and remove any decaying leaves at once, as these, when left, only serve as a harbour for insects. There is yet plenty of time to secure a good crop in dung beds, and if any of the frames which have been used for getting up "bedding-out stuff" can be spared for this purpose, the plants should be got out at once. Very little artificial heat will be necessary at present, but the bed should be made sufficiently high to allow of being able to apply a lining if necessary towards August. This will be best managed by making the bed some 2 feet high with any useless material which will not ferment, placing on this some 18 inches of well fermented stable manure, which will afford sufficient heat for the present.

FLOWER GARDEN AND SHRUBBERIES.

Examine recently transplanted trees and shrubs, &c., frequently, to see that they are not suffering for the want of water. Give a liberal soaking when necessary, and stir and mulch the surface afterwards. The half hardy plants now consigned to their summer places after many months' shelter under glass, and much attention and care, must be duly attended to with water until they lay hold of the soil; and, with the present favourable weather, and proper attention, they will speedily cover the beds, and well repay all the trouble and attention that have been bestowed upon them; but every effort must be used to prevent their sustaining any check, for, if allowed to get into an unhealthy state at present, there will be much difficulty in getting them into free growth without much loss of time. Spare hand-glasses should now be used for the propagation of favourite spring blooming plants, as Pansies, Phloxes, &c. These do best on a shady border.

HARDY FRUIT AND KITCHEN GARDEN DEPARTMENT.

The Strawberry beds will now require attention as to watering, &c. After thoroughly cleaning the beds, a thorough soaking should be given the first possible opportunity, and if a moderate watering from the stable tank can be given when the ground has been well saturated with clear water, it will greatly assist in securing large fruit. The beds should be mulched as soon after watering as convenient, in order to prevent evaporation, and the fruit from being soiled. Next to slates or tiles clean straw is the best material for this purpose, and mowings of lawns the worst. The latter, besides forming an excellent harbour for slugs, soils the fruit, spoils its flavour, and in wet seasons hastens the decay of any over ripe fruit. Where clean straw cannot be afforded, the fresh litter from the stable-yard will form a very good substitute. Exposure to the air and a few showers will perfectly sweeten this, so that there need be no fears entertained of its injuring the flavour; but it should be applied immediately. Persevere in the destruction of insects on fruit trees as soon as they are perceived. Hoe and thin such crops as require it, and encourage the growth of Cauliflowers, &c., by frequent waterings with manure-water.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending June 1, 1854, as observed at the Horticultural Gardens.

May and June.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind.	Rain.
Friday 26	[illegible]	29.701	29.658	64	42	53.0	54	54	S.W.	.43
Satur. 27	1	29.714	29.639	59	37	48.0	53	54½	S.W.	.13
Sunday 28	2	29.740	29.634	62	38	50.0	53	54½	S.	.42
Mon.. 29	3	29.628	29.576	58	41	49.5	53	54	S.	.40
Tues. 30	4	29.839	29.765	65	36	50.5	53	54	S.W.	.34
Wed. 31	5	30.128	29.948	71	40	55.5	53	54	S.W.	.00
Thurs. 1	6	29.916	29.840	67	50	58.5	54	54½	N.E.	.08
Average.		29.809	29.721	63.7	40.5	52.1	53.3	54.2		1.80

May 26—Heavy clouds; very fine; cloudy; rain.
— 27—Heavy rain; hailstorm, with thunder and lightning quarter to 6 P.M.; clear.
— 28—Fine; showery; heavy rain at night.
— 29—Rain; heavy showers; rain at night.
— 30—Overcast; excessively heavy rain, with thunder and lightning between 12 and 1 P.M.; cloudy.
— 31—Very fine throughout.
June 1—Clear; fine; cloudy; rain at night.
Mean temperature of the week, 4½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK.
During the last 28 years, for the ensuing week, ending June 10, 1854.

June.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 4	71.0	46.3	58.7	11	0.76 in.	1	1	2	[illegible]	[illegible]	7	5	4
Mon. 5	70.6	47.1	58.8	15	0.64	2	3	[illegible]	1	[illegible]	[illegible]	[illegible]	3
Tues. 6	68.6	47.4	58.0	14	0.23	4	4	1	[illegible]	[illegible]	9	2	3
Wed. 7	68.4	47.6	58.0	11	0.53	3	5	—	3	4	6	3	4
Thurs. 8	70.2	47.1	58.6	11	0.45	3	5	1	—	4	9	4	2
Friday 9	70.5	48.3	59.4	13	1.48	1	5	1	2	3	11	3	2
Satur. 10	71.2	48.7	60.0	13	0.95	1	6	1	2	3	7	4	4

The highest temperature during the above period occurred on the 7th 1846—therm. 90 deg.; and the lowest on the 8th, 1838—therm. 35 deg.

Notices to Correspondents.

DISEASES: *W Hamilton.* Your Apple leaves are covered with the common *Oidium leucoconium*, a mould very frequently destructive to young Hawthorn, and which may affect the health of your trees. The insects have nothing to do with the affection. Syringe your trees well with the solution of sulphur and lime, the receipt for which you will find in the *Gardeners' Chronicle* of last year, and we doubt not that your pains, if continued, will be rewarded by the disappearance of the parasite. The same observation will apply to Peach mildew.—*C B.* Nothing is more common than for Strawberry leaves to be affected with spots, the cause of which is somewhat obscure. They do not, however, seem in general to suffer materially from the attack. The spots on your leaves do not seem to be quite like the ordinary spots, and are probably due to the action of drops of water on the leaves. This action is sometimes chemical, sometimes physical. Your note is too short to indicate either the circumstances under which the plants were placed or the condition of the plants themselves. If the general health is not affected, the local malady may safely be considered as unimportant. *M. J. B.—L C K.* The cause of your double yellow Rose buds rotting off in the way they have done is doubtless cold and damp. Specimens in a similar condition have reached us from other localities.‡

EVERGREENS: *L C K.* September, as we have often stated, is the best month for transplanting all kinds of evergreens.‡

INSECTS: *Spes Ultra.* The larvæ of the common cockchafer, which you have found so destructive to Lettuces in ground recently meadow land, can only be captured by well turning up the soil and picking out the grubs. You may, however, bury vegetables in the ground as decoys, and take them up once a week, but this will be very partial. Take care to kill all the perfect insects when they appear. *W.*

NAMES OF PLANTS: *T.* Salix pentandra, the Sweet Willow.—*R L.* Cytisus purpureus, Caragana Chamlagu.

STRAWBERRIES: *N B.* The same plants may be forced two years in succession, but as a general rule it is better to use young plants every year.‡

THE HORSE CHESNUT: *A R J.* This is so called in consequence of the seeds being ground and mixed with horse-food in Turkey; especially, it is said, when horses are broken-winded. Deer are fond of them. The scars on the branches have, like the scars of other plants, the form which is presented by the end of the leaf-stalk. The horseshoe form is extremely common; more common, perhaps, than any other.

THE LONDON MANURE COMPANY'S WHEAT MANURE, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. EDWARD PURSER, Sec.
Bridge Street, Blackfriars.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7*l.* per ton; Superphosphate of Lime, 7*l.*; Sulphuric Acid and Coprolites, 6*l.*
Office, 69, King William Street, City, London.
N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures.
WM. INGLIS CARNE, 10, Mark Lane, London.

SEWAGE CHARCOAL MANURE.—This highly fertilising Manure, which is Peat Charcoal completely saturated with London Sewage, will be found most efficient for every species of crop: more especially for Peas, Beans, Turnips, Mangold Wurzel, and other root crops. It will produce a greater return for the outlay than Guano or any other Manure at an equivalent value: it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained at the SEWAGE MANURE WORKS, Stanley Bridge, Fulham, at 4*l.* per ton, and in quantities less than half a ton, at 5*s.* per cwt., for ready money only; and in quantities not less than a ton, will be delivered at the London Termini of the Railroads free of charge for cartage. No charge for sacks.
It may also be had from Messrs. G. GIBBS & Co., 26, Down Street, Piccadilly, Agricultural Seedsmen, Agents for London: and from all the other Agents of the Company.

GUANO (PERUVIAN) AND CHEMICAL FERTILISERS.—NITRATE OF SODA; PERUVIAN GUANO; SUPERPHOSPHATE OF LIME; AGRICULTURAL SALT; AND CONCENTRATED MANURE FOR TURNIPS.
The above articles are supplied on the lowest Cash Terms, for best qualities only, on application to Mr. JOHN CLARANCE, Agriculturist's London Agent, 1A, Bishopsgate Street Within.

TURNIP SOWING.
SUPERPHOSPHATE OF LIME, made from Bone, which is the best Manure for Root Crops (see the Royal Agricultural Society's Journal, Vol. vi., part 2). PERUVIAN GUANO, NITRATE OF SODA, BONE DUST, SULPHURIC ACID, and all other Manures of known value. The PEAT MOSS CHARCOAL COMPANY have appointed the undersigned Sole Agents for the Sale of this fixer and distributor of Ammoniacal matter. They are also Sole Agents (in London) of the Patent Sanitary Company for the sale of their "Nitrogenised Carbon."—Apply to MARK FOTHERGILL & Co., 204A, Upper Thames Street, London.

NITROGENISED CARBON MANURE. — This powerful Manure will be found an excellent substitute for Guano, AT LESS THAN HALF THE PRICE. It contains a large proportion of Ammonia, in addition to all the highly fertilising salts, phosphates, and fæcal matter, in solid and liquid sewage, in a concentrated form, absorbed into Shale Charcoal. This will be found a genuine article, as proved by the analysis of Professor Way, the Chemist of the Royal Agricultural Society of England, and, quality considered, is by far the cheapest Manure in the market, and being perfectly dry and pulverised, it may be easily distributed in any quantity per acre that may be desired.
Price Five Guineas per ton at three months' credit, or a Discount of Five per Cent. for cash. Bags and Packages included; delivered free to any Railway Terminus or Wharf in London.
Address to the Secretary of The Patent Sewerage Manure Company, 22, Lincoln's Inn Fields.

BARTON'S PATENT STABLE FITTINGS AND ENAMELLED MANGERS.—These Fittings have all the newest improvements, and are the only patented invention of this description.
JAMES BARTON, Iron Founder, Smith, &c., 370, Oxford Street, a few doors East of the Pantheon.

AN ACCOMPLISHED FACT.
RICHMOND AND CHANDLER (in competition with the best selected Chaff-Cutters of the most celebrated makers in the world), at the Show of the Royal Agricultural Society of England, held at Lewes, have carried off the highest prize of 10*l.*, eliciting at the same time the most marked approbation of the Consulting and other eminent Engineers connected with the Society.—Implement Works, Manchester, and 32, South John Street, Liverpool.

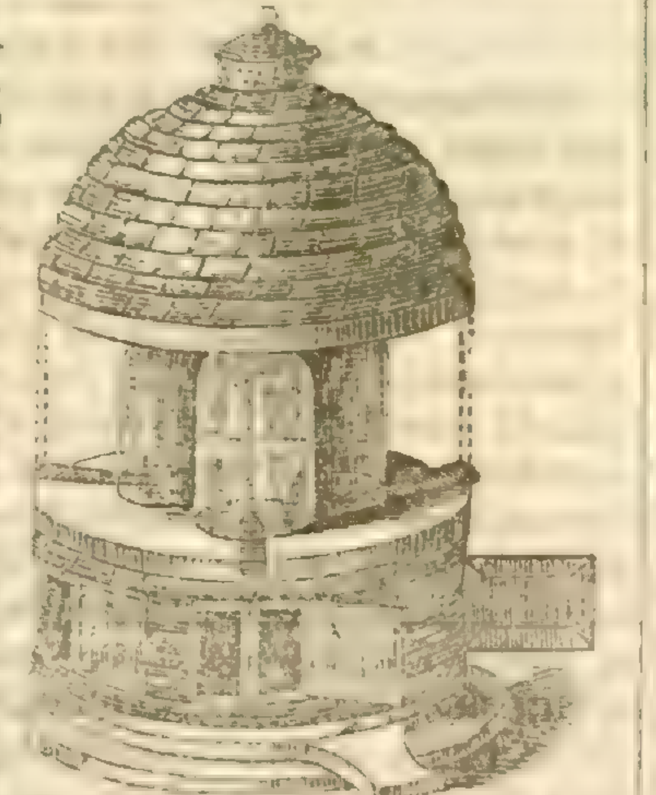
CHAFF-CUTTERS, of the best workmanship, 25*s.*; Two-Knifed Chaff Engines, from 63*s.*; Mills for Bruising Oats and Beans, from 45*s.*
WILLIAM DRAY AND CO., Agricultural Implement Manufacturers, Swan Lane, Upper Thames Street, City.

IMPORTANT TO AGRICULTURISTS.—Few are aware of the great saving which can be effected by using ASPHALTE FLOORS for FARM BUILDINGS of every kind. It resists alike the action of damp and vermin, secures the health of the Cattle, and saves the whole of the money now laid out in manufactured manures.
For further particulars, apply to HENRY BURGESS, Asphalte Manufacturer, Torriano Avenue, Kentish Town, London.
Estimates given and Work executed in the most substantial manner, in all parts of the Country.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.
THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.
The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.
Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

STEPHENSON AND PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.
From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

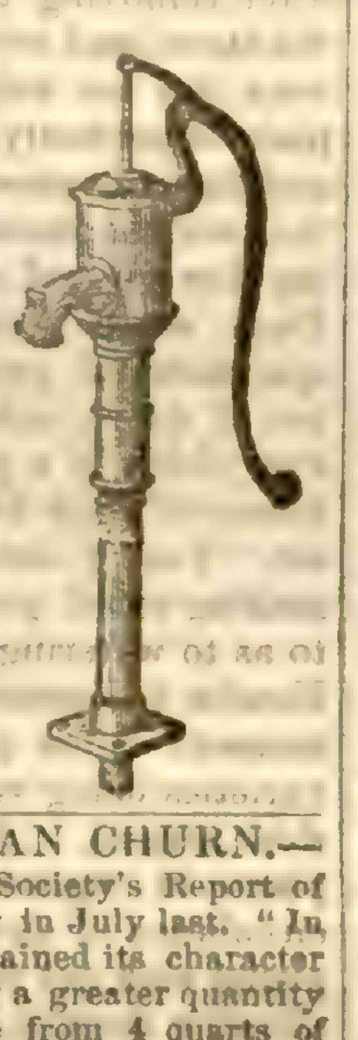
BEEHIVES.
NEIGHBOUR'S IMPROVED COTTAGE BEE-HIVE, as originally introduced by GEORGE NEIGHBOUR & SONS, with all the recent improvements, glasses, thermometer, &c., price 35*s.*, securely packed for the country.



This unique hive has met with universal commendation, and may be worked with safety, humanity, and profit, by the most timid; its arrangements are so perfect, that the honey may be taken at any time of the gathering season without at all injuring the bees.
Early applications, addressed to GEO. NEIGHBOUR & SONS, 127, High Holborn, or 149, Regent Street, London, will receive prompt attention. Their newly arranged Catalogue of other improved Beehives, with Drawings and Prices, sent on receipt of two stamps.
Agents:—Manchester, HALL & WILSON, 50, King Street; Liverpool, JAMES CUTHBERT, 12, Clayton Square; Chester, F. & A. DICKSON & SONS, 106, Eastgate Street; Glasgow, AUSTEN & M'ASLAN, 186, Trongate Street; Dublin, J. EDMUNDSON & Co., 61, Dame Street.

WARNER'S PATENT FARM AND COTTAGE PUMPS.
Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

	£	s.	d.
Patent Pump	1	15	0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing	3	0	0



Larger sizes if required.
The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.
May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,
JOHN WARNER & SONS,
8, CRESCENT, JEWIN STREET, LONDON.
Every description of Machinery for Raising Water; Fire Engines, &c.

ANTHONY'S PATENT AMERICAN CHURN.—Extract from the Royal Agricultural Society's Report of the trial of Churns at the Gloucester meeting in July last. "In this trial the American Churn not only maintained its character in producing butter rapidly, but in producing a greater quantity from the like amount of cream." It made from 4 quarts of cream 4 lbs. 6 oz. of butter, being 8 oz. more than any of the other Churns from the same quantity and quality of cream. Price Lists of Churns and Implements by the best makers sent free, and Illustrated Catalogues on receipt of eight postage stamps. BURGESS & KEY, 103, Newgate Street, and 52, Little Britain, London, who have always a large stock of Steam-engines, Ploughs, Harrows, Diggers, Waggons, Carts, Threshing and Dressing Machines, Mills, Oat and Grain Bruisers, Oilcake Breakers, Reaping Machines, Haymakers, Horse-rakers, Turnip Cutters, Liquid Manure Carts, Parkes' celebrated Steel Digging Forks and Draining Tools. Pumps for Manure, Farm Fire Engines, and for Garden Purposes, &c. &c.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.

MESSRS. BURGESS AND KEY, as Mr. PARKES' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.
103, Newgate Street, and 52, Little Britain, London.

SAMUELSON'S PRIZE FORKING or DIGGING MACHINE, as applied to Spring Cultivation, serves to thoroughly pulverise land which has been trodden by sheep or autumn ploughed, deepening the staple, leaving no pan, dragging up the Couch Grass, and preparing a finely divided seed-bed.
Extracts of Testimonials and references to persons using it.
"Answers thoroughly; brings everything to the surface."—*E. W. Wilmot, Congleton.*
"The very best a man can have upon a mixed or stiff soil, it so thoroughly pulverises it."—*Joseph Cooper, Acton Burnel, Salop.*
"I inform you, with the greatest satisfaction, of its success."—*Francis Hamilton, Friars Place, Middlesex.*
"Attached horses at half-past 8, on 5½ acres, finished at a quarter past 3, making first-rate work."—*J. Kirby, Bodicott, Oxon.*
"Has been working every day."—*T. Cardus, Barwell, Surrey.*
"Will do a given amount of labour, not only cheaper but better than the plough."—*J. J. Mechi, Tiptree, Essex.*
"Let me have one at your earliest convenience."—*Earl of Essex, Cassiobury, Herts.*
"Send to Exton Park one of Samuelson's Forking Machines for *Earl of Gainsborough, Oakham.*"
"Besides improved tillage, economises ploughmen."—*P. Gener, Cuba.*
"Been digging all the week; the *champion* of all implements in England; should be very sorry to be deprived of it."—*Thomas Lawrence, Thurlaston, Dunchurch.*
"Well satisfied last year. Turnips were a superior crop."—*C. Brickwell, Overthorpe, Northamptonshire.*
Price 24*l.* 10*s.*, the general purpose size; and 27*l.* 10*s.* large size, Cash; at the Works, Banbury.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.
PATRON—His Royal Highness PRINCE ALBERT.
PRESIDENT OF COUNCIL—Earl BATHURST.
PRINCIPAL—Rev. J. S. HAYGARTH, M.A.
PROFESSORS, &c.
Chemistry—J. A. C. Voelcker, Ph D., F.C.S.
Zoology, Geology, and Botany—James Buckman, F.G.S., F.C.S.
Veterinary Medicine and Surgery—G. T. Brown, M.R.C.V.S.
Surveying, Civil Engineering, and Mathematics—F. Armstrong, C.E.
Manager of Farm—G. Austin.
The next SESSION will begin early in AUGUST. The Annual Fees for Boarders vary from 45 to 60 guineas, according to age and other circumstances. The Fee for Out-Students is 40*l.* per annum. The College Course of Lectures and Practical Instruction is complete in one twelvemonth—though a longer course is recommended. There is a department for general as well as for agricultural purposes. Prospectuses and information can be had on application to the Principal.
The GUIDE TO THE ROYAL AGRICULTURAL COLLEGE FARM may be obtained of HAMILTON, ADAMS, & Co., Paternoster Row, London; and EDWIN BAILY, Cirencester. Price 1*s.*

PRIZES AND MEDALS.
THE CELEBRATED NEW TURNIP CUTTER and ROOT SLICER will compete for the GRAND PRIZE at the Bath and West of England Meeting.
KEALY AND CO., 369, Oxford Street, London.

THE THIRD CHELTENHAM SUMMER POULTRY SHOW will take place at that magnificent establishment PITTVILLE SPA, on the 14th and 15th of June. For Prize Lists and full particulars enclose a stamped directed envelope to JESSOP BROTHERS, Secretaries.

HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND.—The Show at Berwick-on-Tweed takes place on the 1st, 2d, 3d, and 4th of AUGUST, when Premiums to the amount of 1500*l.* will be offered for Stock and Implements.
All Entries must be made on or before June 17. Prize Sheets and Forms of Entry to be had on application to the Secretary, 6, Albyn Place, Edinburgh.
JOHN HALL MAXWELL, Secretary.

The Agricultural Gazette.

SATURDAY, JUNE 3, 1854.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, June	7	—Agricultural Society of England.
THURSDAY, —	8	—Agricultural Imp. Society of Ireland.
WEDNESDAY, —	14	Agricultural Society of England—Professor Way's lecture.
THURSDAY, —	15	—Agricultural Imp. Society of Ireland.

WE have lately tried to obtain the services of an experienced and intelligent man for the management of a large farm in one of the central counties of England: and have been struck by the abundant confidence of the several candidates for the office, and their apparently easy estimate of the qualifications needed. The farm contains probably a thousand acres, of which about 800 are still an unenclosed dry heathy moor. The climate of the district is sufficiently moist; and its light sandy soil, under good management, will grow Turnips and Barley readily enough. At present, however, the greater portion of it is in a state of nature, and the crop it bears is ling.

Now, just think of the many important questions on which the advice of the farm-manager is needed. He has first to frame a scheme of cultivation; and, supposing the whole farm brought under it, he has, after calculating the kind and quantity of stock which it will maintain, to determine the kind and quantity of accommodation required for it. Farm buildings have to be erected. It is a matter of much difficulty to decide upon their position in the case of a long narrow farm of such extent. The mansion or farmhouse and some few buildings are already built at one end of this long strip, and unfortunately at the narrow end of it, for it widens out considerably at the other. And whether or in what degree the new buildings are to be a mere addition to the old—or if they shall be erected in one or in two positions on the wider end of the estate; and, if so, how the several portions of a complete farmery are to be distributed amongst them —whether each shall be complete in itself, containing stack-yard and root-store, granary, and straw-house, yards, stables, stalls, and boxes (a portable threshing machine being employed to travel from one to the other, as litter is wanted at each); or if each shall contain a portion only of a complete set of buildings —the breeding stock, for instance, and the fixed threshing machinery, the granary and the rick-yards, and a portion of the stabling being placed around or near the tenant's house; while accommodation for the young and fattening stock, and for sheep, and for some of the horses of the farm, is provided at the other stations nearer where the manure is wanted, and the labour too: all these questions will be decided mainly upon the advice of an intelligent farm-manager.

The decision here does not merely concern the investment of a sum of 2000*l.*, it influences the annual expenses and returns of the farm for ever after—placing the tenant in a groove, as it were, from which no escape will afterwards be possible; and this, in the case of so large a business, is a matter of very great importance.

Then, supposing a decision to be arrived at, and the quantity and kind of the accommodation needed, with its position on the farm, to be fixed, there still remains to be designed the arrangement of each set

of buildings within itself, so as to ensure economy of labour—the planning of each separate farmery for the purpose it has to serve. Here, too, the advice of the manager is required, and would be followed.

This is not all: the heath has to be reclaimed piecemeal: two hundred acres have to be educated per annum—brought out of the wilderness and made productive. How is this to be done without abrupt interference with the existing plan of operations? or, rather, what is to be the plan of operations which shall not be annually upset by the sudden influx of so much more to be arranged each year, but which shall, instead, naturally stretch year by year at the rate proposed, without any breakage or confusion. The difficulty is so to crop the fresh instalment every year that it shall yield an increased maintenance uniformly throughout the period. It is easy to decide off-hand that one-half of every annual slice cut off the waste shall grow corn and the other half green crop; it is not so easy to arrange the cropping of the green-crop half so as to ensure a monthly increase of provision for the larger flock of sheep and herd of cattle, which will thus, year by year have to be kept until the whole work is completed. And yet this has to be done, and it is the work of the bailiff to do it.

Apart, too, from the scheme of cultivation, think of the responsibility connected with the selection and purchase of stock. Annually so many more horses must be purchased. The sheep stock and the cattle have yet to be selected, and annual purchases must be made until the capabilities of the place are fully developed. Here too it is not the mere expenditure of so much of an employer's money; it is his committal to a system and a policy, good or bad, for future years, that is the really important aspect of the matter.

Consider, too, the experience needed in the selection and purchase of tools and machinery — whose threshing machine, whose steam-engine, shall be purchased—whose plough, harrow, grubber—what roller, presser, clodcrusher, may be needed — and what power to work these implements, and with them cultivate 1000 acres of such light sandy soil —all these are questions awaiting the decision of the bailiff.

Lastly, and chief of all, there are the resolution, temper, and energy required to manage and direct the manual labour needed — the prejudices of the district against innovation to be overcome — and the goodwill and hearty co-operation of the working men to be secured.

Here is surely scope enough for the exercise of a very high order of ability and a very great amount of intelligence. Those who have charge of the agricultural education of our future land agents and farmers would do well to consider whether the intelligence and ability which they are trying to confer will fit their pupils for a field like this. It is when the practical business of farming is commenced that the real relative importance of the different branches of an agricultural education becomes apparent, and that experience in the field and in the market is seen to be essential. That there is no lack of confidence among the young men offering for situations of the kind is plain from our experience of the last few days; what sort of a foundation it is built upon is an altogether different thing.

The manufacture of Animal and Vegetable Matters—such as fish refuse, butchers' offal, urine, sawdust, moss or peat earth—into manure, and their application to the soil, has long been a subject of anxious inquiry; and that part of it involved in the proposition of Lord Berners, of mixing sawdust with sheep's dung and urine, like other suggestions for economising the volatile and soluble elements of manure on the farm, now so frequently wasted, is deserving of special notice at this time.

Glancing briefly at old practices first, our forefathers used sawdust for littering their stables, cow-houses, sheep-pens, piggeries, and poultry houses, the whole being afterwards mixed together and used as farm-yard manure. Sawyers and carpenters, again, who had none of the above provisions, mixed it in their dunghills for growing Potatoes; while fishermen used it for smoking fish, and mixing in their ash-pits along with fish refuse, selling the compost to farmers. With these practices many localities are familiar to this day, and have been so from time immemorial.

Of these plans, the mixing of sawdust with sheep's dung, urine, slaughterhouse and fish offal, is, perhaps, the most deserving of consideration, because the fermentative qualities of such articles are the best adapted to overcome the comparatively indestructible nature of the dust. Hitherto the great objection to sawings of wood, as manure, has been their slow decomposition. Immediate activity is necessary to give value to manure, and this is what sawdust does not possess. Excrementary and offal matters, on the contrary, are from their nature subject to rapid decomposition, so much so, that half their fertilising value is not unfrequently lost. Indeed it is impossible to estimate the loss arising from this source. Now, if the mixing of the two together will effect the decomposition of the former, while it avoids the loss sustained in the latter, the gain must consequently be great.

What gives peculiar value to composts of this kind is their disintegrated state: they are fit for drilling in along with the seed by Corn or Turnip drills at once. Their freeness from sand and other heavy and comparatively useless mineral substances is another merit. The difference between the expense of applying farm-yard manure and guano, for instance, is considerable, while the advantages gained by expedition in seed time are even of greater importance. The addition of 50 per cent. of sand and clay (as when urine, fish gut, &c., were mixed with earth) doubles the expense and time of application; and this, if the distance is great, may exceed the value of the manure itself.

The prime cost of the article would be little more than the carriage, while in most localities the supply would obviously be great. We have only to examine our timber yards for evidence of this. How many ingenious plans have even been contrived for carrying the sawdust down the stream which drives the saw-mill, or into the fire of the steam engine where steam power is used.

Now that artificial manures have become an agricultural necessity, it is the duty as well as the interest of every one to look first to the resources within his own reach for a supply, and *lastly* to the market for any balance required. To neglect the former, relying entirely upon the latter for Peruvian guano, &c., and then complain of high prices, is inconsistency and folly. Were every farmer to procure annually so many tons of sawdust, ground peat, or charred vegetable matter of any kind, which could be had for little money, and to mix them with the excrements of horses, cattle, sheep, pigs, poultry, &c., adding such other articles as peculiar circumstances required, it would exercise a very salutary effect upon the extravagant prices now paid for all kinds of artificial manures. If a farmer can thus manufacture at home as good an article for 20*s.* as he can purchase for 5*l.* (and this can be done in many cases), the course which he ought to steer is plain.

GAIN OF WEIGHT IN CATTLE FEEDING.

In the various publications to which I have had recourse, with the view of informing myself as to the treatment of cattle, I have found no attempt to estimate and distinguish the gain of useful material made by them in the process of fattening. On seeking to explain my views on this subject, I feel less hesitation, as I supply data and figures from which my conclusions are derived, the soundness and correctness of which it is not difficult to estimate and ascertain.

The cattle I prefer for fattening are well-grown heifers, or cows which have had their first calf at three to five years old. The breeds of this district are to a considerable degree short-horns, the bulls used being more or less of this description; they may be termed of 'fair' to 'good' quality. Their live weight, when bought in a lean store condition, ranges from 7 cwt. to 9 cwt.; their capability of carrying weight, when prime fat, may be taken at an addition of 3 cwt. Although it is not used to kill beasts in a store state, and little positive information can be gained as to the carcase weight of lean stock, yet, from observation and inquiry, I am disposed to think that this will be less than one-half of the live weight, probably not more than 43 to 47 per cent. In Morton's Cyclopedia treatise "On Meat," the comparison of carcase to live weight is stated as 50 to 55 per cent when half fat, and as 61 to 63 when prime fat, for cattle of the like quality. I quote this as tending to confirm what I have stated as to the comparative proportions in lean stock.

I will consider, for example, a lean animal weighing 8 cwt., and capable of weighing when prime fat 11 cwt., live weight; when fairly started, and with proper feeding, I should look for a gain of 14 lbs. per week, which in my practice is a moderate average; at this rate it would require 24 weeks to bring it to a state of prime fatness. On comparing the weights when lean and fat —8 cwt. or 64 stones lean, at 45 per cent, will leave $28\frac{3}{4}$ carcase weight; 11 cwt. or 88 stones fat, at 60 per cent., will leave $52\frac{3}{4}$ carcase weight. The difference is 24 stones, or 14 lbs. per week, for the 24 weeks, being precisely the gain per week in live weight.

During the progress of feeding there is a gradual increase of interior fat of two descriptions—fixed fat in the loins, commonly called suet, which will vary from 8 lbs. when lean to more than 30 lbs. when fat, this is weighed with the carcase; and loose fat, or tallow, which counts as offal. If we take two beasts of equal live weight, and suppose, on killing, one contains 9 stones of loose fat or tallow, the other only 5 stones; now, though this loose fat counts as offal, it is known that the carcase weight of the animal with the 9 stones of loose fat will be heavier than the one with only 5 stones. A consideration of this matter led me to infer that, with the increase of interior fat, there occurred a displacement of material in the process of evacuation. On inquiry of butchers of experience with whom I deal, they tell me that it is a characteristic of a beast, which "proves" well, to have a little stomach. On looking over the items of offal they appear capable of little increase or variation in one or the same animal, with the exception of tallow and of the stomach, in the weight of each of which there is a difference of 100 lbs. or upwards. I observe that the writer of the paper from which I have quoted attributes this comparative increase in the carcase weight of fattened beasts to its greater solidity, to hollows being filled up, and protuberances being formed; it seems, however, clear that this would equally affect the live with the carcase weight, and therefore does not satisfactorily explain the matter.

If my premises be correct, it will appear that, besides the gain of carcase weight (which is shown by comparison to be 14 lbs. per week on an animal which gains this in live weight), there is an additional gain of interior loose fat which counts as offal. From observation and inquiry I am led to think, then, that this will not be less on the average than 3 lbs. per week, or, in the 24 weeks, 72 lbs. of loose fat, making together 17 lbs. per week gain of useful and vendable material—a result at variance with the impression I held before I entered upon this inquiry. I may at some future time seek to draw attention to the probable proportion and description of this material gained in the process of fattening. Y.

VISIT TO TIPTREE HALL.

(*Concluded from page* 347.)

On viewing the homestead, the first building noticed was that used for the house-feeding of sheep. This shed, about 40 feet in length by 18 feet in breadth, contained about 40 South-down hoggets, which appeared to be healthy and in good condition, their average dead weight being about 10 stones each; they were feeding upon Mangold Wurzel, Rape cake, and hay chaff, and their laying was composed of wood spars 3 inches wide, and placed $1\frac{1}{2}$ inch apart; under this wood frame was a tank or pit about $2\frac{1}{2}$ feet in depth. Upon examination of this pit it was found to contain both the solid and liquid excrement dropped by the sheep, and the shed being well constructed for ventilation, there did not appear to be any effluvium arising from this mass of manure at all likely to damage the health of the animals. This pit having connection with the huge tank, can be readily emptied, and it can also be made available for the purpose of manufacturing manure fit for use by the ordinary drill, by being partly filled with ashes or other suitable materials. I think the only improvement to be made in the construction of these floors would be to place the spars 1 inch apart, instead of $1\frac{1}{2}$ inch, as it is now used. This is altogether the best accommodation for the house-feeding of sheep which I have seen, being superior to that in use at Swainston, in the Isle of Wight, by the late Sir Richard Simeon, and also that of the Rev. A. Huxtable, in Dorsetshire, both of which I had seen some years ago, and it is much preferable to the ordinary mode of feeding sheep in yards or sheds, where they are littered with straw. The foot disease is almost sure to attack the animals where straw bedding is used, whereas in this case general good health of the sheep may be expected, from the effect of the dry clean floor, and the purity of the air. The steam-engine, which is a powerful one, was next seen, and the threshing and dressing machine, with the chaff-cutting, corn-bruising, and other appliances, are of a complete and effective description. At one end of the straw barn temporary accommodation was afforded for 12 young beasts, which had been recently purchased, and were placed here awaiting their turn for removal into the bullock sheds. The boxes for fatting cattle were now noticed; and the floor, and the pits underneath for receiving manure, were constructed upon the same principle, the only difference being a somewhat wider space between the spars, with greater strength and substance in the cross bars. It was stated that in these boxes, which were about 12 feet square, two beasts were usually placed for the early period, but after they become forward in condition, they were separated and had a box to themselves. The bullocks seen here were fit for the butcher, and, it was said, were just sold; they however looked remarkably clean and healthy, although the pits were observed to be quite full of manure under them; yet the air, owing to the completeness of the ventilation, was comparatively pure and untainted. These animals were fed in part with steamed chaff, having meal mixed with it, which I thought the best and most economical mode of using meal for feeding beasts which I had seen.

The next building observed was appropriated to young store beasts, and they were accommodated in like manner with the fatting beasts; and, according to their age, they were in good condition, and their general appearance was growing, clean, and healthy. Eight or ten steers, seen feeding on the Italian Rye-grass in the open field, would have been better placed in this shed, and soiled here. Passing on to the adjoining shed, I found the fatting pigs were lodged precisely upon the same plan as the sheep, and I must say no animals upon the premises looked so well as they did. The sheds were narrower than those in use for sheep, but the floors and the manure pits were of the same construction. Two of these sheds were noticed containing from 12 to 15 porkers each, all of which appeared quite fat enough for the market. Another shed contained hoggets of the Down and Leicester cross-breed, which

were kept exactly in the same kind of building as that before described, but the ventilation was noticed in this case as being superior.

The next object which engaged attention was the boxes appropriated for the use of the store pigs and breeding sows. I do not know that the plan adopted was approved by the owner. I however found them in boxes having two compartments, one for resting and another for root feeding, &c.; both were quite small and under cover; the roof was much too low, and the place ill ventilated. They were littered with straw. I approve of the practice of bedding with straw for breeding and store pigs; at the same time I believe that they are best cared for when each sow or lot of pigs has its apartment for undisturbed resting, allowing a space of 8 feet by 12 feet under cover, and also a space of 12 feet square out of doors or uncovered, in the absence of a covered homestead, where it may receive both trough food, or roots and green crops; this space would likewise afford room for a moderate amount of exercise, so essential to the well doing of breeding animals.

The cart-horse stables were not very conveniently placed in connection with the other buildings, but very well constructed, having paved brick floors, with gutter to drain away the urine; plenty of space was allotted for the horses, and the stable lofty and well ventilated. After having seen all the buildings, it occurred to me that their relative position and general arrangement was defective, and somewhat inconvenient; it is, however, only justice to Mr. Mechi to say that he acknowledged this, and stated that the erection of some of these sheds was not contemplated at the commencement, and that in case his plans had been matured from the first, that he would have constructed and arranged his buildings in a different manner.

The extent of Tiptree Hall farm, belonging to Mr. Mechi, was stated to be 140 acres of land, and I was also informed that he occupies about 30 acres in addition, which he has recently hired. The whole of this land is under tillage, except 6 acres of permanent pasture. It appears to me that this farm, like much of the land between this and London, is naturally of a retentive character, the subsoil being comparatively impervious, and composed of strong clay, in some parts mixed with gravel and rock-stones. The surface is for the most part composed of a clay-loam; a portion, however, near the house is of a gravelly nature. In estimating the value of this farm, taking it on the whole at the commencement of Mr. Mechi's occupation, I reckon the value of the annual rental to have been about 18s. per acre. It is, however, now much changed; for the draining (although somewhat incomplete), the forking, and breaking up the subsoil, and the removal of the rock-stones, together with the present buildings, and modern appliances now available, have raised the value of the land, and it may be now fairly estimated to be worth 35s. per acre as the annual rental. I must further observe that this farm (with the sole exception of a portion where the drainage is not quite effective) now contains all the elements of successful farming, and without reference to the money which has been previously expended upon it, I say, without hesitation, that it may be made profitable in occupation, at the above named rental, without the annual outlay of so large a sum for feeding stuffs as Mr. Mechi has been in the habit of expending for some years past.

I now propose offering a few remarks which have occurred to me, resulting from the inspection of this farm. I think 20 acres of the land may be advantageously laid into permanent pasture, or otherwise 20 acres of land sown to Italian Rye-grass, in addition to the quantity of land now under that crop. The permanent pasture may be made highly productive by the application of manures in a liquid state, and its general advantages for sheep pasturage would be great; in case of any extension of the breadth of Italian Rye-grass, the crop as fast as it becomes fit for soiling should be cut and removed daily, and the liquid manure applied close upon its removal. I do not consider feeding upon the land advisable for this crop during the summer months, as it seriously interferes with the succession, upon the quickness of which its value so much depends. With regard to the management of sheep stock upon this farm, it is a question with me whether they would not yield more profit, and more benefit to the land, if they were kept entirely in the open fields during both summer and winter (even admitting that the animals would make more meat for the food consumed, if fed in house during the four winter months); for the cost of removal of root crops and its attendant expenses will, I imagine, be found greater than the gain to be obtained by house-feeding, when compared with a well-conducted system of feeding roots in the field, the method of trough feeding being of course adopted. If, however, anything in connection with the rotation of crops can justify a deviation from open field feeding in the winter months, it is the completeness of the arrangements here for shed feeding. In the case of neat cattle it is very different; for both young stock, and fatting beast, ought to be kept and fed entirely in the house, during summer and winter, and the method of soiling and removal of the crops must be considered best in conjunction with liquid manuring. I would here remark, that the best recognised principle in the practice of manuring is the use of stable, box, or yard manures fresh and unfermented for application to the cereal and pulse crops, and that of liquid manures for green crops, Grasses, and for roots. It was particularly noticed in the field arrangements here how easily and beneficially all the seeds of root crops may be put in with the liquid drill; the drill tank may be filled with liquid in any quantity, at any part of the field, by the aid of the hose here in use, the manure being used in such a state of dilution as may be desirable, and in admixture with superphosphate or other artificials. Upon inquiry I found that the liquid drill had not been in use here; I must, therefore, recommend it to favourable consideration in connection with the management of this farm.

Mr. Mechi, in his lively and confident manner, told me that the system of liquid manuring must become general, that we must all adopt it sooner or later. In reference to this observation, I beg to say the principle must certainly be recognised as one of the great improvements of our time, both for the purpose of irrigaton, and also for the dispersion and application of fluid manures. If we look to the Government report of the Board of Health, it will be found that upon several farms in England and Scotland the system of liquid manuring and irrigation by steam power has been successfully and profitably carried out. In connection with this subject, irrigation is only a matter of expense, for in various parts of the kingdom I have seen much pasture land in a comparatively barren state which may be made highly productive by lifting water with steam-power to the required level, and distributing it for irrigation upon the principle adopted in catch meadows.

In conclusion, I must say, that although Mr. Mechi may not have made his system of liquid manuring profitable at the commencement, yet the persevering manner in which he has continued it, has attracted so large a share of public attention that it will eventually lead to great and beneficial changes, both in irrigation and the application of liquid manure. *J. B., May* 16.

Home Correspondence.

Thick and Thin Sowing.—Never in our remembrance did corn of all kinds look more encouraging than at the present time; and where it is isolated and not planted too thick, an unusually abundant crop may be expected. Last season we stated the possibility of obtaining from single grains of Wheat, at the extreme distance of three feet apart, upwards of 80 perfect ears, containing 50 kernels each, or more than 4000 fold. Our specimens of last year, and of the growing crop this season for inspection, corroborates the assertion. This gives upwards of 10 qrs. per acre, from two pints of seed. We are also prepared to prove that isolated plants, one foot apart, at about six pints of seed per acre, will, under judicious treatment, also produce as great a crop; but if planted closer than this standard, it is an utter impossibility, as the plants then cannot perform their natural capabilities. Respecting the opposite extreme—thick sowing, we now make the bold statement that every grain of corn, whether Wheat, Barley, or Oats, sown in the United Kingdom, simply from its extreme thickness, does not, and cannot yield one ordinary ear, say 40 fold (nay, not even half as much), from each grain; and were it so, as a necessary consequence, it would produce, of course, 40 times as much per acre as is sown, say 2 bushels or 128 pints of Wheat, and 3 bushels or 192 pints of Barley and Oats, as an average quantity of seed usually sown. But such crops are never realised. Objections are raised, that by thin sowing late mildewed crops are sometimes the consequence; granted — but sowing early will be found to obviate this evil, and ensure more forward and bountiful harvests. *Hardy and Son, Maldon, Essex.*

Labourers' Friends. — Last year an agricultural society in Lincolnshire received an offer of a premium from a gentleman landowner of the following nature:—One portion of the reward was to be given to the married couple, and the other to the single labourer, who should have been most frequent and devout in their attendance at the parish church during the past year, the same to be certified by the minister and churchwardens. Considering that the society had other objects than proselytising for the Established Church, and that moreover some dissenter might be stepping forward, and (though inconsistent with his principles) offer a similar premium for attendance at chapel, the proposal was at once declined, and, upon a repetition of the offer, again rejected. *C.*

A Note from Tuam.—Great breadth of Potatoes planted. Emigration not abating. Labour risen considerably. Provisions very dear. Land letting much higher than in 1853. Sheep lower; Cattle also; but not low enough for spring. *Ballandyne.*

The Digger, by Samuelson, of Banbury. — Having purchased one of these implements in June, 1853, and Mr. Samuelson having made use of my name, I think it but due to the public and the inventor to state that the favourable impression I formed of this most useful implement is more than confirmed by another year's trial of it. I have used it this season on all my Turnip fallows, and have found it superior to any other implement, both in the economy of labour, and the excellency of its work—indeed, without it I could not have got some of my fallows ready during the late dry weather. I find two horses and three bullocks will do 3 acres per day on a strong retentive loam. *E. W. Wilmot, Congleton.*

Agricultural Meteorology.—"R." asks me, at page 347, to state the causes and particular phenomena of the storm's-eye, and how the calm in the centre is produced. I have much pleasure in offering my suggestions for his consideration, premising only that all arguments based upon the height of any atmospheric column, or upon any assumption of what the pressure may be, three miles or 30 above our head, must, to a very great degree, be mere assumption. Until balloon ascents are systematised, the small amount of information hitherto derived from that particular source can only be looked upon as the most interesting ground-work of induction, but still only as the ground-work. Air and water being both fluids, "R." may see what gave me my first idea of the rotatory storm's-eye, if he will pull up partly the hatch which regulates the flow of water from any mill-dam that may be near him. Immediately the downward pressure of the waters will cause a hollow cone to be formed, into which he may thrust his walking-stick several inches below the surface of the mill-dam without wetting it. Similar to this I conceive to be the atmospheric fluid which is carried round and round with an upward, instead of downward tendency, from its pressure upward. The calm in the centre of the water is produced by its pressure downward, and by the circular movement; in like manner the calm in the centre of the atmosphere, viz., the storm's-eye, is produced by its pressure upward, and the cause of that upward pressure is the expansion of the air from being heated, *i.e.*, as soon as air is heated it rises. The motion of the earth round its axis causes the heated fluid to rotate in contrary directions on different sides of the equator; and as the area over which this influence extends is enlarged—in other words, as the column expands—so the storm's-eye will extend; *i.e.*, the calm clear weather will prevail over a larger space in a high latitude than in a low one, in England than in the West Indies. Lastly, the particular phenomena attending the approach and passage of the storm's-eye are, a falling barometer with a rising thermometer and cloudy weather, probably with rain; then the weather clears up, and some hours of clear bright sunshine ensue, the barometer still being low; then the wind goes round to the contrary direction, and the barometer begins to rise, and the sky clouds over again; the changes of the wind will, however, depend on whether the observer be in the centre, or at the side of the storm's-eye. In reference to a quotation of "R's" from one part of my recent communication, "a rotatory column of atmosphere having a height of 30 or 40 miles," I quite agree with him that such a thing (probably) never occurs in our (nor in any) latitude: I merely assigned that height hypothetically, though for the purpose of the objection I then had under consideration, the greater the height of the column the stronger would be that particular objection, and, therefore, I put the adverse hypothesis most unfavourably to myself. My own opinion is that three or four miles above the earth's surface is probably the utmost extent of these rotatory influences; but this must be, after all, as I have already said, to a great extent, mere matter of assumption. *F. P. B. M., May* 31.

Societies.

KELVEDON, *May* 16.—*An Evening with Tusser.*—We have been favoured with the MS. of a lecture giving a very admirable review of Tusser's life and writings, delivered by Mr. Crane, of Kelvedon, and from it we make the following extracts on the life of the poet:—

In early youth his father seems to have destined him for the church, then in the throes of the Reformation, and he was sent to the collegiate chapel of the Castle of Wallingford. This arose probably from his possessing an unusually musical voice, and he speaks of it as quite against his own will, as well as that of his mother. After a harassing time, apparently at different places, leaving us to infer that his voice was the cause of his trouble, he ultimately reached St. Paul's, and speaks with gratitude of his progress in music under the celebrated John Redford, organist and almoner of that cathedral. From St. Paul's he went to Eton, where he experienced sharp discipline, and probably good teaching, for he progressed to Trinity Hall, Cambridge. He recounts the pleasant way in which his time passed here "with learned men;" but was driven by long sickness to leave his books and seek his fortune at the court, where he obtained employment, probably in his musical capacity, through the influence of his patron, William Lord Paget, the first titled ancestor of the Anglesey family, of whom he speaks in terms of affectionate gratitude. He remained in this position about ten years, which must have been during the latter part of the reign of Henry VIII., and the first years of Edward VI.; his patron, who had been in great favour, about this time fell into disgrace, and was sent to the Tower; and Tusser, being disgusted, as he says, with the vices of the courtiers, and his views probably baffled by the fall of his patron, for, he says, "the court began to frown," married, and began business as a farmer at Catwade, a hamlet in the parish of Brandham, in Suffolk, on the river Stour, which divides that county from Essex. One could scarcely imagine a less eligible training for the calling than his had been, as a singing boy, student, courtier, and musician. He must then have been over 30 years old, and started apparently ignorant alike of the theory, if there were theorists in those days, and the practice, rude as it then was, of husbandry.

It was here that he composed, or "devised," as he terms it, his "Book of Husbandry," the first edition of which was published in 1557, and dedicated to his patron, William Lord Paget, who, having adhered to the Popish party, had regained his influence, and held the office of Lord Privy Seal under Mary. He must have been engaged in farming for some years before producing even the rude essay which first issued from the press, and which formed the germ of his more perfect work, for in it is found a correct outline of agriculture, which could only be drawn by a practised hand, and the filling in and finishing of the picture seems to have been the solace and the business of his future life. This was the second book on agriculture that was printed in the English language, Fitzherbert's "Boke of Husbandrie" being the first. The work seems to have become extremely popular at once, and edition after edition issued from the press, polish, amplification, and continual additions marking its growth. Within comparatively a few years of its first appearance, Tusser's work was reprinted upwards of 20 times, and yet scarcely a copy of these early editions has been preserved, a proof that it had been sedulously applied to those purposes of instruction for which it was so admirably designed. As is remarked in the "British Biographer," "some books become heir-looms from value; and Tusser's work, for useful information in every department s

agriculture, together with its quaint and amusing observations, perhaps passed the copies from father to son, till they crumbled away in the bare shifting of the pages, and the mouldering relict only lost its value by the casual mutilation of time." Copies of the modern edition, by Dr. Mavor, published in 1812, are scarce, and I am indebted to the kindness of our honoured chairman for the use of that from which the present paper has been compiled. I can think of no piece of mediæval literature that seems to promise a more liberal return, in a pecuniary point of view, than a cheap reprint of the works of the old Rivenhall rhymer.

The illness of his wife, and the too probable embarrassment of his affairs, induced him to quit Catwade, and he is found successively at Ipswich, at Dereham Abbey, and at Norwich, at which latter place Salisbury, the then Dean, of whom he speaks in terms of warm gratitude, is supposed to have obtained for him the place of a singing man in the cathedral. Tusser, compelled to quit Norwich by a painful disorder, afterwards farmed the glebe and tithes of the parish of Fairstead, in our neighbourhood, where he seems, however, as usual, to have been unsuccessful. We find, even at this early period, that the tithes were evaded as much as possible; for though he himself repeatedly speaks of the honest payment of the impost as a religious duty, he attributed his own failure in some measure to the opposite practice of the parishioners of Fairstead—

"The tithing life, the tithing strife,
Thro' tithing ill of Jack and Gill,"

drove him from Essex to London, whence, frightened by the plague of 1574-75, he again sought Cambridge, and found an asylum in Trinity College, which had been founded since his youthful sojourn at the university. On the cessation of the plague he returned to the metropolis to get a living by his voice or his wits, and died there about the year 1580. He was buried in St. Mildred's church, in the Poultry, where an epitaph, probably written by himself, and which is given in Stow's "Survey of London," recorded his memory. This monument perished, of course, with the church, in the great fire of London.

For an author the vicissitudes of his life present an uncommon variety of incident: "without a tincture of careless imprudence," says Warton, "or vicious extravagance, this desultory character seems to have thriven in no vocation;" and Fuller, in his "Worthies of Essex," quaintly remarks, "that his stone, which gathered no moss, was the stone of Sisyphus. He was successively a musician, schoolmaster, singingman, husbandman, grazier, poet, more skilful in all than thriving in any vocation. He traded at large in oxen, sheep, dairies, grain of all kinds, to no profit. Whether he bought or sold he lost; and when a renter, impoverished himself and never enriched his landlord. Yet hath he laid down excellent rules in his 'Book of Husbandry and Huswifery,' so that the observer thereof must be rich. He spread his bread with all sorts of butter, yet none would stick thereon; yet I hear no man to charge him with any vicious extravagancy, or visible carelessness." I might quote the testimony of many other eminent writers to the moral worth of our poet, and the merit of his rhymes, while all lament his ill success in life. In that age of quaint device and allegory, a scythe and whetstone seems to have been thought an apt emblem of poor Tusser. This is found in Peachum's "Minerva," a book of emblems, printed in 1612, with a poetical commentary, and the same idea is more tersely rendered in a work printed in 1641, entitled "Recreations for Ingenious Head-pieces, or a Pleasant Grove for their Wits to Walk in," thus—

"Tusser, they tell me, when thou were alive,
Thou, teaching thrift, thyself could'st never thrive,
So, like the whetstone, many men are wont
To sharpen others when themselves are blunt."

Mr. Crane then took his hearers through the several chapters of the "500 points of good husbandry," making ample quotations in illustration of the manners of the times, the condition and the skill of those then engaged in agriculture, and of the peculiarities and fortunes of the poet. For this we have not room. Our readers must betake them to the volume itself. Mr. Crane, we are informed by Mr. Mechi, the President of the Society, succeeded in interesting a numerous and intelligent audience.

Reviews.

The Cultivation of Dartmoor. A Prize Essay. By Henry Tanner, Estate agent, Exeter.

To the pamphlet before us was awarded the prize offered by the Western Literary and Scientific Union, for "the best essay on the cultivation of Dartmoor as a source of employment for the unemployed population of the district." The subject is interesting, not only as furnishing the opportunity of discussing the relations of climate and agriculture under extreme circumstances, but, especially at the present moment, in its connection with the question whether or not our convict labourers can be profitably employed.

One of the best instances of successful agriculture in the district is that of our correspondent, Mr. Fowler, of Prince Hall, of whose proceedings Mr. Tanner speaks as follows:—

"Not long after Mr. Gullet commenced his operations at Prince Hall, he disposed of the property to Judge Buller, who advanced the improvements, and extended the enclosures; but it remained for his successor to show to what a degree of perfection agricultural operations could be carried out on Dartmoor. This property was purchased by G. W. Fowler, Esq., in 1846; he has since resided upon the estate, and personally superintended its improvement. Numerous as have been, and still are the difficulties with which he has had to contend, yet he has now the satisfaction of seeing the delightful change which has followed his labours, proving what may be done in the cultivation of this comparatively unproductive moor. I feel I should ill discharge my duty, in making a report of this district, did I not name Mr. Fowler as deserving the thanks of the public, for having at a great sacrifice of personal comfort, and risk of capital, gone boldly forward as the pioneer of improvement. The importance of his operations cannot be too highly appreciated by those who are desirous of seeing Dartmoor affording employment to the pauper, good investment to the capitalist, and wealth to the country. He has brought a large portion of his estate into a very high state of cultivation, and has succeeded in growing excellent crops. During the seven years he has cultivated that previously unproductive tract of land, numerous opportunities have arisen for making conclusive trials of the suitability of climate and soil for agricultural purposes; and I feel personally indebted to Mr. Fowler for his kindness in placing at my disposal much practical information which is embodied in this essay.

"His example has not been without its influence upon others. The deeply rooted prejudice which existed in the minds of the moor farmers against deep cultivation, or, as it is locally termed, 'ploughing up the deads,' has been overthrown. The land which was thus treated, instead of being 'utterly ruined' as they predicted, has been thereby much increased in fertility, and thus objectors are compelled to approve of the practice, and when able they venture to adopt it. But by far the most important result of his successful endeavours to develope the agricultural capabilities of Dartmoor, is the attention it has received from Government, and the important step which has been taken in establishing convict prisons at Prince Town. I look upon this proceeding as introducing a new era in the history of Dartmoor, for the means at the disposal of a government enable them to prosecute works of such extended character, as quite eclipse the most zealous and praiseworthy operations of private individuals. I consider this portion of the moor as the centre from which cultivation is to radiate on all sides; and although it is as 'an oasis in the desert,' yet eventually luxuriance and fertility will pervade the face of Dartmoor."

The Dartmoor prisons, originally erected for the accommodation of prisoners of war, have latterly been devoted for the use of convicts.

"The interior of the building has been remodelled and admirably adapted to the requirements of the system which is so ably carried out in that establishment; the work having been chiefly executed by convict artizans. From 1100 to 1300 convicts are generally stationed here, and are employed in reclaiming and cultivating the surrounding moor — planting — making and repairing roads—building—cutting turf for fuel and converting it into gas, by which the prisons are lighted—and a variety of other manual operations. The work is very effectually done, and the aspect of the neighbourhood is already much changed—fertility is beginning to spread where all before was barrenness, and luxuriant crops have taken the place of the heath and the furze. Splendid crops of Turnips, Swedes, Belgian Carrots, Barley, Oats, Flax, and Vetches, have been produced here (1400 feet above the sea), and also a large supply of culinary vegetables for the prisoners. Farm buildings have been erected, a dairy established, and arrangements made for the production of a portion of their animal food. About 50 acres of irrigated meadow-land are being prepared below the prisons, which will be watered with the sewerage from this establishment and the barracks. The produce from these meadows will be almost incredible. The land being naturally of good quality, and well underdrained, the manure will exert its full effect upon the Grass, and this in a climate peculiarly adapted to its growth. Already on a portion which had been levelled and drained, and which but a few months before had been a bog impassable for man or beast, they cut upwards of one ton per acre, of excellent hay, after the use of some sewerage water; what then will be the produce when the land has been sown with good Grasses and a firm sward is obtained!

"By means of a large force-pump (worked by manual labour), which has been erected over the tank which receives the liquid manure from the prisons, all the sewerage can be thrown into another tank, built upon the highest portion of the land in their occupation; and thus, aided by a series of these receptacles, the liquid can be stored, or distributed over a great extent of land with a hose. If at any future time it is thought desirable, these higher lands can be laid down in Grass, and irrigated with the manure water. The time is not far distant when this establishment will be enabled to raise all the agricultural produce that is required for its support, with the exception probably of Wheat, and thus become eminently self-supporting."

Mr. Tanner gives a great deal of useful information on the cost and methods of the different processes employed in reclaiming the moor — as planting and draining, building, roads, and fencing. As to the capabilities of the soil when properly cultivated, the following may be taken as an encouraging testimony:—

"It is very important to know what crops are suited to the moor. Of the corn crops, Oats stand first—the soil and climate are both favourable, and consequently valuable Oats have been grown here. Rye is probably well suited for moorland cultivation; and although for many years past its culture has not been carried out on Dartmoor, yet from the general use of Rye-straw as thatch on the old cottages and farm-buildings, we may infer that it has been extensively cultivated. Flax has been grown with success; but this delicate plant cannot support itself against the winds of the moor until their violence is subdued by extensive planting. Its growth at the present time is very uncertain from this cause; but if shelter could be obtained, it might be cultivated with the greatest success. Barley has been grown of excellent quality; but, although in some seasons it has been very successfully cultivated, yet I consider it too delicate for profitable growth at present. Wheat, Beans, and Peas, are decidedly unfit for cultivation on Dartmoor. The Scotch Bere or Big will, in all probability, answer well here. It is somewhat similar in character to Barley, and is cultivated in districts unsuited to the latter; the advantages are, it does not require such a favourable climate, and ripens at least 14 days earlier; but the produce, although much inferior in quality, is found to be valuable food for stock. Potatoes were grown successfully until the appearance of the disease, now so general amongst them. The quality grown was excellent, and large quantities were sent to the London markets, where they realised high prices. Spring and winter Vetches, Grasses, Clovers, Rape, Turnips, and Swedes, succeed admirably, and produce abundant crops. Many of my readers, no doubt, will remember the fact of the prizes for Swedes and Turnips, offered by the South Devon Agricultural Society, being awarded for two years in succession to the same person, occupying land —not in the rich district of South Devon—but on Dartmoor, 1100 feet above the sea. The judges in awarding the prizes, declared the weight of Mr. Fowler's crop to be—

	Tons.	cwt.	qrs.	lbs.	
Swedes, without tops and bottoms	35	11	1	16	per acre.
White Turnips, with their tops on	43	8	1	6	"

This will be satisfactory proof that the climate and soil of Dartmoor are highly favourable to the growth of these roots. The Mangold Wurzel is of a different habit, and prefers a drier climate; but, although not so productive as the roots just named, yet from its valuable property of keeping good so late in the spring, it should be grown to a small extent. The Carrot may be looked upon as a rather more productive crop than the Mangold, and the variety of food renders its cultivation desirable."

On the most Economical and Profitable Method of Growing and Consuming Root Crops. By W. C. Spooner, of Eling House, Southampton. Prize Essay. Ridgway, Piccadilly.

We call attention to the timely publication of this essay in a separate form. It was first published in the second volume of the Journal of the Bath Society, where it occupies the leading place. It is a very useful practical account of root growing, and well deserves an extensive circulation.

The Illustrated Book of Domestic Poultry. Edited by Martin Doyle. Routledge & Co., Farringdon Street.

This is a handsomely decorated volume, full of descriptive and useful matter relating to all our principal breeds of poultry, given in a chatty readable manner. Too much space is occupied with mere anecdote and ornament, but that will not be objected to by the large class of amateur poultry-fanciers for whom the book is intended, and for whom it is well adapted.

Poultry.

Vitality of Eggs.—A friend and neighbour of mine, possessed of a valuable breed of fowls, has been in the habit of selling eggs to breeders in the breeding season at a high rate, and out of the season to shopkeepers and others at a low rate, in the latter case always taking care to prick them (having heard that if pricked they would not produce a chick), in order to prevent people getting his breed of fowls at the rate of "20 for a shilling." Now, having reason to suspect that chickens had been hatched from some of his pricked eggs, he has made the following experiment. He found a thrush's nest with four eggs in it, and pricked them all, some at the large end and some at the small end, and allowed the thrush to sit unmolested. The result is that there are now three young birds in the nest, and an addled egg, which egg was pricked at the small end. These eggs were not merely pricked through the shell, but the pin nearly touched the opposite end. Since then my friend has pricked five eggs of another thrush, all at the small end, the result of which, if of any interest to you or your readers, I will forward you in due course. *Little Chingey.*

Golden Pheasants: The eggs of golden pheasants vary so much in price that we scarcely know how to advise you. We have known them sold at prices varying from 10s. 6d. to 21s. per dozen.

Miscellaneous.

Sale of Short-horns: Aberdeenshire, May 24.—Mr. Strafford conducted the sale of the herd of pure short-horn cattle, the property of J. C. Grant Duff, Esq., of Eden. The following were among the sums realised, together with the names of the purchasers:—

	gns.
Jenny Lind, red, calved 17th March, 1847—Mr. Tanqueray, Brent Lodge, Hendon, Middlesex	100
Miss Bates the Second, red and white, calved 21st January, 1849—Mr. J. G. Wood, Castlegrove, Strabane, Ireland ...	70
Pure Gold, roan, calved 25th January, 1849—Mr. Cruickshank, Sittyton	91
Manganese, red, bred by Sir Thomas Cartwright, calved 14th Feb., 1849—Mr. Longmore, Rettie	90
Monika, red, calved 17th March, 1849—Mr. Lyall, Kincraig, Brechin	55
Iris, roan, calved 8th June, 1850—Mr. Tanqueray, Brent Lodge, Hendon, Middlesex	95
Flora Fourth, roan, bred by Mr. Trotter, calved 6th Dec., 1850—Mr. Wilson, Cumlidge, Berwickshire	30
Rosewood, roan, bred by Mr. Cruickshank, Sittyton, calved in Feb., 1852—the Duke of Richmond, Gordon Castle ...	55
Pallas, red and white, calved the 28th April, 1852—Mr. Scott, Byres, near Fochabers	60
Astræa, light roan, calved 4th May, 1852—Mr. Tanqueray, Hendon, Middlesex	65
Venus, red and white, calved 4th June, 1852—Mr. Cartwright, Aynhoe Park	95

Thirty cows, heifers, and heifer calves yielded 1555 guineas, or upwards of 50 guineas each: 10 bulls and bull calves yielded 278 guineas, or nearly 30*l.* apiece.

Crops in East Lothian.—The acreable produce of this county has been greatly increased from two causes —thorough drainage and the application of guano. From the former the average extent under Turnip has been quadrupled; from the latter the average weight of bulbs has been increased by at least 4 tons per acre. Without the aid of guano, manure for the breadth of land now capable of growing root crops could not have

been obtained. The average produce of Wheat, from these two causes combined, has been raised not less than 8 bushels per acre. If ten were named it would not exceed the real increase. Barley and Oats have also been increased at least by 12 or 14 bushels; Beans by 8 bushels; while Potatoes could not be grown to one-half the present extent without these two powerful agents—thorough drainage and guano. The average weight of Turnips grown may be estimated at 18 tons per acre. The Swede occupies less than one-third; the Purple-top Yellow and White Globe occupy the largest space. Since the introduction of Skirving's Purple-top Yellow, the Swede has been restricted in breadth. The average produce of Wheat per acre for the whole county, for the last five years, may be taken at 31 bushels; Barley at 44; Oats, 50; Beans, 28; hay at 3360 lbs.; Potatoes at $5\frac{3}{4}$ tons per acre. The average weight of Wheat per bushel is 62 lbs.; Barley, 55; Oats, $42\frac{1}{4}$; and Beans, 66. The weight of the straw is seldom ascertained, except in experiments. It varies considerably, being dependent on variety grown, season, and nature and condition of the soil. These averages are much above those in the Statistical Returns. It must, however, be kept in view that the crop of 1853 is confessedly below an ordinary average. *From the Report on the Farming of East Lothian, by Mr. Stevenson, in the Eng. Ag. Soc. Journal.*

Improvements in Churns. By Theophilus John Nash, of High Holborn, Middlesex. Patent dated March 9, 1853. (No. 600.)—The inventor describes and claims a combination of apparatus for giving an up-and-down and rotary motion to the dashers of churns, such motion being communicated by a winch-handle, on the axis of which is a toothed wheel, which takes into and gives a motion to a similar wheel. On the axis of each of these wheels is fixed an eccentric, and between the two eccentrics there is a disc, which is affixed to the spindle of the dasher of the churn, and which, by the rotation of the winch-handle, will be caused to rotate, and to rise and fall. *Mechanics' Magazine.*

Calendar of Operations.

MAY.

West Sussex, *May* 29.—Since our last report we have had the weather very favourable; showers have been frequent, and not heavy, and the clay lands that were very much rent have now got closed. Grass, which was rather scarce at one time, is now coming up well, and is gaining upon the cattle, consequently all kinds of lean stock have become very dear, and are likely to be so. We must put off hay-making to a later season than usual, but we do not think it will be such a light crop after all, as there is a thick under-growth coming up, which will help to make it up. Wheat looks vigorous, although, now and then, we find a brown leaf, perhaps the result of the frosty nights that we have had so often, and which in some places have done much damage to both Wheat and broad Clover, and also Peas and Beans, but this is only partial, and I have seen but little of it. Mangold, that we sowed the first week in this month, is up pretty well, but does not grow so fast as if we had warmer weather. Barley that was sown early has come up very irregularly, and may be a very uneven sample. Beans are generally a short crop, but here they look healthy, and are coming in flower. Peas are good at present, and some that were sown early in February have been in flower for 10 days. Potatoes, so far as I have seen, look fair, but not over luxuriant. I should think that the cold weather that we have had will prevent that rapid growth which some say is so likely to attract disease. Great faith is put in the sharp frost that prevailed through the winter. We are now about to begin getting in Swedes, and they and Turnips will be got in as soon as possible after this; and if early sowing have any effect on producing a good crop we may look for a better supply of them than last year, as most are ready to put them in quickly, the preparation of the land having been got well forward. There have been several pieces of Trifolium sown for this season; but it has not generally turned out well. Some has been eaten by the slug, and has come in patches; but where it is, it is good; and could we get a regular plant it comes in very useful, as it is early. *G. S.*

Notices to Correspondents.

Agricultural Education: *Hazel.* A year at the Agricultural College commencing in autumn—a winter in Professor Way's laboratory—and a second year with a good business farmer—would, we think, turn out an intelligent and practical agriculturist. We should prefer Berwickshire, Norfolk, Lincolnshire, or Sussex, to Cheshire, as the scene of an agricultural education.

Cart: *S W.* Had the firm of Messrs. Stratton and Co. been still in existence we should have referred you to them. You had better apply to their late foreman and successor, Mr. Chard, Milk Street, Bristol.

Prize for Artificial Guano: *F Atlee.* The mistaken idea that the British Government had offered a premium of 4000*l*. to the inventor of an artificial guano has probably arisen from the fact that the English Agricultural Society (11, Hanover Square, London) has offered a prize of 1000*l*. for the same thing. The conditions of this latter prize may be learned, we believe, by application to the above address. You will have seen in the last number of this journal that no fewer than 143 competitors for this prize have appeared, each of whom professes to supply a manure equal in fertilising properties to Peruvian guano, at a price not exceeding 5*l*. per ton, and in quantity sufficient for all demand.

Salt: *W H.* Blackie's Cyclopedia refers pretty fully to its uses as a manure. Johnston's "Agricultural Chemistry" refers to it also, in detail. We know of no work specially on its uses as a manure, but may state generally that it has been found especially useful for Mangold Wurzel, for which it has been applied along with ordinary manure, at the rate of 4 cwt. per acre with advantage; and also for corn crops on rich lands, where it is believed to have tended to the strength and cleanness of the straw. You may apply 2 cwt. per acre in wet weather, broadcast, over any growing crop, probably with advantage in localities at a distance from the shore.

To put a Cow dry: *J L.* A dose of salts, such as sulphate of magnesia, 12 oz., with 2 drachms of ginger dissolved in warm water, will generally accomplish the purpose. *W. C. S.*

Vetches: *Inquirer.* They admit of but one cutting. We do not know how it may be if mown before the flower-buds have formed; but they would then prove physic rather than food.

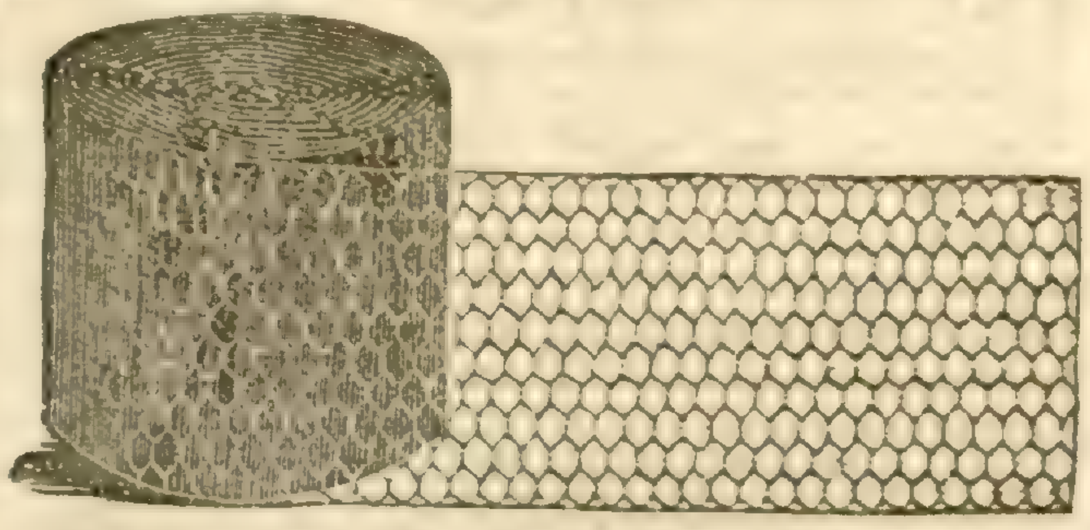
Wheat: *F D.* You would get some autumn feed by hoeing in Italian Rye-grass while the ground is still damp. If the thinness takes the form of entirely blank patches, these might be sown with Buckwheat as you propose, but Buckwheat sown *among* the thin Wheat would so overgrow it as to render it almost impossible to harvest it.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

Priced lists of plant tubs and boxes forwarded on application.

H. J. MORTON and Co., 2, Basinghall Buildings, Leeds.—GALVANISED GAME AND POULTRY NETTING, very strong and neat, NEVER REQUIRES PAINTING.



24 inches wide, 3-inch mesh, 4½*d*., 6*d*., and 8½*d*. per yard.
24 inches wide, 2-inch mesh, 7*d*., 9½*d*., and 1*s*. per yard.

GALVANISED IRON SPOUTING, for Dwellings, Cottages, Farm Buildings, &c., NEVER REQUIRES PAINTING.

Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalte Roofing Felt, &c.

H. J. MORTON and Co., Galvanised Iron Roofing Works, 2, Basinghall Buildings, Leeds.

PATENT WIRE STRAND FENCING FOR PARKS, &c.

This Fencing is the most neat, strong, and durable for Parks and Agricultural purposes in use. It cannot be bent or put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply as above.

IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

GALVANISED WIRE GAME NETTING.—
7*d*. per Yard, 2 Feet Wide.

		Galvanised.	Japanned Iron.
2-inch mesh, light, 24 inches wide	...	7*d*. per yd.	5*d*. per yd.
2-inch " strong "	...	9 "	6½ "
2-inch " extra strong "	...	12 "	9 "
1⅛-inch " light "	...	8 "	6 "
1⅛-inch " strong "	...	10 "	8 "
1⅛-inch " extra strong "	...	14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasantries, 3*d*. per square foot. Patterns forwarded post free.

Manufactured by Barnard & Bishop, Market Place, Norwich; and delivered free of expense in London, Peterborough, Hull, or Newcastle.

(Fig. 1.)

(Fig. 2.)

J. TYLOR and SON'S BARROW GARDEN ENGINE (Fig. 1), in best well painted oak tub, fitted with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 1 holds	10 gallons,	throws	30	feet high	...	£4 10
No. 2 "	15 "	"	45	"	...	5 10
No. 3 "	28 "	"	45	"	...	6 18

J. TYLOR and SON'S BARROW GARDEN ENGINE (Fig. 2), in strong tinned iron tub, well painted inside and outside, with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 10 holds	8 gallons,	throws	25	feet high	...	£2 15
No. 13 "	12 "	"	30	"	...	3 5
No. 11 "	16 "	"	40	"	...	4 0
No. 12 "	24 "	"	45	"	...	5 0
No. 14 "	30 "	"	45	"	...	5 18

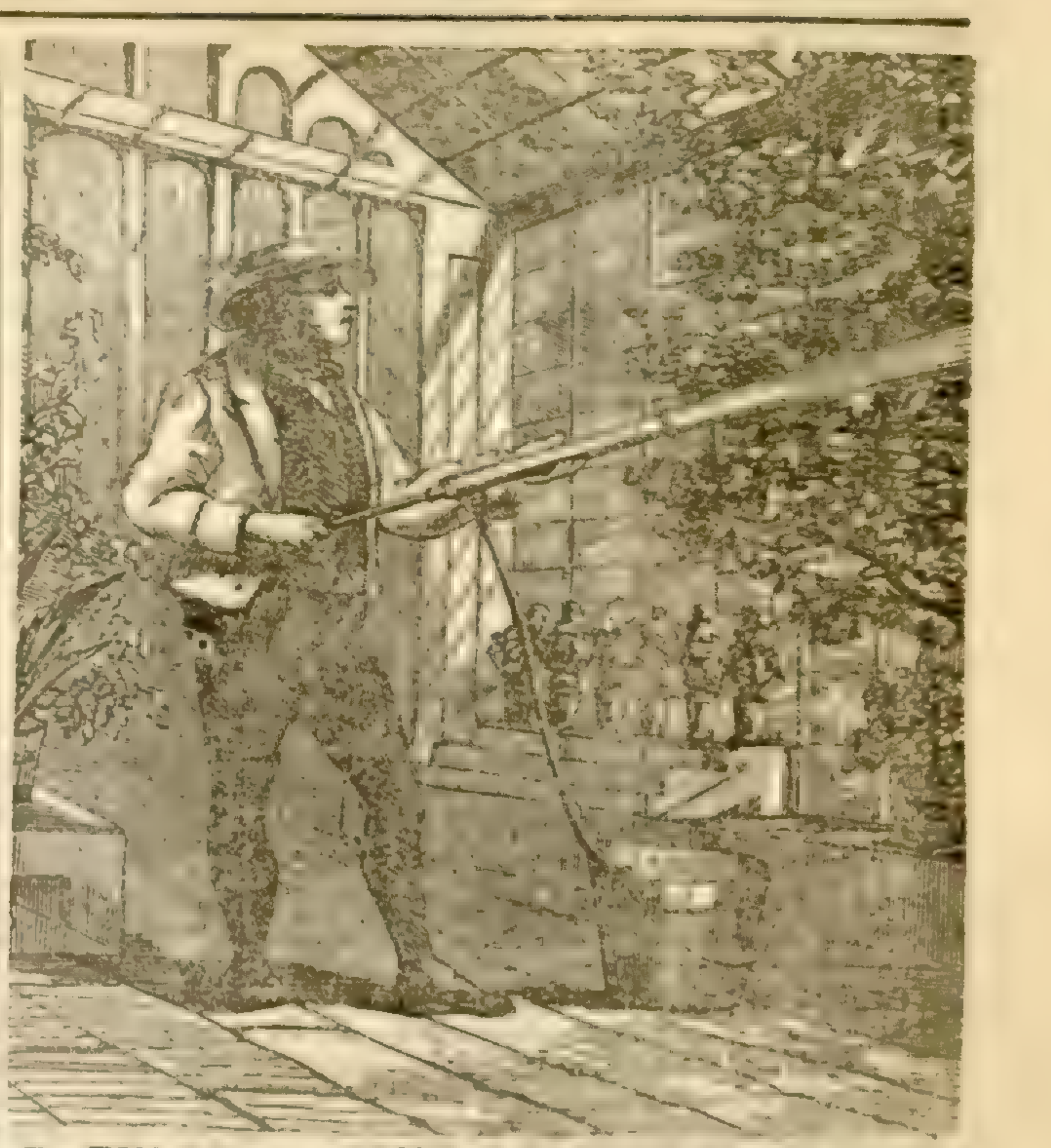
A large assortment of every description of Garden Syringes, Pail Engines, Conservatory Pumps, &c., kept in stock.

Full size Syringe, on Read's principle, of the very best quality and workmanship, with two roses and one jet, 21*s*.; Plain Syringes from 10*s*. 6*d*. upwards.

J. Tylor & Son's Horticultural Apparatus may be obtained at these prices from any respectable Ironmonger or Seedsman in town or country, through whom alone they will be supplied, and of whom Drawings and Prices may be had.

N.B. Cost of carriage, &c., not included in these prices.

J. Tylor & Son's Manufactory, Warwick Lane, Newgate Street, London.

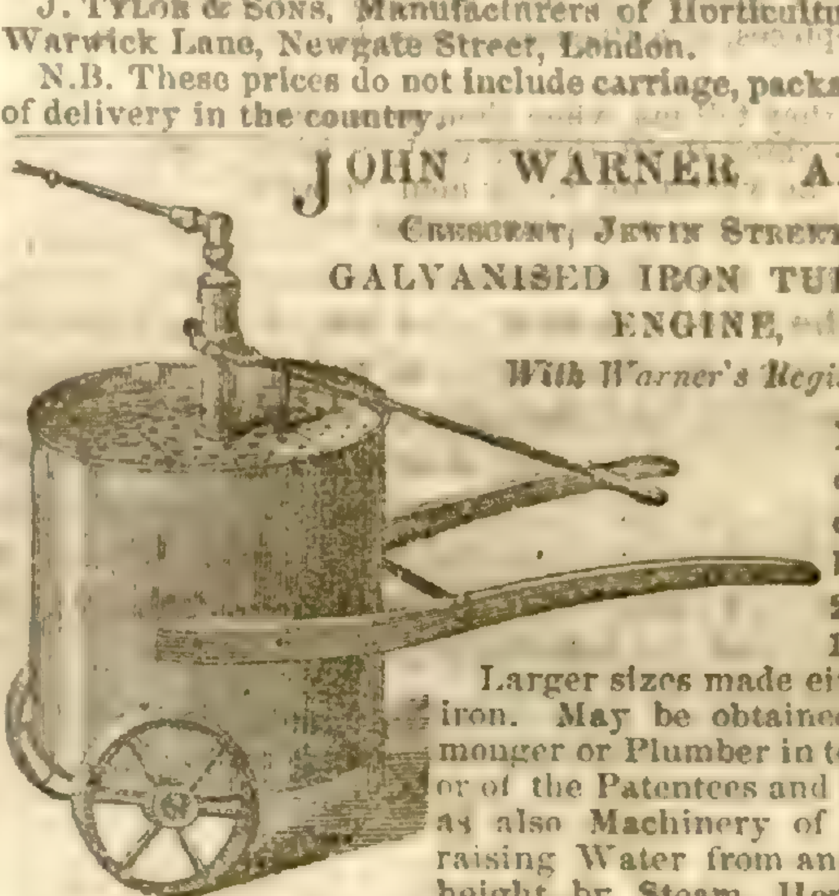


J. TYLOR and SON'S REGISTERED GARDEN SYRINGE.—Small size, for Amateur use, **21s.** each; Large size, for Gardeners' use, **25s.** each.

By a simple arrangement this Syringe is rendered more effective than any portable Conservatory or Garden Pump ever offered to the public. It is equally adapted for Garden or Conservatory use, and is capable of discharging twice as much water in a given time as any other Syringe now in use. The arrangement consists in attaching a small flexible suction tube to the barrel of the Syringe, through which it is filled with water at every discharge of the previous contents. By this means the Syringe is always charged, and the pull-up stroke of the piston rendered perfectly easy, it having, indeed, no work to do, the barrel being previously full of water. Being thus made self-supplying, a great saving of labour is effected; and the necessity of stooping to fill the Syringe at every discharge being done away with, the direction of the water can be maintained for any length of time. It is perfectly cleanly in its action, as it is not possible for any water to get on the outside of the barrel, which is a well-known inconvenience attendant on the use of every other Syringe. Its construction is perfectly simple, and cannot get out of order; the ground-in ball valves and fittings used for filling all other patent Syringes being entirely superseded. To be had of any respectable Ironmonger or Seedsman in town or country.

J. Tylor & Sons, Manufacturers of Horticultural Apparatus, Warwick Lane, Newgate Street, London.

N.B. These prices do not include carriage, package, or expenses of delivery in the country.



JOHN WARNER AND SONS,
Crescent, Jewin Street, London.
GALVANISED IRON TUB GARDEN ENGINE,
With Warner's Registered Spreader,

Is strongly recommended, for durability and low price, viz., 2*l*. 19*s*., to hold 10 gallons.

Larger sizes made either in wood or iron. May be obtained of any Ironmonger or Plumber in town or country, or of the Patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Syringes of various constructions and sizes from 9*s*. upwards. An extensive assortment kept.

JOHN WARNER and SONS, 8, Jewin Crescent, London, Manufacturers of FIRE ENGINES, PUMPS, GARDEN ENGINES, and SYRINGES.

No. 32. No. 11. No. 14.

Brass Syringes, 9*s*. to 18*s*.

All articles of John Warner & Sons' manufacture may be obtained of any Ironmonger or Plumber in town or country, at the advertised prices.

John Warner & Sons having been practical Horticulturist for many years, know exactly the requirements of both Amateurs and Gardeners. A gardener with a properly constructed pump will get through as much work in five minutes as he could with any Syringe in a quarter of an hour, and with half the labour to himself. Syringes are economical only for small houses.

No establishment offers such a variety of effective machines for hydraulic purposes, whether to supply Gardens, Hothouses, Cottages, Farms, Mansions, or Boards of Health, with every requisite connected with the conveyance and distribution of liquids.

Fountains suitable for Conservatories, Lawns, &c.
Sheets of Engravings sent on application.

RICK CLOTHS, MARQUEES, TENTS, ETC.,
New or Second-hand, for Sale or Hire.

BENJAMIN EDGINGTON has, for the ensuing season, an extensive assortment of Marquees, &c., for Horticultural Societies, Fêtes, Cricket Clubs, &c. Rick Cloths, with poles, pulleys, and lines complete. A variety of Emigration Tents erected on the premises, No. 2, Duke Street, Southwark. Netting and Bunting for Fruit Trees.

Warehouse, 32, Charing Cross, where Tents are erected. Address by post, No. 2, Duke Street, Southwark.

GLASS.

THOMAS MILLINGTON, Importer of Foreign Sheet Glass, requests attention to the present Prices of Glass and Stock sizes, which are cheaper and better than those of English manufacture:—

PACKED IN ONE HUNDRED FEET BOXES, THIRDS QUALITY, BOXES INCLUDED.

Inches.	Per 100 ft.	Inches.	Per 100 ft.	Inches	Per 100 ft.	Inches.	Per 100 ft.	Inches.	Per 100 ft.	Inches.	Per 100 ft.
6 by 4	12s.	12 by 10	20s.	14 by 11	20s.	16½ by 12½	20s.	18 by 13	20s.	18 by 14	20s.
6½ „ 4½		12½ „ 10½		14½ „ 11½		17 „ 12		18½ „ 13½		18½ „ 14½	
7 „ 5	14s. 6d.	13 „ 10		15 „ 11		17½ „ 12½		19 „ 13		19 „ 14	
7½ „ 5½		13½ „ 10½		15½ „ 11½		18 „ 12		19½ „ 13½		19½ „ 14½	
8 „ 6		14 „ 10		16 „ 11		18½ „ 12½		20 „ 13		20 „ 14	
8½ „ 6½		14½ „ 10½		16½ „ 11½		19 „ 12		20½ „ 13½		20½ „ 14½	
9 „ 7	17s. 3d.	15 „ 10		17 „ 11		19½ „ 12½		21 „ 13		21 „ 14	
9½ „ 7½		15½ „ 10½		17½ „ 11½		20 „ 12		21½ „ 13½		21½ „ 14½	
10 „ 8		16 „ 10		14 „ 12		20½ „ 12½		22 „ 13		22 „ 14	
10½ „ 8½		16½ „ 10½		14½ „ 12½		16 „ 13		16 „ 14		22½ „ 14½	
11 „ 9		17 „ 10		15 „ 12		16½ „ 13½		16½ „ 14½		23 „ 14	
11½ „ 9½		17½ „ 10½		15½ „ 12½		17 „ 13		17 „ 14		23½ „ 14½	
12 „ 9		13 „ 11		16 „ 12		17½ „ 13½		17½ „ 14½		24 „ 14	
12½ „ 9½		13½ „ 11½									

IMPROVED PATENT ROUGH PLATE, PLAIN, FLUTED, AND IN QUARRY PATTERNS.

British Plate, Patent Plate, Sheet, Crown, and Coloured Window Glass. Pure White Shades for Ornaments. Pumps, Water Closets, and Plumbers' Brass Work. Genuine White Lead, Paint, Colours, Varnishes, Brushes, &c.

Tariffs of the above on application to

T. MILLINGTON, 87, Bishopsgate Street Without, London.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

HETLEY AND CO. are supplying 16-oz. Sheet Glass of British Manufacture, packed in boxes, containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

Sizes.—Inches.	Inches.	Per foot.	Per 100 feet
	Under 6 by 4	at 1½d. is	£0 12 6
From 6 by 4	„ 7 „ 5	„ 2d. „	0 16 8
7 „ 5	„ 8 „ 6	„ 2¼d. „	0 18 9
8 „ 6	„ 10 „ 8	„ 2½d. „	1 0 10
10 „ 8	„ 12 „ 9	„ 2¾d. „	1 2 11

Larger sizes, not exceeding 40 inches long.

16 oz. from 3d. to 3½d. per square foot, according to size.
21 oz. „ 3½d. to 5d. „ „ „
26 oz. „ 3½d. to 7½d. „ „ „

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern, either in sheet or Rough Plate Glass.

Propagating Glasses, Beehive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in Glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the excise duty, reduced one-half. List of Prices and Estimates forwarded on application to

JAMES HETLEY & Co., 35, Soho Square, London.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

JAMES PHILLIPS AND Co. have the pleasure to hand their present prices of Glass for Cash:—

	SHEET SQUARES. In Boxes of 100 feet. £ s. d.	CROWN SQUARES. In Boxes of 100 feet. s. d.
Under 6 by 4	0 12 6	8 6
6 by 4, and 6½ by 4½	0 13 0	12 6
7 „ 5, — 7½ „ 5½ / 8 „ 6, — 8½ „ 6½	0 15 0	14 0
9 „ 7, — 10 „ 8, 12 by 9, 12 by 10, 14 by 10	1 0 0	

Larger Sizes, not exceeding 40 inches long.

16 oz. from 3d. to 3½d. per square foot, according to size.
21 oz. „ 4½d. to 5d. „ „ „
26 oz. „ 6d. to 7½d. „ „ „

SHEET GLASS OF ENGLISH MANUFACTURE FOR ORCHARD HOUSES, THE SAME QUALITY AS WE SUPPLY TO Mr. RIVERS, and of various dimensions, always on hand.

London Agents for the Sale of HARTLEY'S PATENT ROUGH PLATE GLASS.

Glass Tiles, ¼ of an inch thick, packed in cases, containing 50, at 1l. 17s. 6d. per case. Packages 2s. each extra, but allowed for when returned.

Glass Milk Pans, 21s. per dozen; Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoys' Milk Syphons, Wasp Traps; Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the trade.

Horticultural Glass Warehouse, 116, Bishopsgate Street Without, London.

HARTLEY'S PATENT ROUGH PLATE GLASS, 1-8th thick, or 2 lbs. to the foot; 3-16ths, or 3 lbs.; and 1-4th, or 4 lbs. to the foot, for Ridge and Furrow Roofs, Greenhouses, Railway Stations, Engine Sheds, Mills, Market Halls, and Public Buildings generally.

Packed in Boxes of 50 feet each.

6 by 4 and 6½ by 4½	10s. 6d. per box.
7 „ 5 „ 7½ „ 5½	12 0 „
8 „ 6 „ 8½ „ 6½	13 6 „
9 „ 7 „ 9½ „ 7½ and 10 by 8 ...	15 0 „

For larger sizes a full List of Prices will be sent on application. Boxes are charged 2s. each extra, full price allowed if returned free of expense.—For further information apply to

JAMES PHILLIPS & Co.,
116, BISHOPSGATE STREET WITHOUT.

"Rough Plate has never been, and never can be, prejudicial to the colouring of Grapes; though we can easily believe that it has been charged with such a fault by persons who have not skill enough to manage Grapes under glass."—*Gardeners' Chronicle.*

"There *can be no question now* that Rough Plate Glass is the most beautiful as well as the most useful kind of glass that can be employed in horticulture. It is free from all the faults of transparent glass, and has many advantages peculiar to itself, *without a single disadvantage as a set off.*"—*Gardeners' Chronicle.*

MORNING FROSTS.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard run, of E. T. ARCHER, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey. (Re-Regent Street, London.)

FOR WATERING GARDENS, DISTRIBUTING LIQUID MANURE, ETC.

JAMES LYNE HANCOCK'S VULCANISED INDIA-RUBBER TUBING is now manufactured especially for the above purposes, and is of greater flexibility than any other description of hose or tubing. It is also manufactured to resist great pressure, suitable for attaching to the mains of water works or to tanks, or water butts of high elevations. WATERING HOSE fitted up with brass joints, branches, stop-cocks, roses, and jets complete. Vulcanised India-rubber suction pipes for pumps any length or size to order; HOSE for brewers' use, fire engines, &c. VULCANISED INDIA-RUBBER WASHERS, for Steam and Water Joints, and VULCANISED RUBBER in sheets of any size and thickness. Solid vulcanised India-rubber Tubing and Cord, for the joints of glass-doors, sashes, frames, &c.—Prices and every information may be had on application at the Manufactory, Goswell Mews, Goswell Road.

HOSE PIPING.—GREAT REDUCTION IN PRICE.

WAITHMAN'S PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense Pressure, and much more than Leather, vulcanised Rubber, or any other Hose; and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented Inventions, the cost of manufacturing it is now reduced at least 60 per cent., which advantage is offered to the Public.—London Agents, BURGESS & KEY, 103, Newgate Street, and 52, Little Britain, who on application will forward wholesale and retail prices.

PRIZE MEDAL—1851.
AT A VERY ECONOMICAL RATE.

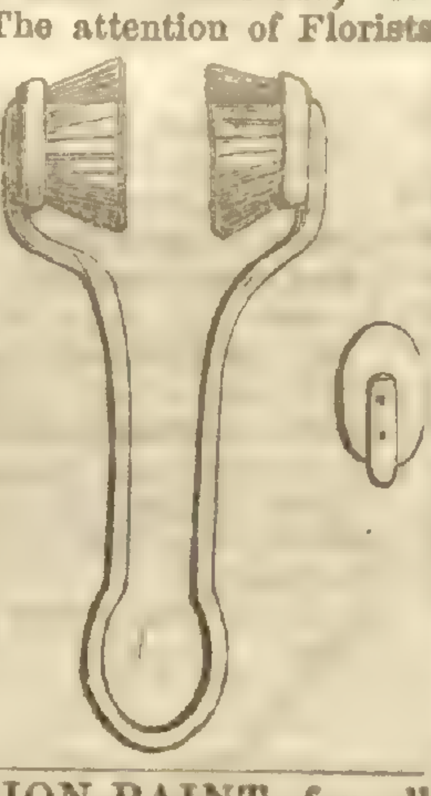
SAMUEL CUNDY, MASON and BUILDER, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Lower Belgrave Place, Pimlico, London.

Marble Chimney-pieces manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price. A good Marble Chimney-piece for 40s. Marble Work in all its branches at a remarkably cheap rate for Halls, Dairies, Larders, &c. Circulars sent on application.

N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank.

IMPORTANT TO GROWERS OF ROSES.

NEWLY-INVENTED APHIS BRUSH, OR GREEN FLY DESTROYER.—The attention of Florists is particularly called to this Cheap and Ingenious Instrument, invented by the Rev. E. S. BULL, of Colchester, which, in a very simple and easy manner, instantly cleanses the Rose from that destructive insect the Green-fly (or Aphis), without causing the slightest injury to the bud or foliage. Price 2s. 6d. each.



MANUFACTURED BY
JOSLING AND SONS,
IRONMONGERS, Colchester.

Retailed by all the principal Ironmongers.

Wholesale agents: W. Thompson and Son, 15, Upper North Place, Gray's Inn Lane Road, London.

PROTOXIDE ANTI-CORROSION PAINT, for all external purposes, on iron, wood, brickwork, or stucco, is cheaper, and more durable, than any similar article.—Manufactured by CHARLES FRANCIS & SONS, Cement Works, Nine Elms, London.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the nobility, gentry, and clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out-door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice.

Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to WALTER CARSON & SON, 9, Great Winchester Street, Old Broad Street, Royal Exchange, London. No Agents. All orders are particularly requested to be sent direct.

DEAFNESS, SINGING IN EARS, & NERVOUS DEAFNESS.—New mode of instantly restoring hearing, without operation, pain, or use of instruments.—By one consultation, a permanent cure is guaranteed to any sufferer, although partially or totally deaf for 40 or 50 years. This extraordinary discovery is known and practised only by Dr. HOGHTON, the eminent Aurist of the Suffolk Place Institution, and is applied by him daily on numbers of deaf applicants with perfect success in every case, enabling deaf persons instantly to hear conversation with ease and delight. Testimonials can be seen from the most eminent physicians in England; also certificates from all the London Hospitals and Dispensaries, and numbers of letters from patients cured, in all grades of society, from the peer to the peasant. Dr. HOGHTON, Member of the London Royal College of Surgeons, May 2, 1845; L.A.C., April 30, 1845. Consultations every day from 12 till 4, without payment of fee, at his residence, 9, Suffolk Place, Pall Mall, London.

Just published, Self-cure of Deafness, for Country Patients; a Stop to Empiricism, Quackery, and Exorbitant Fees. Sent on receipt of seven stamps, free.

FENDERS, STOVES, AND FIRE-IRONS.—Buyers of the above are requested, before finally deciding, to visit WILLIAM S. BURTON'S SHOW ROOMS, 39, Oxford Street (corner of Newman Street), Nos. 1 and 2, Newman Street, and 4 and 5, Perry's Place. They are the largest in the world, and contain such an assortment of FENDERS, STOVES, RANGES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with bronzed ornaments and two sets of bars, 2l. 14s. to 5l. 10s.; ditto, with ormolu ornaments and two sets of bars, 5l. 10s. to 12l. 12s.; Bronzed Fenders complete, with standards, from 7s. to 3l.; Steel Fenders from 2l. 15s. to 6l.; ditto, with rich ormolu ornaments, from 2l. 15s. to 7l. 7s.; Fire-irons from 1s. 9d. the set to 4l. 4s. Sylvester and all other Patent Stoves, with radiating hearth plates. All which he is enabled to sell at these very reduced charges,

1st,—From the frequency and extent of his purchases; and,

2dly,—From those purchases being made exclusively for cash.

WILLIAM S. BURTON has TEN LARGE SHOW ROOMS (all communicating), exclusive of the shop, devoted solely to the show of GENERAL FURNISHING IRONMONGERY (including Cutlery, Nickel Silver, Plated and Japanned Wares, Iron and Brass Bedsteads), so arranged and classified that purchasers may easily and at once make their selections.

Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of.

No. 39, Oxford Street (corner of Newman Street); Nos. 1 and 2, Newman Street; and 4 and 5, Perry's Place.

ONE THOUSAND BEDSTEADS TO CHOOSE FROM.

HEAL AND SON'S Stock comprises a large assortment of handsomely Japanned and Brass-mounted IRON BEDSTEADS, CHILDREN'S CRIBS and COTS of new and elegant designs; MAHOGANY, BIRCH, and WALNUT-TREE BEDSTEADS, of the soundest and best manufacture, many of them fitted with Furnitures, complete; and every variety of SERVANTS' and PORTABLE BEDSTEADS. They have also a large assortment of

BED-ROOM FURNITURE, comprising WARDROBES, both in Japanned Wood and Mahogany, from 4 feet to 8 feet long, fitted with every variety of arrangement; DRESSING TABLES and GLASSES, WASH-STANDS, DRAWERS, and every article for the complete furnishing of a Bed-room.

HEAL & SON'S ILLUSTRATED CATALOGUE OF BEDSTEADS and priced List of Bedding, containing designs and prices of upwards of One Hundred Bedsteads (representing a stock of upwards of One Thousand), sent free by post.

HEAL & SON, 196, Tottenham Court Road, London.

TYLOR AND PACE have removed from 313, Oxford Street, to larger and more commodious premises, 104, New Bond Street, which will enable them to keep a much larger stock in all the different branches of their manufacture, including a very extensive assortment of Iron and Brass Bedsteads, Children's Cots, Portable Bedsteads, and Chair Bedsteads, with suitable Bedding and Mattresses. A Large Show Room is entirely appropriated to the exhibition of Baths and Toilette Ware of every description, all at the most moderate prices. An increased assortment of Venetian and all other Window Blinds, Outside Blinds, and Transparencies. Illustrated Catalogues of Bedsteads, Baths, and Window Blinds, are published separately, and will be forwarded post free on application by naming the description of article required.

TYLOR & PACE, 104, New Bond Street, London.

MR. MECHI, No. 4, LEADENHALL STREET, LONDON, feeling that these are progressive times, has made extensive alterations in his business Establishment, which he trusts will be for the comfort and advantage of his customers, by enabling them to inspect readily his general manufactures, consisting of articles of luxury and economy, suitable for presents or for use. Independently of his usual extensive stock of Ladies' and Gentlemen's Dressing Cases, Work Boxes, and Desks, in Wood, Morocco and Russian Leather, he has devoted one entire apartment to the most choice productions in Papier Mache Ware, contrasting strangely with the once much prized ware of Japan and China. Catalogues will be forwarded gratis on application. Mr. MECHI is preparing a very choice assortment of elegancies and utilities for sale at his Depôt at the New Crystal Palace. His position will be in the nave at the entrance to the French Court.

BERDOE'S VENTILATING WATERPROOF LIGHT OVER-COATS resist any amount of rain, without confining perspiration, the fatal objection to all other waterproofs, air-tight materials being unfit and dangerous for clothing, and being free from vulgar singularity are adapted for general use equally as for rainy weather. Price 45s. and 50s. A large stock for selection. Also of Capes, Shooting Jackets, Ladies' Mantles, Habits, &c.—W. BERDOE, Tailor, &c., 96, New Bond-street, and 69, Cornhill (only).

THE SUCCESSFUL RESULTS OF THE LAST HALF CENTURY HAVE PROVED BEYOND QUESTION THAT

ROWLAND'S MACASSAR OIL possesses singularly nourishing powers in the growth, restoration, and improvement of the human Hair, and when every other specific has failed. This celebrated Oil is now universally acknowledged to be the cheapest, and superior to all other preparations for the hair. It prevents it from falling off or turning grey, strengthens weak hair, cleanses it from scurf and dandriff, and makes it beautifully soft, curly, and glossy. Its operation in cases of baldness is peculiarly active; and in the growth of the Beard, Whiskers, Eyebrows, and Moustachios, it is unfailing in its stimulating operation. For children it is especially recommended, as forming the basis of a beautiful head of hair. Price 3s. 6d. and 7s.; Family Bottles (equal to four small), 10s. 6d.; and double that size, 21s. CAUTION.—On the wrapper of each bottle are the words, Rowlands' Macassar Oil, in two lines. The same are engraven on the back of the wrapper nearly 1500 times, containing 29,028 letters.—Sold by A. ROWLAND & SONS, 20, Hatton Garden, London, and by Chemists and Perfumers.

QUANTITY AND QUALITY OF THE HAIR.

NO TOILET can be considered complete without a careful attention to that department which so materially affects the entire contour, viz., the Hair, which, both in quantity and quality, is susceptible of the most material alteration. That which is weak can be strengthened, and be made to receive a most beautiful gloss by artificial applications. It is to its extraordinary and valuable properties in these respects that is due the character of C. AND A. OLDRIDGE'S BALM OF COLUMBIA, for its invigorating, nutritious, and regenerative qualities. OLDRIDGE'S BALM causes Eyebrows to grow, prevents the Hair from turning grey, and the first application causes it to curl beautifully, frees it from scurf, and stops it from falling off. Price 3s. 6d., 6s., and 11s. per bottle. No other prices are genuine.—N.B. Ask for OLDRIDGE'S BALM, 13, Wellington Street North, Strand, London.

DO YOU WANT LUXURIANT HAIR, WHISKERS, &c.? If so, use Miss GRAHAM'S NIOUKRENE. It reproduces the most efficacious Hair generant ever introduced. It reproduces the Hair when lost either by disease or decay, prevents its falling off, effectually checks greyness, strengthens weak hair, and is guaranteed to produce those attractive ornaments, Whiskers, Moustachios, Eyebrows, &c., in three or four weeks. For nourishing and beautifying the hair, and sustaining its curling powers in all weathers, it has no equal. Price 2s., and sent post free to any part of the kingdom, on receipt of 24 penny postage stamps, by ELLEN GRAHAM, 3, New Road, Hornsey, Middlesex.—"My hair is quite restored." Miss ORME.—"I have a full pair of Whiskers, thanks to your Nioukrene." H. ROBB, Esq.—"It has checked the greyness." Mrs. JONES.—"My hair is restored." Dr. COFFIN.

NEW VOLUME NOW READY.

Volume II., price 1s. 6d., in ornamental boards, of

LARDNER'S MUSEUM OF SCIENCE AND ART:

A MISCELLANY OF

INSTRUCTIVE AND AMUSING TRACTS ON THE PHYSICAL SCIENCES, AND ON THEIR APPLICATION TO THE USES OF LIFE.

Illustrated by Engravings on Wood. 12mo, 1s. 6d. per Volume.

CONTENTS OF VOL. II.

PART IV.

14. Common Things. Air.
15. Locomotion in the United States. Chapter I.
16. Cometary Influences. Chapter I.
17. Locomotion in the United States. Chapter II.

PART V.

18. Common Things. Water.
19. The Potter's Art. Chapter I.
20. Locomotion in the United States. Chapter III.
21. The Potter's Art. Chapter II.

PART VI.

22. Common Things. Fire.
23. The Potter's Art. Chapter III.
24. Cometary Influences. Chapter II.
25. The Potter's Art. Chapter IV.
26. The Potter's Art. Chapter V.
Title and Contents.

☞ The Work is continued in Weekly Numbers at 1d.; Monthly Parts at 5d.; and Quarterly Volumes at 1s. 6d.

LONDON: WALTON & MABERLY, UPPER GOWER STREET, AND IVY LANE, PATERNOSTER ROW.

Price 7s. in cloth, the Sixth Edition of

THE LADIES' COMPANION TO THE FLOWER-GARDEN. Being an Alphabetical Arrangement of all the Ornamental Plants grown in Gardens and Shrubberies: with full Directions for their Culture. By Mrs. Loudon.

Bradbury & Evans, 11, Bouverie Street.

This day is published, price 4s. cloth,

VOLUME VIII., containing COMEDIES AND DRAMAS, and completing THE COLLECTED EDITION OF THE WRITINGS OF DOUGLAS JERROLD.

*** Volumes 1 to 8 may be had together or separately, price 4s. each.

Bradbury & Evans, 11, Bouverie Street.

Price 2s. 6d. cloth,

HOW TO SEE THE BRITISH MUSEUM. By W. B. Jerrold. Contents: Southern Zoological Room—Southern Zoological Gallery—Mammalia Saloon—Eastern Zoological Gallery—Northern Zoological Gallery—British Zoological Room—Northern Mineral and Fossil Gallery—The Egyptian Room—The Bronze Room—Etruscan Room—Ethnographical Room—Egyptian Saloon—The Lycian Room—The Nimroud Room—Phygaleian Saloon—Elgin Saloon—Townley Sculpture—Antiquities of Britain.

Bradbury & Evans, 11, Bouverie Street.

New and cheaper Edition, in fcp. 8vo, price 3s. 6d.,

RIVERS'S ROSE AMATEUR'S GUIDE:—Containing ample Descriptions of all the fine leading Varieties of Roses, regularly classed in their respective Families; their History and Mode of Culture. Fifth Edition, corrected and improved; including a full account of the Author's experience in the Culture of Roses in Pots.

London: Longman, Brown, Green, and Longmans.

Fifth Edition, price 1s., bound in cloth,

CATECHISM of GARDENING and COTTAGE FARMING. By Martin Doyle.

London: Groombridge & Sons, Paternoster Row.

THE HORTICULTURAL JOURNAL and FARM and GARDEN ADVERTISER. (Garden Department by Mr. Glenny.) Every Saturday. Price 2d.; Stamped, 3d.

All communications to the Office, 14, York Street, Covent Garden.

THE AGRICULTURE AND HORTICULTURE OF INDIA.

In 7 vols., 8vo cloth, reduced to 2l. 2s.

TRANSACTIONS of the AGRICULTURAL and HORTICULTURAL SOCIETY of INDIA, 1837 to 1840. Being a Selection of Interesting and Important Papers on a vast variety of Subjects, Published by the Committee appointed by the Society.

London: W. Thacker & Co., 87, Newgate Street.

NEWMAN'S "BRITISH FERNS."

This day is published, the Third Edition of

A HISTORY OF BRITISH FERNS. By Edward Newman. With 136 Illustrations. Price 18s., demy 8vo, cloth lettered.—A very few copies in royal 8vo, price 36s.

London: John Van Voorst, 1, Paternoster Row.

Just published, price 2s.

A PLAIN AND EASY ACCOUNT OF BRITISH FERNS, wherein each Species is described under its respective Genus; and the Characteristics of those Genera given in words of common use. With a Glossary of Technical Terms. By the Rev. E. Bosanquet.

"A useful little book for those who wish to begin the study or cultivation of British Ferns."—*Spectator.*

"The simplest treatise that has yet been published on the subject."—*Weekly Times.*

London: Robert Hardwicke, 38, Carey Street, Lincoln's Inn.

DR. MADDOCK'S NEW WORK.

This day, 8vo, price 5s. 6d.,

ON MENTAL AND NERVOUS DISORDERS; comprising a selection of interesting cases of Melancholy, Lunacy, Sleeplessness, Despondency, Groundless Anxiety, Inaptitude for Mental or Corporeal Labour, Nervous Excitement, and Debility, &c. By Alfred B. Maddock, M.D., formerly Resident Physician of the Malling Asylum.

"Evidently the results of a sound judgment and extensive observation." *Asylum Journal.*

"Full of matter interesting to the general reader." *Sunday Times.*

London: Simpkin, Marshall, & Co., Stationers' Court; H. Bailliere, 219, Regent Street.

Just published, New Edition, price 1s.; or, by post, for 1s. 6d.

THE SCIENCE OF LIFE; Or, How to Live, and What to Live For. With ample Rules for Diet, Regimen, and Self-Management; together with Instructions for securing perfect health, longevity, and that sterling state of happiness only attainable through the judicious observance of a well-regulated course of life. By a Physician.

Also, by the same Author, price 2s. 6d.; by post, 3s. 6d.,

A MEDICAL TREATISE ON NERVOUS DEBILITY AND CONSTITUTIONAL WEAKNESS, with Practical Observations, illustrated with Anatomical Plates, on Health and Disease.

This work, emanating from a qualified Member of the medical profession, the result of many years' practical experience, is addressed to the numerous classes of persons who suffer from the various disorders acquired in early life. In its pages will be found the causes which lead to their occurrence, the symptoms which indicate their presence, and the means to be adopted for their removal.

London: James Gilbert, 49, Paternoster Row; Hannay, 63, Oxford Street, Mann, 39, Cornhill; and all Booksellers.

COMPARATIVE TABLES OF FRENCH AND ENGLISH MEASURES, WEIGHTS, &c., Reprinted from the *Gardeners' Chronicle and Agricultural Gazette.*

Containing—

Measures of Length
Square Measure
Cubic Measure
Measures of Capacity for Liquid and Dry Substances
Weights
Old French Measures of Capacity for Liquids
Do. for Dry Substances
Old French Weights reduced to English Avoirdupois
Thermometers
Various Conversion Tables.

James Matthews, 5, Upper Wellington Street, Covent Garden.

Price 2s. 6d.,

FOLIA ORCHIDACEA.—Part V. By Professor Lindley. Containing Miltonia, Brassia, Ada, Polychilos, Corymbis, Sobralia, Cœlogyne, Panisea.

J. Matthews, 5, Upper Wellington Street, Covent Garden, London.

Price 1s. 6d., free by post 1s. 10d.

LABELS FOR THE HERBARIUM, CONSISTING OF THE NAMES OF THE CLASSES, ALLIANCES, ORDERS, AND SUB-ORDERS, OF PROFESSOR LINDLEY'S "VEGETABLE KINGDOM."

So printed in large type, that they can be cut out and pasted into The Herbarium.

J. Matthews, 5, Upper Wellington Street, Covent Garden, London.

Price 3s. 6d., free by post,

THE TREE ROSE.—Practical Instructions for its Formation and Culture. Illustrated by 24 Woodcuts. Reprinted from the Gardeners' Chronicle, with additions.

CONTENTS.

Annual pruning time, principle of execution, &c.
Binding up
Budding knife
Budding, time of year, day, time of day, state of the plant, care of buds
Budding upon body
Bud, insertion of, into stock
Bud, preparation of, for use
Buds, dormant and pushing
Buds, failing
Buds, securing a supply of
Caterpillars, slugs, and snails, to destroy
Causes of success
Dormant buds, theory of replanting with, explained
Guards against wind
Labelling
Loosing ligatures
March pruning
Mixture for healing wounds
Pruning for transplantation
Planting out, and arrangement of trees
Pushing eye, spring treatment of dwarf shoots from
Roses, different sorts on the same stock
Roses, short list of desirable sorts for budding with a pushing eye
Sap-bud, treatment of
Shape of trees
Shoots and buds, choice of
Shoots for budding upon, and their arrangement
Shoots, keeping even, and removing thorns
Shortening wild shoots
Stocks, planting out for budding upon; the means of procuring; colour, age, height; sorts for different species of Rose; taking up, trimming roots, sending a distance, shortening heads, &c.; saw proper for the purpose.

GRAFTING.

Aphides, to keep down
Free-growers, remarks on
Graft, binding up and finishing [of
Grafting, advantage
Grafting, disadvantage of
Operations in different months
Preliminary observations
Roses, catalogue and brief description of a few sorts
Scion, preparation and insertion of
Scion, choice and arrangement of
Stock, preparation of.

APPENDIX.

A selection of varieties
Comparison between budding and grafting.

Post-office orders to be made payable to James Matthews, 5, Upper Wellington Street, Covent Garden, London.

L'ILLUSTRATION HORTICOLE, published by A. VERSCHAFFELT, Nurseryman, Ghent, Belgium.

Every Month there appears a Number with Three fine coloured Plates, representing the best Trade Plants, accompanied with their Description, Culture, &c., &c. The five first numbers are out, and contain:—

No. 1.
Rhododendron album speciosum.
Oncidium Barkerii
Philesia buxifolia

No. 2.
Epidendrum vitellinum
Abies bracteata
Sciadocalyx Warscewiczi

No. 3.
Maranta Warscewiczi
Azalea indica Bealii
Impatiens Jerdoniæ
Ilex cornuta
Wellingtonia gigantea.

No. 4.
Monochætum umbellatum
Odontoglossum Cervantesi
Skimmia japonica

No. 5.
Clematis lanuginosa
Dendrobium fimbriatum var. oculatum
Gloxinia Princesse de Prusse.

L'ILLUSTRATION HORTICOLE can be obtained of Mr. R. Silberrad, 5, Harp Lane, Great Tower Street, London.

Price 15 francs.

STANFORD'S EMIGRANT GUIDES.

Now ready, price 1s. each; per post, 1s. 6d.

CANADA: its Present Condition, Prospects, and Resources, fully described for the information of intending Emigrants, by William Hutton, a resident Agriculturist in that Colony for the last 20 years. With a Map, showing the Railways.

AUSTRALIA, as a Field for Capital, Skill, and Labour, with useful information to Emigrants of all classes, by J. Capper, late Editor of the Emigrant's Journal. Author of "Our Gold Colonies," &c. &c., with a Map, showing the Gold Fields.

London: Edward Stanford, 6, Charing Cross; Liverpool, Smyth & Co., Berry Street; Edinburgh, Edmonston and Douglas; and all Booksellers.

STANFORD'S Catalogue of recent Works on Emigration and Colonisation may be had on application, or per post, on receipt of one stamp.

Just published, in One Volume, fcp. 8vo, bound in cloth, with Frontispiece, price 3s. 6d., or in cloth, gilt edges, 4s. 6d.,

FEMALE HAPPINESS, or the Lady's Handbook of Life, with Preface, by the Rev. John Edmund Cox, M.A., F.S.A., Vicar of St. Helen's, Bishopsgate.

London: William Tegg & Co., 85, Queen Street, Cheapside.

ON MARRIAGE.

Just published (to be had free, by enclosing 1s. or Twelve Postage Stamps, to Mr. Watson, Clerical Agent, Robert Street, Adelphi, London).

MATRIMONY.—A Pamphlet on Matrimonial Alliances, which merits the attention of those who wish to settle honourably in life. By a Clergyman.

MR. GLENNY requests that REPORTS of all the HORTICULTURAL and FLORAL EXHIBITIONS may be sent to him for publication, and that specimens of Fruit, Flowers, Plants, and Vegetables, as well as other subjects for his opinion, may be addressed, Mr. Glenny, 420, Strand.

---

100 ALDERNEY COWS AND HEIFERS.

JAMES DUMBRELL respectfully invites purchasers of Alderney Cows to inspect his stock. Choice from 100.

James Dumbrell, Ditchling, Hurstperpoint, Sussex, one mile from Hassock's Gate Station, London and Brighton Railway.

HERTFORDSHIRE.

TO BE LET, four miles from Harrow Station, and three from Bushey, with immediate possession, 40 ACRES of rich PASTURE LAND, with genteel Residence, beautifully situate.—Apply to Mr. Finney, Guildford.

TO BE LET, a FLOUR MILL, worked by Steam, driving Five Pair of Stones, newly built, upon the most approved principle of machinery, situate about 20 miles from London, close to a Railway Station, and adjoining a Canal.—Further particulars of Messrs. Ree and Son, Estate Agents, Ware, Herts.

WANTED, a COUNTRY HOUSE, Furnished, with Shooting. Rent must be moderate, premises in repair, district healthy, grounds well timbered, with a small quantity of land. North or west of London preferred.—Apply, pre-paid, to H. V., 54, New Bond Street, London.

WANTED, the SWEEPINGS of a GRANARY or BARN, as Food for Chickens.—Apply, stating price, quality, and quantity, to Messrs. Collier, Post Office, Thrapstone.

COCHIN CHINA POULTRY, ETC.

EGGS FROM PRIZE BIRDS.

MR. JOHN FAIRLIE, of Cheveley Park, Newmarket, in reply to the very urgent applications from numerous amateurs, is now prepared to dispose of a limited number of Eggs, from his celebrated prize Cochins, Brahma Pootras, Scotch Bakies, Dorkings, &c., according to the dates of the orders received.

BLACK COCHIN EGGS from the best birds in England, having always taken prizes at the best shows, at 18s. per dozen, including package. Apply at the city of London Wire Works, 44, Skinner Street, London. N.B. Fowl Houses, Chicken Coops, Poultry Hurdles, and Netting, of every size and description. Illustrated Catalogues forwarded, post free, on application. A few Spanish Pullets, sisters to those sent to her Majesty's yard at Windsor, for Sale.

Sales by Auction.

FANCY POULTRY—PERIODICAL SALE.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, 6th June, at 12 o'clock precisely, a selection of very choice BRAMAH POOTRA and COCHIN CHINA FOWLS and CHICKENS, from several first class Breeders, including Capt. Snell, Messrs. Cannon, Shackle, Jones, and Hill.—Catalogues by enclosing a stamped directed envelope enclosed to Mr. J. C. Stevens, 38, King Street, Covent Garden, London.

*** These Auctions take place on the first and third Tuesdays in every month. Persons wishing to include birds in the Catalogue are requested to send particulars at least 10 days prior to each sale.

ORCHIDS FROM THE BRAZILS.

The Most Important and Valuable Collection Ever Made in that Country.

MR. J. C. STEVENS begs to announce that he is instructed by Mr. de Jonghe, of Brussels, to Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on MONDAY, June 5, at 12 for 1 o'clock, a Consignment of ORCHIDS, received, per last mail-steamer, from his collector in the Brazils, including magnificent specimen plants of Cattleyas Leopoldi, crispa superba, candida, intermedia, and several supposed new species; Burlingtonias, Coryanthes, Epidendrums, Oncidiums, Lælias (probably purpurata), &c., from the provinces of St. Paul and St. Catherine; they have arrived in first-rate condition. Catalogues are preparing, and will be forwarded in due course.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE and MORRIS will submit to public competition, by Auction, at the Mart, Bartholomew Lane, on FRIDAY, June 9th, at 12 o'clock, a first-rate collection of DAHLIAS, FUCHSIAS, VERBENAS, GERANIUMS, and other plants in bloom, with a large assortment of plants for Bedding.—On view the morning of sale; Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

HORNSEY ROAD.

10,000 GREENHOUSE AND BEDDING PLANTS.

MESSRS. PROTHEROE and MORRIS will sell by Auction, on the Premises, Paradise Nursery, Hornsey Road, Middlesex, on WEDNESDAY, June 7th, and following day, at 11 o'clock, a choice collection of GREENHOUSE PLANTS, consisting of Show, Fancy, and Scarlet Geraniums; Crassula, Ericas, Camellias, Verbenas, Fuchsias, Heliotropium, Salvias, Petunias, Lobelias, Neirembergia, Senecio, Anagallis, Gaillardia, Calceolaria, Dahlias, Campanules, &c.; together with a capital Tumbril Cart.—May be viewed the day previous to the Sale. Catalogues may be had on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

NOTE.—The Letters received daily at the Offices from this year's Customers fully support the high character this Manure obtained last year. A few are subjoined.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

THE "ECONOMICAL" MANURE,

SO CALLED, BECAUSE

1¼ to 1½ cwt. per Acre, costing 15s. to 18s., is ample, and fully equal to 3 cwt. of the best Peruvian Guano; thus saving at least 50 per cent., besides Carriage, &c.

THIS quantity is quite sufficient, and must on no account be exceeded, as injury instead of benefit arises if more is used, the Manure having been purposely manufactured in a highly concentrated state. It will be seen from the Testimonials below—

1. That "at a cost of 12s. per acre the Turnips were a most extraordinary crop."
2. With 1¼ cwt. per acre they (the Turnips) "are equally as good as where I applied 3½ cwt. of superphosphate of lime per acre."
3. An expense of 23s. per Scotch acre for this manure produced Turnips "equally as good as those growing in the same field with 6 cwt. per Scotch acre of guano, at 10s. 6d. per cwt.;" making three guineas against 23s.
4. "I can see little difference in the two, where 1 cwt. per acre of this Manure was used against 3 cwt. of guano."
5. 7½ cwt. to 6 acres gave "a splendid crop of Turnips" from the Economical Manure alone, which cost 15s. per acre.
6. "The effect has been surprising on Turnips."
7. "Where I applied it the Turnips are much finer than usual."
8. "The fly has not taken them (the Turnips) so much as where guano was used."
9. On Mangold Wurzel, 1 cwt. per acre produced "the best crop I ever have grown."
10. In 1½ cwt. per acre against 3 cwt. of superphosphate, "the 'Economical' was superior."
11. Where guano and the Economical Manure were used, "it is impossible to tell one from the other."
12. "My Swedish Turnips are capital—the best, people tell me, in the whole parish."

N.B.—The following few Testimonials from the Company's pamphlets are given, because they are considered to embrace almost all parts of the United Kingdom, and although they refer only to the use of the Manure for Turnips and Root Crops, it has produced the most wonderful results last year on every kind of crop, and on all soils, far surpassing the expectations of the purchasers; and no one reading the Company's pamphlet can doubt its being by far the cheapest of all manures, as in fair comparative trials with guano, dung, and other long recognised fertilisers, it will be seen the "ECONOMICAL" was superior; that it is most valuable for fruit trees, shrubs, and garden purposes, and produces the most astonishing effects upon manure heaps, applied in solution, decomposing in 15 days all vegetable matter, peat included, and that it is a perfect deodoriser for liquid manure, besides enhancing its fertilising properties.

It is a chemical compound in a highly concentrated state, providing the plants with a large proportion of ammonia, which it has the property of attracting from the atmosphere and fixing in the soil, as well as the carbonic acid—two of the most energetic agents of vegetation. It is sold in a dry powdered state, and is the result of many years' labour of an eminent Foreign Agriculturist, the Director of the Government Schools of Agriculture in his own country, and of high reputation as a chemist. It is patented, and is one of the most useful and greatest discoveries of the day.

PRICE 12l. PER TON, Packages included, and delivered free on Rail or Wharf in London.

A pamphlet, containing further Testimonials (more cannot be given here), including those from France, Belgium, and Spain, with directions for use, samples, and all particulars, to be had at the Offices of the British Economical Manure Company, 10, Mark Lane, London; or sent gratis on applying to BENJAMIN COVENEY, Manager.

TESTIMONIALS (being a few out of some Hundreds).

Mungalhead, Falkirk, Stirlingshire, N. B. Oct. 14, 1853.

I used the Economical Manure as follows:—I weighed it out at the rate of 210 lbs. per Scotch acre (a Scotch acre is about one acre and one-fifth English), bruised it very small, then properly mixed it with, say twice its bulk of light earth, the land a good loam, cleansed and ready for drilling; the mixture was then sown broadcast, the land drilled up double; we then sowed the Turnip seed, which brairded well, and they are now equally as good as those growing in the same field sown with 6 cwt. of guano per acre, at 10s. 6d. per cwt. What I would suggest is, if you think proper, that you insert an advertisement in our local papers, and refer to the Turnips now growing at Mungalhead, for inspection of the merits of the Manure. I think any one seeing its effects should be satisfied. WM. MORRISON.

Cublington Madley, Hereford, Jan. 2, 1854.

I used the Economical Manure for common Turnips, planted the first week in June; it was sown broadcast on the flat, and afterwards ridged up 20 inches wide. I put about 1½ cwt. per acre, and on the other parts of the field 3 cwt. of superphosphate, and I am of opinion, with most persons who have seen the crop (which is a very good one), that the Economical is superior to the phosphate. GEORGE PYE.

Little Genoch, by Glenluce, Wigtownshire, N.B., Dec. 9th, 1853.

I applied about 4 cwt. of Economical Manure in a liquid state to about 60 cart-loads of farm-yard dung, which I used along with a small quantity of bones to my Turnip crop, and found the crop to be superior to that to which I had applied guano and bones. The Turnips are all grown in the same field alongside of each other. JAMES M'MASTER.

Carlisle, Dec. 5, 1853.

Mr. John Graham, farmer, Beaumont, near Carlisle, has a splendid crop of Turnips, grown entirely from the Economical Manure. He used 7½ cwt. to 6 acres, mixed with three parts earth to one part Manure. The mixture lay three days before it was put upon the ground. THOMAS BLACKLOCK.

Soham, Cambridgeshire, Oct. 4, 1853.

I used your Manure for Mangold Wurzel, broadcast: it was about the first week in May. I put about 1 cwt. per acre mixed with earth. I have the best crop I ever have grown, they looked so strong and growing all through the season. WM. C. PEEK.

Albion Foundry and Iron Works, Rugeley, Staffordshire, July 1, 1853.

I got a friend to test some on a Turnip crop against guano, and he says that his Turnips look best in that part of the field where he sowed the Economical Manure, and that the fly has not taken them so much as those where guano was used. He is a person well known in the neighbourhood; and when this becomes known I have no doubt I shall succeed in selling a good quantity. THOMAS HATFIELD.

Alwalton Lodge, Peterborough, Northamptonshire, Nov. 30, 1853.

Relative to the Economical Manure, I have to observe that I have not noticed it sufficiently to speak definitely as to the attendant results. The season was unfavourable, and I did not get the whole I ordered applied to my Turnips; but where I did apply it they are much finer than usual. The remaining portion I have sown broadcast on Wheat. I am so well satisfied as to its utility, that I shall be a customer on a rather larger scale another year. JOHN POLES.

Cairnsmore, Newton Stewart, Wigtownshire, N.B., Oct. 21, 1853.

I used your Manure for Turnips. I sowed at about 1 cwt. per acre, together with about 20 bushels of bones, and about 3 cwt. of guano, with the same quantity of bones in the same field, and I can see little or no difference between the two.

JAMES CARFRAE, Farm Manager to James Stewart, Esq.

Bodrhyddan, Denbighshire, N.W., Oct. 13, 1853.

I used your Manure for Turnips about the 20th of May. I applied 1½ cwt. per acre, together with about 2 tons of farm-yard manure. I likewise applied on every 20 alternate rows 2 cwt. of Peruvian guano, together with the above-mentioned quantity of farm-yard manure. The result in both cases is an excellent crop, and as near equal as I can judge. I may add, the land is a mixture of gravel and sand. WILLIAM BELL.

Cleves Cross, Durham, Oct. 11, 1853.

I have used the Economical Manure on nothing except Turnips. I sowed about 1½ cwt. per acre alone, and about 2½ cwt. of Peruvian guano in the same field. and I cannot perceive much difference in the two. The soil is limestone gravel. THOMAS THOMPSON.

Stoke Golding, Leicestershire, Dec. 10, 1853.

I tried the Economical Manure for Turnips, and the effect has been surprising. I manured some land equally with rotten dung, upon one part of which I put the Economical Manure. Where I did so, the Turnips are very large, while on that part which received the dung I have scarcely any Turnips at all. I consider the Manure most valuable. My crop will well repay for the extra outlay in the Economical Manure. S. LAW.

Shelford Manor, Bingham, Notts, Nov. 8, 1853.

Through the recommendation of Mr. E. S. Gisborne, Land Agent, Derby, I was induced to try the Economical Manure on a Turnip crop; and, for the purpose of giving it a fair trial, I selected a field of 30 acres, in a good state of cultivation and equal quality. This field I divided into three lots; one third was dressed with the Economical Manure, at the rate of 1 cwt. per acre; one third with kiln-dust of equal value; and one third with soot of equal value. I now have the pleasure of stating that the Turnips on the portion dressed with the Economical Manure are a most extraordinary crop, and surpass in size and vigour in a remarkable degree those on the land dressed with kiln-dust and soot. JOHN HASSALL,

Agent to the Right Hon. the Earl of Chesterfield.

Plascoch, Ruthin, Denbighshire, N. W., November 2, 1853.

I sowed 1½ cwt. of the Economical Manure to the acre, for Turnips on the flat, afterwards ridged up for sowing; but before it was covered the weather changed, and it lay exposed I dare say for a week, which no doubt would have a very injurious effect upon it. The Turnips, on some patches of it, are very strong; I have no doubt, had I been fortunate in its application, it would have answered well. I have a very good opinion of it. FRANCIS CLARKE.

North Walsham, Norfolk, October 26, 1853.

I used your Economical Manure upon half an acre of land for Turnips (1 cwt. of it), and my Swedish Turnips are capital—the best, people tell me, in the whole parish. EDWARD MEADE.

Penkridge, Staffordshire, December 8, 1853.

Although the season has been very unfavourable for the trial of manures, I am quite satisfied that the Economical Manure is a valuable manure. The roots of the Turnips grown by it are equal to any I have grown this season with artificial manure. CHARLES STUBBS.

Barley, near Royston, Herts, December 16, 1853.

The Economical Manure I ordered did not arrive in time to be used upon Swedish Turnips; I therefore used it upon Greentops. The way I tested it was this: the 12 cwt. was mixed with 80 bushels of cinder-ashes, and 4 quarters of malt-chimes, and that was put upon nearly 8 acres, making the expense, including carriage, &c., about 29s. per acre. There was no other manure used, except some burnt ashes from the Grass, &c., round the field; and there is a fine crop of Turnips. There is no doubt about the manure being good, as the difference of the deposit between the up and down-hill works plainly shows its utility. T. C. WALBY.

West Bilney, Swaffham, Norfolk, October 13, 1853.

I applied your Economical Manure as a top dressing for Barley, at the rate of 1½ cwt. per acre, mixed with 20 bushels of burnt earth, and sown broadcast. I was quite satisfied with the result. I likewise drilled the same quantity for Turnips and find they are equally good as where I applied 3½ cwt. of superphosphate of lime per acre, at a cost of 1l. 1s. R. H. WALPOLE.

Chilvers Coton, Warwickshire, Dec. 12, 1853.

I beg to say that the Economical Manure has given me great satisfaction. I used some for Turnips, and the result has been most satisfactory. I have no doubt it will be in great use here as soon as its good qualities become more generally known. JAMES HANKINSON.

Hafod-y-Green, near Denbigh, N. W., Nov. 7, 1853.

The following is the manner in which I applied the Economical Manure:—A portion of a Turnip field was manured with about 20 tons per acre of the best stable and cattle dung, made during the winter; upon the remainder I put about the same quantity of inferior stuff, such as road-scrapings, cinder-ashes, &c.; to this I added about 1 cwt. of your Manure to the acre, hoping to equalise the crop; and at this time there is no difference to be seen in the field. I therefore consider your Manure made up the deficiency. The soil is a cold wet clay; but the crop is quite equal to my expectations. C. H. (Bailiff to J. Blew, Esq.)

Antingham, near North Walsham, Norfolk, Oct. 3, 1853.

I feel satisfied of the utility of your Economical Manure, in promoting the growth of Turnips. HENRY WRIGHT.

Lyde, Herefordshire, January 14, 1854.

I used one barrel of the Economical Manure for common Turnips, planted in July; it was sown broadcast on the flat, and afterwards ridged up 20 inches wide; about 1½ cwt. per acre. I perceived very little good for the first six weeks; afterwards the Turnips progressed very fast. But the land was not drained, and was very wet; yet I find them a fair crop. I have no doubt if the land had been drained I should have had double the quantity. RICHARD EDWARDS.

Cosby Lodge, Lutterworth, Leicestershire, Dec. 15, 1853.

I used your Economical Manure at the rate of 1½ cwt. per acre, to a crop of Swede Turnips. I applied it broadcast, and ridged the soil up afterwards with a small quantity of farm-yard manure. I am perfectly satisfied with the result, having a very good crop. Should I live till next year, I intend using it again. JOHN DRAYCOTT.

Witton, North Walsham, Norfolk, November 1, 1853.

I used your Manure against two others, on the 30th of June, for Turnips, and have a splendid crop, beating both the others. THOMAS CUBITT.

Moorgate House, East Retford, Notts, February 14, 1854.

I have been over to Mr. Johnson's, a large farmer in this neighbourhood, and find that in his Turnips, where guano and the Economical Manure were used, to the same amount in money, it was impossible to tell one from the other; in fact, neither he nor I could tell which was which, the crop from both being extraordinarily good. W. BOWER.

TESTIMONIALS OF 1854.

Cambridge, May 15, 1854.

I applied some of your Economical Manure to various crops this spring:—on two different fields of Wheat, a piece of Barley, 2 acres of Clover, and on some Autumn-set Cabbages. All I can say (and as it is the first year of my using the article), all I ought to say, is, that so far, the improvement in all the crops is most manifest, more especially in the Clover. But even on the Wheat and Barley, although applied invariably where the crop was weakest, its effects are so striking, that a person riding along the road cannot but perceive it. I have used it for Mangold Wurzel, and shall do so for Turnips, but as yet, in the former instance, the Mangold is not up, and therefore nothing can be said of it. It is but fair also to add, that I have applied it to two compost heaps; in reducing Twitch, Cabbage Stalks, and such like, to a useful compound for the land, with layers of horse dung, and with the exception of the windward side of the heaps, where the Couch Grass or Twitch was laid quite on the outside, the heaps, in three weeks, became excellent manure. So far, I have never expended 18s. per acre on any crops, after 40 years' experience, with so much effect. I think the agriculturists to whom I am known will give me credit for not intentionally misleading them. I write only the result of my own experience. You will immediately send me another ton, for my own use, and one for a neighbouring farmer. P.S.—I find 2 heaping bushels per acre of the manure, with the like quantity of ashes, seems to cost about 18s. per acre, and in this manner we have so far used it. WILLIAM BENNETT.

[This gentleman is the well-known and practical Agriculturist, formerly of Lewsey, Bedfordshire.]

Manea, near Chatteris, Cambridgeshire, May 17.

I beg to inclose an order for 24l. 19s., the amount of your account against me for Manure. I should have forwarded this a little earlier, but having used the manure on 12 acres of Hemp, I waited to see if it had any immediate visible effect. I am happy to say I think it has, as the plant is vigorous and strong. MICHAEL L. SEARS.

Halvergate Mills, Acle, near Norwich, May 18.

I am happy to give you an excellent account of the Manure. Mr. Smith, of Reedham, top-dressed a field of Wheat in the beginning of April, it was very thin and weak; he did not expect a quarter of a crop. The other day he was telling me it was wonderfully improved, and he did not think there was any in the parish looking better: so well satisfied is he with it, that he has given me an order for half a ton more for top-dressing Barley, also an order for a friend of his. You are quite at liberty to advertise this, as you cannot speak too highly of it. I shall require two tons instead of one. JOHN HEWITT.

GOOD AGENTS WANTED.—AN ALLOWANCE TO THE TRADE.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office, in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, JUNE 3, 1854.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley

No. 23.—1854.] SATURDAY, JUNE 10. [PRICE 6*d*.

INDEX.

Agri. statistics	378 *b*	London Farmers' Club	379 *b*
— Soc. of England	379 *a*	Manuring at Tiptree, &c.	377 *c*
Books noticed	375 *c*	Melons, to grow	373 *b*
Calendar, horticultural	376 *a*	Milburn, the late Mr.	381 *b*
— agricultural	381 *b*	Mildew, Vine	373 *c*
Cattle, Gorse for	379 *a*	Nidularia fulgens	373 *b*
Cereus, night-blowing	373 *b*	Orchard houses	373 *b*
Chiswick exhibition	371 *b*	Orchids, sale of	376 *a*
— report of	374 *a*	Paint for iron	376 *c*
Clerodendron Bungei	376 *a*	Parks, public	371 *c*
Farming, Lois Weedon	377 *c*	Pasture land	379 *a*
— Tiptree	379 *a*	Pathology, vegetable	372 *b*
Farm-yards	379 *a*	Plants, effects of frost on	373 *c*
Flowers, ephemeral	373 *b*	Rain gauges	372 *c*
Gardens, royal	371 *c*	Statistics, agricultural	378 *b*
Glass walls	373 *b*	Timber, preservation of	378 *a*
Gorse for cattle	379 *a*	Vegetable pathology	372 *b*
Grass land	379 *a*	Vines, Portuguese	372 *a*
Hollyhock seed	376 *a*	Vine mildew	373 *c*
Hygrometers	372 *c*	Wellingtonia	373 *a*
Iron, paint for	376 *c*	Winter in Cheshire	373 *a*
Ixora salicifolia	372 *c*	— in Notts	373 *b*
Labourers' friend societies, 377 *c*,	379 *b*	— in Shropshire	373 *c*
Lois Weedon tillage	377 *c*	Woods and forests	371 *c*

ROYAL BOTANIC SOCIETY, REGENT'S PARK.—The EXHIBITION of AMERICAN PLANTS (Rhododendrons, Azaleas, Kalmias, &c.) will take place on MONDAY NEXT, June 12. Tickets of admission can be obtained at the Gardens by orders from Fellows of the Society, price 5*s*., or on the day of Exhibition, 7*s*. 6*d*. each.

The Gates open at 2 o'clock, at which hour the Bands attend.

SOUTH LONDON SOCIETY OF AMATEUR FLORISTS.—The Third Exhibition for this season will be held at the Horns Tavern, Kennington, on THURSDAY, June 22, when Prizes will be awarded for the following productions, viz., Miscellaneous Plants, Pelargoniums, and Fancy Varieties, Pinks, Roses, Ranunculuses, &c. In addition to the Prizes offered by the Society, P. Secretan, Esq., offers the Large Silver Victoria Medal for the best collection of 20 Stove Plants. An efficient band will be in attendance.

Admission to Non-Members from 2 till 6 a.m., at One Shilling each. List of Prizes may be obtained from

JOHN BUSHELL, Esq., Honorary Secretary, pro tem.
Lower Kennington Lane, Lambeth.

STAINES HORTICULTURAL SOCIETY.—The Exhibition of this season will take place on SATURDAY, June 24, by the kind permission of Mrs. Hagen, in the Grounds of Duncroft House, when a variety of prizes will be offered for competition. Schedules and further particulars may be had on application to W. WATKINS, Honorary Secretary.

MAIDSTONE HORTICULTURAL SOCIETY.—The following Prizes (open to all England), will be given at the Exhibition of the Maidstone Horticultural Society, on THURSDAY, June 29. For best 8 Stove or Greenhouse Plants, 5*l*.; Second, 3*l*.; Third, 1*l*. For best six Exotic Orchids, 2*l*.; Second, 1*l*. For best collection of 36 Roses, in single trusses, 2*l*.; Second, 1*l*. Entrance, Stove Plants, 7*s*. 6*d*.; Roses and Orchids, 5*s*.

Further particulars will be given on application to the Secretary, Maidstone. J. G. SMITH.

EXHIBITION OF AMERICAN PLANTS,
ROYAL BOTANIC GARDENS, REGENT'S PARK.

JOHN WATERER begs to announce that his unrivalled Collection of RHODODENDRONS, &c., is now in bloom, and may be viewed by tickets to be obtained of Fellows of the Society. The Plants at the Nursery are also in perfection, and may be seen gratis.

American Nursery, Bagshot, Surrey, near Farnborough Station, South Western Railway.—June 10, 1854.

EXHIBITION OF AMERICAN PLANTS AT KNAP HILL NURSERY, WOKING.—The American plants at this Nursery are now in bloom, and may be seen daily gratis. The Knap Hill Nursery is within an hour's ride of London, by South Western Railway to Woking, where all trains stop, and from whence capital conveyances may be obtained.—WATERER & GODFREY, late HOSEA WATERER.

T. ANSELL begs to inform his Patrons and Friends that he has an extensive and splendid collection of GERANIUMS, containing most of the newest and most approved varieties, both of show flowers and fancies.—A catalogue may be had on application.

Strong healthy Plants of the following kinds, 20*s*. per doz., viz., Ambassador, Ariadne, Breba, Col. of the Buffs, Constantine, Enchantress, Eurydice, Ganymede, Ignea, Jullien, Little Nell, Lord Mayor, Nepaulese Prince, Purple Standard, Rubens, &c. Also the following fancies 20*s*. per doz., Advancer, Caliban, Captivation, Celestial, Erubescens, Fascination, Formosissimum, Gipsy Queen, Lady Downes, Marginata, Neree, Othello, Richard Cobden, Sambo, Triumphans, &c. Older varieties from 6*s*. to 12*s*. per dozen.

A large assortment of Chrysanthemums in small pots, well adapted for travelling, from 4*s*. to 12*s*. per dozen. Also a splendid collection of Dahlias, of which a catalogue may be had on application.—Camden Nursery, Camden Town, London.

PLANTS OF CABBAGE, SAVOY, KALE, BROCCOLI, CAULIFLOWER, AND CELERY.

JOHN CATTELL, Westerham, Kent, begs respectfully to inform the public that he has a plentiful supply of Plants of his superior true sorts of the above, which will be forwarded to order on receipt of Postage Stamps or Post Office Order made payable here at the following prices, package included:—All the sorts of Early Cabbage, Savoy, and Kale, including Brussels Sprouts, 6*d*. per 100; 4*s*. 6*d*. per 1000. All the sorts of Autumn and Spring Broccoli, and all the sorts of Celery, 8*d*. per 100; 5*s*. 6*d*. per 1000. Cauliflower, Early and Late, 10*d*. per 100. Red Cabbage, 1*s*. per 100; Drumhead, or Cattle Cabbage, 4*s*. per 1000. Packages of 1000 and upwards delivered free of Carriage to London, and to the Edenbridge Station of the South Eastern Rail.

Seed of Cattell's Dwarf Barnes, and of his superior Dwarf Reliance Cabbage, may be had in packets by post for 12 Penny Stamps per packet: the former containing one ounce as usual, and the latter half an ounce.

WELLINGTONIA GIGANTEA.

MESSRS. VEITCH AND SON are now prepared to supply healthy young established Seedling Plants of the above magnificent Tree. For terms, &c., see the Advertisement of their New Plants in another part of this Paper.

Exeter and Chelsea.—June 10, 1854.

LILIUM GIGANTEUM.

JAMES VEITCH, JUN., begs to announce that he has now in bloom a fine specimen of the above noble Lily, which it will be a pleasure to him to show to all lovers of flowers who may be pleased to visit his Nursery.

Exotic Nursery, Chelsea, June 10, 1854.

CHOICE CINERARIA AND CALCEOLARIA SEEDS.

LUCOMBE, PINCE, AND CO. have now ready for sending out Seeds of their very superior

CINERARIAS AND CALCEOLARIAS,

which have been saved with great care from the finest varieties. The great satisfaction which their Cinerarias and Calceolarias have given for several successive years enables them to recommend their Seed of the present season with much confidence.

Packets of each, sealed and warranted by them, at 2*s*. 6*d*., free by post.—Exeter Nursery, Exeter, June 10.

BASS AND BROWN'S NEW POTENTILLAS.—In consequence of the limited stock of King of Crimsons, we regret we must decline receiving more orders. The following are now ready to send out:—

Potentilla Sudbury Gem, each	10*s*. 6*d*.	Potentilla Theodore, each	7*s*. 6*d*.
„ Shylock, do.	10 6	„ Julia, do.	7 6

The following, 16*s*. the set of seven varieties:—

Floral Beauty	3*s*. 6*d*.	Scarlet Gem	3*s*. 6*d*.
Napoleon	2 0	Primrose	2 0
Defiance	2 0	Argo	2 0
Negress	3 6		

For descriptions and editorial remarks, see *Gardeners' Chronicle* of March 13, p. 144, and April 1, p. 208.

Seed and Horticultural Establishment, Sudbury, Suffolk.

TURNIP SEEDS FOR PRESENT SOWING.

Ashcroft Swede	Sutton's Lincolnshire Red Globe Turnip
Skirving's Swede	Hardy Green Round
Sutton's Hybrid Turnips	Sutton's Green Globe
Skirving's Bullock Turnip	Tankard Yellow, and others.
Early Six Weeks Turnip	

SUTTON AND SONS, SEED GROWERS, Reading, have an excellent stock of the above sorts of Turnip Seeds on sale at moderate prices, as see Catalogue.

TURNIP SEEDS! TURNIP SEEDS!
CARRIAGE FREE.

B. PAGE AND CO.'S Genuine Stock, saved from the finest transplanted Bulbs, will, as heretofore, gain the greatest number of Prizes at Root Exhibitions.

Skirving's Improved Swede .. per lb.	1*s*. 0*d*.	Mangold Wurzel, Long Red, per lb.	0*s* 10*d*.
Purple-top	1 0	Ditto, Yellow Globe	1 0
Green-top	1 2	Buckwheat (English growth), per bushel	6 6
Ashcroft Hybrid	1 2	Mustard, ditto	16 0
Laing's ditto	1 2	Dwarf Essex Rape, per cwt.	28 0
Aberdeen or Scotch Yellow	0 10	Rye-grass, Italian, per bushel ... 4*s*. 6*d*. to	5 6
Dale's Hybrid	1 2	Ditto, Perennial, per bushel ... 4*s*. 6*d*. to	5 6
White Norfolk	1 0	Fine mixed for lawns and permanent pasture ... 10*s*. to	15 0
„ Globe	1 0		
Tankard, in sorts 1*s*. to	1 3		
Green Round	1 0		
Red Round	1 0		
Early Stone	1 0		
White Belgian Carrot	1 8		

Offices, Oxford Street (ten yards from the Railway Terminus), and Above Bar, Southampton.

CHEAP BEDDING PLANTS.

JOHN MORSE begs to offer the following in good strong Plants, at 3*s*. per dozen, showing bloom.

Heliotropium corymbosum	Lobelia fulgens multiflora
„ Triomphe de Liege	„ Erinus ramosoides
„ Peruvianum	Anagallis, blue and red
„ Voltaireanum	Neirembergia gracilis
Calceolaria Sultana	Verbenas, in great variety
„ Sulphurea splendens	Petunias „ „
„ Amplexicaulis	Dahlias „ „
„ Floribunda	Fuchsias „ „
Lobelia Queen Victoria	Scarlet Geraniums „

Also a few dozens of the following beautiful Geraniums, strong, in 4-inch pots:—

Mountain of Light	12*s*. per doz.
Flower of the Day	7*s*. „
Cerise Unique	5*s*. „

No charge for Hampers or Package.

JOHN MORSE, Nuseryman, &c., Dursley, Gloucestershire.

A CARD.

JAMES DICKSON, NURSERYMAN and SEEDSMAN, cannot allow the present Planting and Seed Season to terminate without returning to the nobility, clergy, and gentry, and his numerous customers and kind friends, his most sincere thanks for the very gratifying and liberal support he has received since he has been joined in business by his SONS, which has far exceeded his most sanguine expectations.

The extensive patronage with which JAMES DICKSON & SONS have been favoured, and the large orders which have been entrusted to them for TREES and PLANTS, has induced them to break up and bring into Nursery cultivation a considerable quantity of fresh land, now planted with Nursery Stock, which, together with their having had allotted to them by purchase an extra portion of the Old Nursery Grounds, puts them in a position to execute orders, however extensive, with well rooted Plants, at the lowest possible prices. All orders entrusted to J. D. & SONS shall have the utmost dispatch, and their most careful and personal attention.

Seed Warehouse, 102, Eastgate Street, and 106, Deansgate, Manchester; and Nurseries, Newton, near Chester.—June 10.

FUCHSIA DUKE OF WELLINGTON.

J. MOORE AND SON beg to offer a few fine young plants of the above, which are from $1\frac{1}{2}$ to $2\frac{1}{2}$ feet high, well furnished with branches, and calculated to make fine specimens for the July Exhibitions. Price, 15*s*. to 21*s*. each. Also smaller plants, at 10*s*. 6*d*., with usual discount to the trade. Good plants can also be supplied of Fuchsia Ariel, Beauty, Cartoni, Duchess of Lancaster, England's Glory, Glory (Banks), King Charming, Lady Franklin, Nil Desperandum, Sedonia, Voltigeur, and a fine Seedling not sent out, at 12*s*. the set. The above Fuchsias, with Duke of Wellington, are unquestionably the best in cultivation.—Perry Barr Nursery, near Birmingham.

NEW VARIEGATED GERANIUMS,
ATTRACTION AND SILVER KING.

JOHN AND CHARLES LEE are now sending out strong plants of these elegant novelties, which they can recommend as surpassing anything of the kind hitherto introduced.

ATTRACTION has a decided crimson horse-shoe, on a finely variegated foliage, which greatly enhances its beauty. The flowers are light scarlet. Price 10*s*. 6*d*. each.

SILVER KING is of a dwarf free habit, the leaves perfectly flat, with a very broad silver margin; flowers intense scarlet. Price 7*s*. 6*d*. each, or 70*s*. per dozen.

Nursery and Seed Establishment, Hammersmith, near London.

NEW SIPHOCAMPYLUS.

W. J. EPPS has much pleasure in offering the following, feeling they cannot fail to give the highest satisfaction. Strong plants are now ready for delivery.

SIPHOCAMPYLUS NE PLUS ULTRA—Very dwarf habit, with bright green foliage, producing flowers of the most brilliant scarlet in threes and fours at the axle of every leaf; the best of the genus, 10*s*. 6*d*.

BICOLOR ROSEA—Deep crimson, tipped with pale rose, very distinct and beautiful, very dwarf and compact habit; 10*s*. 6*d*. The usual discount to the Trade.—Nurseries, Maidstone.

CINERARIA SEED.

EDWARD GEORGE HENDERSON AND SON, Wellington Nursery, St. John's Wood, London, are now prepared to forward, by post, new Cineraria Seed saved this season. More than usual care has been bestowed in gathering from the choicest named varieties, including the new ones sent out last year; all the light varieties have been discarded, consequently from the above seed we anticipate none but high coloured flowers. Per packet, 2*s*. 6*d*. and 5*s*. each.

Our beautiful collection of CALCEOLARIAS can now be seen in flower at the Nursery, and orders for seed booked, to be sent when ready. Per packet, first quality, 5*s*.; second quality, 2*s*. 6*d*.

NEW ROSES IN POTS, at reduced prices.

HYBRID PERPETUAL.		HYBRID PERPETUAL.	
Baronne de Kermont	5*s*. 0*d*.	Souvenir de Mdme. Lille	5*s*. 0*d*.
Comte de Nanteuil	5 0	Triomphe de Paris	5 0
James Veitch	5 0	Volta	5 0
Lady Stuart	5 0	BOURBON.	
Lady Shelley	5 0	Beauté Lyonnaise	3 6
Le General Jacqueminot	10 6	Madame Helfinbein	5 0
Madame Harriet Stowe	10 6	Sir Joseph Paxton	3 6
Madame Phelip	5 0	TEA.	
Paul Dupuy	7 6	Gloire de Dijon	10 6
Prince Chipetowzikof	5 0	MOSS.	
Prince Leon Kotchouby	7 6	Princess Alice (Paul's)	5 0
Salvator Rosa	3 6	HYBRID BOURBON.	
Sephora	7 6	President Pierce	7 6
		Vivid	5 0

The following choice Hybrid Perpetual Roses, at 30*s*. per doz., Baronne Hallez, Destigny, Egerie, Inermis, Laura Raymond, La Seduisante, L'Enfant du Mont Carmel, Louise Peyronny, Ludovic Letaud, Madame Audry, Madame Ducher, Madame Fremion, Madame Hilaire, Miss Meymott, Souvenir de la Reine des Belges.

BENJAMIN R. CANT, in offering the above, does so with the greatest confidence, as he has received several letters from customers stating that the plants sent are far better than those generally supplied by the Trade.

ST. JOHN'S STREET NURSERY, COLCHESTER.

Carriage paid to London and Norwich and all intermediate stations on the Line. Unknown Correspondents are requested to send a remittance or reference.

THE LARGEST & BEST TURNIP FOR EARLY SOWING.

SUTTON'S LINCOLNSHIRE RED GLOBE TURNIP.—A superior variety, presented to us by Philip Pusey, Esq., being more solid and larger than any other. Price 1*s*. 6*d*. per lb., or 9*s*. per gallon. Carriage free.

From Mr. Albert Edmonds, Steward to Philip Pusey, Esq., November 23d, 1853.

"By the desire of Mr. Pusey, I beg to inform you that he had a very fine crop of the Red Lincolnshire Turnip, weighing 30 tons 10 cwt. 1 qr. 24 lbs. per acre."

From Mr. T. Chandler, Liquid Manure Drill Maker, Aldbourne, November 11th, 1853.

"The Lincolnshire Red Turnip, the seed of which I had from you, has produced the heaviest crop I ever grew."

JOHN SUTTON AND SONS, Seed Growers, Reading, are receiving many orders daily for this Turnip Seed, with similar remarks to the above, relative to last year's crop. *Orders will be executed in rotation, in strict accordance with priority in our receiving them.*

RIVERS'S STUBBLE SWEDE, the best sort for late sowing.—Before Mr. Rivers offered this excellent SWEDE to the public, he favoured us with a sample to grow in competition with others in our sample ground; and being fully satisfied that it would be a great acquisition to Agriculturists, we gave him our opinion, which he published the following season in the *Gardeners' Chronicle* and other Papers. We have now the satisfaction of hearing from all parts of the kingdom that it not only thrives well when sown late, but that it is one of the best Swedes in cultivation. We have a fine stock of Seed grown from that received originally from Mr. Rivers, which we are now selling at 1*s*. 6*d*. per lb., or 9*s*. per gallon; 3 lbs. being fully sufficient for an acre. TIME OF SOWING—MIDDLE OF JUNE TILL END OF JULY.—Address,

JOHN SUTTON & SONS, SEED GROWERS, Reading, Berks.

GOOD FREE FLOWERING ORCHIDS.

THOMAS JACKSON AND SON beg to offer the following:—Acineta Barkeri, Acropera Loddigesi, Cypripedium insigne, Dendrobium chrysanthum, D. Jenkinsi, D. moschatum, D. nobile, D. Pierardi, D. pulchellum, Epidendrum aurantiacum, E. ciliare, Lælia autumnalis, Lycaste cruenta, L. Skinneri, Maxillaria Harrisoni, M. picta, Oncidium altissimum, O. Cebolleti, O. flexuosum, O. leucochilum, O. macropterum, Phaius albus, P. grandifolius, Rodriguezia planifolia, Stanhopea insignis major, S. oculata, S. tigrina major.

T. J. & SON, having a fine Stock of healthy plants of good Orchids suited for amateurs commencing a collection, will be glad to furnish 12 distinct kinds from the above, selected by T. J. & Son, for 42*s.*; 12 selected from the above by the purchaser, 63*s.* Many of the more rare Orchids at equally low prices.

Kingston, near London.

STANDISH AND NOBLE, NURSERYMEN, SEEDSMEN, &c., Bagshot, Surrey, are now prepared to receive orders for the following new and beautiful varieties of AZALEAS, which will be ready for delivery in June next. The Advertisers can recommend them with the greatest confidence, as superior to any others of their kind.

AZALEA BEALII.—This very distinct variety was introduced by them from China. The flowers, which are of first-rate shape, are quite unique, being striped, like a Carnation, with rich vermilion on a pure white ground. It is of good habit, fine in foliage, and a most abundant bloomer; and although decidedly in the first rank as a greenhouse plant, it is quite hardy enough for the open border. Each, 21*s.*

AZALEA CRISPIFLORA, a species differing much from any other known Azalea, having a character entirely its own. No other kind approaches it in compactness of habit, and its foliage is very fine, abundant, and evergreen. The flowers are very large, and the edges of the petals have the appearance of being irregularly *gaufred*, like a lady's frill; the colour is a rich rose lake. From the fact of its blooming very late—much later than any other Azalea—it will be doubly valuable for many purposes Each 21*s.*

PATTERSON'S SCARLET NONPAREIL STRAWBERRY.

JAMES VEITCH, JUN., has the pleasure to inform the public that Mr. Patterson, Gardener to Baroness Wenman, of Thame Park, Oxon, has placed in his hands for distribution the stock of the above first-rate Seedling Strawberry, which, having been fully tested and exhibited, has proved to be of very superior excellence.

It was exhibited at Chiswick, on Saturday last, June 3, and received the Silver Knightian Medal; it has also been submitted to Dr. Lindley, Mr. Marnock, and Mr. Thompson, all of whom report most favourably of its merits.

It is a *first-class forcing* Strawberry in character, intermediate between *its parents—Keens' Seedling* and *British Queen*; of the vigorous habit of the *former*, and fully one week earlier in ripening; and in the quality of its fruit *fully equal* in flavour, if not superior, to the latter. The fruit is of a large size and handsome shape, of a *bright red colour*, and with a remarkably high perfume.

Orders are now taking for strong plants to be sent out the first week in September on the following terms:—

100 Plants ... £3 | 50 Plants ... £2 | 12 Plants ... 12*s.*

Exotic Nursery, Chelsea.—June 10.

GERANIUMS.—Large Surplus Stock of Choice Varieties. Any of the following 9*s.* per dozen, or the set of 24 for 16*s.*; strong for immediate flowering.—Alderman, Beauty of Montpelier, Belle of the Village, Centurion, Crusader, Conspicuum, Commissioner, Elegans, Emily, Falstaff, Field Marshal, Generalissimo, Gulielma, Gustavus, Herald, Norah, Magnificent, Nandee, Prince of Orange, Pearl, Rosa, Star, Tyrian Queen, Virgin Queen, Windsor Castle.

FANCY VARIETIES.—Any of the following, 9*s.* per dozen, or the set of 20 for 14*s.*—Beauty of Winchester, Delicata, Electra, Exquisite, Fairy Queen, Jehu Improved, Jenny Lind, Le Belle de Africana, Lady F. Hastings, Maid of Anjou, Magnifica, Mazeppa Superb, Marian, Ne Plus Ultra, Odorata Superba, Prince Albert, Reine de Fleurs, Statiaski, Village Maid, Zelia.

BASS AND BROWN,
Seed and Horticultural Establishment, Sudbury, Suffolk.

HORTICULTURAL SOCIETY OF LONDON.

EXHIBITION AT THE GARDEN, JUNE 3, 1854.

AWARD OF THE JUDGES.

THE FIRST LARGE GOLD MEDAL.

1. To Mr. Green, Gardener to Sir E. Antrobus, Bart., F.H.S., for a collection of 20 Stove and Greenhouse Plants.
2. To Mr. Williams, Gardener to C. B. Warner, Esq., F.H.S., for 20 species of Exotic Orchids.

THE SECOND LARGE GOLD MEDAL.

1. To Mr. Dods, Gardener to Sir J. Cathcart, Bart., F.H.S., for a collection of 20 Stove and Greenhouse Plants.
2. To Mr. Woolley, Gardener to H. B. Ker, Esq., of Cheshunt, for 20 species of Exotic Orchids.

THE FIRST GOLD KNIGHTIAN MEDAL.

1. To Mr. Barter, Gardener to G. Bassett, Esq., of Stamford Hill, for a collection of 20 Stove and Greenhouse Plants.
2. To Mr. Carson, Gardener to W. F. G. Farmer, Esq., F.H.S., for a collection of 15 Stove and Greenhouse Plants.

THE SECOND GOLD KNIGHTIAN MEDAL.

1. To Messrs. Fraser, of Lea Bridge Road, for a collection of 20 Stove and Greenhouse Plants.
2. To Mr. Gilham, Gardener to J. R. Scott, Esq., of Leyton, for a collection of 15 Stove and Greenhouse Plants.

THE FIRST GOLD BANKSIAN MEDAL.

1. To Mr. Clarke, Gardener to Mrs. Webb, of Hoddesdon, for 10 species of Exotic Orchids.
2. To Messrs. Veitch, F.H.S., for 15 species of Exotic Orchids.
3. To Mr. Speed, of Edmonton, for a collection of 15 Stove and Greenhouse Plants.
4. To Mr. Over, Gardener to W. McMullen, Esq., of Clapham, for a collection of 6 Stove and Greenhouse Plants.
5. To Messrs. Lane, of Great Berkhampstead, for 12 varieties of Roses in pots.
6. To Messrs. Rollisson, of Tooting, for 10 varieties of Cape Heaths.
7. To Mr. C. Turner, F.H.S., for a collection of 12 Pelargoniums.
8. To Mr. Fleming, Gardener to the Duke of Sutherland, F.H.S., for a collection of Fruit.
9. To A. Rowland, Esq., F.H.S., for 12 varieties of Roses in pots.

THE SECOND GOLD BANKSIAN MEDAL.

1. To Mr. Carson, Gardener to W. F. G. Farmer, Esq., F.H.S., for 10 species of Exotic Orchids.
2. To Messrs. Rollisson, of Tooting, for 15 species of Exotic Orchids.
3. To Mr. Peed, Gardener to T. Tredwell, Esq., of St. John's Lodge, Norwood, for a collection of 6 Stove and Greenhouse Plants.
4. To Mr. Francis, F.H.S., for 12 varieties of Roses, in pots.
5. To Mr. Peed, Gardener to T. Tredwell, Esq., for 10 varieties of Cape Heaths.
6. To Mr. Dobson, of Woodlands Nursery, Isleworth, for twelve Pelargoniums, in 8-inch pots.
7. To Mr. Tegg, Gardener to A. Pryor, Esq., F.H.S., for a collection of Fruit.

THE SILVER GILT MEDAL.

1. To Mr. Dods, Gardener to Sir J. Cathcart, Bart., F.H.S., for 10 species of Exotic Orchids.
2. To Mr. Rhodes, Gardener to Sir J. Phillpott, Esq., of Stamford Hill, for a collection of 15 Stove and Greenhouse Plants.
3. To Mr. Taylor, Gardener to J. Coster, Esq., of Streatham, for 6 Stove and Greenhouse Plants in 13-inch pots.
4. To Messrs. Rollisson, of Tooting, for Uropedium Lindeni.
5. To Messrs. Fraser, of the Lea Bridge Road, for 10 varieties of Cape Heaths.
6. To Mr. Jarvis, Gardener to J. Ruck, Esq., of Croydon, for 6 varieties of Greenhouse Azaleas.
7. To Messrs. Veitch, F.H.S., for a collection of Variegated Plants.
8. To Mr. Mockett, Gardener to J. Allnutt, Esq., F.H.S., for a collection of 12 Pelargoniums in 8-inch pots.
9. To Mr. Patterson, of Thame, for a collection of Fruit.
10. To Mr. Frost, Gardener to E. L. Betts, Esq., F.H.S., for Black Hamburgh Grapes.

THE LARGE SILVER MEDAL.

1. To Mr. Green, Gardener to Sir E. Antrobus, Bart., F.H.S., for 10 species of Exotic Orchids.
2. To Mr. Hamp, Gardener to J. Thorne, Esq., of South Lambeth, for 15 Stove and Greenhouse Plants.
3. To Messrs. Pamplin, of Leyton, for 6 Stove and Greenhouse Plants.
4. To Mr. Green, Gardener to Sir E. Antrobus, Bart., F.H.S., for 6 varieties of Tall Cacti.
5. To Messrs. Henderson, of Pine-apple Place, for Hoya sp.
6. To Messrs. Veitch, F.H.S., for Nepenthes lanata.
7. To Mr. Taylor, Gardener to J. Coster, Esq., of Streatham, for 6 varieties of Cape Heaths.
8. To Mr. Taylor, Gardener to J. Coster, Esq., of Streatham, for 6 Greenhouse Azaleas.
9. To Messrs. Rollisson, of Tooting, for a collection of Variegated Plants.
10. To Messrs. Rollisson, of Tooting, for a collection of Tender Plants of fine foliage.
11. To Mr. Gaines, F.H.S., for a collection of Pelargoniums.
12. To Mr. C. Turner, F.H.S., for 6 Fancy Pelargoniums.
13. To Mr. Clements, of East Barnet, for a collection of Fruit.
14. To Mr. Hill, Gardener to R. Sneyd, Esq., F.H.S., for a collection of Fruit.
15. To Mr. Lushey, Gardener to J. Hill, Esq., of Streatham, for Black Hamburgh and Black Prince Grapes.
16. To Mr. Turnbull, Gardener to the Duke of Marlborough, for a Providence Pine-apple, weighing 8 lbs. 11½ oz.

THE SILVER KNIGHTIAN MEDAL.

1. To Mr. Summerfield, Gardener to J. S. Venn, Esq., of Highbury Park, Islington, for 10 species of Exotic Orchids.
2. To Mr. Roser, Gardener to J. Bradbury, Esq., F.H.S., for a collection of 6 Stove and Greenhouse Plants.
3. To Messrs. Fraser, of Lea Bridge Road, for 6 Helichrysums.
4. To Mr. Gilham, Gardener to J. R. Scott, Esq., of Leyton, for 6 varieties of Tall Cacti.
5. To Messrs. Veitch, for Leptosiphon aureum.
6. To Mr. Roser, Gardener to J. Bradbury, Esq., F.H.S., for 6 varieties of Cape Heaths.
7. To Mr. Gaines, F.H.S., for 6 Fancy Pelargoniums.
8. To the same, for 6 French Pelargoniums.
9. To Mr. Ivison, Gardener to the Duke of Northumberland, F.H.S., for Grapes in pots.
10. To Mr. Turnbull, Gardener to the Duke of Marlborough, for Muscat Grapes.
11. To Messrs. Mitchell, of Brighton, for Black Hamburgh Grapes.
12. To Mr. Martin, Gardener to Sir H. Fleetwood, Bart., F.H.S., for Black Prince and Black Frontignan Grapes.
13. To Mr. Chapman, Gardener to J. B. Glegg, Esq., for a Providence Pine-apple, weighing 8 lbs. 5 oz.
14. To Mr. Robinson, Gardener to the Lord Boston, F.H.S., for Providence Pine-apples.
15. To Mr. Smith, of Twickenham, for British Queen and Keens' Seedling Strawberries.

THE SILVER BANKSIAN MEDAL.

1. To Mr. Jarvis, Gardener to J. Ruck, Esq., of Croydon, for 10 species of Exotic Orchids.
2. To Mr. Over, Gardener to W. McMullen, Esq., of Clapham, for a collection of 6 Stove and Greenhouse Plants.
3. To Mr. Taylor, Gardener to J. Coster, Esq., of Streatham, for 6 Helichrysums.
4. To Messrs. Rollisson, of Tooting, for Nidularia fulgens.
5. To Mr. Over, Gardener to W. McMullen, Esq., of Clapham, for 6 varieties of Cape Heaths.
6. To Messrs. Henderson, of St. John's Wood, for 6 Fancy Pelargoniums.
7. To Mr. Stanley, Gardener to J. J. Blandy, Esq., F.H.S., for Sweetwater Grapes.
8. To Mr. Dods, Gardener to Sir J. Cathcart, Bart., F.H.S., for Black Hamburgh Grapes.
9. To Mr. A. Taylor, Gardener to H. Ingram, Esq., of Temple Newsam, near Leeds, for a Black Prince Pine Apple, weighing 6 lbs 13 oz.
10. To Mr. Ferguson, F.H.S., for May Duke Cherries, grown under glass without fire heat.
11. To Mr. Batly, Gardener to G. G. Harcourt, Esq., F.H.S., for Brown Turkey Figs.
12. To Mr. Sparrow, Gardener to Lord Robert Grosvenor, Moor Park, Herts, for Elruge Nectarines.
13. To Mr. Constantine, Gardener to C. Mills, Esq., of Hillingdon, for a collection of Strawberries.
14. To Mr. Patterson, of Thame Park Gardens, for his Scarlet Nonpareil Strawberry.
15. To Mr. Fleming, Gardener to the Duke of Sutherland, F.H.S., for a Cashmere Melon.
16. To Messrs. Lane, of Great Berkhampstead, for Cherries grown in pots.

THE FIRST CERTIFICATE.

1. To Mr. Jarvis, Gardener to S. Ruck, Esq., of Croydon, for a collection of 6 Stove and Greenhouse Plants.
2. To Messrs. Rollisson, of Tooting, for Gaultheria pulchra.
3. To Mr. Gaines, F.H.S., for Azalea roseo-alba.
4. To Mr. Roser, Gardener to J. Bradbury, Esq., F.H.S., for 6 varieties of Greenhouse Azaleas.
5. To Mr. Judd, Gardener to Earl Spencer, F.H.S., for Brown Ischia Figs.
6. To Mr. Toy, Gardener to W. Lyon, Esq., of Chiselhurst, for British Queen Strawberries.
7. To Mr. Young, Gardener to Lord Barrington Beckett, Berks, for a Bromham Hall Melon.
8. To Mr. Carpenter, Gardener to Sir F. Scott, Bart., of Great Barr Hall, Staffordshire, for a Trentham Hybrid Melon.

THE SECOND CERTIFICATE.

1. To Messrs. Veitch, F.H.S., for Rhododendron catawbiense album grandiflorum.
2. To Mr Constantine, Gardener to C. Mills, Esq., of Hillingdon, for Nerii Figs.
3. To Mr. Munro, Gardener to the Earl of Clarendon, for two Hybrid Melons.

SPLENDID NEW HYBRID FUCHSIA
"FUCHSIA DOMINIANA."

MESSRS. VEITCH & SON, of Exeter and Chelsea, can now supply good well-established plants of this really fine Fuchsia. Price 10*s.* 6*d.* each, with one over when three are taken. The merit of raising this beautiful plant is due to Mr. Dominy, the Foreman of the Plant Department at the Exeter Nursery; it consequently bears his name as a memento of his zeal and ability in the performance of his duties. It is a seedling between Serratifolia multiflora and spectabilis, having the fine free growth of the former and the splendid flowers of the latter.

It was exhibited at the National Floricultural Society's Meeting, October 6, 1853, and had a Certificate of Merit awarded it. It was also exhibited at the London Horticultural Society's Meeting, on the 18th of the same month, and was again similarly rewarded.—Exeter and Chelsea Nurseries, June 10.

NEW FANCY PELARGONIUMS.

WM. BARNES, Camden Nursery, Camberwell, begs to announce to his Friends and the Public, that he has purchased the Stock of the following first-rate Fancy Pelargoniums from Mr. W. P. Ayres, and being such as Mr. Ayres has proved to be improvements upon existing varieties, W. B. has much pleasure in recommending them to his friends.

*** The usual discount to the trade.

BOUQUET PARFAIT (Ayres).—A perfect bouquet, of dwarf and very compact habit, and a most profuse bloomer. Colour soft bright rosy lilac, with white centre, and distinct margin of clean white. Height, 12 to 18 inches; size medium; form exquisite. 21*s.*

CRAMOISIE SUPERIEURE (Ayres).—A Cape cross, with deeply laciniated foliage, of a very distinct character. Colour brilliant scarlet crimson of most intense cast; lower petals a little lighter. Habit dwarf and compact; size medium; form very good. A very distinct variety. 15*s.*

DIADEM (Ayres).—A light variety of very desirable quality. Habit dwarf, compact, and of very free growth. Colour, upper petals rich purplish plum, with broad margin of white; lower petals white, slightly pencilled; size large; form excellent. 21*s.*

EUPHROSINE (Ayres).—An improvement upon Beauty of Blackheath, and of free and robust growth. Colour, upper petals soft rosy crimson margined with white; lower petals white, distinctly spotted with crimson; size medium, form excellent. 21*s.*

KATHLEEN MAVOURNEEN (Ayres).—It is sufficient to say this is an improvement upon Formosissimum (one of the only two fancy Geraniums which ever took a first-class prize as a seedling). Colour, scarlet crimson, slightly pencilled with lilac in the upper petals; lower petals a broad belt of the same colour and distinctly margined with clear white. Size large, form first-rate. An excellent grower. 21*s.*

VICTRIX (Ayres).—This is considered by Mr. Turner and equally competent judges as an improvement upon Celestial, and it has certainly the most perfect lower petal of any Geranium in cultivation, but is a little deficient in the top petals. Colour soft lilac rose; size, extra large; habit, free and strong; form nearly perfect. 21*s.*

W. B. would beg to observe that strong plants of the above are now ready for delivery, and most of the kinds may be seen in bloom at his nursery.—Camberwell, June 10.

ARTHUR HENDERSON AND CO. take the earliest opportunity of informing their friends and the public, that their CATALOGUES No. 3 and No. 6 are now ready and can be had, post free, upon application.

No. 3 contains descriptive lists of Geraniums, Verbenas, Fuchsias, Calceolarias, Cinerarias, Chrysanthemums, &c., amongst which will be found all the best novelties of the season, also the choicest selections from former years.

No. 6 contains descriptive lists of all the newest and best Stove, Greenhouse, and Hardy plants, amongst which will be found many new and desirable plants.

The following new plants are now on sale:

SEEDLING GLOXINIAS.

ELEANOR.—Ground colour pure white, blotched with rose, and shaded with purple.
ELEGANTISSIMA.—Ground colour French white, of great substance, centre pale lavender, spotted with buff.
EUGENIE.—Ground colour rosy pink, centre creamy white, spotted with rose.
EXQUISITE—Ground colour pure white, with broad belt of puce, throat creamy white, spotted with puce.
MAGNET.—Ground colour clear rose, with blotch of purple in the throat, flowers large, of fine form.
PRINCE OF WALES.—Ground colour white, shading off to lavender.
SIR C. NAPIER.—Ground colour deep rosy crimson, throat blotched with intense rose, dwarf habit.

The above seven Gloxinias will all be found to be fine varieties, with large well-formed flowers standing well up above the foliage. 7*s.* 6*d.* each, or 42*s.* the set.

CINERARIA EVA.—Ground colour pure white, with narrow margin of purple, dark disc, fine form and substance; received a Certificate at the National Floricultural Society. 10*s.* 6*d.*

GERANIUMS.

DIADEMATUM REGINA.—Ground colour deep shining rose, upper petals veined with dark purple and white, with blotch of bright orange crimson; very dwarf habit, and abundant bloomer; a fine variety for bedding. 7*s.* 6*d.*

DIADEMATUM SIDONIUM MULTIFLORUM.—Lower petals rosy purple, shaded with crimson; upper petals orange crimson, veined with dark maroon; trusses large, habit dwarf and compact, abundant bloomer; a fine variety for bedding. 10*s.* 6*d.*

PRINCESS.—Ground colour blush white, veined and shaded with carmine, dark horse-shoe foliage, large globular-shaped trusses, and most abundant bloomer. 7*s.* 6*d.*

CETERACH MARANTA (syn. Nothoclena maranta).—A new hardy Fern from the Alps of Switzerland; fronds bipinnate, about 8 inches in length, densely coated with golden brown scales on the under side. 15*s.*

Pine-apple Place, London, June 10.

TO AMATEUR FLORISTS, GARDENERS, ETC.

H. COLES & CO. beg to inform Floriculturists, &c., that their celebrated POT MANURE, which has given general satisfaction for so many years, may be obtained of all the principal Seedsmen and Druggists in town and country in packages, at 20*s.*, 10*s.*, 5*s.*, 2*s.* 6*d.*, 1*s.*, and 6*d.* each. For Amateur, Rose, Fuchsia, and Chrysanthemum Growers, it will be found one of the best Fertilisers yet introduced; also their CONCENTRATED ANIMAL MANURE, prepared by a different process for Agricultural purposes, at 6*l.* 10*s.* per ton, which will be found infinitely superior to many other Artificial Manures.

Depôt, Albert Wharf, 10, Wilton Road, Pimlico.

BETHAM & BLACKITH, GENERAL TRANSIT AGENTS, according to annual custom, as the season is approaching for the importation of Dutch Bulbs and Plants, again have the pleasure of offering their services, and of assuring their friends that all packages consigned to their care will be forwarded to their destination without delay, and at very moderate charges.

Agents:—in Rotterdam, Mr. J. A. HOUWENS; Ostend, Messrs. R. ST. AMOUR et fils; New York, Mr. G. G. SHEPPARD, 187, Water Street.

Cox's Quay, Lower Thames Street, London, June 10.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

Priced lists of plant tubs and boxes forwarded on application.

NEW AND BEAUTIFUL PLANTS.

MESSRS. VEITCH & SON,

OF EXETER, AND THE EXOTIC NURSERY, CHELSEA,

HAVE much pleasure and confidence in offering the following novelties. Never, perhaps, have they had the opportunity of presenting at one time so many really VALUABLE and STERLING PLANTS as they do on this occasion, believing them all to be Plants that will give general satisfaction, and tend to increase that confidence and support which have so long and so liberally been bestowed upon them.

The Plants are well established; and all Orders will be executed in the rotation in which they are received.

WELLINGTONIA GIGANTEA.

Ample description of this noble tree having lately appeared in the *Gardeners' Chronicle*, the *Times*, the *Illustrated London News*, Curtis's *Botanical Magazine*, the *Florist*, and other publications, it is only necessary now to say that it is a perfectly hardy Coniferous tree, of immense dimensions and great beauty.

Fine established seedling plants are now ready to send out on the following terms:—

One plant, 2 guineas	Eight plants, 10 guineas
Four do., 6 „	Twelve do., 12 „

DESFONTAINIA SPINOSA.

A fine hardy evergreen flowering shrub, with glossy Holly-like foliage, introduced from the Andes of Patagonia by Mr. W. Lobb, *who discovered it in the region of snow.*

It produces beautiful tubular-shaped blossoms, often 2 inches in length, and of a rich scarlet colour tipped with yellow. (See figure in Curtis's Bot. Magazine for May, 1854.)

This plant having been fully exposed in the open ground during the three last winters may, consequently, be declared to *be perfectly hardy.*

It will certainly be a great acquisition.

Fine established plants, in three sizes, 21*s*., 42*s*., and 63*s*. each.

One over on three to the trade.

CERATOSTEMA LONGIFLORUM.

(Fig. in Curtis's Bot. Mag. for April, 1854.)

A beautiful dwarf evergreen Greenhouse Shrub, introduced through Mr. W. Lobb, from the Andes of Peru.

It bears bunches of large tubular-shaped flowers, of a rich orange scarlet colour, of a stout waxy texture, and which are of great duration.

It was exhibited at Chiswick in July 1853, and obtained the first prize for new and rare plants.

Good established plants, of two sizes, 21*s*. and 31*s*. 6*d*. each.

One over on three to the trade.

LOMATIA FERRUGINEA.

This fine Evergreen Shrub was found in Chiloe and Patagonia by Mr. W. Lobb.

It attains a height of from 6 to 8 feet, and is remarkable for its beautiful Fern-like foliage.

As a fine-leaved Conservatory Plant it is perhaps without a rival, and no collection of fine foliaged plants should be without it.

It has but to be seen to be admired.

Fine established plants of two sizes, 31*s*. 6*d*. and 42*s*. each.

One over on three to the trade.

EUGENIA, OR MYRTUS UGNI.

(Figured in Curtis's "Botanical Magazine" for Jan., 1852.)

This very interesting evergreen flowering shrub was obtained from Patagonia through Mr. W. Lobb.

It has stood several winters in the open ground without shelter, producing its delightfully fragrant flowers in July, succeeded by Strawberry-flavoured berries, eaten in Chili as dessert.

It is a plant of easy culture, and blooming freely in a small state, is well adapted for growing in pots.

Strong blooming plants in 48-sized pots, 21*s*. each.
Second-sized do., in 60-sized pots, 15*s*. each.

One over on three to the trade.

IMPATIENS JERDONIÆ.

This beautiful new Balsam is figured in "The Florist" of January last, and is certainly one of the most interesting of recent introductions.

It is of a dwarf neat habit, of easy cultivation, requiring the temperature of a warm greenhouse or stove, and an abundant bloomer, continuing in flower at least three months.

The flowers are in colour bright red and yellow. It was exhibited in the Hort. Soc. rooms, 21, Regent Street, on the 18th October last, and had the highest prize for new plants awarded.

This is a lovely little plant.

Fine Established Plants ... ... 10*s*. 6*d*. each.
A few extra-sized do. ... ... 21*s*. „

One over on three to the trade.

HEXACENTRIS LUTEA.

A fine Stove Climber, introduced from the Neilgherry Hills, of easy culture, and great beauty.

It produces its flowers in abundance, on elegant pendulous racemes, of from 15 to 18 inches in length, of a clear bright yellow, unmixed with any other colour.

The effect produced when seen drooping from the roof of the conservatory or a trellis is most striking.

It was exhibited at Chiswick on the 13th May last, and obtained the Silver Banksian Medal.

Strong Established Plants ... ... 21*s*. 0*d*. each.
Second sized „ ... ... 10*s*. 6*d*. „

One over on three to the Trade.

VERONICA VARIEGATA.

This lovely hybrid Veronica was raised by J. Anderson, Esq., of Maryfield, Edinburgh, between V. Andersoni and V. salicifolia.

In character it is intermediate between the two parents, having a bushy compact habit, and small glossy foliage.

It is an abundant bloomer.

The racemes of flowers on first appearing are a clear bright pink, and gradually shade off to a pure white, producing a very pretty and striking effect.

It is really a most useful and attractive plant.

It was exhibited at Chiswick in July, 1853, and was awarded a Medal and greatly admired.

Fine bushy plants, 10*s*. 6*d*. each. Three for 21*s*., to the Trade.

AZALEA INDICA.

Striata formosissima (Taylor).

This beautiful new Azalea is now offered for the first time. It is a seedling raised by Mr. Taylor, gardener to J. Coster, Esq., of Streatham. It is a pure white, flaked and spotted with light purple, fine form, good substance, and first-rate habit.

It was exhibited at the National Floricultural Society, on the 16th June, 1853, and received a Certificate of Merit.

It was also exhibited at the June exhibitions of the Royal Botanical Society, Regent's Park, and the Horticultural Society, at Chiswick, on both which occasions it received prizes.

Worked plants are now ready at 21*s*. each. One over on three to the Trade.

MESSRS. VEITCH & SON can also supply the following good and popular Plants:—

Abies bracteata (seedlings)... ... ... 63*s*. each.
Aphelandra Leopoldi ... ... 21*s*. „
Azalea indica, Beauté de l'Europe ... 3*s*. 6*d*. to 21*s*. each.
Begonia Thwaitsi ... ... 10*s*. 6*d*. „
Camellia, Countess of Orkney ... ... 21*s*. „
„ Storyii ... ... 10*s*. 6*d*. „
Hoya fraterna ... ... 10*s*. 6*d*. to 21*s*. each.
Ixora Lobbi ... ... 10*s*. 6*d*. to 21*s*. „
Lilium giganteum ... ... 21*s*., 42*s*., 63*s*. „
Philesia buxifolia ... ... 21*s*. each.
Rhododendron jasminiflorum ... ... 21*s*. to 63*s*. each.
Rhodoleia Championi ... ... 7*s*. 6*d*. to 21*s*. „
Streptocarpus biflorus ... ... 3*s*. 6*d*. „

Detailed Lists are now preparing, and will be forwarded on application.

NURSERIES, EXETER AND CHELSEA.—June 10, 1854.

LIST OF PRESENT PRICES FOR CHOICE FRUITS FORWARDED POST FREE.—Apply to GEORGE TAYLOR, JUN., FRUIT SALESMAN, St. John's Market, Liverpool, *Purchaser and Contractor for Choice Produce. Payment nett cash on receipt of goods.*

BEDDING PLANTS, &c.—ALL IN POTS, STRONG AND FINE.

The price per 100 for quantities not less than 50.
100 Verbenas, in 30 choice vars., 24*s*.; 3*s*. 6*d*. per doz.
20 „ of 20 best new vars. of 1853, 20*s*.
100 Petunias, in 25 choice vars., 28*s*.; 4*s*. per doz.
10 „ of 10 best new vars. 1853, 10*s*.
100 Fuchsias, in 50 choice vars., 32*s*.; 4*s*. to 6*s*. per doz.
15 „ of 15 best new vars. of 1853, 25*s*.
100 Anagallis, best blue and scarlet, 2 vars., 28*s*.; 4*s*. per doz.
100 Heliotropes, 28*s*.; 4*s*. per dozen.
100 „ in 8 fine vars., 40*s*.; 6*s*. per doz.
100 Chrysanthemums, in 100 choice vars., of large flowering and Pompone sorts, 5*s*. to 7*s*. 6*d*. per doz.
10 „ best new large-flowering vars. of 1853, 10*s*.
21 „ best new Pompone vars. of 1853, 20*s*.; 12 for 12*s*.
100 Dahlias, in 50 choice show vars., 35*s*.; 5*s*. to 9*s*. per doz.
100 „ in 30 choice fancy vars., 35*s*.; 5*s*. to 9*s*. per doz.
12 „ best new show vars. of 1853, 21*s*.
10 „ best new fancy of 1853, 18*s*.
100 Herbaceous Plants, in 100 fine and showy vars., 30*s*.
10 „ „ in 10 ditto, including new vars., 50*s*.
25 Rock Plants, in 25 fine vars., 12*s*.
24 Dwarf Rock Cistus, in 24 splendid vars., 15*s*.
50 Phlox, in 50 choice hardy vars., 25*s*.; 6*s*. to 9*s*. per doz.
6 „ of 6 fine new vars. of 1853, 12*s*.
24 Geraniums, in 24 choice show vars., 16*s*.; 12 for 9*s*.
30 „ in 30 choice newer vars., 45*s*.; 12 for 18*s*.
12 „ of 12 best new of last season, 44*s*
20 „ FANCY, in 20 choice vars., 14*s*.; 12 for 9*s*.
12 „ „ in 12 choice newer vars., 18*s*.
6 „ „ of best new of last season, 18*s*.

Extensive Collections of Stove and Greenhouse Plants. Complete Catalogues free by post for 6 penny stamps

☞ GOODS CARRIAGE FREE (not under 20*s*.) to all the London termini, and all stations on the London and Norwich and Colchester Line. Plants added gratis with orders 40*s*. and upwards.

BASS & BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

THOMAS PERKINS, Horticultural Buildings, Atherstone, Warwickshire, has for sale BEDDING PLANTS at 1*s*. per dozen:—GERANIUMS, Scarlet, of sorts; ditto, Horse-shoe-leaved; ditto, Manglesi. HELIOTROPES, of sorts, with many other Bedding Plants.

The Gardeners' Chronicle.

SATURDAY, JUNE 10, 1854.

WHEN foreigners look at the great exhibitions of the HORTICULTURAL SOCIETY, one invariable question now is, "Where are your bad growers?" It surprises them to find that perfect cultivation, which is the exception with them, is the universal rule here; and we trust that they return to their native country with a salutary distaste for the sticks and leaves and dreary flowers which make up many a continental *exposition*. How this has been brought about among ourselves it is needless to enquire. That sturdy determination to overcome obstacles which is the happiest part of our national character, and which carries us safely through the shoals of a strange social and political system, is no doubt at the bottom of our success in gardening. But we may be permitted to add that the determination has been elicited by the steady perseverance of the Fellows of the Horticultural Society to reward merit wherever it could be found. For the last 40 years their funds, their knowledge, and their influence have been unremittingly directed to that great object; all the available talent of the country has been called in aid; engineers, architects, chemists, geologists, botanists, physiologists, natural philosophers, have each contributed their share, and the grand result is that of which a sample may be seen on any of the three great annual exhibitions at Chiswick. Were the Horticultural Society to be suddenly swallowed up in some great catastrophe of nature, it would have left behind it traces which no time will obliterate. Other institutions of recent existence are doubtless contributing their help, but they only came into the field when the great work was well nigh accomplished.

The report of last Saturday's meeting, to be found in another column, entirely justifies all that is now asserted. The old experienced gardeners who have been present at these meetings from the beginning, will feel the justice of our observations; for they must look back with wonder from what plants are to what they were. Not that there was much novelty—nor would that have any bearing upon our case; for we speak of good management, not of fortunate importations. It would have been a novelty, indeed, had the plants been badly grown, but of that small risk exists. Those who are now incapable of managing plants well are too wise to display their defects in public.

Where all was good it is difficult, if not invidious, to single out particular cases for comment. We therefore abstain from criticism, and limit ourselves to the remark that fruit was displayed in most admirable condition and in abundance. So evident, indeed, is it that this part of the exhibition is rising rapidly, under the new regulations, into an importance before unknown, that we cannot but contemplate the possibility of more accommodation being required, and a greater extension being given to the system. On Saturday, one-third of all the medals awarded were granted for fruit, two of which were gold, of the respective values of 7*l*. and 5*l*. each, and were admirably won by Mr. FLEMING, gardener to the Duke of SUTHERLAND, and Mr. TEGG, gardener to Mr. ARTHUR PRYOR, of Wandsworth. The only new varieties that attracted our attention were a Cashmere Melon from Trentham, of singular excellence, and a beautiful new Strawberry, called the Scarlet Nonpareil, as good as it was handsome, produced by Mr. PATTERSON, between KEENS' Seedling and the British Queen. Unlike the ruddy Sir CHARLES NAPIER, shown in May, and found upon trial to be worthless, it received the universal commendation of all who tasted it. We may take this opportunity of expressing our surprise that a respectable fruiterer should have permitted the dish of tasteless fruit bearing the name of Sir CHARLES NAPIER, actually scouted by the judges last May, to be placed in his window, with a card upon them, declaring that they had received a medal.

The next meeting of the Society, on the 8th of July, will, no doubt, present a still more imposing display of fruit, and will, we trust, be held on a warmer day than June 3d, which reminded visitors of March rather than of Midsummer.

SOME years ago the ROYAL GARDENS had fallen into a state of helpless inutility. The forcing and kitchen gardens were a dead weight upon the Lord Steward's department; half-a-dozen of them, maintained at vast cost, were unable to supply the Royal table so well as that of a country gentleman is supplied; and had it not been for Covent Garden, KING WILLIAM must have been sometimes contented with Potatoes and Cabbages for dinner and supplies of grocery for dessert. As to the Royal Botanic Garden at Kew, it was so secluded from the public eye that no impertinent visitor was likely to expose its miserable plight to a ruthless press. The Royal Gardens were so many snuggeries in which a man might slumber away his life without the risk of troublesome questions. Their present parallel is to be found in the Royal Forests.

At last matters become so bad that enquiry was unavoidable. High officers of state became disgusted, and it was resolved to ascertain why the Sovereign of England should not be at least as well supplied as her subjects. The enquiry was not delegated to a Parliamentary Committee, but to three persons, whose practical knowledge could not be questioned, and whose character placed them beyond influence, either from above or below. The gentlemen entrusted with this duty were instructed to inspect the establishments in the presence of the gardeners in charge; they were furnished with ample evidence as to what the gardens had supplied for several previous years; and they received power to examine minutely, in any manner they thought necessary, into every detail relating to past management. They made their report, and their recommendations were carried into execution.

We shall not say what their report was. It is enough to state that in the kitchen and forcing department one active excellent gardener was selected from those in the Royal service to manage a new establishment, expressly created in lieu of the old and worn-out places ordered to be abolished; and that in the Royal Botanic Garden at Kew the Director was relieved from his charge. The result is seen at Frogmore, one of the best managed and

most productive gardens in Europe; and at Kew, which has become by far the most important and popular scientific establishment of its kind in the world.

We have before us Sir WM. HOOKER's last report on Kew Gardens, dated April 5, 1854. It tells us that the visitors have increased from 9174 in 1841 (he might have said from 0, or some undiscoverable number in 1831) to 331,210 in 1853; and he points with just pride to the Museum there, almost the work of his own hands, compared with which the botanical part of the British Museum is contemptible. "In less than seven years from its foundation a collection is formed, at almost no expense to the country, mainly from donations, such as no other country possesses, and such, we may truly say, as no other country has attempted to form, notwithstanding its manifest advantages to a great commercial nation." The Director also announces the donation to the Museum of the Books and Herbarium of the late Dr. BROMFIELD, and the far more important collection formed by Mr. BENTHAM, a noble gift, for it is the second herbarium in this country, and one of the finest in existence. Such are among the early results of a system of management of which all must approve; and at what cost is this effected? It will be found from the Estimates that all which Kew asks for this year is 11,000*l*., less than two-thirds of what the St. James's, Green, and Hyde Parks require. And this, we presume, includes the cost of Botanical lectures, which it is in the contemplation of the chief commissioner to have delivered during the summer.

Lectures explanatory of the application to practical purposes of the vast riches gathered together at Kew, were all that remained to render the establishment a perfect machine for public instruction. If, as we take for granted, these are to be entrusted to Dr. HOOKER, we know enough to be certain that they will not only add much to the value and popularity of Kew Gardens, but greatly raise the establishment in the eyes of the scientific world.

Such is a rapid sketch of the result of a fair inquiry into notorious abuses, when entrusted to independent, resolute, and competent men. Might not similar advantages be derived from such an examination into the Royal Forests?

Among the estimates in the paper before us are the following, which relate to gardens or parks, viz.:

Royal Botanical Gardens, Edinburgh, for the cost of enlarging the present Palm House ...	£6000
Kensington Gardens	2280
Regent's Park	6248
Victoria Park	3369
Kennington Common	753
Richmond Park	5246
Bushy ditto	1967
Hampton Court ditto	4125
Holyrood ditto	871
Phoenix ditto	4507

WE had the pleasure lately of inspecting a very beautiful series of drawings by Mr. FORRESTER, the author of the OLIVEIRA prize essay on Portugal, illustrative of the present state of the Vine, with a view to show whether the plants themselves were deeply affected by the disease, or whether there is reason to believe that the malady is external. As far as the drawings go, and such specimens as we have seen—for we have not had an opportunity of inspecting all the materials—there is not the least reason to believe that the stocks are diseased to such an extent as to make the endurance of the vineyards themselves precarious. In a few cases only the ducts were filled with brown matter so characteristic of phænogams attacked by fungi, but in every such case the evil was distinctly traceable to some old wound, and not to any general depraved state of the plant. In every case the roots were perfectly healthy and in a normal condition.

One or two points connected with the Grape mildew are remarkable, as observed by Mr. FORRESTER, to whom we are indebted for the information. The first is the comparatively large number of seeds which come to perfection in the diseased Grapes. Where one or two only are found in healthy Grapes, as many as five occur in the very same variety where they are diseased. It is scarcely probable that more ovules are impregnated in the one case than in the other; it is more likely that in healthy berries some of the seeds become abortive in consequence of the greater comparative development of the pulp. The increased number of seeds will of course have a tendency to reduce the produce.

Another peculiarity is that the produce is, in equal measures, deficient in body and strength, a consequence perhaps the less surprising when it is considered that the parasite lives at the expense of the sap at the very point where it undergoes those modifications which are most essential for the due perfection of every part of the plant.

A fourth peculiarity is the small deposit of argol or crude tartar, which during fermentation forms a white or red crust on the sides of the casks. As this is bought up greedily by agents from Liverpool, the deficiency was in some cases fraudulently supplied by an artificial imitation, which was the more deceptive because it was dried on old staves, that it might have the proper curved form of the true argol.

What, however, is far more startling is, that though the wines are deficient in strength and body, they are far more forward than those of ordinary growth. It is well known, indeed, that the phenomena of fermentation are connected in great measure with the development of fungi, and it is very curious to find this singular precocity equally connected with their presence, and this, not as regards any especial readiness, so far as we have learnt, to enter into a state of fermentation in the first instance, but with reference to that less palpable but continuous fermentation by which wines attain their full maturity.

We trust that Mr. FORRESTER will continue his curious and active researches, for much remains to be discovered in these matters, and it is from persons on the spot, who have facilities for entering into numerous vineyards and examining even the most favourite Vines, which others would not be allowed to disturb, and who at the same time have powers of observation, and capabilities of registering and designing what they see, that we can look for any general results. Mr. FORRESTER has already done much good service by collecting information, and endeavouring to lead the manufacturers back to the older processes—a consummation greatly to be wished by all who prefer the stronger wines of Portugal to those of France and Germany; and he is far too enthusiastic in the matter to rest contented till he has gained all possible information, and effected all that he sees practicable. *M. J. B.*

VEGETABLE PATHOLOGY.—No. XXIII.

102. When the leaves have fulfilled their functions, decay naturally takes place, and wherever the leaf-stalk is articulated with the stem, the leaf at a certain stage falls off, leaving a scar upon the stem, which is frequently marked with little dots, the indications of so many fascicles of vascular tissue which entered into the footstalk.

103. The fall of the leaf does not, however, in every case take place merely in consequence of the death of the lamina. Where the leaf has not attained its full growth, or has not performed all its functions, if the nutriment on which it depended for support be suddenly cut off, the dry leaf will for a long time remain upon the stem. In some plants, on the contrary, as in Heaths, the leaves separate with peculiar facility from the stem, so that it is very difficult to preserve specimens for the herbarium, and analogous phenomena are exhibited by the peduncles of some Grass. Holcus mollis and lanatus, for instance, are at once known from each other by the comparative facility with which the peduncles separate from the stem when it receives a smart blow.

104. If the tissue by which the petiole is united to the bark were perfectly continuous, or, in other words, if it underwent no modifications in passing from the one into the other, whether at an earlier or later stage of growth, it is clear that there would be no tendency to fall at a particular point. This, however, is not the case. In some instances, as in *Dracæna reflexa* (Schacht Pflanzenzelle, p. 424), a layer of cork-cells is developed at the base of the leaf, leaving merely apertures for the penetration of the vascular bundles, insomuch that the immediate connection between the parenchym of the leaf and that of the bark is interrupted, rendering all further interchange of juice impossible, and this is probably the case in many other instances. At least the scars of stems are often covered with a layer of cork-cells. The same observations apply to the separation of the stems of ripe fruit. The separation, or disarticulation, is, however, often carried further than is at first apparent. If the base from which the stalk of a Pear, for instance, is separated, especially where it has been developed from a terminal blossom, be examined in the following spring, a further disarticulation will be found to take place at every point where a bract was seated. In the case of terminal fruit, the disorganization evidently takes place from the scar left by the abortive peduncles, nor is there any peculiar arrangement of the pith in this, as in some other instances, corresponding with the line of fracture. In some cases the decay is not arrested by the living tissue beneath, but passes down into the stem, causing, as we have often observed in Apples, genuine canker, a fact which indicates the necessity in trees of more than usual value or interest, of carefully cutting out in the autumn, or early spring, the very smallest portion of decayed matter still adhering to the tree.

105. It has been shown experimentally by Knight, that in some cases the absorption of moisture by the leaves is so great as to overcome the upward action through the vascular bundles, and to carry unelaborated sap downwards, and to this he is inclined to attribute the growth of Wheat mildew, which is notoriously prevalent when a damp and cold atmosphere succeeds warm and bright weather, the soil meanwhile being too dry to transmit much moisture upwards. However true the facts may be, it must be remembered that such parasites originate in very various parts of the plant, and that even in the same plant, the parasite may affect different organs. This is evidently the case with Wheat mildew, which is as common on the leaves as on the stem, and by no means originates uniformly in the vascular bundles, while bunt, whose normal situation is in the central tissue of the seeds, is occasionally developed in the stem. *M. J. B.*

IXORA SALICIFOLIA.

THIS species is perhaps the most delicate of the genus; it can seldom be grown to the size of a fine specimen, except it is grafted on some of the stronger kinds.

When I began to cultivate this Ixora I procured a young plant with six good shoots on it, and imagining that it would be difficult to produce a useful-sized specimen quickly, I determined to graft it. I chose a strong healthy young plant of I. coccinea; I. javanica, however, being a more vigorous grower, would be preferable; but at that time it was too scarce to be used for such a purpose. I cut down the stock to within 3 inches of the pot, and I cut up the grafts, using the stronger part of each for fixing on the stock, and the points for cuttings. After grafting I covered with a bell-glass, and plunged in a brisk bottom-heat of about 90°; the only attention it received afterwards, until a union was effected and active growth had commenced, was giving water at the root when it was needed; but as the grafting was performed in February, very little moisture was required. When I perceived that the grafts had united, I untied them, to allow of their swelling regularly, and merely tied them lightly with soft matting to prevent their being accidentally broken off. The bell-glass was then removed, and the plant was kept in bottom-heat, affording it also a warm moist atmosphere; for, like all Ixoras, it delights in plenty of warmth and moisture. Under this treatment it flowered the following June, and, encouraged by my success, I determined to produce a specimen fit for exhibition; and in order to do this as speedily as possible, I cut in, early in February, a large plant of I. coccinea, merely pruning back the shoots to a convenient position for grafting; and having plenty of grafts, these were used unsparingly, placing three or even six on a shoot of the stock, so as to ensure having a well formed specimen for flowering at once. This was plunged in bottom-heat, covering it with hand-glasses with moveable tops, so as to be able to enclose the plant and allow it sufficient space. In about a month, the grafts having taken, with scarcely a failure, the hand-glasses were cleared away, the ties loosened, and the plant exposed to the ordinary treatment of the inmates of the house. The grafts grew away freely, and by the end of June the plant was fit to take a place in a winning collection of 20 plants.

It should, however, be stated that this variety requires a stronger heat to do it well than any of the other Ixoras; and unless this can be afforded, it is impossible to secure active growth. But by grafting on a strong growing variety, as I. javanica, in the manner detailed above, and affording it a brisk moist heat during the growing season, it may be very readily induced to form a fine specimen. The plant exhibited the other day at Regent's Park was grafted in February, 1852, and, with proper convenience, a good large plant for a stock, and plenty of firm pieces for grafts, it is quite an easy matter to graft a plant and show it, in first-rate condition, the same season; when once grafted, with proper management, it will last for many years, but in the case of a plant being grown on for several seasons, the same care that is necessary for the other varieties in ripening the wood, keeping cool, and giving little water at the root in winter, must be practised with this one. And it will also be necessary to cut in the shoots sufficiently to keep the specimen in form, which should be done just before starting it into growth. *Alpha.*

THE RAIN GAUGE AND HYGROMETER.

IN reference to the stringent article which appeared in your columns of the 22d April, demonstrating the fallacy of the information afforded by the rain-gauge, I am induced to offer a few suggestions which may possibly throw some light on this important question.

The error demonstrated by Mr. Lawes in the present instrument cannot, it is conceived, be referable to condensation, since the proportional amount of condensing surface increases with the decreased size of the gauge; but if a sketch of the apparatus be made it will be seen that much of the rain driven by a high wind must rebound out of the instrument, instead of glancing downwards. This error in construction I made apparent to the Ordnance authorities in 1852, and in consequence a 10-inch cubical box has been adopted in its stead. The gauge I have put up here, and which appears to answer every purpose, is made of zinc 10 inches square, 8 inches deep, with a sloping bottom 2 inches deep, terminating in a tube; it has a flap attached to each side, to facilitate its being mounted on a pole. I have placed it at the back of the shed in which I keep my other meteorological apparatus, and a gutta percha tube conducts the water from the gauge to a bottle. The cost of making by a coppersmith here, was 2*s*. 6*d*., and found it I have

every morning unerring information of the state of my land, so far as regards rain. I have not tested it against any other apparatus, but it indicates the amount of dews.

If, then, the information afforded by the present rain gauge demands so severe an immolation, what is to be said of that derived from the hygrometer? The faults of the one may be estimated, and an allowance made for them, but those of the other are for ever concealed. On reference to the *Times* of last winter, during the period of the hard frost, it will be observed that the "amount of evaporation" was "frozen," whilst the actual evaporation of the "frozen" water or ice, was greater than that before the frost; and it is a well established fact that in Canada and at the North Pole during winter, evaporation, or the drying of clothes, is as rapid as it is in this country under the influence of a summer's sun. The hygrometer tells us that the amount of evaporation last year was less than in the preceding years, but the following figures, as determined by the balance, shows that the evaporation of water was actually in excess of the three preceding years.

	1850.		1851.		1852.		1853.
Grains.	92,140	...	92,075	...	92,080	...	100,680

And what may appear incredible, but is nevertheless a fact, is that in May, with an average temperature of 56°, the evaporation was 19,225 grains; whilst in June, with a temperature of 62°, it was only 11,895 grains, although there fell in May 122 ounces of rain on every 100 square inches, and in June only 107. *Franklin Coxworthy, Author of "Electrical Condition," Maresfield, Sussex.*

Home Correspondence.

The Winter at Oulton Park, Cheshire.—Lat. 53° 10′ N., long. 2° 30′ W.; soil, a sandy loam. Thermometer, Dec. 29th, 1853, at 8 A.M., 11° Fahr.; Dec. 30th, at the same hour, 39° Fahr.; January 2d, 1854, at 8 A.M., 27° Fahr.; Jan. 3d, at the same hour, 7½° Fahr. I. PLANTS KILLED.—Cupressus Goveniana, Uhdeana, funebris; torulosa, five plants killed, three injured, three untouched; Pinus halepensis, Arbutus Andrachne, Ilex latifolia and opaca, Quercus gramuntia, Erica mediterranea, Phillyrea latifolia, Bamboo, common Gorse, all tender Roses. II. KILLED DOWN.—Laurustinus, Bay, Arbutus Unedo, Colletia horrida, Berberis Fortuni, Buxus balearica, Passiflora cærulea, Swainsonia galegifolia, Jasminum Nepalense, Abies Brunoniana. III. INJURED.—Hybrid Rhododendrons, Piptanthus Nepalensis, Ilex Perado, Quercus palustris, Branti, Pinus Llaveana, radiata, insignis, patula, Cupressus sempervirens, macrocarpa (slightly), Taxodium sempervirens, Biota orientalis, Cryptomeria japonica (slightly). *E.*

Wellingtonia.—The following is an extract of a letter from my son (mining engineer and surveyor), dated Jamestown, Tuolumne county, Alta California, July 10, 1853:—"Last Saturday I went along with one of my partners to see the 'Big Tree,' discovered in Calaveras county near the head waters of the Stanislaus river. We crossed the river near Carson's Hill, where the richest pockets in quartz yet discovered in California have been found. From Carson's Hill we went on to Murphy's Camp, where we got horses, and after a three hours' ride over a tolerably good trail, ascending pretty rapidly towards the base of the Sierra Nevada, at first through woods chiefly of Oak and Pine (Spruce), and afterwards of immense Pines, Fir, Arbor-vitæ, and Cedar, we reached a closely-wooded bottom, where the trees were more luxuriant than I have seen in any other region, with a good deal of under-brush, through which we had to force our way, and in this swamp we found the Wellingtonia, whose dimensions are as follows:—Diameter at the ground, 34 feet; diameter 20 feet up, 20 feet; diameter about 120 feet up, 14 feet; height, 290 feet; age estimated at nearly 3000 years. I do not think, however, that it is so old, as I find there is on an average about 15 annual rings in the cross section of its wood near the root to the inch; and taking the tree above the swell of the root at 10 feet to the centre, that is 120 inches, at 15 years to the inch, gives only 1800 years. They are now cutting the tree down, and should it be perfectly solid to the centre, the exact age will soon be ascertained. In all climates which have a decided summer and winter, so as greatly to vary the activity of vegetation, the wood deposit of each year, viewed in the cross section, presents a distinct ring. In the same swamp there are many other trees of nearly the same diameter. I stepped round several, 30 yards in circumference, while one which had fallen has a hollow inside fit to stable 50 horses. This gigantic Methusalem forest of the olden time seems to have extended back into periods anterior to any but geological record. The whole surface of the ground is strewed with immense trunks, or their remains, in every stage of decay, in many instances covered with vegetation, so as to look like green earthen mounds—the mural vestiges of ancient camps—and only by cutting into them are they found to be rotten wood. The other trees of the swamp consist of one species of Balsam Fir, two species of Pine, from 3 to 7 feet in diameter, and from 250 to 300 feet high; and two species allied to the Cedar, of nearly the same diameter as the Pines, but not so tall. Amongst the underwood are Hazel, Raspberries, Currant, Gooseberry, Dogwood, Poplar, and Willow, with a number of others which we do not have in Europe, one of them the Rhus Toxidendron or Poison Vine, poisonous to touch. The bark, for about 100 feet, has been removed from the 'Big Tree,' for the purpose of putting it up in its natural figure at the World's Fair, New York, along with a section of the butt. There has been much talk here of the Goth-like act of cutting down the tree, the largest and oldest in the world, as the Californians boast. It would have been a pity to do so, were there no others like it; but many in the same swamp are nearly of the same dimensions, and I see it reported in the Stockton papers that one found on the head waters of the Moquelumne, in the same county, is 40 feet in diameter." *P. Matthew, Gourdie Hill, Errol, N. B.*

The Winter in Nottinghamshire.—The following is the condition of evergreens at Ossington, Notts, 10 miles north of Newark, three miles from the banks of the Trent, on a clay soil, and on an elevation generally at 40 feet above the water. The thermometer, Jan. 3, 1854, was down to zero, perhaps something below it. Now (June 4) common Laurel in many places cut and injured in old strong plants; Portugal Laurel the same. Common Holly cut, and the leaves turned brown; old strong trees looking brown and sickly. Double Gorse, killed. Deodara, the lower boughs severely cut, some of the boughs killed; the leaves have quite fallen off. Some Deodara plants do not appear to have suffered. Araucaria, the lower boughs turned brown; some quite killed. It seems odd that the last year's shoots at the end of the boughs in many cases have kept their fresh green colour, and have not been injured, while the leaves on the wood two and three years old are turned very brown. Chinese Privet killed. The common Ilex, old strong trees, 30 feet high, have suffered a good deal; many of their branches dead; the leaves quite brown. Arbutus, much cut; old plants 40 or 50 years old, that I do not remember ever to have seen hurt before. Laurustinus, killed to the ground generally; one or two plants injured, but not killed, and are throwing out fresh leaves and shoots. Ilex latifolia, turned brown in the leaves. Bay, killed to the ground. Taxodium sempervirens, turned very brown, but not killed. Cupressus macrocarpa: In the case of six fine plants, the leading shoot killed in every one, perhaps a foot or 18 inches down. Some injured, having parts struck and killed; no plant wholly killed. Cupressus Uhdeana, severely hurt; C. Goveniana, killed. Evergreens not injured at Ossington: common Yew, Golden Yew, Irish Yew, Cupressus sinensis, Cryptomeria, Pinus insignis, Douglasi, nobilis, excelsa, Lindleyana, Russelliana, Cembra. The injury to the Hollies is partial. Variegated, Golden Hollies, and many of the common Hollies, not at all injured. *J. E. D.*

Nidularia fulgens.—I observed at Chiswick, on Saturday last, a new plant, which has been thus named. The name would certainly be appropriate, but the persons bestowing it can hardly have been aware that there already exists a genus Nidularia, one of the most curious and interesting in the tribe of fungi. It would, therefore, be advisable that the name should be changed at once, before the new plant becomes generally distributed. *Cryptogam, June 7.*

Melons.—In growing these, I have a pit which is filled up with stable dung, over which I place about 5 inches of soil. When the heat is declining, I put a plant at each end of the lights, permitting only three Vines to grow from each plant; when these are about 2½ feet long, I stop them, which causes them to push laterals. I now wait until three or four flowers are open in one day, and then I fertilise. If one is fertilised three or four days before the others, it will take the lead, and it is useless to attempt setting any afterwards, for the fruit turns yellow and dies off. Of course as soon as I stop the Vines I keep the pits as dry as possible, until I have four Melons on each plant swelled to the size of a hen's egg; I have thus, at least, eight Melons under each light. I take advantage of all sunny days to ripen the fruit, such as giving no more air than just what will keep the plants from flagging. I should attribute your correspondent's failure (see p. 342) to his keeping his pits too warm, and permitting his Vines to grow too long before they were stopped. I sowed my seeds the last week in February, and I have now Melons as large as they will be, with no other heat at my command than that of sunny days. I omitted to say that as soon as my Melons are swelled to the size of an egg, I give the plants a good watering, provided there is an appearance of fine weather. On some of my plants I have six and seven Melons, which, owing to the roots penetrating the manure, will ripen in perfection. *Cymro Clayton.*

Ephemeral Flowers.—I lately reported to you the case of the night-flowering Cereus. On Thursday I nipped off about half the style of the first flower produced by Hemerocallis flava. The anthers were already dry, having discharged their dust. The flower reopened in good condition on the Friday and the Saturday; but on the third day its colour was darker, with a slight orange tinge, and about 3 or 4 P.M. exhibited signs of contraction, showing that it could not make its fourth appearance. I am anxious to see what H. fulva will do; for, being a barren plant, its sexual relations may not be precisely the same. If Cistus Ladaniferus is now anywhere surviving in England, the owners of it will do well to apply this experiment to its blossoms. *A. H.*

Glass Walls and Orchard-houses.—The extraordinary amount of damage sustained by all kinds of fruit trees in the open air this season will, of course, be the most powerful argument ever brought forward in favour of glass walls and orchard-houses. I think it might be highly advantageous if those who possess glass walls would state the result of their experience as regards their power of resisting frost, as I hope we shall never have such another opportunity of testing their value. I think the question will resolve itself into one of orchard-houses *versus* glass-walls; and should the latter be found wanting, it might save much useless expenditure. I have been led to make the above request by the fact of two orchard-houses in this neighbourhood being crowded with fruit, while the blooms, and even fruit and shoots, are involved in common ruin in a glass wall. *J. Laurence, Farnham Castle.*

Vine Mildew.—As this blight is now evidently appearing again in various localities, a word or two as to the best syringe for the application of liquid remedies in certain cases may be useful. Unquestionably the best syringe, where force is required, is the rose of the ordinary garden engine; but in the case of Grape mildew being present, it may not (after the first general syringing) be requisite to syringe the foliage so frequently as the fruit, as it sometimes happens that blight will make its appearance again upon the latter, while the foliage remains clean and free from it, owing, probably, to the remains of mildew among the bunches (especially if the fruit be clustered) being beyond the reach of any application, in which case it will be almost sure to manifest itself again during the season, and can only be kept under by an effective wash, which it is desirable to apply with as much force as we can obtain; for this purpose nothing is certainly so good as the hose of an engine, but I find in practice that for syringing the bunches only, it is preferable to stop up all the apertures except one in the centre, from which a fine but very sufficient stream is obtained, which can easily be directed upon any particular bunch, and of such force that upon striking the fruit the liquid (which is much economised in this way) is well scattered among the berries; but I would earnestly advise cultivators to remember the old saying, that prevention is at all times better than cure, particularly with respect to the Grape blight, which, if allowed to run on unchecked for any length of time, forms such a dense and compact coating upon the fruit that it is next to impossible to remove it entirely. I feel quite satisfied, however, that, as a preventive, M'Adam's wash will prove invaluable, if applied occasionally, and that it will readily destroy the fungus, if used in the earlier stages of the disease. In my own vineries, to which I referred in a former communication, the blight has now quite disappeared under treatment with this remedy, and I shall have pleasure in forwarding a specimen of the fruit when ripe, that you may observe how decided has been its usefulness. *Devoniensis.*

Effects of the Winter and the Frost on the Nights of the 23d and 24th April, at Badger Hall, near Shiffnal, Shropshire.—On the west side of the house Araucaria imbricata has been much injured, and several small plants are dead; but on the east side a fine plant, 10 feet high, has escaped with very little damage. Taxodium sempervirens, on the western exposure, is much injured; all the foliage is dead, though a few buds are bursting forth at the present time. On the east side a fine plant, 17 feet high, and other smaller ones, are comparatively uninjured, the foliage being only a little browned. Juniperus tetragona is dead; J. chinensis, J. excelsa, J. Bedfordiana, and J. squamata, uninjured. Cupressus thurifera, 23 feet 6 ins. high; C. macrocarpa, 16 ft. high; and C. torulosa, of various sizes, are dead. Glyptostrobus pendulus is uninjured. Arbutus Unedo, A. coccinea, A. Andrachne, are killed to the ground everywhere. A. hybrida, A. Milleri, and A. Unedo salicifolia, are dead. A. procera, in quite as exposed a situation, is alive, and was growing freely, but the young shoots were nipped by the frosts in April. Berberis Knighti has been killed to the ground on the west side, but has escaped unhurt on the east. B. fascicularis is cut down; B. Darwini is injured, and B. trifoliata and B. macrophylla are killed to the ground; B. Lycium, B. glumacea, growing near a wall and protected by Laurels, are uninjured; B. asiatica is killed everywhere. Aralia japonica has only the points of the shoots killed on the west side, but on the east side it is killed to the ground; Daphne pontica and D. japonica rubra are injured; and D. variegata is killed; Cotoneaster microphylla is injured; Laurus Sassafras is uninjured; L. nobilis is killed to the ground everywhere; Viburnum Tinus, Ulex hibernicus, and double-flowering Furze, are killed to the ground everywhere; U. europæus has been killed to the ground in many places. Spiræa Lindleyana is killed to the ground, and Gum Cistus is killed everywhere; Colletia horrida, killed to the sawdust that was put round it to protect it from the frost, is now putting forth shoots; Leycesteria formosa is killed to the ground, also Ribes malvaceum; one very large specimen of Quercus Ilex, 32 feet 6 inches high, 54 feet diameter of branches, and the trunk 7 feet in circumference at 3 feet from the ground, is injured very much. Of several other large trees of Q. Ilex and its varieties, the foliage has entirely fallen off, but a few green buds are now bursting forth; Q. Lucombeana is also putting forth buds; Q. coccifera, a small plant, escaped unhurt; Q. mongolica is uninjured; Q. laurifolia, Q. Ilex latifolia, Q. palustris, are dead to the ground. On a wall with an eastern aspect Thea viridis (Tea plant) was killed to the ground, but is now putting forth one bud. Euonymus japonicus, E. j. aureus, E. j. argenteus, and E. fimbriatus; Ceanothus rigidus, C. papillosus, C. dentatus, C. integerrimus, C. divaricatus, and C. azureus, are killed to the ground. Lardizabala biternata and Stauntonia latifolia were cut down, but are now pushing from the roots. Escallonia macrantha and E. rubra are killed to the ground, and the double white Pomegranate is injured. On the same wall the following were not hurt:—Jasminum nudiflorum, Deutzia gracilis (the latter is in full bloom at the present time), Forsythia viridissima and

Magnolia macrophylla; the Grevillea rosmarinifolia is killed. The following plants are injured, though sheltered by the wall on the west, and on the north by buildings and trees, and on the east by shrubs:—Cerasus Caroliniana and ilicifolia, Cleyera japonica, Photinia dentata and glabra, Broussonetia papyrifera, and the common and variegated Alaternus. The Fabiana imbricata is dead. Pinus insignis, 10 feet high, and P. Montezumæ are dead. On a south wall, a fine plant of Magnolia grandiflora, 10 feet high, by 27 wide, is to all appearance dead; but M. obtusifolia is not more injured than in ordinary winters; M. purpurea is in full flower. The Fig trees are all killed to the ground, although matted up with straw before the frost set in; they are now sending forth shoots from the root. In a small nursery (in the kitchen garden), surrounded on three sides by a Hornbeam hedge, the Yucca-like Dracæna indivisa was cut down to the ground; but it is now throwing up a shoot from underneath the surface. Abies Brunoniana, Thuja flagelliformis, and a fine plant of T. aurea, escaped unhurt, as did also a small plant of Cedrus argentea. In a shrubbery exposed to the east winds, the Deodar lost all its foliage, and some of the lower branches are dead; but on a sandy bank, where it was more sheltered, it escaped uninjured. The handsome Dielytra spectabilis has lived out three winters; it was in full bloom in April, but the flowers were browned by the late frosts. Gunnera scabra was also injured in April. The plant that suffered most from the frost of the 24th April was a fine specimen of Pterocarya caucasica, whose young shoots of several inches in length were quite killed, and it has not begun to put out buds as yet; the Garrya elliptica was browned everywhere, and some branches killed, but it is now putting out buds; Phormium tenax was cut to the ground, but is now sending up strong leaves; Ilex latifolia is a good deal injured, but some of the buds look prominent, and I think there is a probability of its shooting out from the main stem; Cryptomeria japonica, 18 feet high, escaped unhurt, and is now growing freely. Quantities of the common Laurels have been cut off to the ground, and a great many branches continue to wither and die at the present time; some of the common Hollies have lost all their leaves and are much injured. It may be as well to remark that on the night of the 2d and 3d January, the thermometer was down to 1° above zero Fahrenheit. On the morning of the 24th April, the quicksilver stood at 24° above zero (8° of frost), and the ice was quite thick on the fountain in the flower garden. The soil here is sandy, and the situation has been found favourable for semi-hardy plants. *George Cooke, Badger Hall.*

Societies.

HORTICULTURAL: GARDEN EXHIBITION, *June 3.*—The more prominent features of this brilliant midsummer display of flowers and fruits were the following.

In collections of 20 STOVE and GREENHOUSE PLANTS, the first Large Gold Medal was again awarded to Mr. Green, gr. to Sir E. Antrobus, Bart., for the following, viz.:—

Acrophyllum venosum	Franciscea confertiflora
Aphelexis macrantha	Gardenia Fortuni
,, purpurea	Gompholobium grandiflorum
Azalea præstantissima	Ixora crocata
,, carnea	Leschenaultia formosa
Dillwynia ericifolia	Polygala cordifolia
Dracophyllum gracile	,, Dalmaisiana
Erica Cavendishi	Pimelea Hendersoni
,, depressa	Rondeletia speciosa
Franciscea acuminata	Vinca rosea

Among the above the Polygalas were most conspicuous, being both extremely well grown plants, and finely flowered; of the two, however, Dalmaisiana was certainly the handsomest, the white spots which the flowers possess giving them both life and beauty. The Rondeletia is one of the best specimens of the kind in the country; it was nearly 4 feet in height, bushy and beautifully flowered. Azalea præstantissima, in the form of a spreading cone, was extremely effective, being still loaded with flowers. On the Fortune Gardenia there was still a good sprinkling of its white waxy blossoms; but the height of their beauty was evidently over, as was also that of the flowers of Franciscea confertiflora, which is one of the best and most useful of the genus. The Leschenaultia was a magnificent specimen, being quite 3 feet in diameter and beautifully flowered. The Ixora was not seen to advantage, being scarcely sufficiently in bloom; but when well flowered this species is almost as striking as the scarlet kind.

Mr. Dods, gr. to Sir J. Cathcart, Bart., of Cooper's Hill, Englefield Green, was second. His plants were:

Aphelexis macrantha	Epacris miniata
,, speciosa	Gompholobium polymorphum
Azalea decora	Leschenaultia formosa
,, Gledstanesi	,, biloba
Bossiæa disticha plumosa	Polygala acuminata
Boronia serrulata	,, cordifolia
,, pinnata	Pimelea mirabilis
Coleonema pulchrum	,, hispida
Erica Cavendishi	Vinca alba
,, depressa	,, rosea

These plants were nicely arranged as regards colour, and they were mostly well grown and flowered. The Cavendish Heath was one of the best specimens of the kind we have seen, and there was also an excellent Erica depressa, which was, however, insufficiently in flower. The blue Leschenaultia was much admired for its charming colour, and nothing could possibly be handsomer than the Azalea decora, which was just in perfection. The Pimelea hispida was not sufficiently in blossom. The Everlastings were just at their best, and when found in this condition, with their flowers fully expanded, few plants are more ornamental. The Gompholobium was in the form of a round bush, supported by a few slight stakes, and managed in this way it looks much more handsome than when trained stifly on a trellis.

Mr. Barter, who was third, sent—

Aphelexis macrantha	Erica coccinea minor
Azalea præstans	,, Cavendishi
Boronia pinnata	Gardenia florida
Chorozema Henchmanni	Ixora coccinea
,, Lawrenceanum	Leschenaultia biloba
Clerodendron squamatum	Pimelea mirabilis
Cyrtoceras reflexum	Polygala acuminata
Dipladenia cras-inoda	,, Dalmaisiana
Eriostemon buxifolium	Stephanotis floribunda
Epacris miniata	Vinca rosea

Of these the Stephanotis was a fine plant, well covered with buds and expanded blossoms. The yellow Erica Cavendishi was large and unwieldy, but well bloomed, as was also the other species of Cape Heaths. The Gardenia florida was not so fully in flower as could have been wished, but its deep green leaves set off what blooms were on it to much advantage. The Azalea was still in excellent condition, and very effective—the glowing purplish red flowers with which it was furnished being unusually large and beautiful.

Messrs. Fraser, of Lea Bridge, produced:—

Azalea variegata	Dracophyllum gracile
,, magniflora	Epacris grandiflora
Allamanda cathartica	Erica vent. perspicuoides
Aphelexis purpurea	Eriostemon buxifolium
,, humilis	Leschenaultia intermedia
Boronia serrulata	Pimelea Nieppergiana
,, pinnata	Polygala cordifolia
Chorozema Henchmanni	,, acuminata
,, varium	Stephanotis floribunda
Clerodendron splendens	Vinca alba

The Allamanda cathartica here was well flowered, luxuriant, and handsome, its branches not having been tied in so closely as to make it formal, a fault unfortunately too common in the management of plants of this kind. The Aphelexis was covered with large well-coloured flowers, which opened freely. The Leschenaultia was also beautifully in bloom, and the blossoms were unusually brilliant. The Azaleas were likewise very effective, but the flowers of the Stephanotis, and one or two other plants, were not expanded sufficiently to render them so striking as they otherwise would have been. Pimelea Nieppergiana is a beautiful white-flowered kind, not so robust as P. spectabilis, and, therefore, much better suited for persons of limited accommodation.

In collections of 15 STOVE and GREENHOUSE PLANTS, the first prize was awarded to Mr. Carson, gr. to W. F. G. Farmer, Esq., for:—

Adenandra fragrans	Erica Cavendishi
Aphelexis macrantha	Franciscea latifolia
,, humilis	Ixora crocata
Allamanda grandiflora	Leschenaultia formosa
,, cathartica	Pimelea Hendersoni
Azalea lateritia	Polygala Dalmaisiana
,, variegata	,, cordifolia
Clerodendron splendens	

The Allamanda grandiflora was a well grown plant, with five flowers on it. The Leschenaultia was a beautiful specimen of the kind. The clean appearance and neat habit of Adenandra fragrans must ever render it a favourite, even when out of bloom; but when well flowered, as this was, it then becomes truly charming. Of the Azaleas we have spoken favourably before, and we can only now state that they were still in as good condition as when we first saw them. The Clerodendron was a fine plant, but not out enough.

Mr. Gillham, who was second, sent—

Allamanda Schotti	Ixora coccinea
,, neriifolia	Pimelea Hendersoni
Azalea Prima Donna	Polygala cordifolia
,, variegata	Rhynchospermum jasminoides
Clerodendron fallax	Statice Holfordi
Dipladenia crassinoda	Stephanotis floribunda
Erica ventricosa breviflora	Vinca rosea
,, Cavendishi	

The most conspicuous among these was the Jasmine-like Rhynchospermum, which was a large plant, and well flowered. The Allamanda was also well flowered, as was the Holford Statice, which, like its near relation macrophylla, remains a very long time in perfection. The Dipladenia, like those in other collections, was not sufficiently advanced in bloom; in July these charming plants may be expected to be seen in much better condition. The Stephanotis was a noble specimen, and very finely in flower.

Mr. Speed, of Edmonton, produced—

Adenandra fragrans	Erica Cavendishi
Aphelexis humilis	Leschenaultia formosa
Azalea lateritia	Pimelea Nieppergiana
Boronia pinnata	Polygala Dalmaisiana
Cyrtoceras reflexum	Stephanotis floribunda
Coleonema pulchrum	Ditto ditto
Dipladenia crassinoda	Vinca rosea
Erica Westphalingia	

The Cavendish Heath, in this group, was a vigorous young plant, finely flowered, and permitted to follow its natural habit of growth, with very little interference in the way of tying or staking. Of the two plants of Stephanotis one was better than the other; but both should not have been shown in the same collection. Erica Westphalingia was finely flowered, but the blossoms, being badly coloured, made little display. The Azaleas were good, as were also the Vinca and Leschenaultia.

From Mr. Rhodes came—

Aphelexis spectabilis	Epacris grandiflora
Azalea variegata	Leschenaultia formosa
,, rosea elegans	Pimelea linifolia
Boronia spathulata	Polygala Dalmaisiana
Cyrtoceras reflexum	Stephanotis floribunda
Dracophyllum gracile	Tetratheca verticillata
Erica Bergiana	Vinca alba
,, Alberti	

The Albert Heath in this group attracted universal attention, on account of the warm buff colour of its blossoms, which were thickly set on a fine specimen. The Boronia spathulata was also a beautiful example of this not very showy species.

Mr. Hamp, gr. to J. Thorne, Esq., Maubey House, South Lambeth, produced—

Allamanda grandiflora	Eriostemon neriifolium
Aphelexis rupestris	Franciscea latifolia
Azalea formosa	,, angusta
,, rosea elegans	Ixora javanica
Boronia serrulata	Pimelea Nieppergiana
Dracophyllum gracile	,, mirabilis
Erica mutabilis	Tetratheca verticillata
,, Cavendishi	

In the Class of 6 STOVE and GREENHOUSE PLANTS, in pots or tubs not less than 20 inches in diameter, there were two exhibitors, Mr. Over and Mr. Peed, both producing fine specimens, among which were noble plants of Everlastings, Pimeleas, Chorozemas, Boronias, Azaleas, and Heaths. A plant of Erica Bergiana, from Mr. Peed, was especially remarkable for its size and beauty, being literally loaded with multitudes of small round purple blossoms.

Groups of 6 plants in 13-inch pots came from Messrs. Taylor, Pamplin, Roser, Over, and Jarvis. Among these we remarked Everlastings, Polygalas, Azaleas, Pimeleas, Leschenaultias, Boronias, Dipladenias, Heaths, Epacrises, Coleonemas, Hoyas, Tetrathecas, Ixoras, Leptospermum bullatum, with white Hawthorn-like flowers, and the yellow Hibbertia Cunninghami.

EVERLASTINGS were exhibited by Messrs. Fraser and Taylor. The varieties consisted of Aphelexis macrantha purpurea, m. rosea, humilis, spectabilis, s. grandiflora, rupestris, purpurea grandiflora, sesamoides, and speciosissima. Among the best is macrantha purpurea, a deep purple kind, and said to be more easily managed than some of the less handsome sorts.

ORCHIDS.—Nothing could possibly be more brilliant than these were on Saturday last, the various collections exhibited being numerous, fresh, and well varied. In groups of 20 plants, Mr. Williams, gr. to C. B. Warner, Esq., received the highest award for—

Aerides (variety of) affine	Dendrobium Dalhousianum
,, crispum	Oncidium ampliatum
,, crispum var. Warneri	Phaius grandifolius
,, odoratum	Phalænopsis grandiflora
Calanthe bicolor	,, amabilis
,, veratrifolia	Saccolabium præmorsum
Cattleya Mossiæ	,, guttatum
Cypripedium Lowi	Trichopilia suavis
,, barbatum	Vanda suavis
Dendrobium nobile	,, tricolor

Of these the two-coloured Calanthe was a good specimen of a plant that is seldom seen; but which, when well grown and flowered, as this was, is far from being unhandsome, and might be introduced into any collection with advantage. The large leaved Phaius had eight spikes of flowers, all of them most beautifully coloured and in the greatest possible perfection. In fact, this was unquestionably the most striking plant of the group. The sweet Trichopil was furnished with eight of its white, rosy-spotted, trumpet-shaped flowers; and the spotted Saccolabe was a charming plant. Among Aerides there was a large flowered pale variety of affine, which promises to be an acquisition, and a variety of A. crispum named Warneri, very distinct and beautiful. The Cypripedium Lowi had two of its singular flowers in beautiful condition.

The next group in point of merit was furnished by Mr. Woolley, gr. to H. B. Ker, Esq., and contained:

Aerides crispum	Dendrobium Devonianum
,, virens	Epidendrum crassifolium
,, odoratum	Oncidium Lanceanum
Barkeria spectabilis	,, leucochilum
Cattleya intermedia	,, ampliatum majus
,, Mossiæ	Phalænopsis grandiflora
,, Skinneri	Sarcopodium Lobbi
Chysis bractescens	Saccolabium guttatum
Dendrobium formosum	Sobralia macrantha
,, nobile	Vanda tricolor

The delicate pink Cattleya intermedia, with its deep purple-tipped lip, was a beautiful example of one of the finest of Cattleyas, and the large flowered Oncidium ampliatum was also a good specimen of its kind. The same excellent Barkeria spectabilis, which had been shown on former occasions, was again produced in beautiful condition; as were the White Butterfly plant (Phalænopsis), Dendrobium nobile, and the Moss Cattleya. Cattleya Skinneri, resplendent with crimson, was the best flowered specimen we ever saw.

Of groups of 10 ORCHIDS there were several. The best came from Mr. Clarke, gr. to Mrs. Webb, of Hoddesdon. This consisted of—

Aerides crispum	Oncidium luridum
,, virens	,, ampliatum
,, maculosum	,, altissimum
Cattleya Mossiæ	Phalænopsis grandiflora
Dendrobium clavatum	Saccolabium guttatum

The two Oncids were beautifully flowered, more especially ampliatum, which, when found in this condition, is very showy, and few Orchids remain longer in beauty than this does. The Phalænopsis was also a fine example of that most useful plant. Dendrobium clavatum was much admired for its rich yellow blossoms, whose beauty we need not say is greatly enhanced by the dark spot which they possess. The Aerides and Saccolabe were also charming plants.

Mr. Carson, who was second, sent:—

Aerides odoratum	Dendrobium nobile
,, affine	Epidendrum longipetalum
,, Larpentæ	Odontoglossum hastatum
Cattleya Mossiæ	Oncidium Lanceanum
Cypripedium barbatum	Phalænopsis grandiflora

The graceful yet half wild beauty of some of the plants of this group, with their long slender flower stems, left free and unconstrained, was its great distinguishing

feature. Of this class were Epidendrum longipetalum, Odontoglossum hastatum, and the Phalænopsis. Of these the first named plant, though in perfection for many weeks past, was still fresh and beautiful.

Mr. Dods, gr. to Sir J. Cathcart, Bart., sent—

Aerides crispum	Stanhopea oculata
" virens	" tigrina
Anguloa Ruckeri	Saccolabium guttatum
Cœlogyne Lowi	Maxillaria aromatica
Dendrobium nobile	Phalænopsis grandiflora

Among these the most remarkable were the Stanhopeas, which were fine plants, and beautifully flowered. The Anguloa Ruckeri had three fine blooms on it. The blossoms of the Dendrobium nobile were very highly coloured, rendering it unusually attractive.

Mr. Green, gr. to Sir E. Antrobus, Bart., produced—

Aerides odoratum	Dendrobium nobile
" crispum	Epidendrum macrochilum
Brassia maculata	Oncidium roseum
Calanthe veratrifolia	" Lanceanum
Cattleya Mossiæ	" divaricatum

Aerides crispum was a strong plant and well flowered, as was also Cattleya Mossiæ, and the warm, rich, small orange-brown flowers of Oncidium divaricatum were much admired.

Mr. Summerfield and Mr. Jarvis also each contributed 10 plants, among which the most conspicuous were Phalænopsis grandiflora, Cattleya Mossiæ, the yellow-flowered Acineta Barkeri, the canary-coloured Peristeria cerina, Acropera Loddigesi, and a small plant of Cypripedium spectabile.

In collections of 15 ORCHIDS Messrs. Veitch showed :

Aerides affine	Dendrobium nobile
" odoratum	Epidendrum vitellinum
Anguloa Ruckeri	Oncidium ampliatum
Cattleya superba	Phalænopsis grandiflora
" Mossiæ	Sobralia macrantha
" Aclandiæ	Sarcopodium Lobbi
Cypripedium barbatum	Vanda Batemanni
Dendrobium Devonianum	

When viewed from a distance the most striking plant in this group was the Sobralia, which was furnished with upwards of a dozen large purple blossoms. The Moss Cattleya was also a noble plant, and equally well flowered. The Devonshire Dendrobe was in a basket sufficiently elevated to allow its spikes of charming flowers to hang down, and, treated in this way, it produced a really fine effect. The Bateman Vanda was not far enough advanced in bloom. The buff-coloured Sarcopodium attracted attention, on account of its singular form ; and few, perhaps, have seen a better-flowered plant of the Bearded Lady's Slipper than that which this collection contained.

Messrs. Rollisson, who were placed second, had :

Aerides crispum	Dendrobium moschatum
Brassia verrucosa	Oncidium flexuosum
Cattleya Aclandiæ	Odontoglossum nævium
" citrina	Phalænopsis amabilis
" Mossiæ	Saccolabium guttatum
" superba	Stanhopea Bucephalus
Cypripedium caudatum	Sobralia macrantha
Dendrobium nobile	

The singular long-tailed flowers of Cypripedium caudatum commanded a greater share of attention than even the most showy of the Cattleyas, though some of the latter were very fine. The Brassia verrucosa had some 15 flower spikes on it, and the colours of the blossoms being nicely brought out rendered it unusually ornamental. The yellow Cattleya citrina and Odontoglossum nævium were also objects of admiration, the one for the rarity of its colour in the genus to which it belongs, and the other for the curious ragged appearance of its small, spotted, white flowers.

Of AZALEAS, three collections in the shape of nicely flowered small plants were exhibited by Messrs. Jarvis, Taylor, and Roser. Among them we remarked a variety of Gledstanesi called formosa, Juliana, coronata, perfecta elegans, Iveryana, Perryana, lateritia, semi-duplex superba, Magniflora, and magnificent.

Of TALL CACTI in flower there were two collections ; one from Mr. Green, the other from Mr. Gillham. The varieties consisted of Cereus Mallesoni and speciosissimus, Epiphyllum Jenkinsoni, coccineum, multiflorum, rubrum cæruleum, Ackermanni, and Egertoni.

ROSES IN POTS, with the exception of those from Messrs. Lane & Son, were not so good as they were in May. In the first group, fine though they were, there was also evidence of a falling off ; it contained an admirable example of the Tea Rose Adam, with flowers extremely large and fine ; Hybrid Bourbon, Coupe d'Hébé, Chenédolé, and Paul Perras were also in good condition, as were Hybrid Perpetual, Queen, Louis Peronny, Caroline de Sansal, and Duchess of Sutherland. Noisette Miss Glegg is a small, white, free-flowering kind, in the way of Aimée Vibert.—Mr. Francis, who was second, had the beautiful Bourbon Souvenir de la Malmaison, Hybrid Perpetual, Mrs. Elliott, Aubernon, La Reine, Amandine, and Baronne Prevost, and a good plant of the Tea Rose, Elise Sauvage. Hybrid China, Blairi, and Belle Marie were also in fair condition. Among the plants from A. Rowland, Esq., who was first in the amateur's class, none were near so handsome as Paul Ricaut, which is unquestionably one of the best shaped and finest Roses in cultivation. Géant des Batailles was out of character, the flowers being a faded purple instead of deep glowing crimson, or rather scarlet, as they should have been.

CAPE HEATHS were numerous and well flowered, especially those from Messrs. Rollisson, Peed, and Fraser. Smaller plants in good condition were also contributed by Messrs. Taylor, Roser, and Over. Notwithstanding the excellence of all of these, however, they failed, as they always do, to attract that attention which was paid to exhibitions of other kinds of plants. This doubtless arises very much from the sameness which to a great extent pervades all Cape Heaths, not only in colour but also in form ; and until exhibitors turn their attention to varying their collections more in both these particulars, but especially as regards shape, by permitting each variety to follow its natural habit, whereby a diversity of appearance would be produced, they must still expect exhibitions of this kind to fall in public estimation. The specimen of Bergiana from Mr. Peed is an illustration of the kind of growth that is wanted, and let us hope that others may follow so excellent an example.

Admirable VARIEGATED PLANTS, and others remarkable for fine foliage, were contributed by Messrs. Veitch and Rollisson. In addition to the sorts mentioned by us in our report of the May show, there were extremely good examples of the different species of Anæctochilus and Physurus, the red and white veined Marantas, Cheirostylis marmorata, Rhexia chrysophylla, Arum giganteum, Duranta Baumardi, Philodendron pertusum, Tillandsia, Crotons, a fine plant of Cissus discolor, the variegated Pine-apple, Stenorhynchus pictus, the noble looking Rhopala corcovadensis, and other plants of a similarly interesting character, which were much admired for their variety.

Among MISCELLANEOUS SINGLE PLANTS by far the best was the new Nepenthes lanata, from Borneo, from Messrs. Veitch. The same firm also sent a Rhododendron, named Catawbiense album grandiflorum, which had white flowers spotted with pale green in the upper petals, and looked as if it would be hardy. Mr. Gaines had an Azalea something in the way of Exquisita, which appeared as if it would prove an acquisition. A first-class Certificate was awarded it, and a second-class one to Messrs. Veitch's Rhododendron. The last-named firm also showed two Gloxinias, one named mirabilis, the other Leonora Van Houtte, and a Dipladenia very like crassinoda. I. Anderson, Esq., of Edinburgh, had what was called a hybrid Geranium, raised between G. sanguineum and G. anemonefolium, but evidently a mere seedling from the last.

NEW PLANTS consisted of the rare and curious Uropedium Lindeni, and two plants called Nidularia fulgens and Gaultheria pulchra, from Messrs. Rollisson; a woolly white-flowered Hoya, from Messrs. Henderson, of Pine-apple Place ; and the bright golden yellow Leptosiphon aureum, from Messrs. Veitch, a very fine annual. Of others of less importance there were a blue shrubby Lobelia, from Mr. Hamp; a Caladium and Maranta, from Messrs. Osborne ; two sorts of Gompholobium, Billbergia, Duc de Croy, and Didiscus pilosus, from Messrs. Henderson ; a tall plant of Cantua dependens, from Mr. Coe, gr. to Mrs. Fitzgerald ; and Gesnera Donkelaari, from Messrs. E. G. Henderson & Son.

PELARGONIUMS this time were numerous and in excellent order, as they always are at the June show. The first Gold Banksian Medal was awarded to Mr. Turner, of Slough, for a collection of plants skilfully grown and beautifully flowered. Mr. Dobson received the second Gold Banksian Medal also, for a group of well-managed plants ; Mr. Mockett was third, and Mr. Gaines fourth. We have thought it unnecessary to repeat the names of the varieties, as they were so recently fully given in our report of the Royal Botanic Society's exhibition in Regent's Park. In fancy kinds Mr. Turner was also first, his plants being everything that could be desired, both as regards growth and bloom. Mr. Gaines was next, and Messrs. Henderson third ; all of these groups were highly creditable to their respective growers. Of French Pelargoniums Mr. Gaines had a collection which attracted everybody's attention, on account of the novelty and singularity of their appearance, each of the petals in all of the flowers being marked with a dark blotch, and some of them being streaked and shaded in a most interesting way, with various colours. Their names were Jaques Duval, Triomphe de la Sour, Gustave Odier, Madame de Lamoricière, Gloire de Bellevue, and Col. Fossy. Their flowers were certainly not well shaped ; but each truss was so large as to be quite a bouquet in itself, and so striking and showy is their whole appearance that they will, doubtless, speedily become very great favourites.

The exhibition of FRUIT was again extensive, well varied, and excellent. The best collection was furnished by Mr. Fleming, gr. to the Duke of Sutherland, at Trentham. It contained three Cayenne Pine-apples, weighing respectively, 3 lbs. 15¾ oz., 3 lbs. 15½ oz., and 3 lbs. 5 oz. ; two Trentham Hybrid Melons, and a Cashmere Melon of great excellence ; May Duke Cherries, large and good Grosse Mignonne, and Royal George Peaches ; Elruge Nectarines, excellent Black Hamburgh Grapes, and very fine Old Pine Strawberries. Mr. Tegg, gr. to A. Pryor, Esq., of Wandsworth, had the next best collection, in which were Royal George Peaches, Hunt's Tawney and Elruge Nectarines, Black Hamburgh Grapes, large both in berry and bunch, Brown Turkey Figs, and three King's Green-fleshed Melons. The next collection in point of merit came from Mr. Patterson, gr. to the Baroness Wenman, Thame Park, Oxon. It consisted of very good Black Hamburgh Grapes, Noblesse Peaches, large and fine ; May Duke Cherries, and a dish of a seedling Strawberry called Patterson's Scarlet Nonpareil, which was pronounced by the judges to be one of the best flavoured of the large-fruited kinds. It was stated to have been raised between Keens' Seedling and the British Queen.

Mr. Clements, of Oak Hill, East Barnet, sent a Providence Pine, weighing 7 lbs. 7 oz. ; two Antigua Pines, two Black Jamaicas, and a dish of Black Hamburgh Grapes. From Mr. Hill, gr. to R. Sneyd, Esq., Keel Hall, Staffordshire, came Black Prince and Black Hamburgh Grapes, all of them fine bunches, and beautifully coloured ; also Royal George Peaches, and Elruge Nectarines. Mr. Ivison, gr. to the Duke of Northumberland, at Syon House, sent four Vines in pots, each couple (a black and a white fruited sort) being fastened together in the form of an arch, the fine clusters of fruit hanging down from which had a capital effect. The pots were neatly mossed, and the exhibition, altogether, did equal credit to Mr. Ivison's taste and his skill as a cultivator. The kinds were Black Hamburgh and White Muscadine, both well fruited, and the black bunches extremely well coloured. The same exhibitor also had 6 pots of Keens' Seedling Strawberry, and a dish of Brown Turkey Figs. Mr. Henderson, gr. to Sir G. Beaumont, Bart., and Mr. Hamp, gr. to J. Thorne, Esq., also had collections of fruit. Mr. Turnbull, gr. to the Duke of Marlborough, at Blenheim, produced a Providence Pine-apple, weighing 8 lbs. 11¼ oz. ; a Cayenne, 3 lbs. 1 oz. ; an Enville, 3 lbs. 10 oz., and a Sierra Leone Pine, of 3 lbs. 15 oz. ; likewise Black Hamburgh and Muscat Grapes, the latter finely grown ; British Queen and Keens' Seedling Strawberries. Mr. Stanley, gr. to J. J. Blandy, Esq., of Reading, sent three compact equally-swelled bunches of Sweetwater Grapes. Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall, Kent, produced bunches of Black Hamburgh of great excellence. Mr. Lushy, gr. to J. Hill, Esq., of Streatham, also had an exhibition of Black Hamburgh, and another of Black Prince Grapes, both of which did him much credit. A beautiful basketful of Black Hamburghs likewise came from Mr. Mitchell, of Brighton ; and Mr. Martin, gr. to Sir H. Fleetwood, Bart., had dishes of the same variety of Grape, together with Black Prince and Black Frontignan. From Mr. Dods, gr. to Sir J. Cathcart, Bart., came Black Hamburgh. Mr. Chapman, gr. to J. B. Glegg, Esq., had a Providence Pine, weighing 8 lbs. 5 oz. ; and a Black Jamaica, 3 lbs. 9 oz. From Mr. Robinson, gr. to Lord Boston, came four Providence Pines weighing respectively 6 lbs. 15 oz., 5 lbs. 7 oz., 5 lbs. 6 oz., and 5 lbs. 4 oz. Mr. Taylor, gr. to H. Ingram, Esq., of Temple Newsam, near Leeds, sent a beautifully shaped and well ripened Black Prince Pine, weighing 6 lbs. 13 oz. Mr. Jones, gr. to Lady Charlotte Guest, also showed Pine-apples. Mr. Ferguson, of Stowe, sent a very fine dish of May Duke Cherries, which were stated to have been ripened in a span-roofed house without fire-heat. Messrs. Lane had also some small Cherry trees in pots, loaded with fruit, which had been ripened under similar circumstances. Mr. Bailey, Shardeloes Gardens, Bucks, sent a Providence Pine weighing 7 lbs., a Lemon Queen 4 lbs., a dish of Strawberries, and a green-fleshed Melon. From Mr. Judd, gr. to Earl Spencer, came well ripened Brown Ischia Figs, and some very good Brown Turkey Figs came from Mr. Baily, of Nuneham. Mr. Constantine, of Hillingdon, sent Nerii Figs, large and fine for that sort, also Black Hamburgh and Black Prince Grapes, a Queen Pine-apple, Royal George Peaches, and four dishes of Strawberries, consisting of British Queen, Kitley's Goliath, Prince of Wales, and Trollope's Victoria. Mr. Sparrow, of Moor Park, Herts, showed some highly coloured and very good Elruge Nectarines. Mr. Smith, of Twickenham, furnished British Queen Strawberries, both gathered and in pots, and a dish of Keens' Seedlings. Mr. Toy, gr. to W. Lyon, Esq., had some excellent examples of the British Queen.

The best MELONS, next to the Cashmere one in Mr. Fleming's collection of fruit, were a Bromham Hall, from Mr. Young, gr. to Lord Barrington ; a Trentham Hybrid, from Mr. Carpenter, gr. to Sir F. Scott, Bart. ; and a Hybrid Green-fleshed, from Mr. Munro, gr. to the Earl of Clarendon.

Of foreign fruit, Mr. Lewis Solomon, of Covent Garden, placed upon the table a basket of fine Pomme d'Api and white Calville Apples. The regulations did not permit of competition on the part of fruiterers.

Notices of Books.

The Chemistry of Common Life, by J. F. W. Johnston, M.A. (Blackwood). No. 4, *The Beverages we Infuse*; No. 5, *The Sweets we Extract* ; No. 6, *The Liquors we Ferment*, are, in every respect, as excellent as the earlier numbers previously noticed in our columns.

The Natural History and Habits of the Salmon, by Andrew Young (Longman)—fcp. 8vo ; pp. 108—is a good account of salmon spawning, and contains an interesting chapter on salmon laws, to the badness of which, as actually enforced, the author in a great measure attributes the decline in value of our fisheries.

Part II. of the *Micrographic Dictionary* has appeared (see p. 323), and we regard it as a decided improvement upon its predecessor. It has no woodcuts, and we hope the succeeding numbers will also be without them. Woodcuts are excellent for delineating large objects, or diagrams explanatory of ideas, but they are unsuitable for the representation of delicate microscopical facts. The introductory matter relating to the management of the microscope and the preparation of objects is an excellent treatise, and is finished in this number.

The Old Printer and the Modern Press, by Charles Knight (Murray). Fcp. 8vo ; pp. 314.—The first part of this interesting and instructive little volume consists of the biography of our great printer Caxton, and an account of the means of obtaining and diffusing knowledge before the complete establishment of the press. The second part "embraces a very broad view of the

progress of the press to our own day, especially in relation to the important subject of cheap popular literature." The thorough acquaintance of Mr. Knight with all matters relating to the modern book trade have enabled him to draw up an outline of its actual state, which all interested in the progress of society would do well to peruse. The remarks on international copyright, the readers in the United States, and the influences of the best books, are especially deserving of attention. The two parts together give as popular and interesting a history of printing and its effects as can well be desired.

New Plants.

66. CLERODENDRON BUNGEI. *Steudel. Van Houtte, Fl. des Serres, t.* 863 ; *aliàs* C. fœtidum *Bunge, &c.*

This plant, as exhibited at a late meeting of the Horticultural Society, would appear to be undeserving notice among cultivators ; for it was presented in the form of a half-starved, long-legged shrub, with one shoot terminated by a little corymb of dull rose-coloured flowers of no beauty. If, however, we can trust a figure of it published in the *Flore des Serres*, it must be remarkably handsome, for its leaves are represented as more than 6 inches long, almost as broad, dark green, with rich crimson veins on the under side ; and the flowers are made to form a corymb nearly 7 inches in diameter, composed of rich rose-coloured corollas an inch across, with violet anthers. It is also stated to be *perfectly hardy* in Belgium.

We must add, in justice to Mr. Van Houtte, that if our wild specimens, gathered by Mr. Fortune in the North of China, are the same as C. Bungei, as we believe, then they corroborate the exactness of his plate as to magnitude and form ; of colour we have not the means of judging. In Paris, M. Decaisne, in speaking of a Chinese C. fœtidum (*Rev. Hort.*, 1851, p. 405), compares the leaves in size to those of Paulownia imperialis, and confirms the hardiness of his plant in Paris. It appears, however, that M. Decaisne regards the Paris plant, which he now calls *C. Lindleyi*, as distinct from that of Belgium, to which the name of C. Bungei is applied.

FLORICULTURE.

RIPENING HOLLYHOCK SEED.— At the great Hollyhock and Carnation Show, which took place at Glasgow in August last, 12 magnificent spikes of Hollyhocks were exhibited by the Messrs. Paul, of Cheshunt. Of these, when the show was over, I had nine spikes, which were immediately put in water, and placed on a table, so as to continue the gratification of viewing them as long as they would remain fresh. After ten days, however, they began to assume the sere and yellow leaf, and hence they were removed, and laid on a heap of cut short Grass, in which there was a considerable heat. I did not think more of them until a few days afterwards, when, passing the heap, I observed seed pods forming on them ; I then removed them, cut a small portion of the lower end off each spike, and placed them in wet sand under glass, for about four weeks, when I considered the seed to have been ripened ; I then took them out of the sand, and laid them carefully aside to dry for a few days ; I afterwards removed the seed pods from the stems, and kept them till the middle of April last, when I sowed the seeds on a hotbed under glass, and have now the satisfaction of seeing upwards of 60 fine healthy young plants, the produce of my friend's noble flowers, which so deservedly carried off the first prize at the exhibition alluded to. *J. N.*

SEEDLINGS.

RANUNCULUS : *K.* A well shaped flower, with a clear yellow ground colour, tipped with purple. A very fine variety.

Miscellaneous.

Brazilian Orchids.—The following prices were realised at the sale to which we last week drew attention :— Cattleya crispa, 1*l.* 10*s.* to 8*l.* ; C. c. superba, 1*l.* 18*s.* to 10*l.* ; C. c. candida, 2*l.* 10*s.* to 4*l.* 15*s.* ; C. intermedia, 1*l.* 5*s.* to 8*l.* ; C. Leopoldi, 6*l.* to 13*l.* ; C. lobata, 7*l.* to 17*l.* ; C. violacea, 1*l.* 5*s.* to 4*l.* 10*s.* ; a new (?) Corysanthes, 2*l.* to 3*l.* ; the rest produced from 1*l.* 2*s.* to 5*l.* 15*s.* a lot. The high prices thus obtained were evidently owing to the excellent condition of the lots, and to their consisting of species the beauty of which is universally known.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Many of the climbers here, as Passifloras, Mandevilla suaveolens, Tecoma jasminoides, &c., will now be growing very freely, and frequent trimmings will be necessary to keep them in proper order. The young shoots should be allowed to grow in a natural manner, merely preventing their getting too much entangled, or growing in masses. The flowering of many varieties of the Passion-flowers will be hastened by stopping the young shoots, and any shoot which may be hanging too low should be stopped, which will prevent confusion, and induce the production of flowers. During weather such as we are now experiencing, the shading must not be used too freely, and care must be exercised to keep the atmosphere moist, giving air sparingly, except on the sheltered side of the house. Let there be no crowding of the plants, but allow every specimen full space, especially hard-wooded plants. It is a very common practice in the management of the conservatory, to huddle the plants very closely together, in order to produce a dense mass of bloom ; and where soft-wooded plants only are used this is of little consequence, but hard-wooded things are very readily injured in this way, and many a promising specimen is ruined. Re-arrange the plants frequently, and at once displace any that incline to become shabby.

FORCING DEPARTMENT.

PINERY.—Where a regular supply of fruit is required, and but limited accommodation afforded for producing it, the most practised grower cannot always avoid disappointment. The plants expected to afford the late autumn supply should now be got together, and every means used to induce them to show fruit ; and if they have been kept dry at the root for three weeks or so, after completing their first growth, by thoroughly watering the soil, and keeping warm and moist, they will generally show fruit at once. If not already done, lose no time in giving the Black Jamaicas and Cayennes for winter fruiting their final shift, and push them along for the next two months as quickly as possible, so as to get the pots well filled with roots, and secure strong plants; for unless this is attended to, their fruiting at the proper time will be quite a matter of chance. After this season use fire-heat sparingly, but shut up early in the afternoon, at a temperature of 90° or 95°. In the event of cold cloudy weather occurring, however, the fires must be used more freely, for the stock must not be allowed to sustain the smallest check at this season. Give a liberal supply of manure water to all plants that have moderately filled their pots with roots, especially those swelling their fruit. VINERIES.—Where not already done, the litter should be removed from the borders ; but where the roots are found to have crept up into it, which will probably be the case where the Vines were started early, the decayed portion at the bottom should be left, and every caution used not to disturb the roots. After removing the litter, it will be necessary to top-dress the border to prevent the surface roots from being injured. A slight coat of decayed turf and horse droppings from the Mushroom-house will answer very well; but the best Grape grower we know thatches his borders with clean straw, beginning at the front and working up to the house, which throws off heavy rains, and retains the moisture most effectually ; and judging from the crop of Grapes annually produced by this cultivator, it is a capital practice. See that the borders of houses where the fruit is swelling are kept properly moist, and be particularly careful to have them in a good healthy state during the colouring period. PEACHES.—Maintain a moist atmosphere where the fruit is swelling, and use every possible means to keep the foliage clean and healthy ; for if this is injured by spider at this time, it will greatly injure the present crop, and the mischief will extend to next season's crop as well. Give abundance of air after the fruit begins to ripen, and keep the atmosphere cool and dry. Also give air freely in the fore part of the day where the fruit is swelling ; but shut up early in the afternoon, after syringing and moistening the borders, passages, &c. This will save fuel, and also prevent red spider from becoming troublesome.

FLOWER GARDEN AND SHRUBBERIES.

The cold, drying east winds which have lately prevailed have been excessively trying to newly-planted "bedding stock," and have doubtless served to convince many of the folly of planting out weakly, ill-prepared stock. While the present weather continues, the plants must be well supplied with water at whatever expense, especially where it is of importance to have them in bloom early. The nights being cold, and not unlikely for frost, we prefer watering in the morning to doing it in the evening, and risking the consequence of even a slight frost upon the wet plants. Where it can be done the whole surface of the bed should be watered with a rose, giving sufficient to keep it moist for the day. Under this treatment our own plants are rooting freely, and making some little progress in the tops, and will soon be sufficiently established to do with an occasional watering. Get the whole of the plants pegged or staked, as the case may be, as quickly as possible, in order to prevent their being blown about and injured by the wind. Also stir the surface of the soil occasionally, which will soon become very close, through being watered so frequently. Look frequently to trees that have not got well established since having been removed, and give a thorough soaking of water whenever it is required, afterwards mulching the surface, to prevent evaporation. Any valuable specimen that may appear to be suffering much from the drying effects of the weather must be watered over-head every evening with the garden-engine.

FLORISTS' FLOWERS.

Part Polyanthuses ; always choose for them a cool and shady situation, sheltered as much as possible from north and easterly winds. After being planted, they should not be allowed to flag or become very dry, as they are extremely susceptible in such cases of being affected with the red spider, which is a sad pest. Remove awnings from Tulip beds; cover with a hand-glass any pods of seed which may have been fertilised, in order to prevent the wet entering the top of the capsule and rotting the seed ; break off all other seed-vessels, the foliage decays sooner, and they may consequently be lifted earlier. In the case of breeders, which we were anxious should be rectified, we should allow them to ripen their seed, as it weakens the energies of the bulbs, and predisposes them to become variegated the succeeding season. Mulch Dahlias with rotten dung, and give plenty of water in dry weather. Disbud Pinks ; occasional doses of liquid manure will be of service, but not strong. Propagate Pansies by the side shoots; mark seedlings worthy of being saved, and pull up the others.

HARDY FRUIT AND KITCHEN GARDEN DEPARTMENT.

The Peach border should be examined where there is any danger of its being too dry for the healthy growth of the trees, giving it a good watering if it be found to require it, as, if the growth is at all checked at present, and the autumn should prove wet, there will be great danger of the trees growing too late, and the wood being badly ripened. Proceed with nailing, and avoid laying in a single shoot which will not be required next season. Where insects or mildew are still troublesome lose no time in applying the usual remedies. Persevere in the use of them until the enemy is fairly overcome, in order that healthy wood may be secured. Strawberries must be liberally supplied with water, especially on light soils of a dry hot nature, for, should the present weather last much longer, there will be no chance of securing a crop without liberal waterings. If not already done, the early Celery should be planted out at once. Endeavour to injure the roots of the plants as little as possible in transplanting, keep them well watered and shade slightly from bright sunshine until they get established. All recently transplanted things, as Cauliflowers, &c., must also be carefully attended to with water while the present drying winds continue. In situations where the Peas are liable to be infested with mildew in dry seasons, it will be advisable to give the lines a thorough soaking of water, and afterwards mulch the ground.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending June 8, 1854, as observed at the Horticultural Gardens.

June.		Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind.	Rain.
Friday	2	6	29.735	29.679	57	47	52.0	54	55	N.E.	.05
Satur.	3	7	29.916	29.775	60	44	52.0	53½	55	N.E.	.02
Sunday	4	[illegible]	30.125	30.036	62	36	49.0	53	55	N.E.	.00
Mon..	5	9	30.110	30.038	62	49	5[illegible].5	53	55	N.E.	.00
Tues.	6	10	30.083	30.040	59	47	53.0	53	55	N.	.00
Wed.	7	11	30.070	30.043	57	45	51.0	52½	54	N.E.	.00
Thurs.	8	12	30.073	29.980	65	48	56.5	53	54½	N.E.	.00
Average.			30.016	29.940	52.7	45.1	52.7	53.1	54.8		0.07

June 2—Rain ; cloudy at night ; boisterous.
— 3—Cloudy ; drizzling rain ; cloudy and windy; fine; clear.
— 4—Light white clouds ; cloudy ; clear and cold at night.
— 5—Uniformly overcast ; fine ; overcast.
— 6—Overcast ; cloudy and cold ; overcast.
— 7—Overcast ; cloudy ; uniformly overcast.
— 8—Cloudy ; fine throughout ; overcast at night.

Mean temperature of the week, 5½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK.
During the last 28 years, for the ensuing week, ending June 17, 1854.

June.		Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday	11	72.1	49.2	60.6	10	0.47 in.	—	7	2	1	3	6	9	—
Mon.	12	71.5	50.4	60.9	12	0.78	—	5	3	1	5	8	3	3
Tues.	13	72.2	49.4	60.8	13	0.77	1	5	3	1	2	7	7	2
Wed.	14	73.0	49.6	61.3	12	0.36	1	2	4	1	5	8	6	1
Thurs.	15	73.0	50.2	61.6	12	0.38	1	4	4	2	4	6	3	4
Friday	16	72.5	49.3	60.9	11	0.20	2	3	4	1	7	6	3	3
Satur.	17	73.2	50.0	61.6	15	0.80	1	4	2	—	6	7	4	4

The highest temperature during the above period occurred on the 12th and 13th, 1842—therm. 90 deg. ; and the lowest on the 15th, 18[illegible]—therm. 30 deg.

Notices to Correspondents.

APHIDES : *Welton.* Fumigation, or dusting the leaves with ground tobacco, wetting them first to make it stick, are the best remedies.‡

CACTI : The seedling No. 1, raised by Mr. Thomas Jobling, gardener to Mrs. Hodgson, of Stelling Hall, Northumberland, from Cereus speciosissimus, fertilised by pollen from C. grandiflorus, is a very fine variety, with the scarlet of Ackermanni, and the size of C. grandiflorus. No. 2 is equally, if not more, beautiful, though paler. If they remain open 48 hours, as we are informed, they must be regarded as great acquisitions.

CLOCHES : *Meta.* You may possibly be able to obtain them at the Glass Works, Bristol.‡

DISEASES : *F D L.* The three Grapes which you have forwarded are affected with rust, respecting which you will find many notices in our columns. One of them is slightly decayed, but probably merely from accidental injury in transmission. The leaf which accompanied them is affected with a disease similar to that which is so prevalent on Pear leaves, and which is supposed to be caused by an Acarus, but not to such a degree as to be materially injurious to the Vine.—*J A.* The Vine leaves have precisely the same excrescences upon them as in the case noted above. In neither have we found the slightest trace of any insect, though there is an aperture in many of the little warts, exactly as in those on Pear leaves. We have no apprehension that the general health of your Vines will suffer. *M J B.*

NAMES OF PLANTS : *J B Whiting.* Orobus luteus.—*P G E.* 1, A Mormodes, with which we are unacquainted ; perhaps the M. leucochila of Klotzsch ; 2, Epidendrum pterocarpum.—*L.* Sophronitis grandiflora.

PAINT FOR IRON : *Felix.* The proportions of Mr. Fleming's are one-third Stockholm tar to two-thirds gas-tar. It is laid on while quite hot.

ROSE SHOOTS : *J M.* They are covered with Uredo Rosæ. Nothing can be done to prevent it.‡

TRANSPLANTING : *St Derbyshire.* Transplant your old Yew Hedge in the end of August or beginning of September. Cut round your Oak and Elm by opening a circular trench 6 feet from their trunks in the beginning of August ; let the trench be 6 inches wide at least, and 3 feet deep. Replace by good rich vegetable soil the earth removed in forming the trench, and finally transplant in November, securing the trees against wind by the usual triangle.

VINES : *Querist.* There is no objection to the grafting or inarching a black Grape on a white Grape stock ; the Mill Hill Black Hamburgh, for example, on the white Sweetwater. It is true that it is a dogma amongst some growers, not to water before, or during sunshine. They, however, do not object to one of those refreshing summer showers, which is often immediately succeeded by a hot, bright sun ; nor is there any reason for the dogma itself.

AN ACCOMPLISHED FACT.

RICHMOND AND CHANDLER (in competition with the best selected Chaff-Cutters of the most celebrated makers in the world, at the Show of the Royal Agricultural Society of England, held at Lewes, have carried off the highest prize of 10*l*., eliciting at the same time the most marked approbation of the Consulting and other eminent Engineers connected with the Society.—Implement Works, Manchester, and 32, South John Street, Liverpool.

CHAFF-CUTTERS, of the best workmanship, 25*s*.; Two-Knifed Chaff Engines, from 63*s*.; Mills for Bruising Oats and Beans, from 45*s*.
WILLIAM DRAY AND CO., Agricultural Implement Manufacturers, Swan Lane, Upper Thames Street, City.

BUDDING'S LAWN MOWERS, with SAMUELSON'S registered improvements, *lightening the draught fully one-half*, and enabling an unskilled labourer to make neat work; free from liability to choke, or get out of order. May be had of all ironmongers in town or country, or from the Works, Banbury; delivered free in a packing case to any station on the North-Western and Great Western Railways. Testimonials forwarded on application.—Britannia Works, Banbury.

ANTHONY'S PATENT AMERICAN CHURN.—Extract from the Royal Agricultural Society's Report of the trial of Churns at the Gloucester meeting in July last. "In this trial the American Churn not only maintained its character in producing butter rapidly, but in producing a greater quantity from the like amount of cream." It made from 4 quarts of cream 4 lbs. 6 oz. of butter, being 8 oz. more than any of the other Churns from the same quantity and quality of cream. Price Lists of Churns and Implements by the best makers sent free, and Illustrated Catalogues on receipt of eight postage stamps. BURGESS & KEY, 103, Newgate Street, and 52, Little Britain, London, who have always a large stock of Steam-engines, Ploughs, Harrows, Diggers, Waggons, Carts, Threshing and Dressing Machines, Mills, Oat and Grain Bruisers, Oilcake Breakers, Reaping Machines, Haymakers, Horse-rakers, Turnip Cutters, Liquid Manure Carts, Parkes' celebrated Steel Digging Forks and Draining Tools, Pumps for Manure, Farm Fire Engines, and for Garden Purposes, &c. &c.

THE LONDON MANURE COMPANY'S WHEAT MANURE, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. EDWARD PURSER, Sec.
Bridge Street, Blackfriars.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7*l*. per ton; Superphosphate of Lime, 7*l*.; Sulphuric Acid and Coprolites, 6*l*.
Office, 69, King William Street, City, London.
N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures.
WM. INGLIS CARNE, 10, Mark Lane, London.

GUANO (PERUVIAN) AND CHEMICAL FERTILISERS.—NITRATE OF SODA; PERUVIAN GUANO; SUPERPHOSPHATE OF LIME; AGRICULTURAL SALT; AND CONCENTRATED MANURE FOR TURNIPS.
The above articles are supplied on the lowest Cash Terms, for best qualities only, on application to Mr. JOHN CLARANCE, Agriculturists' London Agent, 1A, Bishopsgate Street Within.

TURNIP SOWING.

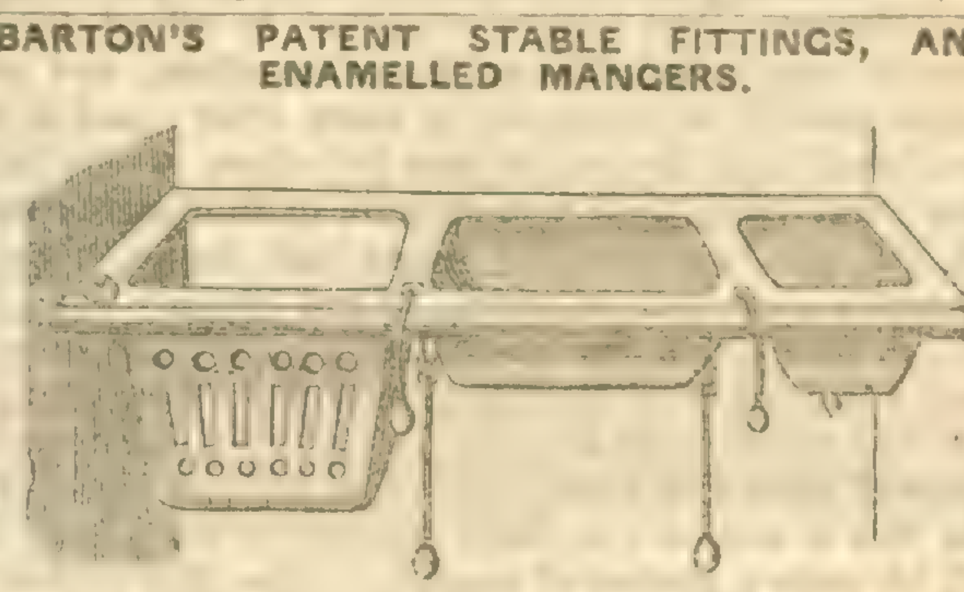
SUPERPHOSPHATE OF LIME, made from Bone, which is the best Manure for Root Crops (see the Royal Agricultural Society's Journal, Vol. vi., part 2). PERUVIAN GUANO, NITRATE OF SODA, BONE DUST, SULPHURIC ACID, and all other Manures of known value. The PEAT MOSS CHARCOAL COMPANY have appointed the undersigned Sole Agents for the Sale of this fixer and distributor of Ammoniacal matter. They are also Sole Agents (in London) of the Patent Sanitary Company for the sale of their "Nitrogenised Carbon."—Apply to MARK FOTHERGILL & Co., 204A, Upper Thames Street, London.

NITROGENISED CARBON MANURE.—This powerful Manure will be found an excellent substitute for Guano, AT LESS THAN HALF THE PRICE. It contains a large proportion of Ammonia, in addition to all the highly fertilising salts, phosphates, and fæcal matter, in solid and liquid sewage, in a concentrated form, absorbed into Shale Charcoal. This will be found a genuine article, as proved by the analysis of Professor Way, the Chemist of the Royal Agricultural Society of England, and, quality considered, is by far the cheapest Manure in the market, and being perfectly dry and pulverised, it may be easily distributed in any quantity per acre that may be desired.
Price Five Guineas per ton at three months' credit, or a Discount of Five per Cent. for cash. Bags and Packages included; delivered free to any Railway Terminus or Wharf in London.
Address to the Secretary of The Patent Sewerage Manure Company, 22, Lincoln's Inn Fields.

SCYTHES.

BOYD'S PATENT SELF-ADJUSTING SCYTHE will last out three of the ordinary sort, and is always ready for use.
"We have seen this Scythe at work, and can strongly recommend it."—See *Mark Lane Express*, May 16, 1853.
To be had of every Ironmonger and Nurseryman in the kingdom; and wholesale and retail of WM. DRAY AND CO., Agricultural Implement Makers, Swan Lane, London.

BARTON'S PATENT STABLE FITTINGS, AND ENAMELLED MANGERS.



THESE FITTINGS have all the newest improvements and are the only patented invention of this description. Also Improved Stable Fittings with Rack, Manger, and Water Trough attached. New Pattern Manger and Water Trough combined; Corner and Straight Mangers, Plain, Enamelled, and Galvanised; Stable Furniture of every description, Iron Gates, Railing, Hurdles, Sheep and Game Wire Netting, Registered Poultry Troughs, Fountains, Feeders, &c.—JAMES BARTON, IRONFOUNDER, SMITH, &c., 370, Oxford Street, a few doors east of the Pantheon.

NEW OAT CRUSHERS, 2*l*. 15*s*. 6*d*.; do., 4*l*. 5*s*. 6*d*. CHAFF CUTTERS, 1*l*. 7*s*. 6*d*.; do., 2*l*. 19*s*. 6*d*. MANGLES, 2*l*. 10*s*. 6*d*. FLOUR MILLS, 4*l*. 10*s*. 6*d*.
MARY WEDLAKE & CO., 118, Fenchurch Street, London.

WEDLAKE'S CELEBRATED HAY-MAKING MACHINE (Original Patent), recently improved so as not to clog, and which obtained the Silver Medal at Derby; manufactured by the Daughter of the Inventor, not complicated, and unequalled for simplicity of construction. Order immediately, so as not to be disappointed in the season, and to get them now at one-fourth of the price usually charged in June and July. Beware of spurious Machines offered by unprincipled traders as MARY WEDLAKE & Co.'s; also,

WEDLAKE'S DOUBLE HORSE, HAY, AND STUBBLE RAKE, doing the work of 10 to 15 women. Price 10*l*., and 3*l*. 10*s*. 6*d*., both Implements recommended by Mr. J. Morton, in the new "Cyclopedia of Agriculture;" also OAT CRUSHERS, 2*l*. 15*s*. 6*d*.—118, Fenchurch Street, City.

Just published, price 1*s*. 6*d*.

HOW TO MAKE HAY IN THREE DAYS, and at one-half of the usual expense, in any County and Weather; or, Hints to Haymakers. Also, How to Keep a Horse for less than 9*s*. per Week.—118, Fenchurch Street, City.

MORNING FROSTS.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.
"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1*s*. 6*d*. per yard run, of E. T. ARCHER, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey. (Removing to 112, Regent Street, London.)

STEPHENSON AND PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.
From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

NOTE.—The letters received daily at the Offices from this year's customers fully support the high character this Manure obtained last year.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

THE "ECONOMICAL" MANURE,

SO CALLED, BECAUSE

1¼ TO 1½ CWT. PER ACRE, COSTING 15*s*. TO 18*s*., IS AMPLE, AND FULLY EQUAL TO 3 CWT. OF THE BEST PERUVIAN GUANO: THUS SAVING AT LEAST 50 PER CENT., BESIDES CARRIAGE, &c.

THIS quantity is quite sufficient, and must on no account be exceeded, as injury instead of benefit arises if more is used, the Manure having been purposely manufactured in a highly concentrated state.
The Agricultural world is respectfully urged to read the hundreds of Testimonials from all parts of ENGLAND, SCOTLAND, and WALES, FRANCE, BELGIUM, and SPAIN, to be convinced that this Manure warrants especial and immediate attention. They prove that it gave most wonderful results last year on every soil and crop, far surpassing the expectations of the purchasers.
No one reading the Company's Pamphlet can doubt its being by far the cheapest of all Manures. In fair comparative trials on every kind of soil and crop with Guano, Dung, and other long recognised fertilisers, it will be seen the "ECONOMICAL" was superior; that it proved most valuable for Fruit Trees, Shrubs, and Garden Purposes, and produced the most astonishing effects upon manure heaps, applied in solution, decomposing in fifteen days all vegetable matter, Peat included, and that it is a perfect deodoriser for liquid manure, besides enhancing its fertilising properties.
PRICE 12*l*. PER TON, Packages included, and delivered free on Rail or Wharf in London.
Orders received at the Offices of the BRITISH ECONOMICAL MANURE COMPANY, 10, MARK LANE, LONDON, where a pamphlet, containing hundreds of Testimonials from all parts of ENGLAND, SCOTLAND, and WALES, FRANCE, BELGIUM, and SPAIN, with directions for use, samples, and all particulars, may be had, or will be sent gratis on applying to
BENJAMIN COVENEY, *Manager*.
GOOD AGENTS WANTED.—AN ALLOWANCE TO THE TRADE.
N.B.—This Manure may be applied broadcast with great effect on Turnips and Root crops generally, after they are out of the ground; and in cases where the plants are weak from any cause, it will be found to give them an extraordinary vigour.
*** Attention is called to the Advertisement of the Company in this Paper of last week, where numerous Testimonials in favour of the Manure from all parts of the Kingdom, both from this year's customers as well as last year's, were given.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.
The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.
Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.
PATRON—His Royal Highness PRINCE ALBERT.
PRESIDENT OF COUNCIL—Earl BATHURST.
PRINCIPAL—Rev. J. S. HAYGARTH, M.A.
PROFESSORS, &c.
Chemistry—J. A. C. Voelcker, Ph D., F.C.S.
Zoology, Geology, and Botany—James Buckman, F.G.S., F.C.S.
Veterinary Medicine and Surgery—G. T. Brown, M.R.C.V.S.
Surveying, Civil Engineering, and Mathematics—F. Armstrong, C.E.
Manager of Farm—G. Austin.
The next SESSION will begin early in AUGUST. The Annual Fees for Boarders vary from 45 to 80 guineas, according to age and other circumstances. The Fee for Out-Students is 40*l*. per annum. The College Course of Lectures and Practical Instruction is complete in one twelvemonth—though a longer course is recommended. There is a department for general as well as for agricultural purposes. Prospectuses and information can be had on application to the Principal.
The GUIDE TO THE ROYAL AGRICULTURAL COLLEGE FARM may be obtained of HAMILTON, ADAMS, & Co., Paternoster Row, London; and EDWIN BAILY, Cirencester. Price 1*s*.

THE THIRD CHELTENHAM SUMMER POULTRY SHOW will take place at that magnificent establishment PITTVILLE SPA, on the 14th and 15th of June. For Prize Lists and full particulars enclose a stamped directed envelope to JESSOP BROTHERS, Secretaries.

HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND.—The Show at Berwick-on-Tweed takes place on the 1st, 2d, 3d, and 4th of AUGUST, when Premiums to the amount of 1500*l*. will be offered for Stock and Implements.
All Entries must be made on or before June 17. Prize Sheets and Forms of Entry to be had on application to the Secretary, 6, Albyn Place, Edinburgh.
JOHN HALL MAXWELL, Secretary.

The Agricultural Gazette.

SATURDAY, JUNE 10, 1854.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, June	14	Agricultural Society of England—Professor Way's lecture.
THURSDAY, —	15	—Agricultural Imp. Society of Ireland.
WEDNESDAY, —	21	—Agricultural Society of England.
THURSDAY, —	22	—Agricultural Imp. Society of Ireland.

THE POLICY OF LABOURERS' FRIEND SOCIETIES was discussed last Monday before a meeting of the Central Farmers' Club. It appeared that members had come together prepared to hear a paper read upon the Friendly and Benefit Societies established by labourers themselves, for their own relief in sickness and old age, mistaking the terms of the announcement on the card, which referred to societies established not by labourers but *for* them; such, for instance, as the Witham and the Roding, and many other "Labourers' Friend Societies," which aim, by money rewards, at the promotion of good conduct and agricultural skill among the labouring men of their respective districts. This misunderstanding possibly interfered somewhat with the character of the discussion which followed the opening paper—for it frequently betrayed a disposition to leave the real point at issue, which was the policy of money rewards for good conduct, and refer to the merits of savings' banks and benefit societies amongst labourers.

On the proper subject of discussion, however, there were not wanting those present who were prepared to defend the policy alluded to, and who spoke with just admiration of the advantages of bringing all classes together on occasions when it was shown that the interests of working men had a place in the minds of their employers—and when addresses by the clergymen of the neighbourhood on the duties of employers and employed would have far greater influence than if delivered from the pulpit. Reference was made to the pleasure evidently given to the working men themselves on such occasions—to happy faces—clean smock-frocks, &c. And some gentlemen alluded in terms of condemnation to the ironical strain in which, as they asserted, the opening paper was conceived, and the mistaken view it took of the conduct and the objects of the societies which it criticised.

On these points we would simply refer our readers to the paper itself. There is not a bit of irony throughout it. It gives perfect credit to the sincere benevolence of the promoters of these societies. Its criticisms are given, not arbitrarily, but with the reasons which, in our opinion, justify them. It is surely perfectly possible to admire the motive, and yet condemn the conduct to which it has led. Is there no such thing as unwise benevolence, or zeal without knowledge? We believe our labourers' friend societies to be generally under the guidance of men who really are the labourers' friends, and who

sincerely desire their welfare; but is not that a reason why their conduct should be all the more anxiously examined, and its tendencies pointed out?

There can be little doubt of the advantage of the annual meetings, on the importance of which so much was insisted, but the attendance would be just as large, and the result as satisfactory, though money rewards for benevolence, morality, and abstinence from drunkenness and crime, were omitted from the attractions. The objection was made that the opening paper had asserted that rewards for good conduct had no moral influence. That assertion was confined solely to one reward it had specified as existing in the list of, we think, the Northleach Society, viz., money to the family who had been at greatest expense during the year, on account of sickness; this, it was asserted, was simple charity, and could have no moral influence on others, and was, therefore, beyond the scope of a society aiming at the promotion of good conduct and of skill.

But we have no hesitation in saying that a money reward for morality or benevolence has a most *immoral* influence, and is altogether mischievous and mistaken. The whole subject is one which deserves detailed discussion and examination, and this we shall from time to time bestow upon it, in the desire not to damage these societies, but improve them—not, by any means, to ridicule or uselessly criticise, but to increase their usefulness and efficiency.

There were many at the meeting on Monday who sympathised with the criticisms then made, and with the resolution which was proposed by the writer of the opening paper. It advised that labourers' friend societies should abandon that portion of their prize lists in which money rewards are offered for benevolent conduct and for personal morality, and generally that such societies should direct their principal attention to the promotion of increased skill in agricultural operations. The objection made, and which prevailed against it, was that, if the Central Farmers' Club passed any condemnatory resolution, it would lose caste and influence. We really think that the influence of the club in question would be more real and lasting if it should guide its conduct by the simple rule of reason and justice, regardless of the results which such a course may bring upon itself.

The inventor of the screw-propeller is said to have declared his regret that he ever thought of it; the harassing labour of effecting its introduction into practical use having wearied and exhausted his bodily and mental resources more than all the protracted study and experimental trial by which the idea was first developed. And many valuable discoveries have been unquestionably suffered to die in embryo, because of the opposition or disregard meeting their first announcement. Now we greatly fear that, from similar causes, some of the most important of modern suggestions in husbandry will be found to be for years without enlarged application; that we shall remain for a long time denying ourselves the advantages they proffer us, out of negligence or incredulity.

The two novelties in Tillage and Manuring—the two great branches of cultivation—manifested the one at Lois-Weedon, the other at Myre-mill, Tiptree, and some other places, are not yet meeting, we think, with that agricultural sanction which their reputed success seems to demand. Both systems profess to replenish the soil with the food of crops more cheaply than our best farming has yet been ble to do it. One consists in an improved mode of returning to the fields that large proportion of their vegetable produce in an altered state, called manure, combined with efficient tillage; in a proper rotation of such cropping as robs the soil with such as forms itself more largely out of the "viewless air," combined with high farming practised in every depart ment. The other enables the cultivator to maintain the fertility of his land by a greater perfection of mechanical tillage; professing even to supersede the necessity for returning any portion of the crop to the soil, or for a succession of different crops upon the same spot. The two systems do not collide in any way: one may be adapted to circumstances in which the other might fail; and, indeed, if each can produce remarkable profits, why should not a combination of the two be made to exhibit yet more extraordinary results? There is no inconsistency in a journal simultaneously enforcing (as this has been found to do before now) the merits of the all-manuring and non-manuring schemes of culture. For both, in fact, solve the same problem, the two methods differing no more than an algebraic and geometrical process.

With reference to the Lois-Weedon husbandry, we take it for granted that our readers are convinced of the following truths:—We state them in a rough and homely manner, with no pretence to scientific phraseology or correctness—viz., that our crops feed upon two sorts of nourishment, one of which they draw principally from the air, the other entirely out of the earth; that the latter (called their *mineral* food) bears no larger a proportion to the former (called their *organic* food) than the salt we eat at dinner bears to our beef and bread; that plants will always help themselves to the former, according to their appetite, if we give them liberty; that the latter sort of food lies in the earth in two states, prepared and unprepared—cooked and uncooked for their vegetable mouths, which are partial to drinks, gruel or soups, instead of joints; and, lastly, that, as fast as the plants devour up the prepared morsels, atmospheric agencies will make ready more of the indigestible crude provision, if we give them sufficient opportunity. Every plant in a crop, then, must have room to grow; must be relieved of the presence of hungry thieving weeds, in order to secure a full supply of the first kind of food. The supply of the latter sort in the soil is always equal to the demand; its diminution is so gradual that it is practically inexhaustible; like the marvellous outflow from the conjuror's bottle, though pushed to the last extremity, it will not fail, only it must be kept in an incessant course of preparation—one way of doing this being, as we have implied, to submit the soil and subsoil to atmospheric action, opening it up to the free influence of air, rain, heat, frost, &c.

We suppose our readers, then, to be theoretically well-affected towards the system which, by continual mechanical tillage, can produce large yields without the assistance of rich manures. But the question of expense, and doubt as to practical result, deter them from a trial. Capital and adventurous enterprise are lacking either to spread high farming, costly feeding, and steam-manuring over the surface of our counties, or to supersede ploughing by manual labour with fork and spade. Now it is our opinion that Lois-Weedon husbandry is not calculated for extended adoption without some modification, but that it may be made a source of immediate profit on a large proportion of our corn lands, without requiring any great disarrangement of plough-teams, or the sole employment of expensive and scarce hand-labour. Mr. Smith's yield of more than four quarters of Wheat per acre, year after year, has been doubtless owing to complete pulverisation by the loosening upturning fork, and deeply-trenching spade; but why may not a less surprising yet still profitable return follow the cheaper and less effective action of plough and cultivator? Jethro Tull himself certainly used a plough; and the horse-hoe with which he wrought such wonders was, in fact, just what he called it, a "hoe plough," and turned over a furrow-slice. The spade, perhaps, will alone suffice on strong land, where the plough would defeat our endeavours by forming an impenetrable pan, and by squeezing up a solid furrow-slice, defiant of all drags or horse-pulverising; but we are anxious that some such scheme as we shall suggest may be tried upon the many deep friable loams suited to the purpose. *I. A. C.*

AGRICULTURAL STATISTICS.

The attainment and successful operation of a sound, correct system of agricultural statistics, however desirable, is not quite so easy a matter as some may imagine. Such a system has more than one enemy to contend with, the chief being, perhaps, that "individual suspiciousness," bordering very closely on "selfishness," of which you spoke and complained the other day. This is the true lion in the path; though, in justice to our Scottish neighbours, the beast does not seem to have inspired them with terror equal to that felt by their brethren in the south. Allow me a small space in your columns to the consideration of this absurd reluctance to furnish information touching the affairs of agriculture, and which by many has been construed into an interference with their private business, and an invasion of their domestic concerns, under the mask of zeal for the general good—an idea not less foolish than narrow-minded. I speak advisedly—it is both; for the information, though derived from individual sources, being divulged only in the aggregate, and for the general good, cannot by possibility operate prejudicially to such as wish to remain incognito, and yet who do not shrink from contributing their quota of knowledge to the national stock. That many, perhaps the great majority, should be anxious to repel the pryings of idle curiosity, who can wonder? Such resistance implies but a proper spirit of independence, for which no one ought to be held blameworthy. I would not quarrel therewith; but we may quarrel with the want of discrimination between mere Paul Pryism and a patriotic zeal for the public welfare, as not only disparaging to the liberality and discernment of the individual, but highly detrimental in a national point of view. We are not, however, disposed to dwell too long or too harshly on the shortcomings of the farmer, in a matter at once novel and repugnant (however erroneously) with his general habits and feelings. We ought in fairness to take into the account that, after all, the enquiry is but an experiment, and that where, as but in too many cases, aversion is manifested to experiments in the field, we cannot wonder at similar, or even greater, objections to those of a more questionable character on paper. The only wonder is, that with all these elements of opposition at hand, the measure should have been so successful; for successful it surely must be called, when, out of five counties, the quantum of prejudice amounts to but $3\frac{1}{4}$ per cent., as in Hampshire; to $2\frac{3}{4}$ per cent., as in Norfolk; and to a mere cypher, as in the three Scotch counties. Whoever has had any experience in the establishment of agricultural societies and farmers' clubs will bear testimony to the weakness and absurdity of the arguments urged against them by some who doubtless consider themselves wise in their generation. The leading feature in the opposition to them, or at least to the publication of the proceedings, was principally a fear of their landlords, on the part of those tenants who, having no leases, regarded them as a sort of Damocles' sword, perpetually suspended over their heads, and ready to fall on the first notification of any rumoured superiority of crop, indicative of permanent improvement. Even in the event of a lease, a certain shyness was often exhibited to furnishing particulars—in other words, to state the whole truth—lest advantage should be taken, on renewal, either by the landlord or his agent. Other objections were occasionally raised, but these were the most prominent; and no doubt influenced many to reject the Government measure of agricultural statistics because it was a Government measure; and as such might be turned against themselves as a body. All this is very absurd, and would be proportionally injurious; but that the amount of prejudice is, as we have seen, too small materially to affect the grand result. A little leaven, we know, leaveneth the whole lump; but much depends on the quality of the article so applied; and happily in the case before us, it has proved far too weak to do either good or harm. The foregoing observations apply mainly to the tenantry; but are the landlords wholly free from blame in the matter? Is their influence always exerted in the right direction? their example, for the promotion of general rather than individual good? Are their judgments always guided by sound discretion? and not distorted by political antipathies and party spirit? I heartily wish I could answer these questions in the affirmative; but a tolerably large acquaintance with, and close observation of the vagaries of some of this class, warrants no such acquiescence on my part. True, their number is but small; yet they do exist, and, as a very minute portion of smut-balls may contaminate a large measure of Wheat, so do their example and influence operate upon the little world around them, and by slow and imperceptible degrees effect a pretty considerable amount of mischief. I do not speak without book on this point, as the following case will testify. To many it will appear apocryphal, if not altogether destitute of credit; but we pledge our word for the truth of the story, the documents on which it is founded being at this moment before us, and all the parties well known to us. When the late Earl of Leicester, then Mr. Coke, first introduced the Southdown breed of sheep into Norfolk he was strenuously opposed by many, both owners and occupiers of land, who differed from him in politics, and who regarded his attempts to exchange the dun for the black-faced, the polled for the horned sheep, as not merely impolitic but absolutely revolutionary; and not only cautioned their neighbours against them, but in the instance to which we have adverted, the landlord went so far as to introduce a clause into his leases, prohibiting his tenants from keeping the new-fangled breed, to the exclusion of the old, legitimate sheep, the horned black-faced Norfolks. His then steward and tenant furnished us with these particulars, though at his request we refrain from mentioning the name of the party, adding in a note which accompanied the lease sent to us: "Mr. —— lived long enough to see the error of his ways, having for many years kept a large flock of Southdowns."

Our own observation has furnished us with many similar cases, in which, ridiculous and almost incredible as the thing may appear, the politics of the individual were clearly exhibited by the colour of his sheep. As in the case of the old squire's sheep just mentioned, it would seem as if the plan of collecting agricultural statistics must be bad, because it emanates from the wrong men; but we cannot help congratulating the advocates of the system on the success of this their first attempt to bring it to bear, when compared with the small minority by whom it was resisted. *T.* [We see that a grant of 6000*l.* has been made to the Highland Society, to be expended in obtaining agricultural statistics for this year in all the Scottish counties; and that a sum is named for expenditure in further experiments in the same direction in England.]

Home Correspondence.

Cool Farm-yards for Summer Feeding.—One of the greatest difficulties in feeding is the reconciliation of winter and summer—the Scylla and Charybdis of graziers. The roofs of my house and buildings look now as cold as winter, and as white as snow, having been lime-washed by my farm labourers. The result is a pleasing and profitable temperature; for when the sun shines, every slate is cold, except those unlimed, which are scarcely cool enough to bear one's hand. The heat is reflected instead of absorbed, by the whitened surfaces. The same principle is advantageously applicable to our towns, where the upper rooms and

attics are insufferably hot during the summer months. This coolness causes a remarkable diminution in flies, and, perhaps, London bugs. Flies will not readily alight on the whitened walls and slating, and when they do, fall a more ready prey to the swallows. Rain will not wash off the lime, but the frosts of winter remove it, and with it any vegetable matter that may have grown on tiles or slates, thus giving to old roofs a new appearance. The affair of cost is trifling—the comfort great; the same remark applies to stables. In South Wales the roofs of houses are, I am told, all lime-washed. A slight coat of white paint answers well. Of course, every one lime-washes the inside of cattle sheds, cellars, stables, &c., once a year. This is my second year's experience in this matter. *J. J. Mechi.*

Tiptree Farming.—Permit me to correct an error or two (arising, no doubt, from his hurried visit) in "J. B.'s" friendly remarks on my farm. I sow winter Oats (not Barley) with my Tares. All my land is drained, and I have none to re-drain. The Oat fields were liquid manured last year, when in Mangold Wurzel; this year only guanoed. If "J. B." will come now, he will find a full crop and all the furrows filled up, or closed in by the growing crops. Thin sowers must be satisfied to be found fault with in the spring, especially on late cold bird-lime-like clays. I wish our Hampshire, and other agricultural friends, would try one bushel of Wheat against two, as I did for several years. They would probably, on well-farmed land, find, as I did, that it makes the rent of the land difference in favour of the one bushel. Five pecks is a safe quantity; but so much depends on soil, season, time of sowing, and quality of farming, that between 3 and 6 pecks must be the range. Absurd quantities are generally sown of most grain, but a reform is gradually taking place. When people say thin sowing won't answer, I find, in nine instances out of ten, the parties have never made practical comparisons, and are, therefore, ignorant as to the facts. My Barley and Oats are this year sown 2 bushels to the acre, and, although on miserable soil, I will show them against our thick sowing friends on their rich land. I hope they will come and judge for themselves. The Tares found fault with were purposely late sown, and will be an abundant crop. *J. J. Mechi, June* 3.

Gorse or Furze for Cattle.—Gorse has been proved for a length of time to be a most valuable food for cattle and horses, as a substitute for hay. This plant flourishes upon sharp sands with a dry subsoil, and yields about 10 tons per acre. The soil should be cleansed and pulverised, as the seed is best put in with a drill, giving about 20 lbs. per acre. Being aware the slug is the great enemy, when the plant just comes out of the ground, and only in its first two leaves, and at that time easily devoured, it is, for safety, best to apply 1½ cwt. of saltpetre per acre, which relieves all anxiety on that point. It has been proved, by careful trials, with a cow fed upon Gorse or Furze in November, that the yield of quality and quantity of cream and butter exceeded that of any other mode of feeding. The practice has already been so beneficial that every friend of his country must wish a continuance of its success, in which we most heartily join. *Richmond and Chandler.*

Management of 100 *acres of first-rate Grazing Land.*—About seven years ago I had the following suggestions in a little talk with an aged and experienced countryman on the best method of managing 100 acres of excellent grazing land. The prices of the cattle, as then given, do not correspond with those high ones of the present time, nevertheless the value of the scheme or system is not less on that account. I merely forward you a copy of the note I made at the time of our conversation. The old man is still alive:—

"I would immediately give about 7*l.* each for 60 Scotch Kyloes, and put them upon 20 acres of it, to pasture there from now (May) till August, at that time I reckon each would on an average bring 10*l.* I would also buy in 200 sheep—good hogs—at 1*l.* each, and put them upon 30 acres till August or September, when they would each be worth 50*s.*, and I should have their wool besides. Again, I would give 7*l.* each for 60 lean drape cows to depasture on 20 acres; it would carry them till October, when I think they would fetch 14*l.* a piece. These cattle and sheep would stock 70 acres, and the other 30 acres I would reserve for growing hay, and the aftermath or fog would be very valuable. I reckon my 60 Scotch Kyloes would cost 420*l.*; my 200 sheep, 200*l.*; and the 60 lean drape cows, 420*l.*, the same as Kyloes, so that 1040*l.* would buy my stock to begin with. My rent would be 600*l.*, making 1640*l.* The sheep would be worth 500*l.*; Scotch Kyloes, 600*l.*; and fat cows, 840*l.*: altogether, 1940*l.* I should have the fleece of 200 sheep, which would average 12 lbs. of wool for each sheep, and at 2*s.* a lb., is 240*l.* I should buy in during autumn 300 Cheviot lambs, at 5*s.* each, and after wintering them upon the hay, &c., I reckon they would be worth 8*s.* apiece, leaving 45*l.*; and my system would improve the estate." [Probably all this might be done on a rental of 600*l.*—the error is in speaking of 100 acres.]

Societies.

ROYAL AGRICULTURAL SOCIETY.

MONTHLY COUNCIL, *June* 7.—Colonel CHALLONER, Trustee, in the chair. One governor and thirty-six new members were elected.

FINANCES.—Mr. Raymond Barker, Chairman of the Finance Committee, read the report on the accounts; from which it appeared, that the current cash-balance in the hands of the bankers at the end of the previous month, was 1548*l.*

LINCOLN MEETING.—Mr. Barker then reported from the General Lincoln Committee the favourable progress of the works, for the ensuing country meeting in that city, and the numerous entries of implements, machinery, and live-stock for the show.

PRIZE-ESSAY.—Mr. Pusey reported from the Journal Committee the following award in the Miscellaneous Class of Essays:

To WILLIAM WALLACE FYFE, of Nottingham: the prize of Ten Pounds, for his Report on the Management and Economical Values of Timber, as the best essay competing in the class of "any other Agricultural Subject."

ESSAY-PRIZES.—The Council deferred till their next monthly meeting the final arrangement of the subjects and amounts of prizes for the essays and reports of next year.

INDICATIONS OF AGE.—On the motion of Mr. Fisher Hobbs, seconded by Mr. Hudson, of Castleacre, the following resolution was agreed to unanimously, namely: "That, on account of the immediate practical importance of the two lectures recently delivered before the Society by Prof. Simonds, on the age of animals as shown by their teeth, these lectures be at once prepared for publication in the second part of the Journal for this year: but as that number will not be due till the 1st January next, that Prof. Simonds be allowed to print off from the type and wood-cuts as many copies as he may require for the purpose of publishing the lectures in the form of a pamphlet, at a cheap rate, in time for purchase by the public at the Lincoln meeting."

STEWARD OF POULTRY.—On the motion of Mr. Fisher Hobbs, seconded by Mr. Hudson, of Castleacre, Sir Archibald Macdonald, Bart., was appointed the Steward of the Poultry Department at the Lincoln meeting.

JUDGES.—The judges of implements and live-stock for the Lincoln Meeting were then, with a few exceptions, finally appointed.

COUNTRY MEETING OF 1855.—A report having been read from the Town-Clerk of Carlisle, on the amount of railway accommodation in the north of England, it was carried unanimously, on the motion of Mr. Raymond Barker, seconded by Sir Matthew White Ridley, Bart., that the city of Carlisle should be the place of the Society's country meeting next year.

COMMUNICATIONS were then submitted to the Council, and reserved for further consideration, from Mr. Spooner, on the National Importance of Promoting Improvement in the Breeding of Cavalry and Artillery Horses; and from Mr. Frere, on the Appointment of a Consulting-Botanist to the Society.

Adjourned to Wednesday, June 14th, at 12 o'clock, when Prof. Way would deliver his lecture on Peat-Charcoal and other Deodorising Substances.

Farmers' Clubs.

LONDON, *June* 5.—*On Labourers' Friend Societies.*—A paper on this subject was read by Mr. Morton, of which the following is an abridgment:—

I must confess that it was not because of any belief in the great influence of Labourers' Friend Societies on the condition of the labouring population that I ventured to suggest their present policy as being worthy of the attention of this club. Scattered as such societies are, at such wide intervals over the country—with such an extensive field, therefore, to each, over which it has to administer what power it may possess—their influence cannot be very great. And I believe that there are few gentlemen resident in country localities who have taken an interest in the welfare of the labourers around them but must feel that that has been comparatively little influenced in this particular way. No doubt the hearty union of many in pursuit of any object renders that object easier and more likely of attainment; but, if the object be, as in the case of most of our labourers' friend societies it professedly is, the moral improvement of the district, I believe it will be found that individual influence and example, and not that of societies, is the only really useful and efficient agent. No one, I think, will dispute the opinion that a single energetic man, an employer of labour, whether he be a farmer or a manufacturer—with a personal character for rectitude and benevolence—kind enough to wish his neighbours well, and *wise* enough, as well as able, to *work* for that end, as well as wish it, will exert a far more powerful and successful influence for good upon the labourers around him than any society, with its system of direct rewards, could hope to do, though it held its meetings in the market-town close by, and was supported by all the gentlemen in the county. Although, however, the power of such societies may not be great, yet it is something, and being directed to an object which we all feel to be of the very highest importance, it is greatly to be desired that it be directed aright; and as it is certain that the discussions and the resolutions of the Central Farmers' Club do exert a considerable guiding influence on many of the local agricultural societies, I hope that the present policy of these societies in reference to the agricultural labourer will this evening receive full and dispassionate consideration.

In the first place, then, what is the present policy of our local Labourers' Friend Societies? This is to be gathered from their prize lists and their rules. In order to answer this question, I have gone through the rules and the reports of upwards of 50 of the local societies of England, and of many more in Scotland and in Ireland. I do not refer to Farmers' Clubs and Discussional Societies, of which there used to be many and are still a few in the country, but to local agricultural societies, established, if we adopt the title of the South Cheshire Association, "for the encouragement of agricultural enterprise, and the promotion of industrious and moral habits among the labouring portion of the community." The fourth general rule of the Cowfold (Sussex) Association puts the objects and the policy of these societies still more plainly. It is as follows:—"That two classes of prizes be offered by this Association—Class I., for the encouragement of enterprise amongst the farmers. Class II., for good conduct and skill amongst labourers." On the first class of means employed I am not about to say anything; the subject on the card confines me to the second—the means employed by our agricultural societies for the benefit of the labourer. These means have, as the words quoted indicate, two objects in view, the promotion, namely, of good conduct and of skill.

It so happens that, among 100 letters which I received two or three years ago from the secretaries of these societies, in answer to a request for information, only two referred to the influence which it was believed such societies were exerting in the country. The one letter referred to their influence on the skill of the labourer, and the other to their influence on his moral standing; and as those letters state pretty fairly the opinions on the subject which I should like to see embodied in this evening's resolution, I will read them. The first is from the secretary of the Isle of Thanet Sheep-shearing Society. It states—"The object of this society is to improve the labourers that perform such work, and to encourage them by rewarding them with prizes—and I certainly can state they are very much improved since this and similar societies have been formed." Here, I take it, is a testimony to the success of these attempts, by exciting emulation, to increase the skill and the efficiency of the labourer. My second testimony is from the honorary secretary of the North Allerton Agricultural Society. He states that that society is supported directly by the best names amongst the well-known agriculturists and breeders of Yorkshire, and that it thus has advantages over many other local societies; but as to the influence of its rewards for good conduct—for long servitude—and avoiding parish relief—he says:—"Having an opportunity of witnessing the practical working of the society, I am enabled to say that the premiums to agricultural labourers produce little or no good either to the labourers as a body or to their employers, and in my opinion there would be far more wisdom in offering premiums to the best cultivated gardens or plots of land than in the present supposed method of rewarding the poorer classes. Probably the best proof of this view of the case is that there is scarcely any competition for the premiums at present offered, and the labourers can only be induced to compete at the suggestion of their masters." I may add in corroboration of this last remark a sentence which I find at the foot of the prize list of a Cheshire association. "Members of the association are particularly requested by the committee to endeavour to induce cottagers in their respective neighbourhoods to become candidates for the premiums offered for their competition." Well, in this second letter we have, I think, a testimony to the inefficiency of the system of money rewards as incitements to improved moral conduct. These two letters, then, state plainly enough the usefulness of attempting, by money rewards, to excite to greater skill—and the uselessness of attempting, by money rewards, to induce a higher moral standing; they exactly state the opinion on the subject which I hold myself, and which I should be very glad to see embodied in a resolution of this club. These letters are, as I have said, of several years ago; but it is plain that their value as evidence is altogether independent of their date. I may mention, by the way, that the greater number of the reports of the societies which I have examined within the last few days are of two or three years ago; but those of the past, and even of the present season, which I have also seen, maintain their original character; and I believe, therefore, that I am safe in reading the *present* policy of our labourers' friend societies in those reports of a few years ago, as well as of the present time, which I have in my possession.

And, first, as regards prizes for evidence of skill:—

[A prize list was then read, in which rewards to ploughmen, shepherds, hedgers, thatchers, hoers, barnsmen, hop-dryers, dairy-maids, chaff-cutters, shoeing smiths, allotment tenants, and cottagers (for bread, for domestic economy, neatness, &c.), were offered for *skill* in their respective operations and proceedings.]

The second division includes premiums for good conduct. Most societies of the kind have a preliminary rule excluding from the competition any who cannot produce certificates from their respective ministers as to their general good conduct. I see, too, that what are called clergymen's prizes are or were offered by the North-East Hants Agricultural Association:—

The clergymen's prize of 3*l.* 3*s.* will be given to the agricultural labourer, or the now disabled cottager, who was an agricultural labourer, who, living within the circle of the North-East Hants Association, shall obtain from his parochial minister, and one churchwarden, the highest character for honesty, industry, sobriety, attention to his children's education, and his own religious duties; the certificate must particularly state if he and his family are regular in their attendance on divine worship, at his own parish church.

The clergymen's prize of two guineas, in like manner, to some single woman, widow, or spinster, above the age of 55 years, &c.

I cannot but think, notwithstanding full sympathy with those who offer such prizes, in the object which I presume them to have had in view, that this way of attaining it is altogether mistaken. I would submit to you that a money reward for honesty is an absurdity—that a money reward for industry should be given in the form of wages—and that a money reward for attention to religious duties is apt to be a premium upon hypocrisy.

[The second division of the prize list was then gone through: it includes prizes to the labourer who has brought up "the largest number of children born in wedlock without parish relief;" to him who has "placed out the greatest number in respectable service;" prizes for "long servitude in the same family;" for widows who have maintained families without parish relief; *for those who have spent most on the doctor during*

the year(*!*); for the oldest men who can prove that they have not been convicted of crime; for those who have supported impotent relations; for those who have most in the savings' bank; or who have subscribed longest to a benefit society.

This, then, states the policy of Labourer's Friend Societies on both divisions of the subject. I must add that rewards for good conduct are confined to England. I find them as far south as Cornwall, and as far north as Penrith, but they do not cross the border. The nearest approach to anything of the kind in Scotland is a prize given for neatly managed cottages and gardens, which I see announced in the list of an East Lothian Society. I am informed, however, by Mr. Hope, of Fenton Barns, that no rewards of any kind are now offered to labourers in East Lothian. And I am informed by Mr. Hall Maxwell, the Secretary to the Highland Society, that while they encourage cottages, gardens, hedge cutting, draining work, and so on, they never had prizes for long service or large families; and their premiums, such as they are, consist of medals or money, not of coats and buttons. In Ireland, again, no such rewards are offered either. In most districts there, indeed, there is not generally that distinction between labourer and occupier of land that there is with us; and the prizes are confined to 2*l.* and 1*l.* rewards for small plots of well-managed crops, whose cultivation it is desired to encourage.

Well, then, having thus stated what the methods adopted by our English Societies for the benefit of labourers are, we are in a position to criticise them. As to the first division of their efforts, no difference of opinion will exist, the excitement of emulation is the best way of increasing skill, and the only thing of importance will be to direct the rivalry aright, so that it shall include all the processes and operations in which the agriculture of the district is interested. Mr. Bailey Denton, a member of this society, I believe, was the first to start draining matches, and I see they are now advertised pretty generally as a feature in the local agricultural meetings. Digging matches, too, are not uncommon at such meetings. I see, too, an offer by a Cheshire Society, which I think deserves to be generally made—"for the invention or improvement of any implement in husbandry, 1*l.*"—thus directing the attention of labourers to the means of facilitating their own work. On the second head, however, *i. e.*, as to the rewards bearing upon good conduct, excepting possibly those relating to benefit societies, and savings' banks, my own both feeling and judgment would be for sweeping the whole affair away, as being generally mischievous and always mistaken. I am entirely ignorant as to what the feeling of this society may be upon the subject, and do not know, therefore, what detail of argument or persuasion may be needed in defence of my position. I may, however, say that it is one which is held by many gentlemen well known in the country generally as agriculturists, and well known by labourers as well as others in their own localities as *good neighbours*. Perhaps sufficient credit is hardly given to those who are for upsetting this system of rewards, not only for the perfect sympathy which certainly they feel in the benevolent object for which this premium system is devised, but also for the experience which many of them undoubtedly possess in all the circumstances and peculiarities of English country life. I could quote a letter which I lately received from Mr. Hope, of Fenton Barns, in East Lothian, a well-known Scottish agriculturist, condemning the practice, which is altogether opposed to the general feeling there, of money rewards for long servitude and so on—but it would be said that he does not understand the circumstances of English village life, and being altogether ignorant of the kind of feeling out of which this practice has arisen, of course his opinion on the subject ought not to influence us. This cannot, however, be said of many an English opponent of the plan, some of whom I hope are present now—and I will be bold to say it cannot be truthfully said even of myself. I have had the good fortune to know something of many English farmers in various grades of intelligence and wealth—from the small occupier up to the leading tenant in a parish. I don't know where any happier picture of intelligent and useful social life could be obtained than was for many years presented in a quiet country village not far from where I lived—where the leading occupier, and therefore leading man in the parish, was an enterprising agriculturist in extensive business—gaining prizes at the local and the country shows—a wise and kind-hearted master, too, winning the affections as well as securing the services of his men—and a Christian gentleman, influencing for good his equals as well as his inferiors.

None who were fortunate enough to be frequent visitors at the hospitable old court-house, which was the residence upon his farm, can be called ignorant of the character of English country life as it is when at its best. This gentleman was, I suppose, the advocate of these money rewards to labourers for good conduct—at least I have, on looking over some old society books, within the last two or three days, seen his name as recommending labourers for such premiums; but I am quite sure it was his personal character alone that made that village what it was—his personal character and that of his family, and not the influence of the Society whose rewards the labourers received, that made them what they were and are. I am afraid you will think that in making this allusion I am running away from the subject, but I have referred to this instance simply in order to show that it is not in ignorance of the relationship of master and servant, as seen on many an English farm, that I hold the opinion I have expressed on the impolicy of the prize lists of many an English Society. I will now state my objections in succession.

(1). The first probably would be—to money rewards or material advantages of any kind as incitements to moral improvement. Of course the morality of any conduct depends altogether upon its motive, and if you say that it has been with the view of gaining this 3*l.*, 2*l.*, or 1*l.* reward, that such a man has supported his impotent father, or punctually attended his parish church, or abstained from crime, or even retained his place upon the farm, or struggled on without parish relief,—then, I say, that compared with another who has done none of these, he is not necessarily the better man of the two. If you say this money is not offered as a prize for competition, but as a reward in acknowledgment of services rendered, then I reply, 1st, it is in effect a prize—for candidates appear, and a few only are successful; and 2d, unless it be a prize, *i. e.*, unless it acts as a stimulant to good conduct in others, it is utterly useless; for this is the professed object of the Society—the promotion of industrious and moral habits among the labouring population.

(2). Let me say, too, that I think this professed object is not sufficiently kept in view, to the entire exclusion of everything else, by some of the societies whose rules I have read. It is not altogether clear, from some of these prizes, that the interest of the occupiers, as much as of the labourers, has not been the leading motive in the offers made. It is a very good thing for the labourer, no doubt, to strengthen the independent feeling which shall lead him to avoid parish assistance, but the offer of money to him, with that end in view, and that, too, by an association of ratepayers, must at the best be a very doubtful method of attaining it.

(3). It may be a good thing (I do not think it necessarily is) to encourage labourers to remain for a length of time in one place, but that is not to be done by a county association; it is to be done by the master himself when he has got a good servant, and by the servant himself when he has got a good master. The thing is as merely private and mutual an arrangement as can be conceived, and it is, I think, placing it in a wrong position to bring it before a public society. It is as much a thing for the benefit of the master as it is for the benefit of the servant; and it is as much a thing to the credit of the master as it is to the credit of the servant. Let them be satisfied with their own mutual advantage and private friendship, which are in themselves their own reward. If any other reward *must* be given, the master deserves it as much as the labourer, and I was glad to see this acknowledged by the Devon Agricultural Society, in whose report of several years ago I read:

> "To the Rev. W. H. Arundell, of Cheriton-Fitzpaine, with whom John Cockram has lived during a servitude of 43 years, a Silver Medal.
>
> "To John Cockram, aged 82, who has lived with the Rev. W. H. Arundell, as above, and has always been strictly honest, industrious, and sober, 1*l.* 10*s.*"

If Mr. Arundell and John Cockram were mutually satisfied with their position, no reward was necessary; if not, then any merit belonging to either must have been that of patience under dissatisfaction. That may have been a proper subject for reward or not.

(4). But even if it was, I cannot believe that rewards of this kind, offered to old age, can have an influence on younger men at the age when character is forming, and when alone such influences are of any use whatever.

(5). They are not only of no use to others, but how paltry and meagre and inadequate, and altogether unfit an acknowledgment they are in the case of the individuals themselves every one must feel. [Instances bearing especially on rewards for good character and faithfulness in service were quoted in proof of this.]

No wonder, I should say, that the competition for these rewards is diminishing; I confess I should think the higher of any district where it had altogether ceased. There is no lack of competition for prizes offered for skill in ploughing, or in other agricultural operations, but there is for those for servitude and for not coming on the parish, and for character. I see at last year's meeting of the Oxton (Derbyshire) Agricultural Society—

> "Thirteen competitors entered at the ploughing match, and 10 for the hedging, but no competition existed for the prizes offered to women for long servitude; and although the names of men receiving prizes under similar circumstances are given, no intimation is given of the number of competitors for the prize."

Their probable influence, however, may be gathered from the following terms, in which one of them is announced:—

> "To the most meritorious labourer.—1st prize, 15*s.*, to William Steemson, 37 years servant to H. Sherbrooke, Esq., and his predecessor; 2nd, 7*s.* 6*d.*, to William Gregory, three years and eight months servant to Mr. Thurman."

It is only fair to add here, however, that I this morning received a letter from the Rev. W. Shepherd, of Margaret Roding, Essex, giving an account of the doings of the Roding Labourers' Friend Society, and that they present a striking exception to the general experience of such societies, so far as I have seen their reports. Indeed, the whole affair presents such an extraordinary picture of what it would appear may be done by means of this kind, when under careful and attentive management, that the notice which it deserves here would be much better from some one who is prepared to defend such means than from myself. He says:—

> "I have been in the almost sole management of the Roding Labourers' Friend Society for 12 or 13 years, and have never found any reason to abate the favourable opinion I entertained of its beneficial operation, both upon masters and labourers. For I do not think the effect is solely confined to the labouring class. I think one great good has been in drawing the employer and the employed more closely together, and thereby more intimately identifying their mutual interests, from which has been fostered a greater kindliness of feeling towards each other, which has, to a great extent, resisted the dissociating spirit of the age. My own feeling on the subject is borne out generally by the farmers of the district; that the workmen are more skilful, they have a more tender regard for character; and they value a good name, especially connected with this Society. I can safely aver that scarcely a prizeman amongst us has ever been found to disgrace the recommendation of his master—based as it is with us on good moral conduct. This is our first requirement, wanting this all other qualifications are as nothing—they are excluded from competition. We have had of late years an average of about 500 certificates yearly, and every certificate is closely scrutinised by an open committee, before admitted to further trial. The prizes are all given in money; in some societies tickets are given, not payable for some days; in others, clothes, or both. My own feeling is, money is the best, accompanied in the principal classes with a memorial of merit. If the man is deserving to be recommended, he ought to be trusted that he will make a good use of his money. If not trustworthy the reward is a mockery. The system is now so generally understood and acted upon that the preliminary committee—the grand jury—are seldom called upon to reject a candidate. That a spirit of emulation is excited and kept up is very apparent; that a man feels himself of more importance after receiving a mark of public approbation is not to be doubted. Every prizeman becomes a public man, and a sense of that adds to his feelings of responsibility, that he should not lose his elevated position. I would add, in reference to length of service (divided into three classes, as you will see in the accompanying bill), we had last year in the old class 35 candidates, whose average length of service was 35 years. In the middle class, 22 candidates averaged 21 years; and the youths, 16 candidates, 10½ years' service. The previous year presented a similar average, and this, too, after the Society has been in operation 14 years. Our prizes are distributed in the field from a waggon, and the attendance last year, in spite of a drenching rain, was several hundreds of people of all classes."

I have thought it fair to read this letter, as of course I want to obtain a victory only for the truth in this matter. My own opinion in reference to such a case as this is, that it is the personal influence of such a man as Mr. Shepherd, and not that of the association, that is here the really acting cause of the success. Or if that be not strictly the state of the affair, that, at any rate, it is personal and not society influence that produces the result. It is not a county society—it includes but two or three parishes—the candidates are known to one another, and to the men who are assembled to reward them, and I can imagine a prize and testimony to character under such circumstances to be valued by labouring men, when one of a merely official character, such as would be awarded by a lot of strangers, would be valueless. Be that as it may, I suppose Mr. Shepherd's experience ought to have some influence on our decision, and I therefore give the account as he has forwarded it to me.

It does not at all alter my opinion as to the much lower status of the labouring men in a district where those rewards are sought, than in one where they would be despised. The question raised as to the men being *trusted* with money rather than clothing, I think confirms this view. It is somewhat as if they were a lot of children, good indeed, but still whom it was advisable to keep out of these little temptations. Certain it is that no rewards of such a kind, or of any kind, are offered in East Lothian, for instance, where, if they *were* offered—I allude to those for large families of legitimate children, and for benevolent attention to impotent relations, and for abstinence from parish relief—they would be looked upon as a positive insult; and yet in East Lothian Mr. Stevenson bears this testimony to the character of the working men:—

> "Nowhere does there exist more of that community of feeling and that friendliness of relation, which ought to subsist between the employers and the employed, than in this county. The servants not only occasionally suggest improvements, but endeavour to carry out what is novel, whether in the adoption of new implements, or of what is new in practice. On some farms the same families have sustained the relation of master and servants for, at least, two generations, and it may be mentioned as a striking proof of the general trustworthiness of the men, that a considerable proportion of the grain is sold by *them* in the stock markets—they giving delivery and receiving payment. We have heard of one instance only where this trust was misplaced—every sixpence of the money being always faithfully accounted for."

Now, of course, English management must be adapted to English circumstances. But I think it deserves the grave consideration of the managers of our labourers' friend societies, whether they shall adopt a system which does, I submit, tend to stereotype the present position of our men, which is that of obedient and almost child-like dependence when they are good, and, of course, therefore, ignorant and reckless blackguardism when they are bad; whether, on the contrary, they ought not to aim rather at the encouragement of manly self-reliance, not only in the matter of personal support, but in intellectual standing and mental independence, without which all other sources of independence are but artificial props undeserving of our confidence. Such are the props, in my opinion, supposed to be erected by these prizes for long servitude, and for not coming on the rates.

I will make a last remark on this point, in answer to an objection which may perhaps be raised. It may be said—

> "You are altogether mistaken in the character of these rewards—no one thinks of them as prizes except yourself. They are testimonials of respect—expressions of goodwill and gratitude—certificates of character—or what else you please; they are not premiums or rewards for good behaviour. A master has had a servant for years in his own service and that of his father before him—sincere esteem has long been entertained for his character, and gratitude for his services; he looks about for some way in which to express the sense he entertains of his value as a servant, and of his character as a man, and he finds no way so well adapted for the purpose as recommending him to the notice of the county association which stands there ready to his hand.'

Now, in answer to that, I take it that the gratification of the employer's gratitude and the improvement of the labourer's character, are two entirely distinct objects. If I were asked to subscribe to any such county association, and were convinced that the latter of these objects was likely to be forwarded by the methods it employed, I would heartily lend what assistance I could; but if I were told it was a machinery which had little more than the effect, whatever its proposed object might be, of providing amongst a number of members the work of expressing the gratitude of a few of that number, I should certainly have nothing to do with it. Surely if any one feels this gratitude, he is bound to express it himself without the assistance of a society.

I hope nothing that has been said will appear as if spoken either in ignorance or in disregard of the real worth of character one often finds amongst agricultural labourers, and *especially*, I would say, among those who have been long in the service of the same family. It is because its worthiness is high above, and altogether out of, the field of £ *s.* *d.* considerations, that I would do away with these money rewards; and it is because its influence is unaffected by society certificates of abstinence from crime, or from parish relief (apparently the next worse thing)—of length of servitude, freedom from

intoxication, and so on, that I would leave our labouring men to the rewards of conscience, and to the respect of friends and neighbours, as the natural and only proper testimonial—one, however, which a long and useful life will always insure for them.

There will be plenty of scope for our labourers' friend societies though all the money rewards for good behaviour were swept away—all rewards for skill of course should be retained, and for the rest they cannot do more for the interests of the labourer than by encouraging enterprise amongst the farmers. If 12 tenant farmers, Mr. Mechi's neighbours, were locked up till they should arrive at a verdict upon the agricultural merits of Tiptree Hall farm, it is possible that they might sustain some considerable length of imprisonment; but place 12 of the labouring men of Tiptree Heath in that position, and I will engage their foreman shall have their verdict ready in five minutes.

There can be no doubt that agricultural energy and enterprise are greatly for the benefit of the agricultural labourer. That I can say from some experience, for I will claim this credit for the Whitfield so-called example farm, that the character of the labourers in its neighbourhood has greatly altered for the better, as the result directly and indirectly of its establishment. The blackguardism of that neighbourhood is very much reduced; the public-houses are the places for information about that, and they will tell you; the game-keepers will report less poaching; the shoemaker, baker, grocer, make a better living than they used; cottages are improved, and their inhabitants are improved as well—evenings are spent in the allotment grounds that used to be spent in the tap-room—and friendly societies and savings' banks, and building societies, have increased their hold upon the people — and yet no labourers' friend society that I know of has ever done anything for that neighbourhood—no money reward for long servitude that I have ever heard of has been received by any person in the place—nor has any one been encouraged to maintain his independence by the offer of a prize to him who should bring up the largest family without assistance from the parish. The facts are these—a greater quantity of labour has been employed, and wages have been paid as much as possible by the piece; and for the rest, thanks to the wise benevolence of the late Earl Ducie, a chapel and a school-house were erected, and day and Sunday schools established; and influences there were put in exercise, compared with which, in their effect upon the rising young men and women of that neighbourhood, any system of money rewards offered, whether for servitude or independence, can be little better than a mockery. Apart from the strictly agricultural societies, I would regard the British and Foreign School Society and the National Society, and probably the Emigration Commissioners, as the three best labourers' friend societies which have yet been seen. They have all had a hand in the alteration for the better which the neighbourhood of Whitfield example farm exhibits—indirectly, as I have said, as the result of its establishment.

I would urge, in conclusion, that every local labourers' friend society should endeavour to encourage education within its limits; that it should encourage the operation of benefit societies and of savings' banks, and especially of that best of all savings' banks for the employment of scraps of time—the allotment system; that it should avoid everything having a pauperising or dependence-producing tendency, keeping in view the maxim which involves a most important truth in material things, as well as in others, that "to him that *hath* shall be given;" that on this ground it should devise means for encouraging the payment of wages by the piece; that it should try to guide and *possibly* to encourage the spirit of emigration in its district; that it should direct its chief attention to the offer of rewards for evidence of skill, whether in agricultural, horticultural, or more domestic operations; and, lastly, that it should abstain from all attempts to influence, by money rewards, such matters as attention to religious duty, benevolence, or personal morality, where higher motives alone ought to have an influence. I shall be exceedingly glad if any experienced member of this Society shall see his way to the proposal of a resolution having especial reference to the last of these points.

A lively discussion ensued; Mr. Acton referred at some length to the advantages of benefit societies and savings' banks, and contended for the advantages of the rewards offered for good conduct as a nest egg of encouragement to prudence and economy. He also deprecated the reference to rewards for good conduct as having no moral influence.

Mr. Nesbitt agreed with Mr. Morton's remarks on rewards for personal morality. Prizes might be usefully offered for physical and intellectual superiority, for man could judge with certainty of these: but real moral standing was a thing which he could not judge, and therefore could not justly reward.

Mr. Mechi believed that these societies commenced at the wrong end. They ought to educate the children and the young men, and not to offer rewards for good conduct to old age. He referred to the apathy prevalent in agricultural districts on the subject of education, saying that in his own parish of 7000 acres a 3*d*. road rate would yield 80*l*.; but the whole contribution per annum for education within that district was 15*l*. a year. The ignorance of the agricultural labourer reacts on the farmer in every way. Very often a man's ability to improve his management was limited, not by the extent of improvement in agricultural machinery or science, but by the trustworthiness and intelligence of his workmen. He believed, too, that the agricultural labourer would be greatly improved by everything that tended to attract capital to agriculture.

Mr. Baker, of Writtle, entirely agreed with Mr. Mechi on the subject of education, and as to the present system of rewards, as beginning at the wrong end. An educated man might be a man with more wants, but in an even greater degree he possessed the means of satisfying those wants. He adverted to the usefulness of these societies in the promotion of skill.

The Chairman agreed with much that had been said in the opening paper, but thought it had been written in a strain of irony and depreciation, as regards these societies, which, he contended, they did not deserve. Before they condemned them, they should remember what a large proportion of their attention was devoted to the promotion of increased skill; and as to the rewards for struggling against parish relief, and for good conduct in general, he knew as a practical man that in his own locality they had been productive of great benefit. Other gentlemen followed on the same side, referring to the annual meetings of these societies, the union of all classes in a common object, the addresses of the clergymen present, the pleasure evidently felt by all, as opportunities of real usefulness which it would be the worst policy to abandon.

Mr. Morton replied that no one in that room had spoken more highly of the benevolent object of these societies than he had done himself. The only question was as to the best way of attaining it. He believed that money rewards for benevolence to relatives and for personal morality had a mischievous tendency, and hoped the resolution arrived at would condemn them.

It appeared, however, to the majority that it was unadvisable to pass any condemnatory resolution whatever, and Mr. Baker at length framed one, which was agreed to—stating the proper object of labourers' friend societies to be the promotion of good conduct and agricultural skill, and that in order to its attainment they should endeavour to promote education within their respective districts, and by means of rewards to excite emulation in the skilful performance of agricultural operations.

Miscellaneous.

The late Mr. Milburn, of Sowerby, near Thirsk.—We very deeply regret to hear of the sudden death of Mr. Milburn, the secretary to the Yorkshire Agricultural Society. Mr. Milburn was well known in the agricultural world as an able contributor to its periodical literature; in his own county he was highly esteemed, both in his profession as a land-agent, and in connection with the county agricultural society, as a most zealous and efficient office bearer; while in his immediate neighbourhood, he was loved and honoured for his benevolent efforts for the good of labourers and others.

Calendar of Operations.

JUNE.

Cheshire, *June* 7.—Since our last report, the weather, with very few exceptions in certain localities, where heavy thunder showers have fallen, has been exceedingly dry; consequently there is, generally speaking, a scarcity of Grass for the cattle, and the prospect of short crops of hay; Potatoes and Mangold Wurzel, too, have come up irregularly, and are much retarded in their growth by the dryness of the weather; and the same remarks will apply to late-sown Barley and Oats. The Wheat crops, although thin on the ground in many places, are much improved, and, on the whole, look very promising. The weather has been favourable for working the Turnip fallows, and the generality of farmers have completed their Swede sowing satisfactorily, and are now only wanting a little rain to place their crops in the position they would wish them to be. Good beef has become very scarce, and is consequently commanding an unusually high price. Potatoes also are very scarce and dear in the markets—as much as 9*s*. per bushel of 90 lbs. was obtained last week—and new ones, it is to be feared, will be later, and a worse crop than usual, in consequence of the frosty nights about the 24th April, and a continuance of the dry weather. Ewes and lambs have done much better lately than they did about the end of April and beginning of May, at which time there were great losses from disease, bowel complaints, &c. *N. C.*

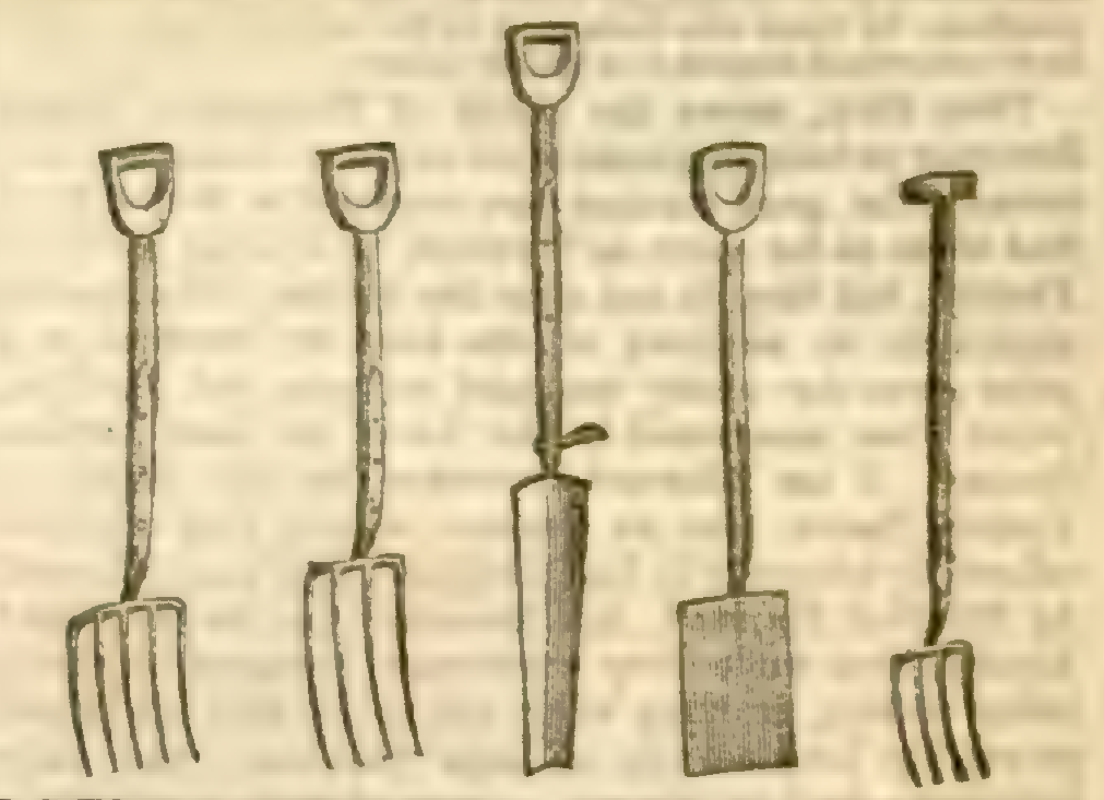
Wester Ross, *June* 4.—The whole country has been visited with abundant showers. The wind throughout last month was generally easterly, and the weather cold, so that Grass that was early eaten off with sheep or cattle has made little progress, and is now somewhat bare. Warm weather, however, has set in, and having abundant moisture, we may expect rapid vegetation. Wheat has been making astounding progress, and bids fair to be a luxuriant crop. Indeed in some places it is likely to overshoot the mark; and every farmer knows that a much lodged crop of Wheat is anything but a satisfactory yielding one. Harvest is still at a respectable distance, and ere it arrives we may expect many alternations, and have a different report to make. Little more can be said of Barley and Oats at this early stage than that they have set out gracefully and vigorously, and will, with an ordinary season, yield an abundance of corn and straw. Potatoes are generally coming above ground, and exhibiting a regular and healthy braird. From the breadth planted, the dependence upon it, and the bright anticipation of a golden harvest (anticipations if not originated, certainly greatly strengthened by the experience of the past year), the eye of the farmer will be oft turned towards this very interesting, but extremely precarious, part of his crop. Swedish Turnip sowing has been concluded. The better time for sowing this part of the crop, in this quarter, is from the middle of May to the beginning of June. The quantity of these now sown is greatly increased. They are found to possess a larger proportion of fattening substance than common Turnips, and consequently are better suited for feeding off the bigger cattle. They are also found to be excellent feeding for horses, even in their raw state, and horses accustomed to them will eat a large quantity, and thrive admirably upon them. They require a larger quantity of manure than the common sorts; but when abundantly manured, and early and regularly brairded, they seldom fail in yielding a heavier crop than the ordinary kinds. Different farmers give very different quantities of manure to their Turnips. It is evident that with a small quantity the crop cannot be abundant; but it is nearly as clear that a superabundant supply will not make the crop correspondingly large. Should the manure given be suitable, then the rate at which the crop absorbs and assimilates that manure depends entirely upon the nature of the season. If the quantity given be enough to supply the wants of the plant throughout the whole growing season, then the crop will be as large as if the quantity of manure had been double; only with the large application there is something left over to a coming crop. A sufficient dose for Swedes would be found within this range—from 10 to 20 loads of manure per acre, from 6 to 10 bushels of bones, and from 1 to 2 cwt. of guano. Everything here is rising rapidly in price, from the wages of the workman down to the boll of lime. Lime that cost us last year 2*s*. is this year 2*s*. 9*d*. The farmer will by and bye find use for all his high prices. Wages of women for out-door work have risen from 6*d*. to 8*d*. per day—not certainly extravagantly high yet.

Notices to Correspondents.

Grass: *J H* says:—I am shortly about to leave this country to take possession of a sheep run of 10,000 acres in New Zealand, a place that I have already visited, as well as Australia. The run I have selected possesses many advantages, but it is rather small for my purposes. Will any of your subscribers tell me whether seeds thrown broadcast over the land, the native Grass being first burnt, the land not broken up, will improve the herbage sufficiently to induce me to incur the expense; and, in such case, what quantity, reference being had to the expense and difficulty of carrying it up the country some 50 miles, it would be advisable to throw on the land per acre. [If 12 to 20 lbs. of suitable seed per acre were sown broadcast, just before rains, they might influence the character of the pasturage.]

Sea Sand: *R M*. It will not be advisable to cart sand to the farm buildings and use it as bedding. Unless it be calcareous it is not in itself of any worth, and it is not absorbent enough; and in all these particulars, therefore, it is inferior to dry peat dust.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.



MESSRS. BURGESS and KEY, as Mr. Parkes' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.
103, Newgate Street, and 52, Little Britain, London.

WEIR'S IRRIGATORS, LIQUID MANURE PUMPS, FIRE and GARDEN ENGINES.

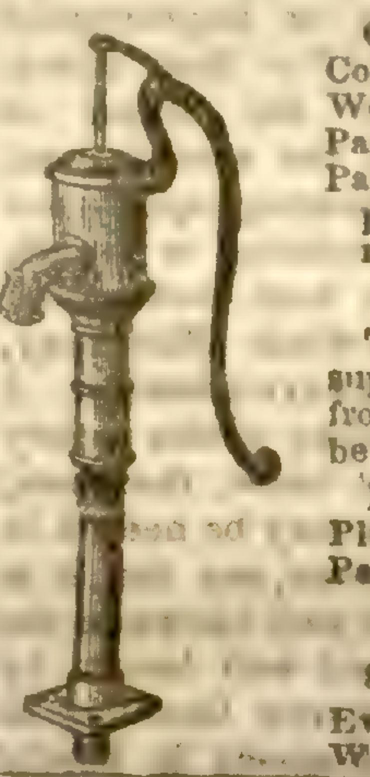
	£	s.	d.
Single Cylinder (as engraving) ...	8	8	0
Double Cylinder ...	10	10	0
Horse power size ...	15	15	0

Exclusive of Suction and Delivery Pipes.

Illustrated Catalogues free per post.

Terms Cash on Delivery.
Edward Weir, Agricultural Engineer, 16, Bath Place, New Road, London, removed from Oxford Street.

WARNER'S PATENT FARM AND COTTAGE PUMPS.



Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

	£	s.	d.
Patent Pump	1	15	0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing	3	0	0

Larger sizes if required.

The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,

8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water; Fire Engines, &c.

JOHN WARNER AND SONS
Crescent, Jewin Street, London.
GALVANISED IRON TUB GARDEN ENGINE,
With Warner's Registered Spreader,

Is strongly recommended, for durability and low price, viz., 2*l*. 19*s*., to hold 10 gallons.

Larger sizes made either in wood or iron. May be obtained of any Ironmonger or Plumber in town or country, or of the Patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Syringes of various constructions and sizes from 9*s*. upwards. An extensive assortment kept.

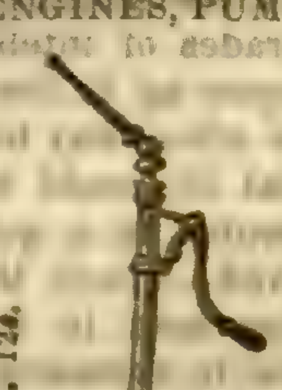
JOHN WARNER and SONS, 8, Jewin Crescent, London, Manufacturers of FIRE ENGINES, PUMPS, GARDEN ENGINES, and SYRINGES.

Conservatory Pump, with Warner's Registered Spreader, 27*s*. 6*d*.

No. 32.

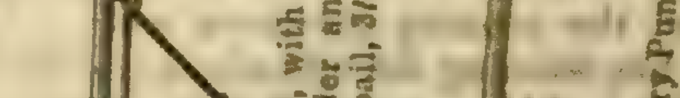
Garden Engine, with Warner's Registered Spreader and Wrench 8*d*., with iron pail, 3*l*. 12*s*.

No. 11.



Patent Conservatory Pump, with Warner's Registered Spreader, 2*l*. 15*s*.; with iron pail, 3*l*. 5*s*.

No. 14.



Brass Syringes, 9*s*. to 18*s*.

All articles of John Warner & Sons' manufacture may be obtained of any Ironmonger or Plumber in town or country, at the advertised prices.

John Warner & Sons having been practical Horticulturists, for many years, know exactly the requirements of both Amateurs and Gardeners. A gardener with a properly constructed pump will get through as much work in five minutes as he could with any Syringe in a quarter of an hour, and with half the labour to himself. Syringes are economical only for small houses.

No establishment offers such a variety of effective machines for hydraulic purposes, whether to supply Gardens, Hothouses, Cottages, Farms, Mansions, or Boards of Health, with every requisite connected with the conveyance and distribution of liquids.

Fountains suitable for Conservatories, Lawns, &c.
Sheets of Engravings sent on application.

HOSE PIPING.—GREAT REDUCTION IN PRICE.

WAITHMAN'S PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense Pressure, and much more than Leather, vulcanised Rubber, or any other Hose; and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented Inventions, the cost of manufacturing it is now reduced at least 60 per cent., which advantage is offered to the Public.—London Agents, BURGESS & KEY, 103, Newgate Street, and 52, Little Britain, who on application will forward wholesale and retail prices.

TO AMATEUR GARDENERS, LOCAL BOARDS OF HEALTH, & SANITARY WORKS.

PATENT SLUICE COCKS, Gutta Percha, Combinated ditto, Patent Flexible India Rubber Tubing, and every other Hose for Watering Gardens. The Hydraulic Ram, Fire, Garden, and every other kind of Pump, Hydrants, High Pressure Cocks, and all other articles to be had. Wholesale and Retail, of FREEMAN ROE, HYDRAULIC ENGINEER, 70, Strand, and Bridgefield, Wandsworth.

(Fig. 1.) (Fig. 2.)

J. TYLOR AND SON'S BARROW GARDEN ENGINE (Fig. 1), in best well painted oak tub, fitted with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 1 holds 10 gallons,	throws 60 feet high	...	£4	10
No. 2 " 15 "	" 45 "	...	5	10
No. 3 " 28 "	" 45 "	...	6	18

J. TYLOR AND SON'S BARROW GARDEN ENGINE (Fig. 2), in strong tinned iron tub, well painted inside and outside, with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 10 holds 8 gallons,	throws 25 feet high	...	£2	15
No. 13 " 12 "	" 30 "	...	3	5
No. 11 " 16 "	" 40 "	...	4	0
No. 12 " 24 "	" 45 "	...	5	0
No. 14 " 30 "	" 45 "	...	5	18

A large assortment of every description of Garden Syringes, Pail Engines, Conservatory Pumps, &c., kept in stock.

Full size Syringe, on Read's principle, of the very best quality and workmanship, with two roses and one jet, 21s.; Plain Syringes from 10s. 6d. upwards.

J. TYLOR & SON'S Horticultural Apparatus may be obtained at these prices from any respectable Ironmonger or Seedsman in town or country, through whom alone they will be supplied, and of whom Drawings and Prices may be had.

N.B. Cost of carriage, &c., not included in these prices.

J. TYLOR & SON'S Manufactory, Warwick Lane, Newgate Street, London.

J. TYLOR AND SON'S REGISTERED GARDEN SYRINGE.—Small size, for Amateur use, **21s.** each; Large size, for Gardeners' use, **25s.** each.

By a simple arrangement this Syringe is rendered more effective than any portable Conservatory or Garden Pump ever offered to the public. It is equally adapted for Garden or Conservatory use, and is capable of discharging twice as much water in a given time as any other Syringe now in use. The arrangement consists in attaching a small flexible suction tube to the barrel of the Syringe, through which it is filled with water at every discharge of the previous contents. By this means the Syringe is always charged, and the pull-up stroke of the piston rendered perfectly easy, it having, indeed, no work to do, the barrel being previously full of water. Being thus made self-supplying, a great saving of labour is effected; and the necessity of stopping to fill the Syringe at every discharge being done away with, the direction of the water can be maintained for any length of time. It is perfectly cleanly in its action, as it is not possible for any water to get on the outside of the barrel, which is a well-known inconvenience attendant on the use of every other Syringe. Its construction is perfectly simple, and cannot get out of order; the ground-in ball valves and fittings used for filling all other patent Syringes being entirely superseded. To be had of any respectable Ironmonger or Seedsman in town or country.

J. TYLOR & SONS, Manufacturers of Horticultural Apparatus, Warwick Lane, Newgate Street, London.

N.B. These prices do not include carriage, package, or expenses of delivery in the country.

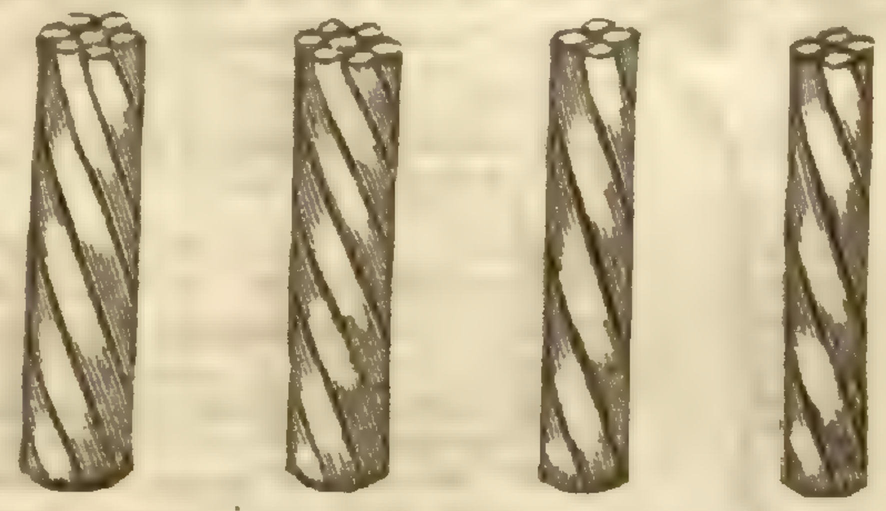
FOR WATERING GARDENS, DISTRIBUTING LIQUID MANURE, ETC.

JAMES LYNE HANCOCK'S VULCANISED INDIA-RUBBER TUBING is now manufactured especially for the above purposes, and is of greater flexibility than any other description of hose or tubing. It is also manufactured to resist great pressure, suitable for attaching to the mains of water works or to tanks, or water butts of high elevations. WATERING HOSE fitted up with brass joints, branches, stopcocks, roses, and jets complete. Vulcanised India-rubber suction pipes for pumps any length or size to order; HOSE for brewers' use, fire engines, &c. VULCANISED INDIA-RUBBER WASHERS, for Steam and Water Joints, and VULCANISED RUBBER in sheets of any size and thickness. Solid vulcanised India-rubber Tubing and Cord, for the joints of glass-doors, sashes, frames, &c.—Prices and every information may be had on application at the Manufactory, Goswell Mews, Goswell Road.

THE GUTTA PERCHA COMPANY'S TUBING FOR WATERING GARDENS, WITH ROSES AND UNION JOINTS FITTED.—27, CITY ROAD, LONDON.

H. J. MORTON AND Co., Galvanised Iron Roofing Works, 2, Basinghall Buildings, Leeds.

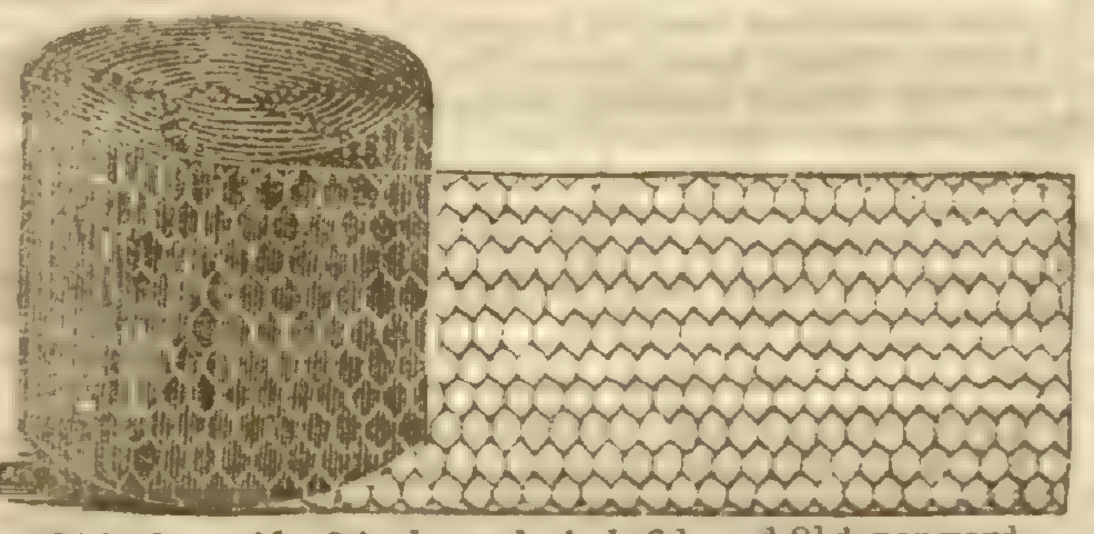
PATENT WIRE STRAND FENCING FOR PARKS, &c.



This Fencing is the most neat, strong, and durable for Parks and Agricultural purposes in use. It cannot be bent or put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply as above.

IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

H. J. MORTON AND Co., 2, Basinghall Buildings, Leeds.—GALVANISED GAME AND POULTRY NETTING, very strong and neat, NEVER REQUIRES PAINTING.



24 inches wide, 3-inch mesh, 4 d., 6d., and 8½d. per yard.
24 inches wide, 2-inch mesh, 7d., 9½d., and 1s. per yard.

GALVANISED IRON SPOUTING, for Dwellings, Cottages, Farm Buildings, &c., NEVER REQUIRES PAINTING.

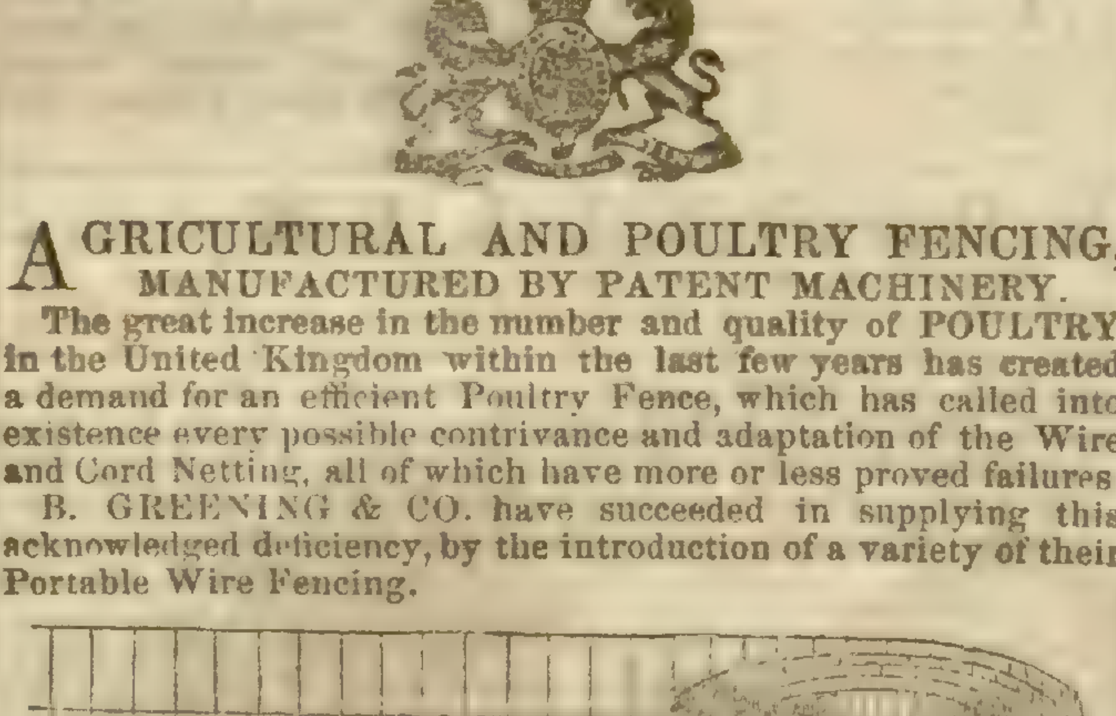
Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalte Roofing Felt, &c.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

AGRICULTURAL AND POULTRY FENCING, MANUFACTURED BY PATENT MACHINERY.

The great increase in the number and quality of POULTRY in the United Kingdom within the last few years has created a demand for an efficient Poultry Fence, which has called into existence every possible contrivance and adaptation of the Wire and Cord Netting, all of which have more or less proved failures.

B. GREENING & CO. have succeeded in supplying this acknowledged deficiency, by the introduction of a variety of their Portable Wire Fencing.



No. 11. PATENT DOUBLE FENCING (Proof against Poultry and Chickens).

This Fencing (which they manufacture by machinery, patented last year) is light, portable, and elegant in appearance, yet stronger and more durable than any Fence before the public. It requires few standards, and is fixed with the utmost facility by a labourer or gardener.

The following are the principal other varieties:—CATTLE FENCING, SHEEP AND LAMB FENCE, HARE AND RABBIT PROOF FENCING, ORNAMENTAL FENCING FOR GARDENS, TRAINERS FOR PEAS, GARDEN BORDERING, EXPORT FENCING, &c. &c., manufactured by Patent Machinery by BENJAMIN GREENING & CO.

1 and 3, CHURCH GATES, and 2 CATEATON STREET, MANCHESTER,

From whom every information, together with Prospectuses and Engraved Sheets of Patterns, may be obtained gratis.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES, GREENHOUSES, DWELLINGS, ETC.

ESTABLISHED MORE THAN ONE HUNDRED YEARS.

THOMAS MILLINGTON requests attention to his present prices of SHEET GLASS in 100 feet boxes.

Squares	6 by 4 and 6½ by 4½	
"	7 by 5 and 7½ by 5½	... ... 13 6
"	8 by 6 and 8½ by 6½	
"	9 by 7 and 9½ by 7½	
"	10 by 8 to 12½ by 9½	... ... [illegible] 3
"	12 by 10 to 24 by 14 ...	... ... [illegible] 0

Orchard House Squares on Mr. Rivers's approved plan, to whom I have sold some thousands of feet:—20 inches by 12, 20 by 13, 20 by 14, 20 by 15, 20½ by 12½, 20½ by 13½, 20½ by 14½, at 19s. per 100 feet.

200 feet cases at 42s., and 300 feet case 63s., in large sheets.

Boxes charged 1s. extra per 100 feet, and the same allowed if returned free of all charge.

HARTLEY'S PATENT ROUGH PLATE GLASS, Fern Shades, Striking Glasses, Milk-pans, Bee Glasses, Cucumber Tubes, Sheet and Rough Plate Glass Tiles, Wasp Traps; Plate, Patent Plate, Crown and Sheet Window Glass, in every thickness and quality, and Ornamental Glass, plain and coloured; pure white Shades for Ornaments, Crystal Glass for Pictures.

Warehouse, 87, Bishopsgate Street Without—same side as Eastern Counties Railway.

HARTLEY'S PATENT ROUGH PLATE GLASS, 1-8th thick, or 2 lbs. to the foot; 3-16ths, or 3 lbs. and 1-4th, or 4 lbs. to the foot, for Ridge and Furrow Roofs, Greenhouses, Railway Stations, Engine Sheds, Mills, Market Halls, and Public Buildings generally.

Packed in Boxes of 50 feet each.

6 by 4 and 6½ by 4½	... ...	10s. 6d. per box.
7 " 5 " 7½ " 5½	... ...	12 0 "
8 " 6 " 8½ " 6½	... ...	13 6 "
9 " 7 " 9½ " 7½ and 10 by 8	...	15 0 "

For larger sizes a full List of Prices will be sent on application. Boxes are charged 2s. each extra, full price allowed if returned free of expense.—For further information apply to

JAMES PHILLIPS & Co.,
116, BISHOPSGATE STREET WITHOUT.

"Rough Plate has never been, and never can be, prejudicial to the colouring of Grapes; though we can easily believe that it has been charged with such a fault by persons who have not skill enough to manage Grapes under glass."—*Gardeners' Chronicle.*

"There *can be no question now* that Rough Plate Glass is the most beautiful as well as the most useful kind of glass that can be employed in horticulture. It is free from all the faults of transparent glass, and has many advantages peculiar to itself, *without a single disadvantage as a set off.*"—*Gardeners' Chronicle.*

DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening Pursuits are invited to examine DEANE, DRAY, AND CO.'s extensive Stock of GARDENING and PRUNING IMPLEMENTS, best London-made Garden Engines and Syringes, Colebrook Dale Garden Seats and Chairs.

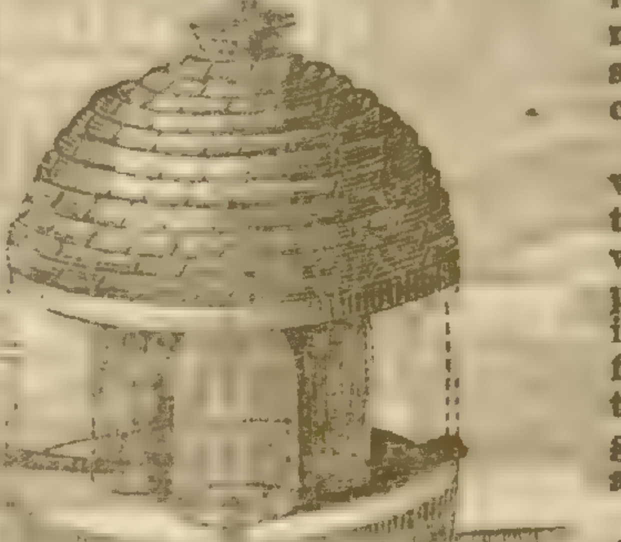
Averuncators	Garden Scrapers	Pickaxes
Axes	Gidney's Prussian Hoe	Potato Forks
Bagging Hooks		Pruning Bills
Bills	Grape Gatherers and Scissors	" Knives, various
Borders, various patterns	Gravel Rakes and Sieves	" Saws
Botanical Boxes	Greenhouse Doors and Frames	" Scissors
Brown's Patent Fumigator	Hammers	" Shears
Cases of Pruning Instruments	Hand-glass Frames	Rakes in great variety
Daisy Rakes	Hay Knives	Reaping Hooks
Dibbles	Horticultural Hammers and Hatchets	Scythes
Dock Spuds	Hoes of every pattern	Scythe Stones
Draining Tools	Hotbed Handles	Shears, various
Edging Irons and Shears	Ladies' Set of Tools	Sickles
Flower Scissors	Labels, various patterns, in Zinc, Porcelain, &c.	Sickle Saws
" Stands in Wire and Iron	Lines and Reels	Spades and Shovels
Fumigators	Marking Ink	Spuds
Galvanic Borders and Plant Protectors	Mattocks	Switch Hooks
Garden Chairs and Seats	Menographs	Thistle Hooks
" Loops	Metallic Wire	Transplanting Tools
" Rollers	Milton Hatchets	Trowels
	Mole Traps	Turfing Irons
	Mowing Machines	Wall Nails
		Watering Pots
		Weed Hooks
		Wheelbarrows
		Youths' Set of Tools

DEANE, DRAY, AND CO. are sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with their Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom. Also wholesale and retail Agents for SAYNOR'S celebrated PRUNING KNIVES, used exclusively by the first Gardeners in the United Kingdom.

DEANE, DRAY AND CO. (Opening to the Monument), London Bridge. ESTABLISHED A.D. 1700.

BEEHIVES.

NEIGHBOUR'S IMPROVED COTTAGE BEE-HIVE, as originally introduced by GEORGE NEIGHBOUR & SONS, with all the recent improvements, glasses, thermometer, &c., price 35s. securely packed for the country.



This unique hive has met with universal commendation, and may be worked with safety, humanity, and profit, by the most timid; its arrangements are so perfect, that the honey may be taken at any time of the gathering season without at all injuring the bees.

Early applications, addressed to GEO. NEIGHBOUR & SONS, 127, High Holborn, or 149, Regent Street, London, will receive prompt attention. Their newly arranged Catalogue of other improved Beehives, with Drawings and Prices, sent on receipt of two stamps.

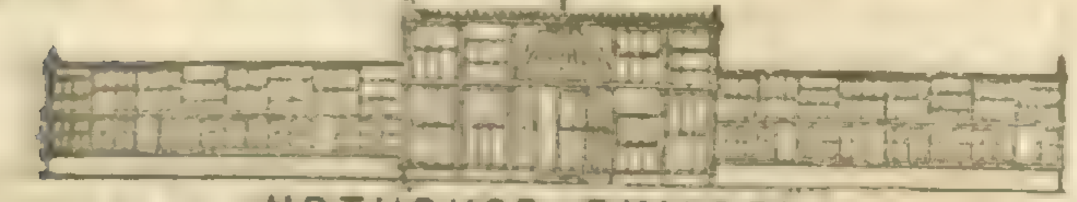
Agents:—Manchester, HALL & WILSON, 50, King Street; Liverpool, JAMES CUTHBERT, 12, Clayton Square; Chester, F. & A. DICKSON & SONS, 106, Eastgate Street; Glasgow, AUSTIN & M'ASLAN, 166, Trongate Street; Dublin, J. EDMUNDSON & Co., 61, Dame Street.

GREENHOUSES.

HENRY FREEMAN, Hothouse Builder, and Hot Water Apparatus Manufacturer, Triangle, Hackney, begs to solicit the attention of the Gentry to his prices for cash. Good substantially built Greenhouses, fixed in any part of the kingdom, 42 feet long, 13 feet wide, 9*l*.; 21 feet by 13 feet, 50*l*.; 12½ feet by 10 feet, 30*l*. A large assortment of Melon and Cucumber boxes, summer houses, &c. Estimates for any branch in the above line either in iron or wood, or park fencing.

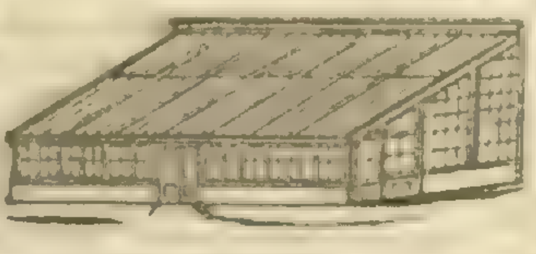
HORTICULTURE IN ALL ITS BRANCHES.

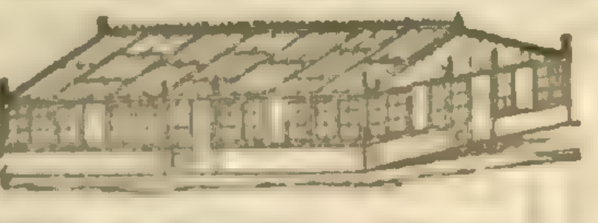
J. WEEKS & Co., King's Road, Chelsea,



HOTHOUSE BUILDERS

The Nobility and Gentry about to erect Horticultural Buildings or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.





The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. Weeks & Co., King's Road, Chelsea, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

At the Lowest Prices Consistent with Good Materials and Workmanship.

GRAY and ORMSON, Danvers Street, Chelsea London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

BY HER MAJESTY'S ROYAL LETTERS PATENT

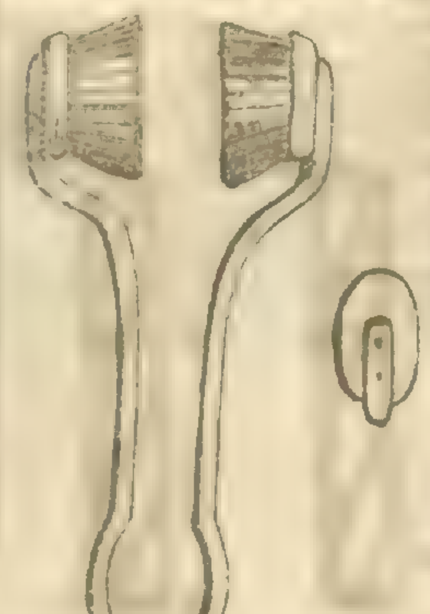
E. DENCH, PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

PATENT HOTHOUSES and excellent Glass at 1*s*. 3*d*. per foot super., which are superior to all others for price with quality, and if known would supersede all others. (See Appendix, in "Book of the Garden," by Mr. M'Intosh.) A Range of Houses and Hot Water Apparatus, was erected by E. D. for E. L. Betts, Esq., Preston Hall, Kent. Mr. J. Frost, head gardener, has shown their efficiency by their produce at the Royal Botanic Gardens, Regent's Park, June 8, and Chiswick, June 11. The editor of the *Gardeners' Chronicle* says: "Beautiful examples of Black Hamburgh, large both in bunch and berry, and as black as Sloes, were furnished by Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall, Kent; these well deserved the first prize which was awarded them."—*Gardeners' Chronicle*, June 18th, 1853. The Grapes were considered the best shown at Regent's Park during the season, and the Houses are as superior for the growth of everything else in horticulture, which has been fully proved, and they have been extensively erected for the nobility and gentry in all parts of the kingdom.

GLAZING WITHOUT PUTTY.—Iron and Glass alone. E. D. has Roofed the Public Baths and Washhouses, Endell Street, on this principle, and others are in hand. Patent Sashes for Peach Walls, Pits, &c., 8*d*. per foot super. Heating by Hot-water, on the most practical principles, and all the best materials used. Printed Price List sent on application.

IMPORTANT TO GROWERS OF ROSES.

NEWLY-INVENTED APHIS BRUSH, or GREEN FLY DESTROYER.—The attention of Florists is particularly called to this Cheap and Ingenious Instrument, invented by the Rev. E. S. Bull, of Colchester, which, in a very simple and easy manner, instantly cleanses the Rose from that destructive insect the Green-fly (or Aphis), without causing the slightest injury to the bud or foliage. Price 2*s*. 6*d*. each.



Manufactured by JOSLIN AND SONS, Ironmongers, Colchester.

Retailed by all the principal Ironmongers.

Wholesale agents: W. Thompson and Son, 15, Upper North Place, Gray's Inn Lane Road, London.

PAGE and CO.'S COMPOSITION FOR THE DESTRUCTION OF MILDEW UPON VINES, BLIGHT UPON ROSES, WALL-FRUIT TREES, CUCUMBERS, MELONS, AND STOVE AND GREENHOUSE PLANTS.—Extra strong, 4*s*. per gallon, sufficient to make four (jars and barrels extra); in bottles, 1*s*. 8*d*. and 2*s*. 6*d*. each. 10 gallons and upwards carriage free to London. Directions for use and copies of testimonials upon application. For testimonials see whole page *Gardeners' Chronicle*, March 11, 1854, describing the satisfactory results derived from its use in cases of Vine Mildew, Thrip, Scale, Green Fly, Red Spider, Mealy Bug, &c., not only without injuring the most delicate flowers or foliage, but promotes a vigorous growth; it is highly appreciated at the Royal Gardens, Osborne Palace, the Royal Gardens, Claremont, and by the principal nobility and gentry in the United Kingdom.

Finest Grasses for Lawns and Parks, and every variety of Garden and Farm Seeds, at B. Page & Co.'s, Seed Merchants, Oxford Street, Southampton.

MILDEW AND RED SPIDER.

BAINBRIDGE ALKALINE EXTRACT.—We can confidently recommend the above as a sure remedy, having used it successfully for many years both on Vines and Peaches, &c. &c. Pints, 3*s*.; quarts, 5*s*. A quart is sufficient for 20 gallons of water applied with the Syringe.

BAINBRIDGE GUIDE TO THE CONSERVATORY, 5*s*. each. Sold wholesale and retail by R. Baldwin, Paternoster Row. Gentlemen can procure the above in any part of the country through their Bookseller, in their Monthly parcels.

Sold also by Bainbridge & Hewison, 7, Bridge Street, York.

PROTOXIDE ANTI-CORROSION PAINT, for all external purposes, on iron, wood, brickwork, or stucco, is cheaper, and more durable, than any similar article.—Manufactured by Charles Francis & Sons, Cement Works, Nine Elms, London.

FENDERS, STOVES, AND FIRE-IRONS.—Buyers of the above are requested, before finally deciding, to visit William S. Burton's SHOW ROOMS, 39, Oxford Street (corner of Newman Street), Nos. 1 and 2, Newman Street, and 4 and 5, Perry's Place. They are the largest in the world, and contain such an assortment of FENDERS, STOVES, RANGES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with bronzed ornaments and two sets of bars, 2*l*. 14*s*. to 5*l*. 10*s*.; ditto, with ormolu ornaments and two sets of bars, 5*l*. 10*s*. to 12*l*. 12*s*; Bronzed Fenders complete, with standards, from 7*s*. to 3*l*.; Steel Fenders from 2*l*. 15*s* to 6*l*.; ditto, with rich ormolu ornaments, from 2*l*. 15*s*. to 7*l*. 7*s*.; Fire-irons from 1*s*. 9*d*. the set to 4*l*. 4*s*. Sylvester and all other Patent Stoves, with radiating hearth plates. All which he is enabled to sell at these very reduced charges,

1st,—From the frequency and extent of his purchases; and,

2dly,—From those purchases being made exclusively for cash.

William S. Burton has TEN LARGE SHOW ROOMS (all communicating), exclusive of the shop, devoted solely to the show of GENERAL FURNISHING IRONMONGERY (including Cutlery, Nickel Silver, Plated and Japanned Wares, Iron and Brass Bedsteads), so arranged and classified that purchasers may easily and at once make their selections.

Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of.

No. 39, Oxford Street (corner of Newman Street); Nos. 1 and 2, Newman Street; and 4 and 5, Perry's Place.

100 ALDERNEY COWS AND HEIFERS.

JAMES DUMBRELL respectfully invites purchasers of Alderney Cows to inspect his stock. Choice from 100.

James Dumbrell, Ditchling, Hurstperpoint, Sussex, one mile from Hassock's Gate Station, London and Brighton Railway.

TO MARKET GARDENERS, NURSERYMEN, & OTHERS.

Turnham Green, Middlesex.

TO BE LET, Forty-three Acres of Fruit and Garden LAND, excellently stocked and cropped (21 of which upon an unexpired term of 15 years), with a suitable seven-roomed Cottage, and convenient business premises; the whole may be treated for and immediate possession had.—May be viewed and particulars had upon application to Mr. W. T. Atwood, Land Agent and Valuer, Mortlake, Surrey; or at the Rainbow Tavern, King Street, Covent Garden, on Saturdays, from 10 till 1.

WANTED, a COUNTRY HOUSE, Furnished, with Shooting. Rent must be moderate, premises in repair, district healthy, grounds well timbered, with a small quantity of land. North or west of London preferred.—Apply, pre-paid, to H. V., 54, New Bond Street, London.

WANTED, the SWEEPINGS of a GRANARY or BARN, as Food for Chickens.—Apply, stating price, quality, and quantity, to Messrs. Collier, Post Office, Thrapstone.

COCHIN CHINA POULTRY, ETC.

EGGS FROM PRIZE BIRDS.

MR. JOHN FAIRLIE, of Cheveley Park, Newmarket, in reply to the very urgent applications from numerous amateurs, is now prepared to dispose of a limited number of Eggs, from his celebrated prize Cochins, Brahma Pootras, Scotch Bakies, Dorkings, &c., according to the dates of the orders received.

BLACK COCHIN EGGS from the best birds in England, having always taken prizes at the best shows, at 18*s*. per dozen, including package. Apply at the city of London Wire Works, 44, Skinner Street, London. N.B. Fowl Houses, Chicken Coops, Poultry Hurdles, and Netting, of every size and description. Illustrated Catalogues forwarded, post free, on application. A few Spanish Pullets, sisters to those sent to her Majesty's yard at Windsor, for Sale.

Sales by Auction.

ORCHIDS.

Established Plants of the Greatest Rarity.

IMPORTANT TO AMATEURS.

MR. J. C. STEVENS is directed to Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, June 22, at 12 for 1 o'clock, Magnificent SPECIMEN PLANTS from a Gentleman's collection, including amongst others the following very great rarities:—Aerides Larpentæ, Schröderi, quinquevulnerum, and maculosum; Vanda suavis Veitch's true, Saccolabium guttatum splendens, Cymbidium eburneum, Cypripedium Lowi, Odontoglossum nævium, and many choise Phalænopsis, Cattleyas, Anguloas, Dendrobiums, &c. Also, a small importation from the East, containing a distinct new Aerides, and some recently imported plants from Guatemala and Venezuela.—May be viewed on the morning of Sale; and Catalogues, which are preparing, will be forwarded in due course.

BLACKHEATH.

To Gentlemen, Nurserymen, Florists, and Others.

MESSRS. PROTHEROE and MORRIS are directed by Mr. Thompson, to Sell by Auction, without reserve, on the premises, West Point Nursery, Blackheath, on WEDNESDAY, June 14th, at 11 o'clock, in consequence of the ground being let for building, the whole of the GREENHOUSE and BEDDING PLANTS, consisting of Show and Fancy Pelargoniums, Camellias, Orange and Lemon Trees, Cactus; also a large quantity of Scarlet Geraniums, Fuchsias, Hydrangeas, Verbenas, Cytisus, Chrysanthemums, Pentstemons, Lobelias, Anagallis, Cuphea, Calceolarias, Deutzias, Petunias, Dahlias, Roses in pots, Jasmine, Clematis, Vines, Lilium lancifolium, Rubrum, Album, &c., &c.—May be viewed prior to the sale; Catalogues may be had on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

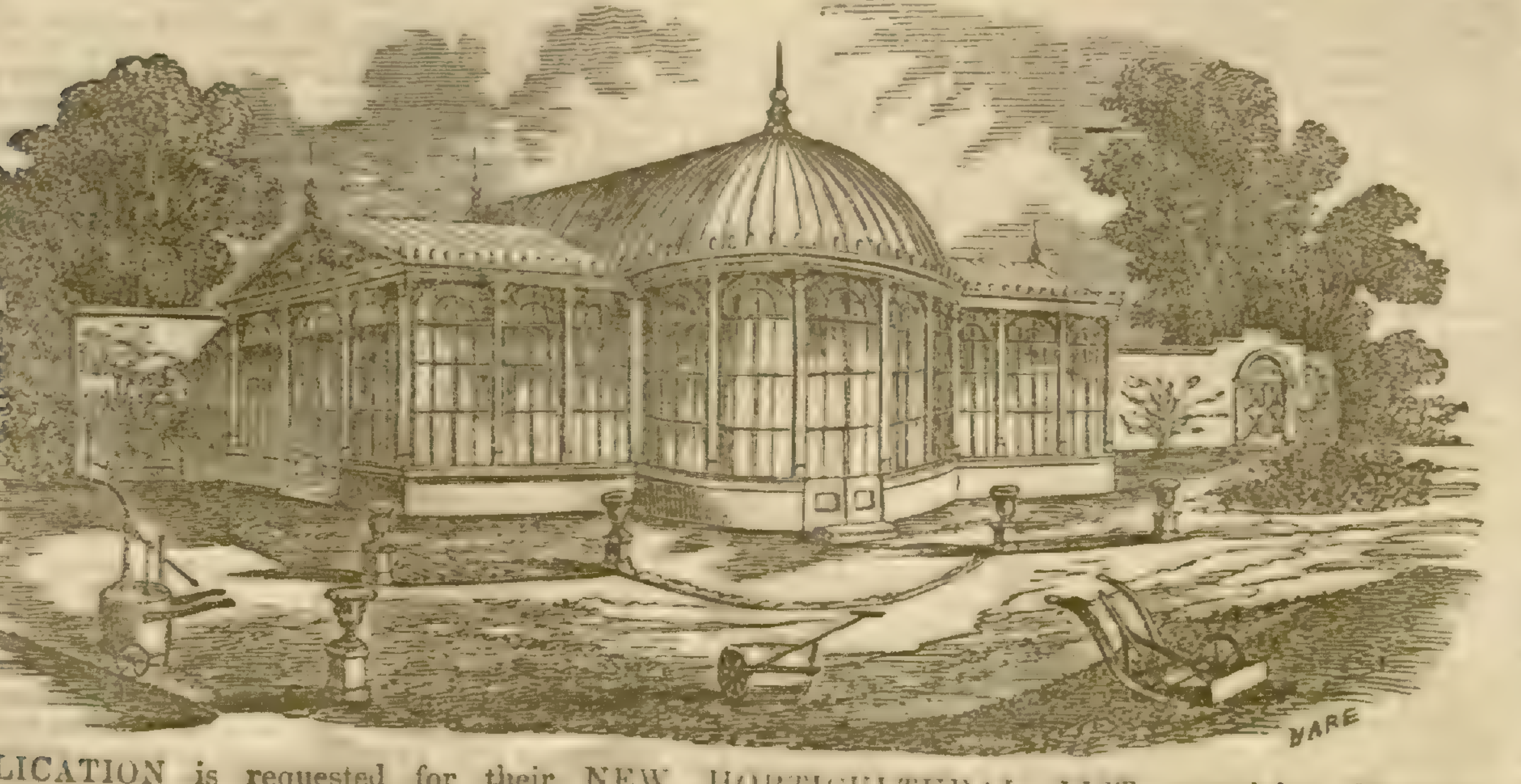
MESSRS. PROTHEROE and MORRIS will sell by Auction, at the Mart, Bartholomew Lane, on FRIDAY, June 16th, at 12 o'clock, a first-rate collection of DAHLIAS, FUCHSIAS, VERBENAS, PETUNIAS, CLIMBING, and other ROSES: also a selected assortment of Geraniums, and other Plants in bloom, with a quantity of Ornamental Plants for bedding.—May be viewed the morning of Sale; Catalogues had at the Mart; and of the Auctioneers, American Nursery, Leytonstone, Essex

DOWN COTSWOLD RAM LAMBS.

MESSRS. GODWIN and SON are instructed by Mr. J. T. Twynam to offer for Sale by Public Auction, at the Corn Exchange, Winchester, on MONDAY, July 17, at 2 o'clock precisely (the day previous to the Great Overton Hampshire Lamb and Sheep Fair, about Forty prime RAM LAMBS, and Three Four-teeth RAMS, of the above valuable breed, now so rapidly rising in public favour. These Lambs are of great size, of one uniform brown or dark colour of face and legs, and possess the most complete amalgamation of the Down and Cotswold symmetry, fleece, and flesh. The sire is (chiefly) Mr. Druce's (of Eynsham, Oxford) No. 7 Down Cotswold Ram, a sheep of beautiful mould and thick flesh; the dams descended from the well-known flock of Down Cotswolds, established by Mr. J. T. Twynam, at Whitchurch, in 1835. Mr. Druce's wethers took the first prize at Smithfield at the last Christmas Exhibition for Crossed Sheep, in class 23. Winchester offers every facility and convenience for gentlemen and dealers who intend visiting the Fair at Overton on the following day.—The Lambs can be seen and particulars obtained on application to J. T. Twynam, North Walls, Winchester.

COTTAM AND HALLEN,

2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.



APPLICATION is requested for their NEW HORTICULTURAL LIST, containing Illustrations, Descriptions, and Prices of

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Syringes	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.

AGRICULTURAL LIST UPON APPLICATION.

EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

ORCHARD HOUSE CULTURE.

T. RIVERS will have much pleasure in showing his ORCHARD HOUSES to any one interested in this interesting mode of cultivating Fruits. The Harlow Station is the most convenient for the Nurseries, and a train leaving Bishopsgate at 11.30 the most eligible.

Nurseries, Sawbridgeworth, Herts.

HONEYSUCKLE VERBENA.—So named for its delightful perfume, which is so near the odour of the Honeysuckle that it cannot be distinguished from it. Last season it was the constant inquiry of visitors at the Nursery Grounds if Honeysuckles were growing near, or what flower so much resembled them in fragrance, and on being informed it was the above new variety of Verbena, they were much surprised, and immediately ordered plants of it.—Description—viz.: Compact habit, fine glossy foliage (will do excellently for bedding, or as a plant for pot culture), long stems to flowers, making it very useful for bouquets—blooms most abundantly; colour rich dark crimson, shaded lilac, very distinct eye; the truss of a fine globular shape, generally measuring 9 inches in circumference, all the pips fully expanded. It will force well during the winter, being a great advantage for cutting, or for its perfume in a greenhouse or conservatory at that season of the year; it will also stand the sun and rain during summer better than any other Verbena. A few blooms added to a bouquet will give it the scent of the sweetest Honeysuckle. Fine strong plants are now ready for sending out, at 5s. each.

LOBELIA LINDLEYANA.—The Subscriber having purchased the whole stock of the above new Lobelia of Mr. Keynes, Salisbury, he begs to offer it to the public. It was awarded a Certificate of Merit at the Horticultural Society and National Society of London, June 1853. Description—viz.: Habit, dwarf and compact, flowering very freely, covering the whole surface of the plant; distinct in colour from all others yet out, being a bright rosy lilac. It is an excellent bedding variety, and will be sure to please every one who grows it, especially for its distinct colour and profusion of bloom. Strong plants now ready at 3s. 6d. each.

The usual allowance to the Trade when three plants of either are ordered. On receipt of a post-office order or penny postage stamps to the amount, the plant or plants will be sent postage and package free.—EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Church Yard, Bath, Somerset.—June 10.

RICK CLOTHS, MARQUEES, TENTS, ETC.,
NEW OR SECOND-HAND, FOR SALE OR HIRE.

BENJAMIN EDGINGTON has, for the ensuing season, an extensive assortment of Marquees, &c., for Horticultural Societies, Fêtes, Cricket Clubs, &c. Rick Cloths, with poles, pulleys, and lines complete. A variety of Emigration Tents erected on the premises, No. 2, Duke Street, Southwark Netting and Bunting for Fruit Trees.

Warehouse, 32, Charing Cross, where Tents are erected. Address by post, No. 2, Duke Street, Southwark.

RIPE FRUIT, STRAWBERRIES, AND SEED BEDS.—New Twined Netting (tanned if required), 1 yard wide, 1½d. per yard; 2 yards wide, 3d. per yard; 4 yards wide, 6d. per yard; ½-inch mesh do., 2 yards wide, 6d. per yard. The Elastic Hexagon Garden Netting, 76 meshes to the square inch, effectually excludes birds, wasps, flies, &c, from fruit trees, flower or seed beds, 4½d. per square yard. Tanned Netting, 2 or 3 yards wide, 1½d. per yard; 4 or 6 yards wide, 3d. per yard, exactly the same as advertised by others at double the above prices. Coir or Hemp Sheepfolding Net, of superior quality, 4 ft. high, 4d. to 6d. per yard. Lamb Net, 6d. per yard. Rabbit Net, 1½d. per yard, 4 feet wide; each edge Corded, 2d. per yard, suitable for fowl fencing. Square Mesh Cricketing Net, fix its full width and length, made of stout cord, 3d. to 4d. per square yard; this is the best article made for fencing against fowls, cats, &c.

The largest, cheapest, and best stock in the world, at W. CULLINGFORD'S, 1, Edmund Terrace, Ball's Pond Road, Kingsland, London; and at the Crystal Palace, South West Gallery, Sydenham. The Trade supplied. Orders by Post punctually attended to. Fishing Nets of all kinds in stock.

COWS.

HARVEY'S CELEBRATED COW DRINKS 1s. each. They have been used with unparalleled success in most diseases incidental to Cows. Full and plain directions are given with each drink for the treatment of Hoven, Mawbound, Colds, Gargle, Red Water, the Tick or Foot and Mouth Distemper, at and after Calving, &c. A very extensive use of these drinks has proved them to be a safe and effectual remedy.

Compounded by R. HARVEY, Veterinary Surgeon, Macclesfield, Cheshire, and sold by all Medicine Vendors. Wholesale Agents, BARCLAY & SONS, Farringdon Street; and MARSDEN & SONS, Queen Steet, Cheapside, London.

ROYAL PANOPTICON OF SCIENCE AND ART, LEICESTER SQUARE.—The following is the programme of the ensuing week:—EXPERIMENTAL CHEMISTRY, by Mr. G. F. Ansell, Monday, 3.30; Tuesday, 7.30; Wednesday, 2.15; Friday, 3.30. ELECTRICITY (Frictional), by Mr. W. R. Birt, Monday, 2.15; Wednesday, 7.30; Thursday, 3.30. VOLTAIC, by Mr. S. Preston, Tuesday, 3.30; Friday, 7.30. ACOUSTICS, by Mr. C. F. Partington, Thursday and Saturday, 2.15. The grand organ, by Mr. W. T. Best, daily at intervals. New Popular Songs by Mr. E. L. Hime and Miss Jacobs, Monday, 2.15; Wednesday 3.30; Thursday, 7.30; Musical Illustrations by Mr. A. West, assisted by several vocalists. Lecture on Irish Music, Monday, 7.30; Scotch Music, Friday, 2.30. Explanation of Machinery and Manufactures, by Mr. C. Rickman, daily at 1 and at 8.35. Fountain at high pressure, daily at 5 and 9. Optical Diorama—"Acis and Galatea," with Organ and Vocal accompaniments, daily at 9.15. The Photographic Gallery is open to the public free of extra charge. Hours of Exhibition—Morning, 12 to 5; Evening, 7 to 10, Saturdays excepted. Admission, 1s.; Schools, and children under 10, half price; Life admission, 10 guineas; Annual Tickets, gentlemen 2 guineas, ladies 1½ guinea.

MR. GLENNY requests that REPORTS of all the HORTICULTURAL and FLORAL EXHIBITIONS may be sent to him for publication, and that specimens of Fruit, Flowers, Plants, and Vegetables, as well as other subjects for his opinion, may be addressed, Mr. GLENNY, 420, Strand.

Just published, Fifth Edition, in Three Parts, price 3s. 6d., or per post from the Author, 4s.,

THE ROSE AMATEUR'S GUIDE. By THOMAS RIVERS.

PART I. The Summer Rose Garden; in which is given the History and Description of a few only of the most desirable varieties of Summer Roses.

PART II. The Autumnal Rose Garden; in which some new and fine varieties of Roses very recently introduced are described.

PART III. The General Culture and Propagation of Roses, their Cultivation in Pots, &c.; the whole forming a complete manual for the lover of Roses.

London: LONGMAN & Co., Paternoster Row.

By the same Author. Third Edition, 2s., or per post from the Author, for 24 stamps,

THE ORCHARD HOUSE; or the Cultivation of Fruit Trees in Pots under Glass.

London: LONGMAN & Co., Paternoster Row.

Fifth Edition, Price 2s., or per post from the Author, 24 stamps,

THE MINIATURE FRUIT GARDEN; or the Culture of Pyramidal Fruit Trees.

London: LONGMAN & Co., Paternoster Row.

BOTANICAL WORKS.

CURTIS'S BOTANICAL MAGAZINE OF NEW AND RARE PLANTS. By Sir W. J. HOOKER, F.R.S. In Monthly Numbers. Six Plates. 3s. 6d. coloured.

A CENTURY OF ORCHIDACEOUS PLANTS, selected from the Botanical Magazine. By Sir W. J. HOOKER. Containing 100 coloured Plates. Royal 4to. Five Guineas.

THE RHODODENDRONS OF SIKKIM HIMALAYA. Thirty coloured Drawings, with Descriptions. By Dr. J. D. HOOKER, F.R.S. Folio. £3 11s.

POPULAR ECONOMIC BOTANY, with 20 Coloured Plates of the Substances and Plants in Fruit. By T. C. ARCHER, Collector of Economic Botany in the Crystal Palace. 10s. 6d.

POPULAR HISTORY OF BRITISH FERNS, comprising all the Species. By THOMAS MOORE, F.L.S. Twenty Coloured Plates. 10s. 6d.

POPULAR HISTORY OF BRITISH SEAWEEDS. By the Rev. DAVID LANDSBOROUGH. Second Edition. 20 Coloured Plates. 10s. 6d.

POPULAR FIELD BOTANY. By AGNES CATLOW. Third Edition. With 20 Coloured Plates of Figures. 10s. 6d.

PHYCOLOGIA BRITANNICA; or, HISTORY OF THE BRITISH SEA-WEEDS. By Professor W. H. HARVEY. In 3 vols., royal 8vo, cloth, arranged in the order of publication, 7l. 12s. 6d.; in 4 vols., royal 8vo, cloth, arranged systematically, 7l. 17s. 6d.

FLORA OF NEW ZEALAND. By Dr. J. D. HOOKER, F.R.S. In Parts, 20 Plates. Price 31s. 6d. coloured; 21s. plain.

THE ESCULENT FUNGUSES OF ENGLAND. By the Rev. D. BADHAM. Coloured Plates. Super-royal, 8vo. 21s.

ILLUSTRATIONS OF BRITISH MYCOLOGY, containing Figures and Descriptions of British Funguses. By Mrs. HUSSEY. Ninety coloured Plates. 7l. 12s. 6d.

LOVELL REEVE, Henrietta Street, Covent Garden.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

In accordance with the wishes of Farmers, Millers, and others interested in the Corn Trade, an Edition is published in time for post every Monday afternoon, containing a FULL REPORT of the MARK LANE and SMITHFIELD MARKETS of the DAY.

* In consequence of the Advertisement Duty having been repealed, the charges for Advertisements in *The Gardeners' Chronicle and Agricultural Gazette* have been reduced.

Advertisements appear in both Editions without extra cost.

	£	s.	d.
Space of Four lines and under (body type) ...	0	2	6
Each additional line up to Twenty	0	0	6
Every Five lines beyond	0	2	0
A Column	3	0	0
A Page	8	8	0

Advertisements of Bailiffs and Gardeners out of Place, if not more than Three lines, 1s. 6d. each.

The Government has again (May, 1854) made public the number of Stamps supplied by the Stamp Office—this time for the Quarter ending March, 1854; and as the circulation of Newspapers is a subject of interest to Advertisers, annexed are the Official Returns as regards the undermentioned Journals.

	Average Circulation for the Three Years, 1851, 1852, and 1853.	Average Circulation for the Thirteen Weeks ending March, 1854.
GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE ...	6277	6462
Magnet ...	4765	5192
Evening Mail ...	4488	5128
Examiner ...	4694	4846
Mark Lane Express ...	4500	4616
Era ...	5500	4615
Economist ...	3837	4308
Daily News ...	3910	4093
Guardian ...	3904	4038
Morning Herald ...	4021	3884
Field (Average for one year)	4409	3423
Record ...	3736	3500
Lady's News ...	4007	3192
Nonconformist ...	2987	3154
Spectator ...	2856	3077
Mining Journal ...	2986	3038
British Banner ...	3798	2808
St. James's Chronicle ...	2844	2692
Morning Post ...	2652	2628
Wesleyan Times ...	5094	2384
Watchman ...	3681	2308
Express ...	2235	2271
Globe ...	1926	2245
Leader ...	2140	2231
Sun ...	2539	2154
Morning Chronicle ...	2364	2083
Herapath's Journal ...	2066	Nil.
John Bull ...	2020	1923
Britannia ...	2329	1885
United Service Gazette ...	1708	1885
Atlas ...	1479	1828
Naval and Military Gazette ...	1313	1423
Standard ...	1456	1320
Railway Times ...	1641	1308
Patriot ...	1304	1154
Weekly News ...	1709	1154
Inquirer ...	863	1077
Court Journal ...	482	516
Gardener's & Farmer's Journal	752	231

OFFICE FOR ADVERTISEMENTS, 5, Upper Wellington Street, Covent Garden, London.

ON MARRIAGE.

Just published (to be had free, by enclosing 1s. or Twelve Postage Stamps, to Mr. WATSON, Clerical Agent, Robert Street, Adelphi, London).

MATRIMONY.—A Pamphlet on Matrimonial Alliances, which merits the attention of those who wish to settle honourably in life. By a Clergyman.

CRYSTAL PALACE, 1854.
GENERAL PUBLICATIONS.

On the 12th instant will be published the following

OFFICIAL GUIDES AND HANDBOOKS, ILLUSTRATIVE OF THE CONTENTS OF THE EXHIBITION.

1. GENERAL GUIDE-BOOK TO THE PALACE AND PARK. With numerous Illustrations and Plans. By SAMUEL PHILLIPS. 1s.
2. HANDBOOK TO THE EGYPTIAN COURT. With Illustrations and Plans. By OWEN JONES and SAMUEL SHARPE. 6d.
3. HANDBOOK TO THE GREEK COURT. With Illustrations and Plans. By GEORGE SCHARF, Jun. 8d.
4. HANDBOOK TO THE ROMAN COURT. With Illustrations and Plans. By GEORGE SCHARF, Jun. 6d.
5. HANDBOOK TO THE ALHAMBRA COURT. With Illustrations and Plans. By OWEN JONES. 8d.
6. HANDBOOK TO THE NINEVEH COURT. With Illustrations and Plans. By A. H. LAYARD, M.P. 6d.
7. HANDBOOK TO THE BYZANTINE COURT. With Illustrations and Plans. By M. DIGBY WYATT and J. B. WARING. 8d.
8. HANDBOOK TO THE MEDIÆVAL COURT. With Illustrations and Plans. By M. DIGBY WYATT and J. B. WARING. 9d.
9. HANDBOOK TO THE RENAISSANCE COURT. With Illustrations and Plans. By M. DIGBY WYATT and J. B. WARING. 8d.
10. HANDBOOK TO THE ITALIAN COURT. With Illustrations and Plans. By M. DIGBY WYATT and J. B. WARING. 6d.
11. HANDBOOK TO THE POMPEIAN COURT. With Illustrations and Plans. By GEORGE SCHARF, Jun. 6d.
12. HANDBOOK TO THE SCHOOLS OF MODERN SCULPTURE. By Mrs. JAMESON. 6d.
13. AN APOLOGY FOR THE COLOURING OF THE GREEK COURT IN THE CRYSTAL PALACE. By OWEN JONES. 6d.
14. HOW TO SEE THE SCULPTURE IN THE CRYSTAL PALACE. By RAFFAELE MONTI. (In the Press.)
15. THE PORTRAIT GALLERY OF THE CRYSTAL PALACE. Described by SAMUEL PHILLIPS. 1s. 6d.
16. HANDBOOK TO THE ETHNOLOGICAL and ZOOLOGICAL DEPARTMENTS. With Illustrations. By Professor EDWARD FORBES and Dr. LATHAM. 6d.
17. THE EXTINCT ANIMALS AND GEOLOGICAL ILLUSTRATIONS DESCRIBED. With Plan and Drawings. By Professor OWEN. 3d.
18. THE CRYSTAL PALACE INDUSTRIAL DIRECTORY. 3d.

**** *The above are the only books published under the authority of the Company.*

BRADBURY AND EVANS, Printers and Publishers to the Crystal Palace Company, 11, BOUVERIE STREET, FLEET STREET.

This day is published, price 5s., Volume I. of PROFESSOR JOHNSTON'S

CHEMISTRY OF COMMON LIFE. With 57 Illustrations engraved on Wood by Branston, &c. To be completed in Two Volumes.

WILLIAM BLACKWOOD & SONS, Edinburgh and London. Sold by all Booksellers.

Seventh Edition, with Woodcuts, 2s. 6d.

THE HOUSE I LIVE IN; or, Popular Illustrations of the Structure and Functions of the Human Body.

London: JOHN W. PARKER & SON, West Strand.

THE HORTICULTURAL JOURNAL AND FARM AND GARDEN ADVERTISER. (Garden Department by Mr. GLENNY.) Every Saturday. Price 2d.; Stamped, 3d. All communications to the Office, 14, York Street, Covent Garden.

THE AGRICULTURE AND HORTICULTURE OF INDIA.

In 7 vols., 8vo cloth, reduced to 2l. 2s.

TRANSACTIONS OF THE AGRICULTURAL AND HORTICULTURAL SOCIETY OF INDIA, 1837 to 1840. Being a Selection of Interesting and Important Papers on a vast variety of Subjects, Published by the Committee appointed by the Society.

London: W. THACKER & Co., 87, Newgate Street.

NEWMAN'S "BRITISH FERNS."

This day is published, the Third Edition of

A HISTORY OF BRITISH FERNS. By EDWARD NEWMAN. With 138 Illustrations. Price 18s., demy 8vo, cloth lettered.—A very few copies in royal 8vo, price 36s.

London: JOHN VAN VOORST, 1, Paternoster Row.

STANFORD'S EMIGRANT GUIDES.

Now ready, price 1s. each; per post, 1s. 6d.

CANADA: its Present Condition, Prospects, and Resources, fully described for the information of intending Emigrants, by WILLIAM HUTTON, a resident Agriculturist in that Colony for the last 20 years. With a Map, showing the Railways.

AUSTRALIA, as a Field for Capital, Skill, and Labour, with useful information to Emigrants of all classes, by J. CAPPER, late Editor of the Emigrant's Journal. Author of "Our Gold Colonies," &c. &c., with a Map, showing the Gold Fields.

London: EDWARD STANFORD, 6, Charing Cross; Liverpool, SMYTH & Co., Berry Street; Edinburgh, EDMONSTON and DOUGLAS; and all Booksellers.

STANFORD'S Catalogue of recent Works on Emigration and Colonisation may be had on application, or per post, on receipt of one stamp.

SIGNS OF THE TIMES.

Just published, sent gratis and free per post to any part of the kingdom,

THE MEDICAL GUIDE ON HEALTH AND LONG LIFE, 64 pages. Address thus—Baron McKINSEY, M.D. Devon European Institution, Heavitree Park, near Exeter, Devon. Proprietor of the celebrated Royal Patent Medicinal Powder, as snuff, an infallible remedy for deafness, polypus in the nose, defect of sight, fits, and all diseases of the head and mind.—Sold retail at 33, Northumberland Street, Strand, London; in boxes, at 2s. 9d., 11s., and 22s., and by all medicine vendors.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, JUNE 10, 1854.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley

No. 24.—1854.] SATURDAY, JUNE 17. [PRICE 6*d*.

INDEX.

Abies Cilicia .... 387 *b*
Aeration .... 389 *c*
Agri. Soc. of England .... 395 *b*
— implements .... 395 *c*
Asia Minor, trees of .... 387 *b*
Bath Agri. Soc. .... 395 *c*
Botanical Soc. of Edinburgh .. 389 *b*
Calendar, horticultural .... 392 *a*
— agricultural .... 396 *c*
Charcoal, a deodoriser 393 *b*— 395 *b*
Cytisuses .... 388 *b*
Dahlia, culture of .... 391 *c*
Deodorising substances.. 393 *b*—396 *b*
Dew, remarks on .... 391 *b*
Eggs, vitality of .... 396 *c*
Flax Society .... 395 *b*
Gardeners' Benevolent Institution .... 389 *a*
Guano, adulteration of .... 393 *c*
Implements, agricultural .... 395 *c*
Labourers' friend societies .... 395 *a*
Linnean Society .... 389 *b*
Machines, sowing .... 394 *c*
Meteorology, Hopkins', rev. .. 391 *a*
Pansy Soc., Hammersmith .... 392 *a*
Pathology, vegetable .... 388 *a*
Pears, M. de Jonghe on .... 387 *c*
— new .... 388 *c*
Plants hurt by frost .... 389 *a*
— viviparous .... 3·9 *a*
Potatoes, to store .... 389 *b*
— and spring frosts .... 390 *a*
Poultry show, Bath .... 396 *b*
Rhododendrons at Regent's Park .... 391 *b*
Roumelia, trees of .... 387 *b*
Royal South London Floricultural Society .... 391 *c*
Sowing machines .... 394 *c*
Storms, theory of ......391 *a*—395 *a*
Trees, protection of wall .... 389 *b*
— of Asia Minor .... 387 *b*
Vegetable, pathology .... 388 *a*
Ventilation .... 389 *c*
Vine disease .... 392 *a*
Wall tree protection .... 389 *b*
Wheat rust .... 393 *b*
Willow, Kilmarnock Weeping 392 *a*
Winter in Devon! .... 389 *a*
— in Derbyshire .... 390 *a*
Woodcock, the .... 389 *a*
Yew, poisonous .... 389 *c*

HORTICULTURAL SOCIETY OF LONDON.—His GRACE THE PRESIDENT has kindly directed the Grounds of Chiswick House to be opened for the reception of the Visitors to the Society's Gardens at the NEXT EXHIBITION, on SATURDAY, the 8th JULY. Tickets are issued at this Office, price 5*s*.; or at the Garden, in the afternoon of the 8th July, at 7*s*. 6*d*. each.
21, REGENT STREET, LONDON.

ROYAL BOTANIC SOCIETY, REGENTS' PARK.—The SECOND EXHIBITION this season of PLANTS, FLOWERS, and FRUIT, will take place on WEDNESDAY next, June 21, and of AMERICAN PLANTS, MONDAY, June 19. Tickets of Admission can be obtained at the Gardens, by Orders from Fellows of the Society, price 5*s*., or on the days of Exhibition, 7*s*. 6*d*. each.

MAIDSTONE HORTICULTURAL SOCIETY.—The following Prizes (open to all England), will be given at the Exhibition of the Maidstone Horticultural Society, on THURSDAY, June 29. For best 8 Stove or Greenhouse Plants, 5*l*.; Second, 3*l*.; Third, 1*l*. For best six Exotic Orchids, 2*l*.; Second, 1*l*. For best collection of 36 Roses, in single trusses, 2*l*.; Second, 1*l*. Entrance, Stove Plants, 7*s*. 6*d*.; Roses and Orchids, 5*s*.
Further particulars will be given on application to the Secretary, Maidstone.
J. G. SMITH.

STAINES HORTICULTURAL SOCIETY.—The Exhibition of this season will take place on SATURDAY, June 24, by the kind permission of Mrs. Hagen, in the Grounds of Duncroft House, when a variety of prizes will be offered for competition. Schedules and further particulars may be had on application to W. WATKINS, Honorary Secretary.

BRIGHTON FLORICULTURAL AND HORTICULTURAL SOCIETY.
President.—His Grace the Duke of Devonshire.
Vice-Presidents.
His Grace the Duke of Richmond.
The Most Noble the Marquess of Bristol.
The Right Hon. the Earl of Chichester.
Admiral Sir G. B. Pechell, Bart., M.P.
Lord Alfred Hervey, M.P.
The Hon. A. Macdonald.
Baron de Goldsmid.
General Superintendent of the Exhibition.—Mr. E. Spary.
The ANNUAL SUMMER EXHIBITION OF PLANTS, FLOWERS, and FRUITS, will be held in the ROYAL PAVILION, Brighton, on WEDNESDAY and THURSDAY, the 28th and 29th of June next. Upwards of 200 Guineas are offered as prizes, Schedules of which can be had of the Secretary.
The Band of the Coldstream Guards, by permission of Colonel the Hon. A. Upton, will attend, under the direction of Mr. Godfrey; and the entire suite of rooms, and the eastern lawn, will be thrown open on the occasion.—EDWARD CARPENTER, Sec., Lavender Street, Brighton, to whom all communications are to be made.

CHELTENHAM GREAT EXHIBITION.
OPENING OF THE BRITISH AND FOREIGN HORTICULTURAL SECTION.—On TUESDAY, JUNE 20, an EXCURSION TRAIN will leave PADDINGTON at 8 A.M. Fares and Times at Stations, see below.

	A.M.	For the First Class.	Double Journey. Closed Carriages.
From Paddington ...	8.0	10*s*.	6*s*. 0*d*.
„ Reading ...	9.15	9*s*.	5*s*. 0*d*.
„ Didcot	9.45	7*s*.	4*s*. 0*d*.
„ Swindon ...	10.20	5*s*.	3*s*. 0*d*.
„ Cirencester ...	10.50	4*s*.	2*s*. 6*d*.
„ Stroud	11.25	4*s*.	2*s*. 6*d*.
Arrive at Cheltenham	12		

And will return from Cheltenham to Paddington the same evening at 7 P.M. Tickets not transferable. No luggage allowed.
Bristol, June 17.

EXHIBITION OF AMERICAN PLANTS,
ROYAL BOTANIC GARDENS, REGENT'S PARK.
JOHN WATERER begs to invite the attention of the nobility and gentry to his unrivalled Collection of RHODODENDRONS, &c., which are now in full bloom.
The celebrated new hardy Scarlet Rhododendron JOHN WATERER is now in perfection.
Admittance obtained by Orders from Fellows of the Society.
The American Nursery, Bagshot, Surrey.—June 17.

EXHIBITION OF AMERICAN PLANTS AT KNAP HILL NURSERY, WOKING.—The American Plants at this Nursery are now in bloom, and may be seen daily gratis. The Knap Hill Nursery is within an hour's ride of London, by South Western Railway to Woking, where all trains stop, and from whence capital conveyances may be obtained.—WATERER & GODFREY, late HOSEA WATERER.

CHIVAS'S ORANGE JELLY TURNIP.
SUTTON AND SONS, Seed Growers, Reading, can supply new Seed direct from Mr. Chivas at the same price as at Chester; they have also themselves grown some excellent Seed from selected Orange Jelly Turnips raised last year from seed received of Mr. Chivas, which they can strongly recommend. Purchasers of large quantities will be supplied liberally. Particulars, on application.—Address JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

THE FORWARDEST TURNIP KNOWN.
SUTTON'S EARLY SIX WEEKS TURNIP should now be sown for feeding off early. Excellent new Seed 1*s*. 3*d*. per pound, or 7*s*. per gallon.
Mr. K. HICKMAN, of Brompton House, near Newbury, in a letter dated February 1st, says:—
"I must mention the 'Six Weeks Turnip' as the best sort I have ever seen for earliest and latest sowing. I have grown them several years, and have invariably found them to produce more feed in less time than any other Turnip. I have had them after Wheat of a good size, within six weeks from the time of sowing."
N.B. Carriage free except parcels under 20*s*. value.—Address, J. SUTTON and SONS, Seed Growers, Reading, Berks.

THOMAS WELLAND, Surrey Gardens, Godalming, Surrey, has to offer the following:—True CATTLE DRUMHEADS; also Fine Spring-sown EARLY BATTERSEA PLANTS, packed and delivered at Godalming Station, at 3*s*. 6*d*. per 1000, and sent to order into any county in England, Scotland, Ireland, and Wales.

NEW BEDDING CALCEOLARIAS.
EDWARD GEORGE HENDERSON & SON, of the Wellington Nursery, St. John's Wood, London, are now sending out their splendid Bedding Calceolarias—Loveliness, Masterpiece, Matchless, Superba, and Surprise. These (the finest and most distinct in this class) were purchased of Mr. Constantine, who exhibited them at Chiswick in 1853. Price 7*s*. 6*d*. each, or 30*s*. the set, with the usual allowance to the Trade. The Plants are fine bushy stuff.

CINERARIA SEED.
EDWARD GEORGE HENDERSON AND SON, Wellington Nursery, St. John's Wood, London, are now prepared to forward, by post, new Cineraria Seed saved this season. More than usual care has been bestowed in gathering from the choicest named varieties, including the new ones sent out last year; all the light varieties have been discarded, consequently from the above seed we anticipate none but high coloured flowers. Per packet, 2*s*. 6*d*. and 5*s*. each.
Our beautiful collection of CALCEOLARIAS can now be seen in flower at the Nursery, and orders for seed booked, to be sent when ready. Per packet, first quality, 5*s*.; second quality, 2*s*. 6*d*.

BASS AND BROWN'S NEW POTENTILLAS.—In consequence of the limited stock of King of Crimsons, we regret we must decline receiving more orders. The following are now ready to send out:—

Potentilla Sudbury Gem, each ...	10*s*. 6*d*.	Potentilla Theodore, each	7*s*. 6*d*.
„ Shylock, do. ...	10 6	„ Julia, do.... ...	7 6

The following, 16*s*. the set of seven varieties:—

Floral Beauty	3*s*. 6*d*.	Scarlet Gem	3*s*. 6*d*.
Napoleon	2 0	Primrose	2 0
Defiance...	2 0	Argo	2 0
Negress	3 6		

For descriptions and editorial remarks, see *Gardeners' Chronicle* of March 13, p. 144, and April 1, p. 208.
Seed and Horticultural Establishment, Sudbury, Suffolk.

CHEAP BEDDING PLANTS.
JOHN MORSE begs to offer the following in good strong Plants, at 3*s*. per dozen, showing bloom.

Heliotropium corymbosum	Lobelia fulgens multiflora
„ Triomphe de Liege	„ Erinus ramosoides
„ Peruvianum	Anagallis, blue and red
„ Voltaireanum	Neirembergia gracilis
Calceolaria Sultana	Verbenas, in great variety
„ Sulphurea splendens	Petunias „ „
„ Amplexicaulis	Dahlias „ „
„ Floribunda	Fuchsias „ „
Lobelia Queen Victoria	Scarlet Geraniums „

Also a few dozens of the following beautiful Geraniums, strong, in 4-inch pots:—
Mountain of Light ... ... 12*s*. per doz.
Flower of the Day ... ... 7*s*. „
Cerise Unique ... ... 5*s*. „
No charge for Hampers or Package.
JOHN MORSE, Nuseryman, &c., Dursley, Gloucestershire.

NEW ROSES IN POTS, at reduced prices.

HYBRID PERPETUAL.		HYBRID PERPETUAL.	
Baronne de Kermont ...	5*s*. 0*d*.	Souvenir de Mdme. Lille	5*s*. 0*d*.
Comte de Nanteuil ...	5 0	Triomphe de Paris ...	5 0
James Veitch	5 0	Volta	5 0
Lady Stuart	5 0	BOURBON.	
Lady Shelley	5 0	Beauté Lyonnaise ...	3 6
Le General Jacqueminot	10 6	Madame Helfinbein ...	5 0
Madame Harriet Stowe	10 6	Sir Joseph Paxton ...	3 6
Madame Phelip ...	5 0	TEA.	
Paul Dupuy	7 6	Gloire de Dijon ...	10 6
Prince Chipetowzikof	5 0	MOSS.	
Prince Leon Kotchouby	7 6	Princess Alice (Paul's)	5 0
Salvator Rosa	3 6	HYBRID BOURBON.	
Sephora	7 6	President Pierce ...	7 6
		Vivid	5 0

The following choice Hybrid Perpetual Roses, at 30*s*. per doz., Baronne Hallez, Destigny, Egerie, Inermis, Laura Raymond, La Seduisante, L'Enfant du Mont Carmel, Louise Peyronny, Ludovic Letaud, Madame Audry, Madame Ducher, Madame Fremion, Madame Hilaire, Miss Meymott, Souvenir de la Reine des Belges.
BENJAMIN R. CANT, in offering the above, does so with the greatest confidence, as he has received several letters from customers stating that the plants sent are far better than those generally supplied by the Trade.
ST. JOHN'S STREET NURSERY, COLCHESTER.
Carriage paid to London and Norwich and all intermediate stations on the Line. Unknown Correspondents are requested to send a remittance or reference.

WELLINGTONIA GIGANTEA.
MESSRS. VEITCH AND SON are now prepared to supply healthy young established Seedling Plants of the above magnificent Tree. For terms, &c., see the Advertisement of their New Plants in another part of this Paper.
Exeter and Chelsea.—June 17, 1854.

CHINESE PÆONIES.
JOHN SALTER'S fine Collection is now in bloom, and may be seen every day, except Sunday; also his unrivalled collection of IRIS GERMANICA.
Versailles Nursery, near Hammersmith Turnpike, Middlesex.

ORCHARD HOUSE CULTURE.
T. RIVERS will have much pleasure in showing his ORCHARD HOUSES to any one interested in this interesting mode of cultivating Fruits. The Harlow Station is the most convenient for the Nurseries, and a train leaving Bishopsgate at 11.30 the most eligible. Harlow 1¼ mile from the Nurseries.
Nurseries, Sawbridgeworth, Herts.

NEW VARIEGATED GERANIUMS,
ATTRACTION AND SILVER KING.
JOHN AND CHARLES LEE are now sending out strong plants of these elegant novelties, which they can recommend as surpassing anything of the kind hitherto introduced.
ATTRACTION has a decided crimson horse-shoe, on a finely variegated foliage, which greatly enhances its beauty. The flowers are light scarlet. Price 10*s*. 6*d*. each.
SILVER KING is of a dwarf free habit, the leaves perfectly flat, with a very broad silver margin; flowers intense scarlet. Price 7*s*. 6*d*. each, or 70*s*. per dozen.
Nursery and Seed Establishment, Hammersmith, near London.

SPLENDID NEW HYBRID FUCHSIA.
"FUCHSIA DOMINIANA."
MESSRS. VEITCH & SON, of Exeter and Chelsea, can now supply good well established plants of this really fine Fuchsia. Price 10*s*. 6*d*. each, with one over when three are taken. The merit of raising this beautiful plant is due to Mr. Dominy, the Foreman of the Plant Department at the Exeter Nursery; it consequently bears his name as a memento of his zeal and ability in the performance of his duties. It is a seedling between Serratifolia multiflora and spectabilis, having the fine free growth of the former and the splendid flowers of the latter.
It was exhibited at the National Floricultural Society's Meeting, October 6, 1853, and had a Certificate of Merit awarded it. It was also exhibited at the London Horticultural Society's Meeting, on the 18th of the same month, and was again similarly rewarded.—Exeter and Chelsea Nurseries, June 17.

PATTERSON'S SCARLET NONPAREIL STRAWBERRY.
JAMES VEITCH, JUN., has the pleasure to inform the public that Mr. Patterson, Gardener to Baroness Wenman, of Thame Park, Oxon, has placed in his hands for distribution the stock of the above first-rate Seedling Strawberry, which, having been fully tested and exhibited, has proved to be of very superior excellence.
It was exhibited at Chiswick, on Saturday, June 3, and received the Silver Knightian Medal; it has also been submitted to Dr. Lindley, Mr. Marnock, and Mr. Thompson, all of whom report most favourably of its merits.
It is a *first-class forcing* Strawberry in character, intermediate between *its parents—Keens' Seedling* and *British Queen*; of the vigorous habit of the *former*, and fully one week earlier in ripening; and in the quality of its fruit *fully equal* in flavour, if not superior, to the latter. The fruit is of a large size and handsome shape, of a *bright red colour*, and with a remarkably high perfume.
Orders are now taking for strong plants to be sent out the first week in September on the following terms:—
100 Plants ... £3 | 50 Plants ... £2 | 12 Plants ... 12*s*.
Exotic Nursery, Chelsea.—June 17.

BETHAM & BLACKITH, GENERAL TRANSIT AGENTS, according to annual custom, as the season is approaching for the importation of Dutch Bulbs and Plants, again have the pleasure of offering their services, and of assuring their friends that all packages consigned to their care will be forwarded to their destination without delay, and at very moderate charges.
Agents:—in Rotterdam, Mr. J. A. HOUWENS; Ostend, Messrs. R. ST. AMOUR et fils; New York, Mr. G. G. SHEPPARD, 187, Water Street.
Cox's Quay, Lower Thames Street, London, June 17.

RICK CLOTHS, MARQUEES, TENTS, ETC.,
NEW OR SECOND-HAND, FOR SALE OR HIRE.
BENJAMIN EDGINGTON has, for the ensuing season, an extensive assortment of Marquees, &c., for Horticultural Societies, Fêtes, Cricket Clubs, &c. Rick Cloths, with poles, pulleys, and lines complete. A variety of Emigration Tents erected on the premises, No. 2, Duke Street, Southwark. Netting and Bunting for Fruit Trees.
Warehouse, 32, Charing Cross, where Tents are erected. Address by post, No. 2, Duke Street, Southwark.

TENTS, MARQUEES, AND RICK CLOTHS.—Now on Sale, several second-hand Rick Cloths, Marquees, and Tents, of various sizes. Some of the Marquees are well adapted for Horticultural Societies. One 50 feet by 30, price 35*l*.; one 70 feet by 30, 50*l*.; and one 100 feet by 30, 65*l*. These are almost new, and quite ready for use. Small Tents for the Wars or Emigrants, weighing 12 lbs., price 25*s*. each, new and waterproof. Small Tents for Gardens, 30*l*. each.—R. RICHARDSON, 21, Tonbridge Place, New Road, London.

GARDEN NETS, FISHING NETS, AND SHEEP NETS made by Machinery at very low prices. New Nets, 1½*d*. per yard. Old Tanned Net, 6*s*. 3*d*. per 100 yards. Nets to cover Pheasantries and for all purposes required.—R. RICHARDSON, 21, Tonbridge Place, New Road, London.

SECURITY TO PREMISES.
WIRE FENCING, 4 feet high, fixed on tops of walls, 1*s*. 6*d*. per yard run, including Iron Standards and all expenses of fixing. This Fence has been approved, in many instances, by the Police. It is almost invisible. Iron Wire Fencing for Hares, Rabbits, Cats, Dogs, Deer, Sheep, and enclosing Fowls and Pheasants, 6¾*d*. per square yard, in various widths, from 6 feet to 15 inches.—R. RICHARDSON, 21, Tonbridge Place, corner of Judd Street, New Road, London.

THE GRAPE BLIGHT.

McADAM'S "COMPOSITION" (now used in the Royal Vineries), for the effectual prevention and cure of the Vine Mildew, may be obtained in 1 lb. packets, 3s. 6d. each, sufficient for 18 gallons of wash.—DAWE, COTTRELL, & BENHAM, Seedsmen, London Agents, 36, Moorgate Street, and 3, Laurence Pountney Lane, City. It may be ordered through any respectable Nurseryman or Tradesman in town or country.

PAGE AND CO.'S COMPOSITION FOR THE DESTRUCTION OF MILDEW UPON VINES, BLIGHT UPON ROSES, WALL-FRUIT TREES, CUCUMBERS, MELONS, AND STOVE AND GREENHOUSE PLANTS.—Extra strong, 4s. per gallon, sufficient to make four (jars and barrels extra); in bottles, 1s. 3d. and 2s. 6d. each. 10 gallons and upwards carriage free to London. Directions for use and copies of testimonials upon application. For testimonials see whole page *Gardeners' Chronicle*, March 11, 1854, describing the SATISFACTORY RESULTS derived from its use in cases of Vine Mildew, Thrip, Scale, Green Fly, Red Spider, Mealy Bug, &c., not only without injuring the most delicate flowers or foliage, but promotes a vigorous growth; it is highly appreciated at the Royal Gardens, Osborne Palace, the Royal Gardens, Claremont, and by the principal nobility and gentry in the United Kingdom.

Finest Grasses for Lawns and Parks, and every variety of Garden and Farm Seeds, at B. PAGE & Co.'s, Seed Merchants, Oxford Street, Southampton.

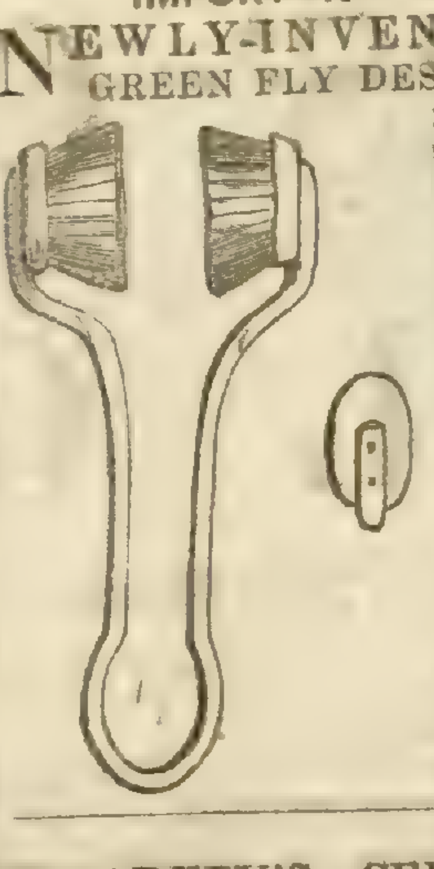
PROTOXIDE ANTI-CORROSION PAINT, for all external purposes, on iron, wood, brickwork, or stucco, is cheaper, and more durable, than any similar article.—Manufactured by CHARLES FRANCIS & SONS, Cement Works, Nine Elms, London.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the nobility, gentry, and clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out-door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice.

Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to WALTER CARSON & SON, 9, Great Winchester Street, Old Broad Street, Royal Exchange, London. No Agents. All orders are particularly requested to be sent direct.

IMPORTANT TO GROWERS OF ROSES.

NEWLY-INVENTED APHIS BRUSH, OR GREEN FLY DESTROYER.—The attention of Florists is particularly called to this Cheap and Ingenious Instrument, invented by the Rev. E. S. BULL, of Colchester, which, in a very simple and easy manner, instantly cleanses the Rose from that destructive insect the Green-fly (or Aphis), without causing the slightest injury to the bud or foliage. Price 2s. 6d. each.



MANUFACTURED BY
JOSLIN AND SONS,
IRONMONGERS, Colchester.

Retailed by all the principal Ironmongers.

Wholesale agents: W. Thompson and Son, 15, Upper North Place, Gray's Inn Lane Road, London.

COWS.

HARVEY'S CELEBRATED COW DRINKS, 1s. each. They have been used with unparalleled success in most diseases incidental to Cows. Full and plain directions are given with each drink for the treatment of Hoven, Mawbound, Colds, Gargle, Red Water, the Tick or Foot and Mouth Distemper, at and after Calving, &c. A very extensive use of these drinks has proved them to be a safe and effectual remedy.

Compounded by R. HARVEY, Veterinary Surgeon, Macclesfield, Cheshire, and sold by all Medicine Vendors. Wholesale Agents, BARCLAY & SONS, Farringdon Street; and MARSDEN & SONS, Queen Street, Cheapside, London.

THE CHOLERA

PREVENTED BY THE DESTRUCTION OF ALL NOXIOUS EFFLUVIA.

CREWS'S DISINFECTING FLUID, Recommended by the College of Physicians. The Cheapest and Strongest Chloride of Zinc.—Quarts 2s.; Pints, 1s.; Half-pints, 6d. Sold by all Chemists, Druggists, and Shipping Agents; and at Commercial Wharf, Mile End, London.

THE CHOLERA—ITS BEST ANTIDOTE.

SIR W. BURNET'S DISINFECTING FLUID, the original and genuine CHLORIDE OF ZINC.—Sold by all Chemists, Druggists, and Shipping Agents; and at the Office, 18, Cannon Street, London Bridge.

N.B. Beware of a spurious and low-priced imitation.

NEW AND BEAUTIFUL PLANTS.

MESSRS. VEITCH & SON,

OF EXETER, AND THE EXOTIC NURSERY, CHELSEA,

HAVE much pleasure and confidence in offering the following novelties. Never, perhaps, have they had the opportunity of presenting at one time so many really VALUABLE and STERLING PLANTS as they do on this occasion, believing them all to be Plants that will give general satisfaction, and tend to increase that confidence and support which have so long and so liberally been bestowed upon them.

The Plants are well established; and all Orders will be executed in the rotation in which they are received.

WELLINGTONIA GIGANTEA.

Ample description of this noble tree having lately appeared in the *Gardeners' Chronicle*, the *Times*, the *Illustrated London News*, Curtis's *Botanical Magazine*, the *Florist*, and other publications, it is only necessary now to say that it is a perfectly hardy Coniferous tree, of immense dimensions and great beauty.

Fine established seedling plants are now ready to send out on the following terms:—

One plant, 2 guineas	Eight plants, 10 guineas
Four do., 6 „	Twelve do., 12 „

DESFONTAINIA SPINOSA.

A fine hardy evergreen flowering shrub, with glossy Holly-like foliage, introduced from the Andes of Patagonia by Mr. W. Lobb, *who discovered it in the region of snow*.

It produces beautiful tubular-shaped blossoms, often 2 inches in length, and of a rich scarlet colour tipped with yellow. (See figure in Curtis's Bot. Magazine for May, 1854.)

This plant having been fully exposed in the open ground during the three last winters may, consequently, be declared to *be perfectly hardy*.

It will certainly be a great acquisition.

Fine established plants, in three sizes, 21s., 42s., and 63s. each. One over on three to the trade.

CERATOSTEMA LONGIFLORUM.

(Fig. in Curtis's Bot. Mag. for April, 1854.)

A beautiful dwarf evergreen Greenhouse Shrub, introduced through Mr. W. Lobb, from the Andes of Peru.

It bears bunches of large tubular-shaped flowers, of a rich orange scarlet colour, of a stout waxy texture, and which are of great duration.

It was exhibited at Chiswick in July 1853, and obtained the first prize for new and rare plants.

Good established plants, of two sizes, 21s. and 31s. 6d. each. One over on three to the trade.

LOMATIA FERRUGINEA.

This fine Evergreen Shrub was found in Chiloe and Patagonia by Mr. W. Lobb.

It attains a height of from 6 to 8 feet, and is remarkable for its beautiful Fern-like foliage.

As a fine leaved Conservatory Plant it is perhaps without a rival, and no collection of fine foliaged plants should be without it.

It has but to be seen to be admired.

Fine established plants of two sizes, 31s. 6d. and 42s. each. One over on three to the trade.

EUGENIA, OR MYRTUS UGNI.

(Figured in Curtis's "Botanical Magazine" for Jan., 1852.)

This very interesting evergreen flowering shrub was obtained from Patagonia through Mr. W. Lobb.

It has stood several winters in the open ground without shelter, producing its delightfully fragrant flowers in July, succeeded by Strawberry-flavoured berries, eaten in Chili as dessert.

It is a plant of easy culture, and blooming freely in a small state, is well adapted for growing in pots.

Strong blooming plants in 48-sized pots, 21s. each.
Second-sized do., in 60-siz d pots, 15s. each.
One over on three to the trade.

IMPATIENS JERDONIÆ.

This beautiful new Balsam is figured in "The Florist" of January last, and is certainly one of the most interesting of recent introductions.

It is of a dwarf neat habit, of easy cultivation, requiring the temperature of a warm greenhouse or stove, and an abundant bloomer, continuing in flower at least three months.

The flowers are in colour bright red and yellow. It was exhibited in the Hort. Soc. Rooms, 21, Regent Street, on the 18th October last, and had the highest prize for new plants awarded.

This is a lovely little plant.

Fine Established Plants ... ... 10s. 6d. each.
A few extra-sized do. ... ... 21s. „
One over on three to the trade.

HEXACENTRIS LUTEA.

A fine Stove Climber, introduced from the Neilgherry Hills, of easy culture, and great beauty.

It produces its flowers in abundance, on elegant pendulous racemes, of from 15 to 18 inches in length, of a clear bright yellow, unmixed with any other colour.

The effect produced when seen drooping from the roof of the conservatory or a trellis is most striking.

It was exhibited at Chiswick on the 13th May last, and obtained the Silver Banksian Medal.

Strong Established Plants ... ... 21s. 0d. each.
Second sized „ ... ... 10s. 6d. „
One over on three to the Trade.

VERONICA VARIEGATA.

This lovely hybrid Veronica was raised by J. Anderson, Esq., of Maryfield, Edinburgh, between V. Andersoni and V. salicifolia.

In character it is intermediate between the two parents, having a bushy compact habit, and small glossy foliage.

It is an abundant bloomer.

The racemes of flowers on first appearing are a clear bright pink, and gradually shade off to a pure white, producing a very pretty and striking effect.

It is really a most useful and attractive plant.

It was exhibited at Chiswick in July, 1853, and was awarded a Medal and greatly admired.

Fine bushy plants, 10s. 6d. each. Three for 21s., to the Trade.

AZALEA INDICA.

Striata formosissima (Taylor).

This beautiful new Azalea is now offered for the first time. It is a seedling raised by Mr. Taylor, gardener to J. Coster, Esq., of Streatham. It is a pure white, flaked and spotted with light purple, fine form, good substance, and first-rate habit.

It was exhibited at the National Floricultural Society, on the 16th June, 1853, and received a Certificate of Merit.

It was also exhibited at the June exhibitions of the Royal Botanical Society, Regent's Park, and the Horticultural Society, at Chiswick, on both which occasions it received prizes.

Worked plants are now ready at 21s. each. One over on three to the Trade.

MESSRS. VEITCH & SON can also supply the following good and popular Plants:—

Abies bracteata (seedlings)... ... ... 63s. each.	Hoya fraterna ... ... 10s. 6d. to 21s. each.
Aphelandra Leopoldi ... ... 21s. „	Ixora Lobbi ... ... 10s. 6d. to 21s. „
Azalea indica, Beauté de l'Europe ... 3s. 6d. to 21s. each.	Lilium giganteum ... ... 21s., 42s., 63s. „
Begonia Thwaitsi ... ... 10s. 6d. „	Philesia buxifolia ... ... 21s. each.
Camellia, Countess of Orkney ... ... 21s. „	Rhododendron jasminiflorum ... ... 21s. to 63s. each.
„ Storyii ... ... 10s. 6d. „	Rhodoleia Championi ... ... 7s. 6d. to 21s. „
	Streptocarpus biflorus ... ... 5s. 0d. „

Detailed Lists are now preparing, and will be forwarded on application.

NURSERIES, EXETER AND CHELSEA.—June 17. 1854.

THE GUTTA PERCHA COMPANY'S TUBING FOR WATERING GARDENS, WITH ROSES AND UNIONS JOINTS FITTED.—27, CITY ROAD, LONDON.

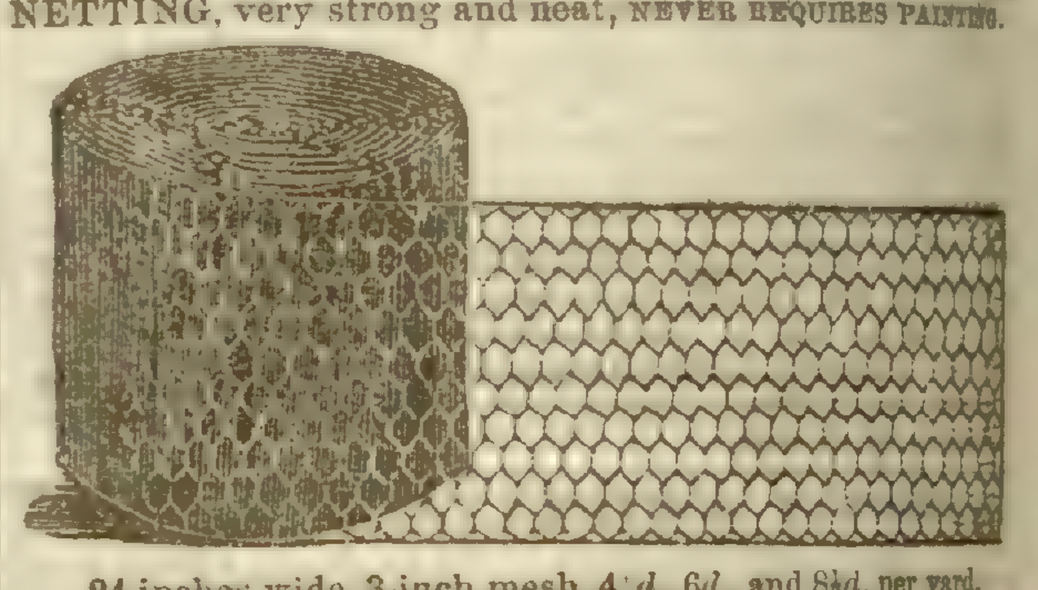
H. J. MORTON AND Co., Galvanised Iron Roofing Works, 2, Basinghall Buildings, Leeds.

PATENT WIRE STRAND FENCING FOR PARKS, &c.

This Fencing is the most neat, strong, and durable for Parks and Agricultural purposes in use. It cannot be bent or put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply as above.

IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

H. J. MORTON AND Co., 2, Basinghall Buildings, Leeds.—GALVANISED GAME AND POULTRY NETTING, very strong and neat, NEVER REQUIRES PAINTING.



24 inches wide, 3-inch mesh, 4d., 6d., and 8½d. per yard.
24 inches wide, 2-inch mesh, 7d., 9½d., and 1s. per yard.

GALVANISED IRON SPOUTING, for Dwellings, Cottages, Farm Buildings, &c., NEVER REQUIRES PAINTING.

Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalte Roofing Felt, &c.

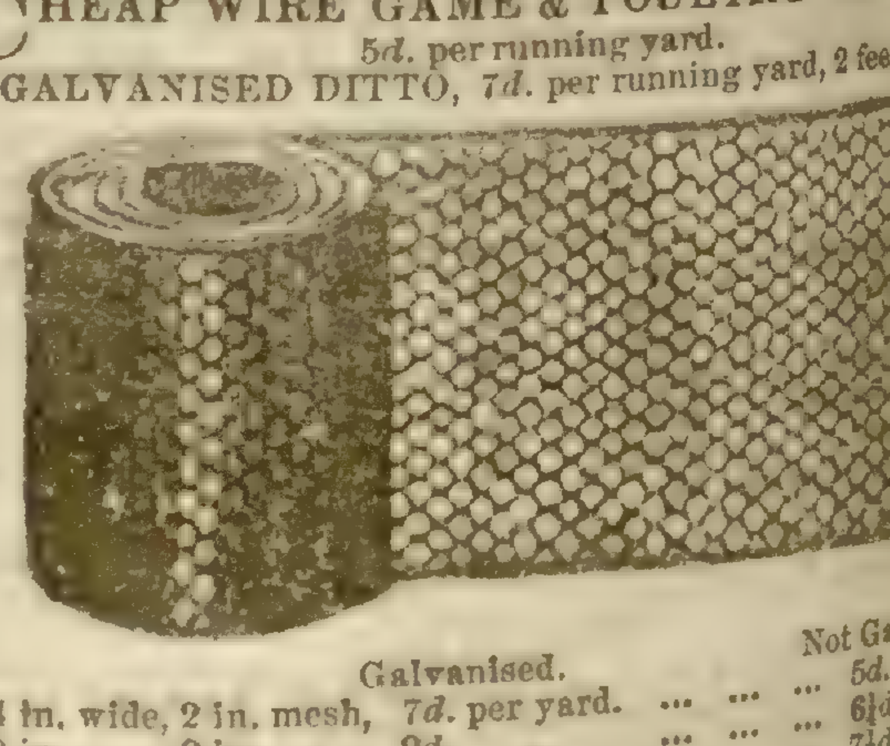
GALVANISED WIRE GAME NETTING.—7d. PER YARD, 2 FEET WIDE.

		Galvanised.	Japanned iron.
2-inch mesh, light, 24 inches wide	...	7d. per yd.	5d. per yd.
2-inch „ strong „	...	9 „	6½ „
2-inch „ extra strong „	...	12 „	9 „
1⅝-inch „ light „	...	8 „	6 „
1⅝-inch „ strong „	...	10 „	8 „
1⅝-inch „ extra strong „	...	14 „	11 „

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasantries, 3d. per square foot. Patterns forwarded post free.

Manufactured by BARNARD & BISHOP, Market Place, Norwich; and delivered free of expense in London, Peterborough, Hull, or Newcastle.

CHEAP WIRE GAME & POULTRY NETTING, 5d. per running yard.
GALVANISED DITTO, 7d. per running yard, 2 feet wide.



	Galvanised.		Not Galvanised.
24 in. wide, 2 in. mesh,	7d. per yard.	... ...	5d. per yard.
30 in. „ 2 in. „	9d. „	... ...	6½d. „
36 in. „ 2 in. „	10½d. „	... ...	7½d. „
48 in. „ 2 in. „	1s. 2d. „	... ...	10d. „

Sparrow Proof Netting, Galvanised, 3d. per square foot, made to any size for the same proportionate price. This article was shown at the Great Exhibition, where it was so much admired for its light and durable appearance, and acknowledged to be the cheapest and best article of the kind ever offered. Extra strong Wire Sheep Netting, 3 feet high, 1s. 6d. and 2s. 3d. per yard. Also every description of Flower Trainers, Dahlia Rods, Garden Arches, Bordering, Flower Stands, Tying Wire, Trellis Work, Invisible Wire Fencing, Hurdles, and every description of Wire Work for Horticultural purposes.—Illustrated Catalogues, Patterns forwarded, post free, on application to T. H. Fox, City of London Wire Work and Iron Fence Manufactory, 44, Skinner Street, and 6 and 8, Snow Hill, London.

CHOICE CINERARIA AND CALCEOLARIA SEEDS.

LUCOMBE, PINCE, AND CO. have now ready for sending out Seeds of their very superior

CINERARIAS AND CALCEOLARIAS,

which have been saved with great care from the finest varieties. The great satisfaction which their Cinerarias and Calceolarias have given for several successive years enables them to recommend their Seed of the present season with much confidence.

Packets of each, sealed and warranted by them, at 2*s*. 6*d*., free by post.—Exeter Nursery, Exeter, June 17.

PLANTS OF CABBAGE, SAVOY, KALE, BROCCOLI, CAULIFLOWER, AND CELERY.

JOHN CATTELL, Westerham, Kent, begs respectfully to inform the public that he has a plentiful supply of Plants of his superior true sorts of the above, which will be forwarded to order on receipt of Postage Stamps or Post Office Order made payable here at the following prices, package included:—All the sorts of Early Cabbage, Savoy, and Kale, including Brussels Sprouts, 6*d*. per 100; 4*s*. 6*d*. per 1000. All the sorts of Autumn and Spring Broccoli, and all the sorts of Celery, 8*d*. per 100; 5*s*. 6*d*. per 1000. Cauliflower, Early and Late, 10*d*. per 100. Red Cabbage, 1*s*. per 100; Drumhead, or Cattle Cabbage, 4*s*. per 1000. Packages of 1000 and upwards delivered free of Carriage to London, and to the Edenbridge Station of the South Eastern Rail.

Seed of Cattell's Dwarf Barnes, and of his superior Dwarf Reliance Cabbage, may be had in packets by post for 12 Penny Stamps per packet; the former containing one ounce as usual, and the latter half an ounce.

GERANIUMS.—Large Surplus Stock of Choice Varieties. Any of the following 9*s*. per dozen, or the set of 24 for 16*s*.: strong for immediate flowering.—Alderman, Beauty of Montpelier, Belle of the Village, Centurion, Crusader, Conspicuum, Commissioner, Elegans, Emily, Falstaff, Field Marshal, Generalissimo, Gulielma, Gustavus, Herald, Norah, Magnificent, Nandee, Prince of Orange, Pearl, Rosa, Star, Tyrian Queen, Virgin Queen, Windsor Castle.

FANCY VARIETIES.—Any of the following, 9*s*. per dozen, or the set of 20 for 14*s*.—Beauty of Winchester, Delicata, Electra, Exquisite, Fairy Queen, Jehu Improved, Jenny Lind, Le Belle de Africana, Lady F. Hastings, Maid of Anjou, Magnifica, Mazeppa Superb, Marian, Ne Plus Ultra, Odorata Superba, Prince Albert, Reine de Fleurs, Statiaski, Village Maid, Zelia.

BASS AND BROWN,
Seed and Horticultural Establishment, Sudbury, Suffolk.

BEDDING PLANTS, &c.—ALL IN POTS, STRONG AND FINE.

The price per 100 for quantities not less than 50.

100 Verbenas, in 30 choice vars., 24*s*.; 3*s*. 6*d*. per doz.
20 „ of 20 best new vars. of 1853, 20*s*.
100 Petunias, in 25 choice vars., 28*s*.; 4*s*. per doz.
10 „ of 10 best new vars. 1853, 10*s*.
100 Fuchsias, in 50 choice vars., 32*s*.; 4*s*. to 6*s*. per doz.
15 „ of 15 best new vars. of 1853, 25*s*.
100 Anagallis, best blue and scarlet, 2 vars., 28*s*.; 4*s*. per doz.
100 Heliotropes, 28*s*.; 4*s*. per dozen.
100 „ in 8 fine vars., 40*s*.; 6*s*. per doz.
100 Chrysanthemums, in 100 choice vars., of large flowering and Pompone sorts, 5*s*. to 7*s*. 6*d*. per doz.
10 „ best new large-flowering vars. of 1853, 10*s*.
21 „ best new Pompone vars. of 1853, 20*s*.; 12 for 12*s*.
100 Dahlias, in 50 choice show vars., 35*s*.; 5*s*. to 9*s*. per doz.
100 „ in 30 choice fancy vars., 35*s*.; 5*s*. to 9*s*. per doz.
12 „ best new show vars. of 1853, 21*s*.
10 „ best new fancy of 1853, 18*s*.
100 Herbaceous Plants, in 100 fine and showy vars., 30*s*.
100 „ „ in 100 ditto, including new vars., 50*s*.
25 Rock Plants, in 25 fine vars., 12*s*.
24 Dwarf Rock Cistus, in 24 splendid vars., 15*s*.
50 Phlox, in 50 choice hardy vars., 25*s*.; 6*s*. to 9*s*. per doz.
6 „ of 6 fine new vars. of 1853, 12*s*.
24 Geraniums, in 24 choice show vars., 16*s*.; 12 for 9*s*.
30 „ in 30 choice newer vars., 45*s*.; 12 for 18*s*.
12 „ of 12 best new of last season, 44*s*
20 „ FANCY, in 20 choice vars., 14*s*.; 12 for 9*s*.
12 „ „ in 12 choice newer vars., 18*s*.
6 „ „ of best new of last season, 18*s*.

Extensive Collections of Stove and Greenhouse Plants. Complete Catalogues free by post for 6 penny stamps.

☞ GOODS CARRIAGE FREE (not under 20*s*.) to all the London termini, and all stations on the London and Norwich and Colchester Line. Plants added gratis with orders 40*s*. and upwards.

BASS & BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

ARTHUR HENDERSON AND CO. take the earliest opportunity of informing their friends and the public, that their CATALOGUES No. 3 and No. 6 are now ready and can be had, post free, upon application.

No. 3 contains descriptive lists of Geraniums, Verbenas, Fuchsias, Calceolarias, Cinerarias, Chrysanthemums, &c., amongst which will be found all the best novelties of the season, also the choicest selections from former years.

No. 6 contains descriptive lists of all the newest and best Stove, Greenhouse, and Hardy plants, amongst which will be found many new and desirable plants.

The following new plants are now on sale:

SEEDLING GLOXINIAS.

ELEANOR.—Ground colour pure white, blotched with rose, and shaded with purple.

ELEGANTISSIMA.—Ground colour French white, of great substance, centre pale lavender, spotted with buff.

EUGENIE.—Ground colour rosy pink, centre creamy white, spotted with rose.

EXQUISITE—Ground colour pure white, with broad belt of puce, throat creamy white, spotted with puce.

MAGNET.—Ground colour clear rose, with blotch of purple in the throat, flowers large, of fine form.

PRINCE OF WALES.—Ground colour white, shading off to lavender.

SIR C. NAPIER.—Ground colour deep rosy crimson, throat blotched with intense rose, dwarf habit.

The above seven Gloxinias will all be found to be fine varieties, with large well-formed flowers standing well up above the foliage. 7*s*. 6*d* each, or 42*s*. the set.

CINERARIA EVA.—Ground colour pure white, with narrow margin of purple, dark disc, fine form and substance; received a Certificate at the National Floricultural Society. 10*s*. 6*d*.

GERANIUMS.

DIADEMATUM REGINA.—Ground colour deep shining rose, upper petals veined with dark purple and white, with blotch of bright orange crimson; very dwarf habit, and abundant bloomer; a fine variety for bedding. 7*s*. 6*d*.

DIADEMATUM SIDONIUM MULTIFLORUM.—Lower petals rosy purple, shaded with crimson; upper petals orange crimson, veined with dark maroon; trusses large, habit dwarf and compact, abundant bloomer; a fine variety for bedding. 10*s*. 6*d*.

PRINCESS.—Ground colour blush white, veined and shaded with carmine, dark horse-shoe foliage, large globular-shaped trusses, and most abundant bloomer. 7*s*. 6*d*.

CETERACH MARANTA (syn. Nothoclena maranta).—A new hardy Fern from the Alps of Switzerland: fronds bipinnate, about 8 inches in length, densely coated with golden brown scales on the under side. 15*s*.

Pine-apple Place, London, June 17.

GOOD FREE FLOWERING ORCHIDS.

THOMAS JACKSON AND SON beg to offer the following:—Acineta Barkeri, Acropera Loddigesi, Cypripedium insigne, Dendrobium chrysanthum, D. Jenkinsi, D. moschatum, D. nobile, D. Pierardi, D. pulchellum, Epidendrum aurantiacum, E. ciliare, Lælia autumnalis, Lycaste cruenta, L. Skinneri, Maxillaria Harrisoni, M. picta, Oncidium altissimum, O. Cebolleti, O. flexuosum, O. leucochilum, O. macropterum, Phaius albus, P. grandifolius, Rodriguezia planifolia, Stanhopea insignis major, S. oculata, S. tigrina major.

T. J. & SON, having a fine Stock of healthy plants of good Orchids suited for amateurs commencing a collection, will be glad to furnish 12 distinct kinds from the above, selected by T. J. & Son, for 42*s*.; 12 selected from the above by the purchaser, 63*s*. Many of the more rare Orchids at equally low prices.

Kingston, near London.

NEW VERBENAS.

THOMAS BARNES, having a fine stock of the undernamed, is enabled to offer them at the following reduced prices, viz., 1*s*. 6*d*. each, 15*s*. per dozen, or 25*s*. for two dozen:—

Arthur, Augustine, Ajax, Annie Laurie, Attraction, Ariosta, Arethusa, Beauty, Beauty of the Garden, Brilliant de Vaise, Bouquet Parfait, Canary Bird, Captivation, Diadem, Emily, Eblouisante (best scarlet out), Goliath, Hector (finest purple), Ida, Imperatrice Eugenie, Lutea pallida, Madame de Stael, Madame Schmidt, Madame Binder, Madame Jardine, Madame de Cataliere, Madame Modeste, Mdlle. de Bandinot, Mdlle. de Frileuse, Maria Louiza, Marie Antoinette, Madonna B, Madonna H, Matchless, Mrs. F. G. Caley, Mrs. Gerard Leigh, Mrs. D. Tysson, Nima, Ne Plus Ultra, Othello, Orion, Pompey, President, Princesse Rousseau, Purple Perfection, Reine des Amazones, Rouge et Noir, Robin Hood, Sulphur Model, Triomphe de Chartrum, Vicomte de Belival, William Barnes.

*** Good border Dahlias, 25*s*. per 100.

Dane Croft Nurseries, Stowmarket.

STANDISH AND NOBLE, NURSERYMEN, SEEDSMEN, &c., Bagshot, Surrey, are now prepared to receive orders for the following new and beautiful varieties of AZALEAS, which will be ready for delivery in June next. The Advertisers can recommend them with the greatest confidence, as superior to any others of their kind.

AZALEA BEALII.—This very distinct variety was introduced by them from China. The flowers, which are of first-rate shape, are quite unique, being striped, like a Carnation, with rich vermilion on a pure white ground. It is of good habit, fine in foliage, and a most abundant bloomer; and although decidedly in the first rank as a greenhouse plant, it is quite hardy enough for the open border. Each, 21*s*.

AZALEA CRISPIFLORA, a species differing much from any other known Azalea, having a character entirely its own. No other kind approaches it in compactness of habit, and its foliage is very fine, abundant, and evergreen. The flowers are very large, and the edges of the petals have the appearance of being irregularly *gaufred*, like a lady's frill; the colour is a rich rose lake. From the fact of its blooming very late—much later than any other Azalea—it will be doubly valuable for many purposes. Each 21*s*.

The Gardeners' Chronicle.

SATURDAY, JUNE 17, 1854.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY,	June	20—Linnean	8 P.M.
WEDNESDAY,	—	21—Royal Botanic Gardens	2 P.M.

WE trust that some of the officers now with the army of the East will have leisure to examine the trees of the little visited districts of Roumelia and Asia Minor. So severe have been the losses lately experienced in gardens from frost that we look with more interest than ever to those rugged climates, the vegetable inhabitants of which bid defiance to the rigours of winter. How little we know of the trees of those countries is evident from the fact that neither Quercus rigida nor rotundifolia, two evergreen Oaks, have ever been seen alive in England, although they cannot but be common on the southern slopes of the Balkan; and that a recent traveller in Asia Minor has pointed out the existence of an entirely new species of Fir tree, existing in a region heavily timbered with Cedars of Lebanon, of the existence of which we had no previous knowledge.

M. DE TCHIHATCHEFF, in a late communication to the *Revue Horticole*, informs us that while following the southern slope of the Bulgardagh, (a hill-country forming a spur, we believe, of Taurus), he was struck by the magnificent forests of Cedar, which reached the upper regions of this majestic ridge of mountains. At first he was inclined to think that they were local, but on reascending the Zamanta San, as far as the Forach, and on crossing the mountains which separate the Zamanta San from the Saihum, where it escapes, he had for several days the pleasure of beholding the finest Cedar forests which are probably at present known to exist—forests which may occupy a belt of land stretching for some 35 or 40 leagues from the south-west to the north-east. Up to the present time, says M. DE TCHIHATCHEFF, botanists have been in the habit of making a pilgrimage to Lebanon to see the Cedars there, and about 15 years ago he himself visited that celebrated mountain, and contemplated with due reverence the 10 or 12 trunks which stand isolated upon it; but they appeared to be sorry objects after the fine forests now visited, with which the Cedars of Lebanon no more deserve to be compared than our hothouse Palms with the Palms of the tropics. Had Linnæus been acquainted with the Cedars of Caramania, he would never have given the name C. Libani to what our traveller calls the king of Conifers.

Whilst crossing the Cedar country, M. DE TCHIHATCHEFF observed, more or less constantly associated with the Cedars, two other Coniferous trees, of which one is a new species. These two trees are *Abies Cilicia* and *Juniperus drupacea*. What he calls Abies Cilicia has leaves like those of A. pectinata, but is characterised by cones which measure as much as a quarter of a yard in length. The slender, white, upright stalks which remain after the scales of the cones have fallen off, give a most remarkable appearance to this tree.

Since we know nothing here of A. Cilicia, it may be as well to translate the following description of it as given by M. KOTSCHY, a well-known botanist, who passed some time on Taurus:—

"Abies Cilicia is a tree about 15 yards high, pyramidal in shape, and upright; its trunk is a little more than half a yard in diameter, and bears branches from its very base. The bark is ash grey, very thick, deeply cracked, and covered all over with little round smooth pits. The whorls of branches are very close to each other; the lower branches, at first horizontal, rise towards their ends; the upper ones, diminishing gradually in size, rise from the stem in acute angles. The leaves are 0.03m. long, and 0.003m. at the broadest; they are almost always twisted at the base, and their apex is slightly emarginate. The male catkin is pedunculated, cylindrical, rounded at its apex, about 0.03m. in length, and 0.006m. in breadth. The crest of the anthers is in the shape of a tongue with a triangular point and entire edges. The cones are from 0.25m. to 0.30m. long and 0.06m. broad, nearly cylindrical, rounded at the base, obtuse at the top, and generally having a concave depression. Each scale is about 0.04m. broad and 0.03m long, measuring from the base of the claw; the upper edge is transversely elliptical, truncated, and perfectly entire; the lateral edges are rounded, almost into half a circle, transparent, and eroded with a wedge-shaped base suddenly narrowed into a claw. The bract is small, strap shaped, a little contracted at the top, from which proceeds an almost quadrangular lamina, crenated at the end, and furnished with a central point about 0.003m. in length, and scarcely projecting. The seeds are three-cornered, obovate, with an obliquely wedge-shaped wing."

This Fir belongs to the group in which the bracts are entirely concealed by the scales of the cones. Its silvery colour is described as giving it a pretty appearance. It is remarkable for its upright habit, its trunk branching from the base, and for its shoots being covered with long closely-packed leaves. The numerous cones are said to make the top of the tree look like a candelabrum, with its wax lights.

The tree was discovered, in 1853, by M. KOTSCHY, in one of the valleys of the Taurus, the Gusgula, to the N.W. of the great Cilician defile Gülleh-Boghos, and was afterwards found on the southern slope of the great mountain chain called Bulgardagh in Cilicia, where it grows along with the Cedar, at a height of from 1100 to 2500 yards above the level of the sea. Sometimes it is found in company with the Juniper mentioned below, at other times it itself and alone forms immense forests. It begins to bear cones when about 10 years old. Such a plant as this can hardly be confined to Caramania, but may be expected to occur anywhere on the mountains of Asia Minor, and would be a great acquisition.

So would an abundant supply of the berries of the magnificent *Juniperus drupacea*, everywhere found accompanying the Cedars. These berries are said to be as large as a nut, and covered with a blue bloom like that of a Plum; moreover, they melt in the mouth, and have a very agreeable taste—at least M. KOTSCHY thought so.

In addition to the Cilician Silver and the Drupaceous Juniper, there also occur in similar localities *Juniperus rufescens*, which takes the place of *J. oxycedrus* of southern Europe, and a Pine allied to *Pinus halepensis*.

We shall take some early opportunity of publishing figures of Juniperus drupacea and the two Oaks above mentioned, so that officers in the East may recognise them. But of Abies Cilicia no specimens exist, that we at present know of, in the herbaria of England. Its stiff stumpy habit, silvery colour, and long upright cones, the rachis or receptacle of whose scales remains long after the scales themselves have dropped off, must render it easy to make out.

Let us add that the common deciduous Oaks of the southern face of the Balkan are well worthy of examination. What are they? Of what quality is their timber? Dried specimens of their leaves, and a few boxes of Acorns, the latter packed in dry earth and forwarded by a steamer, would soon enlighten us upon that point.

OUR intelligent correspondent, M. DE JONGHE, of Brussels, a letter from whom we published at p. 286 of the present volume, having recently visited England, and seen what our fruit gardens are, has communicated the following striking observations, which for the present we submit to our readers without comment. Possibly some of the cultivators alluded to by M. de JONGHE may have some observations to offer upon his letter.

"Since my letter of May the 1st, I have continued to observe the fruit trees in my own gardens and in those of my friends, and everything tends to show the truth of what I before stated. The hardy

Pears grafted on Pear stocks preserved such of their fruit as was set, in spite of the frosts of the 24th and 25th of April; so also did the hardy Plums grafted on the Damas blanc. So did Cherries worked on the Guigne (a variety between the Merise and Griotte), Peaches on the Myrobalan or Cherry Plum, and Apricots on the common coarse blue Plum. This proves that fruit trees on seedling stocks, which send strong roots into the ground, are more vigorous, have more sap, are better able to resist the drought and cold of spring, than Pears worked on Quinces, Cherries on the Merise, Plums on Mirabelles, Apples on Paradise stocks, or Peaches and Apricots on Almonds. Such stocks may suit countries warmer than Belgium and England, and with a different kind of soil. In the reports made to you nothing is said as to the nature of the soil or the stocks upon which the trees are grafted; nor is the variety of fruit given which has suffered most from the frost. These points are, however, of the utmost importance, and require to be correctly ascertained.

"Your nurserymen import from Angers, Orleans, and Paris, young trees, because of their low price, and they expect them to suit England; but such trees cannot succeed better with you than with us, and one of our principal growers has completely lost his business, by persisting in the practice. In July, 1853, I saw, in Gloucestershire, very fine Pear trees (worked on Pear stocks), but those coarse trees, although of considerable size, bore little fruit, even in the best gardens I visited. In all I was greatly struck with the complete absence of all pruning, thinning, and cleaning from insects.

"The soil and climate of Cheltenham appeared to me well suited for the cultivation of our new varieties of very hardy Pears, if worked on the Pear stock. I suggested this to a well-known amateur at Cheltenham, and proposed that he should commence the experiment in the Pittville Gardens, but no trial has, I believe, been made. By forming an orchard of 100 hardy varieties of Pear grafted on wild Pear stocks, it would be seen, after five years at the longest, which varieties best suited the climate, and such an operation would not cost above 20*l*. The introduction of good fruit for dessert would surely be worth a little trouble, most especially in a town where there does not exist, so far as I could discover, one single plant of Passe Colmar, Glout Morceau, or Marie Louise, even on walls. The Cheltenham Society prefers to spend 100*l*. upon a flower show—the glitter of a day—which leaves nothing behind of permanent value! It will, I am afraid, take a long time to change the taste of the English people in this respect.

"I propose at some future time to send, for the benefit of your readers, a list of those varieties of hardy trees, which yield indisputably excellent fruit, and which I have quite recently found to be safe from the frost in Brussels and its neighbourhood. Gentlemen who were here the other day were surprised to see that all the fruit of our hardy varieties is uninjured, whilst nearly all the varieties brought from Lyons, Orleans, Angers, and Laval, have lost their fruit.

"The Beurré Clairgeau * from Nantes, which was in a very cold place, must be mentioned as an exception, being uninjured, and all its fruit saved, whether on pyramid or standard, and whether worked on the Pear or the Quince. This new variety is, no doubt, the hardiest and most productive of all the Pears which come from France. Its quality is delicious, and the fruit as fine in appearance as the Duchesse d'Angoulême. The tree is, morever, much more hardy than that variety, whether it is worked on the Pear or Quince stock."

VEGETABLE PATHOLOGY.—No. XXIV.

106. The main object to which the whole system of organs in any individual plant tends, is the reproduction of the species by means of seed. Other modes of propagation are more or less accidental, though they are sometimes so predominant as to render the formation of the true fruit a rare occurrence. In all such cases, however, the same innate tendency exists, and where the accidental modes of propagation are kept in check, is carried out as perfectly as in those plants which possess no other means of propagation.

107. In cryptogamic plants, where the reproductive bodies consist for the most part of a single cell, there is no regular transformation of the component parts of the vegetative system into organs of fructification; or if actual metamorphoses are obscurely indicated, as in the formation of the calyptra in mosses from a convoluted leaf, it is amongst the higher cryptogams, which more closely simulate the superior products of vegetation, that they occur. In a large proportion the cellular tissue in privileged portions of its course either becomes organised into some form of fruit, the spores themselves being either generated at the expense of the contents of certain cells, or produced externally in the form of either terminal or lateral prolongations or ramifications of the tissue itself, however complicated the receptacle may be.

108. In the higher cryptogams there are, beyond doubt, distinct sexes, the concurrence of either form of fruit being for the most part necessary for the production of new seedlings, though, as in phænogams, there are frequently superadded other modes of propagation analogous to the reproduction by means of tubers, runners, suckers, bulbs, &c. There is also great reason to believe that the principle extends to the lower cryptogams. It is proved beyond the possibility of cavilling in Algæ, and there are, at least, analogues in fungi and lichens, if there are not true spermatozoids. It is obvious, however, that this is not the place to enter at great length into the curious questions connected with the impregnation and germination of cryptogams.

109. In phænogams the reproductive apparatus, taken as a whole, consists of an indefinite number of successive whorls of leaves, in a greater or less state of alteration. However different the functions of these may be, or however strange their modifications, all are clearly so many metamorphosed leaves, whether sepals, petals, stamens, or pistils, in some few cases, perhaps, the terminal point of the axis giving rise to the spongy body on which the ovules are seated. Though, however, we are by no means inclined to disbelieve the existence of a central placenta, it is quite certain that many apparent exceptions are really referable to the more ordinary forms, a striking proof of which is afforded by the Carnation, the curious transformation of whose ovules into one or more carpels, with a free marginal placentation, is figured in the *Gardeners' Chronicle*, 1850, p. 612.

110. As the sepals, petals, &c., are transformed leaves, they are capable, in certain instances, of developing a bud in their axil, though this is very rarely present. Several curious cases are recorded and figured in the "Theory of Horticulture." Such anomalies, however, will find a place in a later division of the work, as they are, according to our definition, properly to be considered as so many cases of disease.

111. The flowers of phænogams may be without either sepals or petals, but they cannot be without stamens or pistils, whether united in the same flower or separated, either upon the same or different plants. The stamens and male organs vary greatly in structure; but some particular part of their tissue, varying according to circumstances, in every case gives rise to distinct organisms, known by the name of pollen grains, which for the most part separate readily from the parent organ in the form of a coloured dust consisting of single cells or several combined together; while, in other cases, the grains are collected into a waxy mass which is never entirely disintegrated.

112. The pistil or young ovary consists of one or more leaves variously combined, a portion of the tissue at the edges of which, either through the whole or a portion only of their length, assumes a spongy form, and gives rise to little sacs, or protuberances known by the name of ovules, consisting of several distinct coats, which ultimately become seeds. These ovules are analogous to the buds or bulbs occasionally formed from the parenchym of leaves, and if we may judge from such cases as that of the Carnation mentioned above, or from the leaflet so commonly produced at the edge of the carpels in a peculiar state of Trifolium repens, consist of one or more leaves, reduced to a rudimentary state, in the centre of which is contained a sac filled with organisable matter in which the embryo is ultimately formed.

113. Besides the placenta, another portion of the tissue of the leaves which constitutes the pistil is exposed, being destitute of cuticle; and this, under a variety of forms, furnishes the stigmatic tissue by the mediation of which the impregnation of the ovules takes place, and true seed is ultimately formed. *M. J. B.*

THE GENUS CYTISUS.

The species and varieties belonging to this genus are among the gayest and most easily cultivated of our winter and early spring flowering plants, producing, with ordinary management, an abundance of bright-coloured cheerful-looking flowers for some three months in succession; and for amateurs, having only a small collection of plants, nothing could be more useful.

Beginners should commence with young plants, of C. racemosus for instance, which, if procured at once, will form nice little specimens for blooming in spring; they should be placed in a cold frame, or a cool airy part of the greenhouse, giving them plenty of water at the root, syringing them overhead on the mornings and evenings of bright days, and keeping them near the glass, to induce close short-jointed growth. If the pots are found to be well filled with roots, which, in the case of healthy plants received from the nursery, will be sure to be the case, give a liberal shift, say into pots two sizes larger than those in which they have been growing. For soil use about equal parts of good rich light turfy loam, and strong fibry peat, broken up so that it would pass through a half-inch mesh sieve, and well intermixed with sharp sand, and some lumpy bits of charcoal, to keep the mass open after the decay of the fibre. Care should be observed to thoroughly drain the pots, for the plants will be found to require a very liberal supply of water; and unless perfect drainage is secured, the soil will be apt to become sour towards the bottom of the pots. Beyond the ordinary routine of watering, syringing, &c., very little attention will be necessary during the growing season; but if spider should make its appearance, no time must be lost in eradicating it, by laying the plants on a clean mat and thoroughly washing the under sides of the leaves with the syringe; this operation, repeated twice a week for a fortnight, will generally be successful, unless when the plants are growing in too warm a situation, and in this case it will be nearly impossible to keep them free from this pest. If any branch is observed to be taking a decided lead of its fellows, it should be stopped, and the main shoot should be kept neatly tied to a stake; this is supposing that the object is to obtain a well furnished pyramidal bush, which is decidedly the best method of training; but if any other form is desired, it will be easily obtained by timely attention; for the plants, being vigorous growers, are easily trained, with a little care, in any shape. If the plants can be kept near the glass in a light airy situation, so as to induce short compact growth, they may be kept growing till late in autumn, but they should not be kept too close at this season. They may be wintered in a cold pit or wherever they can be protected from damp, for a few degrees of frost will not injure them. After they have bloomed in spring allow them to stand in a rather cool place for a fortnight, then cut in the shoots slightly, and place them in a moist and rather close spot, to induce the buds to break freely, and when the young shoots are about an inch long, re-pot, giving a liberal shift, using the same soil, &c., as already recommended, and retain them in a growing temperature, syringing freely until the roots get hold of the fresh soil. When this is the case they may be more freely exposed to air, and as soon as the weather permits, removed to a sheltered situation out of doors, where they will not be exposed to the mid-day sun. Here they will grow freely and will not be so liable to be infested with red spider as in the greenhouse.

With a little attention it is easy to have these plants in bloom at almost any time during the winter, but to effect this they ought to be started into growth sufficiently early to allow of having the young wood firm by the middle of September, after which time the plants should be freely exposed to the sun, and not over-watered at the root. Treated in this way they will commence flowering immediately they are placed in a moderately warm greenhouse, and if supplied with manure water they will bloom profusely for a long time in succession. When the specimens become too large to be conveniently re-potted every season, supply them liberally with manure water while making their wood and blooming, which will preserve them in sufficient vigour for several seasons; or they may be slightly disrooted every year, repotting them in the same sized pots, and using very rich soil. *Alpha.*

DESCRIPTIONS OF NEW PEARS CULTIVATED BY M. DE LIRON D'AIROLES, AT LA CIVELIERE, NANTES.—By Himself.

Beurré Clairgeau.—Tree remarkably vigorous, and soon forms a handsome pyramid; succeeds well against a wall with a south or an east aspect; bears abundantly, and at an early age. Fruit variable in form, but generally calebasse-shaped; a superb fruit, weighing sometimes 20 ounces. It gained the first prize of the Horticultural Society of the Seine, in 1851. Its skin is fine, almost entirely covered with patches of reddish russet when gathered; but at its full maturity, which occurs in November and December, it becomes richly coloured with yellow and vermilion. Its flesh is fine, white, melting, very juicy, sugary, and perfumed. Raised by Pierre Clairgeau, a gardener at Nantes.

Beurré de Nantes, or Nantais.—Tree vigorous, adapted for a pyramid or for training against a wall; it soon comes into a bearing state. Fruit large, oblong, of the form of the St. Germain; skin light green, yellowish when fully ripe; flesh white, melting, very juicy, and perfumed; ripens in September. One of the most handsome and delicious of the new Pears. It was raised by François Maisonneuve, a horticulturist at Nantes.

Beurré Delfosse.—Tree vigorous, suitable for a pyramid or standard. Fruit middle-sized, roundish; skin yellowish brown, slightly tinged with red next the sun. Flesh white, fine, buttery, and melting; very juicy, and sugary, with a delicious, perfumed flavour, somewhat resembling that of the Passe Colmar. Becomes fit for use in Belgium in December and January. Raised by M. Grégoire, of Jodoigne, Belgium.

Bergamotte Hambourg.—Tree vigorous, forms a handsome pyramid, and is also adapted for a standard; an abundant bearer. Fruit large, Bergamot-shaped, from 3 to 3½ inches in diameter; skin rough, green, changing to citron yellow when ripe, dotted with brown, and tinged with red next the sun. Flesh white, very fine, somewhat buttery, juice abundant, sugary, perfumed like the Rousselets and Bergamots. An excellent fruit, ripening, in Belgium, in the first fortnight of October. Raised by M. Bivert.

Duc d'Orléans.—The original tree has a magnificent pyramidal form. The fruit is middle-sized, or tolerably large, obtuse-pyramidal, of a fine golden yellow, profusely sprinkled with reddish brown, and dark specks; the stalk is slender, woody, and about an inch and a quarter in length. Flesh white, fine, melting, very juicy and sugary, with a vinous perfumed flavour. Raised by M. Season, November and December. Alexander Bivert, and bore, for the first time, in 18[illegible]

Beurré Six.—Tree vigorous and fertile, but requires to be worked on the Pear stock and grown against a wall. It is not adapted for pyramidal training. Fruit large, pyriform; skin smooth, light green, dotted with deep green and brown. Flesh white, very fine, melting,

* See third column of this page.

buttery and sugary, with a delicious perfume flavour. Its season of maturity is November and December, in Belgium. Raised by M. Six, nurseryman at Courtray.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

The eleventh anniversary of this charity was held at the London Tavern on Monday last, the 12th inst., T. Grissell, Esq., in the chair, supported by Lieut.-General Sir J. Wilson, J. H. Schröder, Esq., H. G. Bohn, Esq., J. J. Mechi, Esq., Mr. R. Wrench, and about 120 gentlemen.

The usual toasts were proposed and responded to. General Sir J. Wilson returned thanks for the army; and Mr. Tombleson, one of the few survivors of the battle of Trafalgar, returned thanks for the navy. The Chairman proposed the better health of the Duke of Devonshire. He then proposed "Continued Success to the Gardeners' Royal Benevolent Institution." He made a warm appeal to the company in its behalf, and hoped that they would show by their subscriptions the interest they took in the charity. Mr. Wrench proposed the health of the chairman; and after some other healths were drank, the Secretary announced, among many others, the following subscriptions, which had been handed in on the occasion:—

The Duke of Devonshire	£21	0	0	W. S. Johnson, Esq. .	£10	10	0
The Baron Rothschild	21	0	0	Robert Field, Esq. ...	10	10	0
Messrs. Godfrey and Waterer	21	0	0	George Reid, Esq. ...	10	10	0
G. S. Ridgway, Esq. ...	10	10	0	James Veitch, Esq. ...	10	10	0
Thos. Grissell, Esq. ...	10	10	0	Charles Turner, Esq. .	10	10	0
Mrs. Schröder	10	10	0	Edward Denyer, Esq....	10	10	0
Thomas Baring, Esq. .	10	10	0	Charles Palmer, Esq.	5	5	0
Royal Botanic Society	10	10	0	R. Wood, Esq.	5	5	0
H. R. Cheney, Esq. ...	10	10	0	James Thomson... ...	5	5	0
Messrs. Hurst and M'Mullen	10	10	0	Messrs. Minier and Co.	5	5	0
Henry G. Bohn, Esq.	10	10	0	J. J. Mechi, Esq. ...	5	5	0
Messrs. Gray and Ormson	10	10	0	W. B. Booth, Esq. ...	5	5	0
				Samuel M. Peto, Esq. .	5	5	0
				Earl of March	5	5	0
				Sir John Wilson ...	5	0	0

The Chairman then proposed the Horticultural and Royal Botanic Societies, and alluded to the services they had rendered to this charity and the public in general.

Mr. Bohn returned thanks; after several other toasts the meeting separated.

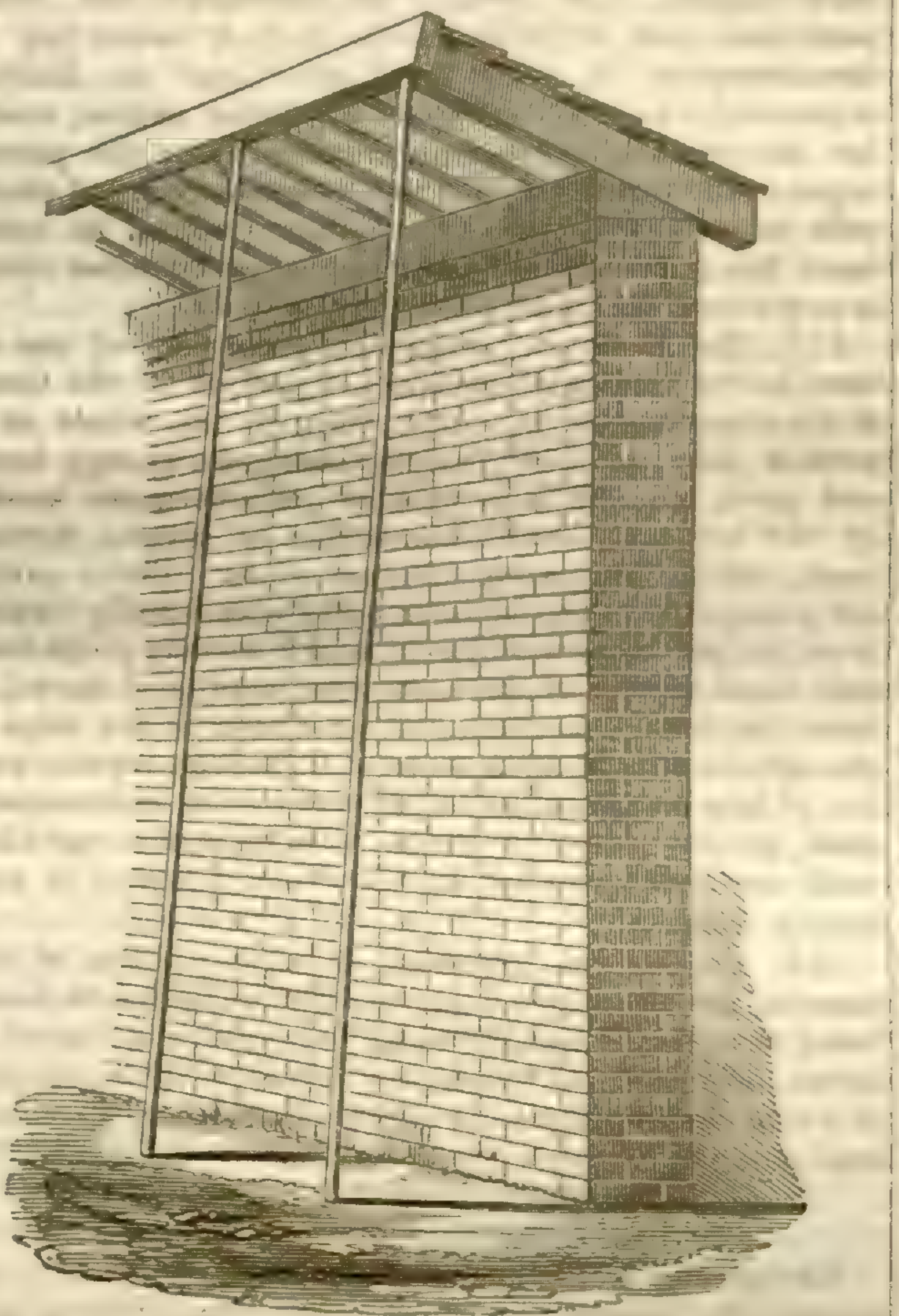
Home Correspondence.

Viviparous Plants.—A remarkable instance of this has just come under my notice: some plants of Pernettya mucronata were placed in a warm moist atmosphere, in which situation they ripened their berries. On opening some of them, every seed was found to have vegetated, in fact the interior of each berry was a mass of young plants. These were carefully taken out and "pricked" into pans, in the same way as ordinary seedlings are treated, and they are progressing favourably. Externally the berries presented no difference from others grown in the open air, except, perhaps, being a trifle larger, and of a paler colour. *Crayon.*

The Winter in Devon.—If I were to name all the plants that have in South Devon braved the late rigorous season, I should give too long a list. I will therefore only say that Araucaria Cunninghami, and Dicksonia antarctica, are both dead, though the former was protected. Our Magnolias have suffered more than usual, though they have sustained no permanent injury. Witheringia superba is killed to the ground, but shooting again, and Viburnum suspensum is slightly injured. Cephalotaxus Fortuni, Rhamnus croceus, Libocedrus chilensis, Cupressus funebris, and many of the new Pines, may be viewed as perfectly hardy in this district, as is Cytisus nubigenus, though growing in a low situation. Against an east wall, and unprotected, Habrothamnus fascicularis has bloomed magnificently, and Cantua bicolor and dependens are in flower now. C. pyrifolia is more tender, and has been killed to the ground. Many plants of Veronica speciosa have done well, and the Chinese Palm is quite hardy. I may add that I have now blooming in pots, under glass, some very fine varieties of Amaryllis, which were raised by a nurseryman in this neighbourhood, Mr. John Mitchell, from seed in a cold frame, and transferred to the open ground, where the bulbs arrived at a flowering state when purchased by me. My Ixias and Sparaxis, &c., are all safe, and Iris Susiana has flowered beautifully. The New Zealand shrub or tree, raised from seed, under the name of "the Lace Bark tree," has stood the winter against a wall. I enclose some twigs of it, and shall be obliged by its name, if known [Philippodendron regium]. It is very graceful, growing as a standard in a pot. We shall have an abundant crop of every kind of fruit, if no more severe weather is experienced; but at Totnes, only 12 miles off, I understand there was ice as thick as a penny piece yesterday (May 23). *A Devonian.*

The Woodcock.—I am of opinion that this bird breeds in many parts of England more frequently than is usually suspected. There is a locality through which I very frequently pass, in which, during the spring and summer months, woodcocks are abundant. The locality alluded to, as may be imagined, is very secluded; in fact, a great portion of it is in reality a game preserve. Heath and Fir plantations predominate, and lakes and streams are abundant. Here, on any fine evening, about sunset, from April to the end of summer, many brace (they always fly in pairs) will cross one's path in the course of a mile. They generally fly low—so low, indeed, that the markings of the feathers may be readily distinguished. And at such times they frequently utter a peculiar note, which I refrain from attempting to convey on paper, but which, as far as my observation goes, is confined to the breeding season. *Crayon.*

Protection of Wall Trees.—I presume to address you on a subject which I conceive must interest the horticultural world. In the year 1792 I accepted this living and retired into this distant part of the kingdom. Having an affluent private fortune, I employed my leisure hours in planting, gardening, and forcing fruits, Pines, Peaches, Nectarines, Vines. I have had fine Grapes every month in the year, having 400 bunches of fine Grapes in a small stove in the difficult month of February, 1805. But the Apricot, which is a bad tree to force, seemed to defy all my endeavours to obtain a crop, always being cut off by the spring frosts. About three years ago I suggested to my gardener, Mr. Evans, who has lived with me above 30 years, the possibility of covering them from the frost in an easy manner, and no sooner suggested than Mr. Evans carried it into execution; and the two last years we had abundant crops, which is the more singular, as this year has been so unfavourable and frosty. The canopy or covering is removable, and composed of rafters and pantiles, which project 2 feet from the wall; and the wall being 12 feet, the iron rod which supports the canopy is 13, making an elevation of 1 foot in the canopy. Five or six pantiles make the canopy, according to the thickness of the wall, and half a pantile must lap over to the north side of the wall to throw the water off the trees situated on the north side, and also to keep the wall dry. If I were to make a new one I would protect all the inner walls in like manner, as no doubt Peaches and Nectarines would bud securely. I have no wish to publish my own fame, living in the most retired manner in my 89th year, being born in Spring Gardens, Westminster, in 1765; but I am unwilling that this discovery should be buried in oblivion, and shall be very happy to show the crop and premises to any one that will honour me with a call. We had above 1800 Apricots upon our trees this year, and a great crop last year. The expense is about 5*s.* per yard, or 5*l.* for 60 feet. We had 1800 Apricots upon our trees before we observed them. The canopy or covering is kept up all the year, which is of great advantage to the walls, and not at all unsightly. *W. B. M. Lisle, L.L.D., Rector of St. Fagan, Cardiff.*



Wall, 12 feet high; iron pillars, 13 feet long; rafters, 4 feet long; over trees, 2 feet; 5 pantiles cover the whole width. Expense per yard, 5s.

Storing Potatoes.—The following results obtained by my plan of storing may prove useful. 1. Twelve sacksful of Potatoes, lifted October 25th, 1853, stored with lime, the lime being placed in small bundles in the middle of each sack. Tubers all preserved; whereas some of the same Potatoes, stored without lime, were much affected. 2. Fifty bushels of Potatoes, dug up towards the end of October, were pitted with three bushels of quicklime, the latter being placed at the bottom of the pit, and covered over with a thick layer of Gorse. On opening the pit it was found that the diseased tubers did not amount to more than two dozen. Tubers stored in the ordinary way, in pits without lime, were almost entirely destroyed by disease. 3, 4, 5. Potatoes stored with and without lime quite untouched by the disease. 6. Roots stored in a large chest or box with lime, and the latter being placed in a small clothes-basket, and covered over with faggots. On opening the box the tubers were found quite healthy, whilst some that had been kept in a cellar without lime, were much diseased. 7. Twenty bushels of the tubers were placed in a large bin with three bushels of lime, the latter forming a stratum at the bottom, and covered over with a thick layer of coarse cinders. At the end of three months the roots were found to be quite sound, whilst another lot which had been put into another bin without lime were very much diseased. 8. Potatoes housed in sacks, one or two large lumps of lime being put into each sack, tubers quite dry, and all preserved. 9. Potatoes first dried by exposure on a gravel walk to the heat of the sun, and then stored away in large boxes with lime, all healthy. Tubers housed in their natural condition became diseased. 10. Potatoes housed with lime, all healthy. 11. Same result. 12. Several bushels of Potatoes were pitted with lime, and when examined, at the expiration of several months, were found to remain untouched by the disease. Roots pitted without lime became quite rotten. 13. Two or three hundred bushels of Potatoes were divided into four equal lots. Three of these were pitted with lime, the other in the ordinary way. In the first of the three lots stored with lime, the lime was placed at the bottom of the pit, with the proper precautions; in the second it was thrown into a conical heap in the centre of the tubers; and in the third and last, it was placed on top of the Potatoes, being separated from the latter by a layer of brushwood, &c. On examining the tubers at the end of some months those in the first pit were found to be much diseased, whilst those contained in the other three were nearly healthy. "The best result," says this correspondent, "I am disposed to think was obtained by placing the lime on the top of the tubers, and this is the plan I intend to follow." *Thornton J. Herapath, Mansion House, Old Park, Bristol.*

Poisonous Nature of the Common Yew.—A few days ago a ploughman with his horses took shelter from a storm beneath a Yew tree. The animals fed upon the branches without being checked by the man, who does not appear to have apprehended any danger. A short time afterwards, however, all the horses were seized with illness, which resulted in the death of two of them. As the poisonous nature of the Yew has sometimes been doubted, it may be well to record this fact. But on the other hand, that the Yew can be eaten with impunity by some animals, and under certain conditions (which I do not attempt to define), I have ample proof. Near a farm-yard, with which, some years ago, I was very familiar, stands an old Yew tree, about which, both at morning and evening milking time, the whole dairy of cows constantly assembled. I repeatedly saw them cropping the lower branches, yet I never heard of any injury being sustained by the cows in consequence. Some years ago this subject was discussed somewhat in detail, I think, in your columns, but I do not recollect that any definite conclusions were arrived at. *Crayon.*

Aeration.—Amongst your unanswerable remarks on Wardian cases and plant cultivation, at page 317, is one I wish to notice. It is this: You say, "At present we want the art of maintaining the air of plant-houses in a state of perpetual ingress, egress, and interior motion." Why, that is just the object aimed at, and accomplished too, by the scheme for aerating plant-houses which appeared in your paper at page 38 of the present year, with a subsequent theoretical explanation. Further experience only convinces me of its correctness; and the health of my plants shows the same. Since the ventilator was put in there has been only one fumigation—no sulphuring—no mildew; of how many closed plant-houses can the same be said during the past five months? Foliage so healthy and green, and firm short jointed wood, have called forth frequent remark from visitors, and are the result of perpetual change of air night and day. Whether right or not, I attribute very much of the success which has attended this attempt to the admission of the refreshing night dew; the plants then, unstimulated by the sun's light and heat, suck in copious draughts of moisture, all denied to other more closely attended relatives, duly shut close up every evening, carefully opened, it may be, some time the next day, perhaps the next after that; during all which time my plants have been helping themselves to just exactly their own requirements. It may be asked how is this accomplished? Need I go over the ground again? The matter is so very simple that one is almost sure to miss or overlook it, and yet it is a difficult task to explain it simply. Once grant that a column of warm air is lighter than one of cold air of equal height, and the whole thing rests on how to make a use of that property. I have done so by a box, bottomless and topless, divided down the middle by a partition, thus making two shafts, flues, or air channels, one of which is made shorter than the other by cutting off a part up to the partition; this short side is the exit side, this box is put in the opening made by sliding down the sash from the back wall, the shortest side of the box is put towards the wall, the longest side hanging down in the house, the air in which is presumed to be warmer than the external air, this warm air occupies the highest level, and therefore fills first the shorter side of my box, then commences the aerial motion, like scales of a beam; the heavier side, the cold, comes down; the lighter, the warm, goes up; the descending cool air continues falling, the ascending warm continuing rising, as long as any difference of temperature exists. By filling the house with smoke from damp straw, the eye can confirm the deductions of theory; the exit side only gives forth the vapour, however dense the smoke within may be. An open door of course upsets the scale and converts for the time both channels into outlets. I will say nothing now about the necessary sizes of these air channels—only let them be big enough—they are sure to be too small. I would suggest that for a span-roofed house the ridge be occupied by a ventilator the whole length of the house, of width proportionate to its cubic contents, and arranged as an inlet between two outlets; that is, that my box be doubled, the two inlet sides being put back to back as one may say, and the two outlets on what would then be the two outsides; at the same

time extending it the whole length of the house. This matter is intimately connected with the almost forgotten Polmaise plan of warming, which same plan is still absolutely correct in theory, waiting only some correct applier. Some day it will raise its head again, and by its aid early crops of vegetables will be produced to an extent unthought of now. For truly a hot water apparatus is a costly affair, and only for the wealthy. A house Po'maised and efficiently ventilated may be much nearer accomplishment than many gardeners perhaps imagine. I have found 1 foot difference in length between the sides of my box to give ventilating power enough; but if the principle of making the cool side the longest side be kept in view, the modes of application may be very various, and the material employed in construction—wood, metal, or glass, plain or ornamental. Before incurring a large outlay, an amateur might do as I have done, just apply one of these ventilating boxes to one light of his house, and he will then certainly go further in that direction; for the principle is of universal application. Wherever the air to be withdrawn is warmer (lighter) than the external air, and a communication can be made therewith, then can an interchange of air be effected and the space ventilated. *J. P. S., Chesterford.*

Spring Frosts v. *Early Potatoes.*—I had hoped to have seen in your columns some remarks upon this subject. To induce others to give information I send you the results of my own observations on two points—what mode of cultivation enables the plants to escape injury, and what varieties, by their own nature, are most capable of resisting the power of frost. The best mode of management appears to be the following. Just before the plants come up, scratch the ground well with a common garden rake, and do nothing more to it until the frosts have ceased, which will be about the end of May. This scratching process was adopted merely to destroy the coming Charlock, &c.; but if done in fair weather the surface soon becomes very dry, and the frosts, both black and hoar, affect the land very little. The crops which suffered most severely were those which, after they had come up, were hoed just before the frosts came on. The hoeing had elevated the damp subsoil to the surface, which became much frozen, and the young plants in contact with it were cut down. The conclusion, then, to be drawn is by previous cultivation to get the land as free from weeds as possible; to rake the surface just before the plants appear above ground, and after their appearance not to hoe before the end of May. As to the different kinds, a long early Kidney, called "White Blossom" in this part, suffered most, and the Walnut-leaved and Forty-fold were least injured. In one plot by accident a few Walnut-leaved were planted amongst the White Blossoms, and in another the reverse. In both cases the White Blossoms are nearly destroyed, and the Walnut-leaved promise to be a good crop. We know that different kinds of Beans, Broccoli, Lettuce, &c., vary as to their power of resisting the power of frost, and no doubt to some degree there is a similar difference in the nature of the various kinds of Potato; and as early growth is desirable, because it enables the plant to stand against the "disease," it becomes a matter of importance to know what varieties will resist cold, or recover rapidly after the tops have been frozen. Perhaps Mr. Cuthill will tell us what has been the fate of his Ash-leaved and Lapstone Kidneys; and other observers will also give us the result of their examinations. *L. S.*

Effects of the Late Winter.—At Rolleston Hall, Aucuba japonica has been partially injured; Viburnum Tinus has had its top killed, but is springing from the root; Arbutus Unedo is dead; Pinus apulcensis, Montezumæ, and patula, are killed; of P. insignis some are much injured; P. Pinsapo is slightly hurt; Cupressus macrocarpa, Uhdeana, and thurifera, are killed; of C. torulosa some are partially injured, others are dead. Saxe-Gothæa and Fitz-Roya are unhurt; Taxodium sempervirens is slightly injured; as is also Libocedrus chilensis; of Thuja aurea some are killed; Cedars of Lebanon are uninjured; Deodars have lost their leaves, and some are even killed; Cryptomeria japonica is unhurt; Laurus nobilis has been nearly killed, but it is alive at the roots; Hedera helix is not injured in the least; but Irish Ivy in places is much hurt; Ligustrum vulgare has lost its leaves, but otherwise it is uninjured; the Chinese Privet is killed; Buxus balearica is very much injured, and some are killed; Phillyrea angustifolia has been killed; P. media, partially hurt, while P. obliqua is uninjured; Alaternus is partially affected; Garrya elliptica is slightly injured; G. laurifolia is killed; Quercus gramuntia is killed; Q. Ilex has had its foliage destroyed and injured. Yews in some places are slightly affected; Irish Yews are unhurt; common Laurels are much injured; Portugal partially so; Buddleya globosa is killed; common Furze is unhurt; while the double blossomed has been killed; Yucca gloriosa and filamentosa are injured; common Holly is uninjured; while many of the variegated sorts are killed. Araucaria is much injured, and many of the leaves are dead. Fifteen miles to the north of Rolleston, at Osmaston and Snelstone, in the neighbourhood of Ashbourne, the leaves of the Deodar and Araucaria were not injured in the slightest degree. Many of the above plants appear to have suffered more from the continued drought of the spring than from the severity of the frost. *Rolleston Hall, May 7.* ——At this place (within three miles of Worcester), the green Cistus has been much injured. A Macartney Rose, which grew on a south wall, has been killed to within an inch of the ground. A strong Escallonia macrantha has shared the same fate; a Cantua dependens, though in a warm nook and doubly covered, is quite killed. But some fine seedling Cinerarias, which were cut down and covered with tan, are alive and shooting nicely; likewise a scarlet Geranium, which was treated in the same way under a west wall. The soil is dry and gravelly. *H. M.*

Societies.

LINNEAN, *June* 6.—Professor Bell, President, in the chair. The President nominated F. Boott, Esq., Robert Brown, Esq., W. Spence, Esq., and W. Yarrell, Esq., Vice-Presidents for the ensuing year. W. Ferguson, Esq., and T. B. Phillips, Esq., were elected Fellows of the Society. Among the donations announced were dried specimens of nearly 300 species of plants from the Cape of Good Hope, collected and presented by Dr. Alexander. Mr. Salmon exhibited two specimens of Kestrels, in the preservation of which the substance colouring the legs had been introduced internally beneath the scales of the tarsi. The following papers were read: —1. "On the Osteological Relations observable among a few species of the Bovine Family," by Walter Adam, M.D.—2. "On the External Membrane of the unimpregnated and impregnated Ova of the common Salmon," by John Hogg, Esq., M.A. This paper was accompanied by specimens, preserved in spirits, of the ova, both unimpregnated and also artificially impregnated.—3. A letter from C. J. F. Banbury, Esq., addressed to the secretary, mentioning the appearance of a species of Hoopoe in the British Channel, on the 15th of April in the present year.—4. Extract from a letter from Dr. F. Welwitsch to R. Kippist, Esq., dated St. Paul de Loanda, Tropical West Africa, S. Lat. 8° 48′ 5″, March 2, 1854. Dr. Welwitsch writes—"What astonished me more than anything else at Sierra Leone, was the circumstance that the English, who have now been so long in full possession of this charming territory, nevertheless still remain in utter ignorance of the adjoining negro district, more particularly with respect to the interior of that part of tropical Africa. In Sierra Leone I saw the first parasitical Orchideæ, and almost always in company with a gigantic species of Platycerium (P. Stemmaria, Desv.) In Prince's Island I wandered, while climbing the highest peak, Pico de Papagaio, for a whole hour among flowering examples of Caladium bicolor and many other splendid tropical species. Of Filices alone, I collected about Free Town and on Prince's Island, above 20 species, among them a Gleichenia (? G. Hermanni, R. Br.) with a scandent stipes often 25 feet high! I arrived in Loanda, the capital of Angola, in Oct. 1853, and since then my whole time has been employed in excursions, so that I have already become acquainted with and plundered upwards of 40 miles of coast from the Quisembo River (three miles north of Ambriz), to near the mouth of the mighty Cuanza (about 9° 30′ S. lat.), and possess the materials for a flora of Loanda of five or six miles [? German] in circumference. . . . March and April are, in Angola, the rainy months; and the period of the highest and most luxuriant development of vegetation falls in the months of May and June. . . . What especially surprises me here with respect to the geographical distribution of certain genera, is the occurrence of three or four Aloes, of a Stapelia, and several other Cape genera. Of Euphorbia I have already found near Loanda a gigantic species with a stem 2½ feet in diameter and upwards of 30 feet high, forming woods as the Pinus sylvestris does, and readily discernible from ship-board. In the lakes of the interior, distant about one to three German [4 to 12 English] miles from the coast, I have found almost everywhere magnificent Nymphæas, and Pistia, but in addition our Typha angustifolia and Scirpus maritimus. Of trees, there occur only in the dry coast from only Adansonia, Sterculia, n. sp., and Afzelia, Eriodendron anfractuosum, and a Bauhinia, with three sp. of Palms. On the rivers, however, the tree vegetation becomes dense and more abundant in species. . . . In the woods of Euphorbia (Candelabra n. sp.) is found a wonderfully beautiful terrestrial Orchidea, with a scape 4 to 5 feet high, which ends in a spike a foot long, of large yellow flowers. A truly magnificent Crinum (Broussoneti ?) luxuriates in boggy places; and on hilly slopes the Adansonia digitata is nearly covered by a glaucous-leaved Loranthus, with deep red flowers. It is much to be regretted that excursions in this country are attended with so much expense, and such great inconveniences of all kinds. . . . As there are few roads, and fewer beasts of burden, all baggage, provisions, water, presses, paper, beds, cooking utensils, with the necessary articles for barter, must be conveyed on the heads of negroes, so that even the shortest excursion of three or four days costs an enormous sum." Dr. Welwitsch furtherannounced his intention to dispatch forthwith to England some portion of his collection of plants, both living and dried, of insects, of seeds, &c.; and these it was stated had subsequently arrived.—5. "Description of an apparently new species of Crab, belonging to the family Lithodidæ, found by Mr. W. Lobb, on the sea-shore near St. Francisco, in California," by Adam White, Esq.

BOTANICAL OF EDINBURGH, *June* 13.—The President in the chair. Professor Balfour exhibited the male cone of a Cycadaceous plant, sent by Dr. Stanger from Natal, and named conditionally by Mr. Smith, of Kew, Stangeria paradoxa. The cone had been sent under the name of Lomaria eriopus, picked by Gueinzius at Port Natal, and details in regard to it and the plant have been recently given by Mr. Smith in Hooker's "Kew Miscellany." The leaves have a Fern-like appearance, and are very like those of a Lomaria or Danæa. The venation is inflexed and involute, and the forked veins come from a true mid-rib. Mr. Smith remarks that the latter circumstance shows the untenable nature of the characters distinguishing fossil Ferns and Cycads.—Professor Fleming noticed the occurrence of a remarkable white fungoid production on the roof of a dark cavern excavated for fire-clay in the sandstone quarry at Joppa, near Edinburgh. It seemed to be the mycelium of a fungus originating in the wood which propped up the roof of the mine. The white mass was 7 feet in diameter. Some of the threads were pendant from the roof, and others had dropped on the floor of the mine. Dr. Macbean had examined the substance with a microscope, and found it to be composed of numerous cells arranged in a bead-like manner, but he was not able to detect fructification or spores.—Mr. G. Lawson exhibited under the microscope preparations of the colouring matters of the flower of Strelitzia Reginæ, and drawings of the same. This plant is interesting, as presenting examples of both the xanthic and cyanic series in the same flower, but still more remarkable in the microscopical peculiarities of its colouring matters, which are referred to by Mohl in the "Vegetable Cell," p. 44. Mr. Lawson stated that in the blue (or purplish-blue) part of the flower, the colouring matter entirely consists of spherical granules of an intense blue or bluish purple colour, with occasionally cells containing similar shaped granules of bright crimson. All the granules of any one cell appear to be constantly of the same colour. In the yellow part of the flower, the colouring matter appears in a very different form. Instead of spherical granules, we have slender filaments, which are more or less spirally twisted and rolled up in various ways in the cell, resembling in their twisting the more delicate spiral fibres in the external cells of the roots of Epiphytal Orchids; but they are in many cases short, and form small round coils, giving the outline of globular bodies, which likewise, however, occasionally occur. While red and blue colouring matters usually occur in the vegetable kingdom diffused in the cell sap, we find them both in Strelitzia in a globular form. Although deceptive appearances often presented themselves, Mr. Lawson felt inclined to believe, from the examination of numerous specimens, that diffused colour did not at all occur in the flowers of Strelitzia. When the flower has attained its maturity, however, the cells are often so completely filled with the deep blue granules that they appear as a dense mass of blue, apparently homogeneous, matter in the interior of the cell. The flower should, therefore, be examined in the young state, not only before it has expanded, but long before the spathe has opened to expose it to the action of the light; even then the colouring of the flower will be found to have far advanced, but the cells not so completely filled with the blue globular granules as to disguise their character, and they are therefore distinctly seen. The cells containing the yellow filaments are generally of larger size, and more elongated in form than those containing blue or red globules.—2. On a species of Potamogeton from Lough Corrib, and other plants. By J. Kirk, Esq.—3. On the flowering of plants in the Royal Botanic Garden. By Mr. M'Nab. Mr. M'Nab communicated the following register of the flowering of certain hardy plants in the garden, as compared with the flowering of the same species during 1851 and 1853:—

	1854.	1853.	1851.
Erythronium Dens-canis ...	March 10	March 19	March 1
Narcissus pumilus	„ 10	„ 21	„ 5
Symphytum caucasicum ...	„ 11	„ 26	„ 23
Doronicum caucasicum ...	„ 11	„ 26	„ 25
Dondia Epipactis	„ 11	„ 25	Jan. 4
Scilla bifolia alba	„ 13	„ 27	March 8
„ rubra	„ 14	„ 30	„ 17
Hyoscyamus Scopolia	„ 14	April 4	Feb. 24
Corydalis cava	„ 14	„ 5	March 21
Anemone pulsatilla	„ 14	„ 13	April 15
Ribes sanguineum (first open flower seen)	„ 14	„ 4	March 5
Scilla bifolia	„ 15	March 27	„ 6
Hyoscyamus physaloides ...	„ 15	April 12	„ 23
Orobus vernus	„ 16	„ 8	Feb. 17
Asarum Europæum	„ 16	March 28	„ 10
Tussilago nivea...	„ 18	April 1	Jan. 27
Hyoscyamus orientalis ...	„ 18	„ 13	March 26
Pulmonaria angustifolia ...	„ 19	March 30	„ 17
Holosteum umbellatum ...	„ 20	...	April 17
Draba aizoides	„ 20	April 1	March 14
Saxifraga crassifolia	„ 20	March 27	„ 29
Anemone nemorosa	„ 22	April 12	„ [illegible]
Gagea lutea	„ 23	„ 12	„ [illegible]
Sesleria cærulea	„ 24	...	April 5
Hyacinthus botryoides ...	„ 24	March 22	March 17
Pulmonaria officinalis	„ 25	April 4	April 1
Narcissus Pseudo Narcissus ...	„ 25	„ 6	March 27
Anchusa sempervirens... ...	„ 25	„ 12	Feb. 14
Dalibarda geoides	„ 25	...	March 30
Omphalodes verna	„ 26	...	„ 23
Doronicum Pardalianches ...	„ 26	...	April 6
Fritillaria imperialis	„ 26	April 12	March 13
Puschkinia scilloides	„ 27	„ 2	„ 15
Adonis vernalis	„ 28	„ 6	Feb. 13
Narcissus moschatus	„ 28	„ 8	March 28
Ranunculus Ficaria	„ 29	March 7	„ 23
Hierochloe borealis	„ 30	...	April [illegible]
Anemone apennina	April 3	April 12	„ [illegible]
Fritillaria Meleagris	„ 5	„ 12	March 13

4. Illustrations of the application of "Nature Printing" to the copying of botanical specimens. By W. Lauder Lindsay, M.D.—William Milnethorpe, Esq., was elected an ordinary Fellow of the Society.

Reviews.

On the Atmospheric Changes which Produce Rain and Wind, and the Fluctuations of the Barometer. Second edition, with additional Essays and Diagrams. By Thomas Hopkins. London: Weale, 59, High Holborn; and Simms, Manchester.

THE author observes, that at present the industry of meteorologists seems to be directed almost exclusively to the collection of facts. The great number of these, however, already furnished, justifies and invites an effort to discover the laws which govern the facts; this, he states, has been the object aimed at in the present work.

The theory of the winds, originally advanced by Hadley, and adopted by Dalton, Malte Brun, and now treated by Professor Forbes, and others, as the established theory, is not acknowledged by the author as being adequate to produce those strong winds which blow in some parts towards, and in others from, the tropics. "The heating of the surface of the globe and of the air near it, by the sun, is not a sufficiently powerful cause to produce those winds, though, like the law of diffusion, such surface heating may, and no doubt does, to a certain extent, bring into active operation another and a more powerful cause, and, as we shall see hereafter, one that is fully equal to their production.

"Unequal temperature is undoubtedly the great cause of the movements of the various portions of the atmosphere which constitute wind, but inequalities of temperature in our atmosphere are not produced merely by the partial heating of the surface of the globe, and of that portion of the air which is in immediate contact with it. The heat of the sun acts in two ways on the surface of the globe; one is by attaching itself to the matter of the earth's surface and increasing its temperature, which increase of temperature is, to some extent, communicated to the air which rests upon it, as stated in Hadley's 'Theory of Winds.' But there is another way in which the heat of the sun acts: it unites with water, and, by evaporation, forms aqueous vapour, without raising the temperature of the surface where the evaporation is carried on to the same extent that the temperature of dry land is increased; and the heat, thus united to the water, moves away from the part in the vapour, and through the operation of certain causes, is carried to a greater or less distance, where it is liberated, and produces effects which appear to have been, in a great degree, overlooked by writers on this subject, but which effects must be duly estimated if we are to understand the causes of the winds which are found to prevail in various parts of the world.

"In treating of the condensation of vapour and the heating of gases, it is observed, that supposing the dew point to be at 56°, an ordinary height in our summers, we shall find that the vapour will constitute not more than 1-100th part of the whole atmosphere, the remainder being formed of non-condensable gases. And as the vapour and gases are intermingled, and diffused through each other, the liberated heat produced by condensation would be attached to the gases, and only one part of it to the remaining vapour. The gases (constituting the atmosphere) would thereby have their elasticity increased; they would expand and rise to a greater elevation, and the remaining vapour being entangled with them would be carried by them to a higher and, consequently, to a colder region. In that higher and colder region, the same process would be repeated, vapour would be again condensed, heat liberated, the gases warmed and expanded, and another similar process commenced; and these processes would be carried on so long as there was a sufficient supply of vapour from below to feed them. The rapidity and energy of the process will depend on the extent of the supply of vapour, and of the power of cooling it. When the supply of vapour was small, and the higher part of the atmosphere warm, the process would be slow, and a mist or stratus cloud would be formed; when the vapour was more abundant, and the higher part of the atmosphere colder, the process would be more rapid, and cumuli might form, and rain fall. And if the supply of vapour was great, and the higher parts of the atmosphere very cold, the process would be violent, and heavy rain would be produced."

The different laws of cooling of the non-condensable gases and of vapour, produce important effects in the atmosphere. On the removal of incumbent pressure, and permitting expansion to take place, the gases cool, say 5°, whilst the vapour would cool only 1°. Through the operation of these different laws of cooling, the non-condensable gases, in their ascent to a height of, say 500 yards, will cool 5°, whilst the vapour that is within them is disposed to cool, by its own expansion, not more than 1°; but, as the different gaseous substances are intermingled, the cold of the former (those constituting the atmosphere) is communicated to the latter, and the vapour is condensed, not by the cooling consequent on its own expansion, but from that which results from the expansion of the (atmospheric) gases. Vapour, as it is formed, rises by its elastic force into the atmosphere, and would, by its own law of cooling, have its temperature reduced only 1° for every 500 yards of height, to which it ought to ascend; but it has to expand into, and pass through the interstices of the gases, which have a temperature that is found lower by 1° for every 100 yards of height. The vapour, in rising, is consequently cooled by the cold gases into which it has to expand, and thus condensation commonly goes on at some moderate elevation in the atmosphere, whilst evaporation is proceeding on the surface below. The condensation forms cloud, and warms the atmosphere in the part, and generally it will be found that the temperature in the newly-formed cloud will be only about one-half as much reduced by altitude as that of the neighbouring air, which has been undisturbed by condensation. When the atmosphere is thus heated, raised, and expanded in a particular locality, the adjoining more dense air presses into the comparative vacuum, and being in its turn heated, and a continuing ascending current created, more distant air rushes in, and thus a horizontal current of air is produced, and a *wind* is the result, and this wind is feeble or strong, according as condensation is moderate or energetic.

According to the author's theory, it appears, therefore, that the force of the wind does not depend so much upon the rarefaction of the air, by the direct influence of the sun's rays, as it does upon the condensation of vapour.

The principal feature of the work is the frequent recurrence to the condensation of vapour, for explanation of meteorological phenomena. Twenty-two essays are added to the present edition, and among them those on the Formation of Dew, Quantity of Vapour in the Atmosphere, Rain at Different Elevations, Pressure of the Aqueous and the Gaseous Atmospheres, Origin and Nature of the Causes that Produce Storms, on Climate, &c.

The concluding paragraph on dew is deserving of notice, especially as so much has been written on that subject by authors who have advanced very different theories respecting the cause of its formation:—

"We may then say that *Falling Dew* is produced by the descent of the cumulus or day-cloud, which, cooled by evaporation in a higher part of the atmosphere, sinks in the evening to the surface of the earth. *Floating Dew* is found in parts which have much vapour in the air in proportion to the temperature, along with a clear atmosphere, and when, consequently, radiation from the surface cools the atmosphere contiguous to it, and condenses a portion of the vapour which the air contains into minute globules of liquid, which are sustained by the elastic force of the air; whilst *Dew*, properly so called—that which is found attached to various substances in the form of drops—is a result of the cooling of certain bodies below the dew point of the atmosphere by radiation of heat from those bodies, and a consequent condensation and abstraction of some of the vapour which the air resting on them contained. And the more any body is thus cooled the greater will be the quantity of dew deposited on it. In the two last mentioned modes, dew supplies to a certain extent the place of rain. Where clouds are freely formed, rain falls to the earth to some extent; but when rain is absent, and the sky is cloudless, radiation of heat, by cooling and condensing vapour, gives some moisture to the earth. Thus the sands of Africa and Asia, which are never visited by rain, have their scanty vegetation supplied with a certain amount of that moisture which is so essential to the life of organised beings."

The work contains much interesting matter on the subject of Meteorology; and if not directly, yet certainly indirectly, much that may prove some day useful to mankind.||

Garden Memoranda.

ROYAL BOTANIC GARDEN, REGENT'S PARK.—The exhibition of American plants held here under canvas is scarcely so good this season as we have seen it in former years. Individually the plants may have flowered well, but as a whole they have certainly not been remarkably effective or striking, owing to the successional way in which the different varieties have come into bloom, of which there has never been so great an amount at one time as there was wont to be in more favourable seasons. The Azaleas are nearly over, while the broad-leaved Kalmias are scarcely yet in flower. Of Rhododendrons there is, however, a fair display, and any of the large standard specimens from Mr. John Waterer, of Bagshot, are of themselves well worth a journey of many miles to see, independent of the masses of smaller plants contributed by Messrs. Standish and Noble, of the same place, and Mr. Baker of Windlesham. The most brilliant by far in the first named group is "John Waterer," a variety remarkable for the very large heads of glowing deep crimson flowers which it possesses. It has also the advantage of being a free flowerer, and is reported to be sufficiently late to be out of the reach of spring frosts. Blandyanum is also a very brilliant kind, but it is scarcely late enough. Erectum, which is a shade lighter than John Waterer, is likewise a valuable kind. Blatteum, a variety bred from the last named sort, is one of the best of the Victoria family. It is a free bloomer, its trusses of flowers being very large. Lady Eleanor Cathcart resembles a Pelargonium more than anything else with which we can compare it. Its flowers are pink, with a dark blotch in the upper petals, and the trusses are large and handsome. Atro-sanguineum is good in colour; but the truss is somewhat loose, and it does not flower sufficiently late. Duke of Norfolk is a medium-sized pleasing rosy pink kind, without spot; and Elegans is a good rosy crimson, with apparently much of the Catawbiense breed about it. Omer Pacha, a new variety, very dark, and with a deep velvety tinge, is a seedling from Waterer's Victoria; it is, however, many shades darker than that sort, and is certainly more singular than beautiful. Among light-coloured kinds, Everestianum still holds a prominent place, not only on account of the beauty of its flowers, but the abundance with which they are produced. Cyaneum is a good dark kind, with a bluish tinge. Of spotted sorts, Leopardi, or perhaps more properly "the Leopard," is the best, and it is a very late kind. Waterer's Delicatissimum is a handsome light variety, as are also Album elegans, and Luciferum. Sherwoodianum is a good pale rose with a dark blotch. Duc de Brabant is new; it has white flowers slightly tinged with violet, and spotted with brown in the upper petals. It is in the way of Pictum, and perhaps scarcely so handsome.

The gem of Messrs. Standish and Noble's group is a new Belgian kind called Concessum. It has rosy pink flowers of the most vivid description, and excellent in shape and substance. The brilliancy of the pink in each floret is relieved by a pale centre, by which the general appearance of the truss is much improved. This is certainly a great acquisition, and one which cannot fail to be everybody's favourite. Among other sorts not mentioned above, a light kind called Ruth, and multimaculatum, were perhaps the most remarkable.

In Mr. Baker's collection the small lilac-flowered semi-double Hyacinthiflorum was in good condition. This makes a charming standard. A kind called Kalmioides has rosy lilac flowers, and foliage much resembling that of the broad-leaved Kalmia; maculatum grandiflorum is one of the best of the Victoria family. Versicolor is a pleasing sort; but it is not seen here in good condition. Nivaticum is a pretty white kind tinged with pink, and spotted with yellowish brown in the upper petals. Catawbiense splendens is also worthy of attention, as is also C. elegans. Baker's Delicatissimum is a handsome light variety, with more violet in it than Waterer's. Wilsoni and Ignescens, two brilliant new crimson kinds, are said to be very striking and handsome, but of these we only saw single flowers. We remarked a Kalmia in this group, with very deep coloured blossoms, and a prettily flowered plant of the dwarf Rhododendron ferrugineum.

FLORICULTURE.

CULTURE OF THE DAHLIA.—I need scarcely remind amateurs that in order to be "well up" for exhibition purposes, the Dahlia should be planted in good strong soil, enriched by a liberal admixture of well rotted dung, and that the plants will be greatly benefited by placing a substantial mulching of the same material round their roots, which will feed on the fertilising liquid, washed down by every shower of rain with which they may be favoured. In order to be successful it is also indispensable that the young plants be strong and healthy, by being hardened and grown on slowly, but without receiving any check, for at least a month before planting, in a cool frame, to which air has been constantly and liberally admitted. The operation of staking should be performed either before planting or immediately after it. Though these conditions are, to some extent, known, and, what is better, acted upon, yet I have obtained such satisfactory results from their application, that wherever the Dahlia is cultivated I have no hesitation in recommending their adoption. In planting care should be taken to keep the ball entire, and to sink it but a trifle below its upper surface. I do not think that it is a good plan to form a basin or small trough for holding water, round the roots of the young plants. This should only be resorted to in very dry seasons, and, even then, not until the plants have made considerable progress towards completing their growth, for in a wet season like last summer, for instance, this method of planting induces a too rapid and, therefore, unnecessary growth, a condition which materially interferes with the quality of the flowers. From careful observation I am convinced that in proportion to the ripeness or otherwise of the trunk and laterals, are the chances that each variety will, or will not, maintain its true character. The fact that many of the leading varieties of last year failed to produce blooms of even average merit, ought to warn cultivators against the practice of furnishing their plants too copiously with an artificial supply of that element, from which, during a wet season, their succulent nature is but too susceptible of injury. The result of such treatment invariably is the production of a profusion of rank long-jointed shoots, instead of short-jointed thoroughly matured wood, from which alone anything approximating to good show flowers can be expected. *R. M.*

ROYAL SOUTH LONDON FLORICULTURAL SOCIETY, *June* 13.—The weather on this occasion was very unpropitious, and the attendance small. One tent was wholly occupied with Pelargoniums, of which there were some good collections. The best came from Mr. Turner, of Slough, who had admirable plants of Esther, Queen of May, Mochanna, Magnet, Exactum, Medora, Astrea and Arethusa. The same exhibitor had also six fancy kinds, consisting of Richard Cobden, Jenny Lind, Triumphant, Miss Shepherd, Madame Sontag, and Electra. Mr. Robinson, who was first in the amateurs' class, had Portia, Optimum, Exactum, Salamander, Star, and Novelty. This cultivator's fancies were Celestial, Delicatissimum, Jenny Lind, Princess Maria Galitzin, Fairy Queen, and Magnum Bonum. Some Pinks were shown, but they were stated to have been forced, to get them into bloom in time, and therefore they were not in very good condition. J. H. Baker, Esq., had Ruby and Koh-i-noor (Bragg's), Titus (Edwards'), Mary (Phillips'), Laura (Wilmer's), Prince Albert (Kirtland's), Countess Rosse (Read's), Sarah (Turner's), A. Morrison (Coster), Teddington (Bottle's), Colchester Cardinal (Norman's) and Mr. Cousins (Cousins'). Mr. Turner produced Rubens (Henbrey's), Pandora (White's), Prince Albert (Kirtland's), Arthur, Sarah, Optima, Esther, Hebe, and Perfection (Turner's), Rose Empress (Carter's), Mrs. Maclean (Maclean's), and Medora (Looker's). The following Pansies were also shown by Mr. Turner, viz., Duke of Norfolk, Earl of Mansfield, Flower of the Day, Mrs. Marnock, Pomona, Miss Talbot, Victory, Euphemia, Charles Turner, Royal Albert, Thisbe, Queen of the Isles, Lady Emily, Blanche,

Memnon, Marian, Attila, Fair Rosamond, Satisfaction, British Queen, Monarch, Mr. and Mrs. Beck, Royal Visit, Pandora, Lady Carrington, Emperor, Caroline, Aristides, Royal White, Sultan, Miss Stuart, Sovereign, Mrs. Hamilton, Egon, and Sir J. Cathcart. Cut blooms of Pæonies and Irises were furnished by Mr. Salter, of Hammersmith, and there was a whole tent filled with stove and greenhouse plants. Seedlings chiefly consisted of Pelargoniums. A first-class Certificate was awarded to Phaeton, a vivid orange-scarlet with a bluish white throat, and upper petals blotched and edged with crimson, shape good: also to Serena, which we have described before. Other seedling Pelargoniums were Vesper, a white kind, blotched on all the petals with purplish crimson; Petruchio, Pandora, and Lord Raglan; the last a brilliant free-flowering sort, which, although not quite perfect as a florist's flower, will, nevertheless, make a good market plant. These were all from Mr. Turner, of Slough. Among Calceolarias, only one received a Certificate. It was named Pandora, a straw coloured ground kind, with mottled orange-scarlet blotch, and tolerably good shape, except that it was too large in the throat. It was shown by Mr. Clarke.

HAMMERSMITH PANSY SOCIETY.—At the late meeting of this Society the following prizes were awarded:—Class I., Nurserymen: 1st Prize, Mr. C. Turner, with 36 blooms, viz., Marion, Monarch, Euphemia, Flower of the Day, Royal Standard, Gliffe, Mrs. Hamilton, Memnon, Mrs. Talbot, Comet, British Queen, Lord Palmerston, Earl Mansfield, Satisfaction, Climax, Sir J. Cathcart, Blanche, Emperor, Uncle Tom, Pandora, Miss Stewart, Victory, Mrs. Mills, Pomona Superb, Royal Visit, Duke of Perth, Caroline, Mr. Beck, Fair Rosamond, Sir J. Paxton, Royal White, Lord John Russell, Marchioness of Bath, Thisbe, National, and Fearless. Class II., 2d Prize, Mr. W. Bragg, Slough, with Ophir, Post Captain, Hercules, Georgiana, Sampson, Marchioness of Bath, Lucida, Duke of Perth, Timour, Royal White, Polyphemus, Miss Talbot, Pandora, Royal Visit, Sir J. Paxton, Kate, Monarch, Velvet, Grace Darling, Mrs. Hunt, Androcles, Queen of England, Mr. Thompson, Bragg's Amelia, Great Western, Euphemia, Alfred the Great, St. Andrew, Dreadnought, Caroline, Mrs. Beck, Lady Carrington, Masterpiece, British Queen, Fearless, and Criterion. Class III., Amateurs: 1st Prize—Mr. Lane, Wycombe, with 24 blooms, viz., Royal Visit, Aristides, Mrs. Hamilton, Ophir, Euphemia, Egon, Emperor, Climax, Polyphemus, Aurora, Nonsuch, National, Queen of England, France Cycole, Exquisite, Duke of Perth, Duchess of Rutland, Timour, Addison, Keepsake, Lucy Neal, Marchioness of Lothian, Sambo, and Androcles. 2d prize, Mr. August, Beddington, with Duke of Norfolk, Queen of England, Joe Miller, Duke of Perth, Sir J. Paxton, Miss Talbot, Aurora, Commander-in-Chief, British Queen, Royal Visit, Mrs. Beck, Marchioness of Bath, Sir J. Cathcart, Maria Dickson, Master Lacon, Mrs Hamilton, Ibrahim Pacha, Monarch, France Cycole, Ophir, Thisbe, Lucy Neal, Pandora, and St. Andrew. 3d Prize, Mr. Holder, Eton College, with Lucida, Mrs. Rouse, Sampson, Marchioness of Bath, Duke of Perth, Royal Visit, Kate, Alfred the Great, British Queen, Ophir, Mr. Thompson, Great Western, Ibrahim Pacha, Optima, Post Captain, Euphemia, Sir J. Paxton, Mrs. Coleridge, Mrs. Hunt, Fearless, National, Androcles, St. Andrew, and Monarch. Open Class, Seedlings:—First Class Certificates were awarded to Mr. Turner for Lord Palmerston, Memnon, and Satisfaction. Extra Prizes:—For the best six Yellow Grounds, 1st Prize, Mr. August, for Sir J. Cathcart, Duke of Norfolk, Robert Burns, Mr. Beck, Thisbe, and Pandora. 2d, to Mr. Holder, Eton College, for Timour, Pandora, Sir J. Paxton, Alfred the Great, Duke of Norfolk, and Mr. Thompson. For the best six White Grounds, 1st, Mr. Holder, Eton College, for National, Mrs. Rouse, Marquis of Bath, Royal Visit, Climax, and Queen of England. 2d, Mr. Lane, of Wycombe, for Aurora, Exquisite, Queen of England, Duchess of Rutland, Euphemia, and Climax. For the best flower in the exhibition the prize was awarded to Mr. Lane, Wycombe, for the variety called Egon.

Miscellaneous.

Kilmarnock Weeping Willow.—This beautiful weeping plant having lately attracted attention, its history may not be uninteresting. There lived, in a sequestered corner of Monkwood estate, near Ayr, an aged botanist, named James Smith, an enthusiastic lover of plants, and a zealous collector. From him Mr. Lang, nurseryman, Kilmarnock, purchased one plant, about 10 years ago. Afterwards Mr. Lang procured a few more plants from Mr. Smith; and as the old gentleman died shortly after, he never had an opportunity of ascertaining where he procured the variety. It is probable, however, that he found it growing wild, as the species, Salix caprea or Palm Willow, is one of the most common plants in the country. Mr. Lang has since been engaged in propagating the plant, and nearly 1000 have been sold. Sir W. J. Hooker received two plants of it in spring, 1852, and having observed, during last summer, how exceedingly ornamental it was, he gave Mr. Lang a decided opinion, stating that he thought very highly of it, and that it was much admired in the Royal Gardens at Kew. The tree flowers freely in the month of April, has broad glossy leaves, every branch is curved gracefully downward, and it is as hardy as the most hardy plant we have, being in fact a native of the country, and not, like the Salix Babylonica, introduced from a foreign clime. The name of Kilmarnock Weeping Willow was bestowed upon it to distinguish it from the common Weeping Willow, the Napoleon Weeping Willow, and the American Weeping Willow; it is quite distinct from either of these varieties, having leaves 2 inches broad. *Abridged from the Kilmarnock Journal.*

Vine Disease.—A M. Saintcletette announces that he believes that iron-salts applied to the roots of the Vine cure the disease. This is the result of four years' experience. He uses sulphate of iron in solution. *C. R.*

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

CONSERVATORY, &c.—The beds of this house (if they have been properly made) will now require a large supply of water to keep them in a sufficiently moist state; and the soil should be occasionally examined, especially near strong growing plants, for the amount of moisture absorbed by these at this season is greater than many persons imagine. Whenever water is applied the beds should be thoroughly soaked to the bottom, and where it can be done without annoyance to the family, &c., manure-water should be given to such plants as are known to enjoy it. This should be furnished, however, in moderate quantities, and, after well soaking the soil with clean water; for to give it in large quantities would probably cause it to reach and injure some adjacent plant. If red spider makes its appearance upon any of the specimens growing in the borders the pot plants in flower should be moved as soon as possible, and the infested subjects given a thorough washing with the engine, and this should be repeated at short intervals until the enemy is thoroughly subdued. STOVE.—See that the specimens here are afforded plenty of space, for there is nothing more injurious than huddling growing plants together. The inmates of this house are mostly plants of easy propagation and rapid growth, and in many cases advantage is taken of this to grow too many for the accommodation at command, and the result is that there is hardly a respectable specimen produced. There can be no doubt that a moderate quantity of well managed specimens will be more valued than a larger number of half starved miserable looking subjects. Keep a sharp look-out for insects, and apply the proper remedies in time to prevent their injuring the plants. Attend frequently to the regulation of the growth of twiners, and prevent their getting into a state of entanglement. Maintain a brisk temperature with plenty of moisture in the atmosphere, and give plenty of weak clear manure-water to anything that is found to be benefited by it. ORCHIDS.—The shading of this house, during such weather as we have experienced of late, requires considerable attention to avoid extremes. Now, however, that the plants are mostly in free growth and very susceptible of injury from bright sunshine, it will be safer to err in the way of using the shading too much than to allow the plants to suffer from the want of it. Aim at securing rapid growth by keeping the house warm, and maintaining a regularly humid atmosphere, sprinkling the paths, &c., sufficiently often on bright days to keep them continually moist; but be careful not to get the plants too wet at the roots by using the syringe too freely over the foliage. See that specimens in baskets or on blocks are kept sufficiently moist, these will enjoy a slight dewing with the syringe morning and evening, whilst in a growing state.

FORCING DEPARTMENT.

PINERY.—Where Pines are grown on the Hamiltonian system (which, although it is undoubtedly the best where there is plenty of houses devoted to the culture of this fruit, is, in our opinion, altogether unsuitable where the accommodation is but limited, and a regular supply of fruit expected, because the individual plants are not sufficiently under control), a close watch must be kept upon the most likely plants for immediate fruiting, so as to keep them dry at the root, or otherwise, as circumstances may dictate; and those showing fruit must not be syringed over-head to the extent of causing water to lodge in the centres of the plants, for this would probably cause the fruit to be deformed. Young stock growing in dung pits must be allowed plenty of air, to prevent their making weakly growth, and must not be over-watered, which, through the greater amount of moisture in the atmosphere, is more apt to be the case here than in houses heated by any other means. Encourage recently-potted stock with plenty of warmth, and a corresponding degree of humidity in the atmosphere, but water carefully until the roots get hold of the fresh soil. The most certain method of obtaining a regular supply of fruit is by securing and potting a limited number of suckers at short intervals throughout the growing season; therefore attend to this, which will save much trouble and disappointment as compared with the old practice of doing this but once, or at the most twice in the year. VINERIES.—Where Grapes are intended to be kept until next January the berries should be thinned, so that they will scarcely touch after they are fully swelled, for it is hardly possible to prevent their damping off during winter, when the berries are left as thick as is usually done for summer and autumn use. Muscats and St. Peter's will be benefited by a little fire-heat at night until the weather becomes warmer than it is at present. Spare no trouble to preserve the foliage of the early house in a healthy state, for, at least, the next two months; and also see that the border is not allowed to become too dry. Give air freely, and early in the morning where the fruit is colouring, and avoid an undue amount of moisture in the house by removing plants, &c., at any inconvenience. FIGS.—Immediately the first crop of fruit is gathered, give the borders a thorough soaking with soft water, for if these are allowed to get very dry at the roots at this season, it will be extremely difficult to preserve the foliage from the attacks of red-spider. Those growing in pots can hardly have too much manure water, except while the fruit is ripening. Give air freely in the fore part of the day, but shut up early in the afternoon, after syringing and thoroughly moistening the borders, passages, &c.

FLOWER GARDEN AND SHRUBBERIES.

On light dry soils many things will be greatly benefited by a thorough soaking of water, especially coniferous plants, most of which make but one growth during the season, and should be encouraged at the proper season, where rapid growth is wished. This attention will be especially necessary in the case of young specimens growing on lawns; one of which we have just removed to-day, and found the soil very much drier than we were prepared to expect. If Stocks, China Asters, &c., are not already planted out where they are to flower, take advantage of the present cool, showery weather to do this; and attend to them with water, &c., for a few days, until they become established. See that Dahlias, Hollyhocks, &c., are properly staked and kept tied up, to prevent their being broken by sudden storms. Stir the surface of the soil among the "bedding-out stock," which will prevent the growth of weeds, and greatly encourage the growth of the plants. Select a few plants from the reserve stock of the more difficult to winter kinds of bedding things, pot them in 7-inch pots (using rather poor sandy soil), and plunge them in a bed of sand. These, with an occasional stopping, will make nice little plants in course of the summer, and will be very easily carried over the winter, and may come in very useful next spring for supplying cuttings.

HARDY FRUIT AND KITCHEN GARDEN DEPARTMENT.

Where the quantity of Peas already sown is not considered sufficient for the autumn supply, sow an early variety on deep, heavily-manured soil. Fairbeard's Surprise we have found an excellent variety for planting at this season; it is a vigorous grower, and good in quality. After the showers which we have had, the ground is in a good state for planting out winter greens, &c.; therefore, get the Brussels Sprouts, Snow's Broccoli, German Greens, and a small breadth of Savoys, &c., planted out as soon as possible; and do not forget Couve Tronchuda, which is the best of all our autumn greens. Also get Leeks planted, if sufficiently strong for removal, affording them an open piece of very rich deep soil. Attend to keeping up a succession of salad. Where it can be done, Lettuce should be planted on a north border at this season, as it is difficult to have these crisp and tender in hot weather, if they are fully exposed to the mid-day sun. Sow Endive for Autumn use; also Onions to draw young for salading, and take care to provide plenty of Parsley for winter use, by sowing a good breadth on light rich soil. Celery, if not already strong, must be carefully attended to with water, so as to have the main crop ready for planting out early next month. Persevere in the destruction of weeds, and endeavour to keep every corner clean and neat.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending June 15, 1854, as observed at the Horticultural Garden.

June.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind.	Rain.
Friday 9	13	29.961	29.929	64	46	55.0	54	55	N.W.	.09
Satur. 10	○	29.908	29.891	66	40	53.0	55	56	W.	.00
Sunday 11	15	29.810	29.654	65	55	60.0	55	55½	S.W.	.01
Mon. 12	16	29.642	29.565	67	46	56.5	56	56	S.W.	.00
Tues. 13	17	29.642	29.585	65	47	56.0	55½	56	S.W.	.14
Wed. 14	18	29.725	29.670	66	52	59.0	55½	57	W.	.04
Thurs. 15	19	29.720	29.662	60	50	55.0	56½	57	E.	[illegible]
Average.		29.781	29.706	64.7	48.0	56.3	55.3	56.1		.22

June 9—Overcast throughout.
— 10—Cloudy and fine; clear and fine at night.
— 11—Fine; rather windy; cloudy; uniformly overcast.
— 12—Densely clouded; very clear at night.
— 13—Rain; clear at night.
— 14—Cloudy; very fine; partially overcast; rain.
— 15—Drizzly; hazy and drizzly; dusky haze in afternoon.

Mean temperature of the week, 4½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending June 24, 1854.

June.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 18	72.8	51.1	61.9	15	0.39 in.	2	2	2	2	4	6	8	2
Mon. 19	71.0	49.6	60.3	14	0.37	1	3	1	2	1	4	10	6
Tues. 20	72.8	51.0	61.9	12	0.21	1	4	1	1	6	[illegible]	[illegible]	1
Wed. 21	74.1	51.2	62.7	12	0.68	2	3	3	3	1	13	4	—
Thurs. 22	72.9	49.0	60.9	12	0.59	2	1	1	1	2	10	[illegible]	3
Friday 23	73.6	49.3	61.5	18	0.44	1	1	3	10	3	2	[illegible]	3
Satur. 24	73.7	50.3	62.0	11	0.49	—	2	4	1	2	11	[illegible]	1

The highest temperature during the above period occurred on the 19th and 22d, 1846—therm. 93 deg.; and the lowest on the 23d, 1851—therm. 35 deg.

Notices to Correspondents.

BOOKS: *T M.* M'Intosh's "Book of the Garden," and Sweet's "Greenhouse and Hothouse Cultivator."—*H H.* The "Manse Garden," with Paxton's "Cottagers' Calendar," or Neill's "Fruit, Flower, and Kitchen Garden," may possibly answer your purpose.‡

CALLA ÆTHIOPICA: *J W.* Where there are plenty of plants this may possibly be had in bloom nearly the whole year round by forcing some into flower early in spring, and retarding the blooming of others till late in autumn. It will, however, require a season's experience to be able to effect this satisfactorily.‡

CUTTINGS: *Petro.* We don't know "what is the most effective substance for eliciting roots from cuttings of plants."

DISEASES: *Icetensis.* The Grape leaves are in a complete state of chlorosis. It is quite impossible that there can be such a deficiency of light in your house as to bleach the young leaves so completely, and we therefore conclude that the cause must reside in the roots, whether due to natural decay, constitutional weakness, or, what is equally possible, to some defect in the soil, of which it is impossible to form any correct judgment, except on the spot. That the root is the source of mischief we have no doubt, and to that therefore we should recommend you to direct your attention. *M. J. B.*

GARDEN SEATS, &c.: *Rusticus.* Of the two, stone colour would look best for your garden seats and flower stands. As regards your pond, you must cut off the supply of the water which brings offensive matter into it.‡

HOTHOUSES: *E S B.* The plan of making the front lights all move at once has been fully tested at Frogmore and other places, and has been found to answer perfectly.‡

INSECTS: *E B.* The fly you have reared from the Dock leaves is one of the nearly 200 species of Anthomyia (Musca pars., Linn.); it is nearly allied to A. fungorum, whose history is given in *Gard. Chron.*, 1853, p. 581.—*Medicus.* From your description the animal you mention is the Gordius aquaticus.—*R V.* Your queries on aphides on the Gooseberry shall be answered next week. *W.*

NAMES OF PLANTS: *J H.* 1, Lastrea dilatata; 2, Pteris aquilina. These are young plants (fronds) of two common British Ferns, drawn up delicate by being in a stove; 3, Adiantum cuneatum.—*H G, and another.* Next week.

PINE-APPLES: *Sub.* If you will refer to p. 324 you will find that your question has been answered. ‡

STRAWBERRIES: *S B.* The fruit of your seedling is very large; in appearance it much resembles the Elton, but the flesh is not so solid, and the flavour of the specimens received is not sufficiently rich to justify a recommendation of the sort; it, however, deserves further trial in the open ground. ‡

. As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

TO AMATEUR FLORISTS, GARDENERS, ETC.

H. COLES & CO. beg to inform Floriculturists, &c., that their celebrated POT MANURE, which has given general satisfaction for so many years, may be obtained of the following Agents in packages, at 20s., 10s., 5s., 2s. 6d., 1s., and 6d. each. For Amateur Rose, Fuchsia, and Chrysanthemum Growers, it will be found one of the best Manures yet introduced.

Agents:—Mr. G. Lawrence, Seedsman, Piccadilly; Mr. Hooper, Centre Avenue, Covent Garden; Mr. Gaines, Herbalist, Covent Garden; Mr. Wood, Seedsman, High Street, Marylebone; Mr. J. H. Tuck, Florist, Sloane Street, Chelsea; Mr. Ricketts, Corn Chandler, Victoria Road, Pimlico; and Mr. Gibbs, 14, Portland Road.—Depôt, Albert Wharf, 10, Wilton Road, Pimlico.

THE "ECONOMICAL MANURE."

All orders for this valuable Manure promptly executed. Delivered free on to the Railways in London, Manchester, or Birmingham, at 12s. per cwt., packages included.

B. Coveney, Manager.

British Economical Manure Company's Offices,
No. 10, Mark Lane, London.

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures.

Wm. Inglis Carne, 10, Mark Lane, London.

THE LONDON MANURE COMPANY'S WHEAT MANURE, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. Edward Purser, Sec.

Bridge Street, Blackfriars.

THE FOLLOWING MANURES are manufactured at Mr. Lawes' Factory, Deptford Creek:—Turnip Manure, 7l. per ton; Superphosphate of Lime, 7l.; Sulphuric Acid and Coprolites, 6l.

Office, 69, King William Street, City, London.

N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

SEWAGE CHARCOAL MANURE.—This highly fertilising Manure, which is Peat Charcoal completely saturated with London Sewage, will be found most efficient for every species of crop; more especially for Peas, Beans, Turnips, Mangold Wurzel, and other root crops. It will produce a greater return for the outlay than Guano or any other Manure at an equivalent value: it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained at the SEWAGE MANURE WORKS, Stanley Bridge, Fulham, at 4l. per ton, and in quantities less than half a ton, at 5s. per cwt., for ready money only; and in quantities not less than a ton, will be delivered at the London Termini of the Railroads free of charge for cartage. No charge for sacks.

It may also be had from Messrs. G. Gibbs & Co., 26, Down Street, Piccadilly, Agricultural Seedsmen, Agents for London: and from all the other Agents of the Company.

GUANO (Peruvian) and CHEMICAL FERTILISERS.—NITRATE of SODA; PERUVIAN GUANO; SUPERPHOSPHATE of LIME; AGRICULTURAL SALT; and CONCENTRATED MANURE for TURNIPS.

The above articles are supplied on the lowest Cash Terms, for best qualities only, on application to Mr. John Clarance, Agriculturists' London Agent, 1a, Bishopsgate Street Within.

TURNIP SOWING.

SUPERPHOSPHATE OF LIME, made from Bone, which is the best Manure for Root Crops (see the Royal Agricultural Society's Journal, Vol. vi., part 2). PERUVIAN GUANO, NITRATE OF SODA, BONE DUST, SULPHURIC ACID, and all other Manures of known value. The Peat Moss Charcoal Company have appointed the undersigned Sole Agents for the Sale of this fixer and distributor of Ammoniacal matter. They are also Sole Agents (in London) of the Patent Sanitary Company for the sale of their "Nitrogenised Carbon."—Apply to Mark Fothergill & Co., 204a, Upper Thames Street, London.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. Nesbit, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and dispatch.

Gentlemen desirous of receiving instructions in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

SCYTHES.

BOYD'S PATENT SELF-ADJUSTING SCYTHE will last out three of the ordinary sort, and is always ready for use.

"We have seen this Scythe at work, and can strongly recommend it."—See *Mark Lane Express*, May 16, 1853.

To be had of every Ironmonger and Nurseryman in the kingdom; and wholesale and retail of WM. DRAY and CO., Agricultural Implement Makers, Swan Lane, London.

ANTHONY'S PATENT AMERICAN CHURN.—Extract from the Royal Agricultural Society's Report of the trial of Churns at the Gloucester meeting in July last. "In this trial the American Churn not only maintained its character in producing butter rapidly, but in producing a greater quantity from the like amount of cream." It made from 4 quarts of cream 4 lbs. 6 oz. of butter, being 8 oz. more than any of the other Churns from the same quantity and quality of cream. Price Lists of Churns and Implements by the best makers sent free, and Illustrated Catalogues on receipt of eight postage stamps. Burgess & Key, 103, Newgate Street, and 52, Little Britain, London, who have always a large stock of Steam-engines, Ploughs, Harrows, Diggers, Waggons, Carts, Threshing and Dressing Machines, Mills, Oat and Grain Bruisers, Oilcake Breakers, Reaping Machines, Haymakers, Horse-rakers, Turnip Cutters, Liquid Manure Carts, Parkes' celebrated Steel Digging Forks, and Draining Tools, Pumps for Manure, Farm Fire Engines, and for Garden Purposes, &c. &c.

HOSE PIPING.—Great Reduction in Price.

WAITHMAN'S PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense Pressure, and much more than Leather, vulcanised Rubber, or any other Hose; and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented Inventions, the cost of manufacturing it is now reduced at least 60 per cent., which advantage is offered to the Public.—London Agents, Burgess & Key, 103, Newgate Street, and 52, Little Britain, who on application will forward wholesale and retail prices.

SAMUELSON'S PRIZE FORKING or DIGGING MACHINE, as applied to Spring Cultivation, serves to thoroughly pulverise land which has been trodden by sheep or autumn ploughed, deepening the staple, leaving no pan, dragging up the Couch Grass, and preparing a finely divided seed-bed.

Extracts of Testimonials and references to persons using it.

"Answers thoroughly; brings everything to the surface."—*E. W. Wilmot, Congleton.*

"The very best a man can have upon a mixed or stiff soil, it so thoroughly pulverises it."—*Joseph Cooper, Acton Burnel, Salop.*

"I inform you, with the greatest satisfaction, of its success."—*Francis Hamilton, Friars Place, Middlesex.*

"Attached horses at half-past 8, on 5½ acres, finished at a quarter past 3, making first-rate work."—*J. Kirby, Bodicott, Oxon.*

"Has been working every day."—*T. Cardus, Barwell, Surrey.*

"Will do a given amount of labour, not only cheaper but better than the plough."—*J. J. Mechi, Tiptree, Essex.*

"Let me have one at your earliest convenience."—*Earl of Essex, Cassiobury, Herts.*

"Send to Exton Park one of Samuelson's Forking Machines for *Earl of Gainsborough, Oakham.*"

"Besides improved tillage, economises ploughmen."—*P. Gener, Cuba.*

"Been digging all the week; the *champion* of all implements in England; should be very sorry to be deprived of it."—*Thomas Lawrence, Thurlaston, Dunchurch.*

"Well satisfied last year. Turnips were a superior crop."—*O. Brickwell, Overthorpe, Northamptonshire.*

Price 24l. 10s., the general purpose size; and 27l. 10s. large size, Cash: at the Works, Banbury.

TESTIMONIAL TO J. B. LAWES, ESQ., of ROTHAMSTED.—The Acting Committee beg to direct the attention of Gentlemen interested in Agricultural Improvement to their Advertisement in the *Gardeners' Chronicle* of April 8, and to the Editorial notice in the same Journal of April 22.—Further information may be obtained by application to

St. Albans, June 17. W. Keel, Hon. Sec.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

Patron—His Royal Highness PRINCE ALBERT.
President of Council—Earl BATHURST.
Principal—Rev. J. S. HAYGARTH, M.A.

Professors, &c.

Chemistry—J. A. C. Voelcker, Ph D., F.C.S.
Zoology, Geology, and Botany—James Buckman, F.G.S., F.C.S.
Veterinary Medicine and Surgery—G. T. Brown, M.R.C.V.S.
Surveying, Civil Engineering, and Mathematics—F. Armstrong, C.E.
Manager of Farm—G. Austin.

The next SESSION will begin early in AUGUST. The Annual Fees for Boarders vary from 45 to 80 guineas, according to age and other circumstances. The Fee for Out-Students is 40l. per annum. The College Course of Lectures and Practical Instruction is complete in one twelvemonth—though a longer course is recommended. There is a department for general as well as for agricultural purposes. Prospectuses and information can be had on application to the Principal.

The GUIDE to the ROYAL AGRICULTURAL COLLEGE FARM may be obtained of Hamilton, Adams, & Co., Paternoster Row, London; and Edwin Baily, Cirencester. Price 1s.

COLLEGE of AGRICULTURE and CHEMISTRY, and of PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.

Principal—J. C. Nesbit, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

ROYAL AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND.—The Society's SHOW at ARMAGH, in the Province of Ulster, will take place on the 9th and 10th of AUGUST next, when Premiums and Cups to the amount of 1200l. will be offered to competition for Farm Stock, Implements, &c. All entries must be lodged not later than 19th July.

Prize Sheets, and Forms of Entry, to be had on application to Robert Cochran, Esq., Secretary to the Local Committee, Armagh; or, to me, at the Society's Offices, 42, Upper Sackville Street, Dublin. Thomas Harkness, Secretary.

YEOVIL POULTRY SHOW.—This Show will be held on Wednesday, the 20th of September next. On receipt of a postage stamp the Prize List will be forwarded on application to Mr. John Glyde, Solicitor, Yeovil, Hon. Sec.

The Agricultural Gazette.

SATURDAY, JUNE 17, 1854.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Wednesday, June	21	Agricultural Society of England—Professor Way's lecture.
Thursday,	—	22—Agricultural Imp. Society of Ireland.
Wednesday,	—	28—Agricultural Society of England.
Thursday,	—	29—Agricultural Imp. Society of Ireland.

We learn that the Wheat on the south coast (Sussex and Hants) is very much affected with "rust." No remedy is known for its attacks; but so long as they are confined to the leaves, they are not often seriously injurious. In the Eastern Counties we hear that the crop is suffering from a mould or mildew for a few inches up the stem from the root. We shall be much obliged for information on this very important subject, from those of our readers who have on previous occasions kindly given us reports.

In another column will be found a short official report of the lecture on Charcoal and other Deodorising Substances, delivered by Professor Way, at the rooms of the Royal Agricultural Society of England, on Wednesday. The main points insisted on were—(1), the distinction to be observed between the process of deodorising and that of retaining the volatile products of the putrefactive process—(2), the absorptive power of charcoal as dependent on its porous structure, and on these pores being open to the gases thus absorbed—(3), and, lastly, the peculiar structure of animal charcoal as compared with that of vegetable origin, to which it owed its greater power as a decoloriser for the sugar refiner.

On the first point it was remarked that the loss of the material of which the sense of smell took cognisance was not necessarily of any importance. A grain of musk was undiminished in weight after it had filled the room with its odour for years. And, so, the mere fact of manure smelling was not, in itself, proof of any material loss. Nevertheless, it was found that, if the gases resulting from the process of putrefaction were fixed, the peculiar odoriferous matter of the manure appeared also, in a great measure, to lose its volatility; and so smell became, if not exact testimony, at least, a tolerably trustworthy index to the loss of valuable matter.

The second remark had this important practical bearing, that while in air charcoal absorbed many times its bulk of many gases—that of ammonia, for instance—in water this power was altogether lost. Charcoal will absorb ammoniacal and other gaseous products of putrefaction, and these are rapidly decomposed in its pores, but fill those pores with water, and their gaseous occupants are at once expelled; and the only power which it then possesses will be that of a sponge holding so much liquid with whatever matter may be dissolved in it. To pass liquid through charcoal, in order to its ammonia being detained, is therefore most mistaken; the liquid will come out of it of the very same composition in every respect as it had before entering it.

The third point had only an indirect agricultural bearing. The peculiar porosity of animal charcoal is due to the separation of the charcoally by the mineral particles of the bone. This has been very ingeniously attempted to be imitated by Mr. Way, by saturating the now well-known silica rock of Mr. Paine's estate at Farnham (which rock is exceedingly light and porous) with tar, and exposing it to destructive distillation, by which means the resultant charcoal is distributed amongst the mineral substance of the rock, much as it is in the case of animal charcoal amongst the mineral substance of the bone. And the decolorising effect of the charcoal in that state is very materially increased. Whether or not it may compete with animal charcoal for the purposes of the sugar refiner seems doubtful; but, if by its use it should reduce the value of animal charcoal below the price at which farmers could afford to purchase, it is clear that the ingenuity of Mr. Way and Mr. Paine will have proved, in this as in other more important instances, agriculturally beneficial.

Adulteration of Guano.—In a lecture recently delivered before the members of the Royal Agricultural Society of England, I had occasion to remark that the adulteration of guano had this year reached a height to which it had in no previous season attained. You will understand that I did not speak without knowledge on this subject, for the number of analyses of manure necessarily passing through my hands enables me to form a very fair opinion of the state of the manure market at any particular time.

Several circumstances have conspired to offer this spring to the adulterators of guano a more promising field of exertion than usual. In the first place, from causes into a consideration of which I need not enter, the supply of guano from Peru was, especially at the early part of the season, very limited. The importers could not meet the demand, and were obliged to refuse orders. Even at this moment I find that guano is selling in many places in the country at 13l. to 14l. per ton. In ordinary years the demand for one kind of manure bears some relation to the supply of manures in general. Thus if one article upon which the farmer is wont to rely is not forthcoming, he turns to another. If he cannot get guano for his green crops he will try superphosphate of lime, or *vice versa*—there is, in fact, a certain equivalency in different manures which regulates the demand for them. After guano, superphosphate of lime is perhaps the artificial manure of greatest consumption. It has happened, however, this year that there has been a particular scarcity of the raw materials of this manufacture. Bones have been scarce—guanos of the phosphoric kind, which at other times have been most valuable to the superphosphate maker, have all but disappeared; whilst the supplies of coprolites, which form really our natural source of phosphoric acid, have so fallen off that the price has been more than doubled; and they were at one time, from their excessive cost, almost out of reach of the manure maker. The dealer in superphosphate of lime, as well as the guano merchant, has found himself this year in the enviable or unenviable position, as it may be, of refusing orders. Here, then, was a glorious opportunity of making money, which the dealers in adulterated manure were not likely to let slip: farmers rushing to the manure market, only too

glad to get supplies of manure, and not over-careful, if the truth must be told, to ascertain whether it was good or bad; and, on the other hand, the nefarious dealer, not even driven to the necessity of adopting a low price to obtain a sale, but revelling in a ready market and enormous profits. In this way many a ton of good guano becomes 3 or 4 tons of a manufactured article. For my own part, I feel convinced that the demand for artificial manures is increasing, and will increase to an enormous extent. No one can well form a notion from the demand this year, what it may next year become; but it is precisely this circumstance, coupled with the fact that the supply does not increase in anything like proportion with the growing requirements of agriculture, that should point out to us the necessity of looking very closely after those who are entrusted with the trade in manures.

As I have before had occasion to show, the dealer in manufactured guano has three or four principal raw articles, to one or more of which he has recourse in his trade. Undoubtedly his favourite ingredient is gypsum—more especially that which in several manufacturing processes is artificially produced—this variety of gypsum, being precipitated, is in fine powder, so that it mixes readily with the guano, and is not liable to the awkward exposure of its presence in the mixture by an accidental crystal, which has escaped the vigilance of the manufacturer. Besides, it does not want crushing, and herein is an extra economy. The chief recommendations of gypsum, however, are, first, that it *burns white*; secondly, that, even when quite dry, it contains water, which burns off at a red heat. Now, good guano burns white when heated sufficiently long; gypsum does not interfere with this whiteness. Good guano loses much weight by burning, and the farmer might perchance have resort to this mode of learning whether or not he has been honestly served; but as gypsum accommodates itself to these circumstances by losing weight when burned, the proof is not so easy.

These are quite sufficient reasons why the guano adulterator should cherish gypsum as his most useful and indispensable ally. Common salt is another resource of the refined adulterator; it also burns white, although it does not, as gypsum, lose weight on burning. Sulphate of soda has lately, I find, been used, and it has, unfortunately, some advantages to recommend it. Coprolites finely powdered form another source of adulteration, and inasmuch as they contain phosphate of lime, one of the natural ingredients of guano, the dishonest dealer may perhaps soothe his conscience by persuading himself that he is not, after all, doing his customers so great an injury as we would have them believe. I need not occupy the time of your readers by answering such sophistry as this (which I have, in fact, heard put forth on more than one occasion), for, independently of the fact that coprolites in their natural state are of no earthly use to vegetation, and that they can at all times be bought for less than one-third of the cost of guano, I say, quite apart from these circumstances, adulteration is adulteration all the world over, and nothing can make those who practise it other than dishonest and disreputable persons.

As matters stand now, coprolites are not likely to be used largely in adulterating guano, on account of their price; neither are they so much esteemed in the adulterating trade, because they burn red, and their presence is more likely to be discovered.

But if the dealer is of an ambitious go-a-head character—if, scouting the refinements of his competitors, and relying, as he frequently may do with perfect safety, on the blind confidence and penny-wise policy of the farmer, he is determined to make the largest amount of profit in the shortest time, he straightway betakes himself to the nearest sand or loam pit.

Sand, I believe, unless very fine, is not well suited to the adulterating dealer's purpose; he prefers a clay, provided that it be so mixed with sand that it will dry and work well. Your readers will remember that two years ago an organised factory, with drying stoves, reverberatory furnaces, and grinding mills, and all the requisites of a large manufacture, was in full work at, or near, Bow Common, for the sole purpose of preparing clay or loam for the use of the guano manufacturer. Here you might have bought every variety of dry loam, with shades of colour to suit the adulterator and the market, whose tastes he had to study. Has this manufacture been discontinued? Have we any reason to suppose that what was profitable then is less so now? I cannot say; but this I can speak with certainty about, that large quantities of guano are still adulterated with loam, wherever it may come from.

I do not propose to discuss the question of the loss which the agriculturist individually and the community at large suffer by these frauds. If this truth is not present to every one's mind without explanation, I feel that I do not possess powers of argument to make it so. I will therefore simply give you a few results of the different forms of adulteration that have come before me this spring. I shall, however, first of all give the analyses of some half dozen good specimens examined this year, to show that the average composition of Peruvian guano has suffered no alteration, and that no diminution of value has, in the last few years, occurred with this valuable manure.

The following are the analyses of six samples of guano received from different parts of the country, and taken at random from my laboratory book.

ANALYSES OF PURE PERUVIAN GUANO, EXAMINED IN THE SPRING OF 1854.

	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.
Moisture	12.02	14.70	15.37	16.75	22.26	8.29
Organic matter and salts of ammonia	51.82	52.09	49.69	50.66	46.99	57.31
Sand, &c.	2.45	1.19	1.25	2.29	1.28	1.12
Phosphate of lime and magnesia	27.69	21.72	22.38	18.50	21.52	21.93
*Alkaline salts	6.02	10.30	11.31	11.80	7.95	11.35
	100.00	100.00	100.00	100.00	100.00	100.00
*These alkaline salts contain phosphoric acid, making the total phosphate of lime	33.21	31.39	30.00	26.11	27.21	33.28
Nitrogen	13.93	14.61	14.34	13.68	12.69	14.17
Equal to Ammonia	16.91	17.74	17.41	16.61	15.41	17.20

The sample No. 5 is certainly below the average composition of best guano, but this arises evidently from the dampness of the sample; it was obviously a cargo or a portion of a cargo slightly injured by sea-water.

I am justified, therefore, by the result of recent experience in the composition of genuine Peruvian guano, in saying, as I did several years ago, that it *averages* fully 17 per cent. of ammonia. From this composition it has not varied in the course of several years—a circumstance which is of the utmost importance, as furnishing us with a standard of comparison wherewith to try sophisticated samples.

I will now give you the analyses of a few adulterated specimens in which the chief or only addition has been gypsum.

ANALYSES OF GUANO ADULTERATED WITH GYPSUM.

	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.
Moisture	8.97	11.30	11.67	11.57	11.22	8.41
Organic matter and salts of ammonia	29.49	30.65	23.66	18.65	22.36	18.58
Sand, &c.	1.97	2.00	2.01	2.97	1.64	1.65
Phosphate of lime and magnesia	19.51	26.48	23.02	18.09	24.24	14.20
Hydrated sulphate of lime (gypsum)	35.81	20.91	31.97	38.42	37.19	53.53
Alkaline salts	4.25	8.66	7.67	7.02	3.35	3.63
Carbonate of lime	...	...	...	3.28	...	...
	100.00	100.00	100.00	100.00	100.00	100.00
Nitrogen	7.70	7.54	8.85	5.06	6.23	5.83
Equal to Ammonia	9.35	9.15	10.74	6.14	7.56	7.08

Here you will observe that the adulteration has ranged from 20 to more than 50 per cent. of gypsum; and it is difficult to say why the whole composition of the guano is not altered in precise relation to the adulteration—that is to say, if 50 per cent. of gypsum be added, the ordinary substances—phosphates, ammonia, &c., should be present in just half the usual proportion. This is not exactly the case, although there is an obvious relation between the ammonia and the gypsum—the one going down as the other increases in per centage. I am inclined to think that, in many cases, the adulterators get hold of damaged guano, which would account partly for the discrepancy; or that they, perhaps, add a portion of a naturally inferior guano, not of the Peruvian type. But the facts, as they stand, are near enough for all practical purposes; these analyses indicate a value in the case of Nos. 4, 5, and 6, of about one-half, and in the other samples of six-tenths of real Peruvian guano.

The following are analyses of adulterated guano, in which sand and clay have been employed in addition to sulphate of lime:—

SAMPLES ADULTERATED WITH GYPSUM AND SAND OR CLAY.

	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.
Moisture	5.50	9.12	8.53	19.45	7.45	9.93
Organic matter and salts of ammonia	16.42	14.19	18.89	7.10	8.62	20.87
Sand and clay, &c.	27.80	48.87	26.80	18.67	35.53	13.89
Phosphates of lime and magnesia	12.24	16.10	16.19	24.17	6.04	19.68
Hydrated sulphate of lime (gypsum)	11.86	7.97	25.00	29.66	29.12	29.08
Alkaline salts, &c.	11.29	3.75	4.59	9.95	13.24	6.55
Carbonate of lime	14.80	...	...	...	...	...
	100.00	100.00	100.00	100.00	100.00	100.00
Nitrogen	2.91	3.14	4.48	1.82	1.11	4.83
Equal to Ammonia	3.53	3.81	5.44	2.21	1.34	5.86

You will see by this table that you are far better off with the gentlemen who only use gypsum, than when you come to those who use clay or sand as well; for the character of the manufactured article in these last instances is infamous. The sample No. 5 is not worth, at the highest estimate, 2*l*. a ton; whilst no doubt, if the truth could be got at, it was sold *a bargain* at 11*l*. per ton.

I could add very many to the number of these analyses, but your readers will be already sufficiently disgusted with the detail. I shall simply state that, although for obvious reasons I give no names or particulars in respect to these analyses, they could in each case be authenticated if necessary. The samples have come to me for analysis in the ordinary way of business, and without any seeking or solicitation on my part.

If you should be able to afford me the space, I will, in a future number of your Journal, point out how far the agricultural public possesses a remedy for this most crying evil. J. THOMAS WAY.

ON SOWING MACHINES.

(*Concluded from page* 347.)

THE fourth method of delivery is adopted in a good many sowing machines, such as some of our dibbling machines, Vingoe's seed planter, and others. It consists in the oscillating movement of a false bottom to the seed box. The holes in the true bottom are covered by a thin false bottom, in which, however, there are also holes of similar size, and of a depth corresponding to the thickness of the material; these holes become filled with the seed in the box, and when, in their lateral sliding movement, they coincide with the holes below them, of course the seed falls out to the ground. There would be an escape of more than the mere contents of the hole, were it not that close upon the upper sliding piece, and immediately over the holes in the lower fixed piece, there is a brush or other impediment to the escape of the seed; so that the sliding holes do in effect come from under these brushes, get filled with the seed, and then pass under the brushes again, where the holesful of seed escape through the bottom of the box.

In some machines this motion of what I have called the false bottom is a lineal oscillating movement; in others, it is a rotatory movement, the upper plate revolving over the lower fixed one, and the seed falling through the latter into tubes, conducting it to its place on or in the ground. In all, the quantity sown depends upon the size of the moveable holes, and the frequency of that coincidence between them and the fixed ones, on which the exit of the seed depends; and, as both of these circumstances are easily under control, this would seem to be an efficient method of delivery; its fault, however, is that the seed is often cut by it, the edges of the sliding pieces coming into work scissors-fashion in a very undesirable manner. Where the coincidence of the holes is produced by a rotatory motion, it is easy to imagine how that of the driving wheels, at right angles to the ground, can be communicated to the horizontal circular plates by bevel wheels; where it is by an oscillating movement, it is effected either by a crank movement, just as the oscillation is given from the driving wheel of a winnowing machine to the riddles, or by a zig-zag flange upon the shaft of the driving wheel of the machine, which guides a stud upon the oscillating piece, and, of course, insures its to-and-fro movement. Of all these four styles of delivering seed, the third is believed to be the best for the safe, uniform, and easily regulated manner in which it performs its work.

I now refer to the second part of sowing machines—that by which they conduct the seed to its place in or on the ground. It does not need many words to describe this. In broadcast sowing machines, the holes in the bottom of the long seed box being equidistant, and the delivery from each being uniform, the even spread of the seed on the surface of the land is insured by the box being sufficiently elevated above it, and the seed being left to find its own way unguided. The broadcast machine has, in fact, no part corresponding to that which we are now considering. In drilling machines the seed is not left thus unguided, but each hole delivers it into a funnel, by which it is guided to a single row on the surface of the land, parallel, of course, to the forward motion of the machine; and this funnel terminates in a heavy coulter, which, sinking in the ground by its weight, or being forced in by pressure, opens a channel on the surface, into which, as the seed falls, it is thus placed in a row beneath the surface, and being then covered by a harrow, the operation of sowing is completed. These funnels and coulters need to be lifted now and then, either to enable them to surmount obstacles, or for the purpose of cleansing them from weeds, or to enable the machine to be turned at the land's-end; and for this purpose they are generally made in pieces, cup-shaped, fitting into one another, and hanging the one from or on to the other, so that the whole is easily lifted, the lowest, when it is pulled up completely, containing all the others, and yet permitting a free passage through all. This absence of rigidity enables not only this lifting of the whole at the land's-end, but permits every coulter to accommodate its position to unevenness in the land. Latterly, tubes of India-rubber have been to some extent used by Mr. Hornsby, of Grantham, in place of these funnel-shaped cups, and only the bottom coulter then needs to be lifted. One objection to these cups, to meet which, indeed, Mr. Hornsby's flexible tubes were employed, arises from their shallowness. A lateral gust of air thus could find its way into them, and disturb the

uniform delivery of the seed. The lower edge of one cup too would sometimes get over the upper edge of the cup immediately below it, and thus not only destroy the flexibility and telescope-slide character of the apparatus, but spill the seed outside the proper line of delivery. This objection has been obviated by Messrs. Garrett, by means of the greater depth of tube with which each cup is now furnished, and by which its continuity with the others is now insured. Messrs. Marychurch & Son, of Haverfordwest, have insured the same thing, and done away with the need of the suspending chains, by which the tubes are held together when hanging fully extended, by spreading the lower edge of each cup, and contracting the upper edge of each, so that on being lifted the former catches the latter. The cups are of course made in parts, which are put together when the whole series is being connected, for when once made they are not separable except by breakage; and if stretched as when at work, they form a tube which wind cannot enter, and whose continuity cannot be broken. I mention this modification of the delivery tubes, as it was exhibited at the last meeting of the English Agricultural Society, although I do not know how it has stood the test of experience in the field, where, by the way, the apparent complexity of chains, and other jingling pieces in a Suffolk drill, is not, in practice, found so real a hindrance or misfortune as might have been expected.

But there are machines which do more than merely conduct the continuous stream of seed, and lay it thus in lines beneath the surface of the soil—we have dibbling machines, which cut this continuous stream in portions, as it were, depositing every separate portion not only in one line, but in distinct and equidistant positions on that line; and the method by which this drop-drilling and dibbling are effected comes under this part of our subject. Drop-drills, generally speaking, act by catching the continuous stream of seed, or whatever it be, flowing down the funnel, at the bottom of it, in a revolving pinion, or hollow cylinder with cells of sufficient size, and, by a slow revolution of this, cause each separate cellful to be delivered in a lot as soon as it comes opposite the exit hole.

It is proper here to mention the principle of Mr. Garrett's drop-drill, which, though drop-drills are not much in fashion—and it is not desirable that they should be so—is probably as worthy of adoption, and has obtained as general favour, as any other of the kind. The principle is simply this:—The material sown is delivered down a jointed tube, and the lowest joint has a pendulum or oscillating position given it over a suspended platform, which closes it altogether when at rest. The material caught upon that platform, inside the tube, accumulates there, of course, only so long as the tube is at rest; for, as soon as it moves towards the other end of the arc in which it vibrates, all the contents carried with it are dropped bodily upon the ground. It will easily be seen how this oscillating movement has the effect of breaking the continuity of the line at which the manure and seed would otherwise be delivered, so that in place of such uniform delivery, the whole is broken up into detached portions, placed at intervals upon the ground.

In the whole class of dibbling machines, the seed is not merely laid at intervals in a continuous channel, but it is deposited at intervals in cup-shaped cavities on the surface of the land. The mode of their action will be best described when discussing the merits of the different machines. *J. C. M., in No. 25 of Blackie's Cyclopedia of Agriculture.*

Home Correspondence.

Meteorology.—My proposition regarding the "storm's eye," or "calm in the centre" of rotatory and progressive storms is a very simple one. A calm in such circumstances could not exist. If any portion of the air actually ceased to revolve round a centre, still it must have motion. The storm surely takes its "eye" along with it, or it would fall into the rear and throw the whole into confusion. If the rate of progression of a storm is 40 miles an hour, its "eye" will be dragged along at that rate, and produce a strong current of wind over the line of its tract. It appears to me this is a self-evident proposition. I may also be allowed to point out that my friend "F. P. B. M." is slightly deserting the views of Mr. Redfield and Sir Wm. Reid. He maintains that the atmospheric fluid has an "upward" instead of a downward tendency in the centre of storms; they both, on the other side, maintain that the effect of rotation is to lower the upper atmosphere in the centre, and actually to bring down portions of air from the colder regions. I do assure him that it is no matter of assumption that the winds, which are regarded as rotating round a centre, are often confined to a very limited depth of the atmosphere. Only let "F. P. B. M." observe the next S.E. wind with a falling barometer, and he will no doubt corroborate the remarks which I made on this subject. *R.*

The judicious Management of Labourers' Friend Societies is a subject of great importance, and it is to be hoped that its discussion will be continued in your columns, in consequence of the impulse given to the enquiry, by Mr. Morton's paper, at the Farmers' Club. I would call the attention of your readers to a cognate subject; namely that of Friendly Societies or Benefit Clubs for Labourers. These institutions are supported, in a great measure, by the contributions of the labourers themselves, and it is the more desirable, on this account, that they should be managed with economy and judgment. Unhappily, the reverse is, more frequently, the case. The meetings of these societies are often held at public-houses; the members are subject to fines for non-attendance at periodical meetings, and compelled, by the rules, to spend a certain sum in refreshments if they attend. Assuming the compulsory sum not to be exceeded (I need hardly point out how little probability there is of this at a public-house), I find that it amounts, in many cases, to one-third of the total amount of the receipts, and, consequently, to more than that proportion of the expenditure. In other words, the members of these clubs who are in health are bound to spend in refreshments about one half as much as they distribute in relief to those who are afflicted, and probably do expend quite as much as they distribute. I will not pursue the subject farther, as any one acquainted with the habits of agricultural labourers, and of the unskilled workmen in towns, will readily conclude how much greater than the direct expense the incidental loss to these poor men must be. No doubt there are many exceptions to this state of things—I should be glad to find it the exception—but I fear it is the rule. My object in drawing attention to it is, that it may be corrected by the aid of those who take an interest in the welfare of the labourers, and more especially of those who are asked to contribute to such societies as honorary members. *B. Samuelson.*

Societies.

ROYAL AGRICULTURAL SOCIETY.

WEEKLY COUNCIL.—Mr. RAYMOND BARKER, V.P., in the chair.—The names of 14 candidates for election, received during the previous week, were read. Prof. Schiltbuis, of Groningen, presented to the Council a copy of his essay "On the Relations of Agriculture to the Soil and Population, and on the Condition and Improvement of the Agricultural Classes in the Netherlands;" to which the Gold Medal of the Dutch Society of Sciences at Haarlem had been awarded, and which the author offered to the Council on this occasion "as a token of his homage to the merits of England in agricultural science, and as a proof of his esteem for the Royal Agricultural Society, also much valued in his own country." The Council received this present with a vote of their best thanks.—Mr. Miles, M.P., having expressed his own views, and those of Mr. Pusey, on the importance of an early settlement of the prizes to be offered by the Society for the Essays and Reports of next year, it was arranged that a special council should be summoned for that purpose.

PEAT-CHARCOAL.—Prof. Way then proceeded to deliver a lecture on peat-charcoal and other deodorising substances. He remarked that, independently of the noxious gases resulting from the putrefaction of animal matter generally, and which consisted principally of sulphuretted hydrogen and sulphuret of ammonia, each particular animal substance, excretionary or otherwise, had its *peculiar* odour, which, although abundantly perceptible by the senses, and, in many cases, as in musk, almost inexhaustible, was inappreciable in weight; therefore, by deodorising a large amount of odour, it was not to be inferred that a large amount of manuring matter was thereby secured. He then enumerated the various single and double deodorisers that had been employed. He referred to Sir William Burnett's excellent application of chloride of zinc, and to the ordinary chloride of lime; to gypsum (sulphate of lime), and its conversion in ammoniacal atmospheres into sulphate of ammonia and carbonate of lime; to the agreeable odour of pure ammonia, and its power of giving intensity to odours of a disagreeable character, which intensity was lost when the ammonia was withdrawn; to sulphate of iron (green copperas), which when powdered and thrown into tanks turned black, on account of the sulphuret of iron formed on the decomposition of the sulphuretted hydrogen present. He then proceeded to the consideration of charcoal as a deodoriser. He gave an interesting statement of the peculiar action of charcoals in general, arising, he believed, from the great amount of surface their spherical interstices presented, and of the particular action and superior value of animal charcoal over all others. He referred to the theory he had been led to form of this peculiar difference, and to a very successful imitation of animal charcoal, which he and Mr. Paine had made, in reference both to deodorising and decolorising properties, from the light porous silica-rock, found on Mr. Paine's estate in Surrey, which when broken up and steeped in heated tar, was put into a gas-retort, where the tar was burnt off in the state of very pure gas, and a residuum left of the new silicated charcoal in question. He explained that in charcoals it was not the amount of carbon they contained that constituted their value, but the mode in which the carbon was distributed; that animal charcoal contained only 10 per cent. of real carbon, while wood charcoal contained 90 per cent. He referred to the large amount of water, 50 or 60 per cent., which peat charcoal took up, and to the fallacious dry state of the manures with which this water-carrier was mixed. He feared this mode of introducing water in a latent state into manures in many cases gave a turn of the scale more in favour of the manufacturer than of the farmer. He doubted whether peat charcoal could be used economically for the purpose of soaking up tank water; if not, he feared it would prove of no advantage in other respects as a remunerative agent to the farmer. It had been long before the public, but had not progressed in market value, as it would have done had its application been successful. He considered it to lead to much error in practice, that the exact nature of the action of charcoal on ammonia was not better understood by the public. Fresh-burnt charcoal would absorb a large quantity of ammoniacal gas, but it was a mistake to suppose that it would consequently abstract ammonia from a liquid impregnated with it; on the contrary, water had the power of displacing from charcoal the whole of the ammonia it had received in a gaseous state within its pores. Peat charcoal did not either make manure or separate it from sewage; it simply rendered manure portable. He exhibited a striking experiment, showing the power of *dry* peat charcoal to arrest odours. Two open tumblers were half-filled with the most offensive sewage-matter Professor Way could obtain, and the surface of each mass covered with a film of thin paper, and a thin bed of powdered peat charcoal resting upon it. These tumblers were in this state handed round to the members, who ascertained the perfect manner in which the sewage-matter was thus rendered no longer offensive to the smell. He then gave an interesting account of the process of Mr. Stothert, by which sewage-matter was reduced, by a double action of purification, into clear water and inodorous precipitate—a process admirably adapted for sanitary purposes, although not for those of agriculture, as the more valuable manuring matters were held in solution and carried off in the pellucid liquid, while the precipitate was comparatively an inert mass. Remarks, bearing on the questions then brought before the meeting, were then offered by Mr. Paine, Dr. Calvert, Sir John Johnstone, Major Wollaston, Mr. Caird, and the Rev. L. Vernon Harcourt; and the thanks of the members were unanimously offered to Prof. Way, on the motion of Mr. Miles, M.P., seconded by Mr. Parkins.

Messrs. Stassen and Pernollet had leave to exhibit the operation of their apparatus for sorting grain and removing from it all extraneous matters. This operation was effected by passing the grain through a revolving metallic plate cylinder divided into compartments having apertures of different size and shape, the grain (freed from its extraneous accompaniments of small seeds, dirt or stones) passing out at the end of the machine in a state fit for sowing.

The Council adjourned to Wednesday, the 21st of June, at 12 o'clock, when Prof. Way would deliver his Lecture on the Absorbent Nature of Soils.

FLAX SOCIETY, BELFAST.—At the last monthly meeting of the committee it was considered very important, owing to the derangement caused by the war in the supply of Russian Flax, that an early estimate should be formed of the quantity sown in Ireland. A rough calculation had been made, by which it was estimated that the breadth, this year, was about 145,000 statute acres, against 175,000 last year; but as the other data were insufficient, it was thought very desirable that Government should supply a return earlier than the usual period of publishing the yearly statistics. The meeting proceeded to discuss a subject of much importance, arising out of the uncertainty of the duration of the Russian war—viz., the means of obtaining a supply of Flax-seed for next year's crop in Ireland. Should the war continue until the close of the Baltic navigation, the usual supply from Riga would be entirely wanting, or only in part available through Prussian ports; and it was evident that the only other sources of foreign supply would be materially contracted, owing to the necessity of Holland, Belgium, France, and Germany, retaining the seed for their own sowing which they might otherwise export. It was, therefore, of the utmost consequence to the Irish farmer, and to the whole Irish linen trade, that more certain means should be devised for meeting the probable deficiency. The committee were unanimously of opinion that the simplest and most practicable way would be, for every Irish farmer to save a portion of his present crop, by ripening the seed on the straw, and reserving it for sowing next spring; and it was arranged that the most energetic means should be taken, at the pulling season, to bring this advice before the farmers in all the Flax-growing districts of Ireland.

BATH AND WEST OF ENGLAND.—Last week this Society held its third annual meeting at Bath. The report of its proceedings was pressed out of our columns by the length of the report of the London Farmers' Club. It was a most successful gathering—the implement department of the show especially was the best which that Society has hitherto gathered. The following is the list of prizes awarded under this head:—

Plough for deep ploughing, 3*l.*; Eddy, Exeter. Plough for general purposes, 3*l.*; Howard, Bedford. Paring plough, two horses, 2*l.*; Silcock, Chippenham. Subsoil plough, three horses, 3*l.*; Carson, Warminster. Turnwrest plough, 2*l.*; Eddy, Exeter. Heavy harrow, 3*l.*; Cambridge, Bristol, and Howards, Bedford. Light harrow, 2*l.*; Cambridge, Bristol. Best cultivator (wide), 2*l.*; Hart, Wantage. Ditto (narrow), two horses, 2*l.*; Coleman, Chelmsford. Roller, 2*l.*; Wightman and Denning, Chard. Clod-crusher, 2*l.*; Fowler and Fry, Bristol. Corn drill, 5*l.*, Hornsby and Son, Spittlegate; 2*l.*, Fowler and Fry, Bristol. Turnip and Manure drill, 5*l.*, Hornsby and Son; 2*l.*, Holmes and Son, Norwich. Economical small-occupation seed and manure drill, for flat or ridge work, 5*l.*, Bowhay, Modbury, Devon; 2*l.*, Holmes, Norwich. Horse hoe for green crops on the ridge, 2*l.*; Busby, Newton, Bedale. Ditto on the flat, 2*l.*; Busby. Machine for setting out Turnips on the ridge or flat preparatory to singling, 5*l.*; Hackvale, Chipping Norton. Haymaking machine, 2*l.*, Smith and Ashby, Lincoln; 1*l.*, Wightman and Denning. Horse rake for hay or corn, 2*l.*; Howards, Bedford. Portable steam-engine, 4-horse power, 10*l.*; Hornsby and Son, Spittlegate. Portable threshing machine, with straw shaker, to be driven by steam, 4-horse power, 5*l.*; Humphries, Pershore. Portable threshing machine, with straw shaker, four horses, 5*l.*; Webber, Newton Abbot. Straw shaker, 1*l.*; Brinsmead, St. Giles, near Torrington, Devon.

Portable threshing machine, not requiring more than two horses, 5l.; Cambridge, Bristol. Clover seed drawer or sheller, 2l.; Holmes, Norwich. One-horse cart, for general purposes, 3l.; Busby, Newton Bedale. Two-horse waggon, 3l.; Milverton, Thorverton, near Collumpton. Rick stand, 2l.; Cambridge, Bristol. Chaff cutter, horse or steam power, 5l.; Barrett and Co., Reading. Chaff cutter, worked by hand, 2l.; Cornes, Nantwich. Turnip cutter for sheep, 2l.; Marychurch and Son, Haverford-west. Corn and pulse bruiser, 2l.; Turner and Co., Ipswich—1l. to Barrett and Co., Reading. Oilcake crusher, 2l.; Hornsby and Son, Spittlegate. Churn, 1l.; Burgess and Key, London, Anthony's American churn. Cheese press, 1l.; Wightman and Denning, Chard. Draining tools, 2l.; Burgess and Key, London.

Special Awards.—S. Rowsell, Buckland St. Mary, 20s., for an American horse rake. W. Pearce, Queen Street, London, 40s., for a vertical Turnip cutter and root slicer. J. Bailey, Nynehead, Wellington, Somerset, 20s., for a Turnip cart and cutter.

It will be seen from this list, and still more was it apparent on the ground, that the Society attracts exhibitors from all parts of the kingdom. Yorkshire, Lincolnshire, Bedfordshire, Essex, Suffolk, were represented in the show yard of the West of England Society, which aims at the improvement of its own district, much more wisely by thus opening its lists to all than if it exclusively patronised and encouraged its own local manufacturers.

In the cattle yard the following prizes were awarded :—

Devons.—Bull, between two and four years old, 12l., Mr. G. Turner, Barton; 5l., Mr. T. Miller, Sherbourne. Bull, under two years old, 12l., Mr. G. Turner; 5l., Mr. J. Quartly, of Molland. Bull, under 12 months old, 5l., Mr. J. Quartly; 3l., Mr. J. T. Davy, of Rose Ash, near South Molton. Best cow in calf, or in milk, 8l., Mr. G. Turner; 4l., Mr. S. Farthing, Stowey Court, Bridgewater. Best heifer, in milk or in calf, 8l., Mr. J. Quartly; 4l., Mr. G. Turner. Best pair of heifers, 5l., Mr. James Hole, of Knowle House, Dunster; 3l., Mr. William Hole, of Hannaford, near Barnstaple.

Short-horns.—Best bull between two and four years old, 12l., Mr. William Fowle, Market Lavington; 5l., Mr. C. H. Abbott, of Long Ashton, near Bristol. Best bull, under two years old, 12l., Mr. R. Stratton, of Swindon; 5l., Mr. W. Hewer, of Sevenhampton. Best bull, under twelve months old, 5l., Mr. R. Stratton; 3l., W. Miles, Esq., M.P., of Leigh Court. Best cow in calf, or in milk, 8l., and 4l., Mr. R. Stratton. Best heifer, in milk or in calf, 8l., and 4l., Mr. R. Stratton. Best pair of heifers, under twelve months old, 5l., Mr. R. Stratton; 3l., Mr. G. Sainsbury, of Corsham.

Hereford, or Cattle of any other Pure Breed.—Best bull, between two and four years old, 12l., Mr. John Feaver, of Wellow; 5l., Mr. W. Melsom, Warminster. Best bull, under two years old, 12l., Mr. Thomas Little, Chippenham. Best cow in calf, or in milk, 8l., Mr. F. Craddock, of Lyppeat, near Radstock.

SHEEP.

Long Woolled (not qualified to compete as Leicester or Cotswold).—Best yearling ram, 5l. and 3l., Mr. Thomas Kingdon, Brampford Speke. Best ram under three years old, 5l., Mr. John Radmore, of Thorverton; and 3l., Mr. Thomas Potter, of ditto. Best pen of five ewes, 5l., Mr. Thomas Potter. Best pen of five two-teeth ewes, 5l., James Wentworth Buller, Esq., Crediton.

Leicester and Cotswold.—Best yearling ram of the Leicestershire breed, 5l., James Wentworth Buller, Esq.; 3l., Mr. Thomas Potter. Best yearling ram of the Cotswold breed, 5l., Mr. Edmund Ruck, Crickdale; 3l., Lord de Mauley, Fairford.

Southdowns.—Best yearling ram, 5l., his Grace the Duke of Beaufort; 3l., Mr. John Moore, of Littlecot Farm, Pewsey. Best ram under three years old, 5l., Mr. John Moore; 3l., his Grace the Duke of Beaufort. Best pen of five ewes, 5l., his Grace the Duke of Beaufort; 3l., R. K. M. King, Esq., Taunton. Best pen of five two-teeth ewes, 5l., his Grace the Duke of Beaufort.

Dorsets.—Best yearling ram, 5l., Mr. Thomas Danger, of Hunstile, near Bridgewater; 3l., Mr. George Coombe, of Creech St. Michael, near Taunton. Best ram, not under three years old, 5l., Mr. Thomas Danger; 3l., Mr. George Coombe. Best pen of five ewes, 5l., Mr. George Coombe; 3l., Mr. Thomas Danger. Best pen of five two-teeth ewes, 5l., Mr. George Coombe; 3l., Mr. Thomas Danger.

Mountain Sheep.—Best ram, under three years old, 4l., and 2l., Mr. Nurcombe, Hopcott, Minehead. Best pen of five ewes, of any age, 4l., and 2l., Mr. James Quartly.

PIGS.

Large Breed.—Best boar, not exceeding two years old, 4l., Mr. William Hewer; 2l., the Rev. C. T. James, of Ermington, near Ivybridge. Best breeding sow, 4l., the Rev. C. T. James; 2l., Mr. W. J. Sadler, of Bentham Purton, near Swindon. Best pen of three breeding sows, 2l., and 1l., Mr. Wm. Hewer.

Small Breed.—Best boar, under two years old, 4l., Mr. John Partridge, of Nymett Rowland, near Crediton; 2l., Mr. William Northey, of Lake Farm, Lifton. For the best breeding sow, 4l., and 2l., Mr. William Northey. Best three breeding sows under eight months old, 2l., and 1l., his Grace the Duke of Beaufort.

HORSES.

Best stallion, for agricultural purposes, 15l., Mr. E. Jefferys, of Hill Deverill, near Warminster; 5l., Mr. W. Melson, of Norton Bavant, near Warminster. Best mare in foal, or with a foal by her side, 10l., Mr. H. Bailey, of Woollaston Farm, Berkeley; 5l., Mr. W. Fowle, of Market Lavington, near Devizes. Best two years old colt or filly, for agricultural purposes, 10l., Mr. Robert Hart, of Mark, near Bridgewater. Best thorough-bred stallion, suited for country purposes, 15l., H. D. Seymour, Esq., M.P.

As to the general character of both divisions of the show, we cannot do better than take it from the speeches of those present at the meeting on Thursday —Mr. Miles, M.P., the President, and one of the judges, Mr. Whittaker. Mr. Miles said :—

I have now to say a few words on the animals which were shown, and I am very anxious to do this, because, though I may pass by many classes, still I shall have something to say on one, namely, the sheep. I hope I may be addressing disappointed competitors in this department, because it has been thought necessary that certain rules should be adopted, and that the shearing, not the clipping, should take place at a certain time. Now, the judges thought it their duty, from their determination to carry out the rules of the Society, to exclude many lots of sheep worthy of commendation, and probably worthy of premiums, because they were clipped, and not shorn. I merely mention this to show you that those whom you appointed endeavoured to do their duty. As to the implements, I am indeed proud to say that, however good we may have conceived the exhibition to have been at Taunton—however good we may have conceived the exhibition to have been at Plymouth—this exhibition in Bath exceeds them both; for I find that the number of implements shown at Taunton was 446, at Plymouth 464, those which you have inspected this day are in number no less than 749, showing that the efforts of the Society are appreciated by the implement makers, and that much may be hoped from the trials which have been conducted under the auspices of a gentleman to whom we cannot be too much obliged, Mr. Amos. (Cheers.) I am informed that in the trial of two rival steam-engines, of ten hours' duration, it was found that their merits were so equal that one consumed only two pounds of fuel more than the other, and that the excellence of working was so similar that the only mode which Mr. Amos could adopt for testing their excellence was by taking them to pieces, and awarding the premium to the best made engine (Cheers.) This showed that implements sold with the stamp and authority of being good; and you cannot do better than purchase such when thus assured of their excellence. In conclusion, I am happy to say that through the incessant applications and persevering energy of my friend, Mr. Acland (loud cheers)—and it is right, indeed, that praise should be given where praise is due—we see results in 1854 which we had no reason to anticipate in 1852.

Mr. Whittaker referred to the sheep exhibited. He said :—

That their task as judges had been in some respects a painful one, inasmuch as they had been obliged to disqualify so many of the Down ewes for not being closely shorn, according to the rules of the Society; but that in doing this, they felt they had only done their duty; that they had much pleasure in saying that the whole of the class of horned sheep presented a marked contrast, in being most fairly and closely shorn; that they begged leave to suggest to the society the propriety of removing the restriction as to the time of shearing; that in their opinion the certificates given by exhibitors should contain as few restrictions as possible, as, however stringent they are, the unscrupulous will disregard them, and thus place judges in the painful dilemma of either shrinking from their duty, or impugning the integrity of exhibitors. They consider, therefore, that the question as to the time of shearing should be left to the discrimination of the judges; that the judges also recommend the removal of the restriction as to the age at which rams are shorn, as in restricting them to three years many superior sheep are excluded from competition; besides that, it is open to the objections before stated. They also recommend the Society to extend their premiums to the Cotswold and Leicester classes, to ewes of the two ages, and to old rams, giving the same premiums in these classes as are given for long-woolled sheep, Down, and horned sheep classes. They noticed some very superior rams and ewes, belonging to Lord de Mauley, excluded from competition, and placed as extra stock in consequence of their being shown as Cotswolds, and thus excluded from the long-woolled class.

Mr. Acland, to whom the Society in its present form owes its existence, with great tact referred, in the course of one of the addresses of the evening, to the idea which prevailed in some quarters, that this Society was intended as a rival to the Royal Agricultural Society; and showed that, omitting Middlesex and Yorkshire, there was only one other county in England which had more members of the Royal Agricultural Society than the two counties of Devon and Somerset, and that county was Norfolk—the number of members being, in Middlesex 266, Yorkshire 229, Norfolk 256, Devon 208, and Somerset 187.

The Poultry Show will be found noticed below.

Poultry.

BATH.—The show of poultry in connection with the Bath and West of England Society's show of stock, which took place on the 7th, 8th, and 9th inst., was a very attractive one, and, we believe, gave general satisfaction, as is proved by the fact, that, notwithstanding the insinuating appeals of the fair vendors at the "Fancy Fair" which was held adjoining the poultry show, on the one side, and the capital show of stock on the other, many worthy representatives of John Bull were to be continually encountered in the thronged space between the rows of poultry. The pens were arranged in tents; and unless our amateur could summon sufficient resolution to visit the show early in the morning, as soon as the doors were open to the public, he must have found it utterly impracticable to examine into the merits of the respective coops, and rested contented with a "bird's-eye" glimpse; for, the fashionable world once stirring, to do otherwise than go with the stream was impossible. By far the greater attention was given to what we consider the agricultural class, the Dorkings; and never before have we seen them so fully and justly appreciated. Go where you would their tent was always crowded; every pen of chickens ticketed at anything approaching a reasonable price was immediately claimed. The only way to avoid the crush was by visiting that part allotted to the Cochins; but as everything will find its level, and it is not our wish to assist in drowning a sinking man, for Cochins certainly have some redeeming points, we will merely state that they attracted but little notice, although there were several pens of very superior birds among them. Their reign is over. 404 pens of fowls were exhibited, 27 pens of ducks, 4 of geese, and 8 pens of turkeys; there were also 67 pairs of pigeons. Hon. Director, Jonathan Grey, Esq.; Hon. Secretary, Henry Spackman, Esq.; and to these gentlemen the public are deeply indebted for the care bestowed on the birds, and the attention given to the gratification of the visitors. The judges were Messrs. Andrews, Symonds, and Hewitt; their awards gave great satisfaction, and, from the excellence of many of the pens, and their near approach to each other in merit, the task could not have been a light one. We will now mention a few of the principal pens in the various classes, and will then subjoin the prize list, in which our readers will recognise many well known names. In Class I. (Spanish) there were 22 entries, and a remarkably good and well matched class it was. In Class II. only three entries, and therefore we cannot wonder that Mr. Plummer easily walked over the course. Mrs. George carried off the first prize for mature Dorkings, and Mr. Davies (to whom the greater portion of our readers are doubtless aware the much dreaded Captain Hornby, for so long a time the cock of the walk, has assigned his whole stock) took the second. The birds belonging to Messrs. Pope and Blandford were very superior. The first prize birds were ticketed at 30l., and were, moreover, claimed at that price; *policy* might have lent a hand in effecting the sale, as we understand they were entered for Lincoln, and it seems probable that the first and second prize birds will take the same position there that they have now taken at Bath. In the white Dorking class improvement was obvious, as also in the Malay class, where, of course, Mr. Manfield's name was conspicuous. In the Hamburgh classes the name of Fookes again appears; before these classes are entirely to our liking, the "hen-feathered" birds in the spangled varieties must be put out of the way. The Polands were not anything very remarkable. In the "Game" class there were many excellent pens, although it was not so even a class as many others. The Bantams, Geese, Turkeys, and Aylesbury Ducks were exceedingly good, and the show of "Pigeons" was a pleasing addition.

CLASS I. SPANISH.—1st, Mr. H. D. Davies, Spring Grove House, Hounslow; 2d, Mr. J. G. Rake, Bristol; 3d, Mr. Plummer, Brislington, Bristol.

II. SPANISH CHICKENS.—1st, Mr. Plummer; 2d, do.

III. DORKING: *coloured.*—1st, Mrs. George, Rookery, Croydon; 2d, Mr. Davies; 3d, Mr. Breavington, Vicarage Farm, Hounslow.

IV. DORKING CHICKENS: *coloured.*—1st, Miss Perkins, Sutton Coldfield, Birmingham; 2d, Mr. Davies.

V. DORKING: *white.*—1st, Mr. C. Edwards, Brislington; 2d, Mr. J. Clift, Dorking; 3d, Mr. J. Jennens, Moseley, Birmingham.

VI. DORKING CHICKENS: *white.*—1st, Mr. G. Vivian, Claverton Manor, Bath; 2d, Mrs. J. Longman, Lyde Farm, Yeovil.

VII. COCHIN CHINA: *buff or cinnamon.*—1st, Mr. C. Clark, Glastonbury; 2d, Mr. Fairley, Chevely Park; 3d, Mr. J. Crane, jun., Tolpuddle, Dorset.

VIII. COCHIN CHINA CHICKENS: *buff or cinnamon.*—1st, Mr. J. R. Rodbard, Wrington; 2d, Mr. J. Dorrell, Slough, Bucks.

IX. COCHIN CHINA: *brown, partridge, or grouse.*—1st, Rev. G. F. Hodson, Banwell; 2d, Mr. Fairlie; 3d, Mr. J. F. Chater, Haverhill, Suffolk.

X. COCHIN CHINA CHICKENS: *brown, partridge, or grouse.*—1st, Mr. J. Garrod, Cheveley; 2d, Capt. W. H. Snell, St. Swithin's Lane, London.

XI. COCHIN CHINA: *white.*—1st, Mr. Cyrus Clark; 2d, Mrs. S. R. Herbert, Powick; 3d, Rev. G. Hutchinson, Malmesbury.

XII. COCHIN CHINA CHICKENS: *white.*—1st, Mr. Turner, Northbrook, Exeter; 2d, Mr. Buckley, Llanelly, Carmarthenshire.

XIII. COCHIN CHINA: *black.*—1st, Mr. Fairlie; 2d, Rev. G. H. H. Hutchinson.

XIV. BRAMAH POOTRA.—1st, Mr. Fairlie; 2d, ditto.

XV. GAME: *white and piles.*—1st, Rev. T. L. Fellowes, Alle, Norfolk; 2d, Mr. J. R. Rodbard, Wrington.

XVI. GAME: *black breasted and other reds.*—1st, Mr. John R. Rodbard; 2d, Mr. Charles Edwards.

XVII. GAME: *duckwings and other greys and blues.*—1st, Rev. C. T. James, Ivybridge; 2d, Mr. W. Manfield, Dorchester.

XVIII. GAME: *black and brassy-winged, except greys.*—1st, Mr. H. Shield, Taunton; 2d, Mr. N. N. Dyer, Bredon, near Tewkesbury.

XIX. MALAY.—1st, Mr. W. Manfield, Dorchester; 2d, Mr J. Oldham, Long Eaton.

XX. HAMBURGH: *golden pencilled.*—1st, Mr. Robert Fookes, Blandford, Dorset; 2d, do.

XXI. HAMBURGH: *silver-pencilled.*—1st, Mr. Thomas M'Cann, Malvern; 2d, Mr. Cyrus Clark.

XXII. HAMBURGH: *golden-spangled.*—1st, Mrs. H. Fookes; 2d, Mr. C. Edwards.

XXIII. HAMBURGH: *silver-spangled.*—1st, Mr. Joseph Symonds, Gorwell, Dorchester; 2d, Dr. Rogers, Honiton.

XXIV. BLACK POLAND WITH WHITE CRESTS.—1st, Mr. A. Williams, Reading; 2d, Mr. C. Edwards.

XXV. POLANDS: *golden-spangled.*—1st, Mr. R. H. Bush, Ashley Lodge, Bath; 2d, Mr. C. Clark.

XXVI. POLANDS: *silver-spangled.*—1st, Mr. C. Clark; 2d, Mr. C. Edwards.

Vitality of Eggs.—I certainly have seen, but I cannot now recollect where, the following suggestion for preserving eggs without destroying the vital principle contained in them, so that they could be hatched after a long period and after travelling a considerable distance, say from America. The plan suggested was that they should be coated with a gum soluble in water, which, while on them, would effectually exclude the air, but which could be completely washed off for the purpose of hatching them. *J. E. H.*

Calendar of Operations.

JUNE.

BERWICKSHIRE MERSE FARM, *June* 13.—Turnip sowing is now all but completed, and the first sowings of Swedes and Yellows look very well indeed, a considerable extent being in the rough leaf, thanks to the rain in the end of last month. Throughout the season we have easily obtained a fine mould, such as the young plant loves; and the clay lands have not been known to work so well for years. Wheat continues healthy, and, with the exception of late spring breaks, is forward. Barley and Oats, the latter especially, were much retarded by long drought; and, even since the rain came, have made but little progress, owing to the unseasonably cold weather accompanying it. During the past week, however, it has become much milder, and, with a return of kindly showers, we may yet hope that the Oat fields will assume a more regular aspect where at present but too much "red land" is visible. Beans and Peas are strong, and some preparing to bloom. Pastures, from being so early stocked, have in many places been for a long time very bare. Young Grass fields I have seen without a green blade, to the certain injury of the plants. Now, however, they are rapidly improving; and this, in conjunction with good prospects for the Turnip crop and the present price of fat, has raised the price of lean stock to an extravagant pitch. Stackyards contain next to nothing; and the local demand keeps our district corn markets above the rates current in the metropolis. Sheep shearing is mostly over, except some flocks of ewes; and the wool is very fair, both as to quantity and quality. Lambs are a small crop, and will be much sought after at weaning time. *J. T.*

BORDER OF THE FENS, *June* 13.—Turnip sowing is now the most important object in hand. Everywhere great efforts have been made this season to clear the land thoroughly from Twitch and root-weeds; granted, then, that a clean tilth has been prepared, the quantity and quality of the manures are the next subjects of consideration. 1st. How has the manure been made—under sheds or in open yards? If under sheds, it will most probably be well trodden and saturated with urine, and, after undergoing a slight fermentation, be of great value; but the quantity will, under the ordinary circumstances which prevail in farm-steadings, be found lamentably deficient; and, indeed, to provide sheds for wintering all the live stock under cover would demand an immense outlay, much of which, after all, might be unnecessary. Sheds, with yards attached, are found to answer all purposes for store stock, and even for forward beasts; they are calculated to make a great bulk of good manure, if the food be generous; nor is the access of moisture, in my opinion, so objectionable as is by some correspondents of the *Agri. Gazette* made to appear—witness the incompleteness of the manure made this year, owing to the long-continued drought of the past spring. We are of opinion that all the straw, or the greater part of it, produced on a farm should be converted into manure, and returned to the land. This is not a very novel or startling idea, and yet it seems strange that contrivances should be in request to divert straw to other purposes, and substitute weeds, ditch scrapings, and rubbish of all kinds, to make up a tolerably-sized heap of so-called manure. Neither will the expensive and oft-repaired apparatus of Mr. Mechi fulfil the conditions supplied by well-made manure. Liquid manure forms an excellent stimulus; but we may be permitted to doubt (where the shape of the farm, or the abundance of water or other facilities are available) whether any mixture can be,

applied sufficiently strong and plentiful, economically to sustain the growing produce of a farm; though prepared at the same time to admit the usefulness of such an addition to other fertilising agents available for the attainment of high and remunerative cultivation. Dovecotes, poultry-houses, calf-sheds, pigsties, lambing-yards, and every other corner where ammonia or phosphates may be suspected to lurk, have been all pressed into the service: and, lastly, we have employed a fair quantum of artificials, among which our treatment of "bones and acid" alone seems to call for notice. We have a "widish" sort of an oil-pipe into which we put 8 or 10 bushels of bone-dust, over which is poured sufficient water to be seen standing an inch or two inches below the top of the bones: to this we add about 2 gallons of strong sulphuric acid (from 36 lbs. to 40 lbs.), and stir it with a long staff for half an hour, until it forms a sort of paste; it is then emptied upon a floor of ashes, and so on until the whole quantity is completed. After remaining in a heap for two or three days, guano or any other dry manure may be added, when it is twice turned over, and should be found then well mixed for use. A moderate amount of attention is required throughout to burn the ashes; separate any lumps or tufts and mix the ingredients thoroughly, the result will reward your care by providing some solid and substantial nutriment for the root and subsequent corn crop. The second week in June is here the favourite time for sowing Turnips; if sown before, they are apt to mildew. The first or second week in July for Coleseed, which, of course, should be treated with a large measure of muck, as well as Turnips. Some persons, however, omit acid with Coleseed, on the ground that although it may enable the bones to act speedily upon the first growth of Coleseed, yet that this growth is not prolonged or so successful as when bones alone are applied; this should be ascertained. Fen land, where Coleseed is chiefly grown, is supposed to be much weaker than it used to be, excepting where "clayed;" therefore it is desirable that whenever practicable, whether with green or corn cropping, every opportunity should be seized for carting heavier soils to be spread over the land—even silt is an improvement; clay is generally so, but road-scrapings, where limestone is used, will be found most advantageous. Salt is another cheap material that seems to assist in retaining moisture on the land, always a good indication of fertility; and, lastly, town manure is a capital auxiliary, though heavy of carriage, and often encumbered with useless refuse. Yesterday we were favoured with a heavy rain, which was extremely acceptable for all purposes, the hay crops being thin and backward, the pastures getting very bare, and some of the spring cropping going off for want of moisture. The Wheat is in many places thin, but everywhere looks healthy, and a few straggling ears may be seen emerging from the sheath; Beans are thin; Peas remarkably healthy and forward; Potatoes looking well; Clover will be a good crop, but that last sown was sadly injured by the late frosts. Labourers' wages continue 13*s.* a week; women earn 1*s.* a day, and children in gangs of 30 are paid 12*s.* per score per day, including the gangman, and, with a good man to manage them, they are happy enough, and their work not hard; and to a couple with a large family the addition of 3*s.* or 4*s.* a week to their income, for each boy or girl able to pick up Twitch or weeds, is very acceptable, and serves to keep the pot boiling, the garments whole, and the young ones from mischief. In conclusion, we are ready to bear testimony to the exemplary conduct of the recipients of prizes for skill in draining, ploughing, &c., given by our local society, which conduct we are also willing to attribute, in a great degree, to a previously well-established good understanding between the masters and men; the latter are improving fast, appearing to be awakened to the folly of anticipating their wages at beershops, excepting when they are left altogether to themselves or where a bad example is set by those who ought to know better; then, alas! are produced applicants for relief at every opportunity, a shifting and disorderly cluster of "eye-servants" (late at work and soon home, with pipes in their mouths, while pretending to be busy), dissolute, saucy, ignorant, and discontented—their existence is only recognised by the stain they leave on society; and whether high wages, education, or agricultural societies, are to rescue these loose countrymen of ours from their degradation, we shall welcome any influence that may give them an honest pride to outshine the town and manufacturing population, as well by their intelligence as by their orderly habits and robust bodily vigour. Wheat continues very steady at 81*s.* per qr., of 18 stones per coomb; 11 stone Oats, at 32*s.*; Barley, malting, at 34*s.*; 19 stone Beans, at 52*s.*; Turnip seed, at 1*s.* and 1*s.* 2*d.* per lb.; Wool is declining, at from 26*s.* to 28*s.* per tod. *J. W., Peterborough.* [Thanks.]

West Sussex, *June* 13.—Wheat has looked anything but well, some of it has got very brown, almost as if it was turning off for harvest; but we must not yet be alarmed, as it has appeared to recover during the past few days, and the ear, which is now coming out, looks healthy, but not so large as we were led to expect during its progress in the spring. Here we have had the white Wheat most affected, and I believe that is generally the case; and as it is a practice hereabout to sow white and red mixed (or what is called white and white strawed), perhaps the white being affected gives the fields generally the appearance of being hurt. There are various opinions as to the cause; most attribute it to the frosty nights and cold winds that have prevailed; but this I cannot do, as I have not been able to find it prevail less in situations that were well sheltered from frost and cold. I am inclined to think it is some mysterious blight, resembling that which affects the Potatoes, only that it has shown itself in Wheat before it has appeared in the Potatoes. But it has, I am sorry to say, appeared in them now, with unmistakeable signs, both in haulm and root. I have seen several pieces affected, and some of the Potatoes half rotten. Nettles also show the same symptoms, and, so far as I am aware, before it appeared in the Potatoes. As it has come earlier, I fear there is little chance of the late crops being heavy. Barley and Oats still look healthy; Mangold Wurzel is up, and looking as well as we can expect with the cold weather that has been so ill-suited to its tender nature. We have some sown in a piece of very heavy, mostly clay, land, where if we do succeed in getting a crop, I think we need not fear trying them anywhere; and they look well, except in some spots where they do not like to show up very quickly. Swede sowing is generally begun, and, in some instances, finished; the first sown are up, and look fresh. Turnip sowing will be finished early. Hay-making is begun, and will be a very light affair; but though the hay crop will be light, pasture is very good, and stock do well. *G. S.*

Notices to Correspondents.

Beet-root: *W B Hurnard* says:—I shall feel greatly obliged to any of your correspondents, if they will kindly inform me whether or not their experience leads them to approve of Beet-root as food for pigs, of course with an admixture of more solid food—viz.: Is it good for sows in pig, for sows after pigging, and for young growing pigs during the spring and summer months? As a root, is it considered equally nourishing as the Swede Turnip? [Not during winter and early spring.]

Books: *G J C.* The principles of account keeping are the same for agriculture as for commercial concerns. See article "Accounts" in "Blackie's Cyclopedia." We should prefer adopting the day-book, journal, and ledger system of ordinary book-keeping, to any of the published forms intended to simplify this matter for agriculturists.

Small Farm: *D. Capland.* Of course the whole thing was absurd enough. Our "endorsement" of it, written without much thought, related merely to the possibility of attaining the main results indicated on a rental of 600*l.*, as for instance on a farm of 400 acres. No one could understand from it any sanction of the absurdities involved in the details.

Weazels: *P F.* The common steel trap baited with a small bird or young rabbit will take them. It is said they are attracted to the trap by the bait being scented with musk.

IMPROVED MOWING AND ROLLING MACHINE.

ALEXANDER SHANKS and SON, Arbroath, Forfarshire, Inventors and Sole Manufacturers, respectfully solicit the attention of the Nobility, Gentry, and Gardeners to this improved Machine for Mowing and Rolling Lawns. The Machine is in operation in the Royal Gardens at Windsor Palace, Buckingham Palace, and at Osborne, in the Botanical Gardens at Kew, Regent's Park, Manchester, Sheffield, &c.; at Blenheim Palace, Trentham, Cliveden, Elvaston, Broadlands, Woburn Abbey, Clumber, Lilleshall, Castle Howard, Shrubland, Eridge Castle, Enville Hall, Tiptree Hall, Chatsworth, and in many other of the principal gardens in the kingdom, as well as in the United States, British America, and on the Continent, where its merits have been fully proved, and its success established.

The Machine is made to cut the breadths of 42, 30, 20, and 15 inches respectively, is exceedingly durable, easily managed, and adjusted to cut to the length required. The execution of the work is far superior to what may be attained by the most skilful mower, while at the same time a great saving of labour is effected. By the largest machine a Scotch acre may be mowed, rolled, and the Grass collected in one hour.

Further particulars, with prices, may be had on application.

BUDDING'S LAWN MOWERS, with Samuelson's registered improvements, *lightening the draught fully one-half*, and enabling an unskilled labourer to make neat work; free from liability to choke, or get out of order. May be had of all ironmongers in town or country, or from the Works, Banbury; delivered free in a packing case to any station on the North-Western and Great Western Railways. Testimonials forwarded on application.—Britannia Works, Banbury.

BALANCE OF FACTS IN FAVOUR OF

RICHMOND and CHANDLER, who have, in competition with the best selected CHAFF CUTTERS of the most celebrated makers in the trade, carried off the highest prizes against all comers.

COPY OF TESTIMONIAL.

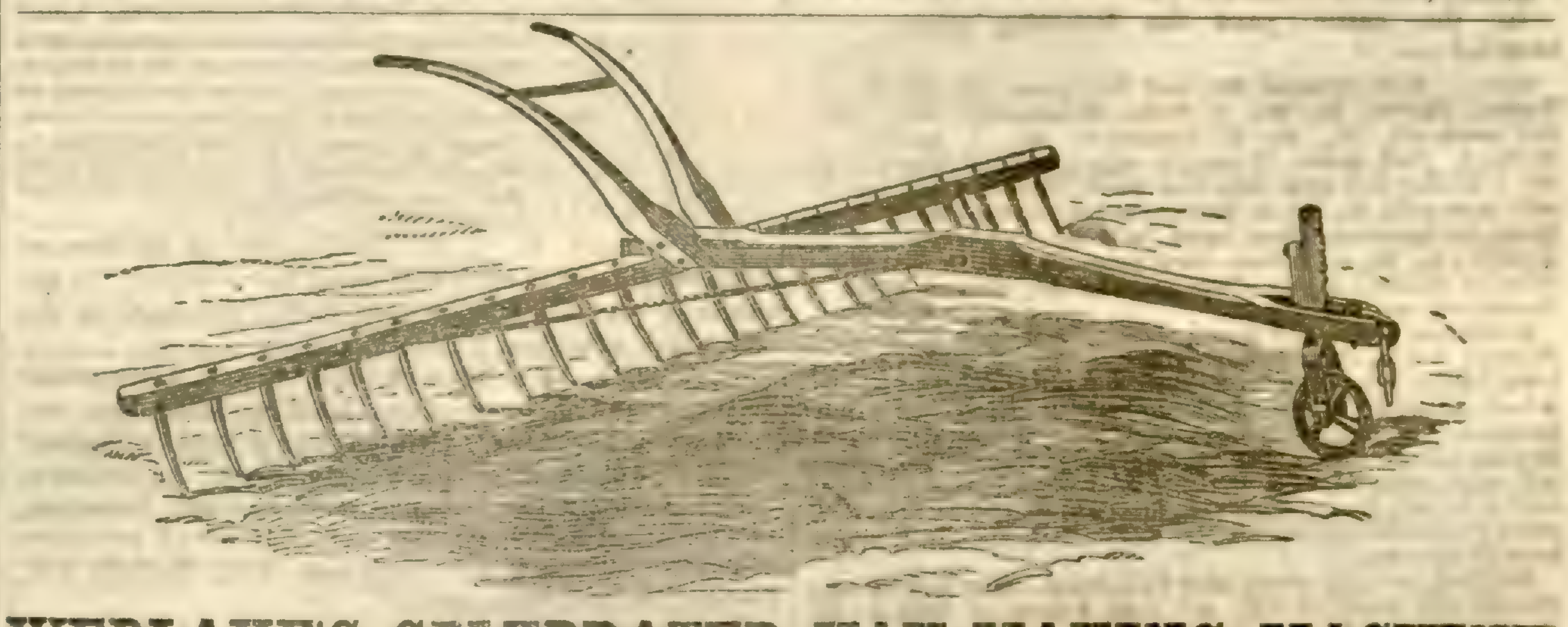
"Early Court, Reading.

"Gentlemen,—I beg to hand you a cheque for your Corn Crusher; I must add, at the same time, that nothing can exceed the goodness of the Machine. I have found in it all I can wish, and, moreover a very superior finished Machine, and a pattern for other makers. (Signed) "Geo. Shackell.

"Messrs. Richmond & Co."

Address—Richmond & Chandler, Manchester; and South John Street, Liverpool.

NEW OAT CRUSHERS, 2*l.* 15*s.* 6*d.*; do., 4*l.* 5*s.* 6*d.* CHAFF CUTTERS, 1*l.* 7*s.* 6*d.*; do., 2*l.* 19*s.* 6*d.* MANGLES, 2*l.* 10*s.* 6*d.* FLOUR MILLS, 4*l.* 10*s.* 6*d.*
MARY WEDLAKE & CO., 118, Fenchurch Street, London.



WEDLAKE'S CELEBRATED HAY-MAKING MACHINE

(ORIGINAL PATENT),

Recently improved so as not to clog, and which obtained the Silver Medal at Derby; manufactured by the Daughter of the Inventor, not complicated, and unequalled for simplicity of construction. Order immediately, so as not to be disappointed in the season, and to get them now at one-fourth of the price usually charged in June and July.

☞ Beware of spurious Machines offered by unprincipled traders as Mary Wedlake & Co.'s.

WEDLAKE'S NEW HORSE HAY RAKE AND DRAG,

EQUALLY USEFUL FOR STUBBLE, CORN, AND GREEN CROPS.

Only £3 10*s.* 6*d.*, width six feet; the Double Size, £9 10*s.* Order early.

WEDLAKE'S

DOUBLE HORSE, HAY, AND STUBBLE RAKE,

DOING THE WORK OF 10 to 15 WOMEN. Price £10, and £3 10*s.* 6*d.*,

Both Implements recommended by Mr. J. Morton, in the new "Cyclopedia of Agriculture;" also

OAT CRUSHERS, £2 15s. 6d.

118, FENCHURCH STREET, CITY.

Just published, price One Shilling and Sixpence,

HOW TO MAKE HAY IN THREE DAYS,

AND AT ONE-HALF OF THE USUAL EXPENSE, IN ANY COUNTY AND WEATHER; Or, HINTS TO HAYMAKERS.

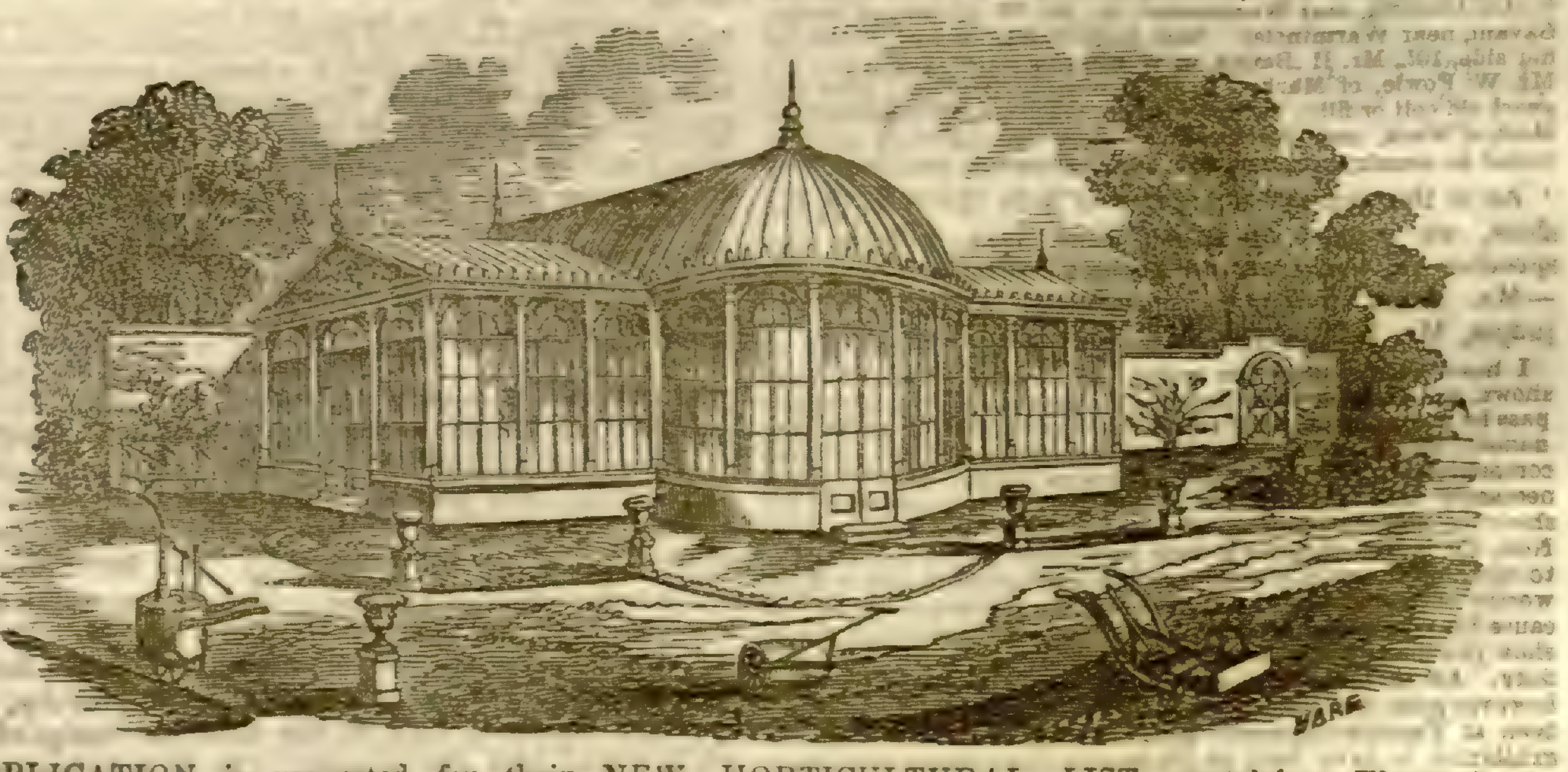
ALSO,

How to Keep a Horse for less than 9s. per Week.

118, FENCHURCH STREET, CITY.

COTTAM AND HALLEN,

2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.



APPLICATION is requested for their NEW HORTICULTURAL LIST, containing Illustrations, Descriptions, and Prices of

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Syringes	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.

AGRICULTURAL LIST UPON APPLICATION.

EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

FOR WATERING GARDENS, DISTRIBUTING LIQUID MANURE, ETC.

JAMES LYNE HANCOCK'S VULCANISED INDIA-RUBBER TUBING is now manufactured especially for the above purposes, and is of greater flexibility than any other description of hose or tubing. It is also manufactured to resist great pressure, suitable for attaching to the mains of water works or to tanks, or water butts of high elevations. WATERING HOSE fitted up with brass joints, branches, stop-cocks, roses, and jets complete. Vulcanised India-rubber suction pipes for pumps any length or size to order; HOSE for brewers' use, fire engines, &c. VULCANISED INDIA-RUBBER WASHERS, for Steam and Water Joints, and VULCANISED RUBBER in sheets of any size and thickness. Solid vulcanised India-rubber Tubing and Cord, for the joints of glass-doors, sashes, frames, &c.—Prices and every information may be had on application at the Manufactory, Goswell Mews, Goswell Road.

(Fig. 1.)

(Fig. 2.)

J. TYLOR AND SON'S BARROW GARDEN ENGINE (Fig. 1), in best well painted oak tub, fitted with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 1 holds 10 gallons,	throws 30 feet high	...	£4 10
No. 2 „ 15 „	„ 45 „	...	5 10
No. 3 „ 28 „	„ 45 „	...	6 18

J. TYLOR AND SON'S BARROW GARDEN ENGINE (Fig. 2), in strong tinned iron tub, well painted inside and outside, with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 10 holds 8 gallons,	throws 25 feet high	...	£2 15
No. 13 „ 12 „	„ 30 „	...	3 5
No. 11 „ 16 „	„ 40 „	...	4 0
No. 12 „ 24 „	„ 45 „	...	5 0
No. 14 „ 30 „	„ 45 „	...	5 18

A large assortment of every description of Garden Syringes, Pail Engines, Conservatory Pumps, &c., kept in stock.

Full size Syringe, on Read's principle, of the very best quality and workmanship, with two roses and one jet, 21s.; Plain Syringes from 10s. 6d. upwards.

J. TYLOR & SON'S Horticultural Apparatus may be obtained at these prices from any respectable Ironmonger or Seedsman in town or country, through whom alone they will be supplied, and of whom Drawings and Prices may be had.

N.B. Cost of carriage, &c., not included in these prices.

J. TYLOR & SON'S Manufactory, Warwick Lane, Newgate Street, London.

J. TYLOR AND SON'S REGISTERED GARDEN SYRINGE.—Small size, for Amateur use, **21s.** each; Large size, for Gardeners' use, **25s.** each.

By a simple arrangement this Syringe is rendered more effective than any portable Conservatory or Garden Pump ever offered to the public. It is equally adapted for Garden or Conservatory use, and is capable of discharging twice as much water in a given time as any other Syringe now in use. The arrangement consists in attaching a small flexible suction tube to the barrel of the Syringe, through which it is filled with water at every discharge of the previous contents. By this means the Syringe is always charged, and the pull-up stroke of the piston rendered perfectly easy, it having, indeed, no work to do, the barrel being previously full of water. Being thus made self-supplying, a great saving of labour is effected; and the necessity of stooping to fill the Syringe at every discharge being done away with, the direction of the water can be maintained for any length of time. It is perfectly cleanly in its action, as it is not possible for any water to get on the outside of the barrel, which is a well-known inconvenience attendant on the use of every other Syringe. Its construction is perfectly simple, and cannot get out of order; the ground-in ball valves and fittings used for filling all other patent Syringes being entirely superseded. To be had of any respectable Ironmonger or Seedsman in town or country.

J. TYLOR & SONS, Manufacturers of Horticultural Apparatus, Warwick Lane, Newgate Street, London.

N.B. These prices do not include carriage, package, or expenses of delivery in the country.

TANNED NETTING, for the protection of Fruit Trees from frost, blight, and birds, and for the security of fresh sown seeds, either in Gardens or Fields, at 1d. per square yard: 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Scrim Canvass, for Wall Fruit.—At EDGINGTON and Co.'s, 17, Smithfield Bars, City, and Old Kent Road, Southwark, where may be seen erected Emigrant Tents in great varieties, on their latest improved principles, and also at Brunswick Street, Poplar, near the East India Export Dock.

REDUCTION IN PRICE.

WEIR'S IMPROVED GALVANISED WROUGHT IRON LIQUID MANURE PUMP.

The Fittings of these Pumps are wholly of Brass, and there is no leather or other matter which can be affected by the manure.

Price, complete, with 10 feet of Flexible Suction Pipe, 4l. 15s. Terms, cash on delivery.

EDWARD WEIR, Agricultural Engineer, 16, Bath Place, New Road, London. Removed from Oxford Street.

Catalogues, with Illustrations, sent free by post.

WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

	£	s.	d.
Patent Pump	1	15	0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing	3	0	0

Larger sizes if required.

The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,

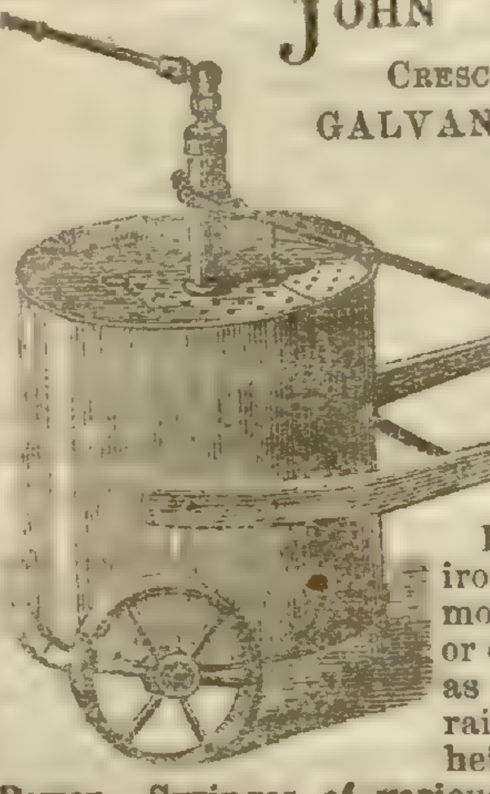
8, CRESCENT, JEWIN STREET, LONDON.

Every description of Machinery for Raising Water; Fire Engines, &c.

JOHN WARNER AND SONS, CRESCENT, JEWIN STREET, LONDON.

GALVANISED IRON TUB GARDEN ENGINE,

With Warner's Registered Spreader,



Is strongly recommended, for durability and low price, viz., 2l. 19s., to hold 10 gallons.

Larger sizes made either in wood or iron. May be obtained of any Ironmonger or Plumber in town or country, or of the Patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Syringes of various constructions and sizes from 9s. upwards. An extensive assortment kept.

JOHN WARNER AND SONS, 8, Jewin Crescent, London, Manufacturers of FIRE ENGINES, PUMPS, GARDEN ENGINES, and SYRINGES.

Conservatory Pump, with WARNER'S Registered Spreader, 27s. 6d.

No. 32.

Garden Engine, with WARNER'S Registered Spreader and Wrench 3l.; with iron pail, 3l. 12s.

No. 11.

Patent Conservatory Pump, with WARNER'S Registered Spreader, 3l. 13s.; with iron pail, 3l. 5s.

No. 14.

Brass Syringes, 9s. to 18s.

All articles of JOHN WARNER & SONS' manufacture may be obtained of any Ironmonger or Plumber in town or country, at the advertised prices.

JOHN WARNER & SONS having been practical Horticulturists, for many years, know exactly the requirements of both Amateurs and Gardeners. A gardener with a properly constructed pump will get through as much work in five minutes as he could with any Syringe in a quarter of an hour, and with half the labour himself. Syringes are conventional only for small houses.

No establishment offers such a variety of effective machines for hydraulic purposes, whether to supply Gardens, Hothouses, Cottages, Farms, Mansions, or Boards of Health, with every requisite connected with the conveyance and distribution of liquids.

Fountains suitable for Conservatories, Lawns, &c.

Sheets of Engravings sent on application.

CHAFF-CUTTERS, of the best workmanship, 25s.; Two-Knifed Chaff Engines, from 63s.; Mills for Bruising Oats and Beans, from 45s.

WILLIAM DRAY AND CO., Agricultural Implement Manufacturers, Swan Lane, Upper Thames Street, City.

BARTON'S PATENT STABLE FITTINGS AND ENAMELLED MANGERS.—These Fittings have all the newest improvements, and are the only patented invention of this description.

JAMES BARTON, Iron Founder, Smith, &c., 370, Oxford Street, a few doors East of the Pantheon.

MORNING FROSTS.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard run, of E. T. ARCHER, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey. (Removing to 112, Regent Street, London.)

PRIZE MEDAL—1851.

AT A VERY ECONOMICAL RATE.

SAMUEL CUNDY, MASON and BUILDER, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Lower Belgrave Place, Pimlico, London.

Marble Chimney-pieces manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price. A good Marble Chimney-piece for 40s. Marble Work in all its branches at a remarkably cheap rate for Halls, Dairies, Larders, &c Circulars sent on application.

N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank.

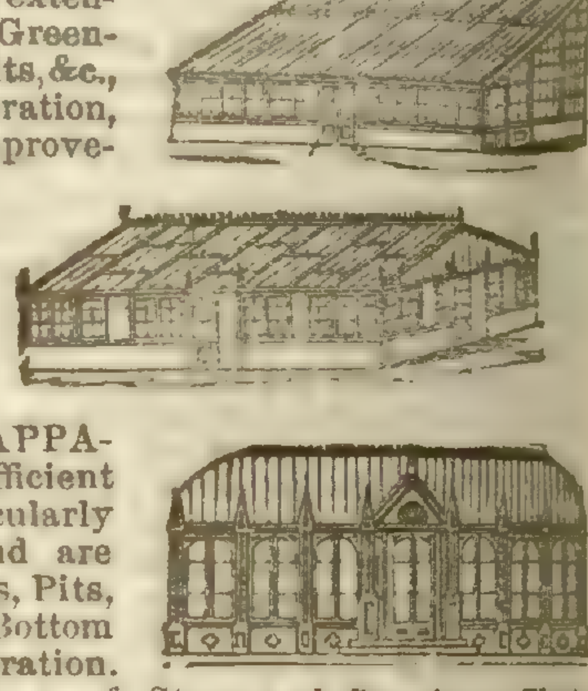
GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER, and HOT WATER APPARATUS MANUFACTURER, Triangle, Hackney, begs to solicit the attention of the Gentry to his prices for cash. Good substantially built Greenhouses, fixed in any part of the kingdom, 42 feet long, 13 feet wide, 90l.; 21 feet by 13 feet, 50l.; 12½ feet by 10 feet, 30l. A large assortment of Melon and Cucumber boxes, summer houses, &c. Estimates for any branch in the above line either in iron or wood, or park fencing.

HORTICULTURE IN ALL ITS BRANCHES.

J. WEEKS & Co., King's Road, Chelsea,

HOTHOUSE BUILDERS.



The Nobility and Gentry about to erect Horticultural Buildings or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

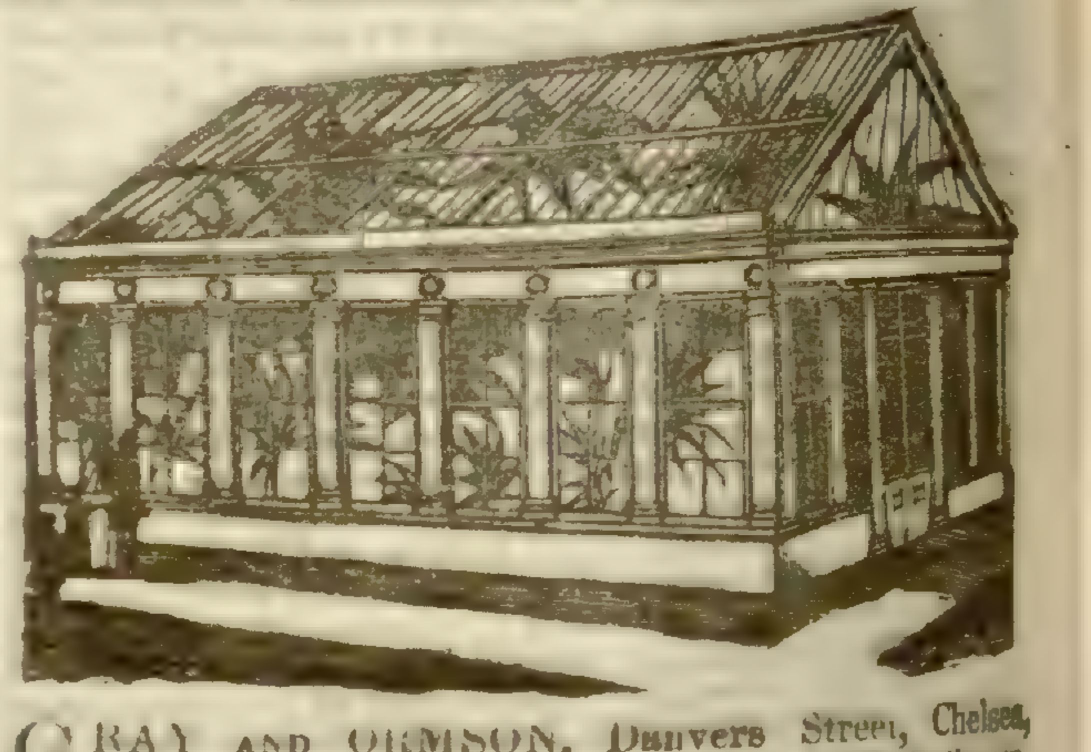
The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings: also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. WEEKS & Co., King's Road, Chelsea, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.

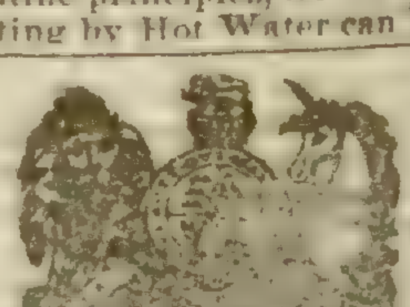


GRAY AND ORMSON, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

BY HER MAJESTY'S



ROYAL LETTERS PATENT

E. DENCH, PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

PATENT HOTHOUSES and excellent Glass at 1s. 3d. per foot super.; which are superior to all others for price with quality, and if known would supersede all others. (See Appendix, in "Book of the Garden," by Mr. M'Intosh.) A Range of Houses and Hot Water Apparatus, was erected by E. D. for E. L. Betts, Esq., Preston Hall, Kent. Mr. J. Frost, head gardener, has shown their efficiency by their produce at the Royal Botanic Gardens, Regent's Park, June 8, and Chiswick, June 11. The editor of the *Gardeners' Chronicle* says: "Beautiful examples of Black Hamburgh, large both in bunch and berry, and as black as Sloes, were furnished by Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall, Kent; these well deserved the first prize which was awarded them."—*Gardeners' Chronicle*, June 18th, 1853. The Grapes were considered the best shown at Regent's Park during the season, and the Houses are as superior for the growth of everything else in horticulture, which has been fully proved, and they have been extensively erected for the nobility and gentry in all parts of the kingdom.

GLAZING WITHOUT PUTTY.—Iron and Glass alone. E. D. has Roofed the Public Baths and Washhouses, Endell Street, on this principle, and others are in hand. Patent Sashes for Peach Walls, Pits, &c., 8d. per foot super. Heating by Hot water, on the most practical principles, and all the best materials used. Printed Price List sent on application.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2*d*. to 3*d*. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

JAMES PHILLIPS AND Co. have the pleasure to hand their present prices of Glass for Cash:—

	SHEET SQUARES. In Boxes of 100 feet. £ s. d.	CROWN SQUARES. In Boxes of 100 feet. s. d.
Under 6 by 4	0 12 6	... 8 6
6 by 4, and 6½ by 4½	0 13 0	... 12 6
7 „ 5, — 7½ „ 5½ } 8 „ 6, — 8½ „ 6½ }	0 15 0	... 14 0
9 „ 7, —10 „ 8, 12 by 9, } 12 by 10, 14 by 10 }	1 0 0	

Larger Sizes, not exceeding 40 inches long.

16 oz. from 3*d*. to 3½*d*. per square foot, according to size.
21 oz. „ 4½*d*. to 5*d*. „ „ „
26 oz. „ 6*d*. to 7½*d*. „ „ „

SHEET GLASS OF ENGLISH MANUFACTURE FOR ORCHARD HOUSES, THE SAME QUALITY AS WE SUPPLY TO MR. RIVERS, and of various dimensions, always on hand.

London Agents for the Sale of HARTLEY'S PATENT ROUGH PLATE GLASS.

Glass Tiles, ½ of an inch thick, packed in cases, containing 50, at 1*l*. 17*s*. 6*d*. per case. Packages 2*s*. each extra, but allowed for when returned.

Glass Milk Pans, 21*s*. per dozen; Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoys' Milk Syphons, Wasp Traps; Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the trade.

Horticultural Glass Warehouse, 116, Bishopsgate Street Without, London.

GLASS FOR CONSERVATORIES, GREENHOUSES, DWELLINGS, ETC.

ESTABLISHED MORE THAN ONE HUNDRED YEARS.

THOMAS MILLINGTON requests attention to his present prices of SHEET GLASS in 100 feet boxes.

Squares	6 by 4 and 6½ by 4½ } 7 by 5 and 7½ by 5½ } 8 by 6 and 8½ by 6½ }	13 6
„	9 by 7 and 9½ by 7½ } 10 by 8 to 12½ by 9½ }	16 3
„	12 by 10 to 24 by 14	19 0

Orchard House Squares on Mr. Rivers's approved plan, to whom I have sold some thousands of feet:—20 inches by 12, 20 by 13, 20 by 14, 20 by 15, 20½ by 12½, 20½ by 13½, 20½ by 14½, at 19*s*. per 100 feet.

200 feet cases at 42*s*., and 300 feet case 63*s*., in large sheets.

Boxes charged 1*s*. extra per 100 feet, and the same allowed if returned free of all charge.

HARTLEY'S PATENT ROUGH PLATE GLASS, Fern Shades, Striking Glasses, Milk-pans, Bee Glasses, Cucumber Tubes, Sheet and Rough Plate Glass Tiles, Wasp Traps; Plate, Patent Plate, Crown and Sheet Window Glass, in every thickness and quality, and Ornamental Glass, plain and coloured; pure white Shades for Ornaments, Crystal Glass for Pictures.

Warehouse, 87, Bishopsgate Street Without—same side as Eastern Counties Railway.

BEEHIVES.

NEIGHBOUR'S IMPROVED COTTAGE BEE-HIVE, as originally introduced by GEORGE NEIGHBOUR & SONS, with all the recent improvements, glasses, thermometer, &c., price 35*s*., securely packed for the country.

This unique hive has met with universal commendation, and may be worked with safety, humanity, and profit, by the most timid; its arrangements are so perfect, that the honey may be taken at any time of the gathering season without at all injuring the bees.

Early applications, addressed to GEO. NEIGHBOUR & SONS, 127, High Holborn, or 149, Regent Street, London, will receive prompt attention. Their newly arranged Catalogue of other improved Beehives, with Drawings and Prices, sent on receipt of two stamps.

Agents:—Manchester, HALL & WILSON, 50, King Street; Liverpool, JAMES CUTHBERT, 12, Clayton Square; Chester, F. & A. DICKSON & SONS, 106, Eastgate Street; Glasgow, AUSTEN & M'ASLAN, 186, Trongate Street; Dublin, J. EDMONDSON & Co., 61, Dame Street.

SUMMER HOUSES IN WOOD AND IRON FOR GARDENS, from 50*s*. each, all made portable, so that they can easily be erected by any ordinary labourer. Drawings of 28 sent free. Small Rooms, 6 feet square, price 5*l*., with doors and windows, and painted.—R. RICHARDSON, 21, Tonbridge Place, New Road, London. N.B. Maker of Iron and Wood Houses for Emigrants; drawings of 21 sent free.

SUBSTANTIAL POULTRY HOUSE, 12 feet by 4, for 4*l*, consisting of House 4 feet square, and covered Run for Fowls 8 feet by 4. The above is painted, and delivered free within four miles of London. Drawings of several sent free. Large Enclosures for Fowls and Pheasants very cheap.

R. RICHARDSON, 21, Tonbridge Place, New Road, London.

N.B. The above are portable, and can be erected by any ordinary labourer.

TO FLORISTS AND OTHERS.

J. JONES, IRON MERCHANT, has always a great variety of CONICAL and SADDLE BOILERS in STOCK; also Fire and Furnace Bars, Ornamental and Plain Supply Cisterns, Double Doors and Frames, Furnace Grates, Soot Doosr, Hot Water Pipes, Elbows, Tees, Syphons, Throttle Valves, Stop Cocks, Flange and Socket Elbows, &c.; also Trough Pipes. Drawings and prices of the above, on application to J. JONES, Iron Bridge Wharf, No. 6, Bankside, London, near the Southwark Iron Bridge.

STEPHENSON AND PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.

MESSRS. BURGESS AND KEY, as Mr. PARKES' Wholesale Agents for England, have ways in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.

103, Newgate Street, and 52, Little Britain, London.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

Priced lists of plant tubs and boxes forwarded on application.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement J. B. WHITE & BROTHERS, Millbank Street, Westminster.

RIPE FRUIT, STRAWBERRIES, AND SEED BEDS.—New Twined Netting (tanned if required), 1 yard wide, 1½*d*. per yard; 2 yards wide, 3*d*. per yard; 4 yards wide, 6*d*. per yard; ½-inch mesh do., 2 yards wide, 6*d*. per yard. The Elastic Hexagon Garden Netting, 76 meshes to the square inch, effectually excludes birds, wasps, flies, &c., from fruit trees, flower or seed beds, 4½*d*. per square yard. Tanned Netting, 2 or 3 yards wide, 1½*d*. per yard; 4 or 6 yards wide, 3*d*. per yard, exactly the same as advertised by others at double the above prices. Coir or Hemp Sheepfolding Net, of superior quality, 4 ft. high, 4*d*. to 6*d*. per yard. Lamb Net, 6*d* per yard. Rabbit Net, 1½*d*. per yard, 4 feet wide; each edge Corded, 2*d*. per yard, suitable for fowl fencing. Square Mesh Cricketing Net, fix its full width and length, made of stout cord, 3*d*. to 4*d*. per square yard; this is the best article made for fencing against fowls, cats, &c.

The largest, cheapest, and best stock in the world, at W. CULLINGFORD'S, 1, Edmund Terrace, Ball's Pond Road, Kingsland, London; and at the Crystal Palace, South West Gallery, Sydenham. The Trade supplied. Orders by Post punctually attended to. Fishing Nets of all kinds in stock.

MILDEW AND RED SPIDER.

BAINBRIDGE ALKALINE EXTRACT.—We can confidently recommend the above as a sure remedy, having used it successfully for many years both on Vines and Peaches, &c. &c. Pints, 3*s*.; quarts, 5*s*. A quart is sufficient for 20 gallons of water applied with the Syringe.

BAINBRIDGE GUIDE TO THE CONSERVATORY, 5*s*. each. Sold wholesale and retail by R. BALDWIN, Paternoster Row. Gentlemen can procure the above in any part of the country through their Bookseller, in their Monthly parcels.

Sold also by BAINBRIDGE & HEWISON, 7, Bridge Street, York.

DO YOU WANT BEAUTIFUL HAIR, WHISKERS, MOUSTACHES, &c.?—ALICE MELVILLE'S PALMAPILLA in all cases strengthens weak hair, prevents its falling off, checks greyness, produces a thick and luxuriant growth, dispels scurf and dandriff, and makes it clean, soft, curly, and brilliant in appearance. For baldness from any cause it is certain and effective; and for the production of Whiskers, Moustaches, Eyebrows, &c., in three or four weeks, it can be fully depended upon. Price 2*s*. 6*d*., sent post free (anywhere) on receipt of 30 penny postage stamps, by Miss MELVILLE, 25, Argyle Square, King's Cross, London.—"My whiskers are growing very thick." R. Mede, Esq.—"It restored my hair, which I had lost in patches." W. Sturt.—"It has quite checked the greyness." Miss Ellis.—"My Moustache is greatly improved." Capt. Ross.

DO YOU WANT LUXURIANT HAIR, WHISKERS, &c.? If so, use Miss GRAHAM'S NIOUKRENE, the most efficacious Hair generant ever introduced. It reproduces the Hair when lost either by disease or decay, prevents its falling off, effectually checks greyness, strengthens weak hair, and is guaranteed to produce those attractive ornaments, Whiskers, Moustachios, Eyebrows, &c., in three or four weeks. For nourishing and beautifying the hair, and sustaining its curling powers in all weathers, it has no equal. Price 2*s*., and sent post free to any part of the kingdom, on receipt of 24 penny postage stamps, by ELLEN GRAHAM, 3, New Road, Hornsey, Middlesex.—"My hair is quite restored." Miss ORME.—"I have a full pair of Whiskers, thanks to your Nioukrene." H. ROBB, Esq.—"It has checked the greyness." Mrs. JONES.

NEAR FARNHAM, SURREY.

TO BE SOLD or LET, a very compact COPYHOLD FARM, in the Parish of Frensham, called PIT, consisting of a good Double Cottage, easily convertible into a comfortable residence, with all suitable Buildings, and 54 acres of Arable, Hop, Pasture, Water, Meadow, and Wood Land; with valuable Common Rights. If sold a part of the purchase-money may, if desired, remain on Mortgage.—For particulars, apply to B. NICHOLS, Esq., Solicitor, Farnham; or to Messrs. SIMPSON and COBB Solicitors, 62, Moorgate Street, London.

TO MARKET GARDENERS, NURSERYMEN, & OTHERS.

TURNHAM GREEN, MIDDLESEX.

TO BE LET, Forty-three Acres of Fruit and Garden LAND, excellently stocked and cropped (21 of which upon an unexpired term of 15 years), with a suitable seven-roomed Cottage, and convenient business premises; the whole may be treated for and immediate possession had. May be viewed and particulars had upon application to Mr. W. T. ATWOOD, Land Agent and Valuer, Mortlake, Surrey; or at the Rainbow Tavern, King Street, Covent Garden, on Saturdays, from 10 till 1.

TWO FARMS, WITH GOOD RESIDENCE AND RIGHT OF SHOOTING, IN SURREY.

TO BE LET, on LEASE, together, or separately, the BURSTOW LODGE MANOR FARM, situate five miles from Reigate and two miles from the Horley Station on the Brighton Railway, comprising 327 acres of sound Arable, Pasture, Meadow, and Woodland; viz., 256A. Arable, 110A. Pasture, and 31A. Wood, with good Family House in the centre, known as "Burstow Lodge," convenient Homestead, Bailiff's House, and seven Cottages.

The HORNE FARM, situate close to the Parish Church, three miles from the Horley Station on the Brighton Line, and three miles from Godstone on the South Eastern, consisting of 131A. 3R. 14P.; viz., 114A. 2R. 20P. Arable, and 17A. 0R. 34P. Pasture, with a moderate Farm House and good Homestead, aside the high road, and in the centre of the Farm.

Particulars and cards to view, may be obtained of Messrs. BLAKE, Croydon, Surrey; and of Messrs. DAVIS & VIGERS, 3, Frederick's Place, Old Jewry, London.

100 ALDERNEY COWS AND HEIFERS.

JAMES DUMBRELL respectfully invites purchasers of Alderney Cows to inspect his stock. Choice from 100.

JAMES DUMBRELL, Ditchling, Hurstperpoint, Sussex, one mile from Hassock's Gate Station, London and Brighton Railway.

TO BE SOLD, the property of a gentleman, a very handsome, small GAZELLE, from Scinde: she has been in England 12 months, is perfectly tame, and fond of children.—For particulars, apply to Mr. YEOMAN, Livery Stables, Guildford Street, Russell Square, London, where she can be seen on and after Tuesday next.

COCHIN CHINA POULTRY, ETC.

EGGS FROM PRIZE BIRDS.

MR. JOHN FAIRLIE, of Cheveley Park, Newmarket, in reply to the very urgent applications from numerous amateurs, is now prepared to dispose of a limited number of Eggs, from his celebrated prize Cochins, Brahma Pootras, Scotch Bakies, Dorkings, &c., according to the dates of the orders received.

BLACK COCHIN EGGS from the best birds in England, having always taken prizes at the best shows, at 18*s*. per dozen, including package. Apply at the city of London Wire Works, 44, Skinner Street, London. N.B. Fowl Houses, Chicken Coops, Poultry Hurdles, and Netting, of every size and description. Illustrated Catalogues forwarded, post free, on application. A few Spanish Pullets, sisters to those sent to her Majesty's yard at Windsor, for Sale.

Sales by Auction.

FANCY POULTRY—PERIODICAL SALE.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, June 20, at 12 o'clock precisely, very purely bred COCHINS and BRAMAH FOWLS and CHICKENS, from the renowned yards of Dr. Gwynne, Messrs. Sparham, Gilbert, Johnson, of Farnham, Fisher, &c.; and some Prize Coloured DORKINGS from the Rev. F. Thursby—upwards of 200 lots—many of the birds being very choice, and well deserving the attention of breeders of first class stock.—May be viewed on the morning of sale, and Catalogues had by enclosing a stamped directed envelope to Mr. J. C. STEVENS, 38, King Street, Covent Garden, London.

ORCHIDS FROM NEW GRANADA.

MR. J. C. STEVENS begs to announce for Sale by Auction, at his Great Room, 38, King Street, Covent Garden, on FRIDAY next, 23d inst., at 12 for 1 o'clock, an importation (just received per steamer Avon) of Orchids collected in New Granada, and certainly the finest that have yet reached Europe from that district. The plants are in capital condition, and the following very rare species are included: Odontoglossum Pescatorei, Halli, nævium, Schlimi, nebulosum, &c. Uropedium Lindeni in fine masses, Miltonia pulchella, Barkeria elegans, Anguloa macrantha, a beautiful new species, and many other choice varieties.—May be viewed the morning of sale, and, if it is possible, Catalogues will be forwarded as usual.

ORCHIDS.

ESTABLISHED PLANTS OF THE GREATEST RARITY.

IMPORTANT TO AMATEURS.

MR. J. C. STEVENS is directed to Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on THURSDAY, June 22, at 12 for 1 o'clock, Magnificent SPECIMEN PLANTS from a Gentleman's collection, including amongst others the following very great rarities:—Aerides Larpentæ, Schröderi, quinquevulnerum, and maculosum; Vanda suavis (Veitch's true), Saccolabium guttatum splendens, Cymbidium eburneum, Cypripedium Lowi, Odontoglossum nævium, and many choice Phalænopsis, Cattleyas, Anguloas, Dendrobiums, &c. Also, a small importation from the East, containing a distinct new Aerides, and some recently imported plants from Guatemala and Venezuela.—May be viewed on the morning of Sale; and Catalogues, which are preparing, will be forwarded in due course.

WINDING-UP SALE FOR THE SEASON.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction, at the Mart, Bartholomew Lane, on FRIDAY, June 23, at 12 o'clock, a first-rate Collection of DAHLIAS, comprising all the newest kinds; choice FUCHSIAS, VERBENAS, PETUNIAS, Climbing and other ROSES, a selected assortment of GERANIUMS, and other Plants in bloom; with a variety of Plants for Bedding.—On view the morning of Sale; Catalogues had at the Mart; and of the Auctioneers, American Nursery, Leytonstone, Essex.

DOWN COTSWOLD RAM LAMBS.

MESSRS. GODWIN AND SON are instructed by Mr. J. T. Twynam to offer for Sale by Public Auction, at the Corn Exchange, Winchester, on MONDAY, July 17, at 2 o'clock precisely (the day previous to the Great Overton Hampshire Lamb and Sheep Fair), about Forty prime RAM LAMBS, and Three Four-teeth RAMS, of the above valuable breed, now so rapidly rising in public favour. These Lambs are of great size, of one uniform brown or dark colour of face and legs, and possess the most complete amalgamation of the Down and Cotswold symmetry, fleece, and flesh. The sire is (chiefly) Mr. Druce's (of Ensham, Oxford) No. 7 Down Cotswold Ram, a sheep of beautiful mould and thick flesh: the dams descended from the well-known flock of Down Cotswolds, established by Mr. J. T. Twynam, at Whitchurch, in 1835. Mr. Druce's wethers took the first prize at Smithfield at the last Christmas Exhibition for Crossed Sheep in class 23. Winchester offers every facility and convenience for gentlemen and dealers who intend visiting the Fair at Overton on the following day.—The Lambs can be seen and particulars obtained on application to J. P. TWYNAM, North Walls, Winchester.

LYELL'S PRINCIPLES OF GEOLOGY.

Now ready, Ninth Edition, thoroughly revised, with numerous Woodcuts, 8vo, 18s.,

THE PRINCIPLES OF GEOLOGY; or, the Modern Changes of the Earth and its Inhabitants, as Illustrative of Geology. By Sir Charles Lyell, F.R.S.

John Murray, Albemarle Street.

MR. SIDNEY'S NEW WORK.

Just published, in fcp. 8vo, with Frontispiece, price 5s.

GALLOPS AND GOSSIPS IN THE BUSH OF AUSTRALIA; or, Passages in the Life of Alfred Barnard. By Samuel Sidney, Author of "The Three Colonies of Australia," &c.

London: Longman, Brown, Green, & Longmans.

Just published in 18mo, price 1s.,

THE BOOK OF HEALTH. By R. J. Mann, M.R.C.S.E., Author of "A Guide to the Knowledge of the Heavens." Forming a part of the new School Series, edited by the Rev. G. R. Gleig, M.A.

London: Longman, Brown, Green, & Longmans.

THE HORTICULTURAL JOURNAL and FARM and GARDEN ADVERTISER. (Garden Department by Mr. Glenny.) Every Saturday. Price 2d.; Stamped, 3d.

All communications to the Office, 14, York Street, Covent Garden.

Shortly will be ready, Part I., of

THE FERNS OF GREAT BRITAIN, Illustrated by John E. Sowerby; Descriptions by C. Johnson, Esq. To contain about 46 Plates, and to be completed in Eight Monthly Parts, full coloured, at 3s.; partly coloured at 1s. 6d. per Part.

Prospectuses may be had through all Booksellers; and of the Proprietor, John E. Sowerby, 3, Mead Place, Lambeth.

Just published, price 2s.

A PLAIN AND EASY ACCOUNT OF BRITISH FERNS, wherein each Species is described under its respective Genus; and the Characteristics of those Genera given in words of common use. With a Glossary of Technical Terms. By the Rev. E. Bosanquet.

"A useful little book for those who wish to begin the study or cultivation of British Ferns."—*Spectator.*

"The simplest treatise that has yet been published on the subject."—*Weekly Times.*

London: Robert Hardwicke, 38, Carey Street, Lincoln's Inn.

THE AGRICULTURE AND HORTICULTURE OF INDIA.

In 7 vols., 8vo cloth, reduced to 2l. 2s.

TRANSACTIONS of the AGRICULTURAL and HORTICULTURAL SOCIETY of INDIA, 1837 to 1840. Being a Selection of Interesting and Important Papers on a vast variety of Subjects, Published by the Committee appointed by the Society.

London: W. Thacker & Co., 87, Newgate Street.

Now ready, demy 8vo, cloth gilt, price 9s.,

THE MICROSCOPE: its History, Construction, and Applications. Being a familiar Introduction to the Use of the Instrument and the Study of Microscopical Science. Illustrated by upwards of 500 Drawings of objects by Jabez Hogg, M.R.C.S., &c.

London: Published at the Office, National Library, Milford House, Strand; and by W. S. Orr & Co., Amen Corner, Paternoster Row.

ON MARRIAGE.

Just published (to be had free, by enclosing 1s. or Twelve Postage Stamps, to Mr. Watson, Clerical Agent, Robert Street, Adelphi, London).

MATRIMONY.—A Pamphlet on Matrimonial Alliances, which merits the attention of those who wish to settle honourably in life. By a Clergyman.

NOTE.—The letters received daily at the Offices from this year's customers fully support the high character this Manure obtained last year. A few are subjoined.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

THE "ECONOMICAL" MANURE,

SO CALLED, BECAUSE

$1\frac{1}{4}$ TO $1\frac{1}{2}$ CWT. PER ACRE, COSTING 15s. TO 18s., IS AMPLE, AND FULLY EQUAL TO 3 CWT. OF THE BEST PERUVIAN GUANO: THUS SAVING AT LEAST 50 PER CENT., BESIDES CARRIAGE, &c.

THIS quantity is quite sufficient, and must on no account be exceeded, as injury instead of benefit arises if more is used, the Manure having been purposely manufactured in a highly concentrated state.

N.B.—The following dozen Testimonials (more were given in a recent week's Paper), taken from some hundreds contained in the Company's pamphlet, embracing all parts of the United Kingdom and the Continent, show that this is the cheapest and most efficient Manure the farmer can possibly employ; and although they refer only to its use for Turnips and Root Crops, it produced the most wonderful results last year on every kind of crop, and on all soils, far surpassing the expectations of the purchasers. This, no one reading the pamphlet can doubt, as in fair comparative trials with guano, dung, and other long recognised fertilisers, it will be seen the "Economical" was superior; that it is most valuable for fruit trees, shrubs, and garden purposes, and produces the most astonishing effects upon manure heaps, applied in solution, decomposing in 15 days all vegetable matter, peat included, and that it is a perfect deodoriser for liquid manure, besides enhancing its fertilising properties.

It is a chemical compound in a highly concentrated state, providing the plants with a large proportion of ammonia, which it has the property of attracting from the atmosphere and fixing in the soil, as well as the carbonic acid—two of the most energetic agents of vegetation. It is sold in a dry powdered state, and is the result of many years' labour of an eminent Foreign Agriculturist, the Director of the Government Schools of Agriculture in his own country, and of high reputation as a chemist. It is patented, and is one of the most useful and greatest discoveries of the day.

Orders received at the Offices of the BRITISH ECONOMICAL MANURE COMPANY, 10, MARK LANE, LONDON, where a pamphlet, containing hundreds of Testimonials from all parts of England, Scotland, and Wales, France, Belgium, and Spain, with directions for use, samples, and all particulars, may be had, or will be sent gratis on applying to

BENJAMIN COVENEY, *Manager.*

GOOD AGENTS WANTED.—AN ALLOWANCE TO THE TRADE.

Extracts from the Testimonials, the Originals of which can be seen.

1. That at a cost of 12s. per acre the Turnips were "a most extraordinary crop."—John Hassell, Agent to the Right Hon. the Earl of Chesterfield, Shelford Manor, Bingham, Notts. Nov. 8th, 1853.

2. With $1\frac{1}{2}$ cwt. per acre they (the Turnips) "are equally as good as where I applied $3\frac{1}{2}$ cwt. of superphosphate of lime per acre."—R. H. Walpole, West Bilney, Swaffham, Norfolk. Oct. 13th, 1853.

3. An expense of 23s. per Scotch acre for this manure produced Turnips "equally as good as those growing in the same field with 6 cwt. per Scotch acre of guano, at 12s. 6d. per cwt.;" making 3 guineas against 23s.—William Morrison, Mungalhead, Falkirk, Stirlingshire, N.B. Oct 14th, 1853.

4. "I can see little difference in the two, where 1 cwt. per acre of this Manure was used against 3 cwt. of guano."—James Carfrae, Farm Manager to James Stewart, Esq., Cairnsmore, Newton Stewart, Wigtownshire, N.B. Oct. 21st, 1853.

5. $7\frac{1}{2}$ cwt. to 6 acres gave Mr. John Graham, Farmer, Beaumont, near Carlisle, "a splendid crop of Turnips," from the Economical Manure alone, which cost 15s. per acre.—Thomas Blacklock, Carlisle. Dec. 5th, 1853.

6. "I used it against two others, and have a splendid crop of Turnips, beating both the others."—Thomas Cubitt, Witton, North Walsham, Norfolk. Nov. 1st, 1853.

7. "Where I applied it the Turnips are much finer than usual."—John Poles, Alwalton Lodge, Peterborough, Northamptonshire. Nov. 30th, 1853.

8. "The fly has not taken them (the Turnips) so much as where guano was used."—Thomas Hatfield, Albion Foundry, Rugeley, Staffordshire.—July 1st, 1853.

9. On Mangold Wurzel, 1 cwt. per acre produced "the best crop I have ever grown."—Wm. C. Peek, Soham, Cambridgeshire. Oct. 4th, 1853.

10. In $1\frac{1}{2}$ cwt. per acre against 3 cwt. of superphosphate, "the 'Economical' was superior."—George Pye, Cublington Madley, Hereford. Jan. 2d, 1854.

11. Where guano and the Economical Manure were used, "it is impossible to tell one from the other."—Wm. Bower, Moorgate House, East Retford, Notts.—Feb. 14th, 1854.

12. "My Swedish Turnips are capital—the best, people tell me, in the whole parish."—Edward Meade, North Walsham, Norfolk. Oct. 26th, 1853.

TESTIMONIALS FOR 1854.

The Company have the satisfaction to state that they are in receipt of most favourable reports of the effect of the Manure this year—two or three are subjoined. The first is from Mr. William Bennett, who may be considered a practical authority on these matters, and whose opinion must have some weight.

To Mr. Coveney.—Sir,—You are aware, I think, that I applied some of your Economical Manure to various crops this spring—on two different fields of Wheat, a piece of Barley, 2 acres of Clover, and on some autumn-set Cabbages. All I can say (and as it is the first year of my using the article) all I ought to say, is, that so far, the improvement in all the crops is most manifest, more especially in the Clover. But even on the Wheat and Barley, although applied invariably where the crop was weakest, its effects are so striking that a person riding along the road cannot but perceive it. I have used it for Mangold Wurzel, and shall do so for Turnips: but as yet, in the former instance, the Mangold is not up, and therefore nothing can be said of it. It is but fair also to add that I have applied it to two compost heaps; in reducing Twitch, Cabbage stalks, and such like, to a useful compound for the land, with layers of horse dung, and, with the exception of the windward side of the heaps, where the Couch Grass or Twitch was laid quite on the outside, the heaps in three weeks became excellent manure. So far, I have never expended 18s. per acre on any crops, after 40 years' experience, with so much effect. I think the agriculturists, to whom I am known, will give me credit for not intentionally misleading them. I write only the result of my own experience. You will immediately send me another ton for my own use, and one for a neighbouring farmer.

Yours truly,

Cambridge, May 15th, 1854. William Bennett.

P.S.—I find 2 heaping bushels per acre of the Manure, with the like quantity of ashes, seems to cost about 18s. per acre, and in this manner we have so far used it.

Manea, near Chatteris, Cambs., May 17th, 1854.

To Mr. B. Coveney.—Sir,—I beg to enclose an order for 24l. 19s., the amount of your account against me for Manure. I should have forwarded this a little earlier, but having used the Manure on 12 acres of Hemp, I waited to see if it had any immediate visible effect. I am happy to say I think it has, as the plant is vigorous and strong.—Yours obediently,

Michael L. Sears.

Halvergate Mills, Acle, near Norwich, May 18th, 1854.

Sir,—I am happy to give you an excellent account of the Manure. Mr. Smith, of Reedham, top-dressed a field of Wheat in the beginning of April; it was very thin and weak; he did not expect a quarter of a crop. The other day he was telling me it was wonderfully improved, and he did not think there was any in the parish looking better; so well satisfied is he with it that he has given me an order for half a ton more for top-dressing Barley, also an order for a friend of his. You are quite at liberty to advertise this, as you cannot speak too highly of it. I shall require two tons instead of one.—Yours faithfully,

B. Coveney, Esq. John Hewitt.

Eastrea, Whittlesea, Cambs., May 19, 1854.

Sir,—I have to inform you that the Wheat is going on well. On part of the ground I used your Manure, on the other part Farm-yard Manure; your Manure is quite equal to the other. I think it a very good application for Wheat. I shall like to try one ton more in the autumn for Wheat.—Yours obediently,

Mr. Coveney. John Hughes.

N.B.—For Turnips and Root Crops generally, where the seed is sown, or the plant out of the ground, and in cases where from any cause it is weak, this Manure, mixed with about its own quantity of earth or ashes, may be put on the surface with great effect, and will be found to speedily force the growth of the plant, and give it an extraordinary vigour; or, as it quickly dissolves, it is not too late to apply it as a top-dressing for Grain Crops, where the plant is sickly or the crop patchy.

Delivered Free on to the Railways in London, Birmingham, or Manchester, at 12l. per Ton, Package included.—All orders promptly executed.

CRYSTAL PALACE, 1854.
GENERAL PUBLICATIONS.

Now ready, the following

OFFICIAL GUIDES and HANDBOOKS, ILLUSTRATIVE OF THE CONTENTS OF THE EXHIBITION.

1. GENERAL GUIDE-BOOK TO THE PALACE AND PARK. With numerous Illustrations and Plans. By Samuel Phillips. 1s.
2. HANDBOOK TO THE EGYPTIAN COURT. With Illustrations and Plans. By Owen Jones and Samuel Sharpe. 6d.
3. HANDBOOK TO THE GREEK COURT. With Illustrations and Plans. By George Scharf, Jun. 6d.
4. HANDBOOK TO THE ROMAN COURT. With Illustrations and Plans. By George Scharf, Jun. 6d.
5. HANDBOOK TO THE ALHAMBRA COURT. With Illustrations and Plans. By Owen Jones. 6d.
6. HANDBOOK TO THE NINEVEH COURT. With Illustrations and Plans. By A. H. Layard, M.P. 6d.
7. HANDBOOK TO THE BYZANTINE COURT. With Illustrations and Plans. By M. Digby Wyatt and J. B. Waring. 8d.
8. HANDBOOK TO THE MEDIÆVAL COURT. With Illustrations and Plans. By M. Digby Wyatt and J. B. Waring. 9d.
9. HANDBOOK TO THE RENAISSANCE COURT. With Illustrations and Plans. By M. Digby Wyatt and J. B. Waring. 8d.
10. HANDBOOK TO THE ITALIAN COURT. With Illustrations and Plans. By M. Digby Wyatt and J. B. Waring. 6d.
11. HANDBOOK TO THE POMPEIAN COURT. With Illustrations and Plans. By George Scharf, Jun. 6d.
12. HANDBOOK TO THE SCHOOLS of MODERN SCULPTURE. By Mrs. Jameson. 6d.
13. AN APOLOGY FOR THE COLOURING OF THE GREEK COURT IN THE CRYSTAL PALACE. By Owen Jones. 6d.
14. HOW TO SEE THE SCULPTURE IN THE CRYSTAL PALACE. By Raffaele Monti. (*In the Press.*)
15. THE PORTRAIT GALLERY OF THE CRYSTAL PALACE. Described by Samuel Phillips. 1s. 6d.
16. HANDBOOK TO THE ETHNOLOGICAL and ZOOLOGICAL DEPARTMENTS. With Illustrations. By Professor Edward Forbes and Dr. Latham. 6d.
17. THE EXTINCT ANIMALS AND GEOLOGICAL ILLUSTRATIONS DESCRIBED. With Plan and Drawings. By Professor Owen. 3d.
18. THE CRYSTAL PALACE INDUSTRIAL DIRECTORY. 3d.

*** *The above are the only books published under the authority of the Company.*

BRADBURY and EVANS, Printers and Publishers to the Crystal Palace Company, 11, Bouverie Street, Fleet Street.

NEWMAN'S "BRITISH FERNS."

This day is published, the Third Edition of

A HISTORY OF BRITISH FERNS. By Edward Newman. With 136 Illustrations. Price 18s., demy 8vo, cloth lettered.—A very few copies in royal 8vo, price 36s.

London: John Van Voorst, 1, Paternoster Row.

Recently published,

A HISTORY of BRITISH MOLLUSCA and their SHELLS. By Professor Ed. Forbes, F.R.S., &c., and Sylvanus Hanley, B.A., F.L.S. Illustrated by a figure of each known animal and of all the shells. Engraved on 203 copper plates. Four Vols. 8vo, 6l. 10s. Royal 8vo, with the plates coloured, 13l.

London: John Van Voorst, 1, Paternoster Row.

Just published, 8vo, with an Illustrative Plate and numerous Woodcuts, 7s. 6d.

PRINCIPLES of the ANATOMY and PHYSIOLOGY of the VEGETABLE CELL. By Hugo Von Mohl. Translated, with the Author's permission, by Arthur Henfrey, F.R.S., &c.

London: John Van Voorst, 1, Paternoster Row.

Post 8vo, sewed, price 1s.

ON WARDIAN CASES for PLANTS, and their Application: the substance of a Lecture delivered at the Royal Institution, on Friday, March 17th, 1854. By Stephen H. Ward, M.D., Lond.

London: John Van Voorst, 1, Paternoster Row.

This day is published, 8vo, price 10s. 6d.,

PRODROMUS FAUNÆ ZEYLANICÆ; being contributions to the Zoology of Ceylon. By E. F. Kelaart, M.D. Edin. F.L.S. F.Z.S. Staff Surgeon.

Ceylon: Printed for the Author. London: John Van Voorst, Paternoster Row.

This day is published in 8vo, 10s. 6d., the first volume (embracing the Topography and Botany) of a

NATURAL HISTORY OF THE EASTERN BORDERS. By G. Johnston, M.D. Author of "A History of British Zoophytes," &c.

London: John Van Voorst, 1, Paternoster Row.

Just Published, Vol. II., comprehending 46 Plates, 4to, price 4l. 4s.,

THE POWERS of the CREATOR DISPLAYED in the CREATION; or Observations on Life amidst the various forms of the Humbler Tribes of Animated Nature; with Practical Comments and Illustrations. By Sir Graham Dalyell, Knt. and Bart. In two volumes, containing numerous Plates of Living Subjects, finely coloured.

London: John Van Voorst, 1, Paternoster Row.

THE MICROSCOPE.

On June 1st, price 2s. 6d., Part II. of

THE MICROGRAPHIC DICTIONARY: a Guide to the Examination and Investigation of the Structure and Nature of Microscopic Objects. By J. W. Griffith, M.D., F.L.S., &c., and Arthur Henfrey, F.R.S., F.L.S., &c. In 12 Half-Crown Monthly Parts, Illustrated by 40 Plates, and 900 Engravings on Wood.

London: John Van Voorst, 1, Paternoster Row.

Printed by William Bradbury, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and Frederick Mullett Evans, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be addressed to the Editor.—Saturday, June 17, 1854.

THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley

No. 25.—1854.] SATURDAY, JUNE 24. [PRICE 6d.

INDEX.

Adamia versicolor .... 404 c
Aeration .... 405 b
Agri. Soc. of England .... 411 c
Amaryllis .... 405 b
Anacharis alsinastrum .... 406 a
Animals, cod-liver oil for............ 412 c
Books noticed .... 407 b
Calendar, horticultural............ 408 a
— agricultural .... 413 a
Cattle, cod-liver oil for............ 411 c
Cheltenham Hort. Society............ 407 a
Cod-liver oil............ 412 c
College, agricultural .... 410 a
Crops, culinary .... 405 c
— to interline .... 410 c
— in West Somerset .... 411 b
— in East York .... 411 b
Farm, management of............ 411 c
Fettercairn Agri. Society .... 412 a
Forests, Royal .... 403 b
Frost, effects of .... 405 c
Gardeners' Benevolent Institution .... 405 b
Kennedy's (Right Hon. T. F.) Correspondence with Lord J. Russell .... 407 c
Kennington Park .... 405 a
Lime, action of............ 411 c
Manure, "economical"............ 409 b
— portable .... 412 c
Pathology, vegetable............ 404 b
Pears, new............ 404 c
Phelipaea............ 405 c
Pig, the .... 410 b
Plants, effects of water on .... 405 c
Ploughing, steam .... 412 a
Potato and spring frosts............ 405 b
Ranunculus, the .... 407 b
Reaping machines .... 413 a
Royal Botanic Soc. .... 406 a
Timber, to measure .... 405 c
— to preserve............ 410 b
Vegetable pathology .... 404 b
Ventilation .... 405 b
Wages in East Lothian............ 413 a
Wasps............ 406 a
Wheat culture............ 409 c
— in Dorsetshire .... 411 b
— rust in............ 411 c
Winter in Lancashire .... 405 c
Woods and forests .... 403 b
Yew, poisonous .... 405 c

HORTICULTURAL SOCIETY OF LONDON.—His GRACE THE PRESIDENT has kindly directed the Grounds of Chiswick House to be opened for the reception of the Visitors to the Society's Gardens at the NEXT EXHIBITION, on SATURDAY, the 8th JULY. Tickets are issued at this Office, price 5s.; or at the Garden, in the afternoon of the 8th July, at 7s. 6d. each.—21, REGENT STREET, LONDON.

MAIDSTONE HORTICULTURAL SOCIETY.—The following Prizes (open to all England), will be given at the Exhibition of the Maidstone Horticultural Society, on THURSDAY, June 29. For best 8 Stove or Greenhouse Plants, 5l.; Second, 3l.; Third, 1l. For best six Exotic Orchids, 2l.; Second, 1l. For best collection of 36 Roses, in single trusses, 2l.; Second, 1l. Entrance, Stove Plants, 7s. 6d.; Roses and Orchids, 5s.
Further particulars will be given on application to the Secretary, Maidstone. J. G. SMITH.

KENILWORTH.—A Grand HORTICULTURAL and FLORICULTURAL EXHIBITION will be held (by permission) among the RUINS OF KENILWORTH CASTLE, on WEDNESDAY, July 5, when Prizes to the amount of nearly 80l. will be awarded for collections and single specimens of Stove and Greenhouse Plants, Cut Flowers, Fruits, Vegetables, &c. This Exhibition will be open to all Exhibitors without entrance fee, limitation, or other restriction, subject only to such conditions as seem necessary to secure order and equal opportunity of reward and distinction to all competitors.
Schedules and every particular may be had on application to J. CHEYNE, Secretary, Offchurch, near Leamington Spa.

NORFOLK AND NORWICH HORTICULTURAL SOCIETY.—The ROSE SHOW will be held at the BRACONDALE GARDENS, Norwich, on WEDNESDAY next.
Amongst others, Prizes of 3l., 2l., 1l., 15s., and 10s. will be offered for collections of 36 varieties, open to all Nurserymen and such Amateurs as are Subscribers. No entrance fee.
Norwich, June 24. ARTHUR PRESTON, Hon. Sec.

MANCHESTER BOTANICAL AND HORTICULTURAL SOCIETY.—The third Exhibition of PLANTS, FLOWERS, FRUITS, AND VEGETABLES, will be held at the SOCIETY'S GARDENS, OLD TRAFFORD, on WEDNESDAY next, June 28th, when productions may be exhibited from any part of the kingdom. Schedules of Prizes to be obtained on applying to the Secretary.
(By order), JOHN SHAW, Secretary.
Council Room, Princess Street, June 22d.

WILL CLOSE ON FRIDAY, JUNE 30.

THE EXHIBITION OF THE WORKS OF THE STUDENTS OF THE SCHOOLS OF ART, both Local and Metropolitan, now open Daily at Gore House, Kensington, WILL CLOSE on June 30.—Admission Free.

NEW BEDDING CALCEOLARIAS.

EDWARD GEORGE HENDERSON & SON, of the Wellington Nursery, St. John's Wood, London, are now sending out their splendid Bedding Calceolarias—Loveliness, Masterpiece, Matchless, Superba, and Surprise. These (the finest and most distinct in this class) were purchased of Mr. Constantine, who exhibited them at Chiswick in 1853. Price 7s. 6d. each, or 30s. the set, with the usual allowance to the Trade. The Plants are fine bushy stuff.

CINERARIA SEED.

EDWARD GEORGE HENDERSON AND SON, Wellington Nursery, St. John's Wood, London, are now prepared to forward, by post, new Cineraria Seed saved this season. More than usual care has been bestowed in gathering from the choicest named varieties, including the new ones sent out last year; all the light varieties have been discarded, consequently from the above seed we anticipate none but high coloured flowers. Per packet, 2s. 6d. and 5s. each.
Our beautiful collection of CALCEOLARIAS can now be seen in flower at the Nursery, and orders for seed booked, to be sent when ready. Per packet, first quality, 5s.; second quality, 2s. 6d.

MARKET FOR EARLY POTATOES, PEAS, FRUIT, &c.

A CARD.

HUGHES AND NEWBURY'S (SALESMEN, Covent Garden Market) present prices are, Round Potatoes, 16s. and 17s. per cwt.; Kidneys, 18s. and 20s. Peas 3s. 6d. per bushel. H. & N. find basket for Potatoes consigned to them (carriage free to any railway station) at an extra charge of 7s. 6d. per ton; or guarantee the return of growers' baskets.—June 24.

BENJAMIN R. CANT begs to offer the following new FUCHSIAS and VERBENAS at the reduced prices annexed, package and carriage free to any station on the Eastern Counties Railway when the order amounts to 1l. New Fuchsias at 2s. 6d. each, or 20s. the set of nine:—Autocrat, Clio, Duke of Wellington, Elegans, Omega, Queen of Hanover, Trentham, Vanguard, and Standish's Perfection.
New Verbenas at 1s. 6d. each, or the set of 18 for 21s.:—Ariosto, Attraction, Annie Laurie, Bridesmaid, Beauty, Beauty of the Garden, Diadem, Ida, Mrs. Gerrard Leigh, Mrs. D. Tysson, Matchless, Madonna, Marie Antoinette, Ne Plus Ultra, Robin Hood, Rouge et Noir, President, and Orion.
St. John's Street Nursery, Colchester.

CHIVAS'S ORANGE JELLY TURNIP.

SUTTON AND SONS, Seed Growers, Reading, can supply new Seed direct from Mr. Chivas at the same price as at Chester; they have also themselves grown some excellent Seed from selected Orange Jelly Turnips raised last year from seed received of Mr. Chivas, which they can strongly recommend. Purchasers of large quantities will be supplied liberally. Particulars, on application.—Address JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

THE FORWARDEST TURNIP KNOWN.

SUTTON'S EARLY SIX WEEKS TURNIP should now be sown for feeding off early. Excellent new Seed 1s. 3d. per pound, or 7s. per gallon.
Mr. K. HICKMAN, of Brompton House, near Newbury, in a letter dated February 1st, says:—
"I must mention the 'Six Weeks Turnip' as the best sort I have ever seen for earliest and latest sowing. I have grown them several years, and have invariably found them to produce more feed in less time than any other Turnip. I have had them after Wheat of a good size, within six weeks from the time of sowing."
N.B. Carriage free, except parcels under 20s. value.—Address, J. SUTTON and SONS, Seed Growers, Reading, Berks.

CHOICE CINERARIA AND CALCEOLARIA SEEDS.

LUCOMBE, PINCE, AND CO. have now ready for sending out Seeds of their very superior CINERARIAS AND CALCEOLARIAS, which have been saved with great care from the finest varieties. The great satisfaction which their Cinerarias and Calceolarias have given for several successive years enables them to recommend their Seed of the present season with much confidence.
Packets of each, sealed and warranted by them, at 2s. 6d., free by post.—Exeter Nursery, Exeter, June 24.

BEAUTIFUL HARDY PLANT, GYNERIUM ARGENTEUM.

LUCOMBE, PINCE, AND CO. have now for sale a few strong established specimens of this highly ornamental plant. The leaves, which are more than 6 feet in length, grow in tussocks, thereby producing a very fine effect, and from the midst of these numerous flower-stems arise to the height of from 6 to 8 feet, surmounted by graceful panicles of inflorescence nearly 2 feet long, which resemble beautiful waving plumes of silvery feathers: few plants are more elegant than this gigantic Grass, which, being perfectly hardy, is certainly a great acquisition to the ornamental grounds of this country, and it is also exceedingly easy of culture.
Size and price may be had on application to L., P., & Co., Exeter Nursery, Exeter.—June 24.

ROSES.

A. PAUL & SON respectfully invite the attention of Amateurs and Lovers of ROSES in general to the unrivalled collection growing at the CHESHUNT NURSERIES, which will be in finest condition the first and second weeks of July. Trains of the Eastern Counties Railway, from Shoreditch to Waltham or Cheshunt, almost hourly.

OSBORN AND SONS have the pleasure to acquaint the public that they are now prepared to send out the following new plants:—

OXYLOBIUM OSBORNI.
This beautiful new Oxylobe obtained the Large Silver Medal at the Chiswick Exhibition in June, 1853. From its graceful habit, and bearing its bright orange-coloured flowers in such abundance, it will, we have no doubt, become a general favourite. Price 10s. 6d. each.

LYSIMACHIA LESCHENAULTI.
An exceedingly pretty plant, with dense heads of pink flowers, raised from seeds received from the Neilgherry Hills; it is a most abundant bloomer, and easy of cultivation. It was awarded the second prize for new plants at the Regent's Park, June 1854. Price 5s. each.

PENTAS ROSEA.
A decided improvement on the Pentas carnea, having much darker coloured flowers. Price 3s. 6d. each. The usual discount to the trade.—Fulham Nursery, near London, June 24.

BEDDING PLANTS, &c.—ALL IN POTS, STRONG AND FINE.

The price per 100 for quantities not less than 50.
100 Verbenas, in 30 choice vars., 24s.; 3s. 6d. per doz.
20 ,, of 20 best new vars. of 1853, 20s.
100 Petunias, in 25 choice vars., 28s.; 4s. per doz.
10 ,, of 10 best new vars. 1853, 10s.
100 Fuchsias, in 50 choice vars., 32s.; 4s. to 6s. per doz.
15 ,, of 15 best new vars. of 1853, 25s.
100 Anagallis, best blue and scarlet, 2 vars., 28s.; 4s. per doz.
100 Heliotropes, 28s.; 4s. per dozen.
100 ,, in 8 fine vars., 40s.; 6s. per doz.
100 Chrysanthemums, in 100 choice vars., of large flowering and Pompone sorts, 5s. to 7s. 6d. per doz.
10 ,, best new large-flowering vars. of 1853, 10s.
21 ,, best new Pompone vars. of 1853, 20s.; 12 for 12s.
100 Dahlias, in 50 choice show vars., 35s.; 5s. to 9s. per doz.
100 ,, in 30 choice fancy vars., 35s.; 5s. to 9s. per doz.
12 ,, best new show vars. of 1853, 21s.
10 ,, best new fancy of 1853, 18s.
100 Herbaceous Plants, in 100 fine and showy vars., 30s.
100 ,, ,, in 100 ditto, including new vars., 50s.
25 Rock Plants, in 25 fine vars., 12s.
24 Dwarf Rock Cistus, in 24 splendid vars., 15s.
50 Phlox, in 50 choice hardy vars., 25s.; 6s. to 9s. per doz.
6 ,, of 6 fine new vars. of 1853, 12s.
24 Geraniums, in 24 choice show vars., 16s.; 12 for 9s.
30 ,, in 30 choice newer vars., 45s.; 12 for 18s.
12 ,, of 12 best new of last season, 44s.
20 ,, FANCY, in 20 choice vars., 14s.; 12 for 9s.
12 ,, ,, in 12 choice newer vars., 18s.
6 ,, ,, of best new of last season, 18s.
Extensive Collections of Stove and Greenhouse Plants. Complete Catalogues free by post for 6 penny stamps.
☞ GOODS CARRIAGE FREE (not under 20s.) to all the London termini, and all stations on the London and Norwich and Colchester Line. Plants added gratis with orders 40s. and upwards.
BASS & BROWN, Seed and Horticultural Establishment, Sudbury, Suffolk.

PLANTS OF CABBAGE, SAVOY, KALE, BROCCOLI, CAULIFLOWER, AND CELERY.

JOHN CATTELL, Westerham, Kent, begs respectfully to inform the public that he has a plentiful supply of Plants of his superior true sorts of the above, which will be forwarded to order on receipt of Postage Stamps or Post Office Order made payable here at the following prices, package included:—All the sorts of Early Cabbage, Savoy, and Kale, including Brussels Sprouts, 6d. per 100; 4s. 6d. per 1000. All the sorts of Autumn and Spring Broccoli, and all the sorts of Celery, 8d. per 100; 5s. 6d. per 1000. Cauliflower, Early and Late, 10d. per 100. Red Cabbage, 1s. per 100; Drumhead, or Cattle Cabbage, 4s. per 1000. Packages of 1000 and upwards delivered free of Carriage to London, and to the Edenbridge Station of the South Eastern Rail.
Seed of Cattell's Dwarf Barnes, and of his superior Dwarf Reliance Cabbage, may be had in packets by post for 12 Penny Stamps per packet; the former containing one ounce as usual, and the latter half an ounce.

NEW VERBENAS.

THOMAS BARNES, having a fine stock of the undernamed, is enabled to offer them at the following reduced prices, viz., 1s. 6d. each, 15s. per dozen, or 25s for two dozen:—
Arthur, Augustine, Ajax, Annie Laurie, Attraction, Ariosta, Arethusa, Beauty, Beauty of the Garden, Brilliant de Vaise, Bouquet Parfait, Canary Bird, Captivation, Diadem, Emily, Eblouisante (best scarlet out), Goliath, Hector (finest purple), Ida, Imperatrice Eugenie, Lutea pallida, Madame de Stael, Madame Schmidt, Madame Binder, Madame Jardine, Madame de la Valiere, Madame Modeste, Mdlle. de Bandinot, Mdlle. de Frileuse, Maria Louiza, Marie Antoinette, Madonna B, Madonna H, Matchless, Mrs. F. G. Caley, Mrs. Gerard Leigh, Mrs. D. Tysson, Nima, Ne Plus Ultra, Othello, Orion, Pompey, President, Princesse Rousseau, Purple Perfection, Reine des Amazones, Rouge et Noir, Robin Hood, Sulphur Model, Triomphe de Chartrum, Vicomte de Belival, William Barnes.
⁂ Good border Dahlias, 25s. per 100.
Dane Croft Nurseries, Stowmarket.

GOOD FREE-FLOWERING ORCHIDS.

THOMAS JACKSON AND SON beg to offer the following:—Acineta Barkeri, Acropera Loddigesi, Cypripedium insigne, Dendrobium chrysanthum, D. Jenkinsi, D. moschatum, D. nobile, D. Pierardi, D. pulchellum, Epidendrum aurantiacum, E. ciliare, Laelia autumnalis, Lycaste cruenta, L. Skinneri, Maxillaria Harrisoni, M. picta, Oncidium altissimum, O. Cebolleti, O. flexuosum, O. leucochilum, O. macropterum, Phaius albus, P. grandifolius, Rodriguezia planifolia, Stanhopea insignis major, S. oculata, S. tigrina major.
T. J. & SON, having a fine Stock of healthy plants of good Orchids suited for amateurs commencing a collection, will be glad to furnish 12 distinct kinds from the above, selected by T. J. & Son, for 42s.; 12 selected from the above by the purchaser, 63s. Many of the more rare Orchids at equally low prices.
Kingston, near London.

GERANIUMS.—Large Surplus Stock of Choice Varieties. Any of the following 9s. per dozen, or the set of 24 for 16s.: strong for immediate flowering.—Alderman, Beauty of Montpelier, Belle of the Village, Centurion, Crusader, Conspicuum, Commissioner, Elegans, Emily, Falstaff, Field Marshal, Generalissimo, Gulielma, Gustavus, Herald, Norah Magnificent, Nandee, Prince of Orange, Pearl, Rosa, Star, Tyrian Queen, Virgin Queen, Windsor Castle.
FANCY VARIETIES.—Any of the following, 9s. per dozen or the set of 20 for 14s.—Beauty of Winchester, Delicata, Electra, Exquisite, Fairy Queen, John Improved, Jenny Lind, Le Belle de Africana, Lady F. Hastings, Maid of Anjou, Magnifica, Mazeppa Superb, Marian, Ne Plus Ultra, Oderata Superba, Prince Albert Reine de Fleurs, Statiaski, Village Maid, Zelia.
BASS AND BROWN,
Seed and Horticultural Establishment, Sudbury, Suffolk.

CHOICE NEW FUCHSIAS, VERBENAS, AND PETUNIAS.

HENRY WALTON, FLORIST, &c., Edge End, Marsden, near Burnley, begs to state that he will be prepared to offer the following in nice healthy plants at the very reduced prices annexed.
FUCHSIAS.—Autocrat, Charmer, Vanguard, Queen of Hanover, Elegans, Omega, Clio, Macbeth, Duke of Wellington, Trentham, Othello, Perfection, Standish, Magnifica, Telegraph, Henry Monteith, Globosa Splendens, Grandissima, Mr. Charles Palmer, Admiral, and Monarch. The above 2s. 6d., or 21s. per dozen, post free, first week in July.
VERBENAS.—Mrs. D. Tysson, Annie Laurie, President, Rouge et Noir, Mrs. Gerard Leigh, Bridesmaid, Canary Bird, Magnet, Captivation, Lord Mayor, Ajax, Emily, Caliban, Climax, Angelina, Electra, Islington Rival, Nobilissima, Forget-Me-Not, Triumph, Queen, Scarlet King, Magnificent, Zaria, Purple Perfection, Madonna, Bouquet parfait, Sulphur Model, Prince of Orange, Sarah, King of Scarlets, Jerome, Beauty, Red Rover, Conqueror of Europe, Ludonies, Formosa Elegans, Vicomtesse de Belleval, Star, Iver Rival, Unique, Sir Charles Napier, Iver Beauty, Delicata, Beauty of the Garden, and Viscomte de Barry. The above 1s. 6d. each, or 12s. per dozen, post free; or two dozen for 1l., now ready.
PETUNIAS.—Bixio, Juliet, Picturata, Rosea Superb, Silver Queen, Sappho, Surprise, Distinctus, Elizabeth, Formosa, Pencillata, Rotunda, and Novelty. The above 1s. 6d. each, or 15s. per dozen, post free, first week in July.
Now ready, plants of all the Fuchsias of last season, 1s. each, or 9s. per dozen. Older varieties, 6s. per dozen.
Thirty varieties of choice Lilliputienne Chrysanthemums recommended in Turner's Florist as the best out, 1s. each, or the set of 30 for 18s. Older varieties, 6s. per dozen.
CHRYSANTHEMUMS.—Show varieties 4s. 6d. and 6s. per dozen.
ACHIMENES.—The following three new varieties 2s. 6d. each, post free:—Sir Trecherne Thomas, Cherita, Louis Van Houtte. Older varieties, 9s. per dozen.

Begonia Prestoniensis	... ...	1s. 6d. and 2s. 6d.	each.
Hexacentris mysorensis	... ...	1 6 and 2 6	,,
Cissus discolor	... ...	1 6	,,
Plectranthus concolor picta	...	1 6	,,
Thyrsacanthus rutilans	... ...	3 6	,,
Streptocarpus biflorus	... ...	3 6	,,

Descriptive list of the above may be had for one stamp. Orders executed in rotation as received. It is respectfully requested that all orders be accompanied with a Post-office order (unless reference is given) payable at Marsden, Lancashire.

ROYAL BOTANIC GARDENS, REGENT'S PARK.

LIST OF PRIZES AWARDED AT THE EXHIBITION, HELD ON WEDNESDAY, JUNE 21, 1854.

PLANTS AND FRUIT.

EXTRA GOLD MEDAL.

To Mr. J. May, Gardener to H. Colyer, Esq., Dartford, Kent, for 16 Stove and Greenhouse Plants.
To Mr. B. S. Williams, Gardener to C. B. Warner, Esq., Hoddesdon, for 20 Exotic Orchids.

LARGE GOLD MEDAL.

To Mr. Green, Gardener to Sir E. Antrobus, Bart., Lower Cheam, Surrey, for 16 Stove and Greenhouse Plants.
To Mr. Woolley, Gardener to H. B. Ker, Esq., Cheshunt, Herts, for 20 Exotic Orchids.

MEDIUM GOLD MEDAL.

To Mr. Speed, Gardener, Edmonton, for 16 Stove and Greenhouse Plants.
To Messrs. Fraser, Nurserymen, Lea Bridge Road, Leyton, Essex, for 12 Stove and Greenhouse Plants.
To Mr. Frost, Gardener to E. L. Betts, Esq., Preston Hall, Maidstone, for 10 Stove and Greenhouse Plants.
To Mr. Blake, Gardener to J. H. Schrœder, Esq., Stratford Green, for 20 Exotic Orchids.
To Mr. Hume, Gardener to R. Hanbury, Esq., Poles, Ware, for 12 Exotic Orchids.
To Messrs. Lane, Berkhampstead, for 10 Roses in pots.

GOLD MEDAL.

To Messrs. Rollisson & Sons, Tooting, Surrey, for 12 Stove and Greenhouse Plants.
To Mr. G. Barter, Gardener to A. Bassett, Esq., Stamford Hill, for 10 Stove and Greenhouse Plants.
To Messrs. Fraser, Lea Bridge Road, Leyton, for 10 Cape Heaths.
To Mr. J. May, Gardener to H. Colyer, Esq., Dartford, Kent, for 8 Cape Heaths.
To Mr. Carson, Gardener to W. F. G. Farmer, Esq., Nonsuch Park, Cheam, for 12 Exotic Orchids.
To Mr. Turner, Royal Nursery, Slough, for 12 Pelargoniums.
To Mr. Nye, Gardener to E. Foster, Esq., Clewer, near Windsor, for 10 Pelargoniums.
To Mr. Francis, The Nurseries, Hertford, for 10 Roses in pots.
To Mr. M'Ewen, Gardener to the Duke of Norfolk, for a Miscellaneous Collection of Fruit.

LARGE SILVER GILT MEDAL.

To Mr. Gilham, Gardener to J. R. Scott, Esq., Stamford Hill, for 16 Stove and Greenhouse Plants.
To Mr. Clarke, Nurseryman, Streatham, for 12 Stove and Greenhouse Plants.
To Mr. Williams, Gardener to Miss Traill, Hayes' Place, Bromley, Kent, for 10 Stove and Greenhouse Plants.
To Mr. Taylor, Gardener to J. Coster, Esq., Hill House, Streatham, for 6 Stove and Greenhouse Plants.
To Mr. Gedney, Gardener to Mrs. Ellis, Hoddesdon, for 12 Exotic Orchids.
To Mr. Green, Gardener to Sir E. Antrobus, Bart., Cheam, for 6 Exotic Orchids.
To Mr. Dobson, Woodlands Nursery, Isleworth, for 12 Pelargoniums.
To Mr. Holder, Gardener to the Rev. E. Coleridge, Eton College, for 10 Pelargoniums.
To A. Rowland, Esq., Lewisham, for 6 Roses in pots.

LARGE SILVER MEDAL.

To Mr. O. Rhodes, Gardener to J. Philpott, Esq., Stamford Hill, for 6 Stove and Greenhouse Plants.
To Mr. Green, Gardener to Sir E. Antrobus, for 6 Tall Cacti.
To Messrs. Rollisson, Tooting, for 10 Cape Heaths.
To Mr. Williams, Gardener to Miss Traill, Hayes' Place, Bromley, for 8 Cape Heaths.
To Mr. Roser, Gardener to J. Bradbury, Esq., Streatham, for 6 Cape Heaths.
To Mr. Iveson, Gardener to the Duke of Northumberland, Syon House, for 6 Exotic Orchids.
To Mr. Turner, Royal Nursery, Slough, for 6 Fancy Pelargoniums.
To Mr. Robinson, Gardener to J. Simpson, Esq., Thames Bank, Pimlico, for 6 Fancy Pelargoniums.
To Mr. Turner, Slough, for 6 New Pelargoniums.

SILVER GILT MEDAL.

To Mr. Bray, Gardener to Sir I. L. Goldsmid, Regent's Park, for 6 Fuchsias.
To Mr. Gaines, Nurseryman, Battersea, for 12 Pelargoniums.
To Mr. Robinson, Gardener to J. Simpson, Esq., Thames Bank, Pimlico, for Pelargoniums.
To Mr. Gaines, Nurseryman, Battersea, for 6 Fancy Pelargoniums.
To Mr. Windsor, Gardener to A. Blyth, Esq., Hampstead, for 6 Fancy Pelargoniums.
To Mr. Sage, Gardener to W. R. Robinson, Esq., Hill House, Acton, for 6 Roses in pots.
To Mr. Paul, Cheshunt, for 50 Cut Roses.
To A. Rowland, Esq., Lewisham, for 25 Cut Roses.
To Mr. Collinson, Gardener to the Marquis of Westminster, Eaton Hall, Cheshire, for 1 Pine-apple.
To Mr. James, Gardener to C. Hanbury Leigh, Esq., Pontypool Park, Glamorgan, for a Queen Pine-apple.
To Mr. Carson, Gardener to W. F. G. Farmer, Esq., Nonsuch Park, Cheam, Surrey, for 10 Stove and Greenhouse Plants.
To Mr. Over, Gardener to W. M'Mullen, Esq., Clapham, for 6 Stove and Greenhouse Plants.
To the same, for 4 Ixoras.
To Mr. Clarke, Nurseryman, Streatham Place, Brixton Hill, for 10 Cape Heaths.
To Mr. Taylor, Gardener to J. Coster, Esq., Streatham, for 6 Cape Heaths.
To Mr. Clarke, Gardener to Mrs. Webb, Hoddesdon, for 12 Exotic Orchids.
To Mr. Henderson, Gardener to Sir G. H. Beaumont, for 1 dish of Black Hamburgh Grapes.
To Mr. Frost, Gardener to E. L. Betts, Esq., Preston Hall, for 1 dish of Black Hamburgh Grapes.
To T. Bore, Esq., Springfield, Berks, for 1 dish of Black Prince Grapes.
To Mr. Bailey, Gardener to T. Drake, Esq., for 1 dish of Muscadine Grapes.
To Mr. Turnbull, Gardener to the Duke of Marlborough, Blenheim, Oxon, for a Pine-apple.
To Mr. Frost, Gardener to J. L. Betts, Esq., for 12 lbs. of Grapes.
To Mr. Turnbull, for one dish of Muscat Grapes.
To Mr. Henderson, Gardener to Sir G. H. Beaumont, for a dish of Frontignan Grapes.
To Mr. Snow, Gardener to Earl de Grey, West Park, Beds, for a dish of Peaches.
To Mr. Collinson, Gardener to the Marquis of Westminster, Eaton Hall, Cheshire, for a dish of Peaches.
To Mr. Henderson, for a dish of Nectarines.
To Mr. Evans, for a dish of Nectarines.

SILVER MEDAL.

To Mr. Stones, Gardener to W. Irving Hall, Esq., for 6 Calceolarias.
To Messrs. E. G. Henderson, Wellington Road, for 6 Calceolarias.
To Mr. Ward, Gardener to G. Bishop, Esq., Regent's Park, for 6 Fuchsias.
To Mr. Clarke, Nurseryman, Streatham, for 12 Pelargoniums.
To Mr. Weir, Gardener to G. Hodgson, Esq., The Elms, Hampstead, for 10 Pelargoniums.
To the same, for 6 Fancy Pelargoniums.
To Mr. Wilkinson, Rose Nursery, Ealing, for 50 Cut Roses.
To Mr. Terry, Gardener to Lady Puller, Youngsbury, for 25 Cut Roses.
To Mr. Henderson, Gardener to Sir G. H. Beaumont, Coleorton, Hall, Leicestershire, for a box of Nectarines.
To the same, for a box of Peaches.
To Mr. Bailey, Gardener to J. Drake, Esq., for a Providence Pine-apple.
To Mr. Jarvis, Gardener to J. Ruck, Esq., Croydon Lodge, Croydon, for 10 Stove and Greenhouse Plants.
To Mr. Roser, Gardener to J. Bradbury, Esq., Bedford House, Streatham, for 6 Stove and Greenhouse Plants.
To Mr. J. May, Gardener to H. Colyer, Esq., Dartford, for 4 Ixoras.
To Mr. Over, Gardener to W. M'Mullen, Esq., Clapham, for 6 Cape Heaths.
To Mr. Hume, Gardener to R. Hanbury, Poles, Ware, for a new terrestrial Orchid from Africa.
To Mr. Frost, Gardener to J. L. Betts, Esq., Preston Hall, for Begonia Prestoniensis superba.
To Messrs. Standish & Noble, for Clematis lanuginosa pallida.
To Mr. Fletcher, Gardener to Dr. Young, Kennington Lane, for 12 Exotic Ferns.
To the same for 30 British Ferns.
To Messrs. Mitchell & Co., Brighton, for 3 dishes of Grapes.
To Mr. Henderson, Gardener to Sir G. H. Beaumont, for 3 dishes of Grapes.
To Mr. Parr, Gardener to J. Barker, Esq., Gloucester, for a dish of Frontignan Grapes.
To Mr. Bain, Gardener to J. Cooke, Esq., Harrow Weald, for one dish of Frontignan Grapes.
To Mr. Ruffett, Gardener to Lady Palmerston, for a dish of Peaches.
To Mr. Chapman, Gardener to J. B. Glegg, Esq., for a ditto.
To Mr. Forbes, Gardener to the Duke of Bedford, for a dish of Peaches.
To Mr. Wright, Gardener to J. Elger, Esq., Putney, for a dish of Peaches.
To Mr. Chapman, for a dish of Nectarines.
To Mr. Henderson, for a dish of Nectarines.
To Mr. Abbott, Gardener to J. Dent, Esq., Wetherby, York, for a dish of Nectarines.
To Mr. Robinson, Gardener to Lord Boston, Hedsor, for a Providence Pine-apple.
To Mr. Jones, Gardener to Sir C. Guest, Esq., Dowlais House, Glamorgan, for a Queen Pine-apple.
To Mr. Davis, Oakhill, Barnet, for a Pine-apple.
To Mr. Clarke, Gardener to Mrs. Webb, Hoddesdon, for a dish of Black Hamburgh Grapes.
To Mr. Forbes, Gardener to the Duke of Bedford, Woburn, for a dish of Black Hamburgh Grapes.
To Mr. Lushey, for a dish of Black Prince Grapes.
To Mr. Williams, Gardener to C. B. Warner, Esq., for one dish of Muscadine Grapes.
To Mr. Forbes, Gardener to the Duke of Bedford, for a dish of Muscat Grapes.

SMALL SILVER MEDAL.

To Mr. Smith, Gardener to J. Anderson, Esq., Regent's Park, for Correct Labels.
To Mr. Rhodes, Gardener to J. Philpotts, Esq., Stamford Hill, for 6 Fuchsias.
To Mr. Barter, Gardener to A. Bassett, Esq., Stamford Hill, for 6 Fancy Pelargoniums.
To Mr. Turner, Royal Nursery, Slough, for 24 Cut Pinks.
To the same, for 36 Cut Pansies.
To Mr. Baker, Woolwich, for 22 Cut Pinks.
To Mr. Holder, Gardener to Rev. E. Coleridge, Eton College, for 24 Cut Pinks.
To Mr. Gaines, Battersea, for Seedling Pelargonium "Conqueror."
To Mr. Hume, Gardener to R. Hanbury, Esq., for 25 Cut Roses.
To Mr. Terry, Gardener to Lady Puller, Youngsbury, for 24 Cut Roses.
To Mr. Gaines, Battersea, for 6 French Pelargoniums.
To Mr. R. Cestar, Benson, Oxon, for Cut Ranunculuses.
To Messrs. Lane, for Fruit Trees in Pots.
To Mr. Hamp, Gardener to J. Thorne, Esq., Mawbey House, South Lambeth, for 10 Stove and Greenhouse Plants.
To Mr. Morris, Gardener to Coles Child, Esq., the Palace, Bromley, Kent, for 10 Stove and Greenhouse Plants.
To Mr. Hamp, Gardener to J. L. Thorne, Esq., Mawbey House, Lambeth, for 4 Ixoras.
To Mr. Jarvis, Gardener to J. Ruck, Esq., Croydon, for 6 Cape Heaths.
To Mr. Rhodes, Gardener to J. Philpotts, Esq., Stamford Hill, for 6 Cape Heaths.
To Messrs. Osborne, Fulham, for Lysimachia Leschenaulti.
To Messrs. E. G. Henderson, Wellington Road, for Aphelandra squarrosa citrina.
To M. Van Houtte, Ghent, for Begonia xanthina Gandavensis.
To Messrs. Standish & Noble, for Hæmanthus Rooperi.
To Mr. Woolley, Gardener to H. B. Ker, Esq., Cheshunt, for 12 Exotic Ferns.
To Mr. B. S. Williams, Gardener to C. B. Warner, Esq., for 30 British Ferns.
To Dr. Allchin, 7, Pembridge Villas, Westbourne Grove, for 30 British Ferns.
To Mr. Harrison, Weybridge, for 12 lbs. of Grapes.
To the same, for a dish of Black Hamburgh Grapes.
To Mr. Patterson, Gardener to Baroness Wenman, Thame Park, Oxon, for a dish of Black Hamburgh Grapes.
To Mr. Tegg, Gardener to A. Prior, Esq., Dover House, Roehampton, for a dish of Black Hamburgh Grapes.
To Mr. Hughes, Gardener to J. Eaton, Esq., Shacklewell, for a dish of Black Hamburgh Grapes.
To Mr. Constantine, Gardener to C. B. Mills, Esq., Hillingdon, Uxbridge, for a dish of Black Prince Grapes.
To Mr. Busby, Gardener to J. Crawley, Esq., for a dish of Muscadine Grapes.
To Mr. Forsyth, Gardener to Baron Rothschild, for a dish of Muscats.
To Mr. Patterson, for a dish of Peaches.
To Mr. Abbott, Gardener to J. Dent, Esq., Wetherby, Yorkshire for a dish of Peaches.
To Mr. Brown, for a dish of Peaches.
To Messrs. Standish and Noble, Bagshot, for 3 New Berberis.
To Mr. M'Ewen, Gardener to the Duke of Norfolk, for 4 Pine-apples.
To Mr. Constantine, Gardener to C. B. Mills, Esq., Hillingdon, Uxbridge, for a box of Nectarines.
To Mr. Hamp, Gardener to J. Thorne, Esq., South Lambeth, for a Pine-apple.
To Mr. Dods, Gardener to Sir J. Cathcart, Englefield Green, for a Queen Pine-apple.
To Mr. Terry, Gardener to Lady Puller, for a Pine-apple.
To Mr. Chapman, Gardener to J. B. Glegg, Esq., Cheshire, for a Green-fleshed Melon.
To Mr. May, Gardener to H. Colyer, Esq., Dartford, for a Scarlet-fleshed Melon.
To Mr. Tegg, Gardener to A. Prior, Esq., Dover House, Roehampton, for a dish of Nectarines.
To Mr. Bore, Springfield, Berks, for a dish of Nectarines.
To Mr. Snow, Gardener to Earl de Grey, for a dish of Black Cherries.
To Mr. Patterson, for a dish of Black Cherries.
To Mr. Davis, Barnet, for a dish of Black Cherries.
To Mr. Snow, for a dish of White Cherries.
To Mr. M'Ewen, for 2 dishes of Strawberries.
To Mr. Iveson, for fruit of Carica papaya.

BRONZE MEDAL.

To Messrs. Fraser, Lea Bridge, for Correct Labels.
To Mr. Bragg, Star Nursery, Slough, for 24 Cut Pinks.
To Mr. Bragg, for 36 Cut Pansies.
To Mr. James, Gardener to W. F. Watson, Esq., Isleworth, for 24 Cut Pansies.
To Mr. Busby, Gardener to J. Crawley, Esq., Stockwood Park, Luton, for 25 Cut Roses.
To Mr. Morrison, Gardener to W. Parker, Esq., Ware Park, Herts, for 24 Cut Roses.
To M. Van Houtte, Ghent, for Aphelandra Leopoldi.
To the same, for Begonia xanthina marmorea.
To F. Wigan, Esq., for a collection of British Plants botanically arranged.
To Mr. Monro, Gardener to Mrs. Oddie, Colney House, St. Alban's, for a Green-fleshed Melon.
To Mr. Frost, Gardener to E. L. Betts, Esq., Preston Hall, Kent, for a Green-fleshed Melon.
To M. Van Houtte, Ghent, for Achimenes gigantea.
To the same, for a Bilbergia sp.
To Messrs. Fraser, Lea Bridge Road, for Gordonia javanica.
To Mr. Gedney, Gardener to Mrs. Ellis, Hoddesdon, for 12 Exotic Orchids.
To Mr. Smith, Gardener to J. Anderson, Esq., Regent's Park, for 30 British Ferns.
To Mr. Williams, Gardener to C. B. Warner, Esq., for 1 dish of Black Hamburgh Grapes.
To Mr. Lushey, Gardener to J. Hill, Esq., of Streatham, for 1 dish of Black Hamburgh Grapes.
To Mr. Smith, Gardener to S. Ricardo, Esq., for 1 dish of Black Hamburgh Grapes.
To Mr. Hill, Gardener to R. Sneyd, Esq., Stafford, for 1 dish of Black Prince Grapes.
To the same, for 1 dish of Peaches.
To Mr. Watson, Ealing, for 1 dish of Peaches.
To Mr. Iveson, Gardener to the Duke of Northumberland, Syon House, for 1 dish of Peaches.
To Mr. Smith, Gardener to S. Ricardo, Esq., Totness Park, for a Green-fleshed Melon.
To Mr. McEwen, for a Green-fleshed Melon.
To Mr. Whiting, the Deepdene, Dorking, for a do.
To Mr. Jupp, Gardener to -- Headlands, Esq., Woodlands, Bedhill, for a Scarlet-fleshed Melon.
To Mr. Constantine, Gardener to C. B. Mills, Esq., Hillingdon, for a dish of Figs.
To Messrs. Mitchell, Brighton, for a dish of Black Cherries.
To the same, for a dish of White Cherries.
To Mr. Hume, Gardener to R. Hanbury, Esq., Ware for 2 dishes of Strawberries.
To Mr. Busby, for Strawberries.

CERTIFICATE.

To Messrs. Fraser, Lea Bridge, for Correct Labels.
To Mr. Carson, Gardener to W. F. G. Farmer, Esq., Cheam, for Correct Labels.
To Mr. Bryan Whitton, Hounslow, for 36 Cut Pansies.
To Mr. Turner, Slough, for Seedling Pelargoniums Vesper and Phaeton.
To Mr. Dobson, Isleworth, for Seedling Pelargonium Laura.
To Mr. Hume, Gardener to R. Hanbury, Esq., Poles, Herts, for 24 Cut Roses.
To Mr. Halley, Nurseryman, Blackheath, for a Seedling Fancy Pelargonium, Enchantress.
To Mr. Smith, Nursery, Hornsey, for a box of Verbenas.
To M. Van Houtte, for a new species of Acer, from Japan.
To Mr. Smith, Nursery, Hornsey, for Seedling Calceolaria Vesper.
To Mr. M'Ewen, Gardener to the Duke of Norfolk, Arundel, for a dish of Strawberries.
To Mr. Smith, Gardener to G. Elliott, Esq., Benfield, Berks, for 1 dish of Black Hamburgh Grapes.
To Mr. Chapman, Gardener to J. B. Glegg, Esq., Whittington Hall, Cheshire, for 1 dish of Black Hamburgh Grapes.
To Mr. Morrison, Gardener to A. Donovan, Esq., Framefield, Sussex, for 1 dish of Judson's Seedling Grape.
To Mr. Collinson, for a dish of Figs.
To Mr. Iveson, Syon House, for a dish of Figs.
To Mr. Marcham, Gardener to J. Smith, Esq., Hanwell, for a dish of Cherries.
To Mr. Head, Worthing, for a dish of Cherries.
To Mr. Gainsford, Brentford, for a dish of White Cherries.
To Mr. Wortley, Gardener to Mrs. Maubert, Norwood, for 2 dishes of Strawberries.
To Mr. Reid, Sydenham, for 2 dishes of Strawberries.
To Mr. Waterer, Bagshot, for Rhododendron John Waterer.
To Mr. Monro, Gardener to Mrs. Oddie, St. Albans, for a Cucumber, "Durham Park Hybrid."
To Mr. Salter, Versailles Nursery, Hammersmith, for Iris germanica.
To the same, for Cut Chinese Pæonies.
To Mr. Hill, Gardener to R. Sneyd, Esq., Stafford, for a Green-fleshed Melon.
To Mr. Gardiner, Gardener to Sir T. Phillips, Warwick, for a Green-fleshed Melon.
To Mr. Henderson, Gardener to Sir G. H. Beaumont, for 12 lbs. of Grapes.
To Mr. Solomons, Peckham, for 12 lbs. of Grapes.
To Mr. Spary, Brighton, for 12 lbs. of Grapes.
To Mr. Monro, Gardener to Mrs. Oddie, St. Alban's, for 12 lbs. of Grapes.
To Mr. Head, Worthing, Sussex, for 12 lbs. of Grapes.

NEW SIPHOCAMPYLUS.

W. J. EPPS has much pleasure in offering the following, feeling they cannot fail to give the highest satisfaction. Strong plants are now ready for delivery.

SIPHOCAMPYLUS NE PLUS ULTRA.—Very dwarf habit, with bright green foliage, producing flowers of the most brilliant scarlet in threes and fours at the axle of every leaf; the best of the genus, 10s. 6d.

BICOLOR ROSEA.—Deep crimson, tipped with pale rose, very distinct and beautiful, very dwarf and compact habit; 10s. 6d. The usual discount to the Trade.—Nurseries, Maidstone.

STANDISH AND NOBLE, NURSERYMEN, SEEDSMEN, &c., Bagshot, Surrey, are now prepared to receive orders for the following new and beautiful varieties of AZALEAS, which will be ready for delivery in June next. The Advertisers can recommend them with the greatest confidence, as superior to any others of their kind.

AZALEA BEALII.—This very distinct variety was introduced by them from China. The flowers, which are of first-rate shape, are quite unique, being striped, like a Carnation, with rich vermilion on a pure white ground. It is of good habit, fine in foliage, and a most abundant bloomer; and although decidedly in the first rank as a greenhouse plant, it is quite hardy enough for the open border. Each, 21s.

AZALEA CRISPIFLORA, a species differing much from any other known Azalea, having a character entirely its own. No other kind approaches it in compactness of habit, and its foliage is very fine, abundant, and evergreen. The flowers are very large, and the edges of the petals have the appearance of being irregularly goffered, like a lady's frill; the colour is a rich rose lake. **From the fact of its blooming very late—much later than any other Azalea—it will be doubly valuable for many purposes.** Each 21s.

THE NEW RHODODENDRONS OF ASSAM & BOOTAN,

COLLECTED BY THOMAS J. BOOTH, Esq.,

AND DESCRIBED IN THE "MAGAZINE OF BOTANY," BY HIS UNCLE THOMAS NUTTAL, Esq., OF RAINHILL, THE WELL KNOWN BOTANIST AND TRAVELLER.

E. G. HENDERSON AND SON, Wellington Road, St. John's Wood, London, have much pleasure in announcing that they have for Sale these, the most remarkable new species of RHODODENDRONS ever introduced into this country, many of which surpass those fine species from Sikkim, discovered by Dr. Hooker. Amongst these brilliant discoveries from the Bootan Alps, we have the most wonderful sized flowers, delicious fragrance, and distinct colours of any that are known to exist in this most gorgeous tribe of plants, which, combined with the magnificent foliage and distinct habit of growth, will render them indispensable, and a great acquisition both for the garden and conservatory.

The entire stock of all these extraordinary species now growing in the Gardens at Rainhill (June 20th, 1854), have been purchased by Messrs. E. G. HENDERSON & SON; the plants are fine, healthy, and robust; many of the species have been planted out in the open ground, and (with the exception of one or two slightly injured by late spring frosts), have proved quite hardy.

Orders will be executed as soon as the young growth is sufficiently ripened for travelling.

We are now taking orders for the above plants at the prices subjoined:—

Per single plant of each species	2 Guineas.
„ 4 plants of either	6 „
„ 8 „ „	10 „
„ 12 „ „	12 „

RHODODENDRON NUTTALI.—This distinct and magnificent greenhouse species was discovered on the Duphla hills, at Meré Patar, about Seram's village, on the banks of the Pappo, at an elevation of 4000 to 5000 feet above the sea level. Leaves 8 inches long by 4 inches wide, of a very thick coriaceous substance, so as to be quite opaque, oval, and obtuse; smooth above, except when in a young state; very strongly veined and reticulated beneath, and scarcely paler than above; in adult leaves brown, with numerous resinous scales, the young leaves and growth of a bright purple red. Flower cone a little more than 2 inches long by 2 inches wide; the scales thick and coriaceous, with silky margins internally. Corolla (or flower) subcampanulate, the border spreading, five-lobed, white with a tint of rose-red, and yellowish at the base within, 5 inches long, and exceedingly fragrant. The blossoms individually of this magnificent species are much larger than the Sikkim Rhododendron Dalhousieanum. It has been named in compliment to the veteran botanist and traveller, T. Nuttal, Esq.

RHODODENDRON WINDSORII.—A fine hardy species, discovered on the mountains of Bootan, growing at an elevation of 7000 to 9000 feet above the sea, on the ridges and slopes of Roophrye, in exposed and arid situations, with Pines, species of, Cupressus, Berberis, &c. Leaves coriaceous, obovate, lanceolate, and acute, 4 to 5 inches long, by 1½ broad, strongly reticulated and pinnately nerved, shining white and silvery beneath, at length pale brown; heads many-flowered. The bracts dilated and silky; the lobes of the corolla emarginate, the colour a beautiful deep crimson scarlet, much deeper coloured than arboreum; the calyx is minute.

RHODODENDRON LONGIFOLIUM.—A magnificent foliaged plant, discovered in the forest of Bootan, on the slopes of the Oola mountains, at an elevation of 6500 to 7500 feet above the level of the sea. The leaves 12 to 18 inches long, 2—4 wide in the middle; at first pubescent, at length smooth or nearly so, gradually narrowed downwards, obovate, lanceolate, silvery and whitish beneath, strongly reticulated as well as veined. Buds very large, capsule 2 inches long and about 1 inch wide, altogether a very distinct and majestic species. To all appearance nearly hardy in this climate. The adult leaves almost resembling those of Magnolia umbrella.

RHODODENDRON CAMELLIÆFLORUM.—A very curious greenhouse species, discovered in the valley of Lablung, also on the Bootan Alps, at the latter place growing at an elevation of 9000 to 12,000 feet. In foliage it resembles R. Maddeni, 3 to 5 inches long; flower stalks axillary or terminal, very short and stout: corolla sparingly scaly, 1½ inch across, of a very thick texture, pure white with faint rosy tinge, all the segments obtuse and entire, the flower strongly resembling that of a single Camellia, from which its name is derived. A very distinct flower.

RHODODENDRON JENKINSI.—Discovered in Bootan, on the southern slope of the Oola Mountain, at an elevation of about 6000 to 7000 feet above the sea level, but exceedingly scarce even in this locality, accompanied by Pinus excelsa. It has leaves 4—6 inches long by 2 in width, coriaceous and shining above, oblong-lanceolate and acute, usually cuneate below, at first glaucous, but at length brown, from a dense clothing of somewhat resinous scales. Flower-buds very large and broad, corymb mostly six-flowered. This species, according to a specimen in the herbarium of Sir William Hooker, was also found by the indefatigable Mr. Griffith, on the Khasya Hills. It has been named in honour of Major Jenkins, of the East Indian service, who has done so much for the botany of that country.

RHODODENDRON KEYSI.—From the mountains of Bootan, at an elevation of 9000 to 10,000 feet. A perfectly hardy species, growing on the northern ridges of Lablung and its native hills amidst snow 2 to 3 feet deep. The leaves are 2½ to 3 inches long, about 1 inch wide, opaque, coriaceous, smooth, and lanceolate; ovate, almost covered with brown circular resinous scales, corolla apparently tubular or unceolate; rather aromatic from the resinous scales with which the leaves are clad beneath. Corymb compounded of three or four branches each, containing five or six flowers. Calyx five toothed—small; the teeth nearly equal and obtuse. Corolla (judging from the withered remains only) apparently tubular or urceolate; the border five lobed and reflected. The segments ovate obtuse.

PHLOX DRUMMONDI RADETZKI.

JOHN CATTELL has a large stock of this very beautiful PHLOX, which is a great improvement on Mayi, having the white clearer, and the purplish crimson much deeper and brighter; every flower comes as regularly and constantly striped, and the habit of the plant is more robust; it is so very handsome that it must become a general favourite. Good Plants, 3s. 6d. each, or 36s. per dozen; extra fine Plants, 5s. each. A liberal discount to the trade. A flower may be had on application, enclosing a penny stamp.

J. C. has also to offer the following very desirable plants, well established:—

	Each.
GERANIUM, crimson ivy-leaved	2s. 6d.
GERANIUMS OF THE SCARLET HABIT.	
Trentham Rose, beautiful rose	2 6
Rosea superb, beautiful cerise rose, large truss, dwarf, strong habit	2 6
Baronne Hugel, light scarlet, white eye, very dark horse-shoe leaf, extra dwarf habit	2 6
Boule de Neige, white, large truss, horse-shoe leaf ...	2 6
Miss Emily Field, delicate pink, large truss, horse-shoe leaf	2 6
Skeltoni, white fading delicate pink, large truss ...	2 6
Kingsbury Pet, rosy salmon, large truss, horse-shoe leaf	2 6
One each of the above eight, 16s.	
GERANIUMS WITH VARIEGATED LEAVES.	
Golden Chain	1 6
Kinghorn's Attraction	10 6
„ Silver King ... ... 5s. to	7 6
Gaines' Attraction	3 6
„ Mount Hecla	3 6

Delphinium Wheeleri	1s. 6d.	Delphinium Hendersoni	5s. 0d.
„ semplex alba plena	3 6	„ magnificum ...	5 0
„ Weltoni	2 6	Petunia Montreal Purple	1 6

Anemone pavonia, brilliant scarlet, double, very hardy, flowers in March and April. Bulbs now ready to transplant, 4s. per dozen, or 25s. per 100.

A remittance or reference to accompany all orders from unknown correspondents.—Westerham, Kent.

BASS AND BROWN'S NEW POTENTILLAS.—In consequence of the limited stock of King of Crimsons, we regret we must decline receiving more orders. The following are now ready to send out:—

Potentilla Sudbury Gem, each ...	10s. 6d.	Potentilla Theodore, each	7s. 6d.
„ Shylock, do. ...	10 6	„ Julia, do.... ...	7 6

The following, 16s. the set of seven varieties:—

Floral Beauty	3s. 6d.	Scarlet Gem	3s. 6d.
Napoleon	2 0	Primrose	2 0
Defiance...	2 0	Argo	2 0
Negress	3 6		

For descriptions and editorial remarks, see *Gardeners' Chronicle* of March 13, p. 144, and April 1, p. 208.

Seed and Horticultural Establishment, Sudbury, Suffolk.

The Gardeners' Chronicle.

SATURDAY, JUNE 24, 1854.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY,	June	27—Horticultural	3 P.M.
WEDNESDAY,	—	28—Microscopical.....................	8 P.M.
THURSDAY,	—	29—National Floricultural..........	3 P.M.

UP to the present time Mr. DRUMMOND'S committee on the WOODS AND FORESTS shows little sign of life. Two or three meetings have been held with CLOSED DOORS, and a few rumours have found their way into public. It is said that the committee has resolved to limit its inquiry within the narrowest possible limits, and that all great points at issue are to be carefully avoided. Some of the deputy surveyors appear to have been examined; and whether it is better to saw timber previous to sale, or to sell it in the round, is reported to have been a subject of discussion. If this be all, we may be pardoned for asking why the committee was moved for?

In the meanwhile the administration of the Woods and Forests has been placed in its true light by Mr. KENNEDY himself, who, in a pamphlet just published, has ably and resolutely vindicated his official conduct;* and at the same time shown what that Treasury system is which has ended for the present in keeping incapable surveyors in office, and in depriving the country of an honourable and efficient public servant. We most earnestly recommend the right honourable gentleman's defence to the perusal of all who have the interests of the country at heart, and are independent enough to call trickery by its right name, and to regard jobbing as a crime.

What a hotbed of iniquity the Woods and Forests were not many years ago needs not now be told. The public revelations concerning Clopwell woods, Salcey, and the New Forest, and private scandals which no official dexterity could wholly conceal, excited such universal indignation as to alarm even patronage secretaries, and attract the serious attention of the highest members of Government. At this time it became necessary to secure at the Board of Works the services of resolute and experienced public officers, who were known to be proof against what is called influence. Mr. KENNEDY, who had greatly distinguished himself by a successful public career in Ireland, in a post of very considerable difficulty, and whose important services are acknowledged in a Treasury minute of March 30, 1847, was selected, at the recommendation of Lord JOHN RUSSELL, as one of the commissioners. He tells us that he accepted office with a desire "that its duties should be performed to the utmost for the benefit of the public service," and "with a determination to administer its affairs as the interests of the Crown and public demanded." He assumed his charge with a feeling similar to that which he would have entertained had he been "called upon to administer, as guardian or trustee, the territorial possessions of some great nobleman, for the permanent benefit of the inheritance and for the advantage of the tenant for life." No course of action could have been more mistaken; the "Treasury" soon gave him to understand that they wanted something else.

In what state the Royal forests were at the time when Mr. KENNEDY assumed the control we have long since stated. Every word that we then said is by him confirmed. He found that 100,000 acres had yielded in 1849 6000*l.* less than nothing, and that the net revenue in 1850 was only 159*l.*; and thinking this a very extraordinary state of affairs, he set about trying to improve it. A pleasant task it proved to be.

In the country he found, with one exception, a universal disposition among the officers under him to throw difficulties in his way, so that he had at once to determine whether he would be a passive commissioner or a responsible officer of the Crown; whether he was to be a tool for registering opinions, and carrying on a smooth course of administration, which from its inefficiency and subservience should not create resistance, or to do his duty. In seeking to follow what he considered an upright course of action, he was on almost all occasions met by resistance founded on the consciousness that an altered course of action implied a condemnation of the past. He was unsupported by the Treasury, and thwarted in the country.

It was under these circumstances that Mr. KENNEDY sought in Mr. BROWN, the eminent Scotch forester, that counsel and assistance which was unobtainable from the Treasury or its agents. And thus arose the long series of reports upon the Royal forests, which has been published by Parliament, which we have read with great attention, and which constitutes, in our opinion, a body of sound advice of the utmost practical value. But this did not suit the Treasury, where Mr. KENNEDY found "a latent determination to support the past system of maladministration, sacrificing the public interest to *that system of patronage and favouritism which has been the bane of the affairs of the Royal forests.*" The result was that, in the long run, the Treasury found what they thought a good opportunity of getting rid of a troublesome commissioner, who presumed to believe that he had a higher duty to perform than playing into the hands of a jobbing Government officer; and they used it most unscrupulously.

By means of a packed tribunal, a report was obtained in which the Treasury imagined they saw a capital case for dismissal. We have formerly pointed out the discreditable composition of this tribunal; but Mr. KENNEDY goes more fully into its examination, and so clearly shows the *animus* which led to its appointment that we must give his words almost verbatim.

"Of two of the referees I never before heard the names, and could find no one to whom they were known. As to the third member of the tribunal, Mr. MENZIES, he was once a subordinate under myself, but is now under the Commissioner administering the other branch of the office, *where are also found among* Mr. MENZIES' *superiors the son and son-in-law of* Mr. HIGGINBOTHOM, *of that very deputy surveyor the merits of whose dispute with* Mr. BROWN, *and official reports to me, this jury had to try.*"

In framing the instructions under which the trio were to act, Mr. JAMES WILSON, one of Secretaries of the Treasury, who has evidently been at the bottom of the whole intrigue, by a species of legerdemain, which we admit to be ingenious, and wish we could call honest, contrived to jumble together assertions by Mr. BROWN, as to a class of facts disputed by the deputy surveyor, and a stern reproof by Mr. KENNEDY for his suppression of facts, for which suppression no excuse has been offered or was possible. But we must here allow Mr. KENNEDY to speak for himself.

"I need hardly remind the reader that there was no question of a disputed fact between me and Mr. HIGGINBOTHOM, but that, on a fact asserted by me and admitted by Mr. HIGGINBOTHOM, an imputation was founded by me of his intention to deceive me; and I now learned that it was the determination of the Treasury *to mix up* the question of the justice or injustice of this charge made by me against a subordinate officer, with the question of the accuracy of the facts relating to the condition of the forest reported on by that officer, and by Mr. BROWN; and that the charge made by me was to be converted into a question of simple fact between me and my subordinate officer, and referred as a question involving my *veracity, integrity, and honour*, as well as his, to a tribunal consisting of two professional gentlemen, and the deputy surveyor of Windsor Forest, who but a short time previously had been himself my subordinate officer, and was still a subordinate officer of the Commis-

* Letter to the Right Honourable Lord JOHN RUSSELL, from the Right Honourable T. F. KENNEDY, relative to his removal from the office of Commissioner of Woods, Forests, and Land Revenue of the Crown; with Lord JOHN RUSSELL'S Reply, and Remarks and Correspondence. RIDGWAY.

sioner of Land Revenue. I should mention that the names of the parties who were thus selected to try this cause, so described by the Treasury, *were not submitted to me for remark, or objection, or acquiescence.* Notwithstanding the disputes of recent date which had arisen between the Treasury Board and me as to the mode in which I had conscientiously thought it incumbent on me to execute the duties of my department, their lordships seem to have considered it becoming *to nominate* the jury, and *send my case for trial* before it, not merely *without my acquiescence*, but without informing me of their intention until it was executed; and thus a privy councillor and a head of a department was without notice brought to trial on a question, stated to be one affecting his veracity, his integrity, and his honour, before a jury nominated by those with whom he had recently been *engaged in warm disputes.*"

The referees produced a report in which, so far as Mr. KENNEDY is concerned, they expressly declare that the suppression of fact by the deputy surveyor, of which Mr. K. complained, *had taken place*; all they can say is that they would not themselves have been misled by it, and do not think it culpable—concerning which, we presume to observe, there may be two opinions.

However, the Treasury acted upon the report as if the fact complained of had *not* taken place; and the CHANCELLOR of the EXCHEQUER forthwith proceeded to dismiss Mr. KENNEDY. One would have thought that before adopting so strong a measure as the sudden removal from office of a Commissioner of her Majesty's Woods and Forests and a Privy Councillor, Mr. GLADSTONE would have deemed it necessary to consult the head of the Administration. Not at all; Lord ABERDEEN was not "informed of the circumstances." Lord JOHN RUSSELL, upon whose recommendation Mr. KENNEDY had been appointed, and to whom common courtesy would have ensured some intimation, knew no more than Lord ABERDEEN; he declares that, even on the 9th of June, five weeks after the removal, the circumstances which led to Mr. KENNEDY's separation from the public service were only partially known to him; and we have reason to believe that other members of the Cabinet were equally in the dark.

The very narrow limits within which our observations are necessarily confined compel us reluctantly to shorten our remarks. We have, however, printed at length, in another column, Mr. KENNEDY's letter to Lord J. RUSSELL, and the reply. It is impossible to peruse Mr. KENNEDY's pamphlet without the most painful feelings; for it discloses a system of misgovernment which we had before supposed to be impossible in England. As to the conduct of Mr. WILSON in the matter, we can only say that, if there is one man of spirit in the House of Commons who remembers what was said about Lord DERBY's Government and the Admiralty, he will lose no time in placing the honourable member for Westbury in the position formerly occupied by Mr. AUGUSTUS STAFFORD.

Mr. KENNEDY acquits of all participation in this intrigue the CHANCELLOR of the EXCHEQUER, who we sincerely believe to have acted throughout under false impressions. That Lord ABERDEEN and Lord JOHN RUSSELL should have been concerned in it nobody would have suggested, even in the absence of the precise disclaimers of those noble lords. But somebody is concerned, and Mr. WILSON knows who. It is to him that Parliament must look for information concerning the "persons of great station, in the Government and out of the Government, in Parliament and out of Parliament," who urged him to thwart the Commissioner, to back the deputy surveyors, to palter with his own duty to the Crown, and, finally, to take that line of action which has compromised for ever his official character.

The hon. member for Westbury, after insolently questioning the "veracity, integrity, and honour" of as high-minded a public officer as ever had the misfortune to serve his country, coolly announces the readiness of "My Lords," that is to say of himself, to justify their proceedings in Parliament. Surely some one will give him the opportunity. If Mr. KENNEDY can substantiate his allegations, and no one doubts it, there is here as flagrant an instance of malversation in office as modern history can produce. The right hon. gentleman urges upon Lord JOHN RUSSELL, as leader of the House of Commons, the justice of granting an impartially chosen committee of inquiry to be named by the committee of selection; and his lordship does not object.

In quitting the subject for the present we cannot avoid quoting Mr. KENNEDY's concluding observations as to the manner in which the management of the Royal forests should henceforth be conducted. It is alike valuable as a warning and reproof.

"Before concluding this statement I am desirous to advert to some considerations of a general character, which appear to me to be of the utmost importance in reference to the administration of such a department as the Office of Woods. It is no doubt essential that a commissioner should be under the control of the Treasury on important matters of pecuniary disbursement; but it does seem to me that with reference to the administration of rural affairs, there cannot be a more vicious arrangement than that a commissioner conducting them should be placed under the control of one or other of the political secretaries of the Treasury for the time being. The department is thereby placed in immediate contact with the dispensation of patronage, and directly subjected to all the evil influences which govern that dispensation. But apart from this obvious consideration, a political secretary is an officer constantly changing, and not necessarily qualified to understand or control rural affairs; neither has he time to attend to them with that deliberation on the one hand, or despatch on the other, which various circumstances constantly render indispensable. The result is that most mischievous delays take place, and that the practical power devolves on some subordinate and irresponsible officer in the Treasury, who, assuming the name of 'My Lords,' procures the signature of some high officer, and thus the supreme authority may be and constantly is exercised with very little knowledge, or without the matters to be disposed of having been considered by any competent and responsible officer. I must venture to say, as the result of my experience, that the only safe and satisfactory arrangement for the public service would be that some high, ostensible, responsible, and *permanent* officer in the Treasury should be charged with the department of the Woods, Forests and Land Revenues of the Crown, and that there should not be a constantly changing administration of those affairs; the practical result of the present system being that the real management is to a great extent conducted by subordinates unknown to the public as depositories of power and practical control. I consider the present system to be fraught with the most serious evils in the conduct of the public affairs of a department which has attracted a very unenviable share of public attention, and which must continue to do so until a sound spirit of administration is introduced into it, in all its branches and ramifications."

VEGETABLE PATHOLOGY.—No. XXV.

114. THE grains of pollen, whether separate or combined, when in contact with the moist stigmatic surface, germinate precisely as the spores of many cryptogams insinuating their germinating tubes into the intercellular passages of the loose stigmatic tissue, ultimately arriving at the cavity of the pistil, and entering the open end of the ovules or micropyle. In some cases, however, as in Conifers, the ovules are themselves naked, and there is therefore no necessity for any intermediate stigmatic tissue. In either case, however, the ultimate result is the same, as also the phenomena exhibited by the pollen tube, the tip of which comes in contact with the delicate embryo sac, in consequence of which an interchange between their contents by means of endosmose and exosmose takes place, and an embryo is formed within the embryo sac, at first consisting of a single cell, but gradually progressing to the formation of a true mono- or polycotyledonous embryo, surrounded by its proper integuments, and immersed or not, as the case may be, in albumen. The radical point of this embryo is always essentially directed to the micropyle, though deviations from this direction may take place in the course of growth.*

115. According to Schleiden, the end of the pollen tube pushes forward and finally inverts the upper portion of the membrane of the embryo sac in a way similar to what takes place in the animal kingdom; the sac then closes round the tube, the extremity of which becomes organised and ultimately forms the embryo. This notion is now, however, entirely exploded, except by a few partisans in Germany, and may safely be considered as erroneous. According to Schleiden's view, the embryo sac is a mere receptacle, and in the case of diœcious plants, the new plant is actually introduced from a distinct stock. This is indeed agreeable to certain theories which have met with favour as to the function of spermatozoa; but careful examination does not confirm the observations which at one time attracted so much attention. The fact of the formation of true embryos in the embryo sacs of Cœlebogyne ilicifolia, without the intervention of pollen, a fact which, however marvellous, is beyond all doubt, alone a convincing proof in the same direction. Spallanzani, indeed, long since noticed the same thing in Hemp, and fertile seeds are often produced in different varieties of Violets, where the stamens are apparently abortive. M. Brongniart has informed me that in the latter case he has frequently found a single pollen grain in stamens otherwise abortive, and it is notorious that a few stray stamens are often produced in the females of diœcious plants. In the Cœlebogyne, however, not the slightest trace has ever been found of stamens, which if present at all must be tolerably numerous, as the greater part of the pistils bear perfect fruit.

116. In some plants, as in certain Arads, a considerable degree of heat is elicited during the time of impregnation. It is very probable that this may be the case in many instances where it is not easily applicable. The pollen grains, at least, of many plants germinate freely, when the temperature of the surrounding air is but slightly above freezing, especially when there is not much free moisture, and it is possible that their germination may be assisted by some accession of temperature in the stigmatic surface.

117. The cause of the change produced by the contact of the embryo sac and pollen tube will probably remain a mystery for ever. The change is not, however, confined to the mere vivification of one or more cells, for in some plants more than a single embryo is formed within the same sac, but where there is a difference between the plant impregnated and that from which the pollen falls on the stigma, the embryo partakes in some measure, in essence at least, of the nature of that plant. In general this change is not perceptible till the seed has germinated and produced a new plant; but, in the case of Peas, at least, the effect is soon apparent, for if a Pea with a white seed is impregnated with the pollen of one which has a dark seed, the produce often exhibits some intermediate tint, of which a very remarkable instance occurred within our own observation in the mutual impregnation of two varieties of Sugar Peas,* the produce of neither of which in the slightest degree resembled the parent. *M. J. B.*

* In Leszczyc-Suminski's curious treatise on the impregnation of Ferns, the spermatozoids are described as penetrating into the embryo sac, and being there transformed into a new plant. Later observations have not confirmed these views, and a strong *à priori* argument against their justice is the circumstance of the radicle being inferior instead of superior, as in all phænogams.

DESCRIPTIONS OF NEW PEARS CULTIVATED BY M. DE LIRON D'AIROLES, AT LA CIVELIERE, NANTES.—BY HIMSELF.

(*Continued from p.* 389.)

Duchesse de Berry.†—This is naturally classed among the Doyennés. In some catalogues it is confounded with the Doyenné d'Été, from which, however, it is very different. The tree is vigorous and very productive. The fruit is middle-sized, somewhat larger than the Doyenné d'Été, or Doyenné de Juillet. Skin smooth, pale green, dotted with brown. Stalk short and thick. Flesh white, crisp, juicy, and sugary. Ripens at Nantes between the 15th of August and the 15th of September. This variety was discovered by M. Bruneau, nurseryman, at Nantes. Among a number of seedling trees at a place called the Barrière de Fer, commune de Saint-Herblain, he observed two trees, the fruits of which appeared to possess merit; to one of them he gave the name of Duchesse de Berry, and to the other that of Saint-Herblain d'Hiver, and introduced them into his nursery in 1827.

Saint Herblain d'Hiver.—The tree does not succeed well on the Quince stock, but on the Pear stock it is tolerably vigorous, and is suitable for standards or pyramids. The fruit bears considerable resemblance to the Easter Beurré, from which it has probably been raised, and at first sight might be mistaken for it. It is of medium size, or rather small when the tree is heavily loaded. Skin smooth, green, sprinkled with small brown dots. Stalk short, deep brown. Flesh fine, white, juicy, and sugary. Although the tree is not so vigorous as many others, yet it appears deserving of cultivation, as the fruit keeps till late in the season.

Marie-Anne de Nancy.—Tree moderately vigorous, and likely to prove a good bearer. Fruit middle-sized, turbinate, about 9 inches in circumference. Skin smooth, green, streaked and speckled with russet, becoming yellowish when fit for use. Stalk scarcely half an inch in length, clear brown, thick and fleshy. Flesh white, very melting and buttery, with abundance of sugary vinous juice. Ripe in September and October. From seed by Van Mons.

Docteur Trousseau.—The tree bore for the first time in 1848. It is entirely destitute of thorns, which is rarely the case with Pear trees that have recently been raised from seed. Fruit large, pyriform, broad near the eye and contracted near the stalk; it is 4 inches in height and 3 inches in diameter. The stalk is strong and woody, about an inch in length, sunk at its insertion. Skin green, spotted with red and sprinkled with grey dots. Flesh fine, white, melting, buttery, with abundance of sugary perfumed juice. Ripe in November and December. Raised by M. Alexandre Bivort.

(*To be continued.*)

ADAMIA VERSICOLOR.

FOR some time after the introduction of this plant it was generally complained of as being a shy bloomer, and some persons still experience the same difficulty in its culture. It certainly cannot be considered a first class plant, the flowers not being high coloured, nor very showy, but with proper management it is a most profuse bloomer, its Hydrangea-like heads of flowers being produced in succession for months, and remain long in perfection; and when seen in the form of a well grown specimen, with every shoot terminated by a head of flowers, it is well deserving of a place in even select collections.

Propagation is readily effected by means of cuttings of the young wood in a rather firm state. These should be selected as early in the season as they can be obtained, and planted in light sandy soil, covered with a bell glass, and afforded a gentle bottom heat. In the course of about a month they will probably be found to have struck root, and as soon as this is the case they should be potted singly in small pots; for keeping them in the cutting pots longer than is absolutely necessary tends to produce a weak habit of growth, and

* The varieties in question were two distributed by the Horticultural Society, under the names of Pois géant sans Parchemin and Pois sans Parchemin Blanc à Grandes Cosses, one of which has purple flowers and maple seeds, the other white flowers and whitish seeds.

† This should be called Duchesse de Berry d'Été, to distinguish it from another Pear lately sold under the name of Duchesse de Berry, and which has proved to be the Uvedale St. Germain

in all cases this should be avoided as far as possible. The young plants should be placed in a close, warm, moist place, and carefully shaded from the sun for about a fortnight after potting singly, by which time they will have taken to their pots, and may be treated as established. After this they should be placed in a close pit, or moderately warm house, keeping them near the glass and syringing them over-head on the mornings and afternoons of bright days. Being of a very free habit of growth, if all goes on well, a shift will soon be required, and they should not be allowed to suffer for want of pot room in this stage, but should be shifted into pots two sizes larger as soon as they require it, kept moist and rather close until the roots strike into the fresh soil. When this is the case give air freely on every favourable opportunity, in order to induce a strong compact habit of growth, and, if necessary to keep the plants bushy, stop the leading shoot; but if a vigorous root action is maintained, stopping will hardly be necessary. Where the object is to grow large specimens before flowering, the plants should be kept growing as rapidly as possible during the summer and autumn, affording them pot room as may be necessary, and a gentle bottom-heat would be of great assistance towards inducing rapid growth. The best situation for them in winter will be an intermediate house, where the temperature may range about 50°, for they should not be checked either by too low a temperature or the want of water, as this would probably produce a tendency to flowering, and cause some difficulty in getting them to start away freely in spring, and neither should they be kept so warm as to encourage growth. About the beginning of March will be the proper time to place them in growing circumstances, and with suitable convenience and attention fine plants will be easily secured by autumn. They should be placed in a gentle bottom-heat, kept near the glass, and as soon as growth commences, the roots should be examined, giving a liberal shift if necessary. Keep the shoots nicely tied out to prevent their growing too closely together and injuring each other; and make sure of having the specimens well furnished towards the bottom. A second shift will probably be required towards May, and this should be into the flowering pots, the size of which must be regulated by circumstances; a 15-inch pot will be sufficiently large for a fine specimen, and will no doubt be found large enough for plants of but two seasons' growth. Stopping must not be practised later than the middle of August, and the plants should be kept rather dry at the root, and more freely exposed to air from the end of September to the middle of November, which will mature the wood, and prepare it for flowering. By placing them in heat, and supplying them liberally with water, they will soon show flower at the end of every shoot; and if removed to a close part of the conservatory just as the buds begin to assume their blue colour, and protected from damp, they will remain in this state for some three or four months, for they will hardly open in the temperature of the conservatory, and in this state they have a very pleasing appearance. The flowers will, however, open freely in the temperature of an intermediate house, where, if the roots are well supplied with weak manure water, and a moderately dry atmosphere maintained, they will last long, and, on plants that have been properly ripened, will be produced in succession from the side shoots for months. Specimens intended to be grown on for further use, must be cut back in time to allow of their making a short growth before winter, and should be repotted every other year; but by supplying them liberally with manure water, they may be kept in health in good sized pots for several seasons without repotting. The best soil for this plant is three parts good strong fibry loam, and one part peat, or leaf-soil, mixed with a proper quantity of sand and lumpy bits of charcoal, to keep it open and porous; for if grown in light rich soil, the wood is apt to be long-jointed, and the specimens rather inclined to straggle. *Alpha.*

Home Correspondence.

Kennington Park.—" Mr. Spooner wished to know what the sum of 2365*l.* special services connected with Kennington Common meant, in addition to the sum of 753*l.* 13*s.*?" — "Sir William Molesworth said that the item for special services was incurred in laying-out the new park and providing it with new shrubs. This outlay would not occur again, and had no connection with the maintenance of the new park." On reading the above in the *Times* of the 8th inst., I was naturally led to suppose that the new park at Kennington had been not only well and judiciously laid out, but also planted with such trees and shrubs as would indicate that the selection was made by persons of sufficient knowledge and good taste to enable them to choose those only which would be most suitable for the locality, and likely to give the ground eventually a park-like appearance; and my curiosity having been excited by reading the answer of Sir Wm. Molesworth, in the House of Commons, that no such expense would be again incurred with regard to the purchase of shrubs, &c., I accordingly made Kennington Common the subject of a visit a day or two ago; but what was my surprise and disappointment at finding this fine piece of ground stocked with the most worthless rubbish in the shape of trees and shrubs that can possibly be imagined! There does not appear to have been the least judgment exercised in the matter; the whole of the planting forcibly suggesting the idea of the refuse of some nursery stock, which it is evident has been handsomely paid for, and the public money thus wasted for a quantity of stuff that would disgrace the meanest garden patch round London; while, had the trees been properly selected, one-fourth of the number would have sufficed. To show the style and quality of the planting, I may mention that a row of Lombardy Poplars extends all round the enclosure, the trees being at a distance of 5 or 6 yards apart, and as poor and naked as you can well conceive, and worth apparently about 10*s.* or 15*s.* per 100. There are also Hollies without any leaves, and Azalea ponticas in a scarcely better condition planted on raised banks of red earth, with several other kinds of trees which are evergreens in anything but appearance. The 48 or 50 common ponticum Rhododendrons, planted about the model house, are, however, not so bad in quality as the rest. Now, when Sir W. Molesworth said that "this outlay will not occur again," I have not the least doubt that the right hon. baronet believed he was stating the truth; but I beg to assure him that it will "occur again," from the circumstance of his not employing competent persons to execute the work on the one hand, and from his looking for a "cheap" market where only the most despicable articles are to be obtained on the other. In fact I know of no London nurseryman who would suffer such stuff to occupy his ground. I am the more anxious to call public attention to the planting and laying out of Kennington, as it may be a foretaste (if the present system be not speedily reformed) of what we may shortly expect to see at the intended Battersea Park. But in this latter instance such proceedings would be objectionable in the extreme, for here we have a splendid piece of land soon to form a valuable addition to the various places of public recreation, and importance cannot be impressed too strongly on the Board of Works of employing men who are capable of performing the business entrusted to them, and whose arboricultural knowledge is such as will allow nothing to be purchased or planted which will not fully answer the purpose required. In the case of Kennington, we see a deplorable example of culpable ignorance and shameful squandering of public money; and I hope that you will continue to exert your influence on this point, which has already been productive of good results. *M. L. R.*

Amaryllis.—The author of "The Danubian Principalities, &c.," lately printed, in vol. i., p. 33, says that near Grobnick, in Austrian Croatia, "the scarlet Amaryllis grew on the damp soil, where tiny streamlets trickled." What does he mean? *A. H.* [Don't know.]

The Potato Crop and Spring Frosts.—In reply to the inquiry as to the kinds of Potatoes which I consider most able to resist frost, I answer, those which contain most farina. The latter always produce a much more hardy foliage than a waxy or wet Potato, and for the following reason. The mealy Potato pushes a weak, slender, tough stem, on account of the floury nature of the tuber; and in choosing Potatoes to buy for eating this is the best guide. On the contrary, if you see that the Potato is showing a strong bold eye, be sure that it will boil waxy and wet. In my experiments with the Potato I have tried all kinds of sets, but if the sorts are greened and sprouted, as described in my pamphlet, all varieties will be found to endure frost about equally well, on account of the sprouted eyes being all green, tough, and grown slowly before planting out; for be it remembered that when once this tough neck is formed it can never lose that hard consistency, neither do insects touch it. The neck of my Potatoes when dug up is so healthy and hard, that I can scarcely put a pin through it—in fact this is the grand secret in managing the Potato. Until I discovered the following plan of treating Potatoes when cut down by frost, I was as much concerned about the loss as any one. When the haulm gets cut down, as was the case everywhere this spring, it is too well known that all dormant eyes will push a large number of shoots; and if all are allowed to remain, they become over crowded, and an inferior small sized crop of tubers is the result. To remedy this, as soon as all the shoots come above ground a second time, let the work-people go over each row, and pull up all the weakest, leaving only two or three of the strongest; perhaps, upon a large scale, the hoe may do as well; once allow the main shoots the lead, and the flow of sap will be entirely directed to them. The above simple plan places the crop in as good a state as before the frost attacked it, only it is thrown 14 days later. *James Cuthill, Camberwell.*

Aëration.—Your correspondent's remarks on this subject, at page 389, are correct in principle; and, modified, the invention may be useful in certain cases. If the external air was always perfectly still, the ventilating apparatus would doubtless act with great regularity; but when a gust of wind arises, what distinction will it make between the ingress and egress openings? —almost none. It will be exactly that arising from the opposition offered by the ascending warm air to the force of the wind; and the ratio of this resistance would be something like that of a feather to a 10 lb. weight. It may, therefore, be said that the cold air, when in brisk motion, will rush in at both openings, almost indiscriminately. Your correspondent ought to prove or disprove this, and then gardeners will be able to judge of the safety or the danger of his plan. *R. T.*

Gardeners' Royal Benevolent Institution. — As a member of this charity, I was much pleased to see, by the report of the last anniversary, at p. 389, that the subscriptions amounted to 267*l.* 10*s.* Being a poor gardener, I cannot therefore refrain from returning my grateful thanks to the very kind gentlemen who so generously subscribed to its funds. But, as a member of the institution, permit me to inquire whether the gentlemen who contribute to its support do so to encourage the poor subscribing gardeners, or to render support to any gardener of the United Kingdom. If for the latter purpose, I for one cannot see the good of subscribing any longer; for if such allowance is made, it is, as it were, permitting wolves to enter freely into our fold. *A Subscriber to your Paper from the first.*

The Winter in Lancashire.— I. Plants on a Wall facing the East:—Escallonia rubra, small branches killed; E. rubra, var. viscosa, killed to the strong branches; E. pubescens, killed to the ground; Rhamnus alaternus and variety, killed to the main stem. II. Plants facing the South:—Euonymus sarmentosus and echinatus, killed to the ground; E. japonicus and variegatus, slightly killed; E. Hamiltonianus, killed to the main stem; Edwardsia grandiflora, very slightly killed; E. microphylla, the small branches killed; E. chrysophylla, killed; Viburnum rugosum, the ends of the branches killed; Ceanothus azureus, killed to the ground; C. pallidus, killed to the main stem; Solanum crispum, killed; Maclura aurantiaca, small branches killed. III. On a Wall facing the West: Buddlea globosa, small branches killed. IV. Plants in the Open Ground: Viburnum Tinus, very much cut; Bambusa falcata, cut to the ground; Aristotelia Macqui, covering a space of 8 yards, with four or five stems, 4 inches in diameter, in a very sheltered situation, killed to the ground; Arbutus Unedo, very much cut; Laurus nobilis, leaves singed as if by fire; Quercus Ilex, lost all their leaves; Rhododendrons hybridum, all more or less injured; R. ponticum, suffered in some instances; Clethras are all very much cut up. I am not prepared to say what was the lowest temperature. *Henry Shepherd, Botanic Garden, Liverpool, June 5.*—— Common Rhododendrons have suffered much—some large plants are quite killed; Laurels, both common and Portugal, have suffered considerably; Sweet Bays are killed to the root; Cupressus horizontalis and Goveniana are killed. The Deodar has suffered much; Azalea indica alba, which has stood in the shrubbery for the last six years, is almost killed; Cistus cyprius is quite killed; as are also Fabiana imbricata and Erica arborea. Lavender has suffered considerably; Dielytra spectabilis has stood the winter without any protection; Calystegia pubescens, in a border against a south wall, is also coming up strongly. Yucca gloriosa has suffered much; Berberis cuneata and Forsythia viridissima have not been at all injured; Buddlea Lindleyana is killed. *H. Winwick, Warrington.*

Kitchen Garden Crops.—The following items are taken from my gardening book. Potatoes planted Dec. 9th, 1853, first drawn April 15th, 1854; Peas (Daniel O'Rourke) sown Dec. 31st, first dish picked May 20th; Potato-Onions planted Dec. 19th, sent to market June 2d. I have had about one quarter of an acre of early Potatoes, which have proved an early and good crop: I have continued drawing from April 15 up to this time. They were planted according to Mr. Cuthill's plan, only earlier, to suit our milder climate. The severe April frost visited my garden, as it was seen on Strawberry leaves close to the Potato plot; but out of the whole quarter of an acre only about 20 plants of the Potatoes were injured. As many of my neighbours who had Potatoes up had their crop seriously injured, I must attribute the escape of mine, in great measure, to their strong growth induced by Mr. Cuthill's plan, which my experience this season (a very trying one) gives me good reason to recommend. My wall fruit trees suffered no injury from the frost, nor did Strawberries, which I began to gather on the 20th of May, and which have proved an abundant crop. *P. V. R., the Lizard, June 20.*

Yew Trees.—I believe the following explanation will solve "Crayon's" difficulties. Yew foliage *is* poisonous to horses and cattle, but only causes death when taken in large quantity upon a fasting stomach. All the fatal cases which have come under my notice have taken place, as in "Crayon's" instance, during refuge from a storm, or during a ploughman's or carter's dinner under the, to them welcome, shade of a Yew tree. In all these instances the horses have been, almost to a certainty, for some time previous without other food. I myself lost a riding horse some years ago from the same cause; he was daily turned out for an hour or two into a field in which were some hedge-row Yew trees, the foliage of which he was often seen to nibble with impunity, but one unlucky day he neglected taking his usual first course of Grass, and was soon past recovery; on opening his stomach, the contents were Yew foliage, with a very trifling proportion of Grass. *Downe.*

Armenia.—Curzon's "Armenia," p. 125, describes a parasite growing on wormwood, with a flower like a Lily, 9 to 12 inches long, including the stalk, and all parts of it resembling crimson velvet. It has no leaves. Is this a fungus? He calls it Ravenea or Philipea coccinea. He also describes a kind of Thistle with flowers all up the stalk, looking and smelling like the Honeysuckle, and called Morena orientalis. Why have we not the plants of Armenia? Are our winters too naked of snow for them to be hardy? *A. H.* [The Phelipæa is a root parasite allied to Orobanche.]

Measurement of Timber.—A long calculation for this purpose was lately given by one of your correspondents, in answer, I suppose, to inquiries on that head; permit me to suggest a shorter, simpler, but equally efficacious mode of doing the same thing, being one by which, in my time, I have disposed of some hundred pounds' worth of oak timber. Let AB be the length of the timber (say 28 feet); BC the girth, or circumference at the middle of the 28 feet length (say 64 inches), then take

"Hoppus's Measurer" (the best book extant), refer to the table wherein is the exact girth of the tree, viz., one-fourth the circumference, = 16 feet, page 52; run the eye down to No. 26 in the first column, being the length of the timber, and the answer in cubic feet is given, viz., 49 feet 9 inches 4 parts; and as 40 cubic feet constitute one load of timber, we have here 1 load 9 feet. Oak timber here being about 8*l.* per load, or 4*s.* per foot square, the value of a timber Oak of the dimensions above is 9*l.* 16*s.* *W. Mason, Necton, Norfolk.*

Anacharis alsinastrum.—On my return from London a few days ago, I got out of the train at the Oxford station to gather some specimens of the Hottonia palustris (L.) which I noticed growing in a ditch close behind the building: with this plant I found abundance of the Anacharis alsinastrum. Not having heard of its appearance in that locality, I have thought it well to send you this notice, as the gradual spread of this water plant is, I know, interesting to many botanists. *Thomas Baxter, Castle Place, Worcester.*

Wasps.—We have killed in my garden 150 wasps during the last month. They were killed on the leaves of Greengage and Orleans Plums. Were all these really queens? They were very large wasps. *Cavanensis.*

Societies.

Royal Botanic, Regent's Park, *June 21.*—The second exhibition of the season, held under the auspices of this Society, took place on Wednesday last. The weather, though cloudy, kept dry till about 6 o'clock, when rain began to fall, and the remainder of the evening was wet. The exhibition itself was in all respects a good one. The Queen, H.R.H. Prince Albert, and two of the Royal children, honoured it with a visit in the morning before the gates were thrown open to the public.

Stove and Greenhouse Plants were numerous, and for the most part in excellent condition. Of groups of 16 plants, the best came from Mr. May, gr. to H. Colyer, Esq., of Dartford. It contained Ixora coccinea, two handsomely bloomed Allamandas, an Azalea and Epacris, both somewhat thin of flowers; two good Everlastings, a large Polygala cordata, the Willow-leaved Ixora, an admirable plant in the best possible condition; the ever-blooming Erica mutabilis, literally a mass of flowers; a huge Erica Cavendishi, the rosy-eyed white-flowered Vinca, and a luxuriant and finely blossomed Clerodendron fallax. Mr. Green, gr. to Sir E. Antrobus, Bart., was second. His plants, with the exception of two, perhaps, were in beautiful condition; among them were two Azaleas, still well flowered; Polygala Dalmaisiana and cordata, Rondeletia speciosa, Kalosanthes miniata and coccinea, both fine specimens and showy; Ixora coccinea, the deep chocolate-flowered Echites atropurpurea, a beautiful Erica Massoni, two Everlastings, Dracophyllum gracile, and the sweet smelling Fortune Gardenia still producing fresh flowers, but evidently very much past its best. Mr. Speed, of Edmonton, had two very good Clerodendons, Dipladenia splendens and crassinoda, both well flowered, but more especially the latter; a charming Stephanotis, Allamanda grandiflora, a small Ixora crocata, the blue Leschenaultia, a fine plant, but insufficiently in flower; a lovely Erica Cavendishi, Phænocoma proliferum, unusually well bloomed; and Cyrtoceras reflexum. Mr. Gillham, gr. to J. R. Scott, Esq., of Leyton, contributed a beautiful group, taken as a whole; but, individually, some of the plants were past their best. Stephanotis floribunda, Schubertia graveolens, Dipladenia crassinoda, and Statice Holfordi, were all, however, finely flowered, and excellent examples of skilful cultivation, as were also two Allamandas; the Jasmine-like Rhynchospermum, Kalosanthes miniata, and the pink and white Vincas.

In collections of 12 Stove and Greenhouse Plants, the first prize was awarded to Messrs. Fraser, of Lea Bridge Road, who furnished, among others, Allamanda cathartica, Stephanotis floribunda, Ixora coccinea, and Statice macrophylla, in excellent order; together with two Everlastings, Leschenaultia intermedia, two Polygalas, and the useful Dracophyllum gracile. Messrs. Rollisson had an admirable Erica ventricosa magnifica, which was not only one of the best plants in their group, but one of the very best varieties of the class to which it belongs; also Erica Cavendishi; Dillwynia splendens, a bright yellow and brown flowered kind; Dipladenia crassinoda, Dracophyllum gracile, Pimelea Hendersoni, Clerodendron Kæmpferi, and Acrophyllum venosum. The last named two plants were both past their best. Mr. Clarke, of Streatham, had a charming Aphelexis sesamoides; two Leschenaultias, one (intermedia) badly coloured; a pretty little Dipladenia crassinoda, Pimelea hispida, a large Erica Cavendishi, and a Boronia serrulata, with few flowers on it.

Groups of 10 Stove and Greenhouse Plants were furnished by Messrs. Frost, Barter, Williams, Carson, Jarvis, Hamp, and Morris. Mr. Frost had an excellent Dipladenia crassinoda, charmingly flowered; Begonia acuminata, measuring nearly 4 feet in height and as much through; but, owing to its naturally dull colour, it made little display; a well-flowered Jasmine-like Rhynchospermum; Erica Cavendishi, a good plant, but with flowers scarcely so bright in colour as they should have been; two Everlastings, Dracophyllum gracile, and Erica tricolor Wilsoni, a very large flowered kind. Mr. Barter sent an excellent Stephanotis, a huge Erica Cavendishi, Epacris miniata, Erica mutabilis, in lovely condition; Azalea præstans, thinly bloomed; Vinca rosea, Dipladenia crassinoda, and a handsome variety of Chorozema varium called elegans. From Mr. Williams (gr. to Miss Traill) came two large Cape Heaths, Azalea variegata nearly out of bloom, a charming Tetratheca verticillata, a large Pimelea decussata, Allamanda cathartica, thinly flowered; and Franciscea acuminata, in but middling condition. Mr. Carson had a lovely plant of the seldom seen Jatropha pandurifolia covered with clusters of small vivid crimson flowers; two Allamandas, an unusually well bloomed Clerodendron splendens, Lemonia spectabilis with very few blooms on it, a pretty Ixora crocata, and a good bush of Aphelexis macrantha purpurea, which is one of the best of the Everlastings. Among Mr. Jarvis' plants were Hoya campanulata, a pretty Dipladenia crassinoda, and good examples of Stephanotis floribunda and Cyrtoceras reflexum. Mr. Hamp sent a specimen of the now rarely seen but rather pretty yellow flowered Relhania squarrosa; Gardenia Fortuni, the white blossomed Xanthosia rotundifolia, Dracophyllum gracile, Clerodendron splendens, Azalea variegata—nearly out of bloom, and a somewhat thinly blossomed Allamanda cathartica. From Mr. Morris came two Allamandas, a huge Pimelea decussata, two Vincas, a Cactus, and an Everlasting.

Collections of six Stove and Greenhouse Plants came from Messrs. Taylor, Rhodes, Over, and Roser. In these groups we remarked Ixora crocata, Eriostemon buxifolium, Aphelexis spectabilis, Pimelea Hendersoni, Leschenaultia formosa, Stephanotis floribunda, Dipladenia crassinoda, Cyrtoceras reflexum, Epacris miniata, various Cape Heaths, Sollya linearis, and Polygala oppositifolia.

Ixoras were furnished by Messrs. Over, May (gr. to H. Colyer, Esq.), and Hamp. The species were javanica, crocata, coccinea, and salicifolia.

Mr. Green had a group of tall Cacti, the varieties in which did not appear to differ from those produced by the same grower at the last exhibition at Chiswick.

Orchids were more numerous and in better condition than they were at this Society's last show. In groups of 20 plants, Mr. Williams, gr. to C. B. Warner, Esq, was first. He had a beautiful specimen of Calanthe masuca in excellent condition; a very finely-flowered Aerides odoratum majus, Epidendrum verrucosum, Saccolabium guttatum, with some 10 charming racemes of flowers; Cypripedium Lowi, Vanda suavis and insignis, and Phalænopsis grandiflora. Mr. Woolly, gr. to H. B. Ker, Esq., had an interesting group, in which the most remarkable plants were Dendrobium Devonianum; Paxtoni, and transparens; Saccolabium guttatum, a fine plant of Phaius albus, and an unusually well-bloomed Peristeria elata. From Mr. Blake, gr. to J. H. Schröder, Esq., came three large and finely-bloomed plants of different kinds of Aerides, Saccolabium guttatum, Dendrobium formosum, a profusely-flowered Cypripedium barbatum, Calanthe veratrifolia, and Phaius Wallichi.

Of groups of 12 Orchids, the best came from Mr. Hume, gr. to R. Hanbury, Esq., the Poles, Hertfordshire. The tops of the pots in this collection were tastefully mossed over, and even stumps of trees, on which were growing Vanda teres and Phalænopsis grandiflora, were covered over with the same material; both these plants were unusually well flowered, more especially the latter, which was the admiration of everybody. Two large and very fine Aerides were growing in square wire baskets, and there was a good plant of Coryanthes maculata with two of its singular blossoms. Cattleya citrina had three blooms on it, and there was also a good Cattleya intermedia, together with Oncidium luridum guttatum, Saccolabium Blumei, and the rare Dendrobium Dalhousieanum. Mr. Carson, who was second, contributed Dendrobium Farmeri in lovely condition, the small purple flowered D. aduncum, Angræcum caudatum, two good plants of different kinds of Aerides, a very dark coloured variety of Cypripedium barbatum, and a good specimen of Dendrobium nobile. From Mr. Gedney, gr. to Mrs. Ellis, of Hoddesdon, came a fine plant of one of the varieties of Aerides odoratum, two charming examples of Phalænopsis, the seldom seen Galeandra Funcki, with greenish yellow flowers, stained at the point of the lip with purple; Sobralia macrantha, Phaius albus, and Epidendrum verrucosum. Mr. Clark, gr. to Mrs. Webb, produced small plants of Oncidium stramineum, a neat Saccolabium guttatum, a highly coloured and beautiful Sobralia macrantha, Cattleya Mossiæ, three Oncids, and as many kinds of Aerides.

Of collections of 6 Orchids there were several. The best came from Mr. Green; it contained very fine specimens of Aerides odoratum, Oncidium Lanceanum, Dendrobium nobile, Stanhopea tigrina, with two flowers on it, and a small Barkeria spectabilis. Mr. Iveson contributed a strong growing Vanda tricolor, with two bunches of flowers on it, Odontoglossum hastatum, Oncidium ampliatum majus, with two spikes of showy flowers; Aerides odoratum, low and spreading, but well bloomed; Cattleya Forbesi, and Saccolabium guttatum. Six small plants were also communicated by Mr. Summerfield and Mr. Jarvis. Mr. Iveson had a most beautiful variety of Cattleya Mossiæ, with pure white sepals and petals, and a purple tipped lip.

Roses in pots, with the exception of those from Messrs. Lane, were not near so fine as we have seen them on former occasions. Messrs. Lane had finely bloomed specimens of the well known Coupé de Hébé, Paul Perras, Duchess of Sutherland, Chenédolé, Great Western, Louise Peronny, and Magna rosea. The last is a beautiful Rose, delicate pink in colour, with a rosy centre. Great Western is seldom to be found good, but when it is, it is certainly a valuable variety. Among Mr. Francis' plants we observed Madame Plantier, Chenédolé, Coupé de Hebé, Richelieu, and Juno, the last a first class sort, which all must admire. Adam and Souvenir de la Malmaison in Mr. Rowland's group (to which the first prize was awarded in the amateurs' class), were both good examples of these favourite kinds. Cut Roses were numerous, and commanded, as they always do, a large share of attention. Of boxes of 50 sorts the best came from Messrs. Paul, of 25 varieties from Mr. Rowland, and of 24 kinds from Mr. Terry.

Cape Heaths were contributed in good condition by Messrs. Fraser, Rollisson, Clarke, May, Williams, Roser, Taylor, Over, Jarvis, and Rhodes. Among the different varieties were tricolor Wilsoni and other sorts belonging to this class; metulæflora, denticulata moschata, depressa, ventricosa grandiflora (a fine kind), Cavendishi, Bergiana, Halicacaba, ampullacea vittata, Westphalingia, mutabilis, Massoni, perspicua nana, gemmifera, and tortiliflora.

Of plants having fine foliage, M. Van Houtte, of Ghent, contributed Passiflora marmorea; a small example of a Japan Acer, with reddish foliage; Bilbergia Carolinæ, the bases of whose inner leaves, *i. e.*, those in the centre of the plant, are brilliant crimson; Aphelandra Leopoldi, with beautifully white-veined foliage; an Achimenes, Begonia xanthina marmorea, and B. x. Gandavensis, the former with large leaves, having silvery markings; Reseda microphylla (in this instance scentless), and Canna liliiflora.

Of novelty there was little. Mr. Hume, gr. to R. Hanbury, Esq., had a yellow-flowered terrestrial Orchid, a Eulophia-like plant, from Natal; Mr. Frost, a Begonia, which was stated to be an improvement on Prestoniensis; Messrs. Standish and Noble a large and fine bloom of Clematis lanuginosa, and a plant of C. l. pallida, both fine kinds, from the north of China, and supposed to be hardy; Messrs. Osborn had Lysimachia Leschenaulti, a promising plant; Messrs. Henderson, Pine Apple Place, a white Gompholobium (G. album) whose flowers are, however, pale straw or cream-coloured, not white; and Messrs. Henderson, of the Wellington Road, the yellow Aphelandra squarrosa.

Of Ferns, both exotic and British, there were fine collections from Messrs. Fletcher, Woolley, Gedney, Allchin, Williams, and Smith. Messrs. Standish and Noble had also Lomaria chilensis, a supposed hardy kind. In one of the collections of British sorts we remarked the rare Gymnogramma leptophylla, which was recently discovered in Jersey, and of which some account was given in a former volume.

Miscellaneous subjects consisted of Berberis japonica, Beali, and intermedia; Lilium sinicum, and Embothrium lanceolatum from Messrs. Standish and Noble; Hæmanthus Rooperi, from Mr. Epps; Gordonia javanica, from Messrs. Fraser; a flowering top of Rhododendron javanicum, from Messrs. Lane; a plant of the Rhododendron called John Waterer, from Messrs. Waterer's, of Bagshot; and boxes of Irises and Pæonies, from Mr. Salter, of Hammersmith.

Pelargoniums were plentiful, and made a good display. In the class of 12 plants, Mr. Turner was first, with Majestic, Magnet, Ganymede, Topsy, Beatrice, Optimum, Enchantress, Rowena, Splendidum, Juliet, Virgin Queen, and Exactum; 2d, Mr. Dobson, with Ambassador, Arethusa, Harriet, Mont Blanc, Exhibitor, Star, Diadem, Ajax, Rosamond, Vulcan, Delicatum, Neatness; 3d, Mr. Gaines; 4th, Mr. Clark. In the Amateur Class of 10 plants, Mr. Nye, gr. to E. Foster, Esq., was first with Autocrat, Sunrise, Purple Perfection, Optimum, Ariel, Enchantress, Magnet, Cloth of Gold, Attraction, and Phaeton; 2d, Mr. Holden, gr. to the Rev. E. Coleridge, with Carlos, Pearl, Magnificent, Portia, Mochanna, Norah, Enchantress, Claudiana, Star, and Centurion; 3d, Mr. Robinson, Pimlico; 4th, Mr. Wier, gr. to G. Hodgson, Esq., Hampstead.

Of Fancy Pelargoniums there were not so many as usual. Mr. Turner was first with Barbette, Celestial, Perfection, Gaiety, Madame Rosati, and Delicatum; 2d, Mr. Gaines, with Advancer, Claranevilla, Fairy Queen, Delicatum, Princess Marie Galitzin, and Madame Ugald. In the Amateurs' Collections, Mr. Robinson was first with Cassandra, Celestial, Magnum bonum, Cobden, Fairy Queen, and Princess Marie Galitzin; 2d, Mr. Winser, gr. to A. Blyth, Esq., Hampstead; 3d, Mr. Wier, gr. to G. Hodgson, Esq., Hampstead; 4th, Mr. Barter, gr. to A. Bassett, Esq, Stamford Hill. A prize was awarded to Mr. Gaines for his French varieties.

In the class of New Pelargoniums, 6 plants, the first prize was awarded to Mr. Turner, for Sanspareil, Optimum, Zara, Mary, Majestic, and Leonora. Mr. Dobson had a boxful of cut blooms, among which were many very fine varieties.

Fuchsias were shown in excellent condition by Mr. Bray, of Regent's Park. His varieties were Perfection, Nonsuch, Elizabeth, Princess, Collegian, and Madame Sontag; 2d, Mr. Ward, Regent's Park, with good plants: but disfigured by the conspicuous display of strings of bast, with which their branches were tied in their places.

Calceolarias.—Mr. Stone, of Hull, sent some very fine herbaceous varieties, the best of which were Celestial, Truth, Rising Sun, Teetotaller, and Mary Ann. Some half-shrubby varieties were also furnished by Mr. E. G. Henderson, of Wellington Road. Of these the best were Aurora and crocea.

Verbenas.—Some were shown by Mr. Smith, of Hornsey, among which Rival and Triumph were good striking kinds.

Some good Pinks were exhibited. In the Amateurs' Class the first prize was awarded to Mr. Baker, Woolwich, for blooms of Huntsman, Sarah, Ruby, Colchester Cardinal, Favourite, Arthur, Mrs. Norman, Koh-i-noor, Winchester Rival, Sappho, Kate, and a seedling. In the class of 24 blooms for Nurserymen, Mr. Turner was 1st, with New Criterion, Perfection, President, Narborough Buck, Rubens, Beauty of Salt Hill, Charmer, Adonis, Pandora, Mr. Hobbs, Fanny, Sappho, Ada, Ruby, Sarah, Jupiter, Portia, Arthur, Edgar, Prince Albert, Great Criterion, King of Purples, Glory, and Mrs. Maclean; 2d, Mr. Bragg, of Slough.

Pansies, 24 blooms.—1st, Mr Holder, gr. to Rev. E. Coleridge; 2d, Mr. James, gr. to W. F. Watson, Esq., Isleworth. 36 blooms, Nurserymen, 1st, Mr. Turner; 2d, Mr. Bragg; 3d, Mr. Bryan, Hounslow. Among these we remarked specimens of Comet, Earl Mansfield, Royal Albert, Emperor, Miss Stewart, Ringleader, Egon, Miss Talbot, Absalom, Father Gavazzi, Samson, and Mrs. Marnock.

Seedlings.—Certificates were awarded to the following: Pelargonium Enchantress; this was exhibited by Mr. Holder,

Black [illegible] it is a [illegible] shaped fancy kind, with a good colour; Pelargonium [illegible] Lamia, and Vesper, all of which have been described before. Pansy, Mr. Phillips, exhibited by Mr. Bragg. The prize for the best scarlet Pelargonium was awarded to Mr. Gaines, for Conqueror.

Of FRUIT, which was shown in the conservatory, there was a fair display; but owing to the crowded state of the place, we only found opportunity to notice some of the best of it. There were 3 miscellaneous collections, 6 Providence Pine-apples, 9 Queens, besides one or two other sorts; 10 green-fleshed and 8 scarlet-fleshed Melons, 27 dishes of Black Hamburgh Grapes, besides 8 trays of 12 lbs. each; 4 dishes of West's St. Peter's, 5 of Sweetwater and Muscadines, 6 of Muscats, 5 of Frontignans, and 1 of Judson's Richmond Villa; 25 dishes of Peaches, and 16 of Nectarines; 4 of Figs, 8 of black Cherries and 4 of white, and 42 exhibitions of Strawberries.

The best collection of FRUIT came from Mr. M'Ewen, gr. to the Duke of Norfolk, at Arundel. It contained 2 dishes of Black Hamburgh Grapes, 3 Queen Pine-apples, the heaviest of which weighed 4 lbs.; May-duke Cherries, 2 dishes of Royal George Peaches, and Elruge Nectarines; 4 dishes of Strawberries, consisting of Eleanor, British Queen, Victoria, and a dark-coloured French sort called La Liégeoise; and 3 Melons, viz., Bromham Hall and Golden Drop.

PINE-APPLES.—The best Queen by far was produced by Mr. James, gr., Pontypool Park. It was beautifully formed, quite ripe, and weighed 5 lbs. 1 oz. Mr. Jones and Mr. Dods, also, both had good fruits of this variety. Providences were, for the most part, but indifferently shaped. The best came from Mr. Collinson, Eaton Hall; and good fruit, though light, came from Mr. Robinson, gr. to Lord Boston, Mr. Bailey, and Mr. Hamp. Mr. Turnbull and Mr. Davis also showed Pine-apples.

GRAPES.—The best tray of 12 lbs. Black Hamburgh was furnished by Mr. Frost, gr. to E. L. Betts, Esq.; and the same exhibitor also deservedly obtained the first prize for three bunches of the same variety. Mr. Henderson, Mr. Forbes, Mr. Mitchell, Mr. Spary, and Mr. Harrison likewise had excellent exhibitions of this sort. The best bunches of Black Prince came from Mr. Bore, of Springfield, Mr. Lushey, and Mr. Constantine. White Muscadines were furnished in excellent condition by Mr. Bailey, Mr. Williams, and Mr. Busby; Muscats by Mr. Turnbull, Mr. Forbes, and Mr. Forsyth; and Frontignans by Mr. Henderson, and Mr. Bain.

PEACHES AND NECTARINES.—From Mr. Collinson came a beautiful dish of Royal George, and Mr. Snow had equally fine specimens of Noblesse. Mr. Wright, Mr. Forbes, Mr. Chapman, and Mr. Ruffet had also fine dishes—the last-named sending Grosse Mignonne. Mr. Evans had beautiful Violette Hâtive Nectarines, and excellent examples of Elruge came from Mr. Chapman, gr. to J. B. Glegg, Esq. Mr. Henderson, Mr. Abbott, Mr. Tegg, and Mr. Bore, also all showed good dishes of this kind of fruit.

Of FIGS the best were Mr. Constantine's examples of Nerii, and Brown Turkey came from Mr. Collinson and Mr. Iveson.

CHERRIES.—Of black kinds the best was a beautiful punnet of Circassian from Mr. Snow; and another of Elton, from the same grower, also obtained the first prize in the class of white sorts. Mr. Mitchell, of Brighton, showed good fruit in both classes.

The best STRAWBERRIES came from Mr. M'Ewen. They consisted of British Queen and Eleanor. Mr. Reid, of Sydenham, also showed good fruit in this class.

MELONS.—Mr. Chapman, gr. to J. B. Glegg, Esq., obtained the first prize for a green-fleshed kind, and Mr. May, gr. to H. Colyer, Esq., sent the best scarlet fleshed. Mr. Monro and Mr. Jupp also each sent good Melons.

Messrs. Lane showed some dwarf standard Cherry and white Currant trees in pots, both extremely well fruited for their size.

CHELTENHAM HORTICULTURAL EXHIBITION.—It is a source of gratification to observe the yearly improvement in the management and success of provincial horticultural exhibitions. A few years since they were almost invariably got up and managed by interested parties; *i.e.*, by proposing exhibitors, whose object was not the advancement of horticulture, and the collateral arts and sciences connected with it, but to so arrange the prize and censor lists as to ensure to themselves the lion's share of the awards. As a natural consequence of such injudicious management, societies of the kind have always proved very ephemeral: and considering the little good and the large amount of bad feeling they engendered, such a result was little to be regretted. In some few instances, however, a different end has been aimed at. Perhaps no provincial exhibitions have equalled (certainly none have surpassed) those of Cheltenham. Not contented with throwing them open to the United Kingdom, they have opened them to all the world; and, by offering liberal prizes, encourage competition, and make it worth while for first-rate growers to bring their productions from a distance. An exhibition took place at Cheltenham on Tuesday and Wednesday last, which would have done no discredit to London. The stove and greenhouse plants were numerous and fine: Heaths good; Orchids choice, healthy, well grown, and in respectable quantity; and of plants with ornamental foliage there was quite a legion. The only drawback was in the Pelargoniums, which, though abundant in quantity, were, with one or two exceptions, very poor and ill-grown. On the first day, the plants were exhibited in the usual way, classed according to their kinds; but, on the second, a new feature was tried, which was evidently a step in the right direction. The plants were all rearranged, each exhibitor's in one great mass by themselves. Prizes were offered in five classes, and the exhibitors had the option of showing their plants in any one of the classes they pleased. The appearance of some of the groups, which were tastefully arranged, was very good: and we observed some very happy effects produced by combinations of Orchids with Pelargoniums, and the judicious admixture therewith of Ferns and other ornamental-leaved plants. The exhibition took place in the grounds of the old Wells, which, besides a very handsome and well-stored museum, contains, as an additional attraction for the season, a crystal palace on a small scale, containing a very nice little exposition of arts and manufactures. Altogether, a spirit quite up to the present day has been displayed by the inhabitants of Cheltenham. We recommend their doings as an example to other towns, and in their future trials heartily wish them success. *W. P.*

Notices of Books.

Handbooks to the Crystal Palace. Bradbury & Evans.

THIS series consists of seventeen duodecimo volumes, remarkably well got up by the gentlemen connected with the building, skilfully illustrated by excellent woodcuts, and admirably printed. They vary in price from 1*s.* to 3*d.*, and furnish a complete guide to the palace and grounds. One of them, written by Mr. Phillips, and illustrated by Mr. Philip de la Motte, is a condensation of the others, with additions, but by no means a substitute for them. We have so frequently described the garden and its decorations, with which alone this journal has to deal, that little remains to be said, except that, in Mr. Phillips' volume, are very clever views of what the scenery will become, when the works shall have been completed.

Russia, the People, Country, and Government; Turkey, the People, &c.—by G. T. Horton, each with 30 illustrations (Mason & Co.)—form a pair of well printed volumes upon the countries whose name they bear, treating concisely of their history, religion, climate, commerce, and defences. The woodcuts are very cleverly executed, especially a full-length portrait of the Sultan.

FLORICULTURE.

THE RANUNCULUS is admitted to be the *ne plus ultra* of floral perfection, and yet it is a singular fact that its culture is all but neglected by florists in general. Let us hope, however, that its present limited cultivation may soon be extended, and that all may become more familiar with its appearance. Few flowers can be grown in so limited a space and with so small an annual cost; and when in bloom what surpasses it in beauty! Among southern growers, Messrs. Tyso, Costar, Airzee, Reeves, and Hook stand prominent; but these are not enough, and our midland florists seem to be quite as neglectful of its culture as our metropolitan friends. I trust that these remarks may be the means of inducing a few new growers to enter the field; and with a view to accelerate this desideratum, I venture to point out to the uninitiated the best modes of cultivation, and which are to be found in Tyso's little treatise on this flower. I have carried out the following instructions as to soil, formation of beds, and planting, fully, and with such excellent success, that I feel convinced the drawing attention to them here even thus early in the season will be doing a real service. "The foundation of all good culture is the adaptation of the compost to the natural habitats of the plant. Experience teaches that the Ranunculus delights in a rich hazelly loam. If, therefore, the natural soil of the garden be unfavourable, procure the top spit of a pasture, of rather heavy and tenacious but not clayey qualities, with the turf, and lay it in a ridge some months, and turn it two or three times before use. To give precise and accurate directions in print for selecting a suitable soil is difficult, but it is deserving of remark, that a pasture abounding with, and luxuriantly sustaining the British varieties of Ranunculus, or Butter-cups, as they are usually called, has also been found congenial to the Asiatic species. The addition of fertilising agents to maiden soil is of paramount importance. Many composts have been recommended to the amateur, the proportionate ingredients of which have been prescribed with the precision of a physician's formula. The secret of vigorous foliage and enormous blooms has been a mixture of powerful chemical stimulants, or a substratum of cow-dung a foot thick, or some other equally unnatural process. Our advice is to avoid quackery. Many valuable collections have been ruined by excessive applications of suitable manures, or the use of such as are destructive rather than nutritive. Decayed stable and cow-dung, in equal quantities, constituting together about one-third, added to two-thirds of loam, will, when mixed and thoroughly incorporated, form a compost for the main depth of the bed; reserving a portion of loam sufficient to make a top layer of soil 2 inches deep, to which about half the above-stated proportions of well decomposed manure may be added. It is of importance that the tubers should not be placed in contact with fresh manure, as it engenders disease in the roots, and consequent injury to the plants. Having chosen an open but not exposed part of the garden, which will admit of the beds being laid down about east and west, remove the earth a foot deep, and from 3 feet to 3 feet 4 inches wide, and fill the bed with the prepared compost, to within 2 inches of the surface; leave it thus a month, and then add the reserved top soil. These operations are best done in autumn, that time may be allowed for the earth to settle. The surface of the beds should be level, and not more than an inch higher than the paths, in order that the roots may be kept regularly cool and moist; and as the Ranunculus thrives on a firm bottom, the compost should not be disturbed at the time of planting, more than is just needful for that operation. During winter the surface may be pointed up rough to take the benefit of frosts, but in no case should this be done more than 2 inches deep. The beds may be neatly edged with inch boards painted lead colour, and in case named sorts are planted, should be numbered with white paint to correspond with the numbers entered in the amateur's list. As a bed, well constructed at the commencement, will admit of several successive plantings with an annual addition of fertilising materials, it is worthy of the particular care of the cultivator, though the preparation at first may involve some little trouble and expense. The best season for general planting is the last fortnight in February—the plants have not then to contend with the severities of the winter. In some favourable seasons roots may be planted with advantage in October; they will have more time to vegetate, and establish themselves; will make stronger plants, and will bloom more vigorously, and about a fortnight earlier than if planted in spring. Considerable hazard, however, attends autumn planting, and it is not recommended, except by way of experiment, to those who possess a large stock and can afford to risk a portion. In fine weather, towards the close of February, rake your beds perfectly level, and divide them into six longitudinal rows for mixed roots, allowing 4 inches from the outside row to the edge; or for named sorts, mark your rows transversely at distances of 5 inches asunder, and plant six roots in a transverse row. Draw drills one inch and a half deep, and plant the roots with the claws downwards, with a gentle pressure to secure them in the soil, so as to be one inch and a half from the crowns to the surface. When planting on a small scale a dibble with a shoulder at the precise depth may be used, but in large quantities it is an inconvenient method; and planting at the bottom of a drill with slight pressure, and without disturbing the subsoil, is attended with similar advantages to the use of a dibble, and in practice will be found to have some points of preference. If the top soil is light after planting, it may be gently beaten with the back of a spade; this operation, however, must be only done in dry weather." *C.*

Miscellaneous.

CORRESPONDENCE BETWEEN LORD JOHN RUSSELL AND MR. KENNEDY.

25, Lowndes Square, 5th June, 1854.

MY LORD,—I am induced to address this letter to your lordship at the present time, from two considerations—1st, You are Leader of the House of Commons; 2d, It was to you, to whom I have been intimately known throughout my life, that I owed my appointment as Commissioner of Woods, Forests, and Land Revenue of the Crown. You were also a member of Lord Melbourne's Government in 1837, when he was pleased to appoint me to the office of Paymaster of Civil Services in Ireland, an office created at that time, and substituted for the ancient Treasury and Exchequer, and I was selected as a person qualified to introduce a new system in financial affairs in that country. At the close of 10 years' service, a letter was addressed to me by command of the Lords Commissioners of her Majesty's Treasury, bearing date April 3, 1847, transmitting to me a Treasury minute of March 30, of both of which documents I beg leave to annex copies for your lordship's information, respecting the manner in which I was considered to have performed my duties.

From the office of Paymaster of Civil Services, it was proposed to me by your lordship, that I should be transferred in the autumn of 1850, to the Department of Woods, Forests, and Land Revenue, for the purpose, as I believe, and cannot doubt, of assisting to introduce an improved system of management with regard to the property of the Crown, which in many most important particulars had been notoriously mismanaged and neglected, and which in public estimation loudly called for amendment. This view is fully and emphatically confirmed by the language of her Majesty's speech from the throne, on August 8, 1851, when her Majesty was graciously pleased to state that, "I have willingly given my consent to a bill relating to the administration of the Land Revenues of the Crown, which will, I hope, conduce to the better management of that department, and at the same time tend to the promotion of works of public utility."

Your lordship is aware that very recently a letter was addressed to me by the Chancellor of the Exchequer, dated April 29, informing me, "that after what has taken place it is plainly impossible that the affairs of the department can remain in your hands with advantage to the service of the Crown and of the public," which decision has been subsequently confirmed by a Treasury minute, bearing date May 10, 1854, going at large into the subject (but omitting a letter which I addressed on May 2 to the Earl of Aberdeen), and to which minute I beg leave to refer your lordship. This minute makes a temporary arrangement for the transaction of the business previously performed by me, but my patent of appointment remains at the present time unrevoked, and can be cancelled, I apprehend, only by the issue of a fresh commission, which has not yet taken place.

When I received the Chancellor of the Exchequer's letter of April 29, I had no reason to doubt that the decision which the Chancellor of the Exchequer announced to me in it, was also the decision of the Government, and I treated it as such, but on May 2 I felt it to be necessary to address a letter to the Earl of Aberdeen, as First Lord of the Treasury and Prime Minister; and when I received his lordship's reply, dated the 9th, informing me, "that not having been informed of the circumstances to which you advert, I felt it incumbent upon me, before expressing any opinion, to examine the voluminous documents explanatory of the case,"—I, for the first time, became aware that Mr. Gladstone's decision was not the act of Government, but of the Chancellor of the Exchequer individually.

As Lord Aberdeen had not been consulted, so I take for granted that your lordship equally, was at the time uninformed, and in ignorance of the decided step taken by the Chancellor of the Exchequer, your colleague in the administration, with respect to an individual whom you, as Prime Minister in 1850, appointed to the office, from which he was removed by the act of the Chancellor of the Exchequer alone. Whether, if I had been aware, from the first, of all these circumstances, I should have taken all the steps I did take, I will not now stop to discuss; but the moment I received the letter of dismissal I could not help feeling indignant at the hasty injustice with which I was treated, and I was anxious (as I had been during the whole of the past year), that my management of the department entrusted to me, and also the causes and justification of my dismissal from the public service, should be inquired into.

Both these subjects are no doubt of great public importance, but the latter partakes of a private and personal character, involving, as the Treasury minute of March 31 *unwarrantably* states, my "veracity, integrity, and honour," as a public servant.

For the investigation of the first subject, a notice of motion for a committee has been kept floating on the Notice Book of the House of Commons during almost the whole of the present Session of Parliament, manifestly in a spirit of inculpation as affecting my management, and the terms of the motion have been somewhat singular, restricting the objects of the committee to "present" management, thereby excluding "past" management (or mismanagement as the case might be), and thus excluding a fair inquiry into the *present*, which must necessarily depend on the *past*; and I have been informed, and should suppose correctly, that the Treasury consented to this committee, on the condition of controlling in a great degree the nomination of its members.

But for the investigation of the second, and personal question, a different tribunal seems in fairness to be required, as contra-distinguished from a committee originating in disapprobation of my administration of the Royal Forests; and from the last letter which I have received from the Treasury, of which a copy is annexed, I cannot help believing that your lordship, as Leader of the House of Commons, will at once see the justice of granting, *as an unopposed motion*, the appointment of an impartially chosen and select committee, *to be named by the Committee of Selection*. In the justice and fairness of the Committee of Selection I should have entire reliance.

I beg leave thus briefly to state to your lordship that my object is to free my public character from the imputations cast, as I think most unjustly, but with much dexterity upon it, a dexterity which is entirely unsupported by the facts of the case, and to show to an impartially-chosen tribunal of high-minded gentlemen, that my "veracity, integrity, and honour" are in no way involved or implicated, as has been unscrupulously asserted in the Treasury minute of March 31.

A signal instance of the manner in which I have been treated as regards the administration of the affairs for which I was responsible, is made manifest in a case in the department of the Land Revenue in Ireland, which relates to the Crown's estate of Kilconcouse, in the King's County, where Mr. Wilson, at the instance of Mr. Sadleir, and, I apprehend, without the knowledge of a single Cabinet Minister, reversed by an act of authority, as I think unjustifiably, a course of proceeding which I considered the public service (and set forth in public documents) imperatively to require, and which I, as the responsible administrator, after personal consultation with the Lord Lieutenant of Ireland, had deliberately pursued. It was first sought to accomplish this object by verbal communication with me, which would have left no trace behind, but I declined to make myself responsible for an act which I strongly disapproved. *The command*, however, was eventually issued, and instantly obeyed by me, and because I had not submitted to perform an act of subservience in this matter, I felt ever after that the displeasure of the Treasury was visited upon me, and so it has been ever since.

I could say much more, but will beg leave to refer your lordship to a statement more at large, which I am about to make public, and trust that, in the meantime, your lordship, as Leader of the House of Commons, may see fit to intimate to me that a Committee will be conceded forthwith, to be nominated by the Committee of Selection, to enter on an impartial investigation of the grounds of my dismissal from office. I undertake to show before such a tribunal, that, under colour of an inquiry, an act of enormous injustice has been committed, by means wholly subversive of the principles on which justice and law are administered in this country.—I have the honour to be, my lord, with great respect and regard, your lordship's obedient humble servant,

(Signed) T. F. KENNEDY.

The Right Hon. Lord John Russell.

Chesham Place, June 9, 1854.

SIR,—It is with much regret that I contemplate the circumstances, only partially known to me, which have led to your separation from the public service. The high character you bear for integrity and honour, the long and useful career which you have pursued in the service of the Crown, and the zeal for the reform of abuses which distinguishes you, make it a matter of deep concern to me that you should no longer be in charge of the department hitherto entrusted to you.

Not having at this moment a seat in the House of Commons, I cannot give you an answer as to the course which I may think it my duty to pursue in reference to Parliamentary enquiry; but should I be re-elected, I shall be ready to communicate with any member who may move for a committee upon this painful subject. —I remain, sir, your most obedient servant,

(Signed) J. RUSSELL.

The Right Hon. T. F. Kennedy.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—At no season should the plants be crowded in this house, and this is especially to be avoided at the present, when mildew is unusually active, and most things in such a state as to be speedily injured by it. Endeavour to grow every plant well, and to bring nothing but fair specimens here, and then there will be no temptation to huddle them together for the purpose of making the one hide the defects of the other. In the case of soft-wooded stove plants, or such things as are grown in a season, it is not of much consequence if they receive a little injury by being placed close while in bloom, but all valuable specimens of hard-wooded plants should stand quite clear, so that every part may receive plenty of light and air. Indeed most conservatories are so constructed and managed as to be very unsuitable for many of our finest summer-blooming greenhouse hard-wooded plants, as Ericas, Leschenaultias, &c.; and if these must be brought here they should while in flower be placed near the glass in the coolest part of the house, where air can be freely admitted during the day; and a little left on at night, when the weather is warm, will greatly assist in preventing etiolation. And such things as are known to be impatient of a confined atmosphere should on no account be allowed to remain too long in a situation which is at the least unsuitable; for fine specimens are not grown without much time and care, and many of them do not soon, if ever, get over an injury which at the time, save to the practised eye, may be hardly perceptible. The Camellias and Azaleas for early flowering will have set their buds, and should be removed to a sheltered shady situation out doors; for if kept in heat they will be apt to make a second growth, which must be avoided, as it prevents their flowering so freely as would otherwise be the case. Give every possible attention to plants for autumn and early winter flowering, as Lilium lancifolium, Chrysanthemums, Salvia splendens, Globe Amaranths, Tree Carnations, Scarlet Geraniums, Cinerarias, Gesneras, Begonias, Euphorbias, &c. Let these have plenty of pot room, good rich compost, a moist atmosphere, and plenty of space for the perfect development of their foliage, regulating the temperature according to the nature of the plant, and they will make very rapid progress. Selago distans is an exceedingly useful winter flowering plant, requiring merely a cold pit to grow it, and flowering through a long season. But we have nothing that surpasses the Epacris, the winter-blooming Ericas, and the Cytisus, and these should not be overlooked in the crowd of suitables. Among comparatively new plants, Sericographis Ghiesbreghtiana is a really good thing for the decoration of the conservatory in winter, as also the blue Conoclinium, and the singular looking Thyrsacanthus rutilans is first-rate for a rather warm house; but I have not found it to answer for winter use in the conservatory. The atmosphere of plant houses can hardly be kept too moist at this season, but it is very easy to err in the opposite direction; therefore sprinkle every available surface frequently, and syringe growing stock lightly twice a day during bright weather. Avoid a too free use of the shading, and ventilate freely, in order to secure compact growth.

FORCING DEPARTMENT.

PINERY.—In case of its being found necessary to add fresh tan to prevent a decline of the bottom heat, it will, in most cases, be safer to surface with a few inches, which should be in a rather dry state, than to mix it with the old tan, which might cause too strong a heat, and occasion much trouble. There is much greater danger from too much than too little bottom heat at this season; therefore, keep a sharp watch upon beds that have been recently disturbed, and avoid the possibility of burning the roots. Encourage plants swelling their fruit with a high temperature, a moist atmosphere, and plenty of manure water at the root; and keep the fruit in an upright position. Young growing stock must not be allowed to stand too closely, but should be afforded plenty of space for the perfect development of their foliage, and kept near the glass, to induce stocky growth. A slight shade on the forenoons of bright days will be useful, but this should be used sparingly, allowing the plants all the sun they will bear without the leaves getting discoloured; except where the bottom-heat is supplied by the fire, this need be used but very sparingly for the next three months, for by shutting up early in the afternoon after syringing and giving the plants a good steaming every sunny afternoon, they will make rapid growth without the aid of fire-heat, save on dull cloudy days, or unseasonably cold nights. VINERIES.—Keep a sharp look-out for spider, and where plants are grown under the Vines, for black thrips also, and spare no pains to keep the foliage in perfect health, for if the leaves are allowed to get injured before they have performed their part, the economy of the Vine will be deranged, and the mischief will be perceptible on next season's crop. The laterals need not be kept so closely stopped after the fruit is ripe, but they should not be allowed to interfere with or shade the principal leaves. After the fruit is cut the house should be kept more moist, giving the Vines a good washing with the engine if red spider is at all troublesome; but air should be admitted freely, keeping the atmosphere as cool as can conveniently be done. Recently planted Vines should be encouraged to ramble away freely, and the laterals should not be stopped too closely, as the more leaves they are allowed to make the more freely the roots will run in the border, and this is what is chiefly wanted the first season. PEACHES.—Maintain a moist healthy atmosphere while the fruit is swelling. Syringe and shut up early in the afternoon, but give air sufficiently early in the morning to prevent any risk of scorching the foliage. Keep the inside borders well supplied with water, giving manure water to trees bearing a heavy crop, and see that the soil is thoroughly moistened to the bottom of the border. Give every attention to the preservation of the foliage in houses where the fruit has been gathered, keeping the atmosphere cool and moist, and giving the trees an occasional washing with the engine, to keep red spider in check and the leaves clean.

FLOWER GARDEN AND SHRUBBERIES.

Now that the bedding stock is fairly cleared off, and growing freely in their summer quarters, there will be more space and time to attend to the propagation of favourite hardy plants, and no time should be lost in getting in a good supply of cuttings of such things as it may be thought desirable to increase; for the propagation of the bedding out stock for next season will soon require attention. If not already done, sow Brompton and Queen Stocks for spring flowering, selecting for them a bit of light rich soil, and never letting the surface become dry until the plants are well above ground, for there is no time to be lost if these are to be had strong for blooming next May, and at that season we have nothing more beautiful nor half so fragrant as well-grown plants of the latter. Do not omit to put on a slight hotbed a good stock of Pink pipings; and also see that there are plenty of young plants of Pansies for enlivening the borders next spring. These have hitherto been left too much in the hands of the florists, but they are deserving of extensive cultivation for the spring decoration of the flower garden. Young shoots, where they can be procured, will root freely under a hand-glass in a shady situation, and if planted out in rich soil in a shady corner, will grow rapidly during the autumn, and may be transplanted into the flower garden, when the frost cuts off its present occupants. Cuttings of Roses grown under glass root in a gentle bottom-heat almost as freely as Verbenas; and every cutting which can be procured should be got in at once, for it is hardly possible to be overstocked with these. Persevere with mowing, rolling, &c. Keep down weeds, and let neatness prevail everywhere.

FLORISTS' FLOWERS.

PINKS will now demand extra care; in the north they are a fortnight later than with us. Those buds which have been retained should be examined every morning and tied round with a piece of thread, which has been rubbed with bees'-wax. The pipings or Grass may be taken off, cut across at the second joint, and placed under hand-glasses on a gentle bottom-heat; they will soon strike root. CARNATIONS and PICOTEES should be disbudded immediately. Occasional waterings with weak liquid manure will now be found serviceable. Offset TULIPS which are turning yellow in the foliage may be taken up, placed in paper bags with the name written outside, and hung up in a place where there is a free circulation of air. As the bulbs on the main bed become fit to remove, place them in their proper compartment in the cabinet; the skin and root may remain on till thoroughly dry, when they may be safely removed. Water Dahlias during dry weather; it will also be highly serviceable to mulch the surface of the soil with rotten manure, as prevention is better than cure; trap earwigs and other destructive insects on all available opportunities.

HARDY FRUIT AND KITCHEN GARDEN DEPARTMENT.

Black fly is sometimes very troublesome on the late Cherry trees at this season; it is, however, easily got rid of by dipping the ends of the shoots in tobacco-water, giving the trees a good washing with the engine next morning. This may occupy a little more time than the usual method of syringing, but it is a more certain remedy, and much less tobacco water is required. Lay in the young shoots of Peach and Nectarine trees, stopping any that may seem to be taking a decided lead, and endeavour to secure an equal state of growth all over the tree. Also persevere in stopping the breast wood on all trained trees, whether wall, espalier, or pyramidal, and proceed with nailing as expeditiously as circumstances will admit. Get Carrots, Onions, &c., thinned while the ground is in a favourable state, also get a good breadth of Broccoli and winter greens planted out if ground can be spared, otherwise prick out the plants in nursery beds, to keep them strong and dwarf until they can be permanently planted out.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending June 22, 1854, as observed at the Horticultural Gardens.

June.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Min.	Mean	Of the Earth 1 foot deep.	2 feet deep.	Wind.	Rain.
Friday 16	20	29.772	29.622	60	53	56.5	56	56½	E.	.04
Satur. 17	[illegible]	29.657	29.569	67	45	56.0	56½	56½	S.W.	.15
Sunday 18	22	29.856	29.743	70	45	57.5	57	57	S.	.00
Mon.. 19	23	29.929	29.912	66	38	52.0	57½	58	S.	.00
Tues. 20	24	29.908	29.876	66	44	55.0	57	58	S.W.	.00
Wed. 21	25	30.030	30.008	67	46	56.5	57	58	S.W.	.16
Thurs. 22	26	30.077	30.067	72	59	65.5	57	58	S.W.	.00
Average		29.889	29.828	66.9	47.1	57.0	56.8	57.4		.35

June 16—Hazy; rain.
— 17—Uniformly overcast; cloudy and fine; clear at night.
— 18—Very fine throughout; clear at night.
— 19—Very fine; cloudy; clear and cold at night.
— 20—Slight haze; fine; very fine, with clouds; clear.
— 21—Fine; cloudy and fine; rain at night.
— 22—Very fine throughout; cloudy and mild at night.
Mean temperature of the week, 4½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending July 1, 1854.

June and July.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 25	71.7	50.4	61.1	15	0.72 in.	1	1	5	2	5	8	3	2
Mon. 26	72.5	50.7	61.6	14	1.00	1	2	4	1	2	9	5	1
Tues. 27	73.2	51.5	62.4	16	[illegible]	2	2	2	2	4	10	6	—
Wed. 28	72.5	50.7	61.6	10	0.65	2	2	5	1	2	7	3	6
Thurs. 29	72.6	49.6	61.1	7	0.20	2	4	3	—	1	11	5	2
Friday 30	72.6	50.1	61.4	10	0.50	—	4	4	2	4	5	5	2
Satur. 1	72.1	52.3	62.2	14	1.23	1	2	5	—	4	9	5	2

The highest temperature during the above period occurred on the 26th, 1826—therm. 93 deg.; and the lowest on the 30th, 1840—therm. 35 deg.

Notices to Correspondents.

ARAUCARIA: *W M.* On no account give it, or other Conifers manure of any kind whatever. It is fatal to the race. If your plant requires to have its health attended to, open the ground round its roots in August next, remove any bad soil, and replace it with a mixture of peat, loam, and sand, or loam and rotten *leaf-mould*.

BOOKS: *An intending Emigrant* will find no difficulty, upon arriving in Australia, in procuring "Sir Thomas Mitchell's Treatise upon the Cultivation of the Vine and other Mediter-ranean Crops in Australia." "Busby on the Vine" is another work of value procurable in the colony.—*A Z.* Moore's "British Ferns," last edition—for native species. There is no book answering to your description, upon exotic Ferns.—*J C.* "McCulloch on Wine Making."—*Beginner.* Paxton's "Cot-tager's Calendar," and "Mills on the Cucumber and Melon" will possibly suit you.‡

DISEASES: *S D.* The Pelargonium leaves are affected with the "spot," of which disease there are two or three forms, all arising, as far as we have observed, from imperfect drainage and ventilation, combined or separate. We should not recommend propagation from such plants, as the produce will very probably have a tendency to contract the same malady, under circumstances which would not affect a healthy stock.—*T Dodds.* The disease is doubtless at the root. The case is clearly similar to that of "Ivenensis," noticed at p. 392, to which we refer you.—*W C.* The affection of the Vine leaves, of which you have sent a specimen, is almost universal, especially in the north; and is probably due to want of light and depression of temperature, for which the present year has been so remarkable. Unhappily we have information that it is not confined to the leaves, but extends to the berries. The grievance is past remedy this year, but there is good reason to hope that with a more genial season it will entirely disappear. It is some comfort that your leaves exhibit no traces of mildew. *M. J. B.*

INSECTS: *C W S.* The Turnip-fly is a small jumping beetle (Haltica nemorum) reared from minute grubs which are found within the leaves of the Turnip and wild allied plants. The chief object is to promote the growth of the young Turnip as rapidly as possible by watering them, manuring the soil, and dusting the leaves with soot or lime. The perfect insects may be caught by drawing a sack rubbed with bird-lime, or a deep insect bag-net over the rows of young plants.—*H.* Your stick-like insect is the caterpillar of the swallow-tail moth Ourapteryx sambucaria, a common species. *W.*

MAGGOTS: *Enquirer.* Try what effect gas water has on them.‡

NAMES OF PLANTS: *H G.* Epidendrum calochilum, Maxillaria punctata *var.*, Pholidota imbricata, and an Odontoglossum not known to us.—*G E W.* Some leguminous plant, but it is impossible to say what, in the absence of flowers.—*Cecil.* 1, Carex remota; 2, C. sylvatica; 3, Festuca or Vulpia bromoides. —*J P.*, Tunbridge Wells. Veronica officinalis.—*A H F C.* Astrantia major.

WOODLICE: *T T D.* A toad or two put into your frames will be found to lessen their numbers.‡

TO AMATEUR FLORISTS, GARDENERS, ETC.

H. COLES & CO. beg to inform Floriculturists, &c., that their celebrated POT MANURE, which has given general satisfaction for so many years, may be obtained of the following Agents in packages, at 20s., 10s., 5s., 2s. 6d., 1s., and 6d. each. For Amateur Rose, Fuchsia, and Chrysanthemum Growers, it will be found one of the best Manures yet introduced.

Agents:—Mr. G. Lawrence, Seedsman, Piccadilly; Mr. Hooper, Centre Avenue, Covent Garden; Mr. Gaines, Herbalist, Covent Garden; Mr. Wood, Seedsman, High Street, Marylebone; Mr. J. H. Tuck, Florist, Sloane Street, Chelsea; Mr. Rickets, Corn Chandler, Victoria Road, Pimlico; and Mr. Gibbs, 14, Portland Road.—Depot, Albert Wharf, 10, Wilton Road, Pimlico.

TURNIP SOWING.

SUPERPHOSPHATE OF LIME, made from Bone, which is the best Manure for Root Crops (see the Royal Agricultural Society's Journal, Vol. vi., part 2). PERUVIAN GUANO, NITRATE OF SODA, BONE DUST, SULPHURIC ACID, and all other Manures of known value. The Peat Moss Charcoal Company have appointed the undersigned Sole Agents for the Sale of this fixer and distributor of Ammoniacal matter. They are also Sole Agents (in London) of the Patent Sanitary Company for the sale of their "Nitrogenised Carbon."—Apply to Mark Fothergill & Co., 204a, Upper Thames Street, London.

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures.

Wm. Inglis Carne, 10, Mark Lane, London.

THE LONDON MANURE COMPANY'S WHEAT MANURE, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. Edward Purser, Sec.

Bridge Street, Blackfriars.

THE FOLLOWING MANURES are manufactured at Mr. Lawes' Factory, Deptford Creek:—Turnip Manure, 7l. per ton; Superphosphate of Lime, 7l.; Sulphuric Acid and Coprolites, 6l.

Office, 69, King William Street, City, London.

N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

Note.—By employing this Manure, at least half the cost of the best Peruvian Guano is saved, and, at the same time, all its valuable effects produced.—*See Certificates.*

THE "ECONOMICAL" MANURE.—The reports from this year's customers fully support the high character this valuable Manure obtained last year, and parties in immediate want of manure can be supplied with any quantity on the shortest notice. $1\frac{1}{4}$ to $1\frac{1}{2}$ cwt. per acre is the proper quantity to be used, and must not be exceeded. Price 12*s.* per cwt., packages included, and put free on to the Railways in London, Manchester, or Birmingham. All particulars in the Company's pamphlet, to be had gratis, with samples, at the British Economical Manure Company's Offices, 10, Mark Lane, London, or sent free on applying to

Benjamin Coveney, Manager.

Note.—For Turnips and Root Crops generally, where the seed is sown or the plant out of the ground, and in cases where from any cause it is weak, this Manure, mixed with about its own quantity of earth or ashes, may be put on the surface with great effect, and will be found to speedily force the growth of the plant, and give it an extraordinary vigour; or, as it quickly dissolves, it is not too late to apply it as a top-dressing for grain crops where the plant is sickly or the crop patchy.

All orders promptly executed.

*** Parties are referred to this paper of the last few weeks for the letters of those who have used the Manure with great satisfaction this year and last.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. Nesbit, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and dispatch.

Gentlemen desirous of receiving instructions in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

Priced lists of plant tubs and boxes forwarded on application.

BALANCE OF FACTS IN FAVOUR OF

RICHMOND AND CHANDLER, who have, in competition with the best selected CHAFF CUTTERS of the most celebrated makers in the trade, carried off the highest prizes against all comers.

COPY OF TESTIMONIAL.

"Early Court, Reading.

"Gentlemen,—I beg to hand you a cheque for your Corn Crusher; I must add, at the same time, that nothing can exceed the goodness of the Machine. I have found in it all I can wish, and, moreover a very superior finished Machine, and a pattern for other makers. (Signed) "Geo. Shackell.

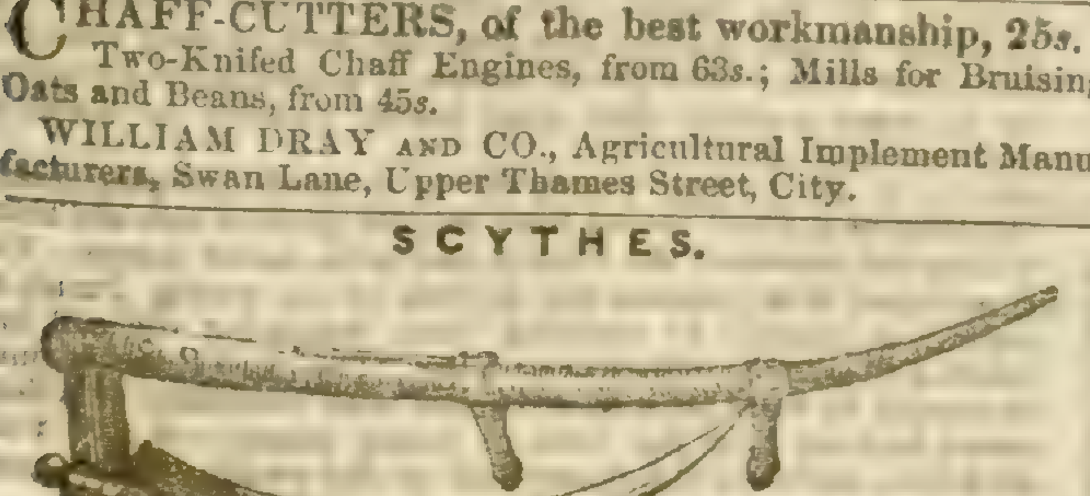
"Messrs. Richmond & Co."

Address—Richmond & Chandler, Manchester; and South John Street, Liverpool.

CHAFF-CUTTERS, of the best workmanship, 25*s.*; Two-Knifed Chaff Engines, from 63*s.*; Mills for Bruising Oats and Beans, from 45*s.*

WILLIAM DRAY and CO., Agricultural Implement Manufacturers, Swan Lane, Upper Thames Street, City.

SCYTHES.



BOYD'S PATENT SELF-ADJUSTING SCYTHE will last out three of the ordinary sort, and is always ready for use.

"We have seen this Scythe at work, and can strongly recommend it."—*See Mark Lane Express*, May 16, 1853.

To be had of every Ironmonger and Nurseryman in the Kingdom; and wholesale and retail of WM. DRAY and CO., Agricultural Implement Makers, Swan Lane, London.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

Patron—His Royal Highness PRINCE ALBERT.
President of Council—Earl BATHURST.
Principal—Rev. J. S. HAYGARTH, M.A.

Professors, &c.

Chemistry—J. A. C. Voelcker, Ph.D., F.C.S.
Zoology, Geology, and Botany—James Buckman, F.G.S., F.C.S.
Veterinary Medicine and Surgery—G. T. Brown, M.R.C.V.S.
Surveying, Civil Engineering, and Mathematics—F. Armstrong, C.E.
Manager of Farm—G. Austin.

The next SESSION will begin early in AUGUST. The Annual Fees for Boarders vary from 45 to 80 guineas, according to age and other circumstances. The Fee for Out-Students is 40l. per annum. The College Course of Lectures and Practical Instruction is complete in one twelvemonth—though a longer course is recommended. There is a department for general as well as for agricultural purposes. Prospectuses and information can be had on application to the Principal.

The GUIDE to the ROYAL AGRICULTURAL COLLEGE FARM may be obtained of Hamilton, Adams, & Co., Paternoster Row, London; and Edwin Baily, Cirencester. Price 1*s.*

COLLEGE of AGRICULTURE and CHEMISTRY, and of PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.

Principal—J. C. Nesbit, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

ROYAL AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND.—The Society's SHOW at ARMAGH, in the Province of Ulster, will take place on the 9th and 10th of AUGUST next, when Premiums and Cups to the amount of 1200l. will be offered to competition for Farm Stock, Implements, &c. All entries must be lodged not later than 19th July.

Prize Sheets, and Forms of Entry, to be had on application to Robert Cochran, Esq., Secretary to the Local Committee, Armagh; or, to me, at the Society's Offices, 42, Upper Sackville Street, Dublin. Thomas Harkness, Secretary.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—PROGRAMME.

Thursday, July 13.—Trial Yard open at Twelve o'clock at noon, when the public will be admitted, at Ten Shillings for each person, to view the Trials of the Steam-engines.

Friday 14, Saturday 15, Monday 17, Tuesday 18.—Trial Yard open at Nine o'clock in the forenoon, when the public will be admitted on each day at Ten Shillings for each person, to view the Trials of the Steam Engines, Barn Works, and other Agricultural Implements and Machinery generally.

Wednesday 19.—The Implement Yard open to the public from Seven in the Morning till Six in the Evening: admission, 2*s.* 6*d.* each person.

The Judges to inspect the live stock and award the prizes.

At One o'clock (or as soon after as all the judges shall have delivered in their awards) the public to be admitted into the Cattle Yard, on the payment of Ten Shillings each person, at the Special Entrance; Members of Council and Governors of the Society being admitted by Tickets to be purchased at the Finance Department of the Society at the Show Yard.

N.B. Notice will be posted up over such entrance when the judges have completed their awards. At Eight o'clock in the Evening the Yard will be closed.

The Dinner of the Society in the Pavilion adjoining the Show Yard, at Four o'clock: open at Three. The Judges' Awards of Prizes for Live Stock will be read.

Thursday, 20.—The Cattle and Implement Yards open to the public from Six o'clock in the Morning till Six in the Evening; admission 2*s.* 6*d.* each person.

Friday 21.—The Cattle and Implement Yards open to the public from Six o'clock in the Morning till Six in the Evening; admission One Shilling each person.

General Meeting of the Members in the Guildhall, at Ten o'clock in the forenoon.

The Agricultural Gazette.

SATURDAY, JUNE 24, 1854,

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Wednesday,	June	28	—Agricultural Society of England.
Thursday,	—	29	—Agricultural Imp. Society of Ireland.
Wednesday,	July	5	—Agricultural Society of England.
Thursday,	—	6	—Agricultural Imp. Society of Ireland.

It is one of the most difficult things to *read* any agricultural fact correctly. In farming, as in medicine, any number of *genuine* "cases" may be quoted by the vendor of the particular recipe, which, in either case, it is the object of the advertiser to applaud; but sensible men know how difficult it is to connect any observed result with the particular cause to which it is really due, and are not misled by the reports of cures, whether in diseases of the body or in barrenness of the soil, alleged to be affected by secret mixtures, whether they be medicine or manure. Take any of the cases (that, for instance, reported by Mr. Bennett, of Cambridge), published by the advertisers, of the so-called "economical manure," and it is plain that, though not a doubt be entertained of the accuracy of its details, yet no one can draw the inference that it would be "economical" to purchase this manure for the soil which he may cultivate, without first ascertaining the composition of his land as compared with that of the field on which Mr. Bennett's results were obtained, as well as that of the manure itself, in order to know whether the efficient part of it might not be obtained at a cheaper rate elsewhere. On this subject we shall publish analyses next week. We allude to it incidentally in this place, as illustrating the importance of the subject on which Professor Way threw so much light in his lecture last Wednesday. His subject was professedly the action of lime upon the soil, but both his own treatment of it and that which it received from subsequent speakers, involved a discussion of the whole question of fertility in soils; and so touched upon many other points beside the one especially on the card.

Among the facts brought out was the startling one that ordinary clay soils contain ammonia per acre, locked up in their substance, corresponding to the quantity present in three tons of guano. The main practical inference derived from the other facts which were adduced was, that lime should be applied at short intervals in small doses, rather than at long intervals in large doses, which is the more general plan. Of course the uses of lime in correcting acidity, and its action on excessive vegetable matter, were independent of that particular purpose which Professor Way believed it to serve in relation to the ammonia of the soil; and for the former a sufficiency of the lime or chalk had to be applied on grounds already well known, and insisted upon by Sir John Johnston and Mr. Beale Browne after Mr. Way had concluded his remarks. But the annual use of *caustic* lime in small quantities, for the purpose of setting free a portion of the ammonia locked up in such abundance in a dormant condition, has a more general and probably a universal bearing on farm practice, when the other aspects of the matter may be of only local importance.

The results of the experiments on which Mr. Way's conclusions are based were given in very few figures; but they had occupied an entire department of his laboratory during nine months; and confirmed, as we believe they will be, by ordinary farm experience, we doubt not that they will exercise an important influence on farm practice for the future.

When the lecture shall be published in the Journal of the Society, the facts of which it speaks, and the inferences to which they lead, will, we believe, be seen to stand high among the very important additions to agricultural truth for which we are already indebted to the chemist of the English Agricultural Society.

If Double-digging and Hand-forking be regarded as impracticable on a large scale, and rotary machines for performing these operations be too unusual or unproved for timorous farmers, let us see what may be possible in the annual Wheat-growing system with common horse implements. Our scheme would be to take a field of deep loamy soil, well drained, plough, clean, and level it, and harrow at the proper time, as for Wheat sowing. Drill Wheat with only three coulters, set at say 11 inches apart, and if your drill-wheels be about $6\frac{1}{4}$ feet distant from each other, by following the wheel-marks, you may easily drill the triple rows in stripes, so as to leave intervals of about $4\frac{1}{4}$ feet breadth—this being the width of four large furrows, with a few inches to spare on each side as protection to the Wheat. At these distances, there will be an average of one row of corn for every $24\frac{1}{3}$ inches of ground, instead of every 20 inches, as in Mr. Smith's system. When the young plants are well up, draw a ridge down the middle of each interval, opening a furrow with the first round; then throw back the two furrow slices, forming a common "backed-up" ridge, and plough one more furrow to cover the first; there will now be three furrow-slices forming a high ridge, with all the land underneath them also ploughed, and there will be two open furrows on each side, within 4 or 5 inches of the Wheat. Let the intervals be thus exposed to winter frosts; or if too compact, skeleton plough them, or drag the stout tines of a Bentall through them; the horses in this operation, as also in the ploughing, walking "at length" along the furrows. When the great frosts are past, set the cultivator to work, stirring the staple to its full depth, and horse-hoe, hand-hoe, and weed whenever necessary throughout the summer. After harvest, proceed in a similar manner with the other alternate spaces, drilling those now fallowed and prepared. It is impossible to plough very deeply so close to the first furrow; perhaps only 6 or 7 inches of mould may be obtainable. Therefore, to imitate the double-digging—which follows upon the same ground *biennially*—*plough the whole field* after harvest *two furrows deep* every other year, or every third year, as may be required. This will bring up fresh soil from 10 or 12, or, with a proper trenching plough, 14 inches depth. Deep ploughing occasionally will thus prevent the formation of a hard pan from the ordinary ploughing; and, indeed, the subsoil plough might be made to follow in every furrow made by the common plough.

Upon the new unmellowed earth it will not be advisable to sow Wheat; but winter Beans, alternated, if you like, with roots in the summer, might be grown for this occasional year. If there should

be any sign of failing vigour in the land, after a course of years, a double digging by manual labour may be commenced, and gradually extended in a few seasons over all the fields appropriated to this system. But it is reasonable to suppose that such costly work would very rarely be necessary.

The above order of tillage may be much inferior to that of the spade and fork; but with the greater cheapness of ploughing, dragging, and drilling, we should be remunerated by many bushels per acre less than Mr. Smith has obtained.

"But have you tried your scheme; can you give a statement of real expenses and returns?" No. We are anxious that the benefits of the new husbandry should not be lost, and propound this mode of further experimentalising upon it, as more likely to meet with a trial. Balance-sheet proof we have none; and, indeed, from observation of other proposed improvements, do not know that our scheme would fare any better for it. The experience of Tull should be a sufficient inducement to enlightened agriculturists to make this attempt after his model. If his tillage met with such success with clumsy imperfect implements, of far less variety than we possess, and when under-drainage was neither understood nor practised as it is now, may not we be confident of far excelling him upon similar soil? But, take the example of the most celebrated cultivator of his day, Mr. Ducket, of Esher, in Surrey, who in the latter part of last century introduced a sort of medium between Tull's and the previous agriculture. He employed a trench-plough and a smaller plough, each of which had two shares, one placed directly over the other, subsequently exchanging the latter for a skim-coulter plough, by which he could pare and bury any long vegetation, and cover it with a second furrow, at one operation. One deep ploughing with the trench-plough to every other or every third crop, with ordinary or shallow ploughings with the lighter two-share plough for all other crops, formed his method of using them. By the former operation fresh earth was brought up. The shallower ploughings with the two-share plough loosened and divided the soil for a seed-bed—like Tull's four-coultered plough, cutting the furrow-slice so as to render the after comminution more easy. There was also a great advantage in ploughing at two different depths in successive years; as, when the same depth is maintained year after year, the rain-water becomes lodged between the loosened and unmoved earth, stagnating and injuring vegetation. By this system of ploughing, combined with drilling and horse-hoeing, he was able to achieve the marvel in those days of keeping 500 acres of "friable, sandy loam, with tenacity enough for bearing great Wheat crops" always under crop—never bare-fallowed—most of his products far excelling those then found on the best cultivated lands of the kind.

Let some approach be made to the Lois-Weedon degree of pulverisation; and, though we may not hope to dispense altogether with manure of some sort, we may surpass our common husbandry as Mr. Ducket did that of his less forward times. *I. A. C.*

AGRICULTURAL CHEMISTRY.

SESSIONAL EXAMINATION—ROYAL AGRICULTURAL COLLEGE.

[We publish in a condensed form the answers of Mr. Louch to the following questions.]

3. How can you distinguish Cane from Grape sugar?
6. What are the best means of preventing decay in timber?
7. What is the reason that milk becomes coagulated when it is kept for some time in an open vessel?
8. What is the composition of bones?
9. Mention the general composition of urine, and state on which of its constituents its fertilising value principally depends.

(3.) In the first place the composition is different: that of Cane being carbon 24, hydrogen 22, oxygen 22, and water 4; and that of Grape being carbon 24, hydrogen 21, oxygen 21, and no water. Cane sugar, on addition of yeast, is not changed into carbonic acid and alcohol; before this it has to be changed into Grape sugar, therefore Cane sugar does *not* ferment. Cane sugar, too, is more soluble and more sweet, and is whiter; besides these distinctions, there are chemical tests.

(6.) A ready means of preserving wood from decay is subjecting it to the action of a running stream, which washes out the albumen and the sap: the principal cause of decay in wood being the sap in the plant, which, after it is cut down, acts on the albumen like a ferment, and thus causes the wood to decompose. Now, if we can only remove this sap or ferment, and render the albumen insoluble, or altogether remove it, we can preserve the wood. One way is to inject by hydraulic pressure an iron salt (as acetate of iron, or pyrolignite of iron), or bichloride of mercury, which combines with the albumen, forming an insoluble compound; another way is to allow a metallic salt (one of the former will do) to penetrate the tree by capillary attraction; another plan is to smoke the wood, the creosote contained in the wood having a very powerful antiseptic action, to which it owes its uses in preserving anatomical specimens. Tarring wood is another way, also charring it before putting it in the ground; another plan is to immerse the tree, whilst green, in a solution of some salt, as pyrolignite of iron, in a large vessel; this finding its way into the plant renders its albumen insoluble. This is Bryant's process, the one by hydraulic pressure is Kyan's.

(7.) When milk is exposed to the atmosphere, the sugar undergoes a decomposition, primarily produced by the casein existing in the milk; this casein then acts on the fatty matters and fatty oils in butter, and decomposes them; from the sugar is produced lactic acid, which combines with the potash and soda previously combined with the casein, and so precipitates the latter, thus coagulating it or forming an insoluble compound. This lactic acid has the power of combining with zinc, lead, and mercury; hence, although zinc vessels give more cream, yet lactate of zinc being soluble, is dissolved in the milk, and thus zinc vessels should never be used, as this salt must affect the system.

(8.) Bones contain two-thirds of bone-earth and one-third of organic matter. They generally contain 10 per cent. of fat, 6 per cent. of carbonate of lime, 42 to 44 per cent. phosphate of lime, and a little phosphate of magnesia, and 16 per cent. of glue or gelatine, capable of yielding ammonia. But the composition of bones considerably varies, as in the young animal we find the organic matter preponderates more than the inorganic in comparison to what it does in the adult animal. The bones, too, of different animals vary much, and especially at different stages of the animal's existence. Bones are dependent on their supplies from the blood, and consequently, if an animal be very badly kept, they cannot be so rich as in one better kept, and in first-rate condition.

(9.) The urine of our domestic animals considerably varies in composition, being richest in man, sheep, pigs, and the horse; these contain phosphoric acid, but cows' urine, &c., contains little of it. This is supplied by their solid excrements. Urine, chemically speaking, consists of urea, uric acid, alkaline salts, and phosphates and carbonates of lime, chloride of alkalies, a little phosphate of lime, and of magnesia in man; and phosphoric acid in that of pigs, if they live well. When you allow urine to stand quietly, it deposits the triple phosphate of ammonia and magnesia. Fresh urine is acid, containing lactic acid; when kept two or three days it is alkaline, from formation of ammonia, and the urea is changed into carbonate of ammonia. Urea contains more nitrogen than flesh, blood, or many highly nitrogenised manures, and it is to this urea that the highly forcing properties of liquid manure may be attributed. As to the constituents of its fertilising value, we may consider urea and uric acid as having much to do with it, as they both contain so much nitrogen; besides, we find potash salts predominant in urine, also phosphoric acid in that of man, pigs, &c.; did urine contain only the sulphates, phosphates, and carbonates which it does, we could easily account for its highly fertilising action; but besides these, on decomposition urine gives off much ammonia, which, if we fix it, we can use. We find in urine the chlorides of potash and soda, too, some sulphate of ammonia, and, in fact, everything that is required for the luxuriant growth of plants; but yet we find an admixture of the liquid and solid excrements to be much more beneficial than either alone. In fact, the two well preserved form the universal manure.

THE PIG.—No. I.

We last year offered a few observations relative to the appropriation of a farm for the purpose of breeding and rearing pigs for sale, instead of the usual descriptions of farm stock. They were intended to show the difficulties that would necessarily arise from such an exclusive appropriation, and also to point out in our humble way the best course to be pursued in rearing and supporting the greatest number of this particular kind of stock—the pig. We then promised at some future day to give our views upon their breeding and general management, and we now purpose in a few short papers to redeem our promise.

The Improvements in the Breeding of Pigs.—Prior to the establishment of the Smithfield Club Cattle Show, the breed of pigs in this kingdom had undergone but little change for centuries. The old breeds are generally described as large, coarse, and ill-formed. We give a few specimens of the descriptions we usually find in our readings. The old Berkshire breed is described as being "in general of a tawny white, or reddish colour, spotted with black; large ears hanging over his eyes—feeding to a great weight." The Essex—"up-eared, with long sharp heads; roached backed; carcases flat, long, and high upon the leg." The Lincoln—"extremely long-legged and weak-loined; very long from head to tail; long coarse curly hair; tolerable feeders, but flesh coarse and flabby." The Norfolk and Suffolk—"a short, small, low-standing, prick-eared, inferior kind, only serviceable as porkers." The Kent and Sussex breeds—"long in their legs, narrow in their backs; grow to a large size." The Cheshire breed—"grow to a gigantic size, remarkably long; long bony legs; heads large, ears long and hanging; back much curved and narrow; sides flat and deep." The Hampshires as—"longer, flatter, and coarser than the Berkshires." The Wiltshires as—"long-bodied, low, hollow about the shoulders, and high on the rump." These are specimens of some of the old English breeds. The old Irish are described as being of "the size of a large jackass, and very large-boned; very long, narrow in frame, very mis-shapen; long large ears, hanging low." The old Scotch as—"small in size, grey colour, long shaggy hair, very hardy."

This very meagre outline will suffice to show that improvement was absolutely necessary; and, great as have been the efforts of the Smithfield Club and triumphant their success, yet they have been surpassed by the Royal English Agricultural Society, and other similar societies have laudably emulated them, so that the improvements in the various breeds have been so great and so extensive as to supersede all the old breeds, and to render an individual animal of the old species a rare curiosity.

The first step in this march of improvement appears to have been the crossing of the native breeds with the Chinese, the Neapolitan, and the other breeds native to the countries bordering upon the Mediterranean; for be it known that the pig is found almost everywhere throughout the world, and in many countries the breed was superior to our own native breeds; but the enterprise of the British people could not long endure this, and their introduction was the consequence, and ultimately the crossing with our own has placed the breed of pigs of this country at the head of the nations. We would observe that this is no small achievement, trifling as it may seem. Agriculturists are often taunted with the comparative littleness of their doings—in this very thing they have done much to supply one of the principal wants of the country. The consumption of pork is immense, and the breeders of pigs have attained to such a state of improvement as to be able to produce more than double the quantity of pork, and of far better quality, in the same space of time, and in which they excel all other countries.

The Old Berkshire breed of pigs had probably obtained the greatest favour of any of our native breeds, and the improvement which it has undergone has quite equalled, if not excelled, all other breeds, so that its popularity is still undiminished. In this improvement, we have a continuation of its old character—to fatten to a large size; but, what is of far greater importance, this large size is obtained at a very early stage of growth, and specimens of the justly celebrated Coleshill white breed have been exhibited, having attained astonishing weight at a very early period. We presume this variety to be derived from crossing the old Berkshire with the white Chinese. There are other improvements made in the old Berkshires of a black colour, and the specimens which we have seen induce us to conclude this cross to be derived from the black Neapolitan or Maltese pig; we scarcely know which is the more valuable variety, both are great acquisitions to our stock of pigs, and deserve extensive diffusion throughout the kingdom.

The Essex Pig.—This breed, we think, stands next in public estimation; it is not so large in character, but in quality it is superior to the improved Berkshire, but it has been so often shown in competition with that breed, and so often borne the palm, that we will not pretend to decide which is the best kind of pig. This we know, that both are most valuable varieties of the pig. We think the Berkshire would produce the greatest weight of food in the same space of time, as the original old Essex pig was not equal in size to the old Berkshire; and we are of opinion that their improvement has been derived by crossing with the black Neapolitan or black Chinese pigs, which, being similar in size to the white Chinese, would favour such opinion. We incline to conclude that from these two sources of improvement sprang the general improvement of the British breed of pigs—they were the breeds which obtained the greatest popularity—they were most continuously exhibited, and obtained the greatest number of prizes—their progeny was most sought for by breeders, and hence the general improvement which followed. This opinion is further confirmed by the fact that we have two general distinctions of the breed of pigs—the large breed and the small breed; the large breed, properly so called, is a continuation of the original breeds, improved by various crossings amongst such breeds. The small breed, properly so called, is the improvement derived from the crossings with the Chinese or Neapolitan breeds as named above. Such, however, has of late years been the spirit to effect improvements in the various breeds, that it has become impossible to tell where the large breed ends or the small breed begins; both have been surprisingly improved, and the breeders of the small character of pig have not only succeeded in retaining such character, but have obtained that thick, compact, broad-chested, well-made form of the small breed upon a large frame, with every corresponding advantage of early maturity, fineness of flesh, and lightness of offal. Indeed, such is the size attained by this class of pigs, that judges at our various meetings can only determine the peculiar breed by the general character of the individual animal, as in point of size he will often outstrip his gigantic neighbour of the large breed. As our great improvements in the breeding of pigs have been derived from the Chinese and Mediterranean countries breeds, we will in our next give an outline of the principal features, to show their peculiar adaptation to improve our native breeds. *J. C.*

ON INTERLINING CROPS.

"It is evident that two plants growing beside each other will mutually injure one another, if they withdraw the same food from the soil. . . . Plants will, on the contrary, thrive beside each other, either when the substances necessary for their growth, which they extract from the soil, are of different kinds, or when they themselves are not both in the same stage of development at the same time."—Liebig.

For some years past the interlining of several families of plants cultivated for their legume, leaf, and root produce, tion, and which we conveniently denominate generally

green crops, has been creeping into practice, and has been admitted to be attended with far greater returns than where only one family of plants has been grown; but, with the exception of the Hardys, I am not aware, further than the advocacy I have given to it, that any one has introduced in this connection a grain crop; and this does certainly appear anomalously curious, for in our most modern and approved system of agriculture it is precisely the rotation that obtains. If it be admitted that the introduction at annual intervals of a grain crop between green crops is good husbandry, surely, upon every principle of science, the immediate intervening of a grain crop with green ones must be better husbandry. If two green crops of diverse families take up from the soil and air different proportions of elementary aliment, all our preconceived notions, as well as analysis, plainly tell us that a grain and a green crop will do the same in greater disproportion. Chemistry tells us that elementary bodies more readily form new combinations at the moment of their disengagement; surely, then, one plant in contiguity at the same time with another must more readily imbibe and appropriate the elementary matter which that other refuses or throws off, and which assimilates to its composition, than where 12 months are allowed to intervene—a period in which, most probably, such matter has formed antagonistic combinations, has entered into some other compositions possessing for it stronger affinities than those of the plant to which we would offer it, if it may not have passed altogether from the soil in the evaporations which are continually going on. A grain crop also, I think, in this connection affords greater facilities in its upright and less spreading growth, not even excepting Beans, for more protracted hoeings, than do any of our green crops. It may be hoed till in ear, if sufficient distance is allowed for the operator, and it is not necessary that distance should be so large as to lessen its acreable production.

To assist in elucidating this view, I instituted the last year three separate experiments, and all three have borne out my expectations, although the very harsh, dry, and backward spring was very much against them in preventing the early tillering so essential to a thin-sown crop.

One acre of land was sown in rows 18 inches apart with Bere, Barley, and Oats, the produce by calculation about 155 stones. Although not in the same field with the experiments, yet I consider it sufficiently under similar conditions to admit of their returns entering into comparison with it, and its produce far exceeded the rest of the field sown broadcast. The whole experiment is, I admit, but an approximation to the truth. It is as near a one as, under my present circumstances, I could arrive at.

In the first experiment a plot of ground containing 384 square yards was finished sowing in April 14, in sets of two and three rows alternately of Barley, the rows 16 inches apart, the intervals between each set of rows admitting of three rows of Carrots at the same distances apart, that is, 16 inches; the proportion of ground under grain was three-sevenths, that under Carrots four-sevenths, the produce of Barley was 9 stones, or, on the acre, 113 stones.

The second experiment, a plot of ground containing 240 square yards was sown on April 15 with double rows of Barley, 15 inches between the rows, at intervals between the double rows, admitting of three rows of Carrots at the same distances apart (15 inches); the proportion of ground under Barley was two-fifths, that under Carrots three-fifths, the produce of Barley 5 stones, or, on the acre, 100 stones.

In both these experiments, from the dryness of the spring, the Carrots only vegetated partially, and were also much diseased.

The third experiment, a plot of ground containing 184 square yards was sown on May 10 in double rows of Barley, alternating with double rows of Ash-leaved Kidney Potatoes, the distance between each row being 18 inches; thus one-half the ground was under Barley and one-half under Potatoes; the produce of Barley was 4 stones 12 lbs., or, on the acre, 128 stones; the produce of Potatoes 2 cwt., or, on the acre, 2 tons 12 cwt. Thus 1 acre of grain in rows 18 inches apart gave 155 stones; the first experiment, three-sevenths of acre under Barley, 113 stones; four-sevenths do. under Carrots failed. The second experiment, two-fifths do. under Barley, 100 stones; three-fifths do. under Carrots failed. The third experiment, one-half do. under Barley, 128 stones; one-half do. under Potatoes, 2 tons 12 cwt. So also I have found in a tillage of Potatoes interlined with Rape a much larger yield than where the whole ground was occupied by Potatoes.

Of a plot of ground a little under the fifth part of an acre (889 square yards), 153 square yards were planted with small Potatoes (whole) in double rows, the double row and furrow being 4½ feet wide; the produce was 20 stones of sound Potatoes, or, on the acre, nearly 4 tons. The remainder 736 square yards in the same breadth of ground (4½ feet) was planted with similar Potatoes in single rows, and between the rows of Potatoes in the first week of August, two rows of Rape were planted out. One-half of the ground was therefore under Potatoes and one-half under Rape; the produce in sound Potatoes was 78 stones, or, on the acre 3 tons 4 cwt.; thus on the half acre there were only 16 cwt. less than on the whole one, with half an acre of Rape spreading somewhat over the ground on the decaying of the Potato haulm from the disease. There are four Rape plants on every yard of ground; I have weighed eight of them, taken together, not picked, their weight 12 lbs., or, on the acre (half), 13 tons. Thus 13 tons of Rape are gained with a loss of 16 cwt. of Potatoes.

The ground was moor land, from which a crop had been taken five years back, and then neglected. I had not an opportunity to begin on it till May 20, when I commenced by paring and burning a part of the moor, the ashes of which were the only manure used for the Rape, seed beds, and the Potatoes. On May 27 I commenced preparing the ground for the Potatoes by laying a sod from 6 to 9 inches broad, with a spade, on each side of the ridgelets, leaving a space of about 9 inches between them in the centre of the ridgelets, in which, as we proceeded, I planted the Potatoes in single rows 1 foot from tuber to tuber, which were covered, and between the sods filled up with broken mould from where the sods had been turned, using in this way only the furrows on one side of the ridgelet, reserving the other for covering the ashes. Thus between every ridgelet was left a space of about 27 inches, in the centre of which remained an unstirred sod 1 foot wide, and upon which the ashes for the Potatoes were wheeled by a barrow; when this was accomplished and the ashes covered by the mould from the remaining furrow, this sod was turned, broken, and ashes wheeled on, which were partially worked into the ground by a hard drag, similar to the one recommended by Mr. Yule, of Armagh, and then planted with Rape in double rows a foot asunder, and the plants a foot apart.

The cost of all these operations was not very great; it ought not to be enough to frighten even an Irish farmer. It amounted to—

Paring and burning	£0	2s.	0d.
Seed Potatoes, 8 stones, at 6d.	0	4	0
Planting Potatoes, and covering them	0	4	0
Drawing on ashes and covering	0	3	0
Preparing and sowing Rape beds and seed	0	2	6
Turning sods and breaking them in intervals for the Rape	0	2	6
Drawing ashes and planting Rape	0	3	4
Digging and drawing Potatoes and pitting them ...	0	3	6
Expenses incurred on 889 square yards of ground ...	£1	4	10

No rent—this moor-land being of little value, is not measured on the tenant.

98 stones of Potatoes, at 5d.	£2	0s.	10d.
2 tons of Rape, at 6s., for feeding, on the 736 square yards (half)	0	12	0
	£2	12	10

As there are four Rape plants on every yard of ground, the amount of the Rape crop has been estimated by weighing eight plants.

Thus, with so late a tillage, after all spring work was over, a profit at the rate of 7*l*. 12*s*. per acre has accrued on waste land, and the land brought into a profitable state, requiring very little labour to ensure a good crop next year. Had the Potatoes been planted a month earlier, the return would have been much higher, as they were not half grown when the stems were attacked by the blight and the growth checked. *J. M. Goodiff.*

Home Correspondence.

Crops in West Somerset.—The Wheat in this neighbourhood until very lately has been looking well; but within the last week it has assumed the red tinge too clearly indicative of rust, which is now, I fear, a subject of general complaint throughout England. Barley has now recovered the effects of the drought it experienced during its infancy, and appears a good average crop. Oats look well. Mangold Wurzel and early Turnips are promising; and not the least symptom of disease appears in the Potatoes. Haymaking has just commenced, and will, I fear, prove "light;" the weather hitherto has been unfavourable. However, we will hope that—

"Though clouds may dim the sky to-day,
'Twill all be bright to-morrow."

W. P.

Wheat in Dorsetshire.—We regret being obliged to corroborate the many statements of the doubtful appearance of the Wheat crop; the plant, in too many instances, is thin on the ground, and the ear, which comes out slowly, is small and uneven; the leaf is almost invariably affected by a kind of rust, or blight, but we have seen no sign of mildew in the stalk. Barley and Oats are looking very luxuriant; and although, in some cases, the former did not come up regularly, in consequence of the long drought, still we hope an extra number of bushels will compensate for want of uniformity of sample. *R. G.*

Crops in East York.—The past season, as a whole, may be considered favourable to the preparation and cleaning of land for Turnips, and other green crops. Potatoes, owing to the late rains, are looking remarkably well. The odd patches of Mangold Wurzel to be seen here come up but in an indifferent manner, especially where due attention was not paid in preparing and getting in the seed. Our Mangold Wurzel has brairded better than usual, and has now attained to the size and stage of thinning. Turnip sowing on the wolds may be said to have been complete a week ago, and are looking well—even on the low grounds adjoining, this operation will have been brought to a close during the present week. Wheat generally is looking well; and we anticipate an early as well as an abundant Wheat harvest, as it is now coming rapidly into ear, though, in some instances, it has spindled, and begins to look thin in the rows. The blight (which here is termed honey dew), as reported from other parts of the country, has extended to here. I noticed it about the 1st of this month, having been through some Wheat fields. I perceived my boots began to assume a yellow colour, and, on more close examination, I discovered that mildew had set in in the form of scales, within a few inches of the ground. It occurred to me at the time, that it was occasioned by the heavy rains which fell during the latter part of May; and were it not, in my opinion, for the sharp drying N.E. winds, which continued during the first week or ten days of this month, and which had the tendency to mar the progress of the blight, the result might have been serious; then, as regards the present stage of the disease, no great danger need be feared, so far as the Wheat crop in this immediate district is concerned. Barley is looking a fair crop; but Oats may be reported as an indifferent bad crop, having been shrivelled up to a brown colour by the winds already alluded to. Pastures are now pretty good; but meadows are rather light. Sheep shearing is now complete, and I am informed that the number of coated fleeces among large flocks this season was more than usual. I should feel thankful for a little scientific information on the probable cause and remedy bearing on this subject. Wages range here, on almost every farm, from 14*s*. to 15*s*. per week, and extra work 3*s*. per day; boys' wages from 6*s*. to 9*s*. per week. *P. Deane.*

Rust in Wheat.—The rust complained of in your Leading Article of the 17th inst. is, I conclude, one of the Uredines—very probably Uredo rubigo. The probable occasion of its appearance arises from the fœtid (rancid, impure) and damp air contained in the clods of earth, for want of closer comminution of the soil and consequent free circulation of the elements. The sap eliminated from the minerals in conjunction with foul air causes the plant to become diseased, and to exhale from its stomata or mouths an atmosphere adapted for the vegetation of that variety of the fungus. The best remedy is to expose the atoms of the clods forthwith to the air, and generally stir the soil around the plants most carefully with a hand-hoe, and the diseased plants will be found to revive and throw off such disease in due course, the quicker according to the different stages of growth of the blight and general tillage of the soil; and further, such stirrings needs be continued throughout the season as long as practicable. This advice is deduced from much study. The remedy will be found equally efficacious to any of the order Coniomycetes or dusty fungus, mildew, or mould. *Agricola.*

Management of a Farm.—I observe that you have been lately trying to obtain the services of an active and intelligent bailiff to manage a farm of 1000 acres, 800 of it in heath; a long narrow strip of land, the farm-house and buildings all at one end; it being difficult to decide where or how the new buildings should be erected, or upon what system to farm it to best pay the owner, &c., &c. They may be called matters of serious consideration, but easily determinable by a practical farmer or bailiff. The plan that I would advise the owner to adopt is to advertise for a bailiff to manage this farm, and out of the many applications for the situation, four or five may be selected as most likely to suit for such a field. In reply to their applications, furnish them with a plan of the estate, nature of the soil, and all particulars thereof, requesting them to make a design of one or two sets of buildings, or merely an addition to the present buildings, necessary for the extent of the farm, and what the cost would be to erect said buildings—accompanied with the system they should adopt to farm and reclaim this wild field or wilderness. A day should be named when the appointment would take place—allowing them a reasonable time to come forward with their productions. If the owner of the said farm strictly adhere to the above directions, there is no doubt he will succeed in getting a bailiff master of the abilities requisite for such a field. The writer thinks it quite essential that there should be two sets of buildings, or home-steadings, erected; as it might, at some future period, let as two farms; but if farmed by the owner, in like manner it would be of great advantage, saving a deal of horse-labour in harvest, and in carting manure to the fields again. *A Bailiff.*

Societies.

ROYAL AGRICULTURAL SOCIETY.

Special Council, *June* 21.—Colonel Challoner, Trustee, in the chair. The following subjects and prizes for the reports and essays to be sent to the Secretary on or before March 1, 1855 (and of which the full terms and conditions of competition will be given in the next Number of the Society's Journal), were finally arranged.

Farming of Warwickshire	£50	0	0
Farming of Buckinghamshire	50	0	0
Chemical changes in the fermentation of dung	30	0	0
Artificial manures, and principles of their application	20	0	0
Artificial feeding stuffs	20	0	0
Causes of fertility and barrenness in soils ...	40	0	0
Retention of moisture in dry Turnip land ...	10	0	0
Prevention and cure of mildew in cereal crops	20	0	0
Lameness in sheep and lambs	20	0	0
Any other agricultural subject	10	0	0
	£270	0	0

Action of Lime.—A weekly Council was then held, when Professor Way delivered before the members a lecture on the results of a nine months' investigation into the conditions under which lime affects the absorptive power of soils in reference to ammonia. These results were numerically represented in a small table, containing only four vertical columns, intersected by as many horizontal spaces; but would prove, as Prof. Way remarked, of a permanent value, worth all the time and labour bestowed upon their production, if they should be found to lead to the establishment of any new principle in agriculture. His lecture was chiefly occupied in the

discussion of these results, and of the clue they might possibly give to explanations of the mode in which lime acted upon soils as a manure. The two principal facts ascertained by these experiments appeared to be the following :—1. That all clay soils, more or less, even beyond the depth of 20 feet, are found to possess a certain quantity of ammonia, derived, as Prof. Way supposes, from the fishy and vegetable matter of beds of lakes or rivers, no bed of clay whatever, he thought, being entirely free from ammonia. 2. That the addition of lime to a soil set free one-half the ammonia it contained ; thus acting, in the first instance, as a "stimulant" to vegetation, but as an exhauster of the stock of ammonia already in the soil or to be slowly derived from the atmosphere, if applied in large quantities. The two principal recommendations were,—1. That liming should take place periodically at short intervals, not more than from 8 to 10 bushels per acre being used every year, or every two years : lime would, under such circumstances, he thought, be found to be one of the most useful adjuncts of the farm. 2. That lime when slaked and mixed with water, forming what was known as "milk of lime," should be added to tank-water, and distributed by means of piping, as in the case of Mr. Mechi's operations at Tiptree, or Mr. Kennedy's, at Myre-mill.—Prof. Way, in the course of this lecture, entered into most interesting details connected with the chemical machinery of the double silicates in the soil, by which the action of lime was regulated; and with the experiments he had instituted for showing, in strong comparative contrast, the results he had obtained. He also pointed out the great importance of giving to land, by means of suitable cultivation, that condition under which it would best act as an absorbent of ammonia from the atmosphere. He has drawn up a complete statement of these details, which will be submitted in due course to the members, in the pages of the Society's Journal. Colonel Challoner, Mr. Woodward, Dr. Calvert, Sir John Johnstone, Mr. Beale Brown, Lord Berners, Mr. Fisher Hobbs, Mr. Payne, and Sir Matthew Ridley, favoured the Council with the results of their own experience in the use of lime of different kinds, and on various soils. These results depended much on the nature of the lime itself, on the mode and time of its application, and on the condition of the land to which it was applied. The chairman remarked that the great value of discussions on questions of that kind was the production of evidence indicating results diametrically opposite to each other, obtained under the same management, and the great value it proved of the establishment of sound general principles in agricultural practice, by means of which exactly the same results might be expected to recur when repeated under exactly the same circumstances. On the motion of Lord Berners, seconded by Mr. Lawrence, the best thanks of the meeting was voted to Prof. Way, for his interesting lecture.

Fettercairn. *Steam Ploughing.*—At a recent meeting of this club, Sir John Forbes, as President, described some of the machines which have been invented since 1836 for this purpose :—The first attempt was by Mr. Parkes, civil engineer, who, upon Chat Moss, between Liverpool and Manchester, about the year 1836, put in motion a plough attached to a band the length of the furrow to be turned over, which communicated with a fixed engine at the one side, and a wheel round which it turned at the other, and thus turned over a very good slice of moss.—This idea was improved upon by the Marquis of Tweeddale, who has made use of a moveable engine at each end of the ridge, which alternately draw a double plough, making two furrows at a time, backward and forward. The operation appears to have been well performed where the land, from being level, and of a pretty uniform quality, would be adapted for it ; and for trench ploughing, the operation might not be too expensive ; but this, as well as an ingenious application of water power to the same object, by a miller in Perthshire, is felt to be suited only for particular situations ; and the public attention has been of late directed rather to a different application of power, and a change in the actual operation. The common plough has long been felt to be an imperfect implement, theoretically considered—the spade, or fork, or grubber, having the advantage of working without a sole, which, as it were, paves the furrow at the bottom, counteracting all the anxious efforts in other operations to keep the subsoil open. This, no doubt, is less felt where land is furrow drained ; but it is an objection ; and so is the continuous nature of the slice thrown up, which does not admit the air so effectually as it would if more completely broken, and comminuted. There are four implements of the digger or grubber kind, to be worked on a large scale, before the public. Of these Mr. Samuelson's, and Mr. Romaine's of Montreal, which was brought out in this country by Mr. Mechi, are grubbers or cultivators; Mr. Guthrie's of Rephad, Stranraer, a regular fork digger, and Mr. Usher's, a revolving plough. Mr. Samuelson's has not been applied to power by steam; it was worked in Oxfordshire in March last, and in Berwickshire in October, by five or six horses—the tines were to go from 6 to 9 inches deep, and it is 3 feet in breadth. The labour over soft land is immense, and it is pronounced by Mr. Wilson, of Edington Mains, and others, as unsuitable for lea ; unless worked by steam, separate common grubbers would do more work. Through the kindness of Mr. Mechi, I received the model of the American plough in time for the meeting of the club, had it not been postponed by the frost; but as Mr. Romaine was to take it back to Canada, and sailed on the 24th of April, I was obliged to return it without being able to show it to many members of the club. It was a combination of steam and horse power, the horses being probably intended to turn it, though it seems as if the engine could accomplish that. The motion was communicated to the axle of the open cylinder with the tines by a toothed wheel in a groove in the middle of it, into which another worked, and this seemed likely to obstruct the work by being too near the soil, and liable to be clogged, besides the objection that horses could never work yoked to a steam-engine. Mr. Mechi describes it as what it really is, a revolving grubber or harrow, 6 feet wide ; the cylinder, having 200 tines, would revolve 240 times per minute, and being moved by the horses at the rate of two miles an hour, with 20 real horse power in the engine to work it, it should comminute 40 to 50 tons of earth per minute. The two points of difficulty here would be the moving of it over soft land with such an enormous weight, and only four common wheels to support it; and the point whether the operation would after all be satisfactory, as supplying the place of the whole ordinary work of cultivation. The next machine I have to notice is Mr. Guthrie's, who has kindly sent me a model of a small portion of it, exhibiting the way in which the forks or diggers are most ingeniously forced into the ground, and turned over, so as completely to reverse the earth on coming out again. This is repeated six or eight times on an axle moved by steam, and revolving 50 or 60 times per minute, to move only two-thirds or three-fourths of a mile per hour. This very ingenious machine is intended to complete the operation of digging, without question the most perfect preparation of land, all over our fields, and, according to Mr. Guthrie's calculations, at a much less expense than the process of ploughing at present in use. It has been the longest of any of these machines in model ; and though it has never yet, from want of means and encouragement, been in actual operation, it is worked out in full size, as far as the mechanical part is concerned. It is greatly to be regretted that so much ingenuity should not meet with encouragement, so far as to render the expense already incurred available, and perfect the machine sufficiently for actual trial. The drawings I exhibit show the arrangement of the whole machine. The next and last of these machines which I wish to notice is the steam plough of Mr. James Usher, brewer, Edinburgh, of which, through his kindness, I am able to exhibit the beautiful model sent to the Crystal Palace in 1851, with complete working drawings. This implement has been worked up by Mr. Slight, the practical mechanician, and was put to work near Edinburgh, at Niddrie, last season. The working model before you will save some description, as the 12 ploughshares and coulters, upon four frames fixed to the axle, revolving by the steam power, can be actually worked in the bed of damp sand prepared for them. These ploughshares succeed one another, and can be placed close enough to tear up every particle of soil. The engine is moved over the soil by a broad roller revolving by the power, while the entrance of the successive scarifiers assists materially to drag it forward. It must strike every one who studies its motion as a very beautiful and successful application of the rotatory principle to tillage. In this application there is no doubt we must at once recognise a variety of operation from that we are accustomed to. It will not turn over the soil in the way our plough does. In fact, in breaking up lea, the turf must be broken, harrowed, and gathered in preparing it for a crop. Whether this can be satisfactorily accomplished at the season we require it remains to be seen ; and what could be done with the vegetable mass which would accumulate from two-year-old lea if such a rotation were persevered in ? but it cannot be denied that the present system of burying and rotting is not in itself a perfect operation either. This machine can of course have a roller and sowing box attached to it if desired ; it is turned by the engine at the end of the ridge, and on nearly level land appears calculated to be successfully used in farming on a large scale. It is calculated by its inventor to plough at the rate of 3*s.* per acre. It has been regarded very favourably by practical men, and the resolution proposed by Mr. Dudgeon, and carried unanimously by the Kelso Farmers' Club—preferring any system which would thoroughly act upon the soil, and comminute it to a sufficient depth, to the old system of ploughing—was a distinct approval of the principle. Mr. Usher has commenced another of lighter construction, with all the improvements which experience has suggested. The cost will be under 500*l.* ; and I am happy to say he has already obtained subscriptions, in 10*l.* shares, to within 100*l.* of the sum required. I hope our district may afford him some supporters. He has received orders for a machine from Australia, which is already begun; and it would be strange, indeed, if enough could not be raised to give the invention a trial in his own country. Such experiments are most interesting efforts to advance in the course of improvement, and even if they should not, in their original form, prove entirely satisfactory, they seldom fail either of being worked into efficiency, or suggesting kindred applications which may supersede them. I should gladly see a similar sum put at the disposal of Mr. Guthrie, to bring out his very ingenious digger in a working shape. Between the two the perfect form might be obtained, or different circumstances dictate which should be preferably used. In either case, Samuelson's or Romaine's revolving grubber (the latter, I am tempted to believe, like the American reaper, a plagiarism from one of ours) might easily be substituted for the digging cylinder, when desirable, and the roller and sowing-box attached behind.

Miscellaneous.

Use of Portable Manures in East Lothian.—The amount spent on guano in this county is very considerable. There are several farmers who purchase guano annually to the extent of 1000*l.* ; and 400*l.* to 600*l.* is a common expenditure. The amount expended on portable manures over the cultivated portion of the county may be taken at 12*s.* to 18*s.* per acre. In one parish, Gladsmuir, of 6386 acres, the quantity of Peruvian guano applied last season was upwards of 400 tons ; this year, for the same parish, already 500 tons have been ordered. The produce of the county has been greatly increased since the introduction of guano. Mr. John Brodie is of opinion that guano has increased the average produce of the Wheat crop something like 7 bushels per acre, and of Barley and Oats fully 8 bushels. Thorough draining, with the use of guano, has doubtless greatly raised the aggregate produce. Allowing for seed, and grain paid as wages to servants, with what is consumed by horses, the aggregate produce of vegetable and animal food which this county supplies for general consumption has been certainly doubled within no very distant period—say 20 to 30 years. *From the Report on the Farming of East Lothian, by Mr. Stevenson, in the Eng. Ag. Society's Journal.*

Cod Liver Oil in Fattening Animals.—About two years ago, when on a visit to an intelligent friend residing on his own farm in Essex, and whose attention has been actively directed to the practical application of science to agriculture, it occurred to me to suggest to him the use of cod-liver oil in fattening cattle, stating my belief that it might be possible to obtain by its administration a decided saving in the cost of feeding. I proposed that he should separate off such of his stock as were to be the subject of experiment, and that the weight of the animals, the price obtained, and the outlay for food, should be carefully noted in comparison with others fed in the ordinary manner. The variety of my friend's occupations prevented his giving to my plan the minute attention which could have been desired, and the results of which I had hoped before this to publish ; but the following letter from him contains matter of much interest, and, if I mistake not, foundation for future experiment and investigation :—"You ask me to write you some particulars of my experiments upon fattening animals with cod oil. I will not attempt to give you any very minute details, but will endeavour to place before you a general view of what we have done; and as last winter I carried my plans out more fully than the preceding one, I will particularly speak of my operations at that time. And first of pigs. I kept upon an average 300, and killed from 20 to 30 per week, mostly porkers, from 5 to 15 stone weight. The experiments were made by dividing off 20 pigs, and weighing each lot, keeping the meal separate, giving one lot 2 oz. of oil per diem, and both as much meal as they liked. I found the pigs taking the oil ate less meal, weighed the heaviest, and made the most money per stone in the London market, the fat being firm and white. Subsequently I found that for small pigs 1 oz. of oil will do better. To larger pigs I have given a quarter of a pint per diem, and to small pigs also, but I have always found I lost money and credit for good pork when the larger quantity was given, and when killed, the fat was yellow, and the flesh tasted fishy. From the weekly examination of so many pigs, I have concluded that the oil in no case cured a pig troubled with lung disease, but that when given in small quantities it was profitable, as the animal fattened upon a less amount of food, the oil tending to produce fat quickly. My experiments have led me to conclude, that if given in a quantity which cannot be digested, it is then passed over the system in the shape of bile, so as to cause the yellow appearance in the fat. The farmer in such case would lose money, as my man did for me, believing that if so small a quantity were good, more would be better. The result with sheep has been more satisfactory ; with one ounce per day the fat has been beautifully white, and the flesh has been compared to short-cake, being light and easy of digestion. The lot of 80 gave general satisfaction to the consumers, but the butchers complained of lighter weight than the healthy well-to-do appearance of the sheep led them to expect. As regards bullocks: last year 10 short-horns took each from a quarter of a pint to three-quarters of a pint daily, and paid better than any other bullocks—those were sold for London. The opinion of all who saw them was, that it was impossible for any beast to go on so well as they did in the usual way with so little food. They commenced with the quarter pint, and ended with three-quarters. I fancied on the whole that they did better on half a pint each per diem. I purchased for an experiment this year eight Herefords, even or regular beasts. They are divided into two lots, one of which has a quarter of a pint of oil daily, and all live alike. The bullocks have the oil mixed up with meal and chaff, the pigs with dry meal, the sheep have split Beans soaked in oil. The commonest cod oil costs from 2*s.* 8*d.* to 3*s.* per gallon. I have tried sperm oil against the cod oil, and prefer the latter. I should add that this year I only use an ounce for sheep and pigs, and four ounces per day for each bullock. The relief to a broken-winded horse from the administration of cod oil is very soon perceptible. I shall be most happy at any time to write to you further upon the subject. *A. W.*"—1. It will be observed that in the

above experiments on pigs, bullocks, and sheep, a greater degree of fattening was obtained from a less amount of food when cod oil was used. 2. That in all the animals there seemed to be a decided limit to the quantity which could be digested; that for pigs being two ounces, the smaller thriving best on one ounce, and the larger hogs being over-fed on four ounces per diem. Sheep took an ounce, and bullocks a quarter to three-quarters of a pint, and paid better than any other bullocks; but in all these cases a much larger quantity was tried experimentally, and it invariably disagreed, producing derangement of digestion, and "causing a yellow appearance of the fat and a fishy taste." This was remarked by the butcher who purchased the animals, and who, at my request, was not informed of the peculiar mode of fattening which was adopted. Whether the above experiments may induce farmers to adopt cod oil as a judicious article of food, more efficacious and cheaper for fattening their stock than those ordinarily used, I will not presume to decide; but I offer the foregoing results to the profession, persuaded of their importance and interest in studying the application and physiological action of oils on the animal system. *Dr. Pollock, Chandos Street, Cavendish Square, in Lancet.*

Reaping Machine. By Dr. Mazier, of Aigle, France.—Patent granted May 11, 1853. (No 1156.)—Claims: 1. The employment of a following-carriage for carrying the cutter and apparatus connected therewith, as described. 2. The method of giving motion to the cutter from the axle by means of a screw and wheel. 3. The employment of a roller in connection with the machine for laying the crop in the right direction to be cut. 4. So arranging reaping-machines that the cutters may be placed on either side of the machine, so as to enable the machine to reap whilst travelling in either direction. *Mechanics' Magazine.*

Wages in East Lothian.—The system of payment is somewhat peculiar, being a species of the truck system. All the hinds upon a farm receive the same "gains." One farmer only varies from another, if at all, to a very limited extent. The "gains" are 72 bushels of Oats, 16 of Barley, and 8 of Beans; keep for a cow, or, in lieu thereof, 5*l.* in money; with about one-tenth of an acre of land for planting Potatoes; house and garden, with liberty to keep a pig; coals driven, and food supplied during harvest. A few farmers also give 2*l.* for Flax and hen money. The keeping of a cow is a source of great convenience to the family, and supplies to them many comforts which they could not otherwise secure. It has also a marked moral effect, as the feeling connected with property generally elevates the tone of the possessor. The system of mutual insurance of the cows is very generally carried out by the hinds, the allowance for a cow being 8*l.*, about 2*l.* below average value. The prevalence of pleuro-pneumonia four years ago has, however, very generally interfered with the working of these insurances. For the above items the hind gives his entire services (the period of work in the fields being nine hours), furnishes a reaper, without wages, in harvest for 21 days, and, where such a stipulation exists, also an outworker, generally a female, termed a "bondager," who, when employed, receives 10*d.* per day. The system of "bondager" has been loudly complained of by the hinds, and, from a general representation, this part of the engagement is now relaxed—many farmers not insisting on this provision, and trusting for the supply of labour to the families of the hinds, cottagers, and the itinerant Irish. *From the Report on the Farming of East Lothian, by Mr. Stevenson.*

Calendar of Operations.

JUNE.

South Devon, *June* 20.—We have lately had sufficient rain, but the weather cannot be called satisfactory, cold winds and cold nights having much retarded the growth of Grass and crops generally. The Turnip crop now claims the most attention, and all parties are busy working and manuring for it, the general system being to plough down the dung, and drill phosphate of lime and guano with the seed, in the proportion of 2 cwt. of the former to 1 cwt. of the latter; there is not, however, much sown as yet. The Mangold Wurzel crop has now generally made its appearance above ground, and in some places been singled: present appearances do not, however, enable one to speak very favourably of its success as a crop this year; there is an irregularity in the coming up which does not look well; still warm genial weather may yet do much for it. The Wheat crop, although thin in the ground, looks healthy. Barley and Oats at present promise well. The Potato crop never looked better and more free from disease. With regard to the hay crops, reports are not so favourable; Clover will decidedly be very slight and meadow as well, unless the late showers of rain and warmer weather bring up more of the bottom Grass. Sheep shearing has become general, and in some places nearly finished. Although an Apple growing county, we cannot boast of our produce this year, notwithstanding the splendid show of blossom; in most instances the fruit after setting well has dropped off from blight, no doubt caused by the cold winds. We may quote fat cattle still well up:—Beef, from 60*s.* to 63*s.* per cwt.; sheep, from 6*d.* to 7*d.* per lb.; lambs, from $6\frac{1}{2}$*d.* to 7*d.* per lb.; calves, from $5\frac{1}{2}$*d.* to 6*d.* per lb. Corn is dull at the following prices per quarter:—Wheat, 84*s.*; Barley, 38*s.*; and Oats, 28*s.*

Notices to Correspondents.

Dairy Management: *T S.* Next week.—*W A.* Cuthbert Johnson's little book, published by Ridgway, may serve your purpose.

Land Agency: *Stright.* Professor Low's work on the management of landed property is the best on the subject. But the thing must be seen and done—not merely studied in books, in order that you may attain efficiency. We do not happen to know Weale's book on the subject.

Management of Small Farm: *J L B.* You are quite right; the details are absurd. See a notice last week.

Weeds: *Warwickshire Sub* and *Enfield.* It is a common idea that pasturing with geese will ultimately destroy Buttercups. We fear that the only way is to remove them bodily by weeding-irons. Dandelions must be removed in the same way. They are both injurious in so far as they occupy the ground to the exclusion of better plants.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1*s.* 6*d.* per yard run, of E. T. Archer, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey.

NEW OAT CRUSHERS, 2*l.* 15*s.* 6*d.*; do., 4*l.* 5*s.* 6*d.* CHAFF CUTTERS, 1*l.* 7*s.* 6*d.*; do., 2*l.* 19*s.* 6*d.* MANGLES, 2*l.* 10*s.* 6*d.* FLOUR MILLS, 4*l.* 10*s.* 6*d.*

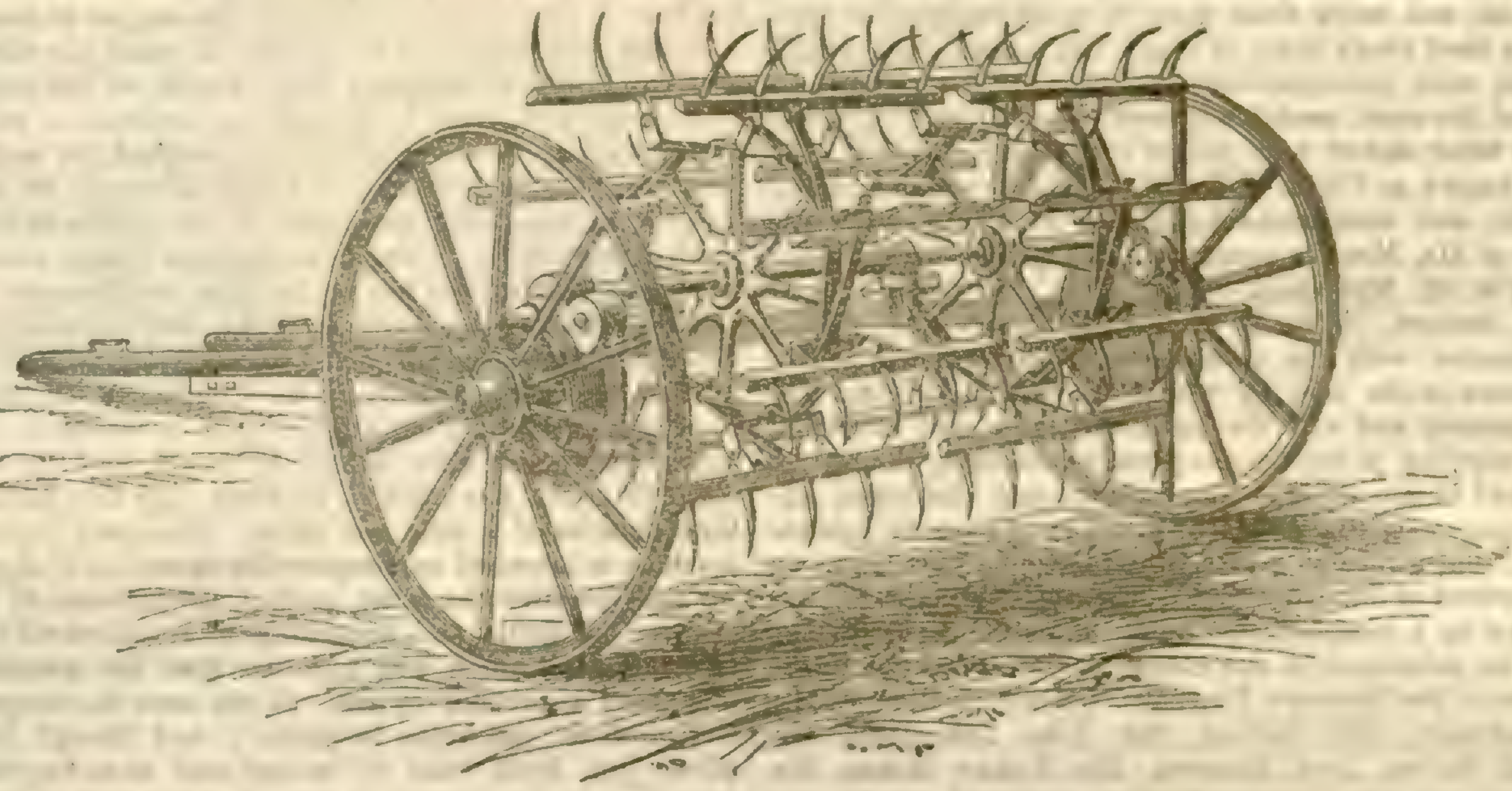
MARY WEDLAKE & CO., 118, Fenchurch Street, London.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement J. B. White & Brothers, Millbank Street, Westminster.



WEDLAKE'S CELEBRATED HAY-MAKING MACHINE

(ORIGINAL PATENT),

Recently improved so as not to clog, and which obtained the Silver Medal at Derby; manufactured by the Daughter of the Inventor, not complicated, and unequalled for simplicity of construction. Order immediately, so as not to be disappointed in the season, and to get them now at one-fourth of the price usually charged in June and July.

☞ Beware of spurious Machines offered by unprincipled traders as Mary Wedlake & Co.'s.

WEDLAKE'S NEW HORSE HAY RAKE AND DRAG,

EQUALLY USEFUL FOR STUBBLE, CORN, AND GREEN CROPS.

Only £3 10*s.* 6*d.*, width six feet; the Double Size, £9 10*s.* Order early.

WEDLAKE'S

DOUBLE HORSE, HAY, AND STUBBLE RAKE,

DOING THE WORK OF 10 to 15 WOMEN. Price £10, and £3 10*s.* 6*d.*,

Both Implements recommended by Mr. J. Morton, in the new "Cyclopædia of Agriculture;" also

OAT CRUSHERS, £2 15*s.* 6*d.*

118, FENCHURCH STREET, CITY.

Just published, price One Shilling and Sixpence,

HOW TO MAKE HAY IN THREE DAYS,

AND AT ONE-HALF OF THE USUAL EXPENSE, IN ANY COUNTY AND WEATHER; Or, HINTS TO HAYMAKERS

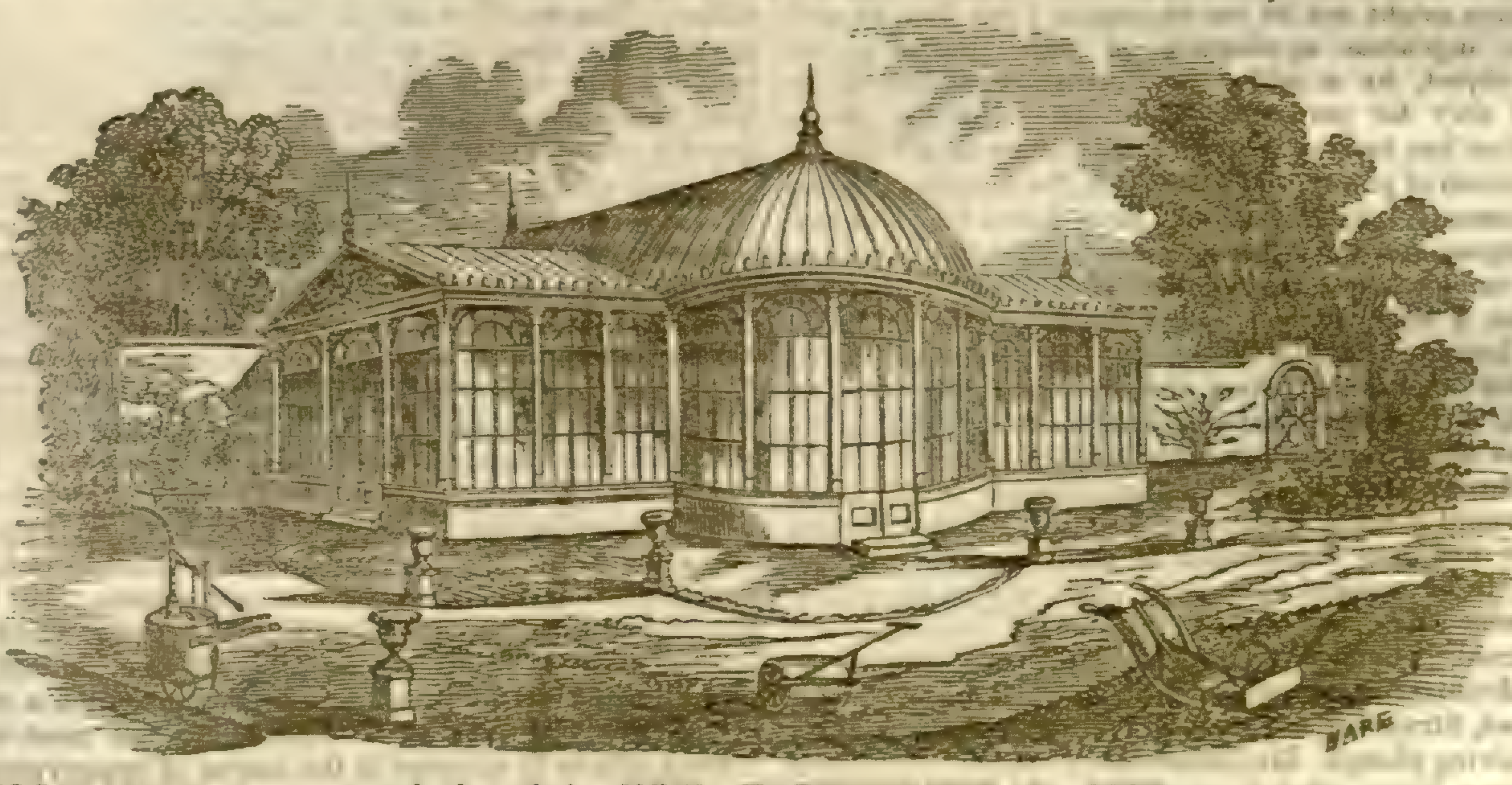
ALSO,

How to Keep a Horse for less than 9s. per Week.

118, FENCHURCH STREET, CITY.

COTTAM AND HALLEN,

2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.



APPLICATION is requested for their NEW HORTICULTURAL LIST, containing Illustrations, Descriptions, and Prices of

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Syringes	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.

AGRICULTURAL LIST UPON APPLICATION.

EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

HOSE PIPING.—GREAT REDUCTION IN PRICE.

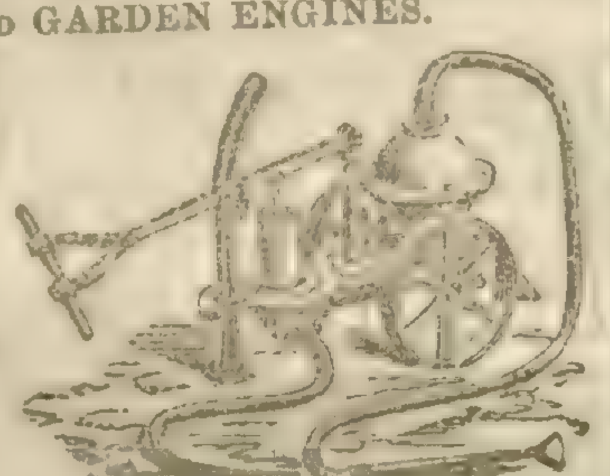
WAITHMAN'S PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense Pressure, and much more than Leather, vulcanised Rubber, or any other Hose; and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented Inventions, the cost of manufacturing it is now reduced at least 60 per cent., which advantage is offered to the Public.—London Agents, BURGESS & KEY, 103, Newgate Street, and 52, Little Britain who on application will forward wholesale and retail prices.

FOR WATERING GARDENS, DISTRIBUTING LIQUID MANURE, ETC.

JAMES LYNE HANCOCK'S VULCANISED INDIA-RUBBER TUBING is now manufactured especially for the above purposes, and is of greater flexibility than any other description of hose or tubing. It is also manufactured to resist great pressure, suitable for attaching to the mains of water works or to tanks, or water butts of high elevations. WATERING HOSE fitted up with brass joints, branches, stop-cocks, roses, and jets complete. Vulcanised India-rubber suction pipes for pumps any length or size to order; HOSE for brewers' use, fire engines, &c. VULCANISED INDIA-RUBBER WASHERS, for Steam and Water Joints, and VULCANISED RUBBER in sheets of any size and thickness. Solid vulcanised India-rubber Tubing and Cord, for the joints of glass-doors, sashes, frames, &c.—Prices and every information may be had on application at the Manufactory, Goswell Mews, Goswell Road.

WEIR'S IRRIGATORS, LIQUID MANURE PUMPS, FIRE AND GARDEN ENGINES.

	£	s.	d.
Single Cylinder (as engraving) ...	8	8	0
Double Cylinder ...	10	10	0
Horse power size ...	15	15	0



Exclusive of Suction and Delivery Pipes.

Illustrated Catalogues free per post.

Terms Cash on Delivery.

EDWARD WEIR, Agricultural Engineer, 16, Bath Place, New Road, London, removed from Oxford Street.

JOHN WARNER AND SONS, 8, Jewin Crescent, London, Manufacturers of FIRE ENGINES, PUMPS, GARDEN ENGINES, and SYRINGES.

No. 32. No. 11. No. 14.

Brass Syringes, 9s. to 18s.

All articles of JOHN WARNER & SONS' manufacture may be obtained of any Ironmonger or Plumber in town or country, at the advertised prices.

JOHN WARNER & SONS having been practical Horticultfirists for many years, know exactly the requirements of both Amateurs and Gardeners. A gardener with a properly constructed pump will get through as much work in five minutes as he could with any Syringe in a quarter of an hour, and with half the labour to himself. Syringes are economical only for small houses.

No establishment offers such a variety of effective machines for hydraulic purposes, whether to supply Gardens, Hothouses, Cottages, Farms, Mansions, or Boards of Health, with every requisite connected with the conveyance and distribution of liquids.

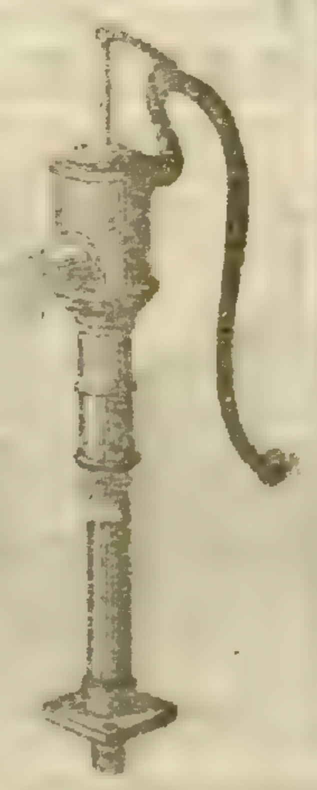
Fountains suitable for Conservatories, Lawns, &c.

Sheets of Engravings sent on application.

WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

	£	s.	d.
Patent Pump	1	15	0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing	3	0	0



Larger sizes if required.

The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,

8, CRESCENT, JEWIN STREET, LONDON.

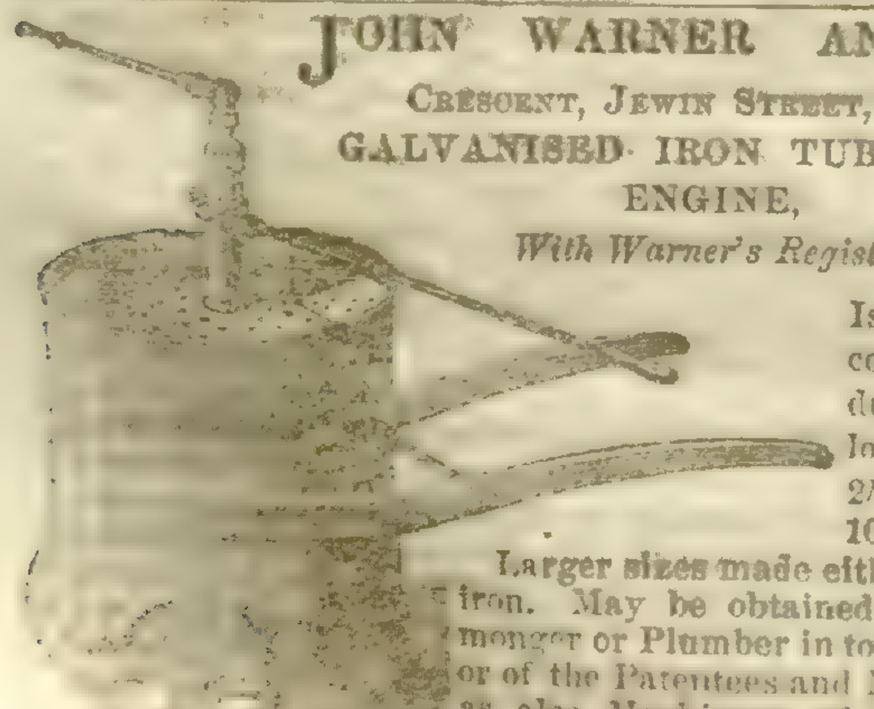
Every description of Machinery for Raising Water; Fire Engines, &c.

JOHN WARNER AND SONS,

CRESCENT, JEWIN STREET, LONDON.

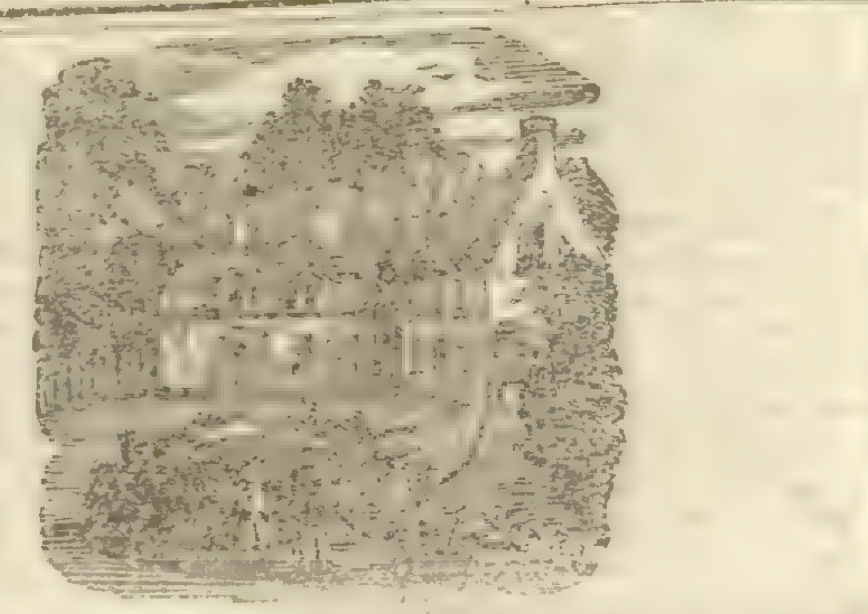
GALVANISED IRON TUB GARDEN ENGINE,

With Warner's Registered Spreader,



Is strongly recommended, for durability and low price, viz., 2l. 10s., to hold 10 gallons.

Larger sizes made either in wood or iron. May be obtained of any Ironmonger or Plumber in town or country, or of the Patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Syringes of various constructions and sizes from 9s upwards. An extensive assortment kept.



THE GUTTA PERCHA COMPANY'S TUBING FOR WATERING GARDENS, WITH ROSES AND UNION JOINTS FITTED.—27, CITY ROAD, LONDON.

(Fig. 1.) (Fig. 2.)

J. TYLOR AND SON'S BARROW GARDEN ENGINE (Fig. 1), in best well painted oak tub, fitted with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 1 holds	10 gallons,	throws	30 feet high	...	£4	10
No. 2 „	15 „	„	45 „	...	5	10
No. 3 „	28 „	„	45 „	...	6	18

J. TYLOR AND SON'S BARROW GARDEN ENGINE (Fig. 2), in strong tinned iron tub, well painted inside and outside, with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 10 holds	8 gallons,	throws	25 feet high	...	£2	15
No. 13 „	12 „	„	30 „	...	3	5
No. 11 „	16 „	„	40 „	...	4	0
No. 12 „	24 „	„	45 „	...	5	0
No. 14 „	30 „	„	45 „	...	5	18

A large assortment of every description of Garden Syringes, Pail Engines, Conservatory Pumps, &c., kept in stock.

Full size Syringe, on Read's principle, of the very best quality and workmanship, with two roses and one jet, 21s.; Plain Syringes from 10s. 6d. upwards.

J. TYLOR & SON'S Horticultural Apparatus may be obtained at these prices from any respectable Ironmonger or Seedsman in town or country, through whom alone they will be supplied, and of whom Drawings and Prices may be had.

N.B. Cost of carriage, &c., not included in these prices.

J. TYLOR & SON'S Manufactory, Warwick Lane, Newgate Street, London.

J. TYLOR AND SON'S REGISTERED GARDEN SYRINGE.—Small size, for Amateur use, **21s.** each; Large size, for Gardeners' use, **25s.** each.

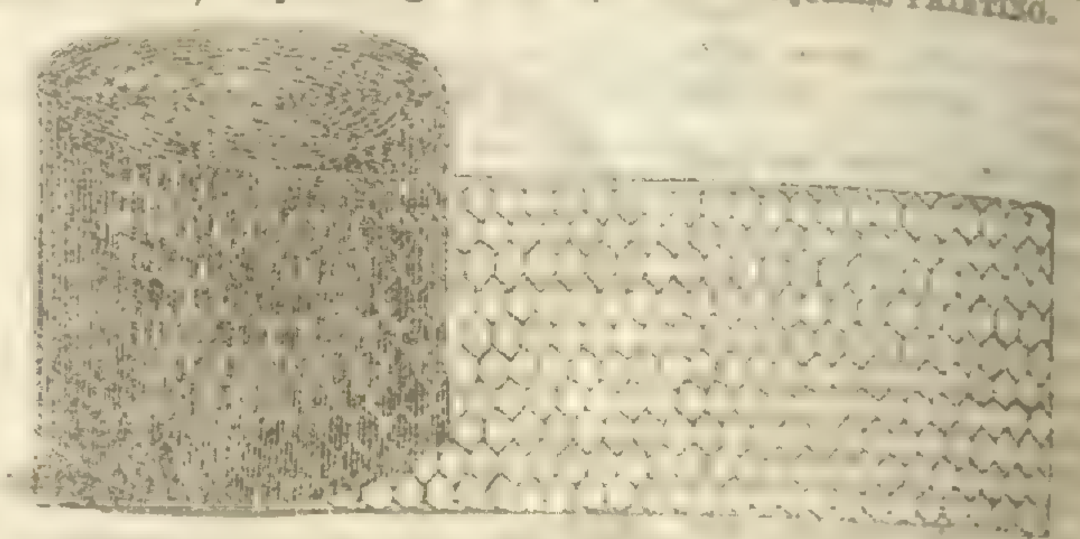
By a simple arrangement this Syringe is rendered more effective than any portable Conservatory or Garden Pump ever offered to the public. It is equally adapted for Garden or Conservatory use, and is capable of discharging twice as much water in a given time as any other Syringe now in use. The arrangement consists in attaching a small flexible suction tube to the barrel of the Syringe, through which it is filled with water at every discharge of the previous contents. By this means the Syringe is always charged, and the pull-up stroke of the piston rendered perfectly easy, it having, indeed, no work to do, the barrel being previously full of water. Being thus made self-supplying, a great saving of labour is effected; and the necessity of stooping to fill the Syringe at every discharge being done away with, the direction of the water can be maintained for any length of time. It is perfectly cleanly in its action, as it is not possible for any water to get on the outside of the barrel, which is a well-known inconvenience attendant on the use of every other Syringe. Its construction is perfectly simple, and cannot get out of order; the ground-in ball valves and fittings used for filling all other patent Syringes being entirely superseded. To be had of any respectable Ironmonger or Seedsman in town or country.

J. TYLOR & SONS, Manufacturers of Horticultural Apparatus, Warwick Lane, Newgate Street, London.

N.B. These prices do not include carriage, package, or expenses of delivery in the country.

TANNED NETTING, for the protection of Fruit Trees from frost, blight, and birds, and for the security of fresh sown seeds, either in Gardens or Fields, at 1d. per square yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Scrim Canvass, for Wall Fruit.—At EDGINGTON and Co.'s, 17, Smithfield Bars, City, and Old Kent Road, Southwark, where may be seen erected Emigrant Tents in great varieties, on their latest improved principles, and also at Brunswick Street, Poplar, near the East India Export Dock.

H. J. MORTON AND Co., 2, Basinghall Buildings, Leeds.—GALVANISED GAME AND POULTRY NETTING, very strong and neat, NEVER REQUIRES PAINTING.



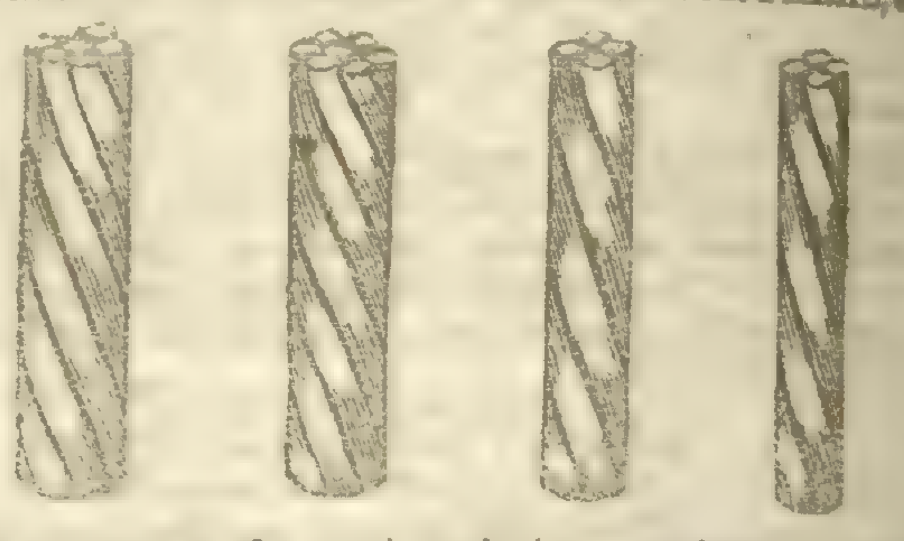
24 inches wide, 3-inch mesh, 4½d., 6d., and 8½d. per yard.
24 inches wide, 2-inch mesh, 7d., 9½d., and 1s. per yard.

GALVANISED IRON SPOUTING, for Dwellings, Cottages, Farm Buildings, &c., NEVER REQUIRES PAINTING.

Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalte Roofing Felt, &c.

H. J. MORTON AND Co., Galvanised Iron Roofing Works, 2, Basinghall Buildings, Leeds.

PATENT WIRE STRAND FENCING FOR PARKS, &c.



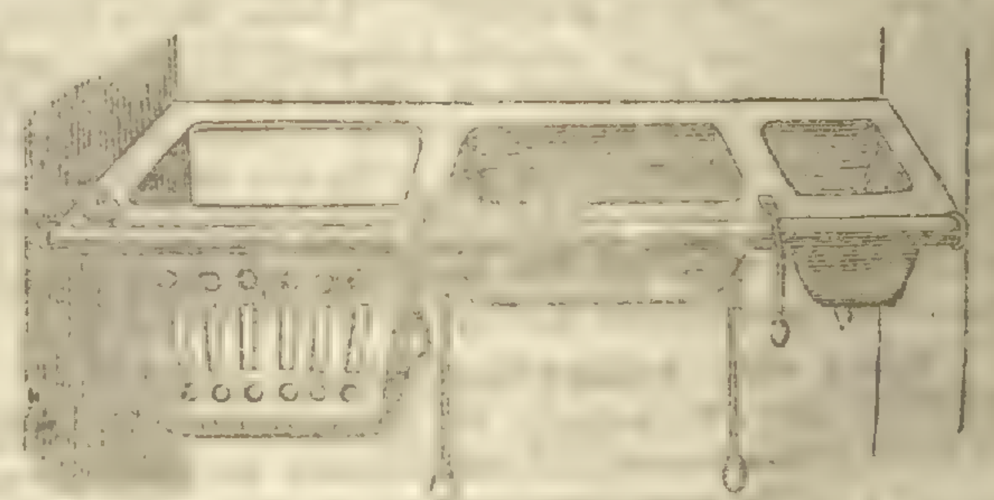
This Fencing is the most neat, strong, and durable for Parks and Agricultural purposes in use. It cannot be bent or put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply as above.

IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

TO AMATEUR GARDENERS, LOCAL BOARDS OF HEALTH, & SANITARY WORKS.

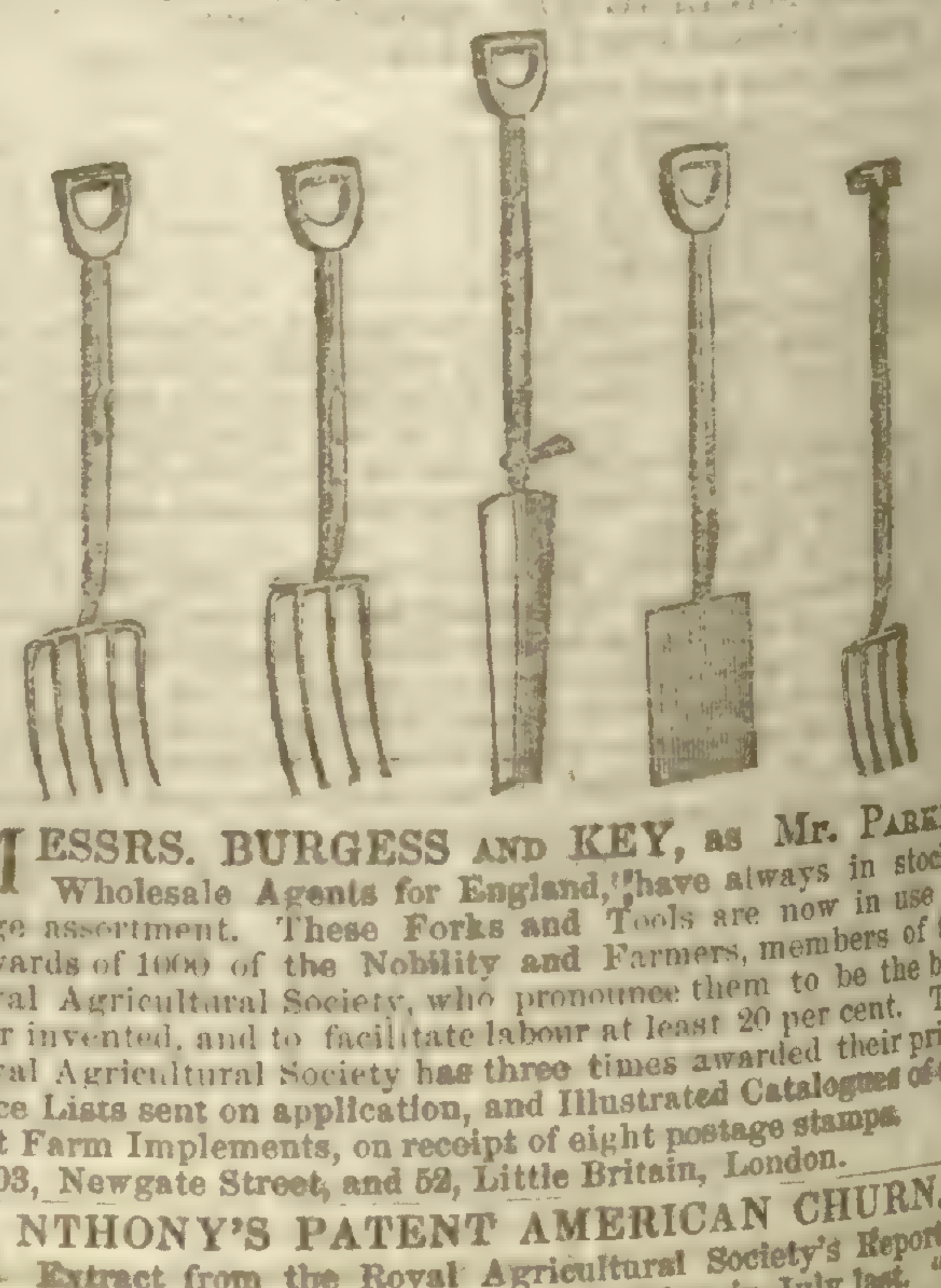
PATENT SLUICE COCKS, Gutta Percha, Combinated ditto, Patent Flexible India Rubber Tubing, and every other Hose for Watering Gardens. The Hydraulic Ram, Fire, Garden, and every other kind of Pump, Hydrants, High Pressure Cocks, and all other articles to be had, Wholesale and Retail, of FREEMAN ROE, HYDRAULIC ENGINEER, 70, Strand, and Bridgefield, Wandsworth.

BARTON'S PATENT STABLE FITTINGS, AND ENAMELLED MANGERS.



THESE FITTINGS have all the newest improvements and are the only patented invention of this description. Also Improved Stable Fittings with Rack, Manger, and Water Trough attached, New Pattern Manger and Water Trough combined; Corner and Straight Mangers, Plain, Enamelled, and Galvanised; Stable Furniture of every description, Iron Gates, Railing, Hurdles, Sheep and Game Wire Netting, Registered Poultry Troughs, Fountains, Feeders, &c.—JAMES BARTON, IRONFOUNDER, SMITH, &c., 370, Oxford Street, a few doors east of the Pantheon.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.



MESSRS. BURGESS AND KEY, as Mr. PARKES' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.

103, Newgate Street, and 52, Little Britain, London.

ANTHONY'S PATENT AMERICAN CHURN.—Extract from the Royal Agricultural Society's Report of the trial of Churns at the Gloucester meeting in July last. "In this trial the American Churn not only maintained its character in producing butter rapidly, but in producing a greater quantity from the like amount of cream." It made from 4 quarts of cream 4 lbs. 6 oz. of butter, being 8 oz. more than any of the other Churns from the same quantity and quality of cream. Price Lists of Churns and Implements by the best makers sent free, and Illustrated Catalogues on receipt of eight postage stamps. BURGESS & KEY, 103, Newgate Street, and 52, Little Britain, London, who have always a large stock of Steam-engines, Ploughs, Harrows, Diggers, Waggons, Carts, Threshing and Dressing Machines, Mills, Oat and Grain Bruisers, Oilcake Breakers, Reaping Machines, Haymakers, Horse-rakers, Turnip Cutters, Liquid Manure Carts, Parkes' celebrated Steel Digging Forks and Draining Tools, Pumps for Manure, Farm Fire Engines, and for Garden Purposes, &c. &c.

BEEHIVES.

NEIGHBOUR'S IMPROVED COTTAGE BEEHIVE, as originally introduced by GEORGE NEIGHBOUR & SONS, with all the recent improvements, glasses, thermometer, &c., price 35s., securely packed for the country.

This unique hive has met with universal commendation, and may be worked with safety, humanity, and profit, by the most timid; its arrangements are so perfect, that the honey may be taken at any time of the gathering season without at all injuring the bees.

Early applications, addressed to GEO. NEIGHBOUR & SONS, 127, High Holborn, or 149, Regent Street, London, will receive prompt attention. Their newly arranged Catalogue of other improved Beehives, with Drawings and Prices, sent on receipt of two stamps.

Agents:—Manchester, HALL & WILSON, 50, King Street; Liverpool, JAMES CUTHBERT, 12, Clayton Square; Chester, F. & A. DICKSON & SONS, 106, Eastgate Street; Glasgow, AUSTEN & M'ASLAN, 186, Trongate Street; Dublin, J. EDMUNDSON & Co., 61, Dame Street.

DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening Pursuits, are invited to examine DEANE, DRAY, AND CO.'s extensive Stock of GARDENING and PRUNING IMPLEMENTS, best London-made Garden Engines and Syringes, Colebrook Dale Garden Seats and Chairs.

Averuncators	Garden Scrapers	Pickaxes
Axes	Gidney's Prussian Hoe	Potato Forks
Bagging Hooks		Pruning Bills
Bills	Grape Gatherers and Scissors	„ Knives, various
Borders, various patterns	Gravel Rakes and Sieves	„ Saws
		„ Scissors
Botanical Boxes	Greenhouse Doors and Frames	„ Shears
Brown's Patent Fumigator	Hammers	Rakes in great variety
Cases of Pruning Instruments	Hand-glass Frames	Reaping Hooks
	Hay Knives	Scythes
Daisy Rakes	Horticultural Hammers and Hatchets	Scythe Stones
Dibbles		Shears, various
Dock Spuds	Hoes of every pattern	Sickles
Draining Tools	Hotbed Handles	Sickle Saws
Edging Irons and Shears	Ladies' Set of Tools	Spades and Shovels
	Labels, various patterns, in Zinc, Porcelain, &c.	Spuds
Flower Scissors		Switch Hooks
„ Stands in Wire and Iron		Thistle Hooks
	Lines and Reels	Transplanting Tools
Fumigators	Marking Ink	Trowels
Galvanic Borders and Plant Protectors	Mattocks	Turfing Irons
	Menographs	Wall Nails
Garden Chairs and Seats	Metallic Wire	Watering Pots
	Milton Hatchets	Weed Hooks
„ Loops	Mole Traps	Wheelbarrows
„ Rollers	Mowing Machines	Youths' Set of Tools

DEANE, DRAY, AND CO. are sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with their Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom. Also wholesale and retail Agents for SAYNOR'S celebrated PRUNING KNIVES, used exclusively by the first Gardeners in the United Kingdom.

DEANE, DRAY AND CO. (Opening to the Monument), London Bridge. ESTABLISHED A.D. 1700.

CLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

CLASS FOR CONSERVATORIES, GREENHOUSES, DWELLINGS, ETC.

ESTABLISHED MORE THAN ONE HUNDRED YEARS.

THOMAS MILLINGTON requests attention to his present prices of SHEET GLASS in 100 feet boxes.

Squares	6 by 4 and 6½ by 4½	
„	7 by 5 and 7½ by 5½	
„	8 by 6 and 8½ by 6½	... ... 13 6
„	9 by 7 and 9½ by 7½	
„	10 by 8 to 12½ by 9½	... ... 16 3
„	12 by 10 to 24 by 14	... ... 19 0

Orchard House Squares on Mr. Rivers's approved plan, to whom I have sold some thousands of feet:—20 inches by 12, 20 by 13, 20 by 14, 20 by 15, 20½ by 12½, 20½ by 13½, 20½ by 14½, at 19s. per 100 feet.

200 feet cases at 42s., and 300 feet case 63s., in large sheets.

Boxes charged 1s. extra per 100 feet, and the same allowed if returned free of all charge.

HARTLEY'S PATENT ROUGH PLATE GLASS, Fern Shades, Striking Glasses, Milk-pans, Bee Glasses, Cucumber Tubes, Sheet and Rough Plate Glass Tiles, Wasp Traps; Plate, Patent Plate, Crown and Sheet Window Glass, in every thickness and quality, and Ornamental Glass, plain and coloured; pure white Shades for Ornaments, Crystal Glass for Pictures.

Warehouse, 87, Bishopsgate Street Without—same side as Eastern Counties Railway.

HARTLEY'S PATENT ROUGH PLATE GLASS, 1-8th thick, or 2 lbs. to the foot; 3-16ths, or 3 lbs.; and 1-4th, or 4 lbs. to the foot, for Ridge and Furrow Roofs, Greenhouses, Railway Stations, Engine Sheds, Mills, Market Halls, and Public Buildings generally.

Packed in Boxes of 50 feet each.

6 by 4 and 6½ by 4½	... ...	10s. 6d. per box.
7 „ 5 „ 7½ „ 5½	... ...	12 0 „
8 „ 6 „ 8½ „ 6½	... ...	13 6 „
9 „ 7 „ 9½ „ 7½ and 10 by 8	... ...	15 0 „

For larger sizes a full List of Prices will be sent on application. Boxes are charged 2s. each extra, full price allowed if returned free of expense.—For further information apply to

JAMES PHILLIPS & Co.,
116, BISHOPSGATE STREET WITHOUT.

"Rough Plate has never been, and never can be, prejudicial to the colouring of Grapes; though we can easily believe that it has been charged with such a fault by persons who have not skill enough to manage Grapes under glass."—*Gardeners' Chronicle.*

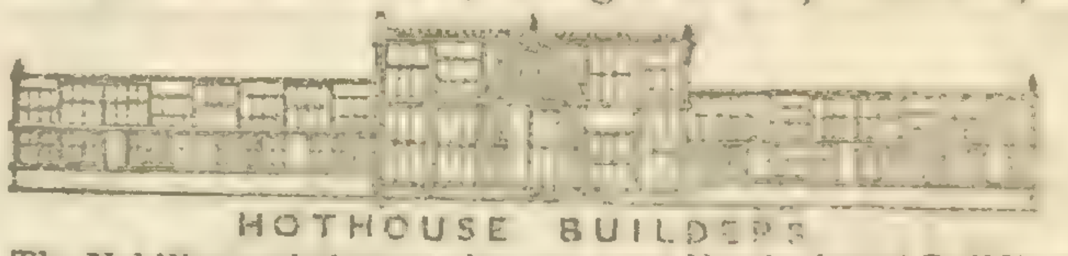
"There can be no question now that Rough Plate Glass is the best ... as well as the most useful kind of glass that can be employed in horticulture. It is free from all the faults of transparent glass, and has many advantages peculiar to itself, without a single disadvantage as a set off."—*Gardeners' Chronicle.*

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER, and HOT WATER APPARATUS MANUFACTURER, Triangle, Hackney, begs to solicit the attention of the Gentry to his prices for cash. Good substantially built Greenhouses, fixed in any part of the kingdom, 42 feet long, 13 feet wide, 90l.; 21 feet by 13 feet, 50l.; 12½ feet by 10 feet, 30l. A large assortment of Melon and Cucumber boxes, summer houses, &c. Estimates for any branch in the above line either in iron or wood, or park fencing.

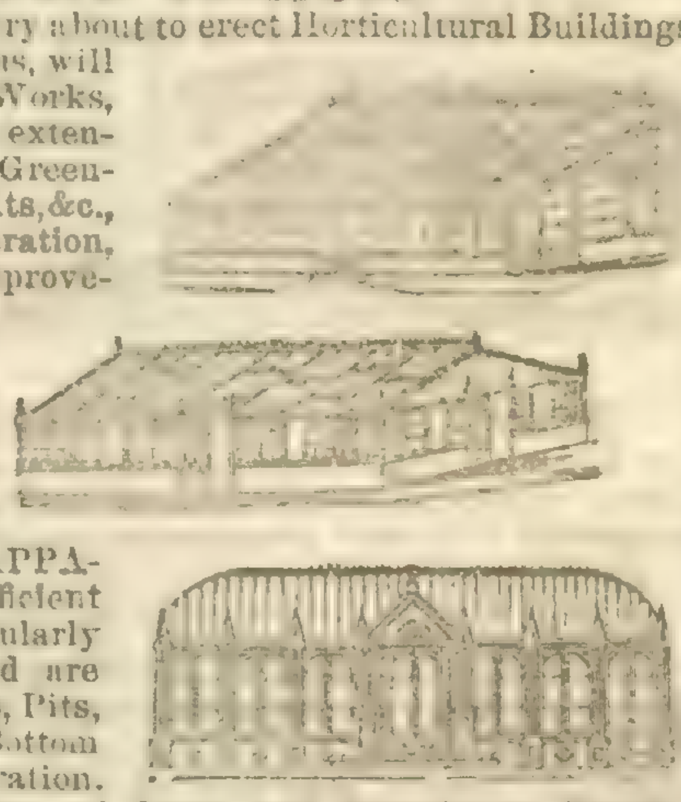
HORTICULTURE IN ALL ITS BRANCHES.

J. WEEKS & Co., King's Road, Chelsea,



HOTHOUSE BUILDERS

The Nobility and Gentry about to erect Horticultural Buildings or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.



The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

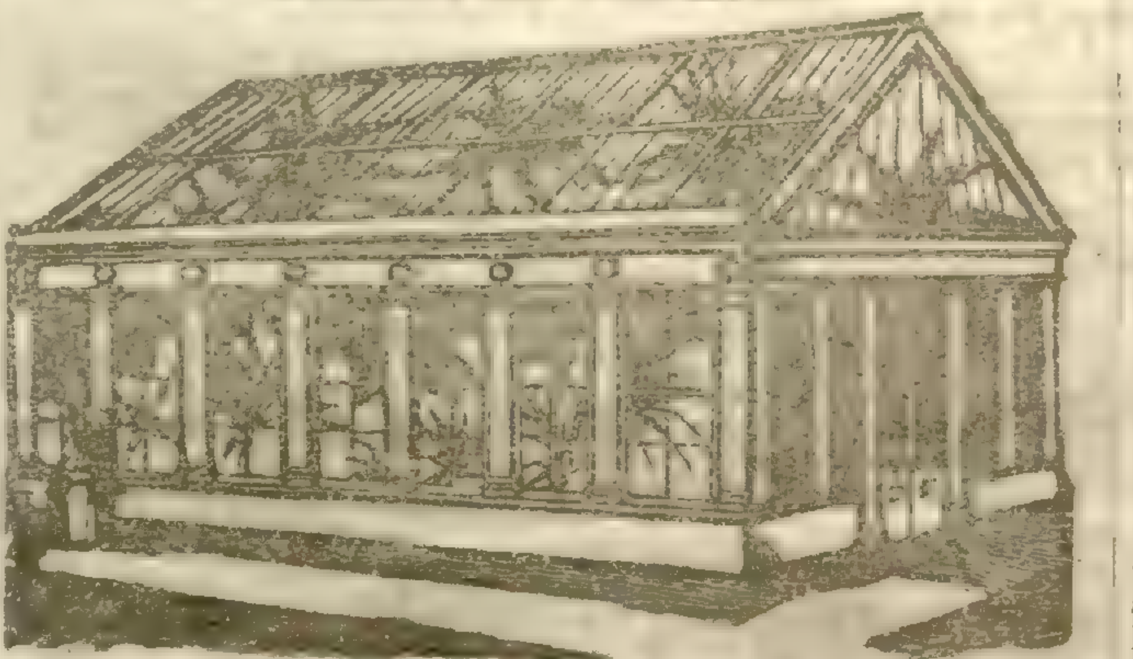
The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. WEEKS & Co., King's Road, Chelsea, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



GRAY AND ORMSON, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

BY HER MAJESTY'S ROYAL LETTERS PATENT

E. DENCH, PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

PATENT HOTHOUSES and excellent Glass at 1s. 3d. per foot super., which are superior to all others for price with quality, and if known would supersede all others. (See Appendix, in "Book of the Garden," by Mr. M'Intosh.) A Range of Houses and Hot Water Apparatus, was erected by E. D. for E. L. Betts, Esq., Preston Hall, Kent. Mr. J. Frost, head gardener, has shown their efficiency by their produce at the Royal Botanic Gardens, Regent's Park, June 8, and Chiswick, June 11. The editor of the *Gardeners' Chronicle* says: "Beautiful examples of Black Hamburgh, large both in bunch and berry, and as black as Sloes, were furnished by Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall, Kent; these well deserved the first prize which was awarded them."—*Gardeners' Chronicle*, June 18th, 1853. The Grapes were considered the best shown at Regent's Park during the season, and the Houses are as superior for the growth of everything else in horticulture, which has been fully proved, and they have been extensively erected for the nobility and gentry in all parts of the kingdom.

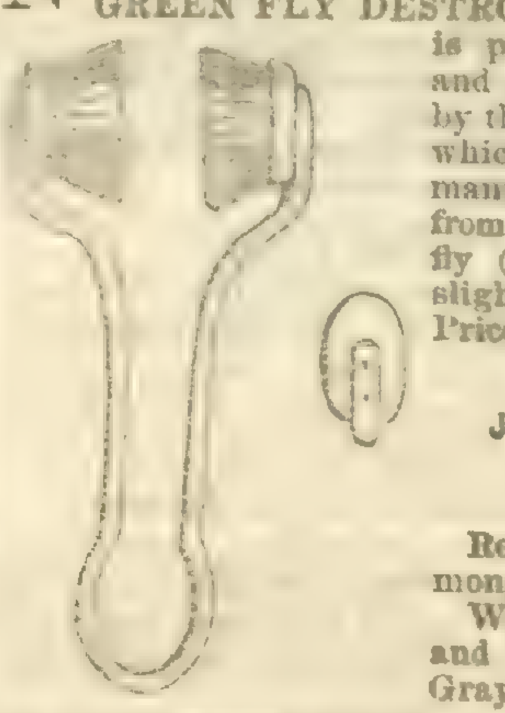
GLAZING WITHOUT PUTTY.—Iron and Glass alone. E. D. has Roofed the Public Baths and Washhouses, Endell Street, on this principle, and others are in hand. Patent Sashes for Peach Walls, Pits, &c., 8d. per foot super. Heating by Hot-water, on the most practical principles, and all the best materials used. Printed Price List sent on application.

STEPHENSON AND PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

IMPORTANT TO GROWERS OF ROSES.

NEWLY-INVENTED APHIS BRUSH, OR GREEN FLY DESTROYER.—The attention of Florists is particularly called to this Cheap and Ingenious Instrument, invented by the Rev. E. S. BULL, of Colchester, which, in a very simple and easy manner, instantly cleanses the Rose from that destructive insect the Green-fly (or Aphis), without causing the slightest injury to the bud or foliage. Price 2s. 6d. each.



MANUFACTURED BY
JOSLIN AND SONS,
IRONMONGERS, Colchester.

Retailed by all the principal Ironmongers.

Wholesale agents: W. Thompson and Son, 15, Upper North Place, Gray's Inn Lane Road, London.

BERDOE'S VENTILATING WATERPROOF LIGHT OVER-COATS resist any amount of rain, without confining perspiration, the fatal objection to all other waterproofs, air-tight materials being unfit and dangerous for clothing, and being free from vulgar singularity are adapted for general use equally as for rainy weather. Price 45s. and 50s. A large stock for selection. Also of Capes, Shooting Jackets, Ladies' Mantles, Habits, &c.—W. BERDOE, Tailor, &c., 96, New Bond-street, and 69, Cornhill (only).

TO NURSERYMEN AND OTHERS.

TO BE LET, a SMALL NURSERY, in a very excellent situation, consisting of a well-stocked Garden and Greenhouses, to be Sold a bargain, in consequence of the party going abroad. For particulars enquire of Mr. HOOPER, Grand Row, Covent Garden, London.

TO BE LET, A FARM, IN SURREY.—Mr. EDWARD RYDE, Surveyor, is instructed to Let, with immediate possession (if desired), a very eligible and compact FARM, containing about 180 acres of good Arable, Meadow, and Hop Land; situate in the parish of Farnham, close to the Railway Station and market Town. The House is a good one, and there is, in addition, a Bailiff's Residence and several Labourers' Cottages, which, considered in connection with the economy and facility of Railway communication with the Metropolis, render it equally attractive to the Gentleman seeking a pleasure Farm as to the practical Agriculturist.—Further particulars may be obtained of Mr. RYDE, at his Estate, Auction, and Agency Offices, 14, Upper Belgrave Place, Pimlico; and of Messrs. RYDE & LILLYWHITE, Auctioneers, Alton, Hants.

KINGSCLERE, FIVE MILES FROM NEWBURY.

TO BE SOLD, by Private Contract, a very desirable small FREEHOLD FARM, exonerated from Land Tax, comprising a complete comfortable Farm-house, suitable Farm Buildings, Yards, Garden and Orchard, and about 50 acres of Land, of which 3 acres are Meadow, 2 Wood, and the remainder arable.—To treat, apply to Mr. CORNELIUS B. DAVIS, Land-Surveyor, The Hitchen, East Woodhay.

TO FLORISTS, ETC.

TO BE SOLD, the LEASE, for the unexpired term of 10 years, of the Manor Nursery, Shacklewell Green, West Hackney. It contains one acre of Ground, two good six-roomed Dwelling Houses, ten Greenhouses, Sheds, &c., and well supplied with water. Any person wishing for a compact Nursery for the culture of plants in pots will find this a very advantageous opportunity.—For particulars, apply to F. J. BUCK, at the above-named Nursery.

HOLYBOURNE, NEAR ALTON.

TO BE SOLD, a small compact BREWERY, Malt-house, Mill, Residence, and Cottage, with Garden, Orchard, and Meadow-land adjoining, containing in all five acres, more or less. The premises are situated close to the London-road, and within a mile of the Alton Railway station.—For particulars apply to Mr. DYER, Alton.

FOR SALE, a FIRE or GARDEN ENGINE, of great power, superior make, and very compact, throwing water above 50 feet high, at the rate of 60 gallons a minute. Enquire of Mr. MART, 130, Oxford Street; or it may be seen at Mr. Porter's, opposite the Forest Hill Station, Sydenham, Kent.

100 ALDERNEY COWS AND HEIFERS.

JAMES DUMBRELL respectfully invites purchasers of Alderney Cows to inspect his stock. Choice from 100.

JAMES DUMBRELL, Ditchling, Hurstperpoint, Sussex, one mile from Hassock's Gate Station, London and Brighton Railway.

COCHIN CHINA POULTRY, ETC.

EGGS FROM PRIZE BIRDS.

MR. JOHN FAIRLIE, of Cheveley Park, Newmarket, in reply to the very urgent applications from numerous amateurs, is now prepared to dispose of a limited number of Eggs, from his celebrated prize Cochins, Brahma Pootras, Scotch Bakies, Dorkings, &c., according to the dates of the orders received.

BLACK COCHIN EGGS from the best birds in England, having always taken prizes at the best shows, at 18s. per dozen, including package. Apply at the city of London Wire Works, 44, Skinner Street, London. N.B. Fowl Houses, Chicken Coops, Poultry Hurdles, and Netting, of every size and description. Illustrated Catalogues forwarded, post free, on application. A few Spanish Pullets, sisters to those sent to her Majesty's yard at Windsor, for Sale.

SPECIMEN STOVE AND GREENHOUSE PLANTS.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King Street, Covent Garden, on FRIDAY, July 7th, at 12 for 1 o'clock, a collection of STOVE AND GREENHOUSE PLANTS, of a Gentleman who has been a most successful exhibitor at Chiswick and the Regent's Park, the plants are grown in the best manner, and comprise all the popular show varieties of Azaleas, Ericas, Ixoras, Allamandas, Epacris, &c. &c.—May be viewed on the morning of sale, and Catalogues had of Mr. J. C. STEVENS, 38, King Street, Covent Garden, London.

ORCHIDS.

THE MOST EXTENSIVE AND VALUABLE COLLECTION EVER OFFERED FOR PUBLIC SALE, CONTAINING FINE PLANTS OF ALL THE BEST SPECIES OF THIS ELEGANT TRIBE NOW IN CULTIVATION.

MR. J. C. STEVENS is instructed to announce for Sale by Auction, at his Great Room, 38, King Street, Covent Garden, on WEDNESDAY, 12th July, and following day, the Collection of ORCHIDS of a gentleman, the character of which will at once be understood by an enumeration of a few of the principal varieties. Vanda suavis (true), four plants, Cymbidium eburneum two plants, Aerides Larpentæ two plants, Saccolabium Blumei eight plants, Lælia purpurata two plants, Phalænopsis rosea, grandiflora and amabilis many plants, Cypripedium Lowii, Uropedium Lindeni, and all the best varieties of Aerides, Vandas, Saccolabiums, Cattleyas, Trichopilias, Calanthes, Lælias, Dendrobiums, Angræcums, Stanhopeas, &c. Catalogues are preparing.

CRYSTAL PALACE, 1854.
Now ready,
THE OFFICIAL GUIDE AND HANDBOOKS,
ILLUSTRATIVE of the Contents of the Exhibition. To be had at the Palace and at all Booksellers and Railway Stations.
Bradbury & Evans, Printers and Publishers to the Crystal Palace Company, 11, Bouverie Street.

BY THE AUTHOR OF "VANITY FAIR."
On the 30th inst. will be published, price One Shilling, No. X. of
"THE NEWCOMES." By W. M. Thackeray, Author of "Vanity Fair," "Pendennis," &c. &c. With Illustrations by Richard Doyle.
Bradbury & Evans, 11, Bouverie Street.

On the 30th inst. will be published, price 1s., the Fifteenth Number of
HANDLEY CROSS; or, Mr. JORROCKS'S HUNT. By the Author of "MR. SPONGE'S TOUR." Illustrated with Coloured Plates and Numerous Woodcuts by John Leech, uniformly with "Sponge's Tour."
Bradbury & Evans, 11, Bouverie Street.

On the 30th June will be published, price 2s.,
THE ENGLISH CYCLOPÆDIA, Part XIV. Extending, in the Natural History Division, from FALCONIDÆ to FOOD;
and in the Geographical Division, from DERBYSHIRE to EDINBURGH;
including articles on Detmold, Detroit, Diarbekr, Dieppe, Dnieper, Dniester, Dobrudscha, Don Cossacks, Dresden, Dusseldorf, Ecbatana, Ecuador, &c. &c.
Bradbury & Evans, 11, Bouverie Street; and to be had of all Booksellers and Newsvendors.

This day is Published, price 2s. 6d., handsomely bound in cloth, with Plans, Illustrations, &c.,
BUXTON AND THE PEAK OF DERBYSHIRE. A Handbook to the Peak of Derbyshire, and to the Use of the Buxton Mineral Waters. By William Henry Robertson, M.D., Senior Physician to the Buxton Bath Charity. This forms a complete Guide to Buxton in 1854; and includes Plans of the Peak and of the surrounding neighbourhood, with a Directory of the Distances, Routes, Hotels, &c. Also a BOTANICAL APPENDIX. By Miss Hawkins.
Bradbury & Evans, 11, Bouverie Street, London; to be had of all Booksellers, and at all Railway Stations.

NEW TALE BY MR. CHARLES DICKENS.
On the 30th June will be published, price 9d.,
PART 51 of "HOUSEHOLD WORDS," containing Four Weekly Portions of a New Work of Fiction, called "HARD TIMES." By Charles Dickens. The publication of this Story will be continued in HOUSEHOLD WORDS from Week to Week, and completed in Five Months from its commencement on April 1st. Price of each Weekly Number of HOUSEHOLD WORDS (containing, besides, the usual variety of matter), Twopence; or Stamped, Threepence. HOUSEHOLD WORDS, conducted by Charles Dickens, is published also in Monthly Parts and in Half-yearly Volumes.
Office, 16, Wellington Street North, Strand.

THE HORTICULTURAL JOURNAL and FARM and GARDEN ADVERTISER. (Garden Department by Mr. Glenny.) Every Saturday. Price 2d.; Stamped, 3d. All communications to the Office, 14, York Street, Covent Garden.

LYELL'S PRINCIPLES OF GEOLOGY.
Now ready, Ninth Edition, thoroughly revised, with numerous Woodcuts, 8vo, 18s.,
THE PRINCIPLES OF GEOLOGY; or, the Modern Changes of the Earth and its Inhabitants, as Illustrative of Geology. By Sir Charles Lyell, F.R.S.
John Murray, Albemarle Street.

MR. SIDNEY'S NEW WORK.
Just published, in fcp. 8vo, with Frontispiece, price 5s.
GALLOPS AND GOSSIPS IN THE BUSH OF AUSTRALIA; or, Passages in the Life of Alfred Barnard. By Samuel Sidney, Author of "The Three Colonies of Australia," &c.
London: Longman, Brown, Green, & Longmans.

Just published in 18mo, price 1s.,
THE BOOK OF HEALTH. By R. J. Mann, M.R.C.S.E., Author of "A Guide to the Knowledge of the Heavens." Forming a part of the new School Series, edited by the Rev. G. R. Gleig, M.A.
London: Longman, Brown, Green, & Longmans.

This day, Two Vols., foolscap 8vo, 9s.,
CLARA MORISON: a Tale of South Australia during the Gold Fever.
London: John W. Parker & Son, West Strand.

This day is published, feap 8vo, with many illustrations, price 5s.,
THE SEA-SIDE BOOK: Being an Introduction to the Natural History of the British Coasts. By W. H. Harvey, M.D., M.R.I.A., Keeper of the Herbarium of the University of Dublin, and Professor of Botany to the Royal Dublin Society. Third Edition, with a Chapter on Fish and Fish Diet, by Mr. Yarrell.
London: John Van Voorst, Paternoster Row.

This day is published, post 8vo, price 12s.,
A MANUAL of NATURAL HISTORY for the Use of TRAVELLERS; Being a description of the Families of the Animal and Vegetable Kingdoms; with remarks on the Practical Study of Geology and Meteorology. To which are appended directions for Collecting and Preserving. By Arthur Adams, M.R.C.S.; William Balfour Baikie, M.D.; and Charles Barron, Curator of the Royal Naval Museum at Haslar.
London: John Van Voorst, 1, Paternoster Row.

Now ready, price 1s., with Frontispiece View of the Crystal Palace and Grounds at Sydenham, and 40 other Illustrations by Anelay, Whimper, and others, the FIRST VOLUME of the NEW SERIES of the
FAMILY ECONOMIST AND ENTERTAINING COMPANION, for town and country, to which is added the Boys' and Girls' Treasury, contains THE HARNETTS (the best Story of the day), and everything that everybody wants to know.
London: Groombridge & Sons. Sold by all Booksellers.

On Saturday, July 1st, will be published, price 2d., No. 1., of
THE EPITOMIST, a weekly Journal of Literature, Criticism, Art, Science, and Manufactures; comprising Fiction of the highest class, Reviews of new works, all the Scientific Intelligence of the week, a list of Patents with abstracts of Specifications, a Domestic Miscellany, and Correspondence: 32 pages, 8vo.
Office, 49, King William Street (city), London.
Order of all Booksellers and Newsvenders in the Kingdom.

BOTANICAL WORKS.

CURTIS'S BOTANICAL MAGAZINE OF NEW AND RARE PLANTS. By Sir W. J. Hooker, F.R.S. In Monthly Numbers. Six Plates. 3s. 6d. coloured.

A CENTURY OF ORCHIDACEOUS PLANTS, selected from the Botanical Magazine. By Sir W. J. Hooker. Containing 100 coloured Plates. Royal 4to. Five Guineas.

THE RHODODENDRONS OF SIKKIM HIMALAYA. Thirty coloured Drawings, with Descriptions. By Dr. J. D. Hooker, F.R.S. Folio. £3 11s.

POPULAR ECONOMIC BOTANY, with 20 Coloured Plates of the Substances and Plants in Fruit. By T. C. Archer, Collector of Economic Botany in the Crystal Palace. 10s. 6d.

POPULAR HISTORY OF BRITISH FERNS, comprising all the Species. By Thomas Moore, F.L.S. Twenty Coloured Plates. 10s. 6d.

POPULAR HISTORY OF BRITISH SEA-WEEDS. By the Rev. David Landsborough. Second Edition. 20 Coloured Plates. 10s. 6d.

POPULAR FIELD BOTANY. By Agnes Catlow. Third Edition. With 20 Coloured Plates of Figures. 10s. 6d.

PHYCOLOGIA BRITANNICA; or, History of the British Sea-Weeds. By Professor W. H. Harvey. In 3 vols., royal 8vo, cloth, arranged in the order of publication, 7l. 12s. 6d.; in 4 vols., royal 8vo, cloth, arranged systematically, 7l. 17s. 6d.

FLORA OF NEW ZEALAND. By Dr. J. D. Hooker, F.R.S. In Parts, 20 Plates. Price 31s. 6d. coloured; 21s. plain.

THE ESCULENT FUNGUSES OF ENGLAND. By the Rev. D. Badham. Coloured Plates. Super-royal, 8vo. 21s.

ILLUSTRATIONS OF BRITISH MYCOLOGY, containing Figures and Descriptions of British Funguses. By Mrs. Hussey. Ninety coloured Plates. 7l. 12s. 6d.

Lovell Reeve, Henrietta Street, Covent Garden.

Shortly will be ready, Part I., of
THE FERNS OF GREAT BRITAIN, Illustrated by John E. Sowerby; Descriptions by C. Johnson, Esq. To contain about 46 Plates, and to be completed in Eight Monthly Parts, full coloured, at 3s.; partly coloured at 1s. 6d. per Part.
Prospectuses may be had through all Booksellers; and of the Proprietor, John E. Sowerby, 3, Mead Place, Lambeth.

Just published, price One Shilling and Sixpence, the Sixth Edition of
FLORA AND POMONA'S FETE. A Poem. By Elizabeth Steele Perkins. The proceeds are devoted towards the funds of the proposed new church on the Coldfield in the parish of Sutton.
London: Simpkin, Marshall, & Co.; and Thompson, Tamworth.

ON MARRIAGE.
Just published (to be had free, by enclosing 1s. or Twelve Postage Stamps, to Mr. Watson, Clerical Agent, Robert Street, Adelphi, London).
MATRIMONY.—A Pamphlet on Matrimonial Alliances, which merits the attention of those who wish to settle honourably in life. By a Clergyman.

HER MOST GRACIOUS MAJESTY HAVING COMMANDED
MR. BARKER'S PICTURE of NAPOLEON THE GREAT REBUKING HIS OFFICERS ON THE BATTLE FIELD OF BASSANO to be sent to Buckingham Palace, on Saturday (this day), Messrs. Leggatt, Hayward, & Leggatt announce to those who have received Cards of Invitation to inspect it, that the Painting cannot be seen until Monday, June 26th, at mid-day.

D. FERGUSON, Landscape Gardener and Contracting Planter, Stowe, Buckingham, still has about 40,000 Geraniums, Calceolarias, Verbenas, Heliotropes, Fuchsias, Lobelias, Salvias, &c. &c.; they are well rooted and established, and if left to his selection, will be sent out at the usual price of 1s. 6d. per dozen, if 10 dozen are taken; 1s. 3d. per dozen, if 20 dozen are taken; 1s. per dozen, if 50 dozen are taken; 5 dozen added if 100 dozen are taken.—Carriage free, or deducted, to all Railway Stations in Britain, to Dublin, Paris, and Amsterdam.

MR. GLENNY requests that REPORTS of all the HORTICULTURAL and FLORAL EXHIBITIONS may be sent to him for publication, and that specimens of Fruit, Flowers, Plants, and Vegetables, as well as other subjects for his opinion, may be addressed, Mr. Glenny, 420, Strand.

JAMES ANDREWS, Floricultural & Horticultural Artist, 9, West Street, Walworth Road, Surrey, begs to inform Florists, Amateurs, and the Public, he undertakes to give faithful DRAWINGS in Water Colours of FRUITS, FLOWERS, or VEGETABLES, and hopes to meet with that patronage which it shall be his constant study to deserve.
J. A. can, after a drawing has been made, furnish any quantity (not less than 100) of Coloured Plates, fac-similes of the original, with advertisement at the foot of each for distribution to the trade, at estimated prices, and would refer to the *Florist and Garden Miscellany* for specimens.

TO FLORISTS AND OTHERS.
J. JONES, Iron Merchant, has always a great variety of CONICAL and SADDLE BOILERS in STOCK; also Fire and Furnace Bars, Ornamental and Plain Supply Cisterns, Double Doors and Frames, Furnace Grates, Soot Doors, Hot Water Pipes, Elbows, Tees, Syphons, Throttle Valves, Stop Cocks, Flange and Socket Elbows, &c.; also Trough Pipes. Drawings and prices of the above, on application to J. Jones, Iron Bridge Wharf, No. 6, Bankside, London, near the Southwark Iron Bridge.

FLOWER-POTS, of a very superior manufacture, delivered at the Bricklayers' Arms Terminus, and other Stations on the Dover Railway, in quantities of not less than 100 casts, at 1s. 9d. per cast.—Apply to the South-Eastern Potteries, Marden, Kent.

PROTOXIDE ANTI-CORROSION PAINT, for all external purposes, on iron, wood, brickwork, or stucco, is cheaper, and more durable, than any similar article.—Manufactured by Charles Francis & Sons, Cement Works, Nine Elms, London.

MILDEW AND RED SPIDER.
BAINBRIDGE'S ALKALINE EXTRACT.—We can confidently recommend the above as a sure remedy, having used it successfully for many years both on Vines and Peaches, &c. &c. Pints, 3s.; quarts, 5s. A quart is sufficient for 20 gallons of water applied with the Syringe.
BAINBRIDGE'S GUIDE TO THE CONSERVATORY, 5s. each. Sold wholesale and retail by R. Baldwin, Paternoster Row. Gentlemen can procure the above in any part of the country through their Bookseller, in their Monthly parcels.
Sold also by Bainbridge & Hewison, 7, Bridge Street, York.

THE GRAPE BLIGHT.
McADAM'S "COMPOSITION" (now used in the Royal Vineries), for the effectual prevention and cure of the Vine Mildew, is sold in 1 lb. packets, with printed directions, at 3s. 6d. each, sufficient for 18 gallons of wash.
Dawe, Cottrell, & Benham, Seedsmen, London Agents, 36, Moorgate Street, City. It may be ordered through any respectable Nurseryman or Tradesman in town or country.

PAGE and CO.'S COMPOSITION FOR THE DESTRUCTION OF MILDEW UPON VINES, BLIGHT UPON ROSES, WALL-FRUIT TREES, CUCUMBERS, MELONS, AND STOVE AND GREENHOUSE PLANTS.—Extra strong, 4s. per gallon, sufficient to make four (jars and barrels extra); in bottles, 1s. 3d. and 2s. 6d. each. 10 gallons and upwards carriage free to London. Directions for use and copies of testimonials upon application. For testimonials see whole page *Gardeners' Chronicle*, March 11, 1854, describing the satisfactory results derived from its use in cases of Vine Mildew, Thrip, Scale, Green Fly, Red Spider, Mealy Bug, &c., not only without injuring the most delicate flowers or foliage, but promotes a vigorous growth; it is highly appreciated at the Royal Gardens, Osborne Palace, the Royal Gardens, Claremont, and by the principal nobility and gentry in the United Kingdom.
Finest Grasses for Lawns and Parks, and every variety of Garden and Farm Seeds, at B. Page & Co.'s, Seed Merchants, Oxford Street, Southampton.

COWS.
HARVEY'S CELEBRATED COW DRINKS, 1s. each. They have been used with unparalleled success in most diseases incidental to Cows. Full and plain directions are given with each drink for the treatment of Hoven, Maw-bound, Colds, Garget, Red Water, the Tick or Foot and Mouth Distemper, at and after Calving, &c. A very extensive use of these drinks has proved them to be a safe and effectual remedy.
Compounded by R. Harvey, Veterinary Surgeon, Macclesfield, Cheshire, and sold by all Medicine Vendors. Wholesale Agents, Barclay & Sons, Farringdon Street; and Marsden & Sons, Queen Street, Cheapside, London.

SHEEP, LAMBS, HORSES, AND CATTLE, Can be Dressed with
LONG'S NON-POISONOUS SHEEP & CATTLE-DRESSING COMPOSITIONS, without any possibility of danger or injury resulting from the application. These Compositions are admitted by all who have fairly tested them to be the most effective Sheep Dressings ever brought before the agricultural public; and as they are non-poisonous, and do not stain or discolour the Wool, they are gradually superseding the use of all Dipping and other Sheep-dressing preparations, composed of such deadly poisons as Arsenic or Mercury.
It is a fact now thoroughly established, that Long's Non-Poisonous Sheep Dressings, if liberally and judiciously applied in the dressing of Sheep and Lambs, will—in their consequent effect in removing Disease, destroying Vermin, and keeping the flock in condition thus promoting increased growth both of Mutton and Wool—as amply repay flock owners for first outlay, as artificial manures when applied to land. They are the only Sheep Dressings also, which, from the fact of their containing no poison, can be beneficially and safely applied to Sheep and Lambs at any age and at any season of the year.
Pamphlets containing full directions for use, and copies of the strongest Testimonials ever accorded to a manufacturer, signed by leading and practical Stock Farmers, residing in all parts of the United Kingdom, together with the names of all Country Agents authorised to vend Long's Patent Sheep and Cattle-dressing Compositions, may be obtained gratuitously on application of any advertised country Agent; or by post, sent free, of
BARRY BROTHERS, Agents for Joseph Long, Meriton's Wharf, and Shad Thames, London.

THE CHOLERA
Prevented by the Destruction of all Noxious Effluvia.
CREWS'S DISINFECTING FLUID, Recommended by the College of Physicians. The Cheapest and Strongest Chloride of Zinc.—Quarts, 2s.; Pints, 1s.; Half-pints, 6d. Sold by all Chemists, Druggists, and Shipping Agents; and at Commercial Wharf, Mile End, London.

THE CHOLERA—ITS BEST ANTIDOTE.
SIR W. BURNET'S DISINFECTING FLUID, the original and genuine CHLORIDE OF ZINC.—Sold by all Chemists, Druggists, and Shipping Agents; and at the Office, 18, Cannon Street, London Bridge.
N.B. Beware of a spurious and low-priced imitation.

SEA-BATHING, HAYLING ISLAND, approached from Havant by a bridge, five miles from Portsmouth.—THE ROYAL HOTEL and FAMILY BOARDING HOUSE. Rooms facing the Sea; opposite the Isle of Wight, &c. Conveyances to meet the Trains, by previous application to C. Lellyett, the Dolphin Commercial Inn and Posting House, Havant, Hants.

DEVONSHIRE CYDER.—A three dozen case (large bottles), of the very best DEVONSHIRE CHAMPAGNE CYDER, will be forwarded to any address on receipt of a Post-office order for 21s., payable to John E. Rendle, Martin Street, Octagon, Plymouth. Case and bottles, value 9s., included.

GLENFIELD PATENT STARCH, used in her Majesty's Laundry, and Wotherspoon's machine-made CONFECTIONARY, MARMALADE, JAMS, JELLIES, &c. which gained the Prize Medal of 1851, may be had of all Grocers. Wholesale of Wotherspoon, Mackay, & Co., 66, Queen Street, Cheapside, London; and Robert Wotherspoon & Co., Glasgow.

BRECKNELL'S SKIN SOAP.—Recommended as the best for producing a clear and healthy skin, being the OLD YELLOW SOAP, made expressly for the purpose, of the best materials and not scented. Sold only in Shilling Packets, of either four rounded tablets or eight squares.—Observe each tablet and square is stamped "Brecknell's Skin Soap."
Brecknell, Turner, & Sons, Wax and Tallow Chandlers, Soap and Oil Merchants, &c., to Her Majesty, Beehive, 31, Haymarket.

Printed by William Bradbury, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and Frederick Mullett Evans, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be Addressed to the Editor.—Saturday, June 24, 1854.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley

No. 26.—1854.] SATURDAY, JULY 1. [PRICE 6*d*.

INDEX.

Aeration ... 420 c
Agri. Soc. of England ... 428 b
— statistics ... 426 a
— chemistry ... 427 a
— College ... 425 b—426 b
Aotus gracillima ... 420 a
Aquarium, Gosse's, rev. ... 422 c
Blidah, Orange grounds of ... 420 b
Books noticed ... 422 c
Calendar, horticultural ... 424 a
— agricultural ... 429 b
Chemistry, agricultural ... 427 a
College, Agricultural ... 425 b—426 b
Crab, Fiddler ... 422 c
Cutting pot, material for ... 421 a
Entomological Society ... 422 b
Erysiphe graminis ... 425 c
Fern seed ... 424 c
Food, cottagers' ... 427 c
Gorse ... 428 a
Grape diseases ... 419 a
Gypsum ... 428 a
Hops, diseased ... 425 b—429 a
Horticultural Society ... 421 c
— — garden ... 423 a
Ireland, tour in ... 427 a
Kennington Park ... 421 c
Law relating to injury done to trees ... 419 b
Linnean Society ... 422 a
Manure, "economical" ... 425 c
— analysis of ... 428 a
Microscope, Hogg on, rev. ... 423 a
Mildew, Vine ... 419 a—421 b
National Floricultural Society ... 423 c
Orange grounds of Blidah ... 420 b
Oxalis tuberosa ... 423 c
Pansy Soc., Scottish ... 423 b
Pathology, vegetable ... 419 c
Pears, new ... 420 c
Pig, the ... 426 b
Potting cuttings ... 421 a
Rabbits ... 421 b
Rain gauges ... 421 b
Root cutters ... 429 b
Seeding, thin ... 427 c
Statistics, agricultural ... 426 a
Superphosphate ... 428 a
Trees, law relating to injuring of ... 419 b
Trees, how to kill ... 421 a
Vegetable pathology ... 419 c
Vegetation, accelerated ... 421 a
Ventilation ... 420 c
Vine mildew ... 419 a—421 b
Weigela rosea ... 421 c
Wheat parasite ... 425 c
Wheat, Lois Weedon ... 427 b

HORTICULTURAL SOCIETY OF LONDON.—His GRACE THE PRESIDENT has kindly directed the Grounds of Chiswick House to be opened for the reception of the Visitors to the Society's Gardens at the NEXT EXHIBITION, on SATURDAY, the 8th JULY. Tickets are issued at this Office, price 5*s*.; or at the Garden, in the afternoon of the 8th July, at 7*s*. 6*d*. each.—21, REGENT STREET, LONDON.

ROYAL BOTANIC SOCIETY, REGENT'S PARK.—The last Exhibition this season of PLANTS, FLOWERS, and FRUIT, will take place on WEDNESDAY next, July 5.

Tickets of Admission can be obtained at the Gardens by orders from Fellows of the Society, price 5*s*., or on the day of the Exhibition, 7*s*. 6*d*. each.

KENILWORTH.—A Grand HORTICULTURAL and FLORICULTURAL EXHIBITION will be held (by permission) among the RUINS OF KENILWORTH CASTLE, on WEDNESDAY, July 5, when Prizes to the amount of nearly 80*l*. will be awarded for collections and single specimens of Stove and Greenhouse Plants, Cut Flowers, Fruits, Vegetables, &c. This Exhibition will be open to all Exhibitors without entrance fee, limitation, or other restriction, subject only to such conditions as seem necessary to secure order and equal opportunity of reward and distinction to all competitors.

Schedules and every particular may be had on application to J. CHEYNE, Secretary, Offchurch, near Leamington Spa.

BEDFORD AND BEDFORDSHIRE HORTICULTURAL AND FLORICULTURAL SOCIETY.—The SUMMER EXHIBITION of the above Society will take place at the ASSEMBLY ROOMS, Bedford, on TUESDAY, July 11, when Prizes for PLANTS, CUT FLOWERS, &c., will be awarded. There will be a Sweepstakes for the undermentioned Plants and Cut Flowers, Open to all England. Entrance to each class, 5*s*.

For the best 6 Fuchsias, distinct varieties.
For the best 6 Geraniums, distinct varieties.
For the best 24 Cut Roses, in single blooms, distinct varieties.
For the greatest number of vars. of Cut Roses in single blooms.
For the best 24 Verbenas, distinct varieties, in single trusses.
For the greatest number of varieties of Verbenas, in single trusses.
For the best 12 Sweet Williams, distinct varieties.
For the greatest number of varieties of Sweet William.

The First Prize to be two-thirds of the total amount subscribed for entries; and the Second Prize to be one-third part.

Entries to be made to the Secretary, on or before July 8.

Parties who cannot attend can send their Plants and Flowers addressed to the Secretary (carriage paid), and they will receive every attention.

St. Mary's, Bedford. C. STAFFORD, Hon. Sec.

EAST AND WEST KENT GRAND HORTICULTURAL EXHIBITION AND MUSICAL PROMENADE, under the distinguished patronage of the Right Hon. EARL and COUNTESS of WINCHILSEA and the nobility of the neighbourhood, in the HORTICULTURAL GROUNDS adjoining the Station, at ASHFORD, on TUESDAY, July 11. Prizes Open to All England. The Royal Artillery Bands of Woolwich will attend. The Orchestra will consist of upwards of 80 Performers, under the direction of Mr. Smythe. A List of Prizes, &c., may be had of the Secretary, W. KEMSLEY.

The Gardens will be opened for admission at half-past 12 o'clock, upon presenting a Ticket, or payment of 2*s*. 6*d*.; at half-past 1 o'clock, 2*s*.; and at 4 o'clock, 1*s*. Cantelo's Hydro-incubator will be on the grounds. Refreshments supplied in the gardens. The Horticultural arrangements are under the direction of Mr. W. J. Epps, Maidstone and Ashford.

NOTICE.

SOUTH-EASTERN RAILWAY.—The DIRECTORS have kindly consented to CONVEY ALL PERSONS visiting the GRAND HORTICULTURAL EXHIBITION and MUSICAL PROMENADE at ASHFORD, on TUESDAY, July 11, at SINGLE FARES to and from ALL STATIONS on their Line of Railway.

PLANTS OF CABBAGE, SAVOY, KALE, BROCCOLI, CAULIFLOWER, AND CELERY.

JOHN CATTELL, Westerham, Kent, begs respectfully to inform the public that he has a plentiful supply of Plants of his superior true sorts of the above, which will be forwarded to order on receipt of Postage Stamps or Post Office Order made payable here at the following prices, package included:—All the sorts of Early Cabbage, Savoy, and Kale, including Brussels Sprouts, 6*d*. per 100; 4*s*. 6*d*. per 1000. All the sorts of Autumn and Spring Broccoli, and all the sorts of Celery, 8*d*. per 100; 5*s*. 6*d*. per 1000. Cauliflower, Early and Late, 10*d*. per 100. Red Cabbage, 1*s*. per 100; Drumhead, or Cattle Cabbage, 4*s*. per 1000. Packages of 1000 and upwards delivered free of Carriage to London, and to the Edenbridge Station of the South Eastern Rail.

Seed of Cattell's Dwarf Barnes, and of his superior Dwarf Reliance Cabbage, may be had in packets by post for 12 Penny Stamps per packet; the former containing one ounce as usual, and the latter half an ounce.

THE BEST SUBSTITUTE FOR SWEDES.

SUTTON'S PURPLE-TOPPED YELLOW HYBRID, the hardiest, largest, and most nutritious of all Hybrid Turnips. Price 1*s*. 4*d*. per lb., or 8*s*. per gallon.

The best time for sowing this sort is during the first two or three weeks of July.—SUTTON & SONS, Seed Growers, Reading.

CHIVAS'S ORANGE JELLY TURNIP.

SUTTON AND SONS, Seed Growers, Reading, can supply new Seed direct from Mr. Chivas at the same price as at Chester; they have also themselves grown some excellent Seed from selected Orange Jelly Turnips raised last year from seed received of Mr. Chivas, which they can strongly recommend. Purchasers of large quantities will be supplied liberally. Particulars on application.—Address JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

THE FORWARDEST TURNIP KNOWN.

SUTTON'S EARLY SIX WEEKS TURNIP should now be sown for feeding off early. Excellent new Seed 1*s*. 3*d*. per pound, or 7*s*. per gallon.

Mr. K. HICKMAN, of Brompton House, near Newbury, in a letter dated February 1st, says:—

"I must mention the 'Six Weeks Turnip' as the best sort I have ever seen for earliest and latest sowing. I have grown them several years, and have invariably found them to produce more feed in less time than any other Turnip. I have had them after Wheat of a good size, within six weeks from the time of sowing."

N.B. Carriage free, except parcels under 20*s*. value.—Address, J. SUTTON and SONS, Seed Growers, Reading, Berks.

SUTTON'S GRASS SEEDS.

GRASS SEEDS FOR PRESENT SOWING.—We are receiving very gratifying intelligence of the crops growing from the seeds we have supplied during the last few months. One of our customers (Mr. Joseph Newton) writing us from Biggleswade, on the 15th April, says:—"*The Grass seeds I had from you have convinced our farmers that it is better to have your selected ripe seeds than to use the unripe hay seeds, from the cow-cribs and hay-lofts.*" Having a fine stock, we can still supply seeds, which may be sown now with certainty of success. For prices and other particulars, address

JOHN SUTTON AND SONS, SEED GROWERS, Reading, Berks.

SUTTON'S IMPERIAL CABBAGE. — THE EARLIEST SORT IN CULTIVATION, large and fine flavour. This sort may be sown immediately without any risk of the plants running to seed. Price 1*s*. per ounce, post free.

JOHN SUTTON and SONS, Nos. 7 and 8, Market Place, Reading, Berks.

DRUMHEAD CATTLE CABBAGE PLANTS.

JOSEPH SHILLING, NURSERYMAN and SEEDSMAN, Winchester, has a large Stock of the above Plants, which he will send by Railway at 8*s*. per 1000, package included.

ROBERT PARKER, from Messrs. A. HENDERSON and Co's., begs to inform his Friends and the Public that he has taken PARADISE NURSERY of Mr. W. J. Pamplin, where he intends to carry on the business of Nurseryman and Seedsman; and assures them that all orders he may be favoured with will be executed with promptitude and care.

Paradise Nursery, Hornsey Road, July 1.

ANEMONES.

JOHN HOADE, FLORIST and SEEDSMAN, Addlestone, near Chertsey, Surrey, begs to offer his first-rate ANEMONE SEED; his collection this Spring is allowed to be equal to anything yet produced for brilliancy and variety. A packet forwarded with printed particulars for sowing and after-culture, on receipt of 13 postage stamps.

NEW ROSES IN POTS.

W. J. EPPS, of Maidstone and Ashford, can now supply fine strong Plants of the following new ROSES. The Plants average from 10 to 20 buds, fit for immediate working.

HYBRID PERPETUALS.	s.	d.	HYBRID PERPETUALS.	s.	d.
Adam Paul	3*s*.	6*d*.	Colonel Rougemont ...	5*s*.	0*d*.
Louis Peyronny ...	3	6	Gloire de France ...	7	6
Baronne Heckerean ...	5	0	Joseph Descarme ...	3	6
Triomphe de Paris ...	5	0	Blanche Portemar ...	3	6
Prince Leon Kotchouby	5	0	Lady Wilson	5	0
Duchess de Orleans ...	5	0	BOURBONS—Pigeron	2	6
Lady Shelley (Mitchell's)	5	0	„ Blanche Laffite ...	3	6
Imperatrice Josephine	5	0	„ Colonel Fossey ...	2	6
Souvenir de Madame Lille	5	0	„ La guintemie ...	7	6
Leon Plee	5	0	„ Prince Albert ...	3	6
James Veitch	5	0	NOISETTES—		
Prince Chipetowzikof	5	0	Maria Charges ...	5	0
Alexander Beckmiteff	3	6	Endoxie	3	6
Le General Jacqueminot	7	6	TEAS—August Vacher	5	0
Baronne le Kermont ...	5	0	„ David Pradel ...	2	6
Lady Stewart	5	0	„ Gloire de Dijon ...	7	6
Jules Margottin ...	7	6	„ Georges de France	5	0

W. J. E. can offer choice varieties, such as Queen Victoria, Egarie, Triomphe de Valenciennes, Standard de Marengo, L'Ergant Vere, Madame Campbell, Palais de Cristal, &c., at 30*s*. per dozen, or 2*s*. 6*d*. each.

GEORGE DAVIES begs to offer to the Trade the following NEW PLANTS, strong and healthy.

Wistaria sinensis alba, 42*s*. per dozen, or 16*l*. per 100.
Prunus sinensis flora pleno, 7*s*. 6*d*. each.
Pernettya ciliaris, 30*s*. per dozen.
Rhodoleia Championi, 60*s*. per dozen.
Echites Harrisoni, 7*s*. 6*d*. each.
Gesnera Donkelaari, 10*s*. 6*d*. each.
Acrophyllum venosum, 30*s*. per dozen.
Daphne Fortuni, 2*s*. 6*d*. each.
„ indica rubra, 12*s*. per dozen.
Cytisus racemosus, superb, 18*s* per dozen.
„ onosperma, 3*s*. 6*d*. each.
„ filipes, 2*s*. 6*d*. each.
Azalea Stanleyana, 7*s*. 6*d*. each, or 60*s*. per dozen.
Gloxinia Wilsoni, 3*s*. 6*d*. each.

The two last were sent out by G. D. last autumn, and have given universal satisfaction.

Stanley and Green Lane Nurseries, Old Swan, Liverpool.

CHOICE CINERARIA AND CALCEOLARIA SEEDS.

LUCOMBE, PINCE, AND CO. have now ready for sending out Seeds of their very superior

CINERARIAS AND CALCEOLARIAS,

which have been saved with great care from the finest varieties. The great satisfaction which their Cinerarias and Calceolarias have given for several successive years enables them to recommend their Seed of the present season with much confidence.

Packets of each, sealed and warranted by them, at 2*s*. 6*d*., free by post.—Exeter Nursery, Exeter, July 1.

BEAUTIFUL HARDY PLANT, GYNERIUM ARGENTEUM.

LUCOMBE, PINCE, AND CO. have now for sale a few strong established specimens of this highly ornamental plant. The leaves, which are more than 6 feet in length, grow in tussocks, thereby producing a very fine effect, and from the midst of these numerous flower-stems arise to the height of from 6 to 8 feet, surmounted by graceful panicles of inflorescence nearly 2 feet long, which resemble beautiful waving plumes of silvery feathers; few plants are more elegant than this gigantic Grass, which, being perfectly hardy, is certainly a great acquisition to the ornamental grounds of this country, and it is also exceedingly easy of culture.

Size and price may be had on application to L., P., & Co., Exeter Nursery, Exeter.—July 1.

CINERARIA SEED.

EDWARD GEORGE HENDERSON AND SON, Wellington Nursery, St. John's Wood, London, are now prepared to forward, by post, new Cineraria Seed saved this season. More than usual care has been bestowed in gathering from the choicest named varieties, including the new ones sent out last year; all the light varieties have been discarded, consequently from the above seed we anticipate none but high coloured flowers. Per packet, 2*s*. 6*d*. and 5*s*. each.

Our beautiful collection of CALCEOLARIAS can now be seen in flower at the Nursery, and orders for seed booked, to be sent when ready. Per packet, first quality, 5*s*.; second quality, 2*s*. 6*d*

WILLIAM WOOD AND SON beg leave to intimate that their extensive Plantations of ROSES are now coming into fine bloom, and will remain in perfection during the Rose season. Maresfield is distant from Lewes 10 miles, and Hayward's Heath 12, both of which places are Stations on the London and Brighton Railway, and from whence conveyances may be obtained.

S. WALTERS' NEW PETUNIAS, now in bloom, possess novelty and quality, which is so desirable in new plants. Amazon, Picturata, Sappho, Silver Queen, and Rosa Superba, 2*s*. 6*d*. each. New and choice Geraniums, 21*s*. per dozen. Fancy Geraniums, 6*s*. to 9*s*. per dozen. See *Gardeners' Chronicle*, page 250. The plants are fine, and well adapted to make stock.

Also, to be disposed of, about 100 Providence, Queen, and other successional Pine-apple Plants in good growth. Price, and other particulars, on application.

Hilperton and Trowbridge Nurseries, Wilts.

PINK.

NORMAN'S COLCHESTER CARDINAL.—For Sale, about 500 Pipings of this splendid PINK, which received a First Class Certificate from the National Floricultural Society, July 1st, 1852, and was designated as—Purple, fine leaf; large and full; fine pod, and best of its class; and figured in the October number of the "Florist." Four pairs, 5*s*.; 25 pairs 20*s*.; including package and postage, on receipt of Post-office order or stamps.—Address, Mr. ROBERT HALLS, High Street Colchester, Essex.

NEW GREEN EDGE AURICULA—LORD PALMERSTON.

ROBERT BAIN, SEEDSMAN and FLORIST, begs to announce that he has purchased the entire stock of the above superb flower, from Mr. Campbell, Falkirk, the raiser, and is now sending out fine plants at 21*s*. each.

It is a cross between Booth's "Freedom" and Yates Morris "Green Hero." It partakes most of the style of "Freedom," but is quite distinct, very constant in flowering, and of a fine habit.

The following is the opinion of Mr. Wood, Editor of the "Midland Florist," in the June number, under the initials "R. R.:"—"Lord PALMERSTON: A very nice flower, of good form, paste dense, a dark green edge, body colour like black velvet; the edge, ground colour, and paste are well balanced."

Falkirk, July 1.

GOOD FREE-FLOWERING ORCHIDS.

THOMAS JACKSON AND SON beg to offer the following:—Acineta Barkeri, Acropera Loddigesi, Cypripedium insigne, Dendrobium chrysanthum, D. Jenkinsi, D. moschatum, D. nobile, D. Pierardi, D. pulchellum, Epidendrum aurantiacum, E. ciliare, Lælia autumnalis, Lycaste cruenta, L. Skinneri, Maxillaria Harrisoni, M. picta, Oncidium altissimum, O. Cebolleti, O. flexuosum, O. leucochilum, O. macropterum, Phaius albus, P. grandifolius, Rodriguezia planifolia, Stanhopea insignis major, S. oculata, S. tigrina major.

T. J. & SON, having a fine Stock of healthy plants of good Orchids suited for amateurs commencing a collection, will be glad to furnish 12 distinct kinds from the above, selected by T. J. & Son, for 42*s*.; 12 selected from the above by the purchaser, 63*s*. Many of the more rare Orchids at equally low prices.

Kingston, near London.

A SPLENDID SIGHT.

WILLIAM NICHOLSON respectfully invites his friends and the public to inspect, and test the merits of his STRAWBERRIES—Ajax, Ruby, Captain Cook, and Fillbasket—fine specimens of which may now be seen growing in his gardens, at Egglescliffe, near Yarm, Yorkshire, where may also be seen the following good and approved sorts:—Ingram's Prince of Wales (new), British Queen, Keens' Seedling, Myatt's Surprise, Bicton Pine, Elton Pine, Cuthill's Black Prince, Cuthill's Prince of Wales, Kitley's Goliath, Trollope's Victoria, and others. Also, some very promising seedlings, not yet named, and which will not be sent out till they have been fully approved by competent judges.

W. N. will be much obliged to any of those gentlemen who have favoured him with their orders for his Strawberry Plants, if they will give their candid opinion of their merits, either in the *Gardeners' Chronicle* or by letter.—Egglescliffe, July 1.

SPLENDID NEW RHUBARB.
SALT'S CRIMSON PERFECTION.

ROBERT SALT, GARDENER, Longton, Staffordshire, will send out roots of this early, productive, and delicious variety of Rhubarb this autumn: see *Gardeners' Chronicle* June 11, 1853: "Very good, and [illegible] beautiful [illegible]: compared with others, it is remarkable for the small amount of acidity it contains."

A Certificate of Merit was awarded for specimens exhibited at the meeting of the Horticultural Society, June 28, 1853; likewise a first-class Certificate at Nottingham Horticultural Society, May 24, 1854; and at the Midland do., May 25, 1854.

Single roots, 7s. 6d., three for one guinea and six for 2l. Orders forwarded now to ROBERT SALT, or to HURST & M'MULLEN, 6, Leadenhall Street, London; Mr. Wood, Nurseryman, Coppice, near Nottingham; Messrs. Burgess & Kent, Nurserymen, Penkhull, will have the earliest attention. A Post-office order requested from unknown correspondents.—Longton, July 1.

OSBORN AND SONS have the pleasure to acquaint the public that they are now prepared to send out the following new plants:—

OXYLOBIUM OSBORNI.

This beautiful new Oxylobe obtained the Large Silver Medal at the Chiswick Exhibition in June, 1853. From its graceful habit, and bearing its bright orange-coloured flowers in such abundance, it will, we have no doubt, become a general favourite. Price 10s. 6d. each.

LYSIMACHIA LESCHENAULTI.

An exceedingly pretty plant, with dense heads of pink flowers, raised from seeds received from the Neilgherry Hills; it is a most abundant bloomer, and easy of cultivation. It was awarded the second prize for new plants at the Regent's Park, June 1854. Price 5s. each.

PENTAS ROSEA.

A decided improvement on the Pentas carnea, having much darker coloured flowers. Price 3s. 6d. each. The usual discount to the trade.—Fulham Nursery, near London, June 24.

ELLETSON'S EMPEROR BROCCOLI PLANTS.

E. P. DIXON, 57, Queen Street, Hull, informs his friends and the public, that he can now supply Plants of the above splendid variety, at 3s. 6d. per 100 (basket included). Early application is necessary.

TO FLORISTS AND OTHERS.

J. JONES, IRON MERCHANT, has always a great variety of CONICAL and SADDLE BOILERS in STOCK; also Fire and Furnace Bars, Ornamental and Plain Supply Cisterns, Double Doors and Frames, Furnace Grates, Soot Doosr, Hot Water Pipes, Elbows, Tees, Syphons, Throttle Valves, Stop Cocks, Flange and Socket Elbows, &c.; also Trough Pipes. Drawings and prices of the above, on application to J. JONES, Iron Bridge Wharf, No. 6, Bankside, London, near the Southwark Iron Bridge.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

Priced lists of plant tubs and boxes forwarded on application.

PRIZE MEDAL—1851.
AT A VERY ECONOMICAL RATE.

SAMUEL CUNDY, MASON and BUILDER, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Lower Belgrave Place Pimlico, London.

Marble Chimney-pieces manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price. A good Marble Chimney-piece for 40s. Marble Work in all its branches at a remarkably cheap rate for Halls, Dairies, Larders, &c. Circulars sent on application.

N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank.

THE
NEW RHODODENDRONS OF ASSAM AND BOOTAN.
COLLECTED BY THOMAS J. BOOTH, ESQ.,

And described in the "Magazine of Botany," by his Uncle, THOMAS NUTTAL, Esq., *of Rainhill, the well-known Botanist and Traveller.*

E. G. HENDERSON & SON

HAVE much pleasure in announcing that they have for Sale these, the most remarkable new species of RHODODENDRONS ever introduced into the country, many of which surpass those from Sikkim, discovered by Dr. Hooker. Amongst these brilliant discoveries from the Bootan Alps are the most wonderful-sized flowers, delicious fragance, and distinct colours of any that are known to exist in this the most gorgeous tribe of plants; and being combined with magnificent foliage, and distinct habit of growth, will render them indispensable, and a great acquisition both for the garden and conservatory.

The entire Stock of all these extraordinary species now growing (June 16, 1854) in the gardens at Rainhill have been purchased by us. The plants are fine, healthy, and robust. Many have been planted out in the open ground, and have proved quite hardy, with the exception of one or two slightly injured by late spring frosts.

The following six species we are now taking orders for, which will be despatched as soon as the young growth of this season is sufficiently ripened for travelling:—

RHODODENDRON NUTTALI.—(BOOTH).

This distinct and magnificent greenhouse species was discovered on the Duphla Hills, at Meré Patar, about Seram's village, on the banks of the Papoo, growing with Yews and Oaks, at an elevation of 4000 to 5000 feet above the sea-level. Young branches and the under surface of the leaves covered with circular, peltate, radiating, resinous scales, of two kinds—the larger, with expanding leaves, of a bright purple red or pink colour. Young plants but little hairy, compared with those of R. Dalhousiæ. Leaves, 6 to 8 inches long, 2½ to 4 inches wide, of a very thick coriaceous substance, so as to be quite opaque; oval and obtuse, smooth above, except in the young state; very strongly veined and reticulated beneath, and scarcely paler than above; in adult leaves, brown, with the numerous resinous scales. Flower-cone, a little more than 2 inches long, by 2¾ wide; the scales thick and coriaceous, with silky margins internally. Stipules oblong, membranaceous, pink red; corymb four to six-flowered; peduncles, very stout, about 2 inches long in the fruit, less than an inch in the flower; calyx-segments thick and opaque; oblong, oval, or ovate; obtuse; slightly ciliated, and, with the margins, rose-red; an inch in length; enlarging in the fruit, when they become scarcely a third shorter than the capsule. Corolla (or flower) subcampanulate; the border spreading; five-lobed; white, with a tint of rose-red, and yellowish at the base within; 4 to 5 inches long; fragrant; stamens, ten; the filaments villous below. Style, very long; the stigma, large and capitate; five-lobed. Capsule, light brown; five-celled; about 2 inches long by 1 inch wide; the valves rounded and slightly carinated; placental dissepinents very deep. Seed, very pale brown, or straw colour; ovate, lanceolate, acute, with a wide eroded margin.

This, the largest-flowered Rhododendron known, has foliage larger and handsomer than here described on living plants now in this country; the flowers, resembling those of the Lily, are much larger than the Sikkim Rhododendron (Dalhousiæ). Colour white, with tint of rose-red, and yellow at the base within, and delightfully fragrant. It has been named, in compliment to the veteran botanist and traveller, T. Nuttal, Esq.

RHODODENDRON WINDSORI.—(NUTT).

A fine hardy species, discovered in the mountains of Bootan, on the ridges and slopes of Roophrye, in exposed and arid situations, with Pines, species of Cupressus, Berberis, &c.

Leaves coriaceous, obovate, lanceolate, and acute; 4 to 5 inches long; 1 to 1½ inch broad; strong, reticulated, and pinnately nerved; shining and silvery beneath; at length, pale brown. Heads, many flowered; crowded; the bracts dilated and silky; lobes of the corolla, all emarginate; the colour, a deep crimson scarlet, more beautiful and richer coloured than the Rhododendron arboreum. The calyx is minute; stamens, ten. Capsule at length, smooth, oblique at base, ten-celled.

This splendid coloured garden Rhododendron, of a colour even surpassing the Rhododendron arboreum, will be found invaluable, from its dwarf close-growing habit and large truss.

RHODODENDRON CAMELLIÆFLORUM.—(HOOK. FIL.)

A very curious species, discovered in the valley of Lablung, also on the Bootan Alps; at the latter place growing at an elevation of 9000 to 12,000 feet.

In foliage it resembles Rhododendron Maddeni; 3 to 5 inches long. Flower-stalks, axillary, or terminal, very short and stout. Corolla, sparingly scaly, 1½ inch across; of a very thick texture; pure white, with a faint rosy tinge; all the segments obtuse and entire; the flower strongly resembling that of a single Camellia, from which its name is derived; a very distinct flower from any other Rhododendron.

This remarkable species was discovered by Dr. Hooker; but as no seed or plants ever reached this country in a living state, this is the first opportunity of the plants being purchased.

RHODODENDRON JENKINSI. (NUTT.)

This distinct species, hardy, or nearly so, with foliage somewhat similar to Rhododendron Maddeni, was discovered in Bootan, on the southern slope of the Oola Mountain, at an elevation of 6000 to 7000 feet above the sea-level, growing a little above Rhododendron Aucklandi; dispersed, and not forming masses, being apparently a scarce species in this locality, accompanied with Pinus excelsa, &c.

A fine shrub, 6 to 7 feet in height, branches covered with a whitish shining bark. Young branches thick, succulent, and of a bright red; leaves coriaceous, and shining above, oblong, lanceolate, and acute, usually cuneate below; 4 to 6¼ inches long, 1 to 2 inches broad; beneath, at first glaucous, but at length brown, from a dense clothing of somewhat resinous scales; petioles thick, about three-fourths of an inch long, with the midrib very stout; lateral vessels or ribs nearly hidden in the thick substance of the leaf. Flower-buds large and broad; conic; the scales yellow, thick, and dilated, with membranous margins, all of them smooth, without ciliation. Corymb, from 4 to 6-flowered; peduncles, about three-fourths of an inch long, very thick. Calyx small; the segments nearly all equal, ovate, or oblong, with broadish membranaceous margins. Corolla, not seen; style, about 3 inches long; stigma, large, 10-lobed. Capsule, about an inch long, conic-ovate, woody, and stout; very scaly; 10-celled; each of the partitions of the placental dissepiment longitudinally cleft. Seed, dark brown; lanceolate, subulately acuminate, oblique and pedicellated at the base.

This species, according to a specimen without flower or fruit, in the herbarium of Sir W. Hooker, was also found by the late indefatigable Mr. Griffith, on the Khasya Hills. As a species, it is allied to Rhododendron Maddeni, of Dr. Hooker; and these, along with Rhododendron Sparsiflorum, Nutt., Rhododendron Camelliæflorum, Hook. fil., Rhododendron Lucidum, Nutt., and Rhododendron Calophyllum Nutt., have a very peculiar aspect, all agreeing in their smooth, lepidote leaves, and succulent texture.

Mr. Booth supposed, from the examination of the buds, that Rhododendron Jenkinsi would have yellow flowers, the specimens having been collected in the month of December. It is named in honour of Major Jenkins, of the East India Service, who has done so much for the botany of that country. If, as it is probable, this species have large yellow flowers, like Rhododendron Maddeni, it will be one of the most distinct Exhibition plants in the tribe.

RHODODENDRON LONGIFOLIUM.—(NUTT.)

A magnificent foliaged plant, discovered in the forest of Bootan, on the slopes of the Oola Mountains, at an elevation of 6500 to 7500 feet above the sea-level; the leaves 12 to 18 inches long; 3 to 5 inches wide in the middle; at first pubescent; at length smooth, or nearly so; gradually narrowed downwards; obovate, lanceolate, silvery, and whitish beneath; strongly reticulated as well as veined; buds, very large. Capsule, 2 inches long, about 1 inch wide, and about 16 celled; oblique at base; transversely wrinkled; at length smooth. Seed, oval or elliptic, with a wide and torn border, light brown. Bud-scales of the leaves nearly smooth. To all appearance, nearly hardy in this climate.

The adult leaves almost resemble those of Magnolia Umbrella. The capsule is larger than that of any other species, if we except that of Rhododendron Nuttali, with flowers, doubtless large, we are unacquainted; it does not show the inner red bud-scales, as in Rhododendron argenteum, to which it is related.

RHODODENDRON KEYSI—(NUTT).

A hardy distinct shrub, growing to the height of 2 or 3 feet, on the mountains of Bootan, at an elevation of 9000 to 10,000 feet above the sea-level, on the summit and northern ridges of the Lablung, forming low thickets, accompanied by Gaultherias and Yews above the range of Rhododendron Hookeri and Rhododendron Falconeri; leaves 2½ to 3 inches long, about an inch wide; opaque; coriaceous, and smooth; lanceolate, or lanceolate-ovate; acute; rounded or narrowed towards the petiole; beneath, as well as the capsule, almost covered with brown circular resinous scales. Corymb, compounded of three or four branchlets, each containing five or six flowers. Calyx, five toothed, small, the teeth nearly equal, and obtuse. Corolla (judging from the withered remains only) tubular or urceolate; the border five-lobed and reflexed; the segments ovate, obtuse. Stamens 10, exerted apparently beyond the corolla; lower half of the filament very hairy or hirsute, as well as the lower half of the style. Anthers, with the usual truncated pores. Capsule, light brown; ovate-cylindric; obtuse. Seeds, dark brown, scarcely subulate, and without the usual margin.

Rather aromatic, from the resinous scales with which the leaves are clad beneath. In its native hills, it grew amidst snows two to three feet in depth. It is allied to Dr. Hooker's Rhododendron vergatum; the flowers, as in that species, axillary, or below the summit of the branch; a shrub very distinct in habit.

One strong plant (of either variety)		... ...	2 guineas.
Four ditto	ditto	... ...	6 "
Eight ditto	ditto	... ...	10 "
Twelve ditto	ditto	... ...	12 "
One smaller-sized plant		... ...	1 "
Six ditto		... ...	5 "
Twelve ditto		... ...	9 "

We have also a few extra-size plants for sale.

GREENHOUSES.

HENRY FREEMAN, HOTHOUSE BUILDER, and HOT WATER APPARATUS MANUFACTURER, Triangle, Hackney, begs to solicit the attention of the Gentry to his prices for cash. Good substantially built Greenhouses, fixed in any part of the kingdom, 42 feet long, 13 feet wide, 90l.; 21 feet by 13 feet, 50l.; 12½ feet by 10 feet, 30l. A large assortment of Melon and Cucumber boxes, summer houses, &c. Estimates for any branch in the above line either in iron or wood, or park fencing.

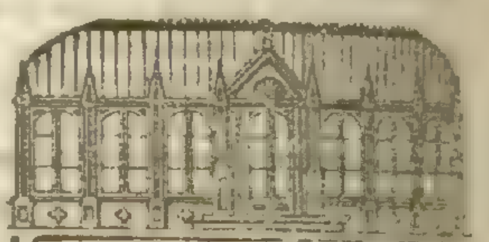
HORTICULTURE IN ALL ITS BRANCHES.

J. WEEKS & Co., King's Road, Chelsea,

HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Buildings or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.



The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings: also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. WEEKS & Co., King's Road, Chelsea, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.

GRAY AND ORMSON, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

BY HER MAJESTY'S ROYAL LETTERS PATENT

E. DENCH, PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

PATENT HOTHOUSES and excellent Glass at 1s. 3d. per foot super., which are superior to all others for price with quality, and if known would supersede all others. (See Appendix in "Book of the Garden," by Mr. M'Intosh.) A Range of Houses and Hot Water Apparatus, was erected by E. D. for E. L. Betts, Esq. Preston Hall, Kent. Mr. J. Frost, head gardener, has shown their efficiency by their produce at the Royal Botanic Gardens, Regent's Park, June 8, and Chiswick, June 11. The editor of the *Gardeners' Chronicle* says: "Beautiful examples of Black Hamburgh, large both in bunch and berry, and as black as Sloes, were furnished by Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall, Kent; these well deserved the first prize which was awarded them."—*Gardeners' Chronicle*, June 18th, 1853. The Grapes were considered the best shown at Regent's Park during the season, and the Houses are as superior for the growth of everything else in horticulture, which has been fully proved, and they have been extensively erected for the nobility and gentry in all parts of the kingdom.

GLAZING WITHOUT PUTTY.—Iron and Glass alone. E. D. has Roofed the Public Baths and Washhouses, Endell Street, on this principle, and others are in hand. Patent Sashes for Peach Walls, Pits, &c., 8d. per foot super. Heating by Hot water, on the most practical principles, and all the best materials used. Printed Price List sent on application.

THE COMFORT OF A FIXED WATER CLOSET for 1l.—Places in gardens converted into comfortable water closets by the PATENT HERMETICALLY SEALED PAN, with its self-acting valve, entirely preventing the return of cold air or effluvia. Any carpenter can fix it in two hours. Price 1l. Indispensable for the health and comfort of a family. Hermetically sealed Inodorous Chamber Commodes, 1l. 4s., 2l. 6s., and 3l.; also, Improved Portable Water Closets, with pump, cistern, and self-acting valve. A prospectus, with engravings, forwarded by enclosing two postage stamps.—At FYFE and Co.'s removed to more commodious premises, at 46, Leicester Square, London.

FIRST-RATE NEW FUCHSIAS, VERBENAS, & PETUNIAS OF 1854, AT GREATLY REDUCED PRICES.

WILLIAM RUMLEY & SONS are now sending out the under-named in fine healthy plants, hamper included, or free by post.

FUCHSIAS, the following best new varieties of 1854, 20*s.* per dozen, 6 for 12*s.*, or 2*s.* 6*d.* each, viz.—Autocrat, Admiral, Clio, Duke of Wellington, Elegans, Grandissima, Globosa splendens, Mrs. Charles Palmer, Monarch, Magnifica, Omega, Queen of Hanover, Trentham, Vanguard, &c.

VERBENAS.—The following comprise the very best sent out this season, many of which are quite new in character, and very distinct; price, 20 for 15*s.*, 12 for 10*s.* 6*d.*, or 6 for 6*s.*; or, our selection, 9*s.* per dozen, or 6 for 5*s.*, viz.—Eblouisante, Mrs. F. G. Caley, Subram, Pandora, Canary Bird, Ajax, Arethusa, Emily, Captivation, Francisse Rousseau, Arthur, Alice, Mrs. Gerard Leigh, Climax, Hector, Annie Laurie, Madame de Frileuse, Giralda, Triumph, Vicomtesse de Balleval, Arsine Baigard, Augustine, Queen of Roses, Incomparable, Sulphur Model, Heroine, Iris, Jessie, Cardinal Wiseman, Magnificent, Caliban, Peter, Dick, Madame Schmidt, Queen, Noblissima, Annette, Fair Rosamond, Comet, Madame Bindeer, National, Superb, Bridesmaid, &c.

PETUNIAS, all the best of 1854, 12*s.* per dozen, or 6 for 7*s.*

The above will be forwarded immediately on receipt of a post-office order, payable at Richmond.

Gilling, near Richmond, Yorkshire.

PHLOX DRUMMONDI RADETZKI.

JOHN CATTELL has a large stock of this very beautiful PHLOX, which is a great improvement on Mayi, having the white clearer, and the purplish crimson much deeper and brighter; every flower comes as regularly and constantly striped, and the habit of the plant is more robust; it is so very handsome that it must become a general favourite. Good Plants, 3*s.* 6*d.* each, or 36*s.* per dozen; extra fine Plants, 5*s.* each. A liberal discount to the trade. A flower may be had on application, enclosing a penny stamp.

J. C. has also to offer the following very desirable plants, well established :—

	Each.
GERANIUM, crimson ivy-leaved	2*s.* 6*d.*
GERANIUMS OF THE SCARLET HABIT.	
Trentham Rose, beautiful rose	2 6
Rosea superb, beautiful cerise rose, large truss, dwarf, strong habit	2 6
Baronne Hugel, light scarlet, white eye, very dark horse-shoe leaf, extra dwarf habit	2 6
Boule de Neige, white, large truss, horse-shoe leaf ...	2 6
Miss Emily Field, delicate pink, large truss, horse-shoe leaf	2 6
Skeltoni, white fading delicate pink, large truss ...	2 6
Kingsbury Pet, rosy salmon, large truss, horse-shoe leaf	2 6
One each of the above eight, 16*s.*	
GERANIUMS WITH VARIEGATED LEAVES.	
Golden Chain	1 6
Kinghorn's Attraction	10 6
,, Silver King ... ... 5*s.* to	7 6
Gaines' Attraction	3 6
,, Mount Hecla	3 6

Delphinium Wheeleri	1*s.* 6*d.*	Delphinium Hendersoni	5*s.* 0*d.*
,, semplex alba plena	3 6	,, magnificum ...	5 0
,, Weltoni	2 6	Petunia Montreal Purple	1 6

Anemone pavonia, brilliant scarlet, double, very hardy, flowers in March and April, Bulbs now ready to transplant, 4*s.* per dozen, or 25*s.* per 100.

A remittance or reference to accompany all orders from unknown correspondents.—Westerham, Kent.

STANDISH AND NOBLE, NURSERYMEN, SEEDSMEN, &c., Bagshot, Surrey, are now prepared to receive orders for the following new and beautiful varieties of AZALEAS, which will be ready for delivery in June next. The Advertisers can recommend them with the greatest confidence, as superior to any others of their kind.

AZALEA BEALII.—This very distinct variety was introduced by them from China. The flowers, which are of first-rate shape, are quite unique, being striped, like a Carnation, with rich vermilion on a pure white ground. It is of good habit, fine in foliage, and a most abundant bloomer; and although decidedly in the first rank as a greenhouse plant, it is quite hardy enough for the open border. Each, 21*s.*

AZALEA CRISPIFLORA, a species differing much from any other known Azalea, having a character entirely its own. No other kind approaches it in compactness of habit, and its foliage is very fine, abundant, and evergreen. The flowers are very large, and the edges of the petals have the appearance of being irregularly *goufred*, like a lady's frill; the colour is a rich rose lake. From the fact of its blooming very late—much later than any other Azalea—it will be doubly valuable for many purposes. Each 21*s.*

The Gardeners' Chronicle.

SATURDAY, JULY 1, 1854.

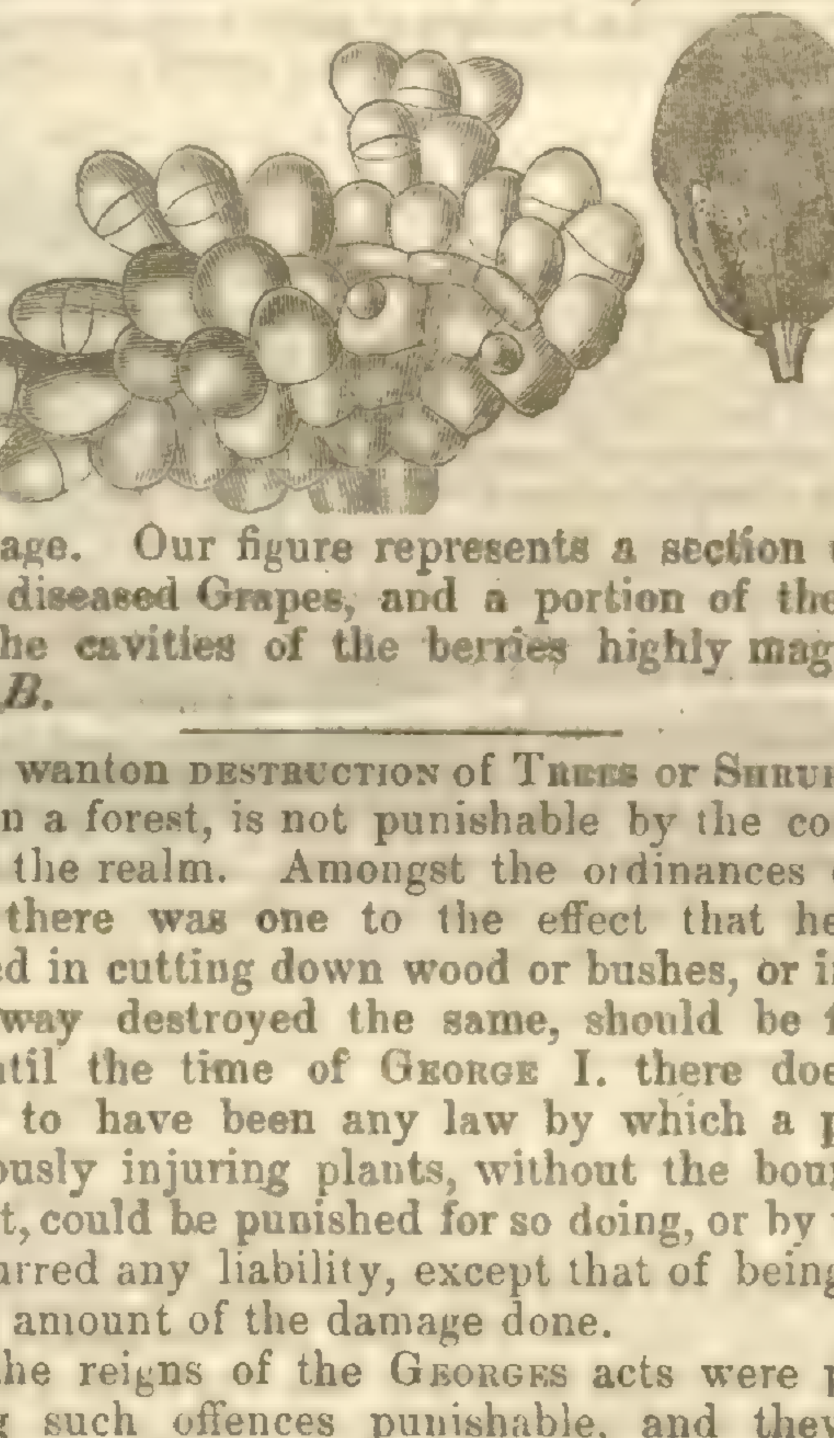
MEETINGS FOR THE ENSUING WEEK.

MONDAY,	July 3	—Entomological	8 P.M.
WEDNESDAY,	— 5	Royal Botanic	2 P.M.
		Society of Arts	7 P.M.
SATURDAY,	— 8	—Horticultural Gardens	2 P.M.

WITHOUT any peculiar prevalence of mildew, few years have brought more general complaints from all parts of England, of the state of the hothouse Grape crop, than the present. Sometimes the leaves are perfectly smooth, extremely delicate, and bleached; sometimes, on the contrary, they are studded with little rough warts, either with the usual green hue, or with a tendency to yellow. In some cases the whole crop of every variety is affected, while in others only one or two especial varieties have suffered. Nor is the evil confined to the leaves; for after a time the berries themselves are frequently affected, and there is great fear that the crop will, in the end, be materially injured. Ocular evidence, indeed, is now before us. Amongst other communications is one from Twickenham of diseased berries, without any especial information as to the state of the plant; but the mode of attack is so peculiar, that we have deemed the case worthy of particular notice.

The first indication of evil, as regards the berry, at least, is a black spot on or near the stalk; the berry then becomes pitted and contracted, commencing generally from the base upwards, and ultimately turns black. A section shows in every case a large cavity at the base, the corresponding ovule being mostly, but not always, abortive; the walls of the cavity are generally even, without the slightest trace of any fungal growth. Sometimes, however, the cellular tissue is forced, probably by the stimulus of the decomposing matter contained in the diseased cells and vessels, into an anomalous growth, resembling somewhat the white cellular tufts which protrude into the cavities of the carpels of Apples, as represented in this journal, 1851, page 19; and though the surrounding tissues are more or less discoloured, the sprouting cells glisten like little diamonds. Many of the more external cells are slightly elongated, and show an annular line, the first indication of further divisions.

In every case of disease which has come before us we have remarked, above all things, the complete absence of fungals, whether perfect or in the state of mycelium, and have felt convinced that the main cause of the unhealthy condition is attributable to the unfavourable weather of the past spring, combining great deficiency of light with low temperature, and at the same time with unusual dryness. It is possible that in some cases, as in those of Chlorosis more especially, the plants may have been permanently injured; but in every case it would be wise to ascertain that the condition of the roots is favourable to future prospects. It is impossible to go into any garden without perceiving the effects of the past ungenial weather in impairing the usual vivid green so characteristic of English vegetation; the condition of the Raspberries, for instance, in the district in which we write more especially, is wretched, but many other plants are scarcely less affected; and in all a generous supply of rich but not rank soil is advisable, and in very bad cases a weak solution of sulphate of iron might, if reports in its favour are to be credited, prove beneficial. It might at least be applied—as we once heard a medical practitioner say, to the consternation of the bystanders at a painful operation, in a matter almost of life and death—with impunity, if not with



advantage. Our figure represents a section of one of the diseased Grapes, and a portion of the cells from the cavities of the berries highly magnified. *M. J. B.*

THE wanton DESTRUCTION of TREES or SHRUBS, not being in a forest, is not punishable by the common law of the realm. Amongst the ordinances of the forest there was one to the effect that he who offended in cutting down wood or bushes, or in any other way destroyed the same, should be fined; but until the time of GEORGE I. there does not appear to have been any law by which a person maliciously injuring plants, without the bounds of a forest, could be punished for so doing, or by which he incurred any liability, except that of being sued for the amount of the damage done.

In the reigns of the GEORGES acts were passed making such offences punishable, and they still continue to be so under the 7th and 8th GEORGE IV., c. 30, by which, in § 19, it is enacted "that if any person shall unlawfully or maliciously cut, break, bark, root up, or otherwise destroy or damage the whole or any part of any tree, sapling, or shrub, or any underwood, respectively, growing in any park, pleasure-ground, garden, orchard, or avenue, or in any ground adjoining or belonging to any dwelling-house, every such offender (in case the amount of injury done shall exceed the sum of 1*l.*) shall be convicted of felony; and if any person shall unlawfully or maliciously cut, break, bark, root up, or otherwise destroy or damage the whole or any part of any tree, sapling, or shrub, or any underwood, respectively, growing elsewhere than in any of the situations hereinbefore mentioned, every such offender (in case the amount of the injury done shall exceed the sum of 5*l.*) shall be guilty of felony," &c.

It will be observed that it is not stated in the above enactment to what the injury must be done; it may mean that if the amount of injury done to some particular tree or trees is 1*l.* or 5*l.*, the offender will be guilty; or it may extend to persons who, maliciously injuring trees, do, in fact, whilst so engaged, cause damage to the requisite amount. Advantage has lately been taken of this ambiguity, and whilst at the quarter sessions the latter was held to be the true construction, the Court of Criminal Appeal held the first to be the correct meaning, and the offenders consequently escaped. The case, as reported in a late number of a legal journal, was as follows:—

At the last sessions for the West Riding of Yorkshire, two men were prosecuted, under this section for maliciously damaging some trees in a hedge, not growing in a park, &c.; to obtain a conviction, the prosecutor had to show that the amount of damage exceeded 5*l.* in value. A sworn valuer proved that the damage amounted to 5*l.* 14*s.*, which he made out thus—Stubbing up the old hedge, which was necessary to repair the damage, 15*s.*; post and rails to protect new hedge, 3*l.* 10*s.*; Quickwood, setting and cleaning, 9*s.* 6*d.*; injury to tree, 1*l.* The court held there was damage to the amount of 5*l.* and upwards, within the meaning of the statute, and convicted the prisoners.

It was objected on their behalf that, as 5*l.* worth of damage was not done to any tree, &c., the prisoners ought to be discharged, and the Court of Criminal Appeal, consisting of POLLOCK, C.B., PARKE, B., CRESSWELL, EARLE, and CROMPTON, J.J., thought so too; and holding that all the items of the valuations beyond the 1*l.* represented damage merely consequential, quashed the conviction. (See R. *v.* WHITEMAN, 18 Jur. 434.)

This decision is one of considerable importance; for, without making any comment on the conclusion at which the learned judges arrived in the above particular case, we are bound to suppose it to be the law that under the above section of the act of Parliament no person can be prosecuted for maliciously damaging trees, &c., unless the amount of the injury done to *them* exceeds 1*l.* if they grow in a park, &c., or 5*l.* if they grow elsewhere. An ordinary person would have thought that by "the amount of the injury done" was meant the amount required to restore the property as nearly as might be to its previous condition, and that some damages merely consequential, *e. g.*, the price paid for new Quicks, and the wages of men employed in planting them, and of course in preparing the ground for their reception, might properly be taken into account in estimating the amount of injury done.

The learned judges have, however, held otherwise, and it may save some of the readers of the *Gardeners' Chronicle* considerable expense and annoyance if the result of the above trial is borne in mind.

There is, it is true, another section in the act (§. 20) in which the amount of injury done need be only 1*s.*, and by which the penalties are, for the first offence, a fine not exceeding 5*l.*; for the 2d, hard labour for not more than 12 months and flogging; and for the 3d, felony punishable by transportation, as in § 19.

There is also another section (23) by which persons maliciously damaging fences are punishable without any restriction as to the amount of damage done; so that, notwithstanding the great favour shown to offenders by the supreme court, it is to be hoped that rascals, as cunning as they are ill-disposed, cannot maliciously injure their neighbours' plants with complete impunity.

VEGETABLE PATHOLOGY.—No. XXVI.

118. It appears probable, from Gærtner's observations, that two kinds of pollen will not act at the same time on one stigma. It is at least certain that a pistil is much more easily impregnated with its own pollen, and in hybridising it is therefore essential to remove the anthers of the flower under experiment before the bursting of their cells. A curious observation made some years since by Mr. Thwaites, shows, however, that where two embryos are formed and come to perfection in the same sac, two totally distinct varieties may be produced from the two embryos. Unfortunately, in consequence of an accident, the plants did not arrive at perfection, but the difference of the foliage and habit was unequivocal.

119. The result of hybridisation, even where at first sight apparently good, is not always beneficial. Though many fine and useful varieties are produced, there is also a peculiar delicacy of constitution and tendency to disease in many. The whole subject is indeed of the greatest importance as regards cultivation and the improvement of the varieties of useful plants, especially where prevalent maladies are concerned. The only remedy, in many cases, is the substitution of healthy varieties for those which have proved sickly, and these can only be provided, in the majority of instances, by judicious crossings of perfectly healthy parents.

120. In some instances hybrids show symptoms of disease from the first, exhibited more especially in a species of chlorosis, which resists every mode of treatment. In some attempts to procure hybrids Mr. Herbert found it absolutely impossible to obtain any result which would bear the test of cultivation beyond a few months. In these cases no flowers were produced; but it is obvious that less glaring instances may occur in which there may still be a dangerous tendency to disease; and as varieties are notoriously apt to hybridise, this tendency may be communicated to varieties at first apparently of great promise. It is obvious, therefore, that no variety should ever be used for impregnation which shows the slightest symptoms of disease, and as in the improvement of the breed of

sheep and cattle, perfect results can only be expected from the patient and judicious adoption of some such principles.

121. As soon as impregnation takes place, in most instances the external organs of the flowers, or at least the petals, wither, and the main flow of the sap is in consequence directed towards the nascent pistil. Those flowers, consequently, which have had no application of pollen, whether natural or artificial, remain expanded for a longer time, so as to multiply the chances of impregnation. When once, however, the stigmatic surface* has become disorganised to such a degree as to make impregnation impossible, whether by natural decay or by accident, the flower, together with its peduncle, withers and falls, while the unimpregnated germen very rarely continues to live and go through the normal degrees of development. It is probable that where such is apparently the case there was a perfect impregnation in the first instance, and afterwards, when the ovules had become accidentally abortive, the walls of the ovary had received a sufficient stimulus to run through their usual course. In Cucumbers, for instance, apparently perfect fruit occurs in which there is not a trace of anything more than minute ovules, none of which have increased materially in size, and the same observation applies to other fleshy fruit. Fruit, indeed, will sometimes set in both Melons and Cucumbers without the presence of male blossoms, but it must be remembered that in both, and especially in the former, imperfect stamens often accompany the stigmas. *M. J. B.*

AOTUS GRACILLIMA.

This slender-growing graceful-looking plant is well worthy of more attention than it generally receives, for when well grown it is very ornamental. It is readily propagated by means of cuttings of strong, short-jointed, young shoots, which root very freely if selected when about half ripe. But the propagation of such plants as this had better be left to those who have proper convenience for doing it well, for amateurs generally fail in producing good young plants; and leggy ill-propagated examples of any of the species of this genus are not worth house-room. Beginners procuring young plants from the nursery should be very careful to select healthy, strong, bushy ones. If obtained at once, place them in a cold frame, where they can be kept cool and moist, and shaded from the midday sun. If they appear to require more pot-room, examine the state of the roots, and give a moderate shift if necessary; but unless the ball is found to be well filled with healthy roots, defer shifting until this is the case; for there is considerable risk and no advantage in over-potting such plants as this. It is desirable, however, to get such things into the pots in which they are to be wintered as soon after this season as possible, so as to allow of having them well established before winter; therefore shifting should be attended to as soon as the plants require it. Keep rather close and moist for a fortnight or so, after repotting, giving water very carefully; but sprinkle the plants over-head morning and evening, and keep the atmosphere as moist as can conveniently be done to prevent rapid evaporation until the roots get hold of the fresh soil. During the growing season attend to keeping the shoots nicely pegged down or tied out, in order to admit light and air, and to secure strong growth.

After the middle of August discontinue syringing and shading, and expose the plants freely to sun and air, and, when it can be done without danger of frost or heavy rain, leave the lights off at night, and endeavour to have the wood strong and well matured previous to winter. When cold or foggy weather sets in it will be advisable to remove the plants to their winter quarters, which should be near the glass in the greenhouse, where they may receive all the light possible, and a free circulation of air whenever the weather will permit; for growth must not be encouraged at this season. Give water very sparingly to the soil, and if the house is properly managed, it will be necessary only at considerable intervals; and when any is given, the ball should be thoroughly moistened. Towards the middle of March cut the shoots back as much as may be necessary to induce the buds to break closely, and place them in the closest part of the house, keeping them well supplied with water at the roots, and a slight sprinkle with the syringe on the mornings of bright days will be useful. As soon as the buds have fairly started shift into pots two sizes larger than those in which the plants have been wintered, and place them where the night temperature may range from 40° to 45°, allowing it to rise some 10° with sunshine and air. Keep a watchful eye, however, upon the young specimens, and endeavour to secure well placed strong growth, regulating the temperature, &c., more by the state of the plants than by any preconceived notion, or arbitrary rule; and if insects are perceived they must be eradicated at once. Owing to the difficulty of maintaining in large houses a cool moist atmosphere, without which these plants can hardly be induced to make strong rapid growth, they should be removed to a cold pit or frame as early in spring as the weather proves at all settled. Afford them plenty of pot room during the growing season, as much warmth and moisture as they will bear without making weakly growth, exposing them to all but the mid-day sun, and keeping the shoots carefully tied out, and if all goes on well they form nice compact little specimens by winter, and will bloom profusely the following spring.

They should be wintered as recommended above, and of course they should be allowed to remain in the greenhouse to bloom, and the flowers should be carefully shaded from bright sunshine, as their beauty soon fades unless this is attended to. After flowering, the shoots must be cut back, the plants repotted, &c., as already recommended, taking care, however, not to over-pot, and, with careful attention, large handsome specimens will be obtained in the course of a few years. The only suitable soil for this genus is good light rich turfy peat, which should be broken up rather fine, and well intermixed with about one-fourth its bulk of clean silver sand, and a small portion of lumpy bits of charcoal. *Alpha.*

* In cases, as for example in the Pear, where the stigmatic surface has been withered by frost without the whole germen being affected, we have observed the decay creeping down the style to the ovules, and ultimately affecting the germen itself. In such instances the decay of the ovule is of course premature. In these cases, though the flower is not impregnated, the germen does not wither immediately, but a practised eye will at once distinguish such fruit as certain to fall, when its neighbours begin to attract the juices more vigorously.

ORANGE GROUNDS OF BLIDAH, IN ALGIERS.

The cultivation of Orange trees in Blidah offers great advantages, is becoming more and more common, and will before long give rise to a commerce as advantageous to France as to Algiers.

The Orangeries at Blidah and Koliah occupy a space of about 425 acres, and consist of 23,680 Orange trees, and yield an annual income of 114,855 francs in addition to that obtained from similar fruits, such as Citrons, Lemons, Cedrats, and Bergamottes, which will also in time become of considerable importance.

As an average the net produce of each Orangery, after paying for its maintenance, tilling, watering, and for pruning, is about 800 francs per hectare. Some of the best Orangeries in Europe give an annual net income of 1200 francs per hectare, and on the other hand there are Orangeries, especially those belonging to the Arabs, which do not yield more than 500 or 600. This arises from the fact that the trees are left entirely to themselves, except that they are badly watered; an Arab never works in his Orangery, never lops or prunes his trees, and, consequently, obtains nothing but stunted worthless fruit.

It was not until 1850 that Oranges were exported into France; the towns to which they principally went were Paris, Lyons, and Marseilles. Before this time Oranges were very cheap; the Arabs were the only persons who bought them in the markets of Blidah, to carry them to the towns inland and on the coast. But in 1850 the appearance of French buyers in the markets caused an entire change. Their first operations were not fortunate; on the one hand they were clogged by the routine of old habits of commerce, and in the next place they were hampered by a heavy duty which has been since repealed. Another cause of failure was the inexperience of the agents employed, and great difficulty was found in procuring persons at Blidah sufficiently intelligent to pack the fruit well. This requires peculiar care and great dexterity, as it is necessary not only to prevent spoiling but to preserve that freshness which is so much appreciated.

In 1851 the exportation was more satisfactory; but important operations of a very different kind from those in the preceding years were being carried out towards the end of 1852, and they promised great success. At this time three houses, two at Marseilles and one at Ollioules, imported into France 3,206,000 Oranges, and at least as many were imported in smaller quantities; so that at the close of 1852 six millions and a half of Oranges had found their way into the French markets. This year workmen have been brought over from Hyères and Ollioules by some merchants upon advantageous terms, and it is expected that the fruit will arrive in better condition, and yet be cheaper than before, so that the operations will be such as to encourage further speculation in this line.

The Orange flowers have not yet been turned to any account in Blidah, and still they might be exported. Attempts have recently been made to extract orange water and essence of neroli from the Orange flowers; and these attempts, though unsuccessful when made with flowers of the sweet Orange, have succeeded when those of the bitter Orange were distilled. From the last a great quantity of essence of neroli is obtained, as is also a water which will well bear comparison with that of Grasse or Portugal.

It is clear from these facts that Oranges are becoming of great importance to Algiers, and especially to the department of Alger. The abolition of the duty has had a very favourable effect; and what is of immense consequence, the growers endeavour to improve the quality of the fruit by an intelligent cultivation, which will alone enable them to compete with success with the growers of Majorca, Valencia, and Portugal. A great deal remains to be done in this line.

It is absolutely indispensable, however, that there should be a sufficient supply of water in summer, and the arrangements at Blidah for furnishing the requisite amount are certainly deficient. The open canals should be replaced by covered stone conduits, in order to prevent loss both by evaporation and absorption by the soil. The Minister of War has lately taken steps to effect this desirable change, and has offered prizes for those whose orangeries are in the best condition, and there is every reason to hope that the Orange will be more and more cultivated in Algiers. *Revue Horticole.*

DESCRIPTIONS OF NEW PEARS CULTIVATED BY M. DE LIRON D'AIROLES, AT LA CIVELIERE, NANTES.—By Himself.

(*Continued from p. 404.*)

Beurré Bretonneau.—Tree vigorous, and abundant bearer, adapted for a standard or pyramid. Fruit is yet variable in form, but generally it is long, pyriform, contracted near the stalk end, 4 inches in length, and about 3 inches in diameter at the widest part. Skin rough, pale green, changing to golden yellow at maturity; the side next the sun is reddish brown, much dotted and freckled with distinct russet specks. Flesh fine, yellowish-white, buttery, half melting, sugary, vinous and perfumed. Keeps till May or June. Named in compliment to Dr. Bretonneau, of Tours, in 1846, by Major Espéren.

Poire de Tongres.—The tree is a very strong grower, and succeeds better on the Pear stock than on the Quince; it is naturally pyramidal. Fruit very large, obovate, 4½ inches in length and 3½ inches in diameter; stalk ¾ of an inch in length, obliquely inserted. The surface of the fruit is uneven; skin bronze coloured, changing to a deep brownish yellow when fit for use; the side next the sun is streaked with red. Flesh fine, white, melting, juicy, sugary, vinous, and agreeably perfumed. Season, middle of October. Raised by M. Durandeau, at the village of Tongres.

Josephine de Malines.—Tree vigorous, and a good bearer, forming a handsome pyramid, and may be worked either on the Pear or on the Quince stock, and it may be planted against an east or west aspect. The fruit is small from a standard, middle-sized from a wall, obovate. Flesh fine, buttery, juicy, sugary, and perfumed. Season, January to March. Raised by Major Espéren, of Mechlin.

La Juive.—The tree is handsome and vigorous, suitable for forming a pyramid. Fruit middle-sized, turbinate; stalk nearly an inch in length, inserted in a cavity. Skin smooth, yellowish-green, marbled with green and brown, red next the sun. Flesh very fine, melting, sugary, and highly perfumed. Season, November. Bore for the first time in 1843. This first-rate Pear was obtained by Major Espéren.

Jules Bivort.—Tree of moderate vigour, but very productive. Fruit large, obovate, about 3½ inches in height, and 3 inches in diameter. Skin dull green, becoming yellow when fit for use, dotted with brown, and slightly tinged with red next the sun. Flesh yellowish-white, fine, melting, half buttery, with abundance of sugary, vinous, much perfumed juice. Fit for use about the middle of November. Raised by Alexandre Bivort, and bore for the first time in 1847.

Poire Andouille.—Tree vigorous, and a great and constant bearer, suitable for a standard or a pyramid. Fruit 3½ to 4 inches in length, and about 2 inches in diameter at the widest part, near the eye; and it is nearly as thick towards the stalk, which is short, thick, and obliquely inserted. Skin yellow, flesh white, coarse, juicy, sweet, and agreeably perfumed. This Pear somewhat resembles the Beurré Bosc, but it is smaller, and so deformed that it has received from us the name of *Poire Andouille*, that being the form which it generally assumes. Were it not rather gritty it would be an excellent dessert fruit; but it would furnish a good supply throughout the season by being dried in the oven. We have tasted the fruit fresh from the tree in the middle of September, its usual period of maturity, and at the same time fruits of the previous year, dried in the oven, and still very excellent. We received this excellent variety from the Abbé Canet, commune de Montigné, near Montfaucon (Maine-et-Loire), who had cultivated it for 15 years. He obtained it from the nurseries of M. Langlois, at La Brulais, near Beaupreau, which were soon given up. M. Canet had no name for the fruit, nor had he seen the variety in his neighbourhood. [From the above description, it is very probable that the variety in question is the common Calebasse, not the Calebasse Bosc or Beurré Bosc, to which, however, it has externally a resemblance. The common Calebasse is an extraordinary bearer, and on this account it is grown in some places near London; but if it should prove the same as the Andouille, it appears that it would be valuable for drying.]

Home Correspondence.

Aëration.—In reply to "R. T.," I would say that, as the openings of the air channels are at right angles to the course of the wind, there can be no more tendency to blow down one channel than down the other—no more than there is in a chimney-stack;—the mere passage of the wind over their mouths, supposing those mouths to be at the same level, does not alter the amount of their out-pouring, though it certainly does the direction of it. But, besides the theoretical statement, I know from practical experience, having put it to that proof, that with equal areas of inlet and outlet there is no blowing down either channel: nay, more, the tendency to blow downwards does not amount to anything like danger to the tenderest plant, when the cross measurement of two outlets to one inlet is as much as 29 inches outlet to 11 inlet, though this arrangement is directly opposed to the correct one, which is that the areas of both openings should be exactly equal. The great advantage of this plan is its entire independence of all lateral draughts, and, to be fully carried out, there should be no other openings whatever; for, if any opening of greater or equal area than the ventilator be at a lower level, the effect is to convert both the ventilator channels into outlets, and is so far only the common arrangement of

opening the lower sashes, and brings with it all the usual evils. The interchange of air within a plant-house ventilated on my plan is effected entirely by the difference of temperature of the columns of air, so long as one is warmer, and consequently lighter in weight, than the other: the actual weight or pressure is immaterial —the difference between the columns is the measure to be attended to. Suppose the cool air column to be of such a size as to weigh 480 grains, an equal-sized column of air, 20 degrees warmer, will only weigh 460 grains, showing a difference of 20 grains, and this 20 grains is still the difference, whether 1 or 100 times 480 grains be the superincumbent weight or not. "R. T.'s" comparison of a feather to 10 lbs. weight is rather extravagant; but, making use of his own simile, a 10 lb. weight plus a feather, must weigh more than 10 lbs. alone, and it is this excess that is the moving power. "R. T." seems not to remember the very small amount of power, measured in grains, by which a hot water apparatus is made to circulate; but water is nearly 900 times the weight of air; and if the heavier can be moved by a few grains excess of weight, surely the lighter can. *J. P. S., Chesterfield.*——The mode of ventilation for plant houses recommended by "J. P. S." is correct enough in principle, but not sufficiently explicit as a guide to others, and may even mislead. If, for instance, the lower mouth of the box carrying off the air descend any depth within the house, all the air in the house above that level will remain stagnant and unrenewed, if it descend 3 feet; in that 3 feet of the upper part of the house the air is stagnant and unrenewed, however active the ventilating box may be. To make this mode of ventilation as perfect as possible, the lower mouth of the exit tube ought not to descend into the house at all, but the tube or box be carried as a chimney above the house; and the entrance box or tube ought to open at or near the floor level. I do not, however, consider this mode of ventilation so good as others in operation in various places. I will mention what I consider to be the best. This is to admit fresh air to the floor of the house by an underground drain or conduit brought from some distance, and to let off the used up or impure air from the highest part of the house by chimneys or ventilators carefully deprived of any back draught. The object of the underground drain is to admit air of a medium temperature, either by night or day, summer or winter. Of course it ought to be of sufficient size to afford an adequate supply, and if for winter or early spring cultivation, of sufficient length and depth to bring the moving column of air to the temperature of the passage it traverses; in fact, I am of opinion, if this conduit were carried along through the stratum of invariable temperature sufficiently far, air should always enter the house at the mean temperature of the latitude of the place where the house is; and thus might we cultivate the most of greenhouse plants without artificial heat. Arnot ventilators, with flaps to prevent back draught, or chimneys with the smoke-cure of an "old wife" on each, to effect the same purpose, are the best exits for the used-up air. The inlets for air ought not, of course, to be placed directly under the outlets, but diagonally, so as to keep the whole air of the house in constant motion. *John Lyell, M.D., Newburgh, Fife.*

Accelerated Vegetation.—Can you furnish your readers with any account, coupled with explanation, of the experiments said to be exhibited at Bromley, in which flower buds are brought forward almost instantaneously into blossom, the buds not being so advanced as to render the operation generally intelligible. And, herewith, can you give us the theory or solution of those famous exhibitions of the Indian jugglers, who sow a seed, raise it up into a plant, and bring the plant into blossom, under the eyes of the spectators. Is this effected by legerdemain, or is it a real operation of Nature accelerated by some art? *A. H.* [We are too ignorant of the art of legerdemain to assist our correspondent.]

How to Destroy a noble Tree, as practised in all our Public Parks.—Take any tree (particularly a slow-growing, valuable one), measure no more than 20 feet from its bole, and then plant a Horse Chestnut or other quick-growing tree in every direction around; in a very few years the ends of all the branches will begin to decay, and in a comparatively short time you will see the last of your fine old tree, especially if, after a severe winter, you carefully abstain from cutting out any dead wood whatever. That I am only stating facts, any one who will go into the Kensington Gardens or Hyde Park may satisfy himself. *A Constant Subscriber.*

Materials for a Cutting Pot.—Provide either broken potsherds, pebbles, or chips of stones from a mason's yard, and place them in the bottom of the pot. Over these put rough fibrous peat or turf; this will act as drainage, which is most essential; then prepare peat, loam, and silver sand in equal parts, with the addition of a little powdered charcoal; let these be well incorporated together and passed through a fine sieve; put this compost on the top of the above-mentioned drainage and press it well down. This must be in sufficient quantity to reach within 1½ inch of the top of the pot. Finish with pure silver sand, and let the whole be well watered, to settle all down before the cuttings are put in. Then having bell-glasses at hand, and the pots ready, dibble the cuttings into the sand, which will induce the emission of roots, and these will strike down into the compost, which, prepared as directed, will suit any plant. After the cuttings are inserted let them be watered with a fine rosed pot, to settle the sand round them. Cover with the bell-glasses and shade until they have become rooted. Cuttings must not be put in too closely together, otherwise they will damp off. Wipe the condensed moisture from the glasses once a day, but keep them close for the first fortnight or three weeks, afterwards admit air by degrees, by placing a little wedge under the glasses. When the cuttings are rooted remove the latter altogether. Sprinkle occasionally with water from a fine rosed watering-pot; by attending to these minutiæ success will certainly be attained. A slight hotbed is the best place for cuttings. *A Gardener, June* 26.

Vine Mildew.—I have tried sulphate of iron as a preventive of this disease, but certainly without any marked advantage; whether I applied the saline mixture to the roots in a too concentrated form, or not strong enough, I am unable to say, 1 oz. of the salt to 2½ gallons of water being the proportion used, but it did not prevent my crop from being destroyed by the mildew, and at the time I imagined that the Vines did not look quite so well afterwards; unquestionably, however, sulphur in almost any form is likely to prove, more or less, beneficial; but what I much doubt is, that it is absorbed and taken into the circulation of the Vine through the roots in sufficient quantity (if at all), to produce any sensible effect. Upon the whole, from some experiments I have made, I am decidedly of opinion that the direct outward application of a remedy can only be safely depended upon, as Grape mildew is clearly not the result of disease inherent in the Vine itself, the mischief being simply caused by the vegetation of a parasitical fungus resulting in the disorganisation of the vegetable fibre of the more succulent parts of the plant by the unnatural abstraction of its juices; in fact, Vine mildew may strictly be called a skin disease which, happily like another to which the cuticle of the human body is liable, can readily be destroyed by the timely exhibition of the same specific, which seems to enter very largely into M'Adam's composition, and which, by the way, I have now seen used in many houses without a single failure; and I believe that it will soon become the standard remedy, as it fully deserves to be. But I would again say to Grape growers, don't neglect mildew for a single day, for it soon gets so firmly rooted, and forms such a thick coating to the fruit in its advanced stage of vegetation, that it will then (as M'Adam judiciously and very truly remarks in his directions) probably require frequent syringing, when in its earliest stage one would have been sufficient to destroy it, putting out of the question the irreparable injury done to the fruit. I beg to hand you a few berries of Black Prince and Muscat from a neighbouring Vinery which was attacked by the blight, and which has at present had only one syringing with M'Adam's stronger liquid, about two or three weeks ago, the effects of which, as usual, are most decided, as you will observe, and I question if the mildew vegetates again this season after a second application of the wash. *Vigneron, Torquay.*

Rabbits.—I have a geometrical garden surrounded by a wire net 3 feet high. Observing my Verbenas cut down, I suspected that rabbits got in, and getting up at 4 o'clock this morning, I found one within the forbidden precincts. I pinned him in a corner, and just as I raised my stick to strike he paused a moment, and then made a bolt at a mesh fully 5 inches from the ground, and though he hung in it a moment, he got through before I could secure him. He was fully half grown, and quite as capable of mischief as a large rabbit. I thought it impossible for even a very small rabbit to get through the netting. The meshes are hexagonal, 3 inches long by 2 high. I write this for the two-fold purpose of informing your readers of the uselessness of the 3-inch mesh, so frequently advertised as a rabbit net, and of inquiring of your correspondents, some of whom have met, no doubt, a similar case, what they did to remedy the evil. Were I ordering a new net, it should be 3 feet high, and the lower part, for 14 inches, should be 1½-inch mesh. *Cavanensis.*

Rain Gauges.—I was somewhat surprised at the statements that appeared lately of Mr. Lawes' comparative observations of the fall of rain as indicated by large and small gauges. I think Mr. Thompson's explanation is insufficient; for condensation will be in proportion to the surface of metal of which the gauge is composed, and a small gauge has probably a larger surface in proportion to its receiving area than a larger one; but with a 10-inch gauge I doubt whether I have ever registered a greater amount of water due to condensation of vapour than 0.005 inch. However, Mr. Lawes' last communication has enabled me to offer another, and, I think, a satisfactory explanation: he admits, that if the water collected in the small gauge had been accurately weighed, a result might have been obtained similar to that supplied by the large gauge. I must, therefore, beg you to pause before you draw such sweeping conclusions against the accuracy of the observations made hitherto by meteorologists with gauges of the ordinary size. The fact is, Mr. Lawes has been misled by the practice to which his object (not primarily meteorology) has drawn him. He weighs the water caught in his gauges. Now parts of an ounce are quite sufficient to give a result of extreme accuracy with such a large receiving surface as 1-1000th of an acre. If we take his last published table, and reduce the largest quantity there registered, in proportion to the receiving surface of his smaller gauge, the result in weight is but a small fraction of an ounce; but such a quantity, or even a 20th part of it, is capable of yielding an appreciable result by measure. I confess myself quite unable to explain the observations made at Pembroke Dockyard; but they seem to me to betray such internal evidence of error, irrespective of the relative size of the gauges, as not to disturb my conviction of the efficiency of rain gauges of an ordinary size, if due attention be paid to their position. There is an objection among observers to use gauges under 100 inches of receiving surface, partly from the possible effect of the wind; but more, because with a less amount of water than 100 inches will collect, it would be difficult to ensure accuracy in measuring. As far as my own experience goes, it is decidedly in opposition to Mr. Lawes' conclusions. I once tried as a receiver a glass funnel 3 inches in diameter, the receiving surface of which would consequently be only about 7 square inches, and the results were exactly the same as those with a surface of 100 square inches; the experiment was made in a season which abounded in soft copious showers, which was favourable to its action; in stormy weather the result would, I dare say, have been different; but, *valeat quantum*, it is evidence on my side of the question, and I do not think meteorologists will willingly look on the results they have obtained as nugatory without much stronger evidence than has been already adduced upon the other side. *John Slatter, Rose Hill, Oxford, June* 20.

Kennington Park.—I can entirely corroborate the statement of your correspondent "M. L. R." as to the disgraceful state of the new plantations. I was unluckily not in the House when Mr. Spooner asked his question. Had I been there I would have endeavoured to elicit some further information from Sir W. Molesworth. With reference to his statement "that the outlay will not occur again," that entirely depends upon the arrangement made by Government as to replacing the dead Hollies, &c. &c. Knowing, as I do, how these matters are generally managed by public departments, I shall be very agreeably surprised if John Bull is not called upon to pay the bill. *M. P.*

Weigela rosea.—People complain that this does not flower so freely as they could wish it, and this state of matters will doubtless continue until the conditions necessary for its perfect development have become better understood and practised. Experience has proved that Chinese shrubs in general, and this one in particular, require to be potted or planted on a well drained bottom, in a warm aspect, and in a sheltered situation. This can best be effected by planting on little mound-like elevations, composed of lime-rubbish, brick-bats, or potsherds; these will keep the main roots near the surface, and facilitate the production of fibres. Treated in this way the plants will become thoroughly acclimatised, and both the wood and roots will grow and ripen together. This is a way by which a seasonable profusion of flowers may be obtained, and the only one that can be depended upon with certainty. To have vigorous growth only it is merely necessary to plant either the Weigela rosea or the Forsythia viridissima in a deep strong soil, where the plants (minus the flowers) will thrive luxuriantly. But if the object is to induce the production of well-ripened short-jointed flowering wood, it is indispensable to success to commence its culture by furnishing the plants with efficient drainage, such as I have described. *R. Miles.*

Societies.

Horticultural, *June* 27.—The Rev. W. L. B. Hawkins in the chair. Lady Harriet Clive, Mrs. Assheton Smith, and S. B. Sharp, Esq., were elected Fellows. The subjects for which special prizes were offered on this occasion were collections of vegetables, of which two of English and one of foreign growth were produced. Of the former two, that to which the first prize was awarded was furnished by Mr. Smith, gr. to Mrs. Reay, of Little Blake Hall, Essex. It contained 47 varieties of kitchen garden produce, while that to which the second medal was assigned, and which came from Mr. Leslie, gr. to Mrs. Alexander, of Ramsgate, only contained 36. Both collections were, however, of very considerable merit; and as an example of what an ordinary kitchen garden can now furnish for table, after so unfavourable a winter and spring as those just passed over, it may be worthy of mention that Mr. Smith sent Early Emperor, Early Warwick, and Ringwood Marrow Peas; Fulmer's Early Kidney Bean, Asiatic and Walcheren Cauliflowers, large, white, and good; West Ham and Vanack Cabbages; Early Horn Carrot, Red Beet, Paris Cos Lettuce, Jewess Cucumber; Deptford, Strasburg and Reading Onions; Chives, Horse-radish, Linnæus, Rhubarb, large and coarse, and Mitchell's Prince Albert, ditto, very good Spinach, Early Dutch and Red stone Turnips, Jackson's Kidney and Fortyfold Potatoes from an open border, and Lapstone Kidney from a frame; Curled Parsley, common, Golden, Normandy and American Cress, and White Mustard, red and white Orach, Wood's Early Frame, and red and white Turnip-rooted Radish, Balm, Burnet, Fennel, Horehound, Sweet and pot Marjoram, Winter Savory, green and red Sage, common and Lemon Thyme, and Garden Sorrel. Of vegetables of foreign growth, Mr. Lewis Solomon, of Covent Garden, sent large and very highly coloured Tomatoes, such as our comparatively sunless climate and low out-door temperature can never be expected to produce; a bundle of Asparagus weighing 9 lbs. 4 oz., Globe Artichokes, beautiful large white Cauliflowers, a bunch of Carrots, a punnet of good looking Moorpark Apricots, and another of Comte de Paris Strawberry, a favourite sort with the French, but, except in roasting seasons, rather too acid when grown in England. These received, as they well

deserved, a Silver Knightian Medal. Mr. Jones, gr. to Lady Charlotte Guest, had three well grown and finely ripened Queen Pine-apples, weighing, one, 4 lbs. 14 oz., and the other two, each 4 lbs. 12 oz. The same exhibitor had also two Green-fleshed Melons, which weighed 4 lbs. 2 oz., and 2 lbs. 3 oz. A Banksian Medal was awarded for the Pine-apples. Seven beautiful Bellegarde Peaches and a dozen Violette Hative Nectarines, came from Mr. Chapman, gr. to J. B. Glegg, Esq., of Withington Hall, Cheshire, to whom a Banksian Medal was very justly awarded; and a Certificate of Merit was assigned to Sir James South's gardener (Pyle), for four brace of very large and fine Cucumbers, just in perfection, the decaying blossoms still adhering to their points. Six were white spined, the name of the other two was unknown. From the garden of J. Harrison, Esq., Snelstone, Derbyshire, came a Verdelbo Vine, with 20 bunches, grown in a pot, upon the spur system. It was in every respect an excellent example of this description of Grape culture, the foliage being clean and healthy, and the bunches, though small (which they naturally are), extremely good. A Certificate of Merit was awarded to it. The same gentleman also contributed a specimen of 1-inch meshed white woollen netting, for protecting wall-fruit trees from spring frosts, and which was stated to answer the purpose perfectly. The piece exhibited was nearly two yards wide or rather deep, with about a foot in breadth of calico at top and bottom—the top being furnished with loops for attaching it to a rod or hooks immediately under the coping, and the bottom being provided with strings for tying it to a horizontal rail about 2 feet from the ground and 3 feet from the base of the wall, thus leaving room for walking comfortably along inside. This kind of protection, admitting, as it does, light and air freely, is kept constantly on while it is wanted; and if properly dried, folded up, and taken care of when not in use, it is reported to last good for many years. As to cost, where everything connected with it had to be bought, it was stated that a piece of wall might be covered with it for about 2s. a yard run. A model of Dr. Lisle's protecting contrivance, mentioned at p. 389, was also exhibited. A Banksian Medal was awarded to Messrs. Veitch, for a plant of their Eugenia Ugni, a fragrant, evergreen, Myrtle-like shrub, bearing little, cupped, pale pink flowers. It is a Chilian plant, and, in addition to its ornamental appearance, the most remarkable fact connected with it is that it produces edible fruit of the greatest excellence, and that in the temperature of an ordinary greenhouse. The fruit is stated to be about the size of large black Currants, to which it bears considerable resemblance, except that it is not in clusters, and its flavour is reported to be different from that of any fruit we yet possess, being described as being a combination of Pine-apple, Strawberry, and Guava. It must therefore be regarded as a great acquisition, the sole possession of which, we believe, belongs to Messrs. Veitch. Mr. Keele, gr. to J. Butler, Esq., of Woolwich, contributed a new Brassavola, for which a Certificate of Merit was awarded. It was a Chive-leaved kind, with singularly ribbed white flowers. The Hon. W. Fox Strangways furnished cut flowers of the Chinese Rose-scented Pæony, a bright purple variety, with as fine a fragrance as a Cabbage Rose, and certainly not half so much grown as it deserves to be; also another kind of Chinese Pæony, paler and with no scent; and pieces of the yellow Mesembryanthemum edule, which makes a handsome rock plant.—From the garden of the Society came Scheeria mexicana (Gloxinia Antirrhini), a plant with good-looking, large, pale violet, Foxglove-like flowers, with white throat both inside and out; Glossocomia clematidea, a very pale blue, bell-flowered plant, obtained from the Russians; it has little beauty to recommend it, except perhaps in the base of its little drooping bells, where there is a singular and rather handsome combination of colours. The deep blue or rather purple Myosotis azorica also came from the garden, as did likewise two more handsome hybrid Epiphyllums, the result of crossing the white E. crenatum with Cereus speciosissimus; the sweet-smelling Long-petalled Epidendrum; the buff Diplacus grandiflorus, Campylobotrys discolor (a plant of no beauty), and other plants, together with the following kinds of Vegetables:—Laitue Romaine Verte Maraichère, L. Chou de Naples, and Cock's Hardy White Cos Lettuce; Newington Wonder Kidney Bean; five kinds of Peas, among which was a very dwarf early sort, called Pois nain Hâtif à Chassis Superfine, which does not grow more than a foot high, and is a great bearer; it is, therefore, well suited for Orchard-houses and other situations under glass, in which early Peas are grown. While speaking of early Peas, it was mentioned that it was not necessary to wait till they were in fruit to have a purée possessing all the flavour of green Peas; for that might be obtained at any time, merely by cutting over the young plants when about 6 inches or so in height, and sending them into the kitchen. When cooked, these young stems and leaves were stated to communicate the flavour of green Peas. Three varieties of Turnip were also shown from the garden, the best of which was the Orange Jelly, described in another column, and a fruit of Tiley's Golden Ball Melon, the seeds of which were sown on the 1st of March last. It is round, with a pale cream-coloured skin, having patches of golden yellow on it.

LINNEAN, *June* 20.—Prof. BELL, President, in the chair. The President exhibited two specimens of the megalopoid form of the genus Planes, and made some observations on them. The following communications were read:—1. Extract from a letter dated Santarem, March 27th, 1854, addressed to S. Stevens, Esq., by Mr. Bates, "On the Habits, &c., of Termites."—2. "On the construction of the nest of a species of mason wasp observed in the neighbourhood of Bombay," in a letter addressed to the secretary, by Dr. G. Buist.—3. "On some remarkable Exostoses developed on the roots of various species of Coniferæ," by J. D. Hooker, M.D., F.R.S. Dr. Hooker had first observed these curious developments on the roots of specimens of Podocarpus dacrydioides, sent from New Zealand by the Rev. W. Colenso, and subsequently found them on so many other Coniferous plants, that he could but regard them as being of very general occurrence in the order. They were met with on Araucariæ of several species, Podocarpi, Taxodium, Dacrydium, Thuja, Cupressus, Phyllocladus, and Cunninghamia. Podocarpus dacrydioides was selected as an example for illustration. The roots and rootlets of this plant are studded at intervals with spherical organs, of various diameters, between 1-40th and 1-60th of an inch; they are either attached by short pedicels, or sessile, or sunk into the bark of the root, easily detached, leaving a small scar on their own surface and on the root; they are spongy in consistence, smooth on the surface, and of a pale reddish colour. A vertical section shows them to be composed of a delicate cuticle, and a mass of spongy cellular tissue aggregated around a central vascular axis, which reaches from the wood of the root to the centre of the sphere. The cells of this soft tissue are uniformly crossed on every facette by delicate transverse lines, which appear to be the result of matter deposited on the inner surface of the cell-wall, and to have the same origin as is usually assigned to spiral and other deposits in cellular tissue. The cells are invariably full of fluid, but empty of chlorophyll. The vascular axis is generally straight, cylindrical, and blunt; it is composed of woody tissue marked with the disks usual in the same tissue of other parts of the plant, and is surrounded by a delicate sheath of bast-cells. Morphologically, Dr. Hooker considers these organs as transformed root-fibrils; but the special function for which they are adapted is not apparent, though they may be supposed subservient to the office of selection of nutriment. The Podocarpus dacrydioides grows in swamps in New Zealand, but the exostoses were as abundantly produced on the roots of specimens planted in dryish earth at Kew. Some attention had been directed to the exostoses of roots by the elder De Candolle, but their general occurrence seemed to have escaped the notice of succeeding writers on general physiology. The Rev. Mr. Berkeley had described, in the *Gardeners' Chronicle*, the exostoses on the roots of the Pea, and Dr. Hooker had long been familiar with others, and especially a remarkable modification of them on the Laburnum, first pointed out to him by Prof. Henslow, who had also shown him abundance of them on the garden Bean, and on both wild and cultivated species of Lathyrus and other Leguminosæ. Except, however, on the Taxodium distichum, where they exist in a very peculiar condition, the fact of their prevalence in Conifers appeared not to have been noticed. Dr. Hooker pointed out, in conclusion, a remarkable morphological analogy between exostoses and the tubers of the root-parasite Balanophora. The structures alluded to were represented in a drawing which accompanied Dr. Hooker's paper.—4. The commencement of a memoir "on the general characters, affinities, and organography of the Clusiaceæ, particularly with reference to the structure of the embryo," by John Miers, Esq., F.R.S. The object of this portion of the paper was chiefly to call attention to the structure of the embryo in the Clusiaceæ (Guttiferæ *Juss.*), the nature of which, the author remarked, had been hitherto quite misunderstood, arising partly, no doubt, from the difficulties met with in the examination of them. The author commences by stating at considerable length the different views which have been expressed by various botanists as to the structure of the seed in this order; and then gives a minute analysis of the fruit of a species closely allied to the Clusia cruiva, *Cambessèdes*—the views of Cambessèdes, which had been almost universally adopted, but from which Mr. Miers' conclusions were widely different, having been principally derived from an examination of that species. The paper was accompanied by some admirable drawings of the seeds of several Clusiaceæ.

ENTOMOLOGICAL, *June* 5.—W. W. SAUNDERS, Esq., F.L.S., V.P., in the chair. A fine collection of insects from Burmah was presented by Mrs. Hamilton, containing a number of rare and interesting insects of all orders (including a new Goliath beetle), whereupon a special vote of thanks was passed in acknowledgment for this and several previous donations of a similar kind from the same lady. Mr. S. Stevens exhibited a moth belonging to the genus Leucania attached to a blade of Grass, and enveloped by a fungus which had grown from its body, also a dipterous insect which had been impaled on the sharp point of a reed by the wind. He also stated that he had succeeded in obtaining a brood of larvæ from the eggs of the female of the rare Notodonta carmelita exhibited at the last meeting. The young caterpillars fed upon the Birch, and he had observed they had considerable difficulty in moulting. He also exhibited a specimen of Notodonta cucullina, reared from the caterpillar taken at Halton, Bucks. Mr. F. Smith exhibited several rare species of bees, captured in Scotland by Mr. Foxcroft; and Mr. Jansen, a number of rare beetles from the same locality. Mr. Westwood mentioned that Mr. Elmslie proposed to make an entomological excursion in the north of Scotland, and requested subscribers for his collections. Mr. Douglas exhibited specimens of Elachista Cerusella, and Mr. Boyd specimens of Elachista Treitschkiella, the larvæ of which mine in the leaves of Cornus sanguinea in their earliest state, subsequently forming flat moveable cases of portions of the leaves, within which they remain as larvæ through the winter. Mr. Westwood read a paper containing descriptions of some new Goliath beetles. He also exhibited cocoons of a species of silk moth, received from Malta from Dr. Templeton, which had recently been imported in considerable quantities from India, and thrived well in the south of Europe, the silk of which was very durable, but it was unwound from the cocoon with great difficulty—a more effectual mode of unreeling it was therefore very desirable. Mr. Saunders stated that a gentleman residing near Geneva had recently requested from him samples of the different kinds of Indian silk, as he had succeeded in unwinding all the kinds of silk of which he had been able to procure cocoons; his discovery would therefore be of great benefit when applied to the species from Malta.

Notices of Books.

Harvey's Seaside Book (Van Voorst), of which we formerly expressed a very favourable opinion, has already, as it well deserved, reached a third edition, which contains a chapter on fish and fish diet by Mr. Yarrell. The present issue is beautifully got up.

Mr. Gosse is indefatigable. We have now before us his *Aquarium* (Van Voorst), a charming duodecimo volume, well illustrated with plates in chromolithography, and good woodcuts. It is superfluous to say that the author's whole heart is in his subject, and that in acquaintance with marine animals he is excelled by no one. When we add to these qualifications an agreeable, gossiping style, enough has been said to show why he is so popular. The resident at the seaside can know no tedium, with a work like this on the table, a good coast at his feet, and a glass vessel of sea water in which the curious animals that Mr. Gosse loves to describe can be kept alive for a few days. Although crabs are not the most inviting of pets, yet the following account of the Fiddler will doubtless amuse some of our readers.

"Beneath a large flat stone, exposed at extreme low water, at the extremity of one of the low rough ledges that run out from the foot of Byng Cliff, I found in September a full grown specimen of the Velvet Fiddling Crab (*Portunus puber*). All the Crabs of this family, which contains a great number of species and not a few genera, are distinguished at once by a peculiar modification of the hindmost pair of feet, for the performance of an important function. They are all Swimming Crabs, and the facility with which they can roam through the element they inhabit, depends largely on the completeness of the modification which I refer to. Our common Eatable Crab, the bulky, thick-clawed, livid 8 pounder, that lies with all his ten pairs of feet so meekly folded across his breast, can swim—about as well as a stone of the same size. Now examine his hindmost feet, their single toe tapers to a sharp point in no wise differing from those of the four pairs that precede them. But the *Portunidæ*, or Swimming Crabs, have this last pair of feet much flattened out side-ways, and the toe in particular dilated into an oval thin-edged plate, which striking obliquely upon the water acts as an oar, with that peculiar action which is known to boatmen as sculling. In the common Shore-crab (*Carcinus mœnas*), that abundant olive-green kind which on every rocky shore little boys and girls catch, by letting down into the crevices a piece of string with a fragment of offal tied to it—we observe a transition condition of the hind-foot; there is a decided tendency to an ovate form, though the tip is yet taper and acute. And the habits of the animal agree with this structure. The power of shooting slantwise through the water exists, which bears the same sort of relation to the free and easy swimming of the typical *Portunidæ*, the Oceanic Crabs of the tropics, as the long leaps of the Flying Squirrels and the Petauri bear to the sustained flight of a bird.

"An old male of the Velvet Fiddler is a striking and handsome crab. His body generally is clothed with a short velvety pile of a pale brown or drab hue, from beneath which here and there shines out the glossy deep black shell, especially where rubbed, as at the edges. The feet, particularly the plates of the oars, are conspicuously striped with black; the large and formidable claws are marked with bright scarlet and azure, as are also the foot-jaws and face; while the eyes are of the richest vermilion, projecting from hollow black sockets.

"I said that he is a 'striking' Crab; and, though I was quite innocent of a pun when I wrote the word, it is characteristic in more senses than one. Both it and its frequent companion, the Shore Crab, when apprehensive of assault, use the powerful claws, not to seize, but to strike transversely, as a mower uses his scythe; and this action they perform viciously, and with great force and effect.

"In the Aquarium the Velvet Fiddler was shy and recluse. He at once slid into the most obscure recess he could find, beneath the dark shadow of two pieces of rock that formed an arch. For some days he remained gloomy in his new castle; but at length he ventured out under the cover of night, and would wander

about the floor of the tank. But he never lost his cautious suspicion, and the approach of the candle was usually the signal for a rush back to his dark retreat. He was a fit representative of one of those giants that nursery tradition tells of, as infesting Cambria and Cornwall, 'in good king Arthur's days.' Gloomy and grim, strong, ferocious, crafty and cruel, he would squat in his obscure lair, watching for the unsuspecting tenants of the tank to stray near, or would now and again rush out and seize them with fatal force and precision. As the Giants Grim of old spared not ordinary sized men for any sympathy of race, so our giant Crab had no respect for lesser Crabs, except a taste for their flesh. I had two or three full grown Soldier Crabs (*Pagurus bernhardus*); themselves warriors of no mean prowess; two, at least, of these fell a prey to the fierce Fiddler. His manner of proceeding was regular and methodical. Grasping the unthinking Soldier by the thorax, and crushing it so as to paralyse the creature, he dragged the body out of the protecting shell. The soft plump abdomen was the *bonne bouche*; this was torn off and eaten with gusto, while the rest of the animal was wrenched limb from limb with savage wantonness, and the fragments scattered in front of his cave.

"The crabs are the scavengers of the sea; like the wolves and hyænas of the land, they devour indiscriminately dead and living prey. The bodies of all sorts of dead creatures are removed by the obscene appetite of these greedy Crustacea; and there is no doubt that many an enormous Crab, whose sapidity elicits praise at the epicure's table, has rioted on the decaying body of some unfortunate mariner. But what of that? Let us imitate the philosophy of the negro mentioned by Captain Crow. On the Guinea Coast people are buried beneath their own huts, and the Land-crabs are seen crawling in and out of holes in the floor with revolting familiarity: notwithstanding which they are caught and eaten with avidity. A negro with whom the worthy Captain remonstrated on the subject, seemed to think this but a reasonable and just retaliation, a sort of payment in kind, replying with a grin and chuckle of triumph:—'Crab eat black man; black man eat *he!*'"

The Microscope, its History, Construction, and Applications. By Jabez Hogg, M.R.C.S. 8vo. Orr and Co.; pp. 440.

It is a singular complaint for the author of a book like this to make, that "one of the most useful and fascinating of studies—the study that belongs to the domain of microscopic observation—should be, if not wholly neglected, at least but coldly and indifferently appreciated by the great mass of the general public." We should have formed an exactly opposite opinion, and have been disposed to congratulate science upon the daily increasing numbers of persons who are now occupying themselves with an instrument so costly as a microscope, and demanding so much leisure for its use. It is, indeed, marvellous to observe how many men immersed in the vortex of the busiest of all lives, that of an Englishman, nevertheless manage to spare a few hours very often for the instruction which the microscope conveys. The increasing number of books upon microscopical subjects is in itself a pretty convincing proof of the rapid increase of this kind of taste.

Mr. Hogg has compiled with very little skill a thick 8vo volume, and has illustrated it with a great number of cuts—he says 500—of which we can only say, that while some are good, others are not such as will prove either attractive or instructive. They are very unequal; and some are far too coarse to convey to the uneducated eye such a representation of objects seen through the microscope as will render them certainly recognisable. In this respect, the beautiful plates of Tulasne, Thuret, and others might have been consulted with advantage. We also regret to see the pages blemished by such careless reading as renders the work a mere stumbling-block to the young. A fungi, Torulæ diabetica, Cer[e]visiæ, Puccinias, prote[i]nic, are strange misprints in two or three consecutive pages, to say nothing of more serious mistakes as to the names of the objects represented. We should be curious to know where Mr. Hogg learned that the cut represented at p. 394 belongs to Oidium, or the Vine Mildew. Upon the whole, therefore, we can only say that, although the volume contains useful matter, it requires to be consulted with caution, and exhibits far more industry than knowledge.

Garden Memoranda.

Horticultural Society's Garden, Turnham Green.—The glass houses here are now well furnished with flowering plants, and are altogether extremely interesting and gay. The shelves of the great conservatory are one mass of bloom, the most conspicuous being that produced by the common Calceolaria rugosa, than which a more striking object at this season could scarcely be found, provided the plants are large enough to make a show. Those here are about 3 feet high and as much through, and quite loaded with yellow blossoms of the most brilliant description. It is surprising that this really handsome though old-fashioned variety is not more grown for decorative purposes than it is—for what could be more effective or useful?—and it is about as easily managed as a scarlet Geranium. The immense trees of white and red Brugmansia in the bed of this house are now in full beauty, as are also a noble Statice arborea, Tea-scented Roses, and many other favourite summer flowering plants.

Out of doors, as might now be expected, the garden is everywhere delightful. The noble standard Roses that occupy the borders on either side of the broad walk which leads from the school gate towards the conservatory are now blooming in the greatest possible perfection, and form an excellent succession to the Rhododendrons and hardy Azaleas, whose blossoms have just begun to fade away.

In the American Garden, Philadelphus chinensis is blooming freely, and among rare plants we remarked the Ledebour Honeysuckle (Lonicera Ledebouriana), a shrubby Californian kind, which promises to be an acquisition. Ceanothus thyrsiflorus we did not find in bloom, but it is certainly a fine addition to our evergreen shrubs. The severity of last winter has not hurt this nor Van Houtte's Ghent Alstrœmerias, which are pushing freely. The Chusan Palm has also wintered safely quite unprotected.

The plants in the beds on the east side of the Arboretum and elsewhere are now beginning to come into flower and grow away freely; but this has only happened within the last fortnight or three weeks, the coolness of the nights having before that very greatly checked the progress of vegetation. Fruit trees on walls had also been stopped in growth from the same cause, more especially Peaches and Nectarines, whose young wood is short compared with what it would have been under more favourable circumstances, and the leaves are inclined to curl. The opposite of this is, however, the case under Cottam and Hallen's glass covering or Peach frame, in which young shoots have grown freely, and the foliage is ample and healthy. The crop on the tree thus favoured, as well as on the open wall, which had the temporary protection of coping boards, &c., applied to it to keep off the spring frost, is a good average one. A considerable portion of the border along the Peach wall has been forked up, and has received a dressing of well-rotted manure; and since this has been done, and the nights have become warmer, the trees have grown more freely.

Some of the pyramidal Pears which were taken up from the open ground in March last, potted and placed in the Orchard-house (formerly the Rose-house) are fruiting; of Plums so treated, one little tree, of Early Prolific, has rather more than a dozen and a half of fruit on it, colouring beautifully. Denison's Superb will also ripen a few good Plums. Kidney Beans in pots, introduced among the fruit trees, have succeeded very satisfactorily in this house; while out of doors, owing to the coldness of the nights and soil, they have refused to grow, and even the underground part of the stem has in some instances presented an appearance resembling that caused by the Potato disease. The advantages of a house of this kind, not only for Kidney Beans, but also for Strawberries and things requiring a very slight degree of warmth in early summer, will therefore be apparent. The variety of Kidney Bean in question was the Newington Wonder, a good prolific sort; but for early forcing, the Haricot Noir de Belgique is reported to be preferable.

Whilst speaking of Vegetables, Cock's white Cos Lettuce should not be forgotten. It is one of the hardiest white Cos varieties we have, standing the winter better than the Paris White Cos, which it resembles in quality; but the tops of the leaves do not hood over each other, and consequently it requires tying up for blanching. Laitue Romaine Verte Maraichère is also a good summer Cos, hardier than the white Paris. Laitue Chou de Naples is certainly one of the very best Cabbage Lettuces that is grown.

Of Turnips, a Cheshire variety, called Orange Jelly, is one of the handsomest and best sorts with which we are acquainted. It is round and regular in shape, with a small top, and a pale orange skin. Its flesh is yellow, juicy, sweet, and tender.

As regards Potatoes, it would appear that Mr. Alborough's plan of growing them, as described at p. 101, does not enable them to resist disease, at least in all cases, any more than other modes of cultivation; for in a trial of it made here the canker has already begun to show itself in the part of the stem that is below ground, exactly in the way in which it has always first presented itself here in former years. A plantation of the Fluke variety, planted in the usual way, is, as yet, healthy, the tops being robust and very dark green, and no brown shrivelled cuticle appearing underground. The haulm of all sorts is, as yet, apparently healthy, and we remarked no disease underground, except in the case just mentioned.

Some Portuguese Vines, thick stumps from the Alto-Douro, which had had their young wood destroyed by mildew, have been imported. They have been potted, and placed in a frame under glass, where two are pushing young shoots from the stem near the ground. Next month we shall therefore have an opportunity of reporting how they behave in regard to the disease.

It may interest some to know that the exhibition of fruit at the forthcoming *fête* on the 8th inst. will take place this time in the iron tent, where a circular stage of suitable size has been erected for its reception. It is to be backed up with Ferns and other plants placed in the centre; and, managed in this manner, it is hoped it will have a better effect than when shown, as it has been for some years past, in a long straight line.

FLORICULTURE.

Scottish Pansy Society.—The tenth annual meeting of this Society was held this year in connection with the last Caledonian Horticultural Society's June show. The attendance of Pansy growers was numerous and the competition spirited. The arrangements made by the Horticultural Society for the convenience of exhibitors gave universal satisfaction; and although some of the blooms shown on this occasion gave evidence of having suffered in quality from exposure to the cold cutting winds which prevailed for some time previous to the show, still, on the whole, the exhibition was a very fine one, which will be understood when we add that between 600 and 700 blooms were contained in the 48 competing stands which were brought forward. The following is a list of the awards:—Nurserymen: Best 18 blooms (5 competitors): 1st, Messrs. Downie and Laird, with Medora, Royal Standard, Father Gavazzi, Flower of the Day, Gliff, Miss Talbot, Yellow Climax, Beauty, Monarch, Countess of Strathmore, St. Andrew's, Emperor, Minerva, Jubilee, Marchioness of Bath, Uncle Tom's Cabin, and Sir J. Cathcart; 2d, Mr. Douglas, Murchiston Park, whose stand contained Diadem, Miss Talbot, Flower of the Day, British Queen, Sovereign, Emperor, No. X., Gliff, Marchioness of Bath, Fearless, Earl of Mansfield, Medora, Jubilee, Ellen, Aunt Chloe, Minerva, Mrs. H. B. Douglas, and Duke of Norfolk; 3d, Mr. Grieve; 4th, Messrs. White and Sinclair. Practical Gardeners and Amateurs: Best 18 blooms (9 competitors): 1st, Mr. Reid, Broomfield, with Lady Emily, Yellow Climax, Flower of the Day, Queen of England, Duke of Norfolk, Mary Taylor (seedling), Robert Burns, Fanny Kemble, Royal Visit, Marchioness of Bath, Miss Talbot, Lady Dundas, St. Andrews, Duchess of Perth, Jubilee, Catherine Dundas (seedling), Sir J. Cathcart, and Charles Cowan; 2d, Mr. Shearer, gr. to the Marques of Tweeddale, with Yellow Climax, Disraeli, Lady Emily, British Queen, Sir J. Cathcart, Miss Talbot, Samson, St. Andrews, Royal Standard, Duke of Norfolk, Royal Visit, Flower of the Day, C. Cowan, Mrs. Blackwood, Sovereign, Mrs. H. B. Douglas, Aurora, and Sir J. Paxton; 3d, Mr. Henderson. Best 12 Blooms (12 competitors): 1st, Mr. Henderson, gr. to C. K. Sivewright, Esq., with Flower of the Day, Robert Burns, Yellow Climax, Duke of Perth, National, Gliff, Royal Standard, Duke of Norfolk, Adela, Miss Talbot, Sir J. Paxton, and St. Andrews; 2d, Mr. Young, gr. to Mrs. H. N. Ferguson, with Flower of the Day, Post Captain, Royal Standard, Lady Emily, Miriam, St. Andrews, Gliff, National, Sovereign, Lady M'Kenzie, Sambo, and Jubilee; 3d, Mr. Grandison; 4th, Mr. M'Nab. Best 6 Blooms (3 competitors): 1st, Dr. Stuart, with Marchioness of Bath, Telegraph, Lady M'Kenzie, Gliff, Diadem, and Flower of the Day; 2d, Mr. Niven; 3d, Mr. Walker. Amateurs exclusively: Best 6 Blooms (4 competitors): 1st, Dr. Stuart, with Marchioness of Bath, Gliff, Lady M'Kenzie, Telegraph, Robert Burns, and Lucretia (seedling); 2d, Mr. Fleming, Berwick, with Earl of Mansfield, Sovereign, Flower of the Day, Duke of Norfolk, and Pandora; 3d, Mr. Young. Classes open to all. Best 12 Dissimilar Blooms—four light grounds, four yellow grounds, four selfs (12 competitors): 1st, Mr. Henderson, with Duke of Perth, Yellow Climax, Flower of the Day, Adela, Miss Talbot, Royal Visit, Miriam, Queen of England, Gliff, Sir J. Cathcart, Favourite, and Lady Emilie; 2d, Mr. Niven; 3d, Messrs. Downie and Laird. Best Dark Self in the room: St. Andrews, in Mr. Niven's stand, which was second in the prizes for Classes. Best Yellow Self: Sovereign, in Mr. Douglas's stand, which was second in the Nurserymen's Class. Best Yellow Ground: Jubilee, in Messrs. Downie and Laird's 18. Best Light Ground: Miss Talbot, in Mr. Henderson's stand. Sweepstakes (4 Competitors): 1st, Mr. Henderson, with Flower of the Day, Royal Visit, Gliff, Duke of Perth, Miss Talbot, Supreme, Yellow Climax, Jubilee, Pandora, St. Andrews, Sir J. Paxton, and National. To two, out of the number of Seedlings sent to this meeting for opinion, Certificates of Merit were awarded; the one named Omar Pacha, from Messrs. Dicksons and Co.; the other from Messrs. Downie and Laird, named Shylock; both dark. Omar Pacha is a flower in the way of Magnificent, but was considered superior in every respect to that variety, of excellent substance and colour, and good in shape. Shylock is a dark self, deep and bright in colour, and of fine form and substance. Both of the above flowers will be found valuable acquisitions. Mr. Stenhouse sent a yellow-ground seedling, which was highly commended; as was also one in the same class from Mr. Shearer of Yester.

National Floricultural Society, *May* 25.—Mr. Hoyle in the chair. The subjects produced on this occasion were:—Azaleas, Shrubby Calceolarias, Cinerarias, Pelargoniums, Rhododendrons, and Pansies. A first-class certificate was awarded to Mr. Hoyle, for Pelargonium Wonderful; a large flower of good form, with smooth, stout petals; top dark maroon, shaded off towards the margin with orange and rose; lower petals deep pink, throat white; a free bloomer. The same raiser also obtained a certificate of merit for Serena, a flower of good substance; top dark, margined with rose; lower petals lilac rose, throat white; a smooth flower. A label of commendation was given for Lord Raglan, which is similar in colour to Prince of Orange, and very showy. A certificate of merit was also awarded to Pelargonium Grand Sultan (Turner), black top petals, under ones deep crimson, strongly marked—a striking flower. A label of commendation was awarded to Mr. Cole, for Calceolaria Dazzle.

June 15.—Mr. Beck in the chair. Mr. Smith had a first-class certificate for Verbena Boule de Feu, a brilliant scarlet, with yellow eye, and truss of fine form. Mrs. Latham, of Dover, sent a bedding Pelargonium called Carminia, which was awarded a certificate. Mr. Cole had a first-class certificate for Calceolaria Eclipse, a reddish crimson, of fine form and good habit. Mr. Dobson sent Pelargonium Mr. White, a carmine rose, with crimson maroon spot, smooth, with a good under petal; Gem of the West, a fine silvery white, with a pure claret spot, good in form and habit; certificate awarded. Mr. Beck sent Fidelio, a heavy rose, with maroon spots, and bright throat, under petals slightly spotted: Silenus, an orange scarlet, with brownish crimson spot, under petals clouded with the same colour—this was awarded a certificate; Conqueror, a good crimson scarlet, with rich maroon spot, good habit—received a first-class certificate: Laura, a good rose, with good spot, white throat, and moderate form. Mr. Turner exhibited a Fancy Pelargonium, called Ariel, which must be seen again, not being sufficiently in bloom. Of the Calceolarias, cut blooms, from Mr. Stone, of Hull, Aurora, Truth, and Gem were among the best; they are of fine form. E. Foster, Esq., of Clewer Manor, sent Pelargonium Phaeton; a rich orange scarlet, stout, smooth, and of good form, a free bloomer—this was awarded a first-class certificate. Mr. Turner sent Pelargonium Pandora, with dark maroon top petals, edged with crimson; bottom petals crimson, free bloomer—awarded a certificate: also Fancy Pelargonium Ne plus ultra; dark purple maroon, edged with white, form good—awarded a first-class certificate: King of Crimsons; bright crimson, very showy, and possessing a free, good habit—certificate of merit awarded.

SEEDLINGS.

Pansies: *W. J. P.* Your yellow ground flower is distinct and well-shaped, with a good bold eye. It is of medium size, and we should say, if we may judge from the number of blooms sent, that it is constant. All the blooms (four) are uniform and good. The white ground variety is a fair flower, but not first-rate.

Roses: *Cultivator.* A very pretty Hybrid Bourbon, and delightfully fragrant.

Miscellaneous.

Oxalis tuberosa.—Under the name of Oca it appears that several varieties of this tuberous plant are known in Bolivia, whence they have been brought by M. Weddell. In the spring of 1853 some tubers, about the size of a pea, were received of the Oca Rouge from M. Vilmorin, and were raised in a Melon pit. Two of the plants were kept in the Vinery, and two were planted in the glass wall. The former died to the soil about the end of September without forming tubers. Those in the glass wall continued growing till killed by frost, Novem-

ber 17th. Their stems had grown in this situation to the height of five feet, with a healthy dark green foliage; but no flowers were produced. When the roots were taken up, it was found that numerous tubers had formed, some of which were fully an inch in diameter, roundish, or somewhat flattened, and having numerous eyes. The skin was smooth, in some parts of a pale straw colour, but mostly of a delicate crimson red. The roots have been taken up with the soil adhering, and covered with dry soil, in a cool Vinery. From the largest tubers strong plants may be expected, which will most probably flower. The tubers may be cut into sets like Potatoes. Possibly the Oca may be grown so as to produce tubers in this country, perhaps in warm soil and hot seasons without the aid of glass, except to forward it in spring. Although very imperfectly ripened, these tubres possessed little of the acidity that might be expected of an Oxalis, and which is spoken of by M. Weddell in the "Revue Horticole" (4th series, vol. i., p. 149). On the contrary, they were pleasant to the taste, perhaps resembling unripe Spanish Chesnuts as much as anything else, and being, in the opinion of persons of taste, at least equal to Rampions, as a raw esculent. The quantity raised in the garden was too small to allow of experiments in cooking them. It is intended to grow them more extensively next year; and, as they are likely to become of interest, the following account of them by M. Decaisne will prove interesting:—"The Oca is very extensively cultivated in the temperate parts of Bolivia, where several varieties of it are distinguished. Two are known by the names of Oca blanca and Oca colorada. The Museum is indebted to M. Bourcier for the latter, which he considers superior in quality to the Oca blanca, although M. Weddell is of a different opinion. The Oca blanca is beginning to appear in our markets; it is now to be found in most greengrocers' shops, but the slightly acid flavour of the tubers is disagreeable to some persons. This acidity may be converted into a sugary flavour by exposing them to the sun, which converts the acid into saccharine matter. This phenomenon is analogous to what goes on at the ripening of most fruits. The Oca, when treated in this way, loses all trace of acidity, and becomes as floury as the best varieties of Potatoes. According to M. Weddell the Oca should be exposed to the sun from six to ten days. In Bolivia this operation is performed in woollen bags, which appear to facilitate the conversion of the acid. To obtain this result, the bags should contain no more tubers than are sufficient to form a thin layer within the bag. If the action of the sun is continued for several months the Ocas become of the consistence and sweet taste of dried figs; they are then called Caui. The Caui is cooked by steam, the tubers being placed on a bed of straw, which keeps them from contact with the water over which they are cooked. In Bolivia, and more especially at La Paz, the Oca is cultivated to double the extent of the Potato. The price is also twice as high as that of the last-named vegetable. *Journal of Hort. Soc.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—This house should now be gay with such things as Achimenes, Clerodendrons, Allamandas, Gardenias, Stephanotis, and other showy plants from the stove; for without the assistance of these it is hardly possible to produce a first rate display at this season. And if the house can be kept rather close, many of our most showy stove plants will be more at home here while in bloom than they would be in the stove; and the length of time which they retain their beauty renders it very desirable to grow them largely for this purpose. To do these justice, however, the house should be cleared of Ericas, and such plants as are soon injured by a close confined atmosphere, so as to be able to keep it closer and moister than would suit these; for very few of our stove plants will do any good in a temperature that is regulated for Ericas and such-like plants. If the permanent occupants of the beds and the twiners, however, are such as require a free circulation of air, the house must not be kept so close as to injure them. But where Passifloras, Ipomœas, Mandevilla suaveolens, Tecomas, Bignonias, &c., are grown for covering the roof—and Orange trees, and other things that enjoy a fair amount of warmth and moisture while making their wood, occupy the beds—the hardier stove plants will form the most suitable decoration for the next three months. Go over the twiners frequently, and regulate the growth before the shoots get entangled; but avoid keeping them tied too closely, for they are never seen to advantage unless they are allowed to hang in their own natural and graceful manner. Any sickly specimen must be frequently examined for insects, and means used to get rid of the pest immediately it is perceived, otherwise it will soon spread to adjoining plants, and be vastly more difficult to eradicate than if taken in time. It just occurs to us that it may be interesting to many buyers of new plants to learn that Achimenes Sir Trecherne Thomas is a splendid thing—good habit, fine round flower of medium size, and novel; very rich colour. A. Chirita, about which a good deal was said, is in the way of the old multiflora, with larger flowers; but, in our opinion, it is not nearly so fine a thing, and is hardly worth growing. Gloxinia Duke of Wellington is good, but not quite as fine as we expected that it would be. It is, however, well worth having, and is probably one of the best in cultivation. STOVE.—The stock here will now be growing very rapidly, and must be afforded sufficient space to allow of the perfect development of the foliage and the formation of compact handsome specimens. The atmosphere of this house can hardly be kept too moist, and the plants should be sprinkled over-head morning and evening, and every available surface kept constantly moist. A slight shade will be indispensable for tender plants in active growth for a few hours on the forenoons of bright days, but this should be used as sparingly as is consistent with the perfect safety of the foliage. Plants that are known to suffer from the direct action of the sun's rays should be placed in a shady part of the house, or kept together at one end, where they can be shaded without interfering with plants that require plenty of light. Mealy bug and black thrips will require to be looked after here for some time to come, and the utmost diligence must be used to keep these pests in check. ORCHIDS.—If previous directions have been properly attended to there will be little to do here beside attending to the ordinary routine of affording the plants a thoroughly moist atmosphere, repotting any specimen that may require it, and sponging the foliage as may be necessary to keep it perfectly clean.

FORCING DEPARTMENT.

PINERY.—If not already done, the plants expected to show fruit next January should have their final shift at once, in order to get the pots well filled with roots, and the growth completed before winter; for if they are kept growing into the winter it will be all an uncertainty about their showing fruit early in spring. Indeed there is no certain means of inducing the Pine to show fruit at that season, but getting the growth well matured in autumn, and allowing them a short rest, giving no more water to the soil than merely sufficient to keep the roots in health, and then subjecting them to a brisk heat. Treated in this way a supply of fruit at the expected season may be calculated upon with the greatest safety, but owing to the want of convenience and necessary means, or other causes, the plants are often kept growing when they should be at rest, and the result generally is that the plants start into growth in spring instead of showing fruit. Give plenty of clear manure-water to all the stock, except those being kept dry with a view to getting them to show fruit soon, and endeavour to secure rapid growth, now that it can be done without etiolation. Keep the atmosphere thoroughly moist, but avoid heavy syringings. Plants growing in the open bed must be well supplied with water at the root, giving a thorough soaking of manure-water as often as may be necessary. VINERIES.—Attend to previous directions, keeping cool and moist where the fruit has been cut, in order to preserve the foliage in a healthy state as long as possible, and get the Vines well charged with organised matter, which will be of the utmost importance to next season's crop. Give plants, fruiting in pots, a liberal supply of manure water, as also those being prepared for the same purpose next season. Keep a sharp look-out for insects everywhere, and lose no time in eradicating them. MELONS.—Young plants must have careful attention to keeping the shoots thin and regular over the bed, for there is no time to be lost after this season, if a crop is to be secured. Earth up as the roots reach the outsides of the hills, using strong loam, and making it quite firm, so as to avoid rank growth. Those swelling their fruit should be kept moist, but avoid frequent waterings of the soil by giving a good soaking. Examine the stems frequently for canker, and apply quick-lime to the affected part immediately it is perceived, first scraping off the decayed part; also avoid, as much as possible, cutting or mutilating the plants, and causing bleeding, which is the ordinary cause of this disease. Plants that have ripened their fruit and are in good health, if cut back, and the soil well soaked with tepid water, will soon start into growth, and set a second crop of fruit. They should not be allowed, however, to carry a large crop.

FLOWER GARDEN AND SHRUBBERIES.

Late sown annuals should be thinned out as soon as they are well above ground, for if left to grow too thickly they spoil one another, and never make half the display plants do that are allowed plenty of space, and which are grown strongly from the first. Attend to staking such of the herbaceous plants as require it before they get blown about and injured, and do not huddle the stems together, as is too frequently done. The early flowering bulbs, as Tulips, Hyacinths, Turban Ranunculuses, &c., will now be ready for taking up, and should not be left in the ground after the decay of the foliage, as, if wet weather occurs, they will be making fresh roots, which weaken them for next season. On light dry soils American plants will be greatly benefited by a good soaking of water after flowering, and the finer specimens should be mulched, to assist in keeping the roots moist during the growing season. Attend to the propagation of the better varieties of Pentstemons, which are exceedingly useful plants; also see to having a good stock of the border Picotees and Carnations, which are invaluable for cutting; and although now discarded from the parterre, should not be overlooked. Cuttings of these, if put in before the wood gets too hard, root as freely as Pinks.

FLORISTS' FLOWERS.

PINKS will still demand extra care. The pipings, or Grass, may be taken off, cut across at the second joint, and placed under hand-glasses on a gentle bottom-heat; they will soon strike root. CARNATIONS and PICOTEES should be disbudded immediately. Occasional waterings with weak liquid manure will still be found serviceable. Offset TULIPS which are turning yellow in the foliage may be taken up, placed in paper bags with the name written outside, and hung up in a place where there is a free circulation of air. As the bulbs on the main bed become fit to remove, place them in their proper compartment in the cabinet; the skin and root may remain on till thoroughly dry, when they may be safely removed. Water Dahlias during dry weather; it will also be serviceable to mulch the surface of the soil with rotten manure. Trap earwigs and other destructive insects.

HARDY FRUIT AND KITCHEN GARDEN DEPARTMENT.

Proceed with nailing in the young wood of wall trees, and see that they are perfectly clear of insects; also stop any gross shoot, and endeavour to secure a fair supply of bearing wood all over the tree. Gross shoots that were stopped early in the season should be divested of all the laterals except one, or, if they can be spared, removed altogether. Keep the breast-wood on Pear and other wall or espalier trees closely stopped in, and attend to thinning the fruit where the crop is too heavy for the strength of the tree. Look to preparing Strawberry runners for forcing next spring. If not already done, a good breadth of Brussels Sprouts should be planted on very rich deep soil; for if not got in at once, the crop will be but poor, and it is very desirable to secure a good supply of this most useful winter green. A fair supply of Savoys and Broccoli, &c., should also be planted at once. Continue to plant out Celery as ground can be spared, and keep it well supplied with water. Cauliflowers and other strong growing things will be greatly benefited by an occasional watering with manure-water. Keep the hoe in action on dry days; cut Box edgings in showery weather, and endeavour to have all neat and clean.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending June 29, 1854, as observed at the Horticultural Garden.

June.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind.	Rain.
Friday 23	27	30.139	30.103	77	52	64.5	58	59	S.W.	.00
Satur. 24	28	30.159	30.078	77	52	64.5	60	60	S.W.	.00
Sunday 25	[illegible]	29.987	29.853	81	61	71.0	61	61	S.	.01
Mon. 26	1	29.690	29.651	68	48	58.0	62	61	S.W.	[illegible]
Tues. 27	2	29.790	29.725	65	49	57.0	59½	60	S.W.	.17
Wed. 28	3	29.649	29.611	68	43	55.5	58	60	S.W.	.06
Thurs. 29	4	29.615	29.590	71	41	56.0	58	59	S.W.	.00
Average		29.861	29.801	72.4	49.4	60.9	59.5	60.0		0.24

June 23—Uniformly overcast; very fine; clear.
— 24—Overcast; very fine; clear at night.
— 25—Cloudy; very fine; overcast; slight rain.
— 26—Cloudy; fine; partially overcast.
— 27—Fine; sudden heavy showers; cloudy; rain.
— 28—Cloudy and fine; showery; clear; cold at night.
— 29—Overcast; cloudy; very fine; clear and cold at night.
Mean temperature of the week, ¾ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending July 8, 1854.

July.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 2	73.3	52.4	62.8	10	0.65 in	1	3	2	—	5	8	7	2
Mon. 3	74.8	52.2	63.5	13	0.78	1	3	2	—	5	7	9	1
Tues. 4	76.7	52.2	64.4	7	0.85	—	4	2	1	2	11	[illegible]	1
Wed. 5	78.4	52.2	65.3	10	0.59	1	1	4	1	5	8	5	—
Thurs. 6	77.0	53.0	65.0	10	0.45	—	3	1	4	5	8	5	2
Friday 7	74.4	53.4	63.9	16	0.34	1	1	4	2	5	8	4	3
Satur. 8	74.5	51.4	62.9	15	0.46	—	1	4	1	1	10	[illegible]	4

The highest temperature during the above period occurred on the 5th, 1852—therm. 97 deg.; and the lowest on the 4th, 1851—therm. 37 deg.

Notices to Correspondents.

FERNS: *G N.* Shake your Fern seed over finely sifted peat and sand pressed firmly in a garden pot. Place it in a damp shady hothouse, and leave it to its chance. If *good* it will grow without further precaution. Should circumstances prevent your keeping the house damp, then you must place a bell-glass over it. You may try the experiment at any convenient season.

FRUIT-TREES: *Tamina.* It is impossible to say what has been the cause of disease in your Espalier Apple-trees, without knowing the condition of the roots; whether these have got into a subsoil of naturally bad composition, or one too wet or too dry. Dead and dying branches frequently result from excessive dryness at the root, taking place after several previously wet seasons. It is not likely that the iron wires to which the branches are trained would have caused these to canker, especially if the wires have been kept painted, as they ought to have been.

INSECTS: *J R.* The Ribes sanguineum is infested by numbers of females of a scale insect, which appears identical with that of the common Vine. The minute larvæ are being hatched in vast numbers from the midst of the downy matter, so that not a minute must be lost in cleansing the tree, by rubbing off as many as possible, and then painting the stems over with a mixture of soft soap, sulphur, a little spirits of turpentine, and some tobacco-water.—*J C M.* Your Strawberries are attacked by numbers of the millepede Julus pulchellus. Your ground must be very foul. Sink some slices of Potatoes, or some damp Moss, in different places in your beds, and examine it every other morning, and destroy the Juli.—*S X.* The black insects on your Bean stems are the common aphis Fabæ. They will certainly be detrimental to the crop. Dip the plants in lime water, and syringe well with plain water. *W.*

NAMES OF PLANTS: *A S.* We are obliged to request a short delay in answering the inquiry from you and another correspondent. —*Hill Street.* It is an Aristolochia; what species we will say next week.—*Flora.* Apparently Clerodendron Kæmpferi.—*F H S.* Rhododendron ferrugineum, and some Poplar or Willow. The wool has no value that we know of.

HOLLIES: *Lichfield.* Your Hedgehog Holly has died of being transplanted in April—you should have taken the end of August. If the smooth Holly is recovering you have been fortunate.

PELARGONIUM: *Ignoramus.* A Pelargonium has irregular flowers with a deep canal leading from the bottom of its cup some way down the flower stalk. A Geranium has regular flowers, and no canal.

STRAWBERRIES. *J K.* The Strawberry, which you have named the Carolina superba, partakes of the flower of the White Carolina; but the fruit was bruised by carriage, so that the paper, which accompanied the Strawberries, was saturated with juice; and this juice dried on the paper like syrup, sweet, adhesive, glossy, and brownish coloured. Strawberry juice does not usually possess these properties.

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

TURNIP SOWING.

SUPERPHOSPHATE OF LIME, made from Bone, which is the best Manure for Root Crops (see the Royal Agricultural Society's Journal, Vol. vi., part 2). PERUVIAN GUANO, NITRATE OF SODA, BONE DUST, SULPHURIC ACID, and all other Manures of known value. The Peat Moss Charcoal Company have appointed the undersigned Sole Agents for the Sale of this fixer and distributor of Ammoniacal matter. They are also Sole Agents (in London) of the Patent Sanitary Company for the sale of their "Nitrogenised Carbon."—Apply to Mark Fothergill & Co., 204a, Upper Thames Street, London.

SUPERPHOSPHATE OF LIME, Turnip Manure, Guano, Bone Dust, Sulphate of Ammonia, Gypsum, Agricultural Salt, Grass Manure, and other Fertilisers, of superior quality, on sale, at the Coprolite Mills, Durham Wharf, Deptford Creek, Greenwich.

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures.
Wm. Inglis Carne, 10, Mark Lane, London.

PEAT CHARCOAL, free from adulteration of any description, the finest Deodoriser known, and afterwards forming one of the most valuable Manures. Invaluable in Private Houses, Hospitals, Cesspools, &c., and tends more than anything known to the sanitary condition of a City. Prices, free on board in Dublin, 40s. per ton; sacks charged only half price when returned in good condition, free of expense. To be had in any quantity on application to the Wigan Coal Company, 4, Luke Street; Mr. S. Frazer, Ironmonger, Mary Street; Mr. G. Reade, 113, Grafton Street; or T. Bridgford & Son, 48, Lower Sackville Street.—Dublin, July 1.

SEWAGE CHARCOAL MANURE.—This highly fertilising Manure, which is Peat Charcoal completely saturated with London Sewage, will be found most efficient for every species of crop; more especially for Peas, Beans, Turnips, Mangold Wurzel, and other root crops. It will produce a greater return for the outlay than Guano or any other Manure at an equivalent value: it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained at the SEWAGE MANURE WORKS, Stanley Bridge, Fulham, at 4l. per ton, and in quantities less than half a ton, at 5s. per cwt., for ready money only; and in quantities not less than a ton, will be delivered at the London Termini of the Railroads free of charge for cartage. No charge for sacks.

It may also be had from Messrs. G. Gibbs & Co., 26, Down Street, Piccadilly, Agricultural Seedsmen, Agents for London: and from all the other Agents of the Company.

THE LONDON MANURE COMPANY'S WHEAT MANURE, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. Edward Purser, Sec.
Bridge Street, Blackfriars.

THE FOLLOWING MANURES are manufactured at Mr. Lawes' Factory, Deptford Creek:—Turnip Manure, 7l. per ton; Superphosphate of Lime, 7l.; Sulphuric Acid and Coprolites, 6l.

Office, 69, King William Street, City, London.

N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

Note.—By employing this Manure, at least half the cost of the best Peruvian Guano is saved, and, at the same time, all its valuable effects produced.—See Certificates.

THE "ECONOMICAL" MANURE.—The reports from this year's customers fully support the high character this valuable Manure obtained last year, and parties in immediate want of manure can be supplied with any quantity on the shortest notice. 1¼ to 1½ cwt. per acre is the proper quantity to be used, and must not be exceeded. Price 12s. per cwt., packages included, and put free on to the Railways in London, Manchester, or Birmingham. All particulars in the Company's pamphlet, to be had gratis, with samples, at the British Economical Manure Company's Offices, 10, Mark Lane, London, or sent free on applying to

Benjamin Coveney, Manager.

Note.—For Turnips and Root Crops generally, where the seed is sown or the plant out of the ground, and in cases where from any cause it is weak, this Manure, mixed with about its own quantity of earth or ashes, may be put on the surface with great effect, and will be found to speedily force the growth of the plant, and give it an extraordinary vigour; or, as it quickly dissolves, it is not too late to apply it as a top-dressing for grain crops where the plant is sickly or the crop patchy.

All orders promptly executed.

⁎ Parties are referred to this paper of the last few weeks for the letters of those who have used the Manure with great satisfaction this year and last.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. Nesbit, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and dispatch.

Gentlemen desirous of receiving instructions in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

BALANCE OF FACTS IN FAVOUR OF

RICHMOND and CHANDLER, who have, in competition with the best selected CHAFF CUTTERS of the most celebrated makers in the trade, carried off the highest prizes against all comers.

COPY OF TESTIMONIAL.

"Early Court, Reading.

"Gentlemen,—I beg to hand you a cheque for your Corn Crusher; I must add, at the same time, that nothing can exceed the goodness of the Machine. I have found in it all I can wish, and, moreover a very superior finished Machine, and a pattern for other makers. (Signed) "Geo. Shackell.

"Messrs. Richmond & Co."

Address—Richmond & Chandler, Manchester; and South John Street, Liverpool.

CHAFF-CUTTERS, of the best workmanship, 25s.; Two-Knifed Chaff Engines, from 63s.; Mills for Bruising Oats and Beans, from 45s.

WILLIAM DRAY and CO., Agricultural Implement Manufacturers, Swan Lane, Upper Thames Street, City.

BARTON'S PATENT STABLE FITTINGS and ENAMELLED MANGERS.—These Fittings have all the newest improvements, and are the only patented invention of this description.

James Barton, Iron Founder, Smith, &c., 370, Oxford Street, a few doors East of the Pantheon.

COLLEGE of AGRICULTURE and CHEMISTRY, and of PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.

Principal—J. C. Nesbit, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

YORKSHIRE AGRICULTURAL SOCIETY, open to the United Kingdom.—The Seventeenth Annual Meeting will be held at Ripon, on the 2d and 3d days of August next. The entry closes on the 19th of July. Free transit for Stock, and half rates for Implements are conceded by the railways of the district, except the Great Northern Railway Company, who have declined this concession. Prize sheets and forms of Certificates are now ready, and may be had on application to the Secretary.

Kirk Deighton, Wetherby, July 1. John Hannam, Sec.

BATH and WEST of ENGLAND SOCIETY for the ENCOURAGEMENT of AGRICULTURE, &c.

Prizes for Essays 1854.

Cereal Crops	£15 0 0
Dairy Management	15 0 0
Water, Animal and Steam Power, applied to Agriculture	15 0 0
Agricultural Dwellings	15 0 0

The particulars of the Subjects to be treated of, and the Conditions of Competition, may be had on application to H. St John Maule, Secretary, Bath, or N. Roberts, Assistant-Secretary, Exeter; to whom all Communications for the Editor of the Journal may be enclosed.

The Journal Committee are authorised to remunerate writers of papers on other subjects in certain cases at their discretion.

ROYAL AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND.—The Society's SHOW at ARMAGH, in the Province of Ulster, will take place on the 9th and 10th of AUGUST next, when Premiums and Cups to the amount of 1200l. will be offered to competition for Farm Stock, Implements, &c.

Very favourable arrangements have been made with various Railway and Steam-Boat Companies for the carriage to and from Armagh, of Stock, Implements, &c., duly entered. Thus the Companies of the Ulster, the Ballymena, the Dublin and Drogheda, the Dublin and Belfast Junction, the Dundalk and Enniskillen, have agreed to carry all articles to and from the Show free, so also has the County Down Railway, excepting Horses. The Southern and Western, and the Great Midland Railway, will charge on articles going, but make no charge on articles returning, provided they have not been sold, or have not changed hands.

The City of Dublin Steam-Boat Company will carry to and from Dublin and Belfast, free by their boat, once a week; and the Belfast Steam-Boat Companies will charge articles going to the Show, but carry free those returning unsold.

The Committee have also arranged with the Agents of the Whitehaven, Morecombe, Ardrossan, Carlisle, Greenock, Glasgow, and Stranraer Steamboats to convey Stock, &c., at half freights to and from Belfast.

All entries must be lodged not later than 19th July.

Prize Sheets, and Forms of Entry, to be had on application to Robert Cochran, Esq., Secretary to the Local Committee, Armagh; or, to me, at the Society's Offices, 42, Upper Sackville Street, Dublin. Thomas Harkness, Secretary.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—PROGRAMME of LINCOLN MEETING.

Thursday, July 13.—Trial Yard open at Twelve o'clock at noon, when the public will be admitted, at Ten Shillings for each person, to view the Trials of the Steam-engines.

Friday 14, Saturday 15, Monday 17, Tuesday 18.—Trial Yard open at Nine o'clock in the forenoon, when the public will be admitted on each day at Ten Shillings for each person, to view the Trials of the Steam Engines, Barn Works, and other Agricultural Implements and Machinery generally.

Wednesday 19.—The Implement Yard open to the public from Seven in the Morning till Six in the Evening; admission, 2s. 6d. each person.

The Judges to inspect the live stock and award the prizes.

At One o'clock (or as soon after as all the judges shall have delivered in their awards) the public to be admitted into the Cattle Yard, and to the Exhibition of Farm Poultry, on the payment of Ten Shillings each person, at the Special Entrance; Members of Council and Governors of the Society being admitted by Tickets to be purchased at the Finance Department of the Society at the Show Yard.

N.B. Notice will be posted up over such entrance when the judges have completed their awards. At Eight o'clock in the Evening the Yard will be closed.

The Dinner of the Society in the Pavilion adjoining the Show Yard, at Four o'clock: the doors open at Three. The Judges' Awards of Prizes for Live Stock will be read.

Thursday, 20.—The General Show Yard of Cattle, Horses, Sheep, Pigs, Farm Poultry, and Implements open to the public from Six o'clock in the Morning till Six in the Evening; admission 2s. 6d. each person.

Friday 21.—The General Show Yard open to the public from Six o'clock in the Morning till Six in the Evening; admission One Shilling each person.

General Meeting of the Members in the Guildhall, at Ten o'clock in the forenoon.

The Agricultural Gazette.

SATURDAY, JULY 1, 1854.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Wednesday,	July	5—Agricultural Society of England.
Thursday,	—	6—Agricultural Imp. Society of Ireland.
Wednesday,	—	12—Agricultural Society of England.
Thursday,	—	13—Agricultural Imp. Society of Ireland.

We have received samples of bine, indicating the miserably blighted state of the Hop Plantations in Kent. The attack is so late and so severe, that recovery seems hardly possible. On this subject we may refer the reader to an extract in another column from Mr. Paine's admirable article on the Hop in Blackie's "Cyclopedia of Agriculture."

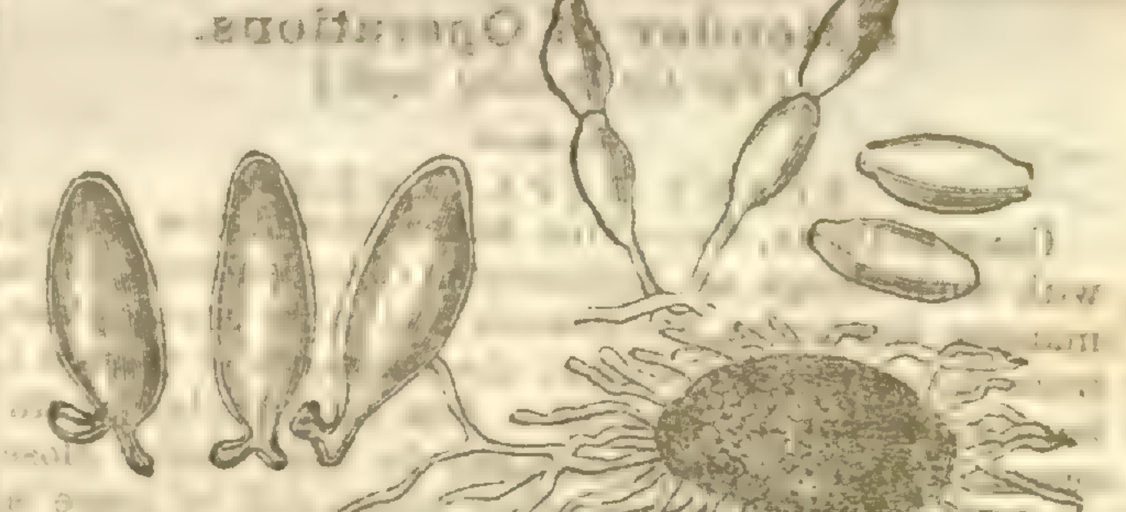
We have received from Cirencester the examination papers by which the agricultural intelligence of the students at the College has just been tested. The whole series, from the commencement of these sessional examinations, already forms a very full catechism of the practice and science of cultivation; and we believe that it might be usefully consulted by those who select the subjects to which the English Agricultural Society annually directs the attention of its essayists. We remember hearing, at one of the late weekly meetings of that Society, the remark made that members would render good service by suggesting useful subjects, from which the annual list might be compiled. It may be allowed us to refer those who have charge of this matter not only to the catechism thus in process of edition by the Professors of the Royal Agricultural College, but also to a list of 150 subjects prepared for the use of Farmers' Clubs, and published in this journal some years ago (No. 50—1845).

As regards the former, or the contribution to it of this session, we add that we have been promised permission to select from among the returns to these papers such replies, especially in the agricultural department of the examination, and in that of agricultural chemistry, as may be interesting to our readers. We are glad to know that previous publications of this kind have contributed, as they naturally must, to extend the reputation of the College, which is rapidly rising to that position in the estimation of the agricultural body which it has now for a long time deserved.

Serious complaints are made in the public journals of a new disease which is attacking the Wheat, both in the east and west of England, appearing at the base of the stems in the form of little mouldy patches, and ultimately affecting the ear. The disease, however, is by no means new; it is well known, not only in this country but on the continent, and is far from being confined to Wheat, but luxuriates equally on other cereals, and on many indigenous Grasses. It is mostly confined to the sheaths of the leaves, and, when that is the case, does not affect the ultimate produce much more than rust or other diseases confined to the foliage. Indeed, we have never seen it do serious injury, but it is asserted by Léveillé that it sometimes prevents the production of perfect corn, and the testimony of several observers seems in favour of such a view during the present season. It is, however, by no means so general an affection as rust, and we trust that the ultimate injury will not be serious, or at least that the disease will not be likely to maintain its virulence.

Its comparatively rare occurrence may perhaps be owing to the circumstance that true sporidia do not seem to be produced in the sporangia, except in very warm districts. Our specimens are without this form of fructification, and such was the case with samples received by Dr. Léveillé from different parts of France, though Dr. Castagne had found individuals with fruit in the provinces of the extreme south.

The parasite, to whose presence the disease is due, is the well known *Erysiphe Graminis*, DC., which



is distinguished from other common species by the sporangia having numerous white filiform appendages, mixed with the creeping mycelium, which forms cushion-like spots. The naked spores of the mycelium are oblong, with a constriction frequently at either extremity; the asci are large and oblong, and in Castagne's specimen contain eight sporidia. We have represented one of the sporangia magnified, with its appendages and mycelium, some of the naked spores fallen and *in situ*, more highly magnified, and three of the asci under the same magnifying power. *M. J. B.*

The analyses of the "Economical" manure, in another column, indicate a very variable composition, not only as to the proportions, but the actual presence of its ingredients. The former might well arise from the difficulty of taking an average sample—the crystals of the several substances being left of considerable size, and the whole being very imperfectly mixed; but the entire absence of gypsum from some samples, and its presence in large quantities in others, cannot be explained in this way.

We have been asked to delay our publication of these analyses until the result of this year's experience of the manure is known; this, obviously, we cannot do. The actual composition of the substance is an independent fact, of course altogether unaffected by those results for which we are asked to wait; and we should long ago have published it, had our attention been earlier directed to it, as we much regret it was not. We

remember, some years ago, a discussion arose as to the relative economy of spending 10*l.* on oilcake or guano. In the comparison of the two that was made, it was urged that a ton of guano, distributed on the several crops of a rotation, would produce so many more cwts. of hay—so many more bushels of Wheat, Barley, and Beans—so many more tons of Turnips, &c., and *these* were valued in order to get at the effect of the investment in the manure; whereas, on the other side, it was said the oilcake, besides its increased produce of meat, would result in so much manure at 3*s.* 6*d.* per cubic yard, one-third of which might be put to the credit of the purchased food. So credit was taken on the one side for the *market value* of the manure, and on the other for *the agricultural effect* of the manure, and this we thought not fair towards the oilcake; for the agricultural effect, and not the market value, was the point which alone determined the question at issue—namely, the "economy" of the investment in guano and oilcake respectively. The case is altogether different in the instance before us—the "economy" of an investment in the "economical" manure is determined, previous to any known results of its application, by the actual market value of its ingredients—and these, accordingly, we have given in another column, and should long ago have given had we known them. Analyses by Dr. Voelcker, Professor Apjohn, and Mr. Nesbit, must be considered conclusive, and to the remarks by the two former gentlemen we direct the attention of our readers.

We understand the manure to have arisen out of some plan proposed, and, if we mistake not, patented, by a French gentleman for the better management of farm manure—in which alum and iron salts were employed, with the alleged effect of hastening decomposition, while, at the same time, the products of that decomposition were fixed; and even now, the "economical" manure is, we believe, recommended for its usefulness, not only independently, but as an agent in the economical management of farm-yard dung. Be this as it may, it is plain that whatever value the mixture possesses may be attained, at about one-third the price at which that is sold, by any one who shall be at the pains to purchase the ingredients, and grind them together himself. We enter here on no discussion of the agricultural value of the substance, or of the curious questions arising out of the many published testimonials to this point, on which we throw no doubt whatever—it is sufficient, for the present, to have pointed out the market value of the ingredients of which the manure is compounded, and the consequent inaccuracy of the title claimed for their mixture.

AGRICULTURAL STATISTICS.

The want, at this season of the year, of some more reliable data than what newspaper reports afford of the good or bad prospects of the coming harvest, has become a subject of general complaint, and whilst the dependence of this country upon foreign supplies of corn renders it of immense consequence to us, and which dependence every year is increasing, there is nothing being done by Government to supply it. The extent to which this country is dependent on foreign supplies of food, and the rapid advance our imports have made in the last 35 years, are matters for serious consideration. In the seven years ending 31st December, 1834, the importations of Wheat and wheaten flour amounted to 7,400,000 quarters; in the next seven years, to 10,300,000; in the following seven years to 16,400,000; and in the six years ending 31st December, 1854, they will have attained the enormous amount of 30,000,000 quarters, (upwards of 25,000,000 having been received in the five years to the end of 1853); so that our imports of bread corn in 34 years have increased from one to five million quarters per annum (the imports of other grain and of cattle having gone on increasing in something like the same proportion), and we are now dependent on these supplies for one-fifth of our consumption, (this year our wants having been one-third). To a country so situated, some general and carefully estimated return of the prospect of the coming harvest must always at this period of the year be wanting, and is this year particularly so, as, during the approaching 12 months, we shall be more than ever dependent upon our own growth; for we shall begin our consumption immediately at harvest on the new growth, with no stock of old to assist it; foreign granaries, like our own, will be empty, and the supplies from abroad for the next 12 months must be very small. There are other considerations, too, which this year increase the importance of an early preparation for a moderate harvest—among which we must not omit that we are not likely to get any supply from the Black Sea or Russia, countries which have been giving us nearly half our supplies.

I do not know what means the French Government has of calculating its resources; but, judging from the very accurate information it promulgated last year of its approaching harvest, and the early steps it took to meet the deficiencies, it must possess a machinery of considerable value. As early as June last year, the French Government commenced purchasing Wheat in England, and were enabled, for several months, to buy of us, under 45*s.* per quarter, what we had afterwards to replace at 70*s.* to 80*s.*; and to encourage importation the French ports were early thrown open to vessels of all countries to receive grain and corn duty free. All taxes and duties on transit were repealed, and a flow of food into the country was encouraged by every means. At the same time all export was prevented; and by this early vigilance the markets all through France have been kept supplied at prices from 10 to 20 per cent. lower than in England, notwithstanding that France has had no foreign resources to apply to that were not open to this country. So we see that France possesses a machinery for acquiring information which we are without; and by possessing this machinery, was enabled to foresee its approaching wants, and, foreseeing them, to take measures in time to supply them—and did so, partly by drawing supplies from this country, and partly by forestalling us in the markets we had to apply to—and in this way it gained its foreign supplies at a cost greatly below what we have had to give, and still more so, as compared with what it would have had to have paid had England as early been in competition in seeking its own supplies. But for this information, and its early wise measures, France would not have sought its supply sooner than we; none of the Wheat we exported at so much loss to the country last autumn would have left us, and it is probable that much of the supply to France would have been obtained through our merchants, and corn must have been as dear in France as in England. It is a fact, ominous of the coming wants of France, and worthy of our notice at this moment, seeing the information it obtains and the grounds upon which the French Government act, that it has within the last week extended the period for the receipt of grain duty free, and its other measures to encourage importation, and prevent exportation, to the 31st December (and the King of Naples has done so also), the more especially that the reports from the farmers of this country are conflicting, for whilst they agree in the good appearance of the crop as regards the quantity of straw, they by no means speak well of its healthy character; and seeing how dependent we are on the weather, even with the best promises, and that we can place little reliance upon foreign resources to supply any home deficiency in the coming year, a Government enquiry that should embrace all Britain, both as to the prospect of the coming crop and of the stock on hand, is particularly needed. *Hewitt Davis, June 28.*

THE AGRICULTURAL COLLEGE.

The Sessional Examination of the students was brought to a close last week. The following are among the results of it:—

Examination in Practical Agriculture.
First Class, in order of merit.

Chancellor	Fell	Molony
Austen Leigh	Bowstead	Brickwood
Wakeman	Palmer	Myatt
Hester	Rome	Morgan
Wilkinson	Cheales	Rotheram
Broughton	Mant	W. Browne
Owen	Peckitt	Field
Kitchener	Tousey	Cuppage
		Hawthorn

The following were at the head of their class in the other departments:—

Organic Chemistry.
David Fry——Horatio Chancellor (equal.)

Inorganic Chemistry.
1st, T. F. Wilkinson 2d, E. D. Brickwood

Veterinary Medicine and Surgery.
1st, Horatio Chancellor 2d, R. R. Stephens, Leonard F. Peckitt

Geology and Zoology.
1st, Matthew Fell, 2d, Lonsdale Bradley, Horatio Chancellor, W. R. Whiteway

Civil Engineering and Surveying.
1st, Lonsdale Bradley 2d, George Mant

The Prizes for the best Register of Cases at the Veterinary Hospital were adjudged to
1st, L. F. Peckitt | 2d, E. D. Brickwood | 3d, Thomas Rome

Those for the best Laboratory Books to
1st, David Fry | 2d, F. Tombs | 3d, Thomas Bowstead

The Prize for the best Essay on an Agricultural Subject to Horatio Chancellor.

THE PIG.—No. II.

The Breeding and Management of Pigs—*continued* *from page* 410.

The Chinese Pig.—This breed of pigs is composed of many varieties, if not perfectly distinct kinds, and they are distinguished by many peculiarities in colour, frame, and general features. The true-bred best white Chinese pigs are beautifully white, both in skin and hair. The general character of the Chinese breed may be taken as follows. The skin is remarkably thin, and will divide or break into crevices when the animal is highly fed. The hair is thinly set, and rather soft, with a few fine bristles. The snout is rather broad, with short head, and wide cheeks, almost overhung by an immense neck; the eyes bright and fierce, and very small fine prick ears; broad, high chine, so that, with the neck, if neck it can be called—for when fat it partakes much of the general carcase—combined with a short back, broad loin, short thighs, and a belly nearly trailing on the ground, from the extreme shortness of its legs, and still shorter tail, the whole would, as has been fitly observed "resemble a well-filled feather bag, without shape or symmetry." It is a most uncommon feeder, eating any kind of food, and becomes in every part so fat and well fed, that only a very small part of the snout is useless offal. The flesh is very delicate and fine meat, when fed upon meal, and not made too fat; but if farinaceous food is withheld, and the feeding should partake much of animal matter, or oily compounds, the flesh itself becomes all fat, oily fat, and the thin delicate skin will crack, and display through these crevices the almost liquid fat beneath. The prevailing tendency of this particular breed is to accumulate fat; and its great fault, the absence of lean flesh. When well fed they will, at 18 months, attain to about 14 stones imperial in weight; and at two years, when they have reached their growth, they will weigh about 18 stones imperial. If allowed to roam at pleasure, without extra feeding, such is their tendency to fatten that they make excellent porkers. The sows, though prolific breeders, are notoriously bad mothers. The Chinese breed have been subdivided into at least seven varieties; and, like our own, these may be indefinitely extended. There is the white breed, with black or sandy heads; ears standing better, and narrower foreheads. The white small breed: this is a remarkably small animal, almost perfect in make and quality. Parkinson says:—"These are certainly pigs in miniature; their legs about 2 or 2½ inches long; ears the size of a large leaf on an Apple tree; the length of the jaw, from the snout end to the crown, about 6 inches; from the crown to where the tail is set on, about 2 feet; height about 12 inches; weight, when full grown and fat, six stones at two years old. The black variety of similar shape and beauty; this will come to a somewhat larger weight when fat. The black breed, with bald faces: these are similar to the first named; they are more prolific, quicker growers, hardier, and come to heavier weights. The large black breed: this is the largest of the Chinese breeds, and are of fine formation and great beauty; they attain great weights when well fed, reaching, in extreme cases, to 40 stones. The black and white Chinese breed are not so well made, their general character denoting careless breeding—coarse and ill-formed throughout—but they are better breeders and better nurses. The sandy, copper-coloured, or blue Chinese breed or breeds are of the larger kind, but differ little from them, except in colour. We may observe that the improvement in the breeding of the pig has not been altogether on one side from crossing with the Chinese; for although they have given more correct proportions, greater propensity to fatten, and vastly improved quality to the English pigs, yet the cross with the English breed has given the Chinese a far greater proportion of lean flesh than they originally possessed. We may further observe that it is the Chinese pig, or sub-varieties of it, that is to be found in all the eastern countries and the islands of the eastern seas; throughout Australia or the Polynesian Islands, and in some parts of Africa and the islands lying contiguous thereto.

The Maltese, Neapolitan, and other breeds of the countries bordering the Mediterranean.—These breeds are so much alike, that for the most part the description or outline of one breed will suffice for the whole. The Neapolitan pig is the progenitor of most of the improvements in our smaller breed of pigs, and more particularly of our small black species. It is to this variety that they owe their beauty of feature and frame, and their delicacy of flesh. They are nearly perfect models of the pig—compact in form and of beautiful symmetry, small in bone and offal (if offal there be), fine snout, head rather longer, with a full, plump round form, of somewhat shorter proportions than the Chinese, but altogether slightly larger in frame; they are almost without either hair or bristles, and their colour is nearly jet black. They are capital feeders, and thrive well on ordinary food; are fair breeders and good sucklers. Their predominant and most valuable trait is their extraordinary propensity to fatten at a very early age, and they produce meat of unequalled flavour and delicacy. From these two classes or breeds of pigs have sprung our principal improvements; but they have long become so intermingled with our native breeds as to preclude the necessity of resorting to this cross again. It is far better to adopt some of our improved breeds than to attempt to form a new one, which we shall attempt to show in a few remarks upon choosing a breed of pigs.

The Breeding of Pigs.—Every judicious breeder desires to propagate that breed which will yield him the greatest profit. He will have to take various circumstances into consideration; he will have to consider what course he should adopt, whether to breed for sale as stores or for fattening; his facilities for sale and for obtaining economical supplies of food; the proximity of a good market, and the peculiar demands of the population in the locality of his residence; the adaptation of his farm or other appliances for fatting or for rearing as stores; his chances of a regular sale, either as porkers, bacon hogs, or store pigs—which is likely to pay him best, and which can he most economically and profitably prepare for market. Considerations like these will direct him in the choice of a breed. Having come to a decision as to the course he will adopt, he should then visit our best agricultural shows, and, instead of attempting to breed a variety for himself, he should purchase animals of the best character he can meet with, not being remarkably fastidious either about price; good animals from acknowledged breeders are always valuable, and are best worth having. He must bear in mind one thing, and that is, that it matters little whether the breed chosen be the large or the small breed; he must see that he obtains the same general contour of frame; the same general characteristics of make and form; he must look for the compact form—

the broad chest—the wide loin and chine, the spring of rib, and depth of carcase. He must look for the well-formed head, with a sprightly, calm-looking eye, full cheek, small mouth, snout end fine, forehead rather narrow and convex, short ears and thin, and pointing forwards—the whole denoting docility. He must look for thin hair, with few bristles; lightness of offal, uniform colour; supple, thin skin, short legs, and fine bone; and that the whole animal shall exhibit a compact symmetrical frame of great beauty in form and feature. *J. C.*

AGRICULTURAL CHEMISTRY.

SESSIONAL EXAMINATION.—ROYAL AGRICULTURAL SOCIETY.

[We publish in a condensed form the replies of Mr. J. H. Barker on the following subjects.]

2. Sources of ammonia.
3. Sources of carbonic acid gas.
10. Adulteration of nitrate of soda.
15. Value of wood ashes as manure.
17. Alumina in soils.

2. Ammonia is detected in rain water by adding a few drops of sulphuric acid to about 20 gallons, and evaporating it, when sulphate of ammonia will be left. You take such a large quantity of water on account of so small a quantity of ammonia being contained in it, and you add the sulphuric acid to it, so as to fix the ammonia; the sulphuric acid unites with the ammonia, forming the sulphate of ammonia, which is not volatile at the temperature required for evaporating the water. To prove that ammonia is contained in the residual salt, you add a little quicklime to it. The sulphuric acid having a greater affinity for lime than for the ammonia, unites with it, forming sulphate of lime, and the ammonia is given off, and can be detected either by smell or by holding a glass rod dipped in muriatic acid over it, when white fumes of muriate of ammonia will be produced.—Ammonia is given off into the air when organic substances containing nitrogen decompose. Our crops generally look very much invigorated after a thunder-shower; this is no doubt partly due to the nitrate of ammonia contained in the water, the electricity of the atmosphere having united a small quantity of the oxygen and nitrogen in the atmosphere, forming nitric acid, and this, uniting with the ammonia, forming nitrate of ammonia, which is brought down by the rain, and thus stimulates our crops.

3. The principal sources from which carbonic acid is derived are, the expiration of animals, all animals breathing it and taking in oxygen; a full grown man breathes out 10 oz. of carbon in this form every day. 2d, it is always given off when organic substances decompose; 3d, all our fires are a continual source of it; 4th, it is given off from plants during darkness.

10. You detect the presence of common salt in nitrate of soda by dissolving a little in water, and adding to the solution a little nitrate of silver, when, if it be present, a white precipitate will be formed, the chlorine of the common salt uniting with the silver, form the insoluble chloride of silver. When nitrate of soda is thrown on the fire it should produce no noise, but make the flame burn brighter. If it contains common salt, a crackling noise will be produced.

15. Wood ashes are more valuable than coal ashes, on account of their containing so much more carbonate of potash, which is the principal fertiliser of these substances. Wood ashes contain about 40 or 50 per cent. of carbonate of potash, and on this account they are worth five or six times as much as coal ashes. They vary, however, as to the quantity of this potash salt which they contain, those made from leaves and young branches containing far more of it than that made from old wood. As plants require a large quantity of this salt, we see that this constituent must be contained in every fertile soil.

17. Alumina occurs in the soil chiefly in the form of silicate of alumina and as hydrate of alumina. Alumina is composed of two parts of aluminum and three parts of oxygen; and silicate of alumina is composed of one part of alumina and one part of silicic acid. Silicate of alumina in a pure form is pipe-clay; earthenware is composed chiefly of silicate of alumina, but besides this it contains oxide of iron, which gives it its reddish colour—the more oxide of iron the redder the colour. All soils, except those of a purely sandy nature, contain more or less silicate of alumina; it prevents the too great porosity of the soil, and thus prevents them from drying so soon; it also retains the manuring matters applied to the soil, and thus prevents them from evaporating into the air. Clay has also another very valuable property—that is, of abstracting gaseous substances from the atmosphere. If you breathe on a piece of clay, a smell is given off, which is due to the clay absorbing the moisture given off during breathing, and this expels some of the gases contained in it.

NOTES OF AN AGRICULTURAL TOUR IN IRELAND.—By Martin Doyle.

(Concluded from page 327).

Though it is in some degree anticipating the regular order of my little tour to refer here to the county of Wexford, I must say—in illustration of the anti-emigration tendency that well-managed small farms on which mixed husbandry is pursued are likely to produce—that the two districts of the county of Wexford known as the baronies of Forth and Bargy (the former of these more especially) have suffered less from famine and its results, and have sent out fewer emigrants than, I believe, any other equally populous parts of Ireland. An industrious system of neat and judicious culture (relatively with the ordinary Irish agriculture), embracing various crops, and the breeding and rearing of cattle, pigs, and poultry, in great numbers, considering the usual smallness of the farms, has enabled both landlords and tenants there to sustain their wonted energies and independence, though poor-rates have been heavy and rents high. Their position, however, on and near the sea-coast, with an excellent soil and facilities of manuring, give them advantages which the emigrating sections from the inland parts of the south and the west have not possessed. Besides, there are some ethnological considerations to be taken into account along with the mere physical points of soil and climate and proximity to a thriving town; the people have inherently an industrious, thrifty disposition, and orderly habits indicating self-respect and steadiness of character, with proverbial honesty. They originally immigrated in the 12th century from Wales, with the Earl of Pembroke, but not from a Celtic stock; they do not speak the Celtic tongue, nor understand a word of it; they have none of the indolence and carelessness and impulsiveness of the native peasant of Connaught or Munster, though they have some of his best qualities. Being good farmers for their circumstances and opportunities, and steady labourers, the emigration of such valuable subjects is to be deprecated; and happily few of them have occasion to leave Ireland.

But to return to Kilmallock. Part of the "golden vale," a tract of rich mellow loam, is in this locality. It is of course, then, a great Wheat district, and Potatoes used to flourish there. Here, indeed, an English farmer might venture to purchase an estate—if he could get it. It is not a little curious that Mr. Wakefield, who published his agricultural book in 1812, rated, from the most accurate inquiries, the maximum produce of Barley in Limerick at 4180 lbs. per statute acre; and of Potatoes, on soil of the same quality, I believe, in Meath, at the enormous quantity of 72,100 lbs. per acre; whereas Professor Low estimates the weight of Barley (average, however) at 1872 lbs. and of Potatoes at 17,920 lbs. for Great Britain. Mr. Low has not stated the maximum weight in these cases, but Professor Johnson does; he calculates the maximum weight of Barley in Great Britain at 4160 lbs. and of Potatoes at 67,200 lbs. The following remark of Sir Robert Kane on the foregoing produce is worth transcribing. "The mode of farming in Ireland was, in 1812, such as made it a matter of wonder that any crop at all should be obtained. It must therefore be concluded that the naturally high fertility of the soil compensated for the ignorance of the farmer, and brought the final result of Ireland in 1812, and Great Britain in 1843, to the equality of production which has been just illustrated."

Great numbers of cattle are bred and fattened in neighbouring pasture lands—mountain and plain—and altogether this district seems pre-eminently desirable to a farmer. With such soil then, and the capabilities of cultivating every sort of crop, including Flax, which grows here luxuriantly, what are the deficiencies which strike the Englishman at the first glance? He sees by far too many fields, an irregular one frequently, minute subdivisions, and a slovenly style of farming. With exceptional cases, showing that the farms have been generally in the hands of ignorant and exhausting cultivators, he compares, as he travels still onwards through the hedgeless country by Buttevant, this unembellished tract of open land with extensive undulating downs (of calcareous soil also) as in Hampshire or Berkshire, for example. His imagination reverts to the tracts around Ilsley and such districts, where, though there is bleakness, nothing offends the eye; on the contrary, farmhouses and labourers' cottages of a compact and comfortable description, at suitable and economical intervals are there indicative of a perfect system and of prosperity. There are no dilapidated walls, straggling hovels, or mean inclosures, with piebald cultivation. He sees open divisions of land under regular rotations. One portion, it may be of 100 acres, under luxuriant Wheat, carefully hand-hoed; a second, of Beans or Turnips; a third, of Barley; and a fourth, of Clover, with a continuous portion of pasture land, to take its turn of cultivation at some future day. He does not see a heap of waste land, and hardly a fence, except about the homesteads for shelter and embellishment, because there are no trespassing cattle and promenading pigs to guard against. How different about Buttevant!

Now, though hedgerows are ornamental, and generally desirable on other accounts also, in a populous land, the absence of them is better than the existence of those miserable substitutes which deform so large an area of Ireland. With respect to the fertile calcareous district about Kilmallock, an English farmer, accustomed to the working of the strong loams on a chalk subsoil, in Hants or Berks, with powerful teams and high manuring, would find the culture of the more friable and fertile loams of Ireland mere child's play in comparison, and the yield enormous. What, then, would the experienced and industrious English farmer find necessary to be done on such land as I have been describing?

Home Correspondence.

Lois-Weedon Wheat Growing.—For the information of very many applicants, most of whom, I believe, are readers of the *Agricultural Gazette*, I think it right to make public the following report of my last year's crop of Wheat, which is just threshed out. "The year 1853 will long be remembered as, perhaps, one of the worst years for Wheat, in respect to yield, ever known. Where one good farmer looked for five quarters per acre, he reaped only three; where another felt assured of four, he found it dwindle to two." Thus I wrote in November last; adding that in my own case the estimated produce was 40 bushels. This estimate was, I think, general, though not universal; for, there was one inspector with a keener eye and larger experience than my own, who warned me in my incredulity that, fine as the crop was in appearance, I should see by the scale and the bushel that the season had told on the produce and lowered it 20 per cent. He was under the mark. *The yield is scarcely 26 bushels. S. Smith, Vicarage, Lois-Weedon, June 28.*

Thin Seeding.—I wish to ask "J. B.," who has written such an excellent account of my friend Mr. Mechi's farming, but who disapproves of what he calls Mr. Mechi's too thin seeding, whether he himself has ever fairly tried half a bushel of seed Wheat or of seed Barley against twice as much, three times as much, or four or five or six times as much. If he has not, I should also wish to ask him what he would think of one peck of Wheat or even of half a peck, or of one or two pecks of Barley only. Of course, if "J. B." condemns Mr. Mechi's four or five pecks of seed Wheat, he would more than condemn my two pecks or one peck, and especially my half peck, and my two pecks of Barley; and yet I produced on the same field, on an average of four years in succession, 5½ qrs. of Wheat, and my quantity of seed never exceeded two pecks, but I varied it from half a peck to two pecks; and what will, I have no doubt, astonish "J. B.," and perhaps nine-tenths of farmers besides, still more—my crops from the half peck and the one peck of seed Wheat per acre were better than those from the two pecks. Let it always be understood also that I always sold my Wheat at the very highest market price; and as for my Barley, the lowest crop I ever had was 4½ qrs. per acre, and the highest 8 qrs. within one bushel; and these crops I sold every year, except one, for seed; and that one, which was last year, the Barley grew in the same field which had been Wheat four successive times before; I sold it at a declining market, at 44*s.* a quarter. Nay, I go still further; I am now cutting a crop of Clover in the same field, which for weight and quality I will back against any crop in England, however it may have been produced; and I intend to mow it again, and then I will drill the field with Wheat, with the drill I use and invented myself, and which deposits just as many seeds as I wish and no more; and the highest quantity of seed I will drill shall be two pecks, and the lowest quantity half a peck; and I will even now back the produce next year against any one bushel, two bushel, or three bushel seeder in the kingdom. Why, then, should I use more seed? Will any gentleman point out to me why I should throw into my land 64 or even 96 quarts of seed per acre, when I can produce, as I have done, nearly 7 quarters of fine Wheat, and nearly 8 quarters of fine Barley, from quantities of seed ranging from 4 to 16 quarts an acre only? And I do still more; for while the thick seeders exhaust their soils with every crop they produce, rendering their operations a continual series of exhaustings and repletions, my land always improves under my system, from its never being impoverished. But, according to my friend Mr. Mechi's showing, he himself puts into the ground from 12 to 15 grains of Wheat to every square foot, and of this quantity "J. B." complains that it is too small; whereas, for some parts of the crops I have referred to I used only one-eighth or one-tenth as much, and for none of them did I use more than one-fifth or one-sixth; and let it be borne in mind always that I produce crop of Wheat after crop as long as I please, and then Barley; and now this year, as I have stated, I will back my Clover, for quantity and quality, against any crop in England; and "J. B.," if he will take the trouble, shall be the judge. But perhaps I shall be told, as I often have been, that this is garden cultivation; and if so, so much in commendation of it; but no such thing, I cultivate with the plough, roller, harrows, scarifier, and horse-hoe alone; and, as I have stated, I put my seed in with a two-horse drill, invented and made by myself, and with which I can put in half a pint of seed with as much regularity as I can two pecks, or a bushel or more. Where, then, I may perhaps be asked, is the secret? And if so, I answer—in deep and thorough draining, the best ploughing I can give, never exhausting, and the feeding of my crops with such food as is proper for them. *Geo. Wilkins.*

Cottage Economy.—As you seem anxious to assist the labouring classes in acquiring habits of economy in preparing and varying their food, and so adding to their comfort, I enclose a few receipts of Scotch dishes which are especial favourites all over Scotland, and are to be seen on the tables of both rich and poor. If you can persuade your countrymen to give them a trial, you will do them a service by enabling them to feed their families much better and at less expense than they do at present. Stews, in general, are liked in Scotland, the sauce making the vegetable (of which we are fond) more palatable. But the Barley broth is the staple food; it requires but little fire in making, and may be said almost to cook itself. I may, if you approve, send some more receipts some time after this.

Barley Broth.—Take of beef or mutton, as is most convenient, about 3 lbs.; put the meat in cold water, in the proportion of 4 quarts to the 3 lbs. of meat, and a teacupful of Barley. Be careful the pot and cover are clean. A little before it comes to the boil, skim it well, and wipe the inside of the cover, then draw aside the pot, and let the broth boil gently for an hour, at which

time put to it two young Carrots and Turnips, cut in dices, two or three Onions sliced, and a little salt; let it boil till the roots are done, and the broth is rich and good. A quarter of an hour before the broth is ready, add a little Parsley, picked and chopped. For beef broth a small quantity of Cabbage or German Greens, roughly shred, to four or five leeks, cut in two-inch lengths, is a good variety. *If* there is danger of the meat being overdone before the broth is properly *lithed* or thickened, it may be taken up, covered for half an hour, and returned to the pot to heat before it is dished. The pieces of beef best adapted for Barley broth are the shin, the brisket, the flank, and the veiny piece of mutton, the neck, the shoulder, and the leg. The brisket or flank when salted for a week makes excellent broth, and the meat eats better.

Pea Soup may be made of the bones of meat used for pies, trimmings of meat, roast-meat bones, or even dripping. Put any of the above in a pot with 3 quarts of cold water; let them come to the boil; skim, and add three teacupfuls of split Peas, and two or three Onions, and a grated Carrot and a little salt. Let them boil till the Peas are dissolved, then cut down a little toasted bread, throw that into the tureen, and pour the soup over it; add a little pepper and mustard. The bones to be taken out before being dished.

Potato Soup.—This cheap and generally acceptable soup may be made of the same materials as Pea soup, or of any liquor in which meat has been boiled; pare as many Potatoes as you think will be required to make the soup of a proper thickness or mash. Season with Onions, pepper, and salt.

Minced Collops.—Mince a fleshy piece of beef, free of skin and gristle, very fine. Roll the collops into a ball, and dust a little flour over it; then brown them with a little suet in a saucepan; some add an Onion, sliced. Add a little water to them, beating them with an iron or wooden spoon, to keep them from going to lumps. Season with pepper and salt. Cover the pan close, and let them stew till tender.

M. C. J., Morningside, Edinburgh.

Gypsum and Superphosphate.—The following two letters, written for our local papers, being of general and seasonable interest, I send copies of them for your columns. *J. Prideaux.*

(1). "Having seen some cargoes of gypsum which I was informed were for the purpose of adulterating superphosphate of lime, I advise farmers and other purchasers of phosphates of lime, of all kinds, and under whatever name, to demand a written engagement on the invoice that they are genuine, and not adulterated with gypsum or any other substance. And the same with guano, which I have reason to believe is subject to the like fraud."

(2). "My caution was not against containing gypsum, but against being adulterated with it. That gypsum is produced in the manufacture of superphosphate manure is well known, and is the reverse of a reason for its further addition. The gypsum produced is no adulteration, the gypsum superadded is one: and it was not candid, towards the farmer, to confound one with the other. Manure dealers know, also, or should know, and farmers too, that burning away the animal matter of bones, and then making up the weight with gypsum, is injurious to the manure, and that the addition of gypsum to keep down the price is unfair to the upright competitor. It will be desirable for purchasers to claim, not only a pledge against adulteration, but a warrant of analysis, subject to the decision of Professor Way (on an agreed fair sample), for guano as well as superphosphate; and that farmers' clubs should form mutual protection societies against frauds in manure. The quantity of guano sold last year was probably three times more than was imported. And when we see cargoes of gypsum, brought in expressly for the adulteration of superphosphate, who shall say how far it may be carried?"

Gorse or Furze.—On the notice of this shrub in a late *Gazette*, it would appear from the quantity raised per acre to be a very valuable article for horses and cattle, as a substitute for hay, and it would be most desirable that it should be more extensively known than it seems to be; perhaps your correspondents would be good enough to give a more particular account as to its cultivation, stating the proper time and mode of sowing the seeds, and of their arriving at maturity, the process of securing the crop and manner in which the same should be given to animals, as also the course of cropping the land and duration of the crop, and of its renewal, and whether it be of an exhausting nature, and any other particulars that might occur to them to be necessary for a full knowledge of its general utility. *Inquirer.* [On these points we extract the following from the article on Gorse, in Blackie's "Cyclopedia of Agriculture:"—

The best sort to cultivate is Ulex strictus, so called, which is, however, thought to be merely a variety of the common Whin. It is more herbaceous than the U. Europæus, though of smaller and slower growth—but it cannot be grown from seed. If it be selected, cuttings must be struck or layers obtained, and these must be transplanted into the field on which it is to be grown. The more common plan, however, is to sow the seed of U. Europæus. About 10 lbs. of seed may be sown per acre, in shallow rows, of any light soil, in the month of March; the rows may be 10 inches apart, and the best plan is to sow it just as Wheat is sown in some districts:—The men opening a shallow drill with a broad light hoe, sowing the seed along it, and then covering it with the earth taken in opening the next drill. It can thus be sown for about 6s. an acre; and if 8 or 10 lbs. of seed, at 1s. a lb. be used, the first cost of the crop is not very great. Some people, however, recommend a larger quantity, and sow it broadcast; this is not a good plan, for the only difficulty which the crop has to withstand arises from the obstruction of its early growth by means of weeds, and these can, of course, be much more easily extirpated under a drill husbandry of the crop. In the second autumn after sowing, having been cleaned at intervals during both the summers, the crop will have attained a growth rendering it worth cutting; but it is well to cut only every alternate row this time, leaving every other to attain a two and a half years' growth against the following autumn; and, by pursuing this method, the half of the field is each year harvested when two years old, having had the advantage of ample room for development, during the second year of its growth, by the removal of the alternate rows. It is cut with a short and heavy hook, within a few inches of the ground, and tied up in bundles. This is paid for at the rate of about 5d. per score of bundles, each weighing about 20 lbs. Two thousand faggots may be the average produce of one acre. This, on being brought home in daily or weekly portions, is cut up somewhat by hand, the stems and very woody portions being thrown away, and the remainder crushed for use. A mallet and block is the simplest apparatus for the purpose. The Gorse being laid on the block, is first cut to bits with the one end of the mallet, armed with cross knife edges, and then smashed with the other end, before being given to cows or horses. But many more efficient and less laborious methods exist, in which this manual operation is replaced by a mechanical contrivance.]

Economic Manure.—I beg you to publish the enclosed paragraph, cut out of Dr. Voelcker's article on "Saline Manure," in Blackie's "Cyclopedia of Agriculture." It ought to be placed alongside of the advertisements which have recently appeared in your columns. *M.*

"As many saline compound manures are very efficacious, and as, generally speaking, farmers are satisfied with the effects they produce, and do not inquire if they might not purchase, in a cheaper market, at half the cost price, the same materials, we can explain how it is that in many instances artificial manures, especially compound saline manures, find purchasers, although the manufacturer takes twice as great a profit as he is entitled to. Practical examples, it is said, teach better than the best arguments; and for this reason we would direct attention to a saline manure, which has lately been offered for sale under the name of 'economic manure.' In the advertisement, this manure is described as highly economic, and possessing superior fertilising effects to the best Peruvian guano. The following analytical results, which the writer of this article obtained on analyses, indeed convinced him that the manure was fully entitled to the epithet *economic;* not, however, on account of its intrinsic value to the purchaser, but on account of the strict rules of economy which have guided the manufacturer in compounding it. The manure contained in 100 parts the following constituents:—

Economic(?) Manure.

Water	36·525
Proto-sulphate of iron (green vitriol)	23·756
Sulphate of lime (gypsum)	·860
Sulphate of magnesia (Epsom salts)	·204
Bisulphate of potash	4·677
Bisulphate of soda	10·928
Sulphate of soda (Glauber salts)	15·143
Sulphate of ammonia	2·648
Insoluble silicious matter (chiefly sand)	8·850
	100·591

It will be observed, that the manure consists principally of green vitriol and sulphate of soda, or Glauber salts, two equally cheap salts, and contains no less than 36½ per cent. of water, 5·8 per cent. of sand, or together 42 per cent. of valueless matters. The fertilising effects of green vitriol appear to be of no high order; and the really expensive and efficacious fertilising salts, namely, sulphate of ammonia and potash, have been added to this mixed saline manure but very sparingly. Nevertheless, we do not doubt that the application of this manure on some land may be followed with beneficial results; but, even taking for granted that it is very efficacious, we still feel bound to censure both the manufacturers and purchasers, the first for selling, and the second for buying a manure, which ought to be supplied at about 5*l*., and not at the price of 12*l*. per ton. We have made a careful calculation, from which it appears that any farmer may obtain the salts which enter into the composition of a ton of this manure at about 4*l*., exactly one-third of the price at which this economic manure is sold."

We add, from the *Journal of the Irish Agricultural Society*, Professor Apjohn's analysis of the same manure:

32, Lower Baggot Street, March 27, 1854.

Dear Sir,—Underneath you have the exact composition of "the British Economical Manure," which a member of our Society requested you to have analysed.

Sand	1·76	Insoluble in Water.
Peroxide of iron	1·08	
Phosphoric acid	·30	
Lime	·27	
Gypsum	20·57	
Sulphate of Magnesia	·33	
Chloride of sodium	12·76	
Sulphate of soda (anhydrous)	22·26	
Sulphate of potash	·67	
Sulphate of iron (in crystal)	38·65	
Sulphate of ammonia	1·35	
	100·00	

The amount of saline ammonia which is set down in the analysis as sulphate, was found to be ·337 per cent., and upon burning the substance with soda lime, it came out ·350; these numbers being very nearly the same, it may be inferred that no azotised organic matter was present capable of yielding ammonia as the result of its decomposition. I should not omit to mention that, when this mixture is treated with an acid, a very feeble effervescence at one or two detached points was sometimes visible, but in some experiments made with care, for the purpose of estimating the carbonic acid, the utmost which was obtained was half a grain from 100. In looking over the above results, Mr. Wight will perceive that the subject of the analysis is a purely saline manure, destitute of azotised organic matter, and containing but very minute quantities of ammonia and phosphoric acid. The most valuable salt present in tolerable quantity is its sulphate of soda, next to which comes the gypsum, and then the chloride of sodium or common salt. As to the green vitriol which constitutes 38·65 per cent. of the mixture, it is difficult to understand why it should have been employed at all, as the prevailing opinion of agriculturists and chemists is that the salts of iron soluble in water are injurious to vegetation. The salt in question, as is well known, abounds in peaty soils, and with a view to the bringing of such into cultivation, the addition of lime for the purpose of decomposing the salt of iron is generally considered indispensable. The success of the practice, however, certainly shows that green vitriol may be added without injury to soils abounding in calcareous matter, and it is even possible that its application in such cases may be productive of benefit, as the green vitriol will, of necessity, be converted into gypsum. Conducting the calculation in the manner usually adopted, and assuming that the green vitriol is replaced by its equivalent of gypsum, the supposition most favourable to the vendor, I find that "the British Economical Manure" is worth 3*l*. 8*s*. 6½*d*. per ton. It may be worth this sum as an application to a calcareous clay, but as I have already explained, it would probably be injurious to soils totally destitute of lime.

I am, dear sir, faithfully yours,

James Apjohn.

N.B.—In estimating this manure as worth 3*l*. 8*s*. 6½*d*. per ton, I have assumed, on the authority of Professor Johnson, that sulphate of soda is worth 10*s*. per cwt. Since then, however, I have ascertained that *salt ash* may be had in this city for 4*s*. 6*d*. per cwt.; so that it will be necessary to subtract 19*s*. 10*d*. from the money value already given, which will leave the "British Economical Manure" worth only 2*l*. 8*s*. 8¾*d*. per ton. J. A.

The following is a third analysis, with which we have been favoured by Mr. Nesbit:—

Analysis of sample of "Economic Manure."

	Per cent.
Moisture	18.05
Silica	3.50
Sulphate of iron	36.15
Chloride of sodium	20.19
Sulphate of soda, &c.	22.11
	100.00
Nitrogen (equal to)	.49
Ammonia	.60

J. C. Nesbit, College of Chemistry, Agriculture, &c., 38 and 39, Lower Kennington Lane, London.

Societies.

ROYAL AGRICULTURAL SOCIETY.

Weekly Council, *June* 28.—Colonel Challoner Trustee, in the Chair.

Early Tares.—The Rev. A. Huxtable transmitted a specimen of early Tares grown upon his Hill Farm in Dorsetshire, at an elevation of 600 feet above the level of the sea. The seeds furnished to him by Mr. W. H. Davis, of Marnhall, near Blandford, were sown at the end of the first week in October, and the plants were at least one month in advance of other "early" Vetches sown several days before them. The maturity of these Tares in growth and podding was in Mr. Huxtable's experience unrivalled; for, notwithstanding the severe frosts of the past April, they were in full bloom in the first week of May; and he thought it unnecessary to point out the importance of a crop which would be available for sheep feeding in the early spring.—Prof. Way remarked, that great quantities of rain fell upon the high lands in Mr. Huxtable's district, and the atmosphere there was mild but damp.—Mr. Baskerville Glegg stated that in Cheshire the farmers had generally their crop of Tares by the middle of May.

April Wheat.—Mr. Iltid Thomas, of Hill House, Swansea, favoured the Council with his experience of the cultivation of April Wheat in South Wales. He preferred it to all other varieties. He had sowed it this year on the 3d of May, and in 28 days it had grown to the height of 6 or 7 inches. The land was a miserable bottomless gravel in the coal-basin, very much exposed to every wind, at an elevation of some 500 feet above the level of the sea, where the vegetation was severely tried by the action of the copper and patent fuel smoke of that locality. The grain was strongly retained by the straw, and the Wheat therefore stood wind well. It was sown last year on the 25th April, and on account of the unfavourable nature of the season, he had a very light crop of it, otherwise it would have yielded from 32 to 35 bushels per acre. He sold the produce at 9*s*. per bushel, and for seed at 10*s*. He had found Clover to succeed very well with it. He did not think it more exhausting than Barley; it was sown at the same time as Barley, with a similar yield of crop, and fetched double the price in the market. The bread made from it was brown, but very sweet and agreeable. This April Wheat was a bearded one, and he highly recommended it for soils not good enough for other higher-bred varieties.—Sir Matthew Ridley referred to the objection offered by the millers in the north of England against the April Wheat, on account of its coarseness and thick skin. It was sown in April and yielded well, but it did not obtain a good price in the market.—Colonel Challoner stated his successful cultivation of the Talavera Wheat, which he sowed very early in the year, and found it escape the ordinary ravages to which the Wheat crop was liable.—Mr. Dent, M.P., alluded to the excellent crops of April Wheat grown by Mr. Thompson, of Moat Hall, in Yorkshire. His was a bearded Wheat, and was sown at the latter end of April.

Manures.—Mr. Andrews, of Cornwall, transmitted a statement and sample connected with his preparation of a manure which he considered highly fertilising, and at the same time very cheap.—Mr. Martin, of Elgin, communicated suggestions for the collection of manure from marine animals, to be obtained at fishing villages, by dredging, and by the employment of women and children in collecting the refuse of fishing-boats.

Rick-machine.—Mr. Lawes submitted the model of a machine he had found very useful in raising hay and corn to the tops of stacks, and for feeding the threshing-machines with sheaves. It was similar in its form and mounting to the common fire-escape; but having attached, at intervals, to an endless-revolving web, the rake-work which carried up aloft the hay or corn required to be stacked.—Colonel Challoner explained to the Council the very complete arrangements for effecting similar objects he had recently been invited to inspect at Prince Albert's Farm at Osborne.

Steam Cultivation.—Mr. Murphy, of Cork, communicated to the Council a statement of peculiarities in the construction of his single and double-action spade-cylinder machine for cutting, turning up, and pulverising the soil 10 inches deep by the draught of a single horse.

Glass Milk-Pans.—Prof. H. von Blücher, of Wasdow, near Rostock (on application to him through the intervention of M. Kreept, the Mecklenburg Consul-General, in London, and at the suggestion of Mr. George Raymond Barker), favoured the Council with the following information connected with the original black-glass milk-pans of the Pine forests of North Germany, recommended to the Society by its late distinguished foreign member, Capt. Stanley Carr, whose recent loss the members have deeply to regret:—

There are only few manufactories of glass in Mecklenburg; in regard to the black-glass milk-pans, the best are fabricated by Mr. Cleve at Karow, by Plau in Mecklenburg, and the surest and cheapest way to procure them would be to apply to the merchant, Joh Christ. Voigt at Rostock, who deals in that article, has at present about 3000 in store, and will send them direct from Rostock to London. The price for 100 pieces (extra embellage) is 27 Prussian dollars; the weight of each is 6—7 lbs. (Hamburgh), and the diameter about 17 inches (English).

Colonel Challoner referred to the great improvement he had effected in his dairy by raising it, as Captain Stanley Carr had recommended, for the purpose of promoting ventilation. This alteration of from 4 to 6 feet greater height had proved of incalculable value; it had cost him 25*l*. to effect it; but he would not for four times that sum restore his dairy to its former proportions.

Improvement in Horse Breeding.—Mr. Spooner, of Southampton, recommended the Council to take measures, with the Government, as well as with the local societies of the country, for improving the breed of horses for cavalry and artillery purposes, with the view of obtaining animals possessing a combination of activity and strength in the highest degree. He thought this object would be obtained by encouraging the breeding of good saddle-horses from the best brood mares capable of carrying 16 stones, by the best stallions, well but not thorough-bred, capable

of carrying a similar weight. He thought that such mares abounded throughout the country, although they were at present employed for draught and other laborious purposes; he considered that the class of male horses to be used, was the one now too frequently castrated, namely, a three part bred hunter, capable of carrying a heavy weight up to the fleetest hounds; such an animal readily commands some 200*l*. or 300*l*. when his excellences are known, and it may in fact be regarded as the most noble and valuable of the horse tribe. Mr. Spooner had little doubt that the system would, in a few years, result in the degeneration of the English breed of saddle horses.—Sir Matthew Ridley referred to the Government establishment in foreign countries of haras, for the express purpose of effecting improvements in the breed of horses. In the north of England good size, and absence of white colour, were points to which much attention was paid. Reference was made to the extensive agency at work in this country for the purchase of the best English horses for exportation to the continent, and to the constant advocacy, by that distinguished veteran Sir Harry Smith, of improvements in our breed of horses for military purposes, by a restoration of the best qualities of the old English hunter.

Deodara Pine.—Sir Matthew Ridley referred to the secure manner in which Deodara Pine seeds had reached him from India, and had retained all their freshness and vitality, by being enclosed in thin oiled canvas; and to the success with which trees of that Pine, 10 years old, had been transplanted from Northumberland to Warwickshire, where they were at that time growing most luxuriantly.

Hamster.—Dr. Calvert stated that rat-like animals of a large size, supposed to bear some affinity to the hamster, were effecting much damage in Yorkshire and also in Hertfordshire.

Mr. Chadwick, C.B., presented the last report of the Board of Health on sanitary measures connected with agricultural operations; and Mr. Rogerson, of St. Alban's Villa, Highgate-Rise, copies of Essays on the agricultural value of the Weardale Lime.

Adjourned to July 5.

Poultry.

Poultry.—I am a farmer, and of course have heard a great deal during this last two or three years about the wonderful value of poultry, &c.; but I shall feel much obliged if any of your correspondents will inform me how I am to make it assist in paying the rent of my farm. I want it to be to the farmer what it is to the fancier, viz., an important item; not that I desire such prices, I will be content if I can obtain 3*s*. per couple for my chickens, and from 9*d*. to 1*s*. per dozen for eggs. That is not being too covetous—is it? The principal questions to which I require answers are, I suppose, what breed must I keep (with, of course, a few hints as to the requisite management), how are eggs to be preserved, and if cross breeds are approved of? If any of your correspondents will take compassion on my ignorance, and endeavour to enlighten me, I must beg him to remember that it is the farmer and not the fancier who now seeks information. *Main Chance.*

Poultry: *A Constant Reader.* No fault can be found with your method of feeding the chickens; there are complaints, similar to yours, from all parts; but the disease is not confined to silver pencilled Hamburghs—in fact, we have been more successful with this sort than with any other variety. We can only recommend change of food, and frequent change of situation for your fowls; nothing else can be done for them.—*Charles Lyndon.* If you do not regard expense, and are anxious to get a great deal of information respecting poultry houses, &c., we advise you to get "The Poultry Book," in which you will find most copious remarks—in fact, we consider that the chief fault of the book is its dwelling too much on one point. But if you wish *multum in parvo*, and a work that gives the desired information (on feeding and rearing poultry, as well as many useful instructions for building poultry houses) in very few words, and which can, moreover, be obtained for little money, then we strongly advise you to get "Fowls," by Baily. We shall be happy to communicate with you again, if you do not find satisfactory information in the books we have mentioned.

Miscellaneous.

The Hop Blight.—"As soon as the aphides settle upon the Hops, they suck the under side of the leaves, and immediately deposit their young—the aphis louse. The lice, too, are viviparous, and they have the singular faculty of propagating their species within a few hours after their birth; and in this manner many generations are produced without the intervention of the fully formed aphis fly; indeed, upon one hill of Hops millions of lice are born and die, neither parents nor progeny having ever attained the condition of the perfect insect. When the first attack of these flies upon the Hops is severe, and early in the season, the growth of the plant is commonly stopped in the course of three or four weeks. If the attack be late—that is, about midsummer, or afterwards—the bine has then attained so much strength that it struggles on against the blight to its disadvantage, and the result is a total failure of the crop at last; for the leaves fall off, and the fruit branches being already formed, there is no chance of recovery. At this time, and in this condition, the stench from the Hop plantations is most offensive. In an early blight, however, we have many instances recorded of extraordinary recoveries; for these insects are remarkably susceptible of atmospherical and electrical changes, and on a sudden alteration of the weather we have known them perish by myriads in a night. This was specially exemplified in the Farnham district, about the middle of June, 1846, which suddenly recovered from a most severe attack, and afterwards produced the *largest crop* ever grown in that quarter. The condition of the plant, therefore, is never hopeless, however severe the attack may be, provided there is *time* for it to put forth its lateral or fructifying branches. We know also several instances in East Kent, which occurred in the same year, when the planters sold their growths on the poles at a few shillings per acre, and these same plantations so far recovered that many of them afterwards produced a crop worth from 30*l*. to 50*l*. per acre. The progress and usual termination of the aphis blight may be thus described. The flies, as before remarked, on their first arrival, immediately suck the under side of the upper small leaves of the bine, and thus they there deposit their young upon the most succulent part of the plant. The multiplication of the lice is so rapid, that the leaves become so thickly covered as scarcely to allow a pin to be thrust between them. They quickly abstract the juices of the bine, so that the leaves assume a sickly brown hue, and curl up, and the bine itself ceases to grow, and falls from the pole, the lice continuing till they perish for want of food; and thus, without the intervention of a favourable change, the crop is destroyed, and the grower may often consider himself fortunate if the plant recovers a due amount of vitality to produce a crop in the following year, for occasionally the hills are killed by the severity of the attack. This description, of course, applies only to the most severe and unusual blights."

Improvements in Cutting Roots and other Vegetable Substances. By R. Barter, M.D., Saint Ann's Hill, Blarney, Cork. Patent dated March 7, 1853. (No. 562.)—The machine described by Mr. Barter consists of a circular disc or drum, or two discs united by cross pieces with a drum or driving wheel between them, suitably mounted in a frame and having an operating surface of suitably-formed knives or cutters on each side of the said disc, or on the outer sides of the pair of discs. The discs are placed between two hoppers, and made to revolve. The inventor claims the above arrangement of apparatus. *Mechanics' Magazine.*

Calendar of Operations.

JUNE.

Farm near Chelmsford, *June* 29.—We are proceeding with our Clover and Grass crops; the former we have secured, the latter are proceeding well under rather unfavourable weather; for although but little rain has fallen on the aggregate, still, from the 23d, we have had occasional showers that greatly interfere with our hay-making proceedings. The crops are unusually light, the best Clover will not average a ton, and the Grass far below that quantity per acre; nor is there great prospect of the aftermath, as the soil is unusually dry, less rain having fallen from October last than we ever recollect in any antecedent year; February, March, April, and greater part of May having been dry, with a drying air and much sunshine; but the latter part of May and June cold cloudy weather, and up to the longest day not one warm congenial summer's day had fallen to our lot, and from Sunday last we have experienced a low temperature. Upon the whole, however, we think that the cool weather has been beneficial to the crops of Wheat, Barley, and Oats. The former has greatly improved, and has assumed a more lively colour; the ear, too, is fine, and generally throughout this district we have observed a similar degree of improvement; the plant is, however, generally thin, but upon good soils has tillered well. Upon one piece we examined yesterday we found upwards of 30 stems from a single grain, and these were not exceptions, as the average of some score or more that we counted nearly reached 18. This was upon Clover lea in good condition, but in February last not thought worth standing for a crop. Some of the stems of Wheat were covered near the roots with some substance of the appearance of white mould. This, upon examination, proved to be a fungus, but it has now entirely disappeared. Little of the Wheat midge has been observed this season; indeed, not one has been seen upon this farm—a most unusual occurrence—as for many years past myriads have been observed at the season of the Wheat coming into ear. We hardly think the average of the county will be above a medium crop; in this immediate vicinity, however, it will be above, so far as appearances justify our observation. For ourselves we say our crop was never nore promising, not only as regards Wheat but also of Barley and Oats, and we believe that such is the case upon all the light mixed soils in this county; upon cold clay subsoils, that are not properly drained, it is otherwise; the cold weather that attended the rain in May checked vegetation, and some of the Barley is turned yellow, and will be a light crop. Our Mangold Wurzel has greatly improved; the plant, however, is about one-fourth deficient. It is all hoed and singled, and if hot weather follows will grow rapidly. Our Swedes are not full in plant; wherever we drilled them with a little superphosphate and ashes they are not affected with fly, but wherever that was omitted the flies have swept them off. Guano is destructive to the seed, if the latter is drilled immediately in contact; we, therefore, sow 3 cwt. to the acre, which is ploughed in, and the seed then drilled with 1 cwt. of superphosphate of lime mixed with double its bulk of wood-ashes; the plant in all such cases is unusually free from attack by fly, but upon those acres first drilled without the superphosphate the flies have swept them all off. Upon another field drilled with Mangold Wurzel in the same way, it may be distinguished as far distant as half a mile how far the extra quantity of superphosphate was drilled in with the seed. All our land for white Turnips is prepared, and we wait until the 10th of July for sowing them. Upon the whole the excellent condition of the fallows leads us to expect an abundant crop of roots for winter use.

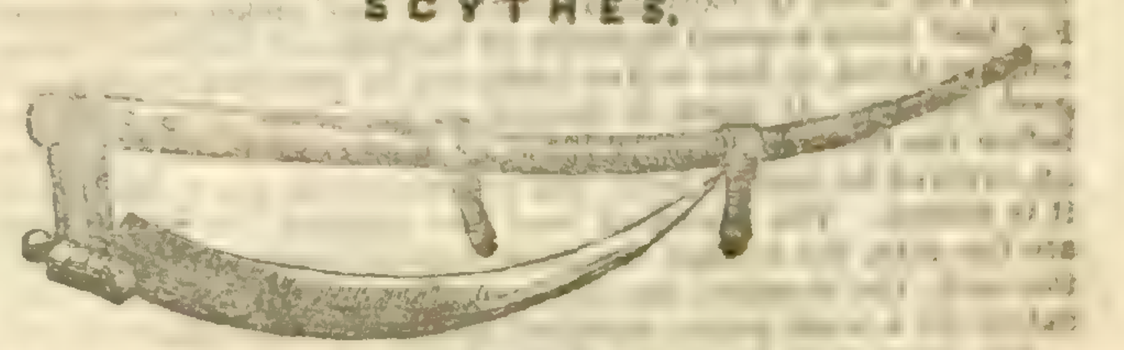
Notices to Correspondents.

Bath and West of England Society: *M.* In our report of the prizes awarded for implements at this meeting we omitted to state that a prize of 2*l*. was awarded to the drill invented by Mr. Spooner and exhibited by Messrs. Tasker and Fowle. The Secretary, H. St. John Maule, Esq., in reply to a letter on the subject, says (June 20), "I am quite unable to account for the omission of the water-drill made by the reporters. It is duly entered in my award book, which book was open to such of the reporters as were present. It certainly is a most admirable implement, and ought to be noticed."

Diseases: *A. Simpson.* It is the common rust, *Uredo Rubigo vera.* It is seldom injurious except it attacks the ear, which does not seem to be the case in your specimens. You are quite right about the dark green here being indication of rust and mildew. *M. J. B.*

Foal: *A H F C.* The disease was pleurisy, for which bleeding in the early stage, and blistering the sides of the chest, with sedative medicines (but no purgatives), internally administered, are suitable remedies. The cause was probably a cold or chill, but it was not necessarily epidemic." *W. C. S.*

SCYTHES.



BOYD'S PATENT SELF-ADJUSTING SCYTHE will last out three of the ordinary sort, and is always ready for use.

"We have seen this Scythe at work, and can strongly recommend it."—See *Mark Lane Express*, May 16, 1853.

To be had of every Ironmonger and Nurseryman in the kingdom; and wholesale and retail of WM. DRAY and CO., Agricultural Implement Makers, Swan Lane, London.

DRUMMOND'S REAPING SCYTHES.—Farmers and others intending to use this excellent Corn Scythe during the coming harvest, will please supply themselves without delay, and thereby prevent the disappointment that was experienced last year, through the inability of the Subscribers to overtake the execution of orders received late in the season.

Price of a single Scythe	11*s*.	6*d*.
Ditto of three, package included...	32	6
Ditto of six, ditto ditto	60	0

Carriage paid to London, Liverpool, Hull, Birmingham, &c.

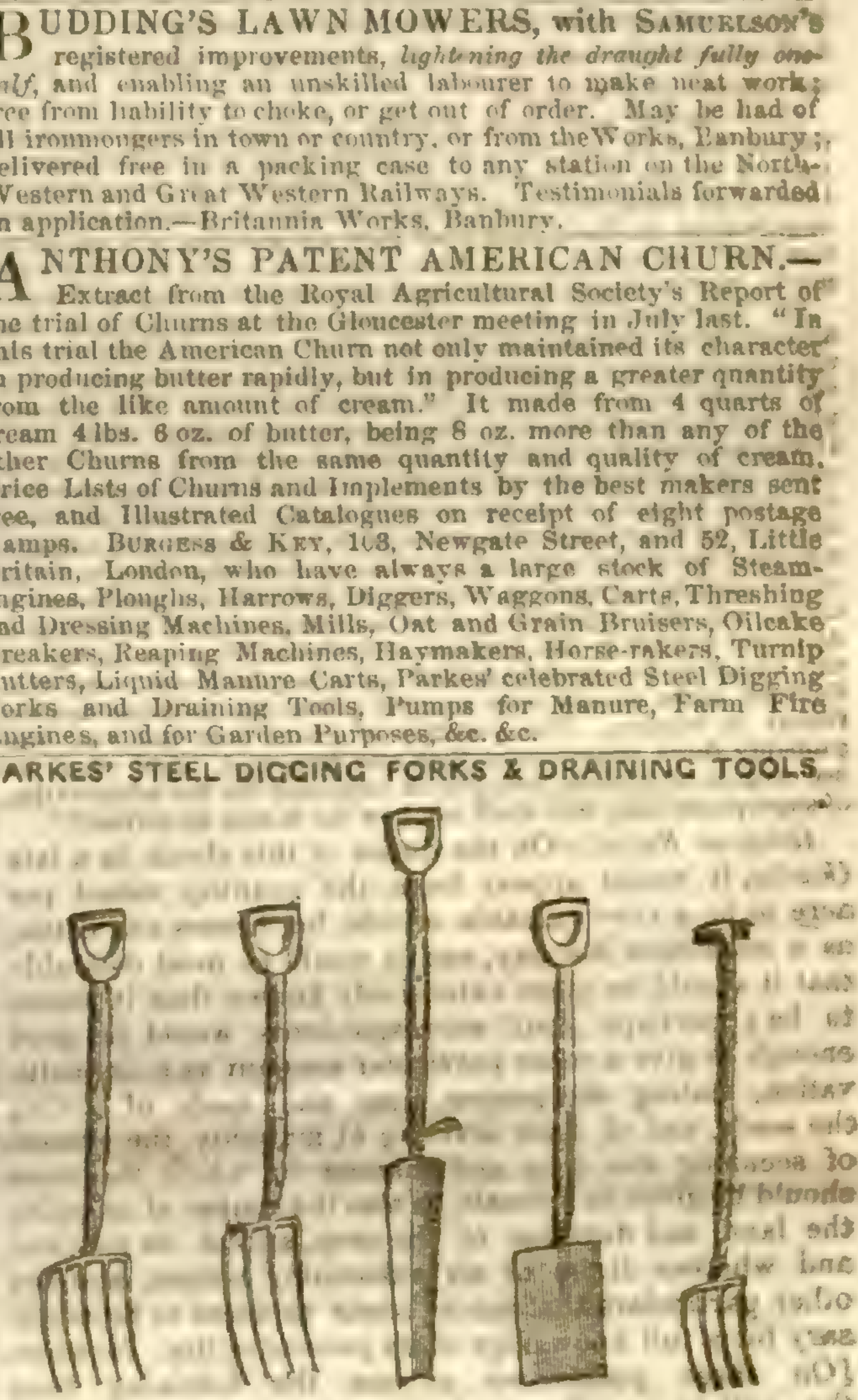
W. Drummond & Son, Seed and Implement Warehouse, Stirling, N.B.

☞ Orders from unknown correspondents must be accompanied with a remittance, otherwise they cannot be attended to.

BUDDING'S LAWN MOWERS, with Samuelson's registered improvements, *lightening the draught fully one-half*, and enabling an unskilled labourer to make neat work; free from liability to choke, or get out of order. May be had of all ironmongers in town or country, or from the Works, Banbury; delivered free in a packing case to any station on the North-Western and Great Western Railways. Testimonials forwarded on application.—Britannia Works, Banbury.

ANTHONY'S PATENT AMERICAN CHURN.—Extract from the Royal Agricultural Society's Report of the trial of Churns at the Gloucester meeting in July last. "In this trial the American Churn not only maintained its character in producing butter rapidly, but in producing a greater quantity from the like amount of cream." It made from 4 quarts of cream 4 lbs. 6 oz. of butter, being 8 oz. more than any of the other Churns from the same quantity and quality of cream. Price Lists of Churns and Implements by the best makers sent free, and Illustrated Catalogues on receipt of eight postage stamps. Burgess & Key, 103, Newgate Street, and 52, Little Britain, London, who have always a large stock of Steam-engines, Ploughs, Harrows, Diggers, Waggons, Carts, Threshing and Dressing Machines, Mills, Oat and Grain Bruisers, Oilcake Breakers, Reaping Machines, Haymakers, Horse-rakers, Turnip Cutters, Liquid Manure Carts, Parkes' celebrated Steel Digging Forks and Draining Tools, Pumps for Manure, Farm Fire Engines, and for Garden Purposes, &c. &c.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.



MESSRS. BURGESS and KEY, as Mr. Parkes Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.

103, Newgate Street, and 52, Little Britain, London.

STEPHENSON and PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1*s*. 6*d*. per yard run, of E. T. Archer, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

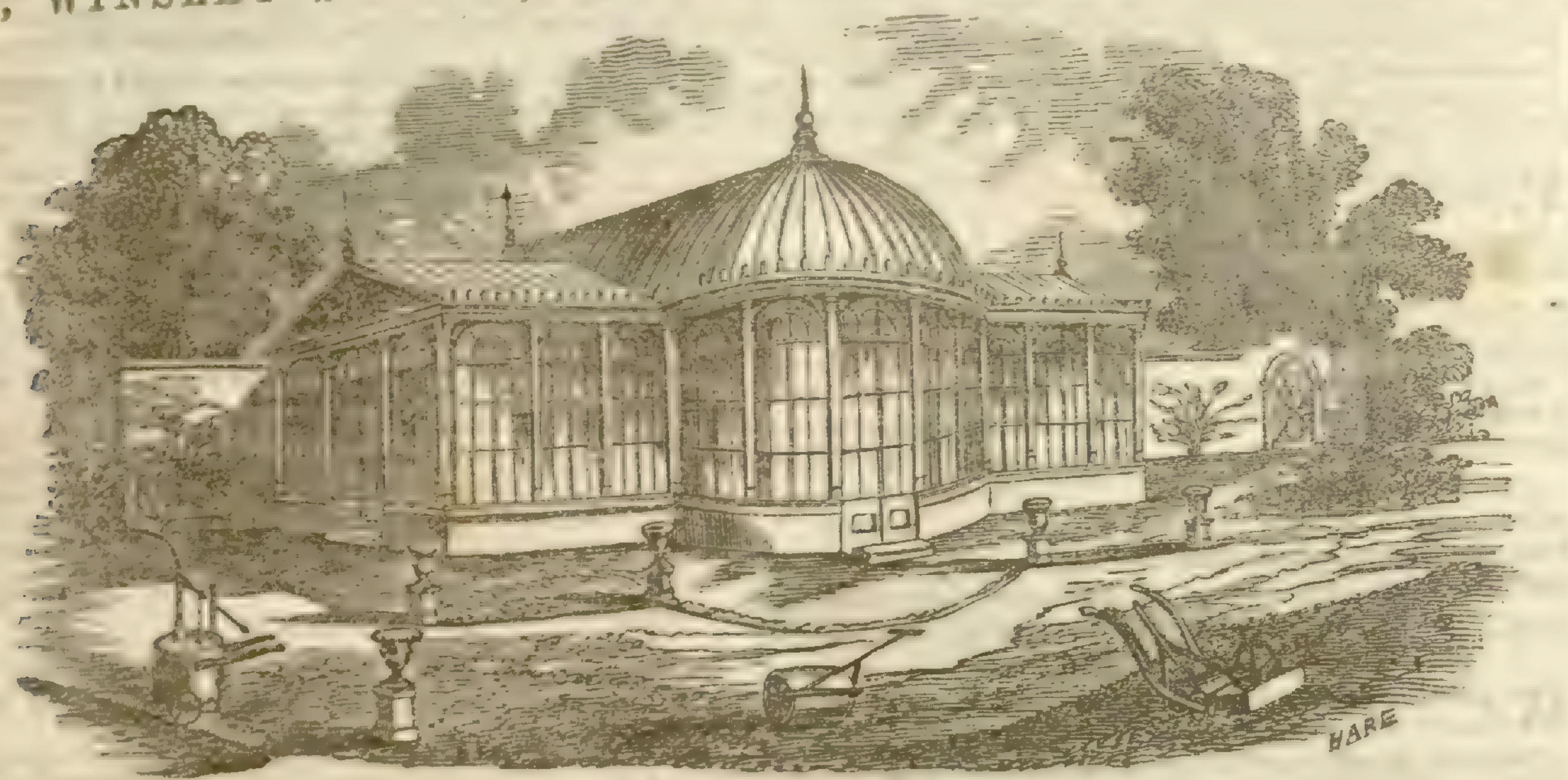
THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement J. B. White & Brothers Millbank Street, Westminster.

COTTAM AND HALLEN,

2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.



APPLICATION is requested for their NEW HORTICULTURAL LIST, containing Illustrations, Descriptions, and Prices of

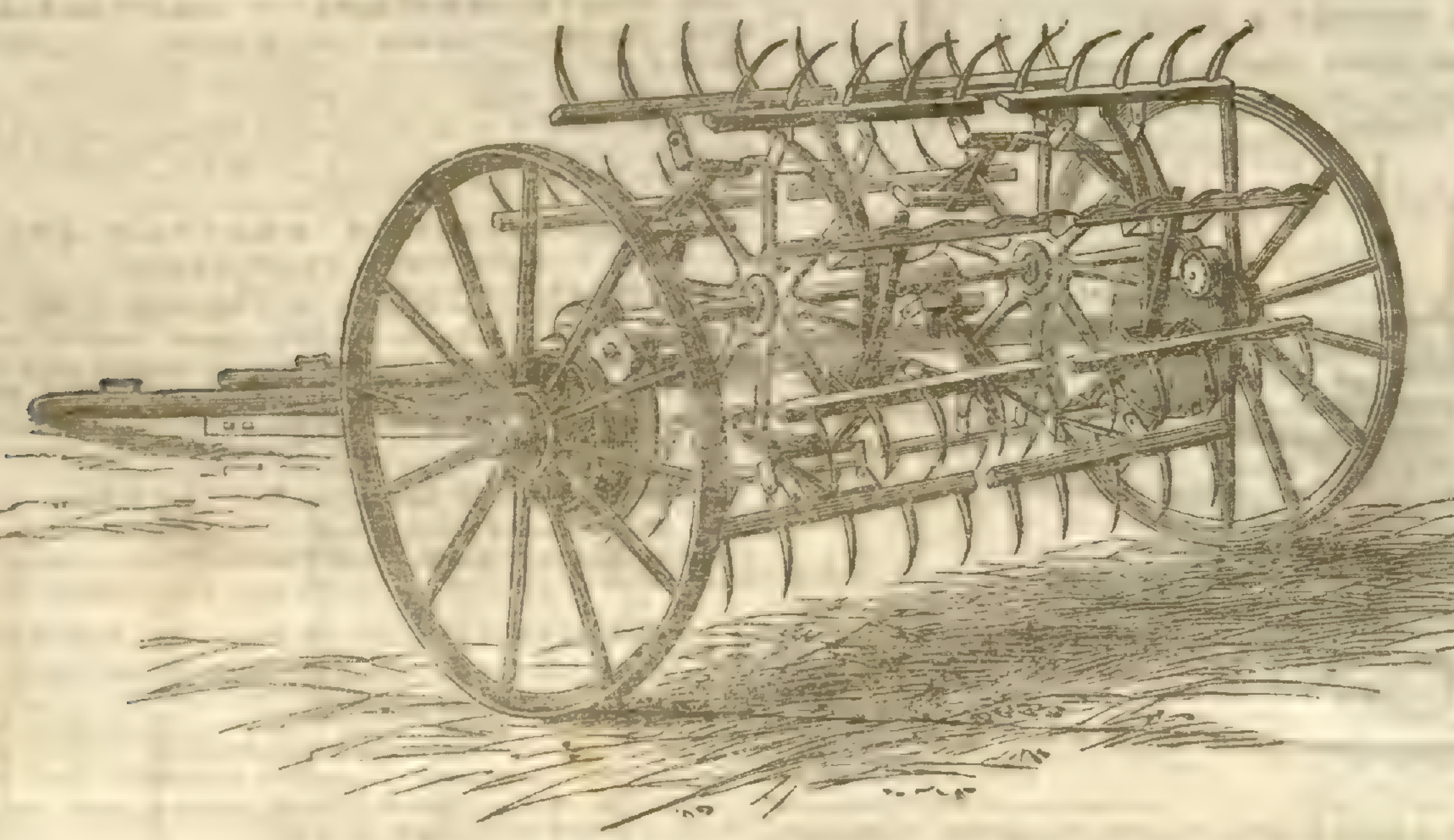
Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Syringes	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.

AGRICULTURAL LIST UPON APPLICATION.

EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

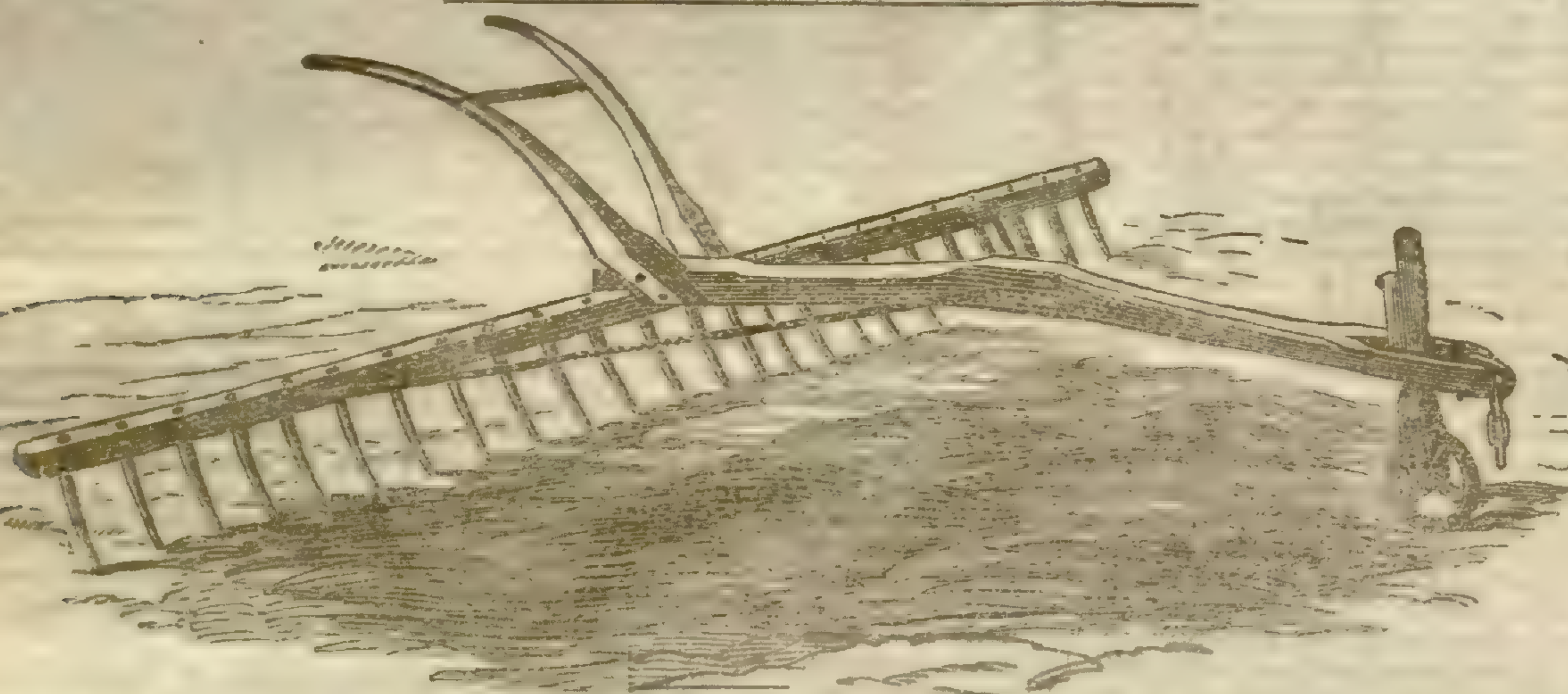


WEDLAKE'S CELEBRATED HAY-MAKING MACHINE

(ORIGINAL PATENT),

Recently improved so as not to clog, and which obtained the Silver Medal at Derby; manufactured by the Daughter of the Inventor, not complicated, and unequalled for simplicity of construction. Order immediately, so as not to be disappointed in the season, and to get them now at one-fourth of the price usually charged in June and July.

☞ Beware of spurious Machines offered by unprincipled traders as MARY WEDLAKE & Co.'s.



WEDLAKE'S NEW HORSE HAY RAKE AND DRAG,

EQUALLY USEFUL FOR STUBBLE, CORN, AND GREEN CROPS.

Only £3 10*s*. 6*d*., width six feet; the Double Size, £9 10*s*. Order early.

WEDLAKE'S

DOUBLE HORSE, HAY, AND STUBBLE RAKE,

DOING THE WORK OF 10 TO 15 WOMEN. PRICE £10, AND £3 10*s*. 6*d*.,

Both Implements recommended by Mr. J. MORTON, in the new "Cyclopedia of Agriculture:" also

OAT CRUSHERS, £2 15s. 6d.

118, FENCHURCH STREET, CITY.

Just published, price One Shilling and Sixpence,

HOW TO MAKE HAY IN THREE DAYS,

AND AT ONE-HALF OF THE USUAL EXPENSE, IN ANY COUNTY AND WEATHER; OR, HINTS TO HAYMAKERS.

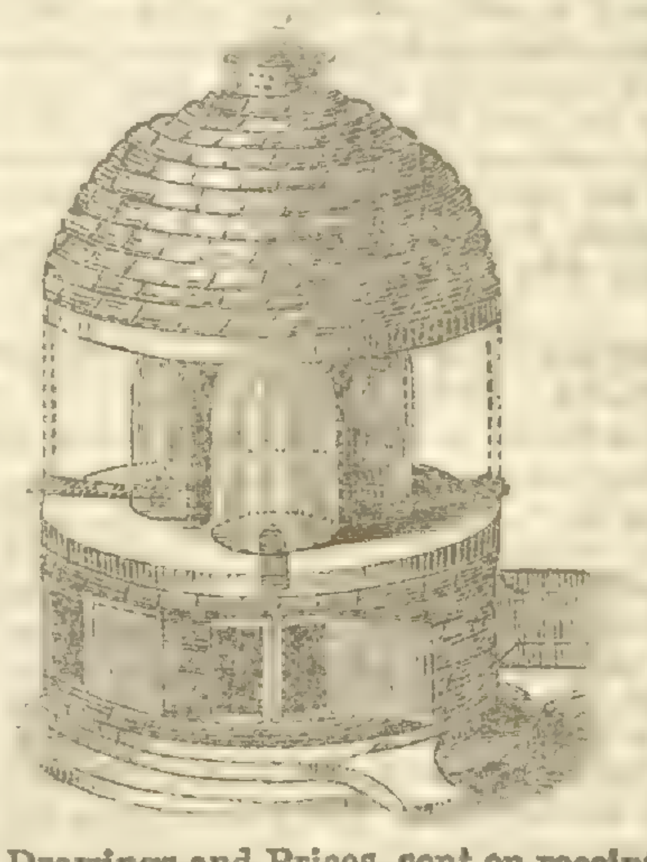
ALSO,

How to Keep a Horse for less than 9s. per Week.

118, FENCHURCH STREET, CITY.

BEEHIVES.

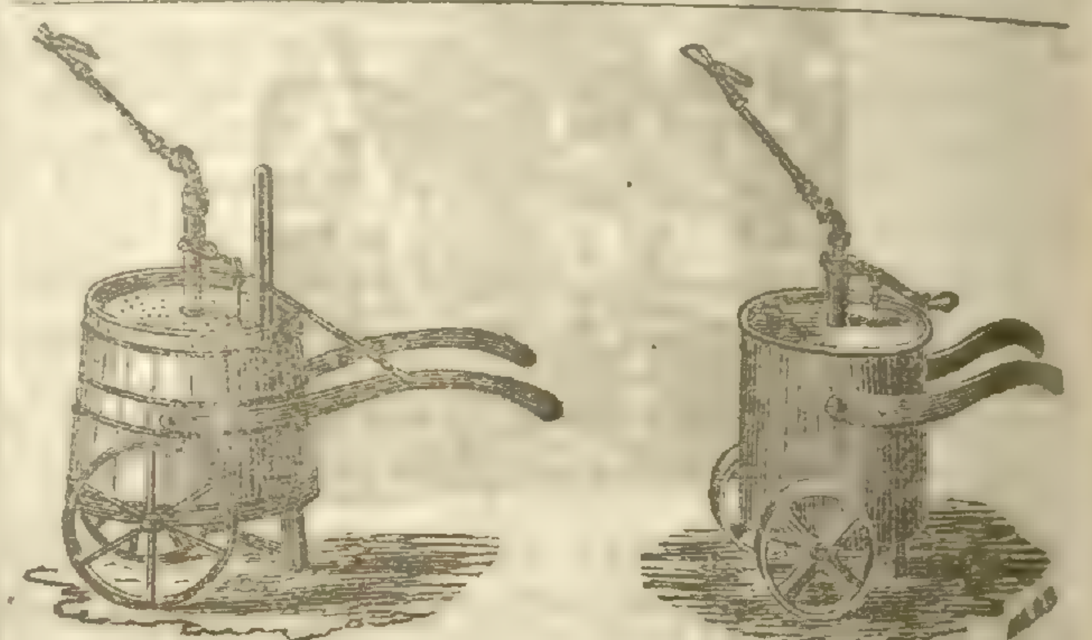
NEIGHBOUR'S IMPROVED COTTAGE BEE-HIVE, as originally introduced by GEORGE NEIGHBOUR & SONS, with all the recent improvements, glasses, thermometer, &c., price 35s., securely packed for the country.



This unique hive has met with universal commendation, and may be worked with safety, humanity, and profit, by the most timid; its arrangements are so perfect, that the honey may be taken at any time of the gathering season without at all injuring the bees.

Early applications, addressed to GEO. NEIGHBOUR & SONS, 127, High Holborn, or 149, Regent Street, London, will receive prompt attention. Their newly arranged Catalogue of other improved Beehives, with Drawings and Prices, sent on receipt of two stamps.

Agents:—Manchester, HALL & WILSON, 50, King Street; Liverpool, JAMES CUTHBERT, 12, Clayton Square; Chester, F. & A. DICKSON & SONS, 106, Eastgate Street; Glasgow, AUSTEN & M'ASLAN, 186, Trongate Street; Dublin, J. EDMUNDSON & Co., 61, Dame Street.



(Fig. 1.) (Fig. 2.)

J. TYLOR AND SON'S BARROW GARDEN ENGINE (Fig. 1), in best well painted oak tub, fitted with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 1	holds 10	gallons,	throws 30	feet high	...	£4 10
No. 2	" 15	"	" 35	"	...	5 10
No. 3	" 28	"	" 45	"	...	6 18

J. TYLOR & SON'S BARROW GARDEN ENGINE (Fig. 2), in strong tinned iron tub, well painted inside and outside, with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 10	holds 8	gallons,	throws 25	feet high	...	£2 15
No. 13	" 12	"	" 30	"	...	3 5
No. 11	" 16	"	" 40	"	...	4 0
No. 12	" 24	"	" 45	"	...	5 0
No. 14	" 30	"	" 45	"	...	5 18

A large assortment of every description of Garden Syringes, Pail Engines, Conservatory Pumps, &c., kept in stock.

Full size Syringe, on Read's principle, of the very best quality and workmanship, with two roses and one jet, 21*s*.; Plain Syringes from 10*s*. 6*d*. upwards.

J. TYLOR & SON'S Horticultural Apparatus may be obtained at these prices from any respectable Ironmonger or Seedsman in town or country, through whom alone they will be supplied, and of whom Drawings and Prices may be had.

N.B. Cost of carriage, &c., not included in these prices.

J. TYLOR & SON'S Manufactory, Warwick Lane, Newgate Street, London.

J. TYLOR AND SON'S REGISTERED GARDEN SYRINGE.—Small size, for Amateur use, **21s.** each: Large size, for Gardeners' use, **25s.** each.

By a simple arrangement this Syringe is rendered more effective than any portable Conservatory or Garden Pump ever offered to the public. It is equally adapted for Garden or Conservatory use, and is capable of discharging twice as much water in a given time as any other Syringe now in use. The arrangement consists in attaching a small flexible suction tube to the barrel of the Syringe, through which it is filled with water at every discharge of the previous contents. By this means the Syringe is always charged, and the pull-up stroke of the piston rendered perfectly easy, it having, indeed, no work to do, the barrel being previously full of water. Being thus made self-supplying, a great saving of labour is effected; and the necessity of stooping to fill the Syringe at every discharge being done away with, the direction of the water can be maintained for any length of time. It is perfectly cleanly in its action, as it is not possible for any water to get on the outside of the barrel, which is a well-known inconvenience attendant on the use of every other Syringe. Its construction is perfectly simple, and cannot get out of order; the ground-in ball valves and fittings used for filling all other patent Syringes being entirely superseded. To be had of any respectable Ironmonger or Seedsman in town or country.

J. TYLOR & SONS, Manufacturers of Horticultural Apparatus, Warwick Lane, Newgate Street, London.

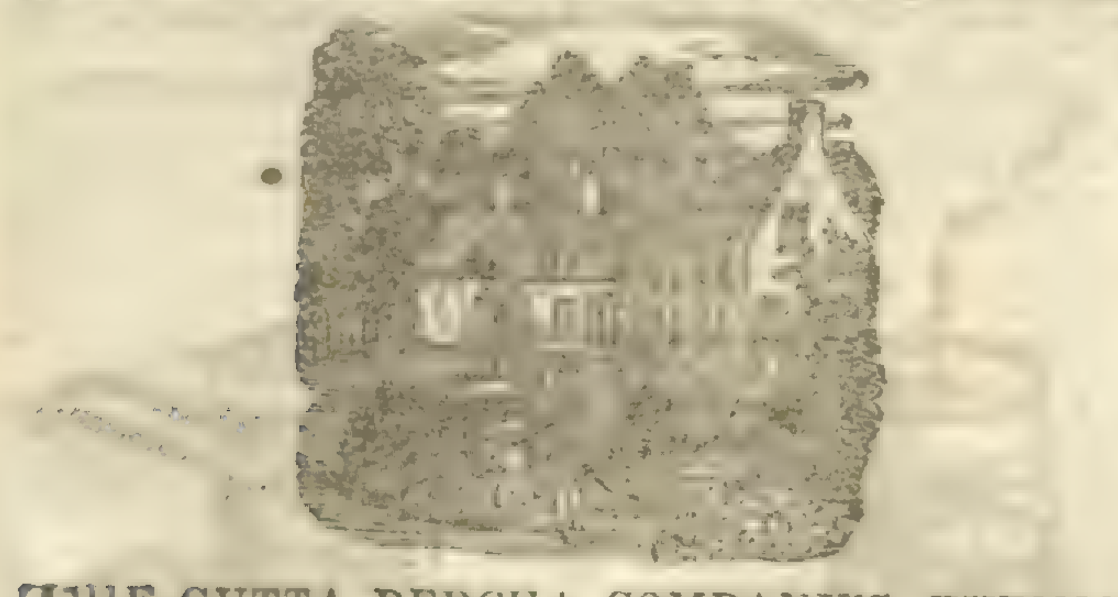
N.B. These prices do not include carriage, package, or expenses of delivery in the country.

HOSE PIPING.—GREAT REDUCTION IN PRICE.

WAITHMAN'S PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense Pressure, and much more than Leather, vulcanised Rubber, or any other Hose; and it is prepared so as to be antirot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented Inventions, the cost of manufacturing it is now reduced at least 60 per cent., which advantage is offered to the Public.—London Agents, BURGESS & KEY, 103, Newgate Street, and 52, Little Britain who on application will forward wholesale and retail prices.

FOR WATERING GARDENS, DISTRIBUTING LIQUID MANURE, ETC.

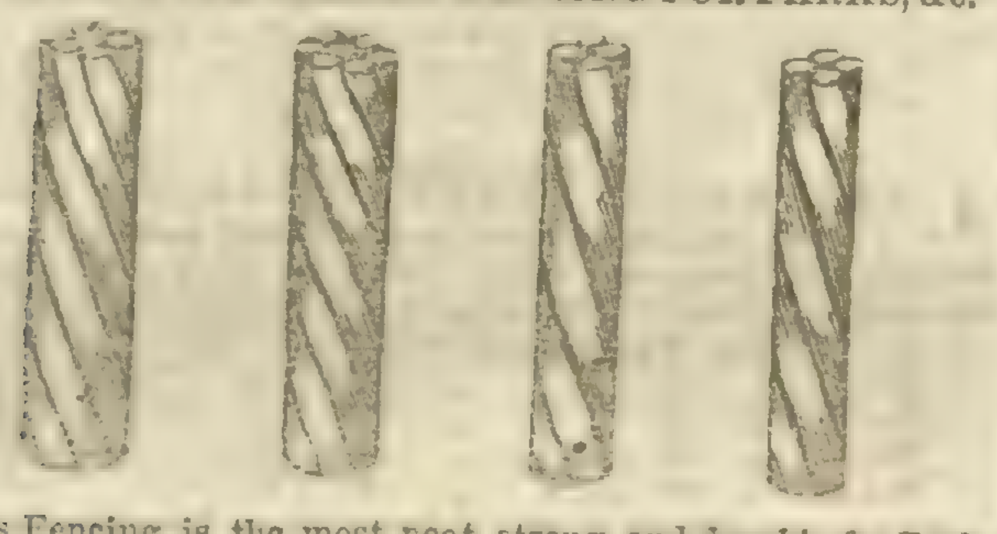
JAMES LYNE HANCOCK'S VULCANISED INDIA-RUBBER TUBING is now manufactured especially for the above purposes, and is of greater flexibility than any other description of hose or tubing. It is also manufactured to resist great pressure, suitable for attaching to the mains of water works or to tanks, or water butts of high elevations. WATERING HOSE fitted up with brass joints, branches, stop-cocks, roses, and jets complete. Vulcanised India-rubber suction pipes for pumps any length or size to order; HOSE for brewers' use, fire engines, &c. VULCANISED INDIA-RUBBER WASHERS, for Steam and Water Joints, and VULCANISED RUBBER in sheets of any size and thickness. Solid vulcanised India-rubber Tubing and Cord, for the joints of glass-doors, sashes, frames, &c.—Prices and every information may be had on application at the Manufactory, Goswell Mews, Goswell Road.



THE GUTTA PERCHA COMPANY'S TUBING FOR WATERING GARDENS, WITH ROSES AND UNION JOINTS FITTED.—27, CITY ROAD, LONDON.

H. J. MORTON AND Co., Galvanised Iron Roofing Works, 2, Basinghall Buildings, Leeds.

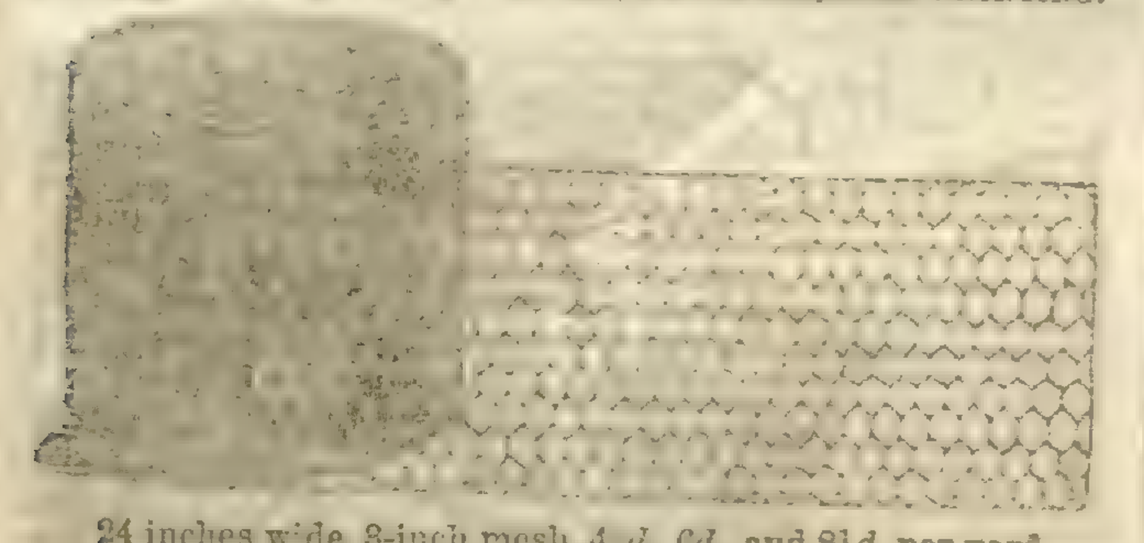
PATENT WIRE STRAND FENCING FOR PARKS, &c.



This Fencing is the most neat, strong, and durable for Parks and Agricultural purposes in use. It cannot be bent or put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply as above.

IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

H. J. MORTON AND Co., 2, Basinghall Buildings, Leeds.—GALVANISED GAME AND POULTRY NETTING, very strong and neat, NEVER REQUIRES PAINTING.

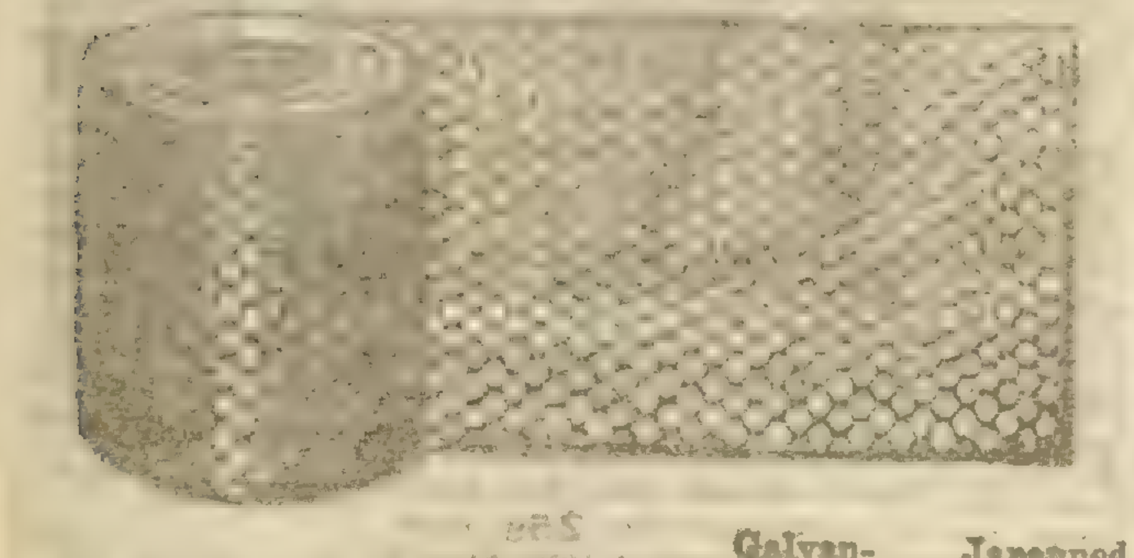


24 inches wide, 3-inch mesh, 4½d., 6d., and 8½d. per yard.
24 inches wide, 2-inch mesh, 7d., 9½d., and 1s. per yard.

GALVANISED IRON SPOUTING, for Dwellings, Cottages, Farm Buildings, &c., NEVER REQUIRES PAINTING.

Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalte Roofing Felt, &c.

GALVANISED WIRE GAME NETTING.—7d. PER YARD, 2 FEET WIDE.



			Galvanised.	Japanned iron.
2-inch mesh, light, 24 inches wide		...	7d. per yd.	5d. per yd.
2-inch	" strong	" ...	9 "	6½ "
2-inch	" extra strong	" ...	12 "	9 "
1½-inch	" light	" ...	8 "	6 "
1½-inch	" strong	" ...	10 "	8 "
1½-inch	" extra strong	" ...	14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasantries, 3d. per square foot. Patterns forwarded post free.

Manufactured by BARNARD & BISHOP, Market Place, Norwich; and delivered free of expense in London, Peterborough, Hull, or Newcastle.

TANNED NETTING, for the protection of Fruit Trees from frost, blight, and birds, and for the security of fresh sown seeds, either in Gardens or Fields, at 1d. per square yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Scrim canvass for Wall Fruit.—At EDGINGTON and Co.'s, 17, Smithfield Bars, City, and Old Kent Road, Southwark, where may be seen erected Emigrant Tents in great varieties, on their latest improved principles, and also at Brunswick Street, Poplar, near the East India Export Dock.

RIPE FRUIT, STRAWBERRIES, AND SEED BEDS.

NEW TWINE NETTING, Tanned if required, 1 yard wide, 1½d. per yard; 2 yards wide, 3d. per yard; 4 yards wide, 6d. per yard. Half-inch Mesh ditto, 2 yards wide, 6d. per yard. The Elastic Hexagon Garden Netting, 76 meshes to the square inch, effectually excludes birds, wasps, flies, &c., from fruit trees, flower or seed beds, 4½d. per square yard. Tanned Netting, 2 or 3 yards wide, 1½d. per yard: 4 or 6 yards wide, 3d. per yard.—At W. CULLINGFORD'S, 1, Edmund Terrace, Ball's-pond Road, Islington, London.

REDUCTION IN PRICE.

WEIR'S IMPROVED GALVANISED WROUGHT IRON LIQUID MANURE PUMP.

The Fittings of these Pumps are wholly of Brass, and there is no leather or other matter which can be affected by the manure.

Price, complete, with 10 feet of Flexible Suction Pipe, 4l. 15s. Terms, cash on delivery.

EDWARD WEIR, Agricultural Engineer, 16, Bath Place, New Road, London. Removed from Oxford Street.

Catalogues, with Illustrations, sent free by post.

WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

	£	s.	d.
Patent Pump	1	15	0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing	3	0	0

Larger sizes if required.

The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,

8, CRESCENT, JEWIN STREET, LONDON.

Every description of Machinery for Raising Water: Fire Engines, &c.

JOHN WARNER AND SONS, CRESCENT, JEWIN STREET, LONDON.

GALVANISED IRON TUB GARDEN ENGINE, *With Warner's Registered Spreader*,

Is strongly recommended, for durability and low price, viz., 2l. 19s., to hold 10 gallons.

Larger sizes made either in wood or iron. May be obtained of any Ironmonger or Plumber in town or country, or of the Patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Syringes of various constructions and sizes from 9s. upwards. An extensive assortment kept.

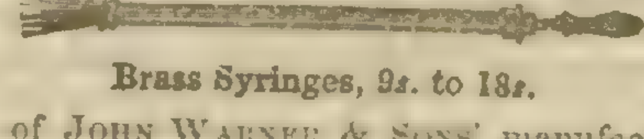
JOHN WARNER AND SONS, 8, Jewin Crescent, London, Manufacturers of FIRE ENGINES, PUMPS, GARDEN ENGINES, and SYRINGES.

Conservatory Pump, with WARNER'S Registered Spreader, 27s. 6d.

Garden Engine, with WARNER'S Registered Spreader and Wrench 3l.; with iron pail, 3l. 12s.

Patent Conservatory Pump, with WARNER'S Registered Spreader, 2l. 13s.; with iron pail, 3l. 5s.

No. 32. No. 11. No. 14.



Brass Syringes, 9s. to 18s.

All articles of JOHN WARNER & SONS' manufacture may be obtained of any Ironmonger or Plumber in town or country, at the advertised prices.

JOHN WARNER & SONS having been practical Horticulturists for many years, know exactly the requirements of both Amateurs and Gardeners. A gardener with a properly constructed pump will get through as much work in five minutes as he could with any Syringe in a quarter of an hour, and with half the labour to himself. Syringes are economical only for small houses.

No establishment offers such a variety of effective machines for hydraulic purposes, whether to supply Gardens, Hothouses, Cottages, Farms, Mansions, or Boards of Health, with every requisite connected with the conveyance and distribution of liquids.

Fountains suitable for Conservatories, Lawns, &c.

Sheets of Engravings sent on application.

JAMES SCOTT AND CO., of Glasgow, have just opened their Premises in St. Paul's Churchyard (near the corner of Ludgate-hill), and respectfully invite Ladies to inspect their magnificent STOCK of SILKS, MANTLES, SHAWLS, DRESSES, DRAPERY, LACE, RIBBONS, &c.

77 and 78, St. Paul's Churchyard; and Trongate, Glasgow.

WANTED, BOARD AND LODGING IN THE COUNTRY for a Person in Reduced Circumstances.—His friends can only afford to pay a very moderate remuneration for the same.—S. M., 15, Beaufort Buildings, Strand, London.

SMALL STOCK FARM.

WANTED, to Rent on Lease (game to be included), from next Michaelmas, a small FARM, suitable for Stock, of about 80 or 100 acres, with respectable House and good Buildings, near a Railway Station, and about 20 miles from London.—Particulars and terms to be addressed to G. W., Mr. Clayton, Solicitor, 12, Serle Street, Lincoln's Inn, London.

IMPROVED MIDDLESEX PIGS.

TO BE SOLD, some fine young BOARS and SOWS of the above kind, being the surplus stock of an amateur. Also a CANTELO'S CHICKEN HATCHING APPARATUS, nearly new.—A. M., Post Office, Turnham Green, Middlesex.

TO BE SOLD, by a Gentleman, GUTTA PERCHA HOSE, of 1½ inch diameter, and 219 feet long. It cost him, new, 8l. 15s., or 10d. per foot, and he will take 6l. for it. He has not used it more than six times, so that it may be considered as good as new.—Enquire of Mr. CHARLES WALTER, 18, Temple Street, Fleet Street.

TO BE LET, A FARM, IN SURREY.—Mr. E. RYDE, Surveyor, is instructed to Let, with immediate possession (if desired), a very eligible and compact FARM, containing about 180 acres of good Arable, Meadow, and Hop Land; situate in the parish of Farnham, close to the Railway Station and market Town. The House is a good one, and there is, in addition, a Bailiff's Residence and several Labourers' Cottages, which, considered in connection with the economy and facility of Railway communication with the Metropolis, render it equally attractive to the Gentleman seeking a pleasure Farm as to the practical Agriculturist.—Further particulars may be obtained of Mr. RYDE, at his Estate, Auction, and Agency Offices, 14, Upper Belgrave Place, Pimlico; and of Messrs. RYDE & LILLYWHITE, Auctioneers, Alton, Hants.

BADLESMERE, NEAR FAVERSHAM, KENT.

TO BE LET, A COTTAGE, containing a good Parlour, 4 Bed-rooms, Kitchen, Washhouse, Pantry, Cellar, Chaise-house, Stable, and three-quarters of an acre of productive Garden and Fruit Plantation; situate at Badlesmere Lees, 4 miles from Faversham, 7 miles from Ashford, and 4 miles from the Chilham Station of the South Eastern Railway. The situation is elevated, healthy, and cheerful, and the roads excellent.—For particulars, and to view, apply to Mr. Whiting, Ospringe, Mr. Alfred Cobb, Badlesmere Court, near Faversham; or to Messrs. Simpson & Cobb, 62, Moorgate Street, London.

HOLYBOURNE, NEAR ALTON.

TO BE SOLD, a small compact BREWERY, Malt-house, Mill, Residence, and Cottage, with Garden, Orchard, and Meadow-land adjoining, containing in all five acres, more or less. The premises are situated close to the London-road, and within a mile of the Alton Railway station.—For particulars apply to Mr. DYER, Alton.

TO POULTRY AMATEURS.—A GREAT BARGAIN.

TO BE SOLD, in one Lot, or separately, about 130 HEAD of POULTRY, consisting of Brahmas, White Poland, Lemon, Black, Silver, Cinnamon, and White Cochins; Japanese Fowls, 4 kinds of beautiful Turkeys, and Aylesbury Ducks.—Apply immediately to A. Z., care of Mr. Ball, Station Master, Needham Market, Suffolk.

COCHIN CHINA POULTRY, ETC.

EGGS FROM PRIZE BIRDS.

MR. JOHN FAIRLIE, of Cheveley Park, Newmarket, in reply to the very urgent applications from numerous amateurs, is now prepared to dispose of a limited number of Eggs, from his celebrated prize Cochins, Brahma Pootras, Scotch Bakies, Dorkings, &c., according to the dates of the orders received.

MR. PEARSON having a few COCKS to dispose of, will send young Birds of Spotted Dorking, Gold Pencilled Hamburghs, and Silver Pencilled Hamburghs at 7s. 6d. each, including package.—Chilwell, near Nottingham.

BLACK COCHIN EGGS from the best birds in England, having always taken prizes at the best shows, at 18s. per dozen, including package. Apply at the city of London Wire Works, 44, Skinner Street, London. N.B. Fowl Houses, Chicken Coops, Poultry Hurdles, and Netting, of every size and description. Illustrated Catalogues forwarded, post free, on application. A few Spanish Pullets, sisters to those sent to her Majesty's yard at Windsor, for Sale.

Sales by Auction.

FANCY POULTRY & RABBITS.—PERIODICAL SALE.

MR. J. C. STEVENS'S next Sale will take place at his Great Room, 38, King Street, Covent Garden, on TUESDAY, July 4, at 12 o'clock precisely. It will include some first-class Dorkings, from Mr. George, of Chaldon, who has recently taken first prize at Bath; Brahma Pootra Fowls and Chickens, from Mrs. Cannon and Mr. Emery; and some very beautiful Cochins, from the yards of Capt. Snell, T. Rider, Esq., and other good breeders; also a first-rate collection of blue and blue and white Lopped-eared Rabbits, and several stacks capital Hutches, the property of a well-known amateur.—Catalogues ready one week before the sale, and will be forwarded by enclosing a stamped directed envelope to Mr. J. C. STEVENS, 38, King Street, Covent Garden. These sales are held on the 1st and 3d Tuesdays in every month.

SPECIMEN STOVE AND GREENHOUSE PLANTS.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King Street, Covent Garden, on FRIDAY, July 7th, at 12 for 1 o'clock, a collection of STOVE AND GREENHOUSE PLANTS, of a Gentleman who has been a most successful exhibitor at Chiswick and the Regent's Park, the plants are grown in the best manner, and comprise all the popular show varieties of Azaleas, Ericas, Ixoras, Allamandas, Epacris, &c. &c.—May be viewed on the morning of sale, and Catalogues had of Mr. J. C. STEVENS, 38, King Street, Covent Garden, London.

ORCHIDS.

THE MOST EXTENSIVE AND VALUABLE COLLECTION EVER OFFERED FOR PUBLIC SALE, CONTAINING FINE PLANTS OF ALL THE BEST SPECIES OF THIS ELEGANT TRIBE NOW IN CULTIVATION.

MR. J. C. STEVENS is instructed to announce for Sale by Auction, at his Great Room, 38, King Street, Covent Garden, on WEDNESDAY, 12th July, and following day, the Collection of ORCHIDS of a gentleman, the character of which will at once be understood by an enumeration of a few of the principal varieties. Vanda suavis (true), four plants, Cymbidium eburneum two plants, Aerides Larpentæ two plants, Saccolabium Blumei eight plants, Lælia purpurata two plants, Phalænopsis rosea, grandiflora and amabilis many plants, Cypripedium Lowi, Uropedium Lindeni, and all the best varieties of Aerides, Vandas, Saccolabiums, Cattleyas, Trichopilias, Calanthes, Lælias, Dendrobiums, Angræcums, Miltonias &c. Catalogues are preparing.

STRATFORD ST. MARY, NEAR COLCHESTER.

GARDEN GROUND AND COTTAGE RESIDENCE.

MESSRS. SMITH AND WARD will sell by Auction, on TUESDAY, July 11, at 4 P.M., at the Swan Inn, Stratford, Five Acres of superior FREEHOLD GARDEN GROUND, planted with Fruit Trees, &c., and cultivated for the last eight years to a considerable depth, with Cottage, Barn, and other buildings complete. Situated in the village on the Turnpike from Colchester to Ipswich, and 8 miles from Ardleigh station. Particulars of Messrs. Barnes and Neck, Solicitors, and of the Auctioneers, Colchester.

THE GRAPE BLIGHT.

McADAM'S "COMPOSITION" (now used in the Royal Vineries), for the effectual prevention and cure of the Vine Mildew, is sold in 1 lb. packets, with printed directions, at 3s. 6d. each, sufficient for 18 gallons of wash.

DAWE, COTTRELL, & BENHAM, Seedsmen, London Agents, 36, Moorgate Street, City. It may be ordered through any respectable Nurseryman or Tradesman in town or country.

PAGE AND CO.'S COMPOSITION FOR THE DESTRUCTION OF MILDEW UPON VINES, BLIGHT UPON ROSES, WALL-FRUIT TREES, CUCUMBERS, MELONS, AND STOVE AND GREENHOUSE PLANTS.—Extra strong, 4s. per gallon, sufficient to make four (jars and barrels extra; in bottles, 1s. 3d. and 2s. 6d. each. 10 gallons and upwards carriage free to London. Directions for use and copies of testimonials upon application. For testimonials see whole page *Gardeners' Chronicle*, March 11, 1854, describing the SATISFACTORY RESULTS derived from its use in cases of Vine Mildew, Thrip, Scale, Green Fly, Red Spider, Mealy Bug, &c., not only without injuring the most delicate flowers or foliage, but promotes a vigorous growth; it is highly appreciated at the Royal Gardens, Osborne Palace, the Royal Gardens, Claremont, and by the principal nobility and gentry in the United Kingdom.

Finest Grasses for Lawns and Parks, and every variety of Garden and Farm Seeds, at B. PAGE & Co.'s, Seed Merchants, Oxford Street, Southampton.

MILDEW AND RED SPIDER.

BAINBRIDGE'S ALKALINE EXTRACT.—We can confidently recommend the above as a sure remedy, having used it successfully for many years both on Vines and Peaches, &c. &c. Pints, 3s.; quarts, 5s. A quart is sufficient for 20 gallons of water applied with the Syringe.

BAINBRIDGE'S GUIDE TO THE CONSERVATORY, 5s. each. Sold wholesale and retail by R. BALDWIN, Paternoster Row. Gentlemen can procure the above in any part of the country through their Bookseller, in their Monthly parcels.

Sold also by BAINBRIDGE & HEWISON, 7, Bridge Street, York.

THE CONICAL HOT-WATER BOILERS, as invented by John Rogers, Esq., are only to be obtained of JOHN SHEWEN, Ironmonger, Sevenoaks, Kent.

Contracts given for Heating.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

HETLEY AND CO. are supplying 16-oz. Sheet Glass of British Manufacture, packed in boxes, containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

Sizes.—Inches.	Inches.		Per foot.		Per 100 feet
	Under 6 by 4	at	1½d.	is	£0 12 6
From 6 by 4	„ 7 „ 5	„	2d.	„	0 16 8
7 „ 5	„ 8 „ 6	„	2¼d.	„	0 18 9
8 „ 6	„ 10 „ 8	„	2½d.	„	1 0 10
10 „ 8	„ 12 „ 9	„	2¾d.	„	1 2 11

Larger sizes, not exceeding 40 inches long.

16 oz. from 3d. to 3½d. per square foot, according to size.
21 oz. „ 3½d. to 5d. „ „ „
26 oz. „ 3½d. to 7½d. „ „ „

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern, either in sheet or Rough Plate Glass.

Propagating Glasses, Beehive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in Glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the excise duty, reduced one-half. *List of Prices and Estimates* forwarded on application to JAMES HETLEY & Co., 35, Soho Square, London.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

JAMES PHILLIPS AND Co. have the pleasure to hand their present prices of Glass for Cash:—

	SHEET SQUARES. In Boxes of 100 feet. £ s. d.	CROWN SQUARES. In Boxes of 100 feet. s. d.
Under 6 by 4	0 12 6	8 6
6 by 4, and 6½ by 4½	0 13 0	12 6
7 „ 5, — 7½ „ 5½; 8 „ 6, — 8½ „ 6½	0 15 0	14 0
9 „ 7, — 10 „ 8, 12 by 9, 12 by 10, 14 by 10	1 0 0	

Larger Sizes, not exceeding 40 inches long.

16 oz. from 3d. to 3½d. per square foot, according to size.
21 oz. „ 4½d. to 5d. „ „ „
26 oz. „ 6d. to 7½d. „ „ „

SHEET GLASS OF ENGLISH MANUFACTURE FOR ORCHARD HOUSES, THE SAME QUALITY AS WE SUPPLY TO Mr. RIVERS, and of various dimensions, always on hand.

London Agents for the Sale of HARTLEY'S PATENT ROUGH PLATE GLASS.

Glass Tiles, ¼ of an inch thick, packed in cases, containing 50, at 1l. 17s. 6d. per case. Packages 2s. each extra, but allowed for when returned.

Glass Milk Pans, 21s. per dozen; Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoys' Milk Syphons, Wasp Traps: Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the trade.

Horticultural Glass Warehouse, 116, Bishopsgate Street Without, London.

PROTOXIDE ANTI-CORROSION PAINT, for all external purposes, on iron, wood, brickwork, or stucco, is cheaper, and more durable, than any similar article.—Manufactured by CHARLES FRANCIS & SONS, Cement Works, Nine Elms, London.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the nobility, gentry, and clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out-door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice.

Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to WALTER CARSON & SON, 9, Great Winchester Street, Old Broad Street, Royal Exchange, London. No Agents. All orders are particularly requested to be sent direct.

COWS.

HARVEY'S CELEBRATED COW DRINKS, 1s. each. They have been used with unparalleled success in most diseases incidental to Cows. Full and plain directions are given with each drink for the treatment of Hoven, Maw-bound, Colds, Gargle, Red Water, the Tick or Foot and Mouth Distemper, at and after Calving, &c. A very extensive use of these drinks has proved them to be a safe and effectual remedy.

Compounded by R. HARVEY, Veterinary Surgeon, Macclesfield, Cheshire, and sold by all Medicine Vendors. Wholesale Agents, BARCLAY & SONS, Farringdon Street; and MARSDEN & SONS, Queen Street, Cheapside, London.

IMPORTANT TO

STOCK FARMERS

AND

FLOCK MASTERS.

SHEEP, LAMBS, HORSES, AND CATTLE,

CAN BE DRESSED WITH

LONG'S NON-POISONOUS SHEEP & CATTLE-DRESSING COMPOSITIONS, without any possibility of danger or injury resulting from the application. These Compositions are admitted by all who have fairly tested them to be the most effective Sheep Dressings ever brought before the agricultural public; and as they are NON-POISONOUS, and do not stain or discolour the Wool, they are gradually superseding the use of all Dipping and other Sheep-dressing preparations, composed of such deadly poisons as ARSENIC or MERCURY.

It is a fact now thoroughly established, that Long's Non-Poisonous Sheep Dressings, if liberally and judiciously applied in the dressing of Sheep and Lambs, will—in their consequent effect in removing Disease, destroying Vermin, and keeping the flock in condition—thus PROMOTING INCREASED GROWTH BOTH OF MUTTON AND WOOL—as amply repay flock owners for first outlay as artificial manures when applied to land. They are the only Sheep Dressings also, which, from the fact of their containing NO POISON, can be beneficially and safely applied to Sheep and Lambs at any age and at any season of the year.

Pamphlets containing full directions for use, and copies of the strongest Testimonials ever accorded to a manufacturer, signed by leading and practical Stock Farmers, residing in all parts of the United Kingdom, together with the names of all Country Agents authorised to vend Long's Patent Sheep and Cattle-dressing Compositions, may be obtained gratuitously on application of any advertised country Agent; or by post, sent free, of BARRY BROTHERS, AGENTS FOR JOSEPH LONG, Meriton's Wharf, and Shad Thames, London.

THE CHOLERA—ITS BEST ANTIDOTE.

SIR W. BURNET'S DISINFECTING FLUID, the original and genuine CHLORIDE OF ZINC.—Sold by all Chemists, Druggists, and Shipping Agents; and at the Office, 18, Cannon Street, London Bridge.

N.B. Beware of a spurious and low-priced imitation.

THE CHOLERA

PREVENTED BY THE DESTRUCTION OF ALL NOXIOUS EFFLUVIA.

CREWS'S DISINFECTING FLUID, Recommended by the College of Physicians. The Cheapest and Strongest Chloride of Zinc.—Quarts, 2s.; Pints, 1s.; Half-pints, 6d. Sold by all Chemists, Druggists, and Shipping Agents; and at Commercial Wharf, Mile End, London.

GLENFIELD PATENT STARCH, used in her Majesty's Laundry, and WOTHERSPOON'S machine-made CONFECTIONARY, MARMALADE, JAMS, JELLIES, &c., which gained the Prize Medal of 1851, may be had of all Grocers; Wholesale of WOTHERSPOON, MACKAY, & Co., 66, Queen Street, Cheapside, London; and ROBERT WOTHERSPOON & Co., Glasgow.

BERDOE'S VENTILATING WATERPROOF LIGHT OVER-COATS resist any amount of rain, without confining perspiration, the fatal objection to all other waterproofs, air-tight materials being unfit and dangerous for clothing, and being free from vulgar singularity are adapted for general use equally as for rainy weather. Price 45s. and 50s. A large stock for selection. Also of Capes, Shooting Jackets, Ladies' Mantles, Habits, &c.—W. BERDOE, Tailor, &c., 96, New Bond-street, and 69, Cornhill (only).

THE CRYSTAL PALACE, SYDENHAM.

GLENNY'S BALBRIGGAN STOCKINGS and SOCKS are displayed in the South End Gallery, over the garden. The elegance of these beautiful Irish Fabrics is surpassed by their great durability and comfort. Sold only by the manufacturer, CHARLES GLENNY, at his depôt, Balbriggan House, Lombard Street, and by THRESHER & GLENNY, next door to Somerset House, Strand, London.

MR. MECHI wishes it to be clearly understood, that he CHARGES the same PRICES at the CRYSTAL PALACE as at Leadenhall Street; that his manufactures are varied to suit all classes. For instance, Dressing-cases at 25s., or at 150l.; Penknives at 1s., or 21s.; Tooth Brushes at 6d., or 2s., each article being good of its sort. Mr. MECHI'S Assistants at the Crystal Palace will attend constantly to receive orders and dispose of his manufactures there.—4, Leadenhall Street, July 1.

CRYSTAL PALACE, 1854.

THE OFFICIAL GUIDE AND HANDBOOKS,

ILLUSTRATIVE of the CONTENTS of the EXHIBITION, are now on Sale, and may be had separately, at prices varying from Threepence to Eighteenpence; or handsomely bound in 3 Vols., price 4s. 6d. each. To be had at the PALACE, and at all Booksellers and Railway Stations, and of

BRADBURY & EVANS, Printers and Publishers to the Crystal Palace Company, 11, Bouverie Street.

Price 1s. 6d., free by post 1s. 10d.

LABELS FOR THE HERBARIUM,

CONSISTING OF THE NAMES OF THE

CLASSES, ALLIANCES, ORDERS, AND SUB-ORDERS,

OF

PROFESSOR LINDLEY'S "VEGETABLE KINGDOM."

So printed in large type, that they can be cut out and pasted into THE HERBARIUM.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden, London.

Just ready,

JOURNAL OF THE ROYAL AGRICULTURAL SOCIETY.—No. XXXIII.

1. Trunk Drainage ... ... J. A. CLARKE.
2. Bearing Reins ... ... Viscount DOWNE.
3. Hereditary Diseases of Cattle ... FINLAY DUN.
4. Light Land Farming ... ... J. HAXTON.
5. Finger and Toe in Root Crops ... J. BUCKMAN.
6. Sewage as Manure ... ... J. TH. WAY.
7. Origin of Wheat ... ... ESPRIT FABRE.
8. Hollow Brick Roofs, from ... ... Earl GREY.
9. Nitrate of Soda and Guano ... ... J. D. NICOL.
10. Farming of Oxfordshire ... ... C. S. READ.

London: JOHN MURRAY, Albemarle Street.

ROYAL AGRICULTURAL SOCIETY'S JOURNAL, 10 vols. 8vo, in 24 parts (pub. 5l. 15s.), 2l. 10s., 1839-49. Another Set, 8 vols., 1l. 16s., 1839-47. Also odd Parts and Volumes. A Catalogue of Books on Agriculture, Gardening, &c., Gratis.

London: JOHN PETHERAM, 94, High Holborn.

THE HORTICULTURAL JOURNAL AND FARM AND GARDEN ADVERTISER. (Garden Department by Mr. GLENNY.) Every Saturday. Price 2d.; Stamped, 3d.

All communications to the Office, 14, York Street, Covent Garden.

GLENNY'S QUARTERLY REVIEW, the First Volume, complete, 7s. No. I. of a New Volume, with Title, Preface, and Index to the First, will appear on July 12, price 1s.; post free, 18 stamps; with 16 Original Articles by the EDITOR.

London: GEORGE COX, King Street, Covent Garden.

Just published, price One Shilling and Sixpence, the Sixth Edition of

FLORA AND POMONA'S FETE. A POEM. By ELIZABETH STEELE PERKINS. The proceeds are devoted towards the funds of the proposed new church on the Coldfield in the parish of Sutton.

London: SIMPKIN, MARSHALL, & Co.; and THOMPSON, Tamworth.

Will be ready on the 1st August, Part I., of

THE FERNS OF GREAT BRITAIN, Illustrated by JOHN E. SOWERBY; Descriptions by C. JOHNSON, Esq. To contain about 46 Plates, and to be completed in Eight Monthly Parts, full coloured, at 3s.; partly coloured at 1s. 6d. per Part.

Prospectuses may be had through all Booksellers: and of the Proprietor, JOHN E. SOWERBY, 3, Mead Place, Lambeth.

Just published, price 2s.

A PLAIN AND EASY ACCOUNT OF BRITISH FERNS, wherein each Species is described under its respective Genus; and the Characteristics of those Genera given in words of common use. With a Glossary of Technical Terms. By the Rev. E. BOSANQUET.

"A useful little book for those who wish to begin the study or cultivation of British Ferns."—*Spectator.*

"The simplest treatise that has yet been published on the subject."—*Weekly Times.*

London: ROBERT HARDWICKE, 88, Carey Street, Lincoln's Inn.

In a thick volume, 8vo, with 10 new Surgical and Anatomical Plates and several Woodcuts, price 24s. cloth,

BLAINE'S OUTLINES OF THE VETERINARY ART; or, a Treatise on the Anatomy, Physiology, and Curative Treatment of the Diseases of the Horse, and (subordinately) of those of Neat Cattle and Sheep. Sixth Edition, revised throughout, and considerably improved by the Introduction of many important subjects both in the Foreign and British Practice of the Art, by EDWARD MAYHEW, M.R.C.V.S. Author of "The Horse's Mouth," &c.

London: LONGMAN & Co.; SIMPKIN & Co.; HAMILTON & Co.; WHITTAKER & Co.; HOULSTON & Co.; H. RENSHAW; J. CHURCHILL; H. G. BOHN; R. GRIFFIN & Co.; and S. HIGHLEY. Edinburgh: MACLACHLAN & Co.

Now ready, price 1s., with Frontispiece View of the Crystal Palace and Grounds at Sydenham, and 40 other Illustrations by ANELAY, WHIMPER, and others, the FIRST VOLUME of the NEW SERIES of the

FAMILY ECONOMIST AND ENTERTAINING COMPANION, for town and country, to which is added the Boys' and Girls' Treasury, contains THE HARNETTS (the best Story of the day), and everything that everybody wants to know.

London: GROOMBRIDGE & SONS. Sold by all Booksellers.

ON MARRIAGE.

Just published (to be had free, by enclosing 1s. or Twelve Postage Stamps, to Mr. WATSON, Clerical Agent, Robert Street, Adelphi, London).

MATRIMONY.—A Pamphlet on Matrimonial Alliances, which merits the attention of those who wish to settle honourably in life. By a Clergyman.

GLASS.

THOMAS MILLINGTON, Importer of Foreign Sheet Glass, requests attention to the present Prices of Glass and Stock sizes, which are cheaper and better than those of English manufacture:—

PACKED IN ONE HUNDRED FEET BOXES, THIRDS QUALITY, BOXES INCLUDED.

Inches.	Per 100 ft.	Inches.	Per 100 ft.	Inches	Per 100 ft.	Inches.	Per 100 ft.	Inches.	Per 100 ft.	Inches.	Per 100 ft.
6 by 4	12s.	12 by 10		14 by 11		16½ by 12½		18 by 13		18 by 14	
6½ „ 4½		12½ „ 10½		14½ „ 11½		17 „ 12		18½ „ 13½		18½ „ 14½	
7 „ 5		13 „ 10		15 „ 11		17½ „ 12½		19 „ 13		19 „ 14	
7½ „ 5½		13½ „ 10½		15½ „ 11½		18 „ 12		19½ „ 13½		19½ „ 14½	
8 „ 6	14s. 6d.	14 „ 10		16 „ 11		18½ „ 12½		20 „ 13		20 „ 14	
8½ „ 6½		14½ „ 10½		16½ „ 11½		19 „ 12		20½ „ 13½		20½ „ 14½	
9 „ 7		15 „ 10	20s.	17 „ 11	20s.	19½ „ 12½	20s.	21 „ 13	20s.	21 „ 14	20s.
9½ „ 7½		15½ „ 10½		17½ „ 11½		20 „ 12		21½ „ 13½		21½ „ 14½	
10 „ 8		16 „ 10		14 „ 12		20½ „ 12½		22 „ 13		22 „ 14	
10½ „ 8½	17s. 3d.	16½ „ 10½		14½ „ 12½		16 „ 13		16 „ 14		22½ „ 14½	
11 „ 9		17 „ 10		15 „ 12		16½ „ 13½		16½ „ 14½		23 „ 14	
11½ „ 9½		17½ „ 10½		15½ „ 12½		17 „ 13		17 „ 14		23½ „ 14½	
12 „ 9		13 „ 11		16 „ 12		17½ „ 13½		17½ „ 14½		24 „ 14	
12½ „ 9½		13½ „ 11½									

IMPROVED PATENT ROUGH PLATE, PLAIN, FLUTED, AND IN QUARRY PATTERNS.

British Plate, Patent Plate, Sheet, Crown, and Coloured Window Glass. Pure White Shades for Ornaments. Pumps, Water Closets, and Plumbers' Brass Work. Genuine White Lead, Paint, Colours, Varnishes, Brushes, &c.

Tariffs of the above on application to

T. MILLINGTON, 87, Bishopsgate Street Without, London.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, JULY 1, 1854.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley

No. 27.—1854.] SATURDAY, JULY 8. [PRICE 6*d*.

INDEX.

Aeration	437 *b*	Pathology, vegetable	436 *a*
Agri. Soc. of England	444 *a*	Pears, new	436 *c*
— — Journal of	444 *b*	Pigs	443 *b*
Ammonia from coal	444 *a*	Plants, new	439 *b*
Bentley Priory, noticed	439 *b*	Potatoes in Ireland	438 *b*
Bicton, winter at	437 *b*	Potato question, the	435 *b*
Books noticed	439 *a*	Poultry, Ceylon	441 *c*
Botanic Garden, Helsingfors	440 *a*	Protection for walls	438 *a*
Calendar, horticultural	440 *a*	Rain gauges	438 *b*
— agricultural	445 *a*	Royal Botanic Society	438 *b*
Caterpillars, to kill	437 *b*	Salvia splendens	436 *b*
Coal, ammonia from	444 *a*	Seed growers' Society	444 *b*
Conifers at Bicton	437 *b*	Slugs	438 *b*
Education, agri.	441 *b*—442 *b*	Solanum verrucosum	435 *b*
Forests, Royal	435 *c*—436 *a*	Textile materials	439 *a*
Glass, Hartley's rough	437 *b*	Tobacco	443 *c*
Guano, adulteration of	441 *c*	Trade memoranda	437 *a*
Haricots, disease in	437 *a*	Vegetable pathology	436 *a*
Helsingfors Bot. Garden	440 *a*	Ventilation	437 *b*
Hemp, supply of	439 *b*	Walls, protection for	438 *a*
Kennington Park	438 *a*	Waltham Forest	437 *a*
Land Valuation Bill	444 *a*	Wasps	438 *a*
Lettuces, disease in	437 *a*	Wheat, successive crops	442 *c*
Manure, "economic"	443 *b*	Winter in Surrey	437 *b*
Melons, disease in	437 *a*	— in Devon	437 *b*
Paper substances	440 *a*	Woods and forests	435 *c*—436 *a*

LINCOLN HORTICULTURAL SOCIETY.—The SECOND SHOW will be held on WEDNESDAY, July 19, in the TEMPLE GARDENS, LINCOLN (being the day on which the Royal Agricultural Society holds its Annual Dinner), when, amongst other Prizes, the following will be awarded:—For the best 24 varieties of Roses, in single trusses, 5*l*.; second, 3*l*.; third, 2*l*. For the best 12 varieties of Hollyhocks, single blooms, 1*l*. 10*s*.; second, 1*l*.; third, 10*s*. For the best 12 varieties of Show Pelargoniums, in single trusses, 1*l*.; second, 10*s*.; third, 5*s*. For the best six Stove or Greenhouse Plants, 2*l*.; second, 1*l*.; third, 10*s*.
This Exhibition will be Open to all England. No entrance Fee to Exhibitors. Schedules and further particulars may be obtained on application to W. P. THROSBY, Hon. Sec.

EAST AND WEST KENT GRAND HORTICULTURAL EXHIBITION AND MUSICAL PROMENADE, under the distinguished patronage of the Right Hon. EARL and COUNTESS of WINCHILSEA, and the nobility of the neighbourhood, in the HORTICULTURAL GROUNDS adjoining the Station, at ASHFORD, on TUESDAY, July 11. Prizes Open to All England. The Royal Artillery Bands of Woolwich will attend. The Orchestra will consist of upwards of 80 Performers, under the direction of Mr. Smythe. A List of Prizes, &c., may be had of the Secretary, W. KEMSLEY.
The Gardens will be opened for admission at half-past 12 o'clock, upon presenting a Ticket, or payment of 2*s*. 6*d*.; at half-past 1 o'clock, 2*s*.; and at 4 o'clock, 1*s*. Cantelo's Hydro-incubator will be on the grounds. Refreshments supplied in the gardens. The Horticultural arrangements are under the direction of Mr. W. J. Epps, Maidstone and Ashford.

NOTICE.
SOUTH-EASTERN RAILWAY.—The DIRECTORS have kindly consented to CONVEY ALL PERSONS visiting the GRAND HORTICULTURAL EXHIBITION and MUSICAL PROMENADE at ASHFORD, on TUESDAY, July 11, at SINGLE FARES to and from ALL STATIONS on their Line of Railway.

ANEMONES.
JOHN HOADE, FLORIST and SEEDSMAN, Addlestone, near Chertsey, Surrey, begs to offer his first-rate ANEMONE SEED; his collection this Spring is allowed to be equal to anything yet produced for brilliancy and variety. A packet forwarded with printed particulars for sowing and after-culture, on receipt of 13 postage stamps.

ALPINE PLANTS OF SCOTLAND.
MR. KERR, A.B.S.E., having this season undertaken a Botanical Tour to the lofty mountains of Clova and Braemar, will be happy to supply sets of dried specimens of the Rare Alpine Plants, at the following rates:—150 specimens, 1*l*. 1*s*.; 100 do., 14*s*.; 50 do., 7*s*.—Address, Mr. ANDREW KERR, Murray Street, Montrose.

PLANTS OF CABBAGE, SAVOY, KALE, BROCCOLI, CAULIFLOWER, AND CELERY.
JOHN CATTELL, Westerham, Kent, begs respectfully to inform the public that he has a plentiful supply of Plants of his superior true sorts of the above, which will be forwarded to order on receipt of Postage Stamps or Post Office Order made payable here at the following prices, package included:—All the sorts of Early Cabbage, Savoy, and Kale, including Brussels Sprouts, 6*d*. per 100; 4*s*. 6*d*. per 1000. All the sorts of Autumn and Spring Broccoli, and all the sorts of Celery, 8*d*. per 100; 5*s*. 6*d*. per 1000. Cauliflower, Early and Late, 10*d*. per 100. Red Cabbage, 1*s*. per 100: Drumhead, or Cattle Cabbage, 4*s*. per 1000. Packages of 1000 and upwards delivered free of Carriage to London, and to the Edenbridge Station of the South Eastern Rail.
Seed of Cattell's Dwarf Barnes, and of his superior Dwarf Reliance Cabbage, may be had in packets by post for 12 Penny Stamps per packet; the former containing one ounce as usual, and the latter half an ounce.

STANDISH AND NOBLE, NURSERYMEN, SEEDSMEN, &c., Bagshot, Surrey, are now prepared to receive orders for the following new and beautiful varieties of AZALEAS, which will be ready for delivery in June next. The Advertisers can recommend them with the greatest confidence, as superior to any others of their kind.
AZALEA BEALII.—This very distinct variety was introduced by them from China. The flowers, which are of first-rate shape, are quite unique, being striped, like a Carnation, with rich vermilion on a pure white ground. It is of good habit, fine in foliage, and a most abundant bloomer; and although decidedly in the first rank as a greenhouse plant, it is quite hardy enough for the open border. Each, 21*s*.
AZALEA CRISPIFLORA, a species differing much from any other known Azalea, having a character entirely its own. No other kind approaches it in compactness of habit, and its foliage is very fine, abundant, and evergreen. The flowers are very large, and the edges of the petals have the appearance of being irregularly crisped, like a lady's frill; the colour is a rich rose lake. From the fact of its blooming very late—much later than any other Azalea—it will be doubly valuable for many purposes. Each 21*s*.

NEW BEDDING PLANT.
CALCEOLARIA AJAX.
LUCOMBE, PINCE, AND CO., are now sending out healthy Plants of their much admired NEW SHRUBBY CALCEOLARIA.
It is now flowering profusely in their Nursery, and they respectfully call attention to it. See *Gardeners' Chronicle*, May 6th.
42*s*. per dozen; a few strong plants at 7*s*. 6*d*. each.
Exeter Nursery, Exeter.

CHOICE CINERARIA AND CALCEOLARIA SEEDS.
LUCOMBE, PINCE, AND CO. have now ready for sending out Seeds of their very superior CINERARIAS AND CALCEOLARIAS, which have been saved with great care from the finest varieties. The great satisfaction which their Cinerarias and Calceolarias have given for several successive years enables them to recommend their Seed of the present season with much confidence.
Packets of each, sealed and warranted by them, at 2*s*. 6*d*., free by post.—Exeter Nursery, Exeter, July 8.

ROSES.
G. CLARKE respectfully invites the attention of lovers of Roses to his unrivalled Collection, extending over 10 acres of ground, which may now be seen in full bloom. Plants can be selected now and orders executed in the autumn.
Streatham Place Nursery, Brixton Hill, near London; four miles from London. The nearest and most pleasant route from the West End to the Crystal Palace.

OSBORN AND SONS have the pleasure to acquaint the public that they are now prepared to send out the following new plants:—
OXYLOBIUM OSBORNI.
This beautiful new Oxylobe obtained the Large Silver Medal at the Chiswick Exhibition in June, 1853. From its graceful habit, and bearing its bright orange-coloured flowers in such abundance, it will, we have no doubt, become a general favourite. Price 10*s*. 6*d*. each.
LYSIMACHIA LESCHENAULTI.
An exceedingly pretty plant, with dense heads of pink flowers, raised from seeds received from the Neilgherry Hills; it is a most abundant bloomer, and easy of cultivation. It was awarded the second prize for new plants at the Regent's Park, June 1854. Price 5*s*. each.
PENTAS ROSEA.
A decided improvement on the Pentas carnea, having much darker coloured flowers. Price 3*s*. 6*d*. each.
The usual discount to the trade.
Fulham Nursery, near London, July 8.

NEW ROSES IN POTS.
W. J. EPPS, of Maidstone and Ashford, can now supply fine strong Plants of the following new ROSES. The Plants average from 10 to 20 buds, fit for immediate working.

HYBRID PERPETUALS.	*s*.	*d*.	HYBRID PERPETUALS.	*s*.	*d*.
Adam Paul	3*s*.	6*d*.	Colonel Rougemont ...	5*s*.	0*d*.
Louis Peyrouny ...	3	6	Gloire de France ...	7	6
Baronne Heckerean ...	5	0	Joseph Descarme ...	3	6
Triomphe de Paris ...	5	0	Blanche Portemar ...	3	6
Prince Leon Kotchouby	5	0	Lady Wilson	5	0
Duchess de Orleans ...	5	0	BOURBONS—Pigeron	2	6
Lady Shelley (Mitchell's)	5	0	„ Blanche Lafitte ...	3	6
Imperatrice Josephine	5	0	„ Colonel Fossey ...	2	6
Souvenir de Madame Lille	5	0	„ La guintemie ...	7	6
Leon Plee	5	0	„ Prince Albert ...	3	6
James Veitch	5	0	NOISETTES—		
Prince Chipetowzikof	5	0	Maria Charges ...	5	0
Alexander Beckmiteff	3	6	Eudoxie	3	6
Le General Jacqueminot	7	6	TEAS—August Vacher	5	0
Baronne le Kermont ...	5	0	„ David Pradel ...	2	6
Lady Stewart	5	0	„ Gloire de Dijon ...	7	6
Jules Margottin ...	7	6	„ Georges de France	5	0

W. J. E. can offer choice varieties, such as Queen Victoria, Egarie, Triomphe de Valenciennes, Standard de Marengo, L'Ergant Vere, Madame Campbell, Palais de Cristal, &c., at 30*s*. per dozen, or 2*s*. 6*d*. each.

PHLOX DRUMMONDI RADETZKI.
JOHN CATTELL has a large stock of this very beautiful PHLOX, which is a great improvement on Mayi, having the white clearer, and the purplish crimson much deeper and brighter; every flower comes as regularly and constantly striped, and the habit of the plant is more robust; it is so very handsome that it must become a general favourite. Good Plants, 3*s*. 6*d*. each, or 36*s*. per dozen; extra fine Plants, 5*s*. each. A liberal discount to the trade. A flower may be had on application, enclosing a penny stamp.
J. C. has also to offer the following very desirable plants, well established:—

	Each.
GERANIUM, crimson ivy-leaved	2*s*. 6*d*.
GERANIUMS OF THE SCARLET HABIT.	
Trentham Rose, beautiful rose	2 6
Rosea superb, beautiful cerise rose, large truss, dwarf, strong habit	2 6
Baronne Hugel, light scarlet, white eye, very dark horse-shoe leaf, extra dwarf habit	2 6
Boule de Neige, white, large truss, horse-shoe leaf ...	2 6
Miss Emily Field, delicate pink, large truss, horse-shoe leaf	2 6
Skeltoni, white fading delicate pink, large truss ...	2 6
Kingsbury Pet, rosy salmon, large truss, horse-shoe leaf	2 6

One each of the above eight, 16*s*.

GERANIUMS WITH VARIEGATED LEAVES.

Golden Chain	1 6
Kinghorn's Attraction	10 6
„ Silver King ... ... 5*s*. to	7 6
Gaines' Attraction	3 6
„ Mount Hecla	3 6

Delphinium Wheeleri 1*s*. 6*d*.	Delphinium Hendersoni	5*s*. 0*d*.
„ semplex alba plena 3 6	„ magnificum ...	5 0
„ Weltoni 2 6	Petunia Montreal Purple	1 6

Anemone pavonia, brilliant scarlet, double, very hardy, flowers in March and April, Bulbs now ready to transplant, 4*s*. per dozen, or 25*s*. per 100.
A remittance or reference to accompany all orders from unknown correspondents.—Westerham, Kent.

ORANGE JELLY TURNIP SEED.
PURCHASERS OF LARGE QUANTITIES will be supplied liberally, for cash payment, on application to Messrs. SUTTON AND SONS, SEED GROWERS, Reading, of whom it may also be had retail at same price as at Chester. Early orders will be first executed.

SUTTON'S IMPERIAL CABBAGE. — THE EARLIEST SORT IN CULTIVATION, large and fine flavour. This sort may be sown immediately without any risk of the plants running to seed. Price 1*s*. per ounce, post free.
JOHN SUTTON and SONS, Nos. 7 and 8, Market Place, Reading, Berks.

GENUINE DRUMHEADS FOR CATTLE.
THOMAS WELLAND, Surrey Gardens, near Godalming, Surrey, can supply Fine Plants of the above, packed and delivered at the Godalming Station, at 3*s*. per 1000.

DRUMHEAD CATTLE CABBAGE PLANTS.
JOSEPH SHILLING, NURSERYMAN and SEEDSMAN, Winchester, has a large Stock of the above Plants, which he will send by Railway at 3*s*. per 1000, package included.

WILLIAM WOOD AND SON beg leave to intimate that their extensive Plantations of ROSES are now coming into fine bloom, and will remain in perfection during the Rose season. Maresfield is distant from Lewes 10 miles, and Hayward's Heath 12, both of which places are Stations on the London and Brighton Railway, and from whence conveyances may be obtained.

PINK.
NORMAN'S COLCHESTER CARDINAL.—For Sale, about 500 Pipings of this splendid PINK, which received a First Class Certificate from the National Floricultural Society, July 1st, 1852, and was designated as—Purple, fine leaf; large and full; fine pod, and best of its class; and figured in the October number of the "Florist." Four pairs, 5*s*.; 25 pairs 20*s*.; including package and postage, on receipt of Post-office order or stamps.—Address, Mr. ROBERT HALLS, High Street Colchester, Essex.

CINERARIA SEED.
EDWARD GEORGE HENDERSON AND SON, Wellington Nursery, St. John's Wood, London, are now prepared to forward, by post, new Cineraria Seed saved this season. More than usual care has been bestowed in gathering from the choicest named varieties, including the new ones sent out last year; all the light varieties have been discarded, consequently from the above seed we anticipate none but high coloured flowers. Per packet, 2*s*. 6*d*. and 5*s*. each.
Our beautiful collection of CALCEOLARIAS can now be seen in flower at the Nursery, and orders for seed booked, to be sent when ready. Per packet, first quality, 5*s*.; second quality, 2*s*. 6*d*.

SPLENDID NEW RHUBARB.
SALT'S CRIMSON PERFECTION.
ROBERT SALT, GARDENER, Longton, Staffordshire, will send out roots of this early, productive, and delicious variety of Rhubarb this autumn; see *Gardeners' Chronicle* June 11, 1853: "Very good, and most beautiful crimson; compared with others, it is remarkable for the small amount of acidity it contains."
A Certificate of Merit was awarded for specimens exhibited at the meeting of the London Horticultural Society, June 28, 1853; likewise a first-class Certificate at Nottingham Horticultural Society, May 24, 1854; and at the Midland do., May 25, 1854.
Single roots, 7*s*. 6*d*., three for one guinea, and six for 2*l*. Orders forwarded now to ROBERT SALT, or to HURST & M'MULLEN, 6, Leadenhall Street, London; Mr. Wood, Nurseryman, Coppice, near Nottingham; Messrs. Burgess & Kent, Nurserymen, Penkhull, will have the earliest attention. A Post-office order requested from unknown correspondents.—Longton, July 8.

CHOICE NEW FUCHSIAS, VERBENAS, AND PETUNIAS.
HENRY WALTON, FLORIST, &c., Edge End, Marsden, near Burnley, begs to state that he will be prepared to offer the following in nice healthy plants at the very reduced prices annexed.
FUCHSIAS.—Autocrat, Charmer, Vanguard, Queen of Hanover, Elegans, Omega, Clio, Macbeth, Duke of Wellington, Trentham, Othello, Perfection, Standish, Magnifica, Telegraph, Henry Monteith, Globosa Splendens, Grandissima, Mr. Charles Palmer, Admiral, and Monarch. The above 2*s*. 6*d*., or 21*s*. per dozen, post free, first week in July.
VERBENAS.—Mrs. D. Tysson, Annie Laurie, President, Rouge et Noir, Mrs. Gerard Leigh, Bridesmaid, Canary Bird, Magnet, Captivation, Lord Mayor, Ajax, Emily, Caliban, Climax, Angelina, Electra, Islington Rival, Nobilissima, Forget-Me-Not, Triumph, Queen, Scarlet King, Magnificent, Zaria, Purple Perfection, Madonna, Bouquet parfait, Sulphur Model, Prince of Orange, Sarah, King of Scarlets, Jerome, Beauty, Red Rover, Conqueror of Europe, Ludonies, Formosa Elegans, Vicomtesse de Belleval, Star, Iver Rival, Unique, Sir Charles Napier, Iver Beauty, Delicata, Beauty of the Garden, and Viscomte de Barry. The above 1*s*. 6*d*. each, or 12*s*. per dozen, post free; or two dozen for 1*l*., now ready.
PETUNIAS.—Bixio, Juliet, Picturata, Roses Superb, Silver Queen, Sappho, Surprise, Distinctus, Elizabeth, Formosa, Pencillata, Rotunda, and Novelty. The above 1*s*. 6*d*. each, or 15*s*. per dozen, post free, first week in July.
Now ready, plants of all the Fuchsias of last season, 1*s*. each, or 9*s*. per dozen. Older varieties, 6*s*. per dozen.
Thirty varieties of choice Lilliputienne Chrysanthemums recommended in Turner's Florist as the best out, 1*s*. each, or the set of 30 for 18*s*. Older varieties, 6*s*. per dozen.
CHRYSANTHEMUMS. — Show varieties 4*s*. 6*d*. and 6*s*. per dozen.
ACHIMENES.—The following three new varieties 2*s*. 6*d*. each, post free:—Sir Trecherne Thomas, Cherita, Louis Van Houtte. Older varieties, 9*s*. per dozen.

Begonia Prestoniensis	1*s*. 6*d*. and 2*s*. 6*d*. each.
Hexacentris mysorensis	1 6 and 2 6 „
Cissus discolor	1 6 „
Plectranthus concolor picta ...	1 6 „
Thyrsacanthus rutilans	3 6 „
Streptocarpus biflorus	3 6 „

Descriptive list of the above may be had for one stamp. Orders executed in rotation as received. It is respectfully requested that all orders be accompanied with a Post-office order (unless reference is given) payable at Marsden, Lancashire.

ROYAL BOTANIC GARDENS, REGENT'S PARK.

LIST OF PRIZES AWARDED AT THE EXHIBITION, HELD ON WEDNESDAY, JULY 5, 1854.

PLANTS AND FRUIT.

EXTRA GOLD MEDAL.

To Mr. J. May, Gardener to H. Colyer, Esq., Dartford, Kent, for 16 Stove and Greenhouse Plants.
To Mr. B. S. Williams, Gardener to C. B. Warner, Esq., Hoddesdon, Herts, for 20 Exotic Orchids.

LARGE GOLD MEDAL.

To Mr. Speed, Edmonton, for 16 Stove and Greenhouse Plants.
To Mr. Woolley, Gardener to H. B. Ker, Esq., Cheshunt, Herts, for 20 Exotic Orchids.

MEDIUM GOLD MEDAL.

To Mr. Green, Gardener to Sir E. Antrobus, Bart., Lower Cheam, Surrey, for 16 Stove and Greenhouse Plants.
To Messrs. J. and J. Fraser, Nurserymen, Lea Bridge Road, Leyton, Essex, for 12 Stove and Greenhouse Plants.
To Mr. Frost, Gardener to E. L. Betts, Esq., Preston Hall, Maidstone, for 10 Stove and Greenhouse Plants.
To Messrs. Rollisson, Nurserymen, Tooting, Surrey, for 16 Exotic Orchids.
To Mr. Hume, Gardener to R. Hanbury, Esq., Poles, Ware, Herts, for 12 Exotic Orchids.

GOLD MEDAL.

To Messrs. Rollisson & Sons, Nurserymen, Tooting, Surrey, for 12 Stove and Greenhouse Plants.
To Mr. Gilham, Gardener to J. R. Scott, Esq., Leyton, Essex, for 10 Stove and Greenhouse Plants.
To Messrs. Rollisson & Sons, Nurserymen, Tooting, Surrey, for 10 Cape Heaths.
To Mr. J. May, Gardener to H. Colyer, Esq., Dartford, Kent, for 8 Cape Heaths.
To Mr. Gedney, Gardener to Mrs. Ellis, Hoddesdon, Herts, for 12 Exotic Orchids.
To Mr. C. Turner, Royal Nursery, Slough, for 12 Pelargoniums.
To Mr. Holder, Gardener to the Rev. E. Coleridge, Eton College, Bucks, for 10 Pelargoniums.
To Mr. M'Ewen, Gardener to Duke of Norfolk, Arundel Castle, for a Miscellaneous Collection of Fruit.

LARGE SILVER GILT MEDAL.

To Messrs. Pamplin & Son, Nurserymen, Walthamstow, Essex, for 12 Stove and Greenhouse Plants.
To Mr. Barter, Gardener to A. Bassett, Esq., Stamford Hill, Middlesex, for 10 Stove and Greenhouse Plants.
To Mr. Taylor, Gardener to J. Coster, Esq., Hill House, Streatham, Surrey, for 6 Stove and Greenhouse Plants.
To Mr. Ivison, Gardener to Duke of Northumberland, Syon House, Brentford, Middlesex, for 6 Exotic Orchids.
To Mr. Gaines, Nurseryman, Surrey Lane, Battersea, for 12 Pelargoniums.
To Mr. Robinson, Gardener to J. Simpson, Esq., Thames Bank, Pimlico, for 10 Pelargoniums.
To Mr. Fleming, Gardener to Duke of Sutherland, Trentham Hall, Staffordshire, for a Miscellaneous Collection of Fruit.
To Mr. Wood, Gardener to C. B. Scott Murray, Esq., Danesfield, Bucks, for 3 dishes of Grapes.

LARGE SILVER MEDAL.

To Mr. Over, Gardener to W. M'Mullan, Esq., Clapham, Surrey, for 6 Stove and Greenhouse Plants.
To Messrs. J. and J. Fraser, Nurserymen, Lea Bridge Road, Leyton, Essex, for 10 Cape Heaths.
To Mr. Frost, Gardener to E. L. Betts, Esq., Preston Hall, Maidstone, Kent, for 8 Cape Heaths.
To Mr. Roser, Gardener to J. Bradbury, Esq., Bedford House, Streatham, Surrey, for 6 Cape Heaths.
To Mr. Clarke, Gardener to Mrs. Webb, Hoddesdon, Herts, for 6 Exotic Orchids.
To Mr. C. Turner, Royal Nursery, Slough, for 6 Fancy Pelargoniums.
To Mr. Robinson, Gardener to J. Simpson, Esq., Thames Bank, Pimlico, for 6 Fancy Pelargoniums.
To Mr. C. Turner, Royal Nursery, Slough, Bucks, for 6 New Pelargoniums.
To Mr. J. Cowan, Gardener to E. Jones, Esq., The Grove, Wanstead, Essex, for a Miscellaneous Collection of Fruit.
To Mr. Bailey, Gardener to T. Drake, Esq., Shardeloes, Bucks, for a collection of 4 Pine-apples.

SILVER GILT MEDAL.

To Mr. T. Williams, Gardener to Miss Traill, Bromley, Kent, for 10 Stove and Greenhouse Plants.
Mr. Rhodes, Gardener to J. Philpott, Esq., Stamford Hill, Middlesex, for 6 Stove and Greenhouse Plants.
To Messrs. J & J. Fraser, Nurserymen, Lea Bridge Road, Leyton, Essex, for 6 Plants of Kalosanthes.
To Mr. T. Williams, Gardener to Miss Traill, Hayes Place, Bromley, Kent, for 8 Cape Heaths.
To Mr. Taylor, Gardener to J. Coster, Esq., Hill House, Streatham, for 6 Cape Heaths.
To Mr. Green, Gardener to Sir E. Antrobus, Bart., Lower Cheam, Surrey, for 6 Exotic Orchids.
To Mr. Keele, Woolwich, for 6 Exotic Orchids.
To Messrs. A. Henderson, Nurserymen, Pine Apple Place, Edgeware Road, for 6 Calceolarias.
To Mr. Bray, Gardener to Sir I. L. Goldsmid, St. John's Lodge, Regent's Park, for 6 Fuchsias.
To Mr. Windsor, Gardener to A. Blyth, Esq., Kiddepore Hall, New West End, Hampstead, for 10 Pelargoniums.
To Mr. Gaines, Nurseryman, Surrey Lane, Battersea, for 6 Fancy Pelargoniums.
To Mr. Windsor, Gardener to A. Blyth, Esq., Kiddepore Hall, Hampstead, for 6 Fancy Pelargoniums.
To Mr. Holder, Gardener to the Rev. E. Coleridge, Eton College, Bucks, for 6 New Pelargoniums.
To Messrs. Lane & Son, Nurserymen, Great Berkhampstead, Herts, for 50 Cut Roses.
To Mr. Munro, Gardener to the Earl of Clarendon, The Grove, Watford, Herts, for 25 Cut Roses.
To Mr. Robertson, Gardener to Lady E. Foley, Stoke Edith Park, Ledbury, Hereford, for 4 Pine-apples.
To the same, for a Providence Pine.
To Mr. James, Gardener to C. H. Leigh, Esq., Pontypool Park, Glamorgan, for Queen Pine-apple.
To Mr. Jones, Gardener to Lady C. Guest, Dowlais House, Glamorgan, for a Pine-apple.
To Mr. Henderson, Gardener to Sir G. H. Beaumont, Colecrton Hall, Ashby-de-la-Zouche, Leicestershire, for 3 dishes of Grapes.
To Mr. Hill, Gardener to T. Sneyd, Esq., Keele Hall, Stafford, for 3 dishes of Grapes.
To Mr. Hughes, Gardener to J. Eaton, Esq., Shacklewell, Middlesex, for 12 lbs. of Grapes.
To Mr. Bailey, Gardener to T. Drake Esq., Shardeloes, Bucks, for 12 lbs. of Grapes.
To Mr. Mitchell, Market Gardener, Bristol Gardens, Brighton, for 12 lbs. of Grapes.
To Mr. Solomon, Peckham Rye, Surrey, for 12 lbs. of Black Hamburgh Grapes.
To the same, for 12 lbs. of Muscat of Alexandria Grapes.
To Mr. Boyd, Gardener to Viscount Dillon, Dytchley, Oxon, for a dish of Black Hamburgh Grapes.
To the same, for a dish of Black Prince Grapes.
To Mr. Smith, Gardener to A. Henderson, Esq., Grove House, Norwood, Surrey, for a dish of White Muscadine Grapes.
To Mr. Solomon, Peckham Rye, Surrey, for a dish of Muscat Grapes.
To Mr. Smith, Gardener to J. H. Elliott, Esq., Binfield Park, Berks, for a dish of Frontignan Grapes.
To Mr. Spencer, Gardener to the Marquis of Lansdowne, Bowood Park, Chippenham, Wilts, for a dish of Peaches.
To Mr. Frost, Gardener to E. L. Betts, Esq., Preston Hall, Maidstone, Kent, for a dish of Nectarines.
To Mr. Chapman, Gardener to I. B. Glegg, Esq., Whittington Hall, Cheshire, for 4 dishes of Peaches and Nectarines.
To Mr. Ivison, Gardener to the Duke of Northumberland, Syon House, for Tropical Fruits.

SILVER MEDAL.

To Mr. Peed, Gardener to Mrs. Treadwell, St. John's Lodge, Norwood, Surrey, for 10 Stove and Greenhouse Plants.
To Mr. Roser, Gardener to J. Bradbury, Esq., Bedford House, Streatham, Surrey, for 6 Stove and Greenhouse Plants.
To Mr. Over, Gardener to W. M'Mullan, Esq, Clapham, Surrey, for 4 plants of Ixoras.
To Mr. Peed, Gardener to Mrs. Treadwell, St. John's Lodge, Norwood, Surrey, for 8 Cape Heaths.
To Mr. Over, Gardener to W. M'Mullan, Esq., Clapham, Surrey, for 6 Cape Heaths.
To Mr. Rhodes, Gardener to J. Philpott, Esq., Stamford Hill, Middlesex, for 6 Cape Heaths.
To Messrs. Veitch, Exotic Nursery, Chelsea, for Veronica variegata.
To Mr. E. G. Henderson, Nurseryman, Wellington Road, St. John's Wood, for Echites Pellieri.
To Mr. Fletcher, Gardener to Dr. Young, Kennington Lane, Kennington, for 12 Exotic Ferns.
To the same, for 30 British Ferns.
To Mr. Ward, Gardener to G. Bishop, Esq., South Villa, Regent's Park, for 6 Fuchsias.
To Mr. Weir, Gardener to J. Hodgson, Esq., The Elms, Hampstead, for 6 Fancy Pelargoniums.
To Mr. C. Turner, Royal Nursery, Slough, for 24 Cut Pinks.
To Messrs. Paul, Nurserymen, Cheshunt, Herts for 50 Cut Roses.
To Mr. Hume, Gardener to R. Hanbury, Esq., Poles, Ware, Herts, for 25 Cut Roses.
To Mr. Davis, Market Gardener, Oak Hill, East Barnet, for a Miscellaneous Collection of Fruit.
To Mr. Spencer, Gardener to the Marquis of Lansdowne, Bowood Park, Chippenham, Wilts, for a Miscellaneous Collection of Fruit.
To Mr. Thompson, Gardener to Viscount Enfield, Wretham Park, Herts, for 4 Pine-apples.
To Mr. J. Bray, Gardener to E. Lousada, Esq., Peak House, Sidmouth, Devonshire, for 4 Pine-apples.
To Mr. Bailey, Gardener to T. Drake, Esq., Shardeloes, Bucks, for a Providence Pine-apple.
To Mr. Jones, Gardener to Lady C. Guest, Dowlais House, Glamorgan, for a Queen Pine.
To Mr. Chapman, Gardener to I. B. Glegg, Esq., Wittington, Chelford, Cheshire, for a Pine-apple.
To Mr. Tillyard, Gardener to the Hon. C. Shaw Lefevre, Heckfield Place, Hartford Bridge, Hants, for 3 dishes of Grapes.
To Mr. Frost, Gardener to E. L. Betts, Esq., Preston Hall, Maidstone, Kent, for a dish of Black Hamburgh Grapes.
To Mr. Stent, Gardener to W. Herbert, Esq., Clapham Common, Surrey, for a dish of Black Hamburgh Grapes.
To Mr. Turnbull, Gardener to the Duke of Marlborough, Blenheim Palace, Oxon, for a dish of Black Prince Grapes.
To Mr. B. S. Williams, Gardener to C. B. Warner, Esq., Hoddesdon, Herts, for a dish of White Muscadine Grapes.
To Mr. Turnbull, Gardener to the Duke of Marlborough, Blenheim Palace, Oxon, for a dish of Muscat Grapes.
To Mr. Boyd, Gardener to Viscount Dillon, Dytchley, Oxon, for a dish of Muscat Grapes.
To Mr. Allport, Gardener to — Ackroyd, Esq., Doddington, Cheshire, for a dish of Frontignan Grapes.
To Mr. Ivison, Gardener to the Duke of Northumberland, Syon House, for Vines in pots.
To Mr. Nicols, Gardener to Sir I. L. Goldsmid, Bart., The Wick, Brighton, for a dish of Peaches.
To Mr. Henderson, Gardener to Sir G. H. Beaumont, Bart., Colecrton Hall, Ashby-de-la-Zouch, Leicester, for a dish of Nectarines.
To Mr. Monro, Gardener to the Earl of Clarendon, Grove Park, Watford, for 4 dishes of Peaches and Nectarines.
To Mr. Spencer, Gardener to the Marquis of Lansdowne, Bowood Park, Chippenham, Wilts, for 4 dishes of Peaches and Nectarines.
To Mr. Snow, Gardener to Earl de Grey, Wrest Park, Beds, for 2 dishes of Peaches and Nectarines.

SMALL SILVER MEDAL.

To Mr. Clarke, Gardener to Mrs. Webb, Hoddesdon, Herts, for 10 Stove and Greenhouse Plants.
To Messrs. Veitch, Exotic Nursery, Chelsea, for Cycnoches sp.
To Mr. Keele, Woolwich, for Brassavola sp. nova.
To Mr. Parsons, Gardener to W. J. Blake, Esq., Danesbury, Welwyn, Herts, for Achimenes cherita.
To Messrs. Rollisson, Nurserymen, Tooting, Surrey, for Abelia uniflora.
To Messrs. A. Henderson, Nurserymen, Pine-apple Place, Edgeware Road, for Cheiranthera linearis.
To Mr. Woolley, Gardener to H. B. Ker, Esq., for 12 Exotic Ferns.
To Mr. B. S. Williams, Gardener to C. B. Warner, Esq., Hoddesden, Herts, for 30 British Ferns.
To Mr. Smith, Gardener to J. Anderson, Esq., The Holme, Inner Circle, Regent's Park, for Correct Labels.
To Mr. Summerfield, Gardener to J. S. Venn, Esq., Highbury Park, Highbury, for 6 Exotic Orchids.
To Mr. George, Gardener to J. Nicholson, Esq., Stamford Hill, Middlesex, for 6 Fuchsias.
To Mr. Keynes, Nurseryman, Salisbury, for 24 Cut Pinks.
To Mr. Turner, Royal Nursery, Slough, for 36 Cut Pansies.
To Mr. Baker, 86, Powis Street, Woolwich, for 12 Cut Pinks.
To Mr. Francis, The Nurseries, Hertford, for 50 Cut Roses.
To A. Rowland, Esq., Lewisham, Kent, for 25 Cut Roses.
To Mr. Francis, The Nurseries, Hertford, for 24 Blooms of Roses.
To Mr. Gedney, Gardener to Mrs. Ellis, Hoddesdon, Herts, for Nepenthes Rafflesiana.
To C. P. Lochner, Esq., Warwick House, Harrow Road, Paddington, for 24 Cut Verbenas.
To Mr. Davis, Gardener to W. Booker, Esq., Vellindra House, Cardiff, Wales, for 4 Pine-apples.
To Mr. Barron, Gardener to J. H. Vivian, Esq., Singleton, Wales.
To Mr. Spencer, Gardener to Marquis of Lansdowne, Bowood Park, Chippenham, Wilts, for a Queen Pine Apple.
To Mr. Spivey, Gardener to J. Houblon, Esq., Hallinby Park, Essex, for a Queen Pine-apple.
To Mr. Bray, Gardener to E. Lousada, Esq., Peak House, Sidmouth, Devon, for a Queen Pine.
To Mr. Turnbull, Gardener to the Duke of Marlborough, Blenheim, Oxon, for a Pine-apple.
To Mr. Jones, Gardener to Lady C. Guest, Dowlais House, Glamorgan, for a Pine-apple.
To Mr. Whiting, Gardener to — Hope, Esq., Deepdene, Dorking, Surrey, for a Green-fleshed Melon.
To Mr. Frost, Gardener to E. L. Betts, Esq., Preston Hall, Maidstone, Kent, for a Green-fleshed Melon.
To Mr. J. May, Gardener to H. Colyer, Esq., Dartford, Kent, for a Scarlet-fleshed Melon.
To Mr. Thomson, Dyrham Park, for 12 lbs. of Grapes.
To Mr. Wood, Gardener to C. Scott Murray, Esq., Danesfield, Bucks, for 12 lbs. of Grapes.
To Mr. Frost, Gardener to E. L. Betts, Esq., Preston Hall, Maidstone, Kent, for 12 lbs. of Grapes.
To Mr. Mitchell, Market Gardener, Bristol Gardens, Brighton, for 12 lbs. of Cannon Hall Muscats.
To Mr. Hill, Gardener to F. Sneyd, Esq., Keele Hall, Stafford, for a dish of Black Hamburgh Grapes.
To Mr. Thomson, Dyrham Park, Barnet, Herts, for a dish of Black Hamburgh Grapes.
To Mr. Smith, Gardener to A. Henderson, Esq., Grove House, Norwood, Surrey, for a dish of Black Hamburgh Grapes.
To Mr. Gray, Gardener to M. Drummond, Esq., Denham, Bucks, for a dish of Black Hamburgh Grapes.
To Mr. Bore, Esq., Springhill, Winkfield, Berks, for Black Prince Grapes.
To Mr. Lushey, Gardener to J. Hill, Esq., of Streatham, Surrey, for a dish of Black Prince Grapes.
To Mr. Tillyard, Gardener to Hon. C. Shaw Lefevre, Heckfield Place, Hartford Bridge, Hants, for a dish of White Muscadine Grapes.
To Mr. Forbes, Gardener to Duke of Bedford, Woburn Abbey, for a dish of Muscat Grapes.
To Mr. Tegg, Gardener to A. Prior, Esq., Roehampton, Surrey, for a dish of Muscat Grapes.
To Mr. Spivey, Gardener to J. Houblon, Hallinby Park, Essex, for a dish of Frontignan Grapes.
To Mr. Constantine, Gardener to C. Mills, Esq., Hillingdon, Uxbridge, Middlesex, for Vines in pots.
To Mr. Nicols, Gardener to Sir I. L. Goldsmid, Bart., The Wick, Brighton, for a dish of Nectarines.
To Mr. Monro, Gardener to Mrs. Oddie, Colney House, St. Alban's, Herts, for 4 dishes of Peaches and Nectarines.
To Mr. Turnball, Gardener to Duke of Marlborough, Blenheim Palace, Oxon, for 4 dishes of Peaches and Nectarines.
To Mr. J. Cowan, Gardener to E. Jones, Esq., the Grove, Wanstead, Essex, for 2 dishes of Peaches and Nectarines.
To Mr. Brown, Gardener to W. C. Cartwright, Esq., Aynho Park, Northampton, for 2 dishes of Peaches and Nectarines.
To Mr. Lydiard, Market Gardener, Bath, for 2 dishes of Strawberries.
To the same, for 4 dishes of Srawberries.
To Mr. B. S. Williams, Gardener to C. B. Warner, Esq., Hoddesdon, Herts, for Tropical Fruits.
To Mr. Spencer, Gardener to the Marquis of Lansdowne, Bowood Park, Chippenham, Wilts, for 3 Queen Pines.
To Mr. Monro, Gardener to Mrs. Oddie, Colney House, St. Alban's, Herts, for 2 boxes of Nectarines.
To Mr. Constantine, Gardener to C. B. Mills, Esq., Hillingdon, near Uxbridge, for a box of Peaches.
To Mr. Henderson, Gardener to Sir G. H. Beaumont, Bart., Hoddesdon, Herts, for a box of Nectarines.

BRONZE MEDAL.

To Mr. Jarvis, Gardener to J. Ruck, Esq., Croydon Lodge, Croydon, for 10 Stove and Greenhouse Plants.
To Mr. Hamp, Gardener to J. Thorne, Esq, Mawbey House, South Lambeth, for 10 Stove and Greenhouse Plants.
To Mr. Jarvis, Gardener to J. Ruck, Esq., Croydon Lodge, Croydon, for 6 Cape Heaths.
To Mr. Epps, Bower Nursery, Maidstone, Kent, for 6 Cape Heaths.
To Messrs. A. Henderson, Nurserymen, Pine-apple Place, Edgeware Road, for Begonia xanthina.
To Mr. Gedney, Gardener to Mrs. Ellis, Hoddesdon, Herts, for 12 Exotic Ferns.
To Dr. Allchin, 7, Pembridge Villas, Westbourne Grove, Paddington, for 30 British Ferns.
To Mr. Smith, Gardener to J. Anderson, Esq., The Holme, Regent's Park, for 30 British Ferns.
To Messrs. Rollisson and Sons, Nurserymen, Tooting, Surrey, for correct labels.
To Mr. Bragg, Star Nursery, Slough, Bucks, for 24 Cut Pinks.
To the same, for 36 Cut Pansies.
To Mr. Wilkinson, Rose Nursery, Ealing, Brentford, Middlesex, for 50 cut Roses.
To Mr. Carter, Gardener to H. Hughes, Esq., Woodgate, Uckfield, Sussex, for 25 Cut Roses.
To Messrs. Paul, Nurserymen, Cheshunt, Herts, for 24 blooms of Roses.
To Mr. Turner, Royal Nursery, Slough, for 12 Carnations.
To the same, for 12 Picotees.
To Mr. G. Smith, Florist, Hornsey Road, Islington, for Cut Verbenas.
To Messrs. E. G. Henderson, Wellington Road, for Sikkim Rhododendrons from the Bhotan Alps.
To Mr. Lydiard, Market Gardener, Bath, for a Green-fleshed Melon.
To Mr. Monro, Gardener to Mrs. Oddie, Colney House, St. Alban's, Herts, for a Green-fleshed Melon, Eyptian Hybrid.
To the same, for Green-fleshed Melon, Pine-apple.
To Mr. M'Ewen, Gardener to the Duke of Norfolk, Arundel Castle, Sussex, for Scarlet-fleshed Melon.
To Mr. Mitchell, Market Gardener, Bristol Gardens, Brighton, for 3 dishes of Grapes.
To Mr. Harrison, Market Gardener, Oatlands Palace Gardens, Weybridge, Surrey, for 12 lbs. of Grapes.
To Mr. Monro, Gardener to Mrs. Oddie, Colney House, St. Alban's, for 12 lbs. of Grapes.
To Mr. Hughes, Gardener to J. Eaton, Esq., Shacklewell, Middlesex, for a dish of Black Hamburgh Grapes.

(For continuation see next page).

Royal Botanic Society's List of Awards *continued.*

To Mr. Williamson, Gardener to the Earl of Lonsdale, Whitehaven Castle, Cumberland, for Black Hamburgh Grapes.
To Mr. Wood, Gardener to C. Scott Murray, Esq., Danesfield, Bucks, for a dish of Black Hamburgh Grapes.
To Mr. Tegg, Gardener to A. Prior, Esq., Roehampton, for a dish of Black Hamburgh Grapes.
To Mr. Harrison, Market Gardener, Oatlands Palace Gardens, Weybridge, Surrey, for a dish of Black Hamburgh Grapes.
To Mr. Monro, Gardener to Mrs. Oddie, Colney House, St. Alban's, Herts, for a dish of Black Hamburgh Grapes.
To Mr. Bassett, Gardener to F. B. Herring, Esq., East End, Finchley, for a dish of Black Hamburgh Grapes.
To Mr. Forbes, Gardener to the Duke of Bedford, Woburn Abbey, Bedford, for a dish of Black Hamburgh Grapes.
To Mr. Cowan, Gardener to E. Jones, Esq., The Grove, Wanstead, Essex, for a dish of Black Prince Grapes.
To Mr. Allport, Gardener to — Ackroyd, Esq., Doddington, for a dish of Muscat Grapes.
To Mr. Tillyard, Gardener to Hon. C. Shaw Lefevre, Heckfield Place, Hartford Bridge, Hants, a dish of Muscat Grapes.
To Mr. Miller, Gardener to Sir W. Smith, Eardisdon House, Worcester, for 4 dishes of Peaches and Nectarines.
To Mr. Collins, Gardener to Sir C. H. Chapman, Hannigay House, Hornsey, for 4 dishes of Peaches and Nectarines.
To Mr. Monro, Gardener to Earl of Clarendon, Grove Park, Watford, Herts, for 2 dishes of Peaches and Nectarines.
To Mr. Ruffett, Gardener to Lady Palmerston, Brochett Hall, Herts, for 2 dishes of Peaches and Nectarines.
To Mr. Bore, Spring Hill, Winkfield, Berks, for 2 dishes of Peaches and Nectarines.
To Mr. Allport, Gardener to — Ackroyd, Esq., Doddington Park, Nantwich, Cheshire, for a dish of Apricots.
To Mr. M'Ewen, Gardener to the Duke of Norfolk, Arundel Castle, for a dish of Plums.
To Mr. Snow, Gardener to Earl de Grey, Wrest Park, Silso, Beds, for a dish of Figs.
To Mr. Mockett, Gardener to — Allnut, Esq., Clapham Common, for a dish of Figs.
To Mr. Tillyard, Gardener to the Hon. C. Shaw Lefevre, Heckfield, Hants, for 2 dishes of Strawberries.
To Mr. M'Ewen, Gardener to the Duke of Norfolk, Arundel Castle, for 4 dishes of Strawberries.
To Mr. Ward, Gardener to W. Stephens, Esq., Prospect Hill, Reading, Berks, for a dish of Seedling Strawberries (Omer Pacha).
To Mr. Bore, Spring Hill, Winkfield, Berks, for 1 dish of Strawberries.
To Mr. Ivison, Gardener to the Duke of Northumberland, Syon House, for Snake and Club Gourds.
To Mr. Snow, Gardener to Earl de Grey, Wrest Park, Silso Beds, for a dish of Black Cherries.
To the same, for a dish of White Cherries.

CERTIFICATE.

To Mr. Speed, Edmonton, for Correct Labels.
To Mr. Bryan, Nurseryman, Whitton, Hounslow, for 36 Cut Pansies.
To Mr. Turner, Royal Nursery, Slough, for Seedling Pelargonium Una.
To Mr. Terry, Gardener to Lady Puller, Youngsbury, Ware, Herts, for 25 Cut Roses.
To Mr. M'Pherson, Gardener to Lord Calthorpe, Perry Hall, Staffordshire, for 25 Cut Roses.
To Mr. Hume, Gardener to R. Hanbury, Esq., Poles, near Ware, Herts, for 24 Blooms of Roses.
To Mr. Epps, Bower Nursery, Maidstone, Kent, for 24 Blooms of Roses.
To Mr. Terry, Gardener to Lady Puller, Youngsbury, Ware, Herts, for 24 Blooms of Roses.
To Mr. Munro, Gardener to the Earl of Clarendon, The Grove, Watford, Herts, for 24 Blooms of Roses.
To Mr. Turner, Royal Nursery, Slough, for a Specimen Pelargonium Rowena.
To the same, Royal Nursery, for Seedling Verbena.
To Mr. Gaines, Nurseryman, Surrey Lane, Battersea, for a box of cut Iris blooms.
To Mr. Bragg, Star Nursery, Slough, for 24 Sweet Williams in pots.
To Mr. Barter, Gardener to A. Blythe, Esq., Kiddepore Hall, New West End, Hampstead, for 4 Achimenes.
To Mr. Cole, Nurseryman, St. Alban's, Herts., for Seedling Calceolaria, Eclipse.
To Mr. Parker, Nurseryman, Dalston, for cut blooms of Seedling Ranunculi.
To Mr. Wetherell, Gardener to D. McNeile, Esq., Hornsey Road, Islington, for Cut Verbenas.
To J. Edwards, Esq., Priory Cottage, Holloway, for a collection of Scarlet Pelargoniums.
To Dr. Allchin, 7, Pembridge Villas, Westbourne Grove, for 12 Monstrosities of Scolopendrum.
To Messrs Wood & Son, Nurserymen, Maresfield, Uckfield, Sussex, for Seedling Rose, Duchess of Norfolk (Hybrid Perpetual).
To Mr. Bailey, Gardener to T. Drake, Esq., Shardeloes, Bucks, for Green-fleshed Melon.
To Mr. Cullingham, Gardener to Miss Traill, Haye's Place, Bromley, Kent, for Green-fleshed Melon.
To Mr. McEwen, Gardener to Duke of Norfolk, Arundel Castle, Sussex, for a Green-fleshed Melon, Golden Drop.
To the same, for a Green-fleshed Melon, Golden Perfection.
To Mr. M. Henderson, Gardener to Sir G. H. Beaumont, Coleorton Hall, Ashby de la Zouche, Leicestershire, for 12 lbs. of Grapes.
To Mr. Gadd, Market Gardener, Surrey, for 12 lbs. of Grapes.
To Mr. Miller, Gardener to Sir W. Smith, Bart., Eardesdon House, Worcestershire, for 12 lbs. of Grapes.
To Mr. Morrison, Gardener to E. Donnivan, Esq., Uckfield, Sussex, for 12 lbs. of Grapes.
To Mr. Mitchell, Market Gardener, Bristol Gardens, Brighton, for 12 lbs. of Grapes, Muscats of Alexandria.
To the same, for 12 lbs. of Grapes, Brighton Muscadine.
To Mr. Corney, Market Gardener, Bury St. Edmund's, Suffolk, for 12 lbs. of Grapes.
To Mr. Moffatt, Gardener to the Duke of Newcastle, Clumber Park, Worksop, Nottinghamshire, for 4 dishes of Peaches and Nectarines.
To Mr. Watson, Market Gardener, Ealing, for 4 dishes of Peaches and Nectarines.
To Mr. Davis, Market Gardener, Oak Hill, Barnet, for 2 dishes of Peaches and Nectarines.
To Mr. Monro, Gardener to Mrs. Oddie, Colney House, St. Alban's, Herts, for 2 dishes of Peaches and Nectarines.
To Mr. Tillyard, Gardener to the Hon. C. Shaw Lefevre, Heckfield, Hants, for a dish of Plums.
To Mr. Constantine, Gardener to C. B. Mills, Esq., Hillingdon, Uxbridge, Middlesex, for a dish of Figs.
To Mr. Tillyard, Gardener to the Hon. C. Shaw Lefevre, Heckfield, Hants, for the same.
To Mr. Mitchell, Market Gardener, Bristol Gardens, Brighton, for a dish of Black Cherries.
To Mr. Head, Nurseryman, Worthing, Sussex, for a dish of Black Cherries
To Mr. Tillyard, Gardener to the Hon. C. Shaw Lefevre, Heckfield, Hants, for a dish of Black Cherries.
To Mr. Spencer, Gardener to the Marquis of Lansdowne, Bowood Park, Chippenham, Wilts, for a dish of White Cherries.
To Mr. Hume, Gardener to R. Hanbury, Esq., Poles, near Ware, Herts, for 4 dishes of Strawberries.
To Mr. Harrison, Market Gardener, Oatlands Palace Gardens, Weybridge, for the same.
To Messrs. Lane and Son, Nurserymen, Great Berkhampstead, Herts, for a collection of Fruit Trees in Pots.

ERRATA IN AWARDS FOR JUNE, ADVERTISED AT P. 402.
2d col., W. Irving Hall, Esq., should be W. Irving, Esq., of Hull.
Do., A Silver Medal is by mistake awarded to Mr. Henderson, Gardener to Sir G. Beaumont, for a box of Peaches.
Do., To Mr. Holder, Gardener to the Rev. E. Coleridge, for 24 Cut Pinks, read 24 Cut Pansies.
Do., Small Silver Medal awarded to Messrs. Standish and Noble, for Hæmanthus Rooperi, should have been to Mr. Epps, for that plant.
Do., Omitted to be inserted, Small Silver Medal, awarded to Mr. Summerfield, for 6 Exotic Orchids.
3d col., Bronze Medal, to Mr. Gedney, Gardener to Mrs. Ellis, for 12 Exotic Orchids should be 12 Ferns.
Do., Mr. Whiting, the Deepdene, for Green-fleshed Melon, instead of Bronze Medal read Certificate.
Do., Mr. Busby, for Strawberries, instead of Bronze Medal read Certificate.
Do., Omitted to be inserted: Certificate awarded to Mr. Smith, Gardener to S. Ricardo, Esq., Totnes Park, for Green-fleshed Melon.
Do., Mr. Marcham, Gardener to J. Smith, Esq., Bydorp House, Hanwell, Middlesex, for a dish of Black Cherries.
Do., Mr. Mitchell, Market Gardener, Bristol Gardens, Brighton, for a dish of White Cherries.

LASTREA FILIX MAS VAR. CRISTATA,
ATHYRIUM FILIX FŒMINA VAR. MULTIFIDUM.

ROBERT SIM begs to draw the attention of Growers of HARDY FERNS to these extremely beautiful and unequalled British varieties.

LASTREA FILIX MAS VAR. CRISTATA.—Fronds 2 feet long, pinnæ broadly multifid at their points, giving the whole plant an unique and very elegant appearance. Very rare. Fine young plants, 5*s.*, and larger 7*s.* 6*d.* each. Small do. by post, 3*s.* 6*d.* each.

ATHYRIUM FILIX FŒMINA VAR. MULTIFIDUM.—Fronds 2 feet long, pendant, the ends of the pinnæ so much multifid as to appear tasselled. Fine young plants, 5*s.* each.

They form elegant Conservatory Ferns also.

Carriage free to London. Post-office orders on Chiselhurst. Nursery, Foot's Cray, Kent.

The Gardeners' Chronicle.

SATURDAY, JULY 8, 1854.

The Potato question seems likely to assume a new form. Raising from seed has failed to preserve the plant from disease, and so has the importation of sets from Peru, as well as a selection of varieties. No one can say that a cure has been found among the many nostrums which have had their admirers; artificial manures, pickles, and steeps are exploded; even peculiar modes of preparing the tubers have been more or less unsuccessful, and such improvement as has taken place in the health of the plant is either due to better cultivation or to a gradual wearing out of the affection. We now find, in the "Revue Horticole," an account of another kind of *Solanum*, called *verrucosum*, which may possibly be destined to perform an important part in the regeneration of the Potato.

It has long been known that in the west of Mexico there exist certain Potato-like plants, producing tubers, and approaching very near to the cultivated species. Some account of them was given in 1848 in the third volume of the Journal of the Horticultural Society. Among the species there mentioned, allusion was made to a *Solanum verrucosum*, which produced very small tubers, not exceeding 1½ inch in length, and which was regarded as of no value in cultivation, although, even in the bad year 1847, it exhibited no trace of disease. It appears, however, as if, in the hands of the French, it were destined to acquire some importance.

A Monsieur Pargues states that, at Vesoul, in the Haute-Saône, he received, in May, 1853, from the Horticultural Society of Ain, a dozen tubers of this sort, about the size of Walnuts. They were perfectly sound, the skin was a clear rose colour, modified by a slight yellowness appearing through it. In quality they were mild and pleasant, and as good as the very best varieties of the common Potato. They were the result of three years' culture in the neighbourhood of Ain, where they had been grown in good, rich, well worked land, without any material increase in size.

It, however, proved far otherwise with M. Pargues. He states that his tubers were planted early in May in common garden soil, which was cleaned twice during the season. On the 6th of September he took up the produce of 10 of these tubers, and found they had each yielded from 23 to 25 ounces; some of the new Potatoes weighed as much as 6 ounces; but others were not larger than Walnuts. It thus appeared that while in the rich well worked soil of Ain the Potatoes were too small to be of any use, in the common garden ground at Vesoul they acquired a fair size, and justified the expectation that by raising this Potato from seeds the size would be gradually increased. What renders this a very important consideration is, that the plants of *Solanum verrucosum* were quite free from disease, although common Potatoes planted by their side were attacked as early as the end of July; and we have the evidence of Prof. Decaisne, that in the Garden of Plants, at Paris, the same power of resisting disease was remarked.

Under these circumstances it seems desirable to procure sets of the *Solanum verrucosum*, which could be easily done by any of the English correspondents of Messrs. Vilmorin, of Paris. Attempts might then be made to improve the new kind, either directly by sowing its seeds, or indirectly by crossing it with such sorts as the Fluke. Should this be practicable, it is to be anticipated that we may at once come into possession of a good large Potato with a perfectly sound constitution—a result which we need not say would be cheaply purchased with any amount of trouble or expense.

We suspect that few understand the exact relation that exists between the Sovereign of this country and those possessions which are administered by the functionaries called Commissioners of Woods and Forests. Were it more generally known that the maladministration of which such grievous complaints have long been made affected the fortune of the Crown as well as the public revenue, we cannot but suppose that those who have the power would take immediate steps to put an end to the system which has so long prevailed. A brief explanation of this matter will, we trust, assist in enabling the public to judge whether the question is not one of the utmost gravity.

In the course of ages the Sovereign of England has acquired large possessions, rights, and privileges, which yield what are called the hereditary revenues. These are derived from the rents and profits of the demesne lands of the Crown, *profits arising from Royal Forests*, and various other sources. In the reign of King George IV. a sum of 1,057,000*l.* was settled upon his Majesty for the payment of the civil list, upon consideration of the monarch *having placed his hereditary revenues at the disposal of the House of Commons*. In other words, the King sold his life interest in the Royal revenues for an annuity of something like a million sterling. King William IV. made the same arrangement, receiving only 510,000*l.* a year, but being relieved from all payments relating to the administration of justice and the support of the great officers of state. Upon the accession of her present Majesty, the same arrangement was made, with this difference, that the Queen received something less than 400,000*l.* a year, in exchange for her Majesty's life interest in her hereditary revenues.

As we have already stated, the Commissioners of Woods and Forests are charged with the important duty of managing a large part of these revenues, and we take it to be their duty to secure for the public the utmost value for the property placed under their charge, so as to show that the surrender of the Royal life interest is a good consideration for the annuity which is paid. If the revenue exceeds the amount of the annuity, the grantee has the satisfaction of knowing that the grantor (the nation) is placed in a better position than he had a right to expect. On the other hand, should the revenue be less than the annuity, then the grantee is exposed to the chance of misrepresentations which ought on every account to be avoided; and, what is of much more importance, the successor to the throne is signally wronged. Diminution of annual value, such as we have seen in the Royal forests, may end in placing another monarch in the position of a suitor to the country for a maintenance, instead of his being able to claim it as a mere equivalent for valuable rights surrendered. Seeing what unexpected events are continually occurring in the political world, it is impossible for any one to say that some future Sovereign of this realm will not find himself at the mercy of a parsimonious Parliament, instead of standing in the independent position of a great prince, inheriting from his ancestors a revenue sufficient for his Royal state.

If this is a just view of the case, the importance of exercising a jealous supervision over the department of government entrusted with the management of the Royal revenues cannot be over-estimated, although it seems to have been the last subject thought of by the guardians of the public interest during the present century. And it is for this reason, seeing how old abuses flourish and new abuses spring up where the Royal property is concerned, that we have endeavoured to use such small knowledge as we chance to possess in exposing a system which nobody ventures to defend, but which, nevertheless, continues to flourish and bids defiance to reform. Most certainly it has not been for the sake of disturbing a few obscure forest officers in remote places, who, as we have formerly said, are less to blame than those in high station who, regardless of the interests of the Crown, assigned to them duties which it was impossible for them to execute efficiently, and than those others who still maintain them in a false position, and would, if report is to be trusted, even extend their sphere of action. Lord Coke says—

"If an office, either of the grant of the King or of subject, which concerns the administration, proceeding, or execution of justice, or the King's Revenue,

or the commonwealth, or the interest, benefit, or safety of the subject, or the like; if these, or any of them, be granted to a man that is unexpert, and hath no skill and science to exercise or execute the same, *the grant is verily void, and the party disabled by law,* and incapable to take the same *pro commodo regis et populi*; for only men of skill, knowledge, and ability, to exercise the same, are capable of the same, to serve the King and his people."—*Co. Litt.*, 3.

If this be English law, we are anxious to learn whether no punishment can reach those who violate it.

Hitherto we have confined our remarks to the Royal forests, properly so called, not wishing to include within our observations any of the other branches of the subject. There will, however, be found in another column a letter from Mr. PALMER, of Nazing Park, which shows that we should be much deceived if we permitted ourselves to believe that neglect of Royal rights and mismanagement of Royal property were confined to those forests which are intended for the growth of navy timber. This gentleman assures us that the Commissioners of Woods have just issued a notice announcing their willingness to buy up the forestal rights of the Crown in Hainault (otherwise called Waltham) Forest, which rights have been usurped, either by the connivance or negligence of the Commissioners. It appears that lords of the adjoining manors, and other parties, have long been encroaching upon the forest, one plundering it of 10 acres, another of 50 acres, and so on; that the verderers, (of whom Mr. PALMER is one, have done their utmost to stop the system, but unsuccessfully. By means of sham pleas the power of the verderers has been evaded, and cognizance of the encroachments has been transferred from their court to her Majesty's Attorney-General, who seems to have been instructed to take no notice of the verderers' presentments. This is quite consistent with the easy-going pace of the Treasury agents, who prefer here, as in other cases, letting unpleasant matters alone, to defending the rights and remote interests of the Crown, at a little trouble to themselves, or at the risk of offending some of the gentlemen "in Parliament and out of Parliament, in the Government and out of the Government," to whom Mr. WILSON referred so graphically in his official communications with Mr. KENNEDY. "There is no use in quarrelling, especially with lords of manors; it is much better to let them squat and encroach, and acquire by possession some seeming rights; for, after all, we can always buy them back again upon reasonable prices." Such appears, in this case, to have been the silent language of the Treasury.

QUOUSQUE TANDEM!

VEGETABLE PATHOLOGY.—No. XXVII.

122. THE reproduction of species is not the only object which is involved in the process of fructification; their diffusion is scarcely of less importance or less clearly designed, and to this end means must be provided by which the reproductive bodies may be readily transported from place to place, and at the same time without injury. Some, therefore, are furnished with delicate feathers by which they may be wafted by the winds; others are entangled in the fleeces of animals by means of hooked points, while others have a viscid adhesive coat. In the curious parasitic genus Myzodendron, the feathery processes of the achenium, which answer to the sarcocarp of Viscum, perform the double office of bearing the fruit to its destination, and by twining round the twigs after the manner of a tendril, fixing it firmly, in order that the protruding root of the germinating seed may be kept in its position, so as to acquire a firm adhesion and union with the matrix, one of the most curious and interesting adaptations of means to a particular end which is perhaps to be found in the vegetable world; and further, as Dr. Hooker observes in his charming account of the genus, "the function performed by the gluten of the Viscum and the feathery setæ of Myzodendron is identical, though effected in a different way, and affords a singular instance of Nature's employing the same means in a very dissimilar manner to the attainment of the same end." In some cases the softer parts are inclosed in a thick shell capable of resisting the waves or outward elements, or the embryo itself is surrounded by hard horny matter, which is almost impenetrable. The surrounding tissues also contain matters favourable or unfavourable to decomposition, and thus, by reason of their various structure and constituents, they present the greatest diversity as to their comparative periods of vegetation, and the time during which they are capable of preserving their vegetative power uninjured. This power depends upon a variety of circumstances, but unless protected from the injurious effect of the external elements, few seeds are capable of vegetating after one or two years, while some, on the contrary, under ordinary circumstances, will retain their vitality for considerable periods, especially those of certain leguminous plants, or the hard seeds of different species of Canna.

123. Many seeds, however, if buried a certain depth within the earth, and thus removed from the influence of the oxygen contained in the air, will retain their vitality for several centuries, as appears not only from the fact of copious crops appearing where earth has been newly turned up from a depth exceeding that to which agricultural instruments usually penetrate, but from well authenticated instances of the vegetation of seeds taken from coffins or ancient barrows. But little credence is to be given to the assertions made of the vegetation of seeds taken from mummies, for the spices with which they are surrounded must speedily destroy all vegetation; besides which, the tricks played by the Arabs upon incautious observers are matters of notoriety.

124. The period during which a seed is able to retain its vitality depends apparently on the power possessed by its constituent parts of resisting decomposition. The same seeds, therefore, under different circumstances, will exhibit very different phenomena. As a general rule, oily seeds exposed to the air retain their vitality for a comparatively short period, while those which contain abundant fecula, like cereals, will vegetate after a long period. Many seeds, however, which abound in oil, as those of Mustard and Poppy, will vegetate after a century or more when buried in the soil. All seeds do not acquire precisely the same degree of maturity, and many kinds which vegetate readily when only just ripe, germinate with difficulty when the tissues and integuments are hardened. One or two individuals only will frequently vegetate amongst a large number submitted to precisely the same treatment, but the remainder, though dormant for one or more seasons, at length germinate. It is extremely difficult, in consequence, to eradicate completely many species where the seed has once been shed. Eschscholtzia californica, for instance, will appear many years in succession, although not a plant is allowed to produce seed, or even flower. Were it not for such a provision one adverse season would often be sufficient to exterminate a species in any given locality. In some cases the tissues and their contents become so firmly compacted as to resist all ordinary conditions favourable to that degree of decomposition, without which germination cannot take place; and it is therefore easy to conceive that cases may occur where over maturity may be no less injurious to crops produced from seeds where a speedy growth is indispensable than it is, as regards the tubers, in the case of the disease known by the name of curl to Potatoes.

125. Seeds depend in great measure for sustenance on the nutritive matter contained at a given time in the tissues, exactly as the formation of flower-buds is intimately connected with the condition of the tissues, however forcing or invigorating the matter may be which is freshly imbibed from the soil. Many seeds in consequence ripen perfectly, even when separated at a comparatively early period from their connection with the roots. This is notorious in the case of cereals, and of many garden seeds; a very curious case, however, has lately been detailed in the *Gardeners' Chronicle*, 1854, p. 376, in which a number of perfect seeds were derived from the cut flowers of some prize Hollyhocks, and of the produce of which the ultimate development is now anxiously awaited.* *M. J. B.*

* Seeds ripened in this manner sometimes yield a weakly offspring. I have in my own garden a quantity of seedlings of a pink Horseshoe Pelargonium, the trusses of which were gathered when perfectly green and succulent. Many of the seedlings have perished from a sort of chlorosis, observable from the time of germination, and all have been difficult to preserve.

SALVIA SPLENDENS.

WHERE winter flowering plants are largely in demand for the decoration of the conservatory, or for supplying cut flowers, this will be found exceedingly useful; for nice sized specimens are easily grown in the course of the summer; they require very little attention or accommodation, and when seen in the form of large specimens, well covered with spikes of bright scarlet flowers, few winter blooming plants present a more brilliant appearance, and scarcely any remain so long in beauty.

Being a very rapid grower, it is unnecessary to keep old plants after flowering, except one or two to supply cuttings, for young plants occupy much less space in spring, and form large specimens in course of one summer. Cuttings should be put in not later than the middle of March, and afforded a gentle bottom-heat until they emit roots, when they should be potted singly in small pots. After potting place them in a close but not over warm situation, and as soon as they get established keep them near the glass, and afford them all the light possible, syringing over-head morning and evening in bright weather, and keeping the atmosphere as moist as circumstances will admit. If good sized specimens are wished by the autumn the young plants must not be allowed to suffer for want of pot room, but should be shifted as soon as the roots require more space, and unless this is attended to it will be difficult or nearly impossible to keep them dwarf and well furnished; and if the plants are allowed to get into a pot-bound, starved condition, their great enemy, red spider, will also be sure to attack them. For soil, use equal parts turfy loam, leaf-soil, and thoroughly decomposed cow-dung, with a liberal admixture of sharp sand for the first potting, and a small proportion, with plenty of lumpy bits of charcoal, for the after shifts. This compost will rather incline to be close; therefore, efficient drainage must be secured, and care must be exercised in watering not to get the soil sodden before the pots get filled with roots. As the plants advance in growth the shoots should be stopped and tied out, in order to secure bushy compact specimens; but if a vigorous root action is maintained, there will be little difficulty in keeping the plants bushy. A cold frame or pit will be the best situation for them after the beginning of May, or earlier if the weather proves favourable; but they should be kept close here, and not allowed to sustain any check, which at this stage would be very injurious. If all goes on well, the plants will be ready for shifting into good sized pots by the end of June, and I seldom repot them after this season. By this time they should be strong and well established in 8-inch pots, and when this is the case I shift some into 12, and others into 15-inch pots, according to the strength of the plants and the size it may be desirable to have them by the flowering season. They should be returned to their former situation, kept close and moist, and encouraged to make active growth, merely giving sufficient air to keep the young wood strong. When the pots get well filled with roots, and the plants become good sized specimens, which will be the case by August, they should be gradually prepared for removal to a sheltered situation out of doors, where they will be shaded from the forenoon sun. Here they will make short stocky growth, and will flower more profusely than if kept under glass all the autumn, but they must not be rashly exposed to the sun, to dry and discolour the foliage. As to stopping, this should not be practised on plants intended to flower in November later than about the middle of August, and all the strong shoots should be stopped, otherwise the specimens will flower irregularly. If it should be desired, however, to retard the blooming of a portion of the plants, they may be stopped as late as October, but in this case it will be necessary to afford them a close place under glass until they make flowering wood. As soon as the weather becomes unsettled in autumn the plants must be placed under glass, for they are very easily injured by frost, and should be afforded a light airy situation. But if it should be desirable to have them in flower at once, they may be kept close and moist, and in this case they will soon be covered with their spikes of brilliant scarlet. If afforded a situation free from damp, and near the glass, with a temperature of about 45°, they will remain long in full beauty; but large pot-bound specimens should be liberally supplied with manure water.

After flowering, the specimens may be thrown to the rubbish heap, reserving one or two to supply cuttings. These should be kept dry at the roots for a fortnight, then cut back rather closely, and placed in any spare corner of the greenhouse until towards the end of February, when they should be placed in a warm house, and thoroughly watered, when they will soon furnish a supply of cuttings. *Alpha.*

DESCRIPTIONS OF NEW PEARS CULTIVATED BY M. DE LIRON D'AIROLES, AT LA CIVELIERE, NANTES.—BY HIMSELF.

(*Continued from p. 420.*)

Conseiller de la Cour.—Tree very vigorous and an abundant bearer, well adapted for a pyramid, the form which it naturally takes. Fruit very large, obovate, usually about 4½ inches in height, and 12 inches in circumference. Stalk slender, woody, about ¾ of an inch or from that to an inch in length. Eye sunk and open, frequently without any remaining segments of the calyx. Skin pale green, dotted with russet, with which it is more closely covered near the stalk. Flesh white, fine, juicy, half buttery, with abundance of sugary and agreeably perfumed juice. Season, end of October and Nov. One of Van Mons' seedlings [and, according to the "Annales de Pomologie," it was named from the circumstance of his son being *Conseiller à la Cour d'Appel*, of Brussels. The tree bore for the first time about 1840].

Marie Parent.—Tree moderately vigorous. It first produced fruit in 1851. Fruit large, pyriform, with the surface uneven. Stalk oblique, ¾ of an inch in length, woody, and of a brown colour. Eye surrounded with folds in a rather large cavity. Skin green, changing to a golden yellow when the fruit becomes fit for use. Flesh white, very fine, melting, somewhat buttery, very juicy, sugary, and deliciously perfumed. Ripens in October. Raised by M. Bivort. [This sort is figured and described in the "Annales de Pomologie Belge," vol. i., p. 15. M. Bivort states that it was raised by him in 1844, and that the seed was taken from fruit gathered that year at Louvain, from a tree among the varieties resulting from the last generation of seedlings raised by Professor Van Mons, named in compliment to Madame Parent, wife of the editor of the "Annales de Pomologie."]

Bonne de la Chapelle.—Tree of moderate vigour, and apparently very productive. Fruit middle-sized, roundish, or rather Bergamot shaped, measuring 2⅓ inches from base to top, and 2¾ inches across. Stalk slender, and about an inch in length. Skin light green, glossy, irregularly sprinkled with small brown dots. Flesh white, crisp, juicy, sugary, and perfumed. Season, end of September. This sort was found by M. Jacques Jalais, gardener at Nantes, in the wood of La Chapelle-sur-Erdre, near Nantes, in 1845.

Beurré de Wetteren.—Tree vigorous, very thorny, suitable for a pyramid. Fruited for the first time [illegible] 1847. Fruit middle-sized, turbinate. Stalk about an inch in length, rather thick, slightly curved, with some small plaits round its insertion. Eye sunk in a wide evenly-formed cavity. Skin completely covered with russet, and slightly coloured next the sun. Flesh fine, yellowish-white, half-melting, buttery, with an abundant sugary, agreeably perfumed, musky juice. [In the "Annales de Pomologie," where this sort is figured and described, p. 59, it is stated to have been discovered [illegible] M. Louis Berkmans, in his garden at [illegible] Berg, among a number of wild Pear trees, which [illegible]

partly from his own sowings, and partly from those of the late Major Esperen, of Mechlin.]

Bon Gustave.—Tree vigorous, suitable for a pyramid. Fruit middle-sized, 3½ inches in length, and 12 inches in circumference, of a regular pyriform shape. Stalk nearly an inch in length, thick and woody. Eye shallow and open. Ground-colour of the skin light green; but nearly the whole surface is russeted. Flesh white, fine, buttery, with a sugary perfumed juice. A fruit of first-rate quality, ripening in December and January.

ON THE DISEASE OF HARICOTS, LETTUCES, AND MELONS.

By M. Bazin.

It has been remarked for the last few days past that the leaves of the Haricot Bean, forward enough to have a few ripe pods, have been disfigured by patches of a yellowish colour, and that when the spots and leaves attacked have become tolerably numerous, the plants have begun to languish, and have become seriously out of health. No one has known to what to attribute this morbid affection. Seeing it daily increase I examined it with care, and soon found that the ravages were caused by a multitude of small jumping insects, which devoured the parenchyma of the upper surface of the leaves, and hid themselves under the lower surface, being entirely covered by their excretions.

In order to arrive at a satisfactory conclusion, I put some of the insects in a glass tube, into which I also placed some pieces of perfectly healthy leaves, and I soon saw that the leaves were attacked and reduced to the same condition as those of the frames. The insect not only eats the parenchyma, but poisons the leaf, and renders it unfit for the performance of its respiratory functions; the plant then suffers, and would, no doubt, ultimately die if, in consequence of the active influence of a forced vegetation, new leaves did not incessantly replace those attacked.

The green Haricots of 1854 are in ill health, and that is due, as is clear, to the ravages of an insect, as far as has been at present ascertained. The insect, unknown at present, is hemipterous and monopterous, nearly allied to the bugs of the sub-genus Miris.

Since the leaves of new Lettuces and Melons just appearing above ground were spotted in a similar manner as, indeed, was seen in the case of Melons and Gourds last year, I turned my attention to them, and found these leaves also infested by the same insect.

It may be remembered that, two years ago, MM. Charles and Stephane Bazin discovered, on the leaves of diseased Potatoes, insects of the genus Podura, which hid themselves in the day-time, and only ran about at night, and which seemed to be, by their ravages, the proximate cause of the well-known disease.

The malady from which the leaves of the Haricot are suffering is apparently so like that which afflicts the vineyards, that there seems to be some reason to suppose that those observers are right who attribute the Vine disease also to the devastations of insects. *Comptes Rendus.* [We print this for what it is worth: without at all endorsing the author's opinions.]

TRADE MEMORANDA.

Who is Mr. George Baron, of Harley Street, Blackburn?

Home Correspondence.

Waltham Forest.—I was very glad to see, by the remarks you made in your Paper of the 24th inst. upon the correspondence between Mr. Kennedy and Lord John Russell, and the general observations upon the manner in which the management of her Majesty's Woods and Forests is being transacted, that you take some interest in those affairs. As one of the verderers of Waltham Forest, I have been trying for some years past to check the abuses and encroachments upon the rights of the Crown and poorer foresters which have been enacted to a great amount by some of the stewards of the lords of manors upon the forest, but have received no support from either the Lords of the Treasury or the Commissioners of Woods and Forests. The forest keepers have also been anxious to do their duty, and have regularly presented the encroachments that have taken place, some of them by the lords of manors themselves, of plots of land from 10 to 50 acres in the very heart of the forest; and then, when these encroachments have been brought before the verderers, at their Court of Attachments, they have pleaded, through their agents, *that the land in question was not within her Majesty's forest of Waltham*—which pleading under the act of Parliament (10 Geo. 4, cap. 50, clause 100) prevented the verderers from proceeding to judgment, but required them merely to certify the pleading of the parties who had made the encroachments to her Majesty's Attorney-General, who, doubtless in pursuance of instructions from *some one*, has taken no further notice thereof, thereby encouraging other parties to make further encroachments upon the rights of the Crown and the poorer foresters. A notice has just been issued from the office of Woods to the effect that the Commissioners are ready to receive proposals to purchase the forestal rights of the Crown upon reasonable prices from those persons who have made these encroachments in ignorance; whereas it is well known they have been all wilful acts, and in many instances the encroachments have been protested against at the time of being made, by the freeholders and poorer foresters, thus causing the Crown to desert these poorer foresters, who have ever looked up to the Crown to aid and support them in maintaining their rights of pasturage for their cattle, &c. at the same time that the feed and protection of her Majesty's deer were regarded—a measure, in my opinion, most unworthy of any responsible adviser of her Majesty to pursue. *George Palmer, Verderer of Waltham Forest, Nazing Park, Waltham Cross, June 29, 1854.*

Caterpillars.—When passing a market garden in this neighbourhood yesterday, my attention was attracted to the singular appearance presented by a large plantation of Gooseberry bushes, loaded with fine fruit, but wholly destitute of leaves. I at first supposed it to be the effect of some disease, resulting from the long continuance of cold unseasonable weather, and the dry blighting winds that prevailed during the past month; but on inspection I found it to be the work of myriads of caterpillars, which made their appearance, as I was informed, about 10 days ago, and in that short period committed all this destruction. It is not unusual to see in our best managed gardens a few bushes disfigured in the early part of the season, but immediately the pest is discovered means are taken to check or arrest its progress. In this instance, however, nothing of the sort had been done, nor does it appear that the parties interested had the least suspicion of their property being molested by such a formidable enemy, until the latter had nearly accomplished its work, and rendered all applications unavailing; and the consequence is, that from the bushes being as bare of leaves as they are in winter, they will naturally receive a certain amount of injury, but not by any means to be compared with that of the crop, which I should imagine will be almost worthless. I regret to say that the ravages of the caterpillar are not confined to any one plantation or locality, but appear to be general on the west side of London, and I dare say will be noticed by some of your correspondents, should any of them have had the misfortune to be visited with this destructive pest. *W. B. Booth, July 3.*

Effects of the late Winter and Spring on hilly ground.—As a confirmation of the well-known fact, that frost is often much less severely felt on the hills than on the neighbouring plains, I beg to annex a list of shrubs, &c., which, in the county of Surrey (about 500 feet above the sea), have been in no degree injured by the severity of the late winter and spring, viz., Cupressus funebris, C. thurifera, C. Lambertiana, Pinus insignis, P. Hartwegi, P. Montezumæ, P. palustris, Abies Douglasi, A. Webbiana, Araucaria, Deodar, Ilex, common Arbutus, Bay, Laurustinus, Hydrangea, and Escallonia. Azaleas have flowered poorly, but are not at all cut by the frost; Cunninghami is slightly browned, but the leading shoots are not at all damaged; unprotected Apricots and Greengages are a good crop. The only trees which seem to have suffered are Peaches and common Robinias. *P. P. P.*

Hartley's Rough Plate Glass.—I am about to erect, over one of Mr. Rivers' Peach frames, which has proved a failure, a span-roofed Peach-house, 90 feet by 18 feet, the roof to be fixed, and ventilation to be effected by the side lights. As Peaches always colour the best when the lights can be entirely removed on fine days, it had occurred to me that possibly they might not colour so well under a fixed rough plate glass roof; I should, therefore, be glad if any of your correspondents, who have had experience in the matter, would favour me with their opinion. In the Orchard-house at Basing Park the Peaches, &c., colour beautifully under common sheet glass, and I must confess I know no reason why they should not, under rough plate; still, I should not like to pay an extra price for my "whistle" and then find it to be of no use. *W. P. A., South Wales.*

Aëration.—The system proposed by your correspondent "J. P. S.," Chesterfield, seems very important. The principle is not new, but practically it has been but imperfectly understood. If "J. P. S." would take the trouble to furnish an exact description, with a sketch, of the ventilator in use, it would confer a great favour on many parties in this quarter, and probably on your readers generally. *H. A., Glasgow.*

Effects of the Winter and Spring on the Pinetum at Bicton, Devonshire.—With us, last winter was the most severe we have had for these 14 years past. Throughout January the thermometer indicated from 8° to 17° of frost, accompanied by cutting north and north-easterly winds. No very serious injury was then done to the plants. The nights of March and April were frosty, the thermometer showing, on many mornings at sun-rise, from 6° to 10°. The sun rising brightly and shining fiercely on the thick hoar-frost began to sear and rust many plants; but it was on the two last weeks in April the most serious injury was done here, after the sap was pretty well up, and many plants had been excited into free growth. We had then from 6° to 9°, and even 10° of frost one morning at sun-rise. Plants, however, which at the time showed the ill-effects of the hard weather have now completely recovered, and are making very luxuriant growth. Taxus Harringtoni, T. Mackaii, T. Bariensis, and T. elegantissima have stood uninjured; Phyllocladus trichomanoides and asplenifolius, which had been slightly protected, are not injured in the least; Saxe-Gothæa conspicua promises to prove as hardy as any of the Yews; Cephalotaxus Fortuni has not been injured; Podocarpus Purdiana and mucronata have been killed, but totara, slightly protected, is unhurt; Dacrydium Mayi, protected, is uninjured. A few of the Mexican Pines have been entirely killed, such as P. occidentalis, P. Grenvilleæ, P. Gordoniana, P. longifolia, and P. filifolia. These measured from 1 to 2 feet in height, and were protected with a small box asphalte protector, with dry Fern placed round their stems, and kept close in severe weather; larger specimens, however, have not been injured in the least, such as P. oocarpa, 14 feet high; P. Russeliana, 10 feet high; P. Hartwegi, of similar height; P. teocote, 16 feet in height, with branches 20 feet in diameter; P. leiophylla, 20 feet in height, and branches 20 feet in diameter—these kinds, as I have stated, have not suffered, and are all making fine wood; P. patula, 8 feet in height, has had a very rusty appearance, but it is now making shoots from 6 inches to 1 foot in length. Pinus californica appears to be quite as hardy as P. insignis, and it has the appearance of making a more noble tree; it is 25 feet in height, with branches 20 feet in diameter, and has no fewer than 100 cones upon it, which have a singular appearance, being formed in whorls on the young wood. Pinus insignis is a fine specimen, having attained the height of 50 feet, while the diameter of the branches is 40 feet, and the circumference of the stem, at 3 feet from the ground, is 6 feet 3 inches; when planted out, in 1839, it was from 8 to 10 feet in height; the annual rate of growth has been 2 feet 8 inches; it has several times lost its leader, which has been eaten off by beetles or broken by birds alighting upon it when very young. This Pine does not appear to bear cones so freely as P. californica, and it is not so large. Pinus macrocarpa is another fine specimen, 46 feet in height, with branches 37 feet in diameter; its mode of growth is singular—from the root to half the height of the tree the branches twist one across the other, while the top part grows more erect. The circumference of the stem at 3 feet from the ground is 5 feet 6 inches. This tree has not produced cones, but it is annually covered with male catkins. A few small specimens of Abies have been injured by the spring frost, such as A. morinda, A. Brunoniana, A. khutrow, and A. Smithiana; these were not more than 2 feet in height, whereas specimens of A. Smithiana, from 18 to 20 feet in height, have not suffered in the least. A. Douglasi is here a very spreading tree, having lost its leader several times; it is 45 feet in height; the diameter of the branches is 40 feet; and the circumference of the stem at 3 feet from the ground, 5 feet; it bears great quantities of cones, which, owing to their great weight, often strip off the branches, but they never produce seed, on account of the spring frosts destroying the male catkins, which are produced, like those of many other varieties of Abies and Pinus, in February and March. The Yew-leaved variety of Douglas Fir (Abies Douglasi taxifolia) is 31 feet in height, while the diameter of the branches is 32 feet. Abies Menziesi is one of the finest of the species of Abies; when moved by the wind, with the sun shining upon it, it has a remarkable appearance, on account of its silvery foliage; it is 32 feet in height, with branches 22 feet in diameter. Of Piceas many have been injured by the spring frost destroying their young shoots when 1 or 2 inches in length, such as those of P. pichta, P. pindrow, and P. naphtha. On former seasons P. Webbiana, in a young state, was greatly injured by late frost; but now that it is 27 feet in height, it does not get injured in the least; the diameter of its branches is 16 feet, and the circumference of the stem 3 feet 2 inches. The long silvery foliage and large blue cones growing among the branches give this tree a fine appearance. It has not yet produced any seed, on account of the spring frost destroying all the male catkins. P. nobilis is 16 feet in height; it is a fine tree, with singular-looking cones. P. Nordmanniana has the appearance of making a noble tree, having attained the height of 9 feet in a short time. P. cephalonica is another species that has generally been injured by late frosts, but now, when it is 28 feet in height, it does not suffer in the least; the diameter of its branches is 21 feet, and the circumference of the stem 4 feet. P. pinsapo is 10 feet in height, and appears more hardy than cephalonica in resisting spring frost. Cedrus Deodara is 35 feet in height, and the diameter of the branches is 34 feet. Araucaria imbricata is a fine tree with a luxuriant dark colour, and branched to the soil; it is 24 feet in height, the diameter of the branches is 16 feet, and the circumference of the stem 3 feet 3 inches. This tree was moved a considerable distance, with a large ball of earth attached to it, in the year 1847, which of course retarded its growth for a season or two. Several years previous to its removal it had formed cones, and it has continued to produce them yearly in quantities, and of a large size. Seed of course it has not perfected, having had no male catkins. This season a fine healthy male Araucaria imbricata, 16 feet in height, has produced its curious long brown coloured catkins or cones. To us they have a novel appearance. There is an avenue here through one of the parks of these singular trees in a very healthy vigorous condition, averaging 15 or 16 feet in height. We may therefore expect to see, ere long, more males, with catkins or cones. Araucaria Braziliensis has stood out with us several winters, and had grown to 8 feet in height, but this winter has killed it. Cunninghamia sinensis is 18 feet in height; all the lower part of the tree had a very brown appearance, but it is now making young wood, and is assuming its usual green appearance. Cryptomeria japonica is a fast growing tree, having been planted about seven years ago, and now it is 20 feet in height, and has been full of cones for several seasons. Taxodium sempervirens, planted at the same time, has grown to 20 feet in height, with branches 16 feet in diameter, and not the least injured by the late winter. Callitris australis was 16 feet in height, but it has been killed, although it has stood for many years uninjured; Callitris macrostachya and C. cupressiformis are

unhurt. Dammara australis has been nearly killed, and there does not appear to be any chance of this plant standing even the climate of Devonshire. Fitz-Roya patagonica will doubtless prove to be as hardy as any of the Cedars, having, with a slight protection, remained uninjured. Cupressus juniperoides and C. aurea have been killed. C. lusitanica, 20 feet high; C. Uhdeana, same height; C. Lambertiana, 12 feet high; C. religiosa, 15 feet high, and C. torulosa, 24 feet high, have all a grand appearance, and have stood quite uninjured; C. macrocarpa is the most striking species of all, and on drawing a branch of it through the hand it emits a most beautiful odour; it is a fast growing tree, having attained the height of 15 feet in six years. Juniperus oxycedrus, echiniformis, communis, and canadensis have been killed. The following have not been injured:—Juniperus mexicana, J. Chamberlani, J. alba, sp., J. flagelliformis, J. oblonga, pendula, J. depressa, J. Bedfordiana, J. fragrans, J. flaccida, J. recurva, J. humilis, J. uvifera and J. rependa; these are now beginning to have a grand appearance. Thuja pendula is a remarkable looking specimen 10 feet in height, with drooping branches reaching nearly to the ground; T. japonica, T. Warreana, T. orientalis stricta, are fine-looking specimens from 10 to 15 feet in height. *James Barnes.*

Protection of Wall-fruit.—I hope you will pardon my again directing attention to this subject. One of our Apricot walls is flanked by an east wall, upon which is the cover represented at p. 389; next the Apricot wall is planted a red Magnum Bonum Plum; one branch of this Plum has extended itself, and taken advantage of the canopy or covering of the Apricot, and is covered with abundance of fine fruit, whereas the rest of the tree has not a single Plum on it. This, I think, forcibly shows the good effects of such shelter, and what might be effected if in general practice. *W. B. M. Lisle, LL.D., St. Fagan, Cardiff.*

Wasps.—The following were destroyed at Copt Hewick in 1854, and paid for to children who brought them.

April 18	... 878	wasps	£0	15	9
" 22	... 765	"	1	12	8¼
" 29	... 479	"	0	19	11¼
May 6	... 456	"	0	19	0
" 13	... 514	"	1	1	8
" 20	... 794	"	1	1	10
" 27	... 445	"	0	12	6
Total ...	3851	"	£7	8	5
Eight nests		... ...	0	2	0

M., Copt Hewick Hall, June 29.

Kennington Park.—The most remarkable feature connected with this park at present is the amount of bare earth which it contains; for, although the boundary belts on the east and south sides have been all planted, yet such is the naked nature of the trees and shrubs that have been put into them that, standing at the model cottage and taking a general survey of the whole, scarcely a green leaf can be seen. The greater portion of the centre will, I understand, be Grass; but, although the season is so far advanced, not a seed has as yet apparently been sown. The walks, which are for the most part straight, with the exception of an extremely ugly and crooked one (serpentine it certainly cannot be called) on the south side, are about 15 feet wide. They have gratings here and there along their sides for carrying off surface water; but so unlevel are the walks that in many places the water never reaches these, but after a shower stands in pools along their sides, and the whole surface of the gravel is a puddle. As regards the borders, they are wholly planted with trees and shrubs such as no man with the slightest knowledge of gardening would ever think of planting, even if he got them for nothing, and which respectable nurserymen would be obliged to send to the faggot heap. Such as are growing will not make any appearance for years, which will be quite intelligible when it is stated that the largest of the forest trees (consisting of Beech, Birch, Elm, Lime, Oaks, and Poplars, &c.), is about 12 feet high, with very few short side branches, and about 2 inches in diameter at the ground. The shrubs, which consist for the most part of Box, Alaternus, Arbor-vitæ, Lilacs, Aucubas, and a few Laurels, which are nearly all cut down to the ground, exhibit the same miserable appearance, fully bearing out what has been said respecting the general naked appearance of the place, and which, except fresh shrubs and trees are introduced, it must have for years. Even the planting of these wretched materials has been done in the most unskilful manner. I observed five Arbor-vitæs in about 2 yards square, and seven Beeches in as many square yards, which are only two instances of very many in which the shrubs and trees are thus huddled together; and although the borders are wide, yet Arbor-vitæs and Alaternus are planted within 18 inches of the Grass verge, and at one place a Hornbeam was even placed at one foot from the verge! Deaths have taken place in abundance. In one place we remarked 12 plants dead, or cut down to the ground, in as many square yards. The only shrubs in the place at all passable are a few Rhododendrons, planted round the model cottage. These look healthy and well, indicating that the place is not unfavourable to growth. The paucity of trees of an ornamental character is a point worthy of notice. There are only one or two purple Beeches, no evergreen Oaks, and no Chestnuts or Almonds. There are certainly a few standard Thorns and Laburnums; but these are planted far back in the borders. I also remarked a Weeping Ash or two; but little else. A few Gueldres Roses, pillar Roses, and hardy Azaleas unworthy of the name may be found here and there. Some of the latter, as well as forest trees, are now laid in by the heels, which I should think will be none the better for the summer treatment they have received. *A Gardener and Looker-on.*

Slugs.—A hint given a week or two ago by one of your correspondents on the capture of slugs seems worthy of republication. To put it into a methodical form:—Take a basinful of oatmeal, and an iron spoon, and sally forth about 6 o'clock, P.M., after rain. Drop a patch of meal, not on the open border, but near any little assemblage of leaves or stalks that offers a nidus to the vermin. A Strawberry bed is a regular preserve. The basin emptied, put in a little salt and water, and with spoon in hand revisit your deposits about an hour later; and you will witness such a commotion amongst a family not noted for agility as will astonish you. Slugs old and young, wrinkled slugs and smooth, black and brown, yellow and grey, mottled and drab, are all on the move. The spectacle of a dozen Russian store-ships could not produce a greater stir amongst the Baltic fleet. Some are seen bearing down in full sail towards the treasure, some tacking to get advantage of the wind, some with grappling-irons fixed intent only on plunder, and some, it may be, reluctantly turning aside, having shipped a cargo far heavier than prudence would dictate. If some friendly chemist would suggest a little addition to the Oatmeal, which would serve as a quietus without the spoon and salt, the recipe would be complete. *T.*

Rain Gauges.—Your correspondent, Mr. Slatter, thinks that the observations made at Pembroke Dock-yard, of the differences in the amount of rain between my two gauges betray "internal evidence of error." I shall be much obliged to him to point out that evidence, as it may, if discovered, assist in arriving at a correct understanding of the question. *T. S. P., Bowness, Windermere, July 3.*

Potato Disease in Ireland.—It is now, I think, over two months since I showed unmistakeable signs of this disease to a learned botanist in Cork; and in a day or two after to two botanists in Dublin. Neither of them believed me, at least so I thought. I showed the same to another and a more learned philosopher, who does not profess or pretend to be a botanist—he did believe me. I have closely observed the growing crops in very many parts of Ireland ever since, and still remarked the same symptoms. A few days ago I saw, within the circular road, Dublin, the leaves and stalks actually withered from disease. Since then I have seen the same, varied in extent, in all sorts of places, from the flat fertile lands in Fingal to the highest bog farms in Tipperary and Clare. I have, since I came to this hotel, seen the disease in the very hearts of the tubers served up for dinner; yet few will believe in its existence. To what extent the disease will go I believe no one can even guess with any degree of accuracy. The past three weeks in Ireland have been very favourable to its spread. This much I know, and all should know the same, that, taking into account the deficiency in our early meadows, and the chances of a bad quality of hay in our late ones, the probable lightness of straw in our grain crops, the high prices at which beef and mutton are selling and likely to sell, every available spot should be sown with the late varieties of Turnip, Rape, in drills and broadcast, and transplanted in the autumn, with the view of securing a fair share of winter and spring provender, generally scarce in most parts of Ireland, but more particularly so during and after severe winters. Such our last winter was and our next may be. "A word to the wise is sufficient for them," and those who will not be wise in time, when fore-warned is being fore-armed, will have themselves alone to blame. *Edward Carroll, Clare Hotel, Limerick, July 5.*

Societies.

ROYAL BOTANIC, REGENT'S PARK, *July 5.*—This Society's last *fête* of the season took place on this occasion under very unfavourable circumstances as respects weather, heavy showers falling at short intervals during the whole afternoon. The exhibition itself, although we observed some of the recesses and other portions of the benches filled with plants from the Society's houses, may, on the whole, be pronounced a good one for July. Stove and greenhouse plants were produced in tolerable abundance, Orchids were in good condition and pretty plentifully supplied, and there was a fair proportion of Pelargoniums and other florists' flowers. Fruit was plentiful and good.

Of 16 STOVE and GREENHOUSE PLANTS, we remarked exhibitions from Messrs. May (gr. to H. Colyer, Esq.), Speed, and Green; all of which did these growers great credit, their plants being clean, fresh looking, and well flowered. Among Mr. Colyer's we remarked very fine specimens of Erica metulæflora bicolor and E. Parmentieri rosea. These were both unusually brilliant and handsome. The same gentleman had also two Vincas, and a similar number of Ixoras, all good; a Rondeletia, and excellent plants of Phænocoma prolifera and Polygala oppositifolia. The other groups also contained many remarkable specimens, but we need not stop to particularise them here, as they will doubtless be reproduced at Chiswick to-day, when they will be carefully examined and fully reported on next week. The same remark also applies to other collections of stove and greenhouse plants from Messrs. Fraser, Rollisson, Pamplin, Gilham, Barter, Peed, Clarke, Jarvis, Hamp, Taylor, Over, Rhodes, and Roser. In a group from Mr. Frost, gr. to E. L. Betts, Esq., which was first in collections of 10 plants, were excellent examples of Kalosanthes miniata and coccinea, Dipladenia splendens and crassinoda, and a very fine Allamanda. Miss Traill's gr. (Williams) had also an excellent Tetratheca verticillata, a good Pimelea decussata, and a handsome plant of the large-blossomed Erica Shannoni.

ORCHIDS, as we have stated, were well furnished by their usual exhibitors, Messrs. Williams, Woolley, Rollisson, Hume, Gedney, Ivison, Clarke, Keele, Green, and Summerfield. Mr. Hume's plants were not so fine this time as they were last, and they were certainly too much surrounded by sticks to be either natural looking or graceful. Among them were Aerides quinquevulnera in fair condition, a good Miltonia spectabilis, and handsome specimens of Phalænopsis and Saccolabium Blumei. Mr. Gedney's most remarkable plants were Phaius albus, Oncidium Lanceanum, Phalænopsis, and Lælia anceps. Mr. Keele had the same new Brassavola which was shown at the last meeting of the Horticultural Society in Regent Street.

CAPE HEATHS were plentiful and well varied, many of the autumn flowering kinds differing greatly from one another, not only in habit of plant, size, and shape of flower, but also in colour. They, therefore, received more than usual attention.

ROSES this time were all shown in a cut state. They were produced by the usual exhibitors, and in good condition; but being arranged along the low side shelves of the great conservatory, they were not seen to good advantage.

Of NOVELTY there was again but little. Messrs. Henderson, of Pine-apple Place, sent the yellow-flowered, handsome-leaved Begonia xanthina, Cheiranthera linearis, Tropæolum incisum, a promising kind; Sentelaria pulchella, and a variegated Fuchsia. Messrs. E. G. Henderson, St. John's Wood, had a collection of Gloxinias and Achimenes, some of which, viz., G. erecta magnifica, and A. Sir Trecherne Thomas, were good; also Echites Pellieri, which was, however, scarcely sufficiently in flower to judge of its merit. Messrs. Veitch produced a large and fine plant of Veronica variegata, a singular-looking small-flowered Cycnoches, and Ixora Lobbi; and Messrs. Standish and Noble again showed their handsome Clematis lanuginosa, and a group of Berberis and other plants. Messrs. Rollisson had Abelia uniflora, a species of little beauty; and Scheeria mexicana came from Mr. Parsons. Mr. Gedney had a large and fine Nepenthes Rafflesiana, which was not, however, shown as a new plant.

PELARGONIUMS.—Mr. Turner obtained the first prize in the Nurserymen's Class, with Magnet, Mochanna, Rowena, Carlos, Enchantress, Optimum, Ganymede, Governor-General, Juliet, Achilles, Azim, and Zeno. Mr. Gaines, who was second, had Queen of Purples, Electra, Nandee, Beauty of Montpelier, Governor, Ajax, Féte noir, Lady Julia, Advancer, Arethusa, Rosa, Seraph, and Andover. Amateurs:—1st, Mr. Holder, with Carlos, Alonza, Pearl, Mochanna, Optimum, Ajax, Supreme, Narcissus, Boule de Feu, and Magnet; 2d, Mr. Robinson. FANCIES:—1st, Mr. Turner, with Electra, Caliban, Celestial, Erubescens, Conspicuum, and Criterion; 2d, Mr. Gaines, with Conspicuum, Delicatum, Vandyke, Alice Maude, Advancer, and Perfection. Amateurs: 1st, Mr. Robinson, with pretty plants of Emily, Delicatum, Fairy Queen, Celestial, and Roland Cashel; 2d, Mr. Winsor, with Magnificum, Duchesse d'Aumale, Parodi, Statiriski, Fairy Queen, and Prince Albert. New Varieties: 1st, Mr. Turner, with Governor-general, Carlos, Mary, Eugenia (a charming spotted kind), and Foster's Rosa; 2d, Mr. Holder, with Pilot, Portia, Sanspareil, Basilisk, Governor-general, and Medora. Mr. Turner received a prize for a large and fine plant of Rowena in an 8-inch pot, shown as a specimen. The same nurseryman also received a Certificate for Pelargonium Una, a fine kind with large trusses and good habit. Phaeton was shown again, and Mr. Gaines reproduced Conqueror. He had also a group of his French Pelargoniums. Mr. Edwards showed a group of well-managed Scarlets.

FUCHSIAS.—Mr. Bray had Elizabeth, Perfection, Speciosa, Madame Sontag, Pearl of England, and Collegian. These were well-flowered and beautiful plants, most of them being about 7 feet in height, and well furnished with branches from top to bottom. Mr. Ward sent Prince Arthur, Elizabeth, Pearl of England, Sir J. Falstaff, and Glory.

CALCEOLARIAS.—Six nicely-flowered plants came from Messrs. Henderson, of Pine Apple Place, they consisted of Othello, President, Minerva, Bertha, Ophelia, and Rubens. Of seedlings, by far the best was one called Eclipse, from Mr. Cole, which must doubtless prove a favourite, being brilliant in colour, and apparently a very free bloomer.

PANSIES were shown tolerably numerous and good, but not sufficiently fine or dissimilar from those shown in May and June to call for special notice. The prizes were awarded to Mr. Turner, Mr. Bragg, and Mr. Bryan, in the order in which the names are given.

We observed stands of CARNATIONS and PICOTEES shown by Mr. Turner, which received prizes, and were interesting at this early time of the year.

There were several lots of cut VERBENAS, and some plants of seedlings, the best of which was Wonderful, purple, with a large white eye; this had a Certificate. Lady Lucan is also a very pleasing rose, with large yellow centre. In the cut collections Boule de Feu and Willam Barnes were the best for effect. There were some pretty light kinds; Bridesmaid and Madame de Frelense were very good.

PINKS.—Fine stands were staged in the Nurserymen's Class of 24 blooms. Mr. C. Turner was 1st, with Brunette, Teddington, Richard Andrews, Duke of Devonshire, Harry, Jupiter, James Hogg, Climax, R. Smith, Arthur, Optima, Sarah, Lord Valentia, Fanny, Mrs. Hoyle, President, Constance, Criterion, New Criterion, Adonis, Salt Hill Rival, Perfection, John Stevens, and two Seedlings: 2d, Mr. J. Keynes, with the following, dissimilar to those in the first collection, Great Britain, Lord C. Wellesley, Sappho, Lola Montez, Mrs. Lewis, Narborough, Buck, Koh-i-noor, Lady Mildmay, Ada, Edwards' No. 3, King of Purples, Huntsman, Ruby, Mrs. Judd, and Napoleon. Mr. Bragg was 3d, with the following, not in the two first stands, Mrs. Bragg, Duke of Wellington, Prince of Wales, Goliath, J. Dickson, Lady B. Smyth, Eliza, and Desdemona. In the class for Amateurs, Mr. Baker, Woolwich, was 1st, with Arthur, Optima, Sarah, Warhawk, Constance, Mrs. Wolf, Criterion, Harkforward, Sappho, Koh-i-noor, Mrs. Norman, and Colchester Cardinal; 2d, Mr. Lawrence, Hampton. Several seedlings were exhibited; the best were R. Andrews, Adonis, and Field Marshal.

FRUIT, as we have stated, was abundant and good. The best collection was furnished by Mr. M'Ewen, gr.

to the Duke of Norfolk, at Arundel. It consisted of three capital bunches of Black Hamburgh Grapes, four Melons, two dishes of very good Green-gage Plums, Bigarreau and Late Duke Cherries; Royal George and Red Magdalen Peaches, and Elruge Nectarines, and Trollope's Victoria and other Strawberries. Mr. Fleming, gr. to the Duke of Sutherland, at Trentham, and Mr. Spencer, gr. to the Marquess of Lansdowne, also had collections, of which there were altogether five.

Pine Apples were numerous, but not remarkable for great weights. They consisted, for the most part, of Queens and Providences, good examples of which were furnished by Messrs. Bailey, Robinson, Bray, Thomson, Bore, and Davis. The best Queen again came from Mr. James, gr. Pontypool Park, and Mr. Jones and Mr. Spencer both had good fruit of this variety. Mr. Robinson sent the best Providence.

Grapes were extremely numerous, and very good. The best Black Hamburghs by far came from Viscount Dillon's gr. (Boyd). These were large both in bunch and berry, finely coloured, and covered with a most beautiful bloom. The same grower had also some of the best Muscats that were perhaps ever seen, as far as size was concerned, the berries being nearly as large as Plums; they did not, however, appear to be quite ripe. Most excellent Black Hamburghs were furnished by Mr. Frost, gr. to E. L. Betts, Esq., Mr. Wood, Mr. Stent, Mr. Hughes, Mr. Hill, Mr. Bailey, Mr. Thomson, and Mr. Mitchell, and Muscats by Messrs. Solomon and Turnbull. The best Muscadines came from Mr. Williams and Mr. Tillyard. Mr. Ivison and Mr. Constantine both had Grapes in pots, those from Syon very good.

Peaches and Nectarines were unusually plentiful and good. The best came from Mr. Snow, gr. to the Earl de Grey. They consisted of Noblesse Peach and Violet Hative Nectarine. These were large, well coloured, and altogether very fine. Mr. Cowan had also beautiful Royal George Peaches and Violet Hative Nectarines. Mr. Brown sent large and fine Royal George Peaches, and tolerably good Violet Hative Nectarines. Mr. Chapman, gr. to J. B. Glegg, Esq., had excellent specimens of Violet Hative Nectarines, and Noblesse and Bellegarde Peaches. Mr. Spencer produced some very fine Noblesse and Bellegarde Peaches, and Violet Hative and Elruge Nectarines; Downton and Elruge Nectarines, and early Purple and Bellegarde Peaches came from Mr. Turnbull.

Of Apricots, there was a dish of small fruit, said to have been ripened without fire heat, from Mr. Allport.

Plums.—Mr. M'Ewen sent a dish of Green-gage, and another of some black Plum came from Mr. Tillyard.

Of Figs, Mr. Snow showed good fruit of Lee's Perpetual.

Cherries.—The last-named exhibitor had some good Eltons and Black Tartarians; Mr. Spencer sent good fruit of Bigarreau.

Among Melons, one of the best was a Beechwood from Mr. Whiting, of the Deepden, near Dorking. Mr. Frost had also a good green-fleshed; and Victory of Bath from Mr. Lidyard was considered good, as was also Munro's Egyptian Hybrid; Mr. May was awarded a prize for the Hoosainee.

Among Strawberries, we remarked a good-looking seedling called Omer Pacha, which was said to be well flavoured. We also noticed a dish of the White Bieton Pine. The more common kinds were abundant and very good, especially some from Mr. Lidyard, of Bath.

Some tropical fruit was shown by Mr. Ivison, of Syon.

Notices of Books.

Dr. Robertson's Handbook to the Peak of Derbyshire (Bradbury and Evans), is intended for the information of visitors to Buxton, who, we have no doubt, will find it an agreeable as well as useful companion. It gives a good geological account of the district, historical records of baths, and numerous details relating to the neighbourhood, to which is added some botanical information, which many will find acceptable, since it guides them to the spots where the wild flowers peculiar to the Peak can be easily found.

Mr. Budworth Sharp has circulated some *Observations upon Fibrous Substances*, by way of introduction to Dr. Royle's lecture upon the subject, lately delivered before the Society of Arts. No one possesses more practical knowledge of this important subject than Mr. Sharp, from whom we must borrow what follows, however much we may shock the susceptibilities of our politico-economical friends:—

"I am sorry that the documents in my possession do not enable me to give an uninterrupted statement of the importation of flax and hemp for each year of the present century, which might have been desirable. But information of that nature will appear in the course of a few weeks, as I have placed in the hands of an honourable member the heads of two motions for Parliamentary returns—one showing the importation of flax and hemp in each year, from 1801 to 1853, distinguishing that imported from Russia; the other showing the import and export of rags in the same years. When these returns are made, they will, I expect, prove that the opinion which I have elsewhere hazarded—namely, that we have paid Russia in the last year between four and five millions, and within the present century nearly 100 millions sterling, for flax and hemp alone — is not far wide of the truth. It is an anomaly little creditable to the enterprise of Englishmen that the sails and rigging of the ships, and a portion of the clothing of the seamen, of our splendid fleets in the Baltic and the Black Sea should be composed, in a considerable degree, of the produce of the soil of that country whose coasts they are now blockading; thus giving extensive employment to the Russian peasantry, and enriching the nobles of Russia, when (and I make the assertion most advisedly) every pound of the same materials, or others of equal value, could have been obtained, for the last hundred years, from our own possessions, east and west, within the tropics—giving a corresponding amount of employment to our own fellow-subjects, and conducing largely to individual, colonial, and national benefit. It is time that this were done. Nor will it be the fault of the individual who appends his name to these observations if, in the sphere in which he moves, aided by effective patent machinery, he does not entitle himself to the credit of having contributed his full share to the realisation of those advantages, public and private, with reference to this question, which it is quite within our power to accomplish."

New Plants.

67. Spiræa grandiflora, *Hooker in Bot. Mag.*, t. 4795; *alias* Amelanchier racemosa, *Lindl. in Bot. Reg.*, 1847, *sub. t.* 38.

A very remarkable hardy shrub, found by Mr. Fortune in the North of China, and sent home as an Amelanchier, which it is much like in habit, except that its flowers are as large as a Philadelphus. The leaves are thin, alternate, lanceolate, entire, and apiculate. The flowers are from two to six on a raceme, white or cream coloured, with a serrated petaloid calyx, and a great fleshy green disk, in the centre of which stand five free carpels. Some of the flowers are male, and it was an examination of one of these which led to the surmise that the plant might be, what it is very like, and what Mr. Fortune called it, an Amelanchier. Living specimens have enabled Sir Wm. Hooker to show that this cannot be, and he refers the plant to Spiræa. That the fruit, when it is produced, will show the plant to be neither the one nor the other we cannot doubt. In the meanwhile we leave it with its latest name.

It is a very handsome plant, forming, when wild, a small bush; and if it should prove hardy, which is probable, it will be a great acquisition.

68. Libocedrus Doniana, *Endlicher*; *alias* Thuja Doniana, *Hooker*.

This singularly beautiful and interesting plant, which is a native of the north island of New Zealand, where it attains a height of from 30 to 70 feet, has stood the winter at this place altogether unharmed. It was planted in the early part of June last year in a situation facing the south and somewhat sheltered from the northern and eastern winds. It had also the advantage of a covering of Fir boughs during the intensity of the frost in winter; that, however, had been discontinued for many weeks previous to the 24th of April, the period at which the frost proved so very destructive even to the hardiest trees of the country. The specimen I forward will show in what excellent condition this rare and Fern-like form, from a climate, too, from which little can be expected to be hardy, has withstood the severity of a spring almost unexampled in its severity. *James Duncan, Basing Park, Hants.* [This is the Kawaka of the New Zealanders, and certainly a very pretty shrub or tree.]

Garden Memoranda.

Bentley Priory, Stanmore, Middlesex. — This charming country seat, as many of our readers doubtless know, belonged to the Marquis of Abercorn; but it has lately become the property of J. Kelk, Esq., the eminent builder. The house stands near the centre of a finely undulated and beautifully wooded park; the latter indeed had been permitted to get overloaded with timber, and therefore it has been found necessary to cut down many of the fine trees with which it was so copiously furnished, in order not only to bring its own natural beauties more prominently into view, but also those of the circumjacent country, comprising Harrow on the Hill, Hampstead Heath, and even in a clear day it is said that the Crystal Palace at Sydenham can be seen from the elevated covered platform or raised terrace in front of the drawing-room windows. From this point the visitor looks down on a neat geometrical flower garden, with beds on gravel, and margined with box, and cut off from the park by a low terrace wall surmounted with vases, which are also placed at regular distances on dwarf terrace walls along both sides of a broad straight walk which passes more immediately in front of the house. The latter, with the exception of such portions as have been altered or newly built by Mr. Kelk, is delightfully mantled with Ivy, which, being kept closely trimmed in, has a neat and cheerful appearance. Down in a hollow in the park, not very far from the south front of the house, and still half hid among trees, is a piece of water covering an area of some 8 acres; and now that such objects as were thought most striking and interesting have been brought within sight of the windows and principal walks, this forms a feature of no mean importance. Old walks have also been renewed and new ones made, and wherever the drainage was inefficient fresh drains have been put down. It will therefore be gleaned that the spirit of improvement is actively at work here.

The forcing-ground is walled in and lies near the stables on the west side of the house. We found here a long range of Peach houses and Vineries, in all of which were full crops; some of the Peaches were just ripe, and the Grapes, which are fair sized useful bunches, were beginning to colour. Nectarines are also a fine crop. In one house, a narrow steep one, Peaches and Nectarines are grown on the back wall and Vines in front, and in the other Figs on the back and Vines before them, and in both cases the two kinds of fruit are said to give every satisfaction. Melons and Cucumbers are largely grown here, there being five long pits devoted to their culture. Among the different sorts were Beechwood, with large and fine fruit; Golden Perfection, Bromham Hall, and Canteloupe. One house was filled with all the finer kinds of Pelargoniums, which are now just in perfection, and specimen Fuchsias, Balsams, and other things were growing on, to succeed them as soon as their beauty is over. On the front shelf were Calceolarias and New Holland plants. Cherries on the open wall are a good crop, and so are Figs; the latter Mr. Parker attributes to having the trees well wrapped up in straw during the winter, and keeping the covering on late in spring, by which all the autumn formed fruits are saved.

A walk covered for some distance with Hornbeam, in the shape of a Gothic arch, and passing through masses of Rhododendrons now beautifully in flower, leads from the forcing ground to the park, on the other side of which, about a mile from the mansion, lay the kitchen gardens, old-fashioned, walled-in places, but very productive. Strawberries promise to be plentiful here, and so do bush fruits, and on a west wall is such a crop of Plums as is rarely to be seen, even in the best of seasons; the trees are literally loaded with fruit, and they have never received the slightest protection. The sorts consist of Greengages, Magnum Bonum, Orleans, Imperatrice, &c.

The flower garden lays on the north-east side of the house. It is oval-shaped, with a broad gravel walk running its whole length, and ending in a rustic summer house; while another broad walk crosses it, and terminates in an Orangery, which has lately been put in good repair, and furnished with a new glass roof. The more remarkable features of this garden are its fine Cedars of Lebanon, Hemlock Spruce, Rose-covered walk, and temples. A raised mound covered with Periwinkle, and overarched with strong iron rods for training Roses on, formed a good back for a series of seats which had been fixed all round it, the arm-points being pedestals for setting specimen pot plants on, and the intervals between the seats being filled up with rustic pieces of wood, skilfully and tastefully disposed. From this resting-place views of the whole garden can be obtained. Many new standard Roses have been introduced here, as well as into the geometrical flower-garden in front of the house, and apparently with good effect. On either side of one of the entrance-walks are borders filled with herbaceous plants, and edged with wood which, when well painted stone colour, as this was, looks well and lasts good for many years. Over a portion of the other entrance-walk has been thrown an arch of Lime trees, which form a shady and cool retreat in a warm summer day.

The whole of the walks have been fresh gravelled and neatly rolled, and the place altogether is assuming a greatly improved form under Mr Parker's management.

FLORICULTURE.

Inconspicuous Props for Florists' Flowers.—Pinks, Carnations, and many other things which require to be supported by props, frequently present the appearance, when in beds, of a grove of sticks with plants tied to them, instead of an orderly mass of well shaped plants, which might be found, on examination, to owe their neatness to props, which without search could hardly have been discovered. The absurdity, where it is avoidable, of having props as conspicuous, or more so, than the plants which they support, is little recognised by gardeners or amateurs, but it is constantly pointed at by people of taste, who are not cultivators, and particularly by ladies. Plant growers have a kind of necessary respect for props, from knowledge of their value; but it seems to me this respect for their utility sometimes degenerates into an admiration of their appearance, which leads to their being made much more conspicuous than they ought to be. Be this as it may, it cannot be denied that the true idea of their being helps, which should be kept as much out of sight as possible, is too much overlooked. The best remedy which I have discovered for the evils alluded to, is the use of well painted straightened wires, of various lengths and thicknesses. For Pinks I have used 24 inch lengths of No. 11 wire, which, with two coats of green paint, are almost invisible, and proved perfectly firm and efficient as supports. For Carnations I employed with equal success and satisfaction 36-inch lengths of No. 6 wire (about 3-16ths of an inch thick), but wire of this kind would soon have become loose in the ground, its small diameter presenting little resistance to motion, and to avoid this I employed tapering wooden shods or sockets, about an inch thick at the upper end and 7 inches long. These were drilled throughout their length, so as tightly to fit the wires, the ends of which were passed through them, and projected about an inch beyond the small ends, which were thus pointed. The sockets were then dipped in boiling tar, and when this had hardened the wire received two coats of green paint. The firmness and efficiency of these props are most satisfactory, and equally so is their non-appearance. With an annual coat of paint, when out of use, they will last for years

and their first cost is trifling. Wires made quite straight by a wire worker, cost me 4*d.* per lb., which, for small sizes, comes very cheap per 100. The wooden sockets were made for me by a bobbin-turner, at 2*s.* 8*d.* per gross. When painting the wires I put a spoonful of paint into a woollen cloth laid in the hollow of the left hand, and draw them through it, a plan I find as good, and much more expeditious, than using a brush. This plan of supporting florist flowers was, I believe, first pointed out by Mr. Sivewright, of Cargilfield, near Edinburgh. *W. C.*

THE RANUNCULUS.—As this flower seems at present to be engaging some attention, perhaps the following hints respecting the way in which I treat and successfully flower the scarlet and yellow Turban varieties, may not be unacceptable; as, in my opinion, these flowers merit a prominent situation in every flower garden, on account of the brilliant display they create at a season when such is most desirable, and they do not interfere with bedding-out half hardy plants. In preparing the bed for the reception of the roots, I remove the soil entirely to the depth of 18 inches, replacing it by a few inches of drainage, adding about a foot of rotten manure. On this I place about 6 inches of yellow loam (I do not incorporate the soil with the manure), I then rake it into a flat surface, allowing the bed to sink lower, if anything, than its edging, in order that it may the better convey water to the roots, and which they require in liberal quantities during a dry season. I plant the third week in November, in rows 4 ins. apart, with the dibble, inserting the roots with their prongs downwards. I then fill up the cavity with sand, raking the ground level, and gently patting it with a spade. As the blooming season advances, I protect them at night by placing hoops across the bed, over which I put mats to guard against sudden changes, as wind, frost, or rain; this I continue till they have done blooming; but in the daytime I remove the temporary covering, unless the weather should prove unfavourable. As sudden showers are likely to occur at this season, the cultivator should be on the alert, or his blooms may be seriously damaged. In order to prolong the flowering season, I shade during hot sunshine. By strictly following the above directions, not one of my roots ever fails to bloom. *J. F. M.*

Miscellaneous.

On the Manufacture of Paper from Vegetable Leaves.—M. Viven, of Paris, has obtained a patent in this country for a method of manufacturing paper from the leaves of trees, plants, &c., of all descriptions. In carrying out his invention, the leaves, which are gathered at a suitable season, are compressed into cakes, and then steeped in lime-water, or in alkaline solution, after which the mass is washed and reduced to pulp by any suitable means. This pulp is then treated according to the quality of the paper to be produced, by applying to it the different operations of sizing, bleaching, &c., in the ordinary way. If it is thought necessary, the pulp formed in the foregoing manner, from vegetable leaves, may be mixed with rag or other pulp in any proportions. *Mechanics' Magazine.*

Botanic Garden, Helsingfors.—After the great fire of 1827, the Russian Government was induced to remove the University from Abo to Helsingfors, which then became the centre of the sciences in Finland. A modern traveller has described the Alexander University and academical buildings and collections. He says, amongst other things, "Nor did the botanical garden answer our expectations, although its director was Professor Nordmann, who is so celebrated for his travels and many scientific writings. The stiff French hedges do not, indeed, look badly, but one had rather not see them in a botanic garden. The forcing houses were everywhere poor. It is, however, possible here to do much that can only be done in so northern a climate, and the name of Nordmann is a guarantee that that will be done." Near the botanic garden is the park, a convenient roomy public place, near the sea. *Botanische Zeitung.*

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Shading should be used sparingly here, except on bright days, for during dull unsettled weather plants require all the light that conservatories (the roofs of which are partially shaded by twiners) afford, and are greatly benefited by an occasional gleam of sunshine. The beauty of most soft-wooded plants will be considerably prolonged by the use of weak manure water, which should be given frequently wherever it can be done. Indeed, such things as Achimenes, Clerodendrons, &c., may be had in full beauty, from June to October, through being liberally supplied with manure water, but this must not be given too strong at first. Keep the atmosphere as moist as can be done; but avoid damp on cold nights, by leaving sufficient air to cause a gentle circulation, and spare no attention to keep the plants clear of insects. Stock for autumn and winter flowering will require careful attention, to get them sufficiently forward; for, so far, the season has been unusually cold, with comparatively little sunshine. Chinese Primulas, especially the double varieties, if at all backward, should be placed in a close frame, and shaded from the sun, where they will make rapid progress, particularly if the pots stand on a slight bottom-heat. Cinerarias, for early flowering, should also be potted and started at once, choosing the strongest suckers and placing them in a close shady frame till rooted. These are sometimes very subject to the attacks of thrips at this season; but if they are kept cool and moist, and smoked occasionally, there is no danger of their being clean and growing vigorously. COLD PITS.—The stock here will now be growing freely, and should be frequently examined individually, to see that all is going right; for plants, when growing rapidly, very speedily suffer through any neglect in watering, or from the attacks of insects. Examine young specimens that were potted early in the season, and shift at once such as require more pot room, so as to get the pots moderately well filled with roots before winter, in which state they are much more easily carried over the winter than when either over or under potted. Leschenaultias should be carefully examined for green-fly, and smoked at once if at all infested, and the flowers should be regularly picked off young plants of these as they appear. Chorozemas, Bossiæas, &c., must also be frequently examined for red spider, and should be laid upon their sides on a clean mat and thoroughly washed with the syringe, repeating this as often as may be necessary to thoroughly eradicate the pest. Young specimens of valuable hard-wooded plants should be carefully trained, keeping the shoots nicely tied out or pegged down in order to secure close compact foundations, upon which future success very largely depends.

FORCING DEPARTMENT.

PINERY.—So far this has been a most unfavourable season for securing well-ripened high-flavoured fruit; and such varieties as are apt to spoil at the bottom before the upper pips are coloured should be kept as dry as possible immediately that they show the slightest signs of colouring, keeping the atmosphere also as dry as can be done without serious injury to the rest of the stock; and slight fires should be used on cloudy days, giving a little air to dispel damp and keep the atmosphere in motion. Look well to securing a supply of fruit for late autumn and early winter use, which in cold sunless seasons is sometimes rather a difficult matter. Prepare the plants for showing fruit by keeping them dry at the root for a fortnight or so, after they appear to have completed their growth, and expose them fully to the sun, in order to give them a rather severe check. Those expected to show fruit in October and November should be encouraged to make free growth for the present. Be very careful in supplying young stock with water, as any neglect in this respect will probably result in their showing fruit prematurely; and attend to potting suckers in succession as regularly as they can be obtained. VINERIES.—Grapes intended to hang through the winter should be thinned very freely, and, if necessary, these should be gone over a second time, and leaving them, so that the berries, when fully swelled, will scarcely touch each other. And only a moderate crop should be left on the Vines; for, to ensure success in keeping Grapes fresh and in good condition till next March, the Vines must be in first-rate health; therefore be satisfied with a moderate, or rather late crop, in the late house. Keep the atmosphere of houses where the fruit is colouring in active circulation, using gentle fires by day, with abundance of air, and leaving a little air on at night, to prevent damp. If red spider appears inclined to be troublesome, wash the pipes, &c., with a mixture of soot and lime, and if the colour is objectionable, add a little soot. FIGS.—Trees that have been kept dry while ripening the first crop, and are now cleared of this, should be well watered at the root, and if there is any appearance of red spider, the leaves should be thoroughly washed with the engine. Give manure-water to trees showing a heavy second crop, and keep the atmosphere moist by frequently sprinkling the passages and borders, &c. Keep the shoots thin and regularly tied in, so as to avoid confusion, and expose all parts of the tree equally to the light. Where the fruit is ripening attend to previous directions, and keep the atmosphere and borders as dry as can conveniently be done. Assist trees in pots by giving them a liberal supply of manure water.

FLOWER GARDEN AND SHRUBBERIES.

Go over the beds frequently, and keep the young shoots of Verbenas, &c., nicely regulated and pegged down until the ground is fairly covered, after which the shoots may be allowed to grow more at liberty. On poor dry soils two or three applications of weak manure water, given at intervals of a few days, and when the ground is moist, will greatly assist in getting the beds covered without loss of time. See that Dahlias and Hollyhocks, &c., are securely staked and kept properly tied as they advance in growth. Manure water will also be useful to these, unless the soil was properly prepared for them. Remove dead flowers and seed from Roses, and give the autumn-flowering varieties plenty of manure water, in order to keep them in vigorous health, and secure plenty of wood for blooming in autumn. Those budded on the Dog Rose must be kept clear of suckers, which, when allowed to grow, weaken the head, besides having an unsightly appearance. Budding should be proceeded with during cloudy weather. Give plants, infested with green-fly, a liberal washing with the engine, or syringe them with tobacco water. Mildew is sometimes very troublesome after this season, and no time should be lost in dusting the infested plant with sulphur, for the enemy will soon spread and destroy the foliage, and ruin the plants for blooming in autumn. Proceed with the propagation of herbaceous plants, as expeditiously as possible, in order to get this work out of hand, and the glasses, &c., at liberty. Take advantage of showery weather to give the walks and lawns a good rolling, and endeavour to keep the Grass short and neatly mown, for nothing looks worse than badly kept Grass.

FLORISTS' FLOWERS.

Now will be a good time to put in the main crop of Pink pipings. They strike root soonest when placed on a gentle heat, and are covered with hand-glasses, but we have lately seen a large quantity doing well which were merely planted on a shady border, regularly sprinkled with water, and kept from the sun's rays by a covering of calico, stretched over hoops which spanned the beds. Cross impregnate to obtain seed for new varieties; always choose those with the broadest petals and smallest edges to operate upon; Constance, Prince of Wales (Bragg's), Mrs. Herbert, &c., are like what we mean. Carnations and Picotees will now require much attention, tying, disbudding, watering, &c. &c., with a vigilant eye for aphis; this may be removed with a camel-hair brush, but by no means bruise the insects on the pods with the finger and thumb. Get up Tulip bulbs; do not divest them of their roots or skins, when first removed from the soil; this is better done at a later period. Thin the blossoms of Hollyhocks, and take care that neither they nor Dahlias want water.

HARDY FRUIT AND KITCHEN GARDEN.

The late showery weather has been very favourable for the growth of Strawberry-runners, and a sufficient stock for forcing next season should be potted at once, and placed in a close shady frame, until they get established, which will soon be the case. Prepare ground for fresh plantations by heavily manuring and trenching, or if ground cannot be obtained at once, select the strongest runners, and plant them on a shady border in rich soil, to be transplanted with balls early next month. Asparagus beds can hardly have too much manure-water from the stable, or farm yard tank, during the present month. On dry friable soils salt may be applied with advantage, but this should not be used on strong adhesive soils, as it keeps the ground wet in winter, and decays the roots. Finish planting out the principal crop of Broccolies and Winter Greens with as little delay as possible. Proceed with planting out Celery as ground can be spared, using plenty of manure, and keep it liberally supplied with water. Attend to staking late Peas, and keep the ground moist about those in a forward state, giving them a thorough soaking occasionally, which will be the best preventive of mildew. See to keeping up a supply of Salad, Spinach, &c., and sow a good bed of Cabbage for furnishing Winter Greens.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending July 6, 1854, as observed at the Horticultural Garden.

June and July.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind.	Rain.
Friday 30	5	29.853	29.666	70	51	60.5	58½	59.0	W.	.44
Satur. 1	6	29.918	29.878	64	49	56.5	55	59	W.	.02
Sunday 2	[illegible]	[illegible]	29.876	69	[illegible]	62.0	58	60	S.W.	[illegible]
Mon. 3	8	29.805	29.620	72	56	64.0	58	59	S.W.	.01
Tues. 4	9	29.620	29.556	69	46	57.5	60	60	S.W.	.01
Wed. 5	10	29.702	29.662	67	47	57.0	59	60	S.W.	.05
Thurs. 6	11	29.725	29.695	67	41	54.0	59	60	S.W.	.07
Average		29.788	29.707	[illegible]	49.3	58.8	58.6	59.5		0.54

June 30—Very fine; cloudy; heavy rain at night.
July 1—Rain; overcast; showers.
— 2—Very fine throughout; slight rain.
— 3—Slight rain; very fine; showers; overcast.
— 4—Slight rain in the morning; fine; densely clouded.
— 5—Fine; showery; heavy showers in afternoon; overcast.
— 6—Very fine; heavy showers; overcast; cold at night.
Mean temperature of the week, 4½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending July 15, 1854.

July.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 9	74.2	50.8	62.5	10	0.57 in	3	1	[illegible]	—	3	8	[illegible]	4
Mon. 10	74.5	51.2	62.8	8	0.36	1	2	1	1	3	[illegible]	5	5
Tues. 11	74.7	52.1	63.1	7	0.71	3	—	3	[illegible]	[illegible]	5	6	5
Wed. 12	74.7	51.5	63.1	11	1.10	—	[illegible]	[illegible]	[illegible]	[illegible]	9	9	1
Thurs. 13	75.0	52.0	63.5	12	0.92	—	[illegible]	[illegible]	[illegible]	1	15	4	1
Friday 14	75.9	51.9	63.9	11	0.64	—	1	3	2	3	[illegible]	[illegible]	1
Satur. 15	75.1	50.5	62.8	15	1.46	1	3	3	1	4	11	5	—

The highest temperature during the above period occurred on the 14th, 1847—therm. 93½ deg.; and the lowest on the 10th, 1851—therm. 38 deg.

Notices to Correspondents.

EPIPHYLLUM: *J R P.* A beautiful variety in the way of E. speciosum; but larger and more delicate in colour.‡

FUNGI: *Stuart and Mein.* It is the Bovista giganteum, or large Puff-ball—a very fine specimen.

INSECTS: *B D.* Your Potatoes are infested with the Aphis vastator to an extent which we have never before seen. We would advise you to pick off the infected tops, and burn or destroy them before the winged aphides appear. The long cold weather has checked the development of the lady-birds and Syrphidæ, but they are now appearing in great numbers, and will greatly assist in destroying the plant lice. *W.*

LANGUAGES. *A Young Gardener* should not ask silly questions.

LAWNS: *E F L.* If your Grasses are strong enough to smother your Chickweed and Groundsel, your misfortune may be remedied. Should it be otherwise, we advise you to get some gas-water from the nearest gas-works, and apply it to a small piece of the ground, by way of experiment. It may kill the weeds and may not hurt the Grass. If upon trial it is found too strong for the Grass, weaken it cautiously with water.

MAGGOTS: *J W* says he has had the greater part of his German and Ten-week Stocks destroyed by white maggots in the roots both this year and last, and will be obliged by any correspondent informing him how he can destroy them.

MORPHOLOGY: *C R.* A very curious case. We should like to see it again later in the season.

NAMES OF PLANTS: *X X X.* Antherioum Liliago.—*Hill.* It appears to be Aristolochia pallida, if it is a climber; but the flower is very young, and smaller than usual in the wild plant.—*A S.* 1 and 2, Abies cephalonica; 3, Pinus Cembra; 4, Probably the same. It is impossible to be certain of the names of such small specimens.—*Ballandyne.* 1, 21, 15, Abies Pindrow; 4, 12, 6, 5, 10, 8, 9, Pinus excelsa; Pinus insignis; 16, Abies cephalonica (?)—*Back.* Saxifraga cumbens.—*J A F.* 1, perhaps Gesnera pendulina; 2, bulbosa; 3, Calceolaria perfoliata.—*Mrs. Mill A* ? [illegible]

TULIP: *G C B.* It has never reached us.‡

TURNIP SOWING.

SUPERPHOSPHATE OF LIME, made from Bone, which is the best Manure for Root Crops (see the Royal Agricultural Society's Journal, Vol. vi., part 2). PERUVIAN GUANO, NITRATE OF SODA, BONE DUST, SULPHURIC ACID, and all other Manures of known value. The PEAT MOSS CHARCOAL COMPANY have appointed the undersigned Sole Agents for the Sale of this fixer and distributor of Ammoniacal matter. They are also Sole Agents (in London) of the Patent Sanitary Company for the sale of their "Nitrogenised Carbon."—Apply to MARK FOTHERGILL & Co., 204A, Upper Thames Street, London.

THE LONDON MANURE COMPANY'S WHEAT MANURE, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. EDWARD PURSER, Sec.
Bridge Street, Blackfriars.

SUPERPHOSPHATE OF LIME, Guano, Bone Dust, Sulphate of Ammonia, Gypsum, Agricultural Salt, Grass Manure, and other Fertilisers, of superior quality, on sale, at the Coprolite Mills, Durham Wharf, Deptford Creek, Greenwich.

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures.
WM. INGLIS CARNE, 10, Mark Lane, London.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7*l.* per ton; Superphosphate of Lime, 7*l.*; Sulphuric Acid and Coprolites, 6*l.*
Office, 69, King William Street, City, London.
N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

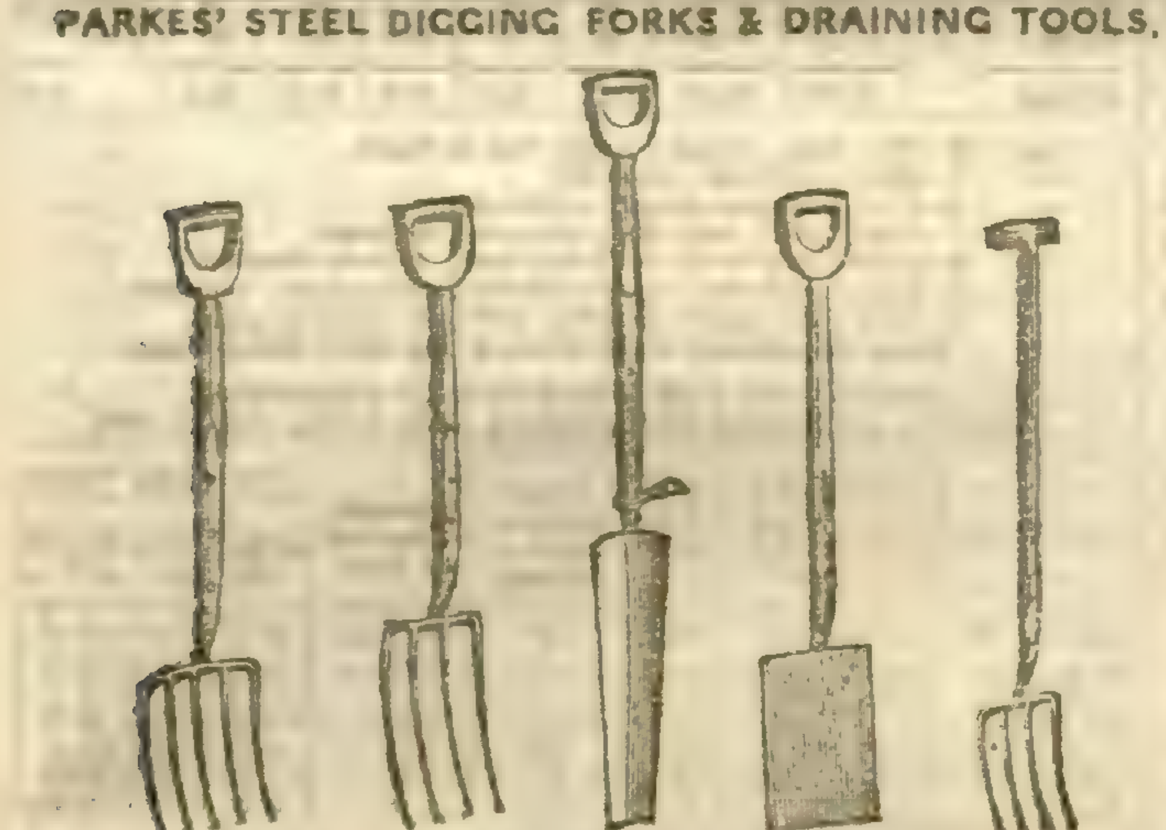
ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and dispatch.
Gentlemen desirous of receiving instructions in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

PEAT CHARCOAL, free from adulteration of any description, the finest Deodoriser known, and afterwards forming one of the most valuable Manures. Invaluable in Private Houses, Hospitals, Cesspools, &c., and tends more than anything known to the sanitary condition of a City. Prices, free on board in Dublin, 40*s.* per ton; sacks charged only half price when returned in good condition, free of expense. To be had in any quantity on application to the WIGAN COAL COMPANY, 4, Luke Street; Mr. S. FRAZER, Ironmonger, Mary Street; Mr. G. READE, 113, Grafton Street; or T. BRIDGFORD & SON, 48, Lower Sackville Street.—Dublin, July 1.

TO AMATEURS, FLORISTS, GARDENERS, ETC.
H. COLES & CO. beg to inform Floriculturists, &c., that their celebrated POT MANURE, which has given such general satisfaction for so many years, may be obtained of all respectable Seedsmen and Druggists in packages, at 20*s.*, 10*s.*, 5*s.*, 2*s.* 6*d.*, 1*s.*, and 6*d.* each. For Amateur Rose, Fuchsia, and Chrysanthemum Growers, it will be found one of the best Fertilisers yet introduced
Albert Wharf, 10, Wilton Road, Pimlico.—July 8.

CHAFF-CUTTERS, of the best workmanship, 25*s.*; Two-Knifed Chaff Engines, from 63*s.*; Mills for Bruising Oats and Beans, from 45*s.*
WILLIAM DRAY AND CO., Agricultural Implement Manufacturers, Swan Lane, Upper Thames Street, City.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.



MESSRS. BURGESS AND KEY, as Mr. PARKES' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.
108, Newgate Street, and 52, Little Britain, London.

SCHOOL FOR GENERAL AND SCIENTIFIC EDUCATION (especially with regard to AGRICULTURE), Wickham Market, Suffolk, conducted by Mr. G. DOWNES.
At this establishment a sound and liberal education may be acquired on moderate and inclusive terms.
Soils, Minerals, and Manures carefully Analysed.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.
PATRON—His Royal Highness PRINCE ALBERT.
PRESIDENT OF COUNCIL—Earl BATHURST.
PRINCIPAL—Rev. J. S. HAYGARTH, M.A.
PROFESSORS, &c.
Chemistry—J. A. C. Voelcker, Ph.D., F.C.S.
Zoology, Geology, and Botany—James Buckman, F.G.S., F.C.S.
Veterinary Medicine and Surgery—G. T. Brown, M.R.C.V.S.
Surveying, Civil Engineering, and Mathematics—F. Armstrong, C.E.
Manager of Farm—G. Austin.
The next SESSION will begin early in AUGUST. The Annual Fees for Boarders vary from 45 to 80 guineas, according to age and other circumstances. The Fee for Out-Students is 40*l.* per annum. The College Course of Lectures and Practical Instruction is complete in one twelvemonth—though a longer course is recommended. There is a department for general as well as for agricultural purposes. Prospectuses and information can be had on application to the Principal.
The GUIDE TO THE ROYAL AGRICULTURAL COLLEGE FARM may be obtained of HAMILTON, ADAMS, & Co., Paternoster Row, London; and EDWIN BAILY, Cirencester. Price 1*s.*

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.
Principal—J. C. NESBIT, F.G.S., F.C.S., &c.
The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.
Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

REAPING MACHINE COMPETITION AT STIRLING.
THE STIRLING GENERAL AGRICULTURAL ASSOCIATION hereby offer the following PREMIUMS to be competed for during next harvest:—
1st, For the most approved Reaping machine, of any price £20 0 0
2d, For the most approved Machine, not exceeding 25 guineas in price 20 0 0
Should the judges fix on a machine of 25 guineas, or under, to be the best on the field, it will thereby be entitled to both prizes.
The price and simplicity of construction of all the machines will be taken into consideration in awarding the Premiums, but the Society reserves the power of withholding the Premiums if in the opinion of the judges, the machines are not of sufficient merit.
Intending competitors will require to enter with Mr. Hutton, their Secretary, at Stirling, not later than the 9th August, when they will have due notice of the time and place of competition forwarded to them.
Intending competitors must forward with their notice of entry the sum of 2*l.* sterling, to be returned on the morning of trial to those who appear on the field of competition with their machines.
The machines are to be tried on all kinds of crop, and upon both Dryfield and Kerse Lands, if required. The trials to be continued until the Judges and Committee appointed by the Association are satisfied.
Machine-makers entering machines are to state what price they will furnish such machines as they compete with to members of the Association, and farmers entering are to state the price they paid for those they compete with. By order of the committee. WM. HUTTON, WM. FORRESTER, Joint Secs.
Stirling, July 5, 1854.

ROYAL AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND.—The Society's SHOW AT ARMAGH, in the Province of Ulster, will take place on the 9th and 10th of AUGUST next, when Premiums and Cups to the amount of 1200*l.* will be offered to competition for Farm Stock, Implements, &c.
Very favourable arrangements have been made with various Railway and Steam-Boat Companies for the carriage to and from Armagh, of Stock, Implements, &c., duly entered. Thus the Companies of the Ulster, the Ballymena, the Dublin and Drogheda, the Dublin and Belfast Junction, the Dundalk and Enniskillen, have agreed to carry all articles to and from the Show free, so also has the County Down Railway, excepting Horses. The Southern and Western, and the Great Midland Railway, will charge on articles going, but make no charge on articles returning, provided they have not been sold, or have not changed hands.
The City of Dublin Steam-Boat Company will carry to and from Dublin and Belfast, free by their boat, once a week; and the Belfast Steam-Boat Companies will charge articles going to the Show, but carry free those returning unsold.
The Committee have also arranged with the Agents of the Whitehaven, Morecombe, Ardrossan, Carlisle, Greenock, Glasgow, and Stranraer Steamboats to convey Stock, &c., at half freights to and from Belfast.
All entries must be lodged not later than 19th July.
Prize Sheets, and Forms of Entry, to be had on application to ROBERT COCHRAN, Esq., Secretary to the Local Committee, Armagh; or, to me, at the Society's Offices, 42, Upper Sackville Street, Dublin. THOMAS HARKNESS, Secretary.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—PROGRAMME of LINCOLN MEETING.
THURSDAY, July 13.—Trial Yard open at Twelve o'clock at noon, when the public will be admitted, at Ten Shillings for each person, to view the Trials of the Steam-engines.
FRIDAY 14, SATURDAY 15, MONDAY 17, TUESDAY 18.—Trial Yard open at Nine o'clock in the forenoon, when the public will be admitted on each day at Ten Shillings for each person, to view the Trials of the Steam Engines, Barn Works, and other Agricultural Implements and Machinery generally.
WEDNESDAY 19.—The Implement Yard open to the public from Seven in the Morning till Six in the Evening; admission, 2*s.* 6*d.* each person.
The Judges to inspect the live stock and award the prizes.
At One o'clock (or as soon after as all the judges shall have delivered in their awards) the public to be admitted into the Cattle Yard, and to the Exhibition of Farm Poultry, on the payment of Ten Shillings each person, at the Special Entrance; Members of Council and Governors of the Society being admitted by Tickets to be purchased at the Finance Department of the Society at the Show Yard.
N.B. Notice will be posted up over such entrance when the judges have completed their awards. At Eight o'clock in the Evening the Yard will be closed.
The Dinner of the Society in the Pavilion adjoining the Show Yard, at Four o'clock: the doors open at Three. The Judges' Awards of Prizes for Live Stock will be read.
THURSDAY, 20.—The General Show Yard of Cattle, Horses, Sheep, Pigs, Farm Poultry, and Implements open to the public from Six o'clock in the Morning till Six in the Evening; admission 2*s.* 6*d.* each person.
FRIDAY 21.—The General Show Yard open to the public from Six o'clock in the Morning till Six in the Evening; admission One Shilling each person.
General Meeting of the Members in the Guildhall, at Ten o'clock in the forenoon.

YORKSHIRE AGRICULTURAL SOCIETY, OPEN TO THE UNITED KINGDOM.—The SEVENTEENTH ANNUAL MEETING will be held at RIPON, on the 2d and 3d days of August next. The Entry closes on July 19. Free transit for Stock, and half rates for Implements are conceded by the railways of the district, and by the Great Northern, London and North Western, and Midland Railway Companies.
Prize Sheets and Forms of Certificates are now ready, and may be had on application to the Secretary. JOHN HANNAM, Sec.
Kirk Deighton, Wetherby, July 8.

The Agricultural Gazette.

SATURDAY, JULY 8, 1854.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY,	July	12	—Agricultural Society of England.
THURSDAY,	—	13	—Agricultural Imp. Society of Ireland.
WEDNESDAY,	—	19	Agricultural Society of England—Meeting at Lincoln.
THURSDAY,	—	20	
FRIDAY,	—	21	
THURSDAY,	—	20	—Agricultural Imp. Society of Ireland.

OUR readers will notice in another column an extract from a letter by Lord EBRINGTON on the subject of agricultural education. We hope next week to call attention to the very important discussion which took place on this subject before the delegates from the various institutions in union with the Society of Arts, at their conference in the Society's rooms, last Wednesday.

WE once more call the attention of our readers to their interest in the progress and success of the trade museum, now in course of organisation by Professor SOLLY. The scheme and its gradual development have been already alluded to in past numbers of this journal, and it is satisfactory to learn that in all parts of the world it is meeting with favour and support. English agriculturists may, as we have already shown, contribute materially to the value of some of its departments, and to one of them we wish again to call their attention.

At the forthcoming Agricultural Show at Lincoln there will be a large number of first-rate fleeces brought together, and the presentation of the fleeces to the trade museum may doubtless be in the power of many who are, in fact, at present ignorant of its very existence. Let us press upon their attention the great practical value of a museum in which the best prize wools of former years would be seen. The museum has already in it a considerable number of very superior fleeces from all parts of the country, and a very large number have been promised, so that the collection cannot fail in a few months to be a fair representation of English wools.

Circulars have been sent to many breeders, but there is no doubt many others quite as large have been left out by accident; and it is in the hope that our remarks may meet the eyes of some of these that we publish this note upon the bearing of the Lincoln meeting on the subject. The collection is being formed for public use, all are interested in it, and all are invited to contribute fleeces or samples.

ADULTERATION OF GUANO.—In a late number of your Journal you published a statement from me regarding the ADULTERATION OF GUANO during the last few months. In accordance with my promise, I now send you a few remarks on the extent of remedy which the farmer possesses against the tricks of the dishonest dealer. There is not a great deal to say on this subject, and what there is has been well said before. Still it may do no harm to remind the purchaser of guano that he is not so helplessly in the hands of the dealer in sophisticated manure as is too generally believed to be the case. There are obviously two questions which the farmer will wish to have answered; the first, how he is to know whether a sample of guano is genuine or adulterated? the second, in what manner he is to proceed in the event of his discovering that he has been cheated? I might add another question to these, namely—on what grounds he is to *suspect* adulteration; for, to be assured of the fact, he must, I fear, have recourse to the analytical chemist. Nothing short of the certainty which this step gives will justify a purchaser in expressing a doubt of the honesty of the seller—still less of putting himself in an attitude of hostility towards him. Now, as I know, by long experience, that it is altogether useless to urge the general resort to analysis as a safeguard against loss, and, indeed, as I am more than doubtful of its necessity under all circumstances, it becomes very important, if possible, to point out to the agriculturist an easy method of forming an *opinion*, in the first instance, as to the genuineness of any given sample—as a preliminary step to the adoption of ulterior measures. Further than this, as I have already said, he cannot hope to go without assistance. Another thing seems very certain, that nothing is practically gained by attempting to teach those whose time and thoughts are fully engaged on the cares and duties of their own occupation even the simplest methods of chemical analysis. Here and there a young farmer may possess the information and appliances requisite for the purpose, and *he* needs not that your pages should be occupied by further instructions; but with the bulk of the farming community it is different, and a reliance on such means of forming an opinion is likely, in the majority of cases, to mislead, and to be productive of much more harm than good.

I am sure that I may speak with confidence for my chemical brethren as well as myself, when I say that, if a simple and unobjectionable method of determining the question, aye or no, of the adulteration of guano existed, it would long since have been placed at the disposal of the farmer. The only suggestions that I have to make on this part of the subject have reference to those external characters with which a person of ordinary observation, and with some experience in the use of the manure in question, will readily become acquainted.

The great peculiarity of Peruvian guano (my remarks apply *solely* to this variety) is its extreme lightness. The organic compounds in guano are all of low specific gravity, and this circumstance affords, perhaps, the best means of forming an opinion as to

its genuineness; for in the adulterating trade, as at present carried on, the substances employed by the dealer, that is to say, sand, clay, carbonate and sulphate of lime, common salt, and sulphate of soda, are all in a greater or less degree heavier than the manure itself. And in one or two cases which have been made public, the first suspicion of adulteration has arisen from a difference in weight being observed. Thus, in the trial for stealing guano, which, it will be remembered, took place a few years ago at the Central Criminal Court, and which resulted in the transportation of one man, and the imprisonment of his accomplice, attention was first called to the fraud, though indirectly, by the weight of the adulterated article. The agents of the Peruvian Government, Messrs. GIBBS, had supplied in the usual way, from a cargo on board ship, genuine guano, in bags which were *full*, and each marked with their weight. These bags were carried off to the premises of one of the prisoners, and the guano being emptied out was mixed with a quantity of loam. The fabricated guano was then returned to each bag, in weight corresponding with the marks on the outside, but the captain of the vessel to whom they were subsequently delivered, observed that *they were not full*, and mentioned his suspicions to the purchaser; additional circumstances, and in the sequel chemical analysis, left no doubt of the fraud, and the result was the conviction of the prisoners, as stated above. I have no doubt that many such cases have occurred without meeting the public eye.

I believe that the weighing of *a bushel* of guano will form the most simple and trustworthy means which a farmer can adopt for forming a preliminary opinion as to the purity of the Peruvian variety—that is to say, provided that he possess a standard of comparison furnished by the weighing of a sufficient number of good samples. Such a standard I am happily in the position to supply, through the kindness of Messrs. ANTHONY GIBBS and SONS, the agents of the Peruvian Government. The following list of weighings of guano was furnished to me by these gentlemen for use in a lecture which I gave upon this subject two or three years ago. I should explain that by "damaged guano" is meant that portion of a cargo which by leakage of the vessel during a long voyage may have become injured by sea-water. This guano is never sold in the usual course by Messrs. GIBBS as "fine guano," but is put up for periodical sale by public auction as "damaged" guano. There is also a further degree of injury called "doubly damaged," and a still further quality when the sample is actually "wet." But I have not thought it necessary to include these in the list, although they were given in that furnished to me.

Average Weights (in lbs.) of Fine and Damaged Guano, weighed in a bushel measure balanced, the importation of 1849.

Name of Ship.	Fine. lbs.	Damaged. lbs.
Alfred	70	74
Alderman Thompson	61½	71
Allwal	70	78½
Briton	70½	76¼
Britannia	71	80½
Beethoven	68	75¾
Ben Lomond	70	75
Cuba	68½	75½
Envoy	70½	76½
Indefatigable	72	79½
Iris	71½	84
Inconstant	68	80½
Jane Glassen	67	81¼
James I. Foord	68	76
Lucy Wright	70½	78
Melissa	73	82½
Panama	71¼	79½
Thomas King	65¼	77½
Victoria	71	80
William Bryan	68½	75¼
Total weight (20 specimens)	1386¼	1557¼
Average weight of bushel	$69\frac{5}{16}$	$77\frac{17}{20}$

With the second column we have here comparatively little to do, and I only give it in order to show that the addition of a quantity of water—itself not nearly so heavy as the adulterating substances—will sensibly alter the weighings, and because it may be urged by the dealer that a suspected adulteration is only a somewhat damper state of a genuine article. It is plain, however, that this shift will not serve, for a sample so "damaged" is not sold by the importers as good guano in the ordinary course of trade, and cannot honestly be resold as such.

The first column, however, is of much interest. The *average* weight of a bushel of good guano is shown to be between 69 and 70 lbs. The variations above this are not great, the highest number reaching 73 lbs. As a matter of course no serious objection could be raised against any sample having this weight, but a considerable excess above would be subject of suspicion. On the other hand, the variation *below* the average is of no importance, because the samples exhibiting it were evidently *superior* to the average. Unless, therefore, any change had occurred since these weighings were made (and I have shown that no such change has occurred), it may safely be assumed that a bushel of good guano weighs, on the average, 69 lbs., and that this weight seldom exceeds in any sample 73 lbs. I need hardly remark that the bushel measure must be balanced in the scale; that the guano must be filled in without pressure, and that (I presume) the surface should be levelled off with a piece of wood, as in measuring corn.

I had intended to apply to some of those from whom I have received this year samples of adulterated guano, to furnish me with weighings of these samples, but I have not had the opportunity of doing so. There are, however, amongst your readers, doubtless, many who have at the present moment within their reach samples of guano analysed this year by different chemists and found to be adulterated. I would suggest to them that they would be doing good service by publishing in your columns the weighing of a bushel measure of the adulterated sample, side by side with the analysis; a very important and valuable preliminary test will thus be supplied, if, as I cannot doubt, the weight of the fabricated samples should prove greatly in excess over those now given for the pure manure. Of course I am not ignorant that two experimenters will not get exactly the same result from any sample, but I do not attach much importance to this objection. I am aware also that a cunning "manufacturer" of guano may find means to evade this test, but at present I think that such means have not been adopted.

The only other character to which I shall call attention is the manner in which the adulterated guano behaves under the shovel. When thrown down it falls heavily, with comparatively little dust, and when allowed to slip off the shovel a very great difference is observed between good and adulterated guano, on account of the mixture of a light and heavy substance.

With regard to the second question, namely, how the farmer is to get redress for any fraud committed on him, I, of course, can only speak with great diffidence. It is a lawyer's question rather than a chemist's; but experience teaches us that successful opposition is not difficult. It is plain that the farmer stands better in a passive than an active position—that is to say, that it is far easier to refuse with success payment for a spurious article than it is to recover money once paid; and many instances have lately occurred where compulsory payment has not been attempted, or where a compromise has been readily accepted. But there is every reason to believe that a jury will always give a verdict in favour of the farmer in a flagrant case, and it is certain that those who have once launched on a course of dishonesty are never content with half measures—so that all cases of adulteration are *flagrant* cases. The only safeguard against fraud to which I have not alluded is that, which cannot be too often recommended, to deal only with persons of known character, or for several persons to combine in a district and buy direct from the importers.

The general adoption of this latter plan, however, is a slur on the dealers, which, as a body, I do not consider they deserve, and I am happy to believe that it is only called for in particular instances.

J. THOMAS WAY.

AGRICULTURAL EDUCATION.

SEVERAL efforts had been made, but made hitherto with little success, to improve the education of the farmers. The College at Cirencester had been established, to which I was a very early subscriber. It has lately, I understand, been working very successfully; but though it has educated many to be farmers, it has hardly numbered one farmer's son among its pupils; and its failure to answer this, its more especial object, proves that the remedy is not to be found in new and expensive institutions, in grand gothic buildings, with costly staff and establishments. An education in such, to be self-supporting, must be expensive; and unless self-supporting, it acquires an eleemosynary taint. Some time, however, last winter, it occurred to me, or rather to a friend of mine with whom I had been talking over the matter, that it might be possible—by providing for young men of the middle classes, and especially for young farmers, prizes for competition, and a standard of acquirements—to make a successful effort to develope the intelligence and spirit of application now, from want of incentives and guidance, lying dormant in many a farmer's son; and to cause either the voluntary self-improvement of many existing private schools, or else the spontaneous establishment of many better ones in their stead. The following is a sketch of the notion which occurred to us as the best means for attaining our object:—

That in the chief county town a yearly examination should take place under the patronage of the lord-lieutenant, county magistrates, or other influential persons connected with the county; at which examination all youths and young men of the county, whose parents or near relations were, or had been, in respectable and independent circumstances, might apply for a "County Degree," and compete for "County Honours."

That the "County Degree" be intended to fix and maintain a standard of education becoming an Englishman of the middle class.

That the "County Honours" be the reward of excellence in any one or more of the practical departments of knowledge, such as Agriculture and the Management of Stock, Chemistry, Mining, Navigation, Engineering, &c.

That, in addition to the "County Degree" and "County Honours," individuals be invited to connect with these examinations special prizes and scholarships.

The sole expense of this proposal would be the salary of a secretary to conduct correspondence, and the payment of examiners, many of whom, however, would be sure to act gratuitously.

If it should succeed, a very small fee on the conferring a degree (say 10*s.*) would provide a liberal sum for the secretary and examiners; and the expense of the "County Honours" (which would carry with them some substantial reward, such as books, valuable medals, &c.) would be met by a very small contribution on the part of those who take an interest in the county examinations.

The "County Degrees" would, of course, be recorded in a public register, and a "Book of Honours" kept.

"The Degree Paper, or Diploma, given to each successful candidate, should be stamped with a county seal, and signed by the examiners, and perhaps also by the lord-lieutenant or some other person of eminence in the county."

I had satisfied myself, from several inquiries I had made of persons likely to be right on such points, that (provided of course a sufficiently influential body of the gentry expressed their concurrence in the scheme, and their disposition to view with favour, and, *cæteris paribus*, give a preference to those who distinguished themselves at these examinations), this degree, thus stamped with public approbation, would be considered by any who came up for examination well worth 10*s.* to them as a testimonial, and, so to speak, a passport to favour and employment.

Of the friends to whom I mentioned this scheme, none expressed any positive disapprobation; all, but one or two, approved highly of the outline I had given, and at once said they were quite disposed to entertain favourably the proposal of working it out. I may mention among members approving, Lord Lansdowne, Lord Harrowby, Lord Yarborough, Lord Stanley, M.P., Lord Courtenay, Lord Ashburton, Sir Stafford Northcote, Mr. Sotheron, M.P., and Mr. Tanner Davy, a well-known Devonshire agriculturist, farming his own estate. But when I informed them of the communications I had had with you since my arrival in town, and of your having made me aware, for the first time, that the Society of Arts had already taken steps for holding examinations of the members of institutions in union with it, and for granting certificates of merit, these gentlemen felt with me that—even if the Society, on account of its comprehensive character as a Society for the encouragement of arts, manufactures, and commerce, on account of the services it has rendered to agriculture as well as to other arts, on account of its long existence, and of the illustrious patronage it enjoys, did not present (as we think it does) peculiar advantages for carrying out such a national scheme—it would be a pity needlessly to prepare and put in motion two sets of machinery instead of one, to effect objects so nearly identical, and apparently so readily attainable by a joint action, at once more powerful and less costly than separate action could be. They therefore agreed with me that the proceedings of the Society of Arts would render it expedient to defer taking further steps for the prosecution of the scheme I had sketched out; at any rate, till we had satisfied ourselves of the hopelessness of attaining our end by means of some arrangement with the Society. *Lord Ebrington, in the Journal of the Society of Arts, June* 30.

WHEAT IN SUCCESSIVE CROPS.

WE have before us two plans of growing successive crops of Wheat on the same ground for 10 years past with equal success, but upon very opposite principles; the Rev. Mr. Smith's and Mr. Piper's, each producing about 4½ quarters, each realising an annual profit of 5*l.* or 6*l.* an acre, excluding last year, and yet it scarcely ought to be excluded, for their systems seem to have given the average crop, the falling short of which, in others, has caused the high prices. While Mr. Smith works up the under-soil, exposing annually fresh crude matter to the immediate action of the atmosphere, working out the principle of inorganic nutrition as existing in the soil, Mr. Piper is content to supply such elements of inorganic nutrition as are found in soot, with a mere superficial stirring of the soil. Is the deep working of Mr. Smith necessary? Is the soot of Mr. Piper required? Will not the continual stirring of the surface soil alone, by rendering it at all times permeable to the inflow of atmospheric fluids, be all-sufficient to produce those effects which are attributed to such very contradictory measures?

Either the soil and air contain all the constituents of Wheat, as is the case in Wheat soils, or they must be artificially supplied as Mr. Smith proposes; but does the soot of Mr. Piper do this? Dr. Hodges says soot is a variable mixture of clayey matters, iron, sulphate of ammonia, gypsum, and certain organic compounds, and that its fertilising qualities are to be ascribed chiefly to the sulphate of ammonia which it contains; now soot appears deficient in silex and phos-

phorus, which, according to Liebig, constitute the chief requirements of Wheat. Are these constituents of Wheat found in sufficient quantities and in a fit state to be taken up by plants on the surface of Mr. Piper's field? It seems they are, for his returns say so; but will they be so found on the surface of all those soils that are commonly considered adapted for Wheat, and, therefore, render unnecessary the deep working of Mr. Smith to bring them up from the under soil? Or does the mere keeping open the surface, the breaking of its crust, the unpuddling of it, enable the air, dew, and light showers to enter and sink so deeply as to fertilise the under soil? To what, then, serves the breaking it? The roots do not require it should be broken up, for they will penetrate anywhere in which their prepared food is to be found; they are only to be stopped by excess of water or by an absence of it. In ground drained either naturally or artificially, we can scarcely doubt that the undersoil will have its inorganic elements of vegetable food so prepared—it could not else drain; the rain water must run through it and deposit in it the organic matters it contains, and which act upon them—the rain-water must also be followed by air. The only question is whether, for the continual cropping with Wheat, the actions so induced would be sufficiently rapid, or whether to render them sufficiently so the mechanical operations of Mr. Smith may not be required. It is possible that Mr. Piper may have acted on a mistaken notion in respect to his "conviction that Wheat would flourish best in solid soils, and that in ground which was comparatively undisturbed this crop might be grown for many successive years without fallowing." A firm bottom—that is, a bottom that has not been very recently disturbed, but has had time to consolidate since its last deep stirring, is probably best for all crops; for, as the water of its later saturation is not evaporated by recent exposure, the roots of the young plants are more vigorously attracted and drawn down by the moisture, while they find thus in solution their food in a more ready state for absorption; but this retention of water of saturation is, I think, promoted by the previous deep stirrings.

It has been recently remarked in this Paper that "the question of expense and doubt as to practical result, deter from a trial some theoretically well affected towards a system which, by continual mechanical tillage, can produce large yields without the assistance of rich manures." As to the practical result, surely the evidence of a naked fallow is sufficient, and Mr. Smith's tillage is, in effect, a naked fallow on half the ground. In the matter of expense—and what is this bugbear of expense, it amounts to just 30*s.* an acre for double digging; Mr. Piper's soot comes to 2*l.*, and other people's manuring would very likely exceed this. In the matter of expense, then, even with hand labour, such a modification of Mr. Smith's plan may be worked as will reduce it so as to leave it no longer an obstacle. Mr. Smith insists on bringing up annually an inch or two of fresh subsoil, and this he does with the fork. In this double digging lies the dreaded expense; yet surely if, as Mr. Piper's practice evidences, the Wheat plant does not require a breaking up of the subsoil, the exposure of a couple of inches of crude soil to atmospheric action would supply a sufficient amount of inorganic food for very many years; the double digging then would only be required at very wide intervals of time, say once in six years, and this frightful item of expense would then be reduced to 5*s.* an acre.

Mr. Smith contends, and, I think, in doing so injures his cause, that only one moiety of his ground is in Wheat. I would say the whole of his ground is as much under crop as a broadcast field is. Were it possible to measure the space of unoccupied ground between every stem in a broadcast crop it would probably be found that the unoccupied ground equalled that of the rowed crop; the stems on the latter would amount to, if not exceed in number those on the former; but it is upon other ground that I advance that the whole field of Mr. Smith is under crop. We cannot doubt that there is a constant underflow of vegetable food running through the whole soil, drains could not act were it not so; we scarcely require evidence that a similar continuous flow of atmospheric food takes place above ground. We know that wherever there exists an aperture for the discharge of a fluid, that a current tending to it will be established to an indefinable distance; this aperture exists in every pore of a leaf, in every spongiole of a root fibre; from all the unoccupied space of air in Mr. Smith's intervals the leaves of his Wheat draw in their gaseous food, from all the uncropped soil of the intervals do the roots of his Wheat suck in the soluble matters they contain. The advantage of the wide-drill system is that the whole of the unoccupied space which is dispersed over the broadcast field is collected in lines, so that what is impossible in the broadcast, or only once in the spring can be imperfectly effected by harrowing, becomes easy in the rows through the entire period of the growth of the crop—the unpuddling of the surface.

Now, I would submit a mode of operation (rather an Irish one) which I consider has some advantages, and is not very heavy in expense of hand-labour, while it retains all the principles of Mr. Smith. I would plough the land in 5-feet ridges, run a light furrow plough with a pair of horses, *tandem*, in the furrows till I had loosened all the surface soil, throw this up with the shovel on the ridges, and drill on them my three rows of Wheat (or Potatoes as we would probably do in Ireland, our despised lazy-bed fashion—why lazy-bed!); repeat this for three years, changing each year the furrow (or which may be better, though Irish, two years with Potatoes, and the third year with Wheat. In Ireland the lea is very generally so broken and manured the first year, the second year it gives still better Potatoes without manure). Every year during the growth of the crop I would break up the subsoil in the furrows either with the fork or the two-horse furrow plough, as could be best effected; and thus in three years the whole soil would be deepened, and the crude subsoil well aërated by exposure to the immediate and continuous action of the atmosphere for several months, while from the working soil of the furrow being thrown on the beds, an additional depth of soil on them of more than one-third would be immediately obtained. I certainly prefer the two years' Potato-lying for many obvious reasons. There are, however, many others of our green and Pulse crops that may be substituted for Potatoes under a similar treatment. *J. M. Goodiff.*

Home Correspondence.

The "Economic" Manure.—I have read your observations upon the analyses of the economic manure, and as I see my name appears among other testimonials in its favour, I beg to state that it has been unwarrantably introduced without my leave or approbation. I know nothing whatever of the parties beyond my being instigated by the recommendation of Mr. Coveney to purchase half a ton, for which I paid 6*l.*, as I was induced to make an experiment with it to prevent mildew upon my Vines, for which it was strongly recommended. After I had obtained it I was, from time to time, solicited for an opinion of its quality. I at length wrote to him, stating that I could not form an opinion, not having used it, except in a very small quantity to some Cabbages, which it had improved, as the growth appeared to be promoted—the application being more liberal than would have been made in the ordinary mode of farming. This portion of my letter I find has been extracted, certainly without my assent, and converted into a testimonial, which I disavow any intention of having made. I hesitate giving testimonials for any description of artificial manure, as there is nothing to show that the public will be supplied with the same quality, and I beg to observe that I have never done so except upon one occasion, some five or six years ago, although I have learned that I have appeared in testimonials of like nature to the one now referred to. *Robert Baker, Writtle, July* 4. We have also received the following:—"I received a sample of the 'Economic Manure,' a portion of which I enclose. I afterwards got a cask and observe the difference in appearance is very great; it seems to me the manure is made by guess, and this is probably the reason that there is so much difference in the three analyses in the *Chronicle* of Saturday last. I also enclose a portion of the manure contained in the cask. Had I not seen such respectable testimonials, I should not have been induced to try it. *J. Carter, jun., Keighley, July* 4." [We shall have some further remarks to make on this subject in reference to the distinction between the *intrinsic value* and *agricultural effect* of manures.]

Pigs are very gross feeders, nothing comes amiss to a greedy hog—roots, herbs, fruit, grain, flesh, fish, and even hay, straw, and fresh manure. In the fold-yard and fallow fields he is a very useful fellow; but in grazing lands he does injury by rooting, by pulling up Grass roots, and by his dung proving nauseous to other stock. He is very soon affected by change either of food or weather. Frozen or sour swill and putrid flesh is very pernicious. Night air and cold rains are the great cause of every ill suffered by young pigs; sour-milk, butter-milk, or bran mixed with water, will make them scour; but steamed roots, mixed with meal, milk, whey, or even water, given warm and in warm sties, will make them thrive faster than any other animal. Raw Potatoes or other roots are injurious to them, while old pigs will get fat upon such food. Pigs should not be put together for fatting in too great numbers. Few feeders take a physiological view of the subject; nevertheless, they mostly adopt the principles. Young pigs require those varieties of food most adapted to promote the healthy development of frame—older pigs those kinds that fatten fastest, hence Pea and Bean meal, Indian meal, Oatmeal, milk, whey, &c., are best for young pigs; while, in addition to these, Potatoes and other roots, steamed, and Barley-meal, greave-cakes, bran, pollard, &c., are best adapted to fatten older pigs: greave-cakes are highly recommended for quick fattening. It is improper in breeding to put two animals together under any great disparity of kind or circumstance—the produce will assuredly be defective in many points; there should be assimilation in size and frame. It is best that the female should be of the larger breed in crossing, and in all cases of attempted improvement, a fine well-formed female must be selected. The most symmetrical animals in all breeds have been produced from a rather large, good, and well-made female, and a good male of moderate size. Pigs will fatten rapidly on grains for a time, afterwards they must have more nutritious food. The refuse of distilleries is fine food for fatting if judiciously applied; it must be given warm, and frequently thinned with water; the oftener this food is alternated from thick to thin the better—sometimes given thick, sometimes thin, to suit the appetite. The refuse of starch-works is far better food than either grains or wash, and will fatten quick and thoroughly; but it is better to mix these saccharine and glutinous compounds with farinaceous matter, to prevent cloying in the pigs. Fattening on crude or dry grain is not good management; it will sometimes cause death by swelling in the stomach, which, indeed, it sometimes bursts after eating to excess; it should always be soaked if given as grain—much better to grind it. If made into malt, all the better. Barley bread or cake, soaked in milk or whey, is said to be unsurpassed for efficacy in fattening. Bean-meal fattens rapidly, but makes the bacon hard and "craunchy." Indian meal fattens very quickly, and makes solid, firm good bacon. Barley-meal is superior to either, and produces excellent quality in the bacon. Pea-meal, mixed with whey or milk, fattens young pigs admirably, and produces the finest quality of pork. Wheat-meal: this is too expensive, and only the coarsest kind is used; it will fatten freely, but the meat is light and flabby. Oatmeal fattens satisfactorily, and produces the most delicate meat as to flavour. Tare-meal—a meal from Tares—is similar to Bean-meal, but not equal to it in efficacy. Linseed-meal fattens very rapidly in mixtures with other meal, but makes the bacon oily and flabby. Acorns and Beechmast are good for store pigs, but fatten very slowly, and never well. Acorns produce good firm bacon; but the bacon from Beechmast feeding is coarse and flabby, with unsound oily fat. Bran, pollard, and seeds of weeds are very slow fatteners. There are so many considerations to be taken into account in pig economy that much more might be said; but I shall merely remark that amongst farmers the management of pigs is very much to be condemned—they are left, in reality, to shift for themselves. They should from their birth be carefully fed and brought on continuously till fattened; if left uncared for, or only now and then attended to, they will prove unprofitable. No animal will pay better for careful nursing and early feeding than the pig. *L.*

Tobacco.—The Virginian Tobacco of commerce, if properly cultivated, grows to the height of 4 to 6 feet. Its leaves are large and expansive; the lower ones, with footstalks, decurrent down the stems; the upper, without stalks (sessile), oblong, accuminate, of a rich yellowish green. When they are freely grown, in an open situation, under the influence of a powerful sun at mid-day, these leaves exhale an odour sensible at a considerable distance. The directions which follow are founded upon an experience in Berkshire, on a deep loamy soil, with good aspect. Tobacco, like the Potato, is tender, and impatient of frost while young, but when once brought into vigorous growth, it becomes firm as the Sunflower. The seeds are small, and ought to be sown by the third week of March, in a pan of extremely fine and sandy soil, just below the surface, slightly pressed down and made level, employing the gentle, rather moist, warmth of a hotbed or propagation house. The seedlings should be dewed from the finest rose of a watering-pot, and progressively thinned to regular distances. When they have acquired that proper substance and strength which a good propagator understands, let them be removed singly to the smallest pots (drained with one-third of an inch of genuine peat or bruised wood-charcoal), and filled with light sandy loam, then gently watered, and shaded in a warm frame till thoroughly established. Removal to a larger pot, wherein another firm ball of roots might be formed, would, without loss of time, be advantageous. Fifty fine plants should yield an ample supply of noble leaves for purposes of fumigation; though to have a greater number as a reserve might be prudent, for there are underground enemies which are apt to do some injury to the rows. In selecting a situation, prefer one open to the south sun, let it be thoroughly double-digged and manured at bottom (that is at 18 inches below the surface), with a 3-inch layer of good spit dung, covering it with the finely pulverised soil raised by the spade so as at first to be 6 inches above the adjoining ground. When settled, be careful to avoid a damp and clodding state of the soil; then, straining the garden line, transfer each plant with its entire ball, into a hole made with a garden trowel, the earth being previously loosened by the tool, and the exterior roots of the plant a little freed by the fingers before placing it in its hole. To judge of the dimensions of the prepared site, the plants ought to stand 20 to 24 inches apart in a rank, the rows to be about 2 yards asunder. As the planting advances, the earth ought to be gently insinuated by the finger (the best instrument) among the liberated fibres, and laid basin-form around the stem, to receive a liberal supply of soft pond water, immediately given through a fine hose. The middle of May, if fine, is an appropriate period; and if the plants be then 6 or 7 inches high, with a stout stem, the promise of success will be great. Curing: The removal of side laterals is recommended by some as favouring the growth of expansive main leaves, and we see no objection to the practice. By the maturing sun of July and August the full-grown leaves will probably become somewhat flaccid and of a yellowish tint; they ought then to be cut off close to the stem, the midribs carefully pared with a very sharp knife nearly level with the under surface of the leaf plates; then string them in pairs, and suspend them under an airy shed till the sap be carried off or absorbed. Thus air-dried in the shade, the leaves become dry and lax, but not brittle; they are then to be laid as flat as possible in a box, to which a stout lid is fitted that will drop upon the herb. The leaves must be successively collected, because many will be ready for the box pressure before the growth of others shall have ceased. As the stock accumulates, the pressure must be increased, always taking care that there be no dampness or tendency to fermentation and decay. Experience justifies the assertion that, however careful the preparation, the leaves are never sufficiently pungent even after the hottest summer. It has therefore

been necessary, at the last stage of drying and pressure, to interpose between every two leaves a small proportion of the strongest shag or "returns" tobacco, and also a few grains of finely powdered saltpetre. Thus, if 500 leaves, to be collected by the end of September, and by gradual drying and pressure, become pale brown, with a sensible odour of tobacco, 20 ounces of the foreign, and one-fifth of that weight of nitre will be enough for the whole stock. Each leaf as it is deposited straight in a box receives its portion of these materials, and thus if the curing and pressure be cautiously conducted in a dry room during winter, not a leaf will decay, and by the time that aphides begin to appear, a copious supply will be obtained in a state fit for direct fumigation with the bellows, or by burning over charcoal in a grated pot, bored, to admit the nozzle of that instrument. Tobacco paper is made by soaking stout brown paper in a very strong infusion, adding sufficient saltpetre to produce a slow touch paper. This paper is exceedingly pungent; it would therefore be prudent to burn in pots, below the stage of a house, and not in the bellows. *J. T.*

Ammonia from Waste Coal.—It was suggested, some time since, by Professor Way, that small coal might be distilled at the pit's mouth, where it is worth little or nothing, for the ammonia, 20*s.* worth of which may be had per ton of coal. If Mr. Young's patent, for paraffine, &c., were employed for the purpose, giving but little gas, most of the products valuable and portable, and converting the worthless small coal into rubbly coke, in constant demand for locomotive engines, it would appear likely to be a profitable undertaking, and the enormous accumulations of small coal would be a supply for many years. *J. Prideaux.*

Valuation of Land (Scotland) Bill.—Can you tell the reason why deer forests and unlet shootings are excluded in the "Valuation of Lands (Scotland) Bill," now before Parliament. To us here, their exclusion and consequent exemption from all public burdens, appears to be a piece of bare-faced class legislation. Surely the representatives of the people are not aware how much deer forests and shootings already cost the community, or they would not thus publicly allow a bounty to be offered for their increase. *A Forfarshire Tenant.*

Societies.

ROYAL AGRICULTURAL SOCIETY.

Monthly Council, *July* 5.—Colonel Challoner, Trustee, in the chair. Twenty-seven new members were elected.

Finances.—Mr. Raymond Barker, Chairman of the Finance Committee, submitted to the Council the report on the accounts of the Society, from which it appeared that the current cash balance in the hands of the bankers was 1305*l.*

Lincoln Meeting.—Mr. Miles, M.P., reported from the General Lincoln Committee, the completion of the works for the meeting, the application made as usual to the Secretary of State for the Home Department for the grant of a certain number of detective police from the Metropolitan Force, the notification from the French Government of a special deputation to the Lincoln Meeting, the arrangements concluded with the principal railways for the conveyance of stock and implements, and the details in progress connected with the Pavilion Dinner.—On the motion of Mr. Raymond Barker, seconded by Mr. Barnett, Messrs. Smith, Ellison, and Co., of the Old Lincoln Bank, were unanimously requested to act as the local bankers of the Society during the period of its ensuing country meeting.—The Council completed the number of Judges required at Lincoln in the several departments of the show.

Journal.—Mr. Pusey transmitted from the Journal Committee a copy of the new Journal just printed off, and in the course of distribution, postage free, among the members of the Society throughout the country.

Paris Exhibition, 1855.—Captain Owen, R.E., addressed to the Council from the Department of Science and Art, Marlborough House, Pall Mall, the following communication, dated the 28th of June last:—

I am directed by the Lords of the Committee of Privy Council for Trade, to request you to take an early opportunity of laying before the Council of the Royal Agricultural Society, the accompanying papers relative to the approaching Paris Exhibition of 1855. My Lords are very desirous that the important department of agricultural machinery and implements should be fully represented upon this occasion, and they would be much assisted if the Council of the Royal Agricultural Society would yield them their support. Mr. Brandreth Gibbs has been so good as to undertake the general superintendence of this department under the direction of my Lords, but as it is to be apprehended that the space which it may be possible to allot to agricultural implements may be limited, it would be desirable that some independent tribunal should be appointed, which could decide how the space may be best disposed of, so as to secure as complete a representation as the space will admit of. My Lords would be greatly assisted if the Council would name from four to six persons to act as a committee, in conjunction with Mr. Brandreth Gibbs, for this purpose.

On the motion of Sir Matthew White Ridley, Bart., seconded by Mr. Barnett, the following committee was appointed to act with Mr. Brandreth Gibbs, in pursuance of the request of the Board of Trade:—Mr. Miles, M.P., Colonel Challoner, Mr. Hamond, Mr. Fisher Hobbs, Mr. Chandos Wren Hoskyns, and Mr. Brandreth.

Lincolnshire Farming.—Mr. Thurstan G. Dale, secretary to the local committee at Lincoln, transmitted to the Society a copy of "A Farming Tour; or Handbook of the Farming of Lincolnshire," prepared by "A Lindsey Yeoman," for the occasion of the Society's ensuing country meeting.

Adjourned to special meetings on Tuesday and Friday next at Lincoln, and to their monthly meeting in London, on the 2d August.

Seed-Growers': Kelvedon.—The system hitherto pursued by the growers of agricultural and garden seeds is without parallel in the annals of British trading. For a series of years it has been the practice of growers to leave all power in the hands of the London seed merchants, permitting them to give what they thought proper for their produce after they have them in their possession, thus affording them a complete monopoly over grower and consumer; and until very recently no article found its way to the consumer but through the London trade, except, perhaps, the home counties, wherein the seed is grown. The result has been large profits to the merchants, at the expense of the growers' just rights, and the occasion of many disappointments and heartburnings. This has to some extent been altered, by the increased facilities of transit by means of railroads and cheap postage—bringing those who have been and still are to a great extent customers to the London trade into communication with the grower; but here also the evil of the monopoly has been severely felt, for whilst the grower has been in their power, the London trade has endeavoured to drive every competitor out of the market. This has greatly aggravated the evil of the anomalous position in which the grower is placed, occasioning ruinous prices, which have been only increased during the past season by the almost total failure of most crops. So manifestly unjust has it of late become, that the growers have determined to extricate themselves from the unfair position in which they are placed. To effect this, a Society has been formed at Kelvedon, Essex, called "The Seed-growers' Society," its object simply being to sever the chain which has been drawn around them, and to protect their own interests by promoting freedom of trade. At a second meeting, held at the Star Inn, Kelvedon, a code of laws was unanimously agreed to, and the Society placed on a solid basis. The co-operation of all growers of seeds is solicited, not only as advantageous to themselves as individuals, but to growers and consumers generally. It is not the intention or wish of the members to sever their connection with the London merchant, but to place their transactions with him upon better and more enlightened principles, and more in accordance with the spirit of the 19th century. The spirit of the meetings already held has been most satisfactory, and has kindled the hope that an alteration will be speedily conducive to the interest of all parties concerned. The intention of this statement of the necessities and position, past and present, of the grower of seeds, is to induce those who have not yet connected themselves with the Society, or who may have been ignorant of its existence or principles, at once to do so, in order that the object aimed at may be at once secured. *Copied from the Chelmsford Chronicle.* [Will "A Friend of Progress and Freedom," who has sent us the above, be kind enough to state what are the "principles" of the Society, and how it is proposed to put them in practice.]

Reviews.

The Journal of the Royal Agricultural Society of England. Vol. XV. Part 1. John Murray.

The current number of the Journal is hardly so interesting as some that have preceded it. A paper on Trunk Draining by Mr. Clarke, of Long Sutton—a gentleman who bids fair to be, if he be not already, the first authority on that subject in this country—is the opening article. Professor Way on Sewage Manure, Mr. Haxton on Light-land Farming, and a portion of the opening description of Oxfordshire Farming, are the other principal contributions. Of a less important character are the papers by Viscount Downe, on Bearing-reins; by Mr. Finlay Dun, on Hereditary Diseases of Cattle; on Finger and Toe, by Professor Buckman; on Ægilops, translated from the French; on Hollow Brick Roofs, by Robert Dun; and on Nitrate of Soda and Guano on Peat, by J. D. Nicol.

From some of these papers we shall take extracts in future numbers. The article on sewage is probably one of the most important of them, pointing out, by the aid of independent researches, as well as by the light of previously published information, the limits within which the possibility of the agricultural usefulness of the subject exists. The more the matter is investigated the less promising to the farmer is the aspect it wears. The following is the conclusion to which Mr. Way has been led:—

"It may be asked, is there then no plan by which a solid manure of sufficient value can be prepared from sewage? My own conviction is, that as yet no plan has been suggested which, with a due regard to the farmer's interests, unites the prospect of a paying speculation. Of course I speak now of a manufacture in which sewage is the staple raw article. It is quite possible to mix other matters, such as the refuse substances of large towns, with the solid deposit of sewage so as to make a good manure, at a fair or even a low price; but in this the merit lies with the substances added, not with the sewage itself; and such a manufacture is obviously very partial and limited in its application.

"It has always appeared to me that this question of sewage-water is regarded in a wrong light. A most exaggerated opinion of the prospects of manufacturing manure from it is entertained by local boards of health and town corporations. Not content with making arrangements by which the removal of the refuse and the cleansing of their watercourses is to be obtained, they in many cases stipulate for a rental for the right of taking the sewage matter. I do not doubt that if the *liquid sewage* could be properly distributed over the extent of surface which it is capable of fertilising, a revenue would be forthcoming towards the reduction of the town rates. But in the absence of arrangements for liquid distribution, and unless we should discover some process far better than any we possess for the solidification of the sewage, I am convinced that the results must be all the other way: that is to say, the towns must be content to *pay* towards the operation, instead of looking to it as a source of income. The question is indeed a compound one—sanitary and agricultural. It is of the utmost importance to the town populations to remove their refuse matter without polluting the neighbouring streams. By the aid of existing processes this object can be satisfactorily accomplished; and the water supplied to a town may be restored to the watercourses in a comparatively unobjectionable form. But the manure so produced cannot be sold at a profit—unless, indeed, the farmer, by giving more than its value, is made to pay for the sanitary improvement of the towns. It is useless to urge that a manure made in this way can be sold, and has been sold, largely at an amply remunerative rate. No one who is acquainted with the nature of farming operations, and with the difficulty of estimating and tracing to their true source the effects of manure, will doubt that for a time even the very poorest manures may have a sale, particularly if the price is temptingly low. But this state of things does not last; and the price at which the solid sewage manure will ultimately find buyers will be below the cost of its production.

"The true policy of towns is to take this matter, in some shape or other, into their own hands. Their primary concern should be to effect the sanitary objects thoroughly, looking to the manure as a set off, greater or less, against the expenses incurred in securing the increased health and cleanliness of their populations."

We should be careful of any style of remark which may have the effect of reviving the old antagonism of interest between town and country; but there can never be harm done in stating the truth in a proper spirit, and Mr. Way does good service to town as well as country by urging the sanitary aspect of the sewage question, as demanding first consideration.

The only other paper we shall notice just now is that by Professor Buckman, on "Anbury." The conclusion he arrives at is that this disease is not properly so called—that it is simply a case of degeneracy towards a natural state of the root. We shall, for the present, merely state this conclusion in his own words, hoping for an early opportunity of laying the entire paper before our readers.

"From the foregoing remarks it will be seen that finger-and-toe in roots is not viewed by me as a disease, in the strict sense of that term, but as a natural result of the early stage of change from wildness to civilisation. The enumerated experiments seem to show that finger-and-toe is the midway from wildness to cultivation; and our observations upon the circumstances connected with cultivated root crops show that the malformation in them is the result of degeneration from cultivation to wildness."

Poultry.

Ceylon Poultry.—The Jungle fowl is abundant in all the uncultivated portions of Ceylon, but particularly so in the northern and north-western provinces. It comes out to feed morning and evening upon the roads, cultivated lands, or other open places. The cocks are generally seen alone, seldom in company with their hens, which, however, are always in the neighbourhood, and keep together, even though their broods may be of very different ages. The cocks fight most desperately in defence of their seraglios, the combat frequently terminating in the death of one of the engaged parties. As they not unfrequently mingle with the fowls of the lonely villages, they cross with the domestic breed, being more than a match in courage for the plebeian dunghill cocks, and armed with tremendous sharp spurs. Mr. Mitford, of the Ceylon Civil Service, showed me, while at Ratnapoora, a hybrid hen; her general appearance and call much resembled that of the wild bird; her eggs also partook of the spotted character, but Mr. Mitford never succeeded in rearing any chicks from them, as they were always addled. The bird was very tame to those with whom she was acquainted, but fled precipitately at the approach of strangers. The hen selects a decaying stump or thick bush for a nesting place, and lays from six to twelve eggs, of a fine rich cream colour, finely mottled with reddish brown specks. Axis 1 in. 9 lines; diam. 1 in. 4 lines. The young when just hatched resemble young chickens, and the old mother leads them to decaying prostrate trees, and scratches for white ants, which they eagerly devour. They are hatched in June. In wet weather, Jungle fowl keep much to thick trees, sitting disconsolately with drooping head and tails among the branches; they also roost in trees at night, retiring to rest early. It is rarely that a bird can be flushed, but when they do fly, it is very much in the manner of the pheasant; they run with incredible swiftness, and trust to their powers in this respect for safety. Their cry is a short crow,

which resembles the words "George Joyce," sharply repeated. It may not be out of place here, while upon the subject of Jungle fowl, to mention the varieties of domestic breeds which are found in the island. The usual kind is the common fowl, which is considerably less than the English breed, and lays a much smaller egg; it runs through all the same variations of plumage; but there is one curious variety, which I cannot describe more aptly than by comparing it to a white fowl drawn down a sooty chimney. On preparing one of these fowls for the table—at which, by the way, they excel all others in flavour and tenderness—the skin and periosteum are found nearly black; the roof of the mouth, tongue, wattles, and legs are also of a deep leaden hue. It is a remarkable fact, that a male bird of the pure sooty variety is almost as scarce as a tortoise-shell tom-cat. The Cingalese call these fowls "Calloo-mas-kukulo," literally, black-fleshed fowl. Kukula means cock (or fowl taken as a whole): kikili, hen; kukulo, plural, fowls. The ingenious and learned author of "Ornamental and Domestic Poultry," at page 392, second edition, refers to these fowls as having silky feathers, but with us in Ceylon this is not the case. The Frizzled or Friesland Fowl, of the same author (page 394), is also domesticated in Ceylon, but it is rare; the Cingalese called it Capri-kukulo, and say it was originally imported from Batavia. This accords with Temminck's statements. The Rumpless Fowl, or Rumkin (*ibid* p. 387), is also plentiful, but only in a domestic state. Temminck's assertion that it is a wild inhabitant of the island is surely a mistake, and the Governor (Loten, I presume), who forwarded him the information must have been deceived by some head man or other. I am quite confident the bird does not exist wild in Ceylon; the very native name, "Cochi-kukulo," Cochin fowl, implies its foreign character. The Cochin China Fowl (*ibid* p. 289), and Malay Fowl (p. 299) are both found in Ceylon; the former is called Mahacochi-kukulo, or large Cochin fowl, and is common enough. I have purchased them for $7\frac{1}{2}d.$ each, while residing at Pt. Pedro; I mention this as a contrast to the absurd prices given in England. The Malay fowl is found principally about the lines of the native Regiment of Ceylon Rifles; they belong to the Malays, and are used in fighting, a sport of which that people, as well as the Cingalese and Tamuls, are passionately fond. I however never saw the true game cock in Ceylon. Creepers (p. 384) are frequently met with; their curiously short legs at once distinguish them from the common breed. One variety has feathered legs, but I never met with true bantams. The Poland or Polish Fowl (p. 364) was introduced many years ago by a relative of my own, the original birds having been procured from my father. I am not sufficiently acquainted with all the varieties of domestic fowls to state if other kinds are found in the island; probably some which I have called "common fowls" may be more valuable varieties. *Layard, in Annals of Natural History.*

Poultry. I have lately seen a splendid bird, the father of which was a pure "speckled Dorking," and the mother a cross between a "Dorking" and "Cochin." I never remember to have seen a bird, which by being put to short-legged Dorking hens, I would prefer using for the foundation of a yard of Dorking fowls: he showed no signs of his false strain, and the only thing to excite suspicion was his being somewhat longer in the shank, a fault, upon which did not fashion put her "veto," I am inclined to consider not altogether an undesirable one; his body was square and perfect, toes not "found wanting," plumage, colour of legs, and comb first-rate. I am perfectly aware that "cross breeds" are not in general approved of, neither ought they to be, as it is a well known fact that chickens bred from two cross-bred parents are almost worthless, but I have known first-rate "pointers," the ancestor of which several generations before was a "fox-hound." Now, in the same way, why may not a little cross-breeding in the poultry-yard be beneficial? Might we not by so doing unite the several peculiar qualifications of two or three breeds in one? If so, I hope these few words will not be considered out of place, although written by *A Mongrel.*

Calendar of Operations.

JULY.

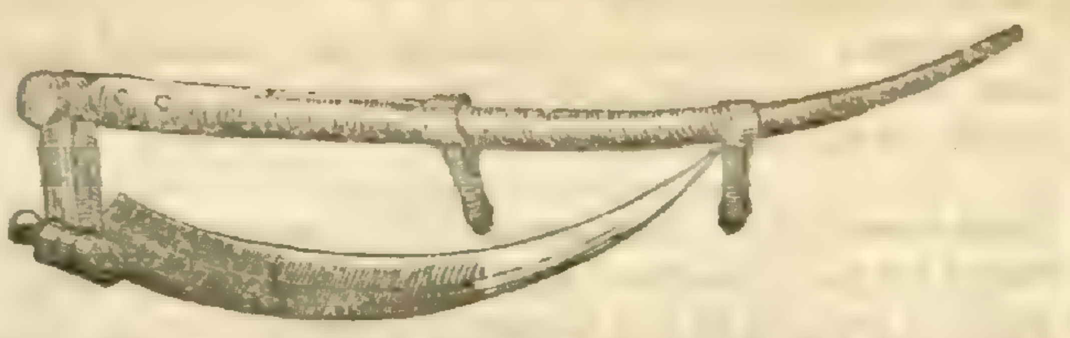
West Sussex, *July* 4.—It is with pleasure that we have to state that the crops have improved since our last report—the Wheat especially, which at present promises to be a good crop. There is a little rust upon the straw, but not to an extent to cause any fear. Barley grows well now, and is generally out in ear where it was sown in good time; but it is still very uneven, and the latest, though the lightest crop, may be the best sample. Peas are as fine a crop as could be looked for; there has not been the slightest appearance of blight in them, and what were sown from the 1st to 13th of February are now in part well filled, and the pods heavy; they are likely to come to harvest before the Wheat. Beans are also a very fine crop where the land is anything like good, and I think have seldom shown a more promising appearance; the podding is now begun in them, but they may yet turn out very different from what we expect, as they, being so much a later crop, cannot be yet said to be safe. The Potatoes have not got worse, but have rather recovered since our last, and we are yet looking for a good crop. Turnip sowing is now in most cases far advanced, and in many finished; and with us they look very healthy, although they have not grown so fast as we could have wished; but the weather has not been settled in temperature, not having had much heat, although we have had frequent and seasonable showers. The hay crop has turned out very light, but has been got in in good order so far as it is done; but there is still a good deal of meadow Grass to cut. All stock is doing well, and lean cattle are very dear; they were so when the Grass was scarce, and they have gone on advancing since we had more favourable weather for it. The hands are now employed at hoeing the Mangold, and will be about the Swedes in a few days, as they are now being horse-hoed. *G. S.*

Notices to Correspondents.

Breeding Horses: *Anon.* The word "degeneration," to which you refer, should have been "regeneration," as the expected result of the plan Mr. Spencer recommended. See p. 429, col. *a*, line 12.

Wheat: *M* 19. Triticum æstivum includes but one variety that we know—the red, bearded April Wheat. Spring and winter Wheat should not be sown together; they will ripen at different times. Other answers next week.

SCYTHES.



BOYD'S PATENT SELF-ADJUSTING SCYTHE will last out three of the ordinary sort, and is always ready for use.

"We have seen this Scythe at work, and can strongly recommend it."—See *Mark Lane Express*, May 16, 1853.

To be had of every Ironmonger and Nurseryman in the kingdom; and wholesale and retail of WM. DRAY AND CO., Agricultural Implement Makers, Swan Lane, London.

DRUMMOND'S REAPING SCYTHES.—Farmers and others intending to use this excellent Corn Scythe during the coming harvest, will please supply themselves without delay, and thereby prevent the disappointment that was experienced last year, through the inability of the Subscribers to overtake the execution of orders received late in the season.

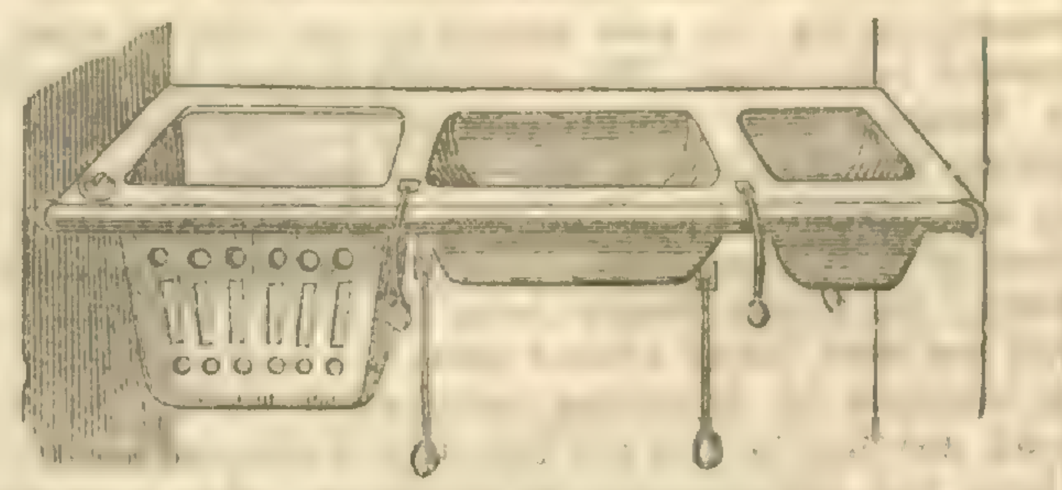
Price of a single Scythe	11s.	6d.
Ditto of three, package included...	32	6
Ditto of six, ditto ditto	60	0

Carriage paid to London, Liverpool, Hull, Birmingham, &c.

W. Drummond & Son, Seed and Implement Warehouse, Stirling, N.B.

☞ Orders from unknown correspondents must be accompanied with a remittance, otherwise they cannot be attended to.

BARTON'S PATENT STABLE FITTINGS, AND ENAMELLED MANGERS.



THESE FITTINGS have all the newest improvements and are the only patented invention of this description. Also Improved Stable Fittings with Rack, Manger, and Water Trough attached, New Pattern Manger and Water Trough combined; Corner and Straight Mangers, Plain, Enamelled, and Galvanised; Stable Furniture of every description, Iron Gates, Railing, Hurdles, Sheep and Game Wire Netting, Registered Poultry Troughs, Fountains, Feeders, &c.—JAMES BARTON, Ironfounder, Smith, &c., 370, Oxford Street, a few doors east of the Pantheon.

BALANCE OF FACTS IN FAVOUR OF RICHMOND AND CHANDLER, who have, in competition with the best selected CHAFF CUTTERS of the most celebrated makers in the trade, carried off the highest prizes against all comers.

COPY OF TESTIMONIAL.

"Early Court, Reading.

"Gentlemen,—I beg to hand you a cheque for your Corn Crusher: I must add, at the same time, that nothing can exceed the goodness of the Machine. I have found in it all I can wish, and, moreover a very superior finished Machine, and a pattern for other makers. (Signed) "Geo. Shackell.

"Messrs. Richmond & Co."

Address—Richmond & Chandler, Manchester; and South John Street, Liverpool.

ANTHONY'S PATENT AMERICAN CHURN.—Extract from the Royal Agricultural Society's Report of the trial of Churns at the Gloucester meeting in July last. "In this trial the American Churn not only maintained its character in producing butter rapidly, but in producing a greater quantity from the like amount of cream." It made from 4 quarts of cream 4 lbs. 6 oz. of butter, being 8 oz. more than any of the other Churns from the same quantity and quality of cream. Price Lists of Churns and Implements by the best makers sent free, and Illustrated Catalogues on receipt of eight postage stamps. Burgess & Key, 103, Newgate Street, and 52, Little Britain, London, who have always a large stock of Steam-engines, Ploughs, Harrows, Diggers, Waggons, Carts, Threshing and Dressing Machines, Mills, Oat and Grain Bruisers, Oilcake Breakers, Reaping Machines, Haymakers, Horse-rakers, Turnip Cutters, Liquid Manure Carts, Parkes' celebrated Steel Digging Forks and Draining Tools, Pumps for Manure, Farm Fire Engines, and for Garden Purposes, &c. &c.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement, J. B. White & Brothers, Millbank Street, Westminster.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

Priced lists of plant tubs and boxes forwarded on application.

SAMUELSON'S IMPROVED

GARDNER'S TURNIP CUTTER.

MR. SAMUELSON having purchased the late Mr. Gardner's Works, has made it his study to maintain the quality of this valuable implement, more especially of the Knives, which are unequalled by the numerous imitations which have been attempted. Since the last meeting of the Royal Agricultural Society, a valuable addition has been made by Mr. Samuelson to the original GARDNER'S TURNIP CUTTER, viz., a screening apparatus, which separates the dirt from the cut roots, thereby preventing Scouring in the Sheep and Lambs.

CHAFF-CUTTERS, CORN-CRUSHERS, and Food-preparing Machines of every description.

SAMUELSON'S IMPROVED BUDDING'S LAWN MOWER, American and Atmospheric Churns, &c.

SAMUELSON'S PATENT FORKING, or DIGGING MACHINE.

Upwards of seventy of these Machines are already at work in various parts of England, the Continent, the Sugar Colonies, and Australia, and the number is daily increasing. It is now an acknowledged fact that by the use of the Forker the advantages of hand-digging can be obtained at a tithe of its cost, and a tilth has been got with it this season when the ground was in such a state that no combination of the ordinary implements could have accomplished it. For all Crops requiring a deep or a fine seed bed, nothing can equal the operation of the Forker.

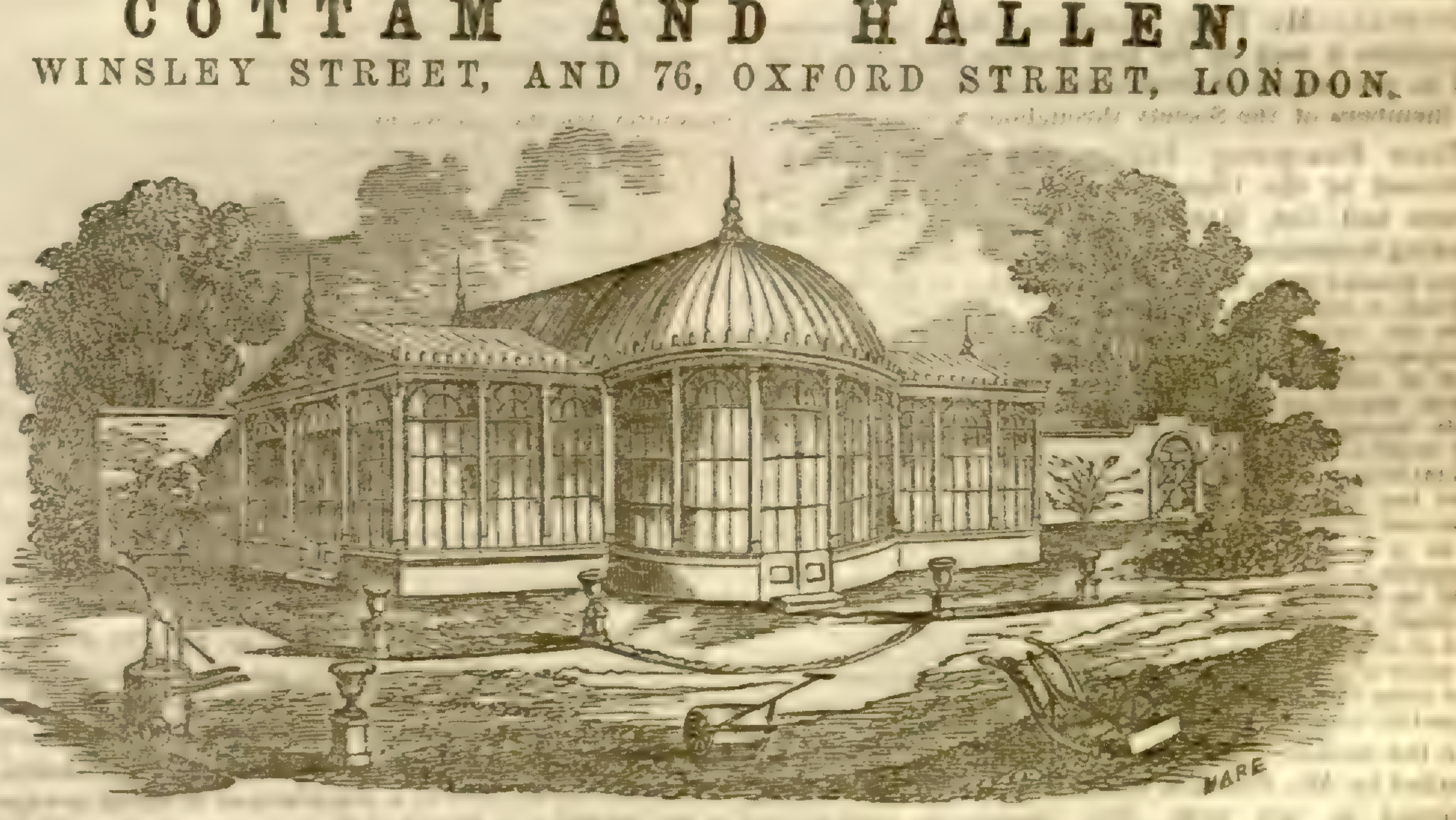
Testimonials from numerous Agriculturists of eminence who are using it, may be had on application.

B. SAMUELSON, successor to the late J. Gardner,

Britannia Works, Banbury; Stand No. 12, Royal Agricultural Show, Lincoln; and Stand No. 33, Agricultural Department at the Crystal Palace, Sydenham.

COTTAM AND HALLEN,

2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.



APPLICATION is requested for their NEW HORTICULTURAL LIST, containing Illustrations, Descriptions, and Prices of

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Syringes	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.

AGRICULTURAL LIST UPON APPLICATION.

EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

FOR WATERING GARDENS, DISTRIBUTING LIQUID MANURE, ETC.

JAMES LYNE HANCOCK'S VULCANISED INDIA-RUBBER TUBING is now manufactured especially for the above purposes, and is of greater flexibility than any other description of hose or tubing. It is also manufactured to resist great pressure, suitable for attaching to the mains of water works or to tanks, or water butts of high elevations. WATERING HOSE fitted up with brass joints, branches, stop-cocks, roses, and jets complete. Vulcanised India-rubber suction pipes for pumps any length or size to order: HOSE for brewers' use, fire engines, &c. VULCANISED INDIA-RUBBER WASHERS, for Steam and Water Joints, and VULCANISED RUBBER in sheets of any size and thickness. Solid vulcanised India-rubber Tubing and Cord, for the joints of glass-doors, sashes, frames, &c.—Prices and every information may be had on application at the Manufactory, Goswell Mews, Goswell Road.

TO AMATEUR GARDENERS, LOCAL BOARDS OF HEALTH, & SANITARY WORKS.

PATENT SLUICE COCKS, Gutta Percha, Combinated ditto, Patent Flexible India Rubber Tubing, and every other Hose for Watering Gardens. The Hydraulic Ram, Fire, Garden, and every other kind of Pump, Hydrants, High Pressure Cocks, and all other articles to be had, Wholesale and Retail, of FREEMAN ROE, Hydraulic Engineer, 70, Strand, and Bridgefield, Wandsworth.

WEIR'S IRRIGATORS, LIQUID MANURE PUMPS, FIRE and GARDEN ENGINES.

	£	s.	d.
Single Cylinder (as engraving) ...	6	8	0
Double Cylinder ...	10	10	0
Horse power size ...	16	16	0

Exclusive of Suction and Delivery Pipes.

Illustrated Catalogues free per post.

Terms Cash on Delivery.

Edward Weir, Agricultural Engineer, 16, Bath Place, New Road, London, removed from Oxford Street.

WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

	£	s.	d.
Patent Pump	1	15	0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing	3	0	0

Larger sizes if required.

The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,

8, Crescent, Jewin Street, London.

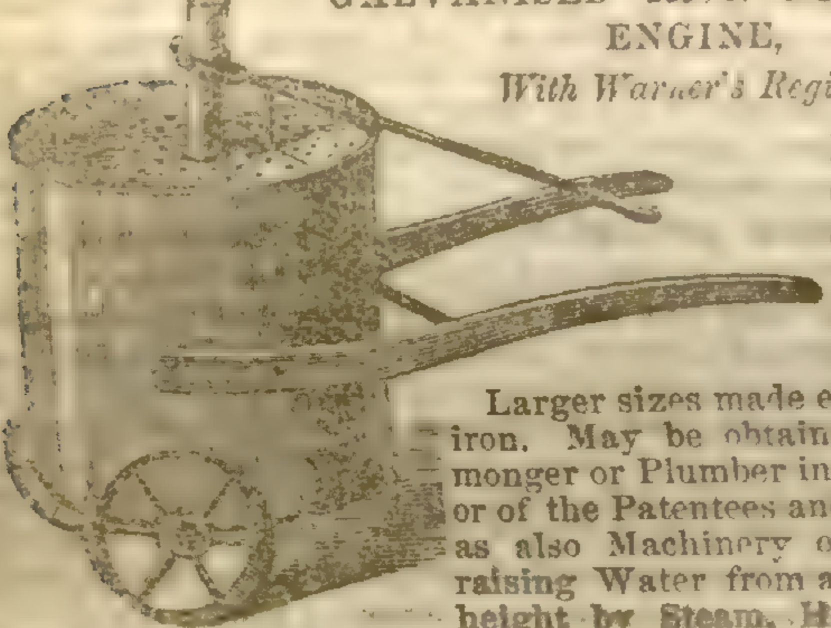
Every description of Machinery for Raising Water; Fire Engines, &c.

JOHN WARNER AND SONS,

Crescent, Jewin Street, London.

GALVANISED IRON TUB GARDEN ENGINE,

With Warner's Registered Spreader,



Is strongly recommended, for durability and low price, viz., 2l. 19s., to hold 10 gallons.

Larger sizes made either in wood or iron. May be obtained of any Ironmonger or Plumber in town or country, or of the Patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Syringes of various constructions and sizes from 9s. upwards. An extensive assortment kept.

JOHN WARNER and SONS, 8, Jewin Crescent, London, Manufacturers of FIRE ENGINES, PUMPS, GARDEN ENGINES, and SYRINGES.

No. 32. No. 11. No. 14.

Brass Syringes, 9s. to 13s.

All articles of John Warner & Sons' manufacture may be obtained of any Ironmonger or Plumber in town or country, at the advertised prices.

John Warner & Sons having been practical Horticulturists for many years, know exactly the requirements of both Amateurs and Gardeners. A gardener with a properly constructed pump will get through as much work in five minutes as he could with any Syringe in a quarter of an hour, and with half the labour to himself. Syringes are economical only for small houses.

No establishment offers such a variety of effective machines for hydraulic purposes, whether to supply Gardens, Hothouses, Cottages, Farms, Mansions, or Boards of Health, with every requisite connected with the conveyance and distribution of liquids.

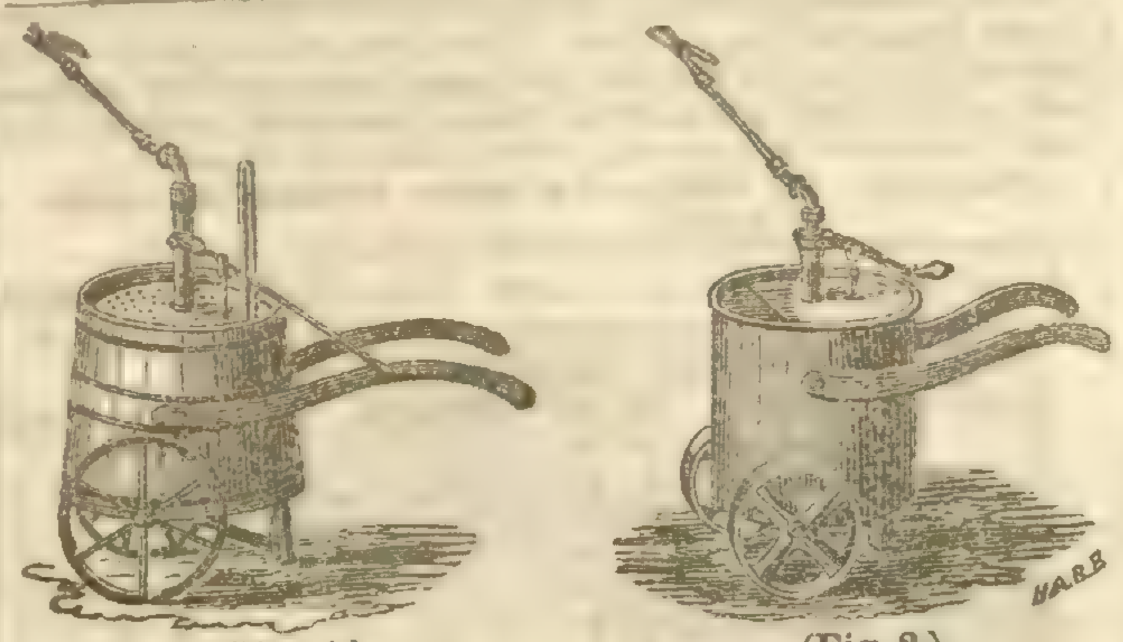
Fountains suitable for Conservatories, Lawns, &c.

Sheets of Engravings sent on application.

HOSE PIPING.—Great Reduction in Price.

WAITHMAN'S PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense Pressure, and much more than Leather, vulcanised Rubber, or any other Hose; and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented Inventions, the cost of manufacturing it is now reduced at least 60 per cent., which advantage is offered to the Public.—London Agents, Burgess & Key, 103, Newgate Street, and 52, Little Britain who on application will forward wholesale and retail prices.

THE GUTTA PERCHA COMPANY'S TUBING for WATERING GARDENS, with Roses and Union Joints Fitted.—27, CITY ROAD, LONDON.



(Fig. 1.) (Fig. 2.)

J. TYLOR and SON'S BARROW GARDEN ENGINE (Fig. 1), in best well painted oak tub, fitted with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 1 holds 10 gallons, throws 30 feet high	...	£4	10
No. 2 „ 15 „ „ 45 „	...	5	10
No. 3 „ 28 „ „ 45 „	...	6	18

J. TYLOR & SON'S BARROW GARDEN ENGINE (Fig. 2), in strong tinned iron tub, well painted inside and outside, with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 10 holds 8 gallons, throws 25 feet high	...	£2	15
No. 13 „ 12 „ „ 30 „	...	3	5
No. 11 „ 16 „ „ 40 „	...	4	0
No. 12 „ 24 „ „ 45 „	...	5	0
No. 14 „ 30 „ „ 45 „	...	5	18

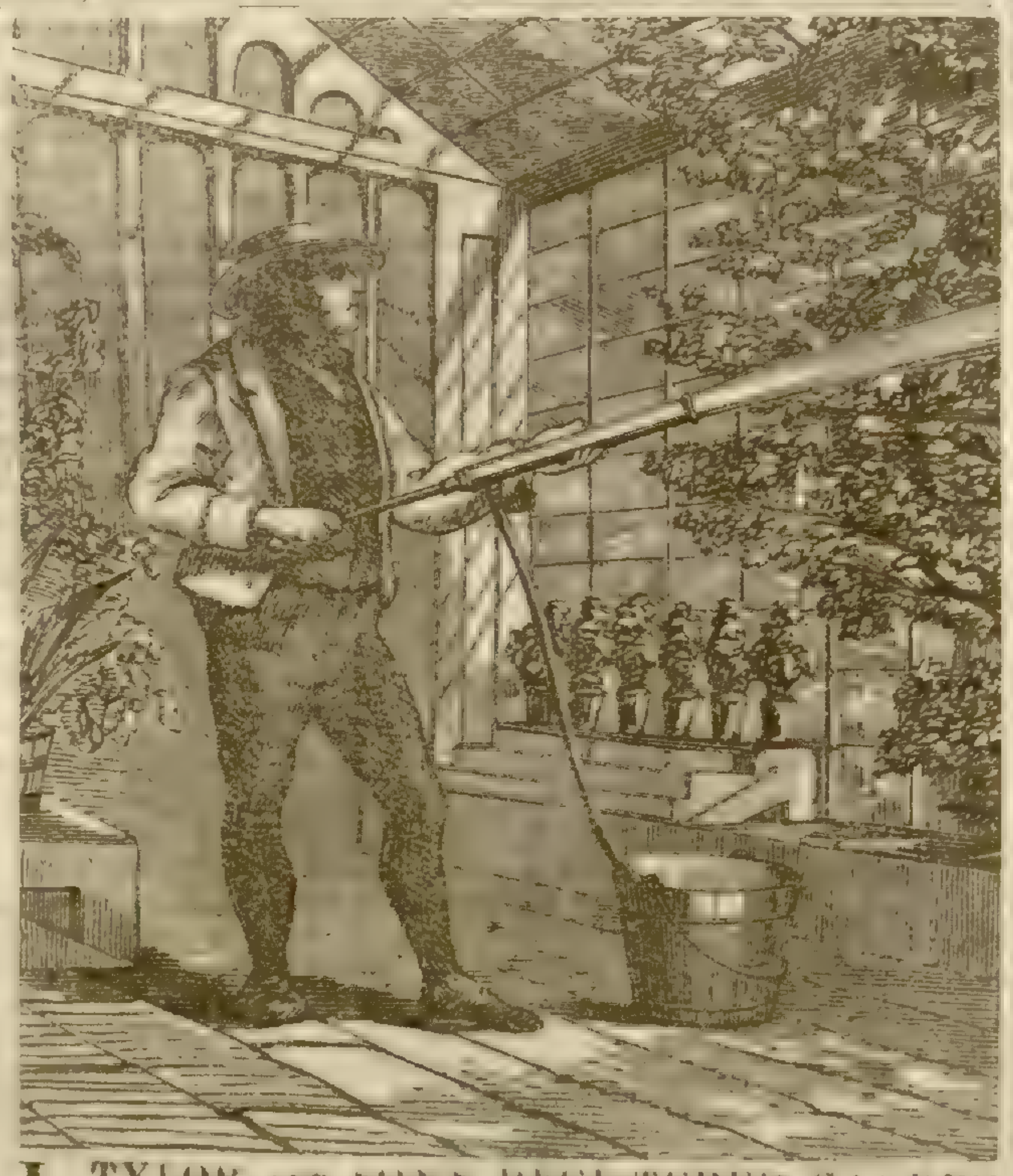
A large assortment of every description of Garden Syringes, Pail Engines, Conservatory Pumps, &c., kept in stock.

Full size Syringe, on Read's principle, of the very best quality and workmanship, with two roses and one jet, 21s.; Plain Syringes from 10s. 6d. upwards.

J. Tylor & Son's Horticultural Apparatus may be obtained at these prices from any respectable Ironmonger or Seedsman in town or country, through whom alone they will be supplied, and of whom Drawings and Prices may be had.

N.B. Cost of carriage, &c., not included in these prices.

J. Tylor & Son's Manufactory, Warwick Lane, Newgate Street, London.



J. TYLOR and SON'S REGISTERED GARDEN SYRINGE.—Small size, for Amateur use, **21s.** each; Large size, for Gardeners' use, **25s.** each.

By a simple arrangement this Syringe is rendered more effective than any portable Conservatory or Garden Pump ever offered to the public. It is equally adapted for Garden or Conservatory use, and is capable of discharging twice as much water in a given time as any other Syringe now in use. The arrangement consists in attaching a small flexible suction tube to the barrel of the Syringe, through which it is filled with water at every discharge of the previous contents. By this means the Syringe is always charged, and the pull-up stroke of the piston rendered perfectly easy, it having, indeed, no work to do, the barrel being previously full of water. Being thus made self-supplying, a great saving of labour is effected; and the necessity of stooping to fill the Syringe at every discharge being done away with, the direction of the water can be maintained for any length of time. It is perfectly cleanly in its action, as it is not possible for any water to get on the outside of the barrel, which is a well-known inconvenience attendant on the use of every other Syringe. Its construction is perfectly simple, and cannot get out of order; the ground-in ball valves and fittings used for filling all other patent Syringes being entirely superseded. To be had of any respectable Ironmonger or Seedsman in town or country.

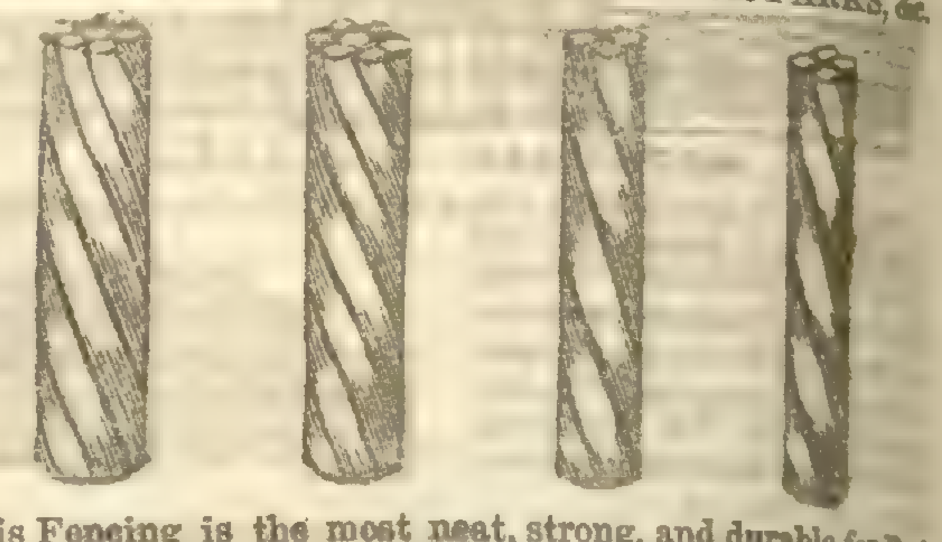
J. Tylor & Sons, Manufacturers of Horticultural Apparatus, Warwick Lane, Newgate Street, London.

N.B. These prices do not include carriage, package, or expenses of delivery in the country.

TANNED NETTING, for the protection of Fruit Trees from frost, blight, and birds, and for the security of fresh sown seeds, either in Gardens or Fields, at 1d. per square yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Scrim Canvass, for Wall Fruit.—At EDGINGTON and Co.'s, 17, Smithfield Bars, City, and Old Kent Road, Southwark, where may be seen erected Emigrant Tents in great varieties, on their latest improved principles, and also at Brunswick Street, Poplar, near the East India Export Dock.

H. J. MORTON and Co., Galvanised Iron Roofing Works, 2, Basinghall Buildings, Leeds.

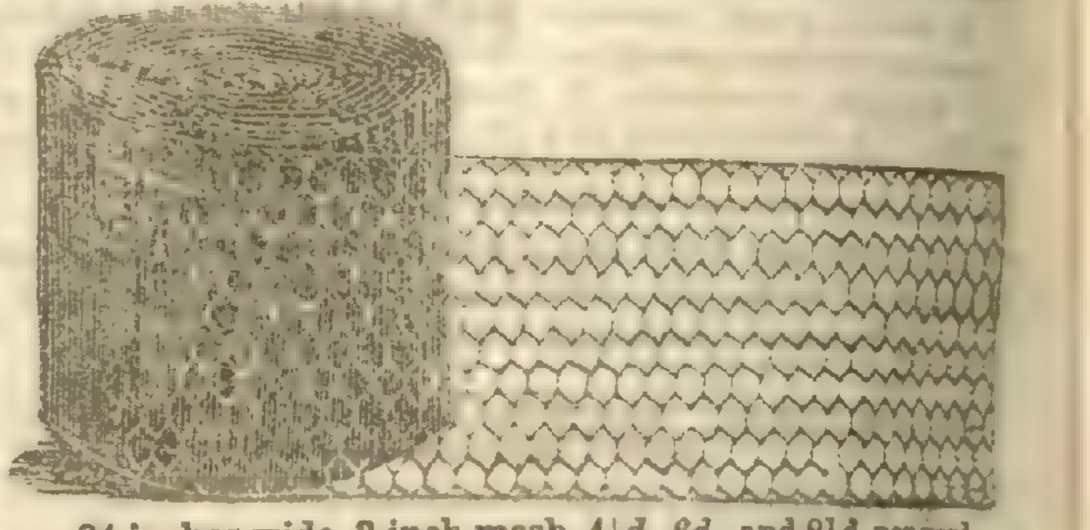
PATENT WIRE STRAND FENCING FOR PARKS, &c.



This Fencing is the most neat, strong, and durable for Parks and Agricultural purposes in use. It cannot be bent or put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last four years. Apply as above.

IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

H. J. MORTON and Co., 2, Basinghall Buildings, Leeds.—GALVANISED GAME AND POULTRY NETTING, very strong and neat, never requires painting.



24 inches wide, 3-inch mesh, 4½d., 6d., and 8½d. per yard.
24 inches wide, 2-inch mesh, 7d., 9½d., and 1s. per yard.

GALVANISED IRON SPOUTING, for Dwellings, Cottages, Farm Buildings, &c., never requires painting.

Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalte Roofing Felt, &c.

DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening Pursuits, are invited to examine DEANE, DRAY, and CO.'s extensive Stock of GARDENING and PRUNING IMPLEMENTS, best London-made Garden Engines and Syringes, Colebrook Dale Garden Seats and Chairs.

Averuncators	Garden Scrapers	Pickaxes
Axes	Gidney's Prussian Hoe	Potato Forks
Bagging Hooks	[Scissors	Pruning Bills
Bills	Grape Gatherers and	„ Knives, various
Borders, various patterns	Gravel Rakes and Sieves	„ Saws
Botanical Boxes	Greenhouse Doors and Frames	„ Scissors
Brown's Patent Fumigator	Hammers	„ Shears
Cases of Pruning Instruments	Hand-glass Frames	Rakes in great variety
Daisy Rakes	Hay Knives	Reaping Hooks
Dibbles	Horticultural Hammers and Hatchets	Scythes
Dock Spuds	Hoes of every pattern	Scythe Stones
Draining Tools	Hotbed Handles	Shears, various
Edging Irons and Shears	Ladies' Set of Tools	Sickles
Flower Scissors	Labels, various patterns, in Zinc, Porcelain, &c.	Sickle Saws
„ Stands in Wire and Iron	Lines and Reels	Spades and Shovels
Fumigators	Marking Ink	Spuds
Galvanic Borders and Plant Protectors	Mattocks	Switch Hooks
Garden Chairs and Seats	Menographs	Thistle Hooks
„ Loops	Metallic Wire	Transplanting Tools
„ Rollers	Milton Hatchets	Trowels
	Mole Traps	Turfing Irons
	Mowing Machines	Wall Nails
		Watering Pots
		Weed Hooks
		Wheelbarrows
		Youths' Set of Tools

DEANE, DRAY, and CO. are sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with their Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom. Also wholesale and retail Agents for SAYNOR'S celebrated PRUNING KNIVES, used exclusively by the first Gardeners in the United Kingdom.

DEANE, DRAY and CO. (Opening to the Monument), London Bridge. Established A.D. 1700.

BEEHIVES.

NEIGHBOUR'S IMPROVED COTTAGE BEE-HIVE, as originally introduced by George Neighbour & Sons, with all the recent improvements, glasses, thermometer, &c., price 35s., securely packed for the country.

This unique hive has met with universal commendation, and may be worked with safety, humanity, and profit, by the most timid: its arrangements are so perfect, that the honey may be taken at any time of the gathering season without at all injuring the bees.

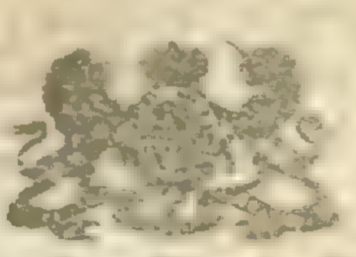
Early applications, addressed to Geo. Neighbour & Sons, 127, High Holborn, or 149, Regent Street, London, will receive prompt attention. Their newly arranged Catalogue of other improved Beehives, with Drawings and Prices, sent on receipt of two stamps.

Agents:—Manchester, Hall & Wilson, 50, King Street; Chester, Liverpool, James Cuthbert, 12, Clayton Square; Chester, F. & A. Dickson & Sons, 106, Eastgate Street; Glasgow, Austin & M'Aslan, 186, Trongate Street; Dublin, J. Edmundson & Co., 61, Dame Street.

STEPHENSON and PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

HORTICULTURE IN ALL ITS BRANCHES.



J. WEEKS & Co., King's Road, Chelsea,

HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Buildings or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. WEEKS & Co., King's Road, Chelsea, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.

GRAY AND ORMSON, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

BY HER MAJESTY'S

ROYAL LETTERS PATENT

E. DENCH, PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

PATENT HOTHOUSES and excellent Glass at 1*s*. 3*d*. per foot super., which are superior to all others for price with quality, and if known would supersede all others. (See Appendix, in "Book of the Garden," by Mr. M'Intosh.) A Range of Houses and Hot Water Apparatus, was erected by E. D. for E. L. Betts, Esq., Preston Hall, Kent. Mr. J. Frost, head gardener, has shown their efficiency by their produce at the Royal Botanic Gardens, Regent's Park, June 8, and Chiswick, June 11. The editor of the *Gardeners' Chronicle* says: "Beautiful examples of Black Hamburgh, large both in bunch and berry, and as black as Sloes, were furnished by Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall, Kent: these well deserved the first prize which was awarded them."—*Gardeners' Chronicle*, June 18th, 1853. The Grapes were considered the best shown at Regent's Park during the season, and the Houses are as superior for the growth of everything else in horticulture, which has been fully proved, and they have been extensively erected for the nobility and gentry in all parts of the kingdom.

GLAZING WITHOUT PUTTY.—Iron and Glass alone. E. D. has Roofed the Public Baths and Washhouses, Endell Street, on this principle, and others are in hand. Patent Sashes for Peach Walls, Pits, &c., 8*d*. per foot super. Heating by Hot-water, on the most practical principles, and all the best materials used. Printed Price List sent on application.

SOUND AND WHITE TEETH are not only indispensably requisite to a pleasing exterior in both sexes, but they are peculiarly appreciated through life as highly conducive to health and longevity. Among the various preparations offered for the purpose, ROWLAND'S ODONTO, or PEARL DENTRIFICE, stands unrivalled in its capability of embellishing, purifying, and preserving the teeth to the latest period of life. Prepared from Oriental herbs with unusual care, transmitted to this country at great expense, it will be found to eradicate all tartar and concretions, and impart a pearl-like whiteness to the enamelled surface, remove spots of incipient decay, render the gums firm and red, and thus fix the teeth firmly in their sockets; and from its aromatic influence imparts sweetness and purity to the breath.—Price 2*s*. 9*d*. per box. Caution.—The words "Rowlands' Odonto" are on the label, and "A. ROWLAND & SONS, 20, Hatton Garden," engraved on the Government stamp affixed on each box. Sold by them, and by chemists and perfumers.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2*d*. to 3*d*. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES, GREENHOUSES, DWELLINGS, ETC.

ESTABLISHED MORE THAN ONE HUNDRED YEARS.

THOMAS MILLINGTON requests attention to his present prices of SHEET GLASS in 100 feet boxes.

Squares	6 by 4 and 6½ by 4½	}	
"	7 by 5 and 7½ by 5½	}	13 6
"	8 by 6 and 8½ by 6½	}	
"	9 by 7 and 9½ by 7½	}	
"	10 by 8 to 12½ by 9½	}	16 3
"	12 by 10 to 24 by 14 ...	... ...	19 0

Orchard House Squares on Mr. Rivers's approved plan, to whom I have sold some thousands of feet:—20 inches by 12, 20 by 13, 20 by 14, 20 by 15, 20½ by 12½, 20½ by 13½, 20½ by 14½, at 19*s*. per 100 feet.

200 feet cases at 42*s*., and 300 feet case 63*s*., in large sheets.

Boxes charged 1*s*. extra per 100 feet, and the same allowed if returned free of all charge.

HARTLEY'S PATENT ROUGH PLATE GLASS, Fern Shades, Striking Glasses, Milk-pans, Bee Glasses, Cucumber Tubes, Sheet and Rough Plate Glass Tiles, Wasp Traps; Plate, Patent Plate, Crown and Sheet Window Glass, in every thickness and quality, and Ornamental Glass, plain and coloured; pure white Shades for Ornaments, Crystal Glass for Pictures.

Warehouse, 87, Bishopsgate Street Without—same side as Eastern Counties Railway.

JAMES PHILLIPS AND CO., 116, Bishopsgate Street Without, have the pleasure to hand their prices of

GLASS PRESERVE JARS.

3 inches diameter	... 0*s*. 3*d*.	With lid ...	... 0*s*. 4½*d*. each
4 " ...	... 0 5	" ...	... 0 7 "
5 " ...	... 0 7	" ...	... 0 9 "
6 " ...	... 0 9	" ...	... 1 0 "
7 " ...	... 1 0	" ...	... 1 3 "
8 " ...	... 1 3	" ...	... 1 7 "
9 " ...	... 1 6	" ...	... 2 0 "
10 " ...	... 2 0	" ...	... 2 6 "

Fruit Bottles, 3*s*. 6*d*. per dozen.

CUCUMBER GLASSES.—Each.

24 inches long	2*s*. 0*d*.	16 inches long	1*s*. 4*d*.
22 "	1 10	14 "	1 2
20 "	1 8	12 "	1 0
18 "	1 6	Made to any length.	

FERN SHADES.—Each.

6 in. diam., with stands	2*s*. 9*d*.	12 in. diam., with stands	8*s*. 1*d*.
7 " "	3 6	13 " "	9 6
8 " "	4 1	14 " "	12 6
9 " "	4 9	15 " "	16 9
10 " "	5 9	16 " "	21 10
11 " "	6 8		

Bee Glasses, Lactometers, Lord Camoys' Milk Syphons, Tiles and Slates, Wasp Traps; Plate, Crown, and Ornamental Glass, Shades for Ornaments, and every article in the trade.

HARTLEY'S PATENT ROUGH PLATE GLASS, for Conservatories, Public Buildings, Manufactories, Skylights, &c.

JAMES PHILLIPS AND CO., Horticultural Glass Warehouse, 116, Bishopsgate Street Without, London.

METCALFE AND CO'S NEW PATTERN TOOTH BRUSH, PENETRATING HAIR BRUSHES, AND SMYRNA SPONGES.—The Tooth Brush performs the highly-important office of searching thoroughly into the divisions and cleansing in the most extraordinary manner—hairs never come loose. Peculiarly penetrating Hair Brushes, with durable unbleached Russian bristles, which will not soften like common hair, and immense stock of genuine unbleached Smyrna Sponge, with every description of British and Foreign Perfumery, at METCALFE, BINGLEY, & Co.'s only Establishment, 130 B and 131, Oxford Street, second and third doors west from Holles Street.

CAUTION.—Beware of the word "from" Metcalfe's, adopted by some houses. Metcalfe's Alkaline Tooth Powder, 2*s*. per box.

DO YOU WANT LUXURIANT HAIR, WHISKERS, &c.?—EMILY DEAN'S CRINILENE has been many years established as the only preparation that can be relied upon for the Restoration of the Hair in Baldness from any cause, preventing the Hair falling off, strengthening weak Hair, and checking Greyness, and for the production of Whiskers, Moustachios, Eyebrows, &c., in three or four weeks with certainty. It is an elegantly scented compound, price 2*s*., and will be sent post free, on receipt of 24 penny postage stamps, by Miss DEAN, 37 A, Manchester Street, Gray's Inn Road, London. At home daily, from 11 till 7. Sundays excepted —"I have used your Crinilene, and have now a good pair of whiskers." J. L. HIGGS, Dudley.—"It has certainly improved my hair." J. THOMPSON, Durham.—"It effectually checked the greyness." L. EDE, Bath.

DO YOU WANT LUXURIANT HAIR, WHISKERS, &c.? If so, use Miss GRAHAM'S NIOUKRENE, the most efficacious Hair generant ever introduced. It reproduces the Hair when lost either by disease or decay, prevents its falling off, effectually checks greyness, strengthens weak hair, and is guaranteed to produce those attractive ornaments, Whiskers, Moustachios, Eyebrows, &c., in three or four weeks. For nourishing and beautifying the hair, and sustaining its curling powers in all weathers, it has no equal. Price 2*s*., and sent post free to any part of the kingdom, on receipt of 24 penny postage stamps, by ELLEN GRAHAM, 3, New Road, Hornsey, Middlesex.—"My hair is quite restored." Miss ORME.—"I have a full pair of Whiskers, thanks to Nioukrene." H. ROBB, Esq.—"It has checked the greyness." Mrs. JONES.—"My hair is restored." Dr. COFFIN.

HOLLOWAY'S PILLS AN EFFECTIVE MEDICINE FOR EPILEPSY AND APOPLECTIC SYMPTOMS.—Mr. Smithson, a retired publican, residing at Arbour Terrace, Norwood, who was of a very full habit of body, suffered to a fearful extent from an overflow of blood to the head, giddiness, and every symptom of Apoplexy; so bad at times that it was considered unsafe to trust him alone. His medical attendants failed to do him any good; therefore, as a last resource, he began to take HOLLOWAY'S PILLS, which he continued regularly for several weeks, and they have been the means of restoring him to sound health, feeling now as light and buoyant as a youth.—Sold by all Dealers in Medicine; and at Professor HOLLOWAY'S Establishment, 244, Strand, London.

BLAIR'S GOUT AND RHEUMATIC PILLS. Price 1*s*. 1½*d*. and 2*s*. 9*d*. per box.—Mr. William Courtney, of Barton, Stacey, Hants, says:—"I had resort to your Pills, and within two hours I was quite easy. The use of these Pills ought really to be known all over the world." Among the many discoveries, none have conferred such a boon on suffering humanity as that of Blair's Gout and Rheumatic Pills, they require neither attention nor confinement, and are certain to prevent the disease attacking any vital part. Sold by all medicine vendors. Observe that "THOMAS PROUT, 229, Strand, London," is impressed upon the Government stamp.

FARM AND RESIDENCE.

WANTED to Rent, upon Lease sufficiently long to admit of a considerable outlay, 400 or 500 Acres of ARABLE LAND, with a superior FAMILY HOUSE. The situation must be agreeable, and within two hours' communication of London, and two miles of a first class station. The South or West of London would be preferred.—For terms and particulars, address to Mr. HEWITT DAVIS, 3, Frederick's Place, Old Jewry, London.

LODGE FARM, BLECHINGLY, SURREY.

TO BE LET, from Michaelmas next, with the Sporting thereon, all that conveniently arranged Farm called the LODGE FARM, situate at Blechingly, Surrey, within an easy distance of the Reigate and Croydon Markets. The Farm comprises a Farm House and compact out-buildings, all in good repair, and 194 acres of land, well farmed and in good condition, of which about 30 are pasture.—To view the Farm, apply to Mr. JAMES EDWARDS on the farm, and for further particulars, of Mr. JAMES WICKENS, No. 1, Chandos Street, Cavendish Square, London.

NURSERY AND SEED BUSINESS.

ESTABLISHED IN THE YEAR 1819.

TO BE LET, with immediate possession, the old-established NURSERY at Taunton, Somerset, for some time past in the occupation of Messrs. Macintyre and McIntosh. The Grounds and Stock are in excellent condition, moderately rented, and are well worthy the attention of any person wishing to carry on the business. If required, the quantity of ground may be reduced.—For further particulars, apply to Mr. JOHN MCINTOSH, Lone Bridge, Taunton; or to Mr. YOUNG (the proprietor), Elm Cottage, Taunton.—July 8.

BLACK COCHIN EGGS from the best birds in England, having always taken prizes at the best shows, at 18*s*. per dozen, including package. Apply at the city of London Wire Works, 44, Skinner Street, London. N.B. Fowl Houses, Chicken Coops, Poultry Hurdles, and Netting, of every size and description. Illustrated Catalogues forwarded, post free, on application. A few Spanish Pullets, sisters to those sent to her Majesty's yard at Windsor, for Sale.

BEES.

TO BE SOLD, Three Hives of BEES, last year's swarms, strong and healthy. The Hives are constructed upon an entirely new and improved principle, and each one worked with seven glasses on the top. Bees now working in the glasses. No Bee-house required. Any lady or gentleman wishing to inspect them will be kind enough to write previously.—Address M. HAYES, Bee-hive Maker, Enfield Highway, Middlesex.

MR. JONAS WEBB begs to inform the public that his TWENTY-EIGHTH ANNUAL SHOW of SOUTH-DOWN RAMS will take place on THURSDAY, July 13. The Sheep will be let or sold as usual, and may remain on the Farm until required by the purchasers. Conditions of his Sheep letting may be had on application. J. W. will forward all Sheep half way, and those let at 20 guineas and upwards will be sent free to any Railroad Station at which they may be required, and their carriage back will be paid by J. W. Whittlesford Station, on the Eastern Counties line, is two miles from Babraham, and, by permission, all trains will on that day stop at Whittlesford, where conveyances will be in readiness to meet them.

P.S.—J. W. will have no Sheep at the Lincoln Meeting of the Royal English Agricultural Society, as he does not intend to exhibit there.—Church Farm, Babraham, Cambridgeshire.

ORCHIDS.

THE MOST EXTENSIVE AND VALUABLE COLLECTION EVER OFFERED FOR PUBLIC SALE, CONTAINING FINE PLANTS OF ALL THE BEST SPECIES OF THIS ELEGANT TRIBE NOW IN CULTIVATION.

MR. J. C. STEVENS is instructed to announce for Sale by Auction, at his Great Room, 38, King Street, Covent Garden, on WEDNESDAY, 12th July, and following day, the Collection of ORCHIDS of a gentleman, the character of which will at once be understood by an enumeration of a few of the principal varieties. Vanda suavis (true), four plants, Cymbidium eburneum two plants, Aerides Larpentæ two plants, Saccolabium Blumei eight plants, Lælia purpurata two plants, Phalænopsis rosea, grandiflora and amabilis many plants, Cypripedium Lowi, Uropedium Lindeni, and all the best varieties of Aerides, Vandas, Saccolabiums, Cattleyas, Trichopilias, Calanthes, Lælias, Dendrobiums, Angræcums, Miltonias, &c. Catalogues are preparing.

STRATFORD ST. MARY, NEAR COLCHESTER.

GARDEN GROUND AND COTTAGE RESIDENCE.

MESSRS. SMITH AND WARD will sell by Auction, on TUESDAY, July 11, at 4 P.M., at the Swan Inn, Stratford, Five Acres of superior FREEHOLD GARDEN GROUND planted with Fruit Trees, &c., and cultivated for the last eight years to a considerable depth, with Cottage, Barn, and other Buildings complete. Situated in the village on the Turnpike from Colchester to Ipswich, and 3 miles from Ardleigh station. Particulars of Messrs. Barnes and Neck, Solicitors, and of the Auctioneers, Colchester.

DOWN COTSWOLD RAM LAMBS.

MESSRS. GODWIN AND SON are instructed by Mr. J. T. Twynam to offer for Sale by Public Auction, at the Corn Exchange, Winchester, on MONDAY, July 17, at 2 o'clock precisely (the day previous to the Great Overton Hampshire Lamb and Sheep Fair, about Forty prime RAM LAMBS, and Three Four-teeth RAMS, of the above valuable breed, now so rapidly rising in public favour. These Lambs are of great size, of one uniform brown or dark colour of face and legs, and possess the most complete amalgamation of the Down and Cotswold symmetry, fleece, and flesh. The sire is (chiefly) Mr. Druce's (of Ensham, Oxford) No. 7 Down Cotswold Ram, a sheep of beautiful mould and thick flesh; the dams descended from the well-known flock of Down Cotswolds, established by Mr. J. T. Twynam, at Whitchurch, in 1835. Mr. Druce's wethers took the first prize at Smithfield at the last Christmas Exhibition for Crossed Sheep, in class 23. Winchester offers every facility and convenience for gentlemen and dealers who intend visiting the Fair at Overton on the following day.—The Lambs can be seen and particulars obtained on application to J. P. TWYNAM, North Walls, Winchester.

MR. FREDERICK MORRIS begs to announce that he has received instructions from the Trustees to Sell by Auction, without the least reserve, on MONDAY next, July 10, and five following days, commencing each day at 11 o'clock, on account of the number of lots, the extensive and superior stock of very choice and valuable HOTHOUSE and GREENHOUSE PLANTS, and IMPLEMENTS of the TRADE, of Mr. Griffin, at the Victoria Nursery, Weston Road, Bath, embracing the whole of the MOVEABLE STOCK, which is very extensive, and of a most valuable description, comprising upwards of 1300 Lots, and including about 300 fine specimen Azaleas, and 700 smaller do.; 1000 superior Camellias; 200 choice Heaths, and 500 smaller do.; 200 Epacris, 1000 Fuchsias, 2000 Geraniums, 50 Cactus, 100 Gardenias; 200 Roses, in pots; 500 Vines, 1000 Araucarias, and other Coniferæ, and many new and select hardy Shrubs, in pots; 100 Carnations and Picotees; 4000 hardy Herbaceous Plants, in pots; 18 Cucumber Frames, of various sizes; 10,000 Garden Pots and Pans, Wheelbarrows, Watering Pots, Syringes, and a large and extensive variety of all kinds of Hothouse and Greenhouse Plants of every description, which are arranged in small and suitable lots for private individuals. The Plants are all named and lotted, and will be on view on Friday and Saturday preceding the sale, when Catalogues will be ready, at 6*d*. each, on the Premises; at the White Lion, Bristol; Mr. G. MORRIS'S, 70, Tottenham Court, Road, London; and at the Auctioneer's Upholstery Warerooms, 22, Milsom Street, Bath.

TO GARDENERS.

HUGHES and NEWBERRY, Salesmen, Covent Garden, give their best attention to GOODS consigned to them. Current Prices are—MELONS, 40s. to 80s. per dozen; GRAPES, 3s. 6d. per lb.; PEACHES, 25s. per hundred.—July 8.

PRIMULA SINENSIS. — Any person having any Seed of the best Fimbriated sort to dispose of, which can be guaranteed to be entirely of the best quality, may hear of a Purchaser by sending particulars of quantity and price, by letter, post paid, to W. H. T., 64, Gibson Square, Islington.
N.B. The seed must be warranted first-rate.

RICK CLOTHS, MARQUEES, TENTS, ETC.
New or Second-hand, for Sale or Hire.

BENJAMIN EDGINGTON has for the ensuing season a large assortment of Marquees, &c., for Horticultural Societies, Fetes, Cricket Clubs, &c. Rick Cloths, with poles, pulleys, and lines complete. A variety of Emigration Tents erected on the premises, No. 2, Duke Street, Southwark. Netting and Bunting for fruit trees. A warehouse, 32, Charing Cross, where tents are erected.—Address, by post, 2, Duke Street, Southwark.

TENTS, MARQUEES, AND RICK CLOTHS.—Now on Sale, several second-hand Rick Cloths, Marquees, and Tents, of various sizes. Some of the Marquees are well adapted for Horticultural Societies. One 50 feet by 30, price 35l.; one 70 feet by 30, 50l.; and one 100 feet by 30, 65l. These are almost new, and quite ready for use. Small Tents for the Wars or Emigrants, weighing 12 lbs., price 25s. each, new and waterproof. Small Tents for Gardens, 30l. each.—R. Richardson, 21, Tonbridge Place, New Road, London.

GARDEN NETS, FISHING NETS, and SHEEP NETS made by Machinery at very low prices. New Nets, 1½d. per yard. Old Tanned Net, 6s. 3d. per 100 yards. Nets to cover Pheasantries and for all purposes required.—R. Richardson, 21, Tonbridge Place, New Road, London.

SECURITY TO PREMISES.

WIRE FENCING, 4 feet high, fixed on tops of walls, 1s. 6d. per yard run, including Iron Standards and all expenses of fixing. This Fence has been approved, in many instances, by the Police. It is almost invisible. Iron Wire Fencing for Hares, Rabbits, Cats, Dogs, Deer, Sheep, and enclosing Fowls and Pheasants, 6½d. per square yard, in various widths, from 6 feet to 15 inches.—R. Richardson, 21, Tonbridge Place, corner of Judd Street, New Road, London.

FRUIT TREES, SEED AND FLOWER BEDS.

NEW TWINE NETTING, Tanned if required, 1 yard wide, 1½d. per yard; 2 yards wide, 3d. per yard; 4 yards wide, 6d. per yard. Half-inch Mesh ditto, 2 yards wide, 6d. per yard. Tanned Netting, 2 or 3 yards wide, 1½d. per yard; 4 or 6 yards wide, 3d. per yard; or 5s. per 100 yards, 1 yard; 10s. per 100 yards, 2 yards; and 20s. per 100 yards 4 yards wide. —At W. Cullingford's, 1, Edmund Terrace, Ball's-pond Road, Islington, London.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.
"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard run, of E. T. Archer, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey.

TO FLORISTS AND OTHERS.

J. JONES, Iron Merchant, has always a great variety of CONICAL and SADDLE BOILERS in STOCK; also Fire and Furnace Bars, Ornamental and Plain Supply Cisterns, Double Doors and Frames, Furnace Grates, Soot Doors, Hot Water Pipes, Elbows, Tees, Syphons, Throttle Valves, Stop Cocks, Flange and Socket Elbows, &c.; also Trough Pipes. Drawings and prices of the above, on application to J. Jones, Iron Bridge Wharf, No. 6, Bankside, London, near the Southwark Iron Bridge.

VICTORIA NEEDLES.—A Morocco Leather Purse, containing 100 of the finest quality Cast Steel NEEDLES, assorted of the most useful sizes, and a Steel BODKIN, forwarded free by post, on receipt of 12 postage stamps.
Apply to Mapplebeck and Lowe, Birmingham.

JAMES SCOTT and CO., of Glasgow, have just opened their Premises in St. Paul's Churchyard (near the corner of Ludgate-hill), and respectfully invite Ladies to inspect their magnificent STOCK of SILKS, MANTLES, SHAWLS, DRESSES, DRAPERY, LACE, RIBBONS, &c.
77 and 78, St. Paul's Churchyard; and Trongate, Glasgow.

GLENFIELD PATENT STARCH, used in her Majesty's Laundry, and Wotherspoon's machine-made CONFECTIONARY, MARMALADE, JAMS, JELLIES, &c., which gained the Prize Medal of 1851, may be had of all Grocers; Wholesale of Wotherspoon, Mackay, & Co., 66, Queen Street Cheapside, London; and Robert Wotherspoon & Co., Glasgow.

THE CRYSTAL PALACE, SYDENHAM.

GLENNY'S BALBRIGGAN STOCKINGS and SOCKS are displayed in the South End Gallery, over the garden. The elegance of these beautiful Irish Fabrics is surpassed by their great durability and comfort. Sold only by the manufacturer, Charles Glenny, at his depôt, Balbriggan House, Lombard Street, and by Thresher & Glenny, next door to Somerset House, Strand, London.

NOTICE.

BERDOE'S VENTILATING WATERPROOF LIGHT OVER-COATS resist any amount of rain, without confining perspiration, the fatal objection to all other waterproofs, air-tight materials being unfit and dangerous for clothing, and being free from vulgar singularity are adapted for general use equally as for rainy weather. Price 45s. and 50s. A large stock for selection. Also of Capes, Shooting Jackets, Ladies' Mantles, Habits, &c.—W. Berdoe, Tailor, &c., 96, New Bond-street, and 69, Cornhill (only).

THE CHOLERA—ITS BEST ANTIDOTE.

SIR W. BURNET'S DISINFECTING FLUID, the original and genuine CHLORIDE OF ZINC.—Sold by all Chemists, Druggists, and Shipping Agents; and at the Office, 18, Cannon Street, London Bridge.
N.B. Beware of a spurious and low-priced imitation.

THE COMFORT of a FIXED WATER CLOSET for 1l.—Places in gardens converted into comfortable water closets by the PATENT HERMETICALLY SEALED PAN, with its self-acting valve, entirely preventing the return of cold air or effluvia. Any carpenter can fix it in two hours. Price 1l. Indispensable for the health and comfort of a family. Hermetically sealed Inodorous Chamber Commodes, 1l. 4s., 2l. 6s., and 3l.; also, Improved Portable Water Closets, with pump, cistern, and self-acting valve. A prospectus, with engravings, forwarded by enclosing two postage stamps.—At FYFE and Co.'s, removed to more commodious premises, at 46, Leicester Square, London.

COWS.

HARVEY'S CELEBRATED COW DRINKS, 1s. each. They have been used with unparalleled success in most diseases incidental to Cows. Full and plain directions are given with each drink for the treatment of Hoven, Mawbound, Colds, Gargle, Red Water, the Tick or Foot and Mouth Distemper, at and after Calving, &c. A very extensive use of these drinks has proved them to be a safe and effectual remedy.
Compounded by R. Harvey, Veterinary Surgeon, Macclesfield, Cheshire, and sold by all Medicine Vendors. Wholesale Agents, Barclay & Sons, Farringdon Street; and Marsden & Sons, Queen Street, Cheapside, London.

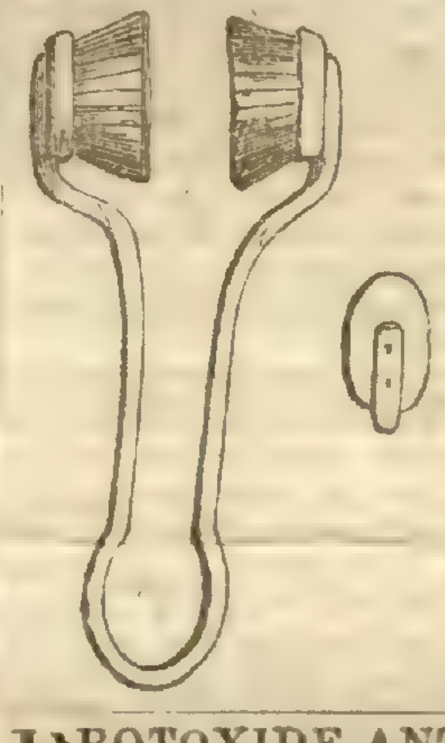
IMPORTANT TO

FLOCK MASTERS.
SHEEP, LAMBS, HORSES, AND CATTLE,
Can be Dressed with

LONG'S NON-POISONOUS SHEEP & CATTLE-DRESSING COMPOSITIONS, without any possibility of danger or injury resulting from the application. These Compositions are admitted by all who have fairly tested them to be the most effective Sheep Dressings ever brought before the agricultural public; and as they are non-poisonous, and do not stain or discolour the Wool, they are gradually superseding the use of all Dipping and other Sheep-dressing preparations, composed of such deadly poisons as Arsenic or Mercury.
It is a fact now thoroughly established, that Long's Non-Poisonous Sheep Dressings, if liberally and judiciously applied in the dressing of Sheep and Lambs, will—in their consequent effect in removing Disease, destroying Vermin, and keeping the flock in condition—thus promoting increased growth both of Mutton and Wool—as amply repay flock owners for first outlay as artificial manures when applied to land. They are the only Sheep Dressings also, which, from the fact of their containing no poison, can be beneficially and safely applied to Sheep and Lambs at any age and at any season of the year.
Pamphlets, containing full directions for use, and copies of the strongest Testimonials ever accorded to a manufacturer, signed by leading and practical Stock Farmers, residing in all parts of the United Kingdom, together with the names of all Country Agents authorised to vend Long's Patent Sheep and Cattle-dressing Compositions, may be obtained gratuitously on application of any advertised country Agent; or by post, sent free, of
BARRY BROTHERS, Agents for Joseph Long, Meriton's Wharf, and Shad Thames, London.

IMPORTANT TO GROWERS OF ROSES.

NEWLY-INVENTED APHIS BRUSH, or GREEN FLY DESTROYER.—The attention of Florists is particularly called to this Cheap and Ingenious Instrument, invented by the Rev. E. S. Bull, of Colchester, which, in a very simple and easy manner, instantly cleanses the Rose from that destructive insect the Greenfly (or Aphis), without causing the slightest injury to the bud or foliage. Price 2s. 6d. each, or free by post, 4s.



Manufactured by
JOSLIN AND SONS,
Ironmongers, Colchester.
Retailed by all the principal Ironmongers.
Wholesale agents: W. Thompson and Son, 15, Upper North Place, Gray's Inn Lane Road, London.

PROTOXIDE ANTI-CORROSION PAINT, for all external purposes, on iron, wood, brickwork, or stucco, is cheaper, and more durable, than any similar article.—Manufactured by Charles Francis & Sons, Cement Works, Nine Elms, London.

PAGE and CO.'S COMPOSITION FOR THE DESTRUCTION OF MILDEW UPON VINES, BLIGHT UPON ROSES, WALL-FRUIT TREES, CUCUMBERS, MELONS, AND STOVE AND GREENHOUSE PLANTS.—Extra strong, 4s. per gallon, sufficient to make four (jars and barrels extra); in bottles, 1s. 3d. and 2s. 6d. each. 10 gallons and upwards carriage free to London. Directions for use and copies of testimonials upon application. For testimonials see whole page Gardeners' Chronicle, March 11, 1854, describing the satisfactory results derived from its use in cases of Vine Mildew, Thrip, Scale, Green Fly, Red Spider, Mealy Bug, &c., not only without injuring the most delicate flowers or foliage, but promotes a vigorous growth; it is highly appreciated at the Royal Gardens, Osborne Palace, the Royal Gardens, Claremont, and by the principal nobility and gentry in the United Kingdom.
Finest Grasses for Lawns and Parks, and every variety of Garden and Farm Seeds, at B. Page & Co.'s, Seed Merchants, Oxford Street, Southampton.

NEW ZEALAND.—FREDERICK YOUNG and CO.'s LINE.—For CANTERBURY, Wellington, and New Plymouth, the magnificent frigate-built ship ROYAL STUART, A 1 13 years, 837 tons register, 1300 tons burden, Richard Holmes Goble, Commander. This splendid vessel, so celebrated for her rapid passages, has unusually fine accommodations for passengers, and will be dispatched from the East India Docks on the 20th of August.—Frederick Young and Co., New Zealand Colonists' Rooms, 9, Adelphi Terrace, and 74, Cornhill.

ASTROLOGY. — Persons residing in London or elsewhere can send any Address, Christian and Surname, and Age, in a letter containing 13 postage stamps, to Professor Melville, Prince's Road, Lambeth, London (the only Acrostic Astrologer in the universe), and they will receive by return of post, special Poems on their names, in which their destinies will be revealed.

KNOW THYSELF!—Professor Blenkinsop continues to receive from individuals of every rank the most flattering testimonials of his success in describing the CHARACTERS of Persons from their HANDWRITING, pointing out their mental and moral qualities, whether good or bad.—Address by letter, stating age, sex, and profession, inclosing 13 uncut postage stamps, to Dr. Blenkinsop, 344, Strand, London.

ON MARRIAGE.

Just published (to be had free, by enclosing 1s. or Twelve Postage Stamps, to Mr. Watson, Clerical Agent, Robert Street, Adelphi, London).

MATRIMONY.—A Pamphlet on Matrimonial Alliances, which merits the attention of those who wish to settle honourably in life. By a Clergyman.

CRYSTAL PALACE, 1854.
THE OFFICIAL GUIDE AND HANDBOOKS,

ILLUSTRATIVE of the Contents of the Exhibition, are now on Sale, and may be had separately, at prices varying from Threepence to Eighteenpence; or handsomely bound in 3 Vols., price 4s. 6d. each. To be had at the Palace, and at all Booksellers and Railway Stations, and of
Bradbury & Evans, Printers and Publishers to the Crystal Palace Company, 11, Bouverie Street.

This day is published, handsomely bound, with Illustrations and Plans, &c., price Half-a-Crown,

BUXTON AND THE PEAK OF DERBYSHIRE. A HANDBOOK TO THE PEAK OF DERBYSHIRE AND TO THE USE of the BUXTON MINERAL WATERS. By William Henry Robertson, M.D., Senior Physician to the Buxton Bath Charity. This forms a complete Guide to Buxton in 1854; and includes Plans of the Peak and of the surrounding neighbourhood, with a Directory of the Distances, Routes, Hotels, &c. Also a BOTANICAL APPENDIX. By Miss Hawkins.
Bradbury & Evans, 11, Bouverie Street, London; to be had of all Booksellers, and at all Railway Stations.

THE QUARTERLY REVIEW, No. CLXXXIX, will be published on THURSDAY NEXT.
Contents:—
I. THE HOUSE OF COMMONS.
II. MILMAN'S HISTORY OF LATIN CHRISTIANITY.
III. THE DRAMA.
IV. CLASSICAL DICTIONARIES.
V. THE ELECTRIC TELEGRAPH.
VI. MELANESIA AND NEW ZEALAND MISSIONS.
VII. QUEEN ELIZABETH AND HER FAVOURITES.
VIII. LORD LYNDHURST AND THE WAR.
John Murray, Albemarle Street.

Now ready,

JOURNAL OF THE ROYAL AGRICULTURAL SOCIETY.—No. XXXIII.
1. Trunk Drainage ... ... J. A. Clarke.
2. Bearing Reins ... ... Viscount Downe.
3. Hereditary Diseases of Cattle ... Finlay Dun.
4. Light Land Farming ... ... J. Haxton.
5. Finger and Toe in Root Crops ... J. Buckman.
6. Sewage as Manure ... ... J. Th. Way.
7. Origin of Wheat ... ... Esprit Fabre.
8. Hollow Brick Roofs, from ... ... Earl Grey.
9. Nitrate of Soda and Guano ... ... J. D. Nicol.
10. Farming of Oxfordshire ... ... C. S. Read.
London: John Murray, Albemarle Street.

This day is published, No. XLV., price 3s.,

THE JOURNAL OF AGRICULTURE, and the TRANSACTIONS OF THE HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND.
Published Quarterly. Subscription, 12s. per annum.
W. Blackwood & Sons, Edinburgh and London.

In the Press,

THE RURAL ECONOMY OF ENGLAND, SCOTLAND, AND IRELAND. By Leonce de Lavergne. Translated from the French.
William Blackwood & Sons, Edinburgh and London.

Will be ready on the 1st August, Part I., of

THE FERNS OF GREAT BRITAIN, Illustrated by John E. Sowerby; Descriptions by C. Johnson, Esq. To contain about 46 Plates, and to be completed in Eight Monthly Parts, full coloured, at 3s.; partly coloured at 1s. 6d. per Part.
Prospectuses may be had through all Booksellers; and of the Proprietor, John E. Sowerby, 3, Mead Place, Lambeth.

Just published, price 5s., elegantly bound, containing 170 Engravings.

WANDERINGS among the WILD FLOWERS; how to See and how to Gather them: with Two Chapters on the Economical and Medicinal Uses of our Native Plants. By Spencer Thomson, M.D., Fellow of the Botanical Society of Edinburgh, Author of "A Dictionary of Domestic Medicine and Household Surgery."
London: Groombridge & Sons; sold by all Booksellers.

AFFECTIONS OF THE NERVOUS SYSTEM.
Now ready, price 5s. 6d. with numerous Cases.

DR. MADDOCK ON NERVOUS DISEASES.—"Dr. Maddock has had large experience in nervous disorders, and he displays great judgment and ability in his comments on them."—*Literary Gazette.*
"The cases related exhibit sensible views and sound practice." —*Ed. Medical Association Journal.*
"Full of matter interesting to the general reader."—*Sunday Times.*
London: Simpkin, Marshall & Co., Stationers' Court.

Just published, New and Improved Edition, price 1s.,

THE CURABILITY OF CONSUMPTION. Being a Series of Papers, presenting the most prominent and important Practical Points in the Treatment of the Disease. By F. H. Ramadge, M.D., Fellow of the College of Physicians, late Senior Physician to the Royal Infirmary for Diseases of the Chest, &c.
Also, by the same Author, price 10s. 6d.,
A TREATISE on ASTHMA and DISEASES of the HEART.
London: Longman, Brown, Green, & Longmans.

On Saturday, the 15th inst., in 8vo, with Plate and Woodcuts,

RESEARCHES on LIGHT in its CHEMICAL RELATIONS; embracing an Examination of all the Photographic Processes. By Robert Hunt, Professor of Physics in the Metropolitan School of Science. New Edition, thoroughly revised, with extensive additions.
London: Longman, Brown, Green, and Longmans.

On Wednesday next, in 18mo, with Woodcuts, price 3s. 6d.,

SOUND and its PHENOMENA. By the Rev. E. C. Brewer, D.D., Trinity Hall, Cambridge; Author of "A Guide to English Composition" (12mo, price 5s. 6d.), "Poetical Chronology" (12mo, price 3s. 6d.), &c.
London: Longman, Brown, Green, and Longmans.

In a thick volume, 8vo, with 10 new Surgical and Anatomical Plates and several Woodcuts, price 24s. cloth.

BLAINE'S OUTLINES OF THE VETERINARY ART; or, a Treatise on the Anatomy, Physiology, and Curative Treatment of the Diseases of the Horse, and subordinately) of those of Neat Cattle and Sheep. Sixth Edition, revised throughout, and considerably improved by the Introduction of many important subjects both in the Foreign and British Practice of the Art, by Edward Mayhew, M.R.C.V.S. Author of "The Horse's Mouth," &c.
London: Longman & Co.; Simpkin & Co.; Hamilton & Co.; J. Whittaker & Co.; Houlston & Co.; H. Renshaw; J. Churchill; H. G. Bohn; R. Griffin & Co.; and S. Highley. Edinburgh: Maclachlan & Co.

Printed by William Bradbury, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and Frederick Mullett Evans, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be Addressed to the Editor.—Saturday, July 8, 1854.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley

No. 28.—1854.] SATURDAY, JULY 15. [Price 6d.

INDEX.

Abies Kæmpferi	455 c	Malt v. sugar	460 b
Agriculture, theory of	459 b	Malta, novel fete at	456 a
Agri. meteorology	460 c	Manure, liquid, and irrigation	459 a
Beer, economical	460 b	Melons, Cabul	452 b
Begonia fuchsioides	452 b	Meteorology, agri.	460 c
Books noticed	455 b	National Floricultural Society	456 a
Butter, potted	461 b	Paper, wood	456 a
Calendar, horticultural	456 a	Pathology, vegetable	451 c
— agricultural	461 a	Plants, new	455 c
Chiswick exhibition	451 a	Plough and spade	457 c
— report of	453 e	Potato disease	453 b
Chrysanthemum, the	455 e	Potato, substitutes for	452 c
Crystal Palace	457 b	Rifles	456 c
Cuttings, to strike	453 b	Shears, edging	453 a
Dairy produce	458 a	Sheep food	460 b
Edging shears	453 a	Spiræa grandiflora	453 b
Food, cooked v. fermented	458 b	Steam cultivation	457 c
Fruit crop in France	453 b	Steps, cheap	456 c
Genista cinerea	453 a	Strawberry culture	452 c
Gooseberry caterpillar	453 a	Sugar and malt	460 b
Grapes, to pack	453 a	Tares, early	461 b
Hort. Society's exhibition	451 a	Vegetable pathology	451 c
— — — report of	453 c	Vine disease	451 c
Irrigation and liquid manure	459 a	Wheat ripening	461 a
Juniperus drupacea	455 c	Wheat in France	460 b

THE SOUTH LONDON SOCIETY of AMATEUR FLORISTS.—The Fourth Exhibition this Season will be held at the HORNS TAVERN, KENNINGTON, on WEDNESDAY, July 26, when Prizes will be awarded for the following productions, viz.:—MISCELLANEOUS PLANTS, CARNATIONS, PICOTEES, VERBENAS, &c. In addition to the Prizes offered by the Society, P. Secretan, Esq., offers the Large Silver Victoria Medal for the best 20 Stove and Greenhouse Plants, open to members, honorary, and non-members; also by Mr. Steward, of Camberwell, the Small Silver Albert Medal, for the best stand of 12 varieties of Verbenas in single trusses, and the Small Silver Albert Medal for the best 6 do., let out this year.

List of Prizes and the Rules of the Society may be obtained from JOHN BUSHELL, Esq., Hon. Sec., *pro tem.*, Lower Kennington Lane, Lambeth.

Admission to non-members from 2 till 6 o'clock, at 1s. each.

TEDDINGTON ROYAL HORTICULTURAL SOCIETY.—The Annual Exhibition of FRUIT, FLOWERS, VEGETABLES, &c., will take place on the 7th September next.

Gates open at 1 o'clock to subscribers, and at 2 o'clock to the public.

LINCOLN HORTICULTURAL SOCIETY.—The SECOND SHOW will be held on WEDNESDAY, July 19, in the TEMPLE GARDENS, LINCOLN (being the day on which the Royal Agricultural Society holds its Annual Dinner), when, amongst other Prizes, the following will be awarded:—For the best 24 varieties of Roses, in single trusses, 5*l.*; second, 3*l.*; third, 2*l.* For the best 12 varieties of Hollyhocks, single blooms, 1*l.* 10*s.*; second, 1*l.*; third, 10*s.* For the best 12 varieties of Show Pelargoniums, in single trusses, 1*l.*; second, 10*s.*; third, 5*s.* For the best six Stove or Greenhouse Plants, 2*l.*; second, 1*l.*; third, 10*s.*

This Exhibition will be Open to all England. No entrance Fee to Exhibitors. Schedules and further particulars may be obtained on application to W. P. THROSBY, Hon. Sec.

THE ANNUAL FETE OF THE BUCKINGHAM HORTICULTURAL AND FLORAL SOCIETY will be held on WEDNESDAY, the 26th of July, 1854, in the spacious Garden of the late Cobham Arms Hotel and the adjoining Grounds, by the kind permission of the Proprietors, where extensive arrangements will be made for the accommodation of Exhibitors.

Twenty-one Prizes, including Two Silver Cups, open to ALL England, together with upwards of 60 Prizes to Nurserymen, Gentlemen's Gardeners, and Amateurs, and 50 Cottagers' Prizes, will be offered for competition. Schedules and full particulars may be obtained on application to Messrs. MARTIN and THORPE, Hon. Secretaries and Treasurers.

ROYAL BOTANIC GARDENS, REGENT'S PARK.
ERRATA IN THE AWARDS PUBLISHED JULY 8TH, 1854.

Silver, and not Silver Gilt, to Mr. Robertson, Gardener to Lady E. Foley, for a Providence Pine-apple.
Do. Mr. James, Gardener to H. Lea, Esq., for a Queen Pine-apple.
Do. Mr. Jones, Gardener to Lady C. Guest, for a Pine-apple (under FE.)
Small Silver, not Silver, to Mr. Bailey, Gardener to T. T. Drake, Esq., for a Providence Pine-apple.
Do. Mr. Chapman, Gardener to J. B. Glegg, Esq., for 1 Pine-apple (under FE.)
Do. Mr. Jones, Gardener to Lady C. Guest, for a Queen Pine-apple.
Bronze, not Small Silver, to Mr. Bray, Gardener to E. Lousada, Esq., for a Queen Pine-apple.
Do. Mr. Spencer, Gardener to Marquis of Lansdowne, for the same.
Do. Mr. Spivey, Gardener to J. Honblon, Esq., for the same.
Do. Mr. Turnbull, Gardener to Duke of Marlborough, for one Pine-apple (FE).

OMITTANCES.

Certificate to Mr. Mitchell, Bristol Gardens, for a dish of White Cherries.
Do. Mr. Marcham, Gardener to J. Smith, Esq., for a dish of Black Cherries.

PARIS UNIVERSAL EXHIBITION OF 1855.

NOTICE IS HEREBY GIVEN, that all demands for Space should be sent in by intending Exhibitors immediately, or at latest on the 1st August.

(By order) H. C. OWEN, Captain R.E.
Marlborough House, Pall Mall, London, July 13.

STANDISH & NOBLE'S Catalogue for the present season is now ready, and may be had by inclosing two stamps for postage.—The Nursery, Bagshot, July, 1854.

ROBERT PARKER, from Messrs. A. HENDERSON and Co's., begs to inform his Friends and the Public that he has taken PARADISE NURSERY of Mr. W. J. Pamplin, where he intends to carry on the business of Nurseryman and Seedsman; and assures them that all orders he may be favoured with will be executed with promptitude and care.
Paradise Nursery, Hornsey Road, July 15.

ORANGE JELLY TURNIP SEED.

PURCHASERS OF LARGE QUANTITIES will be supplied liberally, for cash payment, on application to Messrs. SUTTON AND SONS, SEED GROWERS, Reading, of whom it may also be had retail at same price as at Chester. Early orders will be first executed.

SUTTON'S IMPERIAL CABBAGE. — THE EARLIEST SORT IN CULTIVATION, large and fine flavour. This sort may be sown immediately without any risk of the plants running to seed. Price 1*s.* per ounce, post free.
JOHN SUTTON & SONS, Nos. 7 & 8, Market Place, Reading, Berks.

DRUMHEAD CATTLE CABBAGE PLANTS.

JOSEPH SHILLING, NURSERYMAN and SEEDSMAN, Winchester, has a large Stock of the above Plants, which he will send by Railway at 3*s.* per 1000, package included.

THE QUEEN OR CAULIFLOWER CABBAGE.—The above Cabbage is of most delicate flavour, quite equal to the Cauliflower; very early, and requires good ground. The stumps left in the spring after the Cabbages are cut will reproduce Cabbages all the summer, so that persons growing this kind need not make more than one good bed in the year. It should be sown this month, and planted out in September.—1*s.* per oz.

LONDON MARKET CABBAGE.—Saved from a very choice stock. This kind is of larger growth than the Queen, and will do well for exposed situations.—1*s.* per oz.

The above sent free by post on the receipt of postage stamps or a post-office order.
JOSEPH SHILLING, Nurseryman and Seedsman, Winchester.

HARDY'S NEW EARLY DWARF CRYSTAL CABBAGE.

ABRAHAM HARDY AND SON, SEED GROWERS, Maldon, Essex, can with confidence recommend this as a superior kind, and warrants it to give entire satisfaction. One ounce will be sent to any address, post free, on receipt of 1*s.*, or postage stamps equivalent. Sow in July or August.

POTATO DISEASE.—PREVENTION BETTER THAN CURE.

HUGHES AND NEWBERRY, FRUIT and VEGETABLE SALESMEN, Covent Garden, remind their friends that they have an IMMEDIATE SALE for any quantity or quality of POTATO. Present prices are, per cwt.:—Best ROUND 8*s.*; KIDNEYS, 11*s.* GRAPES, 3*s.* per lb.; PEACHES, 8*s.* per dozen. NEW APPLES in request.

N.B. Directions given for Packing Fruit. Potatoes may now be sent in flour barrels, or, if ripe, in bags.—July 15.

ROSES.

G. CLARKE respectfully invites the attention of lovers of Roses to his unrivalled Collection, extending over 10 acres of ground, which may now be seen in full bloom. Plants can be selected now and orders executed in the autumn.

Streatham Place Nursery, Brixton Hill, near London; four miles from London. The nearest and most pleasant route from the West End to the Crystal Palace.

ROSE NURSERIES, HERTFORD.

EDWARD PARKE FRANCIS will feel great pleasure in showing to any amateur, lady, or gentleman, who may honour him with a visit, his Collection of ROSES, grown on the MANETTI STOCK, which is pronounced by many of the largest Rose growers and practical amateurs to be the finest quarter of Roses yet grown on this stock. The plants budded last autumn are now strong, stout, bushy, and average 3 feet in growth. Samples of flowers may be seen at Mr. DENYER'S, 82, Gracechurch Street; and Mr. CLARK'S, 25, Bishopsgate Street.

WILLIAM WOOD AND SON beg leave to intimate that their extensive Plantations of ROSES are now coming into fine bloom, and will remain in perfection during the Rose season. Maresfield is distant from Lewes 10 miles, and Hayward's Heath 12, both of which places are Stations on the London and Brighton Railway, and from whence conveyances may be obtained.

NEW ROSES IN POTS.

W. J. EPPS, of Maidstone and Ashford, can now supply fine strong Plants of the following new ROSES. The Plants average from 10 to 20 buds, fit for immediate working.

HYBRID PERPETUALS.	s.	d.	HYBRID PERPETUALS.	s.	d.
Adam Paul	3*s.*	6*d.*	Colonel Rougemont	5*s.*	0*d.*
Louis Peyronny	3	6	Gloire de France	7	6
Baronne Heckerean	5	0	Joseph Descarme	3	6
Triomphe de Paris	5	0	Blanche Portemar	3	6
Prince Leon Kotchouby	5	0	Lady Wilson	5	0
Duchess de Orleans	5	0	BOURBONS—Pigeron	2	6
Lady Shelley (Mitchell's)	5	0	„ Blanche Laffitte	3	6
Imperatrice Josephine	5	0	„ Colonel Fossey	2	6
Souvenir de Madame Lille	5	0	„ La guintemie	7	6
Leon Plee	5	0	„ Prince Albert	3	6
James Veitch	5	0	NOISETTES—		
Prince Chipetowzikof	5	0	Maria Charges	5	0
Alexander Beckmiteff	3	6	Eudoxie	3	6
Le General Jacqueminot	7	6	TEAS—August Vacher	5	0
Baronne le Kermont	5	0	„ David Pradel	2	6
Lady Stewart	5	0	„ Gloire de Dijon	7	6
Jules Margottin	7	6	„ Georges de France	5	0

W. J. E. can offer choice varieties, such as Queen Victoria, Egarie, Triomphe de Valenciennes, Standard de Marengo, L'Ergant Vere, Madame Campbell, Palais de Cristal, &c., at 30*s.* per dozen, or 2*s.* 6*d.* each.

LASTREA FILIX MAS VAR. CRISTATA,
ATHYRIUM FILIX FŒMINA VAR. MULTIFIDUM.

ROBERT SIM begs to draw the attention of Growers of HARDY FERNS to these extremely beautiful and unequalled British varieties.

LASTREA FILIX MAS VAR. CRISTATA.—Fronds 2 feet long, pinnæ broadly multifid at their points, giving the whole plant an unique and very elegant appearance. Very rare. Fine young plants, 5*s.*, and larger 7*s.* 6*d.* each. Small do. by post, 3*s.* 6*d.* each.

ATHYRIUM FILIX FŒMINA VAR. MULTIFIDUM.—Fronds 2 feet long, pendant, the ends of the pinnæ so much multifid as to appear tasselled. Fine young plants, 5*s.* each.

They form elegant Conservatory Ferns also.

Carriage free to London. Post-office orders on Chiselhurst.
Nursery, Foot's Cray, Kent.

THE NEW RHODODENDRONS OF ASSAM AND BOOTAN
EXHIBITED AT CHISWICK ON SATURDAY, JULY 8TH, BY MR. J. VEITCH, JUN., OF CHELSEA.

MESSRS. E. G. HENDERSON AND SON, of the Wellington Nursery, St. John's Wood, London, beg to say that in consequence of some remarks having been made to them respecting the above, and other reports having been circulated, originating, as they have been given to understand, from the Exotic Nursery, Chelsea, and which they are sure can have no foundation, think it right to put the readers of this Journal in full possession of the facts — which are, that in the month of March of the present year, Mr. Veitch was in communication with Mr. Nuttal respecting the above Rhododendrons, and in a letter dated the 16th March, Mr. V. requested to have a single plant of the following varieties for inspection, which were accordingly forwarded to him, viz; Keysi, Nuttali, Kendricki, eximium, longifolium, lucidum, calophyllum, and Camelliæflorum; and no other plants have subsequently passed into his hands from Mr. Nuttal.

Messrs. E. G. H. & Son were quite aware of this circumstance at the time of purchasing, and that a few other plants had previously left the collection of Mr. Nuttal.
Wellington Nursery, St. John's Wood, July 14.

PATTERSON'S SCARLET NONPAREIL STRAWBERRY.

JAMES VEITCH, JUN., has the pleasure to inform the public that Mr. Patterson, Gardener to Baroness Wenman, of Thame Park, Oxon, has placed in his hands for distribution the stock of the above first-rate Seedling Strawberry, which, having been fully tested and exhibited, has proved to be of very superior excellence.

It was exhibited at Chiswick, on Saturday, June 3, and received the Silver Knightian Medal; it has also been submitted to Dr. Lindley, Mr. Marnock, and Mr. Thompson, all of whom report most favourably of its merits.

It is a *first-class forcing* Strawberry in character, intermediate between *its parents—Keens' Seedling* and *British Queen*; of the vigorous habit of the *former*, and fully one week earlier in ripening; and in the quality of its fruit *fully equal* in flavour, if not superior, to the latter. The fruit is of a large size and handsome shape, of a *bright red colour*, and with a remarkably high perfume.

Orders are now taking for strong plants to be sent out the first week in September on the following terms:—

100 Plants ... £3 | 50 Plants ... £2 | 12 Plants ... 12*s.*

Exotic Nursery, Chelsea.—July 15.

OSBORN AND SONS have the pleasure to acquaint the public that they are now prepared to send out the following new plants:—

OXYLOBIUM OSBORNI.

This beautiful new Oxylobe obtained the Large Silver Medal at the Chiswick Exhibition in June, 1853. From its graceful habit, and bearing its bright orange-coloured flowers in such abundance, it will, we have no doubt, become a general favourite. Price 10*s.* 6*d.* each.

LYSIMACHIA LESCHENAULTI.

An exceedingly pretty plant, with dense heads of pink flowers, raised from seeds received from the Neilgherry Hills; it is a most abundant bloomer, and easy of cultivation. It was awarded the second prize for new plants at the Regent's Park, June 1854. Price 5*s.* each.

PENTAS ROSEA.

A decided improvement on the Pentas carnea, having much darker coloured flowers. Price 3*s.* 6*d.* each.

The usual discount to the trade.
Fulham Nursery, near London, July 15.

TO GENTLEMEN, FLORISTS, AND OTHERS.

TO BE SOLD, about 200 Pots of the best exhibiting varieties of CARNATIONS and PICOTEES in cultivation, by name, now coming into bloom. Also choice collections of the best named Scotch Ranunculuses and Pinks.—To be seen at R. PARKER'S, Florist, Mayfield Road, Dalston.

THE GRAPE BLIGHT.

MCADAM'S "COMPOSITION" (now used in the Royal Vineries), for the effectual prevention and cure of the Vine Mildew, is sold in 1 lb. packets, with printed directions, at 3*s.* 6*d.* each, sufficient for 18 gallons of wash.

DAWE, COTTRELL, & BENHAM, Seedsmen, London Agents, 36, Moorgate Street, City. It may be ordered through any respectable Nurseryman or Tradesman in town or country.

PAGE AND CO.'S COMPOSITION FOR THE DESTRUCTION OF MILDEW UPON VINES, BLIGHT UPON ROSES, WALL-FRUIT TREES, CUCUMBERS, MELONS, AND STOVE AND GREENHOUSE PLANTS.—Extra strong, 4*s.* per gallon, sufficient to make four (jars and barrels extra); in bottles, 1*s.* 3*d.* and 2*s.* 6*d.* each. Directions for application forwarded. Ten gallons and upwards carriage free to London.

For testimonials, see whole page of *Gardeners' Chronicle*, March 11, 1854, describing the SATISFACTORY RESULTS derived from its use in cases of Vine Mildew, Thrip, Scale, Green Fly, Red Spider, Mealy Bug, &c., not only without injuring the most delicate flowers or foliage, but promotes a vigorous growth.

From Andrew Toward, Esq., Royal Gardens, Osborne Palace.

"I have great pleasure to add my testimony to the efficacy of your Blight Composition, which has been used with great success upon Rose Trees much affected with the Green Fly."

From Frederick Malleson, Esq., Royal Gardens, Claremont.

"I find it answer the purpose in all respects for Walls, also the Green Fly and Brown Scale in the Houses.—May 9, 1854."

Finest Grasses for Lawns and Parks, and every variety of Garden and Farm Seeds, at B. PAGE & CO.'S, Seed Merchants, Oxford Street, Southampton (20 yards from the Railway and Docks).

COWS.

HARVEY'S CELEBRATED COW DRINKS, 1*s.* each. They have been used with unparalleled success in most diseases incidental to Cows. Full and plain directions are given with each drink for the treatment of Hoven, Mawbound, Colds, Gargle, Red Water, the Tick or Foot and Mouth Distemper, at and after Calving, &c. A very extensive use of these drinks has proved them to be a safe and effectual remedy.

Compounded by R. HARVEY, Veterinary Surgeon, Macclesfield, Cheshire, and sold by all Medicine Vendors. Wholesale Agents, BARCLAY & SONS, Farringdon Street; and MARSDEN & SONS, Queen Street, Cheapside, London.

THE

NEW RHODODENDRONS OF ASSAM AND BOOTAN.

COLLECTED BY THOMAS J. BOOTH, ESQ.,

And described in the "Magazine of Botany," by his Uncle, THOMAS NUTTAL, Esq., *of Rainhill, the well-known Botanist and Traveller.*

E. G. HENDERSON & SON

HAVE much pleasure in announcing that they have for Sale these, the most remarkable new species of RHODODENDRONS ever introduced into the country, many of which surpass those from Sikkim, discovered by Dr. Hooker. Amongst these brilliant discoveries from the Bootan Alps are the most wonderful-sized flowers, delicious fragance, and distinct colours of any that are known to exist in this the most gorgeous tribe of plants; and being combined with magnificent foliage, and distinct habit of growth, will render them indispensable, and a great acquisition both for the garden and conservatory.

The entire Stock of all these extraordinary species now growing (June 16, 1854) in the gardens at Rainhill have been purchased by them. The plants are fine, healthy, and robust. Many have been planted out in the open ground, and have proved quite hardy, with the exception of one or two slightly injured by late spring frosts.

They are now taking orders for six of the most distinct species, which will be dispatched as soon as the young growth of this season is sufficiently ripened for travelling. Full descriptions and prices may be seen on referring to the *Gardeners' Chronicle* of July 1, or in their

NEW CATALOGUE FOR 1854, NOW PUBLISHED,

and which will be forwarded post free on application.

Wellington Nursery, St John's Wood, July 15.

HORTICULTURAL SOCIETY OF LONDON.

EXHIBITION AT THE GARDEN, JULY 8, 1854.

AWARD OF THE JUDGES.

THE FIRST LARGE GOLD MEDAL.

1. To Mr. Williams, Gardener to C. B. Warner, Esq., F.H.S., for 20 species of Exotic Orchids.
2. To Mr. Speed, Gardener to E. Ray, Esq., of Edmonton, for a collection of 20 Stove and Greenhouse Plants.

THE SECOND LARGE GOLD MEDAL.

1. To Mr. Woolley, Gardener to H. B. Ker, Esq., of Cheshunt, for 20 species of Exotic Orchids.
2. To Messrs. Fraser, of Lea Bridge Road, for a collection of 20 Stove and Greenhouse Plants.

THE FIRST GOLD KNIGHTIAN MEDAL.

1. To Messrs. Rollisson, of Tooting, for a collection of 20 Stove and Greenhouse Plants.
2. To Mr. Dods, Gardener to Sir J. Cathcart, Bart., F.H.S., for a collection of 15 Stove and Greenhouse Plants.

THE SECOND GOLD KNIGHTIAN MEDAL.

1. To Mr. Rhodes, Gardener to J. Philpott, Esq., of Stamford Hill, for a collection of 20 Stove and Greenhouse Plants.
2. To Mr. Barter, Gardener to A. Bassett, Esq., of Stamford Hill, for a collection of 15 Stove and Greenhouse Plants.

THE FIRST GOLD BANKSIAN MEDAL.

1. To Mr. Carson, Gardener to W. F. G. Farmer, Esq., F.H.S., for 10 species of Exotic Orchids.
2. To Messrs. Veitch, F.H.S., for 15 species of Exotic Orchids.
3. To Mr. Peed, Gardener to T. Tredwell, Esq., of St. John's Lodge, Norwood, for a collection of 6 Stove and Greenhouse Plants.
4. To Mr. Carson, Gardener to W. F. G. Farmer, Esq., F.H.S., for a collection of 15 Stove and Greenhouse Plants.
5. To Messrs. Rollisson, of Tooting, for 10 varieties of Cape Heaths.
6. To Mr. Turner, F.H.S., of Slough, for a collection of 12 Pelargoniums.
7. To Mr. Ingram, Gardener to her Majesty, at Frogmore, for a collection of Fruit.

THE SECOND GOLD BANKSIAN MEDAL.

1. To Mr. Ivison, Gardener to the Duke of Northumberland, F.H.S., for 10 species of Exotic Orchids.
2. To Messrs. Rollisson, of Tooting, for 15 species of Exotic Orchids.
3. To Mr. Over, Gardener to W. McMullen, Esq., of Clapham, for a collection of 6 Stove and Greenhouse Plants.
4. To Messrs. Fraser, of Lea Bridge Road, for 10 varieties of Cape Heaths.
5. To Mr. Gaines, F.H.S., for 12 Pelargoniums in 8-inch pots.

THE SILVER GILT MEDAL.

1. To Mr. Gedney, Gardener to Mrs. Ellis, of Hoddesdon, for 10 species of Exotic Orchids.
2. To Mr. Hamp, Gardener to J. Thorne, Esq., of South Lambeth, for a collection of 15 Stove and Greenhouse Plants.
3. To Mr. Taylor, Gardener to J. Coster, Esq., of Streatham, for 6 Stove and Greenhouse Plants.
4. To Messrs. Veitch, F.H.S., for Befaria æstuans.
5. To Mr. Peed, Gardener to T. Tredwell, Esq., of Norwood, for 10 varieties of Cape Heaths.
6. To Messrs. Veitch, F.H.S., for a collection of Variegated Plants.
7. To Mr. Maher, Gardener to J. M. Strachan, Esq., F.H.S., for 12 Pelargoniums, in 8-inch pots.
8. To Mr. Turnbull, Gardener to the Duke of Marlborough, for a collection of Fruit.
9. To Mr. Strachan, Gardener to K. B. Hill, Esq., of Bache Hall, Cheshire, for Muscat Grapes.

THE LARGE SILVER MEDAL.

1. To Mr. Over, Gardener to W. McMullen, Esq., of Clapham, for 6 Stove and Greenhouse Plants.
2. To Messrs. Veitch, F.H.S., for a new species of Dipladenia.
3. To Mr. Roser, Gardener to J. Bradbury, Esq., F.H.S., for 6 varieties of Cape Heaths.
4. To Messrs. Veitch, F.H.S., for 12 Hothouse Ferns.
5. To Messrs. Rollisson, of Tooting, for a collection of Variegated Plants.
6. To Messrs. Veitch, F.H.S., for a collection of Tender Plants of fine foliage.
7. To Mr. Turner, F.H.S., of Slough, for 6 varieties of Fancy Pelargoniums.
8. To Messrs. Lane, of Great Berkhampstead, for 50 varieties of Cut Roses.
9. To Mr. Snow, Gardener to Earl de Grey, F.H.S., for a collection of Fruit.
10. To Mr. Barron, Gardener to J. H. Vivian, Esq., F.H.S., for Queen Pine-apples.
11. To Mr. Frost, Gardener to E. L. Betts, Esq., F.H.S., for Black Hamburgh Grapes.
12. To Mr. Fleming, Gardener to the Duke of Sutherland, F.H.S., at Cliveden, for do.
13. To Mr. Allport, Gardener to H. Ackroyd, Esq., F.H.S., for Muscat and Frontignan Grapes.
14. To R. Boare, Esq., of Spring Hill, Berks, for Muscat Grapes.
15. To Mr. Brown, Gardener to W. C. Cartwright, Esq., of Aynhoe, for Peaches and Nectarines.

THE SILVER KNIGHTIAN MEDAL.

1. To Mr. Roser, Gardener to J. Bradbury, Esq., F.H.S., for 6 Stove and Greenhouse Plants.
2. To Mr. Taylor, Gardener to J. Coster, Esq., of Streatham, for 6 varieties of Cape Heaths.
3. To Mr. Woolley, Gardener to H. B. Ker, Esq., of Cheshunt, for 12 Hothouse Ferns.
4. To Messrs. Henderson, of Pine-apple Place, for a collection of Variegated Plants.
5. To Messrs. Rollisson, of Tooting, for a collection of Tender Plants of fine foliage.
6. To Mr. Gaines, F.H.S., for 6 varieties of Fancy Pelargoniums.
7. To Messrs. Paul, of Cheshunt, for 50 varieties of Cut Roses.
8. To Mr. Munro, Gardener to the Earl of Clarendon, for 25 varieties of do.
9. To Messrs. Fraser, of Lea Bridge Road, for a collection of 6 Helichrysums.
10. To the same, for a collection of 6 Kalosanths.
11. To Messrs. Veitch, F.H.S., for Pleroma elegans.
12. To the same, for a collection of Lycopods.
13. To Mr. Marsh, Gardener to C. Leach, Esq., for Disa grandiflora.
14. To Mr. Chapman, Gardener to J. B. Glegg, Esq., F.H.S., for a collection of Fruit.
15. To Mr. James, Gardener to C. H. Leigh, Esq., of Pontypool Park, Monmouth, for Queen Pine-apples.
16. To Mr. James, Gardener to the Lady Charlotte Guest, for do.
17. To Mr. Fleming, Gardener to the Duke of Sutherland, F.H.S., at Trentham, for Pine-apples and Grapes.
18. To Mr. Hill, Gardener to R. Sneyd, Esq., F.H.S., for a collection of Grapes.
19. To Mr. Haywood, Gardener to Sir G. Goodman, of Roundhay, near Leeds, for Black Hamburgh Grapes.
20. To Mr. Dods, Gardener to Sir J. Cathcart, Bart., F.H.S., for Grapes and Nectarines.
21. To Mr. Wright, Gardener to J. Elgers, Esq., Putney Heath, for Royal George Peaches.
22. To Mr. Ingram, for Begonia suaveolens rosea, and Begonia hybrida.

THE SILVER BANKSIAN MEDAL.

1. To Mr. Peed, Gardener to T. Tredwell, Esq., of Norwood, for 6 Stove and Greenhouse Plants.
2. To Messrs. Pamplin, of Lea Bridge Road, for do.
3. To Mr. Over, Gardener to W. McMullen, Esq., for 6 varieties of Cape Heaths.
4. To Mr. Gedney, Gardener to Mrs. Ellis, of Hoddesdon, for 12 varieties of Hothouse Ferns.
5. To Messrs. Henderson, of Wellington Road, St. John's Wood, for a collection of Variegated Plants.
6. To the same, for a collection of Tender Plants of fine foliage.
7. To Mr. Maher, Gardener to J. M. Strachan, Esq., F.H.S., for 6 Fancy Pelargoniums.
8. To Mr. Francis, F.H.S., for 50 varieties of Cut Roses.
9. To Mr. May, Gardener to C. M. Northington, Esq., of Caversham, for 25 varieties of Cut Roses.
10. To Mr. Taylor, Gardener to J. Coster, Esq., of Streatham, for Kalosanths.
11. To Mr. Speed, Gardener to E. Ray, Esq., of Edmonton, for Erica Massoni.
12. To Messrs. Veitch, F.H.S., for Oncidium sp.
13. To the same, for Impatiens Jerdon æ.
14. To the same, for Philesia buxifolia.
15. To Mr. Carson, Gardener to W. F. G. Farmer, Esq., F.H.S., for a new species of Burlingtonia.
16. To Mr. Ivison, Gardener to the Duke of Northumberland, F.H.S., for Grapes in pots, and a collection of Tropical Fruits.
17. To Mr. Burn, Gardener to the Hon. Col. Pennant, of Penrhyn Castle, Bangor, for Queen Pine-apples.
18. To Mr. Hayes, Gardener to the Bishop of London, for Providence Pine-apples.
19. To Mr. W. Davies, Gardener to T. W. Booker, Esq., F.H.S., for Queen Pine-apples.
20. To Mr. Lydiard, of Batheaston, for a collection of Strawberries.
21. To Mr. Smith, Gardener to A. Anderson, Esq., of Streatham, for Black Hamburgh Grapes.
22. To Mr. Shrimpton, Gardener to A. J. Doxat, Esq., of Putney, for the same.
23. To Mr. Frost, Gardener to Lady Grenville, F.H.S., for Muscat Grapes.
24. To Mr. Tillyard, Gardener to the Right Hon. the Speaker, F.H.S., for Elruge Nectarines.
25. To Mr. Munro, Gardener to the Earl of Clarendon, for Peaches and Nectarines.
26. To Messrs. Lane, of Great Berkhampstead, for Morello Cherries in pots.
27. To Mr. Monro, Gardener to Mrs. Oddie, of Colney House, St. Alban's, for a Victory of Bath Melon.

THE FIRST CERTIFICATE.

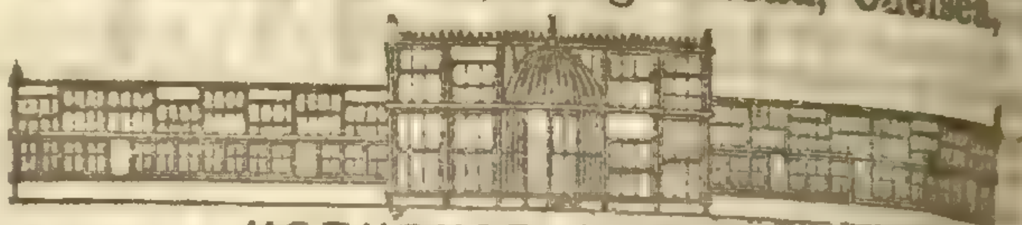
1. To Mr. Wilkinson, of Ealing, for 50 varieties of Cut Roses.
2. To Mr. Sage, Gardener to W. R. Robinson, Esq., of Acton, for 25 varieties of Cut Roses.
3. To Mr. Gedney, Gardener to Mrs. Ellis, of Hoddesdon, for Phalænopsis amabilis.
4. To the same, for Nepenthes Rafflesiana.
5. To Mr. Ingram, for a fragrant species of Sabbatia.
6. To Messrs. Veitch, F.H.S., for Whitlavia sp.
7. To the same, for Escallonia sp.
8. To the same, for Escholtzia tenuifolia.
9. To Mr. Underhill, of Edgbaston, for a seedling Strawberry called "Sir Harry."
10. To Mr. Kitley, of Lyncombe Sale Nursery, Bath, for a seedling Strawberry, called "Carolina superba."
11. To Mr. Frost, Gardener to Lady Grenville, F.H.S., for an Egyptian Green-fleshed Melon.
12. To Mr. Williams, Gardener to C. B. Warner, Esq., F.H.S., for Citrons, Oranges, and Lemons.

THE SECOND CERTIFICATE.

1. To Mr. Carson, Gardener to W. F. G. Farmer, Esq., F.H.S., for Ornitharium striatulum.
2. To Messrs. Osborn, of Fulham, for Lysimachia Leschenaulti.
3. To Messrs. Henderson, of Pine-apple Place, for Stylidium mucronatum.
4. To the same, for Begonia xanthina.

HORTICULTURE IN ALL ITS BRANCHES.

J. WEEKS & Co., King's Road, Chelsea,



HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Buildings or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

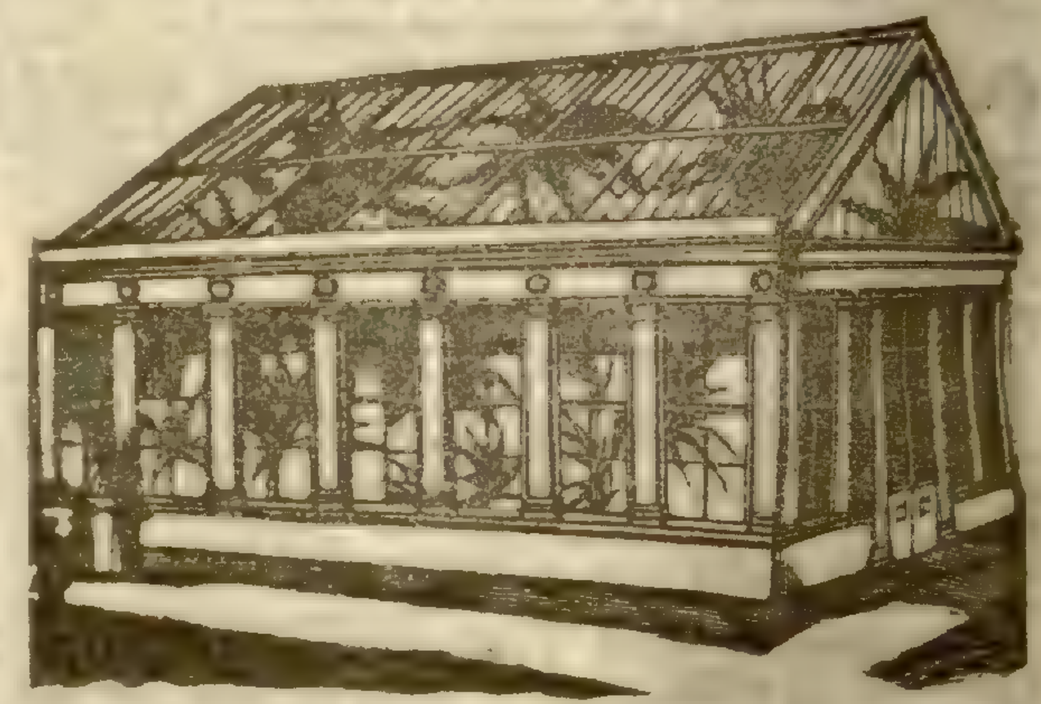
The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. WEEKS & Co., King's Road, Chelsea, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



GRAY AND ORMSON, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

BY HER MAJESTY'S ROYAL LETTERS PATENT

E. DENCH, PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

PATENT HOTHOUSES and excellent Glass at 1s. 2d. per foot super., which are superior to all others for price with quality, and if known would supersede all others. (See Appendix, in "Book of the Garden," by Mr. M'Intosh.) A Range of Houses and Hot Water Apparatus, was erected by E. D. for E. L. Betts, Esq., Preston Hall, Kent. Mr. J. Frost, head gardener, has shown their efficiency by their produce at the Royal Botanic Gardens, Regent's Park, June 8, and Chiswick, June 11. The editor of the *Gardeners' Chronicle* says: "Beautiful examples of Black Hamburgh, large both in bunch and berry, and as black as Sloes, were furnished by Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall, Kent; these well deserved the first prize which was awarded them."—*Gardeners' Chronicle*, June 18th, 1853. The Grapes were considered the best shown at Regent's Park during the season, and the Houses are as superior for the growth of everything else in horticulture, which has been fully proved, and they have been extensively erected for the nobility and gentry in all parts of the kingdom.

GLAZING WITHOUT PUTTY.—Iron and Glass alone. E. D. has Roofed the Public Baths and Washhouses, Endell Street, on this principle, and others are in hand. Patent Sashes for Peach Walls, Pits, &c., 8*d.* per foot super. Heating by Hot-water, on the most practical principles, and all the best materials used. Printed Price List sent on application.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

STRAWBERRIES!

FOUR NEW AND DISTINCT VARIETIES.

NICHOLSON'S AJAX.—Very large and handsome. most exquisite flavour, unequalled as a dessert fruit, and forces well.

NICHOLSON'S RUBY.—Medium size, excellent quality, and an immense bearer, producing a succession of fine fruit for an unusually lengthened period; also a good forcer.

NICHOLSON'S CAPTAIN COOK.—A first-rate market fruit; colour, scarlet; very large size, great bearer, and bears carriage well. Plants remarkably strong and hardy.

NICHOLSON'S FILL-BASKET.—Nothing can surpass this fine sort as a market fruit; in colour it is a very bright scarlet; general shape round; gets very large, but never out of shape; excellent for preserving; a tremendous bearer, and will bear carriage a great distance. Plants very robust and healthy.

These splendid Strawberries have been admired by all who have seen them; the two first for their surpassing excellence as Dessert Fruit; the two latter for their size, colour, abundance, and other good qualities as Market Fruit. Gentlemen, Amateurs, and Market-Gardeners wishing to possess these valuable Strawberries can now be supplied with well-rooted Plants, by WILLIAM NICHOLSON, at 15s. per 100; or 25 each of any two sorts for 10s., box included.

W. N. has had the honour of supplying the Royal Gardens at Frogmore with Plants, by direct order from H.R.H. Prince Albert. He has sent to all parts of England, Ireland, and Scotland; also America, Prussia, and France. Testimonials have been received from the principal horticulturists in the kingdom. Post Office Orders payable at Yarm, Yorkshire, or a Cash remittance required with the order.

Egglescliffe, near Yarm, July 15, 1854.

SPLENDID NEW RHUBARB.

SALT'S CRIMSON PERFECTION.

ROBERT SALT, GARDENER, Longton, Staffordshire will send out roots of this early, productive, and delicious variety of Rhubarb this autumn; see *Gardeners' Chronicle* June 11, 1853: "Very good, and most beautiful crimson; compared with others, it is remarkable for the small amount of acidity it contains."

A Certificate of Merit was awarded for specimens exhibited at the meeting of the London Horticultural Society, June 28, 1853; likewise a first-class Certificate at Nottingham Horticultural Society, May 24, 1854; and at the Midland do., May 25, 1854.

Single roots, 7s. 6d., three for one guinea, and six for 2l. Orders forwarded now to ROBERT SALT, or to HURST & M'MULLEN, 6, Leadenhall Street, London: Mr. Wood, Nurseryman, Coppice, near Nottingham; Messrs. Burgess & Kent, Nurserymen, Penkhull, will have the earliest attention. A Post-office order requested from unknown correspondents.—Longton, July 15.

PLANTS FOR THE WINTER.

CLARKE AND CO., SEEDSMEN AND FLORISTS, 86, High Street, Borough, London, have this season grown a large stock of the following Plants, the varieties of which are quite True and Choice Selected:—The Broccolies consist of late White Spring, Purple Sprouting, Bowles's Sulphur, Purple Cape Autumn, Victoria Early, White Spring, price 8d. per 100, or 5s. per 1000. Enfield Market Cabbage, Tall Scotch Kale, Drumhead Savoy, Green Curled Savoy, Early York Cabbage, Dwarf Scotch Kale, price 6d. per 100, or 4s. per 1000. Imported Brussels Sprouts, 8d. per 100, or 5s. per 1000. Drumhead Cabbage, 3s. 6d. per 1000. The Deptford Market Gardeners' sort of Red Solid Celery, pricked out plants, 1s. 6d. per 100.—Post Office Orders are respectfully requested to be made payable at the Borough Post Office.

CALCEOLARIA AND CINERARIA SEEDS.

GEORGE CLARKE begs to intimate that he has now ready for sale choice Seed of Calceolaria and Cineraria. The collection of Calceolarias from which the Seed now offered was saved forms an unrivalled one, and has been the admiration of all who have seen it; they possess every variety of colour peculiar to the genus, fine shapes, and have been awarded several first-class Certificates. Great care has also been taken in selecting the Cineraria from none but first-rate flowers; and, like the Calceolaria, it is warranted to give satisfaction.—Packets of both, 2s. 6d. each, will be sent on receipt of postage stamps to the amount.—Streatham Place Nursery, Brixton Hill, near London.

CINERARIA SEED.

EDWARD GEORGE HENDERSON AND SON, Wellington Nursery, St. John's Wood, London, are now prepared to forward, by post, new Cineraria Seed saved this season. More than usual care has been bestowed in gathering from the choicest named varieties, including the new ones sent out last year; all the light varieties have been discarded, consequently from the above seed we anticipate none but high coloured flowers. Per packet, 2s. 6d. and 5s. each.

Our beautiful collection of CALCEOLARIAS can now be seen in flower at the Nursery, and orders for seed booked, to be sent when ready. Per packet, first quality, 5s.; second quality, 2s. 6d.

The Gardeners' Chronicle.

SATURDAY, JULY 15, 1854.

IT has usually been remarked that the EXHIBITIONS at CHISWICK in the month of July are inferior to those in May and June; and it was anticipated that this would have been more especially the case in the present year, in consequence of the last show in the Regent's Park having been held only three days earlier. Never were visitors more agreeably surprised.

In the early part of the week the QUEEN had most graciously expressed her MAJESTY'S intention to honour the Horticultural Society with a visit, at Chiswick; and although the hour at which the QUEEN might arrive was not known till Friday last, yet the exhibitors were apprised of the Royal intention sufficiently early to enable them to express their sense of her MAJESTY'S great condescension by producing everything most rich and rare in their possession. The result was not merely a wonderful July exhibition, but one which for intrinsic interest has never been excelled, if equalled. And this was the more remarkable inasmuch as several of the greatest contributors to the Chiswick exhibitions were unable to be present with their plants.

In order that her MAJESTY and the Royal party might be secured against all possible risk of pressure from an eager crowd, stout barriers were erected round the tents, with numerous openings in them through which visitors could pass during the early part of the afternoon up to half-past 4. At that hour the tents were cleared, and remained so till the departure of the Royal party. But long before that time every barrier was lined by spectators anxious to secure good places for seeing; so that, although the line of barriers extended for nearly a thousand yards, it was difficult to pass through the openings provided.

At 25 minutes to 6 the QUEEN, accompanied by his Royal Highness PRINCE ALBERT, with their Royal Highnesses the PRINCE OF WALES, and PRINCE ALFRED, arrived, and was received by General Fox and other members of the Council, his Grace the Duke of DEVONSHIRE, the President of the Society, being unfortunately ill. Upon entering the tents her MAJESTY was pleased to accept at the hands of General Fox a magnificent bouquet, formed from the rarest flowers in the Exhibition. The Royal party then proceeded to inspect the exhibition tables passing along the whole line, and examining the varied objects as they presented themselves. The principal exhibitors, stationed within the barriers, had the satisfaction of remarking personally what degree of interest their stands excited. The large Conservatory was next visited, after which, having rested for a few minutes in the Royal Tent, her MAJESTY walked round the Arboretum, passing the great Poplar tree transplanted in 1853 by M'GLASHAN'S apparatus, in the presence of PRINCE ALBERT, and, visiting the ground near the orchestra, where the QUEEN paused to listen to the military bands, at 20 minutes to 7 her MAJESTY returned to her carriage, having previously been pleased to express her satisfaction at the "beautiful show."

And a most beautiful show it was—in every way worthy of being exhibited before the QUEEN. To the exhibitors themselves it must have been a day to be remembered with honest pride, for it was the first time that the QUEEN had visited in public any of those great horticultural exhibitions which are the summer glory of her metropolis, and on that occasion the exhibitors nobly sustained the reputation of their country for excellent gardening.

The brilliancy of Azaleas, and the exquisite beauty of Roses in pots having departed with the season, the plants exhibited were of a very miscellaneous description. Foremost, as usual, among the producers of novelty were Messrs. VEITCH & SON, who nearly filled one of the tents with an infinite variety of Orchids, variegated plants, Lycopods unrivalled for admirable cultivation, new shrubs, new annuals, and especially a most striking collection of Pitcher plants, partly consisting of Nepenthes and partly of Sarracennias, along with which was a capital specimen of the Venus' Fly-trap (*Dionæa*), which, however, refused to perform its tricks even in the presence of the Sovereign. Among absolute novelties was a noble specimen of *Befaria æstuans*, a Rhododendron-like shrub from Peru; *Whitlavia*, a new hardy Californian annual, with dark violet bell-shaped flowers; a white *Escallonia*, from Patagonia; and the charming *Eschscholtzia tenuifolia*, quite different from the old species, dwarfer and neater. Next followed, as worthy rivals, Messrs. ROLLISSONS, of Tooting, and the two HENDERSONS, with grand displays of variegated and other plants. Nor were the Orchids and Pelargoniums inferior; for the collections of the first from Mr. WARNER and others, and of the second from Messrs. GAINES and TURNER, were universally admired. Her MAJESTY and the PRINCE examined Mr. GAINES'S "Fancies" with particular attention. Highly interesting as were all these, it is doubtful whether anything excited more notice than a very fine *Disa grandiflora*, a glorious terrestrial Orchid, which nobody can manage except Mr. LEACH, who produced it in perfect health and very fine flower, after three years' successful cultivation.

As to the fruit, we can only say that, if perhaps a larger quantity has been collected for display, there could not have been a more imposing exhibition of all that is excellent, with nothing indifferent to spoil the effect. Sixty-three exhibitors contended for the prizes, and a most difficult task it was for the judges to determine how they should be distributed. Sixty picked specimens of Pine-apples, 54 piles of Grapes, 30 dishes of Peaches and Nectarines, and 20 of Strawberries, together with less important fruits in abundance, sufficiently showed what fruit growers can do, even in a Cimmerian summer, when they choose to put forth their strength. The finest collection was produced from her MAJESTY'S garden at Frogmore: but the gardens of the Dukes of SUTHERLAND and MARLBOROUGH, the Earl of CLARENDON, the SPEAKER, and Mr. GLEGG, of Withington Hall, also furnished large supplies. Nor must we neglect to mention the wonderful beauty of a large dish of enormous British Queen Strawberries, sent by Mr. BATES, of Moulsey. Having arrived after the hour prescribed they could not be placed with the other fruit, but were stationed among the plants, where Mr. BATES will be glad to know that they were honoured by the particular examination of her MAJESTY.

The weather in the morning was wet and gloomy, but the sun appeared in good time to disperse the vapours, and the afternoon became brilliant and most enjoyable by the thousands who were present, and who will be long before they forget "the QUEEN'S day at Chiswick."

WE have just had an opportunity of examining two VINE HOUSES, which we think throw some light upon the subject of the disease which has lately been so prevalent in some parts of England. The Vines in the two houses are of various sorts, principally, however, Sweetwater and Black Hamburgh, and the one house some weeks later than the other. Not the slightest trace of disease is visible on any of the Vines trained to the roof of the house, except perhaps a slight pallid tint about the young laterals, to which, however, much importance cannot be attached; the leaves on other parts of the trees are quite as they should be, and the Grapes themselves without spot or blemish. In one of the houses, however, were about a dozen pots, containing Black Hamburgh and Sweetwater Vines, every one of which exhibited leaves covered on the under side with little green pustules. As the whole of the Vines planted in the border were healthy, it became a matter of interest to ascertain the state of the soil and roots in the pots, and on examination they proved to be badly drained; a large portion of the roots, indeed, were dead, in consequence of some former drought; the new roots were unhealthy, and the soil, though not absolutely waterlogged, in an unfavourable condition. What, therefore, we have suspected all along, seems to be verified, that in all those cases in which the leaves are deformed with pustules the root is the seat of evil, and that the remedy must be applied there.

The next point was to examine the structure of the excrescences on the leaves, which was impossible in the shrivelled bruised specimens previously submitted to inspection, and in every case it appeared that they were due to an hypertrophy of the epidermal cells of the under surface, at the expense of the spongy tissue above, by means of which the air is admitted into immediate contact with the walls, and is thus enabled to act upon the fluid which they inclose. The effect, therefore, must be, where the warts are in great abundance, to prevent the proper aëration of the juices, which, in consequence, return in an unhealthy, or at least in an imperfectly elaborated condition, and are unable to supply the exigencies of the fruit, which very naturally contracts disease, and ultimately decays. The cells of which the warts are composed contain only a few scattered grains of chlorophyl, and have apparently a very low degree of vitality, so that they soon become brown, and thus cause the spotted appearance which defaces the beauty of the foliage. It is not pretended that the spots upon the berries themselves are at all of the same nature as those upon the leaves, but rather that they are due to natural decay induced by the depraved state of the juices arising from the disease, which is so evident upon the foliage.

The spot in Geranium is, we doubt not, a case of quite a similar character, though we have not at present accurately compared the two maladies; and the disease so prevalent in Pear leaves may belong to the same category, though that is often accompanied by a minute Acarus; for it is possible that the Acarus may simply take up his abode in the pustules and not be chargeable with their first origin. It is not asserted to what particular condition of the roots the evil may be due, whether to the former drought, which caused many of the roots to perish, or to the subsequent ill-drained condition of the soil when charged with water, or to marked alternations of drought and moisture; but now that the probable origin of the evil has been pointed out, it would perhaps not be difficult, where there are sufficient opportunities of making experiments, to acquire some certain information on the subject. *M. J. B.*

VEGETABLE PATHOLOGY.—No. XXVIII.

126. WHEN seeds are placed in circumstances favourable to vegetation, as, for instance, where due proportions of warmth, moisture, and atmospheric air are co-existent, their water, whether free or combined, is decomposed, and the oxygen, combining with the carbon, produces carbonic acid. The absence of light, as tending to confine again the carbon, is in many cases, but not always, a necessary condition. So long as the carbon remains unaltered, vitality is apparently maintained. Meanwhile, their nutritive matter either becomes diluted or enters into new chemical conditions more easily transmissible by the tissues. Circumstances which favour these phenomena are promotive of vegetation, which, in some cases, would not take place at all, as in the case of long preserved seeds, unless conditions be presented

of more than ordinary efficacy. The simplest instance is the benefit derived from steeping seeds in water, in seasons when a constant supply of moisture can scarcely be expected, and similar ends are aimed at in the various chemical substances, especially such as liberate oxygen, which have at various periods been applied. Lime, for instance, which has a great affinity for carbon, has been employed with a view to set the carbon free from the starch into whose composition it enters. Old Spruce Fir seeds, which would scarcely germinate under ordinary circumstances, sprout readily when treated with lime, and in some cases diluted oxalic acid has been equally efficacious.* In some cases, where the integuments of the seeds are very hard, as of many tropical leguminous plants, it is found that submitting them for some minutes to the temperature of boiling water will favour their vegetation. It is, perhaps, difficult to say what is the exact temperature acquired in such a case by the vital portion of the seed, but it is quite certain that the vegetative powers of many seeds are retained at considerable temperatures. Malt, for instance, after being kiln-dried, has been known to vegetate; and it is matter of fact that the spores of the Penicillium, which, two or three years ago, was so injurious in many bakehouses and barracks in France, though submitted to a temperature equal to that of boiling water, in the centre of the loaf, were in a condition to vegetate as soon as the loaf was cold. Seeds, however, in general, will bear a high dry temperature better than a moist one. (A paper in "Annales des Sc. Nat." ser. 2, vol. 5, p. 5, by Messrs. Edwards and Colin, on the vegetation of cereals at high temperatures, may be consulted here with much advantage, and another by the same authors on the influence of temperature on germination, l. c., vol. 1, p. 257). Dr. Lindley mentions, in the "Theory of Horticulture," a case in which the seeds of Raspberries germinated after they had been boiled to make Raspberry jam, and we have ourselves witnessed a crop of Malaga Vines, some of which are now in cultivation after a period of twenty years, produced by the seeds of raisins which had been three times steeped in boiling water, after being thoroughly drained, and allowed to remain in the fluid till it became cold.

127. Though, however, such means have a tendency to insure a more rapid germination, and to diminish consequently the chances of decay, which might ensue under a more sluggish development of the embryo, no faith is to be attached to such theories as recommend the steeping of seed in liquid manures, with a view to insure a more vigorous as well as a more rapid growth. Such solutions, if exceeding a certain strength, are very likely to prove fatal, either directly or by stagnating in the tender cells; and the very small quantity which would be imbibed by the embryo previous to germination could have no great influence on the ultimate growth. The germination being once insured, artificial nutriment must be supplied by the spongelets, and even then, though the seed may have germinated readily, the nutriment may be present in too condensed a form to be consistent with healthy action, if death be not the immediate consequence, which is frequently the case where guano is injudiciously applied.

128. The embryo partakes not only of the nature of the plant which bears the seed, but if the impregnation have taken place from the pollen of some neighbouring plant of the same species, of that of the male parent also. The seed, therefore, even of a healthy, much less of an unhealthy plant, will not necessarily produce a healthy offspring. No part of agriculture, perhaps, requires attention more than the selection of seed, a point which is not sufficiently estimated by cultivators in general, who frequently suffer from ill-timed economy. The embryo may be sufficiently formed to vegetate, but not to produce a vigorous plant. A partial or complete state of chlorosis is often the consequence, and to this cause may frequently be attributed failures which are ascribed to season or other accidents, which are perfectly blameless. It is pretty certain, too, that the seed derived from plants infested with parasitic fungi is liable to reproduce the parasite with the young plant, however mysterious and inexplicable the matter may be. That particles, capable of generating fungi, do circulate with the juices, can only be denied by those who advocate the theory of equivocal generation, for thousands of facts concur in its proof. An instance of seeds derived from an infected parent, reproducing the original parasite, is recorded in the *Gardeners' Chronicle*, 1848, p. 716, with reference to the reproduction of Cladosporium orbiculatum, Desm., on the common Pyracantha.†

129. It is no less true in the vegetable than in the animal world that a race, when once impaired, can only be renovated by impregnation from a healthy stock. Attempts, therefore, to raise healthy Potatoes from the seed of diseased plants, are *à priori* likely to fail. If the disease, for instance, with which Cucumbers and Melons are affected, be independent of the peculiar characters of the season, which there is good reason to believe, there is every probability that the disease will not be mitigated so long as seed is carelessly selected from diseased races.* *M. J. B.*

* Cobbett's mode of treating seeds, as detailed by London under Platanus occidentalis, securing at once the constant imbibition of moisture, though not such a saturation as in the absence of any means of preventing its stagnation would be sure to induce decay, together with complete aeration, is a step towards the same end, without the use of chemical agents.

† The plants of Pyracantha, which were infested with the Cladosporium, were all raised from Russian seeds. Many old plants of Pyracantha were in the same garden, but the disease was confined to the seedling bushes.

* Cucumbers from foreign seed are equally affected with those of British origin. In the same frame I have, during the present season, had two varieties from Brussels, one resembling somewhat the White Turkey, called Bonneuil, and the other little superior to the old Sandy, named Concombre aux petits cornichons, together with an excellent variety derived immediately from seed raised at Florence, where it had been cultivated some ten or fifteen years. The two former have long since perished, while the latter has not produced a single Cucumber which has not either decayed from the tip, or proved withered and distorted above.

MODE OF CULTIVATING THE MELON IN CABUL.

A FRIEND lately favoured me with some Melon seeds that had just been received by the overland mail from India. They were stated to be the produce of one of the kinds of Melons that are most esteemed in Cabul, and to have been procured from thence by Henry Montagu Smith, Esq., of the Bengal Horse Artillery, who at the same time forwarded the following particulars, that had been communicated to him by a Cabul gardener, respecting the mode of cultivating the Melon in that country.

Trench the ground thoroughly 2 feet deep, 1 foot wide, and 6 feet apart. Water it well, and when half dry, dibble holes along the centre of the ground that has been trenched 2 inches deep, and a foot apart; into each hole, four seeds that have been well washed and dried are to be dropped and covered up. When the young plants are about 2 inches high, pull up three, and only allow the largest to remain. As soon as this plant has two leaves, and a central head or heart, the latter is to be cut off with a pair of scissors; and, about the same time, small holes must be dug all round the plant, but at some distance from it, and filled with well-rotted stable manure. When the plant spreads and its branches begin to bear fruit, cover up one fruit on each branch, when about the size of a Walnut, with a handful of clay, having first scraped out a little hole in the ground for it to sit in. The fruit selected should be the one nearest to the plant, which in most cases is the first on the branch that begins to swell, and generally becomes the largest and finest fruit. Water is given every tenth day.

The covering of the young fruit with clay in the manner directed appears to be an odd proceeding; but it is probably intended as a means of protecting the fruit in the early stage of its growth from the scorching rays of an Indian sun.

The Cabul Melons—such of them, at least, as were grown from the seeds that were introduced 10 or 12 years ago—are very similar to those of Persia, and are characterised, like them, by a thin delicate skin, of a golden yellow when ripe, either smooth or beautifully netted all over. The flesh is pale green, nearly white, very sugary, melting, and of delicious flavour. They require to be grown in a higher temperature than other Melons; and I presume it is partly from this not having been attended to, that the fruit produced in England, except in a few instances, has not merited the character, nor had any of the good qualities it was stated to possess in Cabul. I trust it may be otherwise with the fruit from these seeds. They were confided to the care of one of our best Melon growers, and in due time you shall know the result. *W. B. B.*

BEGONIA FUCHSIOIDES.

AMONG the many favourites of our plant houses, few are more deserving of attention than the Fuchsia-like Begonia. Its graceful habit, the brilliant colour of the flowers, the short time required to have plants in a blooming state, render it worthy of universal cultivation. To those with whom winter-flowering plants are in demand, this Begonia will be found indispensable, and when well grown and bloomed it cannot fail to be generally admired.

I aim at having the plant in flower the whole, or at least the greater part of the year; and to secure this, it is necessary to propagate at two different seasons. In the first instance, cuttings are obtained in the beginning of February, selecting young healthy pieces, such as are not over full of sap, and which are rather firm; these strike freely, inserted rather thickly around the sides of 5-inch pots, and plunged in a close warm frame where the bottom heat is about 75° or 80°. Any light sandy soil will answer. I generally use equal parts of silver-sand and leaf-mould, the latter passed through a fine sieve and thoroughly mixed with the sand. When the cuttings are well rooted, which will be the case in the course of a month, they should be potted singly in 5-inch pots, and replaced in the propagating frame, and if they can have the assistance of a gentle bottom heat all the better. When the pots become filled with roots, shift into 8-inch ones, and place the plants in a shady corner of the stove, or wherever it may be convenient, provided a temperature of from 60° to 65° is maintained, and a moist atmosphere kept up; but unless they occupy a shady situation, it will be necessary to screen them from the midday sun, as this species is rather impatient of bright sunshine; and if thus exposed, it loses that fine glossy appearance which the foliage presents when in vigorous health. When the pots become filled with roots, a little clear manure-water will be beneficial; and they should be syringed with pure water, morning and evening. By the middle of June they will require a final shift into 13-inch pots, and should be encouraged to make vigorous growth. With regard to stopping, they merely require to have any over-luxuriant shoot stopped, when it has attained the desired height, so as to regulate the flow of the sap, and induce the formation of lateral branches, upon which the flowers are produced. The stronger shoots should be supported by neat stakes, and tied out, so as to accommodate the side shoots which are to produce the flowers. Managed in this way they form fine bushy plants, commence blooming in October, and continue in flower till March, or even later, if kept in a temperature of 50° or 55°.

A second lot of cuttings should be got in about the beginning of July, and treated as the first, except that after the second shift, which they should receive in September, they may remain in 8-inch pots till February. During the winter they should occupy a situation near the glass, where the temperature may average from 55° to 60°. Early in February a portion of the plants may be shifted into 13-inch pots, after which a slight increase of heat will be essential to their well doing; but when subjected to a high temperature at this early season, they should receive all the light that it is possible to give them. As the plants progress in growth, they must receive attention in the way of stopping and tying, and when the pots become full of roots they should be watered frequently with clear manure. The remainder of the plants, if allowed to remain in their winter pots, and encouraged with a slight increase of temperature, will flower at an earlier period than those which occupy larger pots, or they may be left in a cool place until the middle of March, and then shifted to form a succession to those shifted in February.

This Begonia may be removed to a conservatory, when in flower, where it will continue to produce a constant succession of blossoms during several months; but unless the conservatory is treated something like an intermediate house, it will be necessary to place the plants in the warmest corner, and where they will not be exposed to currents of cold air; a situation where they can receive abundance of light, without being exposed to the direct rays of the midday sun, will be necessary, in order to have the flowers well coloured. After the blooming season is over, the old specimens may be thrown away, to afford space for young plants, which bloom more freely and produce fine trusses.

The soil best suited for this Begonia in all its stages is equal parts turfy loam, peat, and well decomposed cow or horse manure. The peat and loam should be carefully broken, and used in as rough a state as the size of the shift will allow; the dung should be carefully mixed with sharp sand previous to being mixed with the peat and loam; this tends to thoroughly separate any lumps, which otherwise would be sure to form a harbour for worms; the quantity of sand should be regulated according to the nature of the loam and peat, enough being added to secure *perfect drainage*, as this Begonia is somewhat impatient of stagnant moisture about its roots. *Alpha.*

Home Correspondence.

Substitutes for the Potato.—I am glad to learn from your leading article that there is some chance of obtaining a new and sound variety of that now necessary production the Potato. I quite agree with you that all the nostrums for prevention or cure of the "Potato disease" have added nothing to our knowledge of this most serious evil. I have been for 40 years a close observer of the value and quality of the very numerous varieties of the Potato which have come under my notice, and at all times a grower of many different kinds of them. For more than 30 years I grew one kind of early Potato without perceiving any deterioration in its produce or quality. I hope your suggestion of obtaining the Solanum verrucosum from M. Pagnes will be industriously attended to; and as it may not be generally known how to obtain flowers and seeds from the Potato plants which do not usually produce them, I beg to communicate a method I have successfully adopted for many years, for obtaining varieties of the earliest species. Plant a Potato very near the surface of the soil, which raise by covering it with a small quantity of mould round it, tie the stem up with a stick, or, better still, nail it up to a wall, and as the tubers form draw away the soil from them with the hand, and take them off frequently, and cover up the roots again, and blossoms and seeds will be produced. The Dioscorea japonica, from China, is also named as of probable value as a substitute for the Potato. *Thomas Lander, Burton-on-Trent.*

Strawberry Culture.—The first year's produce of Strawberry plants from runners of the preceding season is generally considered of little account; but, with attention to certain points of treatment, I have reason to believe that it may be made nearly equal to the average produce of the second year. I observed lately in the grounds of a market-gardener a bed of Keens' Seedlings, which he informed me were from runners of last year planted out at the end of summer. They were bearing plentifully, though perhaps not carrying so heavy a crop as a neighbouring bed two years old; nor were the plants, of course, so large and stocky. I have myself some plants of another kind, the Roseberry, from runners of last year, which have six and eight fruit stems or trusses; and the aggregate amount of fruit borne on these plants is quite equal to that on the plants from which they were made, now two years old. The course I adopted in making these plants was this:—In June last year I laid down such runners as I wished to make fresh plants from, removing all others as they were thrown out, whether from the parent plants or from the rooted runners. In September the new

rooted plants were detached from the old ones, and removed with a ball of earth to the place where they have since remained. The removal might, I presume, be as advantageously made at a later period—say in October or November—if the ground they are intended to be placed in should happen to be occupied at an earlier time with other crops. By paying attention to laying down a limited number of runners early, and concentrating the energies of the parent plant in causing them to form their roots, I consider that the constitutional maturity and bearing power of the new plants are materially forwarded, so as to enable them to produce a fair crop the next season, instead of having the ground almost uselessly occupied for a whole year with immature and imperfectly bearing plants, as must necessarily be the case when the beds are made in spring. *J. H. H., July 7.*

Genista cinerea.—In the arboretum here there is a magnificent specimen of this shrub, nine feet in height and about 36 feet in circumference, its branches densely clothed with innumerable racemes of golden yellow Cytisus-like bloom, and yielding a grateful odour throughout the later hours of the day. This is probably the finest of its kind in the kingdom. I have a note taken some years ago of a remarkable specimen of G. cinerea, at Dysart House Gardens, in Fifeshire, equal in height to the one now described, but much inferior in vigour and uniformity of growth. Its hardiness to withstand our severest seasons, and its graceful exotic-like aspect, well serve to distinguish it as one of the most ornamental of summer-flowering shrubs, and, without exception, the gayest object in the arboretum or shrubbery in the months of June and July. The formal figure of this species in Watson's "Dendrologia Britannica" conveys a very bad idea of its elegant and slender form, as it exhibits the silvery hue of its leafy verdure to the breeze. *W. Wood, Holdgate Nurseries, York.*

Edging Shears.—Why are clipping-shears, used for trimming the Grass edges of gravel walks and flower beds, made by manufacturers at right angles to the handles, instead of at an angle of about 45°? In this part of the country every gardener who knows his profession, immediately on obtaining a new pair, takes them to a blacksmith, and has the angle of the shears to the handles altered to about 45°, and when thus altered he can in the same time perform nearly three times as much work: a wheel at the heel of the shears makes no difference, for with or without a wheel the heel must be held off the ground to keep the point down, and give the shears the incline, so as to push forward. If this should meet the eye of a manufacturer he may possibly be induced to alter the angle. *J. G., Blandford.*

Packing Grapes.—I have been struck with amazement at the magnificent Grapes shown at Chiswick and Regent's Park, and more particularly with the beautiful rich bloom which was upon them. This I confess was beyond my comprehension; and why I now trouble you is, to ask some of your exhibiting correspondents how they manage so to pack them that not a berry is rubbed. I remarked that most of them were grown at a distance from London, but nevertheless they appeared as if they were grown on the spot. *Henry John White, Tadcaster.* [We are sure that some of the senders of the beautiful Grapes alluded to will gratify our correspondent.]

Gooseberry Caterpillar and Green-flies.—The extensive Gooseberry and Currant plantations of this neighbourhood (Pershore), are greatly injured by caterpillars and green-flies. White hellebore proves a valuable remedy for the former, but we can discover none for the latter. I have tried nearly every recommendation made in your back numbers for their destruction, but without practical benefit, and I should feel greatly obliged if you could give me any advice for the management of 60 or 70 acres of young bushes now suffering from their attack. A single washing or fumigation might be adopted if there were any certainty of its being successful; but there seems no hope of this being the case, and repeated applications would be too tedious and expensive in so large a plantation. [Repeated syringing with tobacco-water and clear water is certainly beneficial.] Taking off the shoots most infested with the fly and throwing them on the ground or burning them has little effect in retarding their progress now they are strongly established. Would it be effectual if vigorously adopted when they first appear? [Nipping off the young shoots infested is certainly a very serviceable remedy, especially if applied early.] Is the first brood of the season hatched on the trees from eggs deposited on the branches or buds the previous autumn, or do the flies mostly or even occasionally come from a distance? If the former, I would not object to washing the bushes when leafless with a composition to destroy the eggs, if any such be known as perfectly effectual; otherwise, I should prefer running the chance of the season. There are no other gardens near me, but of course there are brambles in the hedges, so my position is not perfectly isolated, but nearly so. [We do not think washing the naked branches in the winter would be a sure preventive, the eggs being so minute would, doubtless, for the most part escape the application, even if it were certain that the early broods are not the progeny of flies brought from other wild plants.] When the remainder of my land is planted, and the present trees more grown, any remedial measure will be more difficult and costly than now, and I would cheerfully encounter considerable expense if future safety could be secured. If the fly comes from a distance, I fear winter washing will have little effect. Can I with advantage encourage the lady-bird or any other insect, or even bird, that will feed upon the aphis, and not injure the fruit? [Encourage the lady-birds and the Syrphidæ as much as possible. It is certain that the inclement weather has not only retarded the appearance of these beneficial insects, but has been eminently favourable to the development of the aphides. The fly-catcher, hedge-sparrow, and even the common sparrow, should also be encouraged.] My bushes have not grown very vigorously, partly owing I suppose to the soil being an impoverished loam or marl, scarcely rich enough for them, although Apple, Pear, Plum, and Quince trees and Strawberries flourish in it most satisfactorily, and partly from their having had their leaves stripped off last year by the caterpillars. The ground is also exposed to the east. May either of these circumstances account for the fly being stronger on my plantation than on those which are older, more vigorous, and more sheltered? [It is certain, and at the same time remarkable, that cold east winds and exposure to the east, which are so detrimental to most insects, seem especially favourable to the development of aphides. We have a bed of Chrysanthemums at the present time in an exposed situation, sadly infested, whilst another bed sheltered by walls and trees is quite free from them.] Would the application of soot, guano, or any other portable manure tend to diminish the green-fly? and is it probable the bushes may be free from fly in more favourable seasons, if I do not adopt any of the expensive expedients alluded to; or must I consider it an evil which will increase if not vigorously and immediately encountered? *R. Varden.* [We think, on the whole, that nipping off the young shoots, and the application of liquid manure to force forward the vegetation as much as possible during the present season, will be the most likely means to benefit your trees. The season so far has been most anomalous, and cannot be regarded as affording a precedent for future operations. The trees in question are in general so little subject to the attacks of aphides that we would rather look on the present visitation as an exceptional one, not likely to occur again. *W.*]

Reappearance of Potato Blight in the North of Scotland.—This part of the country, which nearly escaped its attacks last year, of which the large quantities sent to the London markets gave proof, has this year been visited by the evil earlier than I ever have observed it in any former season, *i.e.*, on the 2d inst., and, although only just turned one week, it has been giving unmistakeable signs of its character; those infected are an early sort, growing on a south border, in the kitchen garden; and, consequently, not of extensive breadth. Judging, however, from its former virulence, and its already rapid progress, it may naturally be looked upon as a very bad omen for the fate of this season's crop, which, up to the present time, has seldom been equalled for luxuriance. The weather for the past three weeks has been wet and sunless, just suited for its extension. We fortunately escaped the late spring frosts here, which have been so destructive in the south. *J. Webster, Gordon Castle, July 10.*

Striking Cuttings.—The following are half a dozen general rules relative to the selection and preparation of slips or cuttings. 1st. Let all slips be cut off as near a joint as possible without injuring it. 2d. For autumn or winter make choice of well ripened firm wood. 3d. In spring or summer half ripened young shoots are best, as they strike quicker than old wood. 4th. All succulents, such as Cactuses, Geraniums, &c., should remain a few days to dry, until their wounds are closed up, before they are potted. 5th. Never allow cuttings to remain in water; if they cannot be planted immediately lay the ends in moist sand. 6th. In winter or summer always let a few of the leaves remain on evergreens. *A Gardener.*

Spiræa grandiflora.—We are happy to say that this Spiræa is perfectly hardy. The plants originally introduced are now growing in our nursery here, where they have been ever since their introduction in 1849. They have never had any protection whatever. The plants are 6 or 7 feet high, and as much through. Their general appearance is decidedly that of an Amelanchier; and it is only when examining the suckers that any resemblance to a Spiræa is perceived. *Standish & Noble.*

The Fruit Crop in France.—It is many years since they have had such a heavy crop of stone fruit in France as that of this season; the Plum trees are breaking down with their loads, and there are enough Greengages for all Europe. But the most remarkable are the standard Apricot trees; these, all through France, from north to south, are so thickly covered with fruit as almost to hide the leaves, and in the fields, the trees that have not been attended to, by thinning the fruit, will be destroyed, owing to the heavy crop. In the environs of Paris, and south-west as far as Nantes, nearly all are Moorparks, and the fruit fine and large; but as they have had nothing but clouds and rain for the last two months, they are very backward. Ripe Apricots from Avignon and Marseilles have, however, been abundant in Paris the last fortnight. They are cheap—from 1 to 2 sous each—but tasteless and dry. Pears are in most places a good crop. Apples seem a failure in all the districts I have passed through, but they say there are good crops in some localities in Normandy. Cherries have been most abundant, but small and scarcely worth eating. On the railway to Versailles (*rive droite*) to the left in the fields by Puteaux and Suresnes, the Cherry trees by thousands were scarlet with fruit, and looked at a distance like groups of Poppies; many of them were not larger than Gooseberry bushes, yet all were laden. I found on inquiry that this sort is peculiar to the district, and the trees never grafted, but raised from suckers; it is like our Kentish Cherry in size and quality, but more dwarf, and a greater bearer, and is one of the numerous varieties known as Cerise de Montmorency. *T. R.*

Societies.

Horticultural, *July* 8: Garden Exhibition.—On this occasion fruit was more than ever abundant and excellent, and formed, as it always does in July, one of the most attractive features of the show. Pine-apples were numerous and generally handsome. Black Grapes were for the most part ripe, and well coloured; but as much can scarcely be said of Muscats and other white sorts, which, although in most instances ripe, wanted that fine golden tinge, which they, doubtless, would have acquired had the season been bright and sunny. They were generally, however, large and fine, both in bunch and berry. Peaches and Nectarines were very good, and there were some beautiful exhibitions of Plums (from Mr. Ingram), Cherries, and Strawberries. Melons were plentiful, but many of them did not appear to be ripe.

Collections of Fruit.—The best by far came from Mr. Ingram, gr. to her Majesty, at Frogmore. It contained a Cayenne Pine-apple, weighing 8 lbs.; Muscat, West's St. Peters, Black Hamburgh, and Royal Muscadine Grapes; large Early Apricots; very fine Bellegarde Peaches; beautiful Elruge Nectarines; Jefferson, Goliath, Washington, and Victoria Plums—all fine of their kinds; Elton Cherries, three dishes of Strawberries, and a Beechwood Melon. Mr. Turnbull, gr. to the Duke of Marlborough, at Blenheim, had a Cayenne and Queen Pine-apple; very fine Early Purple and Bellegarde Peaches; Elruge and Downton Nectarines; and West's St. Peters and Muscat Grapes, the latter large and good; but, as it has been stated, objectionable in point of colour. From Mr. Snow gr. to Earl de Grey, came excellent specimens of Lee's Perpetual Figs; admirable Violet Hative Peaches, both as regards size and colour; and most beautiful Elton and Black Tartarian Cherries. Mr. Chapman, gr. to J. B. Glegg, Esq., contributed a smooth-leaved Cayenne Pine-apple, weighing 5 lbs. 6 oz.; well-grown Noblesse and Violet Hative Peaches, and Elruge and Brugnon Nectarines; and Chasselas Musqué and Black Hamburgh Grapes, the latter perhaps scarcely so well coloured as they should have been.

Pine-apples.—Mr. Barron, gr. to J. H. Vivian, Esq., furnished two capital Queens, one weighing 6 lbs., the other 5 lbs. 8 oz.; these were both finely shaped and well ripened. Mr. James, gr. to C. H. Leigh, Esq., Pontypool Park, had seven Queens, weighing respectively 5 lbs. 13 oz., 5 lbs. 3 oz., 5 lbs., 4 lbs. 15 oz, 4 lbs. 13½ oz., 4 lbs. 11½ oz., and 4 lbs. 11 oz.; and a Providence, not very well shaped, 7 lbs. 5 oz. From Mr. Jones, gr. to Lady Charlotte Guest, came six Queens, which weighed respectively 5 lbs. 1 oz., 4 lbs. 15 oz., 4 lbs. 7 oz., 4 lbs. 6 oz., 4 lbs. 5½ oz., and 3 lbs. 6 oz.; and an Enville, 8 lbs. 15 oz. Mr. Burn, gr. to the Hon. Col. Pennant, sent three good Queens, weighing respectively 4 lbs. 14½ oz., 4 lbs. 3 oz., and 3 lbs. 14½ oz.; and a Black Prince, 6 lbs. 3½ oz. Mr. Davies had four well-ripened Queens, the heaviest of which was 4 lbs. 1½ oz.; and Mr. Fleming, gr. to the Duke of Sutherland, at Trentham, had a fine fruit of the same description of Pine, weighing 4 lbs. 5 oz. From Mr. Hayes, gr. to the Bishop of London, came five Providence Pines, weighing respectively 7 lbs. 9 oz., 7 lbs., 6 lbs. 11 oz., and two each 6 lbs. 3 oz. Mr. Jackson, gr. to G. Beaufoy, Esq., produced a Providence which weighed 10 lbs. 2 oz., but it was not very nicely shaped, and it was quite green towards the top. Other Pine-apples were exhibited, but all inferior to those just mentioned.

Grapes.—Excellent Black Hamburghs, large both in bunch and berry, and extremely well coloured, came from Mr. Frost, gr. to E. L. Betts, Esq., Mr. Fleming, gr. to the Duke of Sutherland at Cliveden, Mr. Hill, gr. to R. Sneyd, Esq., Mr. Haywood, gr. to Sir G. Goodman, Bart., Mr. Fleming, gr. to the Duke of Sutherland, at Trentham, Mr. Smith, gr. to A. Anderson, Esq., and Mr. Shrimpton, gr. to A. S. Doxat, Esq. Mr. Bailey, Shardeloes, also had some well coloured Black Hamburghs, as had also Mr. Frost, of Dropmore, Mr. Mitchell, Mr. Harrison, and Mr. Wood, gr. to C. R. Scott Murray, Esq.; the bunches in the last-named exhibition consisted of what is called Wilmot's Black Hamburgh. Of Muscats, one of the largest bunches possibly ever seen of the Cannon Hall kind was shown by Mr. Strachan, gr. to K. B. Hill, Esq., of Bache Hall, Cheshire. It measured upwards of a foot in length, nearly as much across the shoulders, and the berries were large and regularly diffused over the bunch; it was reported to weigh above 4½ lbs. For this a first prize was very justly awarded. Excellent Muscats also came from Mr. Allport, Doddington Park, Mr. Bore, Mr. Frost, Mr. Fleming, Trentham, Mr. Dods, Mr. Tegg, Mr. Hill, Mr. Tillyard, Mr. Taylor, Mr. Mitchell, Mr. Bucktrout, and Mr. Young, gr. to Viscount Barrington. Other kinds of Grapes consisted of Frontignan from Mr. Allport, Muscadines from Mr. Houliston, Mr. Tillyard, Mr. Mitchell, Mr. Wood, and Mr. Bailey; Sweetwater from Mr. Williams, and Black Prince from Mr. Hill and Mr. Houliston; the former fine bunches, and covered with a beautiful bloom. Three bunches of what was called a new Grape were exhibited. They were long and tapering, and the berries resembled those of the White Nice or Syrian.

Grapes in pots came from Mr. Ivison, gr. to the Duke of Northumberland, at Syon. The sorts were Black Hamburgh and Muscadine, both well furnished with good fruit.

PEACHES AND NECTARINES.—Elruge Nectarines, large and well coloured, came from Mr. Dods, gr. to Sir J. Cathcart, Bart., and the same exhibitor had also some fair Royal George Peaches. Mr. Brown, gr. to W. C. Cartwright, Esq., communicated Jeton de Venus and Royal George Peaches, large and good, together with some fair Violet Hative Nectarines. Very fine Royal George Peaches came from Mr. Wright, gr. to J. Elgers, Esq., of Putney Park; and Mr. Tillyard had beautiful Violet Hative Nectarines. Large and well-ripened Royal George and Bellegarde Peaches, and Murray Nectarines, were furnished by Mr. Munro, gr. to the Earl of Clarendon, at the Grove, Watford. Mr. Busby, gr. to J. Crawley, Esq., had Violet Hative Peaches, and Pitmaston Orange and Elruge Nectarines. Williams' Peach came from Mr. Turner, gr. to Miss Hooper; Noblesse and Royal George Peaches, and Elruge Nectarines, were shown by Mr. Fleming, who also sent two small fruit of the Stanwick Nectarine. Murray Nectarines were contributed by Mr. Munro, gr. to Mrs. Oddie. Mr. Bore sent Elruge Nectarines.

APRICOTS.—The only dish, in addition to Mr. Ingram's, was one of the Moorpark variety, from Mr. Fleming, gr. to the Duke of Sutherland, at Trentham.

FIGS.—In addition to the fine fruit in Mr. Snow's collection, were Lee's Perpetual from Mr. Fleming, of Trentham, and Brown Turkey from Mr. Fleming, of Cliveden.

CHERRIES.—Good specimens of May Duke came from Mr. Houliston, gr. to J. Berners, Esq., and of Circassian from Mr. Taylor, gr. to J. Coster, Esq., and Mr. Marchan, gr. to J. Smith, Esq. Mr. Bailey, gr. to T. Drake, Esq., contributed examples of Bigarreau. Messrs. Lane furnished some well-fruited dwarf Morello trees in pots.

STRAWBERRIES.—Mr. Lydiard, of Bath, communicated very fine dishes of Goliath, Eleanor, Myatt's Surprise, and Trollope's Victoria. Mr. Houliston sent Keens' Seedling, Mr. Bailey a dish of Shardeloes Pine, Mr. Goodhall, gr. to Lady Webster, British Queen, and Mr. Marchan and Mr. Gainsford each contributed dishes of the same variety. Of seedlings there were several. Mr. Myatt showed a large, fine-looking sort, the flavour of which, like that of most very large-fruited varieties, was inferior. Mr. Walker, of Devizes, had a seedling of little merit. Mr. Kitley, of Bath, sent Carolina superba, which received a first-class Certificate. Its flavour resembles that of the old Pine, or Carolina, and its appearance is much handsomer. Mr. Ingram had two kinds, one named Prince Alfred, the other Filbert; both good-looking fruit. Mr. Ward, gr. to W. Stephens, Esq., again showed a dish of Omer Pacha. Mr. Underhill, of Edgbaston, Birmingham, received a first-class Certificate for a kind named Sir Harry, a large very dark fruit, of good flavour. Mr. Bates, of Moulsey, had a dish of British Queen, of enormous size, but it unfortunately arrived too late to be noticed by the judges. Mr. Wrench showed fruit of Myatt's Pine-apple Strawberry, a sort much sought after some years ago, but now rarely to be met with.

RASPBERRIES.—Mr. Laing, of Twickenham, showed some tops of branches, well furnished with fruit, of what he calls his Prolific Raspberry.

MELONS.—The best was Victory of Bath, from Mr. Munro, gr. to Mrs. Oddie, and the next best an Egyptian green-fleshed from Mr. Frost, of Dropmore. Other sorts consisted of Cashmere, Hybrid ditto, Hoosainee, Trentham Hybrid, and other kinds from Mr. Fleming; Camerton Court, from Mr. Taylor; Bailey's Green-fleshed; and Masulapatum, from Mr. Coe.

Mr. Butcher, of Stratford-on-Avon, had a dish of Hunt's Duke of Gloucester Apple, which was almost as plump and sound as when first gathered from the tree. Oranges, Citrons, and Lemons came from Mr. Williams, gr. to C. B. Warner, Esq., and Mr. Ivison contributed fruit of Nutmeg, Vanilla, Papaw, and Plantain.

In collections of 20 STOVE and GREENHOUSE PLANTS, the first prize was awarded to Mr. Speed, of Edmonton, for the following, viz.:—

Allamanda cathartica	Erica tricolor major
„ grandiflora	Epacris miniata
Aphelexis macrantha purpurea	Franciscea acuminata
Æschynanthus pulcher	Ixora coccinea
Clerodendron Kæmpferi	„ javanica
„ fallax	Pimelea decussata
Cyrtoceras reflexum	Phænocoma proliferum
Dipladenia crassinoda	Statice Holfordi
„ splendens	Stephanotis floribunda
Erica obbata	Vinca oculata

This collection was certainly one of the best of the kind that could possibly be produced at this season of the year, and therefore well deserved the distinction it received. The whole of the plants which it contained were finely grown, clean, and beautifully flowered. In these respects the most remarkable were perhaps the Allamandas, Stephanotis, and Dipladenias, all of which were well furnished with flowers. The Phænocoma was literally covered all over with lively brilliant pink blossoms, a very uncommon thing with this plant. The Holford Statice was a magnificent specimen of this macrophylla-like kind. Cyrtoceras reflexum is an extremely useful plant, its Hoya-like flowers, and bright green foliage having a cheerful and interesting appearance. The Aphelexis was a beautiful specimen of this best of all Everlastings.

Messrs. Fraser, of Lea-bridge Road, Leyton, Essex, were placed second. Their plants consisted of:—

Allamanda Schotti	Ixora coccinea
Aphelexis macrantha purpurea	Kalosanthes miniata
„ humilis	Polygala cordata
Burtonia conferta	Pimelea diosmæfolia
Clerodendron Kæmpferi	Phænocoma proliferum
„ squamatum	Relhania squarrosa
Dracophyllum gracile	Statice Holfordi
Dipladenia crassinoda	Stephanotis floribunda
Erica ventricosa Bothwelliana	Vinca alba
„ metulæflora bicolor	„ ocellata

The two Clerodendrons in this group were fine specimens, one of them bearing three panicles of brilliant scarlet flowers. It also contained two beautiful plants of Stephanotis, and the Allamandas and Dipladenias were in good condition. The Holford Statice was a remarkably fine plant of the kind, and the scarlet Ixora and Erica metulæflora bicolor were all that could be desired in the way of good plant growing.

The third group of 20 plants was furnished by Messrs. Rollisson, of Tooting. It consisted of—

Aphelexis humilis	Erica Irbyana
„ macrantha purpurea	Epacris miniata
Allamanda Schotti	Ixora coccinea
Clerodendron affine	„ javanica
„ paniculatum	Kalosanthes coccinea
Cyrtoceras reflexum	„ miniata
Dipladenia crassinoda	Polygala cordata
„ splendens	„ oppositifolia
Erica Cavendishi	Rondeletia speciosa
„ ventricosa grandiflora	Sollya linearis

The most striking feature of this collection was its Kalosanths, which were large and well bloomed, more especially K. coccinea. The Dipladenia, Ixora, and Cavendish Heath were all good plants. Perhaps the least showy of the group was Clerodendron paniculatum, which was not in good condition.

A fourth collection of 20 plants was furnished by Mr. Rhodes, gr. to J. Philpott, Esq., of Stamford Hill. It contained—

Aphelexis spectabilis	Kalosanthes miniata
„ macrantha rosea	Leschenaultia Baxteri
Clerodendron squamatum	Pimelea mirabilis
„ Kæmpferi	Roella ciliata
Dracophyllum gracile	Rhynchospermum jasminoides
Dipladenia crassinoda	Sollya linearis
Erica Bergiana	„ heterophylla
„ tricolor elegans	Stephanotis floribunda
Ixora crocata	Tetratheca verticillata
Kalosanthes coccinea	Vinca oculata

These were all well grown and in good condition, with the exception of Roella ciliata, the foliage of which was rusty and decayed looking, an appearance which this plant generally presents, and which greatly detracts from its beauty.

Of collections of 15 STOVE and GREENHOUSE PLANTS, there were several. The best came from Mr. Dods, gr. to Sir J. Cathcart, Bart., of Cooper's Hill, Englefield Green. It contained—

Aphelexis humilis	Pimelea linifolia
„ macrantha purpurea	„ mirabilis
Azalea Danielsiana	Phænocoma proliferum
Clerodendron fallax	Polygala cordata
„ Kæmpferi	Kalosanthes miniata
Erica Cavendishi	Vinca alba
Leschenaultia formosa	„ rosea
„ biloba	

This group contained Azalea Danielsiana still finely in flower; an admirable specimen of Aphelexis macrantha purpurea, the best of all the Everlastings; and a good blue Leschenaultia, though not very well in flower. The Sollya linearis was useful for its colour, good blues being scarce among stove and greenhouse plants.

A second group of 15 plants came from Mr. Barter, gr. to A. Basset, Esq., of Stamford Hill. It consisted of

Allamanda Schotti	Kalosanthes coccinea
Clerodendron squamatum	„ miniata
Dipladenia crassinoda	Leschenaultia biloba
„ splendens	Phænocoma proliferum
Erica ventricosa Bothwelliana	Stephanotis floribunda
„ ventricosa grandiflora	Vinca alba
Ixora javanica	„ rosea
„ coccinea	

The Scarlet Kalosanth in this group was extremely well flowered and highly effective, as was also the Clerodendron. The Schott Allamanda has the largest flowers of any of the genus, and when well bloomed, as this was, it makes an admirable display. Erica Bothwelliana is a good addition to the class to which it belongs, the blooms being large and handsome. One of the finest of all the ventricosas is, however, v. grandiflora. The Java Ixora was hardly sufficiently in flower. Dipladenia crassinoda was charmingly flowered.

Mr. Carson, gr. to W. F. G. Farmer, Esq., was third with the following—

Aphelexis macrantha purpurea	Ixora Griffithi
Allamanda cathartica	Jatropha pandurata
„ grandiflora	Kalosanthes miniata
Æschynanthus Lobbianus	Leschenaultia formosa
Clerodendron splendens	Lemonia spectabilis
Dipladenia crassinoda	Rondeletia speciosa
„ splendens	Roupellia grata
Exostema aquaticum	

The Lemonia in this instance was not "showy," though it has a good colour; it may be interesting enough when closely and leisurely examined, but it is not sufficiently effective to make a good exhibition plant. The Exostema was admired for the singular shape of its flowers, which served to make an agreeable variety. The Roupellia grata is seldom seen at exhibitions; though not very handsome it contrasts well with the plants more commonly to be met with at such displays. The Allamanda cathartica and Clerodendron splendens were both well flowered.

A group of 15 plants, from Mr. Hamp, consisted of—

Allamanda cathartica	Erica ventricosa
Azalea variegata	„ Cavendishi
Æschynanthus pulcher	Hoya bella
Boronia serrulata	Ixora alba
Crowea saligna	„ crocata
Dracophyllum gracile	Pimelea linifolia
Dipladenia crassinoda	Xanthosia rotundifolia
„ splendens	

Among these, Erica Cavendishi was a very fine plant but the beauty of its blossoms was unfortunately nearly over. The Dipladenia was a good specimen, as were also the charming Hoya Bella, and the Griffith Ixora.

Collections of six STOVE and GREENHOUSE PLANTS in "pots or tubs not less than 20 inches in diameter" were furnished by Mr. Peed, gr. to Mrs. Tredwell, of Norwood, and Mr. Over, gr. to W. M'Mullen, Esq., of Clapham. The former had fine specimens of Erica Irbyana, Clerodendron paniculatum, Allamanda Schotti, Kalosanthes miniata, Vinca alba, and Ixora coccinea.—Mr. Over produced Erica Aitoniana, Epacris miniata, Hoya carnosa, Allamanda cathartica, Ixora crocata, and Dipladenia crassinoda. Some of these were scarcely far enough advanced in bloom.—Groups of six plants in 13-inch pots came from Messrs. Taylor, Over, Roser, Peed, and Pamplin. Among them were good examples of Cyrtoceras reflexum, Rondeletia speciosa, Dipladenias, Clerodendrons, Epacrises, Cape Heaths, Kalosanths, Tetrathecas, Ixoras, Sollyas, Allamandas, Hoyas, Stephanotis, Leschenaultias, and Everlastings.

HELICHRYSUMS were exhibited by Messrs. Fraser. The varieties were Aphelexis purpurea macrantha, A. m. rosea, A. sesamoides, A. s. superba, A. spectabilis, and A. purpurea grandiflora.

KALOSANTHS.—The following were shown by Messrs. Fraser and Taylor; viz., coccinea, c. superba, miniata, nitida, versicolor, and a kind called Louis Napoleon Bonaparte.

ORCHIDS.—These, as might be expected, were scarcely so fine as they were in May and June. Mr. Williams, gr. to C. B. Warner, Esq., had the following:—

Aerides affine	Cypripedium Lowi
„ odoratum	Epidendrum verrucosum
„ maculosum	Oncidium Lanceanum
„ Brooki	„ Papilio
Calanthe veratrifolia	Phalænopsis amabilis
„ masuca	„ grandiflora
„ furcata	Phaius albus
Cattleya Harrisoniæ	Saccolabium guttatum
„ Mossiæ superba	Sobralia macrantha
Cypripedium barbatum	Vanda suavis

The Calanthe masuca was still in bloom and tolerably fresh, though it has been shown in this collection on several previous occasions. The Harrison Cattleya, a beautiful species, was in this instance scarcely so well flowered as could have been wished. Cypripedium Lowi was still in perfection, as was also the Spotted Saccolabe, though both have been in blossom for many weeks. The different species of Aerides were all good, more especially A. maculosum, which is rather a scarce kind.

Mr. Woolley, gr. to H. B. Ker, Esq., produced—

Aerides affine	Epidendrum crassifolium
„ odoratum	Oncidium luridum guttatum
Cattleya Mossiæ	„ leucochilum
Cypripedium barbatum	Odontoglossum Lawrenceanum
Dendrobium formosum	Peristeria elata
„ transparens	Phaius albus
Dendrochilum filiforme	Saccolabium guttatum
Epidendrum alatum	Sobralia macrantha
„ cochleatum	Stanhopea tigrina
„ cinnabarinum	Vanda Roxburghi

The most striking plant in this group was certainly the spotted variety of Oncidium luridum, which was covered all over with flowers of the richest cinnamon-brown colour. Phaius albus was extremely well bloomed, the white colour being clear and beautifully brought out. The Odontoglossum Lawrenceanum is well known to be a mere variety of O. Insleayi. The slender-growing transparent Dendrobe is a pretty small-flowered species in the way of nobile, and very suitable for persons of limited accommodation. The Epidendrum crassifolium and Peristeria elata were both good plants, and well flowered.

Collections of 15 ORCHIDS were shown by Messrs. Veitch and Rollisson. The former had—

Aerides quinquevulnerum	Oncidium pulvinatum
Cycnoches, sp.	Phalænopsis amabilis
Cypripedium barbatum	„ grandiflora
Dendrobium formosum	Saccolabium Blumei
„ Gibsoni	„ Rheedi
Epidendrum vitellinum	Vanda Batemanni
Oncidium ampliatum majus	„ tricolor.
„ flexuosum	

The Aerides quinquevulnerum was a fine plant, of this somewhat rare species, but its blossoms, unfortunately, were hardly sufficiently expanded to show themselves to advantage. The Gibson Dendrobe is a charming species, with which all seemed delighted, and the Bearded Lady's Slipper (Cypripedium barbatum), was one of the finest plants of the kind that has been shown for some time. The large variety of Oncidium ampliatum was also an object of interest, its clear yellow blossoms being just in perfection. The Epidendrum vitellinum majus was likewise much admired for its fine colour.

Messrs. Rollisson produced—

Aerides affine	Dendrochilum filiforme
„ odoratum	Grammatophyllum multiflorum
„ quinquevulnerum	Miltonia spectabilis
Cattleya citrina	Uropedium Lindeni
„ crispa	Saccolabium Blumei
„ „ superba	Stanhopea aurea
„ Mossiæ	„ tigrina
Dendrobium Gibsoni	

The more remarkable plants in this group were perhaps the Uropedium, which puts one in mind of the Tailed Lady's Slipper, but it is not so handsome; and Cattleya crispa superba, a variety of far greater beauty than the species, the blossoms being larger and much better coloured. The many flowered Grammatophyllum is also a plant not very often met with, and, though more singular than beautiful, it served to create an agreeable variety. The Dendrochilum filiforme, with long green tails, was also an object of interest.

Groups of 10 ORCHIDS were furnished by Messrs. Carson, Ivison, and Gedney. Mr. Carson sent—

Acineta sp.	Dendrobium aduncum
Aerides quinquevulnerum	Dendrobium filiforme
Aspasia lunata	Lycaste Skinneri
Cattleya superba	Phaius albus
Cypripedium barbatum	Saccolabium Blumei

The White Phaius was not so effective as it should have been, being unfortunately insufficiently advanced in bloom. The Saccolabe was a very fine plant, one of its four fine racemes of flowers measuring more than a foot in length, and the blossoms were all in the greatest perfection. The Cypripedium barbatum was a very dark variety of this useful plant. The Dendrobium was the best plant of the kind at the whole exhibition, its singular looking green tails being both numerous and fine.

Mr. Ivison contributed—

Aerides odoratum	Odontoglossum hastatum
Cattleya sp.	Oncidium Papilio
Dendrobium densiflorum	„ ampliatum majus
Epidendrum cinnabarinum	Saccolabium guttatum
„ macrochilum	Vanda tricolor

The Aerides odoratum was a spreading plant, beautifully furnished with flowers; and Vanda tricolor had two fine bunches of blossoms on it. Of all the many varieties of Cattleya Mossiæ, that exhibited here as Cattleya sp. is perhaps the very handsomest, its sepals and petals being pure white, while the lip is stained with deep purple. The effect of such a contrast is, as may be imagined, striking and beautiful.

Mr. Gedney produced—

Angræcum caudatum	Oncidium flexuosum
Calanthe masuca	„ Lanceanum
Dendrobium nobile	Phaius albus
Epidendrum vitellinum	Phalænopsis grandiflora
Lælia anceps	Sobralia macrantha

Among these Phalænopsis was a good specimen of that ever-blooming plant, and the White Phaius, as well as the Lance Oncid, the charming Lælia anceps, and Epidendrum vitellinum, were all excellent examples of good gardening.

Cape Heaths were well flowered, and in beautiful condition, considering the season. Collections of 10 plants were shown by Messrs. Rollisson, Fraser, and Reed; and of 6 plants by Messrs. Roser, Taylor, and Over. In these exhibitions were good specimens of Cavendishi, Parmentieri rosea, Massoni, jasminiflora alba, different varieties of tricolor and ventricosa, Irbyana, Aitoniana, retorta, ampullacea, eximia, rubens, mutabilis, ferruginea, and other well-known sorts.

Roses (cut) were shown in abundance, and, maintaining as they did their freshness throughout the day, they formed, as they always do in July, a highly attractive feature of the show. Collections of 50 sorts were contributed by Messrs. Lane, Paul, Francis, and Wilkinson; and of 25 varieties by Messrs. Munro, May, Sage, Coe, and Rowland. In the different boxes we remarked charming blooms of nearly all the leading kinds in cultivation; but more especially of Paul Ricaut, which is certainly one of the very best of Roses, being of a glowing crimson colour and extremely good shape. We also remarked Géant des Batailles in good condition, and most beautiful blooms of Coupé de Hébe, which everybody knows is a first-class Rose; as are also Mrs. Bosanquet, Paul Perras, Duchess of Sutherland, Charles Duval, Chénédolé, and William Griffiths, good blooms of all of which were shown. Vicomtesse Decazes and Safranot were produced in very good condition, as were also Boule de Nanteuil, Brennus, Mrs. Elliot, Baronne Prevost, William Jesse, Devoniensis, and Queen Victoria. Messrs. Wood and Son had a seedling of good colour and shape; but, perhaps, scarcely full enough. As a pillar Rose it will be an acquisition.

Of Single Specimens the best were Pleroma elegans, of a fine bush, well furnished with blossoms, and Erica obbata, from Messrs. Veitch; a well grown plant of Masson's Heath, from Mr. Speed; and an example of the White Butterfly Plant (Phalænopsis grandiflora), from Mr. Gedney. Messrs. Veitch also had an example of the charming Veronica variegata.

New Plants.—The more important of these are adverted to in a leading article in another column; but in addition to what are there noticed it may be remarked that Messrs. Veitch sent finely bloomed masses of Impatiens Jerdoniæ, Philesia buxifolia, a Ceropegia from Java, blooms of a Dipladenia resembling crassinoda from South America; Eugenia Ugni, and Myrtus apiculata from Patagonia; and bark, cones, and plants of Wellingtonia gigantea. Messrs. Henderson, of Pine Apple Place, had Begonia xanthina, a yellow flowered kind, with handsome foliage; and a small yellow Stylidium, called mucronifolium. Messrs. Rollisson produced Abelia uniflora, a species of little beauty; Mr. Carson, Ornitharium striatulum; Mr. Ingram, a Sabbatia, from Texas, an annual, with sweet-scented pink flowers; and two very pretty hybrid deep rose coloured Begonias—one fragrant and called suaveolens rosea, the other hybrida—both highly desirable kinds; Messrs. Standish and Noble produced their two new Clematises—lanuginosa and its pale variety—both of which have been noticed in previous reports; Messrs. Osborn had Lysimachia Leschenaulti, a useful looking herbaceous plant, with heads of rosy flowers, resembling those of a Verbena; Messrs. Henderson, of St. John's Wood, contributed some pretty Gloxinias and Achimenes; and Mr. Salter, of Hammersmith, had a variegated Fuchsia, a new hybrid Veronica, and one or two other plants.

Collections of Variegated Plants were contributed by Messrs. Veitch, Rollisson, Messrs. Henderson, of Pine-apple Place, and Mr. E. G. Henderson, of St. John's Wood, all of whose groups, owing to the variety and different habits of the plants of which they were composed, we need not say were extremely interesting. Among them we remarked the various kinds of variegated Orchids, fine specimens of the handsome Cissus discolor; Coleus Blumei, with black blotched pale green leaves; Maranta rubro-venia, with red-veined dark green foliage; M. variegata, with leaves splashed with white; Bilbergia rosea, beautifully mottled with white; Caladium picturatum, a narrow leaved kind with a wide stripe of red running through the centre; C. pœcile, dark-green and red, and spotted with white; variegated Pines; a flowering plant of what is called Nidularia fulgens, with dark green slightly spotted foliage; a Yucca with leaves edged with yellow; Canna discolor, with red-veined foliage; Begonia marmorea, with leaves splashed with white; B. Thwaitesi, a Java species, the leaves of which when young are of a beautiful crimson colour; together with Dracænas, Crotons, a variegated variety of Hydrangea japonica, Pavetta borbonica, Elæodendron venosum, a slender-growing variegated Vine, and other plants.

Of plants remarkable for Fine Foliage collections were furnished by Messrs. Veitch, Rollisson, and Mr. E. G. Henderson. Among these were Bischoffia javanica, Schizolobium glutinosum, a plant with fine Acacia-like leaves; Uhdea pinnatifolia, a Jonesia with very large fine foliage, Dracæna umbraculifera, Nephrolepis davallioides, with beautiful long graceful leaves; Rhopala magnifica and corcovadensis, Tillandsia carnea, Xanthochymus oblongus, and various others.

Hothouse Ferns and Lycopods were admirably shown by Messrs. Veitch, and Messrs. Woolley and Gedney sent Ferns. The names of these have often been given in former reports, and therefore we need not repeat them here. We may, however, remark, that never before were there exhibitions of this kind produced in better order, or, as a whole, more generally interesting.

Collections of Pitcher Plants, exhibited by Messrs. Veitch and Rollisson, were especially striking and interesting, as were also two or three examples of Dionæa, or Venus' Fly-trap. Among Nepenthes, the more remarkable were lanata, Hookeriana, Rafflesiana, sanguinea, lævis, phyllamphora, ampullacea, and distillatoria. Mr. Gedney, gr. to Mrs. Ellis, of Hoddesdon, had a good plant of N. Rafflesiana, well furnished with pitchers, large and fine.

Rhododendrons.—Of Sikkim and Bootan kinds collections were furnished by Messrs. Veitch and Mr. E. G. Henderson. The more remarkable of the Bootan sorts were Nuttali, a robust-looking kind, with leaves 6 inches long; Keysi, a dwarf-growing sort found above the range of R. Hookeri and Falconeri, leaves between 2 and 3 inches long; Windsori, said to be deeper coloured than R. arboreum; Kendricki, a kind discovered at an elevation 7000 feet above the sea, growing in company with the R. Edgworthi; flowers said to be large and deep red. Calophyllum, Jenkinsi, eximium, longifolium, and Camelliæflorum, were also among the number of these varieties, of which a dozen or more kinds were exhibited.

Pelargoniums, both fancy and ordinary kinds, were shown in extremely good condition by Messrs. Turner, Gaines, and Maher. The sorts were not different from those mentioned at p. 438 of last week's paper. Mr. Turner again showed his fine plant of Rowena, in an 8-inch pot, still in fine flower, and Mr. Gaines reproduced his "New Fancies," which proved so very interesting at former exhibitions.

Notices of Books.

Flora Bristoliensis. By E. H. Swete. (8vo, Hamilton.) This is a very useful guide to the rich Flora surrounding Bristol. In addition to the usual lists of plants, it contains good geological descriptions, showing in what way the author finds the limits of species affected by the soil on which they grow; to which is added a well-executed map of the country five miles round Bristol. We venture to suggest that in future editions such bad orthography as systala for systyla, Lepedium for Lepidium, Orobancha for Orobanche, and so on, would be better if corrected.

Pescatorea.—The first number of this work, announced at p. 236, is before us. It contains well drawn and coloured folio plates of *Odontoglossum Pescatorei*, *Uropedium Lindeni*, *Houlletia odoratissima*, and *Dendrobium Farmeri*, of which the third, a very handsome and fragrant plant, had not been previously figured. To each plant Mr. Luddemann has added a detailed statement of the cultivation which he finds most successful.

The Micrographic Dictionary, Part III. (Van Voorst), reaches Arthrocladia, and contains some very excellent plates, and unusually good woodcuts.

Wanderings among Wild Flowers, by Dr. Spencer Thompson (12mo, Groombridge), is, we presume, intended as an introduction to botany for children. For this it would be well adapted, as far as we have been able to examine it, were it not for the woodcuts, which are unworthy any kind of letter-press, and some of which are calculated to do more harm than good. We venture to ask the author where his artist found the thing called "Leafbud of Horse Chesnut," at p. 16. It appears to have been intended as a rude representation of the end of the rail of some iron balustrade.

Pictures from the East (Chapman and Co., "Reading for Travellers,") consist of sketches of customs, &c., in Ceylon, reprinted from "Chambers' Journal" and the "Household Words."

New Plants.

69. Juniperus drupacea, *Labillardiére Plant Syr. dec.* 2, 14, *t.* 8.

This is one of the plants referred to at p. 387. The figure is copied from the *Revue Horticole*. In addition to what has already been said about it, we gather from Labillardiére that it is an upright branching shrub, with a pale brown (testaceous) fruit, growing in Syria on the mountain called Djebel-Laçara. Clusius says it is known all over the east under the name of Habbel or

Abhel, and that its fruit is brown passing into black, as large as the cone of a Cypress, to which plant it bears much resemblance. Bellonius relates how he found on Mount Taurus, just below the snow, Juniper bushes (evidently this) of larger stature than usual, growing even to the size of Cypresses, with a *sweet fruit*, which the inhabitants ate; the nut in the inside was as long and big as an Olive, and so hard that it could only be broken with a hammer. He places it next after the Cedar among beautiful evergreen trees.

70. Abies Kæmpferi, *Supra*, p. 255.

The following is a good representation of the cone of this curious tree, of which we regret to learn that Mr.

Glendinning has succeeded in raising only about a dozen plants.

FLORICULTURE.

The Chrysanthemum.—I have proved the following to be a most successful method of producing really magnificent specimens of this favourite autumn flower. I insert my cuttings under hand-glasses on a cutting bed in time for them to be sufficiently rooted to enable them to endure the operation of transplanting by the first week in July. I plant them out in beds previously manured with plenty of well-rotted dung, setting them in rows 1 foot apart, and as much between the plants. After they have grown sufficiently large to require staking, and which they will have done in about a month after planting, they are neatly tied to rods, which I contrive to be as near as possible the height to which the plants are likely to grow; at the same time I apply a layer of dung the depth of 3 inches or thereabouts to the surface of each bed. This, while it protects the roots from the effects of continued dry weather,

furnishes the plants during every shower of rain with a copious supply of liquid-manure, which wonderfully accelerates the growth, and imparts to the foliage that dark green massive appearance which is so indicative of vigorous health. Beyond tying the plants occasionally as they require it, they may be left to themselves, until the first week in the following October, when they should be taken up and potted firmly in pots of sufficient size to suit the ball. As a rule, I never attempt to remove the plants until the buds are fairly set; it is, therefore, advisable to defer potting the late flowering varieties until the end of October. After potting, the mould in each pot should be saturated with water, and care should be taken on all subsequent occasions to give the plants plenty of water, and if this is well attended to the plants will not flag or drop their foliage. Treated in this way the time the plants are confined to pots is limited to the shortest possible period, and they never present that starved leggy appearance which they frequently exhibit when they are grown long in pots. When the amount of labour expended in watering is taken into account, together with the frequent drawback of the plants producing diminutive and partially developed flowers, the advantages of the above plan will be apparent, especially when it is recollected that, with scarcely a tithe of the trouble, the cultivator will be in a condition to command a first-rate supply of well grown and finely furnished plants, in every respect worthy of the name, richly studded with flower buds. The true colour, size, and shape of the flowers may also, with comparative certainty, be depended upon. The practice of growing the Chrysanthemum in pots appears to have been founded on the generally received opinion, that, in order to obtain a good show of flowers on young plants, it is necessary to confine the roots in pots proportioned to the size of the plants. Cultivators disposed to give the two methods a fair trial will, however, I am persuaded, acknowledge that the Chrysanthemum does not make such a bad use of its liberty as to render it imperative to put on the roots artificial restriction; on the contrary, strong healthy plants, be they ever so young, will flower freely and immeasurably finer when grown in beds, and are in every respect very far superior to the best Chrysanthemums that can be produced in pots. *R. M.*

NATIONAL FLORICULTURAL SOCIETY, *June* 29.—Mr. Turner in the chair. Of subjects exhibited there were Antirrhinums from Mr. Smith; Calceolarias from Mr. Cole, St. Alban's; Pinks from Mr. Turner; Pansies from Messrs. Downie and Laird; and a collection of Sweet Williams (cut blooms) from Mr. Bragg. Certificates of Merit were awarded to Pinks "Brunette" and "New Criterion" (Maclean), both of which were exhibited by Mr. Turner; the former is a flower strikingly broad in the petal, and has a uniform lacing of purplish crimson, pod first-rate—and, had the edge been quite even, it would have had the highest award. "New Criterion" is a nice flower, with even petals, and a moderate and even lacing of purple, pod good. A Certificate of Merit was awarded to Messrs. Downie and Laird for Pansy "Beauty," a medium-sized sort, with moderately good form and fair substance—ground creamy white, with heavy belting of purple. Mr. Cole's Bedding Calceolaria, "Eclipse," maintained its character, proving a fine trusser, and for colour it is matchless. Mr. Bragg's Sweet Williams, of which there were some 70 varieties, were interesting enough, their distinguishing peculiarity being their evenness of petal; the colours and markings of many of them were curious and beautiful.

Miscellaneous.

Novel Fête at Malta.—His Excellency Sir W. Reid endeavoured to turn the recent festival of St. Peter and St. Paul to a practical use. It is the custom on this festival for all classes of people to make picnics to the country, about Boschetto and Civita Vecchia, where they have no object beyond eating and drinking, and some very poor races in the evening; in fact, it is too hot to make any exertion. However, Sir W. Reid got up a committee, and offered prizes for the best samples of cattle, corn, vegetables, machinery, silkworms, &c.; the prizes for Malta on a liberal scale, from 3*l.* down to 3*s.* There were some very fine mules, poultry, corn, Potatoes, and silkworms exhibited—also some great improvements in machinery; but the pleasantest sight of all was the happy-looking people, picnicing under the trees. All appeared thoroughly happy and contented. Here was every class, from the commanders-in-chief, judges, senators, &c., down to the poorest peasant, and all appeared to be thoroughly enjoying themselves. It must have been a proud day for Sir William; and I believe all classes felt grateful to him for his endeavours to turn this festival into so useful an exhibition. Doubtless, from the many prizes given, next year's exhibition will bring forth more competitors. *Daily Paper.*

Wood Paper.—A very excellent method of manufacturing paper and pasteboard pulp from wood, originally invented by M. Hartmann, has been improved upon by Mr. Schlesinger, of Bradford, who, after taking much trouble to introduce the plan into this country, is now, as the working partner of the inventor, conducting the process with great success. As the manufacture of paper is a subject at present forcing itself upon public attention, we think it right to give prominence to every good improvement relating to it. Process:—Cut a tree—say 6 feet long and 2 feet diameter—into nine lengths of 8 inches by 2 feet diameter each; place these blocks into the boxes, with the fibres running in the same direction as the stone turns, lever them, then start the stone at the rate of about 200 revolutions per minute. By the foregoing process a fibrous pulp is obtained equal to that of ordinary rag-pulp, and lower in price. Moreover, this wood-pulp has the advantage of absorbing a greater quantity of mineral than ordinary rag-pulp, without deteriorating the strength of the pasteboard or paper. Light or hard woods will take the dye of even the most delicate colours as readily as rag-pulp. According to Mr. Schlesinger's calculation, he produces a pound of dry wood-pulp at about one penny, and a pound of dry wood-pulp at about one penny, in districts where wood and power can be had cheaper than at Bradford, it may be made at five-eighths to three-fourths of a penny per pound of dry pulp. The cheapest classes of wood, as Fir, Pine, Poplar, Willow, &c., suit his purpose best. We have had highly satisfactory specimens of the papers and pasteboards above enumerated submitted to our inspection. *Mechanics' Magazine.*

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Some of the stove plants that have recently been brought into this house will require attention, to prevent their being injured by damp during cloudy weather, and it will probably be necessary to use slight fires occasionally for the purpose of drying the atmosphere of the house. The propriety of this will, however, largely depend upon circumstances; for in small well ventilated houses damp will hardly be troublesome, whereas in lofty houses, with but little ventilation, and the roofs overgrown with twiners, it may be very troublesome. But at this season there is nothing to fear from cold, and air should be freely admitted on every favourable opportunity, using every care to keep the atmosphere of the house as dry as possible, and keeping the plants clear of decaying flowers, &c. Considerable care will also be necessary in watering recently repotted specimens, whether of the soft or hard-wooded class, as, in the present state of the weather, they will require very little, and will be speedily injured by a careless supply. Continue to carefully regulate the growth of the twiners, but avoid tying them too close, and allow them to grow according to their natural habits as much as circumstances will admit. Examine the border plants frequently for insects, which, if allowed their own way at this season, soon injure the young tender growth. The Luculias are matchless subjects for the conservatory borders, and are deserving of every care; but they are very subject to black thrips, and if this pest is in the house it will soon disfigure their noble foliage, unless kept under by some means. Tobacco smoke is the most effectual remedy for this pest, and repeated washings with the engine the next best; but there must be no trifling with this enemy, otherwise the beauty of the plants will be sacrificed for the season.

FORCING DEPARTMENT.

PINERY.—The long-continued cold, cloudy weather is most unfavourable for securing well-ripened, high-flavoured fruit; and, unfortunately, last week's directions are still applicable here. Indeed, if the weather continues such as it has been for some time past, ripening fruit must be assisted with a fair amount of fire-heat, keeping the plants dry at the root, and avoiding moisture in the atmosphere as far as circumstances will admit. Young growing stock will enjoy the present sunless weather, and, if properly attended to, will grow very rapidly; but care must be observed not to keep them too close, and so induce weakly growth: and, on the occurrence of bright sunshine, it will be necessary to shade slightly, to prevent the foliage being scorched. Use the watering-pot and syringe very cautiously, until we have more warmth and sunshine. VINERIES.—Attend to last week's directions as to thinning late fruit; for depend upon it that a very moderate crop of first-rate quality will be in every respect more satisfactory than ever so heavy a crop if deficient in quality; therefore thin severely. Use brisk fires during the day where the fruit is colouring, and also see that ripe fruit is not injured by damp. PEACHES.—The Peach enjoys a comparatively cool temperature while ripening, but this must not be combined with a close damp state of the atmosphere; therefore keep the atmosphere dry and in motion by using very slight fires on dull days in houses where the fruit is ripening. Examine the fruit daily, and gather before it is over ripe and loses its flavour. Trees from which the fruit has been gathered should be well washed with the engine if at all infested with red spider, the house kept cool, and every means used to preserve the foliage in a healthy state as long as possible. MELONS.—Do not allow the bottom-heat to decline in dung beds, but apply lining where necessary to maintain a brisk growing heat; especially guard against any decline of the temperature where the fruit is setting. Keep the surface of the soil as dry as possible during damp cloudy weather, and remove decaying leaves immediately they are perceived; also apply quicklime wherever there is the slightest indication of canker.

FLOWER GARDEN AND SHRUBBERIES.

The Roses are the great attraction here at present, and these should be frequently looked over, removing decaying flowers, &c., which, if allowed to hang on the plants, have a very unsightly appearance. Now is the best season for observing the effect of the arrangement of the colours, &c.; and if any alteration is deemed necessary it should be carefully noted, which will greatly facilitate its execution at the proper season. Proceed with the propagation of favourite sorts which it may be desired to increase, either by budding or cuttings. We prefer having the Hybrid Perpetuals, Teas, Chinas, and Bourbons on their own roots, and firm short-jointed shoots of these root very freely at this season. But to ensure success they should be afforded a slight bottom-heat, carefully shaded, and not kept too warm until they emit roots. They will, however, root under a hand-glass on a shady border. Remove suckers from worked plants. Cut back the shoots of the autumn flowering varieties to the most promising eye, as soon as all the flowers are expanded and begin to fade. If manure water cannot be conveniently given, stir the surface soil with a fork, and apply a good sprinkling of guano, the strength of which will be washed down to the roots, and will serve the same purpose as manure water. Slugs must be sharply looked after, otherwise plants to which they are partial will be very likely to be injured, for the weather has been very favourable for these nuisances. The propagation of "bedding out" stock for next season will soon require attention, therefore make the most of the present leisure, &c., for getting up a good stock of the more valuable herbaceous plants.

HARDY FRUIT AND KITCHEN GARDEN.

Those who depend upon young plantations of Strawberries for fruit, should get them planted while the ground is moist, and the weather favourable. If planted at once and properly cared for until the plants get established, a fine crop of superior fruit may be expected next season. We know a gardener, Mr. Mytham, of Hewell, who never allows his Strawberry plantations to stand but one year, and he manages to secure immense quantities of prime fruit from a moderate breadth of ground. Where the plants are to stand only one year they should, however, be planted much thicker than is usually done, say four lines in a 5 feet bed, and 9 inches between the plants in the lines, allowing a foot of an alley between the beds. See that plenty of plants for forcing next season is potted at once, if not already done. As ground becomes vacant by the removal of early crops get it manured, dug, and planted with winter Greens, &c., without loss of time. Also provide a good supply of Turnips. Make the most of every favourable opportunity for the destruction of weeds. Cut Box edgings, clean and roll walks in showery weather, and keep all clean and neat.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending July 13, 1854, as observed at the Horticultural Gardens.

July.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth. 1 foot deep.	Of the Earth. 2 feet deep.	Wind.	Rain.
Friday 7	12	29.743	29.722	66	51	58.5	59	60	S.	.15
Satur. 8	13	29.750	29.721	72	45	58.5	59	60	E.	.06
Sunday 9	14	29.773	29.723	72	49	60.5	59	61	W.	.02
Mon. 10	○	29.909	29.861	67	51	59.0	59.5	61	N.	[illegible]
Tues. 11	16	29.906	29.864	66	50	58.0	60	60.5	N.W.	[illegible]
Wed. 12	17	29.851	29.790	60	46	53.0	59	60	N.	[illegible]
Thurs. 13	18	29.854	29.774	68	49	58.5	58.5	60	S.W.	[illegible]
Average		29.826	29.779	67.3	48.7	58.0	59.1	60.2		[illegible]

July 7—Overcast; heavy showers; cloudy.
— 8—Rain; very fine; clear at night.
— 9—Very fine; cloudy; fine; rain at night.
— 10—Very fine; showery; very cloudy; heavy rain at night.
— 11—Overcast; cloudy; fine; overcast.
— 12—Drizzly rain; densely overcast; rain.
— 13—Fine; slight haze; very fine throughout.
Mean temperature of the week, 5 deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending July 22, 1854.

July.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 16	76.2	51.1	63.6	8	1.60 in.	2	3	3	—	2	11	6	1
Mon. 17	76.0	53.4	64.7	10	0.56	2	—	2	2	4	9	6	3
Tues. 18	73.6	51.7	62.6	13	1.22	—	—	1	—	5	10	8	4
Wed. 19	71.8	51.6	61.7	17	0.60	1	1	1	1	6	9	7	3
Thurs. 20	71.2	51.5	61.4	17	0.47	1	1	2	—	1	14	9	1
Friday 21	72.1	51.2	61.6	12	0.54	2	—	1	1	3	10	8	3
Satur. 22	72.3	52.5	62.4	15	1.37	3	3	2	1	4	9	5	1

The highest temperature during the above period occurred on the 17th, 1834—therm. 94 deg.; and the lowest on the 18th, 1831—therm. [illegible] deg.

Notices to Correspondents.

BOOKS: *S S.* Macculloch on wine making.

CONSERVATORY: *A B.* As far as we understand your account the mode of heating ought to answer; but you are very far from being clear.

DISEASES: *T P W.* Your Vine leaves are very slightly affected by the warty excrescences which have been so prevalent this year. There is evidence now to show that this disease arises from some defect in the condition of the roots; and we should, therefore, recommend you to examine them, if you think the evil sufficiently aggravated to make it worth while meddling with them. *M J B.*

INSECTS: *C H D.* Your fly is not the woolly Apple blight, it is the aphideous Pemphigus affinis of Kaltenbach.—*J S.* The brown objects found with the Orchids are the egg cases of one of the species of Cockroaches. The black flies are Evania lævigata, the larvæ of which live as parasites in the egg cases, one of which, indeed, contained a living larva of the parasite. If you find more of the cases we shall be obliged to you for them. *W.*

NAMES OF PLANTS: *J R M.* Spiræa filipendula.—*S H.* They are small galls, probably caused by the puncture of some insect.—*Cori. Weeks & Co.* How does it differ from Gesnera Lindleyi?—*Cori.* 1, Platanthera bifolia; 2, Ervum Anthyllis vulneraria.—*T W.* 1, Platanthera bifolia; 2, Ervum tetraspermum; 3, Carex curta.—*Sancho.* Solidago virgaurea and Centaurea dealbata are among them; as to the others, they are not common things, and cannot be accurately determined unless much better specimens than these you have sent are furnished.

PERRY: *Pyrus.* Perry is perry, and champagne champagne; you cannot turn one into the other. Very fine squash perry, perfectly made, in good seasons, is however hardly inferior to the sparkling wine called champagne.

RETINOSPORA: *R F.* The species of this genus are from Japan, and are possibly hardy in a good climate; they are very like Cypresses. Dacrydium Franklini perished near London; so did Quercus glabra; but it is reported to be safe more to the southward.

RIFLES: *S G N.* If you believe the common gunsmiths there is nothing comparable to the old troublesome grooved rifle. If you believe disinterested common sense you will learn that Lancaster's smooth bore, or Pritchett's regulation pattern, are incomparably better in every respect. Of course gentlemen who have paid 60 guineas for a rifle don't like to admit that a much better tool can be bought for 5*l.*

STEPS: *Cork.* You may make them cheaply of hard-burnt bricks on edge, set in strong Roman or Portland cement. They will last as long as stone. Mix your Roses.

VINEGAR: *H G M.* The plant bearing this name is the mycelium or spawn of a fungus called Penicillium glaucum.

TURNIP SOWING.

SUPERPHOSPHATE OF LIME, made from Bone, which is the best Manure for Root Crops (see the Royal Agricultural Society's Journal, Vol. vi., part 2). PERUVIAN GUANO, NITRATE OF SODA, BONE DUST, SULPHURIC ACID, and all other Manures of known value. The PEAT MOSS CHARCOAL COMPANY have appointed the undersigned Sole Agents for the Sale of this fixer and distributor of Ammoniacal matter. They are also Sole Agents (in London) of the Patent Sanitary Company for the sale of their "Nitrogenised Carbon."—Apply to MARK FOTHERGILL & Co., 204A, Upper Thames Street, London.

THE LONDON MANURE COMPANY'S WHEAT MANURE, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. EDWARD PURSER, Sec. Bridge Street, Blackfriars.

SUPERPHOSPHATE OF LIME, Guano, Bone Dust, Sulphate of Ammonia, Gypsum, Agricultural Salt, Grass Manure, and other Fertilisers, of superior quality, on sale, at the Coprolite Mills, Durham Wharf, Deptford Creek, Greenwich.

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures, Linseed Cakes, &c.
WM. INGLIS CARNE, 10, Mark Lane, London.

SEWAGE CHARCOAL MANURE.—This highly fertilising Manure, which is Peat Charcoal completely saturated with London Sewage, will be found most efficient for every species of crop; more especially for Peas, Beans, Turnips, Mangold Wurzel, and other root crops. It will produce a greater return for the outlay than Guano or any other Manure at an equivalent value: it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained at the SEWAGE MANURE WORKS, Stanley Bridge, Fulham, at 4l. per ton, and in quantities less than half a ton, at 5s. per cwt., for ready money only: and in quantities not less than a ton, will be delivered at the London Termini of the Railroads free of charge for cartage. No charge for sacks.

It may also be had from Messrs. G. GIBBS & Co., 26, Down Street, Piccadilly, Agricultural Seedsmen, Agents for London: and from all the other Agents of the Company.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7l. per ton; Superphosphate of Lime, 7l.; Sulphuric Acid and Coprolites, 6l.

Office, 69, King William Street, City, London.

N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and dispatch.

Gentlemen desirous of receiving instructions in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

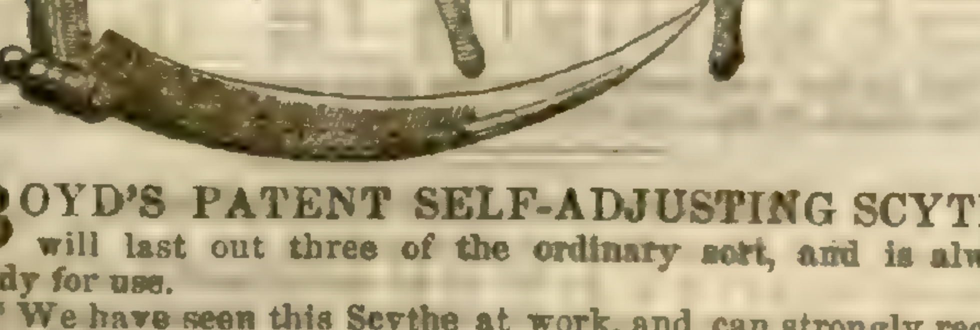
DRUMMOND'S REAPING SCYTHES.—Farmers and others intending to use this excellent Corn Scythe during the coming harvest, will please supply themselves without delay, and thereby prevent the disappointment that was experienced last year, through the inability of the Subscribers to overtake the execution of orders received late in the season.

Price of a single Scythe	11s. 6d.
Ditto of three, package included...	32 6
Ditto of six, ditto ditto	60 0

Carriage paid to London, Liverpool, Hull, Birmingham, &c.
W. DRUMMOND & SON, Seed and Implement Warehouse, Stirling, N.B.

☞ Orders from unknown correspondents must be accompanied with a remittance, otherwise they cannot be attended to.

SCYTHES.



BOYD'S PATENT SELF-ADJUSTING SCYTHE will last out three of the ordinary sort, and is always ready for use.

"We have seen this Scythe at work, and can strongly recommend it."—See *Mark Lane Express*, May 16, 1853.

To be had of every Ironmonger and Nurseryman in the kingdom: and wholesale and retail of WM. DRAY AND CO., Agricultural Implement Makers, Swan Lane, London.

SCHOOL FOR GENERAL AND SCIENTIFIC EDUCATION (especially with regard to AGRICULTURE), Wickham Market, Suffolk, conducted by Mr. G. DOWNES.

At this establishment a sound and liberal education may be acquired on moderate and inclusive terms.

Soils, Minerals, and Manures carefully Analysed.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.

Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

PATRON—His Royal Highness PRINCE ALBERT.
PRESIDENT OF COUNCIL—Earl BATHURST.
PRINCIPAL—Rev. J. S. HAYGARTH, M.A.

PROFESSORS, &c.
Chemistry—J. A. C. Voelcker, Ph.D., F.C.S.
Zoology, Geology, and Botany—James Buckman, F.G.S., F.C.S.
Veterinary Medicine and Surgery—G. T. Brown, M.R.C.V.S.
Surveying, Civil Engineering, and Mathematics—F. Armstrong, C.E.
Manager of Farm—G. Austin.

The next SESSION will begin early in AUGUST. The Annual Fees for Boarders vary from 45 to 80 guineas, according to age and other circumstances. The Fee for Out-Students is 40l. per annum. The College Course of Lectures and Practical Instruction is complete in one twelvemonth—though a longer course is recommended. There is a department for general as well as for agricultural purposes. Prospectuses and information can be had on application to the Principal.

The GUIDE TO THE ROYAL AGRICULTURAL COLLEGE FARM may be obtained of HAMILTON, ADAMS, & Co., Paternoster Row, London; and EDWIN BAILY, Cirencester. Price 1s.

BARTON'S PATENT STABLE FITTINGS AND ENAMELLED MANGERS.—These Fittings have all the newest improvements, and are the only patented invention of this description.

JAMES BARTON, Iron Founder, Smith, &c., 370, Oxford Street, a few doors East of the Pantheon.

SOUTHDOWN RAMS.

MR. R. H. ELLMAN informs his Friends that his RAMS are now ready for Letting or Sale. The Rams may be seen and terms known at any time.—Landport, Lewes.

SOUTHDOWN RAMS.

MR. W. SAINSBURY informs the Breeders of Southdown Sheep that his RAMS will be ready for Letting any time after the 22d day of July.

Manor House, West Lavington, Devizes.

SOUTHDOWN SHEEP.

MR. LUGAR informs the Breeders of Sheep that his SOUTHDOWN RAMS are now ready for Letting.

Hengrave, Bury St. Edmunds.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND, LINCOLN.—STAND No. 24.

WILLIAM PIERCE, AGRICULTURAL IMPLEMENT DEPARTMENT, Crystal Palace, Sydenham—Offices, Cannon House, Queen Street, London—will exhibit Cogan's Glass Churns, Glass Pails, Glass Butter Slabs, and various new articles in Glass, manufactured by Messrs. Cogan & Co., Leicester Square, London; as also a variety of Glass Milk Pans, Cream Pots, Lord Camoy's Syphons, Lactometers, Glass Tiles and Slates, Thick Glass for Farm Buildings, Stables, Hothouses, and Garden purposes, &c., &c.

ROYAL AGRICULTURAL SHOW AT LINCOLN, STALL 128.

CHIVAS'S NEW ORANGE JELLY TURNIP, FOR JULY AND AUGUST SOWING, PRICE 2s. PER LB.

GEORGE CHIVAS, SEEDSMAN, Chester, the introducer of the above unrivalled Turnip, respectfully acquaints the Nobility, Landed Proprietors, and Agriculturists generally, that he purposes attending the above Show with Specimens of his ORANGE JELLY TURNIP, and to receive orders for new Seed, which is now being reaped, and will shortly be ready to send out, which will afford an opportunity of substituting it for the last sowing of Globes and other late kinds. To secure the genuine article, direct application is necessary; and as many hundreds were disappointed in a supply last year, G. C. suggests that intending sowers should forward their orders without delay. Arrangements have been made for the quick delivery of all orders per parcel trains, carriage free to most of the principal towns in England, if ordered before the 21st July; and at the Stall 128 in the show-yard, where a full description of the Turnip, with numerous testimonials from some of the most distinguished noblemen and leading agriculturists of the day may be had.—Seed Warehouse, Chester, July 15.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

PAVILION DINNER.—The Tickets for the Pavilion Dinner will be sold at the Finance Department of the Show-yard, Lincoln: (1) To Members only, on Tuesday, July 18, from 12 o'clock at noon till 4 o'clock in the afternoon; and (2) To Members or their friends on the following day, from 8 o'clock in the forenoon till three o'clock in the afternoon. To prevent disappointment, members of the Society intending to dine on the occasion are requested on reaching Lincoln to make the earliest application for Tickets.

ROYAL AGRICULTURAL IMPROVEMENT SOCIETY OF IRELAND.—The Society's SHOW AT ARMAGH, in the Province of Ulster, will take place on the 9th and 10th of AUGUST next, when Premiums and Cups to the amount of 1200l. will be offered to competition for Farm Stock, Implements, &c.

Very favourable arrangements have been made with various Railway and Steam-Boat Companies for the carriage to and from Armagh, of Stock, Implements, &c., duly entered. Thus the Companies of the Ulster, the Ballymena, the Dublin and Drogheda, the Dublin and Belfast Junction, the Dundalk and Enniskillen, have agreed to carry all articles to and from the Show free, so also has the County Down Railway, excepting Horses. The Southern and Western, and the Great Midland Railway, will charge on articles going, but make no charge on articles returning, provided they have not been sold, or have not changed hands.

The City of Dublin Steam-Boat Company will carry to and from Dublin and Belfast, free by their boat, once a week; and the Belfast Steam-Boat Companies will charge articles going to the Show, but carry free those returning unsold.

The Committee have also arranged with the Agents of the Whitehaven, Morecombe, Ardrossan, Carlisle, Greenock, Glasgow, and Stranraer Steamboats to convey Stock, &c., at half freights to and from Belfast.

All entries must be lodged not later than 10th July.

Prize Sheets, and Forms of Entry, to be had on application to ROBERT COCHRAN, Esq., Secretary to the Local Committee, Armagh; or, to me, at the Society's Offices, 42, Upper Sackville Street, Dublin. THOMAS HARKNESS, Secretary.

The Agricultural Gazette.

SATURDAY, JULY 15, 1854.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, July	19	Agricultural Society of England—Meeting at Lincoln.
THURSDAY, —	20	
FRIDAY, —	21	
THURSDAY, —	20	Agricultural Imp. Society of Ireland.

THE agricultural department of the Crystal Palace will now rapidly attain its proper status and development. The material has been already in great measure gathered—implements, soils, rocks, plants, and animals, with their produce, are already only waiting for arrangement; and as the space which they are to occupy is now nearly all at the disposal of Professor WILSON, we may soon expect to see his plans fully carried out. Both floors of the northern wing or gallery are devoted to the museum of the mineral, vegetable, and animal kingdoms which he is organising, and a large space on the ground-floor, under the main body of the building, in immediate connection with the others, is set apart for agricultural machinery. We understand that this has all been taken, a rent is charged which will ensure that a selection only, and those the worthiest specimens, from the catalogues of the different makers will be exhibited; and as all the best names in the trade are already represented on the ground, we may anticipate a more accurate and instructive illustration here of the condition of agricultural mechanics in this country than is furnished even by the unwieldy annual shows of our national societies. The delay of this department of the Sydenham museum has been owing to the non-completion of the part it is to occupy within the Palace—and as the Lincoln meeting has immediately supervened upon the delivery of the space into the hands of those who have charge of the department, it is probable that they will be unable to complete their arrangements until the implement makers are at liberty from their engagements there.

The northern wing is still more recently finished, indeed a portion of it is hardly completed yet, and much remains to be done before the large mass of material for arrangement there can be ready for the inspection of visitors. The corresponding wing at the southern end of the building is occupied by refreshment rooms: there is some rumour of a portion of the northern gallery being also taken for this purpose. We hope that no further curtailment will be allowed of the very limited space already at the disposal of the agricultural department, which requires an even larger scope for its due development than it has at present.

PERHAPS we cannot better assist the solution of one great agricultural problem—that of STEAM-CULTIVATION, of which the postulates and data have been so well defined by "C. W. H."—than by describing in a few words the different designs which have been hitherto propounded. It is well known that a great number of the multitudinous inventions patented every year perish without any use being made of them, simply because it is discovered too late that the same things have been better executed long before. So amazing have been the number of contrivances in some kinds of machinery, that sometimes an inventor can only determine the novelty or redundancy of his idea by attempting its introduction into practical use. Steam-cultivators, however, have received so little attention from mechanical geniuses, that previous notions may be easily investigated; and any inventor, after studying the few examples already in existence, may set his energies to work upon what he may be sure is entirely new. Now, we are not disposed to print "abstracts of specifications," the exact wording of various inventors' "claims," or fill up our columns with woodcuts and diagrams: all we intend is to state the general idea of each machine referred to.

The several attempts at *yoking a steam-engine to common ploughs* may be dismissed with a word; not as being beneath notice, but because a much higher style of operation is generally allowed to be expected from the marvellous aptitude and versatility of steam-power. The first steam plough was set to work in 1836, and since that time several ingenious individuals have constructed machines upon much the same principle—employing an engine to drag sets of ploughs to and fro by coiling ropes or chains round drums and pulleys. The latest is a design, provisionally patented in November, 1852, in which a wire rope is to be wound up, having ploughs, harrows, &c., attached. Probably the most successful is Lord WILLOUGHBY's, which has been at work in Lincolnshire. As steam has effectually delivered our horses from the round of the threshing-machine, it may be a laudable endeavour to displace them from the plough; still we would rather direct the aim of inventors to some more complete and efficient operation than mere ploughing.

The *spade* being a better tool than a plough as regards the quality of its work, some persons have tried to imitate its movements by mechanism. In the Great Exhibition was seen a large frame on wheels, carrying a number of spades to be worked up and down and oscillated by means of cranks upon a rotating shaft turned by an engine, while the soil thrown off from these spades was to be caught and turned over by a series of scuppets. There was also a model in which a frame of spades or forks was thrust simultaneously into the ground, vibrated so as to loosen the solid earth, and raised and turned half round so as to invert and deliver the loosened spadefuls. Both these machines were reviewed in the Reports of the Exhibition, published in the *Agricultural Gazette* in 1851. In the year 1847, M. BARRAT, of Paris, patented another form of machine for imitating manual digging. It consisted of a locomotive engine working behind it a series of *mattocks*, each somewhat similar in shape to a carpenter's adze, only having a couple of prongs instead of a broad blade. By proper apparatus, in connection with strong springs, these heavy mattocks were struck into the ground; then, by a sliding movement of the bar upon which they hung, they were drawn a short distance backward, to turn over the detached pieces of soil. Meanwhile, the engine maintained a slow uniform rate of progress over the solid land in advance of the tillers. The latest invention for actuating spades by steam power is that of M. BAUER, patented in November, 1853.

And besides these schemes, there have been others for manipulating spades by mechanism put in motion by the mere *traction* of the machine; as, for instance, two inventions provisionally patented in 1853, and another fully patented in September of the same year, in which some broad blades are made to delve, lift, and invert the soil, by means of horse-power applied to draw the implement along.

However, the work of steam culture bids fair to be effected most perfectly, by the order of means recommended by theory—namely, by *tilling or cutting tools arranged upon a rotating spindle*. Nearly a century ago, the Fen drainers constructed a cylindrical cage frame, studded with spades fixed radially, and rolled this along the bottom of their sluggish drains and rivers by means of horses dragging at chains from its axle, the effect being the digging and loosening up of the soft muddy bed, so that the weakest stream could scour and deepen it. A similar contrivance for working upon land excited the risibility of the visitors at one of the earliest agricultural shows, the cylinder having been found to choke up all its immovable spade blades in very few seconds. Perhaps the same fatal suffocation would have arrested the career of the "Archimedian" machine, shown as a model at the Great Exhibition, a roller bristling with knives and prickers, set in a frame to be drawn by horses; provided, indeed, with extra rollers variously shod to suit different kinds of land, these being substituted for each other, like the several barrels of an organ, according to the class of tunes desired. Various mechanics have contrived revolving harrows or grubbers, forkers or diggers, consisting of tines cylindrically curved so as to enter the ground with the greatest attainable ease, and shake off the broken mould behind; one invention, patented in June, 1853, adding a second set of spurs behind the others, and made to revolve by means of wheel work, like that of a drill, to clear the digging teeth of weeds. The best of this class of horse implements is perhaps the forker or digger of Mr. SAMUELSON; but we are only alluding to these implements worked by traction as containing in their form some hints for our guidance in the very different process of cultivating by a steam-driven shaft armed with cutters. And it is quite possible that we may yet be indebted to the inventors of these *rolling* diggers for the rudimentary shape of tine or claw best adapted to the different motion of a steam rasp.

Further observation must be postponed till next week. *I. A. C.*

THE French Government, *it appears*, is laudably exercising its authority just now to procure an ample supply of good dairy produce for the inhabitants of Paris. Milk, as soon as it comes up to railway stations from the country, or makes its appearance in shops from town dairies, is subjected to chemical analysis, and not a few farmers and dairymen are being fined and imprisoned for adding water, or otherwise adulterating this important necessary of life.

There cannot be a doubt that large towns, English as well as French, are deficiently supplied with milk, and that what they do receive is largely adulterated with water, to say nothing of more deleterious mixtures; so that the example of Paris brings home to the British capital a lesson second to none in her domestic economy.

What most concerns our readers is the question—Can we profitably produce more milk for our large commercial and manufacturing towns, whose rapidly increasing millions are annually becoming worse and worse supplied with it? The experience of all ages proves that good milk, butter, and cream, are highly conducive to health; and it is equally plain that a deficient supply is in some measure the cause of an inferior article; and that the latter, again, has given rise to many erroneous prejudices against milk as a diet.

The increased facilities which railways afford for conveyance, point to the practicability of an increased supply of milk from the country as a profitable concern to all parties. So far as farmers are concerned, we have never heard any one doubt the profitableness of dairy farming on lands immediately adjoining large towns. The fact that farms so situated fetch landlords larger rents, under this system of husbandry than any other, is conclusive evidence on the subject. And the extension of railways has brought many distant farms within the compass of profitable dairy farming. Experience has, in fact, already settled the question, distant provinces now sending dairy produce to the metropolis, which could not do so prior to this mode of conveyance.

But although the work has thus been begun under favourable auspices, its progress has not been such as the rapid growth of our urban population requires; for they obviously ought to consume more milk, though of a better quality, so that the questions arise—has not country milk come up to the standard of richness to procure for it an increased consumption?—is town milk just as good as country milk?—are towns-people indifferent to quality, overlooking the fact that milk to many, if not the vast majority, is the most profitable shape in which they can consume animal food?

As to the first of these questions, we fear, from a little inquiry made, that there is too much butter made in some dairies for them sending very rich milk to town, for samples which we ourselves have examined consisted of, at least, two-thirds skimmed with one-third new; and although equal to inferior town milk, from house-fed cows on distilleries and brewery refuse, it was yet far from doing justice to the country generally, while in some other cases rich milk sent in is no doubt liberally watered. As to the second, it would be absurd to suppose that cows would give as good milk in the polluted atmosphere of towns as in the country, other things being equal; or that the town dairyman, who purchases his food and receives comparatively nothing for manure, can sell cheaper milk than the country dairyman, who grows the former and applies the latter to his soil. At the same time, we have examined several town dairies which produce excellent milk, the health and food of cows being duly attended to; although, we regret to add,—this is not the general rule. The third question must obviously be answered in the affirmative, for there is no denying the fact that in all our large towns indifference is manifested towards the quality of milk, and that the honest dairyman is not fairly supported in the daily scramble for halfpence. In this overgrown metropolis we could point out numerous instances in proof of this, were it necessary.

We, therefore, arrive at the conclusion that until our large commercial and manufacturing towns pay more attention to the quality of milk, they must continue to deny themselves one of the greatest blessings that can be enjoyed at the table of either rich or poor. Rich milk does not contain much more water at times than some of the fish, rabbits, poultry, and butcher-meat so eagerly purchased in our densely populated streets for dinner, while the fatty and caseous elements of the former are far more healthy and nourishing than those of the latter. The French have long been justly celebrated for their attention to and success in cookery, and it is no doubt this view of the subject which has induced the Government of LOUIS NAPOLEON to start its chemical investigation of milk in Paris at present; and, as we have already stated, the example brings home to ourselves a practical lesson which we hope will be received in accordance with its merits. The work of reformation, both as to the management of town dairies and an increased supply of good milk from the country, only wants a fair beginning to be productive of the most important and satisfactory results to the community at large—rural as well as urban.

COOKED VERSUS FERMENTED FOOD.

THE following able report by Messrs. Andrews, of Comber, will, no doubt, be read with interest. We extract it in an abridged form from the "Journal of the Agricultural Improvement Society of Ireland."

On Feeding Black Cattle and Swine, with Grated and Fermented Food, on the principle proposed by Messrs. Bushe and Barter, as compared with the ordinary mode of Feeding in use at the Establishment of Messrs. Andrews, of Comber.

A Committee appointed to superintend the experiments assembled at Comber on the 29th of January; and, Mr. Barry, the steward of Mr. Bushe, having arrived, the grating implements and vats which Mr. Robinson had supplied for the purpose of the experiment, were set to work. The grating of the roots was very perfectly executed; and when placed in the vats the finely reduced shreds very speedily passed into the state of fermentation, attended by a very high temperature; and on the morning of Friday, the 2d of February, Mr. Barry considered that the food was in a proper state to be given to the animals.

In the presence of the Committee, and with the full approbation of Mr. Barry, four heifers were selected as equal in all respects as possible, from a stock, 26 in number, which had been feeding from the beginning of November. Six pigs of one family, which, from the time of their birth, had occupied the same apartment, and been fed together, were also selected. Each lot was divided by the alternate choice of a single animal in succession, by Mr. Barry, and the steward of Messrs. Andrews, and they were individually weighed on a bridge, and the weights recorded; and at the end of each week during the experiment every animal was weighed.

The records of this experiment strongly indicate the necessity of great care and caution, and of a lengthened course of observation before any conclusive statement shall be hazarded, or decided opinion adopted, in so nice and delicate a subject as the nutrition of animals, the health and constitution of which are so various, that even with the most strict attention to the only available test by weighing them alive from time to time, very puzzling and inexplicable results will frequently be encountered.

In the first week of the experiment, the fermented food seemed to promise even more than the most sanguine had hoped for. The consumption of fermented food was much less than that of cooked, and the increase in live weight of the pigs was considerably more. The animals also appeared full and thriving; and those who at first had doubted were ready to proclaim the undoubted merit of the new process; but, in the second week, the scene was completely changed. Those on the cooked food were making steady progress, while the fermented food had produced scarcely any increase from the former week. It was then observed that in the first week the bowels of those using the fermented food had been confined, and had become free in the second. The apparent success of the former week was, therefore, obviously the result of indigestion and accumulation of undigested matter in the intestines; at the various stages of the experiment irregularity in apparent progress was manifested in both lots, and in a great measure might be accounted for in the same manner.

The conditions of the experiment were prescribed by Mr. Barry himself, and were acceded to by Messrs. Andrews, though materially different from the system they conceived profitable, as a much greater quantity of rich and expensive food was given, than they had been accustomed to use, and much more than at the present market prices was likely to be remunerative. The three pigs selected for the fermented food weighed 3 cwt. 2 qrs. 19 lbs. = 411 lbs.; those for the cooked food, 3 cwt. 2 qrs. 8 lbs. = 400 lbs.; and Mr. Barry determined that, to each pig 2 lbs. of Bean-meal and 1 lb. of bran should be given daily in addition to as large a quantity of Mangold Wurzel as the animals could consume. The fermented food was prepared by himself, and he carefully attended and fed the animals in his own way. The other lot was fed with steamed roots, mixed with the meal and bran boiled to the state of gruel, according to our usual practice.

Mr. Barry returned home at the end of the second week, but the feeding was continued strictly by the rules he had prescribed; and at the end of the fourth week Mr. Lahy, who had conducted the experiment at Glencairn, as reported, was sent down to superintend the experiment. Finding that Mangold Wurzel was the root used, he desired that Swedish Turnips should be substituted, observing that it was with that root his successful experiment at Glencairn had been conducted; but, at the end of the first week of the Swedes, the result proving much more unsatisfactory, he desired to return to the Mangold Wurzels. That, however, was not thought advisable; and in order to test the relative value of the two bulbs, the Swedes were continued during four weeks; and the result being equally unsatisfactory throughout, the superiority of Mangold Wurzel in comparison with Swedes as food for pigs, seemed to be completely established. To satisfy ourselves on that point, the experiment was continued for four weeks more with Mangold Wurzel, and during that period the increase in the lot feeding on cooked food was double that of the previous period in which Swedes had been used; but those on the fermented food had ceased to make any progress. They were consuming the full quantity of expensive meal and bran, but using a smaller quantity of root than before; and during the period of the last four weeks had actually lost, in live weight, 4 lbs. It was then judged high time, the experiment having been carried on for 12 weeks, to kill the animals; and it was discovered that the intestines of the three that had been fed on fermented food were full of worms, a fact quite sufficient to account for their bad health and retrograde movement.

The intestines of the three pigs fed upon cooked food being, as already stated, of the same family as the others, were entirely free from worms, and two of them were in perfect health to the last. One of them had unfortunately been injured in the process of weighing, and had ceased to thrive. It had, in fact, been making no progress for several weeks, and was killed a week sooner than the others. We shall now proceed to give an abstract of the results of the experiment in figures.

When the animals were killed, the proportion of the dead to the live weight of those fed on cooked food was found to be as 77 to 100; and of those fed upon fermented food as 75 to 100. We have assumed the proportion to be the same at the commencement as at the conclusion of the experiment, though there is every reason to believe that in the lean state the proportion of offal must be relatively greater, and the value of the increase must actually exceed our calculations.

The three pigs fed on cooked food weighed, on the 2d February, 3 cwt. 2 qrs. 8 lbs. = 400 lbs., which at 77-100 would have been 308 lbs. dead weight. When killed, 28th April, they weighed 5 cwt. 2 qrs. and 17 lbs. = 633 lbs. at 77 100. Actual dead weight, 490 lbs.

Increase 182 lbs. at 5*d* per lb.	£3 15 10
They consumed in 12 weeks—	
33 cwt. of Mangold, at 8*d*. per cwt.	£1 2 0
15¾ " Swedes, at 6*d*.	0 7 10
4½ " Bean-meal, at 12*s*.	2 14 0
2¼ " Bran, at 8*s*.	0 18 0
	£5 1 10
Less meal and bran, the portion of one pig killed, 21st	0 1 7
	£5 0 3
Loss by this lot	£1 4 5

The three pigs on fermented food weighed, on the 2d February, 3 cwt. 2 qrs. 19 lbs. = 411 lbs., which, at

77-100, would give 316 lbs. When killed, 28th April, they weighed 4 cwt. 3 qrs. 5 lbs. = 537 lbs., which, at 75-100, gave actual dead weight 401 lbs.

Increase, 85 lbs., at 5d. per lb.				£1	15	5
They consumed in 12 weeks—						
17 cwt. Mangolds, at 8d. per cwt. ...	£0	11	4			
7½ " Swedes, at 6d. ...	0	3	9			
4½ " Bean-meal, at 12s. ...	2	14	0			
2¼ " Bran, at 8s. ...	0	18	0			
				4	7	1
Loss by this lot				£2	11	8

The result of the experiment, even with the lot fed on cooked food, being very discouraging, as respects the question of profit and loss, it seems desirable to examine its bearings more minutely.

As has been already stated, one of the pigs fed on the cooked food was injured and had ceased to thrive, and was killed before the others. It had in the 11 weeks only gained 22 lbs. of dead weight, while the other two had gained 160 lbs., a great part of the loss on the lot thus arising from that cause.

Excluding that pig from the calculation, the other two weighed (2d February) 2 cwt. 1 qr. 33 lbs. = 285 lbs., at 77-100 = 219 lbs. When killed (28th April) they weighed 4 cwt. 1 qr. 17 lbs. = 493 lbs.; dead weight, 379 lbs.

160 lbs. at 5d. per lb.	£3	6	8
Cost of food for the two, two-thirds of 5l. 1s. 10d.	3	7	11
Loss only	£0	1	8

But, as has already been observed, the progress during the middle period of four weeks (when feeding on Swedes) was much less than when on Mangolds, it seems proper therefore to view the results, excluding the Turnip period.

The increase of the two pigs during the two periods of four weeks each, when feeding on Mangolds was—

1 cwt. 2 qrs. 5 lbs. = 173 live weight, 133 dead, at 5d.	£2	15	5
The Mangolds, Bean-meal, and bran consumed by those at the prices above stated, during the eight weeks, cost	2	6	8
Gain under that view	£0	8	9

Considering that the present prices of the Bean-meal and bran, used so largely in the experiment, are so extremely high and disproportioned even to the present high price of pork, let us look at the amount as it would stand at average prices—

Rating the increase of 134 lbs. at 4d. per lb., amount				£2	4	4
The food consumed in eight weeks—						
22 cwt. Mangolds, at 6d. per cwt.	£0	11	0			
2 cwt. Bean-meal, at 8s. " ...	0	16	0			
1 cwt. bran, at 5s. " ...	0	5	0			
				1	12	0
Would exhibit a gain of				£0	12	4

And even that view is subject to the reasonable assumption that the proportion of Bean-meal and bran is greater than a due regard to profit would justify; it is certainly greater than we have been accustomed to use. If 1 lb. of Bean-meal were given on the average during the period of feeding, from the time the animal attains the weight of 80 or 90 lbs till it shall reach 200 lbs.; and if that were increased to 1½ lb. during the remainder of the feeding, with a supply of steamed or boiled Mangolds, a greater amount of profit than has been contemplated in any of the above calculations might reasonably be expected.

We have taken no account of fuel in any of the above calculations. The saving of fuel by fermenting the food is certainly something, but it was vastly overrated in the estimate at first submitted to the society. With a steam boiler, or even an ordinary boiler well set, the consumption of fuel is really very inconsiderable; and the cost of increased labour, in the careful washing and grating of the roots, is not of small amount. It is proper to mention, however, that the use of the grating machine, preparatory to boiling, very much expedites the process, and, of course, proportionately economises fuel.

It only remains to say a few words respecting the experiment with black cattle. It has been our long-established practice to give our fattening stock raw sliced Swedes, unwashed, in quantities of 70 to 80 lbs. daily, in three feeds, mixed with about 10 lbs. Wheat chaff, or cut straw, enriched with 4 to 5 or 6 lbs. of Bean, Barley, and Linseed-meal, mixed in such proportions as the relative prices of the several articles and our convenience may render desirable, and boiled by steam with distiller's wash during winter, into a thin gruel, and thrown in a boiling state upon the chaff. The enriched chaff is equally distributed among the three feeds of Turnips. Under this system of feeding, we have attained a high character for well finished cattle. During eight weeks the Swedes were washed, grated, and fermented, though in a less degree than for the pigs, and given to two of the heifers, in exactly the same quantity, and with the same addition of enriched chaff that was given to the other two, in an unprepared state. They seemed to like the prepared roots; and the mess, when mixed, appeared to be in an excellent state; but, during the eight weeks, there seemed no difference in the result. These on the prepared food gained less of live weight by 14 lbs. than the others, making only 4 lbs. dead weight, in eight weeks, on each which might have been accidental. What has now been submitted would seem to indicate the propriety of further careful experiments with cooked food, in various proportions, in order to ascertain more definitely the most productive and remunerative combinations.

LIQUID MANURE AND IRRIGATION.

I agree with Mr. Mechi in thinking that a veil yet covers the manure question, and I scarcely need say to the readers of the *Gazette* that, if I do not go the whole way, I go very far with him in opinion as to the value of its effects on the inorganics. It seems scarcely to admit of question that the action of the organic parts of our manures on the soil must be exactly similar to that of the atmospheric air; and we know that there was a time when the action of this air, together with the alternation of heat and cold, with water—and water again is composed of what we term organic (I think not very correctly, I would rather say gaseous) elements—were found sufficient to break down rocks, and make fertile soils before men existed to supply them with manures. A very principal effect, then, of our manures must be to operate on the crude *material* in the soil, first reducing it, and then rendering it soluble, and so accessible to plants; a solution implies water in sufficient quantity to dissolve, and as the roots of plants drink and do not eat, it appears very simple that an abundant supply of water is necessary to give an abundant supply of food to plants. And as plants are in part composed of inorganic or earthy matters, it appears equally simple that they are essential to them.

The quantity of water constantly evaporating from all the parts of plants above ground creates a very large demand at their roots. An artificial supply of water, when the soil is too dry to furnish their normal demands, must be necessary to their health; and as water forms the carriage of all matters received into plants through their roots, the larger and more constant the supply (not more, it is to be understood, than they can evaporate) afforded them, the more rapid must be their growth; they should always be fully fed; a deficiency of water at any time in the soil must deprive the plants of food in proportion to that deficiency. And here are the advantages of deep draining and deep working; the roots get into a soil which, being less operated on by evaporating causes, retain to their use a more regular supply of water. But I think it not improbable that plants in a dry soil may suffer further injury by being compelled to give up their moisture to the soil. The supplying of plants with manure in a liquid state, when the soil is not saturated with water, is evidently conducive to their well being—care being taken to dilute the manure in proportion to the dryness of the soil.

But it seems questionable that we are to attribute the immediate effects on plants observable on the application of liquefied manures to their action on the organics of the soil; they must act more directly on them, they must enter the plants in some way before time is allowed for operating on the soil.

Its evaporation from the soil may be one of the causes of the superiority of liquefied over solid manure, as Mr. Mechi supposes, but he is probably in error in supposing a return of the same exhalations at night. For this evaporation from the soil, not only of ammoniacal vapour, but even of inorganic matter, I contended in the *Agri. Gazettes* of 1844, and subsequently, as affording food to plants, and promoted by our hoeing operations: I looked upon it as the explanation of their uses. Indeed, to leaf drinking in and to leaf inspiration I attached the greatest importance in the feeding of plants, and I have had no reason to change my opinion. I can attribute to nothing else the evident benefits to vegetation that attend on our very superficial operations, and I am much pleased that Mr. Mechi should have brought his liquid manure system to bear upon it. However roots may run out laterally, their smaller fibres descend too deeply into the earth to benefit by any recent applications of manure, either dry or liquefied, except in the first and earliest stages of their growth.

Liquid manuring, then, however it may be accomplished—by the rich man with his steam-engine, or by the poor man with his cart, or his barrel and trough—is most undeniably a very beneficial application of manure; one that will well recompense the cost, and would, if general, rescue the country from all chance of famine, and secure to us cheap food with greater certainty than even free trade can do. At the same time, I would not exclude dry manuring; the carbon of straw and peat mould, with some other matters, may so be profitably applied, and left to dissolve in the soil by natural supplies of water, in those seasons of the year when it is in excess; and though some may repudiate carbon from their fertilising ingredients, I think Mr. Mechi will scarcely be of the number, for if "water is three-fourths of our precious selves, and often more than three-quarters of our food," in still greater proportion does carbon enter into the more solid parts of our food; so, then, it ought into our manures, and the more so if the composition of plants is to afford a rule for feeding them.

With all due diffidence I would say, Mr. Mechi mistakes in supposing that by Mr. Way's experiments all the ammonia is fixed, for no doubt clay must have its point of saturation; indeed this is admitted by the observation on the coloured and scented discharge from the drains. Both on this account and on the faith of the value of leaf feeding, it were to be recommended to keep our solid manurings as near the surface as possible, and to use liquid manure in small quantities, with frequent applications. *J. M. Goodiff, Granard.*

THEORY OF AGRICULTURE.

Under this heading we propose giving the rationale of the art, so far simply as that economy of food for plants is concerned which is supposed to be insured by rotation of cropping. Experience has established the practical utility of a proper rotation of crops, and has shown that there are few soils on which one and the same crop can be grown for a succession of years with advantage to the occupier of the land; and that even where, for instance, it is possible to grow corn year after year, an alternate system of cropping is still advisable, in order to maintain or to improve the fertility of the land.

It is the province of science to account for the causes of the beneficial results attending a proper system of alternate husbandry.

Whilst we acknowledge the most successful rotations to be the result of practical skill and experience, we admit, at the same time, the insufficiency of the theories hitherto suggested for accounting fully and intelligibly for the principles on which the rotation of crops rests. It is for this reason that we shall give but a brief exposition of those theories which have enjoyed the greatest popularity. There are especially two which require to be noticed. The one, suggested by Decandolle, and known as the excretion theory, has preceded the other, which, under the name of the mineral chemical theory, has entirely eclipsed the former, at one time held in almost universal esteem.

It was supposed by Decandolle and his followers, that the roots of all plants excrete certain substances, analogous to the excrements of animals, and that these substances exercise an injurious effect on those plants from the roots of which they have been excreted; but that they are harmless to other species, or even promote their luxuriant growth. When a field, after a succession of years, refused to grow any longer a remunerative crop of Wheat, but repaid well the cost of raising a green crop, this experience was explained by the excretion theory in an apparently simple and intelligible manner. The excretions of the roots of the Wheat plants of former crops, said the adherents of Decandolle's theory, have accumulated in the soil to such a degree that it has become poisonous to plants of its own kind; but these poisonous excretions of the roots of Wheat are food for a green crop; and thus Turnips, for instance, succeed well after Wheat. The experience that Wheat could be cultivated again after a bare fallow, was explained in an equally simple manner. During the time of rest, it was said, the poisonous excretions of former crops have time to decompose, and to become converted into food for another crop of Wheat. Beautiful and intelligible as this theory may at first sight appear, it is marked by the great fault of not resting upon facts and observations; and as this is now generally admitted by all natural philosophers of any authority, we shall not stop to expose the errors on which it is based, but shall at once briefly direct attention to the chemical mineral theory, which, at the present time, is believed to explain more fully and consistently the beneficial effects of a rotation of crops.

The analyses of all our cultivated plants have shown that they, without exception, contain a certain amount of mineral substances, which remain behind, generally in the form of white ash, when the plants are burned in an open vessel. These mineral substances, it is evident, must exist in the soil, or in the manure applied to it, before they can find their way into the organism of the plant; and as they are invariably found in all plants, and as the most decisive and careful experiments have distinctly proved that the absence of one or more of those mineral matters which enter into the composition of plants is a sufficient cause to stint a plant in its growth, and to prevent its coming into perfection, it will for ever remain a scientific truth, and not a mere theory, that these inorganic substances, constituting the ashes of plants, are not mere accidental matters, but as important and essentially necessary to bring all plants to maturity as any atmospheric or organic food which they may require. What, therefore, can be more natural than that the soil, when sown with Wheat or Barley, will not produce, year after year, a remunerative crop of grain? Knowing as we do now, that the seeds of our cereals contain much phosphoric acid, it is clear that by the continual removal of grain crops from the land, it must become so impoverished in phosphoric acid that it will no longer contain a sufficient quantity of this substance, so necessary to the perfection of the seed of our white crops.

Or, if it were practically possible to cultivate, year after year, Peas, Beans, or any other leguminous plant, we should soon find that these crops, which all abstract a considerable proportion of lime, will fail on land naturally deficient in this substance. Hence the necessity of alternating crops removing from the soil one substance with such crops as require a different kind of mineral matters, or, at all events, these mineral matters in different proportions. The analyses of the ashes of our cultivated plants have indeed shown that the various mineral matters which we find in all are removed from the soil by different plants in very different relative proportions. Whilst some kinds, as, for instance, the leguminous plants, abstract principally lime in great abundance, other kinds, as our cereals, abstract largely phosphoric acid and silica; and again, others, as, for instance, Turnips, Carrots, Clover, &c., attack in an especial manner the stores of potash in the soil. According to the preponderance of one or the other mineral substance in the ashes of plants, Liebig, it is well known, divides all plants into four groups, namely into—

1. Plants requiring an abundance of phosphoric acid.
2. Plants requiring an abundance of lime.
3. Plants requiring an abundance of potash or soda.
4. Plants requiring much silica.

The requirements as to the various mineral matters thus being very different in different species or families of plants, the advantage of growing a crop which removes from the soil much of one particular mineral matter, after another not so dependent for its healthy growth

on an excess of that particular mineral substance, will at once become apparent. In short, the beneficial effects which result from a proper rotation of crops are explained by the chemical mineral theory, on the supposition that each of the alternating crops removes from the soil some particular kind of mineral matter, in preference to others, so that a succession of different crops will be supplied with mineral food from a soil which would not have been in a condition to meet the wants of a succession of the same crop, without the addition of renewed quantities of mineral manuring matters. It follows as a necessary consequence, from the acceptance of this theory, that the same course of cropping can be successfully maintained only if all the mineral matters, which are removed from the land by the successive crops, are at the end of the rotation again added to the land in the shape of manure. The recommendation to return to the land all the mineral substances which have been removed from it by the various crops of a rotation, certainly deserves the consideration of the practical man; and this he may do without troubling himself much with minute calculations, and without keeping a debtor and creditor account of all the mineral matters which have been removed by the different crops, and of those returned to the land in the manure. We have, indeed, no hesitation in saying that such a system of account-keeping, which some men have recommended who have evidently over-estimated the practical bearing of the mineral theory, would only entail upon the farmer a world of trouble, without securing to him any practical benefit. The fact is, the ash analyses of plants have not been attended with that amount of practical benefit to which they at first appeared to lead.

Upon the chemical principles stated above, the benefits resulting from alternating crops might appear to be successfully explained, but, in reality, all explanations on this point, which are wholly based on these principles, have but an imperfect foundation, for it is not difficult to prove that the gradual removal of mineral substances from the soil by a succession of different crops, does not account for the advantages resulting from a system of alternate cropping. Without entering into many details, we would observe that the fact that a crop of Clover not only leaves the fertility of the land unimpaired, but actually increases its productive powers, so that Wheat succeeds remarkably well after it, plainly contradicts the purely mineral chemical theory. For it is worthy of observation, that of all crops which are usually cultivated, none removes so large a quantity of mineral substances as Clover; thus, assuming the mineral theory to be correct, Clover must indeed be considered as one of the most exhausting crops. Practical experience, however, teaches the contrary. The exhaustion in mineral substances by a crop of Clover, not only affects one or the other mineral constituents found in the ashes of plants, but all the mineral matters entering into the composition of Wheat. A crop of Clover thus removes a larger quantity of phosphoric acid, potash, lime, and, with the exception of silica, of all other mineral matters than is required by a crop of Wheat, and yet Wheat succeeds remarkably well after Clover. The exhausting effects of our cereals cannot therefore be attributed to the abstraction of a larger amount of mineral matters from the soil. In endeavouring to explain why our white crops exhaust the land in a greater degree than Peas or Clover, though the last mentioned crops abstract a larger quantity of those mineral substances which the former also require, we are led to inquire whether the organic constituents of the soil or the atmosphere do not play a far more important function in relation to plants, and consequently affect the theory of rotation of crops, much more than has been hitherto conceded by the adherents of the mineral theory. It appears to us, indeed, that the exhaustion of the soil by our cereals is not so much due to the abstraction of mineral matters from the soil as to the dissipation of humus, or more correctly speaking, the nitrogen of the organic portion of the soil. This dissipation or loss in nitrogen, which has been repeatedly observed by Mr. Lawes, probably finds an explanation in the unsheltered state in which the land is left by crops like our cereals; for it is evident that the bare stalks of Wheat or Barley cannot protect the soil from the atmosphere, which preys upon its organic constituents and dissipates them, so well as crops like Clover and Peas, which by their spreading leaves afford a good cover, and thus counteract this influence. Or we must have recourse to assume what indeed appears to be very likely, that, whilst Wheat, Barley, and in a smaller degree Oats, are principally dependent for their supply of nitrogen on the nitrogenised constituents of the soil, Clover, Lucerne, and other crops which are characterised by an abundant foliage, can draw their supply of nitrogen from the atmosphere in one form or the other. The fact, so clearly proved by Mr. Lawes, that the cereals are benefited in an especial manner by ammoniacal salts, compounds rich in nitrogen, whilst the condition of Beans is not improved by the same fertilisers, strongly supports this view, and, at the same time, affords a ready explanation why Wheat succeeds so well after Clover. If we bear in mind that the deep roots of the Clover plant are not removed from the land, it will appear that the humus in the soil, and with it the nitrogenised matters, must become very materially increased; and it is, no doubt, on account of this increase in organic food, that Wheat grows so luxuriantly after Clover. According to the experience of E. John, the roots of a crop of Clover, having furnished 1960 lbs. of dry Clover hay per acre, which remain in the surface and the uppermost layer of the subsoil, amount to 1900 lbs., and in this quantity of roots 34 lbs. of nitrogen are present. The gradual decay of these remains must thus furnish a considerable quantity of ammonia, or nitric acid compounds, which are well-known promoters of the luxuriant growth of Wheat.

It will appear from the remarks which have been made on the mineral theory, that it does not afford in all instances, nor, indeed, in the majority of cases, the means of explaining the benefits of a good rotation of crops. In conclusion, we would observe, that in giving a satisfactory explanation in this respect, a great variety of circumstances, as, for instance, the natural habits of the plants, the physical condition of the soil, the climate, &c., must be taken into consideration. The neglect of a due regard to these and other particulars, into the discussion of which our limits do not permit us to enter, must necessarily lead to one-sided views and deductions, which are at variance with decisive facts and precise observations. [*A. V.*]

[We add to these remarks by Dr. Voelcker, in the forthcoming number of *Blackie's Cyclopedia of Agriculture*, the practical inference, that whatever the cause of the increasing poverty of land under repeated crops of corn, it may be enriched by the artificial application of manure, and even by such cultivation as shall enable the full use of natural sources of fertility, so as entirely to counteract the exhausting influence of any method of cropping that it may be deemed advisable to adopt. So that while adherence to a well-defined rotation of crop may practically be a security for the permanent value of the land, that can be insured by the intelligent cultivator under any method of cropping which markets may suggest for his adoption.]

Home Correspondence.

Malt v. *Sugar*.—The present high price of malt, combined with the low value of sugar, 3½d. the pound, offers an inducement to make use of the latter in preference; and I have the authority of an experienced brewer to say that 21 lbs. of sugar is fully equivalent to a bushel of malt, and that the combination of malt and sugar on such a scale produces better beer than malt alone—the saving, is about 50 per cent. in favour of sugar. The gentleman alluded to has given me the accompanying recipes. I intend to make use of them myself, and shall feel obliged if you will publish them. *W. B.*

Economical Beer.—For every bushel of malt now used substitute 21 lbs. of brown sugar. The process will be much simplified, as no mashing will be needed, and the whole operation will not occupy more than 3 or 4 hours. Suppose 4 bushels of malt to be the quantity now brewed. Take instead 84 lbs. of strong brown sugar. First boil 5 lbs of Hops in 38 gallons of water for an hour and a half; draw off; reboil the same Hops in 88 gallons more water for about an hour, draw off, and mix with the first boiling, after which add the sugar and stir it well, till it is all dissolved; when it is sufficiently cool, say 72° Fahr., put in 3 pints of good yeast, which must be well stirred and allowed to ferment as usual, and afterwards put into casks. The beer thus made will amount to about 72 gallons, or 2 barrels, and be fully equal in strength and quality to London porter. It will keep equally well, and be more palatable. If a greater strength be required diminish the quantity of water; but if weaker, then increase it in proportion. If a mixture of malt and sugar is preferred, take the malt, and make it into a hogshead of wort, and when it is sufficiently cool to add the yeast for fermentation, put into the wort the quantity of sugar you intend to substitute for malt, and mix it with the yeast in the working tub, and ferment it all together; if half sugar and half malt, to brew beer equal in strength to London porter, will require 2 bushels of malt and 42 lbs. of sugar. If three-fourths of malt are preferred, 3 bushels malt and 21 lbs. sugar.

To make Colouring from Sugar.—Half fill a large iron pot with good dry sugar; put fire under, and keep the sugar well stirred till it becomes black, and in the state of a thick fluid; add water to reduce it to a usable consistency, continuing to stir it until the fire is withdrawn. It may be then put into a barrel and used as required.

New Food for Sheep.—Whilst I was at Geneva I observed every one collecting carefully the fruit of the Horse-chestnut, and on inquiry I learnt that the butchers and holders of grazing-stock bought it readily at a certain price per bushel. I inquired of my butcher, and he told me it was given to those sheep in particular that were fattening. The Horse-chestnuts were well crushed; something in the way, so I understood, that Apples are, previous to cider being made. They are crushed or cut up in a machine kept solely in Switzerland for that purpose; then about two pounds' weight is given to each sheep morning and evening. It must be portioned out to the sheep, as too much would disagree with them, being of a very heating nature. The butcher told me that it gave an excellent rich flavour to the meat. The Geneva mutton is noted for being as highly flavoured as any in England or Wales. *E. D.*

The Wheat Crop in France.—June 24: I have to-day had a seven miles walk over the Wheat fields in the neighbourhood of La Bice, about 30 miles S.E. of Paris; the Wheat is in full bloom, and a more magnificent crop never grew out of the earth; not a weed is to be seen in it, and a great deal of it is so tall that I can (although 6 feet in my shoes) barely see over it. This part of the country is in the hands of small proprietors, but not so much divided as in some places; my friend the farmer, to whom I have paid this visit, owns 20 acres; he lives in comfort and saves money every year, but then the land is excellent, and I found could not be bought under 100*l.* or 120*l.* per acre. They have a system of half fallowing here which I have not noticed before; the land is ploughed in February, and manured; Potatoes are planted in March, in rows, 3 feet row from row, and 3 feet apart in the rows; the large space of bare ground is kept clear with the hoe all the summer, and a crop, more than sufficient to pay expenses, is the result; this they say is a most excellent preparation for Wheat, as the land is not too much loosened, and Wheat likes firm land. I certainly never saw finer Wheat, even in our rich fen lands of Cambridgeshire. —June 29: Angers, the Wheat, all the way from Paris to Nantes, about 300 miles through the plain of La Beauce, is as fine as our finest crops in England. I have visited France for 25 years, and never before saw it so invariably fine; here it has rained incessantly for two days, and great fears are entertained respecting the Wheat, which now requires dry and fine weather. I walked in the fields this morning with a friend, and to his great alarm we perceived the blight, called in England red gum, spreading rapidly; some of the fields in which the red Wheat was changing colour and ripening fast were much infested, and a third of the crop destroyed; the farmers were much alarmed. This blight is called here "Cryptogame rouge," and, as may be seen in a powerful microscope, is a beautiful fungus. *R.*

Notices of Books.

Agricultural Meteorology: the Great Snowstorm of January 2, 3, 4, 1854. "To the Editor of the Agricultural Gazette." (*For gratuitous distribution only*).

MR. MARTIN, whose papers on this subject in past numbers of this Journal have been read by many of our readers, was kind enough to send us some weeks ago a long paper on the snowstorm of January, in which our correspondent "R's" challenge (at p. 141) to explain it upon the rotatory theory was accepted, and an immense mass of observations at a number of stations along the track of the storm, and on either side of it, were collated in order to show how with reference to time, the storm progressed along a given track, how with reference to any one moment, observations at a variety of places showed it to be a whirlwind on a great scale,—and how, with reference to any one station, the wind veered, as on the supposition of such a whirlwind passing to the right or to the left of it, it would; and the barometer fell and rose, as on the supposition of the passage of such a whirlwind, we presume that it might be expected to do. This paper we really had not room for in our columns, and so Mr. Martin has published it in the pamphlet form, in which we have just received it. The pamphlet concludes with the following postscript:

"In explanation to some of my correspondents who may feel that the fair proportions of their respective communications have been unduly curtailed, it is proper that I should state that the Tables and Diagrams were arranged under the impression that this essay would be admitted into the *Agricultural Gazette* in the same manner as was the review and challenge to which this was intended as a reply. Under this expectation I diminished the size of the Diagrams and condensed the detail of the Tables, to the omission of two very important particulars, viz., the barometer, and the state of the weather. I regret this however the less, because any of my readers may ascertain from his own recollections how far the track I have assigned to this storm, as deduced from the fluctuations of the barometer and the changes of the wind, coincides with the facts that came under his own observation."

We have only to add to this that we would gladly have given admission to our pages to so much of the paper and of the conclusions to which it arrives as their size and number would have permitted us, consistently with the more immediate importance of the strictly agricultural subjects to which they should be devoted. It has been with no desire to shelter Mr. Martin's meteorological opponent, our correspondent "R," that we have failed to publish this paper *in extenso*. We are sure that "R," as much as any one, desires fair play for his opponents; and had the article been of more immediate agricultural importance, we would gladly have published it, notwithstanding its length. Under the circumstances, however, we can do no more than refer, very shortly, to the evidence it adduces on the three points already alluded to.

1. As to the passage of the storm in the order of time, the following table gives at a number of stations from south to north, with the period and amount of the greatest depression of the barometer during the occurrence of the storm at each station; and it will be seen that it indicates a gradual passage northwards of the central point of the storm.

SYNOPSIS OF BAROMETRICAL FLUCTUATION.

Stations.	Barometer began to fall.	Previous observation.	Greatest depression.	When observed.	Amount of fall.
C. St. Vincent	Jan. 1, Noon.	30.07	29.17	3rd, Noon.	.90
Corunna ..	„ 1, Midt.	29.80	28.56	3rd, 8 p.m.	1.24
LaPlata, S.S.	„ 2, Noon.	29.25	28.59	3rd, 4 p.m.	.66
Scilly	„ 1, 9 p.m.	29.66	28.62	3rd, 3 p.m.	1.04
Dublin	„ 2, 10 a.m.	29.68	29.24	3rd, 1 p.m.	.44
Sth. Bishop	„ 1, 9 p.m.	29.50	28.90	3rd, 3 p.m.	[illegible]
Eddystone...	„ 1, 9 p.m.	29.70	28.89	3rd, 3 p.m.	[illegible]
Start	„ 2, 3 a.m.	29.23	28.50	9 a.m., 3 p.m.	[illegible]
Guernsey ...	„ 2, 9 a.m.	29.55	28.70	3rd, 3 p.m.	[illegible]
I. of Wight	„ 2, 3 a.m.	29.23	28.60	4th, 5th.	[illegible]
Marseilles ..	„ 2, Midt.	29.60	29.10	4th, Noon.	[illegible]
Brussels.. ...	„ 3, 10 a.m.	29.31	28.76	5th, 2 a.m.	[illegible]
N. Foreland	„ 3, 3 p.m.	29.26	28.83	5th, 9 a.m.	[illegible]
Haisbro'......	„ 3, 9 p.m.	29.08	28.64	5th, 3-9 a.m.	[illegible]
Dublin	„ 4, 10 a.m.	29.31	28.89	5th, 1 p.m.	[illegible]
Frankfort ...	„ 3, 10 p.m.	..	..	4th, 10 p.m.	[illegible]
Nottingham	„ 3, 9 p.m.	29.29	28.86	5th, 9 a.m., 9 p.m.	[illegible]
Flamboro' ..	„ 4, 3 a.m.	29.31	28.83	5-6, Midt.	[illegible]
Heligoland	„ 4, 3 a.m.	29.50	28.86	6th, 3 a.m.	[illegible]
St. Bees	„ 4, 3 a.m.	29.10	28.64	5th, 3 p.m.	[illegible]
Longstone ...	„ 4, 9 a.m.	29.[illegible]8	29.05	5-6, Midt.	[illegible]
Rns. of Islay	„ 4, 9 a.m.	29.25	28.83	5th, 9 p.m.	[illegible]
Hebrides ...	„ 4, 9 a.m.	29.32	29.20	6th, 9 a.m.	[illegible]
Bourtie	„ 4, 10 a.m.	29.30	29.90	6th, 10 a.m.	[illegible]
Kinnaird hd.	„ 4, 9 p.m.	29.56	29.14	6th, 10 a.m.	[illegible]
Orkneys ...	„ 4, 9 p.m.	29.57	29.[illegible]7	6th, 9 a.m.	[illegible]
Shetland ..	„ 4, 9 p.m.	29.40	29.00	6th, 9-9	[illegible]

2. That this period of greatest depression corresponds to the central point as we have called it, is apparent from the following table, which shows, with some uniformity, that the wind at a number of stations veered,

as on the rotatory theory of storms it would, and which also shows in many of the instances that the period of greatest barometrical depression corresponds with that of the abrupt change in the wind consequent on the passage of the storm's centre.

3. Lastly, take any given date, and lay down upon the map of England, from the above tables, arrows indicating the direction of the wind at those stations at that date, and it will be found with what degree of uniformity and accuracy they correspond to a motion of rotation around a continually advancing centre.

Stations on the South Coast of England.

January	Scilly. Bar. Wind.	S. Bishop's. Bar. Wind.	Eddystone. Bar. Wind.	Start. Bar. Wind.	Guernsey. Bar. Wind.	St. Catherine's. Bar. Wind.
1, 3 a.m.	29·51 NNE 7	29·43 NNW 6	29·58 WNW 5	29·16 NW 4	... ...	29·13 NW 4
9 a.m.	·59 NNE 7	·46 N 6	·64 NW 5	·15 NNW 5	29.456 NW 4	·20 NW 4
3 p.m.	·66 NNE 6	·50 N 6	·70 NW 5	·20 NNW 4	·555	·21 NW 4
9 p.m.	·58 NW 6	·45 NNW 6	·68 WNW 5	·23 NW 4	... ...	·23 NW 4
2, 3 a.m.	·45 NNW 6	·28 NW 6	·55 NW 5	·12 NW 4	... ...	·13 NW 4
9 a.m.	·24 NW 5	·21 NNW 5	·42 W 4	·00 WNW 5	·311 WNW 4	·12 NNW 4
3 p.m.	·22 WNW 1	·17 ENE 3	·36 NNE 1	·00 NW 4	·225	·10 NNW 4
9 p.m.	·07 SSE 5	·16 SE 5	·33 E 5	28·95 E 5	... ...	·11 NW by N 4
3, 3 a.m.	28·86 SE 10	·03 SE 6	·18 ESE 7	·82 SSE 7	... ...	28 94 ESE 6
9 a.m.	·63 ESE 10	28 93 SE 7	·03 ESE 9	·72 SSE 8	28·900 NNE 8	·90 ESE 6
3 p.m.	·62 ESE 9	·90 E 6	28·89 E 9	·55 SSE 10	·705	·80 ESE 6
9 p.m.	·77 E by S 9	·96 E 6	·94 E 7	·52 S by E 9	... ...	·64 ESE 7
4, 3 a.m.	·82 E 6	·91 ENE 6	·95 ENE 7	·52 SE 7	... ...	·60 ENE 9
9 a.m.	·88 ENE 4	·86 E 5	·95 NE 4	·50 NE 6	·765 NE 0	·60 ENE 6
3 p.m.	·88 NNE 4	·82 E 4	·95 NNW 2	·50 N 3	·753	·60 NE 4
9 p.m.	·89 N 4	·81 SE 3	·97 WNW 2	·58 N 2	... ...	·60 ENE 4
5, 3 a.m.	·84 WSW. 3	·75 SE 5	29·00 W 3	·58 NW 3	... ...	·60 WNW 3
9 a.m.	·76 ESE 4	·74 SE 5	28·75 S 3	·57 NE 3	·871 WNW 3	·63 WNW 3
3 p.m.	·72 SE 3	·74 SE 5	·86 ESE 5	·45 SSE 5	·762	·60 W 2
9 p.m.	·87 NW 3	·81 SE 3	·90 W 6	·45 NW 6	... ...	·60 S 3

Stations on the East and North Coasts of England and the German Ocean.

January	N. Foreland. Bar. Wind.	Haisbro'. Bar. Wind.	Nottingham. Bar. Wind.	Flamborough. Bar. Wind.	Heligoland. Bar. Wind.	St. Bees. Bar. Wind.	Longstone. Bar. Wind.
3, 8 a.m.	29.26 NW. 4	28.98 E 6	... ...	29.24 NW 2	29.26 W 4	29.00 SE 3	29.28 SW 3
9 a.m.	.26 SE. 5	29.04 ESE 6	29.294 WNW	.27 SE 6	.34 WSW 3	.00 E 1	.40 SW 5
3 p.m.	.20 ESE. 7	.08 SE 6	(2 p.m.) ESE	.29 SE 8	.45 SSE 3	.00 E 3	.44 SE 6
9 p.m.	.08 SE. 9	.02 E 10	.203 ENE	.31 ESE 8	.50 SE 4	.10 NE 3	.46 SE 7
4, 3 a.m.	28.91 ESE. 11	28.90 E 10	... ...	.24 ESE 10	.45 SE 6	.05 E 4	.48 ESE 8
9 a.m.	.90 ESE. 10	.83 E 10	.035 NE	.16 ESE 10	.43 SE by E 7	28.96 E 3	.43 ESE 9
3 p.m.	.86 SE. 8	.80 E 10	... ...	.06 E 10	.30 SE by E 8	.87 E 5	.34 ESE 10
9 p.m.	.86 E. 4	.74 E 9	28.942 ENE	28.98 E 9	.15 ESE 9	.78 E 7	.25 ESE 11
5, 3 a.m.	.84 E. 2	.68 E 8	... ...	.92 E 9	.03 ESE 9	.70 E 2	.17 ESE 10
9 a.m.	.83 NNW. 2	.65 E 4	.867 NE	.86 ESE 8	28.94 SE 9	.70 E 1	.10 ESE 11
3 p.m.	.87 W. 1	.65 E 1	... ...	.84 E 6	.90 SE 8	.64 E 1	.05 ESE 11
9 p.m.	.87 Calm	.65 SW 1	.867 NE.	.83 E 6	.88 SE by E 5	.68 E 1	.05 ESE 9
6, 3 a.m.	.87 SW. 2	.64 Calm	... ...	.83 ENE 8	.86 WSW 4	.65 E 2	.05 E 9
9 a.m.	.91 W by N 6	.64 NE 2	.948 N by E	.86 NE 4	.90 SW 1	.68 E 1	.05 E 8
3 p.m.	29.05 W. 4	.78 W 3	(12.30 SW)	.90 NW 4	.94 SSW 2	.68 E 1	.05 ENE 7
9 p.m.	.06 SW. 6	.84 WSW 1	.034 E	.96 WSW 4	29.00 SW 4	.70 E 1	.05 ENE 7
7, 3 a.m.	.15 SW. 5	.87 SW 1	... ...	.99 WSW 4	.14 W 5	.70 ESE 2	.08 NNW 3
9 a.m.	.17 SSW 6	.90 SSW 2	.000 ...	29.03 S 5	.20 WSW 6	.65 SE 4	.10 SSE 4

Other tables are given in the pamphlet, for which we have not room. We doubt not any one especially interested in the subject will find little difficulty in procuring the perusal of a copy.

Miscellaneous.

The interval between Sowing and Reaping.—I forward to you a copy of a register I have kept for 14 years of the first sight of Wheat ears, and the cutting of the same crop—11 on my own farm, three on an adjoining one (marked*). Crops generally in this district are a good colour, though rather thin on the land. Late sown Barley a failure in many instances. Grass exceeding short. Potatoes promising. Fallows unusually clean. South country agriculturists who attend the Lincoln Meeting, going by the loop line from Peterborough, will see a district not easily surpassed for fertility and profitable farming.

Wheat Earing.		Reaping.		No. of Days.
1841, June 5	...	Aug. 18	...	74
1842, „ 13	...	„ 15	...	63
1843, „ 15	...	„ 21	...	67
1844, „ 10	...	„ 5	...	56
1845, „ 16	...	Sept. 1	...	77
1846, „ 5	...	July 25	...	50
1847, „ 17	...	Aug. 12	...	55
1848, „ 4	...	„ 8	...	65
1849, „ 11	...	„ 15	...	65
1850, „ 19	...	„ 12	...	53
1851,* „ 16	...	July 31	...	45
1852, „ 17	...	Aug. 4	...	48
1853,* „ 13	...	„ 9	...	57
1854,* „ 10				

W. W., South Lincolnshire, June 20, in Bell's Weekly Messenger.

Calendar of Operations.

JULY.

Rhins of Galloway, *July* 6.—The weather for some time past has been extremely wet and cold for the season; notwithstanding which we never saw the crops generally looking so bulky and luxuriant, and, with fine weather from this time forward, there is every prospect of abundant crops. Some fears are, however, entertained as to the injurious effect of the present wet weather on the Wheat crop, which is now mostly in ear, and some of it in flower. Oats promise an abundant return, with greater bulk of straw than we have had for years. Turnips have grown very slowly, and little progress has yet been made in singling. Mangold Wurzel, which has been sown to a considerable extent, in many cases has come up very thin; the same in regard to Carrots, which in some instances have been ploughed up to sow Turnips. Grass on all dry soils has been abundant, though stock generally have not improved rapidly during the last month, the weather being so cold and the pastures always wet. Barn-yards are well cleared out, little remaining except a stack or two here and there for thatching the coming crop. Little grain now remains for sale in the hands of the farmer, the price being such during the season as to induce the keeping of light stocks. Unless we have very fine weather, the harvest will be considerably later than last year.

Wester Ross, *July* 3.—We have got Turnip sowing completed, but not until we are at a loss what next to turn our hands to. Potatoes have been once hoed, but they generally receive a second hoeing, and are now requiring it, and then they are furrowed up. Turnips have been making very rapid progress for the last fortnight, and singling of Swedes is now pretty general. The weather has been very genial, and there has been abundance of rain for the most rain-loving plant. To-day all out-door labour has been suspended, the rain pouring heavily and continuously. Potatoes are generally looking well, and are well advanced. There are complaints, however, in many places, of want of braird, and the likelihood is that the crop will not be so large as last year. The hay crop is not heavy; pasture for sheep and cattle is abundant. The weather has been very unsuitable for Wheat in its present precarious stage, and there is much alarm lest rust prevail to an unusual extent. For many days together the sun has scarcely made its appearance. There will be abundance of straw over the whole north of Scotland; in Morayshire the crop will be very heavy, especially Oats and Barley. In spring there were a few weeks of dry weather, which thinned the Wheat, yet it is now strong and pretty close, and if free from rust might be a large yielding crop. One field in the neighbourhood of Elgin forms nearly the only exception to this general statement. It is now growing what was intended to be a third crop of Wheat in yearly succession. Last year there was a pretty good second year's crop of Wheat upon it, the previous crop not having exhausted the whole of a large application of manure. Deceived by this, the occupier had it intimated through the *Mark Lane Express* that he had found out the way of making Wheat grow continuously, for any number of years upon the same ground. The field has a beautifully variegated appearance, the weeds having flowered to admiration, the Wheat itself reminding one of the Irishman's crop, "One stalk here, and none there." We hope that as wide-spread intimation will be given of this year's failure, as there was of last year's success. Last Muir of Ord market was good beyond precedent. Pasture being abundant, the show of cattle and sheep small, and purchasers numerous, the competition was something like that of a brisk roup.

* Mr. H. C. cut before ripe a week.

Notices to Correspondents.

Agricultural Education: *A.* The conference before the Society of Arts, and the results to which it may lead, we must endeavour to refer to next week, or the following. Attention ought to be called, too, throughout the country, to the educational exhibitions, under the auspices of the Society of Arts, which is now open in St. Martin's Hall, and which schoolmasters and others interested in education ought to study.

Early Tares. Messrs. Sutton, of Reading, have sent to us the following extract of a letter, received from the Rev. Anthony Huxtable:—"Allow me to call your attention to a remarkable variety of early Vetch, which I picked yesterday, at my Hill Farm, 600 feet above the sea, sown at the end of the first week in October, and a full month in advance of the other so-called early Vetches, which were sown about a week before them. It appears to me so valuable a kind that I have sent a sample to the Council of the Agricultural Society. Unfortunately I have only one acre, and shall want more than this for my own use; but I have apprised you of this circumstance that you may obtain some seed if possible." In the report of the Council meeting, at page 428, Mr. Huxtable's communication on this subject will be seen. We have received full grown pods of this variety from Messrs. Sutton—the seed sown on October 28, and the pods pulled, we presume, in the month of June, grown by Mr. Davis, of Mainhall, near Blandford, from whom Messrs. Sutton obtained them.

Potted Butter: *J S.* The following is Mr. Ballantine's recipe, "Quarterly Journal of Agriculture," Vol. I., p. 26:—The butter is taken warm from the churn, and it is an invariable rule never to work it or dip it into water when intended to be salted. The dairymaid puts it into a clean tub, previously well rinsed with cold water, and then works it with cool hands, till the milk is thoroughly squeezed out. Half the allowed quantity of salt is then added, and well mixed up with the butter, and in this state it is allowed to stand till the next morning, when it is again brought up, any brine squeezed out, and the remainder of the salt added. It is then potted in kits, which, when full, should be well covered up, and placed in a cool dry store. A small quantity of salt is usually sprinkled on the surface. The quantity of salt used is half a lb. to 14 lbs. of butter.

Wheat: *Lockerby.* The ears you have sent have been forwarded to "M. J. B." The flowers not having set, and the consequently defective state of the ear, are probably owing to cold wet windy weather during flowering. It is very often observed.

Wheat Crop: *M W.* On your fifth and sixth questions we have merely to say that we are not aware of any difference in the expense of last year as to the harvest of spring and autumn Wheats. You are aware that there are many Wheats sown in March, such as Talavera, &c., which get the name of spring Wheats, but they must not be confounded with the true bearded spring Wheat. The practice of spring sowing has extended, not because spring-sown Wheats yield generally better than autumn-sown Wheats—for the contrary is the case—but as a matter of necessity arising out of the extension of Turnip growing and sheep feeding, under which the land is not ready for the seed till after winter.

THE CONICAL HOT-WATER BOILERS, as invented by John Rogers, Esq., are only to be obtained of JOHN SHEWEN, Ironmonger, Sevenoaks, Kent.
Contracts given for Heating.

FISHING NETS.—A 20-yard Drag Net, with purse complete, 2l. 10s. A Single Walled Drag Net, any length and depth, 1s. per square yard. Casting Nets, complete, 1s. to 1s. 6d. per yard, measured round the lead line. Fine Nets, any size, 1s. per square yard. Complete Minnow Nets, Eel Nets, and Landing Nets equally cheap: all warranted first-rate quality and workmanship.—At W. Cullingford's, 1, Edmund Terrace, Ball's Pond Road, Islington, London; and at the Crystal Palace, Sydenham.

TANNED NETTING, for the protection of Fruit Trees from frost, blight, and birds, and for the security of fresh sown seeds, either in Gardens or Fields, at 1d. per square yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Scrim Canvass, for Wall Fruit.—At EDGINGTON and Co.'s, 17, Smithfield Bars, City, and Old Kent Road, Southwark, where may be seen erected Emigrant Tents in great varieties, on their latest improved principles, and also at Brunswick Street, Poplar, near the East India Export Dock.

GALVANISED WIRE GAME NETTING.—
7d. per Yard, 2 Feet Wide.

	Galvanised.	Japanned iron.
2-inch mesh, light, 24 inches wide ...	7d. per yd.	5d. per yd.
2-inch „ strong „ ...	9 „	6½ „
2-inch „ extra strong „ ...	12 „	9 „
1½-inch „ light „ ...	8 „	6 „
1½-inch „ strong „ ...	10 „	8 „
1½-inch „ extra strong „ ...	14 „	11 „

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasantries, 3d. per square foot. Patterns forwarded post free.

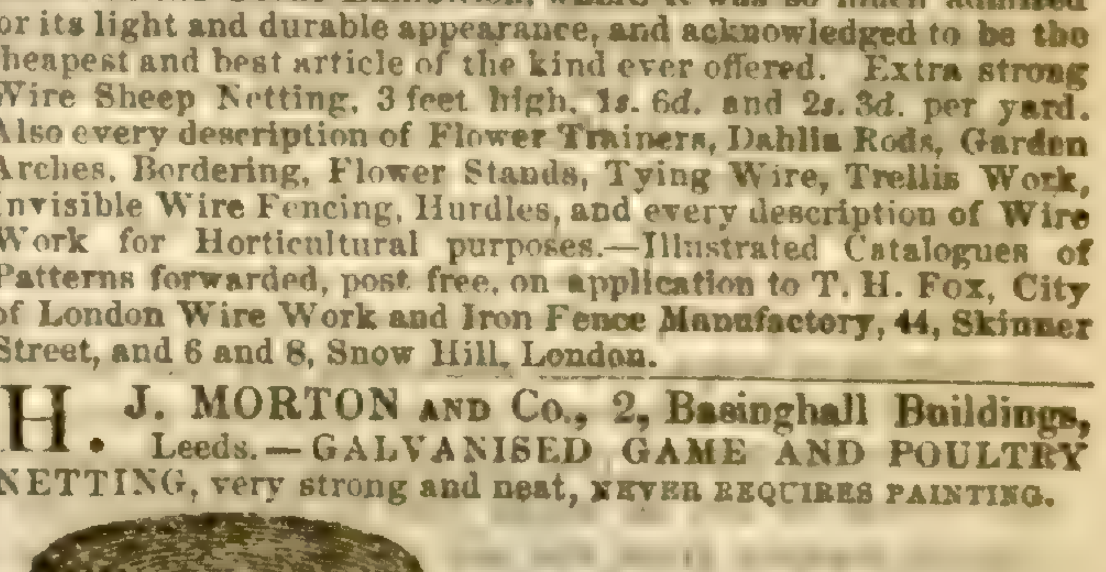
Manufactured by Barnard & Bishop, Market Place, Norwich; and delivered free of expense in London, Peterborough, Hull, or Newcastle.

CHEAP WIRE GAME & POULTRY NETTING,
5d. per running yard.
GALVANISED DITTO, 7d. per running yard, 2 feet wide.

	Galvanised.	Not Galvanised.
24 in. wide, 2 in. mesh,	7d. per yard.	5d. per yard
30 in. „ 2 in. „	9d. „	6½d. „
36 in. „ 2 in. „	10½d. „	7½d. „
48 in. „ 2 in. „	1s. 2d. „	10d. „

Sparrow Proof Netting, Galvanised, 3d. per square foot, made to any size for the same proportionate price. This article was shown at the Great Exhibition, where it was so much admired for its light and durable appearance, and acknowledged to be the cheapest and best article of the kind ever offered. Extra strong Wire Sheep Netting, 3 feet high, 1s. 6d. and 2s. 3d. per yard. Also every description of Flower Trainers, Dahlia Rods, Garden Arches, Bordering, Flower Stands, Tying Wire, Trellis Work, Invisible Wire Fencing, Hurdles, and every description of Wire Work for Horticultural purposes.—Illustrated Catalogues of Patterns forwarded, post free, on application to T. H. Fox, City of London Wire Work and Iron Fence Manufactory, 44, Skinner Street, and 6 and 8, Snow Hill, London.

H. J. MORTON and Co., 2, Basinghall Buildings, Leeds.—GALVANISED GAME AND POULTRY NETTING, very strong and neat, never requires painting.

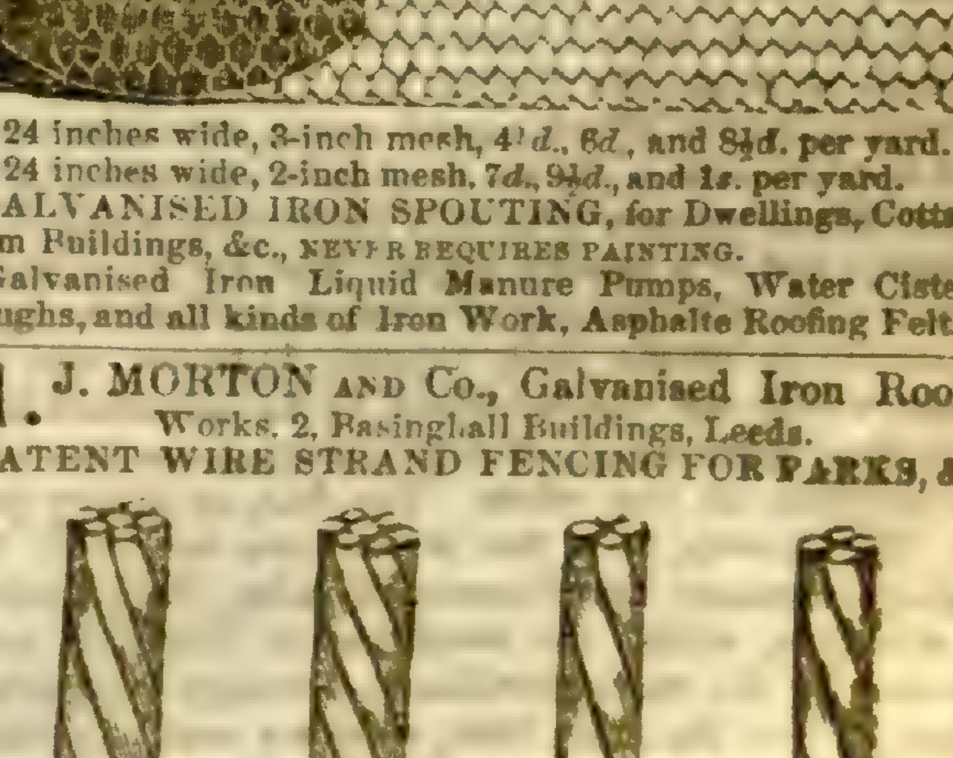


24 inches wide, 3-inch mesh, 4½d., 6d., and 8½d. per yard.
24 inches wide, 2-inch mesh, 7d., 9½d., and 1s. per yard.

GALVANISED IRON SPOUTING, for Dwellings, Cottages Farm Buildings, &c., never requires painting.

Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalte Roofing Felt, &c.

H. J. MORTON and Co., Galvanised Iron Roofing Works, 2, Basinghall Buildings, Leeds.
PATENT WIRE STRAND FENCING FOR PARKS, &c.



This Fencing is the most neat, strong, and durable for Parks and Agricultural purposes in use. It cannot be bent or put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply as above.

IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

BALANCE OF FACTS IN FAVOUR OF

RICHMOND AND CHANDLER, who have, in competition with the best selected CHAFF CUTTERS of the most celebrated makers in the trade, carried off the highest prizes against all comers.

COPY OF TESTIMONIAL.

"Early Court, Reading.

"GENTLEMEN,—I beg to hand you a cheque for your Corn Crusher; I must add, at the same time, that nothing can exceed the goodness of the Machine. I have found in it all I can wish, and, moreover a very superior finished Machine, and a pattern for other makers. (Signed) "GEO. SHACKELL.

"Messrs. RICHMOND & Co."

Address—RICHMOND & CHANDLER, Manchester; and South John Street, Liverpool.

CHAFF-CUTTERS, of the best workmanship, 25s.; Two-Knifed Chaff Engines, from 63s.; Mills for Bruising Oats and Beans, from 45s.

WILLIAM DRAY AND CO., Agricultural Implement Manufacturers, Swan Lane, Upper Thames Street, City.

BUDDING'S LAWN MOWERS, with SAMUELSON'S registered improvements, *lightening the draught fully one-half*, and enabling an unskilled labourer to make neat work; free from liability to choke, or get out of order. May be had of all ironmongers in town or country, or from the Works, Banbury; delivered free in a packing case to any station on the North-Western and Great Western Railways. Testimonials forwarded on application.—Britannia Works, Banbury.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.

MESSRS. BURGESS AND KEY, as Mr. PARKES' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.

103, Newgate Street, and 52, Little Britain, London.

FOR WATERING GARDENS, DISTRIBUTING LIQUID MANURE, ETC.

JAMES LYNE HANCOCK'S VULCANISED INDIA-RUBBER TUBING is now manufactured especially for the above purposes, and is of greater flexibility than any other description of hose or tubing. It is also manufactured to resist great pressure, suitable for attaching to the mains of water works or to tanks, or water butts of high elevations. WATERING HOSE fitted up with brass joints, branches, stop-cocks, roses, and jets complete. Vulcanised India-rubber suction pipes for pumps any length or size to order; HOSE for brewers' use, fire engines, &c. VULCANISED INDIA-RUBBER WASHERS, for Steam and Water Joints, and VULCANISED RUBBER in sheets of any size and thickness. Solid vulcanised India-rubber Tubing and Cord, for the joints of glass-doors, sashes, frames, &c.—Prices and every information may be had on application at the Manufactory, Goswell Mews, Goswell Road.

THE GUTTA PERCHA COMPANY'S TUBING FOR WATERING GARDENS, WITH ROSES AND UNION JOINTS FITTED.—27, CITY ROAD, LONDON.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

Priced lists of plant tubs and boxes forwarded on application.

ANTHONY'S PATENT AMERICAN CHURN.—Extract from the Royal Agricultural Society's Report of the trial of Churns at the Gloucester meeting in July last. "In this trial the American Churn not only maintained its character in producing butter rapidly, but in producing a greater quantity from the like amount of cream." It made from 4 quarts of cream 4 lbs. 6 oz. of butter, being 8 oz. more than any of the other Churns from the same quantity and quality of cream. Price Lists of Churns and Implements by the best makers sent free, and Illustrated Catalogues on receipt of eight postage stamps. BURGESS & KEY, 103, Newgate Street, and 52, Little Britain, London, who have always a large stock of Steam-engines, Ploughs, Harrows, Diggers, Waggons, Carts, Threshing and Dressing Machines, Mills, Oat and Grain Bruisers, Oilcake Breakers, Reaping Machines, Haymakers, Horse-rakes, Turnip Cutters, Liquid Manure Carts, Parkes' celebrated Steel Digging Forks and Draining Tools, Pumps for Manure, Farm Fire Engines, and for Garden Purposes, &c. &c.

REDUCTION IN PRICE.

WEIR'S IMPROVED GALVANISED WROUGHT IRON LIQUID MANURE PUMP.

The Fittings of these Pumps are wholly of Brass, and there is no leather or other matter which can be affected by the manure.

Price, complete, with 10 feet of Flexible Suction Pipe, 4l. 15s. Terms, cash on delivery.

EDWARD WEIR, Agricultural Engineer, 16, Bath Place, New Road, London. Removed from Oxford Street.

Catalogues, with Illustrations, sent free by post.

WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

	£ s. d.
Patent Pump	1 15 0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing	2 0 0

Larger sizes if required.

The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,

8, CRESCENT, JEWIN STREET, LONDON.

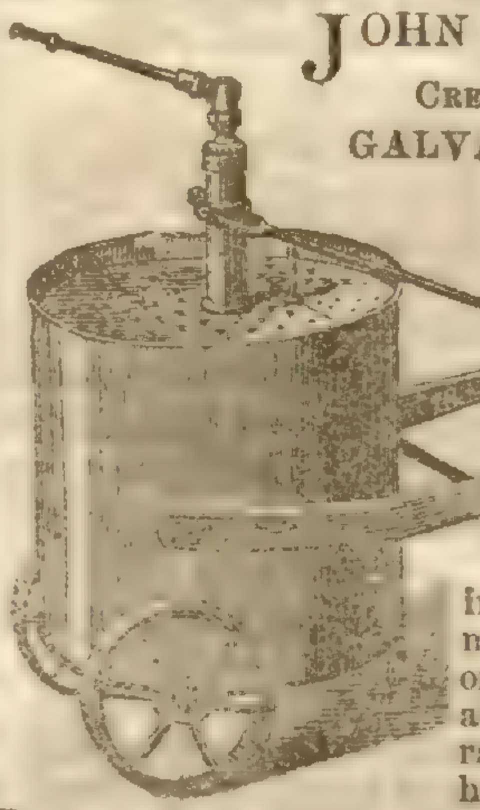
Every description of Machinery for Raising Water; Fire Engines, &c.

JOHN WARNER AND SONS,

CRESCENT, JEWIN STREET, LONDON.

GALVANISED IRON TUB GARDEN ENGINE,

With Warner's Registered Spreader,



Is strongly recommended, for durability and low price, viz., 2l. 19s., to hold 10 gallons.

Larger sizes made either in wood or iron. May be obtained of any Ironmonger or Plumber in town or country, or of the Patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Syringes of various constructions and sizes from 9s. upwards. An extensive assortment kept.

JOHN WARNER AND SONS, 6, Jewin Crescent, London, Manufacturers of FIRE ENGINES, PUMPS, GARDEN ENGINES, and SYRINGES.

Brass Syringes, 9s. to 18s.

All articles of JOHN WARNER & SONS' manufacture may be obtained of any Ironmonger or Plumber in town or country, at the advertised prices.

JOHN WARNER & SONS having been practical Horticulturists for many years, know exactly the requirements of both Amateurs and Gardeners. A gardener with a properly constructed pump will get through as much work in five minutes as he could with any Syringe in a quarter of an hour, and with half the labour to himself. Syringes are economical only for small houses.

No establishment offers such a variety of effective machines for hydraulic purposes, whether to supply Gardens, Hothouses, Cottages, Farms, Mansions, or Boards of Health, with every requisite connected with the conveyance and distribution of liquids.

Fountains suitable for Conservatories, Lawns, &c.

Sheets of Engravings sent on application.

SAMUELSON'S IMPROVED

GARDNER'S TURNIP CUTTER.

MR. SAMUELSON having purchased the late Mr. GARDNER'S Works, has made it his study to maintain the quality of this valuable implement, more especially of the Knives, which are unequalled by the numerous imitations which have been attempted. Since the last meeting of the Royal Agricultural Society, a valuable addition has been made by Mr. Samuelson to the original *GARDNER'S TURNIP CUTTER*, viz., a screening apparatus, which separates the dirt from the cut roots, thereby preventing Scouring in the Sheep and Lambs.

CHAFF-CUTTERS, CORN-CRUSHERS, and Food-preparing Machines of every description.

SAMUELSON'S IMPROVED BUDDING'S LAWN MOWER, American and Atmospheric Churns, &c.

SAMUELSON'S PATENT FORKING, or DIGGING MACHINE.

Upwards of seventy of these Machines are already at work in various parts of England, the Continent, the Sugar Colonies, and Australia, and the number is daily increasing. It is now an acknowledged fact that by the use of the Forker the advantages of hand-digging can be obtained at a tithe of its cost, and a tilth has been got with it this season when the ground was in such a state that no combination of the ordinary implements could have accomplished it. For all Crops requiring a deep or a fine seed bed, nothing can equal the operation of the Forker.

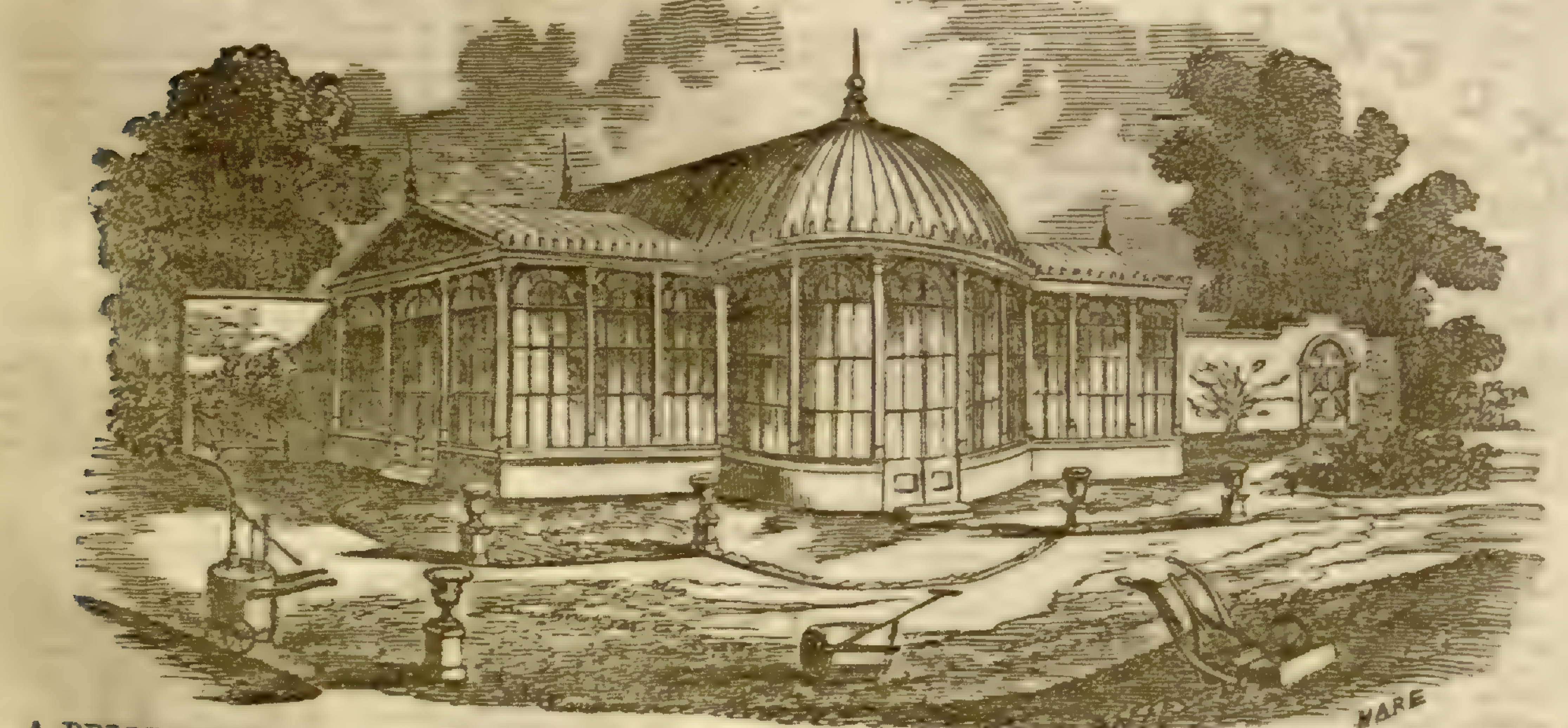
TESTIMONIALS from numerous Agriculturists of eminence who are using it, may be had on application.

B. SAMUELSON, successor to the late J. Gardner,

Britannia Works, Banbury; Stand No. 12, Royal Agricultural Show, Lincoln; and Stand No. 38, Agricultural Department at the Crystal Palace, Sydenham.

COTTAM AND HALLEN,

2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.



APPLICATION is requested for their NEW HORTICULTURAL LIST, containing Illustrations, Descriptions, and Prices of

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Syringes	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.

AGRICULTURAL LIST UPON APPLICATION.

EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

HOSE PIPING.—GREAT REDUCTION IN PRICE.

WAITHMAN'S PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense Pressure, and much more than Leather, vulcanised Rubber, or any other Hose; and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented Inventions, the cost of manufacturing it is now reduced at least 60 per cent., which advantage is offered to the Public.—London Agents, BURGESS & KEY, 103, Newgate Street, and 52, Little Britain who on application will forward wholesale and retail prices.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard run, of E. T. ARCHER, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey.

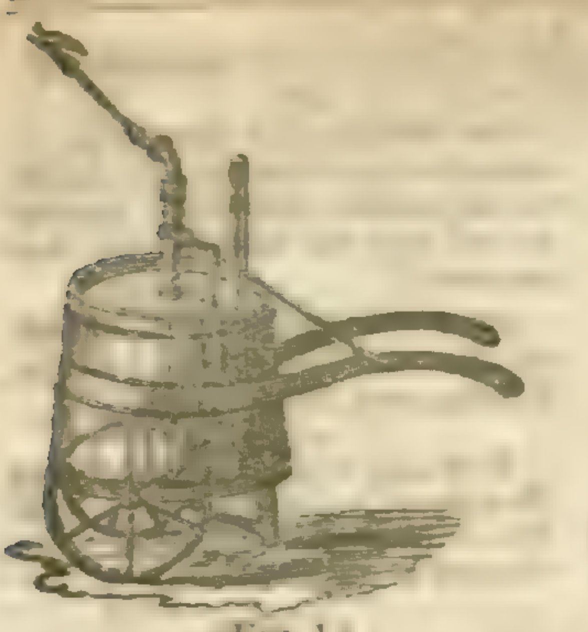


Fig. 1.

(Fig. 2.)

J. TYLOR AND SON'S BARROW GARDEN ENGINE (Fig. 1), in best well painted oak tub, fitted with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 1 holds	10 gallons, throws	30 feet high	...	£4	10
No. 2 „	15 „ „	45 „	...	5	10
No. 3 „	28 „ „	45 „	...	6	18

J. TYLOR & SON'S BARROW GARDEN ENGINE (Fig. 2), in strong tinned iron tub, well painted inside and outside, with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 10 holds	8 gallons, throws	25 feet high	...	£2	15
No. 13 „	12 „ „	30 „	...	3	5
No. 11 „	16 „ „	40 „	...	4	0
No. 12 „	24 „ „	45 „	...	5	0
No. 14 „	30 „ „	45 „	...	5	18

A large assortment of every description of Garden Syringes, Pail Engines, Conservatory Pumps, &c., kept in stock.

Full size Syringe, on Read's principle, of the very best quality and workmanship, with two roses and one jet, 21*s*.; Plain Syringes from 10*s*. 6*d*. upwards.

J. TYLOR & SON'S Horticultural Apparatus may be obtained at these prices from any respectable Ironmonger or Seedsman in town or country, through whom alone they will be supplied, and of whom Drawings and Prices may be had.

N.B. Cost of carriage, &c., not included in these prices.

J. TYLOR & SON'S Manufactory, Warwick Lane, Newgate Street, London.

J. TYLOR AND SON'S REGISTERED GARDEN SYRINGE.—Small size, for Amateur use, **21s.** each; Large size, for Gardeners' use, **25s.** each.

By a simple arrangement this Syringe is rendered more effective than any portable Conservatory or Garden Pump ever offered to the public. It is equally adapted for Garden or Conservatory use, and is capable of discharging twice as much water in a given time as any other Syringe now in use. The arrangement consists in attaching a small flexible suction tube to the barrel of the Syringe, through which it is filled with water at every discharge of the previous contents. By this means the Syringe is always charged, and the pull-up stroke of the piston rendered perfectly easy, it having, indeed, no work to do, the barrel being previously full of water. Being thus made self-supplying, a great saving of labour is effected; and the necessity of stooping to fill the Syringe at every discharge being done away with, the direction of the water can be maintained for any length of time. It is perfectly cleanly in its action, as it is not possible for any water to get on the outside of the barrel, which is a well-known inconvenience attendant on the use of every other Syringe. Its construction is perfectly simple, and cannot get out of order; the ground-in ball valves and fittings used for filling all other patent Syringes being entirely superseded. To be had of any respectable Ironmonger or Seedsman in town or country.

J. TYLOR & SONS, Manufacturers of Horticultural Apparatus, Warwick Lane, Newgate Street, London.

N.B. These prices do not include carriage, package, or expenses of delivery in the country.

BEEHIVES.

NEIGHBOUR'S IMPROVED COTTAGE BEE-HIVE, as originally introduced by GEORGE NEIGHBOUR & SONS, with all the recent improvements, glasses, thermometer, &c., price 35*s*., securely packed for the country.

This unique hive has met with universal commendation, and may be worked with safety, humanity, and profit, by the most timid; its arrangements are so perfect, that the honey may be taken at any time of the gathering season without at all injuring the bees.

Early applications, addressed to GEO. NEIGHBOUR & SONS, 127, High Holborn, or 149, Regent Street, London, will receive prompt attention. Their newly arranged Catalogue of other improved Beehives, with Drawings and Prices, sent on receipt of two stamps.

Agents:—Manchester, HALL & WILSON, 50, King Street, Liverpool, JAMES CUTHBERT, 12, Clayton Square; Chester, F. & A. DICKSON & SONS, 106, Eastgate Street; Glasgow, AUSTEN & M'ASLAN, 168, Trongate Street; Dublin, J. EDMUNDSON & Co., 61, Dame Street.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2*d*. to 3*d*. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

HARTLEY'S PATENT ROUGH PLATE GLASS, 1-8th thick, or 2 lbs. to the foot: 3-16ths, or 3 lbs.: and 1-4th, or 4 lbs. to the foot, for Ridge and Furrow Roofs, Greenhouses, Railway Stations, Engine Sheds, Mills, Market Halls, and Public Buildings generally.

Packed in Boxes of 50 feet each.

6 by 4 and 6½ by 4½	... ...	10*s*. 6*d*.	per box.
7 „ 5 „ 7½ „ 5½	... ...	12 0	„
8 „ 6 „ 8½ „ 6	... ...	13 6	„
9 „ 7 „ 9½ „ 7½ and 10 by 8	...	15 0	„

For larger sizes a full List of Prices will be sent on application. Boxes are charged 2*s*. each extra, full price allowed if returned free of expense.—For further information apply to

JAMES PHILLIPS & Co.,
116, BISHOPSGATE STREET WITHOUT.

"Rough Plate has never been, and never can be, prejudicial to the colouring of Grapes; though we can easily believe that it has been charged with such a fault by persons who have not skill enough to manage Grapes under glass."—*Gardeners' Chronicle.*

"There *can be no question now* that Rough Plate Glass is the most beautiful as well as the most useful kind of glass that can be employed in horticulture. It is free from all the faults of transparent glass, and has many advantages peculiar to itself, *without a single disadvantage as a set off.*"—*Gardeners' Chronicle.*

GLASS FOR CONSERVATORIES, GREENHOUSES, DWELLINGS, ETC.

ESTABLISHED MORE THAN ONE HUNDRED YEARS.

THOMAS MILLINGTON requests attention to his present prices of SHEET GLASS in 100 feet boxes.

Squares	6 by 4 and 6½ by 4½ } 7 by 5 and 7½ by 5½ }	... ...	13 6
„	8 by 6 and 8½ by 6½ } 9 by 7 and 9½ by 7½ } 10 by 8 to 12½ by 9½ }	... ...	16 3
„	12 by 10 to 24 by 14 ...	... ...	19 0

Orchard House Squares on Mr. Rivers's approved plan, to whom I have sold some thousands of feet:—20 inches by 12, 20 by 13, 20 by 14, 20 by 15, 20½ by 12½, 20½ by 13½, 20½ by 14½, at 19*s*. per 100 feet.

200 feet cases at 42*s*., and 300 feet case 63*s*., in large sheets.

Boxes charged 1*s*. extra per 100 feet, and the same allowed if returned free of all charge.

HARTLEY'S PATENT ROUGH PLATE GLASS, Fern Shades, Striking Glasses, Milk-pans, Bee Glasses, Cucumber Tubes, Sheet and Rough Plate Glass Tiles, Wasp Traps; Plate, Patent Plate, Crown and Sheet Window Glass, in every thickness and quality, and Ornamental Glass, plain and coloured; pure white Shades for Ornaments, Crystal Glass for Pictures.

Warehouse, 87, Bishopsgate Street Without—same side as Eastern Counties Railway.

PRIZE MEDAL—1851.

AT A VERY ECONOMICAL RATE.

SAMUEL CUNDY, MASON and BUILDER, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Lower Belgrave Place Pimlico, London.

Marble Chimney-pieces manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price. A good Marble Chimney-piece for 40*s*. Marble Work in all its branches at a remarkably cheap rate for Halls, Dairies, Larders, &c. Circulars sent on application.

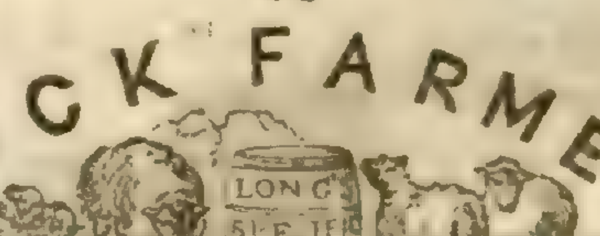
N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the nobility, gentry, and clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out-door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice.

Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to WALTER CARSON & SON, 9, Great Winchester Street, Old Broad Street, Royal Exchange, London. No Agents. All orders are particularly requested to be sent direct.

IMPORTANT TO

STOCK FARMERS



AND

FLOCK MASTERS.

SHEEP, LAMBS, HORSES, AND CATTLE,

CAN BE DRESSED WITH

LONG'S NON-POISONOUS SHEEP & CATTLE-DRESSING COMPOSITIONS, without any possibility of danger or injury resulting from the application. These Compositions are admitted by all who have fairly tested them to be the most effective Sheep Dressings ever brought before the agricultural public; and as they are NON-POISONOUS, and do not stain or discolour the Wool, they are gradually superseding the use of all Dipping and other Sheep-dressing preparations, composed of such deadly poisons as ARSENIC OR MERCURY.

It is a fact now thoroughly established, that Long's Non-Poisonous Sheep Dressings, if liberally and judiciously applied in the dressing of Sheep and Lambs, will—in their consequent effect in removing Disease, destroying Vermin, and keeping the flock in condition thus PROMOTING INCREASED GROWTH BOTH OF MUTTON AND WOOL—as amply repay flock owners for first outlay as artificial manures when applied to land. They are the only Sheep Dressings also, which, from the fact of their containing NO POISON, can be beneficially and safely applied to Sheep and Lambs at any age and at any season of the year.

Pamphlets containing full directions for use, and copies of the strongest Testimonials ever accorded to a manufacturer, signed by leading and practical Stock Farmers, residing in all parts of the United Kingdom, together with the names of all Country Agents authorised to vend Long's Patent Sheep and Cattle-dressing Compositions, may be obtained gratuitously on application of any advertised country Agent; or by post, sent free, of

BARRY BROTHERS, AGENTS FOR JOSEPH LONG,
Meriton's Wharf, and Shad Thames, London.

M'CORMICK'S PATENT REAPING AND MOWING MACHINE.

☞ CAUTION TO USERS, PURCHASERS, AND MANUFACTURERS!

Parties are hereby cautioned against "Making, Using, Exercising, or Vending," any Reaping Machines which infringe on M'Cormick's Patent without a licence from him, *as proceedings at law will be instituted against all such as infringe.* The main features of M'Cormick's Machine consist in zig-zag serrated cutting blade, spear-head shaped holding fingers, and gathering reel.

The sale of these Machines, in the United States, for the present harvest, has been upwards of 1500, their efficiency and superiority being established by the use of thousands for several years.

Machines containing all the *patented improvements* adapting them to the cutting of *grain* or *Grass*, and guaranteed to perform well, may be had on application to Mr. M'CORMICK'S Agent, D. C. M'KENZIE, 166, Fleet Street, London.

TO FLORISTS AND OTHERS.

J. JONES, IRON MERCHANT, has always a great variety of CONICAL and SADDLE BOILERS in STOCK; also Fire and Furnace Bars, Ornamental and Plain Supply Cisterns, Double Doors and Frames, Furnace Grates, Soot Doors, Hot Water Pipes, Elbows, Tees, Syphons, Throttle Valves, Stop Cocks, Flange and Socket Elbows, &c.; also Trough Pipes. Drawings and prices of the above, on application to J. JONES, Iron Bridge Wharf, No. 6, Bankside, London, near the Southwark Iron Bridge.

STEPHENSON AND PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

NURSERY AND SEED BUSINESS.

ESTABLISHED IN THE YEAR 1819.

TO BE LET, with immediate possession, the old-established NURSERY at Taunton, Somerset, for some time past in the occupation of Messrs. Macintyre and McIntosh. The Grounds and Stock are in excellent condition, moderately rented, and are well worthy the attention of any person wishing to carry on the business. If required, the quantity of ground may be reduced.—For further particulars, apply to Mr. JOHN MCINTOSH, Lone Bridge, Taunton; or to Mr. YOUNG (the proprietor), Elm Cottage, Taunton.—July 15.

LODGE FARM, BLECHINGLY, SURREY.

TO BE LET, from Michaelmas next, with the Sporting thereon, all that conveniently arranged Farm called the LODGE FARM, situate at Blechingly, Surrey, within an easy distance of the Reigate and Croydon Markets. The Farm comprises a Farm House and compact out-buildings, all in good repair, and 194 acres of land, well farmed and in good condition, of which about 30 are pasture.—To view the Farm, apply to Mr. JAMES EDWARDS on the farm, and for further particulars, of Mr. JAMES WICKENS, No. 1, Chandos Street, Cavendish Square, London.

SIDBURY AND SALCOMBE REGIS, DEVON.

TO BE LET, for a term of 10 or 14 years, from Michaelmas, 1854, all that compact ESTATE, lying within a ring fence, called Middle and Lower Chelson, situate in the parishes of Salcombe Regis and Sidbury aforesaid, comprising 372 Acres of Arable and Pasture Land, with newly-erected and commodious Farm Buildings, now and for some years past in the occupation of the owner. This Estate, adapted to the growth of Corn and Breeding of Sheep and Cattle, has been thoroughly under drained, new fenced, and improved at a considerable outlay during the last seven years by the owner, and is now in a high state of cultivation, with the necessary preparation made for the ensuing root crops; and would be found an advantageous opportunity for an active and enterprising tenant. The Estate, situated near the village of Sidbury, is distant about three miles from Sidmouth, six from the market town of Honiton, six from Axmouth Harbour, and 14 from Exeter.—For viewing, apply to the Bailiff, at the farm, where the conditions of letting may be inspected; and any further information can be obtained of Messrs. DREW & SON, Land Agents, Peamore, near Exeter, to whom Tenders, with references, are to be sent on or before August 15.—Peamore, near Exeter, July 15.

WHITE COCHIN CHINA CHICKENS, of Mrs. HERBERT'S breed.—Four pair, at 1*l*. per pair. For particulars apply to Rev. H. G. HARVEY, Droitwich, Worcester.

BLACK COCHIN EGGS from the best birds in England, having always taken prizes at the best shows, at 18*s*. per dozen, including package. Apply at the city of London Wire Works, 44, Skinner Street, London. N.B. Fowl Houses, Chicken Coops, Poultry Hurdles, and Netting, of every size and description. Illustrated Catalogues forwarded, post free, on application. A few Spanish Pullets, sisters to those sent to her Majesty's yard at Windsor, for Sale.

FANCY POULTRY.—PERIODICAL SALE.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, July 18, at 12 o'clock precisely, A SELECTION OF POULTRY, from the yards of Mr. Bidwell, of Guildford; Mr. P. Jones, jun., Fulham; F. Sutton, Esq., Bury St. Edmonds; T. Shackell, Esq., Uxbridge; Mr. Plummer, Burlington; and others. It includes Cochins of all colours, prize spangled Hamburghs, Polands, Spanish, and Brahmas.—Catalogues by enclosing a stamped directed envelope to Mr. J. C. STEVENS, 38, King Street, Covent Garden, London.

ORCHIDS.

ESTABLISHED AND IMPORTED PLANTS.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King Street, Covent Garden, on MONDAY, 24th July; and following day, at 12 for 1 o'clock precisely, a collection of very rare and well grown established Plants, including many choice specimens of Aerides, Vanda, Saccolabium, Cattleyas, Phalænopsis, &c.; also importations from La Guyara and Guatemala, and three Cases from the East Indies, containing Amherstia nobilis, Tropical Fruits, &c.—May be viewed on the mornings of Sale, and Catalogues had.

VALUABLE FREEHOLD NURSERY GROUNDS, ETC. FULFORD ROAD, YORK.

TO BE SOLD BY AUCTION, in the month of August next, the long-established and flourishing NURSERY PREMISES of the late Mr. GEORGE CLARKSON, situate on the banks of the Ouse, York, comprising about Fourteen acres of first-rate Nursery Ground well stocked with Forest and Fruit Trees, Shrubs, &c., and having a substantial Dwelling House, Shops, Greenhouse, and other requisite outbuildings attached, with two pleasant suburban Dwelling Houses fronting Fulford Road, commanding respectable tenants; together or in lots, unless previously disposed of by private contract, of which due notice will be given. The purchaser will have the option of taking the Stock on liberal terms. Immediate possession can be given.—Plans and particulars may be had on application to Joshua Hadwen, Esq., 12, Clement Street, Lombard Street, or Charles Lever, Esq., 1, Frederick's Place, Old Jewry, London; Robert Vint, Esq., High Street, Sunderland; Mr. J. S. Hardy, Architect, Lincoln; Messrs. Newsam and Son, Land Agents and Surveyors, Leeds; and of Mr. Luke Thompson, Solicitor, York.

RICK CLOTHS, MARQUEES, TENTS, ETC.

NEW OR SECOND-HAND, FOR SALE OR HIRE.

BENJAMIN EDGINGTON has for the ensuing season a large assortment of Marquees, &c., for Horticultural Societies, Fetes, Cricket Clubs, &c. Rick Cloths, with poles, pulleys, and lines complete. A variety of Emigration Tents erected on the premises, No. 2, Duke Street, Southwark. Netting and Bunting for fruit trees. A warehouse, 32, Charing Cross, where tents are erected.—Address, by post, 2, Duke Street, Southwark.

RIPE FRUIT, STRAWBERRIES, AND SEED BEDS.

NEW TWINE NETTING, Tanned if required, 1 yard wide, 1½d. per yard; 2 yards wide, 3d. per yard; 4 yards wide, 6d. per yard. Half-inch Mesh ditto, 2 yards wide, 6d. per yard. The Elastic Hexagon Garden Netting, 76 meshes to the square inch, effectually excludes birds, wasps, flies, &c., from fruit trees, flower or seed beds, 4½d. per square yard. Tanned Netting, 2 or 3 yards wide, ½d. per yard; 4 or 6 yards wide, 3d. per yard.—At W. CULLINGFORD'S, 1, Edmund Terrace, Ball's-pond Road, Islington, London; and at the Crystal Palace, Sydenham.

NEW AND BEAUTIFUL PLANTS.

MESSRS. VEITCH & SON,

OF EXETER, AND THE EXOTIC NURSERY, CHELSEA,

HAVE much pleasure and confidence in offering the following novelties. Never, perhaps, have they had the opportunity of presenting at one time so many really VALUABLE and STERLING PLANTS as they do on this occasion, believing them all to be Plants that will give general satisfaction, and tend to increase that confidence and support which have so long and so liberally been bestowed upon them.

The Plants are well established; and all Orders will be executed in the rotation in which they are received.

WELLINGTONIA GIGANTEA.

Ample description of this noble tree having lately appeared in the *Gardeners' Chronicle*, the *Times*, the *Illustrated London News*, Curtis's *Botanical Magazine*, the *Florist*, and other publications, it is only necessary now to say that it is a perfectly hardy Coniferous tree, of immense dimensions and great beauty.

Fine established seedling plants are now ready to send out on the following terms:—

One plant 2 guineas	Eight plants, 10 guineas
Four do., 6 „	Twelve do., 12 „

DESFONTAINIA SPINOSA.

A fine hardy evergreen flowering shrub, with glossy Holly-like foliage, introduced from the Andes of Patagonia by Mr. W. Lobb, *who discovered it in the region of snow.*

It produces beautiful tubular-shaped blossoms, often 2 inches in length, and of a rich scarlet colour tipped with yellow. (See figure in Curtis's Bot. Magazine for May, 1854.)

This plant having been fully exposed in the open ground during the three last winters may, consequently, be declared to *be perfectly hardy.*

It will certainly be a great acquisition.

Fine established plants, in three sizes, 21s., 42s., and 63s. each.

One over on three to the trade.

CERATOSTEMA LONGIFLORUM.

(Figured in Curtis's Botanical Magazine for April, 1854.)

A beautiful dwarf evergreen Greenhouse Shrub, introduced through Mr. W. Lobb, from the Andes of Peru.

It bears bunches of large tubular-shaped flowers, of a rich orange-scarlet colour, of a stout waxy texture, and which are of great duration.

It was exhibited at Chiswick in July 1853, and obtained the first prize for new and rare plants.

Good established plants, of two sizes, 21s. and 31s. 6d. each.

One over on three to the trade.

LOMATIA FERRUGINEA.

This fine Evergreen Shrub was found in Chiloe and Patagonia by Mr. W. Lobb.

It attains a height of from 6 to 8 feet, and is remarkable for its beautiful Fern-like foliage.

As a fine leaved Conservatory Plant it is perhaps without a rival, and no collection of fine foliaged plants should be without it.

It has but to be seen to be admired.

Fine established plants of two sizes, 31s. 6d. and 42s. each.

One over on three to the trade.

UGENIA, OR MYRTUS UGNI.

(Figured in Curtis's "Botanical Magazine" for Jan., 1852.)

This very interesting evergreen flowering shrub was obtained from Patagonia through Mr. W. Lobb.

It has stood several winters in the open ground without shelter, producing its delightfully fragrant flowers in July, succeeded by Strawberry-flavoured berries, eaten in Chili as dessert.

It is a plant of easy culture, and, blooming freely in a small state, is well adapted for growing in pots.

Strong blooming plants, in 48-sized pots, 21s. each.

Second-sized „ in 60-sized pots, 15s. each.

One over on three to the trade.

FUCHSIA DOMINIANA.

The merit of raising this beautiful plant is due to Mr. Dominy, the Foreman of the Plant Department at the Exeter Nursery; it consequently bears his name as a memento of his zeal and ability in the performance of his duties. It is a seedling between Serratifolia multiflora and Spectabilis, having the fine free growth of the former and the splendid flowers of the latter.

It was exhibited at the National Floricultural Society's Meeting, October 6, 1853, and had a Certificate of Merit awarded it. It was also exhibited at the London Horticultural Society's Meeting, on the 18th of the same month, and was again similarly rewarded.—Price 10s. 6d. each, with one over when three are taken.

IMPATIENS JERDONIÆ.

This beautiful new Balsam is figured in "The Florist" of January last, and is certainly one of the most interesting of recent introductions.

It is of a dwarf neat habit, of easy cultivation, requiring the temperature of a warm greenhouse or stove, and an abundant bloomer, continuing in flower at least three months.

The flowers are in colour bright red and yellow. It was exhibited in the Hort. Soc. Rooms, 21, Regent Street, on the 18th October last, and had the highest prize for new plants awarded.

This is a lovely little plant.

Fine Established Plants ... ... 10s. 6d. each.

A few extra-sized do. ... ... 21s. „

One over on three to the trade.

HEXACENTRIS LUTEA.

A fine Stove Climber, introduced from the Neilgherry Hills, of easy culture and great beauty.

It produces its flowers in abundance, on elegant pendulous racemes, of from 15 to 18 inches in length, of a clear bright yellow, unmixed with any other colour.

The effect produced when seen drooping from the roof of the conservatory or a trellis is most striking.

It was exhibited at Chiswick on the 13th May last, and obtained the Silver Banksian Medal.

Strong Established Plants ... ... 21s. 0d. each.

Second sized „ ... ... 10s. 6d. „

One over on three to the trade.

VERONICA VARIEGATA.

This lovely hybrid Veronica was raised by J. Anderson, Esq., of Maryfield, Edinburgh, between V. Andersoni and V. salicifolia.

In character it is intermediate between the two parents, having a bushy compact habit, and small glossy foliage.

It is an abundant bloomer.

The racemes of flowers on first appearing are a clear bright pink, and gradually shade off to a pure white, producing a very pretty and striking effect.

It is really a most useful and attractive plant.

It was exhibited at Chiswick in July, 1853, and was awarded a Medal and greatly admired.

Fine bushy plants, 10s. 6d. each. Three for 21s., to the Trade.

AZALEA INDICA.

Striata formosissima (Taylor).

This beautiful new Azalea is now offered for the first time. It is a seedling raised by Mr. Taylor, gardener to J. Costar, Esq., of Streatham. It is a pure white, flaked and spotted with light purple, fine form, good substance, and first-rate habit.

It was exhibited at the National Floricultural Society, on the 16th June, 1853, and received a Certificate of Merit.

It was also exhibited at the June exhibitions of the Royal Botanic Society, Regent's Park, and the Horticultural Society, at Chiswick, on both which occasions it received prizes.

Worked plants are now ready at 21s. each. One over on three to the Trade.

Messrs. VEITCH & SON can also supply the following good and popular Plants:—

Abies bracteata (seedling)...	63s. each.
Aphelandra Leopoldi	21s. „
Azalea indica, Beauté de l'Europe ...	3s. 6d. to 21s. each.
Begonia Thwaitesi	10s. 6d. „
Camellia, Countess of Orkney	21s. „
„ Storyii	10s. 6d. „
Hoya fraterna	10s. 6d. to 21s. „
Ixora Lobbi	10s. 6d. to 21s. „
Lilium giganteum	21s., 42s., 63s. „
Philesia buxifolia	21s. „
Rhododendron jasminiflorum	21s. to 63s. „
Rhodoleia Championi	7s. 6d. to 21s. „
Streptocarpus biflorus	3s. 6d. „

Detailed Lists are now preparing, and will be forwarded on application.

NURSERIES, EXETER AND CHELSEA.—July 15, 1854.

This day is published, THIRD EDITION, *at 3s. 6d.*

TALPA;

OR,

THE CHRONICLES OF A CLAY FARM.

BY CHANDOS WREN HOSKYNS, ESQ.

*** *Of the Original Edition at 8s., illustrated by* GEORGE CRUIKSHANK, *only a few Copies remain.*

LONDON: LOVELL REEVE, 5, HENRIETTA STREET, COVENT GARDEN.

On the 20th of July will be published, price 10s. each, handsomely and strongly bound in cloth,

VOLUME II. OF THE GEOGRAPHICAL DIVISION, AND VOLUME II. OF THE NATURAL HISTORY DIVISION OF

THE ENGLISH CYCLOPÆDIA.

ILLUSTRATED WITH MORE THAN FIVE THOUSAND WOOD ENGRAVINGS.

CONDUCTED BY CHARLES KNIGHT.

☞ A Number of the Cyclopædia is published every Saturday, price 6d.; one week a number of GEOGRAPHY—the next a number of NATURAL HISTORY; and a Part, price 2s., on the last day of every month.

BRADBURY & EVANS, 11, Bouverie Street; and to be had by order of all Booksellers and Newsvendors.

CRYSTAL PALACE, 1854.

THE OFFICIAL GUIDE AND HANDBOOKS,

ILLUSTRATIVE of the CONTENTS of the EXHIBITION, are now on Sale, and may be had separately, at prices varying from Threepence to Eighteenpence; or handsomely bound in 3 Vols., price 4s. 6d. each. To be had at the PALACE, and at all Booksellers and Railway Stations, and of

BRADBURY & EVANS, Printers and Publishers to the Crystal Palace Company, 11, Bouverie Street.

This day is published, handsomely bound, with Illustrations and Plans, &c., price Half-a-Crown,

BUXTON AND THE PEAK OF DERBYSHIRE. A HANDBOOK TO THE PEAK OF DERBYSHIRE AND TO THE USE OF THE BUXTON MINERAL WATERS. By WILLIAM HENRY ROBERTSON, M.D., Senior Physician to the Buxton Bath Charity. This forms a COMPLETE GUIDE to BUXTON IN 1854; and includes PLANS OF THE PEAK and of the surrounding neighbourhood, with a DIRECTORY OF THE DISTANCES, ROUTES, HOTELS, &c. Also a BOTANICAL APPENDIX. By Miss HAWKINS.

BRADBURY & EVANS, 11, Bouverie Street, London; to be had of all Booksellers, and at all Railway Stations.

PROFESSOR LINDLEY'S INTRODUCTION TO BOTANY, 4th Edition, with Corrections and Additions, now ready, in 2 vols. 8vo, with Six Copper Plates and numerous Wood Engravings. Price 24s. cloth.

London: LONGMAN, BROWN, GREEN, & LONGMANS.

Now ready, in 18mo, with Woodcuts, price 3s. 6d.

SOUND and its PHENOMENA. By the Rev. E. C. BREWER, D.D., Trinity Hall, Cambridge: Author of "A Guide to English Composition" (12mo, price 5s. 6d.), "Poetical Chronology," (12mo, price 3s. 6d.), &c.

London: LONGMAN, BROWN, GREEN, & LONGMANS.

AFFECTIONS OF THE NERVOUS SYSTEM.

Now ready, price 5s. 6d. with numerous Cases.

DR. MADDOCK ON NERVOUS DISEASES.—"Dr. Maddock has had large experience in nervous disorders, and he displays great judgment and ability in his comments on them."—*Literary Gazette.*

"The cases related exhibit sensible views and sound practice." —*Ed. Medical Association Journal.*

"Full of matter interesting to the general reader."—*Sunday Times.*

London: SIMPKIN, MARSHALL & Co., Stationers' Court.

Will be ready on the 1st August, Part I. of

THE FERNS OF GREAT BRITAIN, Illustrated by JOHN E. SOWERBY; Descriptions by C. JOHNSON, Esq. To contain about 46 Plates, and to be completed in Eight Monthly Parts, full coloured, at 3s.; partly coloured at 1s. 6d. per Part.

Prospectuses may be had through all Booksellers; and of the Proprietor, JOHN E. SOWERBY, 3, Mead Place, Lambeth.

ON MARRIAGE.

Just published (to be had free, by enclosing 1s. or Twelve Postage Stamps, to Mr. WATSON, Clerical Agent, Robert Street, Adelphi, London).

MATRIMONY.—A Pamphlet on Matrimonial Alliances, which merits the attention of those who wish to settle honourably in life. By a Clergyman.

SPECIMEN PLANTS.

TO BE SOLD, a MISCELLANEOUS COLLECTION of LARGE PLANTS, not Orchids. They have obtained high prizes at the Botanical and Horticultural exhibitions. They are within an hour's drive of the West End, and would be delivered free of charge at any of the London termini.—Address A. B., Mr. Sharpe, Bookseller, Berkeley Square.

PRICE FOURPENCE OF ANY BOOKSELLER.

CONTENTS OF THE NUMBER FOR SATURDAY LAST, JULY 8, OF

THE ATHENÆUM.

JOURNAL OF ENGLISH AND FOREIGN LITERATURE, SCIENCE, AND THE FINE ARTS.

Thirty-two large Quarto Pages.

Reviews OF, WITH EXTRACTS FROM—

1. The Life of Alexander Pope. (*To be continued.*)
2. Narratives of some Passages in the Great War with France, from 1799 to 1810. By Lieutenant-Gen. Sir H. Bunbury.
6. A Letter to R. Lowe, Esq., from J. Bruce Norton, on the Condition and Requirements of the Madras Presidency.
8. Germany from 1760 to 1814. By Mrs. Austin.
4. Dante's Divine Comedy. By F. Pollock.
5. Selections, Grave and Gay, from Writings, published and unpublished, by Thos. De Quinsey.
7. Minor Minstrels—containing Tupper's Batch of War Ballads, Smythies' Prince and the People, Songs and Small Poems of the Holy Scriptures, Nebraska, A Poem and a Pamphlet, Glimpses of the Unseen, The Sceptre of Tara, and Helen.

WITH SHORTER NOTICES OF—

Sir Gervase Grey. By Mrs. Gordon.

Tilbury Nogo; or, Passages in the Life of an Unsuccessful Man.

Cyclopædia of Biography. By E. Rich.

The National Debt, and How to Pay it.

Healthy Homes, and How to make them. By W. Bardwell.

The Australian Emigrant. By G. H. Haydon.

Pamphlets, &c. &c. &c.

Original Papers.—The Educational Exhibition.

Foreign Correspondence.—Naples, Royal Museum at—Rome, Paintings at.

Weekly Gossip.—Chiswick Exhibition—Literary News of New York—Archæological Institute—Grant to the Geographical Society—Mr. Patmore's Memorials—Crystal Palace for Naples—Workmen's Soirée at the Architectural Museum—Society of Arts' Centenary Dinner—The 'Perverse Widow'—Museum for Bath—Sale of Coins.

Societies.—Report of the Proceedings of the Royal Institution—Society of Arts—Institute of Actuaries.

Fine Arts.—Haghe's Aya Sofia (Constantinople), Paintings at Rome.

Fine-Art Gossip.—Coloured Sculpture—'Tirannova Raffaelle,' Sale of Mr. Cave's Pictures.

Music and the Drama.—Sacred Harmonic Society—Concerts of the Week—Olympic ('Heads or Tails')—Haymarket ('As Like as Two Peas')—Lyceum ('The Gentleman Opposite')—Adelphi ('Hopes and Fears.')

Musical and Dramatic Gossip.—Organist's Competition—Music of a Week—Musical Copyright—New ...—Roubiliac's Statue of Handel—French and American Theatricals.

The Athenæum may be ordered of any Bookseller.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. .. Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, July 15, 1854.

THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley

No. 29.—1854.] SATURDAY, JULY 22. [PRICE 6d.

INDEX.

Adulteration of manures...... 468 b
Agri. Soc. of England .... 473 c
— report of .... 474 b
Botanical Soc. of Edinburgh .. 470 c
Caledonian Hort. Society .... 470 c
Calendar, horticultural........ 472 a
— agricultural .... 478 b
Caterpillar, Gooseberry ...... 469 b
Cineraria, culture of .... 471 b
Conifers, effects of winter on.. 469 c
Deutzia gracilis .... 469 a
Dioscorea Batatas .... 468 a
Eggs, carriage of............... 478 b
Entomological Society........ 470 b
Florence new Hort. Soc........ 468 c
Flowers, symmetry of .... 471 c
Food, Yams as .... 467 c
Galvanised wire .... 470 a
Gooseberry caterpillar .... 469 b
Hay, to salt .... 474 a
Hitcham Hort. Soc. .... 471 a
Kennington Park .... 470 b
Lane's (Messrs.) nursery...... 471 a
Lime, waste gas .... 474 a
Manures, adulteration of...... 468 b
— improvements in .... 478 b
Monkshood, pigs killed by.... 474 a
Nectria ma..rata.............. 470 a
Pathology, vegetable .... 468 c
Pears, new..................... 469 b
Plants, new .... 471 a
— Sikkim-Himalayan, new work on .... 468 a
Potatoes, large produce of .... 471 a
Potato disease .... 470 a
Poultry at Lincoln............... 478 a
Sabbatia stellaris .... 471 a
Sikkim-Himalayan plants — new work on............... 468 a
Vegetation, symmetry of...... 471 c
Vegetable pathology .... 468 c
Vine pruning.................. 469 b
Wheat, blighted .... 474 a
Winter, effects of............. 469 c
Wire, galvanised .... 470 a
Yams, Chinese .... 467 c

ISLEWORTH HORTICULTURAL FETE. —SCHOOL TREAT AND JUVENILE REGATTA, under distinguished patronage, will take place on AUGUST 11th, instead of the 8th, as previously advertised (on account of the Thames National Regatta being fixed for the 8th), in the GROUNDS of GORDON HOUSE, by kind permission of Hamilton Cooke, Esq., and Saint Margarets, by kind permission of the Committee of the Conservative Land Society, on the banks of the Thames, when prizes open to all England will be awarded for FLOWERS, FRUITS, and VEGETABLES.—Further particulars may be obtained on application to HICKSON BRIGGS, Hon. Sec.
Holland House, Isleworth, July 22.

DARLINGTON HORTICULTURAL SOCIETY. —The SUMMER EXHIBITION will be held on FRIDAY, August 4th, at Southend, the seat of Joseph Pease, Esq., when Prizes will be awarded for Flowers, Fruits, and Vegetables. Successful Exhibitors of Pot Plants, if residing more than 10 and less than 25 miles from Darlington, will have 10 per cent. added to their prizes; if above 25 miles, 25 per cent. will be added. Schedules to be had of the Honorary Secretaries—
JOHN BOUSFIELD, WILLIAM ROBINSON, EDWARD PEASE, jun.

CHEPSTOW HORTICULTURAL SOCIETY. — The second and last Show for this season will take place on THURSDAY, September 7, 1854, when the undermentioned prizes will be given:—For the best collection of 12 Stove and Greenhouse Plants (given by the inhabitants of Chepstow, open to all England), first prize, a Silver Cup, value 10*l.* 10*s.*; second ditto ditto, 5*l.* 5*s.* N.B. The second prize given by the Society.—Calceolarias, Fuchsias, Orchids, and Pelargoniums, will be excluded from the above collection. For the best Stand of 24 Bunches of Roses, of different names, not more than 3 stems in a bunch, with their own foliage and buds (given by the Wye Steam Packet Company) open to all England. First prize, a Silver Cup, value 5*l.* 5*s.*; second ditto, a Piece of Plate, 2*l.* 2*s.*; N.B. The 2d prize given by the Society. For the best Stand of 36 Dahlias (given by the Society) open to all England. First prize, a Silver Cup, value 5*l.* 5*s.*; second ditto, a Piece of Plate, 2*l.* 2*s.* By the kind permission of Colonel the Hon. Arthur Upton, the band of the Coldstream Guards will perform during the fête. Exhibitors are requested to make an early application for schedules, which may be obtained of the Secretary, Mr JOHN F. HARTLAND, Welsh Street, Chepstow.

THE ANNUAL FETE OF THE BUCKINGHAM HORTICULTURAL AND FLORAL SOCIETY will be held on WEDNESDAY, the 26th of July, 1854, in the spacious Garden of the late Cobham Arms Hotel and the adjoining Grounds, by the kind permission of the Proprietors, where extensive arrangements will be made for the accommodation of Exhibitors.

Twenty-one Prizes, including Two Silver Cups, open to ALL England, together with upwards of 60 Prizes to Nurserymen, Gentlemen's Gardeners, and Amateurs, and 50 Cottagers' Prizes, will be offered for competition. Schedules and full particulars may be obtained on application to Messrs. MARTIN and THORPE, Hon. Secretaries and Treasurers.

PARIS UNIVERSAL EXHIBITION OF 1855.

NOTICE IS HEREBY GIVEN, that all demands for Space should be sent in by intending Exhibitors immediately, or at latest on the 1st August.
(By order) H. C. OWEN, Captain R.E.
Marlborough House, Pall Mall, London, July 22.

ROSES.

G. CLARKE respectfully invites the attention of lovers of Roses to his unrivalled Collection, extending over 10 acres of ground, which may now be seen in full bloom. Plants can be selected now and orders executed in the autumn.

Streatham Place Nursery, Brixton Hill, near London; four miles from London. The nearest and most pleasant route from the West End to the Crystal Palace.

CALCEOLARIA AND CINERARIA SEEDS.

GEORGE CLARKE begs to intimate that he has now ready for sale choice Seed of Calceolaria and Cineraria. The collection of Calceolarias from which the Seed now offered was saved forms an unrivalled one, and has been the admiration of all who have seen it: they possess every variety of colour peculiar to the genus, fine shapes, and have been awarded several first-class Certificates. Great care has also been taken in selecting the Cineraria from none but first-rate flowers; and, like the Calceolaria, it is warranted to give satisfaction.—Packets of both, 2*s.* 6*d.* each, will be sent on receipt of postage stamps to the amount.—Streatham Place Nursery, Brixton Hill, near London.

THE QUEEN OR CAULIFLOWER CABBAGE.— The above Cabbage is of most delicate flavour, quite equal to the Cauliflower; very early, and requires good ground. The stumps left in the spring after the Cabbages are cut will reproduce Cabbages all the summer, so that persons growing this kind need not make more than one good bed in the year. It should be sown this month, and planted out in September.—1*s.* per oz.

LONDON MARKET CABBAGE.—Saved from a very choice stock. This kind is of larger growth than the Queen, and will do well for exposed situations.—1*s.* per oz.

The above sent free by post on the receipt of postage stamps or a post-office order.
JOSEPH SHILLING, Nurseryman and Seedsman, Winchester.

FOR PRESENT SOWING.

SUTTON'S IMPERIAL CABBAGE, *the earliest sort for spring cutting; large, and fine flavour.* Price 1*s.* per ounce, or 6*d.* per packet, post free. Payment may be made by postage or receipt stamps.
Address—SUTTON AND SONS, Reading, Berks.

MAY'S PARAGON CABBAGE.—Prepaid postage. The above superb CABBAGE can still be had in 1 oz. packets, 1*s.* each. Sow July and August.

Also new CINERARIA SEED from the best named flowers, in packets, 2*s.* 6*d.* each.
Address, HENRY MAY, the Hope Nurseries, near Bedale, Yorks.

HARDY'S NEW EARLY DWARF CRYSTAL CABBAGE.

ABRAHAM HARDY AND SON, SEED GROWERS, Maldon, Essex, can with confidence recommend this as a superior kind, and warrants it to give entire satisfaction. One ounce will be sent to any address, post free, on receipt of 1*s.*, or postage stamps equivalent. Sow in July or August.

THE LARGE YELLOW STONE TURNIP.

JOHN RIVERS has about 20 bushels of this large and valuable Hybrid Turnip, well adapted for sowing in August and for winter feed. J. R. is open to an offer from the trade for all or part of the above quantity.—Address JOHN RIVERS, Sawbridgeworth.

FUCHSIA "DUKE OF WELLINGTON."

MOORE AND SON can supply good Plants in Bloom of this unrivalled Fuchsia, at 5*s.* each.
Perry Barr Nursery, near Birmingham.

PICOTEES AND CARNATIONS.

CHARLES TURNER'S very fine and extensive Collections of these Flowers, including some fine new varieties, are now in FULL BLOOM, and may be seen daily.
Royal Nursery, Slough.—July 22.

NEW PLANT CATALOGUE.

WM. RUMLEY AND SON'S NEW DESCRIPTIVE CATALOGUE of all the best new Fuchsias, Verbenas, Petunias, Cinerarias, &c., of 1854, at very reduced prices, is now ready, and may be had on application.
Gilling, Richmond, Yorkshire.

ROBERT SIM'S NEW CATALOGUE of more than 250 species and varieties of STOVE, GREENHOUSE, and HARDY EXOTIC and BRITISH FERNS, &c., can be had for one stamp.—Nursery, Foot's Cray, Kent.

NEW BEDDING PLANT.
CALCEOLARIA AJAX.

LUCOMBE, PINCE, AND CO., are now sending out healthy Plants of their much admired
NEW SHRUBBY CALCEOLARIA.
It is now flowering profusely in their Nursery, and they respectfully call attention to it. See *Gardeners' Chronicle*, May 6th.
42*s.* per dozen; a few strong plants at 7*s.* 6*d.* each.
Exeter Nursery, Exeter.

CHOICE CINERARIA
AND
CALCEOLARIA SEEDS.

LUCOMBE, PINCE, AND CO. have now ready for sending out Seeds of their very superior
CINERARIAS AND CALCEOLARIAS,
which have been saved with great care from the finest varieties. The great satisfaction which their Cinerarias and Calceolarias have given for several successive years enables them to recommend their Seed of the present season with much confidence.

Packets of each, sealed and warranted by them, at 2*s.* 6*d.*, free by post.—Exeter Nursery, Exeter, July 22.

SEEDS OF CALCEOLARIA AND CINERARIA.

E. G. HENDERSON AND SON, of the Wellington Nursery, St. John's Wood, London, are now prepared to forward, by post, the new Seed saved this season from their unrivalled collection, in packets at 2*s.* 6*d.* and 5*s.* each.

The CALCEOLARIA, first quality	... ...	5*s.* 0*d.*
" second "	... ...	2 6

QUALITY, and not QUANTITY, forwarded at the above prices.

FERNS AND LYCOPODIUMS.

E. COOLING begs to offer the following, in good Plants:—

12 choice Ferns and Lycopodiums, suitable for a Wardian case, Gold Fern included ...	15*s.* and 20*s.*
12 choice Indian Azaleas, to name	12*s.* and 18*s.*
6 finest new Verbenas	6*s.* and 9*s.*

The Nurseries, Derby.—July 22.

SPLENDID
CALCEOLARIA, CINERARIA, & SWEET WILLIAM SEED.

WILLIAM BARNES respectfully begs to inform his friends and the public generally, that he has now ready to send out in packets, at 2*s.* 6*d.* each, seed of his unrivalled Herbaceous Calceolarias, which has given so much satisfaction for two years; the varieties have been selected with the greatest care, and none but the finest colours and best shaped flowers have been retained and carefully hybridised.

W. B. has for two years paid great attention to the improvement of the SHRUBBY BEDDING CALCEOLARIA, having purchased all the best kinds from the most eminent growers, and selected from them while in bloom the best shapes, finest colours, and most perfect shrubs; by careful hybridising he has succeeded in raising some first-rate varieties, and is now enabled to offer a few packets of fine new seed at 5*s.* per packet: this W. B. feels assured will give as much satisfaction as his herbaceous varieties have done before, which numerous letters he has received from various parts of the United Kingdom will testify.

CINERARIA SEED, saved from none but the very best and newest varieties in cultivation, at 2*s.* 6*d.* per packet.

The SWEET WILLIAMS have been grown in his Nursery Grounds for two successive years, and have caused universal admiration from all those who have seen them in bloom: nothing can be more beautiful for either clumps or borders, and they retain their great beauty for a very long time. Packets of fine seed at 1*s.* 6*d.* each. A remittance is expected from unknown correspondents.—Camden Nursery, Camberwell, London.

STRAWBERRIES.

WILLIAM NICHOLSON is now sending out strong, well-rooted plants of his four new and distinct STRAWBERRIES, viz., AJAX, a very fine large dessert fruit, very beautiful, solid, and juicy. RUBY, do., a great bearer, and forces well. CAPTAIN COOK, market fruit, large, and a great bearer. FILLBASKET, do. 15*s.* per 100, or 25 each of any two sorts for 10*s.*, box included. Most of the best old and new sorts can be supplied on reasonable terms. See advertisement July 15. Post-office orders payable at Yarm, Yorkshire, or a cash remittance required with the order.
Egglescliffe, near Yarm, July 22.

GRAPE VINES FROM EYES, IN POTS.— The undersigned has now to dispose of a large stock of GRAPE VINES raised from eyes this season, strong, and in vigorous health, now exposed to greenhouse temperature, and hardened so that they can be sent safely to any part of the kingdom without check or injury. By planting now, a whole season will be saved. They comprise all the leading kinds, and an inspection of them is respectfully solicited.
R. GLENDINNING, Chiswick Nursery, near London.

THE BEST PLANT OF THE SEASON.
"BEGONIA PRESTONIENSIS SUPERBA."

W. J. EPPS has much pleasure in stating that he has purchased this splendid Begonia raised by Mr. Frost, Gardener to E. L. Betts, Esq., Preston Hall; the flowers are of much brighter colour than Prestoniensis, and the centre is nearly filled with anthers, resembling a double blossom with a golden tinge, exhibiting a charming contrast; the flowers are delightfully fragrant as a Tea-scented Rose—latest dwarf and bushy; the flowers are thrown well above the foliage, in large trusses, and altogether one of the best plants yet offered. It received the highest award in June at the Royal Botanic Show, Regent's Park, as a new plant; also at Maidstone and Ashford. Plants in October, 10*s.* 6*d.* each; one given where three or more are taken.—Bower Nurseries, High Street, Maidstone.

TO BE SOLD, the whole stock of the INCOMPARABLE PEA, which possesses the following properties, viz., being the most early and abundant cropper, and the produce superior for table. Any lady, gentleman, or seedsman may now inspect it in its growing state, at Rosslyn House Garden, Hampstead; the Gardener, Mr. NICOLS, will be proud to show it, as it is now in its beauty. As a practical gardener Mr. NICOLS has long made it his study to produce something superior, and he now gives a challenge to all England to produce its equal.

HAY.

TO BE SOLD, from 50 to 60 Tons of very Prime MEADOW HAY, well made in 1852.—Apply to Mr. JEREMIAH SINGER, Clink, Frome, Somerset. There is a Station of the Great Western Railway about a mile from the Farm.

SOUTHDOWN RAMS.

MR. R. H. ELLMAN informs his Friends that his RAMS are now ready for Letting or Sale. The Rams may be seen and terms known at any time.—Landport, Lewes.

SOUTHDOWN RAMS.

MR. W. SAINSBURY informs the Breeders of Southdown Sheep that his RAMS will be ready for Letting any time after the 22d day of July.
Manor House, West Lavington, Devizes.

PAGE AND CO.'S COMPOSITION FOR THE DESTRUCTION OF MILDEW UPON VINES, BLIGHT UPON ROSES, WALL-FRUIT TREES, CUCUMBERS, MELONS, AND STOVE AND GREENHOUSE PLANTS.—Extra strong, 4*s.* per gallon, sufficient to make four (jars and barrels extra); in bottles, 1*s.* 3*d.* and 2*s.* 6*d.* each. Directions for application forwarded. Ten gallons and upwards carriage free to London.

For testimonials, see whole page of *Gardeners' Chronicle*, March 11, 1854, describing the SATISFACTORY RESULTS derived from its use in cases of Vine Mildew, Thrip, Scale, Green Fly, Red Spider, Mealy Bug, &c., not only without injuring the most delicate flowers or foliage, but promotes a vigorous growth.

From Andrew Toward, Esq., Royal Gardens, Osborne Palace.
"I have great pleasure to add my testimony to the efficacy of your Blight Composition, which has been used with great success upon Rose Trees much affected with the Green Fly."

From Frederick Malleson, Esq., Royal Gardens, Claremont.
"I find it answer the purpose in all respects for Walls, also the Green Fly and Brown Scale in the Houses.—May 9, 1854."

Finest Grasses for Lawns and Parks, and every variety of Garden and Farm Seeds, at B. PAGE & Co.'s, Seed Merchants Oxford Street, Southampton (20 yards from the Railway and Docks).

RICK CLOTHS, MARQUEES, TENTS, ETC.
NEW OR SECOND-HAND, FOR SALE OR HIRE.

BENJAMIN EDGINGTON has for the ensuing season a large assortment of Marquees, &c., for Horticultural Societies, Fetes, Cricket Clubs, &c. Rick Cloths, with poles, pulleys, and lines complete. A variety of Emigration Tents erected on the premises, No. 2, Duke Street, Southwark. Netting and Bunting for fruit trees. A warehouse, 32, Charing Cross, where tents are erected.—Address, by post, 2, Duke Street, Southwark.

TO FLORISTS AND OTHERS.

J. JONES, IRON MERCHANT, has always a great variety of CONICAL and SADDLE BOILERS in STOCK; also Fire and Furnace Bars, Ornamental and Plain Supply Cisterns, Double Doors and Frames, Furnace Grates, Soot Doors, Hot Water Pipes, Elbows, Tees, Syphons, Throttle Valves, Stop Cocks, Flange and Socket Elbows, &c.; also Trough Pipes. Drawings and prices of the above, on application to J. JONES, Iron Bridge Wharf, No. 6, Bankside, London, near the Southwark Iron Bridge.

STEPHENSON AND PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

NEW FUCHSIAS OF 1854, sent out by Banks and others. The set of 17, well established plants, for 34s., or any 12 for 28s.:—Stokes' Duke of Wellington, Smith's Telegraph, Kimberley's Henry Monteith and Globosa splendens; Banks' Autocrat, Charmer, Vanguard, Queen of Hanover, Elegans, Clio, and Magnifica; Cole's Trentham, Henderson's Monarch; Batten's Charles Palmer, Grandissima, and Admiral; Standish's Perfection.

NEW VERBENAS OF 1854, sent out by Banks, Keens, Smith, and others. A selection of any 30 from the following may be made for 40s., or, per dozen, 18s.:—Keynes' Ajax, Arethusa, Captivation, Emily, Lord Mayor, and Magnet; Barnes' Lutea pallida, and Madonna; Smith's Peter Dick, Noblissima, Climax, Eblouisante, Angelina, Queen, Alice, Scarlet King, Forget-me-Not, Zaria, Caliban, Giralda, Islington Rival, Magnificent, Laura superba, and Triumph; Robinson's Mrs. D. Tyssen; Edmunds' Rouge et Noir, and President; Banks' Orion, Robin Hood, Marie Antoinette, Matchless, Beauty, Madonna, Attraction, Diadem, Ne Plus Ultra, and Arioste; Fozart's Beauty of the Garden; Stewart's Sulphur Model, and Ida; Igley's Honeysuckle; Bragg's Standard, Fair Rosamond, Incomparable, Lord Seaton, King of Purples, Queen of Roses, Prince of Wales, Venus, and Queen of Purples; Mein's Leucostemma, Mitchell's Elegantissima.

NEW PETUNIAS OF 1854, the nine varieties for 14s.:—Kimberley's Novelty, Van Houtte's Striata formosissima; Barnes' Elizabeth, Distinctus, Pencillata, Rotunda, Alba magniflora, and Formosa; Smith's Montreal Purple.

A FEW NEW AND SELECT PLANTS.

Cassia floribunda, a very free flowering new variety, with handsome foliage				7s. 6d.
Clianthus magnifica, a very large and brilliant new variety, with glossy foliage				10 6
Echites pelleri (or flava)	21s. 0d.	to		31 6
Gloxinia Duke of Wellington				7 6
Phlox, Epps' six beautiful new varieties				10 6
Thyrsacanthus rutilans, vermilion carmine colour, flowers very durable, and graceful habit				3 6
Abutilon insignis				3 6
Acacia grandis		3 6	—	5 0
Æchmea fulgens		5 0	—	7 6
Æschynanthus splendens		2 6	—	5 0
Allamanda Schotti		1 6	—	2 6
Aphelandra grandis		3 6	—	5 0
" variegata		5 0	—	7 6
" squarrosa citrina				15 0
Alloplectus Schlimmi		3 6	—	5 0
Azalea Stanleyana	3s. 6d.,	7 6	—	15 0
Berberis Darwini		1 6	—	2 6
Begonia miniata				5 0
" Prestoniensis		3 6	—	7 6
Boronia Drummondi				7 6
Centropogon tovarensis		3 6	—	5 0
CONIFERÆ—Fitzroya patagonica	3s. 6d.,	5 0	—	7 6
" Libocedrus chilensis		3 6	—	7 6
" Saxe-Gothæa conspicua		5 0	—	7 6
Cyrtanthera magnifica				2 6
Echites Harrisi	5s.,	10 0	—	21 0
Franciscea eximia		2 6	—	3 6
Gastrolobium ovalifolium				10 6
" Drummondi				7 6
Gesnera purpurea macrantha		2 6	—	3 6
" Suttoni sub alba		3 6	—	5 0
" Leopoldiana				7 6
Gloriosa planti		5 0	—	7 6
Hexacentris mysorensis		5 0	—	10 6
Hoya coriacea		2 6	—	3 6
" picta		5 0	—	7 6
" imperialis		2 6	—	3 6
Ixora grandiflora		2 6	—	3 6
" Lobbiana				15 0
Kennedya ovata alba				3 6
Lardisabala biternata				5 0
Rhodoleia Championi	7s. 6d.,	10 6	—	21 0
Rogiera thyrsiflora		2 6	—	3 6
Salpingantha coccinea		5 0	—	7 6
Skimmia japonica				21 0
Streptocarpus biflorus		2 6	—	3 6
Siphocampylos pendula-florens		5 0	—	7 6
Weigela amabilis	2s. 6d.,	3 6	—	5 0

Complete Catalogues free by post for 6 penny stamps.

☞ GOODS CARRIAGE FREE (not under 20s.) to all the London termini, and all stations on the London and Norwich and Colchester Line. Plants added gratis with orders 40s. and upwards.

BASS AND BROWN,
SEED and HORTICULTURAL ESTABLISHMENT, Sudbury, Suffolk.

GLASS FOR CONSERVATORIES, GREENHOUSES, DWELLINGS, ETC.

ESTABLISHED MORE THAN ONE HUNDRED YEARS.

THOMAS MILLINGTON requests attention to his present prices of SHEET GLASS in 100 feet boxes.

Squares	6 by 4 and 6½ by 4½ } 7 by 5 and 7½ by 5½ } 8 by 6 and 8½ by 6½ }	13 6
"	9 by 7 and 9½ by 7½ } 10 by 8 to 12½ by 9½ }	16 3
"	12 by 10 to 24 by 14	19 0

Orchard House Squares on Mr. Rivers's approved plan, to whom I have sold some thousands of feet:—20 inches by 12, 20 by 13, 20 by 14, 20 by 15, 20½ by 12½, 20½ by 13½, 20½ by 14½, at 19s. per 100 ft. 200 feet cases at 42s., and 300 feet case 63s., in large sheets.

Boxes charged 1s. extra per 100 feet, and the same allowed if returned free of all charge.

HARTLEY'S PATENT ROUGH PLATE GLASS, Fern Shades, Striking Glasses, Milk-pans, Bee Glasses, Cucumber Tubes, Sheet and Rough Plate Glass Tiles, Wasp Traps; Plate, Patent Plate, Crown and Sheet Window Glass, in every thickness and quality, and Ornamental Glass, plain and coloured; pure white Shades for Ornaments, Crystal Glass for Pictures.

Warehouse, 87, Bishopsgate Street Without—same side as Eastern Counties Railway.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

JAMES PHILLIPS AND Co. have the pleasure to hand their present prices of Glass for Cash:—

	SHEET SQUARES. In Boxes of 100 feet.	CROWN SQUARES. In Boxes of 100 feet.
Under 6 by 4	£0 12s. 6d.	8s 6d.
6 by 4, and 6½ by 4½	0 13 0	12 6
7 " 5, — 7½ " 5½ } 8 " 6, — 8½ " 6½ }	0 15 0	14 0
9 " 7, — 10 " 8, 12 by 9, 12 by 10, 14 by 10 }	1 0 0	

Larger Sizes, not exceeding 40 inches long.
16 oz. from 3d. to 3½d. per square foot, according to size.
21 oz. " 4½d. to 5d. " " "
26 oz. " 6d. to 7½d. " " "

SHEET GLASS OF ENGLISH MANUFACTURE FOR ORCHARD HOUSES, THE SAME QUALITY AS WE SUPPLY TO Mr. RIVERS, and of various dimensions, always on hand.

London Agents for the Sale of HARTLEY'S PATENT ROUGH PLATE GLASS.

Glass Tiles, ¼ of an inch thick, packed in cases, containing 50, at 1l. 17s. 6d. per case. Packages 2s. each extra, but allowed for when returned.

Glass Milk Pans, 21s. per dozen; Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoys' Milk Syphons, Wasp Traps; Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the trade.

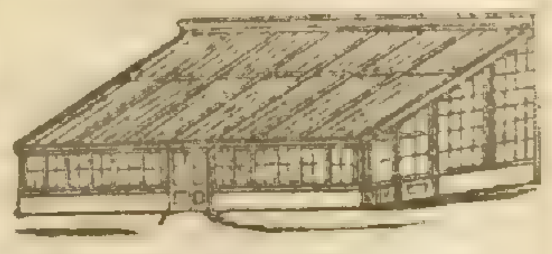
Horticultural Glass Warehouse, 116, Bishopsgate Street Without, Lond

HORTICULTURE IN ALL ITS BRANCHES.

J. WEEKS & Co., King's Road, Chelsea,

HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Buildings or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.



The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very ow prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. WEEKS & Co., King's Road, Chelsea, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.

GRAY AND ORMSON, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

BY HER MAJESTY'S ROYAL LETTERS PATENT

E. DENCH, PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

PATENT HOTHOUSES and excellent Glass at 1s. 3d. per foot super., which are superior to all others for price with quality, and if known would supersede all others. (See Appendix, in "Book of the Garden," by Mr. M'Intosh.) A Range of Houses and Hot Water Apparatus, was erected by E. D. for E. L. Betts, Esq., Preston Hall, Kent. Mr. J. Frost, head gardener, has shown their efficiency by their produce at the Royal Botanic Gardens, Regent's Park, June 8, and Chiswick, June 11. The editor of the *Gardeners' Chronicle* says: "Beautiful examples of Black Hamburgh, large both in bunch and berry, and as black as Sloes, were furnished by Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall, Kent; these well deserved the first prize which was awarded them."—*Gardeners' Chronicle*, June 18th, 1853. The Grapes were considered the best shown at Regent's Park during the season, and the Houses are as superior for the growth of everything else in horticulture, which has been fully proved, and they have been extensively erected for the nobility and gentry in all parts of the kingdom.

GLAZING WITHOUT PUTTY.—Iron and Glass alone. E. D. has Roofed the Public Baths and Washhouses, Endell Street, on this principle, and others are in hand. Patent Sashes for Peach Walls, Pits, &c., 8d. per foot super. Heating by Hot-water, on the most practical principles, and all the best materials used. Printed Price List sent on application.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

Priced lists of plant tubs and boxes forwarded on application.

(Fig. 1.)

(Fig. 2.)

J. TYLOR AND SON'S BARROW GARDEN ENGINE (Fig. 1), in best well painted oak tub, fitted with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 1 holds	10 gallons,	throws	30 feet high	£4 10
No. 2 "	15 "	"	45 "	5 10
No. 3 "	28 "	"	45 "	6 10

J. TYLOR & SON'S BARROW GARDEN ENGINE (Fig. 2), in strong tinned iron tub, well painted inside and outside, with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 10 holds	8 gallons,	throws	25 feet high	[illegible]
No. 13 "	12 "	"	30 "	[illegible]
No. 11 "	16 "	"	40 "	[illegible]
No. 12 "	24 "	"	45 "	[illegible]
No. 14 "	30 "	"	45 "	5 10

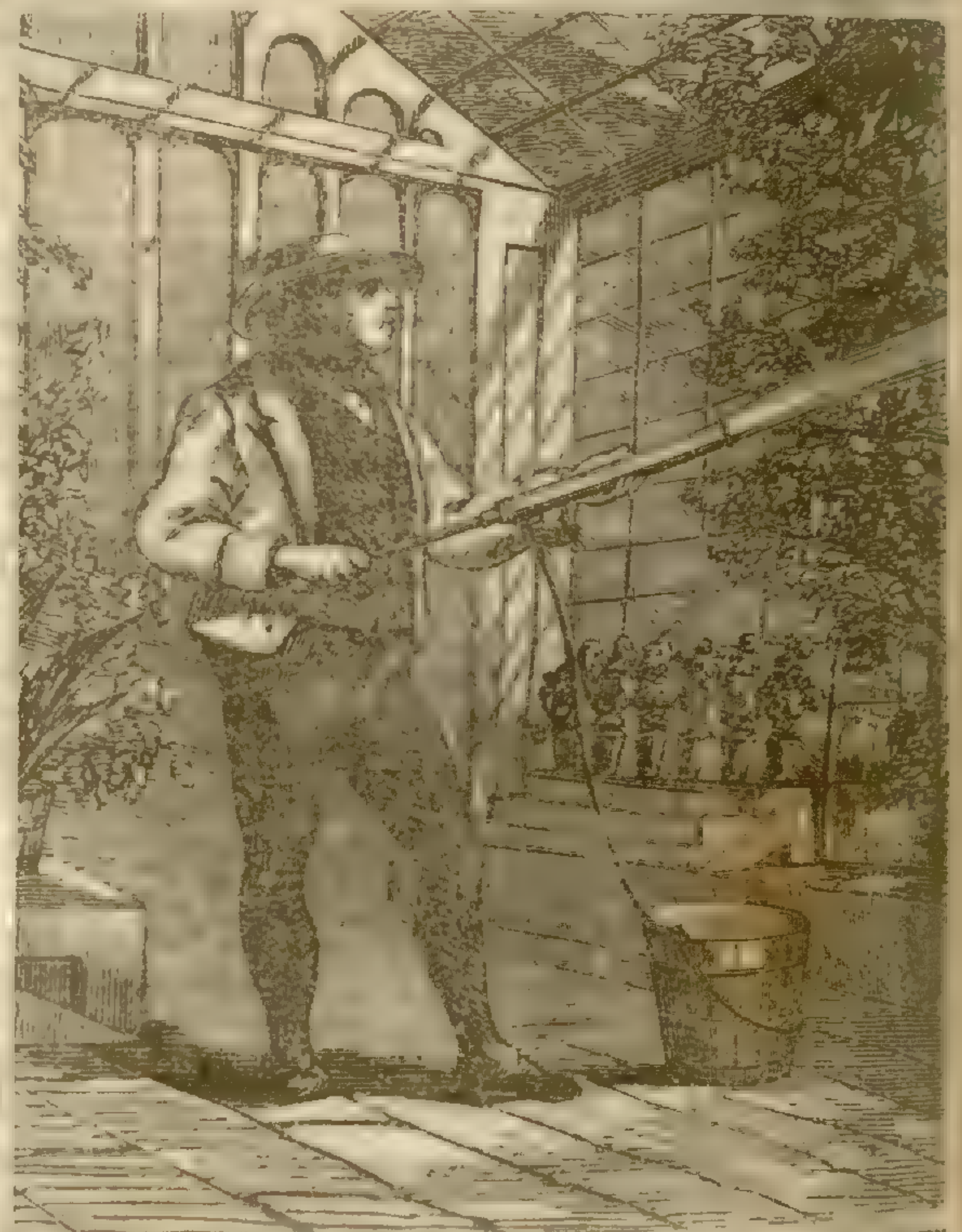
A large assortment of every description of Garden Syringes, Pail Engines, Conservatory Pumps, &c., kept in stock.

Full size Syringe, on Read's principle, of the very best quality and workmanship, with two roses and one jet, 21s.; Plain Syringes from 10s. 6d. upwards.

J. TYLOR & SON'S Horticultural Apparatus may be obtained at these prices from any respectable Ironmonger or Seedsman in town or country, through whom alone they will be supplied, and of whom Drawings and Prices may be had.

N.B. Cost of carriage, &c., not included in these prices.

J. TYLOR & SON'S Manufactory, Warwick Lane, Newgate Street, London.



J. TYLOR AND SON'S REGISTERED GARDEN SYRINGE.—Small size, for Amateur use, 21s. each. Large size, for Gardeners' use, 25s. each.

By a simple arrangement this Syringe is rendered more effective than any portable Conservatory or Garden Pump ever offered to the public. It is equally adapted for Garden or Conservatory use, and is capable of discharging twice as much water in a given time as any other Syringe now in use. The arrangement consists in attaching a small flexible suction tube to the barrel of the Syringe, through which it is filled with water at every discharge of the previous contents. By this means the Syringe is always charged, and the pull-up stroke of the piston rendered perfectly easy, it having, indeed, no work to do, the barrel being previously full of water. Being thus made self-supplying, a great saving of labour is effected; and the necessity of stooping to fill the Syringe at every discharge being done away with, the direction of the water can be maintained for any length of time. It is perfectly cleanly in its action, as it is not possible for any water to get on the outside of the barrel, which is a well-known inconvenience attendant on the use of every other Syringe. Its construction is perfectly simple, and cannot get out of order; the ground-in ball valves and fittings used for filling all other patent Syringes being entirely superseded. To be had of any respectable Ironmonger or Seedsman in town or country.

J. TYLOR & SONS, Manufacturers of Horticultural Apparatus, Warwick Lane, Newgate Street, London.

N.B. These prices do not include carriage, package, or expenses of delivery in the country.

ENCAUSTIC TILE PAVEMENTS.

MAW AND CO., Benthall Works, Broseley, Salop, Manufacturers of the Cloister Pavement of Mediæval Court, and "THE SUCCESSFUL IMITATION OF OFY'S ALEXANDRINE IN THE BEAUTIFUL ENCAUSTIC TILE PAVEMENT OF CLOISTER: BYZANTINE COURT," Crystal Palace (M. D. Wyatt, Esq.: Official Handbook), forward, without charge, Designs and Estimates, adapted to given dimensions, of Entrance Halls, Conservatories, Verandahs, &c., in every style.

Specimens at 11, Aldersgate Street, City.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence at Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard, of E. T. ARCHER, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey.

SPLENDID NEW RHUBARB.

SALT'S CRIMSON PERFECTION.

ROBERT SALT, GARDENER, Longton, Staffordshire, will send out roots of this early, productive, and delicious variety of Rhubarb this autumn: see *Gardeners' Chronicle*, June 11, 1853: "Very good, and most beautiful crimson; compared with others, it is remarkable for the small amount of acidity it contains."

A Certificate of Merit was awarded for specimens exhibited at the meeting of the London Horticultural Society, June 28, 1853; likewise a first-class Certificate at Nottingham Horticultural Society, May 24, 1854; and at the Midland do., May 25, 1854.

Single roots, 7s. 6d., three for one guinea, and six for 2l. Orders forwarded now to ROBERT SALT, or to HURST & M'MULLEN, 6, Leadenhall Street, London: Mr. Wood, Nurseryman, Coppice, near Nottingham; Messrs. Burgess & Kent, Nurserymen, Penkhull; Messrs. F. and A. Dickson & Sons, Seed Merchants and Nurserymen, 106, Eastgate Street, Chester, will have the earliest attention. A Post-office order requested from unknown correspondents.—Longton, July 22.

WARD'S "OMER PACHA" STRAWBERRY.

W. J. WARD (by permission of his employer, W. Stephens, Esq.,) offers to his friends and the public the above Seedling Strawberry, which has been proved to possess superior excellence. It is a large handsome fruit, intermediate between the old Carolina Pine and British Queen, partaking of the fine colour of the former, and by many considered superior in flavour to the latter; it is also remarkable for the fine buttery quality of its flesh. Great bearer; ripe as early as Keens' Seedling, affording a long succession of fine fruit. It was exhibited at the Royal Botanic Gardens, Regent's Park, on Wednesday, July 5th, and obtained the Bronze Medal. It has also been submitted to Mr. Thompson, Horticultural Society, Chiswick; and Mr. Spencer, Bowood, both of whom speak highly favourably of it. Also the following, who have pronounced it first-rate, and are open to take orders for it:—Messrs. Henderson, Pine-apple Place, London: Mr. C. Turner, Royal Nursery, Slough; Messrs. Standish and Noble, Bagshot; Mr. P. Lydiard, Fruiterer, Batheaston, Bath: Mr. W. J. Epps, Bower Nursery, Maidstone; Messrs. Sutton, Reading; Mr. W. Barnes, Camberwell; Mr. Lewis Solomon, Fruiterer, Covent Garden.

Strong well rooted plants last week in August. Terms, cash or reference.—100 plants, 3l.; 50 plants, 1l. 15s.; 25 ditto, 1l. A few strong plants in 32-sized pots, 15s. per dozen.

Prospect Hill, Reading, July 22.

THE NEW RHODODENDRONS OF ASSAM AND BOOTAN.

EXHIBITED AT CHISWICK ON SATURDAY, JULY 8TH, BY MR. J. VEITCH, JUN., OF CHELSEA.

MESSRS. E. G. HENDERSON AND SON, of the Wellington Nursery, St. John's Wood, London, beg to say that in consequence of some remarks having been made to them respecting the above, and other reports having been circulated, originating, as they have been given to understand, from the Exotic Nursery, Chelsea, and which they are sure can have no foundation, think it right to put the readers of this Journal in full possession of the facts—which are, that in the month of March of the present year, Mr. Veitch was in communication with Mr. Nuttal respecting the above Rhododendrons, and in a letter dated the 16th March, Mr. V. requested to have a single plant of the following varieties for inspection, which were accordingly forwarded to him, viz., Keysi, Nuttali, Kendricki, eximium, longifolium, lucidum, calophyllum, and Camelliæflorum: and no other plants have subsequently passed into his hands from Mr. Nuttal.

Messrs. E. G. H. & Son were quite aware of this circumstance at the time of purchasing, and that a few other plants had previously left the collection of Mr. Nuttal.

Wellington Nursery, St. John's Wood, July 22.

PATTERSON'S SCARLET NONPAREIL STRAWBERRY.

JAMES VEITCH, JUN., has the pleasure to inform the public that Mr. Patterson, Gardener to Baroness Wenman, of Thame Park, Oxon, has placed in his hands for distribution the stock of the above first-rate Seedling Strawberry, which, having been fully tested and exhibited, has proved to be of very superior excellence.

It was exhibited at Chiswick, on Saturday, June 3 and received the Silver Knightian Medal; it has also been submitted to Dr. Lindley, Mr. Marnock, and Mr. Thompson, all of whom report most favourably of its merits.

It is a *first-class forcing* Strawberry in character, intermediate between *its parents—Keens' Seedling* and *British Queen*; of the vigorous habit of the *former*, and fully one week earlier in ripening; and in the quality of its fruit *fully equal* in flavour, if not superior, to the latter. The fruit is of a large size and handsome shape, of a *bright red colour*, and with a remarkably high perfume.

Orders are now taking for strong plants to be sent out the first week in September on the following terms:—

100 Plants ... £3 | 50 Plants ... £2 | 12 Plants ... 12s.

Exotic Nursery, Chelsea.—July 22.

GEORGE DAVIES begs to offer to the trade the following NEW PLANTS, strong and healthy:—

Wistaria sinensis alba	... 42s. per doz.
Prunus sinensis flore pleno ...	... 7s. 6d. each.
Pernettya ciliaris	... 30s. per doz.
Rhodoleia Championi	... 60s. „
Echites Harrisoni	... 7s. 6d. each.
Cytisus onosperma	... 3s. 6d. „
„ filipes	... 2s. 6d. „
„ racemosus superba ...	... 18s. per doz.
Daphne indica rubra	... 12s. „
Boronia Drummondi	... 3s. 6d. each, 36s. doz.
Azalea Stanleyana	... 7s. 6d. each, 60s. „
Gloxinia Wilsoni	... 3s. 6d. „

G. D. can with confidence recommend Azalea Stanleyana as one of the best out; the habit is compact and bushy, flower bright rose, with dark spots in the upper petal, very large, fine form and great substance, a most profuse bloomer, and has given universal satisfaction.

Stanley and Green Lane Nurseries, Old Swan, Liverpool.

NEW ROSES IN POTS.

W. J. EPPS, of Maidstone and Ashford, can now supply fine strong Plants of the following new ROSES. The Plants average from 10 to 20 buds, fit for immediate working.

HYBRID PERPETUALS.	s.	d.	HYBRID PERPETUALS.	s.	d.
Adam Paul	3s.	6d.	Colonel Rougemont ...	5s.	0d.
Louis Peyronny ...	3	6	Gloire de France ...	7	6
Baronne Heckerean ...	5	0	Joseph Descarme ...	3	6
Triomphe de Paris ...	5	0	Blanche Portemar ...	3	6
Prince Leon Kotchouby	5	0	Lady Wilson	5	0
Duchess de Orleans ...	5	0	BOURBONS—Pigeron	2	6
Lady Shelley (Mitchell's)	5	0	„ Blanche Laffitte...	3	6
Imperatrice Josephine	5	0	„ Colonel Fessey ...	2	6
Souvenir de Madame Lille	5	0	„ La Guintemie ...	7	6
Leon Plee	5	0	„ Prince Albert ...	3	6
James Veitch	5	0	NOISETTES—		
Prince Chipetowzikof	5	0	Maria Charges ...	5	0
Alexander Beckmiteff	3	6	Eudoxie	3	6
Le General Jacqueminot	7	6	TEAS—August Vacher	5	0
Baronne le Kermont ...	5	0	„ David Pradel ...	2	6
Lady Stewart	5	0	„ Gloire de Dijon...	7	6
Jules Margottin ...	7	6	„ Georges de France	5	0

W. J. E. can offer choice varieties, such as Queen Victoria, Egarie, Triomphe de Valenciennes, Standard de Marengo, L'Ergant Vere, Madame Campbell, Palais de Cristal, &c., at 30s. per dozen, or 2s. 6d. each.

LASTREA FILIX MAS VAR. CRISTATA,

ATHYRIUM FILIX FŒMINA VAR. MULTIFIDUM.

ROBERT SIM begs to draw the attention of Growers of HARDY FERNS to these extremely beautiful and unequalled British varieties.

LASTREA FILIX MAS VAR. CRISTATA.—Fronds 2 feet long, pinnæ broadly multifid at their points, giving the whole plant an unique and very elegant appearance. Very rare. Fine young plants, 5s., and larger 7s. 6d. each. Small do. by post, 3s. 6d. each.

ATHYRIUM FILIX FŒMINA VAR. MULTIFIDUM.—Fronds 2 feet long, pendant, the ends of the pinnæ so much multifid as to appear tasselled. Fine young plants, 5s. each.

They form elegant Conservatory Ferns also.

Carriage free to London. Post-office orders on Chiselhurst.

Nursery, Foot's Cray, Kent.

ŒNOTHERA MACROCARPA, AND NEW VERBENAS.

JAMES SYRED, FLORIST, Redhill, Reigate, Surrey, can supply good healthy Plants of the under-mentioned new VERBENAS, at 1s. each or 10s. per dozen:—Delicata, Unique, Mrs. D. Tyssen, Annie Laurie, Sir C. Napier, Rouge et Noir, Prince of Orange, President, Mrs. Gerard Leigh, Canary Bird, Vicomte de Balleval, Peter Dick, Pandora, Amazon, Arsine, Beaugard, Young England, National, Superb, Nina, Iris, Annette, Madame de Frileuse, Comet, Giraldia, Ajax, Alice, Mrs. F. G. Caley, Danea, Hector, Heroine, Eblouissante, Hebe, Augustine, Francoise Rousseau, Rougeri, Madame Schmidt, Arthur, Caliban, Climax, Angelina, Islington Rival, Electra, Nobilissima, Triumph, Forget-Me-Not, Queen, Scarlet King, Magnificent, and Zaria. Strong Plants of Œnothera macrocarpa, at 7s. 6d. per dozen, or 50s. per 100.—Post-office orders payable at Reigate.

CHOICE SEEDS FOR PRESENT SOWING.—

Free by post at the prices annexed:

CABBAGE, Cattell's Dwarf Barnes, 1s. per oz. packet,

„ „ Reliance, 1s. per half-oz. do.

ANEMONE, Single Poppy, very fine, mixed, 6d. per packet, or 3s. per oz.

„ „ „ saved from all scarlet flowers, 6d. p. pkt.

CALCEOLARIA, from fine sorts carefully hybridised (with directions for sowing, &c.), 2s. 6d. per packet.

CINERARIA, from finest varieties, 2s. 6d. per packet.

GERANIUM, from newest florist varieties, 12 seeds, 2s. 6d. p. pkt.

„ from fine older do. do. 12 seeds, 1s. per packet.

MIMULUS, mixed, from very finest varieties, 6d. per packet.

PRIMULA SINENSIS, fine fringed pink varieties, 1s. p. packet.

„ „ „ „ white do., 1s. per packet.

A remittance or reference to accompany all orders from unknown correspondents.

Address, JOHN CATTELL, Westerham, Kent.

THE NEW RHODODENDRONS OF ASSAM AND BOOTAN.

COLLECTED BY THOMAS J. BOOTH, ESQ.,

And described in the "Magazine of Botany," by his Uncle, THOMAS NUTTAL, Esq., of Rainhill, the well-known Botanist and Traveller.

E. G. HENDERSON & SON

HAVE much pleasure in announcing that they have for Sale these, the most remarkable new species of RHODODENDRONS ever introduced into the country, many of which surpass those from Sikkim, discovered by Dr. Hooker. Amongst these brilliant discoveries from the Bootan Alps are the most wonderful-sized flowers, delicious fragance, and distinct colours of any that are known to exist in this the most gorgeous tribe of plants; and being combined with magnificent foliage, and distinct habit of growth, will render them indispensable, and a great acquisition both for the garden and conservatory.

The entire Stock of all these extraordinary species now growing (June 16, 1854) in the gardens at Rainhill have been purchased by them. The plants are fine, healthy, and robust. Many have been planted out in the open ground, and have proved quite hardy, with the exception of one or two slightly injured by late spring frosts.

They are now taking orders for six of the most distinct species, which will be dispatched as soon as the young growth of this season is sufficiently ripened for travelling. Full descriptions and prices may be seen on referring to the *Gardeners' Chronicle* of July 1, or in their

NEW CATALOGUE FOR 1854, NOW PUBLISHED,

and which will be forwarded post free on application.

Wellington Nursery, St. John's Wood, July 15.

CHIVAS'S

ORANGE JELLY TURNIP SEED.

NEW SEED NOW READY (CARRIAGE FREE).

MESSRS. SUTTON AND SONS, SEED-GROWERS, Reading, having grown a large crop of fine true Seed from Stock received of Mr. Chivas, last season, can supply the same on liberal terms, according to quantity required. SUTTON & SONS can also supply (Carriage free) Seed direct from Mr. Chivas, at the same price as at Chester.

N.B.—The Orders first received will be first executed.

SUTTON'S LINCOLNSHIRE RED GLOBE TURNIP.

For Sowing previous to the second week in August. The largest and heaviest cropping Turnip yet introduced.

NEW SEED, just harvested, 1s. 4d. per lb., 8s. per gallon, 60s. per bushel.

PHILIP PUSEY, Esq., first presented Messrs. Sutton with Seed of this sort to grow a Stock from, and they have since had the honour of supplying him annually with seed for his own farms. In November last, Messrs. Sutton were favoured with the following letter from Mr. Albert Edmonds, Steward to Philip Pusey, Esq.:—"By the desire of Mr. Pusey, I beg to inform you that he had a fine crop of the Red Lincolnshire Turnip, weighing 30 tons 10 cwt. 1 qr. 24 lbs. per acre."

"The Lincolnshire Red Turnip, the seed of which I had from you, has produced the heaviest crop I ever grew."—*From Mr. T. Chandler, Manufacturer of Liquid Manure Drills, Aldbourne, Hungerford, November* 11, 1853.

We have also received very many letters of a similar nature from other customers, some of whom have had upwards of 40 tons per acre.

SUTTON'S EARLY SIX WEEKS' TURNIP.

THE QUICKEST TURNIP KNOWN.

Time of Sowing, middle of July to middle of September.—NEW SEED, 1s. 3d. per lb., 7s. per gallon, or 50s. per bushel.

This is a hardy sort, and will grow freely in all soils; it is called "Six Weeks," from the fact of its attaining to a large size within six weeks from the time of sowing, if the weather is warm; in cold climates it requires a little more time, but is a hardy and certain cropper.

SUTTON & SONS, having for many years adhered to the practice of selling none but genuine, new, unadulterated Seeds, have the satisfaction of receiving strong commendations from all parts of the Kingdom. From many similar letters the following is selected:—

"The Turnip Seeds I had from you last season answered beyond my expectation, and exceeded by far any that I procured elsewhere. I should have been many pounds in pocket if I had procured all I wanted from you."—*From John Hanson, Esq., Culgaith, Penrith, Cumberland, January* 10, 1854.

Goods delivered Carriage Free, except very small parcels.

ADDRESS—JOHN SUTTON & SONS, SEED-GROWERS, READING, BERKS.

The Gardeners' Chronicle.

SATURDAY, JULY 22, 1854.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY, July 25—Horticultural .... 3 P.M.

AMONG the valuable drawings of Chinese plants in the library of the Horticultural Society, is one of a dark rugged root, some 10 inches long, and 6 inches wide at the broadest end, of which nothing more is known than that it was obtained from the public vegetable market. There can, however, be no doubt that it represents a Yam of some kind.

According to M. STANISLAS JULIEN, as quoted lately by M. DECAISNE, a Yam, called Chou-Ya, or Tchou-Yu, Tou-Tchou, Chau-Tchou, Chau-Yo, &c., is universally grown in China. That of Nankin is the largest, and of excellent quality; another from the Chou country is still better. Its stems trail on the ground, the leaves are three-lobed; and in the autumn what are called fruits, but no doubt small tubers, appear among the leaves, and eventually drop off. This is perhaps the root represented in the place referred to. There are, however, many other sorts.

But the Chinese Yams have attracted no attention in Europe. It is probable that they have been considered too tender, our notions of a Yam being formed from East and West Indian reports. It seems, however, that one at least of the Chinese Yams is as hardy as a Potato, and likely to become a formidable competitor with the Potato itself.

M. DECAISNE tells us that the French experiments with a Yam introduced from Shanghae, and called erroneously Dioscorea japonica, justify the expectation that it will become a plant of real importance in cultivation. "If," says M. DECAISNE, "a new plant is to have a chance of becoming useful in rural economy, it must fulfil certain conditions, in the absence of which its cultivation cannot be profitable. In the first place, it must have been domesticated in some measure, and must suit the climate; moreover, it must, in a few months, go through all the stages of development, so as not to interfere with the ordinary and regular course of cropping; and finally, its produce must have a market value in one form or another. If the plant is intended for the food of man, it is also indispensable that it shall not offend the taste or the culinary habits of the persons among whom it is introduced. To this may be added that almost all the old perennial plants of the kitchen-garden have been abandoned in favour of annuals, wherever the latter could be found with similar properties; thus *Lathyrus tuberosus*, *Sedum Telephium*, and *Cirsium oleraceum* have given way before Potatoes, Spinage, and the like. Now, the Chinese Yam satisfies every one of these conditions. It has been domesticated from time immemorial; it is perfectly hardy in this climate (Paris); its root is bulky, rich in nutritive matter, eatable when raw, easily cooked either by boiling or roasting, and then having no other taste than that of flour (*fécule*). It is as much a ready-

made bread as the Potato, and it is better than the Batatas or Sweet Potato. Gardeners should therefore provide themselves with the new arrival, and try experiments with it in the different climates and soils of France. If they bring to their task, which is of great public importance, the requisite amount of perseverance and intelligence, I have a firm belief that the Potato Yam (Igname-Batatas) will, like its predecessor the Potato, make many a fortune, and more especially alleviate the distress of the lower classes of the people."

Testimony of this kind appears too important to be regarded lightly, and we are glad to second the recommendation of so judicious an experimentalist as M. DECAISNE. When we consider how nearly our common Black Bryony (*Tamus communis*) is related to the Yams, the probability of the new plant becoming naturalised among us receives further support. We would also suggest that all owners of ships trading with Shanghae, or other northern Chinese ports, should direct their captains to bring home a quantity of the Yams exposed for sale in the markets. We know that there are many varieties, possibly belonging to more species than one, and it is deserving of enquiry whether one may not suit the climate of Europe better than another.

The species described by M. DECAISNE is called by him *Dioscorea Batatas*, or Igname-Batate, and is described as having much the appearance of the common Tamus. Its stems are annual, but its roots, or more properly speaking rhizomes, are perennial, and directed downwards perpendicularly, sometimes to the depth of a yard, if the soil is loose enough to admit them. The haulm is about as thick as a goose quill, cylindrical, turning from right to left, and about 2 yards long, violet, with small whitish specks. When left to themselves the stems lie flat on the ground, and strike root very readily. The leaves are opposite, heart-shaped, and triangular, upon purple stalks. The "roots" vary in length and thickness with the soil in which they grow. They may usually be compared to clubs, the blunt end of which is as big as the fist, but which tapers downwards till it is no bigger than the finger. Their skin resembles in colour the well-known beverage coffee and milk, and is covered with numerous fibrous rootlets. Under the skin is a white, opaline, very friable, slightly milky cellular mass, filled with flour, which softens and dries in cooking, till it acquires the taste and quality of a Potato, for which it might be mistaken. Each plant may produce several of these roots, though in general there are only two or three.

M. DECAISNE and his friends who have tasted this Yam think that no serious objection will be taken to the employment of it as food. The only question is whether a root which buries itself so deep in the ground will suit the habits of cultivators. It is not, however, easy to understand why, in Europe, the trifling mechanical difficulty of getting up such roots should be a hindrance, when the Chinese with their rude tools find the operation easy enough. In that country the Yam is grown on a great scale. M. MONTIGNY, who sent it to France from Shanghae, calls it *Sain-In*, and says it is highly productive, the country people consuming it as largely as the Potato in Europe. For propagation the smallest roots are set apart and pitted, to keep them from frost. In the spring the roots are taken out and planted in furrows pretty near each other in well prepared ground. They soon sprout and form prostrate stems, which are made into cuttings as soon as they are 6 feet long. As soon as the cuttings are ready a field is worked into ridges, along each of which is formed a small furrow, in which the pieces of the stem are laid down and covered with a little earth, except the leaves. If the weather is rainy the cuttings strike immediately; if dry they must be watered till they do strike. In 15 or 20 days the roots begin to form, and at the same time lateral branches appear, which must be carefully removed from time to time, or the roots will not grow to the proper size.

These directions are simple and easy enough to follow; so that we see no reason why, as M. DECAISNE remarks, the plant should not be perfectly suited to field cultivation. The crop would hardly be more troublesome than a crop of Turnips.

WE observe with pleasure that a new work on "Sikkim-Himalayan Plants," by Dr. HOOKER, is preparing for publication, in a handsome folio volume, with 24 plates (uniform with "The Rhododendrons of Sikkim-Himalaya") and an illuminated title-page; the illustrations will be chiefly selected from drawings made in Sikkim under the superintendence of the late J. F. CATHCART, Esq., Bengal Civil Service, the botanical descriptions and analysis by Dr. HOOKER, and the plates in lithography by Mr. FITCH. It is announced that the principal object of the work is to introduce to notice a selection of Sikkim-Himalayan plants, which, from their beauty, novelty, and interest, are eminently worthy of cultivation in England; and, at the same time, to record the great services rendered to Himalayan botany by the late J. F. CATHCART, Esq., Judge in the Bengal Civil Service.

Attracted by the publication of the "Sikkim Rhododendrons," Mr. CATHCART visited Dorjiling, in the Himalaya, in 1849-50, with the view of furthering botanical science by employing artists, at his own expense, in delineating the magnificent plants of those mountains. During his residence there several artists were kept constantly at work under Mr. CATHCART's and Dr. HOOKER's superintendence, and coloured drawings of nearly 1000 plants were made. It was Mr. CATHCART's intention, on his return to England, to have published (also at his own expense), in conjunction with Dr. HOOKER, a very large selection of these, in the form of the "Sikkim Rhododendrons," but his lamented death (at Lausanne, in 1851), when on his homeward journey, frustrated this munificent intention.

His fine coloured drawings have been presented to the Museum of the Royal Gardens of Kew by Mr. CATHCART's sister; and it is from a selection of these drawings that Dr. HOOKER is preparing a botanical work, as a suitable tribute to the memory and love of science of his late friend.

From the great expense attending publications of this description, Dr. HOOKER (at whose risk it is undertaken) is obliged to regulate the number of copies struck off by that of subscribers; and as it is obviously impossible to keep the lithographic stones, he earnestly desires that persons who may wish to possess the work will oblige him by announcing their intention at their earliest convenience.

TIME was when cheating a Scotchman was about as difficult a feat as cheating a Greek. Time is, when a canny Scot is just as gullible as fat JOHN BULL himself. We are astonished at the degeneracy of our northern friends. Is it because the haggis has given way before roast beef, and good Scotch ale has surrendered to washy bitter beer? or is it that the Union, when it destroyed all national distrust, put an end to the other portions of a Scotchman's caution?

The north country trade in London-made guano seems to have opened men's eyes to the facility with which cheating may be made to thrive beyond the Tweed; and the ingenious gentlemen who live by plunder have not been slow to profit by the discovery. When it was found how eagerly loam, sand, and blue billy were bought for guano, it was a logical inference that salt might be sold for nitrate of soda, and gypsum for superphosphate of lime. Nor have dealers been slow to apply the inference to practice.

We learn from the Transactions of the Highland and Agricultural Society of Scotland, that Mr. GEORGE WILLIAM HAY, of Whiterigg, in Roxburghshire, being desirous of trying experiments with various manures in the cultivation of Turnips, put himself in communication with a person (the name we regret to say is not given) who proposed to deal in what are by courtesy called agricultural manures. Among the substances to be employed by Mr. HAY were superphosphate of lime, nitrate of soda, phosphate of soda, sulphate of potash, sulphate of ammonia, nitrate of potash, phosphate of magnesia, sulphate of magnesia, and muriate of ammonia. When the parcels of chemicals furnished by the respectable people of whom they were bought came to be examined, the nitrate of soda was found to contain only 56 lbs. of that substance in every 100 lbs., the phosphate of soda just 6 lbs. in the 100 lbs! the sulphate of potass 60 lbs., the sulphate of ammonia not quite $9\frac{3}{4}$ lbs.! the nitrate of potash about $11\frac{1}{4}$ lbs., the phosphate of magnesia $2\frac{3}{4}$ lbs.! and the muriate of ammonia 54 lbs. only. As to the superphosphate of lime, as it was called, it only contained 4 per cent. of soluble phosphate of lime; the other 96 lbs. consisted of water, gypsum, siliceous matter, some kind of free acid, and insoluble phosphate of lime, a perfectly useless substance.

When Mr. HAY ventured to complain of the fraud thus practised upon him he was coolly informed by the dealers that they could not think of taking their rubbish back; "it was the *usual quality* for agricultural purposes," of which we entertain no doubt, and contained the "*quantities suitable to plants*." That is to say, in the opinion of the dealers, the quantity which is *suitable for plants* is $2\frac{3}{4}$ lbs. in every hundred of phosphate of magnesia, $9\frac{3}{4}$ lbs. of sulphate of ammonia, 4 lbs. of superphosphate of lime, and 6 lbs. of phosphate of soda. The insolence of the answer was only excelled by the audacity of the fraud.

We, in the south, entertain a high opinion of the acuteness of Scotch farmers; but "no man is a hero in the eyes of his valet," and it would seem that the prestige of a Scotchman only attaches to him when away from home. The dealers who supply him with what is all important to his interests, find anything good enough for him, for he does not know when he is cheated, or if he finds it out he quietly pockets the affront. It is something new to learn that in Scotland discretion is regarded as the better part of valour.

Mr. HAY's account of his "experiments" is certainly one of the most instructive documents we have read. He tells us, not only what rubbish the "chemicals" are, which are sent into the Scotch market, but that the commonest substances prepared for farmers are little better. In that happy country it appears that animal charcoal is not what it ought to be; that London night-soil consists of the scrapings of the streets, with a little limestone and salt; and as to gypsum, it contains 40 per cent. of sulphate of baryta.

Mr. HAY says that many of his countrymen feel very sore at the adulteration of their manures, arising, as it does, out of their "well known gullibility;" and he bitterly laments the absence of any ready remedy. No remedy! then allow us to ask, What are agricultural associations, and chemical associations, and all other such combinations for? and what are Scotch law courts for? Are they myths, or soulless bodies, or mere *capita mortua*, that they cannot bestir themselves in cases like his? In England we should know how to find a remedy.

LETTERS from FLORENCE mention that a HORTICULTURAL SOCIETY has been established in that city under the Presidency of Professor PARLATORE. It is rather unfortunate that a different selection should not have been made; for Professor PARLATORE is not known as a physiologist or as a person conversant practically with rural affairs, although he has the reputation of being well acquainted with Italian systematical botany. We fear that our Italian friends are not well versed in the formation of associations calculated to improve the cultivation of their soil, or the crops which it is able to produce.

VEGETABLE PATHOLOGY.—No. XXIX.

130. Having now traced the progress of a plant through its several stages to its reproduction by seed, and shown what its several component parts are, and their mutual relations, we proceed in futherance of our object to state the effects of external agents on their growth, whether as regards the requirements of health or as capable of producing disease. In treating of the functions of leaves and other organs, we have been obliged to touch more or less upon the subject, but not to such an extent as to make it needless to refer again to the subject.

131. The first of these external agents to which we shall advert is light, one of the most important elements in vegetable life; for there are very few plants, even of the lower orders, which can exist for any length of time in its absence; and any marked departure from the normal intensity requisite for each plant is sure to produce baneful consequences. Light, however, is by no means a simple body, for not only does it consist of a combination of rays of different colours and of different degrees of refrangibility, so that it acts differently according to its modifications, but independently of the heat with which it is usually accompanied when intense, there are certain rays which exercise a chemical agency, both as regards combination and decomposition. These chemical rays, it should be observed, communicate neither light nor heat; their greatest power is exerted beyond the violet portion of the prismatic spectrum, and the property gradually diminishes in approaching the green rays, and beyond this it is totally wanting. It appears, therefore, that the chemical rays are more refrangible than the violet, in consequence of which they are partly diffused throughout the blue, indigo, and violet rays*. It is obvious, therefore, that material effects as regards vegetation must be dependent on its modification—as, for instance, while some plants cannot sustain vitality except exposed to the full influence of direct or diffused solar light, others cannot flourish except under the shade of trees, where it arrives modified by its passage through the surrounding foliage, circumstances which are successfully imitated in the Fern and Orchis house at Kew, by painting the glass a light green.

132. Where light is altogether wanting, the proper fixation of carbon in the tissues and the attendant elimination of oxygen does not take place, no chlorophyl is formed, and the plant is therefore blanched, its cell walls weak, and the secretions which depend upon the perfect organisation and elaboration of the protoplasm of the leaves and young shoots are not formed, and consequently the stems, though succulent, are comparatively tasteless. These circumstances are taken advantage of by the gardener to render some plants available

* This is taken from the article Light, in the "Penny Cyclopædia."

for nutrition, which would otherwise be tough and rank, or even in some cases poisonous. Such bleached state of plants must, however, be regarded as diseases, for though in certain cases, if the bleaching has not been carried to too great an extent, the shoots will gradually, when exposed to light, acquire their proper green tint, yet in many cases they are past recovery, and so pass through the different stages of decomposition and decay. Any material diminution of the intensity of light can therefore be easily conceived as likely to prove injurious to many vegetables; and accordingly, where health is to be preserved, it is one of the main objects of the skilful cultivator to train and thin his plants in such a manner that every part shall have a due exposure to the light; and if this is not the case his fruit will be deficient in colour and flavour, and eventually the plant itself will acquire an unhealthy condition, which will soon manifest itself in some specific disease; for, as in the human frame, when once the mutual relations necessary to perfect health are disturbed, diseased action is sure to be set up in some form or other in those organs which, from constitutional peculiarities, are the weakest and most incapable of resistance, and where propagation takes place by constant division of a single individual, disease once acquired may be handed down for a century. *M. J. B.*

DEUTZIA GRACILIS.

Among the numerous introductions of late years, few have found more admirers than this charming Deutzia, and possibly none of our early flowering plants are more especially deserving of notice. It is easily cultivated, tolerably hardy, forces with the greatest facility if the wood has been properly ripened, flowers profusely even in a small state, and it may be had in bloom the whole of the early spring months. At that season the appearance of a well flowered plant, covered with numerous clusters of snowy white flowers, is sure to excite admiration; and the long duration of the blossoms render it especially adapted for the decoration of the conservatory, drawing-room, or, indeed, almost for any situation in which sufficient light and warmth is maintained.

So general a demand for this Deutzia has occasioned its being extensively propagated, and well-established plants may now be obtained of any nurseryman at a trifling cost. If procured at this time, the plants, if healthy and well rooted, should at once receive a tolerable shift, using a compost consisting of two-thirds turfy loam and one-third leaf soil, or other decomposed vegetable matter, adding a sufficiency of sharp sand to preserve the porosity of the soil. After potting, place them in a sheltered situation out of doors; and as they become established and commence growth, remove them by degrees to an open and airy situation, when the pots should be plunged to the rim, taking care to adopt some means of preventing worms, &c., obtaining ingress to the roots. Water as required, never allowing the plants to be checked, but encourage them to complete their growth as early in autumn as possible. If required for early forcing, I prefer removing them under cover before heavy rains or severe weather sets in; being deciduous, they occupy but little room in a corner of the greenhouse or other convenient place, where they should be watered sparingly, but sufficient quantities should be given to prevent the ball from becoming dry.

If started in time, plants may be had in flower in February; for this purpose, early in December they should be cleaned and top-dressed, pruning out or shortening any superfluous shoots, but bearing in mind that the flowers are produced most copiously on well ripened moderate growth of the present year. When the wounds have dried, remove the plants to a temperature of 50° to 55°, and place them near the light. Water when required, and occasionally on fine mornings give a gentle sprinkle with the syringe. As they advance, the flowering shoots will be readily perceived, and should be tied and regulated accordingly. When the flowers begin to expand remove the plants to a cooler situation: this will make room for a second batch, which should by that time be progressing.

After the plants have finished flowering remove them to a warm greenhouse to complete their growth, giving them a shift if necessary preparatory to hardening them off, and placing them out of doors, when all danger of frost is over. They will bloom much earlier the second year than they did the first. If not required for early forcing the temperature of a warm greenhouse will induce them to flower early in April; after blossoming they may be treated as previously directed.

Cuttings of this plant root freely in spring; use young side shoots 3 or 4 inches long taken off with a heel attached to them. Place them in a pot filled with a light sandy compost, cover with a bell-glass, and set them in a close warm pit or frame, in which, if there is a gentle bottom-heat, so much the better. When rooted, pot them singly into 3-inch pots, and place them in a close frame, and as the pots become filled with roots give a second shift, and afterwards harden them preparatory to turning them out of doors, where, with due attention, they will grow much stronger than if kept under glass. To flower strongly they should be grown a second season before they are forced, and by that time, if well treated, they should be well established plants in 8 or 9 inch pots. They will, however, flower well in pots of a much smaller size, but they should not be kept more than one year without shifting; therefore where small plants are desired it is preferable to propagate a few each season, planting out such as have become too large to be kept conveniently. *Alpha.*

DESCRIPTIONS OF NEW PEARS CULTIVATED BY M. DE LIRON D'AIROLES, AT LA CIVÉLIERE, NANTES.—By Himself.

(*Continued from p. 437.*)

Poire Prince Albert.—Tree vigorous, and succeeds both on the Pear and Quince stock. It naturally takes the pyramidal form. Fruit middle-sized, pyriform, $3\frac{1}{2}$ inches in length, and $2\frac{3}{4}$ inches in diameter. Stalk about an inch in length. Eye small, open, placed in a shallow evenly-rounded cavity. Skin very thick, smooth; ground colour pale green, becoming yellowish when ripe, sometimes slightly coloured next the sun: it is tinged with red near the stalk, elsewhere distinctly marked with reddish spots and sprinkled with black dots. Flesh yellowish-white, fine, melting, with a rich sugary flavour. Season, February and March. This delicious fruit was obtained by M. Bivort, from one of the trees raised from seed by Dr. Van Mons, and which fruited for the first time in 1848.

Van Marum.—Tree vigorous, and an abundant bearer, suitable for a pyramid, and succeeds on the Pear and Quince stocks equally well. On account of the size of the fruit, we have thought the tree worthy of trial against a wall.

The size of the fruit is enormous, 7 inches in length, and 12 inches in circumference, calebasse-shaped. Skin bronze-coloured, brighter where exposed to the sun. Stalk very short, thick, fleshy, but sometimes it is long and slender; it is inserted in a small narrow cavity. Eye open, in a wide speading hollow, surrounded with small plaits. Flesh white, coarse, fibrous, breaking, with but little juice, sweet and perfumed. Season October. This superb fruit was obtained by Van Mons, in 1820, and was named by him in compliment to the eminent Dutch chemist, Van Marum.

Désiré Cornélis.—Tree pyramidal, vigorous, productive, thorny, its branches extending almost horizontally. Fruit large, nearly 4 inches in height and $3\frac{1}{2}$ in diameter. Stalk rather more than an inch in length, somewhat oblique. Eye open, shallow, surrounded with small projections. Skin rough, pale green, becoming yellowish as the fruit approaches maturity, spotted with light brown, slightly tinged with red next the sun. Flesh very fine, white, buttery, melting, with abundance of sugary, perfumed juice. Season beginning of September. Raised by M. Bivort.

Poire Deux Sœurs.—Tree vigorous, pyramidal, thorny, and an abundant bearer. Fruit large, pyramidal, long and tapering to a point, $4\frac{3}{4}$ inches in length, and half as much in diameter, ribbed towards the eye. Stalk upwards of an inch in length, of moderate thickness. Eye slightly sunken. Skin pale green, speckled with brown, interspersed with black dots. Flesh fine, yellowish green, buttery, moderately juicy, very sugary, leaving, after tasting, a decided nut or almond flavour. Season, November. The tree was found in a garden at Mechlin, and named by Major Espéren, but at what period we do not know.

Bergamotte Espéren.—Tree vigorous, somewhat thorny. Fruit middle-sized, Bergamot-shaped. Stalk nearly an inch in length, slightly curved. Eye in a shallow depression, surrounded with small knobby wrinkles. Skin rough, green, becoming yellowish at maturity. Flesh white, tinged with pale rose-colour, very fine, melting; juice abundant, sugary, and agreeably perfumed. Season, March and April. This delicious fruit is one of the many seedlings raised by Major Espéren.||

Home Correspondence.

Vine Pruning.—Some time ago I mentioned a controversy in your Journal about the propriety, or otherwise, of pruning forest trees with the view of accelerating the growth of timber. The theory I then adopted was—that the increase of stem in a timber tree depends on the reciprocity between the roots and branches, and in whatever degree that reciprocity is disturbed by lopping or pruning, in like degree will the increase of stem be checked or retarded. I think, after much writing *pro* and *con*, the above theory came to be pretty generally admitted. I refer to it now, because a doubt has arisen in my mind whether I have not been acting in violation of my own theory, not as regards forest trees, where I feel satisfied, but in the management of Vines. I have been a tolerably successful Grape grower for many years, and have generally adopted the spurring system (so called). Now I had lately, with some intelligent neighbours, a conversation, part of which turned upon the difference between a Vine being confined to one rafter and spurred, and by another mode, one Vine filling a whole house, such as the Hampton Court Vine, and others like it. One of my friends remarked that when a Vine is suffered to grow so as to spread over a whole house, its roots grow in proportion to the branches, whereas by spurring, and thereby cramping the upward growth, you check the growth of roots in a like proportion; on hearing such remark, it at once occurred to me that by spurring Vines I was acting contrary to my own theory. Now is that the case—or does the ripening a crop of Grapes promote the reciprocity in kind or degree, so as to have the same effect on the production of roots that the growth of wood would have? I have my doubts. What say physiologists—or what say you Mr. Editor? *Quercus.* P.S. There appeared in your Paper, a good while ago, some silly questions, by some one who adopted, or rather usurped my cognomen, which I beg to protest against, as it would make me look foolish in the eyes of those who know who "Quercus" really is.

Gooseberry Caterpillars.—Mr. Booth's account of these pests induces me to state a remedy which I thought everybody knew, but which too few practise. There is no incursion of the caterpillars from a distance, they invariably breed in the bush upon which they commit their ravages, and the simplest remedy, I believe, is, from time to time, on the leaves coming out, to look over the bushes, and gather off the leaves, which the young brood, just emerged from the egg, have eaten into those pin-holes which render the leaves so dissected very conspicuous. They are generally found on the under and lower parts of the bush, and one leaf gathered destroys from 30 to 50 caterpillars. A very little time is required to examine many bushes; it is not work, but rather watching, which must be repeated as long as the fly is depositing eggs—perhaps for a month. If you allow the brood to spread over the bush, your labour is endless, and your success imperfect. *Thomas Brown, Cirencester.*——Quick-lime, recommended in your pages some years ago, is a good remedy for these creatures. I apply it round about the bush (but particularly close to the stem) some time in February, and let it slake of itself; I then have it well forked into the surface about the latter end of April. I do not find it necessary to do this every year—perhaps once in three years would prove sufficient (take care to have good quick-lime). Your advice is good as to pinching off the end of the shoot to destroy aphides, but if I were "R. V." I would throw a cloth over a dozen or two of the bushes, and give them a good fumigating with tobacco smoke; if this answered he could carry it further, and the trial would cost but little; if he succeeds, I hope he will report his success, for the benefit of others. *T. H.* ——The ravages of the Gooseberry caterpillar alluded to by your correspondents might have been prevented by one or two timely dustings of hellebore powder applied with a dredging-box when the bushes were quite dry. This remedy is neither expensive nor troublesome, and I have never known it to fail. I only know of one better plan, and that is to place a coop or two of young Cochins amongst the bushes as soon as ever the caterpillars appear. If any of the latter have already ascended the bushes, brush them carefully off and crush them; and depend upon it the chickens will allow no more to ascend. No fears need be entertained of their scraping propensities when under six or eight weeks old, and they will not travel far from their coop; but should there be any young Cabbage or Lettuce plants in their immediate vicinity, they, as well as the caterpillars, will quickly disappear. *G. P.*——To get rid of caterpillars and aphides take two large watering pots that will hold about 4 gallons each; put into one of the pots, 1 quart of soft water, a common table-spoonful of spirits of turpentine, and one of soft soap (heaped up); let a man stir up the mixture until the soap be dissolved, then fill up the pot with water. Let one man take a good syringe and empty that pot, whilst another gets the other pot mixed; let the two men thus proceed in good earnest for 12 hours, and the result will speak for itself. *T. F.*

Effects of the Winter at Singleton, South Wales.—Singleton is 209 miles west of London, and 84 miles west of Bristol; it stands close upon the sea, facing the south, and lies as it were in a curve between two hills projecting into the sea on its eastern and western sides; these hills no doubt afford us great protection, but we are exposed to the S.W. sea breezes, and being within two miles of patent fuel works on the east, we occasionally suffer from the effects of the smoke. This has been the most severe winter we have had for many years; during January we had from 7° to 16° of frost, and in April from 4° to 7°. Notwithstanding, our Coniferæ, &c., have escaped with much less injury than in many places. Cunninghamia sinensis, 32 feet high, another 18 feet high, both very handsome plants, have had the tips of some of the branches slightly cut, but are now growing fast; these were not protected, but their situation is well chosen, both being surrounded by plantations. Cryptomeria japonica, 14 feet high, and 8 feet through at two feet from the ground, is a remarkably handsome plant, its rich branches sweeping the ground, foliage very dense and thick, and the plant itself perfectly conical. I believe it to be the variety called Lobbi; at all events, its dense and thick style of growth is very different from C. japonica, as usually seen. Picea pinsapo, 15 feet high, 7 feet through, and very handsome, lost some of its foliage from the upper branches, either from the effects of cold or smoke, but it is now doing well. A very fine Araucaria brasiliensis, 13 feet high, and protected during the severest frosts, has been slightly cut, but is now doing well. Cupressus torulosa, pendula, sempervirens, and thyoides; Juniperus chinensis and excelsa, all from 16 to 18 feet high, are uninjured. The foliage of the following kinds were all more or less browned:—Pinus Devoniana, 5 feet high; Hartwegi, 4 feet 6 inches; macrophylla, Russelliana, patula, Montezumæ, Gerardiana, radiata, Grenvilleæ; californica, insignis, 8 feet high; cembroides, and Sequoia gigantea (Taxodium sempervirens), all suffered apparently from exposure, but are now doing well, although they are late in making their growth, as all Pines are this season. Picea Nordmanniana, a fine hardy kind; nobilis, grandis, Fraseri, Sabiniana, Abies Brunoniana (very pretty) stand well with us. Abies Menziesii, Jezoensis (small), halepensis; Benthamiana, 4 ft. 6 in. high, handsome plants, growing freely with us; Cembra, Llaveana and Edgariana, as well as all the above, have stood the winter perfectly, as have also the following: Fitz-Roya patagonica, Saxe-Gothæa conspicua, Libocedrus chilensis, Taxus Dovastoni, elegantissima, fastigiata, argentea variegata, Thuja flagelliformis, sinensis,

occidentalis, variegata, plicata, pyramidalis, Warreana, pendula, and aurea; the gold-like appearance of this has a very pretty effect when placed near plants of dark foliage. The pretty little Fern-like Thuja Doniana has stood with us, well sheltered by trees and protected by cut branches. Juniperus Bedfordiana, chinensis, excelsa (small), macrocarpa, recurva, oblonga-pendula, tetragona, &c., Cupressus Goveniana, funebris (this has never done well with us, being probably effected by smoke, or the sea breezes); torulosa, elegans, Knightiana, and macrocarpa have all wintered satisfactorily; the rich dark foliage of macrocarpa is very attractive, and from the fact of its being a rapid grower, I have no doubt it must become a universal favourite. Small plants from the nurseries, about 18 inches high, planted here in April, 1850, are now 16 feet high and 3 feet 6 inches through: to my fancy no plant is better adapted for avenues than this. Cedrus Deodara, robusta, and africana have not suffered in the least, but they will not stand the sea breezes; Araucaria imbricata is not affected by the sea breezes; Abies Douglasi has never succeeded well with us till the present season, the young shoots were annually killed just as they began to grow in spring; but so far, this year, they look very well, some of their leading shoots having grown 9 inches. Many of the young shoots of Rhododendrons were completely cut off by the frost on the 24th of April, as well as some of the young growths of Picea Webbiana and cephalonica; Abies Morinda also suffered. Of other rather tender plants which have stood the winter here for many years may be mentioned the Benthamia fragifera, Arbutus Andrachne, 10 feet high and 10 through; A. procera has produced ripe seeds very freely for several years; Aloysia citriodora, or the sweet-scented Verbena, is 20 feet high, against the house, as is also Pittosporum Tobira, which I may say is in bloom the year round, scenting the air with its sweet flowers; Edwardsia grandiflora grows well, and flowers freely. Camellias and Myrtles grow and bloom freely, but they suffered considerably this year. Mr. Veitch's evergreen Escallonia macrantha, which grows very fast and flowers most profusely, has not suffered in the least; it is a fine thing, and deserves a place in the smallest garden. *William Barron, Singleton, near Swansea, July 14.*

Potatoes in Scotland.—The disease has now manifested itself in a virulent form among Potatoes in an open border in a garden in this neighbourhood. The taint made its appearance on the leaf between two and three weeks ago, and on examining the tubers a few days back the greater proportion was found injured. Part of them are Ash-leaf Kidneys; the others are apparently some later sort; but all are alike diseased where first planted; and another border, which was a little later, has for nearly two weeks been sightly affected on the leaf, and is gradually getting worse every day. As yet field crops appear to be safe, but if we have a continuance of the wet weather we are now experiencing, it is much to be feared the disease will extend itself. *D., Ramornie, Cupar Fife.*

Galvanised Iron Wire.—About 18 months ago, I adopted the plan of running galvanised iron wire through loops driven into my fruit walls, and then training the fruit trees, by fastening the branches to these horizontal wires, with leaden string. My gardener complains that wherever the branch comes in contact with the wire it cankers, and finally destroys the branch. Have you heard such a complaint before, or is it some mismanagement on our part? *Jacobus, Shorncliff Lodge, Sandgate.* [This is a common complaint, and has been adverted to at p. 104 of our present volume.]

Nectria inaurata.—I have had occasion several times to direct attention to the varied mode of fructification which prevails in the same individual fungal, and to the extended observations which have been made, more especially by M. Tulasne, on this subject, and have also recorded the curious discovery, by Mr. Broome, of two distinct sets of organs in the same hymenium, the one producing sporidia within distinct asci, the other large naked spores, without any surrounding membrane. The same gentleman has just forwarded to me a still more curious case, in which the same hymenium produces two sets of asci, differing from each other in form, and containing totally different sporidia; the larger clavate asci, for example, filled with myriads of minute curved sporidia (fig. 3) not exceeding .00015 of an inch in length, and endowed with molecular motion so active as to make their admeasurement somewhat difficult; the smaller cylindrical asci, containing only eight elliptic larger uniseptate sporidia .0005—.0006 of an inch long (fig. 2), furnished at either extremity with a delicate hyaline appendage. The first impression was, notwithstanding the difference of the form of the asci, that the more minute bodies might possibly be fecula, at the expense of which the larger sporidia were formed. But besides the perfect resemblance of the minute curved sporidia to those of very many fungals belonging to different genera, the application of a solution of iodine and sulphuric acid produced not the slightest change of colour; while sugar and sulphuric acid gave rise, in a few minutes, to a beautiful rose tint in the contents of both the clavate and cylindrical sacs, when seen *en masse*; though in the individual granules the tint, though I believe certainly present, is so delicate as to be scarcely distinguishable. The species of *Nectria* in which these twofold asci first occurred is apparently of frequent occurrence, as I have received it from several quarters, though it is at present undescribed, in consequence of its having been confounded with *Nectria aquifolii*, from which it may be known by its less cup-shaped brownish perithecia, thickly clothed with ochraceous granules and appendiculate sporidia, while those of *N. aquifolia* are of a different form, and have no appendage, as will be seen by fig. 4. Similar fructification was found subsequently, though more sparingly, in *Nectria cucurbitula*, a nearly allied species with a more ruddy tinge, and, in consequence of the want of the golden gamboge yellow veil, very different general aspect. Its large sporidia, which are identical in form and nature, vary in in length from .0004‴—.0005‴. A careful scrutiny of dead Holly twigs will probably enable any of your readers to verify Mr. Broome's observations. The species, being undescribed, may be characterised—*Nectria inaurata*, Berk. & Br. cæspitosa, peritheciis globoso-depressis olivaceo-fuscis quandoque rubro-tinctis flavo-pruinosis, ostiolo papillæformi, demum impresso nudo atro-fusco; ascis sporidiisque biformibus, aliis clavatis sporidiis minimis innumeris curvulis; aliis cylindricis sporidiis octonis ellipticis utrinque appendiculatis. On dead twigs of Holly. Our figure represents—

1. A group of clavate cylindrical asci, magnified; 2. Sporidia from clavate asci, highly magnified; 3. Sporidia from cylindrical asci, still more highly magnified; 4. Sporidia of *Nectria aquifolii*, magnified to the same degree as No. 3.

M. J. B.

Kennington Park.—Permit me to inform you that your correspondent's account of this park, at p. 438, bad as it certainly makes it, fails to represent its many imperfections. In my opinion (and I have had considerable experience in such matters), the whole design and arrangement of this fine piece of land are extremely faulty, exhibiting an attempt at landscape gardening in the present age that is disgraceful to all concerned in it. It is perfectly destitute of every feature of skilful display, either as regards convenience or ornamental effect. It is intersected by unlevel puddle-holding walks, some of them unsightly and crooked, others leading to nothing and nowhere, and all putting one forcibly in mind of the hap-hazard windings or track of a blindfolded man in a wheelbarrow race. Their unmeaning curves and awkward corners come continually in one's way. Sweeps and counter sweeps have been formed without harmonising in the least with each other; such incongruity always offending instead of pleasing the eye. The trees and shrubs, too, as your correspondent has stated, are of the most wretched description, and such as no practical man would ever think of buying or planting. Their variety is also extremely limited, the most common-place things being employed, and these mostly deciduous, and apparently the very outcastings of some overgrown unsaleable nursery stock. In place of a lasting embellishment they will remain a permanent disfigurement, stunted and unsightly, and exhibiting every deformity of shape caused by their over-crowded position in the nursery; now they will not be recoverable for years, and thousands of them never will, to say nothing of what are dead or dying. It is evident that their selection and arrangement can never have been effected under the superintendence of any one having the least pretension to professional experience. Their arrangement, if possible, is even worse than the condition of the plants themselves; for they are distributed higgledy-piggledy, without regard to heights, habits, or colours; and the want of good common hardy evergreens is everywhere apparent. In metropolitan improvements of such importance as this, under legislative control and purse, the public naturally expects that competent parties should be appointed to carry out the work, and that the best materials that could have been had would have been employed; but the contrary is the fact here. Your correspondent states that the plants are only fit for the faggot heap, and if I were called on to add my testimony, I would say, pull up the greater portion of them, and commit them to the flames at once, and let their places be filled with better materials in proper health and habit, and thereby save years of delay in furnishing the park properly. Altogether I can only pronounce this park and its arrangements to be a piece of bungling, only complete in that particular, and a good example of reckless national expenditure. *A Practical Man.*

Societies.

Entomological, *July* 3.—The President in the chair. Amongst the various donations received by the Society since the last meeting were 50 species of British Lepidoptera, new to the collection, presented by Mr. Allis; also the second volume of M. Boheman's elaborate monograph on the Cassidæ. The President announced that a new part of the Transactions was ready for distribution among the members. Mr. S. Stevens exhibited a nearly full-grown larva of Notodonta Carmelita, which he had succeeded in rearing from eggs deposited by a female which he had captured in Sherwood Forest. A handsome beetle, Pyrochroa pectinicornis, new to this country, was exhibited by Mr. Stevens, having been captured by Mr. Buxton in Scotland; also two or three species of new microlepidoptera captured by the same person. He also exhibited a specimen of the extremely rare and singular beetle Damaster Blaptoides, a native of Japan. Mr. Janson exhibited a variety of good lepidoptera and coleoptera taken in Scotland by Mr. Foxcroft, intended for distribution amongst the subscribers to his excursion; also a variety of rare Coleoptera collected by himself during the Darenth excursion of the Society in the preceding month, as well as six specimens of the very rare Hypulus Quercinus recently taken at Colney Hatch. A number of specimens of the new Irish burnet moth, Anthrocera Minos, from Galway, were sent by that gentleman for distribution among the members. Mr. Douglas exhibited a new species of Lithocolletes, reared from the Vaccinium Vitis Idea. Mr. F. Smith exhibited some new and very rare British Hymenoptera, including Nomada armata, a species in the British Museum collection which had been considered as one of Dr. Leach's doubtful and incorrectly introduced species. By degrees, however, most of the insects on which doubts had thus been cast were being captured; amongst which it was mentioned that several specimens of the fine Carabus intricatus had been taken in or near to Leach's asserted locality, Spitchweek Park, Devonshire. Mr. Stainton called attention to a memoir on new Swedish insects by Boheman, amongst which was contained the description of a new Nepticula, a genus of lepidoptera, which Mr. Stainton had captured in this country, and regarded as Trichopterous. Mr. Waterhouse read some notes on Amycterus, a genus of weevils from New Holland, and Mr. Westwood the descriptions of four new species of Paussidæ, contained in the collection of the Royal Museum of Stockholm, and in that of M. Dohrn. He also communicated some notes by Mr. Varney, on the habits of wasps, earth-mining bees, rose-mining caterpillars, &c. A discussion arose on the question whether wasps use the scrapings of solid wood in the construction of their nests, an opposite opinion having been maintained at a meeting of the Microscopical Society. Extracts from a letter from Mr. Wallace, who had arrived at Singapore, and had already collected as many as 80 species of butterflies, were communicated by Mr. S. Stevens.

Caledonian Horticultural.—At the late spring competition the following prizes were awarded:—Stove or greenhouse plants: 1st, Mr. Ritchie, Parson's-green, with Epacris miniata; 2d, Mr. Reid, Millbank, with Eutaxia myrtifolia. Six stove or greenhouse plants: 1st, Messrs. Dicksons & Co., with Epacris grandiflora, Bossiæa linophylla, Allamanda neriifolia, Rhododendron javanicum, Tropæolum tricolorum, and an Indian Azalea. Finest three greenhouse plants: *1st*, Mr. Reid, with Bossiæa linophylla, Aphelexis macrantha purpurea, and Boronia tetrandra; 2d, Mr. Ritchie, with Polygala Dalmaisiana, Pimelea decussata, and Adenandra uniflora. An extra award was voted to Mr. Smith, Melville Castle, for Epacris lævigata, Leschenaultia formosa, and an Aphelexis. Cape Heaths: 1st, Mr. Smith, with E. ventricosa, tricolor, and Willmoreana; 2d, Mr. Ritchie, with E. ventricosa, coccinea minor and perspicua nana. Climbing Plant: 1st, Mr. Reid, with Kennedya monophylla; 2d, Mr. Thompson, Lasswade, with Tropæolum tricolorum grandiflorum. Azaleas: 1st, Mr. Reid, with optima and variegata; 2d, Mr. Edwards, Lauriston, with Cupid and lateritia. Rhododendrons: 1st, Mr. Laing, Dysart, with a variety called Beauty; 2d, I. Anderson, Esq., with R. formosum. Cinerarias: 1st, Mr. Reid, Broomfield, with Lady Hume Campbell, Climax, Bessy, and Marianne; 2d, Mr. Laing, with Advancer, Etiole de Vaise, Lord Stamford, and Scottish Chieftain. Auriculas: 1st, Mr. Henderson, Cargilfield, with Ne plus ultra, Green Hero, Glory, Mary Ann, Ringleader, and Prince of Wales; 2d, Mr. Forrester, Ratho, with Colonel Taylor, Lord John Russell, Ne plus ultra, Ploughboy, Standard of England, and Green Man. Messrs. Dicksons & Co.'s prize for Indian Azaleas was gained by Mr. Cameron, Trinity Cottage, with fine plants of præstantissima, lateritia, magnifica, alba, and Addisoni. An extra award (Silver Medal) was voted to Mr. Edwards, for Holfordiana, præstantissima, optima, and Egertoniana. Among articles not sent for competition were Ferns and Lycopods, and a flowering plant of Primula Stewarti, from Mr. Stark; Andromeda formosa, Lilium colchicum, Genethyllus fuchsioides, &c., from Comely Bank; Mimuluses Scarlet Defiance and Queen Victoria, as well as blooms of Pansies, &c., from Messrs. Downie and Laird; a bunch of Asparagus (25 heads), weighing 25 oz., from Mrs. Carstairs; preserved blooms of Rhododendron Dalhousiæ, from Mr. Laing, Dysart House; and a Seedling Rhododendron (a hybrid between hirsutum and formosum), and a flowering plant of Rhododendron lepidotum var. elæagnoides, from I. Anderson, Esq., Maryfield.

Botanical of Edinburgh, *June* 11.—The President in the chair. Several donations were announced. From D. Oliver, Esq., was a strip of the bark of Prosopis juliflora, the Cashaw, received from Jamaica, along with a note, stating that the plant is one of the commonest trees in the savannahs, and one of the hardwood Acacias. It yields a fine bitter, and is used by the people as a substitute for Cinchona. It is employed in certain chronic inflammations of the throat, and is said to be superior to Peruvian bark in its medicinal effects. The wood is constantly used for fuel. From Messrs. W. and G. Law were specimens of raw cocoa, ground

cocoa, roasted cocoa, rock Trinidad, or navy cocoa, cocoa nibs, Fry's chocolate, and a specimen of tea known as Assam dust, which was stated to be scarcely known in commerce, and unnoticed by writers on teas. Messrs. Law remarked that it was a substance produced by friction during the process of preparing the tea. Leaves that are solid and heavy are the tenderest and break the easiest; hence the quantity of dust in Assam tea. This dust is too valuable to be thrown away, as it is often added to give strength to tea. The following papers were read:—1. On the Structure of Diatomaceæ. By E. W. Dallas, Esq., F.L.S. 2. On the various sections of coal, considered in their relation to the block, and the relative views of histologists thereon. By Mr. Neil Stewart. 3. On the effects of the recent frosts on vegetation, in different parts of the country. By Mr. M'Nab. The following candidates were balloted for, and duly elected:—W. Falla, Esq., Ordinary (Resident) Fellow, and Mr. G. Morris, Associate.

Hitcham Horticultural, *June* 27.—We are glad to learn from the judges' report on the cottage allotments connected with this useful society, that the allottees are improving satisfactorily in the management of their little plots, and that they now begin to find out the advantages of the system. Of the benefits arising from cleanly and careful cultivation, the report gives the following remarkable instance:—The culture of six Flour-ball Potatoes by three of the parties to whom Mr. Freeman had presented them, produced the following results. No 79, W. Baker, jun., obtained 35¼ lbs.; No. 1, Jos. Knock (by water-run) 22¼ lbs.; No. 44, George Gardner, 21½ lbs. The average here obtained is 26⅓ lbs. from six moderate sized Potatoes! But the average obtained by three others who had not taken any pains with their culture was only 5¾! W. Baker, jun., has supplied the following memorandum. April 2. Prepared 3 bushels composed of cinder-dirt, ashes, night-soil, and old brick mortar, and dug it in; then trenched in the Potatoes, two whole, two in halves, and two in eight pieces with two eyes to each. July 29. The leaves began to spot with disease. Aug. 16. Cut the haulm close to the ground and covered the ridge with fresh mould. The produce, as mentioned above, was taken up and weighed in the presence of the judges. The judges offer the following suggestions in addition to their former advice. 1. To dig deep, and well pulverise the soil. 2. Not to apply raw manure. Burnt wood, or vegetable refuse is excellent. 3. Special attention to be paid in not planting the sets less than 15 inches apart.

New Plants.

71. Sabbatia stellaris. *Pursh.*

A beautiful herbaceous plant, produced at the last Chiswick show by Mr. Ingram, from Frogmore. It is about a foot high, with opposite oblong leaves, and long-stalked very sweet flowers, about a couple of inches in diameter. The corolla is deep rose colour, with a yellowish green star-shaped eye. Although well known to botanists, neither this nor any other kind of Sabbatia has before occurred to us in cultivation; and Mr. Ingram may claim much credit for having shown how such plants are to be managed. It naturally occurs, according to Dr. Asa Gray, in *brackish* meadows, from Massachusetts to New Jersey and southward. It therefore demands a very warm season of growth, and Mr. Ingram grows it accordingly in a greenhouse. Gardeners are too apt to forget, when they hear of the great severity of winter in the United States, that the summers are on the other hand Neapolitan; and there can be little doubt that the reason why so many of the beautiful perennials of North America refuse to live with us, is that we turn them out of doors to experience the rigour of our wintry summers.

Garden Memoranda.

Messrs. Lane's Nursery, Great Berkhampstead, Herts.—The most prominent feature of this establishment is, as a matter of course, its Roses; but it also contains an excellent stock of such trees, shrubs, and plants as are to be found in ordinary nurseries, and it is to these the following remarks are intended chiefly to apply. In a long half span-roofed house near the entrance was a collection of Peaches and Nectarines, Plums, Cherries, Pears, and even Apples in pots; and elsewhere we observed Apricots, Gooseberries, and Currants grown successfully in the same way, the two latter being well furnished with ripe fruit. On one of the Plums (St. Martin's Quetch) were 36 fruit, and the plant was not more than 2 feet in height, and in a 10-inch pot. The Jefferson, a first-class Plum, also grown in this way, was producing a few fine fruit. A little tree of the Stanwick Nectarine had 12 fruit on it; on a Peach we counted 14, and a small tree of the Hawthornden had 8 Apples on it. Of the condition of Cherries in pots, those who had the good fortune to be present at the great metropolitan exhibitions had an opportunity of judging. Though grown in this way, the fruit is large, juicy, and well flavoured. The advantage of having an orchard-house in an unfavourable season like the past will therefore be apparent, in addition to the interest which belongs to the cultivation of dwarf trees in pots. The house in which these fruits are can be warmed when wanted; it stands up and down a steep hill, and, as hot water could not be made to circulate in it, it has been Polmaised, the narrow sunk passage in the centre acting as a cold-air drain. A pit, running parallel with this house, was filled with Camellias, fine young plants, which promised to be well set with bloom.

Lower down the hill were other plant-houses. One was occupied entirely with "Union Azaleas," *i. e.*, the kinds variegata, lateritia, and Gledstanesi worked together in one plant, which when in bloom produces, by means of its many-coloured flowers, an interesting effect. In another house, the fine specimen Azaleas which have been so successfully exhibited at our great London shows were placed to ripen their wood, these houses being at present kept a little close and warm. In a third long span-roofed house were plants of all the different sorts of Achimenes, among which the pure white A. Margarettæ, with blooms nearly as large as a five-shilling piece, was most conspicuous. The atmosphere of this house being cool and dry, the blossoms not only of this, but of other kinds, were quite free from the slightest spot or blemish, from which it is difficult to keep them in a damp place, or where bees are admitted to puncture and bruise them, which soon impairs their beauty. Here were also the different kinds of variegated Pelargoniums, in quantity, and many excellent scarlets, both French and English. We also observed several French "fancies," similar to those which Mr. Gaines has been showing, and which originated, we are informed, at Bellevue, near Paris. A second division of this house was filled with the better kinds of Fuchsias, including Duke of Wellington, a new and handsome dark sort.

In a span-roofed orchard house, 130 feet in length, and 26 feet in width, with one side and end open, the other end a Privet hedge, and the second side a low brick wall, were more dwarf fruit trees in pots, which, however, refuse to ripen their fruit while the house is so "drafty" and open, and, therefore, Mr. Lane intends to close up the sides, and then Polmaise it. With that end in view Vines have already been led up the rafters. They are planted outside in round pillar-like heaps of turfy loam, set on the surface of the ground, the Vines growing out of the tops of them, about 2 feet above the ground level; and fresh soil is, we believe, to be added annually, in proportion as the roots extend. Among Figs in pots, and other occupants of this house, were different kinds of yellow Rhododendrons, of which there is here an excellent collection, and many very fine standard Portugal Laurels, which have of late years been much enquired for to place along the sides of terrace walks as a substitute for Orange trees. Of these there were also some fine specimens in the open ground. They have clean stems, from 6 to 8 feet in height, in order that when the heads shall have become large a fair proportion between stem and head may be preserved.

Among hardy evergreen shrubs, a small silver striped Box might be found useful for many purposes, and should not be lost sight of by collectors of variegated plants. Daphne japonica variegata is also a hardy kind, which every garden should possess, being sweet and well suited for open air culture. Of weeping trees we remarked some interesting examples, more especially of Beech, Birch, Ash and Elm. Of the last there were several varieties. Among Oaks the striped Turkey, though not weeping, is very handsome, on account of its fine foliage. Of Deodars there were large plantations of very fine plants, not only down in the low ground near the canal, but also high up on Berkhampstead Common. Those in the valley lost their young wood from spring frost; but on the hill are great numbers of plants in the most robust health, that have sustained little or no injury. Abies morinda has been hurt by the winter; not so have P. insignis, excelsa, Fraseri, Montezumæ, and others. P. cephalonica is injured, while P. nobilis is unhurt. The Hemlock Spruce has stood well, as has also Juniperus stricta. The Golden Thuja (T. aurea) has been injured a little, as have also been young plants of Araucaria imbricata, but examples of this Araucaria from 3 to 5 feet high (and of which there are great quantities) have not suffered in the least. Taxodium sempervirens has been browned in places, and Laurustinus has been killed to the ground.

The light loamy soil of Berkhampstead Common appears to suit Rhododendrons perfectly; for plants here, in nothing else, are healthy, and bloom every year as well as if they were in peat. Ghent Azaleas also succeed in it. Among the Rhododendrons were multitudes of standards consisting of the finer varieties worked on stems from 4 to 8 feet in height, and which, when their heads shall have grown large enough, must when in bloom have a striking effect.

Concerning Roses, it may be mentioned that the fine specimens in pots that so justly obtained first prizes everywhere this year have all, with the exception of the Teas, which are under glass, been plunged in raised beds of sawdust out of doors to ripen their wood. Among Teas Madame Willermorz is a good new rose white, with a tinge of salmon in the centre. Mère de St. Louis (H. P.) is also a promising kind, which must certainly become a favourite. The Manetti stock, it may be mentioned, is not liked here; it pushes too early in spring, and the young growths get killed by late frosts. Pears on the Quince stock, too, do not seem to suit this locality, most of them being unhealthy in appearance. Such as are on Pear stocks succeed better.

FLORICULTURE.

The Cineraria.—Flowering from Christmas to June, and forming handsome specimens for decorative purposes at a comparatively small expense, both as regards attention and accommodation, and also furnishing a profusion of finely-shaped many-coloured flowers for bouquets (which the Cineraria does), it well deserves to be, as it is, one of the most popular flowers of the day. It is of easy culture, and in most cases is well managed; but, nevertheless, in some instances (where ample means exist, and also doubtless a desire to produce respectable specimens) it exhibits effects of the worst possible treatment. The following hints may enable such growers to produce creditable examples of this extremely useful plant. The ordinary method of propagating the Cineraria is by root suckers, which are produced abundantly by plants after blooming, when placed in a shady situation and properly attended to with water. The old plants should be broken up as early in August as suckers can be had strong enough; the latter should be potted singly in 4-inch pots, and placed in a shady part of a cold frame till well established, which will be in less than a fortnight. The plants should then be placed near the glass, and receive abundance of air, with a view to secure "stocky" growth. During autumn, and until severe weather occurs, a cold frame will form the most suitable situation for promoting rapid growth; but some attention will be necessary not to wet the foliage any more than can be helped, and also to avoid cold currents of air, which turn the leaves foxy, and greatly injure the plants. At the same time, however, admit sufficient air to prevent weakly growth. Water should be applied early in the day when necessary, giving a good soaking, and air admitted on the sheltered side of the frame, to dry the atmosphere and foliage. During autumn and winter, the Cineraria is somewhat liable to mildew, especially some varieties; keep, therefore, a sharp out-look for this enemy, and apply sulphur the moment it appears to the parts affected. Mildew is greatly encouraged by a confined over-moist atmosphere, which is also very congenial to aphides, which will be sure to make their appearance under such circumstances. As soon as they are perceived, apply tobacco smoke, but if the plants are kept in good health, neither evil will be very troublesome. As soon as frost is likely to occur the glass should be protected every night with straw screens, or some efficient covering; for remember the Cineraria will not stand much frost, and neglect in covering, may do irreparable damage. With respect to potting, the plants should be allowed plenty of root room, until near their period of flowering, and they ought never to be pot-bound during the growing season. Liberal shifts may be given to healthy thriving plants, but weak varieties should not be over-potted. Specimens may have 10-inch pots at the second shift, which will be sufficiently large for the winter, and in March they may be moved into 12 or 15-inch pots, according to the sized specimens desired. The plants should be removed to the front of the greenhouse, or to some light airy situation, where they will be secure from frost and damp. As before stated, keep them free from insects and mildew, and remove any decaying leaves as they appear. When the flower-stems begin to elongate, they should be pegged or tied out, so as to keep the specimens open for the admission of light and air, and manure water will be highly beneficial at this stage. When the plants are in flower they should occupy an airy place, where they will receive abundance of light without being exposed to the full force of the forenoon's sun; but this applies only to plants flowering after the sun becomes powerful in spring. Those blooming in winter like full exposure to the little sunshine and light which can then be afforded them. Where specimens are wished to flower in winter, cuttings should be selected about April, planted in light sandy soil, placed in a temperature of about 55°, and grown as freely as possible during the summer and autumn, and allowed to become pot bound towards November, when, if placed in a temperature of about 50°, they will be found to flower freely, and will be exceedingly useful for furnishing cut flowers. Seeds sown in April produce useful plants for winter flowering, as they grow more vigorously during the summer. When the beauty of the specimens is over, remove the flower stems, unless seed is wanted, and then only a few spikes need be left. Place the plants in a shady situation and keep them clear of insects and properly supplied with water until a supply of suckers is obtained, when the old plants may be thrown away. Good fresh turfy loam, in the proportion of two parts to one of two-years-old cowdung, well intermixed with a quantity of clean sharp sand, according to the nature of the loam, to ensure efficient drainage, forms an excellent compost for the Cineraria. For small plants leaf-soil or sandy peat may be substituted for the cowdung. *A.*

Hollyhocks: *A J.* Propagation by division is best carried out in autumn, immediately after the flowering is over. A large well-ordered plant may sometimes be divided into several, but, in general, three or four is a more advantageous number. Nothing certainly is gained by breaking the old plants into too many pieces; every separate part should carry with it a good share of roots. Seedlings and others that may bloom late cannot be divided till spring. March is, perhaps, the best time, and the fragments, if not broken too finely, will flower during the first autumn.

SEEDLING FLOWERS.

Potentilla: *P J.* A pretty variety, and well worthy of cultivation.

Miscellaneous.

The Symmetry of Vegetation.—The same principles are manifest among flowers. A flower is a body in which that system of equipoise, of which symmetry is the great result, is as clearly traceable as in branches or

leaves, or in the veins of leaves. Either one-half of a flower balances the other, or one series of organs alternates with another, or any deviation from symmetry that occurs in one part is immediately compensated for by some peculiar development specially provided in another part. Take a blossom of the common Goose-foot (Chenopodium). It consists of five slender arms or stamens, which are all exactly alike, and opposite which are five other external parts, forming a star with five rays, the two series corresponding precisely the one with the other. This is one of the simplest of known forms: should a flower be reduced much lower, there is scarcely room for the manifestation of special symmetry. The most complicated structures are merely different in degree. In the Rose, in the Crowfoot, in the Magnolia, or in the Water-Lily itself, the same class of facts pervades the organisation. Among those plants in which augmented number produces a very complex condition is the Verticord. In this flower we have five fringed bodies on the outside of the whole; those bodies consist each of five arms, of which the left and right external arms correspond with each other, and the second inner left corresponds with the second inner right arm; so that we begin with a structure of five parts, each of which is subdivided into five others. In the next place five more parts are placed within and between the first, as if to insure the requisite balance. Then come 10 (twice five) other bodies (scales), which stand, five opposite and five between the second series of five. Finally, we have 10 other parts (twice five again), completing the symmetry of the whole structure, and alternating with the 10 scales which preceded them; the whole presenting a striking example of the way in which, in a complicated structure, the principles of equipoise and symmetry are maintained. Were it possible to weigh the corresponding parts we should, no doubt, find their weights the same, as well as their magnitude and form. The numerical proportions of such a flower are $(5 \times 5) + 5 + (5 \times 2) + (5 \times 2)$. The red Brugmansia offers an instance of a more simple arrangement. In this flower we do not at first perceive any symmetry except that the end of the long tubular corolla is divided into five equal lobes, which, if they had been formed by rule and compass, could not be more exactly alike. On the outside of this corolla, upon each of its five lobes, are three ribs, in all fifteen, or 5×3; and this plant never produces any other number. Upon opening it we find the same number, five, still prevalent in the stamens; and the external cup or calyx is also in reality divided into five triangular teeth, although, owing to the way in which the teeth adhere, this is not at first sight apparent. The fundamental number still being five, this structure is represented by $5 + (5 \times 3) + 5$. All these remarkable examples of floral symmetry seem to show that there is a centrifugal force operating in the formation of flowers, which, being equal in all directions, can scarcely fail to produce such a result. In the ripe fruit of the Apple, no symmetrical arrangement of parts is at first apparent; but it once had a perfectly regular structure, in which all the parts were exactly balanced, and even when ripe its symmetry is visible to the eye of intelligence. At its end will be found five points, which represent the five external divisions that originally belonged to it. If the fruit is cut across, the five-pointed star in the centre indicates the symmetrical number of the Apple to be five. If we count the parts in the Apple blossom, we find five outer divisions in its calyx; five thin delicate plates next succeed as the corolla; then 20 threads for the stamens; and, finally, five other central points or arms complete the structure; all equal and alike in each series, all placed in a certain fixed relation to each other round a common centre, which itself corresponds with the surrounding organs. This structure is $5 + 5 + (5 \times 4) + 5$. In an ear of corn the same kind of symmetry exists, although more difficult to discover. Each grain stands in perfectly symmetrical relation to the others: one right, one left; each a little higher than the preceding. Even the small scales of chaff which enclose the grains are placed in an equally symmetrical position with respect to each other. The demonstration of this, however, involves minute details, which need not be entered upon at present. When properly understood it assists in further proving that symmetry is a fundamental law in plants, and that the most dissimilar forms of vegetation obey that law. *Professor Lindley's Symmetry of Vegetation.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Now that many of the Camellias, Azaleas, and other plants will be removed to their summer situations out of doors—painting or other repairs required by any of the plant houses will be more conveniently done than at any other season. Meantime, however, the weather is rather unfavourable for painting; for, to do this, except when the wood is thoroughly dry, is a very inconvenient and troublesome way of wasting money; but other necessary repairs may be done, so as to allow of proceeding with painting whenever the weather will admit, without the hindrance of having other work to execute first. Where houses are painted sufficiently often to keep the paint always good, which is the cheapest method in the end, there will be no difficulty in getting the wood dry, but where the wood is allowed to become nearly bare before repainting is thought of, the house should be kept dry inside, covering the outside with a tar cloth, in the case of showers, and allowing a fortnight of bright warm weather to thoroughly dry the wood before the work is commenced. It is oftentimes very inconvenient to attend to this, but if the work is to stand, it must be done at whatever inconvenience. STOVE.—If there are sickly or badly rooted specimens here they must be frequently examined for red spider, otherwise they will become a nursery for this pest, from which it will soon spread to adjoining plants. Also guard against the increase of mealy bug, and keep black thrips and green-fly in check by timely applications of tobacco smoke. See that young growing stock is not allowed to suffer for want of pot room, and attend carefully to the watering, giving manure-water to all plants in free growth that enjoy it. Gardenias, &c., which have been removed to the conservatory while in bloom, should be replaced in heat as soon as their beauty is over, in order to allow of getting their growth matured before the dull cloudy days of November. Give every attention to plants for winter blooming, affording them a moist warm temperature, and using every care to prevent their sustaining any check at the present season. ORCHIDS.—The growing stock will require the assistance of a little artificial heat while the weather continues wet and cloudy, if only to allow of admitting fresh air and preventing damp, &c. Shading must be promptly attended to when bright sunshine occurs, as the foliage is unusually tender in consequence of the long period of gloomy weather which we have experienced. Allow them, however, as much light as they will bear without injury, using a very light screen, and only when absolutely necessary. Keep the foliage clear of insects and dust, by frequent syringings or spongings, as may be necessary.

FORCING DEPARTMENT.

PINERY.—Plants expected to show fruit at once, if backward in doing so, should, provided the growth has been well matured and checked by having been kept dry for a time, have a good soaking of water, and be kept warm and moist. This treatment will induce an active root action, and we have seldom found it to fail in inducing backward plants to show fruit, but everything depends upon the growth having been well matured and checked. Avoid syringing plants over head that are in bloom, except on the mornings of bright days, unless sufficient fire-heat is used to keep the atmosphere in motion at night, and prevent injury from damp; for a too free use of the syringe when the weather is dull and cloudy is apt to cause the fruit to be deformed. Young growing stock will be making very rapid progress in the present state of the weather, and some attention will be necessary to secure strong stocky growth, without which first-rate fruit cannot be expected. See that the plants have sufficient space for the development of their foliage, and do not keep the atmosphere so warm as to induce weakly growth. The watering of Pines is frequently left to inexperienced persons, who would not be trusted to water a hardwooded plant of any consequence, and hence they are more commonly over or underwatered than any other plant of equal importance. But although of very easy culture, these plants are not insensible to bad treatment, and are very speedily injured by over-watering. Water should never be given without first ascertaining that the soil is dry, and then a thorough soaking should be afforded, using manure water for plants that are well rooted.

FLOWER GARDEN AND SHRUBBERIES.

In some localities, Verbena Defiance, Calceolarias, and other bedding plants are getting seriously infested with green-fly, and, in some cases, to such an extent that, unless effective measures are adopted for clearing the plants of this pest, there is little hope that they will be of much service this season. We know of no readier or cheaper remedy than moistening the infested plants with tobacco-water and soapsuds of a proper strength, by means of a fine rosed watering pot, and giving them a good washing with clear water from the engine the following morning. This, if properly applied, will clean the plants; but it should be done at once wherever they are suffering, for the season is now far advanced, and if the plants are allowed to get checked, and the present sort of weather continues, there will be but little chance of their ever doing much good. Stir the surface of the soil after heavy rains, wherever it is not covered by the plants, and fill up vacancies from the reserve stock. Keep Roses free from insects, remove dead flowers at least two or three times a week, and get budding finished as soon as possible. Also get Carnations and Picotees layered without loss of time; these are exceedingly useful border flowers, being so much prized for cutting, therefore see that a good stock of them is prepared for next season.

HARDY FRUIT AND KITCHEN GARDEN.

Tomatoes must be regularly attended to, keeping the shoots thin and stopping them above a cluster of fruit; for if the plants are allowed to ramble and grow too freely there will be a poor chance, in an unfavourable season like this, of securing a good crop of fruit. Shallots, if left in the ground after the bulbs are matured, are apt to mildew and rot in wet weather, therefore these should be pulled as soon as the tops begin to decay, and spread out in an airy place to dry before storing them away. Get herbs in flower cut and dried for winter use. Where a sufficient breadth of Celery is not yet planted out, this must be attended to as speedily as possible, and must be well cared for with water, &c., until well established after planting, otherwise good-sized stuff need hardly be expected. Earth up former plantings, and encourage rapid growth by occasional waterings with manure water. See that a good bed of some approved early variety of Cabbage is sown for spring use. Ply the hoe freely among all growing crops, both for the destruction of weeds and for loosening the surface of the soil after heavy rains. Look over all trained fruit trees frequently, for the purpose of stopping and shortening any gross shoots, and keeping the growth nicely regulated; also get the young shoots of wall trees laid in, where not already done.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending July 20, 1854, as observed at the Horticultural Gardens.

July.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth. 1 foot deep.	Of the Earth. 2 feet deep.	Wind.	Rain.
Friday 14	19	29.924	29.749	65	56	60.5	59	60	S.W.	[illegible]
Satur. 15	20	30.096	29.769	72	47	59.5	60	61	N.W.	[illegible]
Sunday 16	21	30.122	29.981	77	52	64.5	60.5	61	S.W.	[illegible]
Mon.. 17	[illegible]	30.058	29.965	71	48	59.5	62	62	S.W.	[illegible]
Tues. 18	23	30.012	29.979	76	46	61.0	62½	62½	S.W.	[illegible]
Wed. 19	24	29.980	29.960	72	43	57.5	62½	62½	S.W.	[illegible]
Thurs. 20	25	30.084	30.066	80	48	64.0	62	63	S.W.	[illegible]
Average.		30.039	29.924	73.3	48.5	60.9	61.2	61.7		[illegible]

July 14—Overcast; clear at night.
— 15—Densely clouded; very fine; partially overcast.
— 16—Very fine throughout; cloudy at night.
— 17—Rain; very fine; clear at night.
— 18—Very fine; air exceedingly dry; clear and fine at night.
— 19—Very fine throughout; cold at night.
— 20—Very fine; hot; thunder clouds in afternoon; clear.

Mean temperature of the week, 1 deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending July 29, 1854.

July.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 23	72.8	52.7	62.8	13	0.70 in.	1	3	5	1	2	6	5	[illegible]
Mon. 24	72.2	52.0	62.1	8	1.16	—	7	4	1	3	8	3	[illegible]
Tues. 25	73.4	51.3	62.3	8	0.36	2	6	2	—	2	7	8	1
Wed. 26	73.1	52.2	62.6	13	0.70	2	1	3	2	3	[illegible]	6	2
Thurs. 27	74.6	52.0	63.3	11	0.98	1	3	4	1	[illegible]	[illegible]	[illegible]	[illegible]
Friday 28	76.2	54.1	65.2	13	0.32	2	2	[illegible]	2	[illegible]	[illegible]	[illegible]	[illegible]
Satur. 29	75.3	51.3	63.3	14	1.31	1	3	4	1	[illegible]	10	[illegible]	[illegible]

The highest temperature during the above period occurred on the 28th, 1844—therm. 92 deg.; and the lowest on the 23d, 1843, and 24th, 18[illegible]—therm. 40 deg.

Notices to Correspondents.

AUSTRALIA: *An Ishmaelite* should address himself to the secretary of the Royal Geographical Society, Waterloo Place. We do not know.

BLIGHT COMPOSITIONS: *J R.* We cannot insert anonymous communications respecting such a matter. What are called facts must be authenticated by the writer's name and residence.—A report or two in favour of Page's Blight Composition have reached us from persons unknown to us, but we wish to ask the gardeners with whom we are acquainted, and who have used it, what their opinion is respecting its quality.

BOOKS: *H S L.* Mrs. Loudon's "Every Lady her own Gardener," and Paxton's "Cottagers' Calendar," will possibly answer your purpose.‡—*J C.* Will you be so good as to point out where we said that Macculloch's book on Wine-making cost only 2s.? We dare say there is no more recent edition than what you have. But what then? We understood you to ask for the *best*, not the newest work on the subject, and we adhere to our recommendation.

CONIFER SEEDS: *J P B.* Sow them now in shallow pans in yellow loam, and keep them in a cold frame. When large enough pot them off, but take care not to allow them to remain in pots till the roots get cramped for want of room.‡

CUCUMBERS: *Julius.* A very fine fruit, measuring 21 inches in length and 9 inches in circumference. Flesh crisp, juicy, and well flavoured.‡

DISEASES: *Old Sub.* The leaves of Lychnis coronata transmitted by you exhibit nothing which can be considered as likely to produce the yellow spot. There are living aphides still upon the plant, and some portions are thickly covered with Microsporium Cheiranthi, but neither the animal nor vegetable parasite can be regarded as the cause of disease. The temperature for months has been several degrees below the average, and there has been scarcely a sunbeam—circumstances which are quite enough to account for morbid appearances. Where the most contagious diseases amongst men are prevalent, it is not every one who is a victim; and, on the same principle, some of your plants may remain healthy, while others suffer. Propagate from the healthy stock, for it is very possible that the diseased state of the other plants may be permanent. *M J B.*

DROPMORE: *W C.* The gardens at Dropmore are permitted to be shown, we believe, every day, except Sunday, to all persons of respectability. Maidenhead is the nearest station to them.‡

INSECTS: *J S.* The chaffers are the common little English dung beetle (Aphodius fimetarius). The black flies are parasites in the egg cases of the cock-roach. Its history will form the subject of a separate article. *W.*

HEATING: *A B.* We *cannot* make out what it is that you want to know. Surely you do not inquire whether such a flue will draw? Of course it will.

LARCH BLIGHT: *W G.* There is no practicable means of destroying this. The Horticultural Society would be glad to receive the plant you mention.

MIGNONETTE: *L.* Damp at the root is the only cause we can assign for your Mignonette dying off in the way you describe. If that be so, and the plants are too thick, they should be thinned out a little, so as to permit the superabundant moisture to escape from the surface of the bed.‡

NAMES OF PLANTS: *J S W.* Certainly not Ceropegia stapeliæformis; it is possibly a morsel of Boucerosia umbellata.—*J M A.* Aerides quinquevulnerum.—*Sancho.* Velleya lyrata, Veronica pinnata, Veronica maritima, and Linaria purpurea.—*E I P.* Valeriana officinalis.—*G P L.* Mimulus luteus, a native of Chili.—*F B.* It appears to be Cereus crenatus; but plants of that kind cannot be determined with certainty by the flowers alone.

PEAS: *F L A D.* Next week.

PEACHES: *J Mc, Renfrewshire.* Our opinion is that the Peaches you sent are all one sort, the Royal George. None of the six received were the Noblesse. The latter has large flowers; the Royal George has small. The flesh of the latter is red at the stone; that of the Noblesse is pale, and its skin is not distinctly dotted with red towards the shaded side, as is the case with those you forwarded. We conclude the judges were right, although at the same time we admit that it is very difficult in many cases to distinguish varieties of Peaches by the fruit only. By observing the nature of the flowers and leaves, the different varieties in cultivation can be determined with certainty. ‖

RAGGED JACK: *Hull.* It is a variety of Borecole, which is quite as hardy as the green curled kind, and should be treated exactly like it. If you cut the heads off your plants that are seeding they will not supply sprouts fit for use this winter; if you have young plants, it is not too late to make a fresh plantation now.‡

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg for the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

TURNIP SOWING.

SUPERPHOSPHATE OF LIME, made from Bone, which is the best Manure for Root Crops (see the Royal Agricultural Society's Journal, Vol. vi., part 2). PERUVIAN GUANO, NITRATE OF SODA, BONE DUST, SULPHURIC ACID, and all other Manures of known value. The PEAT MOSS CHARCOAL COMPANY have appointed the undersigned Sole Agents for the Sale of this fixer and distributor of Ammoniacal matter. They are also Sole Agents (in London) of the Patent Sanitary Company for the sale of their "Nitrogenised Carbon."—Apply to MARK FOTHERGILL & Co., 204A, Upper Thames Street, London.

THE LONDON MANURE COMPANY'S WHEAT MANURE, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. EDWARD PURSER, Sec. Bridge Street, Blackfriars.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7l. per ton; Superphosphate of Lime, 7l.; Sulphuric Acid and Coprolites, 6l.

Office, 69, King William Street, City, London.

N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures, Linseed Cakes, &c.

WM. INGLIS CARNE, 10, Mark Lane, London.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and dispatch.

Gentlemen desirous of receiving instructions in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

CHAFF-CUTTERS, of the best workmanship, 25s.; Two-Knifed Chaff Engines, from 63s.; Mills for Bruising Oats and Beans, from 45s.

WILLIAM DRAY AND CO., Agricultural Implement Manufacturers, Swan Lane, Upper Thames Street, City.

BALANCE OF FACTS IN FAVOUR OF

RICHMOND AND CHANDLER, who have, in competition with the best selected CHAFF CUTTERS of the most celebrated makers in the trade, carried off the highest prizes against all comers.

COPY OF TESTIMONIAL.

"Early Court, Reading.

"GENTLEMEN,—I beg to hand you a cheque for your Corn Crusher; I must add, at the same time, that nothing can exceed the goodness of the Machine. I have found in it all I can wish, and, moreover a very superior finished Machine, and a pattern for other makers. (Signed) "GEO. SHACKELL.

"Messrs. RICHMOND & Co."

Address—RICHMOND & CHANDLER, Manchester; and South John Street, Liverpool.

M'CORMICK'S PATENT REAPING AND MOWING MACHINE.

CAUTION TO USERS, PURCHASERS, AND MANUFACTURERS! Parties are hereby cautioned against "Making, Using, Exercising, or Vending," any Reaping Machines which infringe on M'Cormick's Patent without a licence from him, *as proceedings at law will be instituted against all such as infringe.* The main features of M'Cormick's Machine consist in zig-zag serrated cutting blade, spear-head shaped holding fingers, and gathering reel.

The sale of these Machines, in the United States, for the present harvest, has been upwards of 1500, their efficiency and superiority being established by the use of thousands for several years.

Machines containing all the *patented improvements* adapting them to the cutting of *grain* or *Grass*, and guaranteed to perform well, may be had on application to Mr. M'CORMICK'S Agent, D. C. M'KENZIE, 166, Fleet Street, London.

ANTHONY'S PATENT AMERICAN CHURN.—Extract from the Royal Agricultural Society's Report of the trial of Churns at the Gloucester meeting in July last. "In this trial the American Churn not only maintained its character in producing butter rapidly, but in producing a greater quantity from the like amount of cream." It made from 4 quarts of cream 4 lbs. 6 oz. of butter, being 8 oz. more than any of the other Churns from the same quantity and quality of cream. Price Lists of Churns and Implements by the best makers sent free, and Illustrated Catalogues on receipt of eight postage stamps. BURGESS & KEY, 103, Newgate Street, and 52, Little Britain, London, who have always a large stock of Steam-engines, Ploughs, Harrows, Diggers, Waggons, Carts, Threshing and Dressing Machines, Mills, Oat and Grain Bruisers, Oilcake Breakers, Reaping Machines, Haymakers, Horse-rakers, Turnip Cutters, Liquid Manure Carts, Parkes' celebrated Steel Digging Forks and Draining Tools, Pumps for Manure, Farm Fire Engines, and for Garden Purposes, &c. &c.

HOSE PIPING.—GREAT REDUCTION IN PRICE.

WAITHMAN'S PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense Pressure, and much more than Leather, vulcanised Rubber, or any other Hose; and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented Inventions, the cost of manufacturing it is now reduced at least 60 per cent., which advantage is offered to the Public.—London Agents, BURGESS & KEY, 103, Newgate Street, and 52, Little Britain who on application will forward wholesale and retail prices.

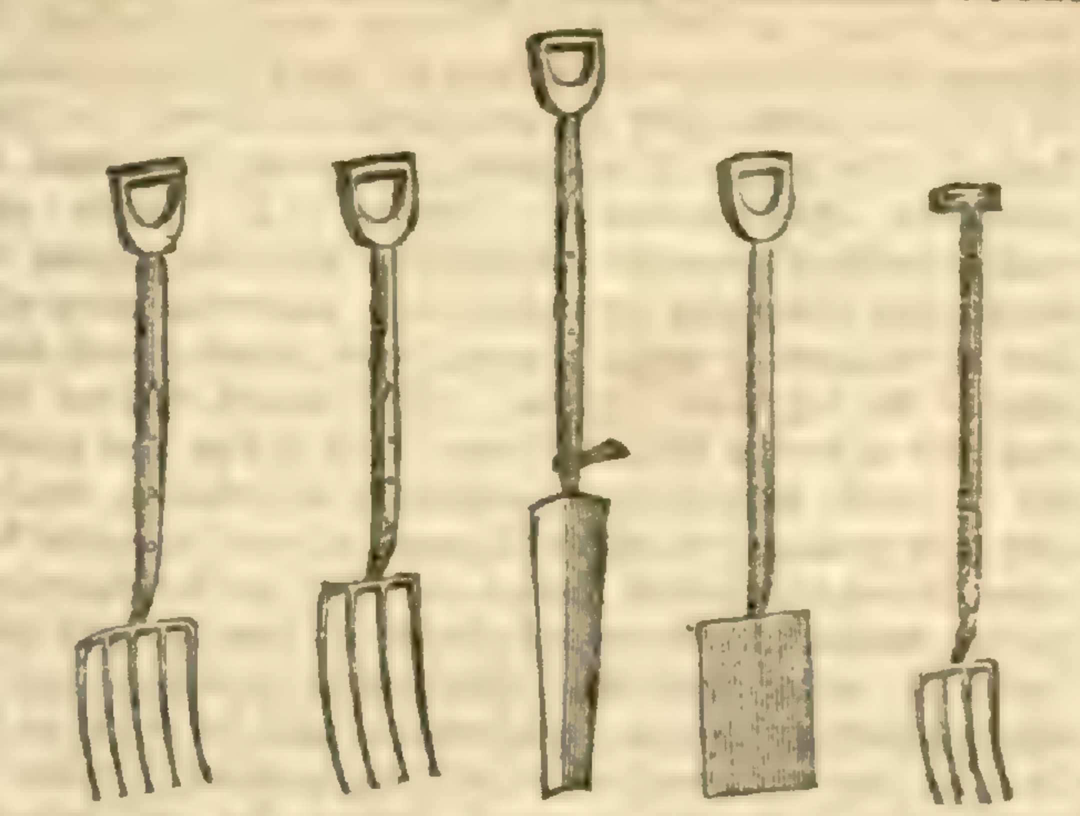
WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

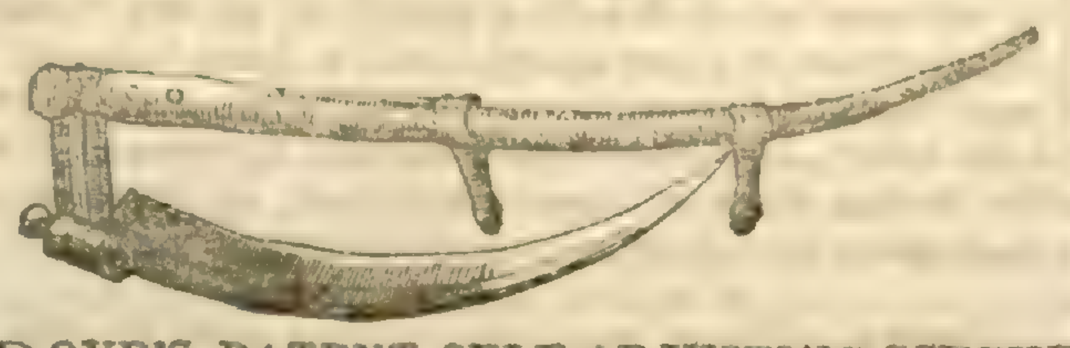
PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.



MESSRS. BURGESS AND KEY, as Mr. PARKES' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.

103, Newgate Street, and 52, Little Britain, London.

SCYTHES.

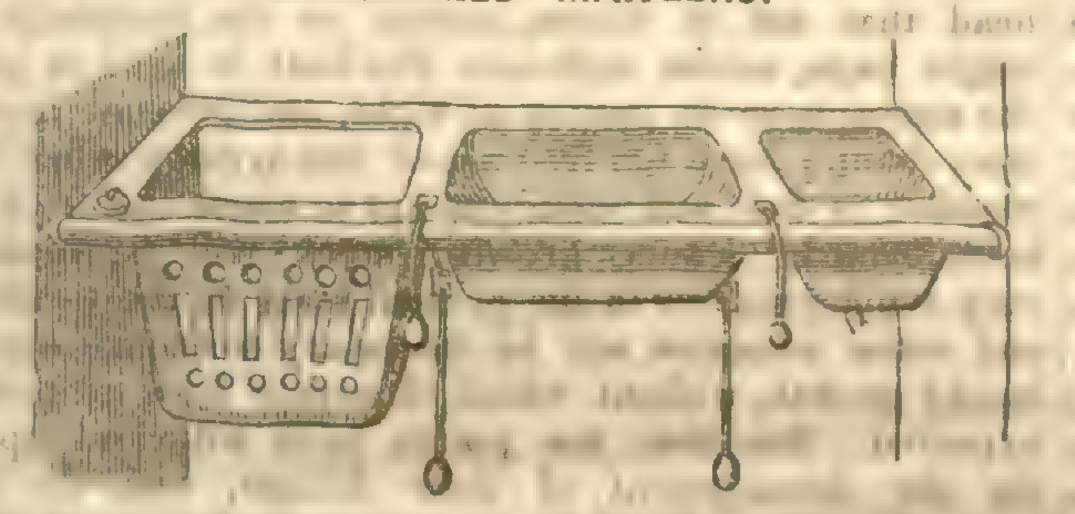


BOYD'S PATENT SELF-ADJUSTING SCYTHE will last out three of the ordinary sort, and is always ready for use.

"We have seen this Scythe at work, and can strongly recommend it."—See *Mark Lane Express*, May 16, 1853.

To be had of every Ironmonger and Nurseryman in the kingdom; and wholesale and retail of WM. DRAY AND CO., Agricultural Implement Makers, Swan Lane, London.

BARTON'S PATENT STABLE FITTINGS, AND ENAMELLED MANGERS.



THESE FITTINGS have all the newest improvements and are the only patented invention of this description. Also Improved Stable Fittings with Rack, Manger, and Water Trough attached, New Pattern Manger and Water Trough combined; Corner and Straight Mangers, Plain, Enamelled, and Galvanised; Stable Furniture of every description, Iron Gates, Railing, Hurdles, Sheep and Game Wire Netting, Registered Poultry Troughs, Fountains, Feeders, &c.—JAMES BARTON, IRONFOUNDER, SMITH, &c., 370, Oxford Street, a few doors east of the Pantheon.

TANNED NETTING, for the protection of Fruit Trees from frost, blight, and birds, and for the security of fresh sown seeds, either in Gardens or Fields, at 1d. per square yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Scrim Canvass, for Wall Fruit.—At EDGINGTON and Co.'s, 17, Smithfield Bars, City, and Old Kent Road, Southwark, where may be seen erected Emigrant Tents in great varieties, on their latest improved principles, and also at Brunswick Street, Poplar, near the East India Export Dock.

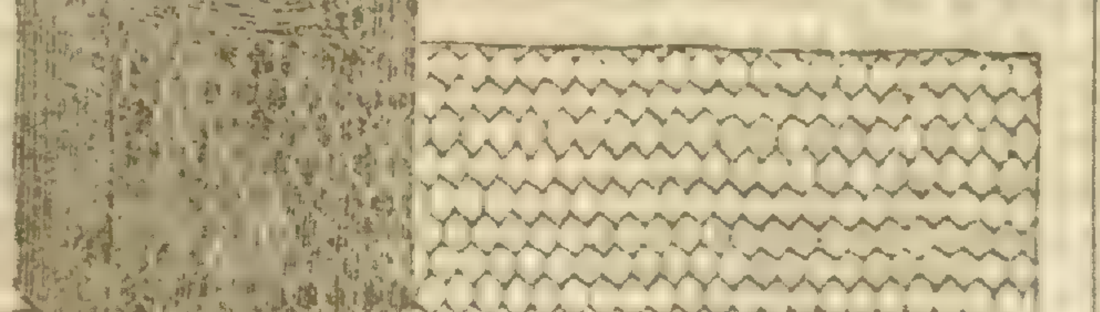
H. J. MORTON AND Co., Galvanised Iron Roofing Works, 2, Basinghall Buildings, Leeds.

PATENT WIRE STRAND FENCING FOR PARKS, &c.

This Fencing is the most neat, strong, and durable for Parks and Agricultural purposes in use. It cannot be bent or put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply as above.

IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

H. J. MORTON AND Co., 2, Basinghall Buildings, Leeds.—GALVANISED GAME AND POULTRY NETTING, very strong and neat, NEVER REQUIRES PAINTING.



24 inches wide, 3-inch mesh, 4½d., 6d., and 8½d. per yard.
24 inches wide, 2-inch mesh, 7d., 9½d., and 1s. per yard.

GALVANISED IRON SPOUTING, for Dwellings, Cottages, Farm Buildings, &c., NEVER REQUIRES PAINTING.

Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalte Roofing Felt, &c.

DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening Pursuits, are invited to examine DEANE, DRAY, AND CO.'s extensive Stock of GARDENING and PRUNING IMPLEMENTS, best London-made Garden Engines and Syringes, Colebrook Dale Garden Seats and Chairs.

Averuncators	Garden Scrapers	Pickaxes
Axes	Gidney's Prussian Hoe	Potato Forks
Bagging Hooks	[Scissors	Pruning Bills
Bills	Grape Gatherers and	" Knives, various
Borders, various patterns	Gravel Rakes and Sieves	" Saws
		" Scissors
Botanical Boxes	Greenhouse Doors and Frames	" Shears
Brown's Patent Fumigator	Hammers	Rakes in great variety
Cases of Pruning Instruments	Hand-glass Frames	Reaping Hooks
	Hay Knives	Scythes
Daisy Rakes	Horticultural Hammers and Hatchets	Scythe Stones
Dibbles		Shears, various
Dock Spuds	Hoes of every pattern	Sickles
Draining Tools	Hotbed Handles	Sickle Saws
Edging Irons and Shears	Ladies' Set of Tools	Spades and Shovels
	Labels, various patterns, in Zinc, Porcelain, &c.	Spuds
Flower Scissors		Switch Hooks
" Stands in Wire and Iron		Thistle Hooks
	Lines and Reels	Transplanting Tools
Fumigators	Marking Ink	Trowels
Galvanic Borders and Plant Protectors	Mattocks	Turfing Irons
	Menographs	Wall Nails
Garden Chairs and Seats	Metallic Wire	Watering Pots
	Milton Hatchets	Weed Hooks
" Loops	Mole Traps	Wheelbarrows
" Rollers	Mowing Machines	Youths' Set of Tools

DEANE, DRAY, AND CO. are sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with their Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom. Also wholesale and retail Agents for SAYNOR'S celebrated PRUNING KNIVES, used exclusively by the first Gardeners in the United Kingdom.

DEANE, DRAY AND CO. (Opening to the Monument), London Bridge. ESTABLISHED A.D. 1700.

REAPING MACHINE COMPETITION AT STIRLING.

THE STIRLING GENERAL AGRICULTURAL ASSOCIATION hereby offer the following PREMIUMS to be competed for during next harvest:—

1st, For the most approved Reaping machine, of any price, £20.
2d, For the most approved Machine, not above 25 gs. in price, £20.

Should the judges fix on a machine of 25 guineas, or under, to be the best on the field, it will thereby be entitled to both prizes.

The price and simplicity of construction of all the machines will be taken into consideration in awarding the Premiums, but the Society reserves the power of withholding the Premiums if, in the opinion of the judges, the machines are not of sufficient merit.

Intending competitors will require to enter with Mr. Hutton, their Secretary, at Stirling, not later than the 9th August, when they will have due notice of the time and place of competition forwarded to them.

Intending competitors must forward with their notice of entry the sum of 2l. sterling, to be returned on the morning of trial to those who appear on the field of competition with their machines.

The machines are to be tried on all kinds of crop, and upon both Dryfield and Kerse Lands, if required. The trials to be continued until the Judges and Committee appointed by the Association are satisfied.

Machine-makers entering machines are to state what price they will furnish such machines as they compete with to members of the Association, and farmers entering are to state the price they paid for those they compete with. By order of the committee. WM. HUTTON, } Joint
Stirling, July 5, 1854. WM. FORRESTER, } Secs.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

PATRON—His Royal Highness PRINCE ALBERT.
PRESIDENT OF COUNCIL—Earl BATHURST.
PRINCIPAL—Rev. J. S. HAYGARTH, M.A.

PROFESSORS, &c.

Chemistry—J. A. C. Voelcker, Ph.D., F.C.S.
Zoology, Geology, and Botany—James Buckman, F.G.S., F.C.S.
Veterinary Medicine and Surgery—G. T. Brown, M.R.C.V.S.
Surveying, Civil Engineering, and Mathematics—F. Armstrong, C.E.
Manager of Farm—G. Austin.

The next SESSION will begin early in AUGUST. The Annual Fees for Boarders vary from 45 to 80 guineas, according to age and other circumstances. The Fee for Out-Students is 40l. per annum. The College Course of Lectures and Practical Instruction is complete in one twelvemonth—though a longer course is recommended. There is a department for general as well as for agricultural purposes. Prospectuses and information can be had on application to the Principal.

The GUIDE TO THE ROYAL AGRICULTURAL COLLEGE FARM may be obtained of HAMILTON, ADAMS, & Co., Paternoster Row, London; and EDWIN BAILEY, Cirencester. Price 1s.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.

Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

SCHOOL FOR GENERAL AND SCIENTIFIC EDUCATION (especially with regard to AGRICULTURE), Wickham Market, Suffolk, conducted by Mr. G. DOWNES.

At this establishment a sound and liberal education may be acquired on moderate and inclusive terms.

Soils, Minerals, and Manures carefully Analysed.

THE SALISBURY AND WESTERN COUNTIES EXHIBITION OF DOMESTIC POULTRY.—The Fourth ANNUAL EXHIBITION will take place on TUESDAY and WEDNESDAY, the 21st and 22d days of November, 1854. Prize Lists, &c., to be had of T. PAIN, Hon. Sec.—Salisbury, July 22.

The Agricultural Gazette.

SATURDAY, JULY 22, 1854.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

WEDNESDAY, July 26	Agricultural Society of England—Mr. Mechi's Annual Gathering.
THURSDAY, — 27	—Agricultural Imp. Society of Ireland.
TUESDAY, August 1	Meeting of the Highland Agricultural Society at Berwick.
WEDNESDAY, — 2	
THURSDAY, — 3	

WE make no apology for filling our columns this week with a report of the exhibition of implements, cattle, horses, sheep, pigs, and poultry, held during the past week at Lincoln, under the auspices of the Royal Agricultural Society. It may be safely pronounced one of the most successful gatherings of the kind that has ever been held in this country.

The high agricultural character of the locality

has attracted large numbers from a distance, and the splendid weather has, we should suppose, swept the whole of the county into its chief town. Lincolnshire has itself contributed, in no small degree, to the merits of the exhibition—nearly one-third of all the shorthorns shown are shown by Lincolnshire breeders—and some of the best of the implement makers are Lincolnshire men. And we must not forget that in Lincolnshire itself is an attraction which, more perhaps than any other consideration, has induced the visits of agriculturists from the more distant parts of the country.

Home Correspondence.

Salting in Damp Hay and Grass.—Damp hay, or even Grass, may be stacked with layers of straw, or of old hay, sprinkled with salt to prevent heating, and to draw out the juice from the damp Grass, which is then absorbed by the straw. Mouldy hay, put together with salt, from 8 lbs. to 25 lbs. per ton, was better relished by the cattle, and did them more good, than sound hay stacked without salt, of which many instances are recorded (Johnson on Salt, p. 105, &c.) An excellent farmer, at Laudrake in Cornwall, many years ago, stacked damp hay with salt, which came out almost a paste when the rick was opened, but the cattle devoured it greedily. In Germany, they even cure fresh cut Grass by pitting with salt, 1 lb. to the cwt.; it comes out quite a paste, and is said to go farther in food than the same quantity of Grass made into hay. The advantage of dry straw, to absorb the juice drawn out by the salt, is twofold; first, in preventing the souring of the Grass; and second, in rendering the straw itself nourishing and palatable, by the juice thus absorbed. The proportion of straw may vary from one-eighth to one-fourth, and the salt from 1 lb. to 3 lbs. per cwt., according to the dampness of the new hay. If old dry hay is used instead of straw, it must be in larger proportion, because less absorbent. And where neither can be had, chaff or young Furze might do; or even bran, if salted enough to prevent fermentation. *J. Prideaux.*

Waste Lime of the Gas Works.—A question has been put to the writer concerning the best method of applying this offensive compound, sulphuret of lime, as a meliorator of the ground, for the purposes of agriculture. Some local difficulties attend this, and the question, in all its bearings, requires much consideration. In the first place, it would never do to lay a stratum of the gas-lime upon the surface of any land; and were its foul odour out of the question, there are light and sandy soils which might be seriously deteriorated by so powerful a chemical agent. Strong clay lands, like those around Sydenham, and in many parts of Norwood, would be much improved in texture and temperament by it, but judgment would be required. The gentleman who made the inquiry is extensively engaged in the manufacture of gas, and while in conversation with him it occurred to the writer that if shallow oblong excavations were made in appropriate land—say 2 feet deep, and of suitable length and breadth, so as to receive the lime, as removed, and to allow its being effectually covered at once with the earth thrown from the space—the object proposed would be brought into a state of progress: for, first, the liquids would pass into the loosened earth, become absorbed, and to some extent chemically fixed; secondly, the offensive odour would be entirely kept down by the covering of earth; and, finally (allowing due time for those changes which nature would operate), by thoroughly blending the lime with its superstratum of covering earth, a compost would be produced which might be spread over the land, previously to ploughing in the autumn. The foregoing hints are suggestions only, and as such admit of modifications in every way: the question is mainly one of labour until it be tested by practice. *Croydon.*

Wheat.—Within the last 48 hours complaints are general in this neighbourhood of the blighted state of the Wheat crop. I inclose specimens of the average state of whole fields of Talavera and Chidham, which, until lately, promised a most bountiful yield. Some three weeks back red rust attacked the leaf of the plant; had fine weather ensued this might have been overcome; but the atmosphere being favourable to the growth of this parasite, it has now attacked the corn itself. How far its ravages may extend it is impossible to calculate, as there appears to be no remedy known to man to meet this disease—fine sunny weather being the all-in-all. I am also sorry to note the usual symptoms of the approaching Potato disease; this is to be regretted, as the crop, perhaps, never looked better. On this farm, last season, early in July, I had Turnip seeds sown over the Potato land; they had one hoeing, and the few disturbed in lifting the Potatoes were replanted. This made full amends for the deficiency of the Potato crop, and proved excellent feed for couples in the spring—now succeeded by a fine crop of Barley. The loss from disease in the Potato crop must be met in some such way, by interlining other things to meet expenses. *H. Bowers, Bushridge Farm, Godalming, July* 11. [See a paragraph in Notices to Correspondents.]

Pigs Killed by Eating Monk's-hood.—A neighbour always lost his pigs when away from home; at last they were opened, and the Monk's-hood found in them, the fact being that his gardener always cleared up his garden in his absence, and his pigs had access to the heap of rubbish. The persons who opened the pigs were both unwell for some hours after having handled the chewed Aconite. This gentleman had lost 40*l*. worth of pigs before he found out the cause of their death. *S.*

Societies.

LINCOLN MEETING OF THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

LINCOLN, *July* 19.—The visitor of the English Agricultural Society's annual meeting will this year have passed through greater abundance and promise of food than on any previous occasion. He enters a county which agriculturally owes more to art than any other county in the kingdom. If he comes from the north he passes through the Wold country, which has owed so much to the tenant-right system prevalent on the Brocklesby estates; if from the south he has traversed the low fen and marsh lands around Peterborough and Spalding, which have been reclaimed from the dominion of both salt water and fresh, and from utter waste and desolation made the most productive land in the kingdom. In the centre of the shire he crosses Lincoln Heath—once a wilderness, now a succession of fertile fields—once needing the land light-house for the guidance of the traveller, to whom its only use at present is the strange light it throws on the agricultural condition of the district in the past. Of this, however, we have specific evidence in Mr. Young's report of half a century ago, where he says:—

"The vast benefit of enclosing can, upon inferior soils, be rarely seen in a more advantageous light than upon Lincoln heath. I found a large range which formerly was covered with Heath, Gorse, &c., and yielding in fact little or no produce, converted by enclosure to profitable arable farms, let on an average at 10*s*. an acre, and a very extensive country all studded with new farm-houses, barns, offices, and every appearance of thriving industry; nor is the extent small, for these heaths extend near 70 miles, and the progress is so great in 20 years that very little remains to do. The effect of these enclosures has been very great; for while rents have risen on the heath from nothing in most instances, and next to nothing in the rest, to 8*s*. or 10*s*. an acre, the farmers are in much better circumstances, a great produce is created, cattle and sheep increased, and the poor employed."

On this Mr. Pusey adds:—

"This is indeed a bright picture of wide and rapid improvement drawn at the close of the last century; and Mr. Young might well say that little remained to do. But has nothing been done? Under another head of his report—'Amount of Crops,' I find the following entry:—'In the enclosures from the heath—crop of Barley, three quarters; oats, four; no wheat.' And in my own note-book, taken on the same heath in the present year;—barley, six quarters; oats, none—since they are too poor a grain for such farms; wheat, four quarters, sometimes five,'— a warning that in farming, as in other pursuits, we should not say 'very little remains to do.'"

Mr. Pusey's report, drawn up 10 years ago, is already, no doubt, below the truth of the present day, but the reader who wishes to learn how agricultural enterprise has conducted itself in Lincolnshire, may still usefully refer to it in the 4th volume of the Society's Journal.

THE TRIALS OF IMPLEMENTS commenced on Thursday last, and will continue till this evening. They are arranged in various classes. Steam engines and threshing machines being placed under one examination, chaff cutters, Linseed crushers, churns, &c., under another, drilling machines under a third, and ploughs, hoes, harrows, reaping machines under a fourth. The weather for the last class has until this day been exceedingly unsuitable, Saturday and Monday having both been wet. On Saturday, Messrs. Ransome, Howard, Busby, and others attempted to turn over some stiff clay soil 11 inches deep, and with the assistance of eight horses to a plough the thing was done, and in sufficient quantity to enable the judges to arrive at a decision on the merits of the implements; though it must be admitted that an opinion formed under such circumstances can be of but little value. Howard's and Ransome's were the only implements able to do the work efficiently; the prize was given to the former. After the deep ploughing, 8 or 10 ploughs were set to turn a furrow 5 inches by 9, and several of them did their work very well indeed—Ball, Busby, Ransome, Howard, and Cooke, may be specified.

These and other ploughs were pitted against one another on lighter soil on the afternoon of Saturday, and the morning of Monday, and some very excellent work was exhibited.

Successive trials had resulted by Monday in weeding these "general purpose" ploughs, as they are called, down to two, Ransome's and Howard's; and they were tried against one another, the latter being held by apparently a better ploughman than the former; however, it was the business of the judges to say which was the best plough, not which was the best ploughman, and for this purpose the dynamometer was applied, and the prize was awarded to Ransome's. It may be safely said that the implements are of equal merit, or at any rate, that any differences that may exist are not such as the short trials to which they have been subjected here are capable of discovering. While these examinations were in progress, the other judges were engaged in inspecting and working the drills in a neighbouring field. Their performances are less open to the inspection of a number, and until the grounds of them are published by the judges themselves, we shall content ourselves simply with announcing the awards.

On Monday a very interesting trial of reaping machines took place on Rye, which was in a tolerably fit state for the operation; and the soil of the field, though somewhat damp and adhesive, was certainly not more so than in most harvest seasons, it occasionally is at reaping time. Crosskill's Bell with M'Cormick's cutters — the same with the old shears, worked by leverage, guided by an oscillating flange on a barrel driven from the carriage wheels —Dray's and Crosskill's Hussey, and Garrett's M'Cormick, with a rotating reel in front, were among the implements at work. A French machine for one horse was also at work, and we shall refer to it in our notice of the implement yard to-morrow. The question of merit lay ultimately between Crosskill's Bell with M'Cormick's cutter, and Dray's Hussey, and the prize ultimately was awarded to the latter. It is singular how the English and Scotch judges vary in their decisions on this subject. In its own country, Bell has uniformly won the palm—and as the trials there have generally been during a fitter state of the corn for its operation, we should be inclined to give greater weight to the Scotch decisions. Dray has this year added a tilting board, which greatly facilitates the delivery of the corn.

Beside these operations in the field, trials have been proceeding of steam engines, barn works, chaff cutters, &c., in the yard. Their results we give in the prize list, which we shall quote below. The kind of test to which the engines were subjected consisted in giving a certain quantity of fuel out and counting the number of revolutions of a given difficulty which each performed. The very great differences which came out must, however, be attributed partly to differences in the stoking and management rather than in the essential character of the engines.

A good deal of discontent has arisen during the past few days in connexion with the so-called public admission to the inspection of these trials in the yards, and that not so much on account of the high charge, as because of the imperfect access given to the operations, in progress. The card, too, was not available for a second entrance the same day, which was of course a great deduction from its value.

July 20.—The following awards of the judges of implements were published this morning:—

KIND OF IMPLEMENT.	PRIZE.	NAME OF EXHIBITOR.
Plough for general purposes	£5	Ransome & Sims
Plough for ploughing more than 10 in. deep	5	J. & F. Howard
Machine for making draining tiles or pipes for agricultural purposes	5	Thomas Scragg
Cultivator, grubber, and scarifier	5	E. H. Bentall
Drill for general purposes	10	R. Hornsby & Son
Corn and seed drill	10	R. Hornsby & Son
Most economical corn drill for small occupations	5	J. Smyth & Son
Most economical small-occupation seed and manure drill for flat or ridged work ...	5	R. Garrett & Son
Turnip drill on the flat, with manure ...	5	R. Hornsby & Son
Turnip drill on the ridge, with manure ...	5	R. Hornsby & Son
Liquid manure or water drill	5	Hugh Carson
Manure distributor	10	T. Chambers, jun.
Horse hoe on the flat	5	R. Garrett & Son
Horse hoe for setting out or thinning Turnips	5	R. Garrett & Son
Reaping machine	20	Wm. Dray & Co.
Portable steam-engine, not exceeding 8-horse power, applicable to threshing or other agricultural purposes	20	Hornsby & Son
Second best do. do.	10	Ransome & Sims
Fixed steam-engine, not exceeding 10-horse power, applicable to threshing or other agricultural purposes	20	Ransome & Sims
Second best do.	10	Wm. Dray & Co.
Portable threshing machine, not exceeding 6-horse power, for larger occupations ...	10	R. Hornsby & Son
Best portable threshing machine, not exceeding 8-horse power, with shaker, riddle, and winnower, that will best prepare the corn for the finishing dressing machine; to be driven by steam ...	20	Clayton, Shuttle- [worth & Co.
Fixed threshing machine, not exceeding 8-horse power, with shaker, riddle, and winnower, that will best prepare the corn for market; to be driven by steam	20	Clayton, Shuttle- [worth, & Co.
Corn-dressing machine	5	—
Grinding mill for breaking agricultural produce into meal	5	Clayton, Shuttle- [worth, & Co.
Linseed and corn crusher	5	—
Chaff cutter, to be worked by horse or steam power	5	—
Chaff cutter, to be worked by hand power	3	James Cornes
Turnip cutter	3	Bern. Samuelson
Machine to reduce roots to a pulp	3	Fred. Phillips
Oil-cake breaker for every variety of cake	5	—
Bone mill, to be worked by steam, or other power	5	—
Churn	3	—

SPECIAL PRIZE OFFERED BY R. A. SLANEY, ESQ.

For the best plough to fill in the soil cast out of drains, with not more than four horses, two and two abreast, 10*l*.—Not sufficient merit.

MISCELLANEOUS.

KIND OF IMPLEMENT.	AWARD.	NAME OF EXHIBITOR.
For a useful farmer's cart	Medal.	William Busby
Do. do.	Do.	Thomas Milford
A cottage stove and cooking apparatus	Do.	W. N. Nicholson
A useful and economic drainage level	Do.	H. A. Thompson
One-horse cart	Do.	Wm. Crosskill
For corrugated piping	Do.	Burgess & Key
Improved mode of screening clay, with a high commendation of his tile machines	Do.	John Whitehead
Patent steam draining plough ...	Do.	Fowler & Fry

SPECIALLY COMMENDED.—For Combined Threshing Machine exhibited by E. & T. Humphries.

THE FOLLOWING ARTICLES WERE HIGHLY COMMENDED.—Drill for General Purposes, exhibited by Richard Garrett & Son; Corn and Seed Drill, Richard Garrett & Son; Turnip Drill on the Ridge with Manure, Richard Garrett & Son; for the Plough adapted for Ploughing more than 10 inches deep, Ransome & Sims; for the Plough adapted for general purposes, J. & F. Howard; Hand Chaff Cutter, Barrett, Exall, & Andrews; Ditto

Ransome & Sims: an Useful Application of Tubular Iron to Agricultural Purposes, W. N. Nicholson: Stoves for Cottage Bed Rooms W. N. Nicholson: Improved Patent Horse Rake, J. & F. Howard. Improved Horse Drag Rake, Ransome & Sims; Bruce's Patent Stable Fittings, Ransome & Sims: Haymaker, Smith & Ashby; for a useful Flank-sided Cart, John Cook: for Models connected with Drainage, J. Bailey Denton: for his Improved Cauldron for preparing Asphalte, John Woods: for a useful 3-ton Cart, and Cattle Weighing Machines, Richard Forshaw & Co.: Farm and Village Fire Engine, Richard Forshaw & Co.

The Following Articles were Commended.—Horse Hoe for setting out and thinning Turnips, exhibited by Richard Garrett & Son: Reaping Machine, William Crosskill: Subsoil Plough, William Smith; Hand Chaff Cutter, Dray & Co.; Ditto, Garrett & Co.; Improved Cart Saddle, James Dunlop: Seed and Corn Separator, John Gibson; Useful One-horse Cart, John Barker: Iron Gates, Barnard & Bishop: Farm and Village Fire Engine, Dray & Co.; Useful Stable Furnishings, Mapplebeck & Lowe: Improvement in Scythe Plates, Mapplebeck & Lowe; Corn and Seed Drill, William Walker; Combined Threshing Machine, R. Garrett & Son; Plough for general purposes, William Busby; ditto, William Ball; ditto, Burgess & Key; Screw Jack, John Eaton; Cultivator, Grubber, and Scarifier, R. Coleman; ditto, William Crosskill; ditto, Charles Hart.

B. T. Brandreth Gibbs, *Hon. Director of the Show.*

The Implement Yard was opened early this morning. It is needless to attempt the description, or even the formation of a judgment, of implements whose relative merits have been arrived at only after many days' careful trial and investigation, by as many as twelve judges. We shall, therefore, just refer to a few of the most notable machines, as we pass around the yard, premising that while the Show seems somewhat less numerous, it appears altogether more substantial and useful than any that the Society has yet held.

Messrs. Crosskill exhibit their clod crushers, Uley cultivators, carts, and waggons, &c. Nos. 8 & 9 at their stand are two different forms of Bell's reaping machine; the former being the original one, with clipping apparatus, the latter having M'Cormick's serrated cutters. The effect of the last alteration is to make the machine work with considerably less power, and the serrated cutters are lighter, and less liable to get out of order than the shears. They are also less expensive, and notwithstanding the enormous rise in the value of wood, iron, and labour since last year, the improved machine can be supplied at the same price as the old one, including a complete set of cutters extra; so that, in case of accident in the harvest field, one set can be repaired without the machine having to be stopped. The alteration in the frame, and the mode of attaching the driving wheels by catches and springs, makes the reaper much more manageable in the field, and it can be backed or turned without the necessity of throwing the wheels out of gear. This machine cut a width of 6 feet 6 inches, and is said to cut 15 acres in 10 hours, assuming that the horses travel 2½ miles per hour. Price of the reaper, including two complete knife bars and six spare cutters, 42*l.* This machine made very good work on the trial ground; the decision given over it in favour of Dray & Co.'s Hussey's machine is chiefly on the ground of greater cheapness, both of first cost and of labour. Twelve hours of Bell's reaper would, it was said, require eight horses, whereas four would suffice for Hussey's. Add to this the greater compactness and general manageability of the latter; and while we contend for the superiority of the principles involved in Bell's machine, we must admit that those principles have not yet been developed in a sufficiently compendious and manageable form. Mr. Crosskill received a medal for his cart.

At the next stand Messrs. M'Neill and Co. exhibit their asphalted felt, with models of roofs and framings, and calculations of cost relatively with that of slate.

Mr. Dunlop, of Haddington, exhibits, we think, the only lot of farm harness in the yard.

Messrs. Gibson, of Newcastle, exhibit their revolving cultivator, which appears to be simply a modification of Samuelson's digger, containing a greater number of teeth in each disc, and a greater number of discs slung on the axle. The Northumberland clod crusher is also exhibited at this stand. It consists of a number of wheels on two parallel axles, working those of the one axle within those on the other, so as to mutually clear one another.

Holmes and Co., of Norwich, exhibit threshing machines, steam engines, and drilling machines. Their combined threshing, shaking, and winnowing machine is a very efficient implement. The shaker is formed of four boxes, having perforated plates on the top surface, and the bottom boarded, so that all the corn remaining in the straw is thoroughly shaken out, and it passes through the perforated plates into the boxes, and is delivered from them to the riddle. By this arrangement the crank bearings under the shakers are kept clear from dust, and are much more convenient to oil. The riddle and trough are made in separate divisions, worked by a double-cranked shaft, by which the motion is rendered more even and smooth than by a single crank, and is more durable. In this machine, as in most of the other travelling machines, the corn is delivered into sacks at one end, in nearly a fit state for market, and the straw at the other; the chaff on one side, and the colver or cuttings on the side opposite, thereby making a perfect separation of the whole; and it has the advantage of blowing the chaff and dust in an opposite direction to the motive power or steam engine, which may be considered so far an advantage, as the dust materially injures the working parts of an engine. The whole of the working parts are fitted with coupling brasses, and great attention has also been given to have the straps working several parts of the machine pulling in opposite directions to each other from the main drum-shaft, thereby counteracting each other in such a way as to greatly lessen the friction in any one direction of the drum-shaft or brasses, and consequently add very much to the durability of the machine in this respect. Price 95*l.*

Mr. Samuelson, of Banbury, receives a prize at the next stand, for his well-known Gardener's Turnip cutter, which has been lately improved by the substitution of a grating in front for the solid board, so as to allow of the passage of dirt. The forking machine made by Mr. Samuelson is also exhibited, and has been tried. It is reduced in width, so as to be more manageable; but the less appearance of work left behind it makes against it in the off-hand judgment of spectators—which judgment in this case, however, is sanctioned by the silence of the judges on the subject.

Among the implements exhibited at stand 16 is the liquid manure drill invented by Mr. Chandler, of Aldborne, Wilts. In place of delivering by cups, the liquid now finds its way out through pierced plates over exit pipes, on the same principle as Spooner's which competes with it: the whole is kept clean and well mixed together by stirrers. This implement will drill three or four rows of any kind of thick liquid manure from cattle sheds, piggeries, &c., or water mixed with all kinds of artificial manure, in any quantity from 2 to 15 hogsheads per acre, either with Mangolds, Turnips, or Carrots, &c., at any distance, or spreading liquid manure broadcast. The recent improvements are—the cistern is divided into compartments, to suit side-hill land; and the buckets are fixed with bolts and screws to a cylinder instead of chains, consequently avoiding the wear and tear of cups and chains. Price 27*l.* 10*s.*

At stand 18 Mr. Whitehead, of Preston, exhibits a tile machine, which is highly commended by the judges here, and has received prizes elsewhere. Near this is an ingenious reaping machine by a gentleman, Mons. Mazier, from L'Aigle (Orne), France. It is on the principle of M'Cormick's cutter, for working by one horse, and can work to and fro on one edge of the standing crop by means of a turnwrest arrangement by which the cutting apparatus is shifted from side to side of the framework. The velocity is got up by a toothed wheel working into an endless screw, which is of course mechanically bad, being wasteful of power. It is an exceedingly ingenious and well made piece of apparatus, and attracted a great deal of attention in the trial field.

Messrs. Garrett exhibit at stand 21 a large number of drills and horse-hoes, the latter prize takers as usual. Their three-row manure and Turnip drill also received a prize. This is a cheap and efficient drill for the purpose of drilling, in rows, on either flat or ridge-ploughed lands, Turnip and Mangold Wurzel seed, with Rape-cake dust, guano, Irish peat charcoal, or any light pulverised manure. The manure-coulters are fixed to a swing bar; while those for seed are attached to levers, to admit of the manure being buried any depth in the soil, and the seed to be deposited directly over it with a portion of mould between them; for which forks are provided. It is calculated for two rows from 20 inches to 28 inches apart, and three rows at 16 inches apart, and the quantities may be delivered as required—say for Turnips 1 lb. to 6 lbs. per acre; Beet seed, 3 lbs. to 8 lbs. per acre; and the manure may be regulated as required from 2 to 16 bushels per acre. This drill is adapted for the draught of one horse or pony, and will be found most convenient and easy of management. Price 14*l.*; if made to drill three rows of Beans, without manure, 1*l.* 10*s.* extra; if made to act as a horse-hoe, 2*l.* 8*s.* extra.

At this stand were two very ingenious machines for cutting Turnip rows into bunches. One does it by means of revolving choppers, the other by a revolving circular edge. In the latter a circular edge across the row is made to revolve; it is plain that thus the whole row would be as it were sawn out and off as the machine progressed; but the circular edge is broken in three or four places, and so three or four times in the length of row covered by the progress of the machine during one revolution of the circle, there are three or four bunches left untouched. The fore steerage to the drills exhibited by Messrs. Garrett has been improved by a double leverage which gives the steerer very great power over the motion of the implement, so as to control any tendency to deviation from the straight line with perfect safety and effect. Messrs. Garrett exhibit fixed barn works on the ground.

Clayton, Shuttleworth, & Co. of Lincoln, also exhibit an arrangement of fixed barn works, and at their stand a large number of portable threshing machines, steam engines, and saw machines, were stationed. We had the pleasure of going over Messrs. Clayton's works, in Lincoln — one of the best exhibitions certainly of which the city can boast; 600 men are employed, and one steam engine on an average is turned out every day, and four threshing machines a week. They have received the prizes for the best portable and the best fixed threshing machines. The latter was exhibited at the Royal Agricultural Society's meeting held at Lewes, 1852, and had a prize of 20*l.* awarded to it. Since then it has had several important improvements and additions made to it. Elevators for discharging the grain into sacks and a Barley-awner have been added; both of which are found to be very valuable and efficient appendages, and effect a considerable saving in labour. It also effectually separates the chaff from the pulse or cavings. The chaff, too, can be brought out on either side of the machine at pleasure—a great advantage in out-door threshing, as the weather frequently renders such separation impossible in machines which cannot take out the chaff from either side. It is intended for steam power, and is driven by a strap over a pulley fixed upon the drum spindle. Price 95*l.*, subject to 2½ per cent. discount for cash payment after trial; if not fitted with Barley-awner and elevators, 85*l.*

A prize was offered by the Society for the best root pulper. It has been taken by Mr. Philips, of Bristol, for a machine which consists essentially of a number of rotating circular saws in front of which the roots are pressed, and before which they are made to oscillate by means of a to and fro motion of the surface on which they rest. It reduces the roots hardly to pulp, but certainly to sawdust. It costs 11*l.*

The so-called pulping machines of Messrs. Bushe & Barter, of Glancairn, and the conical grating machine of Mr. Moody, of Maiden Bradley, Wilts, both of which have been described in this Journal, were exhibited by Mr. Simpson, of Lincoln, at stand 56.

Messrs. Hornsby exhibit at stand No. 38: they have been very successful in their competition for drills, and very neat and clever many of them are. They have also carried off the prize for locomotive steam engines. We select for notice their dibbling machine intended for hill-side sowing. The seed-box is supported in the centre, and by means of a screw at one end, can be raised or lowered endways as the drill travels, so that the box is kept quite level when the drill is travelling on the side of a hill, at an incline of 1 foot in 6, ensuring as regular a delivery of corn or seed as if travelling on perfectly level ground. It has the patent India-rubber tubes for conducting the seed to the coulters, and also two coulter-bars to equalise the pressure upon each coulter. The great superiority of the exhibitors' patent India-rubber tubes over the usual tins has now been fully proved in their very extensive use for four years. It is obvious that the seed is first delivered by the seed-cups with perfect regularity; and the only possible cause of its reaching the ground irregularly, or in patches, as is so frequently the case, is, the very imperfect delivery afforded by the tins. The mere motion of the drill and the form of the tins cause the seed to rebound from side to side until deposited necessarily at varying intervals in the soil. The adoption of this patent entirely does away with the numerous tin cups working within each other, and substitutes simply the continuous and almost indestructible vulcanised India-rubber tubes, through which the seed passes, protected completely from both wind and rain, even in the most boisterous weather, directly and with unerring regularity into the channels made by the coulters. A new shaker is exhibited in their locomotive threshing machine, consisting of oscillating "slat" riddles, which are said to be more efficient in that particular form of them which is adopted, than the ordinary oscillating riddles of pierced plates.

Mr. Bentall, at stand 40, exhibited his well known broadshare plough. This implement has three shares, preceded by three points, arranged parallelly with each other, the centre point being so much longer than the side ones as to project beyond them in front, while the share connected with it is as much behind the side-shares. This arrangement of the points before the shares is essential, as it is this that enables the implement to penetrate the hardest soils, and gives it a remarkable steadiness in its work, and a capacity of adhering to the land in a degree not to be attained by other means. There are other advantages, too, in this peculiar construction. By means of the long point a share 18 inches wide can often be used in hard ground, when, without it, even a six-inch share could not be used; the chance of weeds slipping by it is thereby greatly diminished, and fewer tines being required, the implement is less liable to choke in foul land.

At stand 45 (Thomas Johnson, Leicester) we noticed a churn of the common barrel shape, the axis of whose motion was placed diagonally through it, so that the contents of the churn would be thrown about much more violently than if it were subjected to merely the ordinary rotation on an axis symmetrically placed.

At stand 46 Messrs. Howard exhibited their well-known ploughs and harrows. They are successful with the deep plough, and second with the general purpose plough.

At Messrs. Smith & Ashby's (Stamford) stand we noticed an ingenious circular tail-board to a cart, which slides in under the body when not in use, and lifts out and in to its place by rotation around the axis to which it is itself part of a cylindrical surface. Near this was a new chaff cutter, thus described by its maker, F. Arding, of the Albert Iron Works, Uxbridge:—This machine, for which her Majesty's letters patent have been granted, is formed by the combination of the concave and the convex knives upon the same fly wheel, and in the same machine. One of the principal objections to the use of the concave or the convex knife separately is, that the knife in cutting thrusts the feed from one side of the mouth to the other, thereby giving the machine a tendency to choke, producing a great amount of friction upon the cheeks or sides of the machine, and causing an unevenness of feed; thus, where the knife enters, the feed becomes light and thin, and where it finishes its cut the feed becomes light and hard. The advantages sought to be established by the use of this machine are evenness of feed, and consequent evenness of cut, and avoidance of friction, by which means a greater amount of work may be done with a given power. It is fitted in the best manner, upon a strong ash frame, with wrought iron stretchers. It has hinged covers to the brass bearings, by which means dust and grit are prevented reaching the bearings. Price 6*l.* 6*s.*

At stand 68, T. Chambers, Colkirk, Fakenham, Norfolk, is the prize manure distributor. It is the most ingenious novelty in the yard. The manure is delivered from a reservoir on to a barrel in the usual way. This barrel is a cylinder of considerable size, and the delivery into the long box with oscillating sides, through which the manure falls to the ground, is over and by means of this cylinder, which acts by means of projecting surfaces of dimensions capable of variation, and kept clean by scrapers acting underneath the cylinder. The following is the entry in the Catalogue:—The principle of this machine consists of a barrel formed of a series of rings, each having moveable projecting pieces (for the delivery of either highly comminuted or rough manure), which come in contact with scrapers, so placed beneath the box that the manure falls directly off, thereby doing away with the certainty of setting fast the joints when the manure has to slide down them; the pressure of the scrapers on the barrel being regulated also by moveable weights to the greatest nicety, according to the adhesiveness of the manure used. It is also fitted with a quite novel and excellent stirrer, of an horizontal movement, by means of a pair of bevil wheels and crank, which never fails to give a constant and regular delivery from the box to the barrel, however moist the contents of the box may be. It will sow from 2 bushels to any quantity required, and is so easily adjusted by the slide, that even when at work the quantity can be varied according to the quality of the soil to nearly the two extremes, which in other machines cannot be done to the same extent without the aid of change wheels; and it has been perfectly successful this spring in the regular distribution of the most difficult mixtures, such as guano, blood manure, salt, &c. Price 15*l.* 15*s.*

At stand 71, Messrs. Fowler and Fry exhibit their patent Steam Draining Plough. This machine is similar in principle to the patent horse draining plough which received the Society's Silver Medal at Exeter in 1850, honourable mention at the Great Exhibition in 1851, and the Society's Silver Medal at Gloucester last year; since when it has undergone important improvements, one of which consists in the use of steam, instead of horse, as the motive power; and the other, the application of some simple machinery by which the level of the drain can be adjusted when the machine is travelling over an uneven surface, and a fall insured with the utmost accuracy without being dependent on the skill of the workmen. The steam engine is one of Clayton and Shuttleworth's; common six-horse engines, having a wrought-iron frame attached to one end, on which two drums are fixed, turned by crane gear off the fly wheel shaft of the engine, which wind up wire ropes attached to the plough in a manner similar to the one worked by horses, shown last year at Gloucester. The engine is fixed in one corner of the field, and the ropes work round an anchor and round the plough, up and down the field.

Dray & Co. exhibit another draining plough, invented by the Earl of Dundonald. This machine cuts the drain and lays the pipe at one operation. The implement is formed something like a mole plough. From the upper surface of the beam there is an orifice, or tube, which is carried in an oblique line through the body of the machine. Through this tube the drain pipes or tiles are dropped one by one, and fall by their own weight into their proper position in the drain which has been cut by the nose of the plough. On trial, the loop by which the draught chain was attached broke before the plough could be induced to move.

Near this stand Mr. Nicholls, of St. John's, Bedford, exhibited his horse hoe, in which the guidance of the machine is effected by altering the *direction* of the wheels and tines, so that they shall themselves follow the path desired, and not by the sheer force of the driver applied to the lifting the whole laterally, as is often the case. Mr. Spooner's water drill is exhibited this year by Messrs. Tasker and Fowle, of Andover. Its advantages are stated to be—1st. The water and manure apparatus being disconnected, admits of the application of almost any amount of water (from one to 12 hogsheads per acre), which can be varied to any extent, whilst the distribution of the manure may remain the same; or, on the other hand, the manure may either be diminished or increased, so that a poor spot may be double dressed, whilst the distribution of the water may continue uniform. 2dly. The manure box is fitted with patent rotary tumblers, which deliver the manure with the greatest accuracy, every row and indeed every plant receiving the same; and is adapted for applying bones, superphosphate of lime, guano, and every kind of concentrated manure, in conjunction with water, or without, as situation and circumstances will allow. 3dly. As the water is discharged on the principle of gravitation, no power is employed in raising it; and the wear and tear of buckets, &c., is dispensed with, whilst the simplicity of its construction secures it from getting quickly out of repair: it is assisted in this respect by the fact that, as the liquid is not impregnated with the acid properties of the manure, the rusting and injury of the metal it comes in contact with is altogether avoided. 4thly. By removing the manure box and coulters, the drill is converted into a water-cart, capable of holding 100 gallons, which will be of great utility at those seasons of the year when not required as a liquid manure and Turnip drill. Price, fitted with improved steerage, 41*l.* 10*s.*; without steerage, 36*l.*

Mr. Brinsmead's patent straw shaker is exhibited near this. This invention produces three effects by one action, namely, first it thoroughly shakes the corn out of the straw; secondly, it collects again the short straw that has dropped underneath with the grain, and sends it away with the long straw; thirdly, it conveys the corn back into the body of the threshing machine. It also facilitates the winnowing process in the combined threshing machine is simple in construction and very easy of power. Price 12*l.* 12*s.*

The series of stands nearly closes with No. 113, that of Messrs. Ransome and Sims. It exhibits a number of ploughs, one of which, the "general purpose" plough, carried off the prize. Scarifiers and grubbers are also exhibited, with steam engines, threshing machines, grinding mills, oilcake breakers, reaping machines, &c. We must refer also to an ingenious machine for scutching Flax exhibited here; and to a Bean cutter invented by Mr. Biddell, the novelty of which consists in the teeth or cutters being made of separate pieces of hardened steel fixed in a cylinder. Each tooth has three prepared cutting edges, so that when one edge, or set of edges becomes dull, they may be taken out, turned one-third round, put in again, and a new edge or set of edges is obtained; and when these fail they may be again taken out and turned one-third round, and it makes a second fresh set; and when this third resource fails, they may be taken out and easily replaced with new teeth, by an ordinary labourer, at a very small cost, viz., 6*s.* If driven at a speed of 150 revolutions per minute, will cut 24 bushels per hour. Price 4*l.* 10*s.*

It would be wrong to close this notice of the implement yard without reference to the very admirable show of seeds, plants, and models of Grasses, grains, and Turnips, Potatoes, Apples, &c., exhibited by Messrs. Lawson, of Edinburgh and London.

Reference should also be made to a revolving liquid manure distributor, exhibited by Mr. Hall, of Romford, which, however, bulky and cumbrous it appears, seems still to be an efficient implement.

We hope to refer shortly again hereafter, to some of the many machines of which no notice can this week be taken.

In the evening the Annual Dinner of the Society was held in the Pavilion adjoining the Show-yard. Mr. Pusey's absence was greatly regretted—his place was supplied by the Earl of Chichester. The toast of the evening, the "Royal Agricultural Society," was given by the Earl of Carlisle, in a speech in which he referred to the plains of Troy as being under cultivation by Garrett's and Crosskill's implements, and to the progress of agriculture in those parts as being likely to furnish the true solution of the "Eastern question."

His Excellency the Peruvian Minister responded to the toast of the "Foreign Ministers," and reference was, of course made, first, in a very pointed manner by the President, and again by himself, to the supply of guano as the agricultural link between the two countries. Lord Harrowby spoke to the question of agriculture, manufacture, and commerce, describing them as sisters whom it was now possible to compliment individually, without any risk of being misunderstood as disparaging the other members of the now happy family. Mr. Thompson, of Early Hall, near York, gave the toast of the "Labourer." The list of awards was read by Mr. Brandreth Gibbs near the close of the meeting. The last toast was to the railway companies, and the application of steam to the interests of agriculture, which during the past week had been proceeding under their auspices, and which gave Mr. Wren Hoskyns, in whose hands the toast had been placed, opportunity to insist upon that more immediate and more important application of it to cultivation to which he has so long and ably directed the attention of farmers. We hope next week to publish a report of his remarks.

July 21.—Magnificent weather leaves nothing to desire as to the success of the Lincoln Meeting of the Society. The cattle-yards had been open yesterday evening at a charge of 10*s.* each person, even to exhibitors themselves, which was, we think, unreasonably hard upon them, seeing that they had presented the attractions to which the sale of any of these tickets was due. The yards were opened this morning at a charge of 2*s.* 6*d.*, and soon became crowded with visitors.

THE SHOW OF CATTLE.

The following are our notes on the show of cattle:—

Short-horns.—In the class of old bulls, the 1st prize is justly awarded to Mr. Sanday, of Nottingham, for a fine, straight, well proportioned animal, of very good quality of flesh, which we remember a calf by Usurer, in Lord Ducie's herd at Tortworth, 3 years ago.

No. 5, winning the 2d prize, is a white bull, shown by Mr. Booth, and he is also a first-rate animal, of very superior quality. There would have been more difficulty in deciding between these two, had the latter appeared as well as the other when turned out. No. 6 is a red, thick, useful beast—head quarters not quite perfect; shown by Mr. Burtt, of Grantham. No. 8, a dark roan heavy-fleshed animal, of good quality, shown by Mr. Robinson; 9, a heavy well made beast, with very deep chest, drooping slightly in the back; shown by Mr. Dickenson, of Ulverston. The remainder in this class are very useful animals.

Class 2, young bulls, consists of 23 animals, among which are many of very great merit. Mr. Kirkham, of Hagnaby, shows two in this class, by the same bull as the prize bull. No. 27 is a good roan shown by Lord Zetland, with straight back, and very good loins and hind-quarters. No. 31 and 32 deserve notice, as compact, well-made beasts; the latter shown by Mr. Douglas, of East Lothian, is first-rate in his hind-quarters and flesh—not so good in front, and somewhat coarse about the head. No. 35, shown by Mr. Maw, cuts a very poor figure by its neighbours. No. 36, shown by Mr. Odling of Market Rasen, carries off the first prize. He is a remarkably level, well-proportioned beast, of first-rate quality. The second prize was carried off by Mr. Towneley, a very thick, good bull, and the judges must have had some difficulty in deciding the superiority of its rival. It was with reference to this bull, which is, if we remember rightly, faulty in the colour of the muzzle, that the remark of the herdsman applied, "Races are pretty even when won by a neck but here we have been hardly beaten by *a nose.*" The prize in bull calves is also carried off by Mr. Towneley, for a roan bull of good form and quality—"Master Butterfly." Amongst others, Mr. Kirkham shows a nice calf by Usurer in this class.

We now come to the class of old cows, consisting of 25 head, amongst which there are a few not very excellent, but the largest number are very superior animals. Eight or ten may be selected of the best we ever saw together. We have never had such a show of cows at any previous meeting. Mr. Towneley figures well here with his cow Beauty by Victor—a roan of remarkably fine touch—somewhat patchy about the rumps, in other respects level and good. Mr. Booth carries off the 2d prize for a fine cow of the same family as Mr. Towneley's first prize animal. "Lady Barrington," shown by Mr. Tanqueray, is remarkable for fine quality of flesh, with however some imperfection, especially in her shoulder, though had she been in condition the determination of the prize animals would have been more difficult. Mr. Stratton shows two useful cows in this class, which are highly commended by the judges. 75, shown by Lord Hill is also justly commended by the judges.

In the young class there is the best show of heifers we ever witnessed. The first prize is taken by Mr. Douglas, of East Lothian: she is a perfect model, and justly merits her position. We believe her even better than Mr. Wilson's celebrated "Brawith Rose," which figured at Exeter, and carried the challenge cup in Ireland, and was shown everywhere, and never beaten. Mr. Towneley comes second with a very good light roan heifer, of uncommon merit, as she needed to be to gain a prize in this class, for they are all magnificent animals. Among yearling heifers, the last class of shorthorns, but not the least in importance, and the best class of its kind that we have ever seen, Mr. Towneley again carries off the 1st prize, with a roan heifer of remarkable nice quality, getting rather small forward. Its neighbour, 94, is equal, if not superior to the prize animal. The 2d prize is taken by Mr. George Sainbury, with a red and white heifer, by the Duke of Gloucester," shown in the condition just as such things ought to be, and thus in some respects a pattern to others. The prize is awarded in this case to excessive fat, or the 2d prize animal would have been first. Mr. Towneley also shows a very clever heifer by the Fourth Duke of Oxford.

Nos. 100, 101, and 102 are shown by Mr. Kirkham; they are very compact neat heifers, all by Usurer. 106 and 107 are two red heifers (thick useful beasts), shown by Mr. Fletcher, of Mansfield.

Herefords.—The first class includes only 3 bulls, and the 1st prize is taken by Mr. Price, for as perfectly formed an animal, of first-rate quality, as we have seen for some time. The 2d prize animal, belonging to Mr. Carwardine, is a well proportioned useful beast; not, however, anything equal in symmetry to Mr. Price's bull. Among young bulls, the 1st prize is adjudged to Mr. Rea, for a useful beast, by no means first-rate however. The 2d prize is to a fairly formed beast, of good size, belonging to Mr. Powell. Lord Radnor shows a very nice little beast of good quality, in this class. Lord Berwick shows a large good bull in this class, which we should fancy was entitled to the 1st prize; but it is certainly not a perfect animal.

In Class 3, for bull calves, but one animal is shown; Mr. Price receives a first prize for it, to which he is well entitled. Among cows, only two appear, the 1st prize is received by Mr. Turner, of Leominster; and the 2d by Lord Berwick. The class of heifers contains but two also, of which Lord Radnor receives a second prize for a very good heifer—well formed, but rather hard in the touch. Of yearling heifers we have five; the best is a well-made, thick heavy fleshed beast. The second prize is a neat heifer, of good quality, and perhaps greater symmetry.

The Hereford classes generally are, as may have been expected, represented by but few, the whole width of the island having, in the case of the Lincoln meeting, to be traversed.

Devons.—Among old bulls, the 1st prize is carried off by Mr. Farthing, by a bull of first-rate quality and symmetry, having extraordinary depth and width of chest, with a deep good flank. The 2d prize taken by a very level well-formed bull of Mr. Turner, of Barton, near Exeter, having, however, a slightly defective rump. Among young bulls the 2d prize was taken by Mr. Quartley's bull, and we think it ought to have been the first.

141 and 142, shown by Mr. Blomfield, of Wells, Norfolk, and Mr. Webber, of Tiverton, are useful animals, but we do not much admire 140, shown by Mr. Wright, which carried off the 1st prize.

There were but two in the class of calves, but the prize is rightly awarded to Mr. Turner's No. 144.

Ten cows were shown, and a very good class it is. Mr. Farthing takes the 1st prize for decidedly the best

animal in the class. Lord Leicester takes the 2d prize for a very useful animal, good, especially in the hind quarters. Among the heifers Mr. Turner carries the 1st prize for a very nice level beast, which well deserves the distinction. The second goes to Mr. Quartley.

Among the younger heifers the first prize goes to Mr. Turner. Mr. Blomfield of Norfolk shows a heifer of great merit, than which there is nothing more compact in the Devon class. The second prize is taken by Mr. Webber, for a useful animal of good fore quarters.

As to the show in the cattle classes generally, we will only add that our anticipations of a good show have been abundantly realised. The shorthorned classes are decidedly better than we have seen on any former occasion, especially the classes of cows and heifers, many of which are perfection itself. The classes of Herefords and Devons are smaller in number than they have been at previous shows, but this may be accounted for by the greater distance from the scene of the meeting; and we think that the classes have shown greater uniformity in character than we have previously seen. We must continue to express our regret that exhibitors still feel it to be necessary, in order to attain distinction, to run that risk of rendering their animals unproductive, which is incurred by the extraordinary state of fatness to which some of these animals are brought.

The following is the List of Prizes for Cattle, published soon after the opening of the yards on Monday:—

SHORTHORNS.

Judges—Messrs. Thomas Parkinson, Thomas Trotter, and John Wright.

Class 1. Bulls, between 2 and 4 years old: 40*l*., William Sanday, of Holmes Pierrepont, near Nottingham; 20*l*., Richard Booth, of Warlaby.

Class 2. Bulls, yearlings: 25*l*., William Odling, Market Rasen; 15*l*., Charles Towneley, of Towneley Park.

Class 3. Bull calf, above 6 and under 12 months old: 10*l*., Charles Towneley.

Class 4. Cow in milk or in calf: 20*l*., Charles Towneley; 10*l*., John Booth, of Killerby, Catterick.

Class 5. Heifers in milk or in calf, not exceeding 3 years old: 15*l*., James Douglas, of Athelstaneford Farm, Drem; 10*l*., Charles Towneley.

Class 6. Yearling heifers: 10*l*., Charles Towneley; 5*l*. George Sainsbury, of the Priory, Corsham.

HEREFORDS.

Judges—Messrs. Edward L. Franklin, John Charles Langlands, and John Williams.

Class 1. Bulls, between 2 and 4 years old: 40*l*., Edward Price, of Court House, Leominster; 20*l*., John Carwardine, of Stockton Bury, Leominster.

Class 2. Bulls, yearlings: 25*l*. to James Rea, Monaughty, Knighton; 15*l*. to W. Styles Powell, Castle Street, Hereford.

Class 3. Bull-calf above 6 and under 12 months old: 10*l*. to Edward Price, of Court House, Leominster.

Class 4. Cows in milk or in calf: 20*l*. to Philip Turner, of the Leen, Pembridge, Leominster; 10*l*. to Lord Berwick, of Cronkhill, Shrewsbury.

Class 5. Heifers in milk or in calf, not exceeding 3 years old: 15*l*. to William Perry, of Cholstrey, Leominster; 10*l*. to the Earl of Radnor, of Coleshill House, Highworth.

Class 6. Yearling Heifers: 10*l*. to John Walker, of Westfield House, Holmer, Hereford; 5*l*. to Philip Turner.

DEVONS.

Judges—Messrs. Edward L. Franklin, John Charles Langlands, and John Williams.

Class 1. Bulls between 2 and 4 years old: 40*l*. to Samuel Farthing, Bridgewater; 20*l*. to George Turner, Exeter.

Class 2. Bulls, yearlings: 25*l*. to Robert Wright, Taunton; 15*l*. to James Quartley, of South Molton.

Class 3. Bull calf, above 6 and under 12 months old: 10*l*. to George Turner, of Barton.

Class 4. Cows in milk or in calf: 20*l*. to Samuel Farthing; 10*l*. to Earl of Leicester.

Class 5. Heifers in milk or in calf, not exceeding 3 years old: 15*l*. to George Turner; 10*l*. to James Quartley.

Class 6. Yearling heifers: 10*l*. to George Turner; 5*l*. to Thos. Webber, of Halberton Court, Tiverton.

OTHER BREEDS:

NOT INCLUDING THE SHORTHORN, HEREFORD, OR DEVON BREEDS.

Judges.—Messrs. Edward L. Franklin, John Charles Langlands, and John Williams.

Class 1. Bulls between 2 and 4 years old: No competition.

Class 2. Bulls calved since the 1st of July, 1852, and more than 1 year old: 10*l*. to Samuel Burbery, of Wroxhall, Warwick.

Class 3. Cows in milk or in calf: 10*l*. to Captain Inge, of Tamworth; 5*l*. to Samuel Burbery.

Class 4. Heifers in milk or in calf, not exceeding 3 years old: No competition.

Class 5. Yearling heifers: 5*l*. to Captain Inge.

SHEEP.

The show of Leicesters is very large; of short-wools, rather less than usual; while the long-wools have been assembled in far greater numbers than at any previous occasion—indeed, if we include the class of improved Lincolns, we find that they form nearly one-half of the sheep present; although in all other years they have been the smallest class. The numbers in the different classes are as follow:—Leicesters, 89 rams, 12 pens of ewes; short-wools, 55 rams, 12 pens of ewes; long-wools, 72 rams, 24 pens of ewes; improved Lincolns, 42 rams, 6 pens of ewes. The numbers of exhibitors are:—Leicesters, 26; short-wools, 14; long-wools, 20; improved Lincolns, 13; total 73. An inspection of the names of exhibitors will show how well the county of Lincoln has responded to the call of the society—though this point, indeed, is sufficiently obvious from the great gathering of Lincoln sheep. Out of the 26 exhibitors of Leicesters, 6 are Lincolnshire men; out of the 20 exhibitors of long-wools, 4 are Lincolnshire men; which added to the 13 exhibitors of improved Lincolns, gives a total of 23 Lincolnshire exhibitors of sheep; while those from all other counties in England amount to only 50.

LEICESTERS.—Class 1. Shearling Rams: Mr. Pawlett's prize rams struck us as being remarkably fine animals. The first, with broad chine, full deep plates, and good rump, level back, and good fleece; the other of great length, with good scrag, and good thighs. The first measures—girth, 4 feet 10 inches: length, 36½ inches. The second—girth, 4 feet 11½ inches; length, 3 feet 7 inches. Mr. Abraham has two moderately good sheep; one measuring 4 feet 8 in girth, and 3 feet 5¼ in length. Mr. Grantham shows good backs and legs, one with a bare loin. Mr. Barton's rams are good as usual, well fleshed, with thick fore-quarters, but some scarcely deep enough through the chest. Mr. Radmore's are useful sheep. Mr. Sonley's rams show considerable length, but a little deficient in frame. Mr. Turner's are good animals, compact, and of fine quality. Mr. Sanday's are broad, with good chines and plates, but too small, and the wool not sufficiently fine. One of Mr. Spencer's is a compact sheep, another has a narrow loin and rump. Lord Berners shows a great sheep with heavy wool, but having a rather narrow fore-quarter. Mr. Kingdom's have inferior backs and fore-quarters. Mr. Mann's are much of Cotswold character, with broad loins, and light wool.

Class 2. Rams of any other age: Mr. Barton's 1st prize sheep is well made, long and wide; measuring—girth, 5 feet 4 in.; length, 3 feet 7 in.; height, 2 feet 7¼ in. Mr. Abraham's 2d prize sheep is large and broad, with wide chine and loin; good full deep plate, good legs, wide rump, and fine bone, in fact, a better animal than the other, but also older. The first measures—girth, 5 feet 4 in.; length, 3 feet 7 in.; height, 2 feet 7 in. The second measures—girth, 5 feet 3¼ in.; length, 3 feet 9 in. Mr. Creswell exhibits some rather narrow framed sheep, good in some points, but with rather falling chines. Mr. Sanday's are useful animals, wide, and with good frames, but backs not all well covered, and the wool of second-rate character. Mr. Torr's are good sheep, first-rate mutton, but rather deficient in chine.

Class 3. Pens of five shearling ewes: Mr. Walmesley's beautiful ewes take the first prize. They are compact, well formed, and very fine, with excellent quality of flesh. Mr. Abraham's have the 2d prize; they are very fine, with curly wool, but are certainly not deep enough in constitution.

SHORT-WOOLS.—Class 1. Shearling rams: Mr. Lugar's rams (of which one has the 1st prize); have broad straight backs, great depth, good breasts and twists, and are well filled out; bone fine, wool good; some have loins rather high, or not sufficiently well covered with wool. The Duke of Richmond's, taking the 2d prize, has first-rate chine and fore-quarter, but not a good rump; colour a shade lighter than some others. The measurement of the first sheep are—girth, 4 feet 4½ in.; length (from point of shoulder), 2 feet 8¼ in. Another of Mr. Lugar's sheep—girth, 4 feet 6 in; length, 2 feet 8½ in. Of the 2d prize sheep—girth, 4 feet 4½ in.; length, 2 feet 9½ in. Mr. Sainsbury's Downs are not perfectly shaped, have large frames, but not good backs: one measures in girth only 3 feet 3½ in. Mr. Overman's rams are compact and well made, with thick necks and good rumps, but have very much wool. [We venture to add here a remark on the shearing of the animals exhibited. We could point out the sheep shown by the Duke of Richmond, by Mr. Hayward, of Fothington, and Mr. Harrison, of Frocester, and others, as favourably contrasting in this respect with prize animals—some of which, as well as of their unsuccessful rivals, were bare enough over the loin, while the wool was nearly a couple of inches long over and behind the shoulder—presenting to the eye a much more perfect form than on examination by the hand they proved to have.]

Class 2. Mr. Sainsbury's ram, of great length and size, takes the 1st prize; he measures, girth, 4 feet 10½ in.; length, 2 feet 11 in.; height, 2 feet 5 in. Mr. Rigden's rams (one of which has the 2d prize), have considerable length and width, good legs, but some not particularly good fore-quarters. The 2d prize ram measures—girth, 4 feet 7 in.; length, 2 feet 7 in.; height, 2 feet 5 in. A useful sheep of Mr. Lugar's in this class measures—girth, 4 feet 11 in.; 2 feet 10½ in.; 2 feet 5 in. Lord Walsingham shows some very compact useful sheep.

Class 3. Pens of five shearling ewes: Mr. Overman's 1st prize ewes are very fine, and well made. The Duke of Richmond's 2d prize ones are also good, but with less wool.

LONG-WOOLS. — Class 1. Shearling rams: The 1st prize sheep of Mr. Fletcher is certainly of amazing breadth, with fine chest and deep flanks; his head is too short; his girth is 5 feet 3 in. The 2d prize sheep of Mr. Hewer is also a remarkably fine animal, girthing 5 feet 2 in. Mr. Hewer's sheep are more especially worthy of notice, for their firm fine hand and pleasing countenances, as well as for their weight and form. We also admired Mr. Lane's rams, particularly one really marvellous shearling, whose large proportions it was difficult to reconcile with the youthfulness indicated by his teeth.

Class 2. Rams of any other age: both 1st and 2d prizes fell to Mr. Lane; the first of these sheep measuring in girth 5 feet 11½ in., the second, 5 feet 5 in. We have not time to allude to Mr. Game's, Mr. Hardy's, and other noble animals in this class.

Class 3. Pens of five shearling ewes: Mr. Game's prize ewes are certainly as large as some rams, and notwithstanding are of conspicuous beauty of form, and possess other great merits. Mr. Lane's are perhaps equally deserving of attention. Mr. Peel's ewes we considered very inferior, with such thin scrags, and other deficiencies.

IMPROVED LINCOLNS.—Class 1. Shearling rams: In this class, Mr. Abraham had unfortunately entered some of his larger Leicesters, and they have therefore been disqualified. Mr. John Clarke's rams (one of which has the first prize, together with the special prize), combine great size with good proportion of fore-quarter, loin, and rump, and heavy skins. The prize sheep measures—girth, 4 feet 8¾ in.; length, 3 feet 10¾ in.; height, 2 feet 6¼ in. Mr. Greetham's (2d prize) is a very good, well-shaped sheep, but head not of good character.

Class 2. Rams of any other age: Mr. John Clarke's rams take both 1st and 2d prizes, together with the special prize. They have certainly great breadth and depth of frame, immense plates, and uncommon good hand, with extra heavy fleeces. The 1st prize ram clipped 51¾ lbs. of wool in three years. His girth is 5 feet 8 in.; length, 4 feet 1 in. The 2d prize sheep measures—girth, 5 feet 4 in.; length, 3 feet 10 in.

Class 3. Pens of five shearling ewes: Mr. Kirkham's prize ewes are a very useful lot, with plenty of wool. Mr. Greetham has also here some well-formed ewes, well made up, but with wool rather too light for this class. In conclusion we may say that the sheep classes generally exhibit very considerable merit. Some of the downs perhaps may be criticised for having been rather too freely pruned by the shears; and every one must remark how severely this class suffers from the absence of Mr. Jonas Webb's unrivalled models. The Leicesters abound with beautiful specimens; the long-wools have their usual gigantic animals, each of which would require several lines of description to do it justice; and the improved Lincolns are certainly not only the largest, but the most praiseworthy and valuable sheep which have yet been exhibited in a local class at the Society's meetings.

The following is the Prize List for the Sheep and Pigs. Some remarks on the latter class we shall be able to give next week.

SHEEP.—LEICESTERS.

Judges—Messrs. Robert Aylmer, W. Harrison, and William Smith.

Class 1. Shearling Rams: 30*l*. to T. E. Pawlett, of Beeston, Sandy, Beds; 15*l*. to the same.

Class 2. Rams of any other age: 30*l*. to John Borton, of Barton House, Malton; 15*l*. to William Abraham, Brigg, Lincolnshire.

Class 3. Pens of 5 shearling Ewes of the same flock; 20*l*., to George Walmsley, Rudstone, Bridlington, Yorkshire; 10*l*., to William Abraham.

SOUTHDOWN, OR OTHER SHORT-WOOLLED SHEEP.

Judges—Messrs. George Brown, John Clayden, and Edward Pope.

Class 1. Shearling Rams: 30*l*. to Henry Lugar, of Hengrave, Bury St. Edmund's; 15*l*., to the Duke of Richmond.

Class 2. Rams of any other age: 30*l*., to William Sainsbury, of West Lavington, Devizes; 15*l*., to William Rigden, of Hove, Brighton.

Class 3. Pens of 5 shearling Ewes of the same flock: 20*l*., to Lord Walsingham, Merton Hall, Thetford; 10*l*., to the Duke of Richmond.

LONG-WOOLLED SHEEP. NOT QUALIFIED TO COMPETE AS LEICESTERS.

Judges—Messrs. Hugh Aylmer, Henry Bateman, and William Hesseltine.

Class 1. Shearling Rams: 30*l*., to George Fletcher, of Shipton, Andoversford, Cheltenham; 15*l*., to George Hewer, of Leygore, Northleach, Gloucester.

Class 2. Rams of any other age: 30*l*., to William Lane, of Broadfield Farm, Northleach; 15*l*., to William Lane.

Class 3. Pen of 5 shearling Ewes of the same flock: 20*l*., to William Garne, of Aldsworth, Northleach: 10*l*., to William Lane.

IMPROVED LINCOLN SHEEP.

Judges—Messrs. Hugh Aylmer, Henry Bateman, and William Hesseltine.

Class 1. Shearling Rams: 15*l*., to John Clarke, of Long Sutton, Lincolnshire; 10*l*., to Thomas Greetham, of Stainfield, Wragby, Lincolnshire.

Class 2. Rams of any other age: 15*l*., to John Clarke, of Long Sutton, Lincolnshire.

Class 3. Pens of 5 shearling Ewes of the same flock: 10*l*., to John Kirkham, of Hagnaby, Spilsby, Lincolnshire.

PIGS.

Judges—Messrs. H. Eddison, John Grey, and Benjamin Swaffield.

Class 1. Boars of a large breed: 15*l*., to Henry Blandford, of Sandridge, Chippenham; 5*l*., to the assignees of Samuel Fryer, of Newark.

Class 2. Boars of a small breed: 15*l*., to William Northey, of Lake Lifton, near Launceston; 5*l*., to Solomon Ashton, of Peter Street, Manchester.

Class 3. Breeding Sow of a large breed: 10*l*., to Edward Robinson, of Green Bank Lymm, Warrington.

Class 4. Breeding Sow of a small breed: 10*l*., to George Mangles, of Givendale, Ripon.

Class 5. Pen of three breeding sow pigs of a large breed, of the same litter, above 4 and under 8 months old: 10*l*., to William James Sadler, of Bentham Purton, Swindon.

Class 6. Pen of three breeding sow pigs of a small breed, of the same litter, above 4 and under 8 months old: 10*l*., to the Earl of Radnor.

Veterinary Inspector—Professor Simonds.

SPECIAL PRIZES.

Offered by J. T. Tweed, Esq., mayor of Lincoln.

I. HUNTERS.

Class 1. Hunting Stallions: 40*l*., to John E. Denison, of Ossington, Newark, Notts.

Class 2. Hunting Gelding or Filly: 20*l*., to Richard Stockdale, of Skerne, Driffield: 10*l*., to William Marris, of Great Limber, Ulceby, Lincolnshire.

II.—IMPROVED LINCOLN SHEEP.

Class 1. Shearling Ram: 10*l*., to John Clarke, of Long Sutton, Lincolnshire.

Class 2. Ram of any age: 10*l*., to John Clarke, of Long Sutton, Lincolnshire; 5*l*., to John Clarke, of Long Sutton, Lincolnshire.

Class 3. Pen of five shearling Ewes: 5*l*., to John Kirkhem, of Hagnaby, Spilsby

[We must omit the prize list of poultry till next week.]

HORSES.

THE SHOW OF HORSES may justly be considered as superior to that of the average of former years. The 23 animals shown in Class No. 1, for agricultural stallions of any age, not less than 3 years, were generally of larger frame, and presented a greater variety in their appearance than any exhibition that we remember since that of Northampton. They afforded some excellent specimens of the description of horses most approved of in the midland counties. The 1st prize was awarded to No. 199, a remarkably fine 6-year-old brown stallion, belonging to Mr. James Stockdale, an animal well proportioned, and combining strength and activity in a

considerable degree. The second prize fell to No. 201, a fine and powerful brown horse, the property of Messrs. E. and M. Reed. This animal possessed an almost perfect frame—indeed, the chest was wide almost to fault, and we should have liked him better if his fore-arms had not been quite so far apart; his fore-legs were exceedingly good, and symmetry and strength were happily combined. Next to this animal was No. 200, a remarkably fine and powerful Suffolk horse, belonging to Mr. Biddell, which for some reason was passed over by the judges. No. 202 was highly commended; a Suffolk horse of great strength and compactness, but in whose case the possession of thorough pins no doubt depreciated his other great excellences. This horse took a 2d prize last year at Gloucester. A remarkably fine 3-year-old bay horse belonging to Mr. Savage, No. 212, was also highly commended. This horse bids fair to be a first-class horse, barring the possession of white hind legs; he exhibited strength, symmetry, and activity well combined. This horse was got by No. 214, Honest Tom, belonging to Mr. Gant; a horse possessing vast power, with activity, but showing more hair on his legs than is generally approved of. This horse was commended, as was also Mr. Crisp's Suffolk horse (No. 209), an admirable specimen of this fashionable breed; and a bay horse (No. 197) of great power, belonging to Mr. Gilbert. There were many other animals in this class of great merit; amongst others No. 193, a grey horse, and a black stallion, No. 195.

The 2-year-old class was short in numbers, there being only eight horses entered. Two handsome Suffolk colts, belonging to Mr. Wilson, Nos. 218 and 219, struck our attention. The former was rewarded with the 2d prize, and certainly exhibited much strength and symmetry; 219 bids fair to be a valuable animal, although the hocks approached each other somewhat too much. The 1st prize was, however, awarded to No. 217, a very fine young bay horse, belonging to Mr. Bryan, the gentleman who, if we remember rightly, won the 1st prize at the Northampton Meeting, with a very fine chestnut horse. Nos. 220 and 222 were also nice horses.

Class 3, for colts foaled last year, was not so good as we expected. The prize was given without any difficulty to No. 228, a black Lincolnshire colt of great size and promise, the owner of which was Mr. Howard. Mr. Catlin's colt, No. 231, obtained the 2d prize. The others were certainly distanced.

We pass over Class 4, the roadster stallions, to that of Class 5, the mares and foals; and here we find a splendid grey mare, No. 251, belonging to Dr. Timon, gaining the 1st prize. Her foal, however, was not so good as the two next in order, Nos. 258 and 260. The former was a remarkably fine bay mare belonging to Mr. Page, near Colchester, with a good foal, to which the 2d prize was awarded; and the latter a brown mare of great strength and activity, with a remarkably fine foal. There were upwards of a dozen exhibited, and amongst them some very useful animals.

Class 6, for 2-year-old fillies, possessed considerable excellence. The prize animal, No. 266, belonging to Mr. Barthropp, was one of the most perfect animals we have ever seen. The 2d prize was given to No. 263, a very fine black filly, owned by Mr. Bayley; whilst Mr. Catlin's Suffolk filly, No. 270, was highly commended. No. 277, belonging to Mr. Wythes, also a Suffolk, was also commended, as well as the class generally, which certainly bids fair to transmit the merits of good cart horses to succeeding generations.

We must postpone our observations on the roadster stallions, as well as on the special classes for hunting stallions, and hunting mares and geldings, until next week.

The following is the prize list for horses:—

Judges—Messrs. J. H. Bland, Wm. Linton, and W. C. Spooner.

Class 1. Stallions for agricultural purposes, foaled previously to the 1st of January, 1852: 30*l.* to James Stockdale, of Hutton Cranswick, Driffield; 20*l.* to Edward and Matthew Reed, Beamish Burn, Chester-le-Street.

Class 2. Stallions for agricultural purposes, foaled in the year 1852: 20*l.* to Frederick Thomas Bryan, of Knossington, Oakham; 10*l.* to William Wilson, of Ashbocking, Ipswich.

Class 3. Agricultural Stallion, foaled in the year 1853: 15*l.* to Robert Howard, of Rise Farm, Nocton, Lincoln.

Class 4. Roadster Stallions: 15*l.* to Joseph Innocent, of Rossington, Bawtry.

Class 5. Mares and Foals for agricultural purposes: 20*l.* to Dr. Timm, of Scrooby House, Bawtry; 10*l.* to Isaac Page, of West Bergholt, Colchester.

Class 6. Two years old Fillies for agricultural purposes: 15*l.* to N. G. Barthropp, of Cretingham Rookery, Woodbridge; 10*l.* to Charles Bayles, of Riseholme, Lincoln.

Poultry.

SHOW AT THE ROYAL AGRICULTURAL SOCIETY'S MEETING AT LINCOLN.—While it has afforded a treat to the lovers of gallinaceæ, it has added fresh proof to the fact that with care and judicious management, there is something of certainty in exhibitions if proper birds be selected, and this is suggested to us by the fact that although Captain Hornby's birds have changed hands, the triumphs they have achieved here will, if possible, add to their prestige. We cannot help reverting to these blue ribands of the poultry world, because it affords us sincere pleasure to find that the purchaser of the stock is able to keep up its reputation. The show comprised 300 pens of choice poultry in all its varieties, save pencilled Hamburghs. Mr. Davies took three prizes in Dorkings, two in Spanish, and one in ducks. Mr. Towneley Parker was deservedly successful in Dorkings and geese. The prize list, which we must postpone till next week, will give the information which the limit of a report forbids. The general commendations are well merited by the Dorkings, Spanish, Polish, and spangled Hamburghs. The ducks and geese were unusually good and Lord Hill took a prize with a pen of remarkably beautiful turkeys.

Carriage of Eggs.—It may be interesting to some of your readers to know the result of an attempt to send eggs from here to America to be hatched there; and as it has been pretty successful it may induce others to try the same mode of procuring poultry of the finer breeds. By one of the New York steamers, which left this in the end of April, I sent a box containing 61 eggs of different selected breeds; they were 12 or 13 days in reaching New York, and on being landed they were sent on 80 miles further by steamboat, and were placed under hens on the following day. Of the number sent, four were broken on the journey, and of the remainder one-half were hatched and were alive on the 27th June, the date of my last communication—a very good result, considering both time and distance, especially as all but one dozen had been brought to Liverpool by railway. *D. J.*

Miscellaneous.

Improvements in the Manufacture of Manure, by Henry Bousquet, of Fenchurch Street, merchant. Patent dated March 19, 1853 (No. 682).—This invention consists in manufacturing manure from sugar scum, by the processes indicated in the claims, which are—1, the purification of the scum by its dissolution in water; 2, the mixture of the scum with black bones, lime, burnt clay, or other calcined substances; and 3, the mixture of the whole (by which combination an artificial manure is produced), and the use thereof for agricultural and other similar purposes. *Mechanics' Magazine.*

Calendar of Operations.

JULY.

BERWICKSHIRE MERSE FARM, *July* 11.—For three or four weeks past the sky has been uniformly cloudy, with dropping and uncertain weather, and an unseasonably low temperature, seldom reaching 60° Fahr. On the 17th and 30th ult. the wind suddenly shifted from the west to north-east, and brought storms of rain, cold and heavy, which flooded the streams and carried away some Turnip drills from the haughs. Little apparent injury, however, has been done to cereals where beyond flood-mark, unless it be to the early Winter Wheat, which was in bloom at the time of the latter "spate." In one or two exceptional cases, the completion of Turnip-making was considerably retarded by the rain of the 17th. But our chief solicitude was lest it should wash out the newly thinned plants before they had regained their footing. They stood it better than could have been expected. More than half of the Turnip break is thinned, and looking well. Any injury sustained from fly has been, contrary to the general rule, among later sowings. Wheat is nearly all in bloom, as also Barley, and both have healthy heads of average size, and plenty of straw. Oats, on the contrary, are very deficient in the latter particular, and only beginning to show the ear. Peas are a strong crop. Beans are short, but from the number of pods set, promise to be corny. The cutting of Clover and Ryegrass for hay was general last week. It improved wonderfully in weight after the rain, and is a fair crop, but the dampness and the entire absence of sun are very unfavourable for making it. Pastures are at their best, and stock improve rapidly. Notwithstanding the prospect of a good Turnip crop, the demand for lean sheep is very inactive, and prices have fallen considerably. Lambs are 2*s.* to 3*s.* cheaper than last year. Comparatively few calves being reared here, store cattle of good quality are scarce, and command extreme prices. *J. T.*

CHESHIRE, *July* 11.—Since our last report a very beneficial change in the weather has taken place in this county. For many weeks the weather continued so dry that farmers became alarmed about all their crops, excepting Wheat, which did not appear to suffer from the extreme dryness of the season, but on the contrary rather improved. Early sown Barley and Oats, too, which received a severe check, will, it is hoped, eventually prove fair crops; but late sown Barley, it is to be feared, will be very light under any circumstances, and hundreds of acres of Oats, sown late upon stiff clay land, will scarcely be worth cutting; for in many instances, the little rain which fell at different times did not reach the grain, consequently it lay dormant in the ground until the 28th and 29th of June, when there were some nice showers, but much too late to benefit those crops materially. About the third and fourth weeks of June the early Potato fields, generally, had an animated appearance, every one engaged in raising early Potatoes being anxious to send them to market whilst they were fetching good prices, and to clear the land for a second crop, such as transplanted Mangold Wurzel and Swedes, the Green Melon Turnip, now in such great repute, &c. The rain above alluded to, which fell about the end of June, has greatly improved the appearance of the winter Potatoes, Mangold Wurzel, and Turnip fields; and the farmers generally are now very sanguine as to the result of those crops. The pastures, too, which were so bare as to compel many farmers to fodder their dairy cows with green Clover, Vetches, &c., in the stalls, have been much improved, and it is to be hoped, with an increase of Grass, there will be an increase of milk, which hitherto has been very deficient, and, as a matter of course, there will be a short make of cheese. *N. C.*

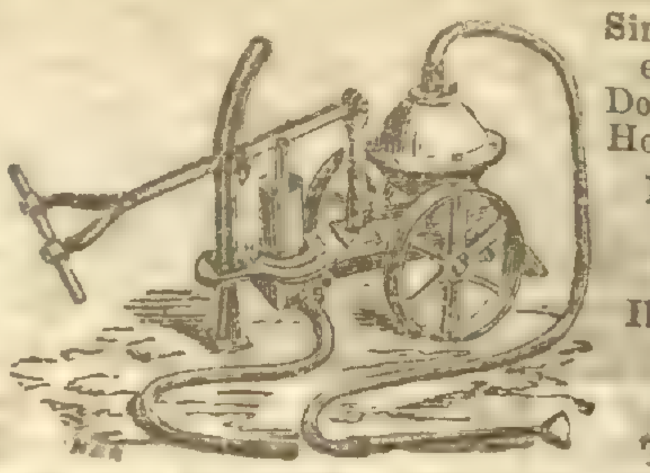
Notices to Correspondents.

NAMES OF PLANTS: *An Old Farmer.* The specimen you have sent is the common Bromus mollis, covered by the eggs of some insect.

TURNIP GROWING: *Young Farmer.* The defect you name may be remedied by mixing damp earth with the guano, by which hand sowing will not be attended with loss of manure, even in a wind. And as to the raised drill, that is considered an advantage wherever the climate is wet enough; the operations of hoeing, during the early growth of the plant, are so much more easily and efficiently performed.

WHEAT: *J W C.* Your Wheat ears have been so long upon the road that it is very difficult to say anything positive about them; three, however, out of the seven are badly affected with rust; the remainder show no trace of fungi, but a more or less partial abortion of the seeds, which in one ear are traversed by a foxy line. Some of the grains are evidently abortive from the attacks of a little orange coloured larva, but we do not think that the abortion of all the grains is due to the same cause. On the whole the affection appears to be what is known by farmers, who have tolerably clear notions as to the diseases with which their corn is affected, under the name of blight, a malady which depends upon some radical defect in the plant, whether constitutional or the result of peculiarities of soil or culture is uncertain. *M. J. B.*

WEIR'S IRRIGATORS, LIQUID MANURE PUMPS, FIRE AND GARDEN ENGINES.



Single Cylinder (as engraving) £ s. d. ... 8 8
Double Cylinder ... 10 10
Horse power size ... 16 16

Exclusive of Suction and Delivery Pipes.

Illustrated Catalogues free per post.

Terms Cash on Delivery.

EDWARD WEIR, Agricultural Engineer, 16, Bath Place, New Road, London, removed from Oxford Street.

WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

Patent Pump ... ... [illegible]
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing ... ... [illegible]

Larger sizes if required.

The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,

8, CRESCENT, JEWIN STREET, LONDON.

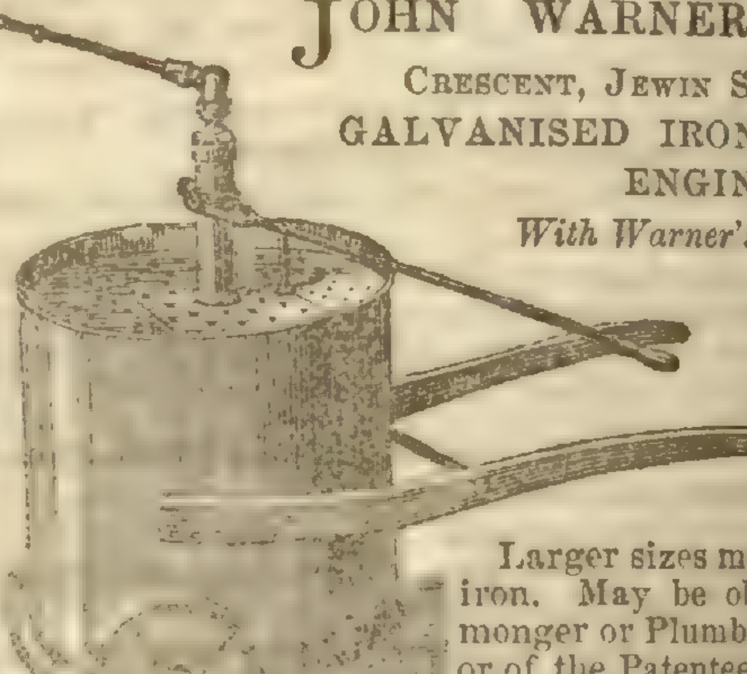
Every description of Machinery for Raising Water; Fire Engines, &c.

JOHN WARNER AND SONS

CRESCENT, JEWIN STREET, LONDON.

GALVANISED IRON TUB GARDEN ENGINE,

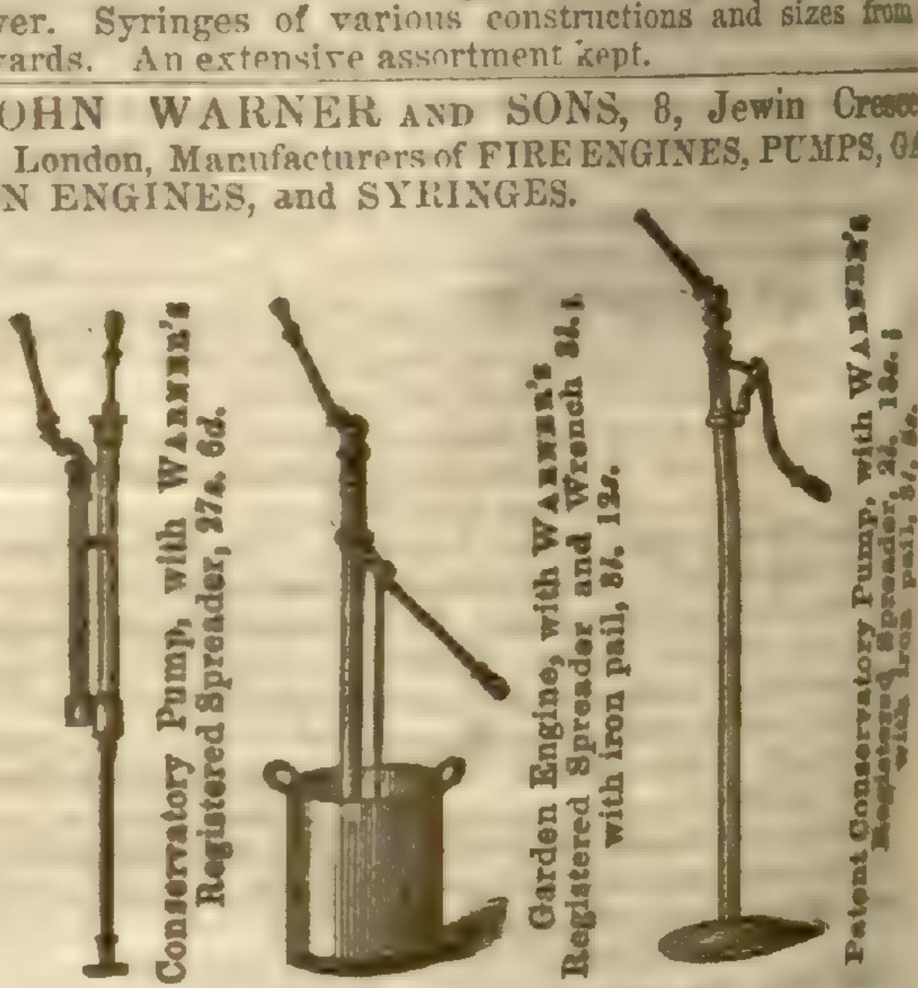
With Warner's Registered Spreader,



Is strongly recommended, for durability and low price, viz. 2*l.* 19*s.*, to hold 10 gallons.

Larger sizes made either in wood or iron. May be obtained of any Ironmonger or Plumber in town or country or of the Patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Syringes of various constructions and sizes from 9*s.* upwards. An extensive assortment kept.

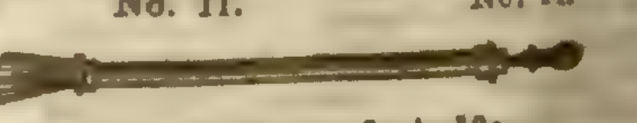
JOHN WARNER AND SONS, 8, Jewin Crescent, London, Manufacturers of FIRE ENGINES, PUMPS, GARDEN ENGINES, and SYRINGES.



Conservatory Pump, with WARNER'S Registered Spreader, 27*s.* 6*d.*
No. 32.

Garden Engine, with WARNER'S Registered Spreader and Wrench 3*l.* 1... with iron pail, 3*l.* 12*s.*
No. 11.

Patent Conservatory Pump, with WARNER'S Registered Spreader, 2*l.* 18*s.* ... with iron pail, 3*l.* 5*s.*
No. 14.



Brass Syringes, 9*s.* to 18*s.*

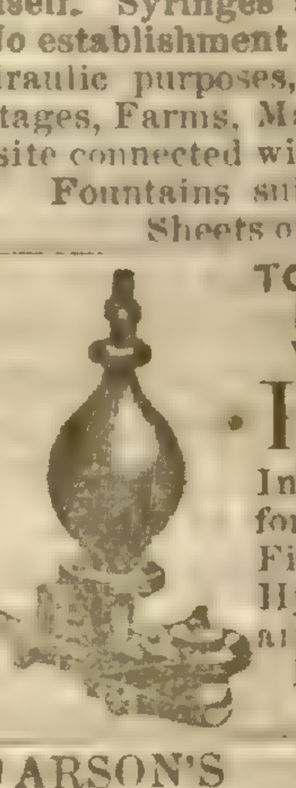
All articles of JOHN WARNER & SONS' manufacture may be obtained of any Ironmonger or Plumber in town or country, at the advertised prices.

JOHN WARNER & SONS having been practical Horticulturists for many years, know exactly the requirements of both Amateurs and Gardeners. A gardener with a properly constructed pump will get through as much work in five minutes as he could with any Syringe in a quarter of an hour, and with half the labour to himself. Syringes are economical only for small houses.

No establishment offers such a variety of effective machines for hydraulic purposes, whether to supply Gardens, Hothouses, Cottages, Farms, Mansions, or Boards of Health, with every requisite connected with the conveyance and distribution of liquids.

Fountains suitable for Conservatories, Lawns, &c.

Sheets of Engravings sent on application.



TO AMATEUR GARDENERS, LOCAL BOARDS OF HEALTH, & SANITARY WORKS.

PATENT SLUICE COCKS, Gutta Percha, Combinated ditto, Patent Flexible India Rubber Tubing, and every other Hose for Watering Gardens. The Hydraulic Ram for Watering Gardens. The Hydraulic Ram, Fire, Garden, and every other kind of Pump, Hydrants, High Pressure Cocks, and all other articles to be had, Wholesale and Retail. FREEMAN ROE, HYDRAULIC ENGINEER, 70, Strand, and Bridgefield, Wandsworth.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the nobility, gentry, and clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out-door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice.

Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to WALTER CARSON & SON, 9, Great Winchester Street, Old Broad Street, Royal Exchange, London. No Agents. All orders are particularly requested to be sent direct.

IMPORTANT TO

STOCK FARMERS

& FLOCK MASTERS.

SHEEP, LAMBS, HORSES, AND CATTLE,

CAN BE DRESSED WITH

LONG'S NON-POISONOUS SHEEP & CATTLE-DRESSING COMPOSITIONS, without any possibility of danger or injury resulting from the application. These Compositions are admitted by all who have fairly tested them to be the most effective Sheep Dressings ever brought before the agricultural public; and as they are NON-POISONOUS, and do not stain or discolour the Wool, they are gradually superseding the use of all Dipping and other Sheep-dressing preparations, composed of such deadly poisons as ARSENIC or MERCURY.

It is a fact now thoroughly established, that Long's Non-Poisonous Sheep Dressings, if liberally and judiciously applied in the dressing of Sheep and Lambs, will—in their consequent effect in removing Disease, destroying Vermin, and keeping the flock in condition—thus PROMOTING INCREASED GROWTH BOTH OF MUTTON AND WOOL—as amply repay flock owners for first outlay as artificial manures when applied to land. They are the only Sheep Dressings also, which, from the fact of their containing NO POISON, can be beneficially and safely applied to Sheep and Lambs at any age and at any season of the year.

Pamphlets, containing full directions for use, and copies of the strongest Testimonials ever accorded to a manufacturer, signed by leading and practical Stock Farmers, residing in all parts of the United Kingdom, together with the names of all Country Agents authorised to vend Long's Patent Sheep and Cattle-dressing Compositions, may be obtained gratuitously on application of any advertised country Agent; or by post, sent free, of

BARRY BROTHERS, AGENTS FOR JOSEPH LONG,
Meriton's Wharf, and Shad Thames, London.

TO NERVOUS SUFFERERS.

A RETIRED CLERGYMAN having been restored to health in a few days, after many years of great nervous suffering, is anxious to make known to others the means of cure, and will therefore send (free), on receiving a stamped envelope, properly addressed, a copy of the prescription used.—Direct, the Rev. E. DOUGLASS, 18, Holland Street, Brixton, London.

SOUND AND WHITE TEETH are not only indispensably requisite to a pleasing exterior in both sexes, but they are peculiarly appreciated through life as highly conducive to health and longevity. Among the various preparations offered for the purpose, ROWLAND'S ODONTO, or PEARL DENTRIFICE, stands unrivalled in its capability of embellishing, purifying, and preserving the teeth to the latest period of life. Prepared from Oriental herbs with unusual care, transmitted to this country at great expense, it will be found to eradicate all tartar and concretions, and impart a pearl-like whiteness to the enamelled surface, remove spots of incipient decay, render the gums firm and red, and thus fix the teeth firmly in their sockets; and from its aromatic influence imparts sweetness and purity to the breath.—Price 2s. 9d. per box. Caution.—The words "Rowlands' Odonto" are on the label, and "A. ROWLAND & SONS, 20, Hatton Garden," engraved on the Government stamp affixed on each box. Sold by them, and by chemists and perfumers.

IT HAS BEEN SAID that the man who makes a single blade of grass grow where none grew before, deserves honourand regard, as having done good service to society. The same holds true of the historian who has depicted the wants and maners of his day, of the inventor who has conceived some plan to adri labour and economise time, or of the scholar who has smoothed the rugged path of learning. Under various aspects OLD PARR may be considered as a great man. He has left to posterity a remedy for almost all the varied disorders to which the human frame is liable. PARR'S LIFE PILLS have long and justly been acknowledged as having a potent and certain effect, not only in eradicating disease, but in giving vigour, tone, and strength to the system. Invalids suffering from liver complaints, bilious disorders, pains in the back, gravel, lumbago, indigestion, costiveness, loss of appetite, or depression of spirits, should at once make trial of Parr's Life Pills, which will be found a safe and admirable remedy.

ASK FOR PARR'S LIFE PILLS.

Sold by E. EDWARDS, 67, St. Paul's Churchyard; BARCLAY & SONS, Farringdon Street; SUTTON & Co., Bow Churchyard; HANNAY & Co., 63, and SANGAR, 150, Oxford Street, London; and by all respectable Chemists and Medicine Vendors in Town and Country. In boxes, price 1s. 1½d., 2s. 9d., and in family packets 11s. each.

FRAMPTON'S PILL OF HEALTH.—"For upwards of nine years (writes Mr. Thomas Province, of Winchmore Hall, Middlesex), I have experienced the efficacy of this excellent medicine, and I have the happiness of saying that I never had a better state of health. I beg further to add that this medicine is in general use by my family, and we know of nothing to equal it." For females these pills are truly excellent, removing all obstructions, the distressing headaches so very prevalent with the sex, depression of spirits, dulness of sight, nervous affections, blotches, pimples, and sallowness of the skin, and gives a healthy juvenile bloom to the complexion Sold by all medicine vendors, price 1s. 1½d. per box.—Observe that "THOMAS PROUT" is on the Government stamp.

BLAIR'S GOUT AND RHEUMATIC PILLS. Price 1s. 1½d. and 2s. 9d. per box.—Mr. William Courtney, of Barton, Stacey, Hants, says:—"I had resort to your Pills, and within two hours I was quite easy. The use of these Pills ought really to be known all over the world." Among the many discoveries, none have conferred such a boon upon suffering humanity as that of Blair's Gout and Rheumatic Pills, they require neither attention nor confinement, and are certain to prevent the disease attacking any vital part. Sold by all medicine vendors. Observe that "THOMAS PROUT, 229, Strand, London," is impressed upon the Government stamp

HOLLOWAY'S PILLS INVIGORATE THE SYSTEM AND PROMOTE HEALTH.—Mrs. Reynolds, of Burton, had been a great sufferer, for many years, from a complication of nervous diseases, so that her constitution had become very much impaired, which affected both her mental and physical powers; her strength also was completely prostrated; change of air, change of scene, and every available remedy was resorted to without any beneficial effect whatever, as she appeared to be sinking fast. HOLLOWAY'S Pills were commenced at this critical period, and by this unrivalled medicine Mrs. Reynolds speedily derived temporary relief, and ultimately a permanent cure was effected, and she continues to enjoy excellent health.—Sold by all Vendors of Medicine; and at Professor HOLLOWAY'S Establishment, 244, Strand, London.

DR. DE JONGH'S

LIGHT BROWN COD-LIVER OIL, PREPARED FOR MEDICINAL USE IN THE LOFFODEN ISLES, NORWAY, AND PUT TO THE TEST OF CHEMICAL ANALYSIS, THE MOST EFFECTUAL REMEDY FOR CONSUMPTION, BRONCHITIS, ASTHMA, GOUT, CHRONIC RHEUMATISM, AND ALL SCROFULOUS DISEASES.

Approved of and recommended by BERZELIUS, LIEBIG, WOEHLER, JONATHAN PEREIRA, FOUQUIER, and numerous other eminent medical men and scientific chemists in Europe.

Specially rewarded with medals by the Governments of Belgium and the Netherlands.

Has almost entirely superseded all other kinds on the Continent, in consequence of its proved superior power and efficacy,—effecting a cure much more rapidly.

Contains iodine, phosphate of chalk, volatile acid, and the elements of the bile;—in short, all its most active and essential principles,—in larger quantities than the pale oils made in England and Newfoundland, deprived mainly of these by their mode of preparation.

A Pamphlet by Dr. de Jongh, with detailed remarks upon its superiority, directions for use, and cases in which it has been prescribed with the greatest effect, will be forwarded gratis on application.

The subjoined testimonial of the late Dr. JONATHAN PEREIRA, Professor at the University of London, author of "The Elements of Materia Medica and Therapeutics," is selected from innumerable others from medical and scientific men of the highest distinction:—

"MY DEAR SIR,—I was very glad to find from you, when I had the pleasure of seeing you in London, that you were interested commercially in Cod-liver Oil. It was fitting that the Author of the best analysis and investigations into the properties of this oil should himself be the purveyor of this important medicine. I feel, however, some diffidence in venturing to fulfil your request by giving you my opinion of the quality of the oil of which you gave me a sample; because I know that no one can be better, and few so well, acquainted with the physical and chemical properties of this medicine as yourself, whom I regard as the highest authority on the subject. I can, however, have no hesitation about the propriety of responding to your application. The oil which you gave me was of the very finest quality, whether considered with reference to its colour, flavour, or chemical properties; and I am satisfied that for medicinal purposes no finer oil can be procured. With my best wishes for your success, believe me, my dear Sir, to be very faithfully yours,

(Signed) "JONATHAN PEREIRA.

"Finsbury Square, London, April 16, 1851.
"To Dr. de Jongh."

Sold wholesale and retail, in bottles, labelled with Dr. de Jongh's stamp and signature, by

ANSAR, HARFORD, AND CO., 77, STRAND,

Sole Consignees and Agents for the United Kingdom and British Possessions; and by all respectable chemists and vendors of medicine in town and country, at the following prices:—

IMPERIAL MEASURE, half pints, 2s. 6d.; pints, 4s. 9d.

JAMES SCOTT AND CO., of Glasgow, have just opened their Premises in St. Paul's Churchyard (near the corner of Ludgate-hill), and respectfully invite Ladies to inspect their magnificent STOCK of SILKS, MANTLES, SHAWLS, DRESSES, DRAPERY, LACE, RIBBONS, &c.

77 and 78, St. Paul's Churchyard; and Trongate, Glasgow.

TO BE LET ON LEASE, with immediate Possession, or at Michaelmas, an excellent FARM, containing 130 acres of Arable Land, situate midway between Guildford and Farnham, 1¼ mile from the Ash station.—Apply to Mr. FINNEY, Guildford, Surrey.

TO BE LET, with possession at Michaelmas next, WIDNEY GREEN FARM, situate in the parishes of Tyfield and Willingale Spain, near High Ongar, in the county of Essex. It consists of 292 acres of land, of which 61 are meadow and the rest arable. The whole is in very good condition, and has on it a most excellent commodious house, with all requisite, very useful, and well arranged farm premises, in capital repair. The whole forms a most desirable occupation.—For particulars, apply to Mr. OAKLEY, Land Agent and Surveyor, 60, Doughty Street, Mecklenburgh Square, London.

PRIZE WHITE COCHINS.

TO BE SOLD by an Amateur, a magnificent selection of first class CHICKENS of the above breed; being bred exclusively from celebrated Birds that won the highest Prizes last year at Bedford, Birmingham, Bury, Farningham, Gloucester, Leeds, Malvern, Manchester, Metropolitan, Winchester, Southampton, and Surrey Gardens Exhibitions. The Birds offered are of the highest order; being perfect in symmetry and possessing bright yellow well feathered legs.—For price, &c., apply to Mr. T. B. FAIRHEAD, Braintree, Essex.

BLACK COCHIN EGGS from the best birds in England, having always taken prizes at the best shows, at 18s. per dozen, including package. Apply at the city of London Wire Works, 44, Skinner Street, London. N.B. Fowl Houses, Chicken Coops, Poultry Hurdles, and Netting, of every size and description. Illustrated Catalogues forwarded, post free, on application. A few Spanish Pullets, sisters to those sent to her Majesty's yard at Windsor, for Sale.

TANK FOR SALE.

TO BE SOLD, a CAST-IRON TANK, suitable for a Hothouse, of first-rate make, and in perfect condition. Dimensions 9 feet 1 inch long, 4 feet 1 inch wide, and 11 inches deep; will be sold a bargain.—Apply, post paid, to H., Post Office, Wantage, Berks.

TO BE SOLD, a NURSERY BUSINESS, in the vicinity of Clapham, with Greenhouses, &c., convenient Cottage, and 1 acre and a half of Land, walled in. Held for an unexpired term of 80 years, at a moderate ground rent.—Apply to Mr. FIELD, Lansdowne Road, Clapham Road, Surrey.

Sales by Auction.

NURSERIES, CLAPHAM.

MESSRS. PROTHEROE & MORRIS are instructed by the Administrators of the late Jos. Fairbairn, to offer for unreserved sale, in the early part of September, the entire stock of specimen Greenhouse and Stove Plants, which are all of the most choice sorts, and in the best condition. The lease of the old established Seed Shop and Nursery to be sold; the Stock may be taken by valuation or by agreement: for particulars apply to the administrators, at the Nursery, Clapham, or to JAMES FAIRBAIRN.—ROBERT SILVESTER BROWN, and CLACK, Administrators, Nursery, Clapham.

CLAPHAM.

GREENHOUSE AND STOVE PLANTS.

MR. J. C. STEVENS has received instructions from Mr. Over, a well-known exhibitor at the Metropolitan Shows, to submit to Public Auction, on the premises, Albion Road, Larkhall Lane, Clapham, on WEDNESDAY, August 2d, and following day, at 12 o'clock, his collection of SPECIMEN STOVE AND GREENHOUSE PLANTS, consisting of Heaths, Azaleas, Allamandas, Ixoras, Dipladenias, Hoyas, Gardenias, a few Orchids, &c., all of which are in the finest possible health. May be viewed the day prior and mornings of Sale; and catalogues had (1s. each, returnable to purchasers), by applying to Mr. OVER as above, or to Mr. J. C. STEVENS, 38, King Street, Covent Garden, London.

ORCHIDS.

ESTABLISHED AND IMPORTED PLANTS.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King Street, Covent Garden, on MONDAY, 24th July, and following day, at 12 for 1 o'clock precisely, a collection of very rare and well grown established Plants, including many choice specimens of Aerides, Vanda, Saccolabium, Cattleyas, Phalaenopsis, &c., some Pine Cones from California; also importations from La Guyara and Guatemala, and three Cases from the East Indies, containing Amherstia nobilis, Tropical Fruits, &c.—May be viewed on the mornings of Sale, and Catalogues had.

HACKNEY.

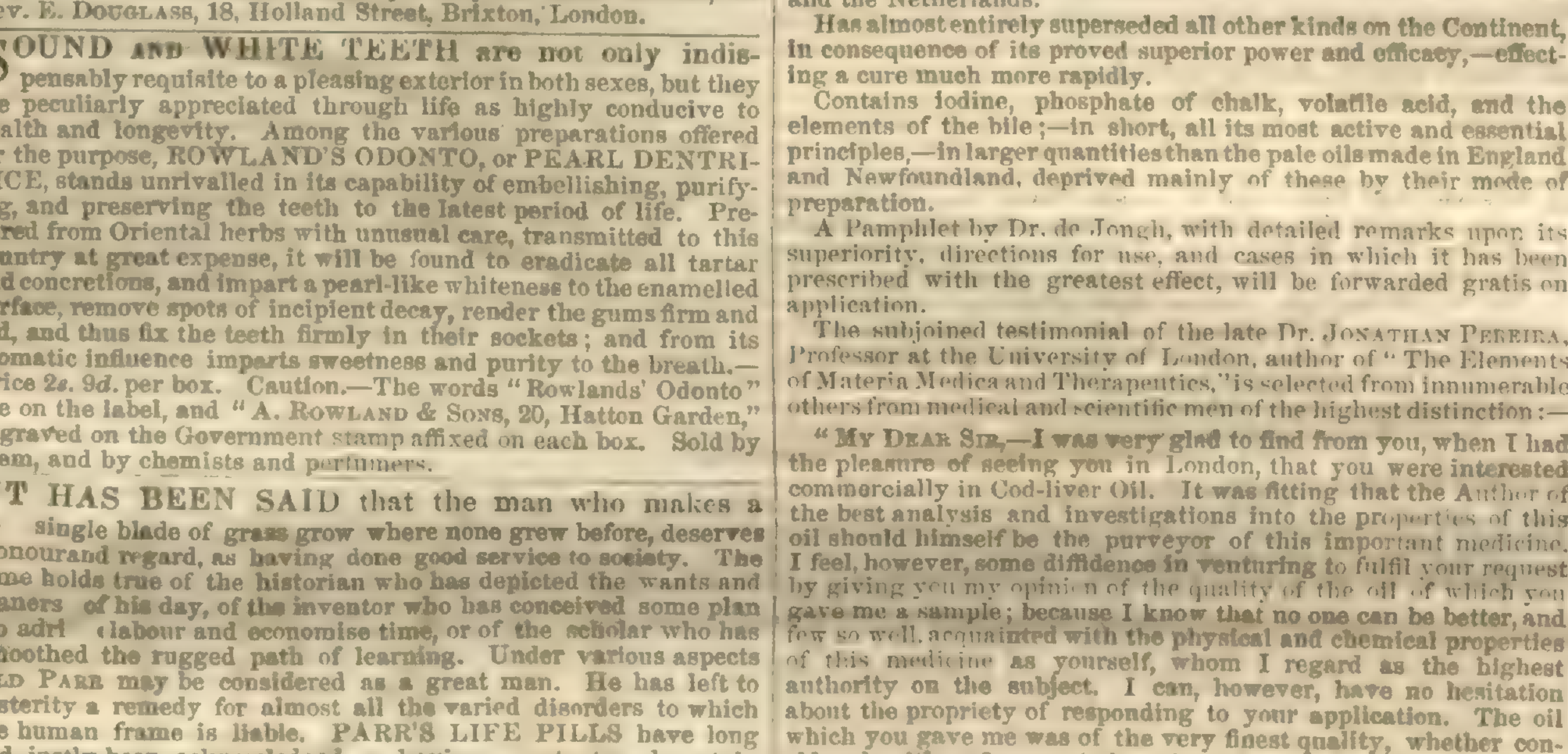
IMPORTANT SALE OF THE MATERIALS OF MESSRS. LODDIGES' EXTENSIVE HOTHOUSES AND CONSERVATORIES, PITS AND FRAMES, WITH THE CELEBRATED PALM HOUSE, INCLUDING 1,000,000 STOCK BRICKS.

PULLEN AND SON, in conjunction with Mr. J. C. STEVENS, respectfully announce that they are instructed by Messrs. Loddiges (in consequence of the disposal of their celebrated collection of Plants to the Crystal Palace Company), to Sell by Auction, on the Premises, on THURSDAY, August 17, the whole of the valuable BUILDING MATERIALS and FITTINGS-UP of the celebrated Palm House, extensive ranges of Hothouses and Conservatories, Pits and Frames, Seed Rooms, and various buildings, covering a very large extent of ground in Mare Street, Hackney, comprising 1,000,000 excellent stock bricks, 2000 feet run of glazed lights and frames, about a superficial acre of glass in the hothouses and conservatories, two miles of 4-inch iron flange pipe, with 14 large wrought-iron boilers, and all the hot-water heating apparatus complete, 10,000 feet of York paving, a most expensive conservatory, 100 feet long by 20 wide, with copper sash bars and framing, 5000 feet of shelves and boarded stages, pan and paving tiles, seed drawers, counters, and all the implements of trade, and a variety of valuable materials and fittings-up, particularly adapted for horticultural purposes. May be viewed two days previous.—Catalogues had of Mr. J. C. STEVENS, 38, King Street, Covent Garden; and of PULLEN & SON, 80, Fore Street, Cripplegate.

MESSRS. BAKER AND SON are honoured with instructions by Sir John Tyssen Tyrell, Bart., M.P., to Sell by Auction, on TUESDAY, August 15, at the Cheese House Farm, Boreham, Essex, at 12 o'clock, without reserve, a superior FLOCK of pure SOUTH-DOWN SHEEP, consisting of 218 Ewes, 152 Lambs, 50 fat Wethers, and 20 Rams; also two curious improved Leicester Rams, and seven fat Wethers, of Lord Talbot's breed; 14 improved Short-horned Heifers and Steers, one fat do. Cow, five superior Cart Horses, and two Colts, &c. The Sheep have been bred and crossed at great expense from the flocks of the first breeders in the kingdom, are large in frame, and of excellent symmetry and age. The horses are in constant work, are young and sound, and will be sold without reserve. Sir John Tyrell having let his farm.—Catalogues may be had at the York Hotel, New Bridge Street, Blackfriars, London; at the principal Inns in the market towns of Essex; and of the Auctioneers, Chelmsford and Writtle, Essex.

COTTAM AND HALLEN,

2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.



APPLICATION is requested for their NEW HORTICULTURAL LIST, containing Illustrations, Descriptions, and Prices of

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Syringes	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.

AGRICULTURAL LIST UPON APPLICATION.

EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

WORKS PUBLISHED BY BLACKIE & SON.

I.

MORTON'S CYCLOPÆDIA OF AGRICULTURE, PRACTICAL AND SCIENTIFIC; in which the Theory, the Art, and the Business of Farming, in all their departments, are thoroughly and practically treated. By upwards of Fifty of the most eminent Farmers, Land Agents, and Scientific Men of the day. With numerous Illustrations on Wood and Steel. Vol. I. now ready, super royal 8vo, cloth, price 37s.

II.

THE AGRICULTURIST'S CALCULATOR: A Series of Tables for Land Measuring, Draining, Manuring, Planting, Weight of Hay and Cattle, by Measurement, Building, &c. Adapted to the use of all engaged in Agriculture or the Management of Land. Bound in roan, price 9s.

III.

HOW TO CHOOSE A GOOD MILK COW; Or, a Description of all the marks by which the Milking qualities of Cows may be ascertained. By J. H. MAGNE, Professor of the Veterinary School, Alfort. With a SUPPLEMENT on the Dairy Cattle of Britain, their qualities, management, and productive results, with hints for selecting. By JOHN HAXTON. With Illustrative Engravings, price 3s., cloth.

IV.

THE FARMER'S GUIDE: A Treatise on the Diseases of Horses and Black Cattle; with Instructions for the Management of Breeding Mares and Cows. By JAMES WEBB, Veterinary Surgeon. Price 3s. 6d., cloth.

V.

SMITH'S ESSAY ON COTTAGES. An Essay on the Construction of Cottages, for which the Premium was voted by the Highland Society of Scotland. With Working Plans, Specifications, Details, and Estimates. By G. SMITH, Architect, Edinburgh. Cloth, 4s.

VI.

THE FARM ENGINEER: A Treatise on Barn Machinery, and the application of Steam and other motive Powers for Agricultural purposes. By ROBERT RITCHIE, C.E., Edinburgh. Cloth, 12s.

VII.

THE LAND-MEASURER'S READY RECKONER: Being Tables for ascertaining at Sight the Contents of any Field or Piece of Land. By NEIL M'CULLOCH. Third edition. 2s. bound.

BLACKIE & SON, 11, Warwick Square, City, London; and 38, Queen Street, Glasgow.

GLEIG'S SCHOOL SERIES.

In 18mo, with Woodcuts, price 1s.,

ELECTRICITY FOR THE USE OF BEGINNERS: In which the Principles of the Science are familiarly Explained, and Illustrated by numerous Experiments and Diagrams. By T. TATE, F.R.A.S., of Kneller Training College.

Also by Mr. TATE, in Gleig's "School Series,"
ASTRONOMY FOR BEGINNERS, price 1s.
HYDROSTATICS, HYDRAULICS, and PNEUMATICS, 1s.
FIRST THREE BOOKS OF EUCLID, price 1s.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

Just published in 8vo, with Plate and Woodcuts, price 10s. 6d.

RESEARCHES ON LIGHT IN ITS CHEMICAL RELATIONS; embracing a Consideration of all the Photographic Processes. By ROBERT HUNT, F.R.S., Professor of Physics in the Metropolitan School of Science. Second Edition, thoroughly revised, with extensive additions.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

CHEVREUL ON COLOUR.

On Friday next, in crown 8vo, with Illustrations,

THE PRINCIPLES OF HARMONY AND CONTRAST OF COLOURS, AND THEIR APPLICATION TO THE ARTS: Including Painting, Interior Decorations, Tapestries, Carpets, Mosaics, Coloured Glazing, Paper Staining, Calico Printing, Letterpress Printing, Map Colouring, Dress, Landscape and Flower Gardening, &c. By M. E. CHEVREUL, Member de l'Institut de France, &c. Translated from the French by CHARLES MARTEL.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

On Friday next, will be published, in post 8vo, a New Edition, with many additional Woodcuts,

CATLOW'S POPULAR CONCHOLOGY; or, the Shell Cabinet arranged according to the Modern System. With a Detailed Account of the Animals, and a complete Descriptive List of the Families and Genera of Recent and Fossil Shells. Second Edition, much improved.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

Just published, in crown 8vo, price 9s. 6d. cloth,

THE LAST OF THE OLD SQUIRES: A Sketch. By CEDRIC OLDACRE, Esq., of Sax-Normanbury, sometime of Christ Church, Oxon.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

FOWLS.—By JOHN BAILY. Now in the press, and will be published, August 1, the Second Edition of the above work, with which is reprinted the fourth edition of "The Dorking Fowl," corrected, revised, and considerably enlarged. It contains descriptive tables of all the fowls now exhibited, giving in few words their chief points and qualifications, with copious rules for their selection and management. Price 2s.; by post, 2s. 6d.

JOHN BAILY, 113, Mount Street, Grosvenor-square, London.

Will be ready on the 1st August, Part I., of

THE FERNS OF GREAT BRITAIN, Illustrated by JOHN E. SOWERBY; Descriptions by C. JOHNSON, Esq. To contain about 46 Plates, and to be completed in Eight Monthly Parts, full coloured, at 3s.; partly coloured at 1s. 6d. per Part.

Prospectuses may be had through all Booksellers; and of the Proprietor, JOHN E. SOWERBY, 3, Mead Place, Lambeth.

AFFECTIONS OF THE NERVOUS SYSTEM.

Now ready, price 5s. 6d. with numerous Cases.

DR. MADDOCK ON NERVOUS DISEASES.—"Dr. Maddock has had large experience in nervous disorders, and he displays great judgment and ability in his comments on them."—*Literary Gazette.*

"The cases related exhibit sensible views and sound practice."—*Ed. Medical Association Journal.*

"Full of matter interesting to the general reader."—*Sunday Times.*

London: SIMPKIN, MARSHALL & Co., Stationers' Court.

ON MARRIAGE.

Just published (to be had free, by enclosing 1s. or Twelve Postage Stamps, to Mr. WATSON, Clerical Agent, Robert Street, Adelphi, London).

MATRIMONY.—A Pamphlet on Matrimonial Alliances, which merits the attention of those who wish to settle honourably in life. By a Clergyman.

PRICE FOURPENCE OF ANY BOOKSELLER.

CONTENTS OF THE NUMBER FOR SATURDAY LAST, JULY 15, OF

THE ATHENÆUM.

JOURNAL OF ENGLISH AND FOREIGN LITERATURE, SCIENCE, AND THE FINE ARTS.

Thirty-two large Quarto Pages.

Reviews OF, WITH EXTRACTS FROM—

The Life of Alexander Pope. (*To be continued.*)
Sunny Memories of Foreign Lands. By Mrs. H. Beecher Stowe.
Peruvian Antiquities. By M. E. Rivero.
Magdalen Hepburn: A Story of the Scottish Reformation. By Mrs. Maitland.
Crewe Rise. By C. Jeaffreson.
Unpublished Letters and Fragments of Leibnitz. By A. Foucher de Careil.
Books on the War, containing—Landor's Letters of an American, mainly on Russia and Revolution—Krasinski's Russia and Europe—Neale's Islamism—Monteith's Conquest of Finland, &c.

WITH SHORTER NOTICES OF—

The Last of the Old Squires: A Sketch. By C. Oldacre.
Clara Morison: A Tale of South Australia during the Gold Fever.
Books for the Country—Angling, and where to go. By R. [illegible]lakey.
Robert [illegible]en's Address to the Humar[illegible] 'n [illegible]s Eighty-fourth [illegible]thday.

Pamphlets, &c., &c.

Original Papers.—The Proudest Lady. By T. Westwood—Obituary: Madame Sontag.

Weekly Gossip.—Miss Mitford's Writings—Accommodation for Scientific and Literary Bodies—Royal Society's Grant to Mr. Huxley—Polytechnic Institution Soirée—Liebig's Testimonial—Prince Von Paar's Engravings—Sale of Mr. Gardner's Library—A New Minute by the Committee on Education—The "Perverse Widow"—The Faussett Antiquities—Obituary: M. Raoul Rochette, and M. Emile Souvestre—Meteorological Science—M. Latour's Parachute Ascent—British Museum Library—Anecdote of M. Boutibouse.

Societies.—Report of the Proceedings of the Chemical.

Fine Arts.—New Publications—Art in Wood and Stone.

Fine-Art Gossip.—Horace Vernet, and Coosmans' Arrival at Constantinople—Dr. Waagen's Letter on the Pre-Raphaelite Heresy.

Music and the Drama.—New Publications—Concerts of the Week—Sacred Harmonic Society (The New Oratorio 'Daniel')—Royal Italian Opera ('Otello,' 'Une Étoile')—Olympic ('Perfect Confidence.')

Musical and Dramatic Gossip.—Madame Grisi's Farewell Benefit—Her Majesty's Theatre—Madame Alboni's Arrival in London—Madame Goldschmidt—Donation to the Cologne Cathedral—Gluck's Birthplace.

Miscellanea.—Paris Universal Exhibition of 1855—Discovery of Valuable Coins—The Egyptian Railroad.

The Athenæum may be ordered of any Bookseller.

Price 1s. 6d., free by post 1s. 10d.

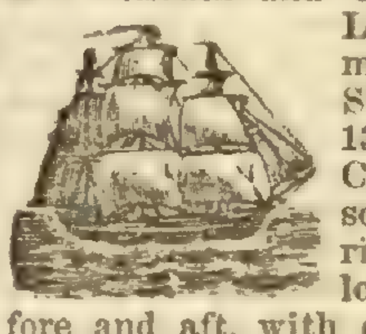
LABELS FOR THE HERBARIUM, CONSISTING OF THE NAMES OF THE CLASSES, ALLIANCES, ORDERS, AND SUB-ORDERS, OF PROFESSOR LINDLEY'S "VEGETABLE KINGDOM." So printed in large type, that they can be cut out and pasted into THE HERBARIUM.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden.

GLENFIELD PATENT STARCH, used in her Majesty's Laundry, and WOTHERSPOON'S machine-made CONFECTIONARY, MARMALADE, JAMS, JELLIES, &c., which gained the Prize Medal of 1851, may be had of all Grocers; Wholesale of WOTHERSPOON, MACKAY, & Co., 66, Queen Street, Cheapside, London; and ROBERT WOTHERSPOON & Co., Glasgow.

THE COMFORT OF A FIXED WATER CLOSET for 1l.—Places in gardens converted into comfortable water closets by the PATENT HERMETICALLY SEALED PAN, with its self-acting valve, entirely preventing the return of cold air or effluvia. Any carpenter can fix it in two hours. Price 1l. Indispensable for the health and comfort of a family. Hermetically sealed Inodorous Chamber Commodes, 1l. 4s., 2l. 6s., and 3l.; also, Improved Portable Water Closets, with pump, cistern, and self-acting valve. A prospectus, with engravings, forwarded by enclosing two postage stamps.—At FYFE and Co.'s, removed to more commodious premises, at 46, Leicester Square, London.

NEW ZEALAND, embarking Passengers at Plymouth and Gravesend.—For CANTERBURY, WELLINGTON, and NEW PLYMOUTH, the magnificent frigate-built ship ROYAL STUART, A 1 13 years, 837 tons register, 1300 tons burden, RICHARD HOLMES GOBLE, Commander. This splendid full-poop vessel, so celebrated for her rapid passages, has unrivalled accommodation for passengers. Her lofty 'tween decks (8 feet high) will be fitted, fore and aft, with enclosed cabins to suit the convenience of Families, to whose comfort every attention will be paid. The dietary scales are liberal, and an experienced Surgeon is engaged. She will be despatched from the East India Docks on the 20th of August.—For rates of passage and every information apply to FREDERICK YOUNG & Co., 9, Adelphi Terrace, or 74, Cornhill, London.



ROYAL PANOPTICON OF SCIENCE AND ART, LEICESTER SQUARE.—CHEMISTRY, by Mr. G. F. Ansell, Monday, 3.15; Tuesday, 2; Thursday, 2; Friday, 3.15; POPULAR SONGS by Mr. E. L. Hime and Miss Jacobs, Monday, 2; Friday, 7.45: FRICTIONAL ELECTRICITY, by Mr. W. R. Birt, Tuesday, 3.15; Thursday, 3.15; Saturday, 2: VOLTAIC ELECTRICITY, Monday, 7.45; Friday, 2: Songs and Sayings of Samuel Lover, by Mr. E. L. Hime, Tuesday, 7.45; Saturday, 3.15: Distribution of Land and Water over the Earth, by Mr. Hugo Reid, Wednesday, 2: History of Diving Apparatus, by Mr. C. Partington, Wednesday, 3.15: Natural Magic, by Mr. Malcolm, Wednesday, 7.45; Explanation of Manufactures and Machinery, at 1 and 7.20 daily; Messrs. Heinke's Improved Diving Apparatus (which received the prize medal at the Exhibition of 1851) in the Crystal Cistern, containing 6000 gallons of water, 2.45 and 7.20. Organ Performances, by Mr. W. T. Best, at intervals. Optical Diorama, illustrative of Handel's Serenata of "Acis and Galatea," with Organ and Vocal Accompaniments. Hours of Exhibition—Morning, 12 to 5; Evening, 7 to 10, Saturday evening excepted. Admission, 1s.; Schools, and children under 10, half price.

AT A MEETING held at 21, Regent Street, London, on Monday, July 10, THOS. RIVERS, Esq., of Sawbridgeworth, in the chair,—it was proposed by Mr. Hogg, seconded by Mr. Edwards, and carried unanimously,—

1. That a Society shall be established, to be called the BRITISH POMOLOGICAL SOCIETY.

2. That the Society shall have for its objects the promotion generally of Fruit Culture in the British dominions. That it shall especially direct attention to the production of new varieties of Fruits, examining and reporting on their merits, and endeavouring to classify the Fruits of Great Britain, the European continent, and America.

3. That the Entrance Fee be Ten Shillings.

4. That the Annual Payment of Ten Shillings shall constitute a member, and shall be due and payable on the 1st of August in each year.

5. Resolved that the following gentlemen, having signified their desire to become members, are hereby duly elected:

Sir Joseph Paxton, Kt., Chatsworth
Rev. Reginald Chandos Pole, Rudbourne, Derby
Robert Hanbury, Esq., The Poles, Herts
H. Bellenden Ker, Esq., Cheshunt
Geo. Wm. Johnson, Esq., Winchester
Chas. Lawson, Esq., Edinburgh
T. Ingram, Esq., Royal Gardens, Windsor
John Edwards, Esq., Holloway, Middlesex
Mr. John Jennings, Knowsley, Lancashire
Mr. Geo. Thompson, Bramham Park, York
Mr. George M'Ewen, Arundel Castle Gardens
Mr. John Spencer, Bowood, Wilts
Mr. T. Rivers, Sawbridgeworth
Mr. Thos. Francis Rivers, Sawbridgeworth
Mr. John Lee, Hammersmith
Mr. Hugh Low, Clapton
Mr. John B. Whiting, The Deepdene
Mr. F. J. Malleson, Claremont
Mr. T. Moore, Botanic Garden, Chelsea
Mr. J. Ingram, Huntingdon
Mr. W. Davidson, Shrubland Park, Ipswich
Mr. James Burbank, Grittleton, Wilts
Mr. Wm. Rowell, Harporley, Durham
Mr. Wm. Breadley, Somerleyton, Suffolk
Mr. W. Tillery, Welbeck, Notts
Mr. Jas. Garraway, Durdham-down, Bristol
Mr. John Sanders, Tedworth, Wilts
Mr. T. Taylor, Covent Garden
Mr. Robert Hogg, Brompton
Mr. Charles Wood, Maresfield, Sussex
Mr. J. Powell, Royal Gardens, Frogmore
Mr. Charles Turner, Slough
Mr. Wm. Dean, Slough
Mr. Wm. Thomson, Wrotham Park, Herts
Mr. Holmes, Handsworth, Sheffield
Mr. Peter Lydiard, Bath
Mr. James Kitley, Bath
Mr. J. Jeffries, Cirencester

6. Proposed by Mr. Edwards, seconded by Mr. Turner, and carried unanimously,—That Sir Joseph Paxton, Knt., shall be President of the Society.

7. That Robert Hanbury, Henry Bellenden Ker, and Thomas Ingram, Esqs., shall be Vice Presidents.

8. That Mr. Spencer shall be Treasurer and Secretary (*pro tem.*)

9. And that Mr. T. Rivers, Mr. J. Lee, Mr. Hogg, Mr. G. W. Johnson, Mr. M'Ewen, Mr. Whiting, Mr. Powell, Mr. Turner, Mr. Edwards, Mr. Moore, Mr. Thomson (Wrotham), Mr. Malleson, Mr. Davidson, Mr. Low,—be elected a Committee of Management, with power to add to their number.

10. Proposed by Mr. Hogg and seconded by Mr. Rivers, that the above Resolutions be advertised in the *Gardeners' Chronicle*, "Cottage Gardener," and "The Florist."

JOHN SPENCER, Secretary.

Now ready, THIRD AND CHEAPER EDITION, *at 3s. 6d.*

TALPA;

OR,

THE CHRONICLES OF A CLAY FARM.

BY CHANDOS WREN HOSKYNS, ESQ.

*** *Of the Original Edition at 8s., illustrated by* GEORGE CRUIKSHANK, *only a few Copies remain.*

LONDON: LOVELL REEVE, 5, HENRIETTA STREET, COVENT GARDEN.

On the 31st July will be published, price 2s. each,

PARTS XV. AND XVI. OF

THE ENGLISH CYCLOPÆDIA.

EXTENDING IN

THE NATURAL HISTORY DIVISION FROM FOOD TO GYROSTEUS,

AND IN

THE GEOGRAPHICAL DIVISION FROM EDINBURGH TO GEORGIA.

Including articles on Egypt, Eifel, Ekatarinoslaf, Elba, the Elbe, Elbing, Elis, Elsinore, Emden, Ens (Austria), Entre Douroe Minho, Entre Rios, Ephesus, Epirus, Erfurt, Erzrum, Esthonia, Estremadura, Ethiopia, Etruria, Eubœa, Europe, Faröe, Fernando Po, Ferrara, Finland, Flanders, Florence, Florida, France, Frankfurt, Freyburg, Friesland, Friuli, Fünen, Galicia (Austrian), Galicia (Spanish), St. Gall, Geneva, Genoa, Georgia, &c., &c.

*** These Two Parts are published together to enable Subscribers to complete the Second Volume of each Division.

BRADBURY & EVANS, 11, Bouverie Street; and sold by all Booksellers and Newsvendors.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, July 22, 1854.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley

No. 30.—1854.] SATURDAY, JULY 29. [PRICE 6*d*.

INDEX.

Aeration	486 *c*	Manures, weight of	491 *b*
Agricultural education	489 *a*	Mechi's (Mr.) gathering	489 *b*
Agri. Society's meeting	491 *c*	National Floricultural Society	488 *a*
Bohn's (Mr.) garden, noticed	487 *b*	Pathology, vegetable	493 *c*
Books reviewed	486 *c*—492 *c*	Pears, new	484 *c*
Caledonian Hort. Society	486 *a*	Pear trees, London	484 *a*
Calendar, horticultural	488 *a*	Pelargonium, culture of	487 *c*
— agricultural	493 *c*	Philesia buxifolia	485 *a*
Caterpillar, Gooseberry	485 *c*	Plants, new	487 *b*
Cattle pools	491 *c*	Plant sticks, to preserve	485 *c*
Cells, functions of, &c.	486 *c*	Potato crop	485 *c*
Crops, rotation of	490 *c*	Poultry at Lincoln	493 *b*
Dioscorea Batatas	486 *a*	Quercus rotundifolia	487 *b*
Disa grandiflora	483 *a*	Rhodoleia, hardiness of	485 *a*
Education, agri	489 *a*—491 *c*	Seed-growers' Society	491 *b*
Eggs, carriage of	491 *b*	Seeding, thin	491 *c*
Enville Hall Gardens	486 *a*	Stairs, rustic	485 *b*
Fish manure	489 *c*	Statistics, agricultural	492 *b*
Forests, Royal	483 *b*	Steps, rustic	485 *b*
Ginger, treatment of	488 *c*	Sticks, preservation of plant	485 *c*
Gooseberry caterpillar	485 *c*	Threshing machines, cost of	493 *b*
Guano, adulteration of	491 *b*	Tropæolum tuberosum	488 *a*
Highland Agricultural Society	492 *b*	Vegetable pathology	493 *c*
Horses, breeding	490 *a*	Ventilation	486 *b*
Horticultural Society	485 *c*	Walls, damp	491 *b*
Kalosanthes coccinea	484 *c*	Wheat crop and thin seeding	491 *c*
Manures, fish	489 *c*	Woods and forests	483 *b*
— adulteration of	491 *b*—492 *c*	Yam, Chinese	486 *a*

A GRAND EXHIBITION OF HOLLYHOCKS, Open to the United Kingdom, will be held at the ROYAL SURREY ZOOLOGICAL GARDENS, on TUESDAY, August 22. A Subscription is now open for the purpose of raising a fund of sufficient magnitude to distribute Prizes to Nurserymen and Amateur Growers worthy the merits of this noble and popular flower. It is intended to offer a Silver Cup, value 5*l*. 5*s*., to each class for spikes in flower, with valuable descending Prizes of Gold and Silver Medals. Cut Blooms also will receive their due share of attention. In addition to the above, Gold and Silver Medals will be awarded for Miscellaneous Collections of Stove and Greenhouse Plants, Specimen Plants, Dahlias, Roses, &c.

COMMITTEE. Messrs. W. Barnes, Peckham; J. W. Bircham, Bungay; W. Bragg, Slough; W. Chater, Saffron Walden; W. Paul, Cheshunt; A. Parsons, Ponder's End; Reake, Clewer; and C. Turner, Slough, by whom subscriptions will be received, also by the Secretary. Lists of Prizes, with Rules of the Exhibition, may be obtained of the Secretary, J. T. NEVILLE, Ebenezer House, Peckham.

ISLEWORTH HORTICULTURAL FETE. — SCHOOL TREAT AND JUVENILE REGATTA, under distinguished patronage, will take place on AUGUST 11th, instead of the 8th, as previously advertised (on account of the Thames National Regatta being fixed for the 8th), in the GROUNDS of GORDON HOUSE, by kind permission of Hamilton Cooke, Esq., and Saint Margarets, by kind permission of the Committee of the Conservative Land Society, on the banks of the Thames, when prizes open to all England will be awarded for FLOWERS, FRUITS, and VEGETABLES.—Further particulars may be obtained on application to HICKSON BRIGGS, Hon. Sec.
Holland House, Isleworth, July 29.

CHEPSTOW HORTICULTURAL SOCIETY. — The second and last Show for this season will take place on THURSDAY, September 7, 1854, when the undermentioned prizes will be given:—For the best collection of 12 Stove and Greenhouse Plants (given by the inhabitants of Chepstow, open to all England), first prize, a Silver Cup, value 10*l*. 10*s*.; second ditto ditto, 5*l*. 5*s*. N.B. The second prize given by the Society.—Calceolarias, Fuchsias, Orchids, and Pelargoniums, will be excluded from the above collection. For the best Stand of 24 Bunches of Roses, of different names, not more than 3 stems in a bunch, with their own foliage and buds (given by the Wye Steam Packet Company) open to all England. First prize, a Silver Cup, value 5*l*. 5*s*.; second ditto, a Piece of Plate, 2*l*. 2*s*.; N.B. The 2d prize given by the Society. For the best Stand of 36 Dahlias (given by the Society) open to all England. First prize, a Silver Cup, value 5*l*. 5*s*.; second ditto, a Piece of Plate, 2*l*. 2*s*. By the kind permission of Colonel the Hon. Arthur Upton, the band of the Coldstream Guards will perform during the fête. Exhibitors are requested to make an early application for schedules, which may be obtained of the Secretary, Mr JOHN F. HARTLAND, Welsh Street, Chepstow.

STANDISH & NOBLE'S Catalogue for the present season is now ready, and may be had by inclosing two stamps for postage.—The Nursery, Bagshot, July, 1854.

ROBERT SIM'S NEW CATALOGUE of more than 250 species and varieties of STOVE, GREENHOUSE, and HARDY EXOTIC and BRITISH FERNS, &c., can be had for one stamp.—Nursery, Foot's Cray, Kent.

CHOICE SEEDS.—Splendid mixed Sweet William, Antirrhinum, Primula sinensis fimbriata, Calceolaria, and Cineraria, Chater's Hollyhock, 1*s*. and 2*s*. 6*d*. per packet. Can be strongly recommended; saved only from the best flowers. Catalogues free by post.

DAWE, COTTRELL, & BENHAM (successors to F. Warner), Seedsmen, 36, Moorgate Street, and 3, Laurence Pountney Lane, City, London.

Agents for Butcher's Barbarossa Vines, M'Adam's Anti-Grape Blight Composition, and Cole's Concentrated Animal Manure.

MAY'S PARAGON CABBAGE.—Prepaid postage. The above superb CABBAGE can still be had in 1 oz. packets, 1*s*. each. Sow July and August.

Also new CINERARIA SEED from the best named flowers, in packets, 2*s*. 6*d*. each.

Address, HENRY MAY, the Hope Nurseries, near Bedale, Yorks.

THE QUEEN OR CAULIFLOWER CABBAGE.— The above Cabbage is of most delicate flavour, quite equal to the Cauliflower; very early, and requires good ground. The stumps left in the spring after the Cabbages are cut will reproduce Cabbages all the summer, so that persons growing this kind need not make more than one good bed in the year. It should be sown this month, and planted out in September.—1*s*. per oz.

LONDON MARKET CABBAGE.—Saved from a very choice stock. This kind is of larger growth than the Queen, and will do well for exposed situations.—1*s*. per oz.

The above sent free by post on the receipt of postage stamps or a post-office order.

JOSEPH SHILLING, Nurseryman and Seedsman, Winchester.

BULBS FOR EARLY BLOOMING.

B. PAGE AND CO. beg to offer FINE FLOWERING ROOTS.

DOUBLE ROMAN NARCISSUS	...	4*s*. per dozen.
PAPER WHITE DO.	... ...	4*s*. „
LARGEST DOUBLE JONQUILS	...	2*s*. 6*d*. „

Their first importation having arrived.

Oxford Street Seed Stores, Southampton.

New Seed, OWN GROWTH, CHIVAS'S ORANGE JELLY TURNIP, 1*s*. 9*d*. per lb., large quantities cheaper.

MESSRS. J. AND H. BROWN offer the following CHOICE PLANTS:—

12 Orchideæ, fine specimens, one of a sort by name, including Dendrobiums, Stanhopeas, Oncidiums, Epidendrums, Maxillarias, Peristerias, Vanda, &c.	40*s*.	0*d*.
50 Greenhouse Plants, choice hard-wooded varieties, one of a sort by name	45	0
24 Choice Ericas, one of a sort, in small pots	16	0
12 Superb New Climbers, for Conservatory	18	0
12 Hardy Climbers, Roses, Passifloras, Jasmines, &c...	10	0
Choice Grape Vines, from eyes, in pots, per dozen ...	18	0

Albion Nursery, Stoke Newington, London.—July 29.

CHIVAS'S NEW ORANGE JELLY TURNIP.

BASS AND BROWN have just harvested Seed of the above quick growing Turnip, also the large Lincolnshire Red Globe and other Turnips.

Chivas's Orange Jelly, 16*s*. per peck, or 1*s*. 9*d*. per lb.

Early Mousetail Stone, a very quick growing and fine sort, 12*s*. per peck, 1*s*. 2*d*. per lb.

Lincolnshire Red Globe, very large, 15*s*. per peck, 1*s*. 2*d*. per lb.

Norfolk White and Green Round, also White and Red Tankards, 12*s*. per peck, 1*s*. 2*d*. per lb.

Agricultural Seed Lists on application.

Seed and Horticultural Establishment, Sudbury, Suffolk.

FERNS AND LYCOPODIUMS.

E. COOLING begs to offer the following, in good Plants:—

12 choice Ferns and Lycopodiums, suitable for a Wardian case, Gold Fern included ...	15*s*. and 20*s*.
12 choice Indian Azaleas, to name	12*s*. and 18*s*.
6 finest new Verbenas	6*s*. and 9*s*.

The Nurseries, Derby.—July 29.

SEEDS OF CALCEOLARIA AND CINERARIA.

E. G. HENDERSON AND SON, of the Wellington Nursery, St. John's Wood, London, are now prepared to forward, by post, the new Seed saved this season from their unrivalled collection, in packets at 2*s*. 6*d*. and 5*s*. each.

The CALCEOLARIA, first quality	5*s*. 0*d*.
„ second „	2 6

QUALITY, and not QUANTITY, forwarded at the above prices.

CALCEOLARIA SEED.

R. PARKER has now ready for sending out new seed of this year's saving, which he can recommend with the greatest confidence, it having been saved from flowers of the finest form and most beautiful markings, in packets at 1*s*. 6*d*. and 2*s*. 6*d*. each; also a few packets of choice Cineraria Seed at 1*s* 6*d*. and 2*s*. 6*d*. each. A remittance or reference to accompany all orders from unknown correspondents.

Paradise Nursery, Hornsey Road, London.—July 29.

CALCEOLARIA SEED, from the most splendid varieties in cultivation, some of which (by competent judges) have been pronounced almost perfect. They have been admired by thousands during the present summer. Great pains have been bestowed in crossing the best flowers, so that a great improvement is fully anticipated.

Price 2*s*. 6*d*. per packet, free by post.

JOHN KER, FLORIST, Bristol Road, Birmingham.

CALCEOLARIA AND CINERARIA SEEDS.

GEORGE CLARKE begs to intimate that he has now ready for sale choice Seed of Calceolaria and Cineraria. The collection of Calceolarias from which the Seed now offered was saved forms an unrivalled one, and has been the admiration of all who have seen it; they possess every variety of colour peculiar to the genus, fine shapes, and have been awarded several first-class Certificates. Great care has also been taken in selecting the Cineraria from none but first-rate flowers; and, like the Calceolaria, it is warranted to give satisfaction.—Packets of both, 2*s*. 6*d*. each, will be sent on receipt of postage stamps to the amount.—Streatham Place Nursery, Brixton Hill, near London.

STRAWBERRIES.

WILLIAM NICHOLSON is now sending out strong, well-rooted plants of his four new and distinct STRAWBERRIES, viz., AJAX, a very fine large dessert fruit, very beautiful, solid, and juicy. RUBY, do., a great bearer, and forces well. CAPTAIN COOK, market fruit, large, and a great bearer. FILLBASKET, do. 15*s*. per 100, or 25 each of any two sorts for 10*s*., box included. Most of the best old and new sorts can be supplied on reasonable terms. See advertisement July 15. Post-office orders payable at Yarm, Yorkshire, or a cash remittance required with the order.

Egglescliffe, near Yarm, July 29.

GRAPE VINES FROM EYES, IN POTS.— The undersigned has now to dispose of a large stock of GRAPE VINES raised from eyes this season, strong, and in vigorous health, now exposed to greenhouse temperature, and hardened so that they can be sent safely to any part of the kingdom without check or injury. By planting now, a whole season will be saved. They comprise all the leading kinds, and an inspection of them is respectfully solicited.

R. GLENDINNING, Chiswick Nursery, near London.

TO AMATEURS, NURSERYMEN, AND FLORISTS.

THE ADVERTISER is desirous of parting with his choice stock of AURICULAS, which comprise about 80 plants of the very best varieties, in good health, including—Fletcher's Ne Plus Ultra, Smith's General Bolivar, Hudson's Apollo, Sykes's Complete, Taylor's Glory, Dickson's Duke of Wellington, Maclean's Unique, and others.—Apply to Mr. H. JUDD, Warwick House, Warwick Road, Paddington, where they can be seen.

ROSE NURSERIES, HERTFORD.

EDWARD PARKE FRANCIS will exhibit at MR. DENYER'S, 82, Gracechurch Street, all through next week, sample flowers of that splendid Hybrid Perpetual Rose, LEON DES COMBATS, grown on the MANETTI STOCK.

THOMAS BEACH, the well-known Strawberry Grower, begs to inform the public that he has now ready a large stock of fine strong Plants of his true British Queen, the same he beat the whole world with at the Crystal Palace, many of them weighing from two to three oz. each, likewise the same he gained the Knightian Medals at Chiswick, and many other places; that he has gained the Head Prize, and surprised the world, both in flavour and weight. Fine strong Plants sent to any part of the world at 5*s*. per 100, box included. Post-office Orders on Hounslow, to Mr. THOS. BEACH, Strawberry Grounds, Worton, Isleworth, Middlesex.—July 29.

CHOICE SEEDS FOR PRESENT SOWING.— Free by post at the prices annexed:

CABBAGE, Cattell's Dwarf Barnes, 1*s*. per oz. packet,
„ „ Reliance, 1*s*. per half-oz. do.

ANEMONE, Single Poppy, very fine, mixed, 6*d*. per packet, or 3*s*. per oz.
„ „ saved from all scarlet flowers, 6*d*. p. pkt.
CALCEOLARIA, from fine sorts carefully hybridised (with directions for sowing, &c.), 2*s*. 6*d*. per packet.
CINERARIA, from finest varieties, 2*s*. 6*d*. per packet.
GERANIUM, from newest florist varieties, 12 seeds, 2*s*. 6*d*. p. pkt.
„ from fine older do. do. 12 seeds, 1*s*. per packet.
MIMULUS, mixed, from very finest varieties, 6*d*. per packet.
PRIMULA SINENSIS, fine fringed pink varieties, 1*s*. p. packet.
„ „ „ „ white do., 1*s*. per packet.

A remittance or reference to accompany all orders from unknown correspondents.

Address, JOHN CATTELL, Westerham, Kent.

PATTERSON'S SCARLET NONPAREIL STRAWBERRY.

JAMES VEITCH, JUN., has the pleasure to inform the public that Mr. Patterson, Gardener to Baroness Wenman, of Thame Park, Oxon, has placed in his hands for distribution the stock of the above first-rate Seedling Strawberry, which, having been fully tested and exhibited, has proved to be of very superior excellence.

It was exhibited at Chiswick, on Saturday, June 3, and received the Silver Knightian Medal: it has also been submitted to Dr. Lindley, Mr. Marnock, and Mr. Thompson, all of whom report most favourably of its merits.

It is a *first-class forcing* Strawberry in character, intermediate between *its parents—Keens' Seedling* and *British Queen*, of the vigorous habit of the *former*, and fully one week earlier in ripening; and in the quality of its fruit *fully equal* in flavour, if not superior, to the latter. The fruit is of a large size and handsome shape, of a *bright red colour*, and with a remarkably high perfume.

Orders are now taking for strong plants to be sent out the first week in September on the following terms:—

100 Plants ... £3 | 50 Plants ... £2 | 12 Plants ... 12*s*.

Exotic Nursery, Chelsea.—July 29.

WARD'S "OMER PACHA" STRAWBERRY.

W. J. WARD (by permission of his employer, W. Stephens, Esq.) offers to his friends and the public the above Seedling Strawberry, which has been proved to possess superior excellence. It is a large handsome fruit, intermediate between the old Carolina Pine and British Queen, partaking of the fine colour of the former, and by many considered superior in flavour to the latter; it is also remarkable for the fine buttery quality of its flesh. Great bearer; ripe as early as Keens' Seedling, affording a long succession of fine fruit. It was exhibited at the Royal Botanic Gardens, Regent's Park, on Wednesday, the 5th of July, and obtained the Bronze Medal. It has also been submitted to Mr. Marnock, Regent's Park, London; Mr. Thompson, Horticultural Society, Chiswick; and Mr. Spencer, Bowood, all of whom speak highly favourably of it. Also the following, who have pronounced it first-rate, and are open to take orders for it:—Messrs. Henderson, Pine-apple Place, London; Mr. C. Turner, Royal Nursery, Slough; Messrs. Standish and Noble, Bagshot; Mr. P. Lydiard, Fruiterer, Batheaston, Bath; Mr. W. J. Epps, Bower Nursery, Maidstone; Messrs. Sutton, Reading; Mr. W. Barnes, Camberwell; Mr. Lewis Solomon, Fruiterer, Covent Garden.

Strong well rooted plants last week in August. Terms, cash or reference.—100 plants, 3*l*.; 50 plants, 1*l*. 15*s*.; 25 ditto, 1*l*. A few strong plants in 32-sized pots, 15*s*. per dozen.

Prospect Hill, Reading, July 29.

M'CADAM'S ANTI-GRAPE BLIGHT COMPOSITION.—"This will soon become the *standard remedy*, as it fully deserves to be."—(See *Gardeners' Chronicle*, July 1, May 27, June 10, &c.) 1 lb. packets, with full printed instructions, 3*s*. 6*d*. each, sufficient for 18 gallons of wash.

Agents:—DAWE, COTTRELL, & BENHAM, 36, Moorgate Street, London. It can be ordered through any country Bookseller.

PAGE AND CO.'S COMPOSITION FOR THE DESTRUCTION OF MILDEW UPON VINES, BLIGHT UPON ROSES, WALL-FRUIT TREES, CUCUMBERS, MELONS, AND STOVE AND GREENHOUSE PLANTS.—Extra strong, 4*s*. per gallon, sufficient to make four (jars and barrels extra); in bottles, 1*s*. 3*d*. and 2*s*. 6*d*. each. Directions for application forwarded. Ten gallons and upwards carriage free to London.

For testimonials, see whole page of *Gardeners' Chronicle*, March 11, 1854, describing the SATISFACTORY RESULTS derived from its use in cases of Vine Mildew, Thrip, Scale, Green Fly, Red Spider, Mealy Bug, &c., not only without injuring the most delicate flowers or foliage, but promotes a vigorous growth.

From Andrew Toward, Esq., Royal Gardens, Osborne Palace.

"I have great pleasure to add my testimony to the efficacy of your Blight Composition, which has been used with great success upon Rose Trees much affected with the Green Fly."

From Frederick Malleson, Esq., Royal Gardens, Claremont.

"I find it answer the purpose in all respects for Walls, also the Green Fly and Brown Scale in the Houses.—May 9, 1854."

Finest Grasses for Lawns and Parks, and every variety of Garden and Farm Seeds, at B. PAGE & Co.'s, Seed Merchants, Oxford Street, Southampton (20 yards from the Railway and Docks).

ROSES.

G. CLARKE respectfully invites the attention of lovers of Roses to his unrivalled Collection, extending over 10 acres of ground, which may now be seen in full bloom. Plants can be selected now and orders executed in the autumn.

Streatham Place Nursery, Brixton Hill, near London; four miles from London The nearest and most pleasant route from the West End to the Crystal Palace.

PINUS CEMBRA.

WANTED to purchase 5000 of the above, from 6 to 12 inches.—Address W. W., Bakewell, Derbyshire.

SPLENDID
CALCEOLARIA, CINERARIA, & SWEET WILLIAM SEED.

WILLIAM BARNES respectfully begs to inform his friends and he public generally, that he has now ready to send out in packets, at 2s. 6d. each, seed of his unrivalled Herbaceous Calceolarias, which has given so much satisfaction for two years; the varieties have been selected with the greatest care, and none but the finest colours and best shaped flowers have been retained and carefully hybridised.

W. B. has for two years paid great attention to the improvement of the SHRUBBY BEDDING CALCEOLARIA, having purchased all the best kinds from the most eminent growers, and selected from them while in bloom the best shapes, finest colours, and most perfect shrubs; by careful hybridising he has succeeded in raising some first-rate varieties, and is now enabled to offer a few packets of fine new seed at 5s. per packet; this W. B. feels assured will give as much satisfaction as his herbaceons varieties have done before, which numerous letters he has received from various parts of the United Kingdom will testify.

CINERARIA SEED, saved from none but the very best and newest varieties in cultivation, at 2s. 6d. per packet.

The SWEET WILLIAMS have been grown in his Nursery Grounds for two successive years, and have caused universal admiration from all those who have seen them in bloom; nothing can be more beautiful for either clumps or borders, and they retain their great beauty for a very long time. Packets of fine seed at 1s. 6d. each. A remittance is expected from unknown correspondents.—Camden Nursery, Camberwell, London.

THE
NEW RHODODENDRONS OF ASSAM AND BOOTAN.
EXHIBITED AT CHISWICK ON SATURDAY, JULY 8TH, BY MR. J. VEITCH, JUN., OF CHELSEA.

MESSRS. E. G. HENDERSON AND SON, of the Wellington Nursery, St. John's Wood, London, beg to say that in consequence of some remarks having been made to them respecting the above, and other reports having been circulated, originating, as they have been given to understand, from the Exotic Nursery, Chelsea, and which they are sure can have no foundation, think it right to put the readers of this Journal in full possession of the facts — which are, that in the month of March of the present year, Mr. Veitch was in communication with Mr. Nuttal respecting the above Rhododendrons, and in a letter dated the 16th March, Mr. V. requested to have a single plant of the following varieties for inspection, which were accordingly forwarded to him, viz., Keysi, Nuttali, Kendricki, eximium, longifolium, lucidum, calophyllum, and Camelliæflorum; and no other plants have subsequently passed into his hands from Mr. Nuttal.

Messrs. E. G H. & Son were quite aware of this circumstance at the time of purchasing, and that a few other plants had previously left the collection of Mr. Nuttal.

Wellington Nursery, St. John's Wood, July 29.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES, GREENHOUSES, DWELLINGS, ETC.
ESTABLISHED MORE THAN ONE HUNDRED YEARS.

THOMAS MILLINGTON requests attention to his present prices of SHEET GLASS in 100 feet boxes.

Squares	6 by 4 and 6½ by 4½		
"	7 by 5 and 7½ by 5½	... ...	13 6
"	8 by 6 and 8½ by 6½		
"	9 by 7 and 9½ by 7½		
"	10 by 8 to 12½ by 9½	... ...	16 3
"	12 by 10 to 24 by 14 ...	... ...	19 0

Orchard House Squares on Mr. Rivers's approved plan, to whom I have sold some thousands of feet:—20 inches by 12, 20 by 13, 20 by 14, 20 by 15, 20½ by 12½, 20½ by 13½, 20½ by 14½, at 19s. per 100 ft.

200 feet cases at 42s., and 300 feet case 63s., in large sheets.

Boxes charged 1s. extra per 100 feet, and the same allowed if returned free of all charge.

HARTLEY'S PATENT ROUGH PLATE GLASS, Fern Shades, Striking Glasses, Milk-pans, Bee Glasses, Cucumber Tubes, Sheet and Rough Plate Glass Tiles, Wasp Traps; Plate, Patent Plate, Crown and Sheet Window Glass, in every thickness and quality, and Ornamental Glass, plain and coloured; pure white Shades for Ornaments, Crystal Glass for Pictures.

Warehouse, 87, Bishopsgate Street Without—same side as Eastern Counties Railway.

HARTLEY'S PATENT ROUGH PLATE GLASS, 1-8th thick, or 2 lbs. to the foot; 3-16ths, or 3 lbs.; and 1-4th, or 4 lbs. to the foot, for Ridge and Furrow Roofs, Greenhouses, Railway Stations, Engine Sheds, Mills, Market Halls, and Public Buildings generally.

Packed in Boxes of 50 feet each.

6 by 4 and 6½ by 4½	... ...	10s. 6d.	per box.
7 " 5 " 7½ " 5½	... ...	12 0	"
8 " 6 " 8½ " 6½	... ...	13 6	"
9 " 7 " 9½ " 7½ and 10 by 8	...	15 0	"

For larger sizes a full List of Prices will be sent on application. Boxes are charged 2s. each extra, full price allowed if returned free of expense.—For further information apply to

JAMES PHILLIPS & Co.,
116, BISHOPSGATE STREET WITHOUT.

"Rough Plate has never been, and never can be, prejudicial to the colouring of Grapes; though we can easily believe that it has been charged with such a fault by persons who have not skill enough to manage Grapes under glass."—*Gardeners' Chronicle.*

"There *can be no question now* that Rough Plate Glass is the most beautiful as well as the most useful kind of glass that can be employed in horticulture. It is free from all the faults of transparent glass, and has many advantages peculiar to itself, *without a single disadvantage as a set off.*"—*Gardeners' Chronicle.*

BY ROYAL LETTERS PATENT.

THE COSMOPOLITAN GLASS COMPANY, 206, Oxford Street, London.—The Managers beg to inform the Nobility and Gentry, Farmers, Gardeners, &c., that their new List of Prices may be had free on application at the Company's Depot.

HARTLEY'S PATENT ROUGH PLATE, for Roofing Conservatories, Halls, and Public Buildings.

PLATE, CROWN, and SHEET WINDOW GLASS.

Coloured and Ornamented Glass of every description.

Glass Milk Pans, Pails, Tests, and Measures; Cream Pots and Syphons; Churns, Butter Tests and Slabs; Tiles and Slates; Bee Hives, &c.

Moore's Patent Ventilator and Lockhead's Patent Perforated Glass, for Dairies and Greenhouses.

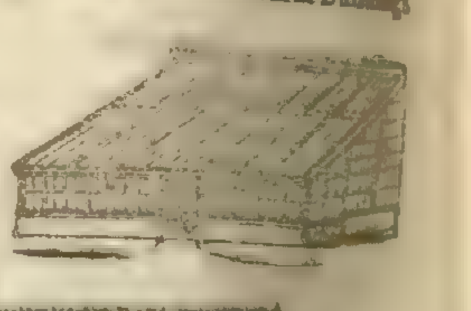
Aquavivariums, Fern Shades, Propagating Glasses, Fruit Protectors, Preserve Jars, Cucumber Tubes, Hand Lights, Flower Vases, Labels, &c., and all kinds of Agricultural, Horticultural, Architectural, Domestic, Scientific, and Ornamental Glass, British and Foreign, at the lowest prices.

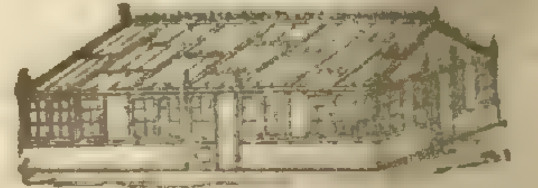
HORTICULTURE IN ALL ITS BRANCHES.

J. WEEKS & Co., King's Road, Chelsea,

HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Buildings or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.





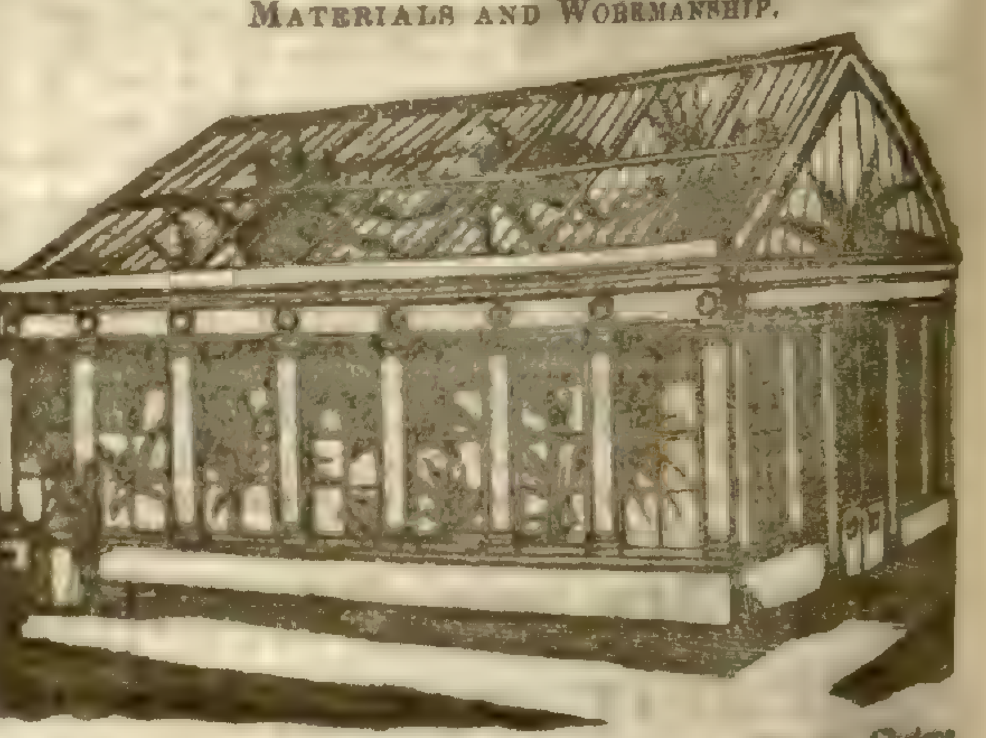
The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. WEEKS & Co., King's Road, Chelsea, London.

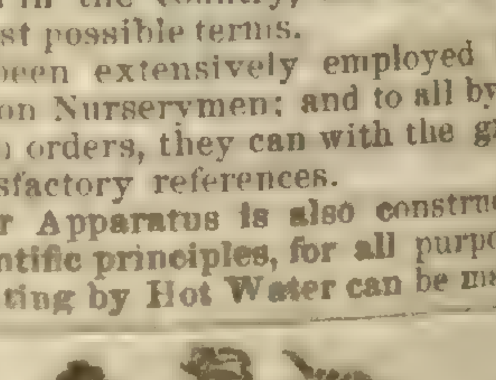
HORTICULTURAL BUILDING AND HEATING BY HOT WATER.
AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



GRAY AND ORMSON, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.



BY HER MAJESTY'S ROYAL LETTERS PATENT

E. DENCH, PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

PATENT HOTHOUSES and excellent Glass at 1s. 3d. per foot super., which are superior to all others for price with quality, and if known would supersede all others. (See Appendix, in "Book of the Garden," by Mr. M'Intosh.) A Range of Houses and Hot Water Apparatus, was erected by E. D. for E. L. Betts, Esq., Preston Hall, Kent. Mr. J. Frost, head gardener, has shown their efficiency by their produce at the Royal Botanic Gardens, Regent's Park, June 8, and Chiswick, June 11. The editor of the *Gardeners' Chronicle* says: "Beautiful examples of Black Hamburgh, large both in bunch and berry, and as black as Sloes, were furnished by Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall, Kent; these well deserved the first prize which was awarded them."—*Gardeners' Chronicle*, June 18th, 1853. The Grapes were considered the best shown at Regent's Park during the season, and the Houses are as superior for the growth of everything else in horticulture, which has been fully proved, and they have been extensively erected for the nobility and gentry in all parts of the kingdom.

GLAZING WITHOUT PUTTY.—Iron and Glass alone. E. D. has Roofed the Public Baths and Washhouses, Endell Street, on this principle, and others are in hand. Patent Sashes for Peach Walls, Pits, &c., 8d. per foot super. Heating by Hot water, on the most practical principles, and all the best materials used. Printed Price List sent on application.

THE
NEW RHODODENDRONS OF ASSAM A NDBOOTAN.
COLLECTED BY THOMAS J. BOOTH, ESQ.,
And described in the "Journal of Botany," by his Uncle, THOMAS NUTTAL, Esq., *of Rainhill, the well-known Botanist and Traveller.*

E. G. HENDERSON & SON

HAVE much pleasure in announcing that they have for Sale these, the most remarkable new species of RHODODENDRONS ever introduced into the country, many of which surpass those from Sikkim, discovered by Dr. Hooker. Amongst these brilliant discoveries from the Bootan Alps are the most wonderful-sized flowers, delicious fragance, and distinct colours of any that are known to exist in this the most gorgeous tribe of plants; and being combined with magnificent foliage, and distinct habit of growth, will render them indispensable, and a great acquisition both for the garden and conservatory.

The entire Stock of all these extraordinary species now growing (June 16, 1854) in the gardens at Rainhill have been purchased by them. The plants are fine, healthy, and robust. Many have been planted out in the open ground, and have proved quite hardy, with the exception of one or two slightly injured by late spring frosts.

They are now taking orders for six of the most distinct species, which will be dispatched in October. Full descriptions and prices may be seen on referring to the *Gardeners' Chronicle* of July 1, or in their

NEW CATALOGUE FOR 1854, NOW PUBLISHED,

and which will be forwarded post free on application.

We lington Nursery, St. John's Wood, July 29.

COTTAM AND HALLEN,
2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.

APPLICATION is requested for their NEW HORTICULTURAL LIST, containing Illustrations, Descriptions, and Prices of

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Syringes	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.
AGRICULTURAL LIST UPON APPLICATION.
EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.
EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

NEW FUCHSIAS OF 1854, sent out by Banks and others. The set of 17, well established plants, for 84s., or any 12 for 28s. :—Stokes' Duke of Wellington, Smith's Telegraph, Kimberley's Henry Menteith and Globosa splendens; Banks' Autocrat, Charmer, Vanguard, Queen of Hanover, Elegans, Clio, and Magnifica; Cole's Trentham, Henderson's Monarch; Batten's Charles Palmer, Grandissima, and Admiral; Standish's Perfection.

NEW VERBENAS OF 1854, sent out by Banks, Keens, Smith and others. A selection of any 30 from the following may be made for 4**s., or, per dozen, 18s. :—Keynes' Ajax, Arethusa, Captivation, Emily, Lord Mayor, and Magnet; Barnes' Lutea pallida, and Madonna; Smith's Peter Dick, Nobilissima, Climax, Eblouissante, Angelina, Queen, Alice, Scarlet King, Forget me-Not, Zaria, Caliban, Giralda, Islington Rival, Magnificent, Laura superba, and Triumph; Robinson's Mrs. D. Tyssen; Edmunds' Rouge et Noir, and President; Banks' Orion, Robin Hood, Marie Antoinette, Matchless, Beauty, Madonna, Attraction, Diadem, Ne Plus Ultra, and Arioste; Fozart's Beauty of the Garden; Stewart's Sulphur Model, and Ida; Igley's Honeysuckle; Bragg's Standard, Fair Rosamond, Incomparable, Lord Seaton, King of Purples, Queen of Roses, Prince of Wales, Venus, and Queen of Purples; Mein's Leucostemma, Mitchell's Elegantissima.

NEW PETUNIAS OF 1854, the nine varieties for 14s. :—Kimberley's Novelty, Van Houtte's Striata formosissima; Barnes' Elizabeth, Distinctus, Pencillata, Rotunda, Alba magniflora, and Formosa; Smith's Montreal Purple.

A FEW NEW AND SELECT PLANTS.

Cassia floribunda, a very free flowering new variety, with handsome foliage	7s. 6d.
Clianthus magnificus, a very large and brilliant new variety, with glossy foliage	10 6
Echites Pellieri (or flava)	21s. 0d. to 31 6
Gloxinia Duke of Wellington	7 6
Phlox, Epps' six beautiful new varieties	10 6
Thyrsacanthus rutilans, vermilion carmine colour, flowers very durable, and graceful habit ...	3 6
Abutilon insigne	3 6
Acacia grandis	3 6 — 5 0
Æchmea fulgens	5 0 — 7 6
Æschynanthus splendens	2 6 — 5 0
Allamanda Schotti	1 6 — 2 6
Aphelandra grandis	3 6 — 5 0
„ variegata	5 0 — 7 6
„ squarrosa citrina	15 0
Alloplectus Schlimmi	3 6 — 5 0
Azalea Stanleyana	3s. 6d., 7 6 — 15 0
Berberis Darwini	1 6 — 2 6
Begonia miniata	5 0
„ Prestoniensis	3 6 — 7 6
Boronia Drummondi	7 6
Centropogon Tovarensis	3 6 — 5 0
CONIFERÆ — Fitzroya patagonica ...	3s. 6d., 5 0 — 7 6
„ Libocedrus chilensis	3 6 — 7 6
„ Saxe-Gothæa conspicua... ...	5 0 — 7 6
Cyrtanthera magnifica	2 6
Echites Harrisi	5s., 10 0 — 21 0
Franciscea eximia	2 6 — 3 6
Gastrolobium ovalifolium	10 6
„ Drummondi	7 6
Gesnera purpurea macrantha	2 6 — 3 6
„ Suttoni sub alba	3 6 — 5 0
„ Leopoldiana	7 6
Gloriosa Planti	5 0 — 7 6
Hexacentris mysorensis	5 0 — 10 6
Hoya coriacea	2 6 — 3 6
„ picta	5 0 — 7 6
„ imperialis	2 6 — 3 6
Ixora grandiflora	2 6 — 3 6
„ Lobbiana	15 0
Kennedya ovata alba	3 6
Lardisabala biternata	5 0
Rhodoleia Championi	7s. 6d., 10 6 — 21 0
Rogiera thyrsiflora	2 6 — 3 6
Salpiglossis coccinea	5 0 — 7 6
Skimmia japonica	21 0
Streptocarpus biflorus	2 6 — 3 6
Siphocampylos pendula-florens...	5 0 — 7 6
Weigela amabilis	2s. 6d., 3 6 — 5 0

Complete Catalogues free by post for 6 penny stamps.

☞ Goods CARRIAGE FREE (not under 20s.) to all the London termini, and all stations on the London and Norwich and Colchester Line. Plants added gratis with orders 40s. and upwards.

BASS AND BROWN,
SEED and HORTICULTURAL ESTABLISHMENT, Sudbury, Suffolk.

The Gardeners' Chronicle.

SATURDAY, JULY 29, 1854.

AMONG the many striking instances of horticultural skill, exhibited at the last meeting at Chiswick, nothing attracted more attention than a terrestrial Orchid, well known to amateurs under the title of Disa grandiflora. From among some grassy leaves this gorgeous plant sends up a stem bearing erect some three or four flowers, each as large as a lady's hand, and of the richest crimson, melting into yellow.

It occurs at the Cape of Good Hope, and in no other part of the world. In that colony its favourite haunt is Table Mountain, where, according to Dr. HARVEY, it is so common that every stream is literally bordered with it in March. Sir JOHN HERSCHEL tells us that the temperature of the situation where it occurs is *occasionally* as low as 31½°, and also occasionally as high as 96½°. It lives on the borders of pools of standing water, the drainage of the boggy slopes of the mountain, in which its roots are immersed. These are dry or nearly so in summer. But it is frequently involved in the dense mists of the clouds, which, even in the hottest months, often prevail for a week or fortnight at a time.

These facts, and his own observations, appear to have suggested to Mr. LEACH that skilful course of treatment which has led him to such entire success. How he proceeds we learn from a letter with which he has favoured us:—

"I would say that my success in growing it has, I think, resulted simply from treating it as a greenhouse plant, and not drying it off for rest, as is usually done with Cape bulbs. I have not yet been able to perceive that my plant has ever been perfectly at rest; leaves seem either to be lengthening or offsets coming up—it was this peculiarity which determined me upon continuing to give it water all the year round—moderately, of course, during winter, while the thermometer was ranging between 35° and 45°, and freely during the other parts of the year.

"I suspect that, in its native habitats, though long continued heat and drought may cause all foliage to die down, the roots, nevertheless, in the ravines where I understand it grows, remain continually moist. With me, however, a change of habit seems to take place, and the offsets of last autumn and winter become the flowering plants, not of this, but of next year; whilst those now in flower will die down, leaving an abundance of plants, scarcely half grown, and followed soon afterwards by fresh offsets.

"Rough fibrous peat is the soil I use, with a good portion of silver sand; good drainage, of course—and, from the results I have obtained, I see no reason why this very beautiful species should not be found in the greenhouses of every one disposed to bestow the same care upon it which he gives to his Geraniums, and such like plants."

In this belief we concur, provided always a master's eye is present, to insure the plant against that neglect or forgetfulness which kills more fine plants in a year than merely bad cultivation in a century.

Mr. DRUMMOND'S Committee on the WOODS and FORESTS has made its report; but the evidence is not yet printed. During its sittings Sir WILLIAM HEATHCOTE was discharged from attendance, and was replaced by Mr. JAMES WILSON. When the name of the latter gentleman was proposed in the House by Mr. HAYTER, and Sir JOHN SHELLEY objected to him, Mr. WILSON himself is reported to have said that it would be *unseemly* if he should not be on the Committee; (the honourable gentleman has very peculiar ideas of unseemliness). In this way two Treasury officers acted upon a Committee appointed to enquire into matters in which the conduct of the Treasury was to be examined; and Lord HOTHAM never having attended, one-seventh of the Committee was thus made up of Treasury officers.

The Committee have differed greatly among themselves as to the terms of their report, Mr. DRUMMOND'S draft having produced, brief as it is, no fewer than six divisions, in four of which the Treasury succeeded in obtaining a majority. The Report, as agreed to, declares that—

"Except in the Forest of Dean and the New Forest, there is scarcely any timber at present of sufficient age for navy purposes; nor is there likely to be for many years to come. The Forest of Dean, which lately contained 22,000 loads, now contains only 4000. The Forests of Alice Holt, Woolmer, and Delamere contain none. The Forests of Hainault and Epping have long since ceased to bear timber, and are now devoted to agriculture. In the New Forest, out of 2635 loads felled, consisting of 3115 trees, only 936 loads were accepted by the Surveyor of the Navy; so large is the proportion of faulty to sound trees."

Mr. LIPSCOMBE and his forest of Delamere is thrown overboard. New Forest fares little better. In Alice Holt, Bere, and Parkhurst the management is declared to have been satisfactory and judicious; in other words, Mr. HIGINBOTHAM and Sir JAMES CAMPBELL have met with approval.

The Committee do not recommend the Scotch method of stacking bark; and they question the advantage of a portable saw-mill in Dean. The last-mentioned subject is reported on thus.

"A sawing-mill has been lately erected in the Forest of Dean, with a view of testing the propriety of establishing the same in other places. This must depend upon local circumstances: a portable sawing-mill can only be employed for timber of small scantling; and if intended for large timber, it would be difficult, on deep clay soils, to move the timber to the mill, which must then be a fixture. *As ship and boat builders are alone competent judges of what is best adapted for their own purposes, it would be wrong under any circumstances to attempt to convert crooked or knee timber.* The price of coals, the available extent of water power; the demand for staves, lathes, uprights or props for mines, &c., are also points to be considered, on which a person of practical and local knowledge is alone competent to give a sound opinion."

The sentence here put in italics will hardly elevate the committee in the eyes of the public. It was never proposed to compel buyers of timber to use the saw-mill in question; all that was proposed was to give them the opportunity of doing so in case they desired it; and, unless we are much misinformed, buyers did in fact eagerly avail themselves of it. We would also humbly submit to the Committee that since "ship and boat-builders are alone competent judges of what is best adapted for their own purposes," it would not be wrong *under any* circumstances to attempt to convert crooked or knee timber. Suppose they wished to convert it, why should they not? Their wish having been expressed, circumstances in which it would be desirable seem to us to arise.

The Committee say that "they consider it due to Mr. KENNEDY to state that, though his proceedings may be open to objection, he has evinced much zeal, energy, and vigilance in the execution of his office." Since the reward which he has received at the hands of the Treasury is dismissal from office, we learn unmistakeably how "zeal, energy, and vigilance" are valued in Downing Street.

The Committee go on to say:—"The division of responsibility between the Commissioners and the Treasury, established by the 14 & 15 Vict. c. 42, has not worked well. A surveyor-general of practical experience, the appointment of whom is provided for by the 12th section of the said Act, should have the superintendence of the whole of the forests, which he should frequently visit, and be responsible for carrying out all necessary details, through competent deputy surveyors under him. These deputy surveyors should also be practically acquainted with forest affairs, and the place of *deputy surveyors should not be given, as it sometimes has been, to persons wholly ignorant of the management of woodlands.*"

We trust that the last paragraph will not be forgotten. The committee entirely agree with the opinion we have so repeatedly expressed, and we hope to hear no more of the harshness with which we have spoken of appointments which the committee would no doubt have condemned in terms as strong as our own had the forms of Parliament permitted it.

When the evidence is printed we shall return to this subject, and shall then endeavour to discover whose information it is which has led the Committee to report that there is no timber in Hainault forest, which is now a place devoted to agriculture. We suspect that the dwellers therein will be as much surprised as ourselves at this declaration.

VEGETABLE PATHOLOGY.—No. XXX.

133. In some cases an extremely small quantity of light is quite sufficient to satisfy the necessary conditions. Humboldt has shown in his "Personal Narrative," that certain Algæ exhibit a green tint at the depth of many fathoms in the sea, where the degree of light is only $\frac{1}{1500}$ as intense as common daylight, and in "Uster's Annals,"* and the "Flora Friburgensis," he has stated, from his own experiments, in addition to many notorious facts, that plants raised in mines do sometimes acquire a green tint, and he therefore reasons that light cannot be regarded as the cause of the formation of chlorophyl, and that bleaching is due to the accumulation of oxygen.† The mines in which his experiments and observations were made abounded in hydrogen, and he conceives that the oxygen ceased in consequence to be accumulated, and that etiolation did not take place. Such plants are not always short-lived, but even produce perfect flowers, in those cases only (in all probability) where the plant is already well established and ready to blow, as in turf containing such plants as Poa annua, Trifolium arvense, Plantago lanceolata, &c., or where the flower is already formed within the bulb, as in the Crocus; though, however, the Crocus formed green leaves and flowered well, the whole plant perished on the 17th day after the bulb had been placed in the mine, a circumstance which might well be expected in an atmosphere so charged with hydrogen as to extinguish a candle and affect the lungs. When the abovementioned plants were introduced into the mine the blossoms expanded, and the fresh leaves were green, but dark at the tips and pale below. This difference of tint was not observable in Peas, which germinated in the galleries of the mine. Whichever theory be adopted, it is clear that the practical effect in questions relative to disease where pure atmospheric air is concerned, remains just the same. The green colour is not produced except the oxygen is eliminated; and whether the colouring be effected by the immediate agency of light or by the eliminated oxygen, is comparatively of little importance. As regards the green tint acquired by Algæ at depths where light is extremely faint, Dr. Harvey suggests, though with the confession that it is a mere supposition, "that perhaps what are called the chemical rays, in which seem to reside the most active principles of solar light, may be those which cause colour amongst vegetables, and these *may* penetrate to depths which luminous rays do not reach."

134. The intensity of light varies considerably in different countries, whereas at the Cape of Good Hope it is given by Herschel as 48 75, in England it is only from 25 to 30. In artificial culture it is, therefore, evident

* Usteri Annalen der Botanik, 1792, p. 236. Flora Friburgensis, 1793, p. 180.

† It is curious that Aristotle, in his treatise on colours, as quoted by Humboldt, says where water and light co-operate green is produced; where earth and water alone, white.

that plants which require such an intense light must be liable to disease in consequence of the comparative deficiency.

135. Light has a marked effect in altering the nature of surfaces in many cryptogamic plants. If, for instance, a Polyporus in full fruit be inverted, the hymenium is soon obliterated, and the former upper surface is converted into a true hymenium. Exactly the contrary effect takes place in Marchantia, the frond of which, if inverted, soon changes its character, the old upper surface giving out roots, and the lower acquiring stomata.

136. That chlorophyl is produced under the influence of light is certain, and it is probable that other secretions may be influenced by it. That they are so, indirectly at least, is clear, since those secretions are in proportion to the production of chlorophyl, or at least to the healthy elaboration of juice in the leaves, which does not take place if the chlorophyl is deficient. Some secretions, as for instance sugar, seemed to be formed most energetically in the absence of light, at least in some cases; but even in these cases "the matter out of which the sugar was obtained all derived its origin in the first instance from the leaves, when it was produced under the influence of light, air, and heat." (Lindl. Intr., v. 2, p. 305.)

137. As fungi are mostly lovers of shade, but few species present a green tint, and that rather metallic than vegetable, while on the contrary chlorophyl in the shape of gonidia is the characteristic distinction of Lichens, which delight to bask in the full sun. Many Algæ, again, especially those which are well exposed, are of a bright green, and abound in chlorophyl, as, for instance, Confervæ, and the curious Caulerpæ, most of which grow on exposed sandy shores. It is true that many Lichens cannot bear exposure, and that such species equally with the others produce gonidia. It is probable that modifications of the normal vegetable green do not depend so much upon light as upon other chemical agents, though aided probably by its greater or less intensity. Some kinds of fruit, though gathered nearly green, acquire their proper colour when kept in the shade, though the tint is not so deep as when they are exposed.

138. It is sometimes asserted that light is the agent by which inorganic matter is transformed into an organic compound; but no such transformation can take place without the pre-existence of a germ. It is very true that when water is exposed to light, green Algæ soon make their appearance; but it is no less true that the spores of fungi germinate much more readily in the shade. And, indeed, if the development of cells in phænogams be considered, we shall find that it is only those which immediately elaborate the chlorophyl on which the other secretions of the plant are more or less dependent, which grow the best when exposed to light. The tissues of the roots, which are intended principally to convey water, with the matter dissolved in it, from the soil, and which will perform this function the better the more delicate and pervious the tissues are, are developed best when removed from its influence, a fact confirmed by the greater rapidity with which roots are produced in Hyacinths, placed in water, when kept in the shade; and, indeed, where the deposit of woody fibre is the greatest, it is completely protected from the light by the thick bark, whereas the young shoots and many herbaceous plants suffer a considerable quantity of light to pass through their tissues. The first phenomenon of germination consists in the protrusion of the root with a view to collect water for the supply of the carbonic acid which may be mixed with it to the young plant; and as this process succeeds best in the shade, intense light is prejudicial in the first stages of germination, though no sooner have the cotyledons made their appearance than its agency is requisite to commence the fixation of the carbon and the elimination of oxygen, on which the vigour of the young plant depends. We have omitted any notice of the effects of the different coloured rays on vegetation, as, though matters of curiosity, they do not (except in the cases of greenish light) enter into the elements of the diseases of plants, so far at least as we are able to appreciate. *M. J. B.*

ON THE CULTIVATION OF PEAR TREES IN THE NEIGHBOURHOOD OF LONDON.

It is evident to every foreign observer that the plantations of Pear trees in the neighbourhood of London are objects of great importance. They remark that extensive portions of ground are planted with these fruit trees, especially between Vauxhall station and Kingston, from thence to Isleworth, between Hammersmith and Brentford, and in going from Paddington to Reading. In all these plantations, the same system prevails as regards the choice of trees; and they all appear to be reared and cultivated uniformly in the same way. The trees, however, grow vigorously, which is a proof that the soil and climate are suitable to them.

Doubtless the soil in these localities, as well as the climate of England, is generally colder than in Belgium, which, also, is less favourably circumstanced in these respects than its neighbouring countries situated more to the south. On this account the planter should select only very hardy and vigorous sorts, which should be reared in a proper manner; and in order to obtain the desired result, the trees, moreover, should be skilfully pruned.

On several visits which we have made of late years to the plantations of Pear trees, above alluded to, we have observed that they were unproductive; and to what cause must this be attributed? This question is not only of great importance to the proprietor of the soil, but also to the tenant. We shall endeavour to solve it.

It is probable that in the choice of seeds for raising Pear stocks the preference is given, in England, to those from vigorous varieties. In proof of this the trees generally exhibit a strong growth. Instead of training the stocks with a straight upright stem for 8 or 10 years before grafting, at 7 feet from the ground, that is to say, at the part of the stock nearest to the fructification, the English cultivator grafts near the ground, and as far as possible from where the fruit is to be produced. The consequence is that the graft requires to grow for three or four years before it attains the necessary height of stem for a standard; and then another period of three or four years must elapse before a head can be formed to produce its first fruit. This is an error, and is contrary to all physiological principles applicable to the cultivation of fruit trees.

In fact, when we examine the bearing of Pear trees, trained with an upright stem, either as a pyramid or as a standard, we always find that the fruit shows itself first on the upper part of the plant. The age of the tree, the numerous sap vessels of the stem and branches exposed to the influence of the solar rays and free air, contribute to the formation of fruit-buds, and to the nourishment of the fruits which are subsequently produced. When we deprive the stock of these sap channels, in consequence of grafting low, or on stocks that are too young, we have long to wait before the trees come into bearing. This will be understood by every practical man who has paid attention to the subject.

There is another point to which attention ought to be directed. Some stocks exercise a certain influence on the graft; and the latter requires likewise to be judiciously selected. In grafting at standard height, it is necessary that the graft should be taken from a vigorous shoot in the upper part of a bearing tree, growing on the Pear stock. By using a graft taken from an overgrown shoot, or cut from a lateral branch of a tree not yet in bearing, fruitfulness is thereby delayed. If we employ grafts taken from a very old tree, diseased or weakened by bearing, or from a tree worked on the Quince stock, we impart to the tree resulting from such grafts all the characteristics of degeneracy and of premature decrepitude.

In all the plantations round London the standard Pear trees, instead of being trained with a straight, upright stem, exhibit, after seven or eight years of cultivation, a number of branches hanging and straggling in all directions, furnished with a mass of spurs disproportionate to the vigour of the trees. These flower abundantly every spring; but the fruits, from being slightly or imperfectly set, drop off. These disastrous results are attributed, in England, to the coldness of the soil and variableness of the climate; but we are of opinion that the fault is entirely owing to the mode of cultivation. Some call this English cultivation; but when it only gives unsatisfactory results, why persevere in it?

We have stated on what principles a tree ought to be reared; but in order that it may preserve sufficient vigour, and that it may be quickly brought into a bearing state, it is necessary that the roots, stem, branches, and shoots should be in due proportion to each other. To maintain the equilibrium amongst these, it is necessary that the tree should be subjected, from its youth until it comes into bearing, to a proper system of pruning. Afterwards its top will require to have the branches thinned, regulated, or occasionally shortened; and this care must be continued during the life of the tree. By keeping the spurs in good condition, and the tree clear from insects, it will be enabled to set and bring to maturity its fruit. It is scarcely necessary to add that this result cannot be obtained unless the ground is enriched with good manure, adapted to the nature of the soil. This holds good as regards all crops. There is another essential point to which we would call the attention of intelligent practical men.

In rearing a standard for the open ground, it is indispensably necessary to train the stem erect, straight, and tapering, so that all the sap ascending and descending by the stem may be distributed in the branches and shoots, placed at proper distances and at angles sufficiently open to admit the sun's rays to all the parts. It is also necessary that the stem be grafted from 6 to 7 feet above the ground, and that it is strong enough to support itself without a stake. We only place a small rod at the upper part, which is tied to the stem in two places; to this the graft is fastened for two consecutive years, in order to preserve it from being injured by the wind. During the summer of the third year after grafting, the leading shoot is still kept straight and upright by means of a small rod.

Disbudding must be attended to during the first three years after grafting, in order that the branches may be formed at proper distances. The operation should be commenced as soon as the grafts begin to push. Laterals should be pinched after midsummer. If these operations are duly performed, the winter pruning will be reduced to merely cutting back the shoots to a good eye. The tree will bear fruit in the third or fourth year, if grafted and reared according to the system we have indicated, and of trees managed according to it we could show a great number of specimens in our nurseries at Brussels.

We are of opinion that these operations belong to nurserymen; for those who have to make plantations of Pear trees will find it better to plant trees already formed as standards, and that have been grafted at least two years. If the trees be planted in November, the check from removal will tend to the formation of fruit-buds in the following season.

There are some new and very hardy varieties of Pears which have been raised from seed in Belgium within the last 25 years, and which are admirably adapted for standards. They will be specially noticed in an article which we are preparing. If any English amateur should rear a certain number of standard Pear trees, according to the preceding directions, and manage them on good principles, he may be assured they will bear abundantly; and then he will readily perceive the cause of unfruitfulness in the Pear plantations in the neighbourhood of London. *J. de Jonghe, Brussels, July 18.*

KALOSANTHES COCCINEA.

This and other varieties of Kalosanthes as bedding plants cannot be excelled either in beauty or the facility with which their cuttings are struck and brought into a flowering state. The immense and singularly compact heads of bloom that can be obtained from each comparatively small plant, in about nine months from the time the cuttings are put in, combined with their charming colour, render them among the most attractive plants in the parterre.

Any time about the end of September I take some strong healthy points of the growing shoots, and after forming them into cuttings $2\frac{1}{2}$ inches in length, cutting close to a joint, and stripping the leaves from the bottom for about three-fourths of an inch, I lay them on the potting bench to dry for 24 hours. This is necessary, as from the extreme succulence of the plants they are apt to rot if put in at once.

Shallow pans or boxes four inches deep, and any convenient length and width, are prepared by putting in two inches of drainage, then a little moss or sphagnum, and over that some lumpy peat or loam, an inch deep; and then an inch of sandy loam, fine lime rubbish and sand, well mixed, and pressed closely down.

The cuttings should be put in about an inch, or an inch and a half apart, and a slight watering given to settle the soil around them. Place them in any frame or pit, or even in a greenhouse, close to the glass, and they will strike freely, and continue rooting all the winter. The tops will not grow much if kept near the glass, and plenty of air allowed them; nor is this desirable, as the dwarfer the plants are, the more novel and beautiful they look.

In March prepare some compost for potting them, by mixing three parts sandy loam, some fine lime rubbish, a very little leaf-mould, or lumpy peat and sand. Take the plants from the pans with little balls of soil, by raising them gently with the potting stick, and place them singly in 4-inch pots, well drained. Set them in a frame or pit, with their tops *only 4 or 6 inches from* the glass, and where the frost can be excluded, keeping the frame close for about a week or 10 days, after which they must be gradually inured to a circulation of air. Tilting the sashes at the sides, by placing the tilter between them and the rafter, will be found to answer better than sliding, or only tilting at the back. The object is to give strength without drawing the plants up, and, by keeping the glass close to their tops, to cause them to set flower-buds, which they will readily do under such treatment; and by planting out time, which with me is about the beginning of June, every plant, if well-managed, will have its head of bloom perfectly formed, and beginning to expand.

Kalosanthes look best planted in circular or oval beds, placing the tallest in the centre, and gradually descending to the edge; the last row should be placed in the ground a little deeper than the rest, and should slightly incline outward, in order to give a rounded appearance. Any good border soil seems to suit them, but if poor, some fresh loam and leaf soil should be added. I always water the plants well before turning them out of the pots, and the bed also, when necessary. Some green moss laid upon the surface of the bed gives it a neat appearance, and prevents evaporation. *Alpha.*

DESCRIPTIONS OF NEW PEARS CULTIVATED BY M. DE LIRON D'AIROLES, AT LA GIVÉLIERE, NANTES.—By Himself.

(*Continued from p.* 469.)

Alexandrine Douillard.—Tree vigorous, and may be grown as a standard, or as a pyramid; the latter form is, however, most suitable for it. The fruit is handsome, of the size of a Beurré d'Amanlis; stalk long, skin yellowish grey, flesh fine, white, very juicy and sugary. Season, November and December. Raised from seed by M. Douillard, architect, Nantes; and fruited for the first time in 1849.

Duc de Brabant.—Tree vigorous and productive; may be grown either as a standard or as a pyramid. Fruit large, about $3\frac{3}{4}$ inches in length and 6 inches in circumference at the widest part, of a pyriform shape, tapering much towards the stalk; the latter is about $1\frac{1}{4}$ inch in length, slightly curved; eye open, in a slight depression; skin smooth, pale green, dotted and speckled with brown, and acquiring a somewhat yellowish tinge as the fruit approaches maturity, which it usually attains in October and November. This is one of Van Mons' seedlings, and is supposed to have been first fruited in 1827.

Willermoz.—The tree makes a fine growth, and quickly forms a handsome pyramid. Fruit large, pyriform. Stalk short. Eye open, in a small cavity, surrounded with some folds. Skin smooth, pale green, yellowish when the fruit is ripe, tinged with red, and finely marked with yellowish brown dots. Flesh white, fine, melting, juicy,

sugary, with a slight musky perfume. Season, October and November. Obtained by M. Bivort, and named by him in compliment to M. Willermoz.

Henri Bivort.—The tree grows with excessive vigour on the Pear stock; less so, of course, on the Quince. It pushes so strongly that it is more advantageous to propagate it by grafting rather than by budding. Fruit 3½ inches in length, and nearly as much in diameter; obtuse-pyramidal. Stalk from 1 to 1¼ inch in length, oblique. Eye open, irregular, in a slight depression. Skin smooth, pale green, speckled with brown. Flesh yellowish white, fine, half buttery, very juicy and melting, with a perfumed flavour. Ripens in the first fortnight of September. Raised by M. A. Bivort.

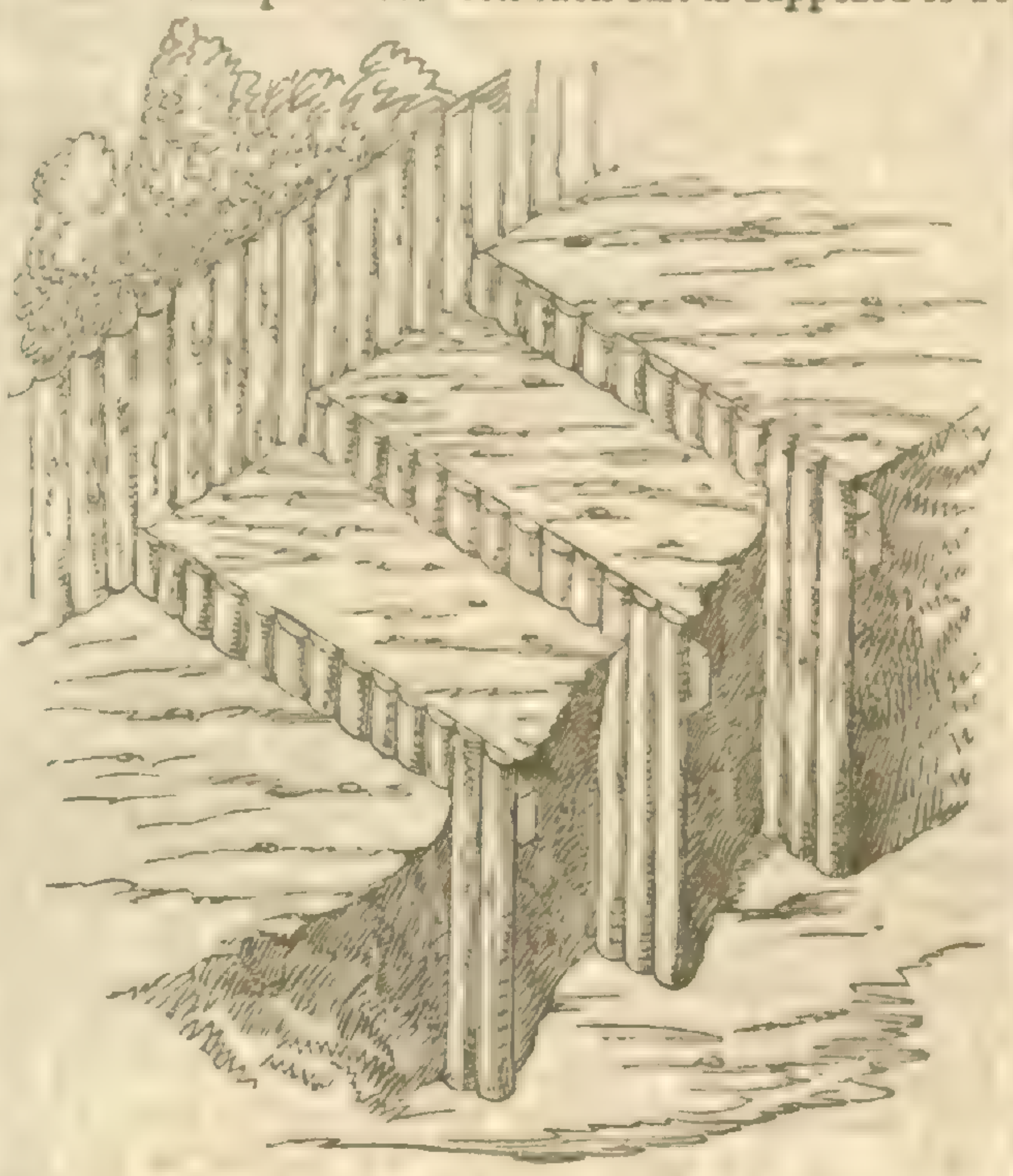
Beurré Benner.—The tree assumes a handsome pyramidal form, suitable for a standard. Fruit small, turbinate; stalk about an inch in length, thick; eye open in an irregularly formed knobby cavity; skin smooth, yellow, strongly marked with streaks and patches of reddish brown next the sun; flesh melting, fine, buttery, with abundance of sugary perfumed juice. Season January and February. Obtained by M. Bivort, and fruited for the first time in 1846. ||

Home Correspondence.

Hardiness.—I should be glad to learn whether Philesia buxifolia stands the winter and spring in the ordinary parts of England. Also the same as to Rhodoleia; and if so, whether its hardiness is rendered useless, like that of the Camellia, by precocious blossoming. Thirdly, whether the statements concerning Clerodendron fœtidum and the closely allied species being hardy are believed by you. *A. H.* [Rhodoleia is certainly tender. Philesia and Clerodendrons are probably hardy, but we have no personal experience on the subject.]

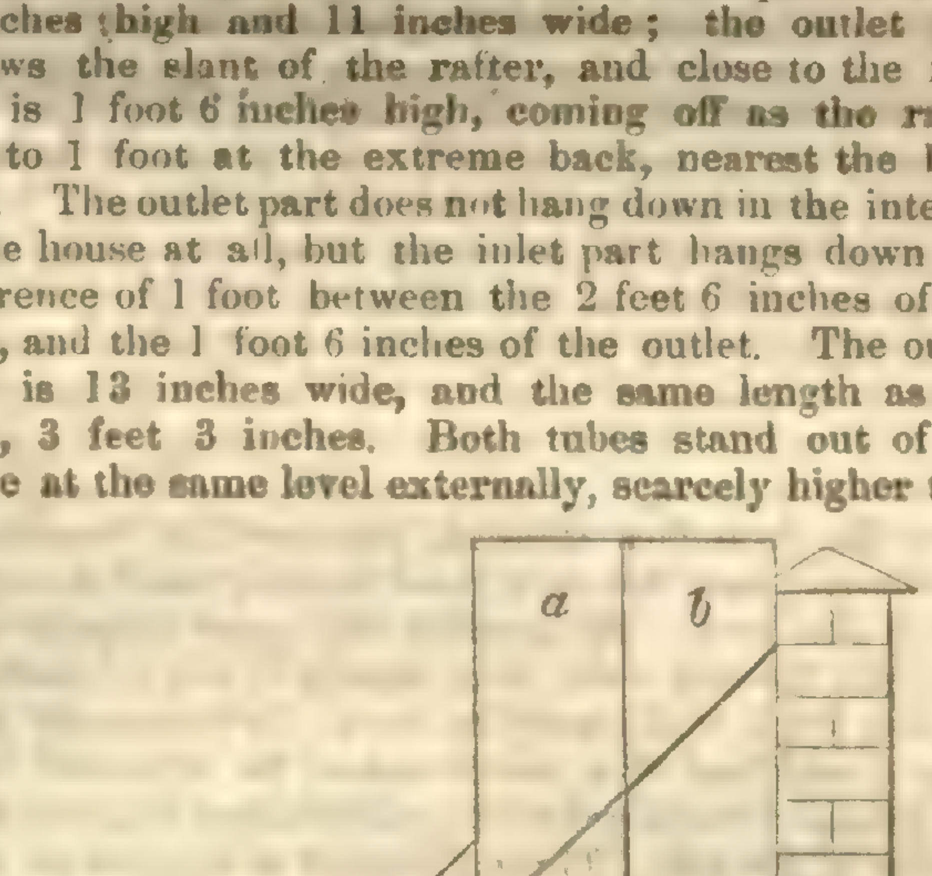
Enville Hall Gardens.—For 25 years I have been in the habit of annually visiting many of the gardens in England, and can bear testimony to the vast improvement that has steadily progressed during that time. Some places have sustained a well-earned fame for beauty for many years; others have had wide-spread names, but little deserved them, except in one or two particulars—such was the case with Enville, the seat of the Earl of Stamford and Warrington; it had long borne an honoured name, on account of its beautifully undulated lawns, and for its plantations having been judiciously arranged by the poet Shenston; through the persevering liberality of the present Earl, however, and that liberality guided by good taste and an innate love of all that is beautiful, it may now take a high rank among our best places, for all that makes a garden admirable and enjoyable. Most of the best places in England have been the work of many years, their noble owners from generation to generation have spent large sums of money upon their improvement and enlargement, but little or nothing was done for Enville till seven years ago, when the present Earl commenced adding to the small lawn, which was called, *par excellence*, "the gardens," and the four acres of olden days are now fast growing into 60. Coniferous plants of the best sorts have been largely introduced, and are growing well. Rhododendrons and other evergreens luxuriate in the natural soil (a gravelly loam), and most of the old trees, and especially Limes and copper-coloured Beeches, are fine specimens. The flowers (all good) are arranged in round beds, and in "ribbons" along the borders. I noticed two beds of Geraniums, Mountain of Light, each containing above 150 plants, and about 800 Golden Chain, forming the front rank of one of those pretty rows of various colours, which are so ornamental, especially when disposed in curves. I now, however, come to the great features of the place, the magnificent fountains just finished. It is a common saying, that "comparisons are odious," but the proverb does not always stand good, for there is nothing odious in comparing one thing that is admirable with another of acknowledged excellence. I have therefore no hesitation in saying that the large jet at Enville will stand comparison with that at Chatsworth, and that the "Triton and River Horse" fountain is superior to anything of the kind in the kingdom. The large jet is placed in a pool at the higher part of the pleasure grounds, backed by a hanging wood of fine old Oaks. The "River Horse" fountain is in a pool immediately below, fringed with Rhododendrons and Weeping Willows. The ground on each side gradually slopes to the water's edge, and flower-beds are introduced at intervals. I stood in a position from which I could see both fountains playing at the same time. The day was glorious, the sun unclouded, and but little wind stirring. Words fail to convey a correct idea of the beauty of the scene. There were 16 jets throwing water to a height of 40 feet from beautifully-modelled horses, and the triton discharged a stream full 70 feet high. Thirty-five feet above was the large jet, emitting far more than 1000 gallons per minute to the height of 200 feet. These grand results have been effected at the expense of a large outlay; for all the water has to be pumped up to the reservoir by two thirty-horse power steam-engines, through half a mile of 15-inch pipes, and it descends from the reservoir (nearly 300 feet above the jet), through the same distance of piping without a check, there not being a bend in the whole length. The works were commenced in the spring of last year; there was a large pool made on the gathering grounds, and the reservoir formed on the top of the hill; an enormous weight of piping has been laid, the engines and all other necessary things fixed, and the fountains were at work on the 10th of July, 1854. "Let honour be given to whom honour is due." It would be an insult to the noble proprietor who conceived and has caused these great works to be carried out, to bespatter him with fulsome praise; all I can say is, let those who can go and see Enville, for he kindly allows all, without distinction, to inspect his lovely place on Tuesdays and Thursdays, and I am quite sure that it will require no selected individual to give the key note to the thousands who will honour his spirit and liberality. *From a Correspondent.*

Rustic Steps.—The kind of steps of which I annex a sketch will be found useful and appropriate in many situations. One great advantage they possess is their simplicity of construction. Any rough carpenter with the assistance of a labourer can manage them very well. The isometrical sketch will, I think, explain their details. The spaces between each rise is supposed to be



filled in with the ordinary soil, and faced with gravel like the walk of which they are but continuations. I have, however, seen the gravel replaced by hexagonal wooden blocks, and they answer very well. The readiest and least expensive way to make them is to get a few poles sawn into the requisite shape, and then cut them into pieces of sufficient length to imbed firmly in the soil, fitting them together like paving tiles. *Crayon.*

Aëration.—I now send as concise and exact a description as I can of the ventilator I have used in my planthouse for these last seven months. It is made of deal boards—as long as one sash is wide, say 3 feet 3 inches; call this the length of the box. The inlet part is 2 feet 6 inches high and 11 inches wide; the outlet part follows the slant of the rafter, and close to the inlet side is 1 foot 6 inches high, coming off as the rafter lies to 1 foot at the extreme back, nearest the back wall. The outlet part does not hang down in the interior of the house at all, but the inlet part hangs down this difference of 1 foot between the 2 feet 6 inches of the inlet, and the 1 foot 6 inches of the outlet. The outlet part is 13 inches wide, and the same length as the inlet, 3 feet 3 inches. Both tubes stand out of the house at the same level externally, scarcely higher than



a Inlet side, 2 feet 6 inches by 11 inches.
b Outlet side, 1 foot 6 inches and 1 foot by 13 inches.

the coping of the back wall. This arrangement of the two parts of the ventilator answered perfectly through the winter months; but for summer ventilation the parts had better be reversed, and the inlet side turned to the back wall, and lengthened, so as to make it still 1 foot deeper than the lowest part of the outlet. My reason for proposing this alteration is, that as the house is supposed to face the south, as the sun gains strength, in the first arrangement of the parts of the ventilator, he warms that side of the box which it is desirable to keep as cool as possible, and therefore that side had better be placed to the north. This will slightly increase the expense, because it will take more material in its construction. In a span-roofed house I would place the inlet between two outlets. There can be no objection to making the inlet side come down in the house as low as may be considered desirable, if expense is no consideration. But it is as well to think beforehand whether the gain is in proportion; as in any apparatus, the parts when fixed cannot adapt themselves to any change that may take place. The ventilating power resides in the difference of temperatures and heights of these inlet and outlet columns of air; and does not change in the direct proportion of these differences and heights, but in the proportion of the square roots of those dimensions; therefore if a certain height, at a certain given temperature, produces any given amount of ventilation, to double that amount, we must multiply the depth of the inlet side by 4; for three times the effect by 9, and so on. Therefore it is very much cheaper, and would be found more effectual, to increase the number of these ventilators than to try to make one do all the work; to say nothing of the unsightly appearance of a great tube 9 or 16 feet long hanging down where plants should be. Nor would it do to elevate these tubes very much above the house, as the changes of the external temperature would act against the efficiency of one or other of the air-channels; and, besides these considerations, by increasing their number or making them continuous the whole length of the house, an ornamental appearance may be given. The foregoing reasoning also applies to the temperature, as affecting the rate of ventilation. If, with a certain given height or depth of column, a known rate is produced by some given difference of temperature, this difference must be fourfold for the rate to be doubled, ninefold for it to be trebled, &c. But the temperature must not be allowed to vary in anything like these proportions; thus furnishing additional reasons for multiplying the number of these ventilating columns, and confirming the correctness of my insisting that one foot difference in height between the columns is sufficient. One word as to the novelty of this "system," as "H. A." terms it. I know it is not new, and the application of it to plant houses may not be new; nor is it entirely my own, I owe to another the idea; but I believe it is new to very many of your readres. I gave the rule for ascertaining the rate of motion in these air-channels in a previous communication, and need not repeat it here. *J. P. S., Chesterford.*

The Potato Crop.—As yet (July 22d) we have fortunately no disease. About a fortnight ago, when the weather was humid and sunless, we heard of spotted leaves, and here and there a diseased tuber and some infected foliage was even sent us, but by this time we trust that the bright sunny weather will have stopped it, and that the tubers will be safe. In Essex, where most people have planted early dwarf kinds, they are now fast ripening with a healthy yellow hue, and bidding defiance to disease, and none are in danger here except late varieties; by adherence to dwarf early sorts and early planting we hope to be able in future to say "Good bye to the Potato disease." Of about 10 selected varieties we cultivate, all are ripening free from taint. We are also equally successful this season in raising sound early varieties from seed (not tubers) a feat which has hitherto baffled us. It is a remarkable fact that this year such crops as are most susceptible of blight, louse, and numerous other insects, are, with the exception of the Bean and Hop, and a few others, comparatively free from those pests now so prevalent. We may instance the ill-fated Potato, the Pea, and the Cabbage, with some others. *A. Hardy and Son, Maldon.*

Preservation of Plant Sticks.—One frequent complaint I have heard made by exhibitors is, that the constant tying and untying of plants, rendered necessary by the rotting of the sticks in pots, takes up much time, and gives much additional trouble. I myself have experienced this, and, consequently, was induced to try some experiments as to the best means of preserving the sticks. Having tried various preparations, a solution of gutta percha among the number, I find what painters call knot-varnish (or what they put on knots before painting the wood) to be by far the best; even some small sticks, not so thick as an ordinary penholder, have, after 12 months' use, appeared as sound as on the day they were put in. I simply dip the stick into a bottle of the varnish, and let it drain off. I think, on further trial, it will be found to bear out the above statement. The sticks, of course, when dry can be painted any colour required; perhaps, however, some of your readers may know of something even better than this; if so, I hope they will favour me with their experience in the matter. *S. E. C., Cheltenham.*

Gooseberry Caterpillars.—In 1834 my fruit and Rose bushes being in a bad state through these pests, after all other remedies had failed I got 2 bushels of unslacked North Sunderland lime shells (no other kind will do, as I afterwards proved). I slacked two-thirds of the lime in the evening, and put the remainder in a dry place, to be used afterwards if necessary. Early next morning, while the dew was upon the bushes, I turned over the lime, adding a little more water if not thoroughly powdered, and with a slater's harling trowel or small shovel I dashed the hot lime in small quantities on the lower parts of the bushes infested as far up as the vermin were. The lime must be poured hot, or it will not kill the caterpillars, and if used in moderation it will not hurt the foliage or the fruit in the least. *R. W. H., Morningside, near Edinburgh.*

Societies.

Horticultural, *July* 25.—General Fox in the chair. J. Cunningham, Esq., Macedon, near Belfast, was elected a Fellow. Among subjects of exhibition was a collection of vegetables contributed by Mr. Smith, gr. to Mrs. Reay, of Little Blake Hall, Wanstead, to whom a Knightian Medal was awarded. Messrs. Veitch produced a cut specimen in a pot of Desfontainia spinosa, a new evergreen shrub from Patagonia, the general appearance of which, with the exception of the long

scarlet tubular flowers tipped with yellow with which it is furnished, is exactly that of the common Holly. It is expected to be hardy, but of that there has not yet been time enough for direct proof. Of Orchids, Mr. Dunsford, of Chingford, sent a newly imported plant of the yellow Cattleya citrina. Mr. Keele, gr. to J. Buller, Esq., of Woolwich, had Lissochilus speciosus, a terrestrial species from Southern Africa, bearing a long upright spike of yellow flowers. It is a well known plant, introduced very many years ago; but it has been lately brought forward as something new. Mr. Williams, gr. to C. B. Warner, Esq., contributed a cut specimen of Schomburgkia Lyonsi, a handsome species, described in our last volume, p. 615. From R. S Yates, Esq, of Manchester, came a specimen of the handsome Chinese Renanthera coccinea, beautifully in flower, a rare occurrence in this country. In China, however, it is found to blossom with certainty and in the greatest profusion, scrambling over the walls of the factory at Macao, and covering them magnificently with its glorious inflorescence. A Certificate of Merit was awarded it. Of Pine Apples there were some extremely excellent fruit. Mr. Jones, gr. to Lady Charlotte Guest, sent two Ripley Queens, beautifully grown, and weighing respectively 6 lbs. 12 oz. and 5 lbs. 2 oz.; also a Providence, 10 lbs. 2 oz., and an Otaheite, 6 lbs. 4 oz., the four fruit making in all 28 lbs. 4 oz.! The heaviest Queen was stated to be only 3 oz. lighter than the finest fruit of the kind ever exhibited to the Society. A Knightian Medal was awarded. Two Queens, each 4 lbs. 5 oz. and 4 lbs. 4 oz., and a Providence, 7 lbs. 10 oz., came from Mr. Joy, gr. to Mrs. Colston, to whom a Banksian Medal was awarded. A similar award was also made to Mr. Davies, gr. to J. Dixon, Esq., of Astle Park, near Knutsford, for a Providence Pine weighing 9 lbs., and for a boxful of large and fine fruit of the Royal George Peach. Mr. Chapman, gr. to J. B. Glegg, Esq., produced six well ripened Stanwick Nectarines. Mr. Chapman, like other growers of this fruit, has found that it is late, and requires more heat than most sorts to bring it to perfection; but that when thoroughly well ripened in a high temperature, it fully maintains all that has been said respecting its remarkable excellence. A Certificate of Merit was awarded to it. The same grower also sent a fruit of his hybrid green-fleshed Melon, whose merits are now tolerably well known. Of Grapes, Mr. Carpenter, of Ban Hall Gardens, near Birmingham, had a small bunch of a white sort, said to be a seedling from the Black Hamburgh, and which it resembled very much except in colour. Mr. Cuthill furnished a dish of his Prince of Wales Strawberry, a good looking late kind. Mr. Wrench again showed a few fruit of Myatt's Pine-apple, the best flavoured of all Strawberries; but of late years it has become so unproductive that it has all but disappeared. Mr. Wrench stated that "it grows very well with him, but that it fruits most shyly." Mr. Kinghorn, St. Margaret's, Isleworth, produced what is very seldom seen in this country, fruit of Prunus dasycarpa, or Black Apricot, a species different from the common Apricot, and certainly unworthy of cultivation with us, except as a matter of curiosity. Its size and appearance are more those of a small deep red coloured Plum than an Apricot. The fruit in question was tolerably well flavoured; but in general it is too acid to be agreeable. A Certificate of Merit was awarded. The same grower also sent a dish of what was called St. Margaret's Cherry, a large and handsome black kind, apparently not different from the Circassian. From M. Decaisne, of the Jardin des Plantes at Paris, came two plants of the highly interesting Chinese Yam (Dioscorea Batatas), described in a leading article last week, as a probable substitute for the Potato. From the size of the set from which one of them had sprung it was evident that the tubers have the requisite of sufficient magnitude for profitable cultivation. We believe that M. Decaisne is fully justified in declaring that this plant at least is *pleine d'avenir*. They have been sent to the Society's garden for trial, the result of which will be duly reported. A Large Silver Medal was awarded it. From the Garden of the Society came Platycodon sinense, a greenhouse plant not inferior to the Russell Lisianth in colour and far more cultivable; a white form, new to gardens, of the well-known biennial Trachelium cæruleum, Exostema aquaticum, four varieties of Achimenes, Lobelia ramosa, the beautiful Myosotis azorica, Erica erubescens, and a hybrid Begonia, a bad cross between B. cinnabarina and B. heracleifolia. The garden also supplied a collection of vegetables, consisting of Auvergne, Ne Plus Ultra, and Fairbeard's Champion of England Peas, two kinds of Lettuces, Vanack Cabbage, Courge coucourzelle, an extremely good kind of Vegetable Marrow, Orange Jelly Turnip, doubtless the best in cultivation, both as regards uniformity of shape and excellence, and it does not readily run to seed; early Six-weeks Turnip, two kinds of Kohl Rabi, and a specimen of Ægilopean Wheat, to which so much interest attaches, and concerning which so much was written in our volume for 1852. The produce of the seeds furnished by M. Fabre (who, it will be remembered, followed up the experiment of sowing the miserable Grass Ægilops ovata year after year till it became Wheat), raised in the garden this year, is in no respect different from the common hard Wheat of the South of France. From the garden likewise came fruit of Denniston's Superb Plum, from the orchard house; and Myatt's Eleanor, and white and red Alpine Strawberries.

CALEDONIAN HORTICULTURAL. — An extra summer competition was held on the 8th of July, when prizes were awarded as follows: 1st, for Greenhouse Plants, Mr. Reid, Millbank, with Phænocoma proliferum and Statice Holfordi; 2d, Mr. Lockhart, Arniston, with Tetratheca verticillata and Aphelexis humilis. Best dark Fuchsia: 1st, Mr. Mitchell, Ravelston, with Banks' Glory; 2d, Mr. Walker, Rosehall, with Sir J. Falstaff. Best light ditto: 1st, Mr. Mitchell, with Diadem of Flora; 2d, Mr. Crombie, Cramond House, with Pearl of England. Best Achimenes, Mr. Crocket, Raith. Best Cape Heaths: 1st, Mr. Lockhart, with a very tall plant of Erica spuria, and a neat well flowered specimen of Beaumontiana; 2d, Mr. Reid, with Ventricosa Bothwelliana and inflata alba; 3d, Mr. Smith, Melville Castle, with Cavendishi and Savilleana. Pinks (cut blooms): 1st, Mr. Reid, Broomfield, with Harriet, Surpriser, Lola Montes, Rubens, Berkshire Hero, Whipper-in, Laura, Brilliant, Young's XX, Lord Valentia, Sharp's Splendid, and the Hon. Mrs. Herbert. Phloxes: 1st, Mr. Thomson, Lasswade, with Antagonist, Eyebright, Abd-el-Medschid Khan, and Chamouni; 2d, Mr. Smith, Clermiston, with Antagonist, Chamouni, and Baron Addisward. Pelargoniums in 8-inch pots: 1st, Mr. Forest, Glentarkie, with finely bloomed plants of Conspicuum, Norah, and Forget-me-not; 2d, Mr. Henderson, Cargilfield, with Gulielmus, Beauty of Montpelier, and Falstaff; 3d, Mr. Cameron, Trinity College, with Emily, Beauty of Montpelier, and Magnificum. Fancy kinds: 1st, Mr. Forrest, with Princess Maria, Delicatum, and Countess of Ross; 2d, Mr. Cameron, with Mignon, Annette, and Prima donna. Honorary award to Mr. Pender, of Moredun, for a dish of Keens' Seedling Strawberry. Messrs. P. Lawson & Son's Guinea, offered for the best 24 cut Roses, was awarded to Mr. Buist, Tynningham, for Géant des Batailles, Comte de Bourmont, La Reine, Eliza Mercer, William Jesse, Chénédolé, Dr. Juillard, Pius IX., Coupe d'Hébe, Count Montalivet, Adela Prévost, Louise Peronne, General Kleber, La Superbe, Robin Hood, Madame Fremion, Reine des Fleurs, General Changarnier, Léon de Guay, Charles Duval, Paul Ricaut, Boule de Nanteuil, Baronne Hallez, and Mrs. Elliot. A second premium was voted (by the Society) to Mr. Edwards, Lauriston Castle, for Charles Duval, Boule de Nanteuil, William Griffiths, Bernard Palissy, Nina, Lady F. Waldegrave, Augustine Mouchelet, Baronne Prevost, Robin Hood, Coupe d'Hébe, Géant des Batailles, General Changarnier, General Jacqueminot, Columella, Leonora, William Jesse, Madame Bosanquet, Eugène Barbet, Beauty of Billiard, Duchess of Sutherland, Shakespeare, Mrs. Elliot, La Ville de Bruxelles, and Chénédolé. The Guinea, offered by G. Patton, Esq., to Cottagers, for the best three cut Roses, was gained by Mr. Fargie, Newbattle, with Géant des Batailles, Baronne Prevost, and Laure Davoust. From the Nurseries of Messrs. Dickson & Co. were Tropæolum edule and other plants, with a box of Seedling Pansies, and one of named varieties, Pinks, Pelargoniums, &c.; from Messrs. Dickson & Sons, Cissus discolor, Lilium eximium, and Rose blooms; from Messrs. P. Lawson & Son, Gloxinia Digitalis erecta, Diplacus Californicus, stands of Roses, with blooms of their new Hybrid Bourbon, named "Charles Lawson" —also plants of Wellingtonia gigantea, and a Californian Conifer, labelled "Cupressus sp.," much resembling Wellingtonia in its young state; from Mrs. Carstairs, Fancy Pelargoniums, Calceolarias, and Rose blooms; from Mr. Handasyde, Roses; from Mr. Stark, Roses, Pansies, and Delphiniums; from Mr. Methven, Pelargoniums; and from Messrs. Young and Mackay, a flowering plant of Ipomœa quamoclit. From Lady Keith, Fuchsias; from Mrs. Fraser, Oncidium pulvinatum, for which an honorary award was voted, also Ferns and Alpine plants; from Sir W. Gibson Craig, Bart., several new Californian plants, including Horkelia congesta and Eriogonum Californicum in flower; from S. Hay, Esq., Pelargoniums; from Professor Syme, Statice puberula; from C. K. Sivewright, Esq., Pelargoniums; from W. Hunt, Esq., promising Seedling Gloxinias; from the garden of J. Cameron, Esq., a large and fine specimen of Clerodendron Kæmpferi, and several Cockscombs; from W. A. Pringle, Esq., Roses; and from J. Mood, Esq., Fuchsias. The day being fine there was a large attendance.

Reviews.

The Intimate Structure and Vital Functions of Cells.—(*Die Pflanzenzelle, der innere Bau und das Leben der Gewächse.*) Von Dr. H. Schacht. 8vo, pp. xvi. and 470; tab. xx. Berlin, 1852.

IT would be difficult to point out a more important book to the physiological botanist than that whose title we have just given. It abounds with matter derived from various sources and original observations, and is accompanied by illustrations, which, with a few solitary exceptions, leave little or nothing to be desired.*

Every organ is separately considered—historically, anatomically, and functionally—and, for the most part, every possible degree of information pointed out; where any deficiency in this respect exists, the defect arises from a less frequent consultation of foreign than of German authorities;† and, in a few instances, we have noticed a tendency to generalise from partial observations. It would be easy to give extracts of more than sufficient interest to justify us in occupying a more considerable space than is usually devoted in our pages to reviews, and we have indeed already given a large extract from the portion which treats on vital phenomena.

We shall, however, take occasion to reproduce another tolerably long passage, because of its great utility, for we do not know where to find a full statement elsewhere in so practical a form of the effect of chemical reagents on the component parts of vegetable structure. We must, however, confine ourselves to that portion which treats of the cell walls themselves and their proteinous contents, without adverting to the matter contained in the protoplasm, such as starch, chlorophyl, inuline, crystals, &c. The matter is of the greatest importance as regards multitudes of questions of vegetable physiology, and affords quite a new field of elegant and profitable recreation for those who are moderately skilful in the use of the microscope. The beauty of some objects, such as the delicate appendages of Riccia natans, under the application of such reagents, is almost inconceivable.

In order to obtain any satisfactory result from the use of chemical reagents under the microscope, it is absolutely necessary to be acquainted intimately with the actions of these substances on the different fundamental chemical productions of plants. Unfortunately, all of these productions, at least under existent methods of analysis, are not capable of being perfectly separated from others, or of being procured in sufficient quantity to admit of their chemical examination. We are, therefore, obliged to be contented with the cursory observation of the reaction of chemical tests under the microscope.

The following may be distinguished as decidedly different products:—

1. *Cellulose* is characterised by its solubility in concentrated sulphuric acid, while it is insoluble in caustic potash. It is, besides, in many cases rendered blue by a solution of iodine* and chloride of zinc; iodine and sulphuric acid produce the same tint more readily, but there are modifications of cellulose which do not become blue when treated with either of these substances. Iodine imparts to cellulose a light yellow tint; sugar and sulphuric acid have no effect upon it. According to Schulze it is dissolved by maceration; the more delicate parts of the cell walls, which consist of cellulose, are naturally acted upon more rapidly than the stronger incrassated portion; in consequence, a macerated cell often exhibits real apertures, while merely attenuated spots arise in the same kind of cells insolated by potash. Potash produces a slight swelling of the cellulose. Cellulose appears on the one side *to pass into starch*, or into a substance resembling *starch, on the other to be* changed both into xylogen and cork. Cellulose forms the fundamental substance of the primary cell-wall, and of the lining strata; the wall of all young cells is composed entirely of it; cellulose, however, is subject to many modifications, which are indicated by the different shades of colour produced by a solution of iodine and chloride of zinc, and combined iodine and sulphuric acid. The charcoal of pure cellulose appears, according to the latest observations of F. Schulze (Tagblatt der xxviii Naturforscher—Sammlung. p. 13. Gotha, Sep. 20, 51), to be, like the diamond, colourless, and translucent under the microscope. The chemical analyses of cellulose present the following composition:—

PAYEN.	FROMBERG AND BAUMHAUER.	MITSCHERLICH.
C. 12	24	[illegible]
H. 20	42	20
O. 10	21	10

2. *Xylogen*, or wood-forming matter, has exactly opposite qualities to those of cellulose; concentrated sulphuric acid has little or no effect on it, caustic potash dissolves it readily and completely; a solution of iodine and chloride of zinc, and combined iodine and sulphuric acid, produce no blue tint; iodine as well as sugar and sulphuric acid, are equally indifferent; boiled with chlorate of potash and nitric acid, according to Schulze, it is dissolved. Xylogen is deposited in the primary cell wall and in the lining strata of all lignified cells, producing firmness of the cell wall, and preventing the reaction of the accompanying cellulose on iodine and sulphuric acid. Xylogen is probably a metamorphic production of cellulose; no chemical analysis exists.

3. *Cuticular matter* or *cork* is acted upon by sulphuric acid and caustic potash in the same manner as xylogen; sulphuric acid does not dissolve it, caustic potash dissolves it readily; it is, however, distinguished from xylogen essentially by its relation to oxidising matters: boiled with chlorate of potash and nitric acid it is not dissolved, but changed into a tough resinous substance which is soluble in ether and alcohol; it burns in a platinum capsule with a light smoky flame, diffusing a faint aromatic odour, and leaves a porous charcoal. Cuticular matter is found in the walls of old cork cells, which often consist entirely of this substance, and in the cuticular layers of the epidermis; like xylogen, it prevents the reaction of iodine and sulphuric acid on the cellulose by which it is accompanied; it seems to be a metamorphic product of cellulose, since, with the increase of cuticular matter, it gradually decreases, and at length entirely vanishes. Mitscherlich found in 100 parts of the cork of Quercus Suber—C., 65.73; H., 8.33; O., 24 54; and N., 1.50.

4. *Intercellular substance* has the same reaction as xylogen. It is insoluble, or nearly so, in sulphuric

* The least satisfactory is the analysis of the Truffle, which will not bear comparison for a moment with that of Tulasne.

† As an instance, we may give the assertion that spiral vessels are seldom branched (see p. 191). We might point out Turpin's paper on Biforines, Solly's papers in the Transactions of the Society of Arts, and Trecul's Memoirs, as indicative of their being frequently branched, especially in Endogenous plants.

* The solution of iodine recommended by Schacht in his work on Flax and Cotton consists of 1 gr. iodine, 2 gr. iodide of potassium, and 1 oz. distilled water.

acid, while caustic potash dissolves it more or less speedily. Iodine with sulphuric acid, as also a solution of iodine and chloride of zinc, do not communicate a blue tint. Intercellular substance, like cellulose, seems to undergo many modifications, as appears by the degree of its solubility in sulphuric acid; and the intercellular substance of some fungi, lichens, and algæ is dissolved by boiling in water.

5. The true *cuticle* is identical with the intercellular substance, and, as it seems, is only slightly modified, as regards colour and character, by the effect of air; it is soluble in caustic potash, and is not affected by concentrated sulphuric acid; the cuticle of pileate fungi is soluble in water. The intercellular substance, as well as the cuticle, are secretions from the cell-wall; neither contains cellulose—but both are more nearly allied to xylogen than cuticular matter, since both are dissolved, according to Schulze, by maceration. There is no existing analysis.

6. The proteinous matters of cells are not dissolved by concentrated sulphuric acid; but, on the contrary, are affected by caustic potash; iodine and sulphuric acid give them a golden-yellow tint; a solution of iodine and chloride of zinc produces a contraction or curdling. A solution of iodine, as also nitric acid and ammonia, imparts a deep yellow tint. Muriatic acid produces in 24 hours a violet tint, sugar and sulphuric acid in 10 minutes a beautiful rose red. The proteinous matter penetrates with other substances into the cell walls. Protein, according to Mulder, consists of C_{40}, N_{10}, H_{62}, O_{12}.

Most willingly should we extend our extracts, but want of space compels us to close our notice. The work will probably be given to the public in an English form, the only impediment being the attendant expence, and the necessity of its translation being undertaken by some thoroughly competent person. We could easily point out two nearly contemporaneous translations of the same memoir, which in a multitude of minute points differ materially from each other, the one proceeding from a person perfectly conversant with the original language, but unacquainted with the subject, while the other laboured under no such disadvantage. The author's work on the microscope has had full justice done it by its talented translator, who would, however, have done well to leave out some of its platitudes and truisms; and we trust that this equally, or even more, important treatise may meet with similar good fortune.

Botany of the Antarctic Voyage. Flora of New Zealand, Part 6.—This new part of Dr. Hooker's great work is entirely occupied by details of cryptogamic botany. The plates are filled with beautiful figures of Mosses, Jungermannias, Fungi, and Seaweeds.

The Botany of the Herald has reached a 5th number, which contains all the orders intervening before Peppers, and admirable plates to illustrate the unpublished text. The figure of the Ivory Nut Palm is one of the happiest instances of Mr. Fitch's successful pencil. Among other pieces of useful information, Dr. Seeman informs us that the frankincense used in the churches of Veraguas is obtained from a kind of Styrax—S. punctatum; that some Schultesias furnish the Gentian of Panama, called Canchalagua; that the very hard timber called Guayacan in Panama is furnished by a Bignoniaceous plant called Tecoma Guayacan; and that a Pepper called Ottonia glaucescens is used in Darien for stupefying fish. The present number of Dr. Seeman's work also contains his general observations upon the race of Calabashes or Crescentiads.

Garden Memoranda.

Northend House, Twickenham, the residence of Mr. Henry Bohn, the well-known publisher.—A brilliant Rose fête took place here a week or two ago, at which between 300 and 400 of the nobility and gentry attended. The Roses, of which Mr. Bohn possesses a very large and excellent collection, were then just in perfection, and being chiefly standards, furnished with clean stems and charming heads of flowers, they made an admirable display. Among new kinds was General Jacqueminot (H. P.), a capital acquisition, with a colour equal to that of Standard of Marengo. On the lawn, which is fringed with flower beds, were some very fine pillar Roses, which, when skilfully introduced, have a striking effect. A few of the beds are what is termed "mixed;" others are "masses." The former contained a fine collection of different kinds of Lilies in bloom. Some of the circular masses consisted of variegated Geraniums, intersected by stripes of Mountain of Light, which run through them and round their edges, and served to enhance their beauty considerably. Stocks, scarlet Kalosanths, and similar gay plants in other beds, all served to make a brilliant display, which by means of late flowering Roses, Fuchsias, Japan Lilies, scarlet Geraniums, Calceolarias, and other plants will be well sustained all through the autumn.

The lawn is cut off from the kitchen and fruit gardens partly by a belt of lofty trees and shrubs, in the midst of which is a winding walk, and partly by a wall covered with climbers and other plants. The fruit department, which is entered through a handsome iron gate, comprises about six acres thickly planted with bush and other fruits, and presents a fair crop of most things, especially of Morello Cherries on standards. Broad gravel walks traverse this ground in various directions, all of them bordered with standard Roses, Conifers, Rhododendrons, Kalmias, and other choice and valuable plants. Among the Conifers were Funeral Cypress, Fitz-Roya patagonica, and Saxe-Gothæa conspicua, both the two last named plants about 8 feet in height; Pinus Nordmanniana, which has wintered safely, as have also Libocedrus chilensis, and Deodars, which have not even been touched either by winter or spring frosts. Pinus insignis was hurt; but has recovered. A Cryptomeria, 10 feet high, lost four feet off its top, while another of less height, and a little sheltered, escaped. We also remarked some charming specimens of the Golden Thuja. Some of the smaller Conifers are growing out of round patches of Stonecrop, which is very plentiful. Specimens here and there of Irish Yew had Golden Yew worked on their tops, which made them look as if they bore great panicles of bright yellow inflorescence. Deutzia gracilis, both dwarfs and standards, was planted out, and doing well; of Dielytra there are many very large masses here, which wintered well, but were cut down completely by the April frost. They have, however, pushed again freely, and will probably flower in the autumn. The various Sikkim Rhododendrons, of which there are here nearly every variety, have been plunged in the open border to harden and ripen their wood.

On the lawn near the house is a fine old Catalpa, and we also remarked an example of the seldom seen Maidenhair tree (Salisburia adiantifolia).

In another part of the grounds, a half-sunk pit, with a ridge and furrow roof, has been converted into an elegant greenhouse. It has a circular pane of glass in one of the sides 3 feet in diameter, which greatly relieves the heavy look of the brickwork; and a sloping square pane of plate glass forms one of the ends. This pane is about 5 feet square; it permits the interior of the pit to be viewed with facility from the outside, and when full of flowering plants a novel and pleasing effect is produced.

On a south wall was a full crop of Apricots, Plums, Peaches, and Nectarines, it having been protected by coping and nets during the spring months.

New Plants.

72. Quercus rotundifolia. *Sibthorp.*

When Dr. Sibthorp was in Greece, he found an evergreen Oak, to which he gave the name of rotundifolia. The same species was found by Lady Liston near Constantinople, as we know from a specimen in our possession, communicated by the late Mr. A. B. Lambert. It seems to be distinct from the Spanish Ilex called *rotundifolia* by Lamarck. The leaves are thick, evergreen, [illegible]

almost orbicular, or even oblate, sparingly toothed, and thickly covered on the underside with a loose felt; when young they are woolly on both sides. The acorns are unknown. No doubt it is possible that this is a mere form of the evergreen Oak; but even in that case it would be welcome here. Its leaves, however, are much more coriaceous than is usual among Ilices, and their tendency to vary the customary form is not by lengthening, as happens even in Q. Gramuntia, but by widening, so as to become broader than long.

FLORICULTURE.

Culture of the Pelargonium.—Those who have the opportunity of frequently witnessing the fine specimens of this plant, which are annually brought to the Chiswick and Regent's Park exhibitions, may perhaps imagine that further directions on its culture are unnecessary; such is, however, unhappily not the case; Pelargoniums, even in good establishments in different parts of the country, are often very indifferently managed; and as the following is a method by which first-rate specimens may be produced, I have ventured to furnish it. I prepare the soil of an open border about the middle of July (this year I have been a little later) and plant my cuttings. The situation chosen is exposed to the sun during the middle of the day. In about six weeks, the cuttings will be sufficiently rooted to remove, and I pot them in 3-inch pots. To prevent the worms getting into the pots, they are placed on a temporary stage, and allowed to remain in a shady situation about three weeks, by which time the plants will be well established, and bear removing to a more exposed spot, where, under the influence of the sun and air, the wood will attain a necessary degree of hardness. Here they remain until taken into the house for the winter, which is generally done about the end of September; the time varies according to season, but they are housed before danger arises from frost. To improve the appearance of the plants, and make them compact and bushy, I stop them at the third or fourth joint, and shift them into 5-inch pots, using a little turfy loam and sand with the compost, to allow the water to pass freely through the soil. I give but little air during 8 or 10 days; the plants will be then re-established, and afterwards as much air may be given as the state of the atmosphere will permit until the beginning of December. The side-lights must be kept closed during the prevalence of cold winds. The pots by this time will be well filled with roots, and the plants will require shifting into 8 inch pots. The bone-dust which is now added must be used with caution, being of a drying nature it is not used near the surface of the soil; the shoots are again stopped at the third joint, the house is kept at a temperature of 45° Fahrenheit for about 10 days, and then allowed to fall to 40° or 42°, at which it is kept. The flues are damped two or three times every night, to prevent the air from becoming too dry, and a little top air is admitted whenever the weather is sufficiently favourable. About the middle of February, those plants which are intended to be large specimen plants are shifted again into 9-inch pots, those of vigorous growth will require a size larger. A small stick is now put to each stem to train them into uniform and well shaped plants. In the beginning of April, when fires are discontinued, the plants are syringed over the top three times a week; this is done about 4 o'clock, at the time the house is closed, and continued during three or four weeks. The house is well damped every evening, and the bottom and the top sashes opened the first thing in the morning, to allow the damp air to escape, and during the day all the air is admitted that can be given with safety. The plants when beginning to bloom are freely watered, and protected from the scorching rays of the sun during the middle of the day by means of canvas; and are thus retained in blossom a much longer time than would be possible if this precaution were omitted. When the plants are housed, the decayed leaves are removed; and whenever the green-fly makes its appearance, the house is well fumigated: to do this effectually, it must be performed when the plants are in a dry state, and they must be well watered the day following. When the flowering is over, the plants are exposed for about a fortnight to the sun and air to harden the wood before being cut down. Those plants which are intended as specimen plants the second season, after heading down are placed in a sheltered situation where little water is given, and as soon as the new shoots are an inch long are repotted into pots from one to two sizes smaller; the old soil is shaken from the roots and good drainage given. The plants thus treated are kept in better health during the winter, from having less soil about their roots. When repotted, they are placed upon a stage in a shady situation, removed into the house at the proper time, and undergo the same treatment the second winter as described for the first. When those plants which are intended for specimens begin to show their bloom, they receive additional attention; a little liquid manure is occasionally given, they are no longer syringed over the top, bees are kept out of the house by means of gauze blinds, and every precaution is taken to preserve their beauty; they are never allowed to flag from exposure to the sun, or want of water. I recommend every grower to begin early to train his plants for specimens; when the shoots are young and tractable, any direction may be given to the stems; a uniform and handsome appearance will arise from the practice, and the plants will require fewer supports and less pulling about; at the time they receive their final dressing the flowers should be so arranged as to present an equal distribution of bloom over the head of the plant, to effect which the stems must be secured to small Willow twigs. Practice alone can teach the art of dispersing flowers properly; the less art is employed the better, and the means should always be kept out of sight. The compost I use for my Pelargoniums is the following: Two barrowfuls of good maiden loam with the turf, one ditto well rotted cow-dung, three years old; this requires frequently to be turned over in winter, to destroy the worms and insects; one peck of silver sand, one ditto of bone-dust. For the winter repotting a little more sand is added. *S.*

National Floricultural Society, *July* 27.—Mr. Henderson in the Chair. Mr. Turner, of Slough, sent a box of seedling Picotees and Carnations, consisting of some very fine varieties. Amongst the former, Finis and Mrs. Headley, a beautiful red-edged flower, received first class certificates. A similar award was given to a scarlet flake Carnation named Exit. King John,

a very fine rose flake flower, looks as if it would also prove an acquisition. Mr. Cole, Nurseryman, St. Alban's, contributed three bedding Calceolarias, partaking of the habit of Albiflora, they were called Delicata, Novelty, and Purity, the latter a pretty free blooming clear white variety, that will doubtless be desirable for bedding purposes, also cut blooms of his seedling crimson variety, Eclipse. Mr. Bragg had a seedling purple flake Carnation, called Omer Pacha, and a seedling rose flake called Flora, both of average quality. Mr. Cole sent a variegated horse-shoe Geranium, Variegated Queen, which received a certificate of merit. Messrs. Wood and Son, of Maresfield, produced a box of their new Hybrid Perpetual pillar Rose, Duchess of Norfolk, a bright coloured variety and very fragrant; it received a certificate of merit. From Mr. Turner came two very pretty seedling Verbenas. Lacon Lacon, a white eyed bright pale pink sort, was awarded a first-class certificate; the other was called Wonderful, a dark purple kind with a large white centre, and very striking: this received a certificate of merit. From the same establishment was also a good blue Verbena, called Blue Beard, together with some other varieties, the best being William Barnes, crimson with a very dark centre, Madame Schmidt, Augustine, Mademoiselle de Fritense, Mrs. D. Tyssen, Mrs. F. G. Caley, (clear white, small blush eye), and Orb of Day, an excellent deep scarlet variety for bedding.

Carnations: *Mary*. The soil which some of the best florists use for these flowers is the top spit of a meadow taken off long before it is wanted, and frequently turned, in order to clear it of wireworms: it is by no means heavy soil; the only addition it receives is about one barrowful of good decayed stable-manure to three of loam. Sufficient material for the following year is mixed every August.

Miscellaneous.

Tropæolum tuberosum.—Although not cultivated as yet in the Society's garden, this deserves mention in an account of newly introduced esculents. It produces an abundance of very pretty yellow and red pear-shaped tubers from 2 to 3 inches long; and since it is as hardy as a Potato there is no reason to doubt its being cultivable; but it is a question whether its flavour, which is not very agreeable in its ordinary condition, can be improved in England, as it is in La Paz, its native country. Upon this subject M. Decaisne has some interesting observations to the following effect:—"The tubers of the Tropæolum tuberosum, designated Ysaño at La Paz, require to be prepared before they become edible. Indeed when they were prepared in Europe like Potatoes, and immediately after being taken up, their taste was very disagreeable. But a mode of making them palatable was discovered in Bolivia, and the Ysaño has there become, if not a common vegetable, at least one which is quite edible. The means consist in freezing them after they have been cooked, and they are eaten when frozen. In this state M. Weddell affirms that they constitute an agreeable dish, and that scarcely a day passes at La Paz without two lines of dealers being engaged in selling nothing except Ysaño, which they protect from the action of the sun by enveloping it in a woollen cloth and straw. The ladies of La Paz are all very fond of the Ysaño, and in the season of the taiachas large quantities are sopped in molasses, and taken as refreshments during the heat of the day. It will be perceived by the preceding, and by the preparation which the Ysaño must undergo, that the cultivation of the Tropæolum tuberosum, and likewise that of the Ulluco, has but little chance of being successful among us, our climate being entirely different from that of La Paz, the mean annual temperature of which (50°) is, however, little different from that of Paris (51,44°). Many plants can resist intense cold in the very dry climate of La Paz, where the dryness of the air allows several Cacti to grow as on the elevated table-lands of Mexico, although the thermometer falls nearly every night below the freezing point. But such is not the case in our moist climate; for we know that a slight fall in the temperature is sufficient, either in spring or autumn, to destroy the stems of all herbaceous vegetables." *Journal of Hort. Society.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Conservatory, &c.—The sudden occurrence of bright hot weather, after a long period of cold and gloom, is very trying to plants in flower, especially to Fuchsias and other greenhouse plants, which, unless carefully shaded and liberally supplied with water, will soon drop their flowers. It is seldom convenient to use the syringe freely in this house, but the surface of the beds should be kept moist in warm weather, which will greatly assist in preventing excessive dryness in the atmosphere, and prolonging the duration of the bloom. See that the soil about the roots of specimens growing in the borders, and the twiners, is not allowed to get dry under the surface, which sometimes happens through keeping the surface continually moist by slight sprinklings. Specimens that have matured their season's growth should, however, be more sparingly supplied with water at the root, in order to promote the ripening of the wood. Orange trees, and other plants known to be liable to the attacks of red spider, must be frequently examined for this pest, and well washed with the engine immediately it is perceived, taking care not to bruise or injure the foliage, and placing the affected plants so that every leaf may be reached. Also keep a sharp look-out for other insects, and spare no trouble to keep these under. Go over the twiners frequently, and keep the shoots nicely regulated, cutting out where necessary, to prevent their being too thick, and shortening any that hang down so low as to interfere with other things. Attend promptly to the removal of decaying specimens before they become unsightly, and also see to having plenty coming forward with which to supply their places. Cold Pits.—The stock here will probably require re-arrangement about this time, as some of the specimens, having completed their season's growth, will be better in a shady situation out-doors, and their removal will allow of giving more space to those left. Young growing stock, and late flowering plants that have yet to make their season's growth, should receive the most careful attention, as, if well treated, they will make rapid and vigorous growth at this season; and nothing in the way of good soil, careful potting, or proper accommodation, will compensate for the want of this. Indeed, there is no possibility of securing free growth from hard-wooded plants in bright hot weather, except by moderate shading, and maintaining a moist atmosphere by sprinkling the plants overhead morning and evening, and air must be given liberally to keep the wood strong, avoiding, as much as possible, exposure to drying winds. Any of the specimens which require more pot room should be shifted as soon as possible, taking care to have the ball moist, and keeping them rather closer, and the atmosphere moister than usual, for a fortnight after potting. Get the young shoots tied before they begin to fall about and crowd, and injure each other. Cut down Pelargoniums as soon as the wood is properly hardened, and keep them very sparingly supplied with water at the root until they start into growth; but sprinkle them over-head frequently, which will cause them to break more strongly. Get cuttings of favourite sorts rooted, and attend to those that were rooted early in the season. Continue to pot Cinerarias as strong suckers can be obtained, placing them in a close part of a cold frame until they get established in their pots, but avoid placing them in heat where they speedily become a prey to insects and mildew, and never do any good.

FORCING DEPARTMENT.

Pinery.—Take advantage of bright warm weather to strengthen the growth of plants in dung frames, by giving a free supply of air while it can be done without lowering the temperature too much. See, however, that young stock is not allowed to become too dry at the root, as this and the change of atmosphere recommended would probably cause some of them to fruit prematurely. Keep the atmosphere as moist as possible for plants swelling their fruit until they begin to show symptoms of colouring, and give them a liberal supply of manure-water at the root; but while colouring avoid moisture as much as possible. A slight shade will be indispensable for plants that are near the glass and growing freely, to prevent their leaves getting scorched, but use a thin material, and this only when it cannot be dispensed with. Vineries.—Where the fruit has been cut some time and the Vines seem inclined to go to rest, keep the atmosphere as cool and dry as possible. Do not allow the foliage to become a prey to insects, but endeavour to preserve every leaf until its natural period of decay. Give abundance of air to fruit colouring and do not allow plants of any kind to remain in the house to cause damp, which if allowed at any time to settle on the berries spoils the bloom. Keep a watchful eye for insects in the late houses, and if spider or black thrips is perceived wash the infested leaves with a sponge, choosing a cool morning for the operation. This will be more effectual than washing with either the syringe or engine, will hardly occupy more time, and there will be no danger of spoiling the bloom, and some excellent growers avoid syringing after the berries are set, believing that it injures the bloom. Keep up plenty of moisture in the atmosphere, and give inside borders a liberal supply of manure water. Peaches.—Trees from which the fruit has been gathered should be freely exposed to air, leaving the ventilators open night and day, and every means should be used to preserve the foliage in a healthy state as long as possible; for except this is attended to there will be no possibility of securing well ripened wood. Do not allow the borders to get dry all at once because the fruit is gathered, but keep them moderately moist until the wood appears to be well matured. Where the fruit is ripening it will be advisable to shade the house on the forenoons of bright hot days, which will prolong the supply, and will not injure the flavour but rather improve it.

FLOWER GARDEN AND SHRUBBERIES.

After the plants have fairly covered the ground, the great point will be to preserve that symmetrical appearance over the whole of the beds which, in a geometrical flower-garden, is absolutely necessary to render the effect pleasing. To do this will involve frequent attention and considerable labour for some time to come, as some of the plants will incline to grow much too strongly for others, and will also be continually encroaching upon the edgings, extending beyond their proper limits. Plants of a weakly habit of growth, as the Melindres varieties of the Verbena, &c., may be assisted in dry weather by an occasional watering with manure water; but for those that grow too strongly there is no help except thinning out and pegging down the shoots. In shortening back shoots that incline to extend beyond the edges of the beds, avoid the least appearance of formality, by thinning out the under shoots, and keeping all parts of the bed of equal depth or thickness, or allowing the plants to, as it were, die away at the edges, according to the arrangement. Climbers on walls must be attended to as they advance in growth, keeping the young shoots neatly laid in, &c. The climbing Roses will also require to be gone over occasionally, for the purpose of cutting off the decayed blooms; and any weakly old wood should be cut out at the same time, to allow of laying in the strong young shoots, which will bloom much finer next season than the old wood would do. Phloxes and other herbaceous plants must be neatly tied up, avoiding huddling the shoots together, as is sometimes done even about well-kept places, to save time. Any of the perpetual blooming Roses that have flowered very freely should be assisted by a liberal watering with manure water from the stable or farm-yard tank; indeed, too much of this can hardly be given to any of the autumn-flowering varieties.

FLORISTS' FLOWERS.

Carnations and Picotees.—In some localities these favourite flowers will be getting fast into bloom; the plants in pots should be removed under an awning similar to that used for Tulips. Here they may be arranged on a raised platform or not, according to the taste of the amateur—the Picotees grouped on one side, the Carnations on the other, taking care that the tallest plants are behind, and at the same time contrasting the colours as much as possible. Pipings may be put in on a gentle hotbed, the grass or shoots are usually layered at a somewhat later period; but where there are small ones, and in a position that cannot well be brought down to layer, it is a good plan to obtain plants struck from cuttings. Plant out in showery weather Pink pipings which have taken root; or, should the weather prove dry, cover the bed with any light awning, keep them moderately moist, and they will speedily establish themselves. Ranunculus roots may be taken up as soon as the foliage turns yellow, for should rain ensue, they would emit fresh fibres, and, if then taken up, their destruction would be certain.

HARDY FRUIT and KITCHEN GARDEN DEPARTMENT.

Select a bit of open light ground, and prepare it for winter Spinach, by giving it a heavy dressing of manure, and trenching or digging it deep. This crop should be sown at once and in drills in beds, allowing wide alleys, so as to be able to gather the crop without treading the ground; also provide ground for winter Onions, &c. Finish planting out Broccoli and Winter Greens, as speedily as ground can be obtained; for unless the autumn should prove very favourable, those planted after this time will not attain much size. Get Endive planted out on very rich soil; also Lettuce to maintain the succession, and attend to other small salad herbs. See to securing a good supply of Parsley for winter use, which is always largely in demand. A good bed should be planted in some convenient place for protecting it during severe weather in winter. The soil should be of a light texture, deep, and thoroughly drained, as a preventive against damp in winter. New plantations of Strawberries should be made at once, selecting the strongest young plants, and keeping them well supplied with water until they get established. Attend to Celery and all recently planted crops with water, if the weather continues warm and dry.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending July 27, 1854, as observed at the Horticultural Gardens.

July.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind.	Rain.
Friday 21	26	30.173	30.163	83	46	64.5	62	63	S.W.	[illegible]
Satur. 22	27	30.201	30.148	84	45	64.5	65	66	S.W.	[illegible]
Sunday 23	28	30.159	30.152	89	56	72.5	64	65	S.	[illegible]
Mon.. 24	29	30.103	30.051	85	57	71.0	65	65½	S.E.	[illegible]
Tues. 25	[illegible]	30.053	30.040	89	58	73.5	66	66	E.	[illegible]
Wed. 26	1	30.103	30.052	75	55	65.0	67	67	E.	[illegible]
Thurs. 27	2	30.052	30.078	67	51	59.0	64	65	S.E.	[illegible]
Average.		30.135	30.083	81.7	52.5	67.1	64.7	65.3		[illegible]

July 21—Very fine throughout; clear at night.
— 22—Very fine, with a bright, entirely cloudless sky.
— 23—Cloudless and very fine; excessively hot.
— 24—Sultry with haze; very fine; lightning at night.
— 25—Very fine; excessively hot; lightning at night.
— 26—Very fine; slight dry haze; cloudy, heavy rain in the night.
— 27—Easterly haze; very fine; overcast; rain.

Mean temperature of the week, 4½ deg. above the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending July 29, 1854.

July and Aug.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 30	73.8	51.0	62.4	14	0.88 in	[illegible]	3	3	1	1	[illegible]	[illegible]	[illegible]
Mon. 31	74.2	51.4	62.8	11	0.66	[illegible]	3	[illegible]	[illegible]	3	[illegible]	[illegible]	[illegible]
Tues. 1	75.7	51.9	63.8	14	1.23	[illegible]	[illegible]	5	2	3	[illegible]	6	1
Wed. 2	75.1	53.4	64.2	13	1.03	1	4	2	—	[illegible]	[illegible]	4	[illegible]
Thurs. 3	74.2	51.6	62.9	15	0.50	[illegible]	3	3	1	3	10	4	1
Friday 4	75.4	52.0	63.7	14	0.85	1	3	[illegible]	3	3	11	4	1
Satur. 5	73.6	52.8	63.2	13	0.43	—	8	4	2	4	9	3	3

The highest temperature during the above period occurred on the 1st, 1846—therm. 92 deg.; and the lowest on the 3d, 1847—therm. 38 deg.

Notices to Correspondents.

Aquatics: *W T.* If what you call a Sacrit Bean is the Nelumbium, as we suppose, then, in that case, you have done all you can for it. The withered leaves will not recover. If it forms new ones give it plenty of sun, no shade, and in the winter pour the water off, and allow it to dry in its own mud, keeping it so till you want to start it in the spring.

Books: *S S.* Any *respectable* bookseller can procure it, if he chooses, in the ordinary course of trade. We believe it is published by Longmans.

Courtyards: *J T.* The only materials that will prevent weeds from growing through them are asphalte and Portland cement; the latter, however, does not stand well when exposed to heavy traffic.‡

Delphinium: *A B.* Your seedling is neither new nor any improvement upon what is called mesoleucon.

Ginger: *J T.* It must have a rich soil, well drained, and plenty of heat and moisture while growing, therefore your conservatory will not suit it; it only does well in a hotbed, Pine pit, or warm stove. As it ripens, gradually withhold water, till at last you give none at all. After the crop is gathered, the oldest tubers may be wintered in dry sand for planting again. As to Fuchsias, there are none that we know of with white corolla and red calyx and tube.‡

Names of Plants: *J C X.* Leycesteria formosa, from the Himalaya Mountains.—*R A.* Centaurea odorata.—*S J R.* Calla pallida.

Peas: *F. & A. Dickson & Sons.* Having made the necessary enquiries, we are able to say that your Early Favourite Pea is a distinct and very useful variety among the class of second earlies, to which it belongs. The pods are unusually full.

Window Gardening: *F T.* We presume that your window plants suffer from the dryness of air and the absence of effectual ventilation.

THE LONDON MANURE COMPANY'S WHEAT MANURE, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. EDWARD PURSER, Sec.
Bridge Street, Blackfriars.

SEWAGE CHARCOAL MANURE.—This highly fertilising Manure, which is Peat Charcoal completely saturated with London Sewage, will be found most efficient to every species of crop; more especially for Peas, Beans, Turnips, Mangold Wurzel, and other root crops. It will produce a greater return for the outlay than Guano or any other Manure at an equivalent value: it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained at the SEWAGE MANURE WORKS, Stanley Bridge, Fulham, at 4*l.* per ton, and in quantities less than half a ton, at 5*s.* per cwt., for ready money only: and in quantities not less than a ton, will be delivered at the London Termini of the Railroads free of charge for cartage. No charge for sacks.

It may also be had from Messrs. G. GIBBS & Co., 26, Down Street, Piccadilly, Agricultural Seedsmen, Agents for London: and from all the other Agents of the Company.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7*l.* per ton; Superphosphate of Lime, 7*l.*; Sulphuric Acid and Coprolites, 6*l.*

Office, 69, King William Street, City, London.

N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

PEAT CHARCOAL.—The undersigned have a cargo of this valuable Deodorizer and fixer of Ammoniacal matter, on Sale. Apply to MARK FOTHERGILL & Co., 204A, Upper Thames Street.

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures, Linseed Cakes, &c.

WM. INGLIS CARNE, 10, Mark Lane, London.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and dispatch.

Gentlemen desirous of receiving instructions in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.

Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

PATRON—His Royal Highness PRINCE ALBERT.
PRESIDENT OF COUNCIL—Earl BATHURST.
PRINCIPAL—Rev. J. S. HAYGARTH, M.A.
PROFESSORS, &c.
Chemistry—J. A. C. Voelcker, Ph.D., F.C.S.
Zoology, Geology, and Botany—James Buckman, F.G.S., F.C.S.
Veterinary Medicine and Surgery—G. T. Brown, M.R.C.V.S.
Surveying, Civil Engineering, and Mathematics—F. Armstrong, C.E.
Manager of Farm—G. Austin.

The next SESSION will begin early in AUGUST. The Annual Fees for Boarders vary from 45 to 80 guineas, according to age and other circumstances. The Fee for Out-Students is 40*l.* per annum. The College Course of Lectures and Practical Instruction is complete in one twelvemonth—though a longer course is recommended. There is a department for general as well as for agricultural purposes. Prospectuses and information can be had on application to the Principal.

The GUIDE TO THE ROYAL AGRICULTURAL COLLEGE FARM may be obtained of HAMILTON, ADAMS, & Co., Paternoster Row, London; and EDWIN BAILEY, Cirencester. Price 1*s.*

SCHOOL FOR GENERAL AND SCIENTIFIC EDUCATION (especially with regard to AGRICULTURE), Wickham Market, Suffolk, conducted by Mr. G. DOWNES.

At this establishment a sound and liberal education may be acquired on moderate and inclusive terms.

Soils, Minerals, and Manures carefully Analysed.

The Agricultural Gazette.

SATURDAY, JULY 29, 1854.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY, August 1 / WEDNESDAY, — 2 / THURSDAY, — 3	Meeting of the Highland Agricultural Society at Berwick.
WEDNESDAY, — 2 / THURSDAY, — 3	Agricultural Improvement Society—at Armagh.

MOST of our readers will remember the extract which we lately published from a letter on Agricultural Education, by Viscount EBRINGTON. His lordship's plan was brought under the consideration of the delegates from the local institutes in union with the Society of Arts at their recent conference. There was no very definite expression either of concurrence, or otherwise, elicited, but the Society was requested to direct their attention to this subject with a view to further action.

We have always felt that a body which has so invigorated the Mechanics' Institutes of the country might do immense service to its agriculture, if it would in like manner endeavour to inspirit the Local Agricultural Societies. Whether these will ever prove the proper centres of an educational influence such as Lord EBRINGTON desires to see in exercise is more than doubtful; but even though the result of such an effort should merely be the restoration of them to something like their life and energy of 10 years ago, good would be effected. The more important of them—our county, and still more our large provincial societies—might very well so far be connected with the proposed board of examiners as to give a local sanction to the diploma they would grant—and this would probably increase its substantial value to the winner of it, although its intrinsic merit might not be affected.

The discussion on the proposal, as very shortly referred to by Lord EBRINGTON, could hardly bear the name. One portion of his proposal was rejected or postponed—the other, which had regard only to the first stages of the movement, was accepted, and we may hope that in accordance with the resolution then passed, the council of the society will direct their attention to the possibility of establishing some such means as the proposal indicates, for granting its diploma to successful candidates after subjection to an examination, such as "educated Englishmen" ought to pass. The terms and methods of such an ordeal are, of course, proper for future consideration: it is a matter of importance to have succeeded in the mean time, in bringing it prominently and acceptably before so capable and energetic an educational association as the Society of Arts.

ON Wednesday Mr. MECHI's annual gathering took place at Tiptree Hall farm. His invitation gathered 300 of all ranks, noblemen and commoners, clergymen and laity, men of science and of practice, Englishmen and foreigners, men whose only common bond of union probably, but that a most efficient one, was interest in the agricultural experience, the public service, and above all the personal merits of their host. This large number spent a most delightful day in the examination, under Mr. MECHI's guidance, of the methods and results of Tiptree management, and in listening to his most lively and instructive commentary, as each successively passed under our review. The crops of Wheat and Oats and Barley are this year excellent—more than 5, and 9 or 10, and 6 or 7 quarters per acre being at present fairly promised by them respectively. The Mangold Wurzel crops are very forward, and in vigorous growth. The Italian Rye-grass is not so luxuriant as might have been expected. The contrast between neighbouring fields, where the dividing fence is the Tiptree boundary line, was at many points most obvious, and the merits of the liquid manure system, as compared with ordinary farm management, were confidently, and we believe justly, deduced from it. This was of course the leading idea insisted on throughout the day, and evidence was adduced from other quarters telling even more strongly in its favour than Tiptree farm itself. Thus, a letter was read from Mr. KENNEDY, of Myre Mill, stating that during the past month he had kept on 33 Scotch acres (rather less than 40 statute acres) of Italian Rye Grass, 250 "large cattle," 465 sheep, 200 pigs, and 25 cart-horses. It is not too much to say that those 33 acres must in that time have yielded nearly 800 tons of food. Whether this was the first or second cut we do not know—probably the latter. But it is obvious that under the dripping skies of Ayrshire the liquid manure system, as developed at Myre Mill produces results which are not dreamt of by the most sanguine agriculturists in the south, and which Tiptree itself, under its drier climate, will probably never parallel. Another Ayrshire farmer, Mr. TELFER, was present on the ground, and stated that he had made upwards of 20 tons of hay per Scotch acre per annum of his Italian Rye-grass at three cuttings—the two first of which were 25 tons of Grass apiece, and the third upwards of 15 tons. Mr. CAIRD electrified the company in his address, after dinner, in the tent, by an announcement to the above effect.

We remember in Captain BASIL HALL's charming book of travels, that he gives an account of a leap which he once saw taken clean out of the water by a fish some 60 feet in length, but he introduces it by several pages of introductory discussion on the policy of extraordinary statements of this kind. Admitting the duty of a writer not to risk his credibility even by the statement of a *true* story, if it bore an extraordinary degree of improbability about it, he nevertheless *does* tell the story, having, however, first adduced what evidence he could collect from other witnesses of similar feats by whales elsewhere. We could have wished that Mr. TELFER's experience had been illustrated and argued in like manner, instead of being abruptly announced; for it was not believed. Mr. KENNEDY's statement is, however, so far corroborative of it, that in his case too, 24 tons per acre must have been yielded at a cutting—and leaving it for Mr. TELFER, if he shall think it necessary, to give a more detailed account of his experience, we merely urge that this corroboration of his statement is strongly in his favour.

Among the many other points alluded to by Mr. MECHI in the course of our walk, were the folly of wasting town sewage and sending to Peru for an expensive substitute; the importance of determining by continuous experiment and observation the right seeding per acre under altered circumstances of soil and cultivation; the substitution of Vetches and Turnips for the long fallows prevalent on the stiff soils of the neighbourhood—the policy of winter forking by hand-labour—the mischief done by hedgerow timber—the merits of the several machines which were exhibited—Mr. SPOONER's and Mr. CHANDLER's rival water drills—Mr. GARRETT's threshing machine — Messrs. DRAY's and Mr. GARRETT's rival reaping machines—all of which were shown in operation.

The after-dinner portion of the day was as amusing and instructive as any of it. Mr. MECHI was himself as full of hearty indignation and sanguine expectation in reference to past and present and the future of English agriculture as on any previous occasion, and Mr. CAIRD gave a most substantial and instructive speech in reply to the toast of "English and Foreign Agriculture," with which his name had been connected. The company separated about 8 P.M., feeling, we are sure, more strongly than ever, that if, as he asserts, the battle of agricultural progress has been fought over Mr. MECHI's body, it has lost during the encounter none of that genial, hearty, benevolent, enthusiastic spirit by which it has hitherto been inhabited.

SURROUNDED by a sea-coast so redundant in fish, our economy of the refuse as manure is deserving of more detailed investigation than we were able to bestow upon it when last addressing ourselves to this subject.

Now that the warm weather has set in, the smell of a fishing village is of itself sufficient to prove that the amount of volatile matter escaping into the atmosphere is of no ordinary magnitude; and although less perceptible to the senses, the quantity of soluble matter washed from fishermen's dunghills into the ocean is certainly nothing less. Altogether the loss of fertilising elements is immense.

During the herring fisheries one barrel of offal is derived from 14 of fish, or 14 barrels of herrings yield one of refuse, and the proportion will be greater in some other kinds of fish, as the haddock and cod, where the head and part of the backbone are removed in the curing, while a large quantity of worthless fish is always caught in nets, and never brought to land; and when we further add to this the night soil of the fishing villages themselves, the result will be a large per centage of the weight of the whole "take of fish," while in some exceptional cases the whole take itself is sold to farmers at a few shillings per load for manure.

The present manner in which this immense supply is disposed of, we need hardly stop to describe, but at once proceed to the more important question of securing and applying it to the soil; and here the diversity of practice which has arisen of late, or the liquid manure systems and solid manure systems of modern times, call for a corresponding diversity in the supply and manufacture of artificial manures of this kind. In other words, we must either have a soluble manure fit for applying with the hose and jet, or a solid one in a sufficiently powdered state for applying with the drill.

The raw materials themselves are so various in value as to require separate manufacture prior to forming a general compound for application either in a liquid or solid form. Shells, for instance, collected in procuring bait, and forming a conspicuous item in every fisherman's dunghill, will require different treatment from gut; and the same may be said of bones. To throw shells, bones, blood, gut, coal, peat, or wood ashes, night soil, and urine into one open and exposed dunghill, to undergo fermentation, is obviously to sacrifice the more valuable elements of one portion before any effect is produced upon another—a conclusion too well known to require proof.

Shells and bones may be crushed or ground to dust, in which state they will ferment more rapidly when mixed along with the others; but the quantity of ashes will be insufficient to absorb the volatile matter given off during such a process. A large addition of ground peat, sawdust, rotted turf, or light articles of this kind, will be required besides. At present earth is generally used, such as the scourings of ditches or headlands gathered up by those who purchase the offal of herrings, &c., and the quantity required is considerable, as many of our readers are doubtless aware from experience; but earth is too heavy and worthless a substance, entailing a serious loss of time and expense in the manufacture and application. No doubt the absorbent powers of dried clay are great, as the successful practice of China proves; while for sandy and calcareous soils it possesses peculiar recommendations besides, and, therefore, for such may be used; but applied to clay soils, it is worse than useless, while its agency in the work of decomposition may be questioned. It is otherwise with the vegetable substances just

noticed, for they are not only good absorbents, but also subject to decomposition, forming enriching manures of themselves.

Were covered manurials erected in every fishing village, so as to exclude the influence of heat during summer, and frost and rain during winter, and the whole refuse of every "boat's crew" thrown daily into them, along with a sufficiency of sawdust, peat, earth, &c., shells and bones being previously crushed or dissolved in acid, there cannot be a doubt but a very valuable manure may thus be formed, while the sanitary state of such villages would be very much improved.

Several practical questions may here arise as to whether fishermen are the proper manufacturers of such guano—or whether their landlords should not erect and let to regular manufacturers such manurials, they purchasing the raw products of fishermen daily—or whether farmers should not do so, thus saving the erection of village manurials, excluding monopoly, and ensuring to fishermen a better market for their refuse.

Experience must be left to answer such questions satisfactorily. None of these plans would interfere with the successful working of the others. Fishermen, for instance, if they found they could make more of the manufactured article than the raw material, would be at liberty to do so; while farmers, who had sawdust, peat mould, &c., at hand, could purchase refuse at so much per load daily, if they found they could make the cheapest and best manure themselves. The regular manufacturer in large villages would, however, have many advantages, and no doubt would be able to make a better and cheaper article than either fishermen or farmers, giving more for the raw material at the same time, but he could have no monopoly if landlords took care of their own and tenants' interests. Sea-weed could be gathered, dried, ground, and added to the mass, or decomposed in a green state along with peat mould, &c., and afterwards added, or sold separately, as desired.

With resources so great and promising, it is manifest therefore that something should be done to turn them to advantage. More than the landlords of fishing villages are here interested; and were an experiment fairly made, there is no doubt but much comparatively idle capital would find a profitable and productive investment. Fishermen may be as idly disposed as they are represented to be, but they are not insensible to the value of money; and were they to receive a sure price for all sorts of fish brought to land, much of the squalid misery and idleness which characterise them would disappear.

THE BREEDING OF HORSES.

In a communication which I addressed a short time since to the Royal Agricultural Society of England, on the subject of the best means to adopt for the improvement of the breeds of horses calculated for our cavalry and artillery services, I recommended a general distribution of rewards throughout the country, by means of the various societies, sufficient to cause the most useful well-bred weight-carrying mares to be devoted to the stud instead of being, as at present, worn out in ordinary labour; and a three parts bred weight-carrying horse to be employed as a stallion in the place of the third-rate thorough-bred horse now too generally used, by which union we may reasonably expect a half-bred horse capable of carrying a good weight, with all the qualifications of an excellent hack, and with all the advantages derived from an equal admixture of pure breed. These observations, however, though the result of 25 years' careful and somewhat extensive observation and experience, are condemned *in toto* by the writer, who occupied the editorial chair of the *Mark Lane Express*, on Monday, July 3. This gentleman, not content with confounding me by his own experience or opinion alone, ventures also to fire at me two paper bullets from the pens of two "own correspondents" of the *Express*, which, however, appear to me to have but a secondary bearing on the subject. If I am not entirely annihilated by this combination of attacks—if I still survive after being thus charged and ridden (written) down by such thorough-bred (riders) writers—I hope my antagonist will attribute it to that breed which, as he says "carries the dandy officer through the many hardships of a campaign," the same mystical purity of blood from which a greyhound "gathers the conquering speed of his course," and the "foxhound the bottom that sees him through a run," which wondrous faculty, he should add, enables a Shorthorn or a Leicester to get fat quickly, an Alderney cow to give very rich cream, a Cotswold sheep to have very long wool, an Essex pig a very short tail, and, I was going to add, a Spanish donkey very long ears. Wonderful faculty that secures for the fortunate inheritor the possession of such opposite qualifications as we find in the thorough-bred horse and the well-bred pig, both aristocrats in their way, one remarkable for his spirit, activity, and disposition to keep lean, the other for his stolidity, inactivity, and propensity to get fat. A golden recipe is also gratuitously given us wherewith to judge man, horse, or hound. For the future (there is no getting on without it, the writer observes) our first enquiry will be "How is he bred?" Once satisfied on this point, and we have but little to fear. It is quite true that some of the veriest weeds we have seen bought for a ten-pound note to run before the bars of a stage, could boast a lineage of unspotted purity in direct descent from the Darley Arabian or Flying Childers. It is equally true that some of the worst hacks we have ever known—daisy cutters with crooked legs—have been either quite or only one remove from thorough-bred. We must forget all this for the future, for all we need to care about is—how is he bred? To drop, however, the ironical vein, which we have only pursued in order to show the great absurdities into which the writer may be led by pursuing the argument on which he founds his article, it may be well to observe that when a critic, armed with the authority, and protected by the *incognito* of an editorial leader, ventures to exercise his skill on an antagonist, he should take care, not only that he thoroughly understands the subject before him, but also that he does not misrepresent the party he attacks. He says that my advice, if followed, would cause the *degeneration* of our breed of saddle horses, and that I at once *ignore* the keystone to our success—the agent that has made the English saddle-horse what it is. Now, if I condemned, despised, or underrated the thorough-bred horse, why should I recommend a stallion possessing three-fourths of the very breed that I condemn? Surely this alone ought to be sufficient to shield me from the censure heaped upon me. If the writer condemns cross-breeding and half-breds, why not keep to thorough-breds altogether. If, as one of the writers quoted states, the thorough-bred horse makes the best of hunters, the noblest of chargers, and equal to any for the phaeton or drag, and a steady cart horse to boot—if he is capable of carrying 15 stones across the country, why not breed thorough-bred horses for the cavalry entirely? Or, better still, go to the fountain-head at once, and mount our heavy dragoons on Barbs and Arabs—the progenitors of our blood horses—and who, though little more than 14 hands, can boast a pedigree direct from the Prophet's mares. The writer quoted instances of the case of four thorough-bred horses, two of them great winners, and two the sires of winners, each capable of carrying 15 stones. Granting this, for the sake of argument, there are yet not 20 such horses in the kingdom, or the world; and what chance is there of the ordinary breeder availing himself of such animals, when their services are gladly secured by the owners of mares for racing purposes, at such sums as ordinary horses are expected to be bought for? If, then, these first-rate horses cannot be procured, the breeder must be contented with such as he can get, and is generally obliged to put up with a third-rate animal. My opponent concludes by stating that if my recommendation is followed, Mr. Strafford may at once burn his herd-book, and buy up some half-bred bull for a further improvement in the short-horn; in other words, because I recommend, for the purpose of breeding, half-bred horses of greater substance, that three parts bred weight-carrying stallions should be used instead of second-rate thorough-breds, *ergo*, the pure short horn must be improved by the use of a half-bred bull. I will leave our readers to determine whether this is a logical conclusion. If I had recommended a half-bred stallion to improve our breed of race horses, there would have been some seeming justice in the parallel, but not otherwise.

I respect a good pedigree as well as my opponent, but for no mystical or superstitious regard, but because it assures me that much care has been employed for many generations past to secure the perpetuation of certain excellencies, and the avoidance of certain defects, by carefully weeding out the latter and retaining the former; and, consequently, that there is a much greater probability of obtaining what we require by pure breeding than by using a cross, which may introduce certain faults possessed by his progenitors, if not by the animal himself, with whom the cross is gained.

This is the only rule that holds good without an exception with regard to purity of blood in all animals; and when once a breed is established by long-continued vigilance and care, by the cutting off and condemning, without mercy, the slightest defect—though faults may appear and re-appear, like the hundred-headed monster of antiquity, it is far better than to rest satisfied and preserve the breed pure. If the improved short-horn is the animal that at the earliest age will convert a given quantity of food into the utmost amount of butcher's meat—and these are the qualifications we want—there is no occasion to cross; so likewise with the sheep and the pig, but in our saddle-horses we require those qualifications which we can only secure by the happy combination of different breeds. We obtain from the thorough-bred horse the small head, lengthy quarters, powerful thighs, extended stride, great speed, and unconquerable bottom; but it is from the native breed, the Norfolk trotter, or the old English hunter or hack, descendants to a certain extent of the ancient Spanish horse, considered by the old Duke of Newcastle as the best horse for the *manége* in the world, that we acquire the oblique shoulder, elevated withers, good forehead, safe walk, and fast trot, accompanied by a larger and wider frame, greater bone, and more powerful digestive organs than the blood horse possesses. When once these varied qualifications are happily combined, as it often is in the three-parts bred horse, it is a *fact accomplished*—the means in our hands for continued excellence, by which we can impart to the next generation the requisite amount of breeding, without that risk of weedyness which so often attends the first cross. In judging the merits of a breed I would not, as one of the writers suggests, take the best specimens, but rather the average of the breed; and when I find that the thorough-bred horse, as a rule, has a smaller carcase, narrower chest, longer legs, smaller bones, and slighter sinews, than the half or three parts bred horse, even although these bones and sinews may be relatively stronger than in other horses, I surely would not select the thorough-bred for the purpose of imparting greater weight and substance to the expected offspring. Nothing can be more unscientific than to compare breed and pedigree in horses with that in man. Why, I have known a nobleman, weighing nearly 20 stone, whose family came over with William the Conqueror, but whose physical conformation resembled far more a Suffolk punch or an Hereford ox than that of a thorough-bred horse; and I have seen a wiry plebeian, a "pariah" if you please, whose ancestors no herald could trace, but whose spare and muscular form and untiring energy presented a close resemblance to that of a thorough-bred horse. Our boxers, pedestrians, opera dancers, and professors of gymnastics, can rarely boast of much pedigree or breed, and yet they may justly be considered as the most perfect specimens of the human form. The fact is, the human race has not been kept distinct, like that of animals, and thus we find every variety of size, temperament, and physical conformation in every rank of life, and mental development of every degree in bodies of widely different forms and capacities. *W. C. Spooner.*

THE ROTATION OF CROPS.

Since the investigation of the chemical composition of our crops has increased in minuteness and precision, the explanation of the cause of their rotation has become more difficult rather than more simple. It is familiar to every one that the necessity for a rotation has been usually attributed to different crops removing different inorganic constituents from the soil. Thus certain plants require for their luxuriant growth a large quantity of potash, and they must be followed in the rotation by some other plant which does not extract that element from the soil, or at least only in a comparatively small quantity; and each individual crop can only be successfully repeated, when, by the lapse of time, a sufficient quantity of its characteristic constituent has been liberated from some inert form of combination in which it exists in the soil. The differences which the earlier analyses showed between the ashes of different plants have become less marked, with the advance of more accurate investigation; and that, coupled with the unequivocal fact that all fertile soils contain their valuable mineral constituents in quantity sufficient to supply an almost endless succession of crops, though not altogether excluding this view, has certainly thrown difficulties in the way of the unhesitating adoption of what we once supposed so unquestionable a doctrine.

Mr. Lawes, in one of his recent papers, has suggested another view, of much ingenuity, and deserving of notice; though I confess it scarcely appears to me to be compatible with all the facts at present known to us. He believes that the necessity for a rotation depends not so much upon the exhaustion of the inorganic constituents of the soil, as of its nitrogen, and that the exhausting crops are those which require for their growth the largest expenditure of that element. His experiments have led to the conclusion that nitrogen is not a necessary constituent of the manure applied to the Turnip, while it is absolutely essential to the more exhausting Wheat, and to the cereals generally. Of course it is not meant that no nitrogen is required for the Turnip, but simply that the quantity contained in the soil or derived from the air (in the form of ammonia or nitric acid), is sufficient for its requirements. But with Wheat, not only must nitrogen be present in the manure, but it must be there in a quantity out of all proportion to that actually assimilated; in other words, only a small proportion of the nitrogen of the manure makes its appearance in the plant, the rest being dissipated in some form or other. Mr. Lawes, founding on certain experiments which show that plants exhale nitrogen, believes that the nitrogen which has disappeared has actually undergone this process. In doing so (if I do not misunderstand his view), it acts, so to speak, as a carrier of carbon; that is to say, the quantity which passes through the plant stands in a direct relation to the quantity of carbon assimilated and converted into non-nitrogenous compounds, such as starch, &c. Hence the cereals, which contain in their seeds a large quantity of such compounds, require the passage through their system of abundance of nitrogen, and consequently exhaust the soil. On the other hand, the Bean and leguminous plants generally, which yield a seed containing a trifling proportion of carbonaceous compounds, though rich in nitrogen, do not exhaust the soil, because they take only enough of that element to produce their nitrogenous compounds, and do not require that much larger quantity which in other plants is not retained in their system, but is expended merely as a means of causing the accumulation of a sufficient quantity of starch, &c., in their seeds.

Founding upon this view, he points out that the Turnip—which, when grown for its bulb, does not exhaust the soil, because it does not require nitrogen—becomes a scourging crop when grown for seed, which contains a large quantity of oil, and hence requires the expenditure of that element. Ingenious as this view is, I fear it can scarcely be considered as altogether satisfactory. The experiments on the exhalation of nitrogen by plants are too limited and uncertain to serve as

the foundation of such a theory; and the more recent inquiries on the subject throw great doubts on the results of previous inquirers. A very extensive investigation by Knop of the gases evolved by water plants of different species, and under the most varied circumstances, has led him to express the opinion, that the nitrogen evolved is not derived from the organic tissues of the plant, but simply from the water in which they grow. That this is the case appears to be directly deducible from the experiments of Unger, which extend over a large number of plants. He carefully determined the amount of nitrogen given off by a specimen of Cladophora fracta; and comparing it with the quantity of nitrogen gas held in solution in the water, he found the latter to exceed the former. It is therefore unnecessary to assume any decomposition of the tissues as the source of the nitrogen in this case; and though equally precise experiments have not been made with other plants, it has been distinctly made out that the quantity of nitrogen evolved is by no means considerable; nor is it possible to admit, as a general fact, that the Turnip does not require nitrogenous manures. Mr. Lawes' experiments unquestionably give this result; and no one who knows the precision and care with which all his experiments are made, will for a moment doubt that they show the conditions of cultivation required for his own district. But we cannot admit his generalisation. It is very certain that the experience of farmers here is strongly in favour of guano for the Turnip, and guano, too, of the nitrogenous class—the different conditions of climate, no doubt, being the cause of the difference. As a remarkable illustration of this distinction, I may mention a fact communicated to me by an extensive manure manufacturer of scientific acquirements. He manufactures large quantities of superphosphate from coprolites alone, and he assured me that, when sent to the south of England, it invariably gave satisfaction to those who employed it, while the very same substance in Scotland proved unsuccessful, and he had found it absolutely necessary to add a proportion of ammonia, or some other nitrogenous matter, to the superphosphate prepared for the Scotch market. The fact is, that the effect of a manure is not constant and definite, but varies to a much greater extent than we were at one time inclined to admit, under the influence of climate and various other circumstances; and ingenious as Mr. Lawes' idea is, we ought, I think, to suspend our judgment, and await the result of further experiments before adopting it.

This seems the proper place in which to refer to the system of cultivation introduced by Mr. Smith at Lois Weedon, which has recently attracted a good deal of attention. By Mr. Smith's plan, rotation is abandoned, and Wheat grown year after year on the same soil, and without manure of any sort. In order to effect this object, the land is divided into ridges of five feet wide, on each of which three rows of Wheat are sown at a distance of a foot apart. In this way the field forms a series of strips of crop alternating with spaces on which nothing is grown. The success of the plan, according to Mr. Smith, is dependent on the management of the strips of fallow land lying between the spaces under crop, which, by a system of deep forking in the autumn and winter, and by being occasionally worked with the grubber in summer, are kept free of weeds and exposed to the atmosphere. Next year the Wheat is sown upon that which had been fallow the previous season; and so on year after year, alternating always the position of crop and fallow. By this plan Mr. Smith has succeeded in obtaining from each acre, on the average, 30 bushels of Wheat, and sometimes as high as 40; while the same land, cultivated in the ordinary manner, does not yield more than from 24 to 28 bushels. In this method of cultivation we see reproduced the principles which guided old Jethro Tull in his agricultural improvements, and it is peculiarly interesting as a means of impressing on the mind the importance of careful and complete tillage. By the frequent stirring of the soil, and admission of air, the valuable materials it contains are enabled to undergo decomposition more rapidly, and are prevented from falling into that inert condition into which they are apt to pass by its exclusion. No one, now-a-days, questions the effect thus produced; although perhaps much more reliance is placed upon manure than on tillage; and the value of Mr. Smith's system lies in its bringing distinctly before us the importance of the latter. I do not conceive that the method he advocates is likely to come into general use, nor do I think it possible that it can be carried out without, in the long run, impoverishing the land. Conceal it as we may, frequent tillage is only a means of bringing the valuable constituents of the soil rapidly into an available condition; and sooner or later the supply contained in it must be diminished or exhausted. Mr. Smith seems to think that something is absorbed from the air—probably ammonia and nitric acid; but even this would not suffice to counterbalance the loss continually going on. The whole quantity of nitrogen deposited annually by the rain on an acre, in these forms, amounts, as has been stated in a former part of this paper, to 20 lbs.; but a crop of Wheat removes from 50 to 60 lbs. of that element. The whole matter comes to this: there are two methods of increasing the produce of land—tillage and manuring; and that system cannot be a good one which relies upon the one to the exclusion of the other. Both must be employed simultaneously; and in their judicious combination we may expect to find the conditions of the greatest amount of general success. When manure is applied to the land, part of it acts rapidly, and part passes into an inert state; and the consequence is, that, when tillage is deficient, there is a gradual accumulation of these inert matters, from which the valuable constituents of plants may be set free by a change in system. In such cases this matter may be considered as so much capital laid up in a useless state, which may at any time, by proper working of the land, be brought into a useful condition. It is my belief that Mr. Smith is now spending the dormant capital of his land, and that, sooner or later, he will find it requisite to apply manure. The true system of cultivation is surely to make use of manure, and, by proper cultivation, to prevent as far as possible its passing into a dormant state. *Prof. Anderson, in the Transactions of the Highland and Agricultural Society.*

Home Correspondence.

Adulteration of Guano.—Mr. Way tells us that there is no simple and unobjectionable method of determining the question of adulteration in guano. Did he ever have a single sample submitted to him which could not be detected by the simple process of burning? A common tobacco-pipe and a strong fire are all that is required. I send two samples—one pure and the other adulterated to a great extent, which, nevertheless, was sold as guano, and returned in consequence of its being burned by me in a tobacco-pipe in my kitchen fire. I have tested other samples, and never found the fire proof fail; all earths, sand, and the like must be detected by it. The pure guano burns to a white ash and loses two-thirds of its weight in the fire; the ash is the residue of 10 grains of each. *J. C. C.* [The samples are sufficiently distinct and significant.]

Portable Manures, weight per bushel.—In reference to Prof. Way's article, in the *Agri. Gazette* of July 8, on detecting adulteration in guano, it would be doing good service if one or more of the respectable manure dealers would give, through your columns, trustworthy tables of the weights per bushel (imperial strike) of the various portable manures, which seem now to be quoted almost at random; for instance, I have quotations of common agricultural salt, from 60 lbs. to 80 lbs. per bushel; of lime, from 80 lbs. to 96 lbs.—chalk lime, no doubt, under 80 lbs., &c. The relation of weight to measure is important, not only in the purchase but in the application of manure. *J. Prideaux, Plymouth.*

Damp of Limestone Walls Cured.—I have found the walls of every cottage I have yet built damp, although no expense has been spared, and I find that this is a general complaint in limestone districts. This year I am building the walls with a lining of hollow bricks, having an interval between the bricks and the stone walls, and tying the brick lining to the stone walls by brick "headers." I have no doubt this will make the houses quite dry. The expense is not much, and the difference to the health and comfort of your labourers immense. *Somerset.*

Seed Growers' Society.—At your request I beg to hand you a few of the principles of the above Society, also a report from the *Chelmsford Chronicle*, together with the rules for its management. *A Friend of Progress and Freedom.*

Old System.	New Principles.
The London seed merchants have been used to meet (their own body only) for the purpose of determining what price they should fix for such and such articles.	The growers claim the right of having a voice in fixing a price on their own property.
The trade hitherto have secured most of their supply before they would give any idea of what their prices would be fixed at.	The growers have determined not to deliver their goods without first knowing what they are to be paid for them.
The trade has formerly been almost exclusively kept in a state of monopoly, and nearly all articles have been bought up by some 20 or 30 individuals.	The growers will hereafter sell to any party who pays them best for their goods, making it an open market for town and country.
The trade has always by their travellers collected all necessary information for their own guidance, as to the probable yield of the seasons, which the growers have been entirely ignorant of.	The growers have now adopted a plan of returns of acres grown, and probable yield, enabling them to ascertain what ought to be a fair legitimate price between buyer and seller.

Let it be distinctly understood that the object of the Society is justice between producer, merchant, and consumer. "In a former communication it was stated to be the unanimous desire of the growers of seeds to maintain a friendly relationship with the London merchant, at the same time that they expressed their determination to transact business upon a more satisfactory basis. In accordance with this desire, a deputation from the committee of the Society has visited the trade in London during the past and present week, to explain the objects and intentions of the members, and, if possible, to secure their compliance with their propositions, and were gratified at finding them—although naturally leaning to the old system, and wishing to retain the power to themselves—not unwilling to yield to their request, and freely confessing to the fairness of the proposals made. This statement is made with the avowed design of enlisting those who, from fear of injury resulting therefrom, or from an attachment to established customs, have hitherto stood aloof from the Society. The next general meeting of the Society is to be held at the latter part of the month at Kelvedon. The following are the rules of the Society:—

"1. That this Society be called the Seed Growers' Society, and that its object be to protect the interests of the growers of seeds.—2. That the officers of the Society shall consist of a chairman, secretary, and treasurer, and committee, to be elected annually, who shall manage the business of the Society.—3. That the Society shall meet at least three times in each year, or oftener if the committee shall deem requisite.—4. That each member shall subscribe 5s. and upwards to the funds of the Society annually, in advance.—5. That notice be given to the secretary of any persons wishing to become members, who will bring their names before the Society at its next meeting, and if approved by the majority be then elected.—That all political questions be totally excluded from the meetings of the Society.—7. That every member be requested to furnish the secretary with information of the probable produce of all seeds, &c., grown by him. The committee being furnished with such information, to call a meeting of the members before seeking an interview with the trade, in order to obtain a fair adjustment of prices.—8. That the general meetings of this Society be held in Kelvedon.—9. That any member wishing for the alteration of any rule must give notice thereof in writing to the secretary, in order to its being submitted to the annual general meeting, to be held in March.—10. That a copy of the above rules be given to every person on becoming a member."

Cattle Pools.—Much of the ill-health of cattle arises, no doubt, from the state of the water they drink. I send you a plan I am going to adopt to economise water, and yet allow the sun always to lie on it. It is, in short, a covered tank with a short "slip," from which the water runs into the tank free from gravel, mud, &c., which injures the water and is expensive to clear out; moreover, it deceives you as to the quantity of water you really have in your pool. When the slip is not full you pump up clean water and expose it to the atmosphere in the slip, which from being always full does not collect dung or weeds between the stones, &c. *Somerset.*

Agricultural Education.—In Lord Ebrington's philanthropic letter on agricultural education, published in the Journal of the Society of Arts, also in the *Agricultural Gazette* of July 10th, he proposes—"That in the chief county town a yearly examination should take place, under the patronage of the lord-lieutenant, county magistrates, or other influential persons connected with the county; at which examination all youth and young men of the county, whose parents or near relations were, or had been, in respectable and independent circumstances, might apply for a "county degree," and compete for "county honours." Why, I ask, this qualification? Would it not be better to grant the privilege of applying for a "county degree" to all young men of good character engaged in agricultural pursuits or employment, without reference to the position or circumstances of their parents or near relations? Surely his lordship would never contemplate withholding the privileges of competing for the proposed "degree" from an enterprising and intelligent youth who might not be able to show that his parents were, or ever had been, in independent circumstances. Nor can he consider it unjustifiable ambition in the son of an agricultural labourer or working mechanic, to aspire to a standard of education becoming an Englishman of the middle class. *G. P.*

Wheat Crop and Thin Seeding.—Since our last report various mishaps have attended the growing crops of Wheat, viz., rust in the blade, which occurred during the cold blasts which prevailed just at the time when the first ears were bursting from their sheaths and coming in blossom, consequently some abortive ears are the result of this; but since that time warm weather has bettered its condition in no small degree. The mould or fungus, which also appeared about the same time at the feet of its stalks, has, by a strong effort in nature, been overcome. Within this last fortnight, however, another visitation is not uncommon, namely, "red gum," and in some places to an alarming extent. Notwithstanding all this, we contend, as before stated, that on the whole, an unusual and abundant crop may be expected, especially where our system of isolating the plants, at an early time, in their thin and regular order has been attended to, some of which may be fairly estimated at from 6 to 8 quarters per acre. A late harvest is now certain, from the unaccountable absence of sun during the whole summer. Our own crop of Wheat, growing on common ploughed land, planted at 1 foot apart, or six pints of seed per acre, we venture to challenge the United Kingdom to produce so good a crop, on the same space of land, from their 128 pints per acre, or 21 plants to the square foot. We also back our Barley at 1 foot asunder, or 8 pints per acre, against any body else's at their 192 pints per acre, or 24 plants to the foot. Instance, numerous ears of Wheat, five, six, and seven set, at 60 to 80 kernels, and 20 to 80 ears on each stub. Also of Barley, the common kind, at 40 grains in each ear, and of a favourite variety averaging 72 kernels each ear, and both kinds 30 ears on each stub, all performing their natural capabilities. *Hardy and Son, Seed Growers, Maldon, Essex.*

Societies.

LINCOLN MEETING OF THE ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

Lincoln, *July* 22.—We understand that this meeting has been a very satisfactory one financially — that upwards of 1200 paid for admission to the yards on Thursday and upwards of 40,000 on Friday, the receipts on these two days therefore amounting to as much as 3500*l.* On Friday morning a meeting of the members took place, for the purpose of winding up the proceedings of the week by votes in acknowledgment of the efforts made by the several local authorities for their reception during the week.

We append further reports on the one class of the horses, and on the pigs exhibited, to which we had not last week space to refer:—

HORSES.

The praise which we have readily bestowed on the cart-horse classes, and to which they are justly entitled, we can by no means offer without reservation to the

lighter horses. In addition to the prizes offered by the Society for the best stallion for getting roadsters, local prizes were given by the Mayor of Lincoln for the best stallion for breeding hunters, as also a separate class for the best and second best three-year-old hunting gelding or filly.

With regard to the roadster stallions, we could scarcely discover a perfect hack of suitable size and substance amongst the whole list. The best in shape appears to be an old brown horse (No. 242) of the Fireaway breed, too infirm from diseased feet to enable us to judge of his action, except from his conformation, and he appeared to have been equal to weight as well as another horse, 246, similar in colour; the latter, however, was somewhat too heavy, and exhibited one of the faults that could scarcely be forgiven, viz., a blemished knee. The prize was awarded to No. 240, a bay horse belonging to Mr. Joshua Innocent, a good-shaped animal, and equal to some weight. A clever cob or pony (No. 237) was worthy of notice, and possessed superior action; and also a handsome iron grey, belonging to Mr. Askew, though probably not adapted to carry weight. A perfect hack should, in our opinion, be able to carry weight, and with it walk four or five miles or trot 14 miles within the hour, with comfort to his rider and ease to himself. We observed a young horse at the Saxmundham show, a short time since, the son of Phenomenon, a Norfolk trotter, that could evidently do this or more, and which we prefer to any horse of the kind we found at Lincoln.

In the special class, viz., stallions for getting hunters, we anticipated much from the liberal prize of 40*l.* offered by the Mayor of Lincoln, and which was awarded to No. 721, a 19-year-old thorough-bred brown horse, apparently perfect in all respects with the exception of having crooked legs—a grievous fault, but one which the great age and high breed of the horse somewhat mitigated; for it is a fault derived from high blood and the system of breeding the fastest horses for the turf irrespective of any other consideration. The straighter the action and the nearer the horse goes to the ground the better for this purpose, and a bent leg often co-exists with great speed, and indeed is no disparagement to it, although anything but desirable in a hack, or a favourable conformation in a hunter when landing from a high leap with a heavy weight on his back. The commendation was given to No. 722, a good shaped half or rather three-parts bred chesnut horse, possessing much substance, and equal to a fair amount of weight, the property of Messrs. Marfleet. Such a horse as this would be extremely useful in many parts of the country, in the place of the weedy thorough-bred horse that is too frequently found.

Two prizes were given in the next class, which was open to both mares and geldings three years old. There were several nice animals in this class, though none of them adapted to carry much weight. The prize was awarded to a brown gelding, No. 732, belonging to Mr. Stockdale, a well-bred fashionable animal that will no doubt carry a light weight well to hounds. The 2d prize was given to No. 728, a chestnut gelding with Arab blood, belonging to Mr. Marriss, a neat clever animal with a somewhat better forehand than the first prize horse, and equal to rather more weight, but his appearance was somewhat marred by an indifferent tail. There were several promising animals also exhibited in this class.

PIGS.

The show consisted of 59 boars, 68 sows, and 10 pens of three each, being a total of 157 animals beside young ones. But though this great collection included some beautiful specimens of small-breed pigs, and a few examples of colossal proportions and amazing fatness, the general character of the show as to quality is certainly a little below what it has presented in some former years. There are 54 exhibitors, from all parts of the kingdom; but as the county in which the show is held is not celebrated above others for its hogs, we find only six Lincolnshire exhibitors, only two obtaining commendations, and none any prize.

Class 1. Boars of a large breed: The prize boar of Mr. H. Blandford, of Sandridge, Wilts, is very large, and with not very fine quality of flesh. He is 2 years 3 months and 2 weeks old, a pure Berkshire black, with white face and feet. The 2d prize hog of Messrs. M. Harvey and J. Branston, of Langford, Nottinghamshire, is of great size and fine quality, but immensely fat. He is 2 years 11 months and 2 weeks old, white, with small breed character. The white boar of Mr. F. Frudd, of Bloxholm Moor, Lincolnshire, 74 stones live weight, is highly commended. Mr. Dyson, of the Firs, Finsley, near Sheffield, shows a hog 3 years and 11 months old, having a tremendous frame, and legs pretty nearly as strong as those of the Devon heifer.

Class 2. Boars of a small breed: Mr. W. Northey, of Lake Lifton, Cornwall, takes the prize, for a black boar of the improved Leicester breed, 1 year and 3 months old, of very good quality, and thick compact form. The 2d prize boar, 1 year and 2 months old, of Mr. S. Ashton, of Manchester, is a beautiful animal, a pure small-bred pig, white, with blue spot. Besides Mr. Druce's boar, highly commended; and Mr. Northey's and Mr. Turner's, commended, we particularly noticed a 2 years 6 months and 2 weeks old, of Mr. G. Mangles, of Givendale, Yorkshire, very large, but still quite in character; also a very superior animal, between 5 and 6 years old, of the Coleshill breed, belonging to the Earl of Radnor.

Class 3. Breeding sows of a large breed: Mr. E. Robinson, of Green Bank, near Lymm, Cheshire, obtains the prize for a sow of the large Cheshire breed, 2 years and 2 months old. This animal is of amazing length—measuring 10 feet long, and has very deep sides and good quarters. The distinction of "highly commended" is bestowed upon the sows of Mr. Wainman, of Carhead, near Leeds, and the Rev. E. Elmhurst, of Shawell Rectory, Leicestershire; a commendation is also awarded to Mr. Horsfall, of Burley Hall, Yorkshire. But we were more especially pleased with the fine-qualitied sow of Mr. M. Cartwright, of Stanton Hill, near Burton-on-Trent; with the great height and depth of carcase marking one of the sows exhibited by Mr. T. Craven, of Manningham, near Bradford; and by the good hand and remarkable quarters of another shown by the same gentleman, which was not so much over-fed as many of the animals exhibited.

Class 4. Breeding sows of a small breed: This class is so excellent in quality as to have merited a general commendation from the judges, who must have had some little difficulty in coming to a decision with their various awards. Mr. Mangles's prize sow, 2 years and 4 months old, of white Yorkshire breed, is of considerable size, with wide back, and of fine feeding quality. Mr. Northey's 11 months old Improved Leicester sow, highly commended, and his 1 year and 3 months old sow, commended; are both very superior, well-made, thick and deeply formed, and of prime quality. Mr. Horsfall's sows attracted our attention, from their beautiful form and uniformly good quality. Mr. Mangles has also a sow commended.

Class 5. Three breeding sow pigs of a large breed: The prize is awarded to Mr. W. J. Sadler, of Bentham Purton, near Swindon, for a pen of 7 months and 1 day old pure Berkshire; certainly very fine and well-bred specimens, possessing several important points in perfection.

Class 6. Three breeding sow pigs, of a small breed: The prize is taken by the Earl of Radnor, for three of his lordship's well-known animals—a very useful, beautiful, and valuable breed; and those exhibited are well worthy the honour they have received. A pen of sow pigs, 7 months and 6 days old, of Mr. J. Greetham, of Wragby, Lincolnshire, was commended—certainly of great size for their age, but of second-rate quality.

It is to be regretted that so many exhibitors should continue to feed up their animals to such a state of obesity as must unfit many of them for breeding purposes. Let the judges always bear in mind that the society offer their premiums strictly for breeding stock—not for animals crammed up to the utmost stretch of fatness, unable to make proper use of their limbs, and scarcely capable of unimpeded respiration.

HIGHLAND AND AGRICULTURAL.—*Half-yearly General Meeting, July 19.*—Earl of Rosslyn in the chair. One hundred and fifty-two new members were elected.

Agricultural Statistics for Scotland.—Sir John M'Neil said—The Society are aware of Government having resolved to extend the inquiry as to agricultural statistics over the whole country. The secretary has accordingly been actively engaged in making the preparation necessary to carry that object into effect. In consequence of no fault of ours, however, the authority to commence proceedings in the matter was not given until after the beginning of May, and after that authority had been given, there were a great number of preliminary matters to be arranged before schedules could be issued. One of the first and most important of these preliminary matters was to obtain a list of all the occupants of land in Scotland. That was not a very easy thing to arrive at, and various modes were suggested for accomplishing it. At length the secretary himself learned that he might possibly be able to obtain the necessary information through the assessors for the property and income tax. That led to a negotiation with the Department of Inland Revenue, and which the Secretary has successfully carried out; and he is now in progress of receiving, through that channel, the names of the various occupants in different parts of Scotland. Up to this date the names of 35,000 occupants of land, to whom schedules would have to be issued, have been returned. But that was not the only preliminary matter which he had to attend to; it was necessary also that he should make arrangements for dividing the whole country into districts, for the purposes of the inquiry. To accomplish this, it was necessary that he should communicate with the most intelligent persons connected with agriculture in all parts of the country. In doing so, he was not content with mere communication by letter, but, with his usual zeal and energy, he has visited the greater part of the country, for the purpose of communicating with the parties themselves; and I am happy to have to report to the Society that he has succeeded in making a satisfactory subdivision of the provinces he has visited into districts, suited for the purpose. It was also necessary that, with reference to these districts, enumerators should be selected and committees appointed. That also has been accomplished. Enumerators have been selected and committees have been named for the districts; and it is very satisfactory to have to report that, out of 260 replies to applications made to individuals with the view of inducing them to represent their various parishes in the committees, 245 have been in the affirmative, while, in almost every instance in which the duty was declined, an intelligent and satisfactory reason was given for declining it; and, in a good many instances in which parties themselves were not prepared to undertake the duty, they suggested other persons well qualified for the work. So soon as the list of occupants has been received, I presume the secretary will be ready to issue the schedules. I have only, therefore, to congratulate the Society on the successful progress, so far as it has yet gone, of the enterprise in which we are engaged; and in doing so I would not be doing justice to the gentleman on whom the burden of working this scheme has chiefly fallen, if I did not direct the attention of the Society to the remarkable tact, energy, and ability which have been displayed by the secretary in conducting these proceedings.—The Secretary said that the work of subdividing the country into districts, and appointing local committees, had been satisfactorily accomplished for about two-thirds of the counties of Scotland; and from the experience which he had had of the readiness with which the farmers of Scotland had offered their co-operation in the work, on hearing the matter explained, he had no doubt of being equally successful in making similar arrangementsin those parts of the country which he had yet to visit.

The Berwick Show.—The Secretary stated that he had to report the very satisfactory nature of the arrangements for the meeting at Berwick. The programme of the proceedings was as follows:—Monday, the 30th, will be devoted to placing implements, and Tuesday, the 1st August, to their inspection by the judges; on the morning of Wednesday the 2d, a trial of implements at the farm of Castlehill, about a mile from Berwick, on ground granted for the purpose by Mr. Laurie, the tenant; on the forenoon of Wednesday, the yard will be opened for the exhibition of implements. On Thursday, the 3d, the stock will be placed and judged in the morning, and the public admitted to the yard between 11 and 4 o'clock. The banquet will take place in a marquee fitted for 600, furnished by Edgington, of London, and erected in an inclosure placed at the Society's disposal by Messrs. Can and Darling. He concluded by reminding members who wish to avail themselves of their new privilege of free admission to the show-yard, that application for tickets must be made at his office not later than the 25th of July, as it was impossible to give free admission at the gates to every one representing himself as a member of the Society.

The Chemical Department.—Professor Anderson said—I am glad to say that I can report satisfactorily as to what has been done in this department. As usual, we have had a great number of analyses to make for various parties—the spring half-year being generally that in which the greater part of such work is done. I regret, however, to say that this year we have had more than the usual number of adulterated guanos to analyse—the increase of price having, I presume, encouraged the adulterator to a considerable extent. Owing to this being our busiest half-year in conducting analyses for the members of the Society, less than the average amount of work had been done in promoting investigations for the benefit of the Society; but in this respect also we have been by no means idle. A considerable number of analyses have been completed on several subjects, which will be prepared for publication shortly. As regards work in hand, I may mention that we are about to enter on the investigation of the composition of the Turnip in relation to its specific gravity. This subject is one which the Marquis of Tweeddale has particularly directed his attention to. He has carried on the general investigation of the properties of the Turnip so far as could be done, and there now only remains the chemical part of the enquiry. The results of the investigation, I may say, will be of high practical importance.

Further reports, for which we have not room, were read on the National Industrial Museum to be established in Edinburgh; on the Geological Survey of Scotland; and on the Shows of 1855-6.

Reviews.

The Journal of Agriculture, and the Transactions of the Highland and Agricultural Society of Scotland. July, 1854.

THE current number of this Journal contains papers by Mr. M'Lagan, on Cotton Seed as Cattle Food; by Mr. Russell, on Italian Irrigation; by Mr. Burns, on the Steam Engine; by Dr. Voelcker, on the Composition of Rye and Rape; with shorter articles on Clover, oleaginous plants, &c. The Transactions of the Society published in this part include papers by Sir J. S. Forbes, G. W. Hay, of Roxburghshire, and Professor Anderson, on Agricultural Meteorology, Manure-effects, and Agricultural Progress respectively. We refer at present to the second of them alone, and that for the purpose of calling attention to the extent of adulteration which analysis proved in the manures that were tested.

"The manures experimented with were—1, B. manure; 2, G.S.P. manure; dung; 3, Latham Island guano; 4, Patagonian; dung; 5, Monte Video; 6, Saldanha Bay; dung; 7, Peruvian; 8, Sharks Bay; dung; 9, Bolivian; 10, patent manure; dung; 11, superphosphate of lime; 12, mixed B. and G.S.P. manures; 13, recent guano from henhouse; 14, Saldanha crusts; 15, Latham Island and Saldanha crusts mixed. I append a sheet of the analyses of the greater number of manures made use of. How far the guanos came up to their analysis, it is impossible to say; but it will be seen from the analysis of the superphosphate of lime, which was made for me, that it only contains of soluble phosphate of lime 4.0, and of insoluble phosphate of lime 46.0. Of the two first articles I had no analysis, nor is there any given, which is highly commendable in all dealers, as

the article may be anything or nothing in that case, without reflections being raised from off the buyer's own shoulders; however, with regard to these, no doubt seems to attach to any of them, as, with the exception of the Patagonian and Bolivian guanos, they rank highest on the list. The quantity of each of the manures to the quarter of acre was 1 cwt., to which were added 84 lbs. of gypsum, 28 lbs. of animal charcoal, and 28 lbs. of salt, thus giving 4 cwt. of guano or special manure, 3 cwt of gypsum, 1 cwt. of animal charcoal, and 1 cwt. of salt to the acre, or 9 cwt. of all combined. The portions dunged received of superior and well-rotted farmyard manure fully 4½ tons each quarter of acre. The animal charcoal, I fear, was not quite what it ought to have been, as I was offered, by the parties from whom I got it, a quantity of stuff to which was given the name of London night-soil; but which, on being analysed, turned out to be, in the words of the chemist, remarking upon the products, 'seemingly the scrapings of the streets, with a little limestone and salt.' As to the gypsum, it was far from being genuine; for instead of being pure sulphate of lime, it contained 40 per cent. of sulphate of baryta, which, even though it were beneficial for the soil, raises the price of the gypsum beyond the legitimate value, from its being so heavy, as its name implies. I may be excused entering so fully into the adulteration of our manures, as it is a subject upon which all of us feel very sore, I have no doubt, and one for which there does not seem to be at present a sufficiently ready remedy. We are now so dependent upon special manures, and our gullibility is so well known, that I do not in the least doubt but that many good-going businesses have been, are, and will continue to be, opened and supported by the farming community of Great Britain, to the aggrandisement of the trader in these spurious articles, and the loss of the purchasers; and when treating of another field, it will be shown by analysis how far we are imposed upon."

In addition to the above-named manure, certain chemicals were purchased and used upon a field sown with white Globe Turnips, for the purpose of testing the qualities of each respectively.

"'This object, however, it will be seen, has been entirely frustrated, for the very obvious reason that none of the ten manures I had sent to me as genuine articles turned out to be anything at all like what they are represented to be, with the exception of two. The chemicals I asked for were the following:—1, nitrate of soda; 2, carbonate of potass; 3, sulphate of magnesia; 4, muriate of ammonia; 5, sulphate of potass; 6, carbonate of soda; 7, nitrate of potass; 8, sulphate of ammonia; 9, phosphate of magnesia; and 10, phosphate of soda. I append a list of the analyses of these substances, and it will be seen from it that the genuine articles were, carbonate of potass, which was pure, and the carbonate of soda, which was a pure bi-carbonate, and of course more expensive than I intended. The phosphates of magnesia and soda I was prevented from using at all, from their impurities, the phosphate of magnesia only giving 2.8 per cent. of phosphate of magnesia, and the phosphate of soda only 6.0 per cent. of phosphate of soda. From the appearance of those two substances, I feared that they were not correct; and an analysis having been obtained of all of them, I wrote to the party who had procured them for me, and who unfortunately had paid for them even before they had come into my possession, stating that they would not suit my purpose, and requesting that genuine substances might be sent in their place, otherwise I would return those I had, and that the money must be given back. The reply which I received from the house furnishing the articles was to the effect, 'I must certainly decline receiving back the manures; they are the usual quality for agricultural purposes, (for which purpose I only manufacture chemicals). Mr. ——— bought them at the usual price-current handed to him. The foreign ones, viz., nitrates soda and potash, and carbonate of potash, are exactly as imported, and the others contain the quantities respectively as are suitable for plants.'

"'Suitable for plants.' It does appear unsuitable certainly that the farmer is to be dictated to by the manufacturers of manures in what is suitable for the growth of his plants. This is in plain language telling the agriculturist that he knows nothing of his own business, and must be kept right by the manufacturer, even though that manufacturer does not even know beforehand for what purpose those manures he is furnishing are required. In consequence of this letter, I wrote to him, giving him some farther time to furnish me with genuine articles that I might proceed with the experiments, and even delayed sowing the field for some time beyond the limited period, hoping that they would be sent; but, as they were not forthcoming, the field was sown, keeping each kind by itself, adding to each a proportion of guano, gypsum, charcoal, and salt, that the crop might not be entirely risked."

We add the analyses of the chemical manures employed, and it will be seen how, with two exceptions, the materials supplied have been among the most glaring instances of barefaced fraud that have been published.

Analysis of different kinds of Chemical Manures.

Carbonate of Soda—a pure bi-carbonate.

Carbonate of Potass—pure.

Nitrate of Soda.

Moisture	11.0
Nitrate of soda	56.3
Muriate of soda	26.6
Sulphate of soda	6.1
	100.00

Nitrate of Potass.

Moisture	9.0
Nitrate of potass... ...	11.6
Muriate of soda	10.8
Residue, chiefly nitrate of soda	68.6
	100.00

Phosphate of Soda.

Moisture	19.0
Soluble phosphate of lime	12.0
Free acid, with organic matter	11.0
Sulphate of lime... ..	12.0
Insoluble phosphate of lime, with iron ...	40.0
Phosphate of soda ...	6.0
	100.00

Sulphate of Potass.

Sulphate of potass ...	60.0
Sulphate of soda, &c. ...	40.0
	100.00

Sulphate of Ammonia.

Sulphate of ammonia ...	9.7
Muriate of soda	6.6
Sulphate of soda	78.2
	94.5

Phosphate of Magnesia.

Water	18.0
Phosphate of lime ...	39.0
Sulphate of lime ..	12.0
Silicious matter	3.0
Free acid	15.0
Phosphate of magnesia...	2.8
	89.8

Sulphate of Magnesia.

Sulphate of magnesia, crystallised	87.0
Muriate of soda	13.0
	100.00

Muriate of Ammonia.

Moisture	26.0
Muriate of ammonia ...	54.0
Sulphate and muriate of soda	20.0
	100.00

(Signed) Andrew Fyfe.

It seems a monstrous thing that farmers should be thus imposed on. Mr. Hay must not, however, complain of his case being without remedy, until he has brought it unsuccessfully before a court of law.

Poultry.

Lincoln Meeting of the English Agricultural Society.—The following is the prize list postponed from last week:—

Judges—Messrs. G. J. Andrews, John Bally, and Thomas Barber Wright.

Class 1. Dorking Fowls (Cock and two Hens), Chickens of 1854: 5*l*., to H. D. Davies, of Spring Grove House, Hounslow; 3*l*., Do., do.; 2*l*. to Joseph Smith, of Henley in Arden, Warwick; 1*l*., to James Lewry, of Handcross, Crawley, Sussex.

Class 2. Dorking Fowls, more than 1 year old (Cock and two Hens): 5*l*., to H. D. Davies; 3*l*., to Mrs. Towneley Parker, of Astley Hall, Chorley; 2*l*., Do., do.; 1*l*., to G. A. Gelderd, of Aikrigg End, Kendall.

Class 3. Dorking Cocks of any age: 2*l*., to G. A. Gelderd; 1*l*., to Mrs. Towneley Parker.

Class 4. Spanish Fowls (Cock and two Hens): 5*l*., to H. D. Davies; 3*l*., to George Botham, of Wexham Court, Slough; 2*l*., to H. D. Davies; 1*l*., to G. A. Gelderd.

Class 5. Spanish Cocks of any age: 2*l*., to James Dixon, of Westbrook Place, Bradford, Yorkshire.

Class 6. Cochin China Fowls (Cock and two Hens), Chickens of 1854: 5*l*., to G. A. Gelderd: 3*l*., Do., do.; 2*l*., to John Taylor, jun., of Spring Grove, Hounslow; 1*l*., to William Sanday, of Holme Pierrepont, Nottingham.

Class 7. Cochin China Cocks of any age: 2*l*. to Caborn Pocklington, of Boston, Lincolnshire.

Class 8. Bramah Pootra Fowls (Cock and two Hens): 2*l*. to the Rev. F. Thursby, of Abington Rectory, Northampton.

Class 9. Game Fowls (Cock and two Hens): 5*l*. to Henry Worrall, of Knotty Ash House, near Liverpool; 2*l*. to G. C. Adkins, of West House, Edgbaston, Birmingham; 1*l*. to William Cox, of Brailsford, near Derby.

Class 10. Game Cocks of any age: 2*l*. to Henry Marshall, of Cotgreave, Nottingham.

Class 11. Hamburgh Fowls—Golden Pencilled (Cock and two Hens): Prizes withheld.

Class 12. Hamburgh Fowls—Silver Pencilled (Cock and two Hens): Prizes withheld.

Class 13. Hamburgh Fowls—Golden Spangled (Cock and two Hens): 2*l*. to William Sylvester, of Stamp Office, Lincoln; 1*l*. to John Andrew, of Waterhouses, Ashton-under-Lyne.

Class 14. Hamburgh Fowls—Silver Spangled (Cock and two Hens): 2*l*. to James Dixon, of Westbrook Place, Bradford; 1*l*. to Jeffrey Ashcroft, of Waterloo, Ashton-under-Lyne.

Class 15. Malay Fowls (Cock and two Hens): 2*l*. to James Oldham, of Long Eaton, Derby; 1*l*. to the Rev. T. Lyon Fellowes, of Beighton Rectory, Acle, Norfolk.

Class 16. Poland Fowls (Cock and two Hens): 3*l*., to G. C. Adkins, West House, Edgbaston, Birmingham; 2*l*., Do., do.; 1*l*., to C. Rawson, of the Hurst, Walton-on-Thames.

Class 17. Turkeys (Cock and two Hens): 3*l*., to Viscount Hill, of Hawkston, Shrewsbury; 2*l*., to C. Pocklington, of Boston, Lincoln; 1*l*., to H. Lister Maw, of Tetley, Crowle, Lincoln.

Class 18. Geese (Gander and two Geese): 3*l*., to Mrs. Towneley Parker; 2*l*., to Mrs. Harriet Hill, of New House, Walton-on-Thames; 1*l*., to Christopher Rowson.

Class 19. Aylesbury Ducks (Drake and two Ducks): 3*l*., to W. G. K. Breavington, of Vicarage Farm, Hounslow; 2*l*., to H. D. Davies; 1*l*., to G. A. Gelderd.

Class 20. Rouen Ducks (Drake and two Ducks): 3*l*., to George Botham, of Wexham Court, Slough; 2*l*., to Thomas Teanby, of Ulceby Hall; 1*l*., to Charles Punchard, of Blunt's Hall, Haverhill, Suffolk.

Class 21. Ducks of any other variety (Drake and two Ducks): 2*l*., to Henry Worrall, of Knotty Ash House, near Liverpool; 1*l*., to T. M. Keyworth, of Cottesford Place, Lincoln.

Carriage of Eggs.—I observe by a writer in your last number, under the signature "D. J.," that he has succeeded in conveying eggs to America in so perfect a state as not to destroy their vitality, and am much pleased with the result, and would feel obliged if he would minutely describe the means by which he accomplished it. I have tried the experiment but have not succeeded, and have been assured by what is termed "high authority," that it was impossible to succeed. In my last attempt I packed the eggs of the black Spanish fowls and English song birds in pulverised charcoal, but though those we broke appeared perfectly fresh, the rest became putrid under the process of hatching. *T. S. W.*——We have also received the following:—It is a disputed point how long eggs will retain vitality, and the following instance may interest your readers. On the 12th ult. I received by steamer from New York, a box containing a dozen of Bramah Pootra eggs, packed in sawdust. They were sent from a friend resident 80 miles up the Hudson, and from the dates upon them had been laid from 17th to 25th May. They were not set until the 25th ult., being then from four to five weeks old, and I had six chickens hatched on the 15th inst., all strong and healthy. *J. B., Liverpool, July 18.*

Miscellaneous.

Cost of fixed Threshing Machines.—Mr. Bridges writes, "I have divided the dressing apparatus from the mill; and were hummellers and foul-spout elevators deducted, so as to form a mill still extensively used, the price would be reduced, say 16*l*. The mill and dressing apparatus will be understood to prepare the grain ready for measuring up; at the same time it is not so well done as when finished by hand-labour on the old system."

Horse Power	Price of a fixed high-pressure Steam Engine.	Price of Mill with Hummeller and foul-spout Elevators.	Dressing Apparatus including 2 Winnowing Machines, with Elevators.	Converting Horse-course into Engine and Boiler House, in ordinary cases.	Cost of a New Engine House and Boiler House, in ordinary cases.
	£	£	£	£	£
4	90	60	32	50	76
5	100	65	35	55	83
6	110	70	35	60	90

Average of repair for engine for first 19 years, under good management, per year, 2*l*.

For mill, per year, 2*l*.

From the Report on the Farming of East Lothian, by Mr. Stevenson, in the Eng. Ag. Soc. Journal.

Calendar of Operations.

JULY.

Border of the Fens, *July* 24.—More than ordinary attention is attracted to the Wheat crop, which has now arrived at the important turning point which seems to determine its comparative value for the current season, the flowering period is over without any severe trial from wind or weather, the kernel swells under a more than usual amount of sunshine, the straw is generally erect and unbroken, and though in most instances rather thin on the land, yet the rows of chaff are of the full complement, and the ears well-formed and complete. We have not observed any instances of its ripening prematurely, therefore bold and heavy samples may be expected to prevail, and if ever thin sowing is to commend itself, this year's growth may furnish examples of large produce from thinly distributed stems, as, from the dryness of the spring, less "tillering" took place than usual, and at no time has the plant been pushed with too much rapidity, as is frequently the case if warm moist weather prevails before the appearance of the ear. Should, however, the present remarkably fine weather continue, to the shearing, the advocates of thick sowing may appropriate no small confirmation of the advantages of their system, as shown by the few really heavy crops surviving the blight which threatened them about a fortnight since; at this moment they look almost as bright and perfect in the undistinguishing crowd of their heads, as in the thinner fields where the drills may be yet traced, and where the stems are seen as plainly as the corn. Birds are this year extremely troublesome amongst the Barley, every forward crop of which gives proof of their ravages in brown spiry-looking straws, showing themselves divested of every kernel by the sparrows. Serious losses are sustained in this way among cottagers' allotments, the occupiers of which should club together to employ an active scarer with a gun. Complaints are universally made of the scantiness of the hay crops, as well as of the shortness of keep in pastures; the Tare crop has, therefore, been of great value, as in many cases foddering stock has not been a matter of choice; the scarcity of pasture feed threatens to be followed by a scarcity of water, as the "socks" are extremely low. From these causes a more than usual quantity of beasts have been drafted out for market before maturity to relieve the wasting Grass from being overstocked; this circumstance and the high price of Linseed-cake in prospect, will place the English cattle dealer at a disadvantage, if the price of meat should even hold up fully to the present rates. As to the consumers of meat, there is every chance of their being compensated by a probable abundance of corn and Potatoes, which will at least ensure a plentiful subsistence for the whole population on a moderate scale of prices. *J. W., Peterborough.*

Wester Ross, *July* 22.—The Potato disease has made its appearance unmistakeably in different fields within these few days. The fields attacked are the farthest advanced, and more luxuriant ones. Its progress seems to be rapid, commencing in one spot, and spreading all around. The leaves are quickly withered away, leaving the stems blackened, as if fire had passed over them. Should it become general at this early season, it would go far to extinguish them altogether.

West Sussex, *July* 25.—The appearance of the crops has changed very fast, and we shall have harvest much earlier than was expected; I believe it will be general by the end of next week. There is, no doubt, a little rust in the Wheat, but, for all that, we shall have a fair crop, perhaps above an average. Barley has improved very much, and with this forcing weather will come more equally to harvest. Oats are generally a good crop; Peas have done well, and will be fit to cut this week in some places. Beans here are a fair crop, but there is a little blight in patches, which showed itself about three weeks ago, but has not got worse since that time; but we hear they are very bad in some places. The season has been very favourable to Turnips, both sowing and hoeing, and they are generally a promising plant' very few have had to be sown more than once, and they are well advanced, and the weeds have been well kept under. So with Mangold, but a good shower would do them all good. Hay-making has been finished, and made pretty well, but is a very light crop and will be scarce next winter; but if we have a fine harvest, the Barley and Oat straw will be a better substitute than last year. We are now getting the dung in a forward state for Wheat, and when the Peas are off we shall have to clean the land as soon as possible, and if convenient, sow Rape, which will come up soon enough either to be fed off or ploughed in, and in the latter case it serves well on this heavy land in keeping the soil open, thus giving the Wheat a more healthy and open bed during the winter; and we have little doubt but that it will benefit the Wheat more when ploughed in than when fed off. The work of cleaning will be easier than usual, as the land has not got hard and the weeds are not so many as for some years they have been. The scarifier applied twice, once with the sharp tines, and then crossed with the broad shears, with Howard's drags to follow, will bring all the rubbish to top and leave a finely pulverised soil for the Rape, and save so many ploughings as are common when preparing Pea-stubble for Wheat, and that too at a season of the year not well adapted for working fallow land. *G. S.*

Notices to Correspondents.

Ashes: *B A.* You had better keep the ashes in heaps, and not spread them till a few weeks before you hope to see their effect.

Davis' New Vetch: *July* 19. We have received a fine sample of already ripe seed.

Damp Hay: *Monday.* We were quite aware of its being a republication.

Drains: *Mr. Moodie.* Pipes of 1½-inch bore are large enough for the parallel drains 30 feet apart, of the largest fields, say 300 yards; and pipes of 4-inch bore are large enough for the main drains of 10 acre fields. It would not be possible to answer as definitely as you seem to desire.

Produce per Acre: *C D.* You want us to state the dream as well as the interpretation. How is it possible to form an opinion of the produce of grain without seeing the crops? Valuers of growing crops form a guess, guided by the experience of past years; valuers of crops in the rick—either thresh part or all.

THE ADVANCE OF SCIENCE IN AGRICULTURE.

RICHMOND AND CHANDLER'S unprecedented celebrity for their improved CHAFF MACHINES and CORN CRUSHERS, achievable only by intrinsic merit, has secured for them the highest character in the trade, together with the confidence of the public, whether as regards true economy or the unapproachable finish and sterling quality which characterise all their productions, and render them worthy the reputation of a Manchester manufacturer.

The most distinguished authorities in all civilised countries report their unqualified satisfaction with the highly beneficial effects resulting from the use of these justly celebrated Machines, and with the now established fact of their not being subject to any of the contingencies inseparable from other machines, they are calculated to meet with general approval in the present advancing state of agriculture.

Address—RICHMOND & CHANDLER, Salford and Manchester; and 82, South John Street, Liverpool.

CHAFF-CUTTERS, of the best workmanship, 25*s.*; Two-Knifed Chaff Engines, from 63*s.*; Mills for Bruising Oats and Beans, from 45*s.*

WILLIAM DRAY AND CO., Agricultural Implement Manufacturers, Swan Lane, Upper Thames Street, City.

BUDDING'S LAWN MOWERS, with SAMUELSON'S registered improvements, *lightening the draught fully one-half*, and enabling an unskilled labourer to make neat work; free from liability to choke, or get out of order. May be had of all ironmongers in town or country, or from the Works, Banbury; delivered free in a packing case to any station on the North-Western and Great Western Railways. Testimonials forwarded on application.—Britannia Works, Banbury.

(Fig. 1.)

(Fig. 2.)

J. TYLOR AND SON'S BARROW GARDEN ENGINE (Fig. 1), in best well painted oak tub, fitted with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 1 holds	10 gallons,	throws 30 feet high	...	£4 10
No. 2 „	15 „	„ 45 „	...	5 10
No. 3 „	28 „	„ 45 „	...	6 18

J. TYLOR & SON'S BARROW GARDEN ENGINE (Fig. 2), in strong tinned iron tub, well painted inside and outside, with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 10 holds	8 gallons,	throws 25 feet high	...	£2 15
No. 13 „	12 „	„ 30 „	...	3 5
No. 11 „	16 „	„ 40 „	...	4 0
No. 12 „	24 „	„ 45 „	...	5 0
No. 14 „	30 „	„ 45 „	...	5 18

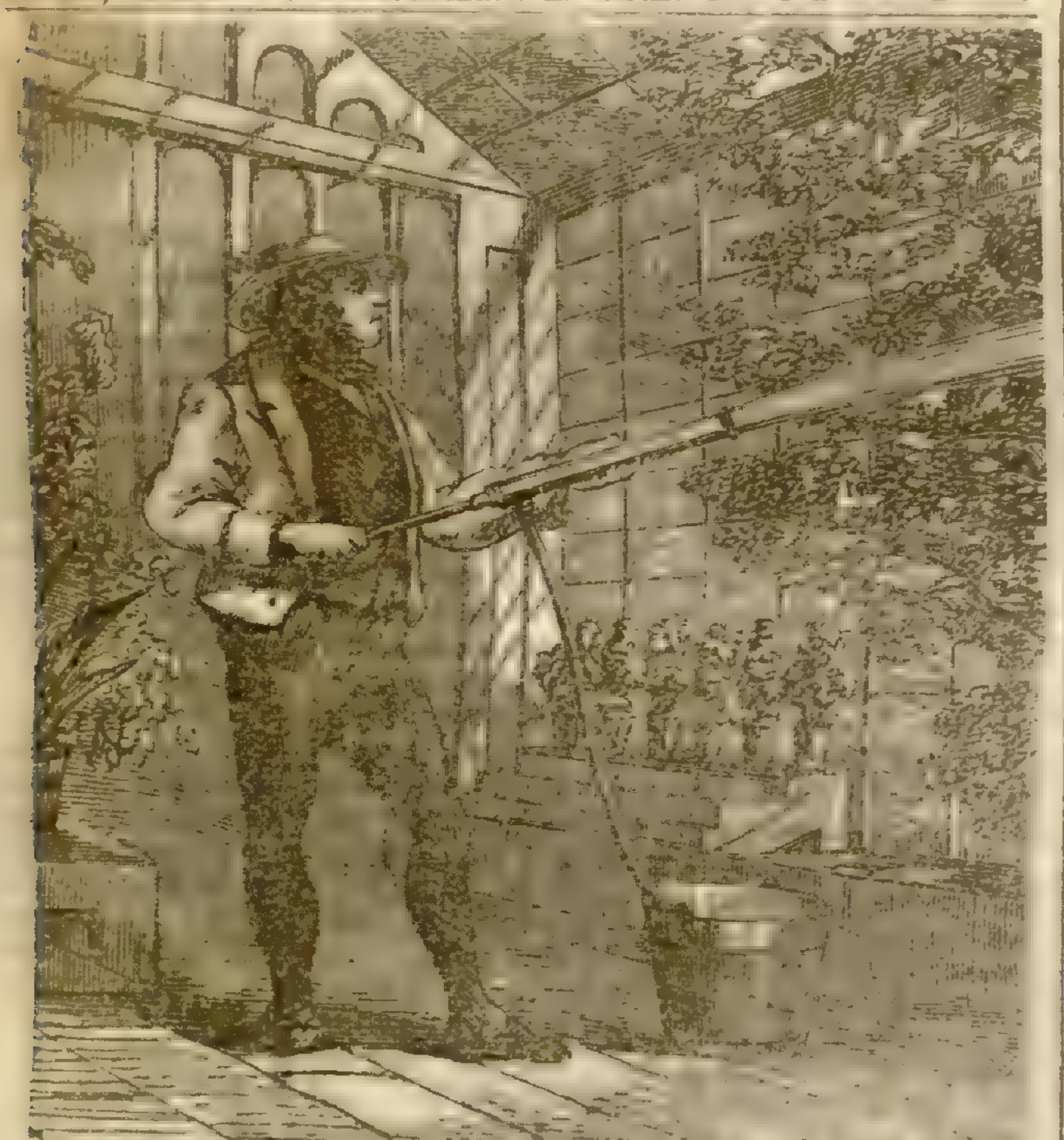
A large assortment of every description of Garden Syringes, Pail Engines, Conservatory Pumps, &c., kept in stock.

Full size Syringe, on Read's principle, of the very best quality and workmanship, with two roses and one jet, 21*s.*; Plain Syringes from 10*s.* 6*d.* upwards.

J. TYLOR & SON'S Horticultural Apparatus may be obtained at these prices from any respectable Ironmonger or Seedsman in town or country, through whom alone they will be supplied, and of whom Drawings and Prices may be had.

N.B. Cost of carriage, &c., not included in these prices.

J. TYLOR & SON'S Manufactory, Warwick Lane, Newgate Street, London.



J. TYLOR AND SON'S REGISTERED GARDEN SYRINGE.—Small size, for Amateur use, **21s.** each; Large size, for Gardeners' use, **25s.** each.

By a simple arrangement this Syringe is rendered more effective than any portable Conservatory or Garden Pump ever offered to the public. It is equally adapted for Garden or Conservatory use, and is capable of discharging twice as much water in a given time as any other Syringe now in use. The arrangement consists in attaching a small flexible suction tube to the barrel of the Syringe, through which it is filled with water at every discharge of the previous contents. By this means the Syringe is always charged, and the pull-up stroke of the piston rendered perfectly easy, it having, indeed, no work to do, the barrel being previously full of water. Being thus made self-supplying, a great saving of labour is effected; and the necessity of stooping to fill the Syringe at every discharge being done away with, the direction of the water can be maintained for any length of time. It is perfectly cleanly in its action, as it is not possible for any water to get on the outside of the barrel, which is a well-known inconvenience attendant on the use of every other Syringe. Its construction is perfectly simple, and cannot get out of order; the ground-in ball valves and fittings used for filling all other patent Syringes being entirely superseded. To be had of any respectable Ironmonger or Seedsman in town or country.

J. TYLOR & SONS, Manufacturers of Horticultural Apparatus, Warwick Lane, Newgate Street, London.

N.B. These prices do not include carriage, package, or expenses of delivery in the country.

REDUCTION IN PRICE.

WEIR'S IMPROVED GALVANISED WROUGHT IRON LIQUID MANURE PUMP.

The Fittings of these Pumps are wholly of Brass, and there is no leather or other matter which can be affected by the manure.

Price, complete, with 10 feet of Flexible Suction Pipe, 4*l.* 15*s.* Terms, cash on delivery.

EDWARD WEIR, Agricultural Engineer, 16, Bath Place, New Road, London. Removed from Oxford Street.

Catalogues, with Illustrations, sent free by post.

WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

	£	s.	d.
Patent Pump	1	15	0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing	3	0	0

Larger sizes if required.

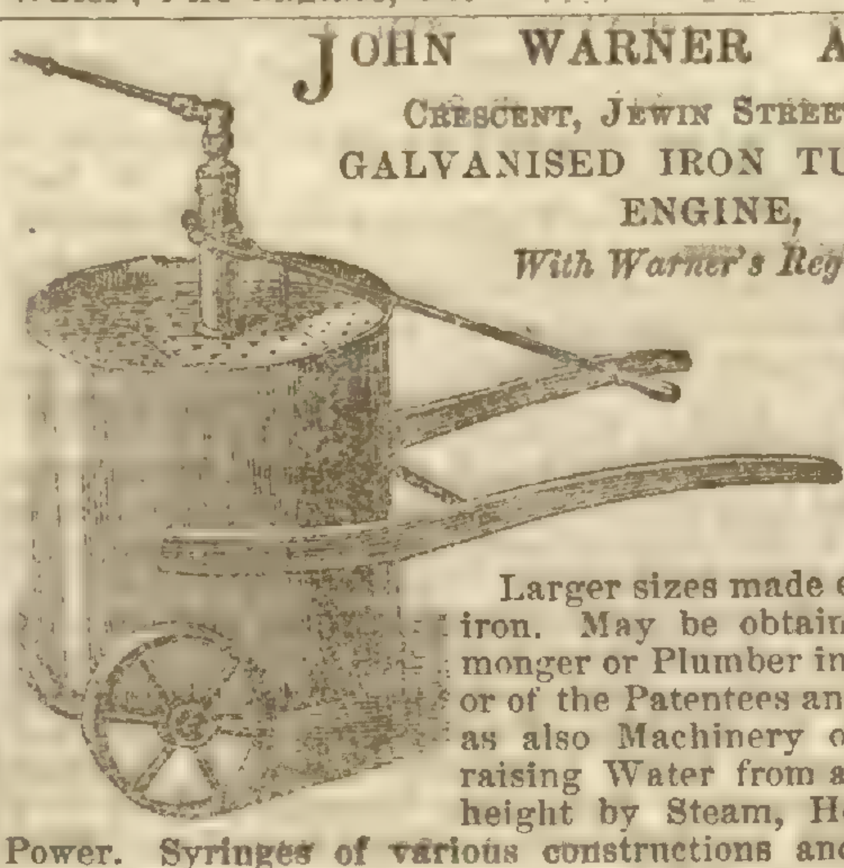
The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,

8, CRESCENT, JEWIN STREET, LONDON.

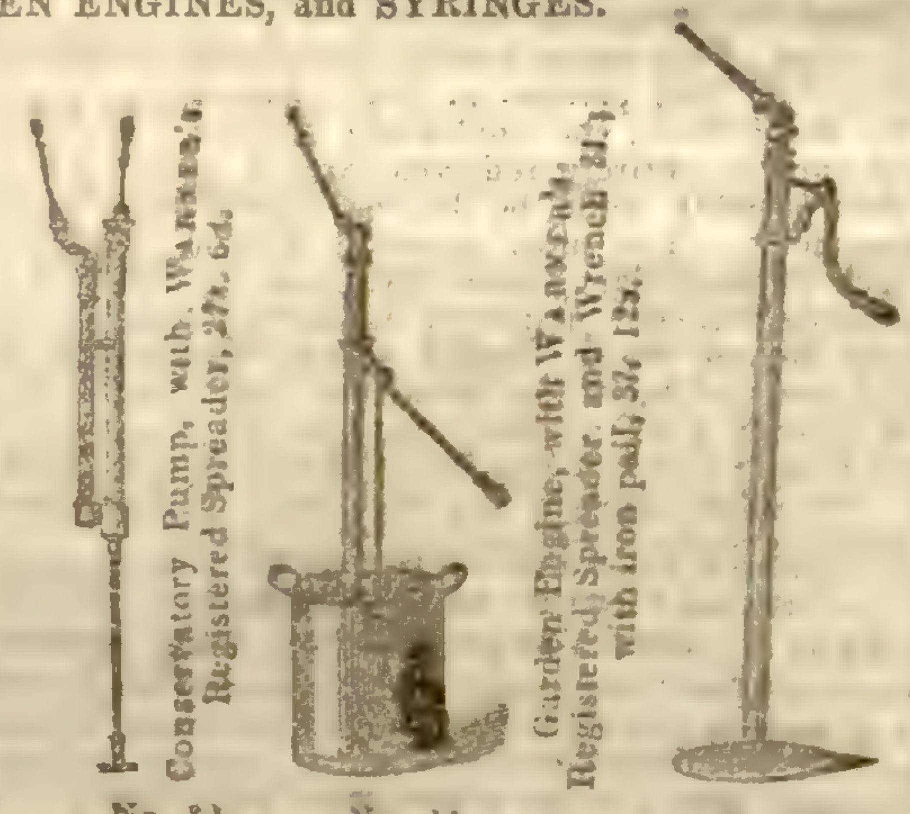
Every description of Machinery for Raising Water; Fire Engines, &c.



JOHN WARNER AND SONS, CRESCENT, JEWIN STREET, LONDON. GALVANISED IRON TUB GARDEN ENGINE, *With Warner's Registered Spreader*, Is strongly recommended, for durability and low price, viz., 2*l.* 19*s.*, to hold 10 gallons.

Larger sizes made either in wood or iron. May be obtained of any Ironmonger or Plumber in town or country, or of the Patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Syringes of various constructions and sizes from 9*s.* upwards. An extensive assortment kept.

JOHN WARNER AND SONS, 8, Jewin Crescent, London, Manufacturers of FIRE ENGINES, PUMPS, GARDEN ENGINES, and SYRINGES.



Conservatory Pump, with WARNER'S Registered Spreader, 27*s.* 6*d.*

No. 32.

Garden Engine, with WARNER'S Registered Spreader and Wrench 21*s.*, with iron pail, 3*l.* 12*s.*

No. 11.

Patent Conservatory Pump, with WARNER'S Registered Spreader, 2*l.* 15*s.*; with iron pail, 3*l.* 5*s.*

No. 14.

Brass Syringes, 9*s.* to 18*s.*

All articles of JOHN WARNER & SONS' manufacture may be obtained of any Ironmonger or Plumber in town or country, at the advertised prices.

JOHN WARNER & SONS having been practical Horticulturists for many years, know exactly the requirements of both Amateurs and Gardeners. A gardener with a properly constructed pump will get through as much work in five minutes as he could with any Syringe in a quarter of an hour, and with half the labour to himself. Syringes are economical only for small houses.

No establishment offers such a variety of effective machines for hydraulic purposes, whether to supply Gardens, Hothouses, Cottages, Farms, Mansions, or Boards of Health, with every requisite connected with the conveyance and distribution of liquids.

Fountains suitable for Conservatories, Lawns, &c.

Sheets of Engravings sent on application.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

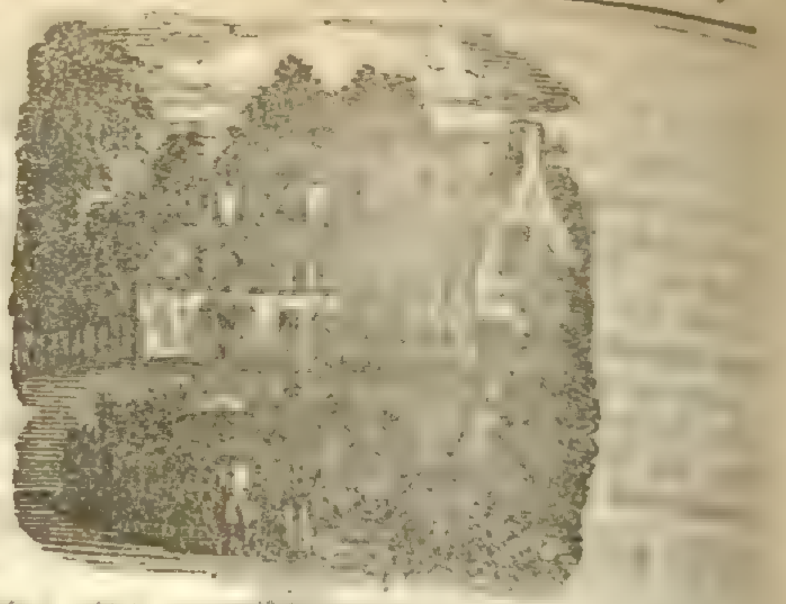
Priced lists of plant tubs and boxes forwarded on application.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

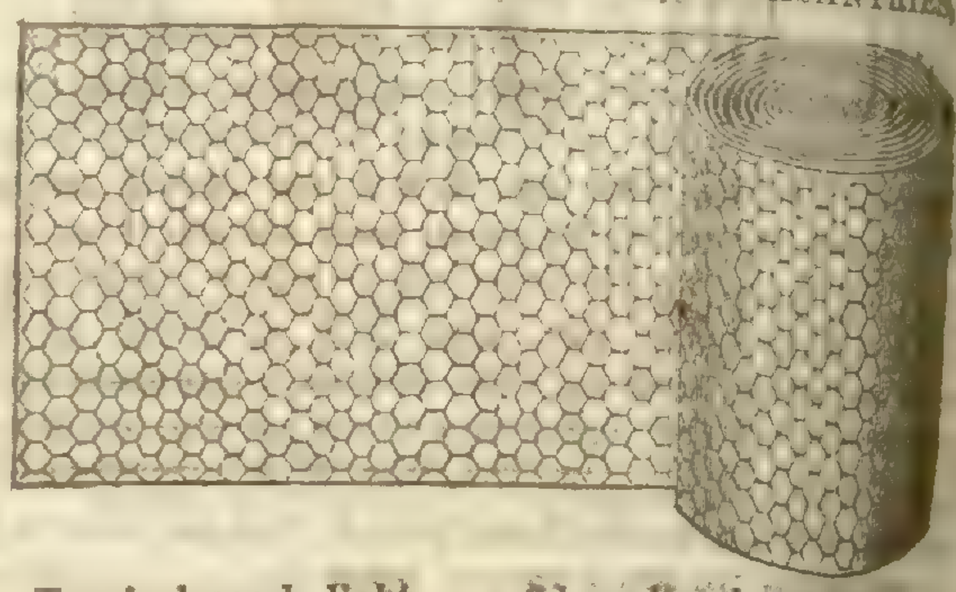
Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.



THE GUTTA PERCHA COMPANY'S TUBING FOR WATERING GARDENS, WITH ROSES AND UNION JOINTS FITTED.—27, CITY ROAD, LONDON.

TANNED NETTING, for the protection of Fruit Trees from frost, blight, and birds, and for the security of fresh sown seeds, either in Gardens or Fields, at 1*d.* per square yard; 200 yards, 14*s.*; 500 yards, 30*s.*; 1000 yards, 50*s.* Scrim Canvass, for Wall Fruit.—At EDGINGTON and Co.'s, 17, Smithfield Bars, City, and Old Kent Road, Southwark, where may be seen erected Emigrant Tents in great varieties, on the latest improved principles, and also at Brunswick Street, Poplar, near the East India Export Dock.

GALVANISED WIRE NETTING FOR GAME AND SHEEP FENCING, AVIARIES, PHEASANTRIES, &c.



Two-inch mesh, light	...	6*d.*	per lineal yard 2 ft. wide.
„ „ strong	...	8*d.*	„ „
„ „ extra strong		1*s.*	„

Any size or quantity made to order on the shortest notice. Special Estimates given for large quantities.

GEORGE CASTON AND CO., Wholesale Wire Netting Manufacturers, Howard's Buildings, Brick Lane, St. Luke's, London. Orders by post punctually attended to.

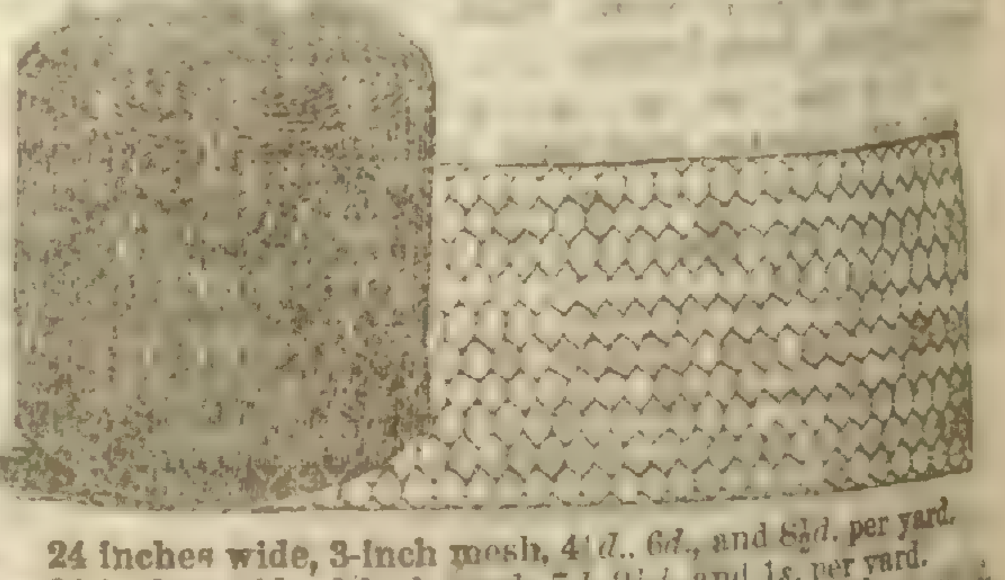
GALVANISED WIRE GAME NETTING.—7*d.* PER YARD, 2 FEET WIDE.

		Galvanised.	Japanned Iron.
2-inch mesh, light, 24 inches wide	...	7*d.* per yd.	5*d.* per yd.
2-inch „ strong „	...	9 „	6½ „
2-inch „ extra strong „	...	12 „	9 „
1⅝-inch „ light „	...	8 „	6 „
1⅝-inch „ strong „	...	10 „	8 „
1⅝-inch „ extra strong „	...	14 „	11 „

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasantries, 1*d.* per square foot. Patterns forwarded post free.

Manufactured by BARNARD & BISHOP, Market Place, Norwich; and delivered free of expense in London, Peterborough, Hull, or Newcastle.

H. J. MORTON AND Co., 2, Basinghall Buildings, Leeds.—GALVANISED GAME AND POULTRY NETTING, very strong and neat, NEVER REQUIRES PAINTING.



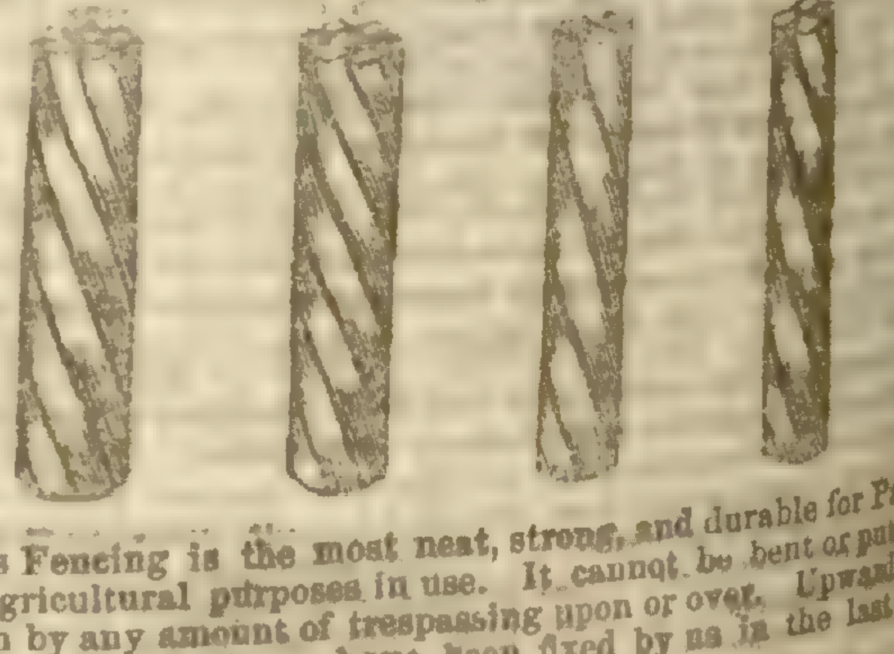
24 inches wide, 3-inch mesh, 4½*d.*, 6*d.*, and 8½*d.* per yard.
24 inches wide, 2-inch mesh, 7*d.*, 9½*d.*, and 1*s.* per yard.

GALVANISED IRON SPOUTING, for Dwellings, Cottages, Farm Buildings, &c., NEVER REQUIRES PAINTING.

Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalte Roofing Felt, &c.

H. J. MORTON AND Co., Galvanised Iron Roofing Works, 2, Basinghall Buildings, Leeds.

PATENT WIRE STRAND FENCING FOR PARKS, &c.



This Fencing is the most neat, strong, and durable for Parks and Agricultural purposes in use. It cannot be bent or put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply as above.

IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

HOSE PIPING.—Great Reduction in Price.

WAITHMAN'S PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense Pressure, and much more than Leather, vulcanised Rubber, or any other Hose; and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback: but, owing to recent important patented Inventions, the cost of manufacturing it is now reduced at least 60 per cent., which advantage is offered to the Public.—London Agents, Burgess & Key, 103, Newgate Street, and 52, Little Britain, who on application will forward wholesale and retail prices.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.

MESSRS. BURGESS and KEY, as Mr. Parkes' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.
103, Newgate Street, and 52, Little Britain, London.

BARTON'S PATENT STABLE FITTINGS and ENAMELLED MANGERS.—These Fittings have all the newest improvements and are the only patented invention of this description.
James Barton, Iron Founder, Smith, &c., 370, Oxford Street, a few doors East of the Pantheon.

ANTHONY'S PATENT AMERICAN CHURN.—Extract from the Royal Agricultural Society's Report of the trial of Churns at the Gloucester meeting in July last. "In this trial the American Churn not only maintained its character in producing butter rapidly, but in producing a greater quantity from the like amount of cream." It made from 4 quarts of cream 4 lbs. 6 oz. of butter, being 8 oz. more than any of the other Churns from the same quantity and quality of cream. Price Lists of Churns and Implements by the best makers sent free, and Illustrated Catalogues on receipt of eight postage stamps. Burgess & Key, 103, Newgate Street, and 52, Little Britain, London, who have always a large stock of Steam-engines, Ploughs, Harrows, Diggers, Waggons, Carts, Threshing and Dressing Machines, Mills, Oat and Grain Bruisers, Oilcake Breakers, Reaping Machines, Haymakers, Horse-rakers, Turnip Cutters, Liquid Manure Carts, Parkes' celebrated Steel Digging Forks and Draining Tools, Pumps for Manure, Farm Fire Engines, and for Garden Purposes, &c. &c.

IMPORTANT TO GROWERS OF ROSES.

NEWLY-INVENTED APHIS BRUSH, or GREEN FLY DESTROYER.—The attention of Florists is particularly called to this Cheap and Ingenious Instrument, invented by the Rev. L. S. Bull, of Colchester, which in a very simple and easy manner, instantly cleanses the Rose from that destructive insect the Green-fly (or Aphis), without causing the slightest injury to the bud or foliage. Price 2s. 6d. each, or free by post, 4s.

Manufactured by
JOSLIN AND SONS,
Ironmongers, Colchester.

Retailed by all the principal Ironmongers.
Wholesale agents: W. Thompson and Son, 15, Upper North Place, Gray's Inn Lane Road, London.

IMPORTANT TO STOCK FARMERS & FLOCK MASTERS.

SHEEP, LAMBS, HORSES, AND CATTLE,
Can be Dressed with

LONG'S NON-POISONOUS SHEEP & CATTLE-DRESSING COMPOSITIONS, without any possibility of danger or injury resulting from the application. These Compositions are admitted by all who have fairly tested them to be the most effective Sheep Dressings ever brought before the agricultural public; and as they are non-poisonous, and do not stain or discolour the Wool, they are gradually superseding the use of all Dipping and other Sheep-dressing preparations, composed of such deadly poisons as Arsenic or Mercury.

It is a fact now thoroughly established, that Long's Non-Poisonous Sheep Dressings, if liberally and judiciously applied in the dressing of Sheep and Lambs, will—in their consequent effect in removing Disease, destroying Vermin, and keeping the flock in condition—thus promoting increased growth both of Mutton and Wool—as amply repay flock owners for first outlay as artificial manures when applied to land. They are the only Sheep Dressings also, which, from the fact of their containing no poison, can be beneficially and safely applied to Sheep and Lambs at any age and at any season of the year.

Pamphlets containing full directions for use, and copies of the strongest Testimonials ever accorded to a manufacturer, signed by leading and practical Stock Farmers, residing in all parts of the United Kingdom, together with the names of all Country Agents authorised to vend Long's Patent Sheep and Cattle-dressing Compositions, may be obtained gratuitously on application of any advertised country Agent; or by post, sent free, of

BARRY BROTHERS, Agents for Joseph Long,
Meriton's Wharf, and Shad Thames, London.

TO FLORISTS AND OTHERS.

J. JONES, Iron Merchant, has always a great variety of CONICAL and SADDLE BOILERS in STOCK: also Fire and Furnace Bars, Ornamental and Plain Supply Cisterns, Double Doors and Frames, Furnace Grates, Soot Doors, Hot Water Pipes, Elbows, Tees, Syphons, Throttle Valves, Stop Cocks, Flange and Socket Elbows, &c.; also Trough Pipes. Drawings and prices of the above, on application to J. Jones, Iron Bridge Wharf, No. 6, Bankside, London, near the Southwark Iron Bridge.

THE CONICAL HOT-WATER BOILERS, as invented by John Rogers, Esq., are only to be obtained of JOHN SHEWEN, Ironmonger, Sevenoaks, Kent.
Contracts given for Heating.

STEPHENSON and PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

THE COMFORT of a FIXED WATER CLOSET for 1l.—Places in gardens converted into comfortable water closets by the PATENT HERMETICALLY SEALED PAN, with its self-acting valve, entirely preventing the return of cold air or effluvia. Any carpenter can fix it in two hours. Price 1l. Indispensable for the health and comfort of a family. Hermetically sealed Inodorous Chamber Commodes, 1l. 4s., 2l. 6s., and 3l.; also, Improved Portable Water Closets, with pump, cistern, and self-acting valve. A prospectus, with engravings, forwarded by enclosing two postage stamps.—At FYFE and Co.'s, removed to more commodious premises, at 46, Leicester Square, London.

FOR HOT OR WET WEATHER.

BERDOE'S LIGHT SUMMER COATS, of superior description, at lowest charges, a large Stock for selection; also of the well-known Ventilating Waterproof Light Coats, Capes, Shooting Jackets, &c., with Mantles, Habits, &c., for Ladies; all effectually resist any amount of rain, without confining perspiration.—W. Berdoe, Tailor, 96, New Bond Street, and 69, Cornhill (only).

GLENFIELD PATENT STARCH, used in her Majesty's Laundry, and Wotherspoon's machine-made CONFECTIONARY, MARMALADE, JAMS, JELLIES, &c., which gained the Prize Medal of 1851, may be had of all Grocers; Wholesale of Wotherspoon, Mackay, & Co., 66, Queen Street, Cheapside, London; and Robert Wotherspoon & Co., Glasgow.

METCALFE and CO.'S PERFUMERY DEPARTMENT.—PROPRIETARY ARTICLES. — Metcalfe's celebrated ALKALINE TOOTH POWDER is acknowledged as the safest and most efficient now in use. Dupuytren's Medicated Pomade is the most certain remedy for preventing the hair prematurely falling off, and for restoring it when baldness has already commenced. Dupuytren's Medicated Balm strengthens, cleanses, and improves the growth, and is generally acknowledged as the best wash for the hair.—Manufacturers of British and Importers of Foreign Soaps, Perfumery, and J. M. Farina's genuine Eau de Cologne, at Metcalfe, Bingley, & Co.'s only Establishment, 130b and 131, Oxford Street, second and third doors west from Holles Street.

DEAFNESS.—NEW DISCOVERY.—The Organic Vibrator, an extraordinarily powerful, small, newly invented instrument, for Deafness, entirely different from all others, to surpass anything of the kind that has been, or probably ever can be produced; being of the same colour as the skin is not perceptible. It enables deaf persons to hear distinctly at church and at public assemblies; the unpleasant sensation of singing noises in the ears is entirely removed, and it affords all the assistance that possibly could be desired. Invaluable newly-invented spectacles. The most powerful Patent Telescopes, possessing such extraordinary power, that some, 3½ inches, with an extra eye-piece, will show distinctly Jupiter's Moons, Saturn's Ring, and the Double Stars. Opera, Camp, Race-course, and Perspective Glasses to know the distances. Also a very small, powerful, Waistcoat Pocket Glass, the size of a walnut, to discern minute objects at the distance of from four to five miles. — S. & B. Solomons, Aurists and Opticians, 39, Albemarle Street, Piccadilly; observe, opposite the York Hotel.

TO NERVOUS SUFFERERS.

A RETIRED CLERGYMAN having been restored to health in a few days, after many years of great nervous suffering, is anxious to make known to others the means of cure, and will therefore send (free), on receiving a stamped envelope, properly addressed, a copy of the prescription used.—Direct, the Rev. E. Douglass, 18, Holland Street, Brixton, London.

DINNEFORD'S PURE FLUID MAGNESIA has been for many years sanctioned by the most eminent of the Medical Profession, as an excellent remedy for Acidities, Heartburn, Headache, Gout, and Indigestion. As a mild aperient, it is admirably adapted for delicate females, particularly during pregnancy, and it prevents the food of infants from turning sour during digestion. Combined with the Acidulated Lemon Syrup, it forms an Effervescing Aperient Draught, which is highly agreeable and efficacious.—Prepared by Dinneford & Co., Dispensing Chemists (and General Agents for the Improved Horse-Hair Gloves and Belts), 172, New Bond Street, London, and Sold by all respectable Chemists throughout the Empire.

RUPTURES EFFECTUALLY CURED WITHOUT A TRUSS.—All sufferers from this alarming complaint are earnestly invited to consult or write to Dr. LESLIE, as he guarantees them relief in every case. His remedy has been successful in curing thousands of persons during the last 11 years, and is applicable to every kind of single and double Rupture, however bad or long standing, in male or female of any age, causing no confinement or inconvenience in its use whatever. Sent post free to any part of the world, with full instructions for use, on receipt of 7s. 6d. in postage stamps, cash, or Post-office order, payable at the General Post-office, to Dr. Herbert Leslie, 87a, Manchester Street, Gray's Inn Road, London. At home daily (except Sunday) from 11 till 3 o'clock. A Pamphlet of Testimonials sent post free on receipt of one postage stamp.

The Successful Results of the last Half Century have proved beyond question that

ROWLAND'S MACASSAR OIL possesses singularly nourishing powers in the growth, restoration, and improvement of the human Hair, and when every other specific has failed. This celebrated Oil is now universally acknowledged to be the cheapest, and superior to all other preparations for the hair. It prevents it from falling off or turning grey, strengthens weak hair, cleanses it from scurf and dandriff, and makes it beautifully soft, curly, and glossy. Its operation in cases of baldness is peculiarly active; and in the growth of the Beard, Whiskers, Eyebrows, and Moustachios, it is unfailing in its stimulating operation. For children it is especially recommended, as forming the basis of a beautiful head of hair. Price 3s. 6d. and 7s.; Family Bottles (equal to four small), 10s. 6d.; and double that size, 21s. Caution.—On the wrapper of each bottle are the words, Rowlands' Macassar Oil, in two lines. The same are engraven on the back of the wrapper nearly 1500 times, containing 29,028 letters.—Sold by A. Rowland & Sons, 20, Hatton Garden, London, and by Chemists and Perfumers.

THE BEST SHOW of IRON BEDSTEADS in the Kingdom is William S. Burton's.—He has two very Large Rooms, which are devoted to the exclusive show of Iron and Brass Bedsteads and Children's Cots, with appropriate Bedding and Mattresses. Common Iron Bedsteads from 17s.; Portable Folding Bedsteads from 12s. 6d.; Patent Iron Bedsteads, fitted with dovetail joints and patent sacking, from 21s.; and Cots from 21s. each; handsome Ornamental Iron and Brass Bedsteads, in great variety, from 2l. 19s. to 18l. 13s.

BATHS AND TOILETTE WARE.—William S. Burton has ONE LARGE SHOW ROOM devoted exclusively to the DISPLAY of BATHS and TOILETTE WARE. The stock of each is at once the largest, newest, and most varied ever submitted to the public, and marked at prices proportionate with those that have tended to make his establishment the most distinguished in this country. Portable Showers, 7s. 6d.; Pillar Showers, 3l. to 5l.; Nursery, 13s. 6d. to 32s.; Sponging, 15s. to 32s.; Hip, 14s. to 31s. 6d. A large assortment of Gas Furnace, Hot and Cold Plunge, Vapour, and Camp Shower Baths. Toilette Ware in great variety, from 15s. 6d. to 45s. the Set of Three.

William S. Burton has TEN LARGE SHOW ROOMS (all communicating), exclusive of the shop, devoted solely to the show of GENERAL FURNISHING IRONMONGERY (including Cutlery, Nickel Silver, Plated, and Japanned Wares), Iron and Brass Bedsteads, so arranged and classified that purchasers may easily and at once make their selections.

Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of.

39, OXFORD STREET (corner of Newman Street); Nos. 1, 2, and 3, NEWMAN STREET; and 4 and 5, PERRY'S PLACE.

KNOW THYSELF.—Persons desirous of knowing the gifts, defects, talents, tastes, affections, and other characteristics of themselves or any friends in whom they are interested, must send a specimen of the WRITING, stating sex and age (including 13 penny postage stamps), to Miss GRAHAM, 3 New Road, Hornsey, Middlesex, and they will receive a minute graphiological delineation, written in a style peculiarly her own. Testimonial from W.R.: "Having seen several of your pourtrayals of character, and being much struck with the forcible truths contained in them, I should like your opinion of mine."—Miss H. S.: "Your delineations are most faithful."—Miss Grove: "Your letter gave great satisfaction."—Miss Rosa C.: "Accept my sincere thanks for your advice. I was exceedingly doubtful of him."

SOUTHDOWN RAMS.

MR. R. H. ELLMAN informs his Friends that his RAMS are now ready for Letting or Sale. The Rams may be seen and terms known at any time.—Landport, Lewes.

TO BE LET ON LEASE, with immediate Possession, or at Michaelmas, an excellent FARM, containing 130 acres of Arable Land, situate midway between Guildford and Farnham, 1½ mile from the Ash station.—Apply to Mr. Finney, Guildford, Surrey.

CORN-DEALER'S BUSINESS.

TO BE SOLD, an old-established CORN-DEALER'S BUSINESS, in the most preferable part of the West End of London, having a large connection among the nobility and gentry, for which a Premium of 350l. will be required, and the Stock and Fixtures to be taken at a valuation.—For further particulars, address to A. B., Mr. Milligan's Office, Hungerford Wharf, Strand; or apply at Mansell & Elliot's Offices, 13a, Belgrave Square, and 12, Birchin Lane, Cornhill.

TO BE SOLD, a NURSERY and SEED BUSINESS, near the most fashionable watering place in the Isle of Wight. Coming in very reasonable, as the proprietor is relinquishing the business.—Direct to A. B., Mr. Whitmore, 7, High Street, Newport, Isle of Wight.

TO BE SOLD, pure black Norfolk and other varieties of TURKEYS, for Stock; also several kinds of the best Fancy and other POULTRY.—Apply to A. Z., care of Mr. Brill, Station Master, Needham Market, Suffolk.

MR. H. D. DAVIES has much pleasure in allowing any one to see his Stock of POULTRY; but some inconvenience having arisen from the visits of persons altogether unknown, and at unseasonable hours, those ladies and gentlemen who may wish to see the birds, are requested to favour Mr. Davies previously with their name and address, when a card of admission will be immediately forwarded. In future, no person can be admitted into the poultry yard without producing such a card, or at any other hours than those named for the purpose.
Spring Grove House, Hounslow.

BLACK COCHIN EGGS from the best birds in England, having always taken prizes at the best shows, at 18s. per dozen, including package. Apply at the city of London Wire Works, 44, Skinner Street, London. N.B. Fowl Houses, Chicken Coops, Poultry Hurdles, and Netting, of every size and description. Illustrated Catalogues forwarded, post free, on application. A few Spanish Pullets, sisters to those sent to her Majesty's yard at Windsor, for Sale.

SPANISH AND DORKING CHICKENS FOR 1854, bred from the Prize Birds at Bath, Cheltenham and Lincoln, and other first-rate Stock. As also some Brahma Pootra Chickens and White Aylesbury Ducks are now on Sale, and may be had by amateurs and others wishing to improve their stock of Poultry.—Apply, by letter only, post-paid, to Mr. H. D. Davies, Spring Grove House, Hounslow.

NURSERIES, CLAPHAM.

MESSRS. PROTHEROE & MORRIS are instructed by the Administrators of the late Jos. Fairbairn, to offer for unreserved sale, in the early part of September, the entire stock of specimen Greenhouse and Stove Plants, which are all of the most choice sorts, and in the best condition. The lease of the old established Seed Shop and Nursery to be sold; the Stock may be taken by valuation or by agreement: for particulars apply to the administrators, at the Nursery, Clapham, or to James Fairbairn.—Robert Silvester Brown, and Clack, Administrators, Nursery, Clapham.

CLAPHAM.
GREENHOUSE AND STOVE PLANTS.

MR. J. C. STEVENS has received instructions from Mr. Over, a well-known exhibitor at the Metropolitan Shows, to submit to Public Auction, on the premises, Albion Road, Larkhall Lane, Clapham, on WEDNESDAY, August 2d, and following day, at 12 o'clock, his collection of SPECIMEN STOVE AND GREENHOUSE PLANTS, consisting of Heaths, Azaleas, Allamandas, Ixoras, Dipladenias, Hoyas, Gardenias, a few Orchids, &c., all of which are in the finest possible health. May be viewed the day prior and mornings of Sale; and catalogues had (1s. each, returnable to purchasers) by applying to Mr. Over as above, or to Mr. J. C. Stevens, 38, King Street, Covent Garden, London.

SUPERIOR DOWN COTSWOLD RAMS.

MESSRS. T. MALLAM and SON have received instructions from Messrs Druce, of Eynsham, near Oxford, to Sell by Auction, on WEDNESDAY, the 9th day of August, at 11 o'clock, in a Close near Worcester College (being the Monthly Cattle Market at Oxford), about 30 SUPERIOR SHEARLINGS, a few older Sheep, and two well bred Yearling Bulls. The Auctioneers beg to observe that this Stock gained the first prize at Smithfield, in 1853, and has been successfully exhibited at the Birmingham and Midland Counties, and the Oxfordshire Shows, for some years past.

POPULAR WORKS ON BOTANY
BY DR. LINDLEY.

SCHOOL BOTANY; OR, THE RUDIMENTS OF BOTANICAL SCIENCE.
400 Illustrations. 8vo. Price 5s. 6d. half-bound.
BRADBURY & EVANS, 11, Bouverie Street.

Lately Published,

THE ELEMENTS OF BOTANY, STRUCTURAL AND PHYSIOLOGICAL. With a Glossary of Technical Terms, and numerous Illustrations. 12s. cloth.

This completes the series of Elementary Botanical Works by Professor LINDLEY, of which "School Botany," and "The Vegetable Kingdom," form the other parts.

The first two Parts of THE ELEMENTS OF BOTANY, comprising Structural and Physiological Botany, and a Glossary of Technical Terms, are published in one octavo volume, price 12s.

These three parts form a complete manual of Botany for Medical and other Students who have made themselves acquainted with the author's "School Botany."

N.B. The Glossary may be had separately, price 5s.
BRADBURY & EVANS, 11, Bouverie Street.

This day is published, in one vol. 8vo, with numerous woodcuts, price 14s.,

MEDICAL AND ŒCONOMICAL BOTANY; or An Account of the Principal Plants employed in Medicine or Domestic Œconomy.

EXTRACT FROM THE AUTHOR'S PREFACE.

"The Vegetable Kingdom contains, among a large quantity of plants of no known importance to man, various useful species employed in medicine, the arts, or in the many branches of domestic œconomy. The principal part of those which can be brought by teachers in Europe under the notice of students, or which, from their great importance, deserve to be among the earliest subjects of study, are mentioned in the following pages, where they are arranged in the manner proposed in the 'VEGETABLE KINGDOM' of the author, with the sequence of matter departed from in a few instances, when it was believed that the convenience of younger students would be consulted by doing so. The author trusts that this selection will be found to have been made in such a way that all teachers who possess reasonably extensive means of illustrating their lectures, and all Botanic Gardens, may furnish the larger part of the species which are mentioned. A small selection was indispensable; firstly, because a greater work would have been beyond the reach of the majority of purchasers; and secondly, because experience shows us that those who have to study a science of observation, such as Botany, require to concentrate their attention, in the first instance, upon a limited number of objects."
BRADBURY & EVANS, 11, Bouverie Street.

NEW TALE BY MR. CHARLES DICKENS.

On the 31st instant will be published, price 11d.,

PART 52 of "HOUSEHOLD WORDS," containing Five Weekly Portions of "HARD TIMES." By CHARLES DICKENS.

Office, 16, Wellington Street North, Strand; and sold by all Booksellers and Newsvendors.

BY THE AUTHOR OF "VANITY FAIR."

On the 31st inst. will be published, price 1s., No. XI. of

"THE NEWCOMES." By W. M. THACKERAY, Author of "Vanity Fair," "Pendennis," &c. &c. With Illustrations by RICHARD DOYLE.
BRADBURY & EVANS, 11, Bouverie Street.

On the 31st inst. will be published, price 1s., the FIFTEENTH NUMBER of

HANDLEY CROSS; OR, MR. JORROCKS'S HUNT. By the Author of "MR. SPONGE'S TOUR." Illustrated with Coloured Plates and Numerous Woodcuts by JOHN LEECH, uniformly with "SPONGE'S TOUR."
BRADBURY & EVANS, 11, Bouverie Street.

On the 31st July will be published, price 2s. each,
PARTS XV. AND XVI. OF

THE ENGLISH CYCLOPÆDIA,
EXTENDING IN
THE NATURAL HISTORY DIVISION from FOOD to GYROSTEUS,
AND IN
THE GEOGRAPHICAL DIVISION from EDINBURGH to GEORGIA.

Including articles on Egypt, Eifel, Ekatarinoslaf, Elba, the Elbe, Elbing, Elis, Elsinore, Emden, Ens (Austria), Entre Douro e Minho, Entre Rios, Ephesus, Epirus, Erfurt, Erzrum, Esthonia, Estremadura, Ethiopia, Etruria, Eubœa, Europe, Faröe, Fernando Po, Ferrara, Finland, Flanders, Florence, Florida, France, Frankfurt, Freyburg, Friesland, Friuli, Fünen, Galicia (Austrian), Galicia (Spanish), St. Gall, Geneva, Genoa, Georgia, &c. &c.

. These Two Parts are published together to enable Subscribers to complete the Second Volume of each Division.

BRADBURY & EVANS, 11, Bouverie Street; and sold by all Booksellers and Newsvendors.

Price 2s. 6d.,

FOLIA ORCHIDACEA.—Part V. By Professor LINDLEY. Containing MILTONIA, BRASSIA, ADA, POLYCHILOS, CORYMBIS, SOBRALIA, CŒLOGYNE, PANISEA.
J. MATTHEWS, 5, Upper Wellington Street, Covent Garden, London.

Price 1s. 6d., free by post 1s. 10d.

LABELS FOR THE HERBARIUM,
CONSISTING OF THE NAMES OF THE
CLASSES, ALLIANCES, ORDERS, AND SUB-ORDERS,
OF
PROFESSOR LINDLEY'S "VEGETABLE KINGDOM."
So printed in large type, that they can be cut out and pasted into THE HERBARIUM.
J. MATTHEWS, 5, Upper Wellington Street, Covent Garden.

Price 3s. 6d., free by post,

THE TREE ROSE.—Practical Instructions for its Formation and Culture. Illustrated by 24 Woodcuts. Reprinted from the GARDENERS' CHRONICLE, with additions.

CONTENTS.

Annual pruning time, principle of execution, &c.
Binding up
Budding knife
Budding, time of year, day, time of day, state of the plant, care of buds
Budding upon body
Bud, insertion of, into stock
Bud, preparation of, for use
Buds, dormant and pushing
Buds, failing
Buds, securing a supply of
Caterpillars, slugs, and snails, to destroy
Causes of success
Dormant buds, theory of replanting with, explained
Guards against wind
Labelling
Loosing ligatures
March pruning
Mixture for healing wounds
Pruning for transplantation
Planting out, and arrangement of trees
Pushing eye, spring treatment of dwarf shoots from
Roses, different sorts on the same stock
Roses, short list of desirable sorts for budding with a pushing eye
Sap-bud, treatment of
Shape of trees
Shoots and buds, choice of
Shoots for budding upon, and their arrangement
Shoots, keeping even, and removing thorns
Shortening wild shoots
Stocks, planting out for budding upon; the means of procuring; colour, age, height; sorts for different species of Rose; taking up, trimming roots, sending a distance, shortening heads, &c.; saw proper for the purpose.
GRAFTING.
Aphides, to keep down
Free-growers, remarks on
Graft, binding up and finishing [of
Grafting, advantage
Grafting, disadvantage of
Operations in different months
Preliminary observations
Roses, catalogue and brief description of a few sorts
Scion, preparation and insertion of
Scion, choice and arrangement of
Stock, preparation of.
APPENDIX.
A selection of varieties
Comparison between budding and grafting.

Post-office orders to be made payable to JAMES MATTHEWS, 5, Upper Wellington Street, Covent Garden, London.

Now ready, Part I., of

THE FERNS OF GREAT BRITAIN, Illustrated by JOHN E. SOWERBY; Descriptions by C. JOHNSON, Esq. To contain about 46 Plates, and to be completed in Eight Monthly Parts, full coloured, at 3s.; partly coloured at 1s. 6d. per Part.

To be had through all Booksellers; and of the Proprietor, JOHN E. SOWERBY, 3, Mead Place, Lambeth.

MR. LEE ON BATHS, ETC.

Just published, third edition, fcap. 8vo. cloth, 5s. 6d.,

THE WATERING PLACES OF ENGLAND, Considered with reference to their Medical Topography. By EDWIN LEE, M.R.C.S.

By the same Author,

THE BATHS OF FRANCE, CENTRAL GERMANY, &c. Third Edition, post 8vo, cloth. 6s. 6d.

THE BATHS OF RHENISH GERMANY. Post 8vo. 3s.

HOMBURG AND ITS MINERAL WATERS. Fcap. 8vo. 1s.

London; JOHN CHURCHILL, Princes Street, Soho.

NEW WORK BY DR. WILSON, OF MALVERN.

Just published, 8vo, 750 pages, cloth, 10s. 6d.,

THE PRINCIPLES AND PRACTICE OF THE WATER CURE, and Household Medical Science, in Conversations on Physiology, on Pathology, or the Nature of Disease, and on Digestion, Nutrition, Regimen, and Diet. By JAMES WILSON, M.D.

London: JOHN CHURCHILL. Malvern: HENRY LAMB.

ON MARRIAGE.

Just published (to be had free, by enclosing 1s. or Twelve Postage Stamps, to Mr. WATSON, Clerical Agent, Robert Street, Adelphi, London).

MATRIMONY.—A Pamphlet on Matrimonial Alliances, which merits the attention of those who wish to settle honourably in life. By a Clergyman.

GLEIG'S SCHOOL SERIES.

In 18mo, with Woodcuts, price 1s.,

ELECTRICITY FOR THE USE OF BEGINNERS. In which the Principles of the Science are familiarly Explained, and Illustrated by numerous Experiments and Diagrams. By T. TATE, F.R.A.S., of Kneller Training College.

Also by Mr. TATE, in Gleig's "School Series,"
ASTRONOMY FOR BEGINNERS, price 1s.
HYDROSTATICS, HYDRAULICS, and PNEUMATICS, 1s.
FIRST THREE BOOKS OF EUCLID, price 1s.
London: LONGMAN, BROWN, GREEN, and LONGMANS.

Just published in 8vo, with Plate and Woodcuts, price 10s. 6d.

RESEARCHES ON LIGHT IN ITS CHEMICAL RELATIONS; embracing a Consideration of all the Photographic Processes. By ROBERT HUNT, F.R.S., Professor of Physics in the Metropolitan School of Science. Second Edition, thoroughly revised, with extensive additions.
London: LONGMAN, BROWN, GREEN, and LONGMANS.

Just published, in crown 8vo, price 9s. 6d. cloth.

THE LAST OF THE OLD SQUIRES: A Sketch. By CEDRIC OLDACRE, Esq., of Sax-Normanbury, sometime of Christ Church, Oxon.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

FOWLS.—By JOHN BAILY. Now in the press, and will be published, August 1, the Second Edition of the above work, with which is reprinted the fourth edition of "The Dorking Fowl," corrected, revised, and considerably enlarged. It contains descriptive tables of all the fowls now exhibited, giving in few words their chief points and qualifications, with copious rules for their selection and management. Price 2s.; by post, 2s. 6d.
JOHN BAILY, 113, Mount Street, Grosvenor-square, London.

Now ready, a new edition, greatly enlarged, price 1s. plain, or 1s. 6d. coloured, cloth,

PROFITABLE POULTRY: THEIR MANAGEMENT IN HEALTH AND DISEASE. By W. B. TEGETMEIER.

"There is more good sense and practical knowledge in this modest shilling's worth than in many a more voluminous treatise: and it is only necessary to state that the illustrations are by HARRISON WEIR."—*Fraser's Magazine*, December, 1853.
London: DARTON & Co., Holborn Hill.

BRAHMA POOTRA FOWLS. An Anatomical Refutation of their Claims to be considered a Distinct Breed, will be found in the new edition of Mr. TEGETMEIER'S "Profitable Poultry." London: DARTON & Co., Holborn Hill.

PRIZE MEDAL—1851.
AT A VERY ECONOMICAL RATE.

SAMUEL CUNDY, MASON and BUILDER, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Lower Belgrave Place Pimlico, London.

Marble Chimney-pieces manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price. A good Marble Chimney-piece for 40s. Marble Work in all its branches at a remarkably cheap rate for Halls, Dairies, Larders, &c. Circulars sent on application.

N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank.

ENCAUSTIC TILE PAVEMENTS.

MAW AND CO., Benthall Works, Broseley, Salop, Manufacturers of the Cloister Pavement of Mediæval Court, and "THE SUCCESSFUL IMITATION OF OPY'S ALEXANDRINUM IN THE BEAUTIFUL ENCAUSTIC TILE PAVEMENT OF CLOISTERS OF BYZANTINE COURT," Crystal Palace (M. D. Wyatt, Esq., in Official Handbook), forward, without charge, Designs and Estimates, adapted to given dimensions, of Entrance Halls, Conservatories, Verandahs, &c., in every style.

Specimens at 11, Aldersgate Street, City.

RICK CLOTHS, MARQUEES, TENTS, ETC.
NEW OR SECOND-HAND, FOR SALE OR HIRE.

BENJAMIN EDGINGTON has for the ensuing season a large assortment of Marquees, &c., for Horticultural Societies, Fetes, Cricket Clubs, &c. Rick Cloths, with poles, pulleys, and lines complete. A variety of Emigration Tents erected on the premises, No. 2, Duke Street, Southwark. Netting and Bunting for fruit trees. A warehouse, 32, Charing Cross, where tents are erected.—Address, by post, 2, Duke Street, Southwark.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard run, of E. T. ARCHER, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey.

MILDEW AND RED SPIDER.

BAINBRIDGE'S ALKALINE EXTRACT.—We can confidently recommend the above as a sure remedy, having used it successfully for many years both on Vines and Peaches, &c. &c. Pints, 3s.; quarts, 5s. A quart is sufficient for 20 gallons of water applied with the Syringe.

BAINBRIDGE'S GUIDE TO THE CONSERVATORY. 5s. each. Sold wholesale and retail by R. BALDWIN, Paternoster Row. Gentlemen can procure the above in any part of the country through their Bookseller, in their Monthly parcels.

Sold also by BAINBRIDGE & HEWISON, 7, Pridge Street, York.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the nobility, gentry, and clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out-door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled, by anything of the kind hitherto brought before the public notice.

Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to WALTER CARSON & SON, 9, Great Winchester Street, Old Broad Street, Royal Exchange, London. No Agents. All orders are particularly requested to be sent direct.

On Monday, the 7th of August will be published, carefully revised and wholly reprinted, in One Volume, price 5s.,

HARD TIMES.
BY CHARLES DICKENS.

BRADBURY AND EVANS, 11, BOUVERIE STREET.

Now ready, Part VII., price Eightpence-halfpenny,

THE HOME COMPANION:
AN ILLUSTRATED
Magazine of Popular Literature, Criticism, and the Fine Arts.

CONTENTS:

No. XXVI.
Gui de St. Flore. An Historical Romance. With an Illustration.
Woman. By the Hon. Mrs. Norton.
Something about Petrarch.
The Mossy Nook. By the Rev. J. Eagles.
Memorials of Eminent Men. Samuel Rogers. Second Article. With an Illustration.
Chapters on Angling. III.
Nota Bene.
"My Father's Wooing."
An Interview with Humboldt.

No. XXVII.
Gui de St. Flore. An Historical Romance. With an Illustration.
On Beauty of Face.
London Reformatory.
The Screw Propeller. With an Illustration.
"My Father's Wooing."
Nota Bene.
Learning and Working. Second Lecture.

No. XXVIII.
Chapters on Angling.—IV. With an Illustration.
The Tombs of St. Denis
Wilkie. With an Illustration.
Learning and Working. Third Lecture.
Nota Bene.
Miss Bremer and Jenny Lind at the Havana.
"My Father's Wooing."

No. XXIX.
Birds of Australia. With an Illustration.
"Keeping up Appearances."
The Seat of War on the Danube. With an Illustration.
Learning and Working. Fourth Lecture.
"My Father's Wooing."

No. XXX.
Birds of Australia.—II. With an Illustration.
Australian Jottings.—II.
Lost and Found. A Story of Indian Life.
The Seat of War on the Danube. With an Illustration.
"My Father's Wooing."
Learning and Working. Fifth Lecture.
Criticisms on the American Press.—III.
Tavern Associations.

London: WM. S. ORR AND Co., Amen Corner, Paternoster Row; and sold by all Booksellers.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul, Covent Garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, July 29, 1854.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley

No. 31.—1854.] SATURDAY, AUGUST 5. [PRICE 6d.

INDEX.

Aeration and ventilation	501 a	Pear trees, unproductiveness of	499 a
Agri. Soc. of England	503 a	Peat charcoal, Prof. Way on .	503 c
Bicton, effects of the winter at	501 c	Plantations and Woods.........	500 b
Books noticed	502 b	Plants, new	502 c
Calendar, horticultural........	504 a	— watering	501 b
Capsicums, to grind	504 c	Potato crops	501 c
Charcoal peat, Prof. Way on..	503 c	— disease	502 b—508 a
Crops, reports on the....505 b—	506 a	Quercus rigida..................	502 c
Farming, steam........ 505 b—	508 b	Shalots, large crop of	501 c
Ferns, Sowerby's British, rev..	502 b	Spiranthes æstivalis, new habitat for	501 b
Forests, Royal	501 b	Steam cultivation...... 505 b—	508 b
Furs, to kill moths in..........	504 c	Strawberries, Nicholson's	501 b
Highland Soc. meeting at Berwick	508 c	— Underhill's, Sir Harry ..	502 b
Hornbeam	502 b	Vegetable pathology..........	500 a
Horticultural Society	499 c	Ventilation and aeration......	501 a
— — garden.	503 a	Vetiver..........................	501 c
Hoya bella.....................	500 c	Vine, to prune	501 c
Ireland, tour in	505 c	Wheat blight	505 a
Ladies' Traces, new habitat for	501 b	Winter, effects of, at Bicton ..	501 c
Mechi's (Mr.) gathering	501 b	Wire, galvanised	501 b
Moths, to kill in fur	504 c	Woods and plantations........	500 b
Pansy, culture of..............	503 b	— and forests.............	501 b
Pathology, vegetable	500 a	Yucca gloriosa................	501 c

A GRAND EXHIBITION OF HOLLYHOCKS, Open to the United Kingdom, will be held at the ROYAL SURREY ZOOLOGICAL GARDENS, on TUESDAY, August 22. A Subscription is now open for the purpose of raising a fund of sufficient magnitude to distribute Prizes to Nurserymen and Amateur Growers worthy the merits of this noble and popular flower. It is intended to offer a Silver Cup, value 5l. 5s., to each class for spikes in flower, with valuable descending Prizes of Gold and Silver Medals. Cut Blooms also will receive their due share of attention. In addition to the above, Gold and Silver Medals will be awarded for Miscellaneous Collections of Stove and Greenhouse Plants, Specimen Plants, Dahlias, Roses, &c.

COMMITTEE.—Messrs. W. Barnes, Peckham; J. W. Bircham, Bungay; W. Bragg, Slough; W. Chater, Saffron Walden; W. Paul, Cheshunt; A. Parsons, Ponder's End; Keake, Clewer; and C. Turner, Slough, by whom subscriptions will be received, also by the Secretary. Lists of Prizes, with Rules of the Exhibition, may be obtained of the Secretary, J. T. NEVILLE, Ebenezer House, Peckham.

SALISBURY GRAND ANNUAL DAHLIA EXHIBITION, open to all England, will take place at Milton Park, on Thursday, the 31st August, 1854, when Silver Cups and Plate will be awarded as under.

FIRST CLASS.—Amateurs, 24 blooms: Prizes, 7l. 7s.; 5l. 5s.; 3l. 3s.; 2l. 2s.; 1l. 1s.; 10s.

SECOND CLASS.—Amateurs, 12 Blooms: Prizes, 5l. 5s.; 3l. 3s.; 2l. 2s.; 1l. 1s.; 15s.; 10s.

THIRD CLASS.—Amateurs, 12 blooms, Fancy Flowers: 2l. 10s.; 1l. 10s.; 1l.; 10s.

FIFTH CLASS.—Seedlings, 1853, 3 blooms: Certificates.

SIXTH CLASS.—Seedlings, 1854, single bloom.

RULES AND REGULATIONS.—Flowers to be ready for the umpires as soon as possible after the first train from London. The flowers to be shown in the grower's own stands, which must be the same as the Metropolitan Society's. All entries to be made by the 28th of August. No entrance allowed after the 28th. Entrance for First, Second, and Third Class, 10s. each; Fourth, Fifth, and Sixth, 2s. 6d. No competitor to show unless he sends a letter containing a Post-office order, to the amount of his entries, to the Secretary, which letter shall be produced, if required. No growers that have sold green plants of Dahlias, whether Seedlings or otherwise, will be eligible to show in Classes One, Two or Three. Prizes will only be given to two-thirds of the entries in all classes. All communications to be directed, post paid, to JOHN KEYNES, Salisbury, Honorary Secretary.

N.B.—No Prizes offered to Nurserymen.

STANDISH & NOBLE'S Catalogue for the present season is now ready, and may be had by inclosing two stamps for postage.—The Nursery, Bagshot, July, 1854.

ROBERT SIM'S NEW CATALOGUE of more than 250 species and varieties of STOVE, GREENHOUSE, and HARDY EXOTIC and BRITISH FERNS, &c., can be had for one stamp.—Nursery, Foot's Cray, Kent.

CALCEOLARIA AND CINERARIA SEEDS.

GEORGE CLARKE begs to intimate that he has now ready for sale choice Seed of Calceolaria and Cineraria. The collection of Calceolarias from which the Seed now offered was saved forms an unrivalled one, and has been the admiration of all who have seen it; they possess every variety of colour peculiar to the genus, fine shapes, and have been awarded several first-class Certificates. Great care has also been taken in selecting the Cineraria from none but first-rate flowers; and, like the Calceolaria, it is warranted to give satisfaction.—Packets of both, 2s. 6d. each, will be sent on receipt of postage stamps to the amount.—Streatham Place Nursery, Brixton Hill, near London.

SPLENDID

CALCEOLARIA, CINERARIA, & SWEET WILLIAM SEED.

WILLIAM BARNES respectfully begs to inform his friends and the public generally, that he has now ready to send out in packets, at 2s. 6d. each, seed of his unrivalled Herbaceous Calceolarias, which has given so much satisfaction for two years; the varieties have been selected with the greatest care, and none but the finest colours and best shaped flowers have been retained and carefully hybridised.

W. B. has for two years paid great attention to the improvement of the SHRUBBY BEDDING CALCEOLARIA, having purchased all the best kinds from the most eminent growers, and selected from them while in bloom the best shapes, finest colours, and most perfect shrubs; by careful hybridising he has succeeded in raising some first-rate varieties, and is now enabled to offer a few packets of fine new seed at 5s per packet; this W. B. feels assured will give as much satisfaction as his herbaceous varieties have done before, which numerous letters he has received from various parts of the United Kingdom will testify.

CINERARIA SEED, saved from none but the very best and newest varieties in cultivation, at 2s. 6d. per packet.

The SWEET WILLIAMS have been grown in his Nursery Grounds for two successive years, and have caused universal admiration from all those who have seen them in bloom; nothing can be more beautiful for either clumps or borders, and they retain their great beauty for a very long time. Packets of fine seed at 1s. 6d. each. A remittance is expected from unknown correspondents.—Camden Nursery, Camberwell, London.

GRASS SEEDS.

SUTTON AND SONS *recommend the sowing of* GRASS SEEDS *during the month of August for permanent pasture, and are now prepared to supply excellent fresh Seeds for the purpose.*

Also New Italian Rye Grass and Trifolium incarnatum, at moderate prices.

JOHN SUTTON & SONS, Seed Growers, Reading.

SUTTON'S IMPERIAL CABBAGE, THE BEST FOR AUTUMN SOWING AND SPRING CUTTING. New Seed, 1s. per ounce, post free.

After trying nearly every sort in cultivation, we consider this decidedly the earliest and best Cabbage for the table. It is also a profitable sort for agriculture.

Address, JOHN SUTTON & SONS, Seed Growers, Reading.

JUST HARVESTED.

SUTTON'S EARLY SIX WEEKS, THE QUICKEST TURNIP KNOWN, *and the best for latest sowing.* New Seed, 1s. 3d. per pound, or 7s. per gallon.

ORANGE JELLY TURNIP SEED.

PURCHASERS OF LARGE QUANTITIES will be supplied liberally, for cash payment, on application to Messrs. SUTTON AND SONS, SEED GROWERS, Reading, of whom it may also be had retail at same price as at Chester. Early orders will be first executed.

CHIVAS'S NEW ORANGE JELLY TURNIP.

BASS AND BROWN have just harvested Seed of the above quick growing Turnip, also the large Lincolnshire Red Globe and other Turnips.

Chivas's Orange Jelly, 16s. per peck, or 1s. 9d. per lb.

Early Mousetail Stone, a very quick growing and fine sort, 12s. per peck, 1s. 2d. per lb.

Lincolnshire Red Globe, very large, 15s. per peck, 1s. 2d. per lb.

Norfolk White and Green Round, also White and Red Tankards, 12s. per peck, 1s. 2d. per lb.

Agricultural Seed Lists on application.

Seed and Horticultural Establishment, Sudbury, Suffolk.

BULBS FOR EARLY BLOOMING.

B. PAGE AND CO. beg to offer FINE FLOWERING ROOTS.

DOUBLE ROMAN NARCISSUS ...	4s. per dozen.
PAPER WHITE DO.	4s. „
LARGEST DOUBLE JONQUILS ...	2s. 6d. „

Their first importation having arrived.

Oxford Street Seed Stores, Southampton.

New Seed, OWN GROWTH, CHIVAS'S ORANGE JELLY TURNIP, 1s. 9d. per lb., large quantities cheaper.

FERNS AND LYCOPODIUMS.

E. COOLING begs to offer the following, in good Plants:—

12 choice Ferns and Lycopodiums, suitable for a Wardian case, Gold Fern included ...	15s. and 20s.
12 choice Indian Azaleas, to name	12s. and 18s.
6 finest new Verbenas	6s. and 9s.

The Nurseries, Derby.—July 29.

SEEDS OF CALCEOLARIA AND CINERARIA.

E. G. HENDERSON AND SON, of the Wellington Nursery, St. John's Wood, London, are now prepared to forward, by post, the new Seed saved this season from their unrivalled collection, in packets at 2s. 6d. and 5s. each.

The CALCEOLARIA, first quality	5s. 0d.
„ second „	2 6

QUALITY, and not QUANTITY, forwarded at the above prices.

CHOICE FLOWER SEEDS, FOR PRESENT SOWING.

PANSY, saved from 100 of the best vars., by name,	2s. 6d.	per pkt.
POLYANTHUS, do. 50 do. „	2s. 6d.	„
GLOXINIA, from 24 fine varieties, „	2s. 6d.	„
CALCEOLARIA, from superb spotted prize vars., by name	2s. 6d.	„
DAISY, do. 50 of the new Belgian do.	1s. 6d.	„
ANTIRRHINUM, do. 20 best named varieties ...	1s. 0d.	„
ANEMONE, from the most showy and brilliant kinds,	1s.	„

30 packets of Choice Flower Seeds per post free for 5s.

The above, per post, free—Postage Stamps received in payment.

YOUELL AND CO., Royal Nursery, Great Yarmouth.

CHOICE SEEDS.—Splendid mixed Sweet William, Antirrhinum, Primula sinensis fimbriata, Calceolaria, and Cineraria, Chater's Hollyhock, 1s. and 2s. 6d. per packet. Can be strongly recommended; saved only from the best flowers. Catalogues free by post.

DAWE, COTTRELL, & BENHAM (successors to F. Warner), Seedsmen, 36, Moorgate Street, and 3, Laurence Pountney Lane, City, London.

Agents for Butcher's Barbarossa Vines, M'Adam's Anti-Grape Blight Composition, and Cole's Concentrated Animal Manure.

GEORGE TAYLOR, JUNIOR, FRUIT SALESMAN.

ST. JOHN'S MARKET, LIVERPOOL,

Contractor for and Purchaser of Choice Garden Produce.

MYATT'S new Seedling Strawberry, "ADMIRAL DUNDAS."—This is the most extraordinary variety, for size and productiveness, that has yet been raised at Manor Farm; it is much larger and a better flavour than either the Surprise or Mammoth, and ripens off the late fruit to advantage.

J. M. & SONS can confidently recommend this, as being superior to any large variety that has come under their notice.

Strong, well-rooted runners are now ready, and will be carefully packed and delivered free to any part of London, at the following scale of charges:—100, 50s.; 50, 30s.; and 25, 16s. Also strong Plants of MYATT'S British Queen, Cinquefolia, Eleanor, Surprise, Globe, Eliza, Hooper's Seedling, Keens' Seedling, Black Prince, and Barnes' Bicton Pine, 5s. per 100.

Manor Farm, Deptford, August 5.

CALCEOLARIA SEED.

R. PARKER has now ready for sending out new seed of this year's saving, which he can recommend with the greatest confidence, it having been saved from flowers of the finest form and most beautiful markings, in packets at 1s. 6d. and 2s. 6d. each; also a few packets of choice Cineraria Seed at 1s 6d. and 2s. 6d. each. Primula sinensis, all saved from fringed flowers, 1s. per packet. A remittance or reference to accompany all orders from unknown correspondents.

Paradise Nursery, Hornsey Road, London.—Aug. 5.

MAY'S PARAGON CABBAGE.—Prepaid postage. The above superb CABBAGE can still be had in 1 oz. packets, 1s. each. Sow July and August.

Also new CINERARIA SEED from the best named flowers, in packets, 2s. 6d. each.

Address, HENRY MAY, the Hope Nurseries, near Bedale, Yorks.

STANDARD PORTUGAL LAURELS (in Pots); Cedrus Deodara, 3 to 8 feet; Araucaria imbricata, 2 to 5 feet; Rhododendrons, and a general collection of Trees and Shrubs; also Fruit Trees in Pots; Azaleas, Camellias, Roses, &c. &c., all in beautiful health, can be seen at H. LANE & SON'S, The Nursery, Great Berkhampstead, Herts, near to the Station on the London and North Western Railway. In the town there is an excellent Hotel, the King's Arms, with superior accommodation, combined with moderate charges, where a few days or even weeks could be spent for the purpose of roaming this delightful and beautiful neighbourhood.

STRAWBERRIES.

WILLIAM NICHOLSON is now sending out strong, well-rooted plants of his four new and distinct STRAWBERRIES, viz., AJAX, a very fine large dessert fruit, very beautiful, solid, and juicy. RUBY, do., a great bearer, and forces well. CAPTAIN COOK, market fruit, large, and a great bearer. FILLBASKET, do. 15s. per 100, or 25 each of any two sorts for 10s., box included. Most of the best old and new sorts can be supplied on reasonable terms. See advertisement July 15. Post-office orders payable at Yarm, Yorkshire, or a cash remittance required with the order.

Egglescliffe, near Yarm, August 5.

WARD'S "OMER PACHA" STRAWBERRY.

W. J. WARD (by permission of his employer, W. Stephens, Esq.,) offers to his friends and the public the above Seedling Strawberry, which has been proved to possess superior excellence. It is a large handsome fruit, intermediate between the old Carolina Pine and British Queen, partaking of the fine colour of the former, and by many considered superior in flavour to the latter; it is also remarkable for the fine buttery quality of its flesh. Great bearer; ripe as early as Keens' Seedling, affording a long succession of fine fruit. It was exhibited at the Royal Botanic Gardens, Regent's Park, on Wednesday, the 5th of July, and obtained the Bronze Medal. It has also been submitted to Mr. Marnock, Regent's Park, London; Mr. Thompson, Horticultural Society, Chiswick; and Mr. Spencer, Bowood, all of whom speak highly favourably of it. Also the following, who have pronounced it first-rate, and are open to take orders for it:—Messrs. Henderson, Pine-apple Place, London; Mr. C. Turner, Royal Nursery, Slough; Messrs. Standish and Noble, Bagshot; Mr. P. Lydiard, Fruiterer, Batheaston, Bath; Mr. W. J. Epps, Bower Nursery, Maidstone; Messrs. Sutton, Reading; Mr. W. Barnes, Camberwell; Mr. Lewis Solomon, Fruiterer, Covent Garden.

Strong well rooted plants last week in August. Terms, cash or reference.—100 plants, 3l.; 50 plants, 1l. 15s.; 25 ditto, 1l. A few strong plants in 32-sized pots, 15s. per dozen.

Prospect Hill, Reading, August 5.

WILLIAM IVERY begs to inform his friends and the public that he is now prepared to send out his New GERANIUM FAVOURITE, the most beautiful variegated variety yet out. A great improvement on Attraction. Truss large, brilliant scarlet, free grower; splendid for bedding purposes. Price 7s. 6d.

GERANIUM MASTERPIECE (Ivery's). A beautiful scarlet of immense truss; foliage truly beautiful, the horse-shoe far surpassing Cerese; unique in variety of colours. Price 5s.

CINERARIA, MRS. TRUELOVE, figured in Turner's "Florist," May 1854; this variety has gained certificates at the National and other Societies: colour white ground tipped with rich plum, fine shape and splendid habit, 7s. 6d.

W. I. has now ready strong flowering plants of all the leading Liliputian and large flowering Chrysanthemums, from 9s. to 12s. per dozen. Autumn Catalogues can now be had on application, which contain a select list of Geraniums, Fuchsias, Cinerarias, Azaleas, Winter Blooming Carnations, Antirrhinums, Phloxes, Chrysanthemums, hardy Herbaceous Plants, Dwarf Roses in pots, Miscellaneous Plants, &c. N.B. The trade supplied with fine Mushroom Spawn.—Hanover Nursery, Peckham, London.

PAGE AND CO.'S COMPOSITION FOR THE DESTRUCTION OF MILDEW UPON VINES, BLIGHT UPON ROSES, WALL-FRUIT TREES, CUCUMBERS, MELONS, AND STOVE AND GREENHOUSE PLANTS.—Extra strong, 4s. per gallon, sufficient to make four (jars and barrels extra); in bottles, 1s. 3d. and 2s. 6d. each. Directions for application forwarded. Ten gallons and upwards carriage free to London.

For testimonials, see whole page of *Gardeners' Chronicle*, March 11, 1854, describing the SATISFACTORY RESULTS derived from its use in cases of Vine Mildew, Thrip, Scale, Green Fly, Red Spider, Mealy Bug, &c., not only without injuring the most delicate flowers or foliage, but promotes a vigorous growth.

From Andrew Toward, Esq., Royal Gardens, Osborne Palace.

"I have great pleasure to add my testimony to the efficacy of your Blight Composition, which has been used with great success upon Rose Trees much affected with the Green Fly."

From Frederick McEwen, Esq., Royal Gardens, Claremont.

"I find it answer the purpose in all respects for Walls, also the Green Fly and Brown Scale in the Houses.—May 9, 1854."

Finest Grasses for Lawns and Parks, and every variety of Garden and Farm Seeds, at B. PAGE & Co.'s, Seed Merchants, Oxford Street, Southampton, 20 yards from the Railway and Docks.

THE

NEW RHODODENDRONS OF ASSAM AND BOOTAN.

COLLECTED BY THOMAS J. BOOTH, ESQ.,

And described in the "Journal of Botany," by his Uncle, Thomas Nuttal, Esq., *of Rainhill, the well-known Botanist and Traveller.*

E. G. HENDERSON & SON

HAVE much pleasure in announcing that they have for Sale these, the most remarkable new species of RHODODENDRONS ever introduced into the country, many of which surpass those from Sikkim, discovered by Dr. Hooker. Amongst these brilliant discoveries from the Bootan Alps are the most wonderful-sized flowers, delicious fragance, and distinct colours of any that are known to exist in this the most gorgeous tribe of plants: and being combined with magnificent foliage, and distinct habit of growth, will render them indispensable, and a great acquisition both for the garden and conservatory.

The entire Stock of all these extraordinary species now growing (June 16, 1854) in the gardens at Rainhill have been purchased by them. The plants are fine, healthy, and robust. Many have been planted out in the open ground, and have proved quite hardy, with the exception of one or two slightly injured by late spring frosts.

They are now taking orders for six of the most distinct species, which will be dispatched in October. Full descriptions and prices may be seen on referring to the *Gardeners' Chronicle* of July 1, or in their

NEW CATALOGUE FOR 1854, NOW PUBLISHED,

and which will be forwarded post free on application.

Wellington Nursery, St. John's Wood, August 5.

THE

NEW RHODODENDRONS OF ASSAM AND BOOTAN.

Exhibited at Chiswick on Saturday, July 8th, by Mr. J. Veitch, Jun., of Chelsea.

MESSRS. E. G. HENDERSON and SON, of the Wellington Nursery, St. John's Wood, London, beg to say that in consequence of some remarks having been made to them respecting the above, and other reports having been circulated, originating, as they have been given to understand, from the Exotic Nursery, Chelsea, and which they are sure can have no foundation, think it right to put the readers of this Journal in full possession of the facts — which are, that in the month of March of the present year, Mr. Veitch was in communication with Mr. Nuttal respecting the above Rhododendrons, and in a letter dated the 16th March, Mr. V. requested to have a single plant of the following varieties for inspection, which were accordingly forwarded to him, viz , Keysi, Nuttali, Kendricki, eximium, longifolium, lucidum, calophyllum, and Camelliæflorum; and no other plants have subsequently passed into his hands from Mr. Nuttal.

Messrs. E. G. H. & Son were quite aware of this circumstance at the time of purchasing, and that a few other plants had previously left the collection of Mr. Nuttal.

Wellington Nursery, St. John's Wood, August 5.

NEW FUCHSIAS OF 1854, sent out by Banks and others. The set of 17, well established plants, for 34s., or any 12 for 28s.:—Stokes' Duke of Wellington, Smith's Telegraph, Kimberley's Henry Monteith and Globosa splendens; Banks' Autocrat, Charmer, Vanguard, Queen of Hanover, Elegans, Clio, and Magnifica; Cole's Trentham, Henderson's Monarch; Batten's Charles Palmer, Grandissima, and Admiral; Standish's Perfection.

NEW VERBENAS OF 1854, sent out by Banks, Keens, Smith, and others. A selection of any 30 from the following may be made for 40s., or, per dozen, 18s.:—Keynes' Ajax, Arethusa, Captivation, Emily, Lord Mayor, and Magnet; Barnes' Lutea pallida, and Madonna; Smith's Peter Dick, Nobilissima, Climax, Eblouissante, Angelina, Queen, Alice, Scarlet King, Forget-me-Not, Zaria, Caliban, Giralda, Islington Rival, Magnificent, Laura superba, and Triumph; Robinson's Mrs. D. Tyssen; Edmunds' Rouge et Noir, and President; Banks' Orion, Robin Hood, Marie Antoinette, Matchless, Beauty, Madonna, Attraction, Diadem, Ne Plus Ultra, and Arioste; Fozart's Beauty of the Garden; Stewart's Sulphur Model, and Ida; Igley's Honeysuckle; Bragg's Standard, Fair Rosamond, Incomparable, Lord Seaton, King of Purples, Queen of Roses, Prince of Wales, Venus, and Queen of Purples; Mein's Leucostemma, Mitchell's Elegantissima.

NEW PETUNIAS OF 1854, the nine varieties for 14s.:—Kimberley's Novelty, Van Houtte's Striata formosissima; Barnes' Elizabeth, Distinctus, Pencillata, Rotunda, Alba magniflora, and Formosa; Smith's Montreal Purple.

A FEW NEW AND SELECT PLANTS.

Cassia floribunda, a very free flowering new variety, with handsome foliage	7s. 6d.
Clianthus magnificus, a very large and brilliant new variety, with glossy foliage	10 6
Echites Pellieri (or flava)	21s. 0d. to 31 6
Gloxinia Duke of Wellington	7 6
Phlox, Epps' six beautiful new varieties	10 6
Thyrsacanthus rutilans, vermilion carmine colour, flowers very durable, and graceful habit	3 6
Abutilon insigne	3 6
Acacia grandis	3 6 — 5 0
Æchmea fulgens	5 0 — 7 6
Æschynanthus splendens	2 6 — 5 0
Allamanda Schotti	1 6 — 2 6
Aphelandra grandis	3 6 — 5 0
" variegata	5 0 — 7 6
" squarrosa citrina	15 0
Alloplectus Schlimmi	3 6 — 5 0
Azalea Stanleyana	3s. 6d., 7 6 — 15 0
Berberis Darwini	1 6 — 2 6
Begonia miniata	5 0
" Prestoniensis	3 6 — 7 6
Boronia Drummondi	7 6
Centropogon Tovarensis	3 6 — 5 0
Coniferæ — Fitzroya patagonica	3s. 6d., 5 0 — 7 6
" Libocedrus chilensis	3 6 — 7 6
" Saxe-Gothæa conspicua	5 0 — 7 6
Cyrtanthera magnifica	2 6
Echites Harrisi	5s., 10 0 — 21 0
Franciscea eximia	2 6 — 3 6
Gastrolobium ovalifolium	10 6
" Drummondi	7 6
Gesnera purpurea macrantha	2 6 — 3 6
" Suttoni sub alba	3 6 — 5 0
" Leopoldiana	7 6
Gloriosa Planti	5 0 — 7 6
Hexacentris mysorensis	5 0 — 10 6
Hoya coriacea	2 6 — 3 6
" picta	5 0 — 7 6
" imperialis	2 6 — 3 6
Ixora grandiflora	2 6 — 3 6
" Lobbiana	15 0
Kennedya ovata alba	3 6
Lardizabala biternata	5 0
Rhodoleia Championi	7s. 6d., 10 6 — 21 0
Rogiera thyrsiflora	2 6 — 3 6
Salpiglossis coccinea	5 0 — 7 6
Skimmia japonica	21 0
Streptocarpus biflorus	2 6 — 3 6
Siphocampylos pendula-florens	5 0 — 7 6
Weigela amabilis	2s. 6d., 3 6 — 5 0

Complete Catalogues free by post for 6 penny stamps.

☞ Goods Carriage Free (not under 20s.) to all the London termini, and all stations on the London and Norwich and Colchester Line. Plants added gratis with orders 40s. and upwards.

BASS and BROWN,
Seed and Horticultural Establishment, Sudbury, Suffolk.

(Fig. 1.) (Fig. 2.)

J. TYLOR and SON'S BARROW GARDEN ENGINE (Fig. 1), in best well painted oak tub, fitted with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 1 holds 10 gallons,	throws 30 feet high	...	£4	10
No. 2 " 15 "	" 45 "	...	5	10
No. 3 " 28 "	" 45 "	...	6	18

J. TYLOR & SON'S BARROW GARDEN ENGINE (Fig. 2), in strong tinned iron tub, well painted inside and outside, with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 10 holds 8 gallons,	throws 25 feet high	...	£2	15
No. 13 " 12 "	" 30 "	...	3	5
No. 11 " 16 "	" 40 "	...	4	0
No. 12 " 24 "	" 45 "	...	5	0
No. 14 " 30 "	" 45 "	...	5	18

A large assortment of every description of Garden Syringes, Pail Engines, Conservatory Pumps, &c., kept in stock.

Full size Syringe, on Read's principle, of the very best quality and workmanship, with two roses and one jet, 21s.; Plain Syringes from 10s. 6d. upwards.

J. Tylor & Son's Horticultural Apparatus may be obtained at these prices from any respectable Ironmonger or Seedsman in town or country, through whom alone they will be supplied, and of whom Drawings and Prices may be had.

N.B. Cost of carriage, &c., not included in these prices.

J. Tylor & Son's Manufactory, Warwick Lane, Newgate Street, London.

J. TYLOR and SON'S REGISTERED GARDEN SYRINGE.—Small size, for Amateur use, **21s.** each; Large size, for Gardeners' use, **25s.** each.

By a simple arrangement this Syringe is rendered more effective than any portable Conservatory or Garden Pump ever offered to the public. It is equally adapted for Garden or Conservatory use, and is capable of discharging twice as much water in a given time as any other Syringe now in use. The arrangement consists in attaching a small flexible suction tube to the barrel of the Syringe, through which it is filled with water at every discharge of the previous contents. By this means the Syringe is always charged, and the pull-up stroke of the piston rendered perfectly easy, it having, indeed, no work to do, the barrel being previously full of water. Being thus made self-supplying, a great saving of labour is effected; and the necessity of stooping to fill the Syringe at every discharge being done away with, the direction of the water can be maintained for any length of time. It is perfectly cleanly in its action, as it is not possible for any water to get on the outside of the barrel, which is a well-known inconvenience attendant on the use of every other Syringe. Its construction is perfectly simple, and cannot get out of order; the ground-in ball valves and fittings used for filling all other patent Syringes being entirely superseded. To be had of any respectable Ironmonger or Seedsman in town or country.

J. Tylor & Sons, Manufacturers of Horticultural Apparatus, Warwick Lane, Newgate Street, London.

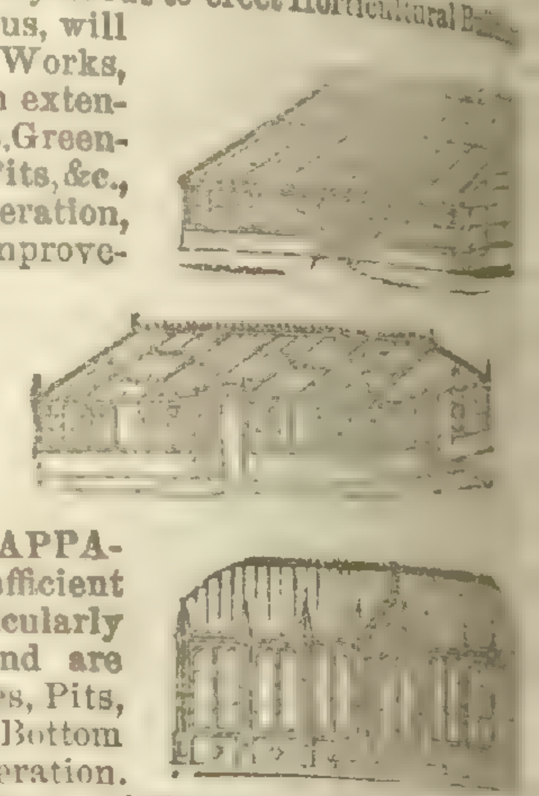
N.B. These prices do not include carriage, package, or expenses of delivery in the country.

HORTICULTURE IN ALL ITS BRANCHES.

J. WEEKS & Co., King's Road, Chelsea.

HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Buildings or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.



The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings, and Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. Weeks & Co., King's Road, Chelsea, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

At the Lowest Prices Consistent with Good Materials and Workmanship.

GRAY and ORMSON, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

E. DENCH, PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

PATENT HOTHOUSES and excellent Glass at 1s. 3d. per foot super., which are superior to all others for price with quality, and if known would supersede all others. (See Appendix in "Book of the Garden," by Mr. M'Intosh.) A Range of Houses and Hot Water Apparatus, was erected by E. D. for E. L. Betts, Esq., Preston Hall, Kent. Mr. J. Frost, head gardener, has proved their efficiency by their produce at the Royal Botanic Gardens, Regent's Park, June 8, and Chiswick, June 11. The editor of the *Gardeners' Chronicle* says: "Beautiful examples of Black Hamburgh, large both in bunch and berry, and as black as sloes, were furnished by Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall, Kent: these well deserved the first prize which was awarded them."—*Gardeners' Chronicle*, June 18th, 1853. The Grapes were considered the best shown at Regent's Park during the season, and the Houses are as superior for the growth of everything else in horticulture, which has been fully proved, and they have been extensively erected for the nobility and gentry in all parts of the kingdom.

GLAZING WITHOUT PUTTY.—Iron and Glass alone. E. D. has Roofed the Public Baths and Washhouses, Endell Street, on this principle, and others are in hand. Patent Sashes for Peach Walls, Pits, &c., 8d. per foot super. Heating by hot water, on the most practical principles, and all the best materials used. Printed Price List sent on application.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the loam from the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state; then add water. It may then be laid on 2 inches thick, applying the water. No tool is required beyond a spade, and a labourer can mix and spread it. In 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be used in winter equally well as in summer.

Manufacturers of the Cement, J. B. White & Brothers, Millbank Street, Westminster.

THE BEST PLANT OF THE SEASON.
"BEGONIA PRESTONIENSIS SUPERBA."

W. J. EPPS has much pleasure in stating that he has purchased this splendid Begonia raised by Mr. Frost, Gardener to E. L. Betts, Esq., Preston Hall: the flowers are of a much brighter colour than Prestoniensis, and the centre is nearly filled with stamens and petals, resembling a double blossom with a golden tinge, exhibiting a charming contrast. The flowers are delightfully fragrant as a Tea scented Rose. Habit—dwarf and bushy; the flowers are thrown well above the foliage, in large trusses, and altogether one of the best plants yet offered. It received the highest award in June, at the Royal Botanic Show, Regent's Park, as a new plant; also at Maidstone and Ashford. Plants in October, 10s. 6d. each; one given where three or more are taken.—Bower Nurseries, Maidstone, Aug. 5.

NEW AND DESIRABLE PLANTS.

YOUELL AND CO. beg to offer the following :—

FUCHSIAS, 15s. per dozen, viz.—Duke of Wellington, Monarch, Trentham, Queen of Hanover, Vanguard, Hendersoni, Premier, Princess, England's Glory, Model, Lady Franklin, Duchess of Lancaster, Mrs. Pattersen, and other equally fine varieties.

CHRYSANTHEMUMS (large-flowering varieties) at 9s. per dozen, viz., Nell Gwynne, Rosa Mystica, Poudre d'Or, Rebecca, Madame Laborde, Norah, Rosée du Ciel, Berryer, Madame Dervaux de Lavarde, Mimosa, Osiris, Madame Andry, Ondine, Jenny Lind, Racine, Baron de Solyman, Atrorubens, Marshal Ney, Arc en Ciel, with many other fine kinds.

CHRYSANTHEMUMS (Pompon and Lilliputian varieties), at 9s. per dozen, viz., Drine Drine, Nelly, Cedo Nulli, La Vogue, Alveoflorum Caroline Gignoux, Sathaniel, Argentine, Princesse Mathilda, Atropos, Daphne, La Sapagon, Vitida, Lais, Mignonette, Madame Rousselon, Solfaterre, with many other fine varieties.

PHLOXES.—The following new and beautiful varieties, at 9s. per dozen: Striata Superba, Alexandrina, Mrs. Thompson, Maria Vincent, Madame Doublet, Aricie, Nimrod, Deuil de la Comtesse de Marnes, Bois Rose, Roi Leopold, Spenceri, Vulcain, Joyeuse, Princesse Marianne, Napoleon, Madame Poivra, Madame Courcelles, Macrantha, Madame Lierval, Imbricata, Eliza, Anais, Diadem, and many other fine kinds.

GERANIUMS. — Crimson-flowering Ivy-leaved variety (sent out by Messrs. Standish & Noble), 2s. 6d. each.
„ Boule de Neige (Horse-shoe leaf) with pure white flowers, 1s. 6d. each
„ Kingsbury Pet, bright salmon, 1s. 6d.
„ Miss Emily Field, blush white, 1s. 6d.
„ Silver King, 3s. 6d.
„ Mountain of Light, 1s. 6d.

TREE CARNATIONS, in 12 fine and distinct kinds, for Autumn and Winter blooming, 18s. per doz.

CHOICE GREENHOUSE PLANTS, &c.

		Each. s.	d.
Acacia grandis, 2s. 6d. each.			
„ oleifolia elegans, 2s. 6d. do.	Funkia grandiflora, ...	2	6
„ cordifolia, 1s. 6d. do.	Glycine sinensis alba ...	7	6
„ conspicua, 1s. 6d. do.	Kennedya ovata alba ...	2	6
Aralia trifoliata, 3s. 6d. do.	Lardizabala biternata ...	3	6
Boronia Drummondi, 3s. 6d. do.	Oxalis Lowi	1	6
Boronia serrulata, 1s. 6d. do.	Philesia buxifolia	10	6
Berberis Darwini (Hardy) 12s. per dozen.	Pimelea spectabilis rosea	2	6
	„ Niepergiana ...	2	0
Camellias, finest kinds, nice plants, 12 to 18 in. in height, set with buds, 24s. per dozen.	Pernettya speciosa ..	2	6
	Polygala grandiflora ...	1	6
	„ Dalmaisiana	1	6
Chorozema Chandleri, 1s. 6d.	Pultenæa ericifolia	2	6
„ lanceolatum, 2s. do. each.	Sollya linearis (one of the		
„ Lawrenceanum, 1s. 6d. do.	handsomest of the genus)	1	6
Dillwynia scabra, 2s. 6d. do.	Sollya Drummondi ...	1	6
„ sulphurea, 2s. 6d. do.	Tacsonia mollissima, one of the handsomest greenhouse climbers	1	6
Ericas, 50 choice kinds, fine bushy plants, 12s. per dozen.			
Epacris, 50 choice kinds, fine bushy plants, 12s. per dozen.	Tetratheca ericifolia ...	2	6
	„ verticillata	1	6
Epiphyllum Snowi, 2s. 6d. each.	Weigela amabilis	2	0

GLOXINIAS.—The following new superb kinds, 18s. per dozen viz., La Perouse, La Bicta, Baron de Viere, Imperialis, General Baudraud, Spectabilis, Mr. G. Adanson, Napoleon, Exquisite, Marginata, Amabilis, Victoria Regina, Wilsoni, &c.

Orders of 2l. and upwards are delivered Carriage Free to any Railway Station within 150 miles of the Nursery.

YOUELL & Co., Royal Nursery, Great Yarmouth.

The Gardeners' Chronicle.

SATURDAY, AUGUST 5, 1854.

Our correspondent, M. de Jonghe, has raised a very important question; nothing less than the cause of the present unproductiveness of Pear trees. In a communication printed in our last number (p. 484), he maintains that the constantly recurring loss of our orchard fruit is owing, not as is alleged in England to spring frosts, but to our own mismanagement. As M. de Jonghe possesses great experience in a climate pretty much like our own, and is in the best sense of the word a practical man, his opinions deserve the utmost respect. Let us see, then, to what points his criticism is directed.

His objections to our management fall under the following heads.

1. Our Pear trees are not grafted standard high.
2. Stocks are badly selected.
3. Scions are badly selected.
4. The trees are overloaded with spurs.
5. We prune ill.
6. We neglect cleanliness in our trees.

Half a dozen charges like these are sufficient to shake the nerves of the stoutest gardener, when put on his defence. Let us see what answer can be made to them.

Orchard Pear Trees should be grafted standard high.—M. de Jonghe offers some explanation of this practical truth; but we are not inclined to acquiesce wholly in the reasoning. That the period of bearing is accelerated if a scion is put upon a stem 6 or 7 feet high, and three or four years old, instead of being compelled to form its own stem, must be admitted. A certain length of time is required to enable a tree to arrive at a bearing state; and if that time is passed in the nursery rather than in the orchard so many years' rent is saved. But then a nurseryman pays rent as well as a market gardener, and if he is to keep his trees three or four years longer than usual before he sells them, he must be remunerated by a higher price. No doubt a Pear-stock seven years old will bear quicker when grafted than a stock three years old, and so on. Of organisable matter ready to be formed into fruit there is much more present in an old stock than a young one. We should say that if immediate bearing is required then M. de Jonghe is right, and in private gardens his views cannot but be accepted, when price is no object; but in market gardens it is questionable whether it is more profitable to pay rent for unprofitable land to the landlord or the nurseryman. One or the other must have it.

As to *a bad selection of stocks* our correspondent does not insist upon that; he merely suggests it. We believe that little or no objection can be taken to our English Pear stocks. Good, strong, hardy kinds, with a sound constitution, are certainly to be preferred, and M. de Jonghe does not deny that they are so selected. In one respect grafting standard high secures the buyer from bad stocks; for weak unhealthy varieties will not form, soon enough for commercial purposes, strong healthy stems, such as Pear trees grafted 7 feet high must necessarily have.

That *scions are unskilfully selected* is no doubt quite true in many cases. An English gardener is satisfied with his scion if it is from nice clean young wood, and he does not enquire whether it is from a lateral or a stout upright shoot, from a tree grafted on a Pear or a Quince, from a good bearer or a bad one. But M. de Jonghe's practice tells him that the scion should be carefully selected "from a vigorous shoot in the upper part of a bearing tree," and from no other place. He finds that such scions bear sooner and produce better heads. Upon this we have no remark to make; but we should like to know what the experienced orchardists of this country say to it. Since it is there that vitality is strongest, and that light and free air exercise their greatest influence, it is probable that his remark is just. But whatever opinion may be formed as to that point, no doubt can exist as to the impropriety of taking cuttings from trees weakened by old age, or bad stocks, or bad soils, or bad climate, or any other cause whatever. All experience shows that in every kind of created thing, be it man, or beast, or bird, the mysterious principle called life remains during the whole period of existence what it was at first. If vitality is feeble in the beginning so it remains. Weak parents produce weak children, and their children's children are weaker still, as imperial dynasties have sadly shown. When the rustic schoolboy translated the well-known Latin adage into "strong uns come from strong and good uns," he expressed in homely words a universal truth; and we have no doubt that M. de Jonghe is perfectly right in applying the principle to the Pear tree. It was, indeed, the notoriousness of the fact that old decrepid trees produce sickly successors, themselves to become decrepid prematurely, which Mr. Andrew Knight misinterpreted into the limited duration of varieties, and which led his followers into wasting breath and paper upon endless applications of the misconception to the Potato disease. Undoubtedly the greatest care should be taken to ensure scions being procured from perfectly healthy trees with unimpaired vitality.

That our *trees are overloaded with spurs* is a very just remark. In fact, orchardists never dream of removing them. The more they have, the greater they fancy the chance of a good crop. They are like those speculators who, in their eagerness for immense gains, contrive to realise nothing. The Belgian, on the contrary, is the plodding, thrifty shopkeeper who takes care of his moderate profits, never makes much, never loses much, but in the long run finds a very satisfactory account at his banker's. It is an axiom in applied physiology that no animal or plant can bear more than its system can nourish; when an attempt is made to contravene this natural law, abortion is the result, or the produce, whether animal or vegetable, if it survives, is degenerate and imperfect. Let a Pear tree contain a pound of nutrition or natural food, ready to be attracted into its spurs; let each spur require a dram of such food, then the tree may carry 256 spurs, supposing the food to be equally distributed. But if a thousand such spurs are present it is probable, not that 750 will be starved and 250 fed, but that the whole will be starved; in the struggle among them for the food, none will obtain what is requisite to sustain life, and all will perish. M. de Jonghe carries the application of the principle far beyond what is usual. He says that food and vitality may be practically regarded as identical, the one representing, or at all events accompanying, the other. If so, the action of frost becomet intelligible. Under favourable circumstances, that is to say when well fed, the blossom of the Pear tree can support without injury, we will say, 10° of frost. In that case the thermometer falls to 22°, and no harm is done. But when ill fed, vitality is so low, and has such small power of resisting cold, that even less than 10° of frost are fatal; in such a state of health, if the thermometer only falls to 24°, every blossom perishes. That is our experienced correspondent's case. We have put it into a form which he, perhaps, may not have contemplated; but it represents exactly what we understand to be his opinion, and a very striking view of the action of frost it is. What is more, it is probably true, either wholly or in a great measure. We are assured that frosts which leave nothing behind them in England pass over the well-managed Belgian orchards without committing serious mischief. We have Mr. de Jonghe's testimony to this fact in a former communication (see p. 28[illegible]). He then stated that the great frost of April 24th, which ruined all the orchard crops in the south of England, had spared many of the Belgian hardier Pears, Cherries, Plums, and even Apricots. Our hardiest Pears, Cherries, Plums, and Apricots perished. Of course it is a question whether our hardiest fruits are as hardy as the Belgian. We entertain no doubt of their being so. This opens up a very interesting field of inquiry, which we cannot pursue to-day. On an early occasion we shall return to the subject, and then consider our correspondent's two remaining criticisms, viz., bad pruning and want of cleanliness.

Does the reader know what a gobble-gossip is? The French call it a *gobemouche*, and regard it as a creature that lives upon flies; but we would rather say that its food consists of flies with the head off. Some say the animal belongs to the genus *Homo* of zoologists, though not to the species *sapiens*. Others are reported to have called it *Homo amens*. It abounds in fashionable places, especially where idlers congregate, and where it may be often seen attached to a buttonhole. It is great among the low class of newspaper reporters, and is not unknown in London clubs. Its life is spent in spreading rumour, amplifying falsehood, modifying truth, inventing shams, scandalmongering, and lying. Each has its train of believers, and although its news never proves right, yet there is so much credulity among its followers, that every new invention passes just as currently as if it bore the mint-mark of truth.

Lately one of these gobble-gossips has occupied itself with the affairs of the Horticultural Society. It is said that it has been seen with *épaulettes* on its coat, but that may be the invention of some other of its race. About two years since it informed its believers, with an air of mystery, that the Society did not intend to hold any further meetings at Chiswick; it was a sad thing, it said, that so great a society should be so ill supported, but the fact was as it represented; it had it from the best authority. In course of time, however, the usual meetings took place, in the usual way, and lie the first was then disposed of. Nothing daunted—gobble-gossips are never daunted; on the contrary, they are found to increase in confidence as their character for truth evaporates—our friend reported that with 1853 the garden would most certainly be closed, and that that would of necessity put an end to the meetings; it believed, indeed, that Sir Joseph Paxton had bought all the plants for the Crystal Palace Company, and it knew for a *fact* that the Society's lease had expired. But when the Crystal Palace opened nobody could find there the Horticultural Garden; again the meetings were held at Chiswick, with undiminished magnificence, and were even honoured by the presence of the Queen. One would have thought that this, at least, would have disconcerted the animal, and that the exposure of lie the second would have dulled its inventive faculties. Not at all. On the contrary, her Majesty's visit confirmed all that it had reported. It had it from the highest source—it could not say more—that the real history of the Royal visit was a desire on the part of an exalted personage to take a last look at that which would never again be seen; that, in fact, the garden would be immediately converted to building purposes; and that the lease having fallen in, the Duke of Devonshire had caused plans of villas to be immediately prepared.

Since time must elapse before lie the third will perish by the ordinary course of events, we may as well dispose of that ourselves. We, therefore, contradict the statement in every particular. There is not and there never has been any intention of closing the garden of the Horticultural Society; the lease has not fallen in, on the contrary it cannot expire till the year 1881; and as for the tale of

converting the ground to building purposes, it only shows to what desperate expedients detected falsehood is sure to lead. The only building purpose to which the ground *can* be applied, under the covenants of the lease, is that of horticultural structures, and we know that the present autumn will not witness the erection of even another forcing pit.

The corporation of the Horticultural Society will hold its garden, maintain its exhibitions, continue its distribution of plants, and persevere in its course of usefulness, applying to the best of its judgment the funds at its disposal. Its collectors will still enrich our gardens with all that is most valuable in foreign countries, and it will remain what it has been for half a century, the centre of garden knowledge, without disturbing itself about malicious reports, or the idle inventions of the animals here described under the name of gobble-gossips.

VEGETABLE PATHOLOGY.—No. XXXI.

139. THE next external agent to which we must advert is temperature, an element which enters into almost every question which concerns the animal or vegetable world. A certain degree of heat, varying according to the species, is absolutely necessary for the perfect performance of the functions of the several organs. A few species, such as Stellaria media, Poa annua, and Capsella bursa-pastoris, flourish and perfect their fruit at a temperature a little above freezing, while they are at the same time capable of enduring a considerable degree of heat, and consequently are found in most parts of the world, but more especially the latter; others, however, require much higher temperatures for the preservation of health; and certain functions, such as the irritability of various organs and tissues, are promoted by heat, and require a certain degree for their development. Impregnation takes place in many plants at a comparatively low temperature, while the maturation of the fruit requires a far greater degree of warmth. But few really tropical plants will bear exposure to the open air of our climate, even for a week, in the most favourable weather. In some cases evaporation takes place more rapidly than it can be supplied by the roots, in others the necessary chemical conditions are not present, or the vital energies of the cell walls are so lowered that the proper interchange of juices does not take place; and in great depression of temperature the juices freeze, decomposition takes place, and in some cases the cell walls themselves burst, or are separated from their mutual connection. In fact, apart from the special requirements of each individual species, within certain ranges only of temperature animal and vegetable life are capable of being sustained, and for the most part the ordinary scale of a thermometer exceeds these limits. A limited number of Phænogams, though frozen, will recover *all* their vital powers if the temperature is not too rapidly raised, inasmuch as sudden changes are destructive to life;* but a few degrees below the freezing point are sufficient to destroy the proper relation of the several component parts, and life in consequence ceases. Though the spores of certain moulds are capable of sustaining a temperature equal to that of boiling water, without losing their powers of vegetation, and the yeast fungus has been known to vegetate after being exposed to a temperature 76° ‡ below zero, no perfectly developed vegetable can survive such exposure, and in most cases life ceases far below that point. In all the degree of moisture makes a great difference in the power of endurance. The drier the medium the greater the power of resistance. This is not, however, without exception, for many plants utterly incapable of sustaining a high dry temperature luxuriate where the same degree of heat is attended with moisture.

140. In the hottest springs of Pugha in Tibet, at an altitude of 15,300 feet, and which attain a temperature of 174°, three species of Conferva, taking the word in its widest sense, were found by Dr. Thomson, together with several Diatomaceæ; at Momay, at an altitude of 16,000, where the water of the hot springs is 110°, about five Confervæ occur; and at Soorujkund, where the springs vary from 80° to 158°, between 84° and 112° there is a Zygnema, an Oscillatoria, and a Scytonema. An Anabaina occurs at 125° and upwards, and at 158° vegetation ceases altogether. Plants, however, have been observed by others to flourish at still higher temperatures. The lower Algæ, mixed with Lycopodium and Marchantia, flourished in the hot springs up to a temperature even of 186° Fahrenheit, as observed by Mr. Barrow at the Island of Amsterdam, and Chara has been found healthy and bearing fruit in a spring in Iceland so hot as to boil an egg in four minutes. Sir W. J. Hooker also found Riccia glauca in profusion, on spots which were so much heated by the boiling streams beneath that he could scarcely bear his hands upon the ground. As regards the temperature which Phænogams are able to sustain, there is some difficulty, as their roots may be seated beyond the influence of the high temperature, by reason of which the intrinsic temperature of the plants may be below that of the water in which they grow, exactly as is the case with plants exposed to a burning sun.

141. This depends upon the fact that the temperature of the earth may differ very greatly at different depths from that on its surface. It is well known that many succulent plants flourish under a nearly vertical sun; but then they part very slowly with their moisture: and, for a similar reason, some woolly-leaved plants, where the stomates are obstructed by the thick fleecy coat, are able to endure temperatures which nearly allied species, in which such a clothing is wanting, are quite unable to withstand. One of the best described cases on record of the difference of the superficial temperature from that in which the roots are plunged, is that mentioned by Dr. Hooker in his Himalayan Journals, vol. i., p. 36. The fresh milky juice of Calotropis was only 72° when the surface sand was heated to 110° where sheltered from the wind, and 104° in the open bed of the river. At the latter temperature it was necessary for the roots to descend 15 inches to imbibe moisture at the temperature of the juices of the plant. The exposed leaves meanwhile maintained a temperature of 80°, nearly 25° cooler than the similarly exposed sand and alluvium. On the same night the leaves were cooled down to 54°, when the sand had cooled to 51°. Before daylight the sand had cooled to 43°, and the leaves of the Calotropis to 45½°; but the sand at the same depth (15 inches) as that at which its temperature and that of the plant agreed at midday was 68°. And assuming this to be the heat of the plant, we find that the leaves are heated by solar radiation during the day 8°, and cooled by nocturnal radiation 22½°. Part, therefore, alone of the effect is to be attributed to the temperature of the soil, for this is modified by radiation. It is not, however, meant that the superficial heat of the soil, especially when sandy, is not frequently far above this. The temperature in tropical climates reaches frequently as much as 126°, and Humboldt has recorded its attaining on one occasion 140°. *M. J. B.*

* Exposure to light is injurious to plants under such circumstances, because it stimulates the vital powers at a moment when they are collapsed, and it is requisite to resuscitate them very gently.

‡ This statement is made on the authority of Dr. Carpenter, Man. of Phys. p. 65. Bottom yeast is not formed at a lower temperature than 32° F. But the question is not as to the germination of the Yeast Fungus, but as to the degree of cold which it will bear without losing its powers of germination.

WOODS AND PLANTATIONS.—No. II.

THE pressure of other engagements has caused me to delay the few additional remarks which I have to offer upon this interesting theme. For this delay I crave the pardon and indulgence of those who were kind enough to say that they were looking forward with interest to my future observations; and believing myself far from infallible, I would, for my own benefit as well as that of your general readers, invoke the criticism of those persons who are conversant with this particular department of rural economy.

Woodland property, independently of scattered park trees and hedgerows, is generally made up of large tracts comprising timber and underwood—called in rural parlance, woods—and of plantations, in which all kinds of trees are planted, without reference to undergrowth, or indeed to any methodical arrangement. I will first consider the management of woods.

The mixture of timber trees and undergrowth, so called, is the most ancient form in which we find this species of property, and the one which departs least from the status of our aboriginal forests; where, under the gigantic arms of widely spreading Oaks, we find attenuated Thorns, consumptive Crabs, and sickly Briars forming the most picturesque combinations which the eye of taste could desire to see; here presenting bold projecting masses, and there intricate and ever varied recesses.

To those who appreciate the expression of sylvan scenes, nothing can be more beautiful than the margin of a natural forest; there can be no better place to study the art of grouping, and well would it be if some of our modern landscape artists were more frequently to make such scenes their models. We should then be spared the infliction of those linear and monotonous belts and kidney-shaped clumps which are so often perpetrated, and which are not only abortive in an artistic sense, but too generally destroy breadth.

Apart from the consideration of effect is that of utility or profit. I have always been of opinion that it is possible to do what is not done generally, viz., combine beauty and profit, by adopting the lesson which the margins of our natural forests teach us as to effect; leaving groups of trees and thorns and cutting recesses into the borders of them with the care and taste of an artist, rather than under the guidance of inexorable law of equi-distant thinning, which is perfectly monotonous. I would leave a broad margin to every wood to be thus treated in the picturesque manner, and afford shelter to the interior; but within this I would adopt the most perfect system of preventive pruning, exposure to light, and equalisation of space. I would even be so heretical as to separate the underwood from the timber, growing it separately, an idea for which I am indebted to my friend Mr. Spencer, of Bowood, and which is worthy of attention, when we consider the small acreable profit which is derived where the trees are left their usual thickness. Of the advantages which would follow such a plan, the difference of poles cut from an Ash spinney and those mixed with a general growth of underwood offers a familiar example. All good gardeners and farmers admit the important agencies of light and air in promoting the growth of their crops; they know that it does not answer to grow one crop under the shade of another; why then should we expect our underwood to thrive and remunerate us, if we deny it one of the first principles of life, cultivating it under the shade and drip of trees, and in situations "nulli penetrabilis astro?"

Evelyn says, "there is no more noble or worthy husbandry than is this." He says, too, "Copses are sometimes of competent stature, about eight or ten years." This octennial cutting is still practised in the midland counties, and demonstrates how little alteration has taken place in the management of woods for the last 200 years, while it is quite clear that the whole plan was indicated by the state of our primeval forests, where a continued struggle for existence resulted in the annihilation of the weaker for the benefit of the stronger.

In ancient times, the supply of underwood and timber, owing to the great extent of forests, might not be worth a consideration, but even then we find "our more prudent ancestors," enacting laws for the perpetuation of a supply of Oak timber. "By the statute of Henry VIII., in copses or underwoods felled at 24 years' growth, there were to be left 12 standils or stores of Oak upon each acre. In default of so many Oaks, the same number of Elm, Ash, Asp, or Birch, and these to be of such as are of likely size for timber, and such as have been spared at some former felling, unless there were none, in which case they are to be then left, and so to continue without felling till they are 10 inches square within a yard of the ground."

I make this quotation to show that our ancestors, with their vast resources, thought it worth while to legislate with regard to the prospective supply of timber. Those vast forests which supplied them are no more in existence. In the great march of civilisation, and its attendant arts and manufactures, our wooded plains and hills are denuded of trees, which are rapidly succeeded by vast piles of bricks and mortar, teeming with life. Surely, then, it is time that attention should be paid to these things; every day the demand increases, and as daily the supply lessens. Too many young trees are invariably left to struggle with each other when woods are cut, and the underwood is much of it destroyed. I advise most strongly the explosion of this antiquated practice. We require to increase our produce from smaller means, which can only be accomplished by fostering knowledge and discarding prejudice. *Henry Bailey, Nuneham.*

HOYA BELLA.

To have this charming little Hoya in perfection, it requires plenty of warmth and moisture while growing, good drainage, and a free open soil. The latter should consist of equal parts good fibrous peat, leaf-soil, and sand, well mixed together, to which may be added a tolerable portion of clean potsherds, broken small, and a few pieces of charcoal. The pots used should be drained from 1 to 2 inches in depth, according to their size. The peat should be broken up with the hand, but not sifted.

Presuming that young plants are obtained in spring, they should be placed in a stove or pit, where a temperature of from 65° to 70° is kept up. Under such circumstances they will grow freely, and will soon require shifting into larger pots. Shade slightly during bright sunshine, and water when necessary; but with a sufficiently moist atmosphere, and a moderate use of the syringe on favourable occasions, but little will be required at the roots, heavy drenches of water being prejudicial to them. As they progress, the leading shoots should be stopped, in order to induce the formation of more numerous branches, which should be spread out and arranged so as to make a neat specimen. If by the middle or end of June the plants are still growing freely, another shift may be given and the same temperature maintained. When they begin to cease growing, which they should be encouraged to do early in autumn, they should be placed on a shelf near the glass to ripen their wood, and a drier atmosphere should be maintained; they may be kept here during winter, provided the temperature is not higher than 55° or 60°; during that season just sufficient water will be required to preserve the foliage in health.

Early in January, or a little later, as may be convenient, the plants should be cleaned, top-dressed, and placed in a growing temperature as before directed, keeping the atmosphere moist, to induce them to break freely. When they have broken well, if large plants are desired, they may be shifted and grown on; but if intended for flowering, it is preferable to defer shifting, as they bloom most freely when slightly pot-bound. The flower buds will make their appearance as the young shoots progress; and, when commencing to expand, a drier atmosphere, and a somewhat cooler temperature will prolong the duration of the flowers. If well attended to during the summer, the wood will be perfectly ripened by the time the flowering is over, and the plants may be wintered as before. If it is necessary to prune them back it should be done a few weeks before starting them, in order to allow time for the wounds to heal over before growth has commenced.

This plant has a fine effect, either planted or plunged in a basket of moss, and suspended from the roof of a stove or Orchid house. In this way the flowers show themselves to advantage; and if the plants are kept moist while growing, and otherwise well treated, they will last for several years in perfection.

Cuttings made of the young shoots root freely; insert them in sand, cover with a bell glass, and place them in a temperature of 70°, where there is a gentle bottom heat. When rooted pot them off singly into two or three inch pots, and place them in a close warm situation. If rooted early they will make strong plants by autumn. *Alpha.*

AËRATION AND VENTILATION.

There are many who will scarcely give themselves the trouble to inquire in what respect aëration differs from ventilation, and in consequence of not doing so regard the two as synonymous. Indeed I may almost say this is generally the case, although on a little reflection it must be evident they are not identical, as was shown when they were formerly noticed in the *Gardeners' Chronicle*. In the volume for 1845, p. 267, aëration is defined as "the art of keeping the atmosphere of a forcing house in motion by currents of warmed fresh air," whilst ventilation is stated to mean "the process of letting the external air at once into the forcing house." This is no fine-drawn distinction, but a very important difference which every cultivator ought to bear in mind, especially when it is considered that it is mainly owing to the power they possess of regulating the atmosphere of their forcing houses in a proper manner, and at the time required, that their success is to be attributed. The reason why aëration is advantageous, has been so clearly pointed out and explained in the article to which I have just referred, that I trust I shall be excused for bringing it again under the notice of those who are likely to profit by its study and perusal. It is there stated that—"A man's reason must tell him that a plant condemned to pass its life in a still atmosphere is like nothing so much as a criminal set fast in an everlasting pillory. In order to secure motion in the vegetable kingdom, currents of air are made to do the work of the muscles, limbs, and volition of animals. It is not at all improbable that, in addition to the mechanical effect of motion in assisting the propulsion of the sap, it may be important that the stratum of air in contact with the leaves of plants should be incessantly shifted, in order to enable them to procure an adequate supply of food; for we find that water in motion feeds them better than that which is stagnant. Leaves are continually abstracting from the air the very minute quantities of carbonic acid which it contains. When the air moves quickly over the surface, fresh supplies of that food are incessantly presented to it, and the operation of abstraction may be facilitated; while, on the contrary, if the air is stagnant, the absorption of carbonic acid may be much slower. In an absolutely still air perspiration will be reduced to its minimum, and it will increase within certain limits, in proportion to the quickness with which the air sweeps over it. The motion of the air being thus favourable to the two great operations of feeding and perspiring, we shall find it is equally needed day and night, for perspiration goes on principally during daylight, and feeding in the hours of darkness. A good system of aëration must then be constantly in action." (*Gardeners' Chronicle*, volume 1845, page 267.)

With the view of effecting this, a variety of plans have been devised from time to time, which, to a certain extent, have answered the purpose; but I think it will be admitted that a great deal yet remains to be done before it can be said that a proper system of aëration has been perfected. At present it is a desideratum, and the oftener the subject is discussed the more likely are we to discover the path that shall lead us to the object which has so long evaded our pursuit.

Some years ago a correspondent suggested that a small machine, made on the principle of a winnowing-fan, might be employed for the purpose of ventilating hothouses. The farmer, it was said, obtained a very powerful current of air in a small compass by such means; and the gardener, it was thought, might obtain the same advantages by adopting a somewhat similar plan for his forcing-houses. The machine might be so constructed as to be wound up like a clock, when its gradual action would produce a gentle and continuous breeze; and, by turning a winch or handle, the degree of wind might be increased to any extent desired. Such an apparatus, I find, was lately made the subject of a patent. It is known as Haig's pneumatic engine, and is stated to be admirably adapted for the complete ventilation of houses, churches, and public buildings of every description; the lower decks and holds of ships, and the engine-rooms and stoke-holes of steam-vessels. It is now in use on board of her Majesty's ships Asia, Prince Regent, Duke of Wellington, and several others; and has been fitted up by order of the emigration commisioners on board the Calabar, bound to Port Philip. Some idea of its power may be formed from the fact that in a trial that was made of it at Messrs. Hoare and Co.'s Brewery, East Smithfield, one of their largest vats (which holds about 1200 barrels) was emptied from carbonic acid gas in the space of 50 minutes, so that a man went to the bottom of it in perfect safety.

Now it appears to me that a small machine which can exhaust the air in the manner just described, might, by a little ingenuity, be so contrived as to produce a circulation of air in our hothouses at a time when it would be unsafe to ventilate, and I think it not unlikely that after we have become more alive to the advantages which vegetation derives from a circulation of heated fresh air, some such machine as the one I have noticed will be looked upon as a necessary appendage to our pits and early forcing-houses. At present Haig's invention may be considered a move in the right direction, and as it is capable of being easily fitted to hothouses or pits at a trifling expense, I trust the preceding remarks may induce some of our leading horticulturists to give it a fair trial, and favour us with the results. *W. B. B.*

Home Correspondence.

Watering Plants.—Although during summer plants in pots require plenty of water, yet the too frequent application of it to hard-wooded things, such as Azaleas, Ericas, Epacrises, &c., even in the growing season, has the injurious effect of retarding the ripening of the young wood until the season is so far advanced that the securing this desirable object becomes a matter of impossibility. Plants like those just mentioned, when started into growth, provided they are not over-potted and the balls are well drained, require, both in the quantity given and the frequency of its application, a gradual increase of this element, the administration of which ought to be regulated by the state of the weather on the one hand, and the condition of the roots on the other. In dull weather, for instance, and especially if accompanied by a humid atmosphere, an interval of from 24 to 48 hours might with advantage be allowed to elapse between the waterings; for, at all seasons, the fine thready fibres which constitute the roots of these plants are very impatient of excessive moisture. Again, to avoid the danger in this respect resulting from overpotting the plants, care should be taken to have the size of the pots proportionate with the strength of the plants, so that by the time the latter have done growing the pots will have become filled with roots. Treated in this way, both the wood and the roots will grow and ripen together, a condition which will enable the plant to resist the ill effects of an occasional overwatering. After the growing season is over, the plants of Indian Azaleas should be removed to the plant ground, for the twofold purpose of hardening them off and preventing them from making a second growth; and in order to protect them from the effects of rough weather, it will be advisable to provide each row with a few short stakes driven firmly into the ground, to which should be securely fastened a single fence of neat rods, to suit the height of the plants. To this support, one tie for each plant will be ample. Ericas and Epacrises, however, should on no account be consigned to the plant ground, for a continuance of wet weather is certain death to them. A cool pit having a south aspect is the best place to grow them in; and if they have a cool well-drained bottom to stand on, all the sun it is possible for them to have will not harm them. They must, however, have plenty of air; and with proper care in watering, no fears need be apprehended for their perfect culture. *R. Miles.*

Woods and Forests.—Will you be so good as to inform me whether Mr. Lipscombe, the Surveyor of Delamere Forest, is still in charge? or does Mr. Kennedy's very proper dismissal of him stand good? And is Sir James Campbell also removed from Bere? I ask because I see from the report of Mr. Drummond's committee that both Mr. Lipscombe and Sir James Campbell received a guinea a day, in addition to their expenses, which I suppose would not be the case if in the service of the crown. *W. Q.* [We know no more than the committee says. It is, however, quite consistent with the other part of the Royal forest management that officers should be paid twice over for the same duty; once for doing duty in London, and once for doing duty at the same time in their forests. You should observe, however, that neither Mr. Machen nor Mr. Higginbotham received more than their travelling expenses, and Mr. Cumberbatch received *nothing*.]

Nicholson's New Strawberries.—I recently inspected Mr. Nicholson's Strawberries at Egglescliffe, and made the following notes regarding their respective merits:—Ajax is a very distinct variety; there is no Strawberry I have seen which bears the least resemblance to it. It is a very strong grower and a good bearer; the colour of the fruit is a deep shining red, the seed is very thinly set and deeply imbedded in the berry, which is large in size, of a fine globular shape, and remarkably juicy and sweet. As a dessert Strawberry I consider it unequalled. Ruby is a vigorous grower; the shape and colour of the fruit very much resembles that of "Ingram's Prince of Wales," but it is not so highly flavoured as that variety; it is an immense bearer, and ripens its fruit for a long time in succession; this must prove one of the most useful Strawberries in cultivation. Fillbasket is another sort that is well named, the ground round it being literally covered with fruit. In colour it resembles the "British Queen," size large, and it is passable in flavour; for market gardeners this variety will be invaluable. Captain Cook is also a great bearer; the fruit is larger and deeper in colour than that of the preceding sort, and I thought better flavoured. I also saw one or two more very promising seedlings, one of which was remarkable for its bearing properties; on one plant alone I counted no fewer than 200 perfectly formed fruit in various stages of ripeness. Altogether I have never seen such crops of Strawberries as I saw at Egglescliffe. *J. W. Kinmont, Castle Gardens, Bishop Auckland.*

Wire.—The wire of cages in which squirrels, mice, and such creatures, perform their revolutions, is liable to be destroyed by their wetting it. Would the wire galvanically covered over with tin, or any other preparation of wire, resist the influence of that acid? *A. H.* [Yes.]

New Habitat for Ladies' Traces.—An excursion was recently made to Wyre Forest, in this county, by a few members of the Worcester Branch of the Phytological Club. They were accompanied by Mr. Jorden, of Bewdley, a gentleman who has done more to develop the treasures of the neighbourhood than any botanist of the district; and who still, though over 70 years old, maintains all the vigour and enthusiasm of youth. In the heart of the forest, on the margin of a bog, white with Eriophorum latifolium, Mr. Jorden was fortunate enough to discover a specimen of Spiranthes æstivalis. We looked vainly for more: but the plant found being only in bud, I hope more plants may spring up. *T. W. Gissing, 44, High Street, Worcester, August* 1.

The Potato Crops around Bath were in flower early in July, and were so unexceptionably healthy that I concluded the crop was safe. About the 21st or 22d ult., however, the foliage was struck, and last week entire plots were diseased and stinking. They were the Champions, and it was remarkable that in the same gardens other sorts were yet in a perfectly healthy state. Does this arise from some varieties being able to resist the disease longer than others? If not, the cause cannot be from any condition of the atmosphere. From the beginning, however, the impression on my mind has been that the disease arises from want of electricity. *C.*

Yucca gloriosa.—Amongst a choice collection of trees and shrubs, including many fine specimens of Conifers and rare plants, in the grounds of the Marquis of Huntley here, may be seen a Yucca gloriosa in full blossom. It has two flower stalks measuring 9 feet in height, and 2300 perfect blooms on it. *Angus Ross, Orton Longueville, Peterborough, August* 2.

Vine Pruning.—Your correspondent "Quercus" doubts whether the general practice of pruning Vines on the spur system is at all times in accordance with the laws which promote a corresponding reciprocity betwixt the roots and the leaves, although he has no cause to complain, having adopted that mode of pruning with success. The following are the results of my experience in the matter. When I came here in February, 1848, the Vines in one of the vineyards were a mass of young wood, they had not then been pruned for the season. My predecessor stated that allowing so much wood to remain was the only means he had of insuring a crop of fruit. I, however, proceeded at once to reduce the number of shoots to one or two rods to a Vine. The result was a middling sprinkling of Grapes; not being satisfied, the next year I left one rod to each Vine (there being a Vine planted to each rafter); I then spurred them to two eyes, but I got only a few Grapes, and the most of them stunted, but the efforts on the part of the Vines to produce wood and foliage were most satisfactory, emitting, as they did, abundance of roots, if I may so term them, along the branch. The following season I pruned them to spurs a foot in length, with the view of checking the vigorous growth, and to cause them to produce fruit—but it was a failure. I then trained some shoots for rods; the next season these produced a favourable crop, while the spurs remained barren as before; however, I continued to train shoots for rods, entirely abolishing the spur system of pruning; this year my labours are agreeably rewarded with what is considered a plentiful crop—some have borne two bunches to a shoot; from this I am led to infer that in the formation of the border the soil was too rich and light, causing a rampant growth, thus creating tap roots instead of an increased quantity of spongioles, which are so essential for absorbing the nourishment necessary for the production of fruit. The Vines, in my opinion, had been planted too thickly; instead of one Vine to a rafter, if there had been one to every three it would have been able to extend its growth, and to somewhat keep pace with the extension of the roots, as I would say that the top growth was not reciprocal with the under growth, especially when the spur system of pruning was adopted. *John F. M'Elroy, Gardener to W. J. Lancaster, Esq., Stamford Hill.*

Shallots.—I planted a pint of Shallots in the second week in March, each measuring 3 inches in circumference, and they have yielded me a bushel of fine bulbs, many of them 8 inches in circumference. Is not this a large increase? [Yes.] *John Brackling, Gardener to the Rev. J. Ekins, Sampford, Braintree.*

Effects of the Winter at Bicton, Devonshire.—In addition to Conifers (see p. 437), the following have been more or less injured. Clematis Gebleri, and a species from New Holland, have been killed entirely; but C. florida, C. flore pleno, C. Sieboldi, C. cærulea, and upwards of 20 other species and varieties remain uninjured. Tasmannia aromatica, Illicium anisatum, floridanum, and religiosum, are all uninjured. Magnolia exoniensis, glauca, cordata, Soulangeana, Alexandrina, and macrophylla, and 30 other kinds, have not exhibited the least effects of severe weather; a large plant of M. fuscata against a wall has stood well, and has had hundreds of flowers open daily; Schizandra coccinea, Kadsura japonica, and Menispermum canadense, have all stood well unprotected. All the Berberries are uninjured, and have bloomed beautifully; more especially B. dulcis, buxifolia, canadensis, cretica, rotundifolia, petiolaris, and Darwini, which last is one of the handsomest; B. nervosa, Fortuni, fascicularis, hybrida, trifoliata, and all the varieties of aquifolium, have also bloomed most profusely. Cistus incanus, salvifolius, and tauricus have been killed; but some of the other kinds have been beautiful objects for a long time—such as C. heterophyllus, monspeliensis, candicans, cymosus, laxus, ladaniferus, and corbariensis. The Helianthemums are hardy and striking objects; more especially on a fine day, when their variety of colours and profusion of bloom have a fine effect. Pittosporum Tobira, variegatum, and eriocarpum, have been killed down to the ground. Thea viridis, bohea, and oleifera, slightly protected, have remained uninjured; one large plant of Thea viridis, 8 feet high and as much through, has stood uninjured for years, and is at this time of a fine dark green colour. Hypericum uralense and nepalense have been killed, and

Coriaria nepalensis, protected, has been killed to the ground; Euonymus japonica and argentea have lost their leading shoots; Celastrus buxifolius has been killed down; Ilex excelsa had all the young wood killed, but other tender sorts have not been injured, such as cassine, vomitoria, Maderensis, and balearica; Zizyphus vulgaris has been killed; Rhamnus sempervirens, hybridus, and oleoides, and the more hardy kinds, have remained uninjured; Colletia horrida has had a very gay appearance, having been covered with little bell-shaped flowers; C. Bictonensis is a singular but ornamental shrub, with thick succulent wood, covered with sharp spines, very minute leaves, and little white bell-shaped flowers. Ceanothus dentatus has been killed, but C. thyrsiflorus, divaricatus, rigidus, azureus, intermedius, papillosus, and americanus have remained uninjured; Pistacia vera and lentiscus have had their foliage and young wood very much cut; Duvaua latifolia has been killed, but dependens, ovata, and longifolia are uninjured, as are also Virgilia lutea; Edwardsia macrophylla, and microphylla, and all the Genistas are unhurt, such as triquetra, lusitanica, radiata, tinctoria, Scorpius, tinctoria plena, and procumbens; Cytisus hirsutus, elongatus, capitatus, sessilifolius, polytrichus, and purpureus, are unharmed. Adenocarpus intermedius has stood unprotected, and is now a grand ornamental shrub, being 8 feet in height, and covered with beautiful racemes of flowers. Acacia Browni has proved to be one of the hardiest of shrubs, it is of a dark green colour, has a beautiful pendulous habit, and when covered with flowers it has a grand appearance; Caragana pygmæa, jubata, Gerardiana, ferox, and spinosa, are uninjured; as are also Coronilla glauca, Emerus, media, arborea, and Astragalus tragacantha; these have had no protection. Spiræa trilobata, alpina, decumbens, sinensis, canadensis, tomentosa, lævigata, lanceolata, nepalensis, and Reevesiana, are all uninjured, although they have had no protection; Photinia serrulata and glauca are likewise uninjured; Elæocarpus cyaneus has been killed; Deutzia scabra, corymbosa, staminea, and gracilis are uninjured, and have flowered in the greatest profusion; Myrtus communis and mucronatus, unprotected, have remained unhurt; Eucalyptus montana has not been injured, but oppositifolia and pulverulenta, although protected, have been killed; Passiflora Colvilli, racemosa, and rubra, have been cut down; Escallonia caracasana has been killed, but viscosa, macrantha, alba, and illinita have escaped without injury, also all the other varieties; Hydrangea altissima, hortensis, involucrata, azasia, and quercifolia are uninjured; Aralia trifoliata and quinquefolia, although protected, have lost all their leaves; Benthamia fragifera has stood without [illegible]ury. Viburnum odoratum has been cut down; V. chinensis [illegible] had all its foliage killed; Weigela rosea, exposed to the full se[illegible]verity of the weather, has not been the least affected by it, it has been one mass of flower and very gay; Abelia rupestris has escaped without injury; Ozothamnus rosmarinifolius has not suffered in the least, and is now one mass of white flowers. Most of the Heaths have a gay appearance, such as stricta, ciliaris, Mackayana, carnescens, and atropurpurea. Erica arborea is one of the most useful shrubs here, being in flower all the winter months, and the blossoms are not injured by frost; Leucothoe axillaris, latifolia, Catesbæi, spinulosa, acuminata, and floribunda have all been very gay; Arbutus myrtifolia and farinosa, although protected, have been killed; and Arctostaphylos nitida and arbutoides have been killed; Pernettya pilosa, floribunda, Cunninghami and mucronata have escaped without injury; Gaultheria coccinea has been killed; Rhododendron rubellans, Farreri, norbitense, and fimbriatum have been killed; all the other kinds have flowered abundantly, the following being most striking: cinnamomeum, rubricaule, Dickensi, Hibberti, catawbiense, altaclerense, venustum, Nobleanum, pulcherrimum, coccineum superbum, speciosum, campanulatum, elegans, splendens, tigrinum, hyacinthiflorum, præcox, and Charles Truffet; also splendid large plants of the arboreum have flowered truly grand. Styrax officinale and lævigatum have had all their young wood killed; Myrsine bifaria has been killed; Olea europæa and robusta have escaped without injury, but fragrans has lost all its foliage, and O. grata has been entirely killed. Forsythia viridissima is uninjured; [illegible] ma is [illegible]; Jasminum odoratissimum has been killed, but officinale, Walkeri, Reevesi, and nudiflorum have not been injured. Physianthus albus has been killed; Bignonia capreolata has had all its leading shoots destroyed; Solanum crispum and jasminoides have escaped without injury; Fabiana imbricata has not suffered in the least; Buddlea Lindleyana has been killed down; Paulovnia imperialis has lost all its leading branches; Veronica speciosa has been killed; Pentstemon scaber is unhurt; Deeringia Amhersti has been killed; Polygonum vaccinifolium and Grevillea rosmarinifolia have escaped without injury; Laurus variegata and carolinensis have had all their young wood killed, but Sassafras, Benzoin, and angustifolia are uninjured; Tetranthera japonica is unhurt, although not protected in the least. Daphne japonica, Tarton-raira, neapolitana, collina, variegata, Aucklandi, and oleoides have all been killed, although they had the protection of a box and dry Fern; Elæagnus reflexa has escaped without injury; Aristolochia tomentosa, Broussonetia papyrifera, Maclura aurantiaca and Ficus carica are all unhurt; Quercus lanata, hybrida, nana, rugosa, virens, heterophylla, and americana alba grandiflora, although protected, have all been killed. Quercus sclerophylla, Catesbæi, and polymorpha have been killed down; Q. glabra has escaped without injury, and is one of the most striking species we have, the foliage having more the appearance of a Magnolia than an Oak; it is 8 feet high by 8 feet wide. Q. mexicana, confertifolia, sempervirens, grandifolia, Louetti, Meerbecki, appenensis, dealbata, pannonica, tauzin, coccifera, nigra, laurifolia, coccinea, sinuosa, and Ægilops are all uninjured; they are in a very flourishing condition, and will soon make some fine ornamental trees. Fagus antarctica is another very interesting tree, perfectly hardy, and making rapid growth; F. Cunninghami is more tender and also more slender in growth, having more the appearance of a Birch (Betula nana); Garrya elliptica, and macrophylla have not suffered in the least; Comptonia asplenifolia has escaped without injury. *James Barnes.* [It is much to be regretted that in this valuable report the names of so many plants should occur of which nothing is known, and which are beyond doubt *aliases*, or trifling varieties of species otherwise named in science.]

Potato Disease.—The Potato disease this year is very general, and from the appearance of the plant in this neighbourhood, I was surprised that any district should be so exempt, as represented by Messrs. Hardy and Sons, for here it seems to have assumed its worst character, and, singular to relate, the early kinds seem most affected. I have now growing luxuriantly a late red kind without the slightest taint or trace of infection, whilst not a hundred yards from it are Rogers's Prolific, Ashleaf Kidney, and Early Oxfords, in a most deplorable condition, quite half of the tubers being unsound; nor is this state of things confined to gardens, for the farmer's crops present a most melancholy aspect; the luxuriant appearance of the fields a few weeks since is now destroyed by the scorched and shrivelled foliage of the plant, and the atmosphere in their neighbourhood is heavily impregnated with the well known odious effluvia. *J. B., Derry Ormond Park, near Lampeter, Cardiganshire.*

Hornbeam.—Addison, in the "Spectator," No. 477, recommends a winter garden to be planted with Evergreens. "The walls are covered with Ivy instead of Vines. The Laurel, the Hornbeam, and the Holly, with many other trees and plants of the same nature, grow so thick in it, that you cannot imagine a more lively scene." Being unacquainted with any evergreen species of the Carpinus, or what we commonly call Hornbeam, I have recourse to you for an explanation of this passage. As it is a proposal, not a description of any place he had seen, it is possible this famous writer may not have exactly understood the subject he was handling. *A. H.* [No Hornbeam is evergreen; but, like the Beech, it will, when clipped, retain its dead leaves during winter.]

Underhill's "Sir Harry" Strawberry.—"I recommended," says Mr. Beaton, "two sorts of the Strawberries exhibited at the last Chiswick fête, to my late worthy employées, Sir William and Lady Middleton, as [illegible] the dessert, but whether or not they are most useful [illegible] I know; the kinds were of good flavour is more than [illegible] the Bicton White Pine, a large white berry, that will make a most useful change in a dessert for great or small parties, and a very dark one named Sir Harry. This last was sent by Mr. Richard Underhill, of Edgbaston, near Birmingham." Having for many years had much experience, and taken great interest in the cultivation of fruit, I called upon the gentleman just mentioned for the purpose of making more particular inquiries respecting his seedling, and possessing myself of that information as to flavour, &c., which Mr. Beaton could not give. Mr. Underhill politely invited me to walk through and inspect his beds, when I was perfectly astonished at the enormous size and deep colour of the fruit, combined with the excessive cropping of the plant. I then tested the flavour with Keens' Seedling and British Queen, both equally well ripened, when the superiority of Sir Harry to either was at once so evident that I pronounce it the *most* exquisitely flavoured berry I have ever tasted. It is both firm and juicy, and carries its rich red colour entirely through it. The other distinguishing characteristics of the plant are these—its leaves are few, and it spreads its bearing branches out so wide as to thoroughly expose the fruit to the full influence of sun and air. *James Boucher (formerly Gardener to the Lady Olivia B. Sparrow), King's Heath, Worcestershire.*

Notices of Books.

The Ferns of Great Britain, illustrated by J. E. Sowerby; the Descriptions, &c., by C. Johnson. Small 8vo. Part I.

THE prevailing love of Ferns has led Mr. Sowerby to produce the present work, in which all our British species are to be represented by coloured or half-coloured figures engraved on copper. Each number is to contain six plates, and the work is to consist of eight numbers. The figures are carefully drawn, and Mr. Johnson's letter-press is satisfactory. We only wish he would call a leaf a leaf, and not a frond—and an indusium an indusium, and not an involucre, which an indusium is not. His directions for cultivation are clear, and evidently the result of his own observation of the habits of the plants. He has the good sense to reject Mr. Newman's preposterous nomenclature. When finished the work will form a handsome volume. Mr. Johnson's account of Polypodium calcareum may illustrate his manner of treating the subject.

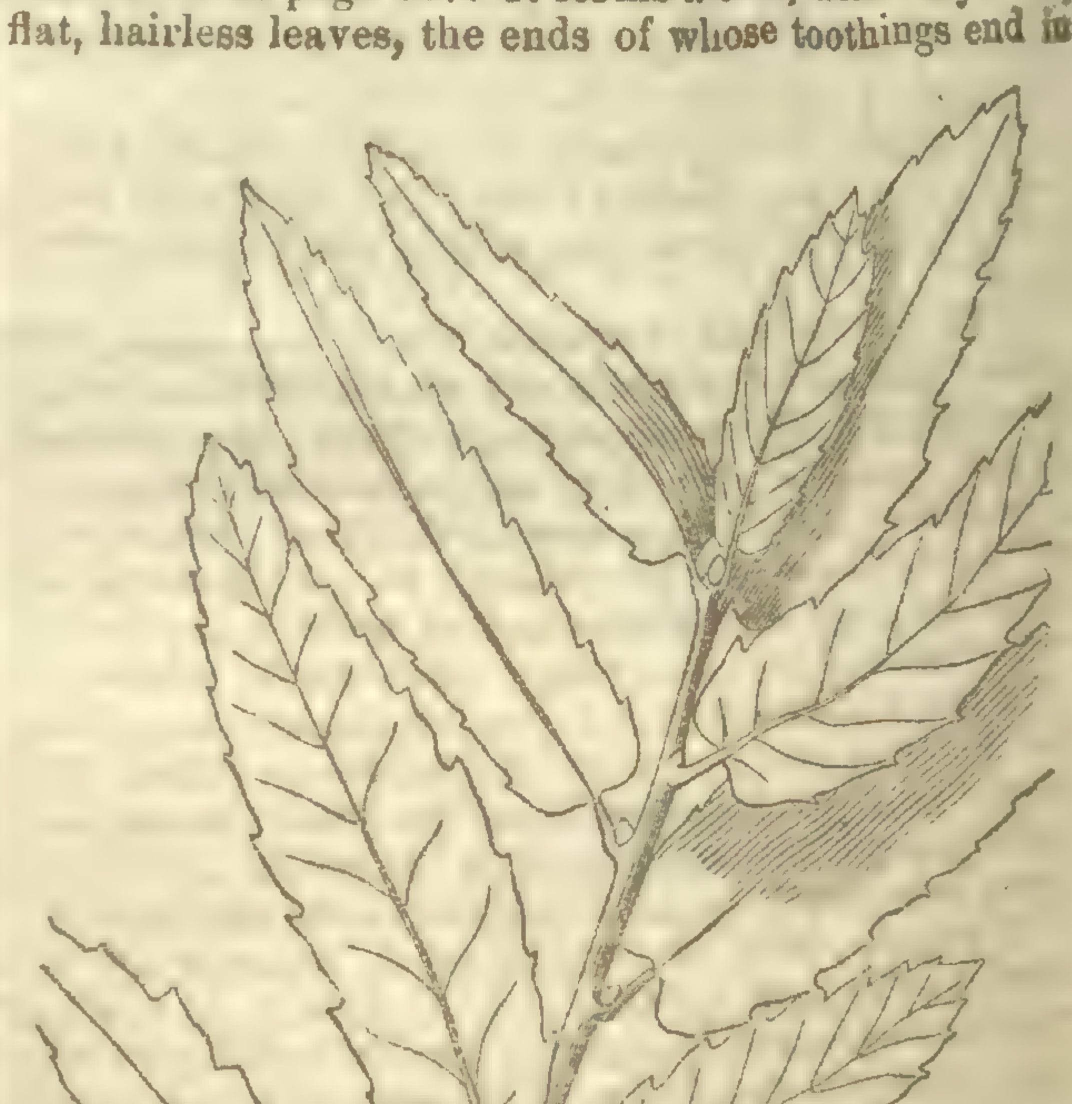
"Apparently confined in its natural growth to limestone districts. Sir J. E. Smith first noticed it as a distinct species, and it is perhaps more frequent than generally supposed. In the rocky parts of Derbyshire it is far from uncommon, occurring among Grass and bushes in broken limestone and tufa; the Cheddar cliffs and Ingleborough are other stations; and the growing specimens in my garden are from the vicinity of Kenilworth, where it accompanied P. Dryopteris, a species with which it has often been confounded, although in habit and other respects very dissimilar. The rhizoma is thicker and less spreading than that of the latter plant; the frond less distinctly ternate or three-branched, the lower branches being shorter than the terminal or middle one; all the three are rigid, expanding upward on the same plane, and not at all drooping. The colour of the frond is of a dull green, owing to the presence of numerous minute stalked glands that give a mealy appearance to the surface, and similar glands communicate a glaucous hue to the rachis. The sori arising from the extremities of the lateral veins of the segments form a more distinct intramarginal series than those of P. Dryopteris, and generally become confluent when the thecæ open. Being of less compact growth than the last species, and more rigid, it is a much less ornamental plant; but it bears exposure better. Most persons who have had it under cultivation complain of its liability to die off, but I believe this to be the effect of confinement and superabundant moisture; left to itself, few Ferns are more hardy, but it likes pure air and perfect drainage. Even in the wild state it cannot be styled a 'free-grower;' and being a very local plant, its natural condition must be considered as much as possible in our efforts to naturalise it in the Fern garden. It flourishes best on a sloping bank, planted near the surface, with an admixture of lime rubbish to the ordinary compost, the ground about it being studded with fragments of stone or burs from the brick-kiln, to prevent evaporation. Under these circumstances it does not seem to be injured by daily exposure to four or five hours of the midday sun. If grown in pots they should be large, and about one-third filled with draining material."

Piercy's Popular Tales (Groombridge, 12mo) are more amusing than sound, if to be judged by the story of Buffon and the Golden Pheasant. The writer could know little of vegetable physiology when he made the great naturalist feed a Rose tree with coloured water, and afterwards detect the colour in the branches. Does Mr. Piercy require to be told of the common fact that colouring matter will not enter the roots of a plant! This tale should be altered in a book intended for young people, and so far as manner and style are concerned, well suited to them.

New Plants.

73. QUERCUS RIGIDA. *Willdenow.*

THIS is one of the Oaks the existence of which within the possible operations of the troops in the East we mentioned at page 387. It forms a tree, with very hard, flat, hairless leaves, the ends of whose toothings end in



a sharp firm point; they are on short stalks, and are distinctly heart-shaped at the base. Dr. Sibthorp found it in some part of the Morea; our own specimens are from Broussa. It is probably the same as a Quercus Libani found on Lebanon by Olivier, whose figure is copied in "Loudon's Arboretum," p. 1932, t. 1826.

In Armenia occurs abundantly another species of Oak—if it is not a form of that now mentioned—with larger leaves, on much longer stalks, and much deeper,

longer-pointed, and more irregular indentations. This, too, of which we have specimens before us, from Mr. Brant, H. M. Consul at Erzeroum, for whom they were collected by Dr. Dickson, would be an extremely welcome addition to the Oaks in English cultivation.

Garden Memoranda.

Horticultural Society's Garden, Turnham Green.—It may interest Orchid growers to know that the great plant of Lælia superbiens in the curvilinear stove has again thrown up four flower-spikes, and that there is reason to expect that more may yet be produced. This makes the fifth or sixth year in which this magnificent Orchid has bloomed, without ever missing a season, and therefore the appearance of its handsome blossoms annually may now be looked forward to with certainty. The plant itself is in excellent health, and the spikes vigorous and strong.

An Allamanda cathartica, which spreads over the interior of the span roof of the propagating house, is at present one mass of yellow blossoms, a condition which it never fails to be in every year about this time. It is growing in a pot, and, with the exception of pruning it back every autumn to the well ripened wood, it requires nothing more than the most ordinary treatment. In another division of this house were plants of M. Van Houtte's Aphelandras, such as have been shown at our metropolitan exhibitions this year, together with Scheeria mexicana, a Gloxinia-like plant of considerable beauty, and examples of the Double Yellow Brugmansia (B. flava) in a very young state.

In a cool pit was Glossocomia clematidea, a white or rather very pale blue bell-flowered plant, obtained from the Russians; although not striking, yet on account of the singular and really handsome combination of colours in the interior of the little drooping bells, it is certainly well worth cultivation. Associated with it were Campanula primulæfolia, a hardy herbaceous plant which has not yet flowered in the garden, and a species of Antigonum which is expected to prove a valuable climber. An Orange Globe Amaranth was producing a few stray flowers; it is a fleshy rooted species, which may possibly turn out to be a useful late autumn and winter-flowering plant.

In the conservatory the white Brugmansia is still in blossom; but the huge specimens of the red one are nearly over, when they will be pruned "hard in" and cleaned preparatory to their pushing fresh growths for another crop of flowers. The Orange Cestrum is now coming finely into blossom, and for a large house like this nothing can possibly be handsomer. The different Tea roses planted along the sides of the paths have likewise been and are still in beautiful condition, while on the shelves are fine bushes of Calceolaria rugosa and the white variety of Trachelium cæruleum. The latter makes a capital plant for greenhouse or conservatory decoration at this season, the numerous great corymbs of small white flowers, most symmetrically arranged, having a pleasing effect. It is a biennial, the seeds of which, in this instance, were sown in March, 1853. Young plants of Selago distans, Chrysanthemums, and Japan Lilies, &c., are now being shifted and grown on for the winter decoration of this house.

In the open ground, American plants are making fine growth, and the ill effects of the winter on most things have now all but disappeared. Even the Mexican Pinuses, which a short time ago looked as if they had been entirely killed, have now made fresh foliage, and are fast recovering. At present P. apulcensis is the most naked, but that is also putting forth young leaves.

On the conservative wall the white variety of Ceanothus azureus is now in full blossom; it endured the winter unhurt, while C. azureus was killed. The Mount Etna Broom (Spartium Etnense) on the same wall is also coming into blossom, its branching head of yellow flowers rising some distance above the wall.

Of Roses, a bed of foot standards, Bourbons, which had been wintered on Mr. Rivers's plan (*i.e.*, in a cool frame packed closely together, with their roots covered with ashes) are doing well. When winter approaches they will be again taken up and stowed away as before, to be replanted next summer. They are thus wintered free from frost, and their flowering is made a matter of certainty.

Some of the young fruit trees in the orchard house, though only dug out of the open ground last spring and potted, have nevertheless produced a few good Plums and Pears. Among the latter, Beurré d'Anjou has two, and Baron de Melo five fruit, and among the former a small tree of Reine Claude de Bavay has 18 Plums on it. Two seedling Nectarines from the Stanwick are thriving young trees, which may probably fruit next year. A few Figs will possibly ripen this season, and there is plenty of young fruit for next year's crop. One of the Potato Yams alluded to at pp. 467 and 486 has been planted in the bed of this house; the other has been placed in the open border. Both appear to be thriving.

In the lean-to Vinery a ventilator, similar to that represented and described at p. 485, has been fixed. An opportunity will therefore be afforded of testing its value. It may be mentioned, however, that the inlet in this instance appears to be the shaft next the back wall, while, according to "J. P. S.," it should be that furthest from it. No mildew has as yet attacked any of the Vines, either in this house or elsewhere in the garden this year, except those on open walls, where a dusting or two with sulphur has stopped its progress.

In the orchard department, Apple trees are very much affected with American blight, which has to be continually washed off them by syringing them well with a powerful garden engine. Gooseberries and Currants are nearly spoiled by aphides, honey-dew, and a black sooty-looking deposit, both on the leaves and fruit. The latter, indeed, is so much covered with it that they have to be washed, or otherwise cleaned, before they are fit for use. These evils are not confined to the Society's Garden, but are prevalent in the adjacent market gardens, and, we believe, all over the neighbourhood. Of ordinary orchard fruit, there is none this year; and therefore the very many varieties that remain to be proved must stand over till a more favourable season has furnished the means of doing so.

The haulm of Potatoes in the kitchen-garden is fresher this August than it has been at a similar period in any year since 1845, and the tubers are as yet apparently free from disease. This remark applies to Potatoes in the garden generally under all kinds of circumstances, whether earthed-up on Mr. Aldborough's plan or grown in the ordinary way; all, with the exception of a stray stalk here and there, are alike sound. Of French Beans it may be mentioned that the Newington Wonder, a dwarf-growing sort, has borne most abundantly this year. The Haricot noir de Belgique is a stronger grower, and usually a good kind; but this year it has not done so well as the Newington Wonder, which has proved itself to be a most useful variety.

FLORICULTURE.

Culture of the Pansy.—The following instructions may be useful to amateurs beginning to grow this flower for the first time. Having fixed upon the situation for your bed (one having a south-eastern aspect and well sheltered from all winds is the best that can be selected, taking care that it is not so overhung with trees as to cause the plants to be drawn, or where they will catch the drippings from the boughs), at any time between October and February mark out your ground in plots 3 or 4 feet wide with 1 foot alleys; remove the soil from the beds to the depth of 8 inches, and fill them to the height of 3 inches above the alleys with previously prepared compost, the roughest or coarsest portion of which should be made use of first, reserving the finer part for the surface. The next operation to be considered is planting; for this choose a dry day, towards the latter end of March or the beginning of April, and having first neatly raked the bed, proceed to mark off the intended rows at one foot apart, and when planting leave a space of at least 10 inches between each plant. After planting, it would be advisable to turn a garden pot over each plant for the first day or two, to shade it from the sun, wind, or frost. If there has been frost during the night, be very careful not to uncover them if the sun be at all likely to shine. Pansies love a moist still atmosphere, and are very impatient of wind; all sudden changes are also very prejudicial. Several of your readers will have remarked that if a hot sun succeed rainy weather, many of the plants begin to droop, and would soon die off if not shaded. The same effect is also produced when a bed previously shaded is suddenly exposed to the heat of the midday sun. If you find any plant thus affected, place a hand-glass over it, and form it into cuttings. But after all due care and attention have been bestowed, it will frequently be found that some of the plants fog off. This has been attributed to the wire-worm, but I have never found that pest at or in the roots of any Pansy I have taken up, which I invariably do when any of the plants fall prostrate. Strength or freshness of the manure, and its being too retentive of moisture, have been assigned as other causes; that this disease has been accelerated by them I have no doubt, but it cannot be the only reason, as they very frequently fog off in poor sandy soils. Perhaps some of your readers can suggest the true cause. Any person who may wish to send flowers for exhibition will be quite unable to compete successfully, unless he covers his beds at least a week previously to each show, to protect the plants from being battered by the wind or rain, or faded by the sun; in hot weather it will prevent excessive evaporation, and in cold keep the temperature more uniform. The frame for the cover should be at least 3 or 4 feet above the bed in the centre, and supported at the four corners on posts, at about 8 inches from the surface, to allow the free circulation of air; it may be made similar to a Tulip frame. One of the greatest enemies the Pansy-grower has to contend with is the slug; during one night it will make as great ravages among the blossoms as will require a week to replace. The best method to rid yourself of these intruders is to water the bed with clear lime water during the evening, after a shower of rain (when they come out in great abundance); but any person wishing to show, must carefully search for them both morning and evening. They generally secrete themselves under the leaves or close to the roots of the plants. In order to guard as much as possible against the depredations of slugs, &c., let your beds be edged with slate or stone, which affords no harbour for them, and always looks neat. There is only one other remark I would wish to make concerning the general management of these plants, namely, never to water your beds even in the driest season, but in its stead, if continued hot weather is expected, I would advise that fresh cow manure be placed round the base of each plant, which, by preventing too rapid evaporation, will be amply sufficient to preserve a due amount of moisture about the roots. For the propagation of old and known varieties about the middle of this month, take strong short-jointed cuttings from those plants which are the healthiest and have produced good flowers during the season, and strike them in a shady bed made of equal parts of silver or sharp sand, leaf-soil, a little bog earth, and garden mould; for the first few days they should be covered with a hand-glass, and shaded from the sun, but no protection will be required afterwards. When the cuttings are sufficiently rooted, which will be in about three weeks or a month, plant them in good sized pots, and let them stand in a dry situation till the frost commences; the pots should then be plunged in cinder ashes in a cold frame, and kept quite dry, but air must be given as often as practicable, particularly in spring. When the frost is severe cover the frame with a mat, which must not on any account be removed during the day, if the sun shines; more plants are lost in the spring, especially by not attending to this rule, than by the severest frost. New varieties of course must be raised from seed, which may be sown at any time from March till September, either in pans or in the open ground. In about six weeks the seedlings will be ready to plant out, but if sown so late in the year that they cannot be removed, the seedlings will require some protection during the winter, either by a frame or otherwise; they can be planted out early in the spring. As a general rule, Pansy seed should be sown as soon as convenient after being gathered; for if allowed to remain some time unsown, vegetation is much longer in taking place, and many of the seeds will not come up at all. Seed should be saved from those plants which have the best shaped blooms; and if these be fertilised with the pollen of other flowers, which have bright or good eyes, it may have a good effect. The seed-pods, when ripe, become erect, and open on the first fine day, and if not gathered, would shed in the course of a few hours during fine weather; therefore the beds should be looked over at least once a day, and such pods as appear ripe should be gathered. It only remains to notice succession beds, which it will be necessary to have, in order to ensure a continuance of blooms; for this purpose I would recommend that the first cuttings which can be obtained be taken from the spring plants, and, when struck, be planted out in a bed, to bloom in the autumn. The treatment of the plants will be the same as before directed, but the situation of the bed must be due south. I may add that the whole of the remarks I have just made are the result of several years' practical experience in the cultivation of this plant. *D.*

Miscellaneous.

Lecture on Peat Charcoal. By Prof. Way.—Prof. Way remarked (says the *Chemist*) that, independently of the noxious gases resulting from the putrefaction of animal matter generally, and which consisted principally of sulphuretted hydrogen and sulphuret of ammonia, each particular animal substance, excretion or otherwise, had its *peculiar* odour, which, although abundantly perceptible by the senses, and, in many cases, as in musk, almost inexhaustible, was inappreciable in weight; therefore, by deodorising a large amount of odour, it was not to be inferred that a large amount of manuring matter was thereby secured. He then enumerated the various single and double deodorisers that had been employed. He referred to Sir William Burnett's excellent application of chloride of zinc, and to the ordinary chloride of lime; to gypsum (sulphate of lime), and its conversion in ammoniacal atmospheres into sulphate of ammonia and carbonate of lime; to the agreeable odour of pure ammonia, and its power of giving intensity to odours of a disagreeable character, which intensity was lost when the ammonia was withdrawn; to sulphate of iron (green copperas), which when powdered and thrown into tanks turned black, on account of the sulphuret of iron formed on the decomposition of the sulphuretted hydrogen present. He then proceeded to the consideration of charcoal as a deodoriser. He gave an interesting statement of the peculiar action of charcoals in general, arising, he believed, from the great amount of surface their spherical interstices presented, and of the peculiar action and superior value of animal charcoal over all others. He referred to the theory he had been led to form of this peculiar difference, and to a very successful imitation of animal charcoal, which he and Mr. Paine had made, in reference both to deodorising and decolouri-ing properties, from the light porous silica-rock, found on Mr. Paine's estate in Surrey, and when broken up and steeped in heated tar, was put into a gas retort, where the tar was burnt off in the state of very pure gas, and a residuum left of the new silicated charcoal in question. He explained that in charcoals it was not the amount of carbon they contained that constituted their value, but the mode in which the carbon was distributed; that animal charcoal contained only 10 per cent. of real carbon, while wood charcoal contained 90 per cent. He referred to the large amount of water, 50 or 60 per cent., which peat charcoal took up, and to the fallacious dry state of the manures, with which this water-carrier was mixed. He feared this mode of introducing water in a latent state into manures, in many cases, gave a turn in the scale more in favour of the manufacturer than of the farmer. He doubted whether peat charcoal could be used economically for the purpose of soaking up tank-water; if not, he feared it would prove of no advantage, in other respects, as a

remunerative agent to the farmer. It had been long before the public, but had not progressed in market value as it would have done had its application been successful. He considered it to lead to much error in practice, that the exact nature of the action of charcoal on ammonia was not better understood by the public. Fresh burnt charcoal would absorb a large quantity of ammoniacal gas, but it was a mistake to suppose that it would consequently abstract ammonia from a liquid impregnated with it; on the contrary, water had the power of displacing from charcoal the whole of the ammonia it had received in a gaseous state within its pores. Peat charcoal did not either make manure or separate it from sewage; it simply rendered manure portable. He exhibited a striking experiment, showing the power of *dry* peat charcoal to arrest odours. Two open tumblers were half filled with the most offensive sewage-matter Professor Way could obtain, and the surface of each mass covered with a film of thin paper and a thin bed of powdered peat charcoal resting upon it. These tumblers were in this state handed round to the members, who ascertained the perfect manner in which the sewage-matter was thus rendered no longer offensive to the smell. He then gave an interesting account of the process of Mr. Stothert, by which sewage-matter was reduced, by a double action of purification, into clear water and inodorous precipitate—a process admirably adapted for sanitary purposes, although not for those of agriculture, as the more valuable manuring matters were held in solution and carried off in the pellucid liquid, while the precipitate was comparatively an inert mass. *Mechanics' Magazine.*

Monograph of Tropical American Oaks. — Dr. Liebmann, of Copenhagen, the distinguished traveller in Mexico, and the worthy successor of Professor Hornemann in the botanical chair of the University of Copenhagen, has in a very forward state a history, with numerous figures (we believe, in folio), of the Oaks of tropical America. His own collections of these are very considerable, and those of other herbaria have been made available to him; and we are sure that the publication will be as acceptable to all botanists as it will be honourable to the author. We learn that here, as is the case in all extensive genera, Dr. Liebmann has found it necessary to reduce very considerably the amount of book-species. *Hooker's Journal of Botany.*

Calendar of Operations.
(For the ensuing week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Now that there is a profusion of flowers out of doors, it will not be possible to maintain the interest of this house, except by keeping it furnished with handsome specimens of showy plants in first-rate condition; and, with proper convenience, this is no difficult matter at this season. Nothing, therefore, should be brought here at present that is not a fair specimen, and well bloomed; nor should a single plant be allowed to remain a day here after it begins to get shabby, for it seems a waste of means, and certainly betrays bad management somewhere, to occupy glass structures with plants of inferior interest to such as are plentiful in the open air. It is not desirable in our opinion, however, to crowd the house with flowering plants, but the aim should rather be to have a moderate number of handsome specimens effectively arranged, which, while flowers are so plentiful out of doors, will be vastly more interesting and pleasing than a larger amount of floral display from plants of no individual interest or merit. This kind of display may be agreeable enough at a season when flowers are scarce, but it is useless to hope to maintain the interest of a house at this season by this kind of management. A thin arrangement of the pot specimens will also be advisable, on account of the permanent occupants of the beds or borders, which at this season should be allowed plenty of space, in order to secure strong well ripened wood; for unless this is obtained they will not bloom finely. Look over former directions, and use every means to keep insects in check, and to make order and neatness conspicuous in the arrangements of this house. STOVE.—Such of the inmates here as are intended for the decoration of the conservatory in autumn and early winter should be carefully looked over, shifting such as are likely to want more pot room, without unnecessary loss of time, so as to get the pots well filled with roots before their flowering season. Also keep the shoots tied out rather thinly, and expose the plants to as much sunshine as they will bear without scorching their foliage, in order to promote stocky growth. Give clear weak liquid-manure water to young growing specimens, and repot any of these that are intended to have another shift this season, so as to get the pots well filled with roots before winter. Maintain a moist growing atmosphere, and ply the syringe vigorously upon any plant at all infested with red spider. ORCHIDS.—The growing season is far advanced, therefore encourage any backward plants with plenty of heat and moisture, while this can be safely done. See that plants growing on blocks and in baskets are properly supplied with moisture at the root, and to prevent any mistake handle every plant at least once a week, and immerse those found to be dry in tepid water until the material about their roots is well soaked. Syringe lightly morning and evening, and sprinkle the floors, &c., frequently, so as to keep the atmosphere thoroughly moist.

FORCING DEPARTMENT.

PINERY.—Attend carefully to growing stock, keeping the bottom-heat regular, and the atmosphere warm and moist, and use every means to secure rapid vigorous growth. This will not be obtained, however, unless all is right at the root, therefore attend well to watering, and never allow any of the plants to become pot bound. Give air moderately to young stock, and shut up early in the afternoon, giving the plants a gentle wipe with the syringe, and the house a good steaming by wetting every available surface. Continue to pot a few suckers, as they can be obtained of sufficient strength, and do not allow too many to be produced by one plant, as they weaken each other. Indeed we never allow a sucker to grow to any size that is not likely to be wanted for stock, and unless in the case of any scarce sort, never more than two on a plant. Plants growing in beds of soil must be very carefully attended to with water, giving enough at each application to moisten the whole body of soil; for unless this is attended to, the bottom of the bed will sometimes get quite dry, while the surface is moist. VINERIES.—The inside borders of houses intended to furnish a late supply of Grapes should be well soaked with manure water as soon as convenient, so as to allow of their becoming dry before the damp cloudy days of autumn set in, for damp will be most injurious then, and anything likely to cause it should be avoided. Muscats beginning to ripen should be assisted with fire heat, for it is hardly possible to ripen these properly at any season without artificial heat; and those for late use should be pushed on, so as to get them ripe by the end of next month at the latest; for those ripened later in the season are seldom of good quality, and we have always found them to hang better when ripened early in autumn than those that were ripened later in the season. FIGS.—The second crop on the earliest trees will be fast advancing towards maturity; as soon as the fruit begins to ripen the atmosphere should be kept dry and rather cool, giving air freely every fine day, and using a little fire on wet cloudy days, to prevent damp and allow of a gentle circulation of air. Use every care to keep the foliage clean and healthy, and clear of insects, and do not crowd the young shoots. MELONS.—Plants on which the fruit is ripening should be kept dry at the root, and freely exposed to air on fine days, avoiding moisture in the atmosphere as far as can be done without injury to the other plants. Do not allow the bottom heat to decline where the fruit is setting, which is a frequent cause of the young fruit dropping off. Keep a watchful eye on the foliage, and guard against red spider, which, if once allowed to establish itself, can hardly be removed without greatly injuring the tender foliage.

FLOWER GARDEN AND SHRUBBERIES.

Now that the effect of the present arrangement of the colours in the beds can be fairly seen, there is an excellent opportunity for noticing any mistakes, and determining upon the arrangement for next season, and this should be done without delay. When it is decided what each bed is to be occupied with next season, a plan of the garden should be made, writing the names of the plants on the beds according to the arrangement decided upon. This will be of the greatest service in showing at any time what quantity of each kind of plant has to be propagated; and unless some method of this kind is adopted, it is not unusual to find at planting out time that there is a scarcity of some things and too many of others, whereas, those who have their plan to refer to can tell at a glance the exact number required of everything, and avoid mistakes in getting up too many of one thing and too few of another, and all the anxiety and confusion of working without a well defined object in view. Dahlias are growing very rapidly, and will require to be gone over frequently to keep the side branches securely tied in; for when left untied, they are readily broken off by a thunder-storm. Hollyhocks must also be securely tied to their stakes. Continue to remove dead flowers from Roses, and give plenty of manure-water to the autumn-blooming varieties. Plant out rooted cuttings of Pansies, &c., in nursery beds in a shady situation, keeping them well watered if the weather proves dry until they get established. Finish budding Roses at once, if not already done, and also get border Carnations, Picotees, and Cloves layered without farther loss of time.

FLORISTS' FLOWERS.

Take care that Carnations and Picotees do not suffer from drought. Layering may be commenced with those shoots sufficiently long. Cross breed flowers which have the desired properties; the anthers will be found low down in the calyx. The operation is a pleasing one and attended with but little difficulty. Mark seedlings, which promise well, and pull up those which are not up to the mark. Plant out Pink pipings, and put in a second crop of cuttings; these will often strike root, and make better plants than the early ones. Look over and divest of their loose skins the bulbs of Tulips. Arrange the rows of the bed so as to be ready for planting. Discard all impure flowers, whether stained in the base or on the stamens; whatever good qualities the flower may possess, these defects render it utterly worthless. Give Dahlias and Hollyhocks abundance of water; tie out the branches, and disbud the former where required, and shorten the flowering stem of the latter.

HARDY FRUIT AND KITCHEN GARDEN.

The main breadth of Spinach for furnishing the winter supply should be sown at once; also prepare ground for winter Onions. Get a good breadth of Lettuce and Endive planted out for the autumn supply, and sow some hardy sort of Lettuce for planting out against south walls, or in frames, to come in after the frost cuts off the out-door supply. Dig down exhausted plantations of Strawberries, and get the ground planted with winter stuff, if there is not already sufficient of this planted; and make a further sowing of Turnips, if these are likely to be scarce before the winter is over. Attend to cutting and drying herbs as they are ready, and do not allow Shallots to remain in the ground after the tops die down, as, in the event of wet weather, they will make fresh roots, which prevents their keeping. Get a good breadth of Cabbage planted thickly in rich ground to furnish winter greens.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending Aug. 3, 1854, as observed at the Horticultural Garden.

July and Aug.	Moon's Age.	Barometer.		Temperature.					Wind	Rain.
				Of the Air.			Of the Earth			
		Max.	Min.	Max	Min.	Mean	1 foot deep.	2 feet deep		
Friday 28	3	30.200	30.182	71	38	54.5	63	65	S.E.	.00
Satur. 29	4	30.183	30.045	76	54	65.0	64½	63	S.	.00
Sunday 30	5	29.969	29.816	82	56	69.0	62½	64	S.	.46
Mon. 31	6	29.803	29.654	76	59	67.5	63	64	S.W.	.36
Tues. 1	7	29.697	29.658	69	46	57.5	61	63½	S.W.	.24
Wed. 2	8	29.783	29.684	73	56	64.5	62	63	N.W.	.40
Thurs. 3	9	29.854	29.805	58	46	52.0	63	63	N.E.	.27
Average		29.927	29.831	72.1	50.7	61.4	62.7	63.6		1.73

July 28—Clear and fine throughout; cold at night.
— 29—Slight fog; overcast; fine; cloudy at night.
— 30—Very fine; heavy storm of thunder, lightning and rain, from 2 to 5 P.M.
— 31—Uniformly overcast; heavy thunder clouds; lightning; rain.
Aug. 1—Cloudy; clear in the evening; heavy rain at night.
— 2—Clear and very fine; thunder, lightning, and heavy rain at night.
— 3—Densely and uniformly overcast; rain at night.
Mean temperature of the week, 2 deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending July 29, 1854.

August.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 6	72.4	52.1	62.3	12	0.58 in	—	5	2	1	4	7	7	2
Mon. 7	74.4	51.1	62.8	9	0.57	—	4	2	—	5	15	2	—
Tues. 8	75.3	49.7	62.5	10	0.26	2	5	2	—	4	10	5	—
Wed. 9	75.2	51.1	63.2	10	0.40	1	5	1	—	5	11	5	—
Thurs. 10	75.9	52.8	63.9	13	1.06	1	3	2	—	2	14	5	1
Friday 11	74.8	51.5	63.1	14	0.78	1	—	2	1	5	12	6	1
Satur. 12	74.3	51.6	62.9	10	0.47	2	2	1	1	5	8	5	4

The highest temperature during the above period occurred on the 1[illegible]th, 1842—therm. 93 deg.; and the lowest on the 6th, 1833—therm. 36 deg.

Notices to Correspondents.

AUSTRALIA: *X Y Z* would do better in Canada than in Australia, if he has health, strength, industry, and a little money to start with. The difference between the passage money to Australia and Canada will be enough. Read Mr. Hutton's Canada, a little emigrant's guide noticed lately in our columns.

CAPSICUMS: *Weltonian.* When ripe and perfectly dry, grind or pound them into powder. You may do them in a mortar with a heavy pestle, or a pepper-mill will do.

DISEASES: *J. Rowe.* The Melon disease of which you have sent a specimen is very common in the county and neighbourhood in which you live, and perhaps elsewhere. My own Melons have suffered, but have not failed, in consequence of continual attention to the state of the atmosphere—proper, but not extreme shading, and cutting off the diseased leaves, a few at a time, close to the stem, with a sharp knife. Without this treatment my crop of Beechwood would certainly have perished. The diseased spots in damp weather are covered with a little mould, Trichothecium roseum, but the moment the air in the frame is dry it disappears; the fungus has nothing to do with the disease, which arises from atmospheric conditions, inducing a low state of vitality and imperfect organisation of the leaves. ——*C M D.* The disease upon the Azalea leaves appears to be confined to the cuticular cells, and to be of the same nature as that which has been so prevalent in Vines, arising probably, as in their case, from the condition of the roots. The leaves, too, have evidently been affected by insects, which have probably aggravated the evil. It is impossible to say much on the matter without personal inspection of the locality and mode of treatment.—*B W J.* Your Grapes appear as if they had been syringed with water containing carbonate of lime. The white efflorescence effervesces strongly with sulphuric acid, and is certainly no vegetable production. Perhaps the Grapes were sound when transmitted, and if so, you have probably nothing to fear. At any rate the white patches do not arise from disease.—*M L.* Your Grapes seem to be affected very much in the same way as those of which we gave a figure (July 1, 1854), to which we beg leave to refer you. There is no indication of mildew about the berries. *M. J. B.*

HEATING: *J M.* No.

INSECTS: *Q L.* Your young Peach trees are infested with the Peach aphis (A Persicæ), and slightly also with thrips. Being young and healthy, the aphis has preferred attacking them, but the vigorous shoots of the older trees are equally liable, and the removal of the former will scarcely prevent the development of the aphides on the others in a season when these insects have abounded to such an extraordinary extent. *W.*

MIGNONETTE: *B O.* The cause of your Mignonette becoming drawn and straggling may be ascribed either to its being grown in a shady situation, or to its having been allowed to become too crowded. Tree Mignonette is obtained by selecting and potting a vigorous young plant, the flowers of which are to be pinched off as often as they appear during the first season. It must be repotted as occasion may require; the lower shoots must be removed in autumn, and the plant must be kept during winter in a room or greenhouse above the freezing point. The second season it may be treated in a similar manner; and the next year it may be allowed to bloom, which, with care, it will continue to do for several years.

NAMES OF PLANTS: *R S.* Periploca græca.—*W B J.* We do not recognise the leaf of your "celestial tree." We have spent an hour in a vain attempt to identify it. There is nothing to distinguish it from ten thousand other pinnated leaves.—*Diss.* Erythræa pulchella, with white flowers.—*Godwin.* We really can see nothing worth remark in your Delphinium m soleucum.—*A M.* Begonia petalodes. The Ferns are so shrivelled that nothing can be said about them.—*P G E.* Oncidium umbrosum, and what seem to be leaves of Drymonia punctata.—*Scotia.* Cerasus Padus, the common Bird-cherry.—*M P.* Catananche cærulea; a double Campanula glomerata; and some Coreopsis, apparently C. Atkinsoni.—*Biddulph Grange.* Acineta densa, no doubt.

STRAWBERRIES: *H. Doubleday.* Between the Strawberries you sent, correctly under the name of Eleanor, and those you sent as the Nimrod, we can see no difference.

TRANSPLANTING: *T S P.* The best time for moving your trees and shrubs is the end of August or September.

VETIVER: *C.* The vegetable matter which is employed by furriers, in Montreal and other towns of Canada, to destroy moths in furs, &c., having some such name as "Vettie vert," is probably the root of the Indian Grass called Anatherum muricatum.

WALLS: *Inquirer.* There is no better mortar than what is made from stone lime and sharp river sand. Use it any time in the course of this month or the next. We do not approve of tying fruit trees against walls to a wire trellis. When used it is strained horizontally.

THE LONDON MANURE COMPANY'S WHEAT MANURE, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. EDWARD PURSER, Sec.
Bridge Street, Blackfriars.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7*l.* per ton; Superphosphate of Lime, 7*l.*; Sulphuric Acid and Coprolites, 6*l.*

Office, 69, King William Street, City, London.

N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures, Linseed Cakes, &c.
WM. INGLIS CARNE, 10, Mark Lane, London.

PEAT CHARCOAL.—The undersigned have a cargo of this valuable Deodorizer and fixer of Ammoniacal matter, on Sale. Apply to MARK FOTHERGILL & Co., 204A, Upper Thames Street.

REAPING AND MOWING MACHINES.— CAUTION.—Notice is hereby given, that any person or persons infringing any of the Patents of Cyrus Hall M'Cormick, for Reaping and Mowing Machines, or making, or vending, or using, or exercising any Machines which in any way infringe upon any such Patents, will be proceeded against according to law. The main features of M'Cormick's Patents consist in a zig-zag serrated cutting blade, spear-head shaped holding fingers, and a gathering reel.
E. J. & H. LAWFORD, Mr. M'Cormick's, Solicitors.
Draper's Hall, 27, Throgmorton Street, London, Aug. 5.

THE ADVANCE OF SCIENCE IN AGRICULTURE.

RICHMOND AND CHANDLER'S unprecedented celebrity for their improved CHAFF MACHINES and CORN CRUSHERS, achievable only by intrinsic merit, has secured for them the highest character in the trade, together with the confidence of the public, whether as regards true economy or the unapproachable finish and sterling quality which characterise all their productions, and render them worthy the reputation of a Manchester manufacturer.

The most distinguished authorities in all civilised countries report their unqualified satisfaction with the highly beneficial effects resulting from the use of these justly celebrated Machines, and with the now established fact of their not being subject to any of the contingencies inseparable from other machines, they are calculated to meet with general approval in the present advancing state of agriculture.

Address—RICHMOND & CHANDLER, Salford and Manchester and 32, South John Street, Liverpool.

CHAFF-CUTTERS, of the best workmanship, 25*s.*; Two-Knifed Chaff Engines, from 63*s.*; Mills for Bruising Oats and Beans, from 45*s.*

WILLIAM DRAY AND CO., Agricultural Implement Manufacturers, Swan Lane, Upper Thames Street, City.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and dispatch.

Gentlemen desirous of receiving instructions in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.
Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

THE SALISBURY AND WESTERN COUNTIES EXHIBITION OF DOMESTIC POULTRY.—The Fourth ANNUAL EXHIBITION will take place on TUESDAY and WEDNESDAY, the 21st and 22d days of November, 1854. Prize Lists, &c., to be had of T. PAIN, Hon. Sec.—Salisbury, July 22.

REIGATE ASSOCIATION FOR THE IMPROVEMENT OF DOMESTIC POULTRY, for the Counties of Surrey, Sussex, and Kent. Established 1852.—The Third Annual Exhibition will be held at the PAVILION, BRIGHTON, on WEDNESDAY, 22d, and THURSDAY, 23d of November next.

The Agricultural Gazette.

SATURDAY, AUGUST 5, 1854.

MEETINGS FOR THE ENSUING WEEK.

WEDNESDAY, August 9	Agricultural Improvement Society—at Armagh.	
THURSDAY, — 10		
FRIDAY, — 11		

OUR attention has been called by a correspondent to a note by M. BOUTEILLE, on which a report has been given by Messrs. DECAISNE, MONTAGNE, and TULASNE, in the "Comptes Rendus," respecting a disease very prevalent in France, arising from a kind of red rust, which attacks Wheat-glumes, and which is regarded by M. ROBERGE as a new species, *Uredo glumarum*, but differing very slightly from the well-known *U. rubigo vera*. The ravages committed by this parasite in France are unfortunately very great, and threaten to justify there the bad character which it obtained in Saxony in 1846.

Either this same parasite, or a form of the common red rust, we are scarcely prepared to say which, for we confess, on a comparison of dried specimens we can see no specific difference, is attacking the corn in several districts of this country, but we trust without any prospect of serious injury; and where the ears are partly abortive, the mischief arises rather from the presence of a little maggot which feeds upon the Uredo, than from the parasite itself. However this may be, the blighted ears which occur in so many crops of Wheat this year are not due to any parasite, but to some radical defect in the plant, for in every case where they occur the base of the stem will be found to be diseased, and sometimes completely decayed.

Such is the character of the case which accompanied the extract mentioned above, and the same may be said of samples which we have gathered ourselves and received from correspondents. We do not, however, think that in those districts which we have personally inspected such ears are more common than in many other years in which we have observed them, and they have too small a proportion to the healthy portion of the crop to affect the produce materially. *M. J. B.*

WE need not direct attention to the reports of harvest prospects in another page, as at this season that is the all-important subject. It will be seen that there is unusual promise of an abundant produce of Wheat, and that Oats and Barley are good, much better than the very dry cold seed time led most of us to anticipate—that Beans are very generally injured by blight and fly in the south—that the Hay crop is unusually light, and much of it badly harvested—that the green crops generally promise well, and that there is a more general and earlier complaint of the Potato disease than there has been for several past years. A rapid journey northwards from London, and through several of the eastern counties of Scotland, enables us to add our testimony to that of correspondents in Fifeshire, the Lothians, and Berwickshire, as to the magnificent crops of all kinds which cover the ground. The Turnips already very generally hide the land; the Wheat is very fine, and the Oats and Barley are very good. Crops, too, are more forward as to ripeness in the Lothians and in Fifeshire than in the northern and central counties of England.

STEAM CULTIVATION performed by the agency of cutters attached around a horizontal shaft driven by an engine, is not exactly a novelty in speculation, however isolated and obscure may have been its practical trials. And, indeed, it has been suggested from the very first to connect other field-operations with that of simple tillage—that is, to make the locomotive engine, carrying a rasp or digging tool behind it, capable also of dragging a harrow, roller, seed-drill, &c., and even of having its machinery changed, so as to transform it into a steam reaping machine. Some individuals were greatly astonished when Mr. MECHI first announced his new steam cultivator, which "by a simple inversion of the machine," he said would be able to reap and mow—and one farmer of our acquaintance might wonder with sufficient reason, for he took the words to mean *a turning of the thing upside down!*—but we find the very same diverse ends proposed so early as 1847. In October of that year, Sir JOHN SCOTT LILLIE patented machinery for tilling, mowing, and other agricultural operations, by either steam or horse-power. A steam-engine and boiler placed upon a carriage, propelled itself by means of a peculiar shaped wheel or drum travelling along a rope stretched across the field from end to end, and secured by grapnels. The carriage wheels were supported from sinking into the ground by two endless chains made of long bars joined together by hinge joints, forming a sort of perpetual self-laid railway, laid down in front and taken up behind the carriage by skeleton-reels for the purpose, this being done solely by the progressing motion of the whole machine. Two double mouldboards or ridge-ploughs preceded the two series of bars, to open level gutters for their reception. It was not necessary to turn the apparatus at the end of the field, but only to shift it a distance equal to its own breadth sideways; for this purpose, an additional set of three carriage wheels were provided, being fixed transversely to the other, or straightforward set, and raised or lowered by means of a screw. Short wooden platforms were placed on each head-land, for these transverse wheels to travel on, in the operation of shifting to another row or furrow, the carriage being hauled forward by means of what are called "crabs." The engine drove with considerable velocity a shaft placed across the machine, which being armed with a series of bent prongs or tines, tore up the soil as the machine advanced, being immediately preceded by fixed coulters or scarifiers. The mowing apparatus consisted of scythes projecting horizontally in front, and fixed upon endless straps or chains, which, passing round drums on each side, were made to bring the scythes rapidly across the front of the machine, this propelling itself slowly as before. As this ingenious contrivance must have had enormous weight—at least, if of sufficient power to pulverise hard earth—and, as it is not designed to travel solely over the unstirred land, we imagine that it never could become generally useful. Whatever may be said about its peculiar methods of propulsion, both in the forward and sidelong directions, it seems pretty clearly to fail in this indispensable condition—the situation of the tool-part, either behind or on one side of the carriage, so that the latter may always stand upon firm ground. We may also lay down as a rule that, as the effectual working of a rasp (such as inventors now generally agree to be the best form of tiller) cannot be insured without an equable and perfectly uniform rate of progression; and as this can never be obtained so well as by driving round the carriage wheels directly by the engine, all schemes involving chains and ropes, or *any second power for propulsion extraneous to that actuating the rasp itself*, must probably be futile.

Surely there are but few of the many machines in various branches of manufacture constructed to receive a material and cut it to pieces by a *rapidly* revolving tool (as saws, graters, grooving and planing machines, &c.) which can work if fed irregularly. In nearly all such contrivances, the feed is always strictly regulated by the speed of the cutter itself—so that this may always have its full supply of work, yet not be liable to stoppage by sudden gluts of the material. How, then, is it likely that a quickly revolving rasp-cultivator can perform its work if attached (as some have proposed) to a carriage drawn forward by horses? Now, hopeful and elated as we could not help feeling when Mr. MECHI announced to the world the arrival of Mr. ROMAINE, and pledged his own "agricultural reputation" that the new engine would answer its purpose, we begin to think it probable that the public will wait in vain for its success—simply because its rasp or cylindrical grubber is expected to turn at a speed of 240 revolutions per minute, while dragged forward through the soil by the unsteady fluctuating progress of walking, stumbling, or starting quadrupeds. Have any actual trials been made with this machine—and with what result? We earnestly hope that Mr. MECHI will give us a few intimations on this point, as it is of the utmost importance for inventors and the agricultural public to know, as soon as the experiments will admit, what principles of construction are found promising, and what defective.

We have not room this week for a description of the machine, but merely state as our opinion that a modification of its parts, so that it may be self-propelling, and riding upon broader wheels, would stand a better chance of succeeding. Its peculiarly light form of boiler and engine, if proved equal to their duty and free from all great objections, will be an encouragement to contrivers of steam cultivators; while its new method of gearing the motive power to the rasp may be of considerable suggestive value.

Our mechanical readers may obtain the printed specification, with plates of the drawings, at EYRE and SPOTTISWOODE'S, the Queen's Printers,—entitled "A.D., 1853, No. 1151, Specification of JOHN HENRY JOHNSON." *I. A. C.*

NOTES OF AN AGRICULTURAL TOUR IN IRELAND.—BY MARTIN DOYLE.

I ASKED, at page 427, what would be the conduct of an English farmer, under the circumstances described as characteristic of the neighbourhood of Kilmallock. Assuming that the surplus native population had left their hovels by the wayside and lanes of his new farm, he would have to build cottages in convenient positions, if there were no adjacent villages in which they could be decently and commodiously lodged. He would have to make a complete clearance of a large proportion of the fences, by which easy and cheap operation his gain would probably be 5 per cent. of his acreage. He, or his landlord more properly, would have to erect suitable farm buildings, and, at least on the boundaries, hedge-rows, or walls. There are very extensive tracts on which, since the evacuation of them by the former occupiers, great improvements might be effected without any very alarming cost; many of the most unsightly, bleak, and poverty-stricken districts might be rendered, by the operation just suggested, and within two or three seasons, downs of pleasing appearance and remuneratively productive.

The nakedness of the district which I have been noticing requires, in truth, a fresh suit of green clothing. Woods and plantations, on inferior soils and waste places more especially, which have been from time to time cut away by improvident owners, ought to be re-established, and those admirable examples afforded by some of the undisturbed present, and many of the late proprietary, should be followed by the new purchasers.

Besides the levelling of old, worthless fences, and much draining in large districts, the new farmer would have to clean his arable land thoroughly, and where the occupiers had been of the poor class, to plough deeply, in order to bring it into proper tilth. But as the very heavy clays and chalks which are found in England are not encountered in Ireland, he would not require a larger plough yoke than a pair of stout horses to each plough; therefore he would save the cost of a driver and of a supernumerary horse to each plough team.

The land about Charleville, Doneraile, and Buttevant,

in the north-east part of the county Cork, is very fine, —splendid for sheep feeding—but presenting to view very few sheep; and as to the folding them on Turnips or early Vetches, I had not noticed a single symptom of the existence of this most beneficial system through the whole of my journey; nor have I subsequently seen any marks of it. This practice, however, no doubt, after the present transition period shall have passed, and a new agricultural era arisen, will be accomplished in a country so pre-eminently adapted by soil and climate to Turnip culture and sheep husbandry. The land south of Charleville is very fine; limestone abounds in that direction, and on the northern side the limestone gravel, so peculiar to Ireland, and so efficacious in reclaiming moory soil, is abundant. All around me I could distinguish undulating grounds of the most fertile quality, fit for any purposes of husbandry, and rich plains for meadow, or feeding the large Leicester cows, for which that portion of Ireland used to be distinguished. From Charleville to within a short distance of Mallow on the south, and towards Tipperary and Waterford on the east, the soil is calcareous, and of admirable quality, and limestone abounds. As stone and lime-mortar are principal materials in the erection of farm-houses, offices, and cottages, the abundance and cheapness of these materials in this and one or two other districts of the same county, lead us to wonder and lament that with such facilities for building, and such land for cultivating, so little has been done; and our surprise is increased on learning that among the proprietors of this fine part of the county of Cork are some of our most distinguished noblemen.

The north-west part of the county—in which Spenser lived and wrote—is less favoured by soil, excepting on the eastern quarter, but adjoins a range of high and rocky mountains on the west, which give it shelter from the Kerry side and its Atlantic breezes. There some property is intrinsically valuable beyond the ordinary averages, from its being a coal bed which has been worked for a long period. The coal is of the anthracite kind, in beds from 2 to 3 feet thick, and the increased facilities that might be rendered by truck railways, for conveying the small coal or culm to the limestone districts, and for re-conveying limestone to the argillaceous soil of the coal district, would impart a double benefit, and greatly tend to the progress of agricultural improvement there.

As we approached Mallow, where I had passed some weeks more than half a century ago, through a tract of moorland and yellow clay, I found that no progress has been perceptibly made there—the same bleakness, the same air of general wretchedness around. A glimpse of the suburbs was quite enough to tell a tale of human misery, and of the retrogression, rather than the advancement, of the population of that quarter, in the scale of civilisation. The chief cause of this long-existing state of desolation is perceptible at a glance. The soil is wretched, the limestone district being discontinued; and a poor dry moorland soil succeeded. This continues for a considerable stretch; beyond which, southward, the same sort of greystone, which prevails in the north-west of the county, reappears.

Within 3 or 4 miles of Cork, the indications of improvement and prosperity appear; and strange would it be if, on the confines of a very populous and apparently prosperous city, and within easy access to the bed of limestone at Blarney, on the west and the south side of the city, husbandry should not flourish. *M. D.*

PROSPECTS OF THE COMING HARVEST.

[FROM OUR OWN CORRESPONDENTS.]

COUNTY.	WHEAT.	BARLEY.	OATS.	BEANS.	PEAS.	HAY.	GREEN CROPS	POTATOES.	NAME AND ADDRESS.
SCOTLAND.									
ROSS	Full average	Full average	Full average	Good	......	Middling	Fair	Slightly diseased	R. Murray, Lochlin'
INVERNESS	Good; some rust	Good	Good	Good	......	Average	Very good	Spots of disease	J. M'Kenzie, Eileanach
PERTH	Bare average	Good	Good	Bulky	Bulky	Average	Promising	Average	P. Edie, Abernethy
	Fair: ½ of it late	Bulky	Various	Very bulky	Bulky; late	Under average	Look well	Look well	C. Playfair, Carse of Gowrie
ELGIN	Far over average	Very fine	Over average	......	......	Very good	Good	Very fine	J. Hamilton, Forres
FORFAR	Fine; some rust	Very fine	Capital	......	......	Poor	Good	Good	A. Bell, Ferryden
	Average	Full average	Full average	Indifferent	......	Average	Good	Spots of disease	W. Smith, Brechin
	Over aver.; rust	Over average	Average	Average	Average	Average	Over average	Very fine; diseased	R. Colvill, Cairnton
FIFESHIRE	Full average	Over average	Full average	Bulky	Bulky	Very light	Look well	Average; symptoms of disease	J. Haxton, Drummod
EAST LOTHIAN	Full aver.; green	Over average	Average	Average	......	Under average	Very thriving	Healthy	G. Hope, Drem
MID-LOTHIAN	Average	Full crop	Fair	Good	......	Middling	Promising	Inferior; diseased	J. Melvin, Ratho
SELKIRK	Fair average	Fair average	Average	......	......	Light	Promising	Indifferent	J. Stalker, Galashiels
RENFREW	Full average	Average	Full average	Excellent	......	Fair average	Healthy; late	Fair	R. Boyd, Renfrew
LANARK	Rather thin	......	Hardly average	Good	Good	Average	Very late	Indifferent	D. Gairdner, Hamilton
AYRSHIRE	Average	......	Promising	Heavy	......	Good	Late	Sound; light	A. Ralston, Dundriff
BERWICKSHIRE	Very good	Good	Not good	Good	......	Very light	Most promising	Good; tainted in gardens	J. Wilson, Edington
	Average	Average	Average	Average	Average	Average	Average	Average	G. Logan, Greenlaw
ROXBURGH	Over average	Over average	Average	Average	Average	Average	Average	Average	J. Thomson, St. Boswell's
DUMFRIES	Near average	Near average	Over average	Average	......	Hardly average	Promising	Cases of disease	W. Thomson, Clerkhill
	Good	Good	Fair	......	......	About average	Good, late	Diseased	J. Little, Langholm
WIGTON	Bulky; rust; full average	Good	Over average	Blighted	......	Average	Late; finger and toe	Diseased	A. H. M'Lean, Stranraer
ENGLAND.									
NORTHUMBERLAND	Over average	Full average	Near average	Good	Good	Under average	Very promising	Very good	J. Thomson, Coldstream
	Good average	Average	Under average	......	Doubtful	Very light	Promising as yet	Look well still	J. Grey, Dilston
	Good	Capital	Tolerable	Good	Good	New land, bad	Good	Good	W. Glover, Newcastle
	Various	Very good	Light	Middling	Middling	Very bad	......	Most luxuriant	P. Nairn, Belford
DURHAM	Pretty good	Pretty good	Middling	Very good	Pretty good	Generally good	Good	Uncertain	R. B. Dixon, Darlington
	Very good	Good	Middling	Short, poor	Very good	Very light	Very good	Good	G. Bell, Durham
	Generally good	Good average	Good average	......	Fair	Seeds bad	Never better	Never better	——, Durham
CUMBERLAND	Thin	Good	Good	Little sown	......	Light	Middling	Look well	S. Rigg, Wigton
	Excellent	Excellent	Excellent	......	......	Light	Promising	Very promising	T. Wilson, Penrith
	Average	Over average	Average	Average	Average	Average	Av.; finger & toe	Well.	T. Gibbons, Longtown
	Various	Generally good	Good	......	......	Good	Pretty well	Spots of disease	T. Donald, Carlisle
WESTMORELAND	Good	Good	Not heavy	Generally good	......	Tolerable	Good	Good as yet	W. Key, Kirkby Lonsdale
	Very good	Good	Good.	......	......	Average	Excellent	Promising	J. Crosby, Kirkby Thore
	Good	Very promising	Average	......	......	Average	Very good	Good	J. Robinson, Warcop
LANCASHIRE	Over average	Over average	Average	......	......	Over average	Over average	Good	——, Milnthorpe
	Good	......	Good	Good	......	Abundant	Good	Very good	M. Saul, Garstang
	Very good	Good	Good where early	Good; blighted	......	Light and bad	Late, but good	Never better	F. Twining, Standish
	Good	Short	Short	Injured	......	Very light	Good	Good	S. Drury, Hoiker
	Never better	......	Very good	Good	......	Rather light	Good	Luxuriant	E. Evans, Wigan
YORKSHIRE	Full average	Average	Hardly average	Average	Average	Not ½ an average	Very promising	Very promising	H. J. Turner, Richmond
	Good on limestn	Average	Hardly average	Not good	......	Very light	Growing	Good	F. W. Tyas, Askem
	Over average; slightly rusted.	Over average	Not average	Injured	......	Light	Very promising	Less disease	T. Horsfall, Wharfedale
	Average	Average	Average	......	Strawy	Very light	Very good	Looks well	——, Leyburn
	Most promising	Indifferent	Very bad	Bad	Bad	Light Clover	Look well	Promising	T. Parington, Lazenby
	About average	Good	Light	Bad	......	Light	Promising	Promising	P. Stevenson, Thirsk
CHESHIRE	Excellent	Very good	Good	Promising	Average	Very short	Look well	Luxuriant	R. Owen, Tarporley
	Full average	Improved	Various	Generally good	......	Very light	Irregular	Very promising	W. Palin, Stapleford
	Very good	Good	Moderate	Good	......	Light	Not good	Promising	H. Tipping, Warrington
LINCOLNSHIRE	Promises well	Average	Rather light	Some complaints	Very well	Very light	Good	Healthy as yet	Croft Sharpley, Acthorpe
	Good	Good	Average	Blighted	Good	Light	Well	Good	F. Sowerby, Grimsby
	Good	.. ...	Fair	Full crop; fly	Good	Very light	Fair	Some disease	T. Aitken, Spalding
	Average	Average	Average	.. ...	......	Light	Good	Good	W. Hesseltine, Brigg
	Very promising	......	Good	Full crop	Fair	Scanty	Fine	All right hitherto	J. Clarke, Long Sutton
	Very good	Average	Light	......	......	Very short	Good	Good	E. Darby, Greetham
RUTLAND	Average	Good	Good	Good	Good	Very light	Good	Healthy as yet	W. Fancourt, Empingham
DERBY	Very good	Hardly average	Quite average	Very good	......	Under average	Splendid	Good	Dr. A. Bernays, Derby
	Very promising	......	Generally good	......	......	Over average	Luxuriant	Healthy as yet	W. Shaw, Newhaven
	... ...	......	Very good	......	......	Very good	Promising	Good; tainted	D. Swaffield, Ashbourne
NOTTS	Average; various	Abundant with exceptions	Good	Promising	Average	Very light	Promising	Not seen disease	J. Young, Newark
SHROPSHIRE	Under average	Average	Average	Mildewed	Good	Very light	Good	Good	H. Davis, Little Wenlock
	Under average	Average	Average	......	......	Very light	Never better	Diseased	E. Bowen, Ludlow
	Not average	Not average	Average	Average	Average	Very short	Good	Partly diseased	T. Swain, Shiffnal
	Generally thin	Average	Average	......	......	Light	Good	Good	W. Minor, Market Drayton
LEICESTER	Good	Various	Fair	......	......	Not full	Promising	Good	C. Noel, Hinckley
	Very good	Not average	Good	Very good	Good	Light	Very good	Good as yet	T. Spencer, Knossington
	Average; some mildew	Under average	Not average	Good	......	Light	Very good	Sound as yet	S. Townshend, Sapcote
	Thin; healthy	Various	Not average	Good	Promising	½ of average	Promising	Luxuriant	J. Buckley, Normanton
NORTHAMPTON	Average	Good	Good	Various	Average	Very light	Good	Disease appearing	W. Grey, Courteen Hall
	Thin, but strong	Full average	Full average	Full crop	Very good	Very bad	Various	Tainted	J. Smeeton, Welford
STAFFORDSHIRE	Fair average	......	Very good	......	......	Light and late	Good	Slightly tainted	——, Newcastle
	Average	Irregular	Very good	Blighted	Good	Very light	Promising	Very good	J. Aston, N. Staffordshire
WARWICK	Average	Late; indifferent	Good	Early good	Very good	Light; bad	Promising	Slightly diseased	J. Ford, Newbold, Pacey
	Good	Average	Average	Generally averge	Good	Half a crop	Generally good	Good; complaints	J. Burbery, Wootton Grange
	Good; blackened	Good; diseased	Good	Average	Abundant	Very bad	Promising	Good	H. Thornby, Elmdon
	Average	Uncertain	Not good	Partly blighted	Good	Half a crop	Good	Slightly tainted	J. H. Burbery, Kenilworth
	Good	Various	Good	Various	Full average	Bad	Various	Satisfactory	W. Gibbs, Stratford-on-Avon
WORCESTERSHIRE	Full crop	Light	......	Indifferent	Fair	Very light	Promising	Very good	R. Smith, Droitwich
	Full average	Very good	......,	Under average	Over average	Very light	Good	Good; tainted	T. W. Fletcher, Baughton Hall
	Nearly average	......	Average	Under average	Average	Much under aver.	Bad plant	Very good as yet	F. E. Williams, Doddenham
HEREFORD	Full average	Full average	Full average	Good	Excellent	Various	Promising	Abundant; tainted	H. Hudson, Wick
	Quite average	Average	......	Inferior	Good	Very light	Never better	Very promising	W. Price, Ross
	Under average	Under average	......	......	Good	Much under aver.	Good	Healthy	J. Matthews, near Hereford
	Hardly average	Full crop; some late	Very good	Bulky	Fair	½ under average	Promising	Abundant	———, Leominster
MONMOUTH	Nearly average	Average	Promising	Average	Generally good	Very light	Promising	Good; slight sympt.	P. N. Edwards, Barns of Gears
	Good	Various	Abundant	Fair	Good	Very light	Very good	Healthy	H. Price, Ross
	Very good	Various	Good	......	Good	Half crop	Promising	Very good	W. H. Little, Abergavenny
	Over average	Over average	Good	Blighted	Good	Very light	Splendid	Disease in leaf	T. Dyke, Monmouth
GLOUCESTER	Very promising	Very good	Very good	......	.. ...	Average	Promising	Tainted	G. R. G. Pelper, Uske
	Hardly average	Average	Average	Doubtful	Excellent	Under average	Good	Good	J. F. Peacy, Winchcomb
	Average	Under average	Average	Under average	Average	Short and bad	Good	Not much diseased	J. Hunt, Almondbury
	Good	Various	Good	Blighted	Good	Light	Promising	Very fair	J. Keatsey, Cirencester
	Generally good	Promises well	Variable	Doubtful	Generally good	Very light	Promising	Generally good	G. Austin, The College Farm
	Good	Various	Various	......	Good	Very light	Good	Good	G. N. Halbert, Bagenden
OXFORD	Good	Under average	Average	Good	Good	Under average	Good	Excellent	S. Druce, jun., Eynsham

PROSPECTS OF THE COMING HARVEST—*Continued.*

COUNTIES.	WHEAT.	BARLEY.	OATS.	BEANS.	PEAS.	HAY.	GREEN CROPS	POTATOES.	NAME AND ADDRESS.
ENGLAND.									
CAMBRIDGE	Full average	Heavy crop	Various	Injured	......	Light crop	Promising	Little disease	A. S. Ruston, Chatteris
	Good	Good	Good	Various	Good	Not average	Well	Promising	Page Howard, Granchester
HUNTINGDON	Good	Very good	Good	Slightly hurt	Magnificent	Very light	Good	Very good	P. Purves, Brampton
	Over average	Over average	Fair	Large crop; fly	Over average	Short	Short	Little diseased	R. Beart, Godmanchester
BUCKS	Full crop; slightly blighted	Good	Very good	Injured	Good	Light	Late	Slightly hurt	A. Fraser, Claydon
BEDFORDSHIRE	Very promising	Early; good	Good	Good	Good	12 cwt. per acre	Heavy	Healthy yet	W. G. Duncan, Bradwell
HERTS	Over average	Average	Average	Good	Very good	Light	Not good	Good	W. Lavendon, Beddenham
	Various	Full crop	Good	Blighted	Average	Deficient	Injured	Tainted	——
	Very good	Over average	Over average	Blighted	Fair	Short	Abundant	Good	C. Humbert, Watford
	Very good	Very good	Very good	Very much diseased	Good	Rather light	Very good	......	J. B. Lawes, Rothamsted
NORFOLK	Average	Very good	Good	Blighted	Average	Generally good	Various	Diseased	J. J. Hill, Bristow
	Heavy; slightly mildewed	Over average	Good	Bad	Moderate	Good	Never better	Diseased	W. Cubitt, Bacton Abbey
	Fair average	Average	Average	Average	Good	Very light	Promising	Good as yet	T. Brown, Downham
	Average	Good	Good	......	......	Good	Promising	Not good	G. Clarke, Thorpe Market
SUFFOLK	Good average	Generally short	Good	Injured	Fair	Deficient	Late	Slightly tainted	G. Spence, Beccles
	Average; complaints	Good	Pretty good	Hurt	Hurt	Light	Good	Complaints	L. O. Cottingham, Saxmundham
	Full average	Various	......	Much hurt	Various	Damaged	Promising till lately	Tainted	C. Welton, W. Market
	Average	Over average	......	Various	Various	Very light	Not good	Tainted	J. G. Cooper, Bramfield
	Generally good	Very good	Excellent	Bad	Moderate	Light	Fair	Good	H. Edwards, jun., Woodbridge
ESSEX	Average	Over average	Over average	Bad	Near average	Very short	Bad	No complaints	W. Hutley, Witham
	Good	Good	Good	Blighted	Fair	Light	Good	Good	C. Hall, Havering
	Full average	Very good	Good	Bad	Good	Light	Indifferent	Good	R. Baker, Writtle
	Excellent	Very good	Good	Blighted	Moderate	Damaged	Promising	Tainted	J. Malpas, Ramsey
	Good	Good	Fair	Bad	Fair	Fair	Fair	Fair	J. S. Fenn, Colchester
	Very good	Good	Seldom better	Various	Very good	Various	Injured	Healthy	A. Barfield, Dunmow.
WILTS	Average	Good	Average	Average	Good	Light	Promising	Tainted	S. Brown, Avebury
	Full average	Average	Fair	Good	Very good	Short	Promising	Tainted	T. Arkell, Swindon
	Good average	Good average	Average	Two-thirds aver.	Average	Two-thirds aver.	Good	Very good	J. R. Maskelyn, Calne
	Over average	Good average	Fair	Blighted	Good	Damaged	Good	Tainted	J. Spencer, Bowood
	Generally good	Various	Very good	Good	Good	Very short	Good	Good	T. Chandler, Aldbourne
SOMERSET	Good	Good	Very good	Blighted	Fair	Various	Promising	Good	W. Pope, Castle Carey
	Very good	Average	Good	Various	Good	Various	Good	Tainted	C. P. Collyns, W. Somerset
BERKS	Good	Good	Good	Blighted	Blighted	Under average	Good	Tainted	J. Williams, Abingdon
	Full average	Average	Good	Under average	Over average	Very short	Good	Tainted	J. Aduams, Thatcham
	Average	Average	Under average	Average	Good	Moderate	Promising	Good	E. W. Moore, Coleshill
SURREY	Very good	Very good	Excellent	Partial	Very good	Various	Very good	Tainted	J. M. Paine, Farnham
	Good	Good	Very good	Injured	Good	Various	Good	Good	E. J. Lance, Frimley
KENT	Average	Over average	Over average	Under average	Under average	Very short	Not half average	Much diseased	R. Matson, Wingham
	Good	Average	Very good	......	Average	Short	Good	Tainted	M. Sandford, Dover
	Excellent	Good	Good	Middling	Inferior	Short	Good	Tainted	J. Smeed, St. Peter's
	Average	Good	Good	Bad	Very good	Various	Good	Tainted	J. B. Andrews, Sittingbourne
	Very good	Splendid	Good	Injured	Good	Very short	Promising	Diseased	J. Smeed, Canterbury
SUSSEX	Very good	Average	Very good	Not good	Average	Very light	Average	Blighted	H. S. Hayward, Folkington
	Average	Average	Average	Average	Under average	Not good	Good	Tainted	J. Brotherston, Robertsbridge
HANTS	Good	Good	Good	Failure	Partial	Short	Want rain	Good	H. E. Sadler, Chichester
	Good; blight	Good	Good	Blighted	Average	Short	Promising	Tainted	J. Eames, Beck Farm
	Average	Over average	Over average	Deficient	Average	Light	Excellent	Tainted	J. Blundell, Bursledon
	Good; complaints	Good	Good	......	Good	Hurt	Good	Tainted	H. Raynbird, Basingstoke
DORSET	Average	Average	Good	......	Average	One-third under average	Good	Various	W. Voss, Corfe Castle
DEVON	Middling	Good	Good	Good	Good	Bad	Good	Diseased	J. Furmedge, Beaminster
	Full average	Full average	Full average	......	......	Average	First-rate	Blighted	G. W. Fowler, Dartmoor
	Very good	Good	......	......	......	Light	Promising	Tainted	S. Cornish, Kingsbridge
	Long eared not ripening well	Fair average	Average	......	Not average	Very short	Promising	Badly diseased	G. Turner, Barton
	Under average	Good	Average	......	......	Light	Very good	Tainted	J. Michelmore, Totness
	Full average	Full average	Full average	......	......	Damaged	Various	Promising	G. Langdon, Barnstaple
	Under average	Over average	Average	......	......	Various	Various	Tainted	J. Benson, Tavistock
	Average	Very strong	Very good	Blighted	Good	Various	Good	Tainted	J. Moore, Chumleigh
CORNWALL	Full average	Irregular	Well	......	......	Various	Good	Tainted	W. Elliott, Landulph
	Doubtful	Abundant	Very good	......	......	Injured	Late	Diseased	J. Michell, Feoch, Truro
	Average	Bulky	Good	......	......	Light	Late	Diseased	J. Wills, Launceston
MIDDLESEX	Very good, but thin in places.	Very good	Very good	Blighted	Good	Two-thirds of a crop	Good	Few diseased	C. Webster, Uxbridge
WALES									
CARMARTHEN	Very well	Good	Good	......	......	Light	Very good	Tainted	J. Barnell, Llanelly
CARNARVON	Fair	Fair	Fair	Fair	Fair	Light	Fair	Good	J. Williams, Conway
IRELAND									
DONEGAL	Good	Good	Very good	Good	......	Average	Good	Blighted in places	T. J. Atkinson, Ballyshannon
DERRY	Very good	......	Very fine	......	......	Good	Promising	Good	C. Pollock, Magherafelt
	Good	Very superior	Very fine	Good	Good	Very large	Excellent	Good; tainted	J. Orr, Coleraine
	Very good	......	Very good	......	......	Various	Superior	Good	J. J. Clark, Maghera
ANTRIM	Good	Good	Slightly hurt	Middling	Very good	Short	Good	Diseased	R. R. Haughton, Lisburn
	Not good	Good	Very good	Good	Good	Light	Various	Tainted	J. Burmiston, Randalstown
TYRONE	Very good	Very good	Very good	......	......	Average	Very bad	Tainted	W. Paterson, Newton Stewart
	Average	Average	Over average	Inferior	......	Average	Deficient	Tainted	R. Smith, Stewartstown
	......		Very good	......	......	Improved	Good	Little blight	J. Buchanan, Omagh
MAYO	......	Average	Very good	......	......	Very bad	Indifferent	Pretty good	A. Perkins, Killala
	Good	Average	Abundant	......	......	Good	......	Slight disease	G. Hildebrand, Westport
LEITRIM	......	......	Luxuriant	......	......	Good	Various	Blight	J. Lindsay, Manor Hamilton
MONAGHAN	......	......	Average	......	......	Average	Good	Tainted	J. Marow, Ballibay
	......	......	Luxuriant	......	......	Good	Average	Very good	G. B. Coulter, Castleblaney
ARMAGH	Good	Good	Very good	Good	......	Good	Not good	Slight disease	W. Boyd, Armagh
	Good	Fair	Very fine	......	......	Fair	Good	Not good	R. B. Hardy, Tanderagee
DOWN	Average	Promising	Full average	Luxuriant	......	Very light	Promising	Tainted	J. Andrews, Comber
	Fair average	Good	Excellent	......	......	Various	Flourishing	Tainted	Rev. H. E. Boyd, Dromara
	... ..	......	Not average	......	......	Improved	Good	Never better	D. Boyd, Carrick-on-Shannon
ROSCOMMON	Very good	......	Very heavy	......	......	Very short	Very good	Most luxuriant	J. Kelly, Roscommon
LANGFORD	Good	Good	Very good	......	......	Good	Good	Very good	E. Morgan, Edgeworthstown
	Good; promising	......	Over average	......	......	Short	Middling	Tainted	J. M. Goodiff, Granard
CAVAN	Excellent	Good	Excellent	......	Good	Various	Not average	Very promising	I. Gibson, Bailieborough
	Short and thin	......	Very good	......	......	Heavy	Good	Very fine	J. A. Nesbitt, Belturbet
LOUTH	Very fine	Very good	Excellent	Good	......	Various	Good	Very fine	W. M'Culloch, Dundalk
DUBLIN	Red rust	Good	Somewhat smutted	Injured	......	Poor	Good	Tainted	J. Donaghy, Glasnevin
	Various	......	Never better	......	......	Very light	Various	Diseased	E. Carroll, Phibsborough
MEATH	Good	......	Good	......	......	Good	Very good	Very fine	E. Beuley, M.D., Navan
	Good	Good	Good	......	Very good	Good	Good	Very good	R. Bagnall, Tyrrell's Pass
	Very good	Good	Good	......	......	Light	Very good	Blighting	G. Bagnall, Milltown Pass
	Good	......	Very good	......	......	Light	Good	Excellent	W. Newburn, Mullingar
GALWAY	......	Good	Good	......	......	Pretty good	Middling	Large crop; partly tainted	J. Ellis, Letterfeach
	Good	......	Late; good	......	......	Late	Better	Tainted	J. Sheil, Creggs
KING'S COUNTY	Good	Average	Good	Fair	Pretty good	Short	Middling	Tainted	R. B. Seymour, Banagher
KILDARE	Various	Promising	Good	......	......	Light	Good	Diseased	G. Lamb, Castledermot
CLARE	Injured	Full average	Average	......	......	Fair	Various	Very blighted	E. Bennet, Ballycar
	Good	Good	Very fair	......	......	Good	Very good	Diseased	W. Digan, Killaloe
QUEEN'S COUNTY	Good	Very good	Very good	......	Good	Very short	Very good	Tainted	M. Dunne, Stradbally
	Slightly hurt	Very good	Very good	......	......	Light	Very good	Diseased	T. Roe, Rathdowney
CARLOW	Rusted	Good	Excellent	......	......	Very poor	Very good	Diseased	J. De Renzy, Clonegal
	Average	Good	Black	......	......	Very light	Promising	Blighted	P. B. Mosse, Carlow
	Very good	Very good	Very good	......	Good	Light	Very good	Failing	G. Glascott, ——
WICKLOW	Average	Average	Over average	Good	......	Various	Very good	Failing	J. Daly, Enniskerry
LIMERICK	Very promising	......	Very fine	......	......	Very fine	Promising	Diseased	R. D. B. Massey, Ballywire
TIPPERARY	Hurt	......	Good	......	......	Light	Good	Failing	J. Fennell, Cahir
	Good	Good	Good	Good	Good	Light	Good	Doubtful	W. Ryall, Cashel
	Average	Average	Very good	......	......	Average	Very good	Good; blighted	D. A. Milward, Tullogher
KILKENNY	Good	Superior	Good	Fair	Fair	Light	Fair	Much blighted	P. Grace, Freshford
WEXFORD	Hurt	Good	Average	......	Fair	Very light	Promising	Failing	S. Gordon, Ferns
	Injured	Good	Fair	......	......	Very light	Good	Blighting	R. T. Barron, Kilmacthomas
WATERFORD	Injured	Fine	Fine	......	......	Bad	Middling	Blighted	E. Kennedy, Waterford
	Good	Good	Very good	......	......	Good	Good	Best since 1845	J. O'Sullivan, P.P. and V.G. Kenmare
KERRY	Very good	Very good	Very good	......	......	Very good	Very good	Very good	J. Creagh, Tarbet
	Hurt	Good	Very good	......	......	Light	Middling	Diseased	D. Barclay, Blarney
CORK	Fair crop; hurt	Good	Good	......	......	Scarce	Good	Blighted	S. Peddill, Kildorrery
	Promising	Very promising	Very good	......	......	Rather light	Very good	Blighted	D. Clanchy, Charleville
	Good	Looks well	Very good	......	......	Short	Promising	Blighting	H. Longfield, Doneraile
	Good	Good	Good	......	......	Light	Good	Partly blighted	F. A. Twinam, Kanturk
SLIGO	Good	......	Good	......	......	Good	Good	Blighted	J. Knott, Boyle

Home Correspondence.

Potato Disease.—On the Potato disease I would remark that it is only in some few instances, and among the early kinds, that disease as yet shows; in the tubers, they are more so, but not yet generally, affected in the leaf—there are very few cases in which the later kinds show disease, even in the leaf. It is too soon for the disease to be much developed, but it shows itself sufficiently to indicate its existence and its continued virulence. I think it does not admit of a question that it will be as generally and to an equal extent destructive as it was last year, and may cause about the same deficiency of crop—the greater number of acres under this crop this year balancing the later planting and earlier attack. The disease in its first attacks appears to require a certain approach to maturity, while in its later attacks two, three, or four weeks afterwards, it destroys indiscriminately all. The kind called "Scotch Downs," although suffering in the leaf, resists the disease very much in stem and tuber, which last continues to grow as long as any vitality remains in the stem. The drying of the seed tubers, according to the experiments of Professor Bollman, very probably will afford much security against the disease; last year, of 411 Potatoes—the produce of dried seed—only seven were diseased; the rest have kept sound to the present day. In my experiment this year with purposely late-planted Ash-leaved Kidney Potatoes, dried for a month in the kitchen chimney, I have found a very curious distinctive appearance, which promises well for security under this plan. I pulled up a score of shoots from among them, every one of which, down to their juncture with the seed tubers, were of a fine healthy white; on the contrary, the shoots I pulled from among the Ash-leaved, which had not been dried, were, with only two or three exceptions, very discoloured and rusty—an evidence, I believe, of incipient disease. *John Goodiff, Granard.*

Societies.

ROYAL AGRICULTURAL SOCIETY.

MONTHLY COUNCIL, on Wednesday, Aug. 2: Colonel CHALLONER, Trustee, in the chair. Twenty-three new members were elected.

FINANCES.—Mr. Raymond Barker, Chairman of the Finance Committee, submitted the monthly report on the accounts, from which it appeared that the current cash-balance in the hands of the Society's London bankers, was 776*l*.

FINES.—Mr. Simpson, Chairman of the Fines Committee, presented the report of that committee, when the Council ordered that immediate steps should be taken for the recovery of the fines for non-exhibition, and a list be laid before them at their next meeting of persons who should have failed to make those payments.

PROTESTS.—Mr. Barnett, senior steward of the cattle-yard at the Lincoln meeting, reported the protests made against awards of the judges on that occasion. The Council referred these protests to the investigation of the stewards, with a request that they would report upon them to the Council at their next meeting.

The following communication was received from the Earl of Clarendon, with the best thanks of the Council.

"Foreign Office, July 21, 1854.

"Sir,—I am directed by the Earl of Clarendon to transmit to you a copy of a list which has been sent home by her Majesty's Chargé d'Affaires at Lima, of those Islands and places in Peru where guano is to be found, and I am to request that you will state to the president and members of the Royal Agricultural Society that Lord Clarendon has transmitted another copy of this list to the Lords Commissioners of the Admiralty, and has requested that the admiral in command of her Majesty's squadron on the Pacific Station may be directed to make such a survey of the places named by Mr. Sulivan as containing guano, as the means at his disposal will enable him to undertake. Lord Clarendon has also instructed Mr. Sulivan to furnish the admiral with all the information he can obtain on this important subject.

"*I am, sir, your most obedient humble servant,*

"E. HAMMOND."

"To the Secretary of the Royal Agricultural Society."

NITRATE OF SODA.—Mr. Pusey transmitted various communications received from the Earl of Clarendon in reference to searches instituted for natural deposits of the nitrates. At Mr. Pusey's suggestion, Prof. Way had drawn up the following short memorandum of easy means by which saline depositions may be tested as to the amount of nitrates contained in them.

Characteristics of Nitrates of Potash, Soda, &c.—All the ordinary nitrates are readily *soluble in water.* The nitrate of soda crystallises in cubes. The nitrate of potash in long prisms. When exposed to a gentle heat the nitrates fuse, giving off oxygen gas. On this character is founded the most simple and certain means of distinguishing these salts from all other natural saline deposits—namely, to throw a portion of the supposed nitrate on red-hot fuel, when "deflagration," or a greatly increased and violent combustion of the fuel, will result. A mixture in which the quantity of alkaline nitrate is too small for the production of these phenomena, will hardly pay for importation into England. All nitrates are valuable, though not in an equal degree, for agricultural use.

J. THOMAS WAY.

FRENCH AGRICULTURE.—The following letter from Mr. Herbet, Consul-General of France in England, was laid before the Council, acknowledging, on the part of the Minister of Commerce and Public Works in France, the attention paid by the Council to the deputation sent by the French Government to the Lincoln Meeting, and offering for the acceptance of the Society a selection of agricultural works published in Paris under his Excellency's auspices:—

"Londres le 22 Juillet, 1854.

"Monsieur,

"Son Excellence M. le Ministre de l'Agriculture, du Commerce et des travaux publics, voulant reconnaître les procédés obligeants du Conseil de la Société Royale d'Agriculture d'Angleterre pour les délégués du Gouvernement Impérial, et désireux en même temps de témoigner du vif intérêt qu'il prend au travaux et au succès de cette honorable Société, m'a chargé de lui offrir, en son nom, divers ouvrages publiés sous les auspices de son ministère, et dont vous trouverez la liste ci-inclus. Je m'empresserai de vous la transmettre, dès quils seront parvenus à Londres.

"Ayant pu apprécier moi-même à de nombreuses reprises la bienveillance du Conseil de la Société Royale, c'est avec le plus grand plaisir, Monsieur, que je m'acquitte de la commission de son Excellence M. Magne. Il me reste à vous remercier personnellement pour l'extrême courtoisie avec laquelle vous avez constamment accueilli les personnes que j'ai eu l'honneur de vous adresser et les demandes que j'ai été chargé de vous soumettre.

"Veuillez agréer, Monsieur, les nouvelles assurances de ma considération très-distinguée.

"Votre tres humble et très obéissant Serviteur,

"Le Consul Général de France,

"ED. HERBET."

"J. Hudson, Esq., Secretary to the Royal Agricultural Society of England."

On the motion of Mr. Fisher Hobbs, seconded by Lord Southampton, this communication was received with the liveliest satisfaction by the Council, and a complete set of the Society's Journal ordered to be offered for the acceptance of the French Government, in acknowledgment of the valuable donation then announced to the Council.

His Excellency Lord Cowley transmitted to the Council, from Paris, a complete set of the Transactions of the Imperial Agricultural Society at Valenciennes, addressed to his care by the President of that body, for presentation to the Royal Agricultural Society of England, in acknowledgment of the set of Journals offered to the Valenciennes Society in the year of Lord Ashburton's Presidency, and transmitted through the Consul-General of France in England.

NATURE-PRINTING.—Messrs. Bradbury and Evans, of Whitefriars, presented to the Council a series of beautiful and striking specimens of their "nature-printing," or process by which vegetable productions may be printed off in their natural size and colour in almost perfect fac-simile. The objects selected for the series consisted chiefly of common wild flowers and well-known agricultural and other plants, of which both the strength and the delicacy of the details were given with daguerreotype exactness. These specimens were much admired by the members, and the value of such a process in an agricultural point of view fully recognised.

MISCELLANEOUS COMMUNICATIONS.—From Colonel Owen, conveying the thanks of the Board of Trade from the committee appointed by the Council to co-operate with Mr. Brandreth Gibbs, in reference to the French Exhibition; from Mr. Miles, M.P., President of the Society, transmitting a letter from the Agricultural Society of India; from Miss Bannister, of Steyning, details of the successful results attending her cultivation of the Dactylis glomerata, of which she forwarded to the council on that occasion various specimens, as well as of the hay made from it; from Mr. S. Clarke, of Crewkerne, on the Potato disease; from Mr. Hill, Medical Superintendent of the Clifton Lunatic asylum, inquiries on the management of sewerage; from Mr. Adderley, M.P., on the successful subsoil underdrainage of Mr. Dumolo; and from Mr. Pullan, of Chester, suggestion for a prize for the construction of a domestic corn-mill.

The Council having arranged that the prizes for Implements next year should be decided on the first Wednesday in December, appointed a General Carlisle Committee, and requested Mr. Fisher Hobbs to attend to the preparation of the land for the trial of implements. They then adjourned over the autumn recess to the first Wednesday in November.

LINCOLN MEETING.—We append here a fuller report than we have yet been able to give of the remarks on *the Agricultural Uses of Steam Power*, made in connection with "The Railway Companies" at the dinner of the English Agricultural Society at Lincoln. Mr. Wren Hoskyns said it was his misfortune to find his name opposite the last toast on the list, at that late hour when every topic of excuse for every supposed defect had been exhausted, and left to him but the last resource of simply trusting to the charity of his hearers all shortcomings of thought or language, in venturing to touch upon a subject unavoidably suggested by the toast—a subject allied to some cherished predilections of his own, yet too vast to receive justice from his or any other tongue—that of the giant power of steam; the power which had enabled them to meet together, the *primum mobile* of that splendid exhibition they had seen to-day. It might be called a singular chance, but what seemed chance and accident was but the singly-seen result of hidden causes—that the birth of the railway system, and of this great Society was coeval. They were born and had grown together, and had advanced year after year, mutually indebted, until increasing weight and superadded numbers began to present a problem of some difficulty to future meetings. But indebted as they were to the steam-engine on the rail, he felt it impossible, as a steward of the trial-yard, in which during the past week the comparative merits of nearly 60 steam-engines had been tested by the invaluable aid of the dynamometer—not to indulge the hope, now authorised by a premium of the Society, that the useful power which had been applied to almost every branch of human art and industry—that civilising power by which distance was overcome yet space retained, and which had already been applied to so many agricultural processes, might yet make one step more, and lend its aid to the actual task of cultivation itself. He must, however, acknowledge that the experiments hitherto made towards the application of steam to cultivation appeared to him to have proceeded too much on the supposition that ploughing, digging, or forking, or some of the other accustomed and conventional modes of tillage must of necessity be made use of. But if the steam-engine ever began to cultivate, and he for one would make the sacrifice—if sacrifice it still was—to declare his conviction of this result being ultimately attained, it would probably not be by any of these modes of operation. In point of fact, cultivation was as obviously independent of each and either of these processes, as they were each independent of the other; and he would take this opportunity of expressing his belief, not formed on slight grounds or short consideration, that this step would not be accomplished by crude and hasty attempts to plough, nor yet to dig—no, nor yet to "fork," by steam power. These were but the incidental means to the production of a certain result, and it was the result we wanted and not the means; these might be totally altered by the steam engine, which had already revolutionised the mere process, and simplified the attainment of the result in every mechanical task it had been applied to. What we wanted was a seed bed, a layer of soil cultivated to a certain depth, and cultivation consisted in the inversion, comminution, and aëration of the soil, no matter by what process. He believed, and all that the steam-engine had heretofore done warranted the belief, that when it came to this task, it would perform it in the most perfect detail, and by means more specifically peculiar to its own mode of action than any that could be thrust upon it by the attempt to gear on to it horse tools or hand tools unsuited to its nature, and not essential to the end in view. Let them look at what the steam-engine had done to navigation: it had there, as in other cases, substituted its own circular motion for the alternating and wasteful action of the oar. But while pointing out circular motion as the usual medium in steam machinery, he was far from sanctioning the converse error of applying it to horse-power. He threw out these remarks because he believed that before that time next year many experiments would be made towards the application of steam to cultivation, and he wished, if possible, to prevent a waste of labour and capital in erroneously-based attempts. Whenever that object was accomplished, be it in one year or after many, this country, with its mines of coal and iron, and its mine of industry to avail itself of them, could not fail to derive a new impulse and a new pre-eminence in agriculture, such as would make up for every disadvantage of soil or climate. The farmer of the clays, in our midland counties, no longer limited to the horse-work of 8 or 10 hours a day in difficult seasons, could employ an agent that would more than double the available opportunities; for the steam-engine could work almost throughout the 24, since darkness does not impede its operations. After some further allusion to the advantage derived by railroad accommodation, illustrated by the recovery of the dynamometer by Mr. Amos, its inventor, who had for a time lost it on his journey to Lincoln, Mr. Hoskyns concluded by proposing the toast of "The Railway Companies."

MEETING OF THE HIGHLAND SOCIETY AT BERWICK.—The visitors to Lincoln, especially if they approached it from the South, must have noted the magnificent promise of Wheat and other grain crops through which their journey led them. Those who have during the past week been at Berwick cannot have been less gratified, especially those of them who have passed through the eastern counties of Scotland. for more splendid green and grain crops were never seen at this season of the year. We have been told that it is the mark in Berwickshire of a good green crop year, when the leaves of the Turnips meet by the 5th of August: in most of the fields that we have seen, they have done so before the 1st, and in many the ground is already entirely hid.

Berwick is an admirable station for an agricultural gathering at this season, simply because of the admirable agricultural examples given in the neighbourhood from whatever quarter it is reached: and as regards the town itself, it is large enough to accommodate a very considerable accession to its numbers, and it offers in its immediate neighbourhood an admirable site for a show yard large enough to accommodate any quantity of stock.

The yard was opened on Wednesday after the trial of implements, and on the Thursday it was thronged by a multitude from all parts of the country, and especially from all parts of the county. As a whole, the show will be pronounced a successful one whether by those interested in the prosperity of the society or those who look upon the exhibition strictly as a means to agricultural improvement.

There was a great show of horses—a very good show of shorthorns, especially in the first class of bulls—a small number, of remarkable quality however, of the polled breeds, chiefly Angus—a fine show of Ayrshire cows—a large collection of Leicesters—some good pens of Southdowns—a full representation of the Cheviot breed—and as good an exhibition of implements as has ever been held at the Highland Society's annual meeting. Of course in this last department, and indeed in several others there is a very small and meagre exhibition, as compared with the one just held at Lincoln; but it must be remembered that the English Agricultural Society throw their whole strength into their annual show and Journal, while with the Highland Society its annual gathering is but one of very many objects which it keeps in view.

There are 225 implements exhibited. They are

arranged in some 60 or 70 sections, not according to the makers, but according to the nature of the implement itself. Thus, 22 ploughs for general purposes are exhibited side by side. It greatly facilitates comparison and selection; but for the commercial interests of an exhibitor, the English system, in which everyone has his implements together, is no doubt preferable. The prize is taken by Mr. Howard, of Bedford, for the implement with which he competed with Messrs. Ransome at Lincoln. Beside the short mould-boards and simple construction of the Scottish swing ploughs, it looked a very remarkable implement, and gathered great crowds continually, who were sufficiently astonished at a decision so entirely opposed to the opinions, hitherto, of Scottish ploughmen. The mould-boards of the English ploughs, exhibited at Lincoln, excluding the share, varied from 3 feet 3 to 4½ feet in length. The Scottish ploughs are very much shorter here. And that this length of mould-board and attachment of wheels, &c., does *not* increase the draught is proved by the fact that the decision in favour of Howard, by Scottish judges, was sanctioned by the dynamometer. We cannot enumerate all the classes under which the implements are arranged. Under the list of deep furrow ploughs, Howard's, which succeeded at Lincoln, is beaten by a large Scotch swing plough, by George Ponton, of Linlithgow.

Smith of Deanston's subsoil plough, as exhibited by Law of Shattlestorn, near Glasgow, was successful over some of the many tried implements, pronounced its superior by English judges.

The best double mould-board plough is that of Messrs. Sellar of Huntly, price 4*l.* 5*s.*, straight mould-boards and a guide-rod marking out the line of the next drill. Among other ploughs, Mr. Ponton, of Linlithgow, exhibits one having a revolving harrow attached to the tail of the mould-board, by which the furrow slice is torn and comminuted as it is turned. It receives a prize.

The grubber exhibited by him is also successful. A large show under this class of implement appeared. Among others, Tenant's grubber was exhibited—a very cheap and simple framework, with moveable tines; also Messrs. Wilson's (Berwick) improvements on it, consisting chiefly in the arrangement of the tines, the attachment of the handles, and the substitution of a double wheel for the single one in front.

A drill-grubber by W. Purvis, of Kelso, received a prize. Besides the ordinary grubbing tines, it had a revolving harrow with an independent motion derived from a central wheel, and its effect would be to throw the weeds, &c., loosened in its pathway, from it on to the surface in its wake.

Three Norwegian harrows were shown, Mr. Kirkwood, of Tranent, taking the prize.

Mr. Crosskill took the prize for a consolidating land-roller. Mr. Gibson, of Newcastle, for a pulverising roller—the one with his clod-crusher, the other with his double set of inter-working wheels, or discs, which has been already described in this journal.

Messrs. Sconlan, of Haddington, received a prize for a land-presser of the ordinary English make.

For harrows, Messrs. Howard take the prize with their jointed drags, and Mr. Thompson, of Berwick, with a set adapted for light land.

In swing trees, an exceedingly simple and ingenious substitute for the ordinary hook or S used in attaching them to the draft-chains, was shown by Mr. Gray, of Motherwell. It consisted in the terminal link of the traces being thinned or flattened on the side, by which *there* it passed into the close hook, from which it had no escape so long as it rested endwise in its place, as it would do when pulled.

Among the drilling machines was one by Mr. Sheriff, of Westbarns, Dunbar, to which there was attached an odometer and an index-plate, telling the acreage traversed by the machine and the quantity of bushels delivered by the sowing apparatus. This was capable of being put out of gear at the turnings, so that its indications were really trustworthy.

Turnip cutters on several principles are exhibited. Forshaw's of Liverpool, and Gardner's of Banbury, both received prizes.

Messrs. Finlham are also successful in corn-bruisers. Messrs. Richmond, of Salford, in chaff-machines; Mr. Thompson, of Berwick, in steaming apparatus; Mr. Crosskill, in washing-machines for roots; Mr. Walker, of Coldstream, with a one-horse cart—a neat tilting cart of the ordinary Scotch build.

We may refer to an exceedingly neat scythe, capable of many exceedingly simple and easily effected adjustments, by Mr. Smith, of Auchterarder.

Mr. Dunlop, of Haddington, receives a prize for a very satisfactory method of effecting self adjustment of the cart-saddle to any form of back. The pads are not a rigid part of the cart-saddle framework, but independent parts of it, having play to and fro within certain limits, by means of ball and socket joints, by which they are held by the rigid part of the framework. The latter thus rests on the animal through the intervention of the former, which by this independent motion adapt themselves with equal exactness to a narrow or a level back. A large number of implements are unclassified or designated as "collections," and "extra implements." Among them is a cheap and simple ribbing grubber, with drill machine attached, by George Aitken, of Edington price 10*l*, doing five rows.

Mr. Bell, of Inchmichael, Errol, exhibits a drill with apparatus for sowing manure, by means of oscillating delivery, and ingenious rotating stirrers. Several reaping machines are in the yard, but they have not been subjected to a trial. A Turnip-cutter on the principle of Philip's, of Bristol, is provided with pulping as well as cutting revolving plates, exhibited by Mr. Sutherland, of Forse. We have not space for further notice of implements, and on the other departments of the show must postpone many of our remarks.

Cattle: *Short-horns.*—Class I., bulls calved before 1852. Mr. Booth, of Warlaby, takes the first prize with a white bull, 2 years and 10 months old, of remarkable fineness of touch and quality of flesh. The second prize goes to Mr. Shephard, of Tarves, for a bull bred by John Booth, of Killerby.

In young bulls, the first prize goes to Mr. Campbell, of Tullichewan, for a red bull, aged 2 years, very good in its fore quarters—not of remarkable quality of flesh. The second prize is taken by Mr. Clay of, Kelso; the third by Mr. Marshall, of Alnwick.

In bulls calved after January 1, 1853. Mr. Douglas, of Drem, succeeds with the animal he showed unsuccessfully at Lincoln—remarkably good in its hind quarters, somewhat coarse forwards. The second prize is awarded to a pretty little white beast shown by Mr. Milne, of Melrose. In calves Mr. Booth takes the first prize, and Mr. Willis, of Bedale, the second and third. In old Cows, Mr. Booth again takes the first prize with a remarkably straight, wide, well-built animal, of good quality. The second prize goes to Mr. Tod of Tranent, for a very fat and somewhat patchy beast, somewhat faulty behind the shoulder. The third is awarded to a red cow by Mr. Chrisp, of Alnwick. Among heifers calved after 1st Jan., 1852, the first prize is taken by the beautiful red heifer, successful at Lincoln also, shown by Mr. Douglas of Drem; the second goes to Mr. Saunders, of Penrith, and the third to Mr. Campbell, of Tullichewan.' Among younger heifers, Mr. Booth takes the first prize with a white heifer, apparently somewhat weak and rickety behind. Mr. Douglas takes the second, and Mr. Haig, of Kirkaldy, the third.

The Polled breeds of cattle were represented by several large beasts in the bull classes, remarkable for their thick and fleshy covering where the meat is of the best quality, and also in some cases for the fineness of their handling and the quality of the meat. They are black, chiefly Angus, cattle. The prizes are taken by Sir J. Carnegie, of Brechin; Mr. Bowie, of Arbroath; Sir A. Burnett, of Banchory; and Mr. McCombie, of Tillyfour, who is especially successful in the cow classes.

The Ayrshire breed is represented by several in the class of bulls, and a large number in the cow classes. Extraordinary udders, some of them perfectly monstrous and evidently swollen out to an unnatural and cruel degree, characterise this breed, which is undoubtedly the dairy breed of the country. The prizes are taken by Mr. Murdock, of Cambuslay, Mr. Findley, of Balluston, near Glasgow, Mr. Stewart, of Strathaven, &c. The Highland breeds are not well represented.

The annual dinner of the Society took place on the evening of Thursday, which was throughout fine and satisfactory to the very large number who, during it, crowded the show-yard and the city. We may have occasion for further remarks next week.

Mr. Mechi's Gathering.—The following are some of the remarks made by Mr. Mechi and Mr. Caird. The latter, in connection with the toast "Success to Agriculture," said—

"It was some years since he had the pleasure of visiting Mr. Mechi's farm, and he told him then, and he repeated it now, that he had entered on a path that would prove of great advantage. There were many points to which he might allude. But he thought, perhaps, the immediate trial, and the main question on which they were called to form an opinion was, that which was one of the points of the greatest interest of the day—the application of liquid manure. He thought they would all agree with him that it was in his corn crops that Mr. Mechi particularly excelled; and when a gentleman said he had made two blades of Grass to grow where only one grew before, he selected one of Mr. Mechi's weakest points, for in his Grasses he failed. What was the reason? It was this—in all the western parts of our island we found from the greater supply of moisture the land was peculiarly favourable to Grasses; and he had by the side of him Mr. Talfourd, from Ayr, who had followed the same course, and he found from him that he never had such success as this year in the growth of his Grasses, which he attributed to the wet season. Now in the west 10 inches more rain fell; under this there were 1000 tons of fluid on the field; and Mr. Mechi, before he could be on a level with them, must lay on 1000 tons an acre—he must do that before he could find himself on a level with the western agriculturists. Hence he knew the letter he read from Mr. Kennedy was strictly true when he said he could keep 90 sheep per acre, though it might be astonishing to their friends here. Therefore he thought he might say Mr. Mechi had attained great excellence in his corn, but had failed as to his Grass crops. To bring them to a clear understanding of the question, he brought them not a letter but a living man by the side of him, and he told them in the presence of all it was a fact that this man grew this year, by the aid of liquid manure, 25 tons of dry hay per acre. ["Impossible."] It was done on a Scotch acre in the neighbourhood of Ayr. [Expressions of disbelief.] It was not obtained at one but at three cuttings, and he took something like 100 tons weight of green Grass. This was a fact. They might wonder and be astonished, for it involved a question of from 5 to 50 sheep, and from 5 to 25 tons in hay, as compared to the soil in this country. This showed what was done. And it wanted but such examples as that of Mr. Mechi's to enlarge the production of food to an extent that was perfectly incalculable; and he thought the man who did that richly deserved the gratitude of his country. Mr. Mechi, in the course of his remarks made in the fields to day—and he never listened with more pleasure than he did to the lecture as they went along: and though some might think parts of it were not quite sound, it was clearly expressed—congratulated some of the neighbouring towns that they had taken up the question of sewage manure; but the only facts they had had, showed them that the advantages which had been gained by the application of liquid manure had been agricultural liquid manure, and they had no instance of sewage manure through pipes producing such extraordinary effects. [A voice—"Except at Edinburgh."] Except at Edinburgh. But it was a totally distinct thing in open sewers to putting it over the land with pipes; and those who were their chemists told them that for 1 lb. of valuable stuff they must apply 700 lbs. that was of no value whatever. As practical men they must keep this in view; and he did not know it was yet proved that the sewage of towns could be applied to farms in the same way as the liquid of the farm-yard could. [Hear.] He said that, that they might not be led into error till they had the thing fully proved.

Mr. Sandars gave as a toast "The health of the worthy President—a benefactor to his country and a friend to agriculture." (Drunk with loud cheering.)

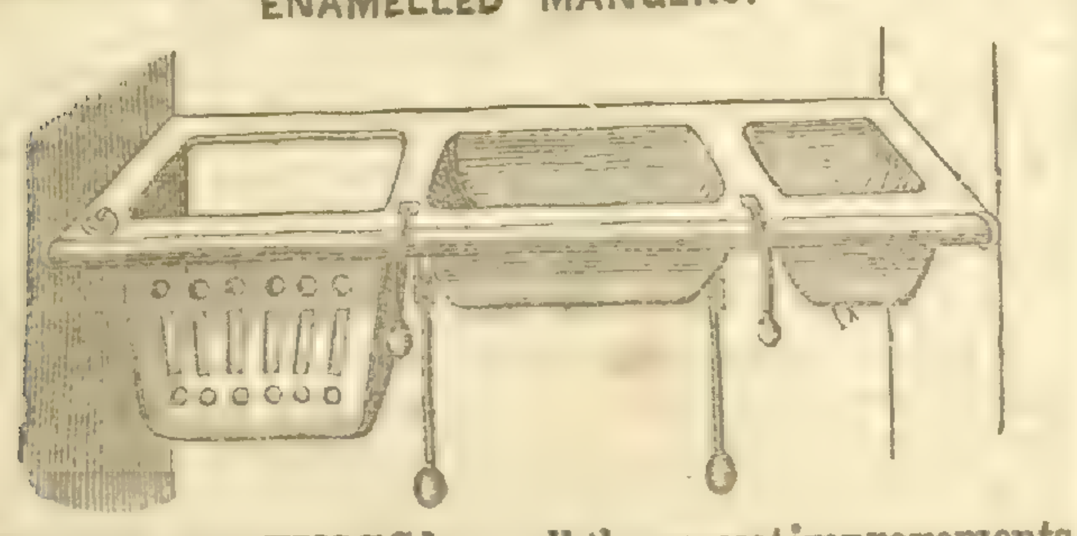
Mr. Mechi said he thought this really a case of wind and water. (Laughter.) He heard gentlemen on his right and left laugh, but he repeated in all sincerity and gravity that it was a case of wind and water; and when he told them that 75 per cent. of their bodies was water, that 20 per cent. was wind or gas, and 5 per cent. inorganic matter—or matter, he ought to say, that was soluble—he could only arrive at the conclusion that this was a very light meeting. (Laughter.) Science would tell them—they had had Davy, and now Liebig and others, who would tell them—that if they had not wind and water they would be blocks of wood; for if there was not a fluid, where would be their circulation? When they came to have an agricultural education, such an education as would fit them for their calling—and this must come—the company would not laugh at such a statement as this; for, as his friend Caird said, he was beaten in Grass because he had 1000 tons less water than they had in the western parts of this kingdom. That water was what?—it was everything; and when he cleaned out his boiler after some time working it, and took cart-loads of solid matter out of it, he at first wondered where it came from; but if it had not these things which entered into the circulation of the plant, that plant would soon want strength and life. Plants searched for and took up and fed on these things. As an instance of it, if they put a Vine within 10 feet of a river it would send a root out that would reach the water and take it up, thus showing that if the plant had not reason it had instinct. But we did not understand this as we ought to do; and when they looked into the schools of the country, and asked, "Where are your books on agriculture?" they said, "Oh, we don't know anything about that." He told them agriculture was not now what it would be 100 years hence. There were thousands of things in regard to it yet undeveloped, and our children would look back on their fathers and say, "What a stupid set of fellows they were—what a pity that science did not rise and enlighten their minds." (Cheers.) But he would not quarrel with the farmers as to whether they should turn up the stiff clay, he would not go into matters of detail: but he took the broad principle of education—and, he said, "You must teach these things to those who are to enter on the pursuit of agriculture—they must be pondered over, and studied, and understood, or you will not grow your quartern loaves as you ought to do." Let them look at the leading article of the *Times*, and see how it was that consols came to be at their present quotation. He said it was all a question of victuals. If they stopped the stomach, they stopped their commerce, their arts, their sciences, their manufactures; and as for their friend Dr. Lyon Playfair there, if he had no dinner for a fortnight, good bye to all his science. (Cheers and laughter.) He believed the time was coming when they should be awake and not insane, as they were now; the dinner which they ate to-day would reproduce itself to-morrow—that was, provided they did not send it down to the Thames to pollute the water instead of sending it to the land where it would fructify and reproduce itself again. (Hear.) Gentlemen had seen his children, and he would say that if those children fed on the milk of London, deprived of that nutritious quality which was lost by its being thrown away instead of being sent back to the pasture, they would find they would want bone and muscle, and development, for that was the cause why all the children of London had crooked knees and bow legs—(laughter)—because the excrement that ought by its use to make the milk rich, thus bringing up the bone and muscle, and development of the child, was thrown into the Thames. So long as they threw that into the Thames, and went to Peru and purchased guano at a high price to replace it, he did say they were not acting as business-like and sensible men, and as they would act when the matter came to be understood. (Hear.) He would not measure this meeting, this great and important and scientific meeting, by details, but he took the principle, and he said, "If God does not give you 10 inches of rain, you must go to a river, if you have one near you, and pour it on: you will thus double your stock, increase your corn, and thus you will increase the employment and the food of man." (Cheers.) He would not detain the meeting, as he might do on the subject—he would write it out some day: but he did say it was a question that bore upon the moral, the social, and political welfare of this great country. He held it as a great principle, that that which was not profitable to agriculture was not a thing that it was proper to advocate—if it was not desirable on the ground of profit it was worthless. Now, it would be said, "Where is the money to come from?" His reply was, he had now at that table the president of a body in London who would lend them the money for all these things if they could pay 6½ per cent. for it, to be repaid in 21 years; and he did say, if they did not borrow it they did not know their own interests. (Hear.) But he felt humbled when he saw those gentlemen from the city, and saw that they had companies in the first, second, and third floors for the improvement of the land in almost every country in the world—there was not a country they had not their money in, but they had not money in the improvement of English agriculture. He said it was a disgrace to them. Was there not ample scope in this country for that employment? When he travelled thousands of miles by railway through the country, what did he see? Poverty, and a fixed rent, fixed tithe, fixed labour, fixed everything and a limited production! It was like a gentleman having a large shop and nothing in it, and the rent of which was thus in effect doubled or trebled because he had not sufficient stock in it to make a profit. (Hear.) These things must be altered—the change must come, and therefore in these meetings he called together the people of the towns and the people of the country, for he felt it was only by such a combination that they would get more agricultural knowledge: for if they went into agriculture and did not understand it, it was of no use. He said, therefore, have your college in every county, so that those who were to practise agriculture should thoroughly know their business. Depend on it a man must learn his business by acquiring information, by study, and by practical experiment: and what he wanted to see was for the towns to introduce schools for agriculturists, and see that they really did understand agriculture before they turned them into the country to employ their capital in the pursuit. For himself he followed his destiny in the course he took, feeling that he could not allow agriculture, for want of exertion on his part, to remain as it was in this great kingdom. (Cheers.)

Notices to Correspondents.

Manures: *T C.* Woollen rags may be applied, notwithstanding their not being rotted. The Kentish farmers chop them into pieces, an inch or two across, and strew them evenly over the ground by hand. They give them no other preparation. The great value of the rags depends on their slow but gradual decay when in the soil.

Poultry: *Augusta.* Lay in a small stock of patience, try no more quack remedies, for, as in the present case, they in general do more harm than good. Give your favourites no Beans or Peas, and but little Barley. Let their chief diet be Oatmeal and Wheat, and allow them a good Grass run. Should this treatment not answer, then mix a little Epsom salts with their food.

BARTON'S PATENT STABLE FITTINGS, AND ENAMELLED MANGERS.



THESE FITTINGS have all the newest improvements and are the only patented invention of this description. Also Improved Stable Fittings with Rack, Manger, and Water Trough attached, New Pattern Manger and Water Trough combined; Corner and Straight Mangers, Plain, Enamelled, and Galvanised; Stable Furniture of every description, Iron Gates, Railing, Hurdles, Sheep and Game Wire Netting, Registered Poultry Troughs, Fountains, Feeders, &c.—JAMES BARTON, IRONFOUNDER, SMITH, &c., 370, Oxford Street, a few doors east of the Pantheon.

WEIR'S IRRIGATORS, LIQUID MANURE PUMPS, FIRE AND GARDEN ENGINES.

	£	s.	d.
Single Cylinder (as engraving) ...	8	8	0
Double Cylinder ...	10	10	0
Horse power size ...	16	16	0

Exclusive of Suction and Delivery Pipes.

Illustrated Catalogues free per post.

Terms Cash on Delivery.

EDWARD WEIR, Agricultural Engineer, 16, Bath Place, New Road, London, removed from Oxford Street.

JOHN WARNER AND SONS,
CRESCENT, JEWIN STREET, LONDON.
GALVANISED IRON TUB GARDEN ENGINE,
With Warner's Registered Spreader,

Is strongly recommended, for durability and low price, viz., 2l. 19s., to hold 10 gallons.

Larger sizes made either in wood or iron. May be obtained of any Ironmonger or Plumber in town or country, or of the Patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Syringes of various constructions and sizes from 9s. upwards. An extensive assortment kept.

WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

	£	s.	d.
Patent Pump	1	15	0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing	3	0	0

Larger sizes if required.

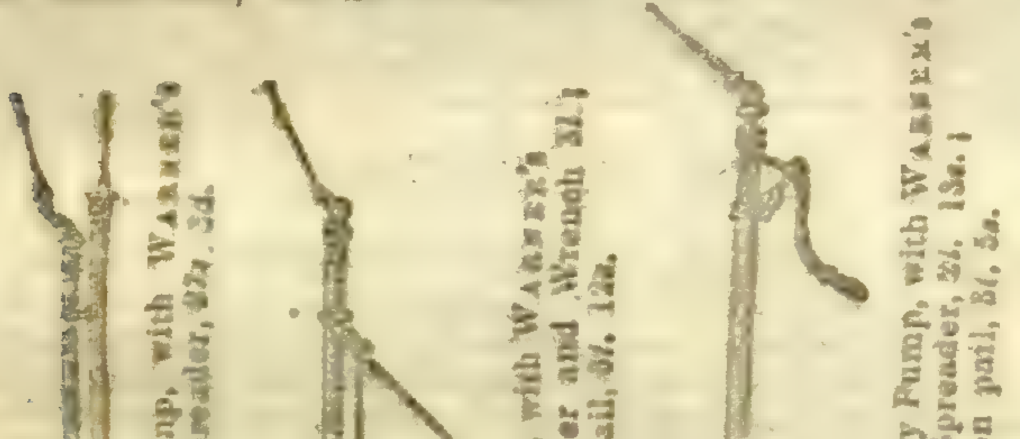
The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

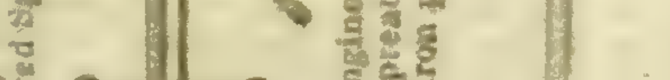
JOHN WARNER & SONS,
8, CRESCENT, JEWIN STREET, LONDON.

Every description of Machinery for Raising Water: Fire Engines, &c.

JOHN WARNER AND SONS, 8, Jewin Crescent, London, Manufacturers of FIRE ENGINES, PUMPS, GARDEN ENGINES, and SYRINGES.



No. 32. No. 11. No. 14.



Brass Syringes, 9s. to 18s.

All articles of JOHN WARNER & SONS' manufacture may be obtained of any Ironmonger or Plumber in town or country, at the advertised prices.

JOHN WARNER & SONS having been practical Horticulturists for many years, know exactly the requirements of both Amateurs and Gardeners. A gardener with a properly constructed pump will get through as much work in five minutes as he could with any Syringe in a quarter of an hour, and with half the labour to himself. Syringes are economical only for small houses.

No establishment offers such a variety of effective machines for hydraulic purposes, whether to supply Gardens, Hothouses, Cottages, Farms, Mansions, or Boards of Health, with every requisite connected with the conveyance and distribution of liquids.

Fountains suitable for Conservatories, Lawns, &c.

Sheets of Engravings sent on application.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

Priced lists of plant tubs and boxes forwarded on application.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.

MESSRS. BURGESS AND KEY, as Mr. PARKES' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.

103, Newgate Street, and 52, Little Britain, London.

ANTHONY'S PATENT AMERICAN CHURN.—Extract from the Royal Agricultural Society's Report of the trial of Churns at the Gloucester meeting in July last. "In this trial the American Churn not only maintained its character in producing butter rapidly, but in producing a greater quantity from the like amount of cream." It made from 4 quarts of cream 4 lbs. 6 oz. of butter, being 8 oz. more than any of the other Churns from the same quantity and quality of cream. Price Lists of Churns and Implements by the best makers sent free, and Illustrated Catalogues on receipt of eight postage stamps. BURGESS & KEY, 103, Newgate Street, and 52, Little Britain, London, who have always a large stock of Steam-engines, Ploughs, Harrows, Diggers, Waggons, Carts, Threshing and Dressing Machines, Mills, Oat and Grain Bruisers, Oilcake Breakers, Reaping Machines, Haymakers, Horse-rakes, Turnip Cutters, Liquid Manure Carts, Parkes' celebrated Steel Digging Forks and Draining Tools. Pumps for Manure, Farm Fire Engines, and for Garden Purposes, &c. &c.

BUDDING'S LAWN MOWERS, with SAMUELSON'S registered improvements, *lightening the draught fully one-half*, and enabling an unskilled labourer to make neat work; free from liability to choke, or get out of order. May be had of all ironmongers in town or country, or from the Works, Banbury; delivered free in a packing case to any station on the North-Western and Great Western Railways. Testimonials forwarded on application.—Britannia Works, Banbury.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

JAMES PHILLIPS AND Co. have the pleasure to hand their present prices of Glass for Cash:—

SHEET SQUARES. In Boxes of 100 feet.		CROWN SQUARES. In Boxes of 100 feet.
Under 6 by 4	£0 12s. 6d.	8s. 6d.
6 by 4, and 6½ by 4½	0 13 0	12 6
7 „ 5, — 7½ „ 5½; 8 „ 6, — 8½ „ 6½	0 15 0	14 0
9 „ 7, — 10 „ 8, 12 by 9, 12 by 10, 14 by 10	1 0 0	

Larger Sizes, not exceeding 40 inches long.
16 oz. from 3d. to 3½d. per square foot, according to size.
21 oz. „ 4½d. to 5d. „ „ „
26 oz. „ 6d. to 7½d. „ „ „

SHEET GLASS OF ENGLISH MANUFACTURE FOR ORCHARD HOUSES, THE SAME QUALITY AS WE SUPPLY TO Mr. RIVERS, and of various dimensions, always on hand.

London Agents for the Sale of HARTLEY'S PATENT ROUGH PLATE GLASS.

Glass Tiles, ¼ of an inch thick, packed in cases, containing 50, at 1l. 17s. 6d. per case. Packages 2s. each extra, but allowed for when returned.

Glass Milk Pans, 21s. per dozen; Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoys' Milk Syphons, Wasp Traps; Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the trade.

Horticultural Glass Warehouse, 116, Bishopsgate Street Without, Lond

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

HETLEY AND CO. are supplying 16-oz. Sheet Glass of British Manufacture, packed in boxes, containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

Sizes.—Inches.	Inches.		Per foot.		Per 100 feet
	Under 6 by 4	at	1½d.	is	£0 12 6
From 6 by 4	„ 7 „ 5	„	2d.	„	0 16 8
7 „ 5	„ 8 „ 6	„	2¼d.	„	0 18 9
8 „ 6	„ 10 „ 8	„	2½d.	„	1 0 10
10 „ 8	„ 12 „ 9	„	2¾d.	„	1 2 11

Larger sizes, not exceeding 40 inches long.
16 oz. from 3d. to 3½d. per square foot, according to size.
21 oz. „ 3½d. to 5d. „ „ „
26 oz. „ 3½d. to 7½d. „ „ „

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern, either in sheet or Rough Plate Glass.

Propagating Glasses, Beehive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in Glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the excise duty, reduced one-half.

List of Prices and Estimates forwarded on application to JAMES HETLEY & Co., 35, Soho Square, London.

GLASS.

THOMAS MILLINGTON, Importer of Foreign Sheet Glass, requests attention to the present Prices of Glass and Stock sizes, which are cheaper and better than those of English manufacture:—

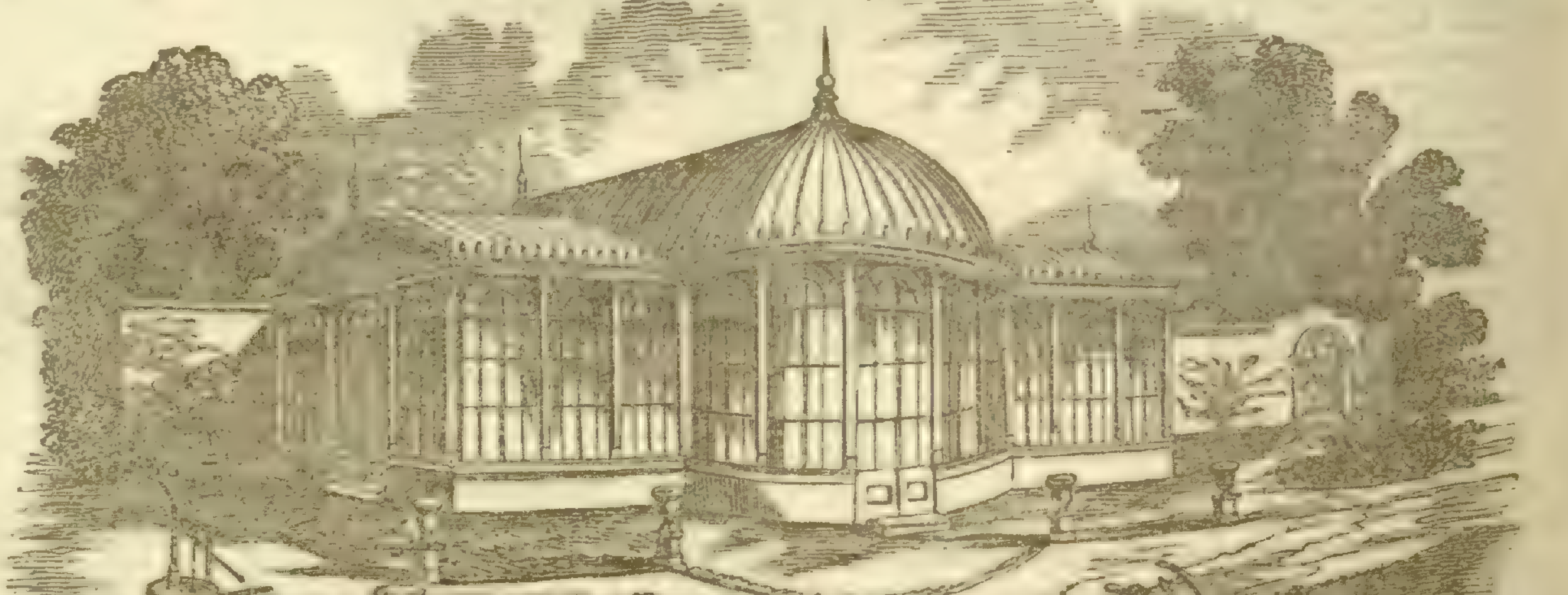
PACKED IN ONE HUNDRED FEET BOXES, THIRDS QUALITY, BOXES INCLUDED.

Inches.	Per 100 ft.	Inches.	Per 100 ft.	Inches	Per 100 ft.	Inches.	Per 100 ft.	Inches.	Per 100 ft.	Inches.	Per 100 ft.
6 by 4	12s.	12 by 10		14 by 11		16½ by 12½		18 by 13		18 by 14	
6½ „ 4½		12½ „ 10½		14½ „ 11½		17 „ 12		18½ „ 13½		18½ „ 14½	
7 „ 5		13 „ 10		15 „ 11		17½ „ 12½		19 „ 13		19 „ 14	
7½ „ 5½	14s. 6d.	13½ „ 10½		15½ „ 11½		18 „ 12		19½ „ 13½		19½ „ 14½	
8 „ 6		14 „ 10		16 „ 11		18½ „ 12½		20 „ 13		20 „ 14	
8½ „ 6½		14½ „ 10½		16½ „ 11½		19 „ 12		20½ „ 13½		20½ „ 14½	
9 „ 7		15 „ 10	20s.	17 „ 11	20s.	19½ „ 12½	20s.	21 „ 13	20s.	21 „ 14	20s.
9½ „ 7½		15½ „ 10½		17½ „ 11½		20 „ 12		21½ „ 13½		21½ „ 14½	
10 „ 8		16 „ 10		14 „ 12		20½ „ 12½		22 „ 13		22 „ 14	
10½ „ 8½		16½ „ 10½		14½ „ 12½		16 „ 13		16 „ 14		22½ „ 14½	
11 „ 9	17s. 3d.	17 „ 10		15 „ 12		16½ „ 13½		16½ „ 14½		23 „ 14	
11½ „ 9½		17½ „ 10½		15½ „ 12½		17 „ 13		17 „ 14		23½ „ 14½	
12 „ 9		13 „ 11		16 „ 12		17½ „ 13½		17½ „ 14½		24 „ 14	
12½ „ 9½		13½ „ 11½									

IMPROVED PATENT ROUGH PLATE, PLAIN, FLUTED, AND IN QUARRY PATTERNS.
British Plate, Patent Plate, Sheet, Crown, and Coloured Window Glass. Pure White Shades for Ornaments. Pumps, Water Closets, and Plumbers' Brass Work. Genuine White Lead, Paint, Colours, Varnishes, Brushes, &c.
Tariffs of the above on application to

T. MILLINGTON, 87, Bishopsgate Street Without, London.

COTTAM AND HALLEN,
2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.



APPLICATION is requested for their NEW HORTICULTURAL LIST, containing Illustrations, Descriptions, and Prices of

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Syringes	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.
AGRICULTURAL LIST UPON APPLICATION.
EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.
EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

PRIZE MEDAL—1851.

AT A VERY ECONOMICAL RATE.

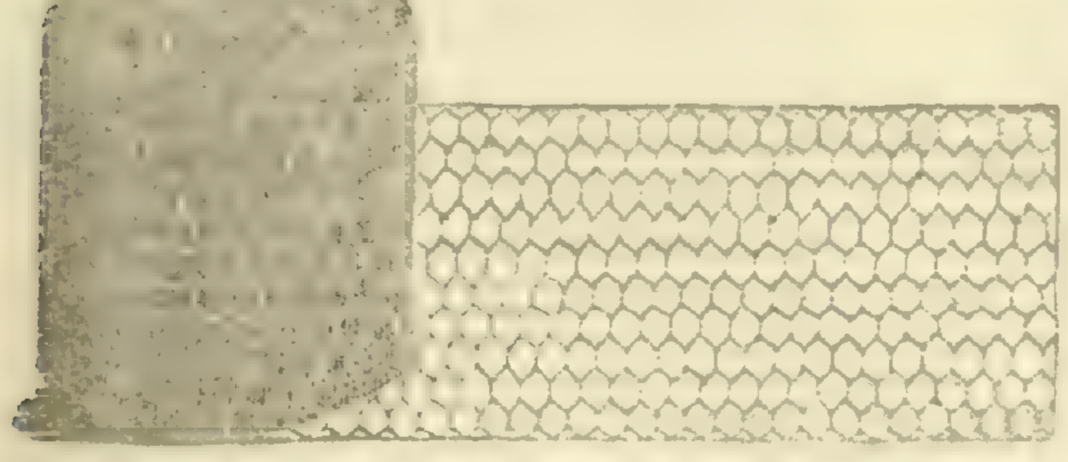
SAMUEL CUNDY, MASON and BUILDER, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Lower Belgrave Place Pimlico, London.

Marble Chimney-pieces manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price. A good Marble Chimney-piece for 40*s*. Marble Work in all its branches at a remarkably cheap rate for Halls, Dairies, Larders, &c. Circulars sent on application.

N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank.

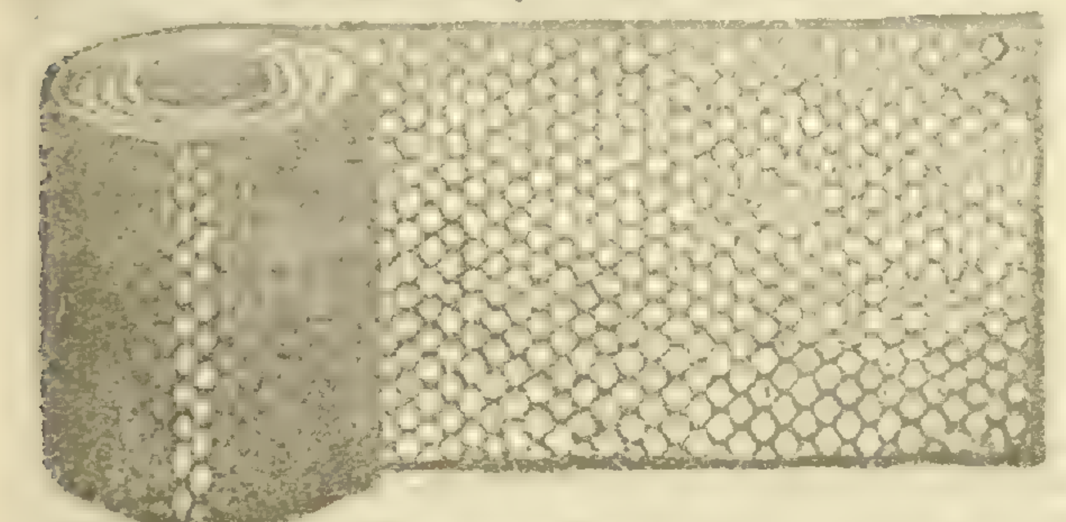
TANNED NETTING, for the protection of Fruit Trees from frost, blight, and birds, and for the security of fresh sown seeds, either in Gardens or Fields, at 1*d*. per square yard; 200 yards, 14*s*.; 500 yards, 30*s*.; 1000 yards, 50*s*. Scrim Canvass, for Wall Fruit.—At EDGINGTON and Co.'s, 17, Smithfield Bars, City, and Old Kent Road, Southwark, where may be seen erected Emigrant Tents in great varieties, on their latest improved principles, and also at Brunswick Street, Poplar, near the East India Export Dock.

H. J. MORTON AND Co., 2, Basinghall Buildings, Leeds.—GALVANISED GAME AND POULTRY NETTING, very strong and neat, NEVER REQUIRES PAINTING.



24 inches wide, 3-inch mesh, 4½*d*., 6*d*., and 8½*d*. per yard.
24 inches wide, 2-inch mesh, 7*d*., 9½*d*., and 1*s*. per yard.
GALVANISED IRON SPOUTING, for Dwellings, Cottages, Farm Buildings, &c., NEVER REQUIRES PAINTING.
Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalte Roofing Felt, &c.

GALVANISED WIRE GAME NETTING.—
7*d*. PER YARD, 2 FEET WIDE.



		Galvanised.	Japanned iron.
2-inch mesh, light, 24 inches wide	...	7*d*. per yd.	5*d*. per yd.
2-inch " strong "	...	9 "	6½ "
2-inch " extra strong "	...	12 "	9 "
1½-inch " light "	...	8 "	6 "
1½-inch " strong "	...	10 "	8 "
1½-inch " extra strong "	...	1 "	11 "

All the above can be made any width at proportionate prices If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasantries, 3*d*. per square foot. Patterns forwarded post free.

Manufactured by BARNARD & BISHOP, Market Place, Norwich and delivered free of expense in London, Peterborough, Hull, or Newcastle.

SHEEP, LAMBS, HORSES, AND CATTLE,
CAN BE DRESSED WITH

LONG'S NON-POISONOUS SHEEP & CATTLE-DRESSING COMPOSITIONS, without any possibility of danger or injury resulting from the application. These Compositions are admitted by all who have fairly tested them to be the most effective Sheep Dressings ever brought before the agricultural public; and as they are NON-POISONOUS, and do not stain or discolour the Wool, they are gradually superseding the use of all Dipping and other Sheep-dressing preparations, composed of such deadly poisons as ARSENIC or MERCURY.

It is a fact now thoroughly established, that Long's Non-Poisonous Sheep Dressings, if liberally and judiciously applied in the dressing of Sheep and Lambs, will—in their consequent effect in removing Disease, destroying Vermin, and keeping the flock in condition—thus PROMOTING INCREASED GROWTH BOTH OF MUTTON AND WOOL—as amply repay flock owners for first outlay as artificial manures when applied to land. They are the only Sheep Dressings also, which, from the fact of their containing NO POISON, can be beneficially and safely applied to Sheep and Lambs at any age and at any season of the year.

Pamphlets containing full directions for use, and copies of the strongest Testimonials ever accorded to a manufacturer, signed by leading and practical Stock Farmers, residing in all parts of the United Kingdom, together with the names of all Country Agents authorised to vend Long's Patent Sheep and Cattle-dressing Compositions, may be obtained gratuitously on application of any advertised country Agent; or by post, sent free, of

BARRY BROTHERS, AGENTS FOR JOSEPH LONG,
Meriton's Wharf, and Shad Thames, London.

MR. MECHI, 4, Leadenhall-street, London, feeling that these are progressive times, has made EXTENSIVE ALTERATIONS in his BUSINESS ESTABLISHMENT, which, he trusts, will be for the comfort and advantage of his customers, by enabling them to inspect readily his general manufactures, consisting of articles of luxury and economy, suitable for presents or for use. Independently of his usual extensive stock of ladies' and gentlemen's Dressing Cases, Work Boxes, and Desks, in Wood, Morocco, and Russia Leather, he has devoted one entire apartment to the most choice productions in papier mâché ware, contrasting strangely with the once much-prized ware of Japan and China. Catalogues will be forwarded gratis on application. Mr. Mechi has prepared a very choice assortment of elegancies and utilities for sale at his depot, at the New Crystal Palace. His position is in the Nave, at the entrance to the French Court.

ENCAUSTIC TILE PAVEMENTS.

MAW AND CO., Benthall Works, Broseley, Salop, Manufacturers of the Cloister Pavement of Mediæval Court, and "THE SUCCESSFUL IMITATION OF OPY'S ALEXANDRINUM, IN THE BEAUTIFUL ENCAUSTIC TILE PAVEMENT OF CLOISTERS OF BYZANTINE COURT," Crystal Palace (M. D. Wyatt, Esq., in Official Handbook), forward, without charge, Designs and Estimates, adapted to given dimensions, of Entrance Halls, Conservatories, Verandahs, &c., in every style.

Specimens at 11, Aldersgate Street, City.

JACKSON'S PATENT PREPARATION FOR THE PRESERVATION OF POTATOES, SEEDS, &c.—This valuable discovery, for which letters patent have been obtained, is the successful result of 14 years' study and experiments in the preservation of vegetable matter. It imparts health and vigour to the Plants and Seeds subjected to its action, and effectually prevents the Potato Disease, the Smut in Wheat, Mildew and Rot, all Fungal Diseases, and the attacks of Insects and Vermin, and further recommends itself to the Farmer, the Planter, and the Public generally, by the extreme simplicity of the mode of its application.

It is sold by all Seedsmen and Chemists, in packets of one, two, three, and four pounds each, with instructions for its use; and parties requiring larger quantities for their own use or for exportation can be supplied on advantageous terms, by addressing Mr. JACKSON, the Patentee, 18, Cannon Street, London Bridge; where the article is always on sale, and the fullest particulars and directions for its use can be obtained.

GLENFIELD PATENT STARCH, used in her Majesty's Laundry, and WOTHERSPOON'S machine-made CONFECTIONARY, MARMALADE, JAMS, JELLIES, &c., which gained the Prize Medal of 1851, may be had of all Grocers; Wholesale of WOTHERSPOON, MACKAY, & Co., 66, Queen Street, Cheapside, London; and ROBERT WOTHERSPOON & Co., Glasgow.

NOTICE.—Before leaving town, ladies and gentlemen should provide themselves with one of BERDOE'S well-known VENTILATING WATERPROOF GARMENTS, which resist any amount of rain, WITHOUT CONFINING PERSPIRATION (the fatal objection to all other waterproofs), while their respectability adapts them for general use, equally as for rainy weather. An extensive variety for selection.—W. BERDOE, Tailor, 96, New Bond Street, and 69, Cornhill (only).

THE COMFORT OF A FIXED WATER CLOSET for 1*l*.—Places in gardens converted into comfortable water closets by the PATENT HERMETICALLY SEALED PAN, with its self-acting valve, entirely preventing the return of cold air or effluvia. Any carpenter can fix it in two hours. Price 1*l*. Indispensable for the health and comfort of a family. Hermetically sealed Inodorous Chamber Commodes, 1*l*. 4*s*., 2*l*. 6*s*., and 3*l*.; also, Improved Portable Water Closets, with pump, cistern, and self-acting valve. A prospectus, with engravings, forwarded by enclosing two postage stamps.—At FYFE and Co.'s, removed to more commodious premises, at 46, Leicester Square, London.

METCALFE AND CO'S NEW PATTERN TOOTH BRUSH, PENETRATING HAIR BRUSHES, AND SMYRNA SPONGES.—The Tooth Brush performs the highly-important office of searching thoroughly into the divisions and cleansing in the most extraordinary manner—hairs never come loose. Peculiarly penetrating Hair Brushes, with durable unbleached Russian bristles, which will not soften like common hair, and immense stock of genuine unbleached Smyrna Sponge, with every description of British and Foreign Perfumery, at METCALFE, BINGLEY, & Co.'s only Establishment, 130 B and 131, Oxford Street, second and third doors west from Holles Street.

CAUTION.—Beware of the word "from" Metcalfe's, adopted by some houses. Metcalfe's Alkaline Tooth Powder, 2*s*. per box.

FRAMPTON'S PILL OF HEALTH.—"For upwards of nine years (writes Mr. Thomas Province, of Winchmore Hall, Middlesex), I have experienced the efficacy of this excellent medicine, and I have the happiness of saying that I never had a better state of health. I beg further to add that this medicine is in general use by my family, and we know of nothing to equal it." For females these pills are truly excellent, removing all obstructions, the distressing headaches so very prevalent with the sex, depression of spirits, dulness of sight, nervous affections, blotches, pimples, and sallowness of the skin, and gives a healthy juvenile bloom to the complexion Sold by all medicine vendors, price 1*s*. 1½*d*. per box.—Observe that "THOMAS PROUT" is on the Government stamp.

DR. DE JONGH'S

LIGHT BROWN COD-LIVER OIL, PREPARED FOR MEDICINAL USE IN THE LOFFODEN ISLES, NORWAY, AND PUT TO THE TEST OF CHEMICAL ANALYSIS, THE MOST EFFECTUAL REMEDY FOR CONSUMPTION, BRONCHITIS, ASTHMA, GOUT, CHRONIC RHEUMATISM, AND ALL SCROFULOUS DISEASES.

Approved of and recommended by the most distinguished Scientific Chemists, prescribed by the most eminent Medical Men, and supplied to the leading Hospitals of Europe.

EXTRACTS FROM

MEDICAL AND SCIENTIFIC TESTIMONIALS:

THE LANCET, *July* 29, 1854.

"In the preference of the light brown over the pale oil we fully concur. We have carefully tested a specimen of the light brown Cod-liver Oil prepared for medical use under the direction of Dr. de Jongh, and obtained from the wholesale agents, Messrs. ANSAR, HARFORD, & Co., 77, Strand. We find it to be genuine, and rich in iodine and the elements of bile."

"THE MEDICAL CIRCULAR." May 10, 1854.

"The pale oil, even when genuine, is deficient to a considerable extent, if not wholly, of the volatile fatty acid, iodine phosphate of chalk, the cholinic acid, bilifellinic acid, and other elements of bile, which are found in their normal proportions in the light brown oil. The utmost reliance may be placed upon the experimental researches of Dr. de Jongh, who is one of the most eminent of European chemists; the oil prepared by him enjoys also the additional sanction of the opinion of Baron Liebig and the late Dr. Pereira, in favour of its genuineness and efficacy. Our own experience practically confirms their judgment, and we unhesitatingly recommend the light brown oil as the best for medicinal purposes, and well deserving the confidence of the profession."

BARON LIEBIG.

"You have rendered an essential service to science by your researches, and your efforts to provide sufferers with this medicine, in its purest and most genuine state, must ensure you the gratitude of every one who stands in need of its use."

DR. JONATHAN PEREIRA.

"I know that no one can be better, and few so well, acquainted with the physical and chemical properties of this medicine as yourself, whom I regard as the highest authority on the subject. The oil which you gave me was of the very finest quality, whether considered with reference to its colour, flavour, or chemical properties; and I am satisfied that for medicinal purposes no finer oil can be procured."

Sold wholesale and retail, in bottles, labelled with Dr. de Jongh's stamp and signature, by

ANSAR, HARFORD, AND CO., 77, STRAND, LONDON,

Sole Consignees and Agents for the United Kingdom and the British Possessions; at the following prices:—

IMPERIAL MEASURE, half pints, 2*s*. 6*d*.; pints, 4*s*. 9*d*.

*** Four half-pint bottles forwarded, CARRIAGE PAID, to any part of England, on receipt of a remittance of Ten Shillings.

TO NERVOUS SUFFERERS.

A RETIRED CLERGYMAN having been restored to health in a few days, after many years of great nervous suffering, is anxious to make known to others the means of cure; he will therefore send (free), on receiving a stamped envelope, properly addressed, a copy of the prescription used.—Address the Rev. E. DOUGLASS, 18, Holland Street, Brixton, London.

SOUND AND WHITE TEETH are not only indispensably requisite to a pleasing exterior in both sexes, but they are peculiarly appreciated through life as highly conducive to health and longevity. Among the various preparations offered for the purpose, ROWLAND'S ODONTO, or PEARL DENTRIFICE, stands unrivalled in its capability of [illegible] purifying, and preserving the teeth to the latest period of life. Prepared from Oriental herbs with unusual care, transmitted to this country at great expense, it will be found to eradicate all tartar and concretions, and impart a pearl-like whiteness to the enamelled surface, remove spots of incipient decay, render the gums firm and red, and thus fix the teeth firmly in their sockets, and from its aromatic influence imparts sweetness and purity to the breath.—Price 2*s*. 9*d*. per box. Caution.—The words "Rowlands' Odonto" are on the label, and "A. ROWLAND & SONS, 20, Hatton Garden," engraved on the Government stamp affixed on each box. Sold by them, and by chemists and perfumers.

IT is the peculiar characteristic of PARR'S LIFE PILLS that they purify the system mildly and imperceptibly, so that there is no reaction or tendency to constipation afterwards, as is the case with the purgatives administered by many apothecaries and ignorant pretenders. There are instances of persons with diseased livers and tender lungs who have passed years of misery, pain, and apprehension, but who, after taking Parr's Life Pills, have actually been made whole, the liver having resumed its proper functions. For bilious disorders, liver complaints, indigestion, loss of appetite, costiveness, sick headache, and depression of spirits, there is no remedy equal to Parr's Life Pills. Invalids should make an immediate trial of this excellent, long-tried, and successful medicine. Ask for Parr's Life Pills.—Sold in boxes, at 1*s*. 1½*d*., 2*s*. 9*d*., and family packets at 11*s*. each, by all respectable chemists, booksellers, and medicine vendors throughout the world. Full directions are given with each box.

Wholesale and Retail Agents:—E. EDWARDS, 67, St. Paul's Churchyard; BARCLAY & SONS, Farringdon Street; SUTTON & Co., Bow Churchyard; HANNAY & Co., 63, and SANGAR, 150, Oxford Street, London.

SOUTHDOWN RAMS.

MR. R. H. ELLMAN informs his Friends that his RAMS are now ready for Letting or Sale. The Rams may be seen and terms known at any time.—Landport, Lewes.

TO NURSERYMEN, FLORISTS, OR GARDENERS.

TO BE SOLD, for 300*l*., a FREEHOLD, consisting of Two acres of well-drained, highly-cultivated LAND, having on it a Cottage residence of considerable size, situate half-way between Brighton and London, and 1½ mile from a Railway Station. It is well watered, commands extensive views, and is exceedingly healthful.—Apply by letter to W. W. B., Little Windmill Street, Brewer Street, Golden Square, London.

TO BE SOLD, a bargain, a well-stocked small NURSERY, containing several Greenhouses and Pits; the ground is well stocked with roots and fruit trees.—Apply to Mr. G. SMITH, Bell Inn, Edmonton.

TO BE SOLD, BUFF COCHIN CHICKENS, from first class Prize Birds. Brahma Pootra Chickens, from imported American Prize Birds, and Spanish Chickens. Also some very good one-year-old Birds of the above descriptions. Wire, Game, and Poultry Netting, Poultry Hurdles, Hen-houses, Chicken Coops, Flower Stands, and Trainers, Garden Arches, and every kind of Wire Work, useful and ornamental.—T. H. FOX'S, City of London Wire Works, 44, Skinner Street, and 6 & 8, Snow Hill

Illustrated Catalogues forwarded post free.

SPANISH AND DORKING CHICKENS FOR 1854, bred from the Prize Birds at Bath, Cheltenham and Lincoln, and other first-rate Stock. As also some Brahma Pootra Chickens and White Aylesbury Ducks are now on Sale, and may be had by amateurs and others wishing to improve their stock of Poultry.—Apply, by letter only, post-paid, to Mr. H. D. DAVIES, Spring Grove House, Hounslow.

MR. H. D. DAVIES has much pleasure in allowing any one to see his Stock of POULTRY; but some inconvenience having arisen from the visits of persons altogether unknown, and at unseasonable hours, those ladies and gentlemen who may wish to see the birds, are requested to favour Mr. Davies previously with their name and address, when a card of admission will be immediately forwarded. In future, no person can be admitted into the poultry yard without producing such a card, or at any other hours than those named for the purpose.

Spring Grove House, Hounslow.

Sales by Auction.

PIGS, ETC.—SALE OF VALUABLE BREEDING STOCK.

MR. J. C. STEVENS is directed by a well-known Amateur to announce for Sale by Auction, at the Great Central Horse Repository, St. George's Road, Southwark, on WEDNESDAY, August 9, at 3 o'clock in the afternoon precisely, BOARS and SOWS, and BOAR and SOW PIGS, from the counties of Lincoln, Berks, and Dorset, designed for the purpose of breeding, including fine specimens of the improved sorts of both large and small breeds, selected from stocks of celebrity in the various localities; also a DOG and BITCH, of the pure Mount St. Bernard's Breed, admirably matched, and considered to be the finest in this country, and a NEWFOUNDLAND DOG.—May be viewed on morning of sale, and Catalogues had at the Repository opposite the Elephant and Castle; and of Mr. J. C. STEVENS, 38, King Street, Covent Garden, London.

NURSERIES, CLAPHAM.

MESSRS. PROTHEROE & MORRIS are instructed by the Administrators of the late Jos. Fairbairn, to offer for unreserved sale, in the early part of September, the entire stock of specimen Greenhouse and Stove Plants, which are all of the most choice sorts, and in the best condition. The lease of the old established Seed Shop and Nursery to be sold; the Stock may be taken by valuation or by agreement: for particulars apply to the administrators, at the Nursery, Clapham, or to JAMES FAIRBAIRN.—ROBERT SILVESTER BROWN, and CLACK, Administrators, Nursery, Clapham.

SUPERIOR DOWN COTSWOLD RAMS.

MESSRS. T. MALLAM AND SON have received instructions from Messrs. Druce, of Eynsham, near Oxford, to Sell by Auction, on WEDNESDAY, the 9th day of August, at 11 o'clock, in a Close near Worcester College (being the Monthly Cattle Market at Oxford), about 30 SUPERIOR SHEARLINGS, a few older sheep, and two well bred Yearling Bulls. The Auctioneers beg to observe that this Stock gained the first prize at Smithfield, in 1853, and has been successfully exhibited at the Birmingham and Midland Counties, and the Oxfordshire Shows for some years past.

Now ready, Part I., of

THE FERNS OF GREAT BRITAIN, Illustrated by John E. Sowerby: Descriptions by C. Johnson, Esq. To contain about 48 Plates, and to be completed in Eight Monthly Parts, full coloured, at 3s.; partly coloured at 1s. 6d. per Part. To be had through all Booksellers; and of the Proprietor, John E. Sowerby, 3, Mead Place, Lambeth.

JOHNSON and SHAW'S FARMER'S ALMANAC for 1855.—Alterations and Corrections for the above should be forwarded to the Publisher as early as possible.
London: James Ridgway, 169, Piccadilly.

ON MARRIAGE.

Just published (to be had free, by enclosing 1s. or Twelve Postage Stamps, to Mr. Watson, Clerical Agent, Robert Street, Adelphi, London).

MATRIMONY.—A Pamphlet on Matrimonial Alliances, which merits the attention of those who wish to settle honourably in life. By a Clergyman.

THE FOLLOWING WORKS ARE ALWAYS ON SALE AT THE OFFICE OF THIS PAPER.

Price 2s. 6d.,

FOLIA ORCHIDACEA.—Part V. By Professor Lindley. Containing Miltonia, Brassia, Ada, Polychilos, Corymbis, Sobralia, Cœlogyne, Panisea.
J. Matthews, 5, Upper Wellington Street, Covent Garden.

Third Edition, considerably enlarged, price 5s. 6d.,

RURAL CHEMISTRY. By Edward Solly, F.R.S., F.L.S., F.G.S., Honorary Member of the Royal Agricultural Society of England, Professor of Chemistry to the Horticultural Society of London, Lecturer on Chemistry in the Hon E. I. Co.'s Military Seminary at Addiscombe, &c., &c.
J. Matthews, 5, Upper Wellington Street, Covent Garden.

Price 1s. 6d., free by post 1s. 10d.

LABELS FOR THE HERBARIUM, consisting of the names of the CLASSES, ALLIANCES, ORDERS, AND SUB-ORDERS, of PROFESSOR LINDLEY'S "VEGETABLE KINGDOM."
So printed in large type, that they can be cut out and pasted into The Herbarium.
J. Matthews, 5, Upper Wellington Street, Covent Garden.

Price 2s. 6d., free by post,

THE TREE ROSE.—Practical Instructions for its Formation and Culture. Illustrated by 24 Woodcuts. Reprinted from the Gardeners' Chronicle, with additions.

CONTENTS.

Annual pruning time, principle of execution, &c.
Binding up
Budding knife
Budding, time of year, day, time of day, state of the plant, care of buds
Budding upon body
Bud, insertion of, into stock
Bud, preparation of, for use
Buds, dormant and pushing
Buds, failing
Buds, securing a supply of
Caterpillars, slugs, and snails, to destroy
Causes of success
Dormant buds, the mode of replanting with, explained
Guards against wind
Labelling
Loosing ligatures
March pruning
Mixture for healing wounds
Pruning for transplantation
Planting out, and arrangement of trees
Pushing eye, spring treatment of dwarf shoots from
Roses, different sorts on the same stock
Roses, short list of desirable sorts for budding with a pushing eye
Sap-bud, treatment of
Shape of trees
Shoots and buds, choice of
Shoots for budding upon, and their arrangement
Shoots, keeping even, and removing thorns
Shortening wild shoots
Stocks, planting out for budding upon: the means of procuring; colour, age, height: sorts for different species of Rose; taking up, trimming roots, sending a distance, shortening heads, &c.; saw proper for the purpose.

GRAFTING.

Aphides, to keep down
Free-growers, remarks on
Graft, binding up and finishing [of
Grafting, advantage
Grafting, disadvantage of
Operations in different months
Preliminary observations
Roses, catalogue and brief description of a few sorts
Scion, preparation and insertion of
Scion, choice and arrangement of
Stock, preparation of.

APPENDIX.

A selection of varieties
Comparison between budding and grafting.

Post-office orders to be made payable to James Matthews, 5, Upper Wellington Street, Covent Garden, London.

POPULAR WORK ON BOTANY BY DR. LINDLEY.

SCHOOL BOTANY; or, THE RUDIMENTS OF BOTANICAL SCIENCE.
400 Illustrations. 8vo. Price 5s. 6d. half-bound.
Bradbury & Evans, 11, Bouverie Street.

Just published, in crown 8vo, price 9s. 6d. cloth,

THE LAST OF THE OLD SQUIRES: A Sketch. By Cedric Oldacre, Esq., of Sax-Normanbury, sometime of Christ Church, Oxon.
London: Longman, Brown, Green, and Longmans.

FOWLS.—By John Baily. Now in the press, and will be published, August 1, the Second Edition of the above work, with which is reprinted the fourth edition of "The Dorking Fowl," corrected, revised, and considerably enlarged. It contains descriptive tables of all the fowls now exhibited, giving in few words their chief points and qualifications, with copious rules for their selection and management. Price 2s.; by post, 2s. 6d.
John Baily, 113, Mount Street, Grosvenor-square, London.

PRICE FOURPENCE OF ANY BOOKSELLER.

CONTENTS of the NUMBER for SATURDAY LAST, JULY 29, OF

THE ATHENÆUM.

JOURNAL OF ENGLISH AND FOREIGN LITERATURE, SCIENCE, AND THE FINE ARTS.
Twenty-four large Quarto Pages.

Reviews of, with Extracts from—

The Dramatic Works of Mary Russell Mitford.
Satire and Satirists. By J. Hannay.
History of the Byzantine and Greek Empires, from 1057 to 1453. By G. Finlay.
Narrative of a Journey through Syria and Palestine, in 1851 and 1852. By C. W. M. Van de Velde.
History of the American Revolution. By G. Bancroft.
Memoirs and Correspondence of King Joseph. By A. du Casse.
Minor Minstrels, containing—Poems by Melanter—Passing Thoughts, &c.—Darby's Sweet South—Macfarlan's Poems—Watkins' Twins of Fame—Longland's Trephely—The Turkish War—Poetical Laudatory Portraits—The Titians of To-day, &c.—King Nutcracker—Thomson's Legend of Vilikins and Dinah.

With Shorter Notices of—

Charles the Fifth: Chronicles of his Personal and Political Life. By Amédée Pichot.
The Lost Treasures: A Tale. Matrimonial Shipwrecks. By Annette Marie Maillard.
Technological Military Dictionary. By Capt. C. F. Duckett.
Guide Books: Lee's Notes on Spain—Lee's Nice and its Climate—Robinson's Handbook to the Peak of Derbyshire and to the Use of the Buxton Mineral Waters, &c. &c.

Original Correspondence.—British Association—Manuscripts of the Poet Gray—Pope's Epitaph on 'Mrs. Corbet.'

Foreign Correspondence.—Vieusseux's 'Archivio Storico Italiano.'

Weekly Gossip.—Hood Memorial—Holford House—Obituary: Caroline Southey—Munich Exhibition—Half Holiday Movement—Campbell's 'Life of Mrs. Siddons'—Sale of Shells—Duboscq's Optical Experiments—New Pictorial Illustrations of the War—Female Hippopotamus—The Stevenson Bequest.

Societies.—Report of the Proceedings of the Royal Institution.

Fine Arts.—Delessert's Life of Marc Antony Raimondi.

Fine-Art Gossip.—Irish National Gallery—Claudet's Photographic Gallery—Götzenberger's Frescoes—Government Grants to the Schools of Design.

Music and the Drama.—New Publications—Haymarket ('The Old Château; or, the Night of Peril') Lyceum (Mr. Charles Mathews' Benefit).

Musical and Dramatic Gossip.—Mr. Wallace's Return to Europe—Royal Academy of Music—Rotterdam Musical Festival—New Organ at the Church of St. Eustache—Marylebone Theatre—Drama in Holland.

Miscellanea.—Literary Pensions.

The Athenæum may be ordered of any Bookseller.

HOSE PIPING.—Great Reduction in Price.

WAITHMAN'S PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense Pressure, and much more than Leather, vulcanised Rubber, or any other Hose; and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback: but, owing to recent important patented Inventions, the cost of manufacturing it is now reduced at least 60 per cent., which advantage is offered to the Public.—London Agents, Burgess & Key, 103, Newgate Street, and 52, Little Britain, who on application will forward wholesale and retail prices.

THE GUTTA PERCHA COMPANY'S TUBING FOR WATERING GARDENS, with Roses and Union Joints Fitted.—27, CITY ROAD, LONDON.

TO FLORISTS AND OTHERS.

J. JONES, Iron Merchant, has always a great variety of CONICAL and SADDLE BOILERS in STOCK: also Fire and Furnace Bars, Ornamental and Plain Supply Cisterns, Double Doors and Frames, Furnace Grates, Soot Doors, Hot Water Pipes, Elbows, Tees, Syphons, Throttle Valves, Stop Cocks, Flange and Socket Elbows, &c.; also Trough Pipes. Drawings and prices of the above, on application to J. Jones, Iron Bridge Wharf, No. 6, Bankside, London, near the Southwark Iron Bridge.

STEPHENSON and PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard run, of E. T. Archer, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey.

DEANE'S WARRANTED GARDEN TOOLS.—Horticulturists, and all interested in Gardening Pursuits, are invited to examine DEANE, DRAY, and CO.'s extensive Stock of GARDENING and PRUNING IMPLEMENTS, best London-made Garden Engines and Syringes, Colebrook Dale Garden Seats and Chairs.

Averuncators
Axes
Bagging Hooks
Bills
Borders, various patterns
Botanical Boxes
Brown's Patent Fumigator
Cases of Pruning Instruments
Daisy Rakes
Dibbles
Dock Spuds
Draining Tools
Edging Irons and Shears
Flower Scissors
" Stands in Wire and Iron
Fumigators
Galvanic Borders and Plant Protectors
Garden Chairs and Seats
" Loops
" Rollers
Garden Scrapers
Gidney's Prussian Hoe
Grape Gatherers and [Scissors
Gravel Rakes and Sieves
Greenhouse Doors and Frames
Hammers
Hand-glass Frames
Hay Knives
Horticultural Hammers and Hatchets
Hoes of every pattern
Hotbed Handles
Ladies' Set of Tools
Labels, various patterns, in Zinc, Porcelain, &c.
Lines and Reels
Marking Ink
Mattocks
Menographs
Metallic Wire
Milton Hatchets
Mole Traps
Mowing Machines
Pickaxes
Potato Forks
Pruning Bills
" Knives, various
" Saws
" Scissors
" Shears
Rakes in great variety
Reaping Hooks
Scythes
Scythe Stones
Shears, various
Sickles
Sickle Saws
Spades and Shovels
Spuds
Switch Hooks
Thistle Hooks
Transplanting Tools
Trowels
Turfing Irons
Wall Nails
Watering Pots
Weed Hooks
Wheelbarrows
Youths' Set of Tools

DEANE, DRAY, and CO. are sole Agents for LINGHAM'S PERMANENT LABELS, samples of which, with their Illustrated List of Horticultural Tools, can be sent, post paid, to any part of the United Kingdom. Also wholesale and retail Agents for SAYNOR'S celebrated PRUNING KNIVES, used exclusively by the first Gardeners in the United Kingdom.

DEANE, DRAY and CO. (Opening to the Monument), London Bridge. Established A.D. 1700.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the nobility, gentry, and clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out-door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice.

Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to Walter Carson & Son, 9, Great Winchester Street, Old Broad Street, Royal Exchange, London. No Agents. All orders are particularly requested to be sent direct.

Just published, the Second Edition, with Additions, price 5s. 6d. cloth,

ORNAMENTAL AND DOMESTIC POULTRY: THEIR HISTORY AND MANAGEMENT.

By the Rev. EDMUND SAUL DIXON, M.A., Rector of Intwood with Keswick.

THE BIRDS TREATED OF ARE—

Domestic Fowl in general
The Guinea Fowl
The Spanish Fowl
The Speckled Dorkings
The Cochin China Fowl
The Malay Fowl
The Pheasant Malay Fowl
The Game Fowl
The Mute Swan
The Canada Goose
The Egyptian or Cape Goose
The Musk Duck
The Grey China Goose
The White Fronted or Laughing Goose
The Wigeon
The Teal, and its congeners
The White China Goose
The Tame Duck
The Domestic Goose
The Bernicle Goose
The Brent Goose
The Turkey
The Pea Fowl
The Golden and Silver Hamburgh Fowls
The Cuckoo Fowl
The Blue Dun Fowl
The Lark-crested Fowl
The Poland Fowl
Bantam Fowls
The Rumpless Fowl
The Silk and Negro Fowls
The Frizzled or Friesland Fowls

"It will be found a useful and intelligent guide to the poultry-keeper; while the lively and often amusing manner in which it is written, gives it a claim upon the attention of the general reader."—*Midland Counties Herald.*

"This book is the best and most modern authority that can be consulted on the general management of poultry."—*Stirling Observer.*

Published by JAMES MATTHEWS, at the Office of the Gardeners' Chronicle and Agricultural Gazette, 5, Upper Wellington Street, Covent Garden; and may be ordered of any Bookseller.

On Monday, the 7th of August, will be published, carefully revised and wholly reprinted, in One Volume, price 5s.,

HARD TIMES.
BY CHARLES DICKENS.

BRADBURY AND EVANS, 11, BOUVERIE STREET.

On the 16th of August will be published, price 5s. 6d.,

THE NINTH VOLUME OF HOUSEHOLD WORDS.
Conducted by CHARLES DICKENS.
CONTAINING "HARD TIMES" COMPLETE.

OFFICE, 16, WELLINGTON STREET NORTH, STRAND; and Sold by all Booksellers and Newsvenders.

Printed by William Bradbury, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and Frederick Mullett Evans, of No. 7, Victoria Street, in the Parish of St. Margaret and St. John, Westminster, both in the County of Middlesex, Printers, at their Office in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be Addressed to the Editor.—Saturday, August 5, 1854.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley

No. 32.—1854.] SATURDAY, AUGUST 12. [PRICE 6*d*.

INDEX.

Achimenes, culture of .... 517 *a*
Agri Imp. Society's show .... 523 *c*
Aphides, to kill on bedding plants .... 517 *b*
Calendar, horticultural........ 520 *a*
— agricultural .... 525 *c*
Clerodendron Bungei .... 518 *a*
Eggs, carriage of.......... 525 *b*
Ergot, sphæria from .... 515 *c*
Euphorbias, out-door.......... 518 *a*
Farming, steam .... 522 *a*
— Lois Weedon .... 521 *b*
Fish refuse .... 523 *b*
Flax Society .... 525 *b*
Fuchsia, culture of .... 519 *c*
Fungi, food of .... 515 *a*
Guano, fraudulent .... 523 *b*
Highland Soc. meeting at Berwick .... 525 *a*
Holstein, crops in .... 523 *c*
Labourers, agri. .... 525 *c*
Leaves, skeleton .... 520 *c*
Lois Weedon farming .... 521 *b*
Manure, fish .... 523 *b*
Melbourne (N. S. Wales), floral exhibition at .... 519 *a*
Nutmeg, California .... 519 *a*
Orchids, specimen .... 518 *a*
Paris exhibition, agri. produce for.......... 521 *a*
Pathology, vegetable .... 516 *a*
Pears, new .... 517 *b*
Pear cultivation .... 516 *b*
Pig, the .... 523 *a*
Plants, new.......... 519 *a*
— to kill aphides on bedded 517 *b*
Potato disease .... 517 *c*
Poultry, Dorking.......... 522 *c*
Rats, to kill .... 520 *c*
Siluria, Sir R. I. Murchison on, rev. .... 518 *c*
Sphæria from ergot .... 515 *c*
Sports, Wheat .... 515 *c*
Standish and Noble's nursery 519 *b*
Steam cultivation .... 522 *a*
Temperature, influence of spots on the solar disc on.......... 517 *c*
Timber, to keep fungi off...... 515 *a*
— preservation of .... 515 *a*
Torreya myriatica .... 519 *a*
Vegetable pathology .... 516 *a*
Verbenas, pot culture of ...... 519 *c*
Wall, damp, limestone, how caused .... 518 *a*
Wheat sports .... 515 *c*
Wheat rust .... 521 *b*
Wire, galvanised .... 517 *c*
Wood, to keep fungi off .... 515 *a*
— preservation of.......... 515 *a*
Yorkshire Agri. Society ...... 524 *a*

A GRAND EXHIBITION OF HOLLYHOCKS, Open to the United Kingdom, will be held at the ROYAL SURREY ZOOLOGICAL GARDENS, on TUESDAY, August 22. A Subscription is now open for the purpose of raising a fund of sufficient magnitude to distribute Prizes to Nurserymen and Amateur Growers worthy the merits of this noble and popular flower. It is intended to offer a Silver Cup, value 5*l*. 5*s*., to each class for spikes in flower, with valuable descending Prizes of Gold and Silver Medals. Cut Blooms also will receive their due share of attention. In addition to the above, Gold and Silver Medals will be awarded for Miscellaneous Collections of Stove and Greenhouse Plants, Specimen Plants, Dahlias, Roses, &c.

COMMITTEE.—Messrs. W. Barnes, Peckham; J. W. Bircham, Bungay; W. Bragg, Slough; W. Chater, Saffron Walden; W. Paul, Cheshunt; A. Parsons, Ponder's End; Roake, Clewer; and C. Turner, Slough, by whom subscriptions will be received, also by the Secretary. Lists of Prizes, with Rules of the Exhibition, may be obtained of the Secretary, J. T. NEVILLE, Ebenezer House, Peckham.

CHICHESTER HORTICULTURAL SOCIETY.—The Autumn Exhibition will be held on THURSDAY, August 31, when, in addition to the usual Premiums, Prizes of 3*l*., 2*l*., and 1*l*., Open to all England, are offered for Hollyhocks, 12 varieties, in spikes. Entrance, 10*s*.

HENRY SILVERLOCK, Jun., Secretary.

BRIGHTON AND SUSSEX FLORICULTURAL AND HORTICULTURAL SOCIETY.—The annual Autumn Exhibition, to be held at the ROYAL PAVILION, Brighton, on WEDNESDAY and THURSDAY, Sept. 13 and 14.

President.

HIS GRACE THE DUKE OF DEVONSHIRE.

Vice-Presidents.

His Grace the Duke of Richmond, Lord Lieut. of county.	Admiral Sir G. B. Pechell, Bart., M.P.
His Grace the Duke of Norfolk, E.M.	Lord Alfred Hervey, M.P.
The Most Noble the Marquess of Bristol.	The Hon. Hanbury Tracy.
The Right Hon. the Earl of Chichester.	The Hon. A. Macdonald.
	The Baron de Goldsmid.
	Rear Admiral Sir G. Westphall, [R.N. &c., &c., &c.

Upwards of 270*l*. are offered as Prizes (including the RAILWAY CUP, value 10*l*., offered for the best 24 dissimilar Dahlia Blooms), schedules of which can be obtained of the Secretary, among which will be found the following, viz.:—Orchids, 8 vars., 8*l*., 5*l*., 3*l*.; Stove and Greenhouse, 8 vars., 8*l*., 5*l*., 3*l*.; Device—Cut Flowers, 5*l*., first prize; Collection of 8 Dishes Fruit, 7*l*., 4*l*., 3*l*., 2*l*.

The Band of the Coldstream Guards (by permission of Col. the Hon. A. Upton), will attend each day, conducted by Mr. Godfrey; also the Military Band from the Garrison, under the direction of Herr Daverow. The entire suite of Rooms and eastern lawn will be thrown open for the occasion.

Through the liberality of the Directors of the London, Brighton, and South Coast Railway, the Committee have the pleasure to announce to the Exhibitors that all Plants, &c., for Exhibition, will be conveyed to Brighton from all stations, and back whence they came, Free of Charge.

General Superintendent of the Exhibition, Mr. E. Spary

EDWARD CARPENTER, Secretary.

Brighton, Aug. 12, 1854.

N.B. All communications to be made to the Secretary. Address, 45, Lavender Street.

SALISBURY GRAND ANNUAL DAHLIA EXHIBITION, open to all England, will take place at Milton Park, on Thursday, the 31st August, 1854, when Silver Cups and Plate will be awarded as under.

FIRST CLASS.—Amateurs, 24 blooms: Prizes, 7*l*. 7*s*.; 5*l*. 5*s*.; 3*l*. 3*s*.; 2*l*. 2*s*.; 1*l*. 1*s*.; 10*s*.

SECOND CLASS.—Amateurs, 12 Blooms: Prizes, 5*l*. 5*s*.; 3*l*. 3*s*.; 2*l*. 2*s*.; 1*l*. 1*s*.; 15*s*.; 10*s*.

THIRD CLASS.—Amateurs, 12 blooms, Fancy Flowers: 2*l*. 10*s*.; 1*l*. 10*s*.; 1*l*.; 10*s*.

FIFTH CLASS.—Seedlings, 1853, 3 blooms: Certificates.

SIXTH CLASS.—Seedlings, 1854, single bloom.

RULES AND REGULATIONS.—Flowers to be ready for the umpires as soon as possible after the first train from London. The flowers to be shown in the grower's own stands, which must be the same as the Metropolitan Society's. All entries to be made by the 28th of August. No entrance allowed after the 28th. Entrance for First, Second, and Third Class, 10*s*. each; Fourth, Fifth, and Sixth, 2*s*. 6*d*. No competitor to show unless he sends a letter containing a Post-office order, to the amount of his entries, to the Secretary, which letter shall be produced, if required. No growers that have sold green plants of Dahlias, whether Seedlings or otherwise, will be eligible to show in Classes One, Two, or Three. Prizes will only be given to two-thirds of the entries in all classes. All communications to be directed, post paid, to JOHN KEYNES, Salisbury, Honorary Secretary.

N.B.—No Prizes offered to Nurserymen.

JUST HARVESTED.

SUTTON'S EARLY SIX WEEKS, THE QUICKEST TURNIP KNOWN, *and the best for latest sowing.*
New Seed, 1*s*. 3*d*. per pound, or 7*s*. per gallon.

GRASS SEEDS.

SUTTON AND SONS *recommend the sowing of* GRASS SEEDS *during the month of August for permanent pasture, and are now prepared to supply excellent fresh Seeds for the purpose.*

Also New Italian Rye Grass and Trifolium incarnatum, at moderate prices.

JOHN SUTTON & SONS, Seed Growers, Reading.

BULBS FOR EARLY BLOOMING.

B. PAGE AND CO. beg to offer FINE FLOWERING ROOTS.

DOUBLE ROMAN NARCISSUS	...	4*s*. per dozen.
PAPER WHITE DO.	...	4*s*. „
LARGEST DOUBLE JONQUILS	...	2*s*. 6*d*. „

Their first importation having arrived.

Oxford Street Seed Stores, Southampton.

New Seed, OWN GROWTH, CHIVAS'S ORANGE JELLY TURNIP, 1*s*. 9*d*. per lb., large quantities cheaper.

CHOICE FLOWER SEEDS, FOR PRESENT SOWING.

PANSY, saved from 100 of the best vars., by name,	2*s*. 6*d*. per pkt.
POLYANTHUS, do. 50 do. „	2*s*. 6*d*. „
GLOXINIA, from 24 fine varieties, „	2*s*. 6*d*. „
CALCEOLARIA, from superb spotted prize vars., by name	2*s*. 6*d*. „
DAISY, do. 50 of the new Belgian do.	1*s*. 6*d*. „
ANTIRRHINUM, do. 20 best named varieties ...	1*s*. 0*d*. „
ANEMONE, from the most showy and brilliant kinds,	1*s*. „

30 packets of Choice Flower Seeds per post free for 5*s*.

The above, per post, free—Postage Stamps received in payment.

YOUELL AND CO., Royal Nursery, Great Yarmouth.

LISIANTHUS RUSSELLIANUS.

J. AND J. FRASER beg to offer the above, in strong and healthy plants, such as will make large specimens for flowering next season, at 2*s*. 6*d*. each.

Lea Bridge Road, Essex, August 12.

SEEDS OF CALCEOLARIA AND CINERARIA.

E. G. HENDERSON AND SON, of the Wellington Nursery, St. John's Wood, London, are now prepared to forward, by post, the new Seed saved this season from their unrivalled collection, in packets at 2*s*. 6*d*. and 5*s*. each.

The CALCEOLARIA, first quality	... ...	5*s*. 0*d*.
„ second „	... ...	2 6

QUALITY, and not QUANTITY, forward[illegible] the above prices.

CHRYSANTHEMUM "[illegible] HENDERSON,"
7*s*. 6*d*. each, or f[illegible] for 21*s*.
HELIOTROPIUM, "BEAUTY OF THE BOUDOIR,"
5*s*. each, or six Plants for 21*s*.

The above Plants are now ready for distribution; they are both the finest in their class, and possess very useful qualities. The descriptions of them, and the following, can be seen in the Catalogue of MESSRS. E. G. HENDERSON AND SON, Wellington Nursery, St. John's Wood, London, which will be forwarded post free, on application.

The new French Spotted Geraniums, 5*s*. and 7*s*. 6*d*. each, according to size. The five new bedding Calceolarias, 31*s*. 6*d*.

FERNS AND LYCOPODIUMS.

E. COOLING begs to offer the following, in good Plants:—

12 choice Ferns and Lycopodiums, suitable for a Wardian case, Gold Fern included ...	15*s*. and 20*s*.
12 choice Indian Azaleas, to name	12*s*. and 18*s*.
6 finest new Verbenas	6*s*. and 9*s*.

The Nurseries, Derby.—August 12

NEW FUCHSIAS, VERBENAS, AND PETUNIAS OF 1854 AT REDUCED PRICES, with other NEW and SELECT PLANTS.

For BASS AND BROWN'S Advertised Lists of the above, see *Gardeners' Chronicle* of July 22 and 29, and August 5.

SUPERB NEW CHRYSANTHEMUMS.

12 best new Pompone varieties of last season	12*s*.
10 best new large flowering do. do.	10*s*.
60 splendid varieties of Pompone and large flowers, including new, 40*s*., or, per dozen	9*s*.

These are all fine and strong for flowering.

Catalogues free for three penny stamps. Post-office orders payable to BASS & BROWN, or to STEPHEN BROWN, Post Office, Sudbury, Suffolk.

BASS AND BROWN are now saving several of their choice Seeds, and can strongly recommend the following, which have been selected with their usual care from their superb collection:—

CALCEOLARIA, very choice, 1*s*.; extra superb ...	2*s*.	6*d*.
CINERARIA, very choice, 1*s*.; extra new and choice	2	6
FUCHSIAS, from new and choice	1	0
GERANIUM, very choice, 1*s*.; extra new and choice	2	6
„ from finest fancy varieties	1	6
GLOXINIA, fine, 6*d*. extra from new and choice ...	2	6
ANTIRRHINUM, choice, 6*d*. extra from superb flowers	1	0

A List of Choice Seeds selected for Autumn sowing may be had free by post on application.

Post-office orders to be made payable to BASS & BROWN, or STEPHEN BROWN. Penny stamps received for small amounts.

Seed and Horticultural Establishment, Sudbury, Suffolk.

CUTHILL'S EARLY BLACK PRINCE and LATE PRINCE OF WALES STRAWBERRIES.—Very strong rooted plants will be ready August 28; the Black Prince 5*s*. per 100, the Prince of Wales 10*s*. per 100. The two sorts lasted in successive bearing this year for 75 days, in the open ground here. The Prince of Wales is a handsome and good flavoured dessert fruit, and the best late preserver; hundreds of ladies round here have proved it for these last three years.

J. C.'s Pamphlet on the Potato Culture, containing the best and only way of growing early and large crops, and avoiding the disease. It also contains 20 more articles upon the Strawberry, Rhubarb Wine, &c. Price 2*s*., or by post 2*s*. 4*d*. Post-office orders on Camberwell Green.—JAMES CUTHILL, Camberwell.

PRIME DRUMHEAD PLANTS.

THOMAS WELLAND, Surrey Gardens, Godalming, offers the above plants at 3*s*. per 1000, or 8000 for 1*l*., packed and delivered at Godalming Station.

CALCEOLARIA SEED.

MR. HENRY MAJOR, Knowsthorpe, near Leeds, begs to announce that his new CALCEOLARIA SEED of this season is now matured, and may be had in packets at 2*s*. 6*d*. each, or 3 packets for 5*s*., post-free. The Seed has been produced from rich and beautiful varieties, for which his collection stands unrivalled, and therefore Seedlings possessing good and beautiful properties may reasonably be expected. The present, up to the end of this month, is a proper time to sow for insuring an early spring bloom. Postage stamps are respectfully requested in payment of the Seeds.

CHOICE SEEDS.—Splendid mixed Sweet William, Antirrhinum, Primula sinensis fimbriata, Calceolaria, and Cineraria, Chater's Hollyhock, 1*s*. and 2*s*. 6*d*. per packet. Can be strongly recommended; saved only from the best flowers. Catalogues free by post.

DAWE, COTTRELL, & BENHAM (successors to F. Warner), Seedsmen, 86, Moorgate Street, and 3, Laurence Pountney Lane, City London.

Agents for Butcher's Barbarossa Vines, M'Adam's Anti-Grape Blight Composition, and Cole's Concentrated Animal Manure.

WILLIAM IVERY begs to inform his friends and the public that he is now prepared to send out his New GERANIUM FAVOURITE, the most beautiful variegated variety yet out. A great improvement on Attraction. Truss large, brilliant scarlet, free grower; splendid for bedding purposes. Price 7*s*. 6*d*.

GERANIUM MASTERPIECE (Ivery's). A beautiful scarlet of immense truss; foliage truly beautiful, the horse-shoe far surpassing Cerese Unique in variety of colours. Price 5*s*.

CINERARIA, MRS. TRUELOVE, figured in Turner's "Florist," May 1854; this variety has gained certificates at the National and other Societies: colour white ground tipped with rich plum, fine shape and splendid habit, 7*s*. 6*d*.

W. I. has now ready strong flowering plants of all the leading Liliputian and large flowering Chrysanthemums, from 9*s*. to 12*s*. per dozen. Autumn Catalogues can now be had on application, which contain a select list of Geraniums, Fuchsias, Cinerarias, Azaleas, Winter Blooming Carnations, Antirrhinums, Phloxes, Chrysanthemums, hardy Herbaceous Plants, Dwarf Roses in pots, Miscellaneous Plants, &c. N.B. The trade supplied with fine Mushroom Spawn.—Hanover Nursery, Peckham, London.

PATTERSON'S SCARLET NONPAREIL STRAWBERRY

JAMES VEITCH, Jun., begs to inform the Public that he is now prepared to send out good well rooted Plants of the above-named fine Strawberry, which was exhibited at Chiswick, on Saturday, June 3d, and received the Silver Knightian Medal. It was also submitted to Dr. Lindley, Mr. Marnock, and Mr. Thompson, all of whom reported most favourably of its merits. The terms are—for 100 plants, 3*l*.; 50 ditto, 2*l*.; 12 ditto, 12*s*. The stock is limited, and orders will be executed strictly in the rotation in which they are received.

Exotic Nursery, Chelsea, Aug. 12, 1854.

STRAWBERRIES.

WILLIAM NICHOLSON is now sending out strong, well-rooted plants of his four new and distinct STRAWBERRIES, viz., AJAX, a very fine large dessert fruit, very beautiful, solid, and juicy. RUBY, do., a great bearer, and forces well. CAPTAIN COOK, market fruit, large, and a great bearer. FILLBASKET, do. 15*s*. per 100, or 25 each of any two sorts for 10*s*., box included. Most of the best old and new sorts can be supplied on reasonable terms. See advertisement July 15. Post-office orders payable at Yarm, Yorkshire, or a cash remittance required with the order.

Egglescliffe, near Yarm, August 12.

THOMAS BEACH, the well-known Strawberry Grower, begs to inform the public that he has now ready a large stock of fine strong Plants of his true British Queen, the same he beat the whole world with at the Crystal Palace, many of them weighing from two to three oz. each, likewise the same he gained the Knightian Medals at Chiswick, and many other places; that he has gained the head prize, and surprised the world, both in flavour and weight. Fine strong Plants sent to any part of the world at 5*s*. per 100, box included. Post-office Orders on Hounslow, to Mr. THOS. BEACH, Strawberry Grounds Worton, Isleworth, Middlesex.—August 12.

THE BEST PLANT OF THE SEASON.
"BEGONIA PRESTONIENSIS SUPERBA."

W. J. EPPS has much pleasure in stating that he has purchased this splendid Begonia raised by Mr Frost, Gardener to E. L. Betts, Esq., Preston Hall: the flowers are of much brighter colour than Prestoniensis, and the centre is nearly filled with stamens and petals, resembling a double blossom with a golden tinge, exhibiting a charming contrast The flowers are delightfully fragrant as a Tea scented Rose. Habit—dwarf and bushy: the flowers are thrown well above the foliage, in large trusses, and altogether one of the best plants yet offered. It received the highest award in June, at the Royal Botanic Show, Regent's Park, as a new plant; also at Maidstone and Ashford. Plants in October, 10*s*. 6*d*. each; one given where three or more are taken.—Bower Nurseries, Maidstone, Aug. 12

ORANGE AND SHADDOCK TREES.

TO BE SOLD, a bargain, within five miles of the Reading Station of the Great Western and eight miles of the Winchfield station of the South-Western Railways, some fine large specimens of the above.—Apply to JOHN SUTTON and SONS, Reading, Berks.

SEED POTATOES.

TO BE SOLD, from 10 to 12 acres of PRINCE REGENTS, and 6 or 7 acres (imperial) of ORKNEY REDS. The above are perfectly free from all taint or disease, in fine condition for seed, and being grown on Mossy land, and chiefly without farm manure, will be valuable as seed. They will be lifted and carted to the nearest station on the Caledonian Railway free of expense. Carriage from thence to be paid by the purchaser.—Apply, stating offers per ton, to Mr. JAMES CLARK, Marchbank Wood, Moffat. N.B. Samples will be forwarded if desired.—August 12.

THE
NEW RHODODENDRONS OF ASSAM AND BOOTAN.
COLLECTED BY THOMAS J. BOOTH, ESQ.,

And described in the "Journal of Botany," by his Uncle, Thomas Nuttal, Esq., *of Rainhill, the well-known Botanist and Traveller.*

E. G. HENDERSON & SON

HAVE much pleasure in announcing that they have for Sale these, the most remarkable new species of RHODODENDRONS ever introduced into the country, many of which surpass those from Sikkim, discovered by Dr. Hooker. Amongst these brilliant discoveries from the Bootan Alps are the most wonderful-sized flowers, delicious fragrance, and distinct colours of any that are known to exist in this the most gorgeous tribe of plants; and being combined with magnificent foliage, and distinct habit of growth, will render them indispensable, and a great acquisition both for the garden and conservatory.

The entire Stock of all these extraordinary species now growing (June 16, 1854) in the gardens at Rainhill have been purchased by them. The plants are fine, healthy, and robust. Many have been planted out in the open ground, and have proved quite hardy, with the exception of one or two slightly injured by late spring frosts.

They are now taking orders for six of the most distinct species, which will be dispatched in October. Full descriptions and prices may be seen on referring to the *Gardeners' Chronicle* of July 1, or in their

NEW CATALOGUE FOR 1854, NOW PUBLISHED,

and which will be forwarded post free on application.

Wellington Nursery, St. John's Wood, August 12.

SPLENDID
CALCEOLARIA, CINERARIA, & SWEET WILLIAM SEED.

WILLIAM BARNES respectfully begs to inform his friends and the public generally, that he has now ready to send out in packets, at 2*s.* 6*d.* each, seed of his unrivalled Herbaceous Calceolarias, which has given so much satisfaction for two years; the varieties have been selected with the greatest care, and none but the finest colours and best shaped flowers have been retained and carefully hybridised.

W. B. has for two years paid great attention to the improvement of the SHRUBBY BEDDING CALCEOLARIA, having purchased all the best kinds from the most eminent growers, and selected from them while in bloom the best shapes, finest colours, and most perfect shrubs; by careful hybridising he has succeeded in raising some first-rate varieties, and is now enabled to offer a few packets of fine new seed at 5*s.* per packet: thus W. B. feels assured will give as much satisfaction as his herbaceous varieties have done before, which numerous letters he has received from various parts of the United Kingdom will testify.

CINERARIA SEED, saved from none but the very best and newest varieties in cultivation, at 2*s.* 6*d.* per packet.

The SWEET WILLIAMS have been grown in his Nursery Grounds for two successive years, and have caused universal admiration from all those who have seen them in bloom; nothing can be more beautiful for either clumps or borders, and they retain their great beauty for a very long time. Packets of fine seed at 1*s.* 6*d.* each. A remittance is expected from unknown correspondents.—Camden Nursery, Camberwell, London.

WILLIAM BARNES begs to call the attention of his friends and the public generally to his general stock, which will be found to contain the greater part of the very best things in cultivation.

CHINESE AZALEAS, all the best varieties that have been sent out up to the present time, great care having been taken in the growth of this beautiful family of plants, all the weak delicate growing varieties being selected and worked upon strong healthy stocks, and the plants are such as are rarely to be met with for health and vigour, and will bloom fine next season.

GERANIUMS, all the best fancies, large flowering kinds, and bedding, as well as the following variegated varieties, viz., Flower of the Day, Mountain of Light, Golden Chain, Silver Queen, Silver King, Attraction, Lady Cottenham, Brilliant, and Cupped Leaf.

Also the finest varieties of Delphiniums, French and Belgian Phloxes—many of them may now be seen in bloom.

Perpetual Blooming Carnations, fine plants that will bloom through autumn and winter in great variety.

All the new French and English Verbenas, fine strong plants.

Chrysanthemums, Pompons, and large flowering varieties; newest and best fine strong bushy plants.

Roses on own roots, comprising the newest and most approved kinds of Hybrid Perpetuals, Bourbons, Teas, Chinas, Noisettes, Hybrid Chinas, and Hybrid Bourbons. These have all been kept shifted into larger pots, and are now very fine strong healthy plants. Japan and other Liliums, of which W. B. has a very large stock, both in beds and pots.

A very fine selection of all the most approved kinds of Vines from eyes in pots, among them some extra strong plants of Black Barbarossa.

Antirrhinums, Pentstemons, Petunias, Heliotropiums, Lobelias, Fuchsias, and fine plants of Hydrangea japonica variegata.

Fine new Mushroom Spawn.

An inspection of his Stock is respectfully solicited.

N.B.—Catalogues can be had on application.

Camden Nursery, Camberwell, London, Aug. 12.

WARD'S "OMER PACHA" STRAWBERRY.

W. J. WARD (by permission of his employer, W. Stephens, Esq.,) offers to his friends and the public the above Seedling Strawberry, which has been proved to possess superior excellence. It is a large handsome fruit, intermediate between the old Carolina Pine and British Queen, partaking of the fine colour of the former, and by many considered superior in flavour to the latter; it is also remarkable for the fine buttery quality of its flesh. Great bearer; ripe as early as Keens' Seedling, affording a long succession of fine fruit. It was exhibited at the Royal Botanic Gardens, Regent's Park, on Wednesday, the 5th of July, and obtained the Bronze Medal. It has also been submitted to Mr. Marnock, Regent's Park, London; Mr. Thompson, Horticultural Society, Chiswick; and Mr. Spencer, Bowood, all of whom speak highly favourably of it. Also the following, who have pronounced it first-rate, and are open to take orders for it:—Messrs. Henderson, Pine-apple Place, London; Mr. C. Turner, Royal Nursery, Slough; Messrs. Standish and Noble, Bagshot; Mr. P. Lydiard, Fruiterer, Batheaston, Bath; Mr. W. J. Epps, Bower Nursery, Maidstone; Messrs. Sutton, Reading; Mr. W. Barnes, Camberwell; Mr. Lewis Solomon, Fruiterer, Covent Garden.

Strong well rooted plants last week in August. Terms, cash or reference.—100 plants, 3*l.*; 50 plants, 1*l.* 15*s.*; 25 ditto, 1*l.* A few strong plants in 32-sized pots, 15*s.* per dozen.

Prospect Hill, Reading, August 12.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the nobility, gentry, and clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out-door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice.

Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to Walter Carson & Son, 9, Great Winchester Street, Old Broad Street, Royal Exchange, London. No Agents. All orders are particularly requested to be sent direct.

TO FLORISTS AND OTHERS.

J. JONES, Iron Merchant, has always a great variety of CONICAL and SADDLE BOILERS in STOCK; also Fire and Furnace Bars, Ornamental and Plain Supply Cisterns, Double Doors and Frames, Furnace Grates, Soot Doors, Hot Water Pipes, Elbows, Tees, Syphons, Throttle Valves, Stop Cocks, Flange and Socket Elbows, &c.; also Trough Pipes. Drawings and prices of the above, on application to J. Jones Iron Bridge Wharf, No. 6, Bankside, London, near the Southwark Iron Bridge.

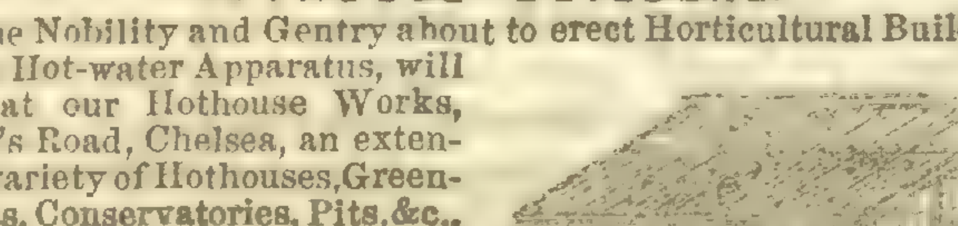
THE CONICAL HOT-WATER BOILERS, as invented by John Rogers, Esq., are only to be obtained of JOHN SHEWEN, Ironmonger, Sevenoaks, Kent.
Contracts given for Heating.

STEPHENSON and PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS. and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

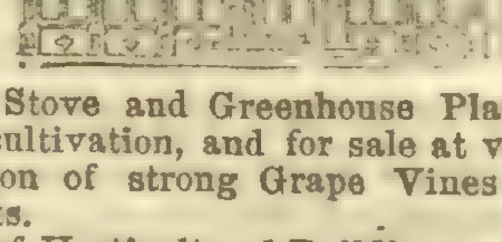
HORTICULTURE IN ALL ITS BRANCHES.

J. WEEKS & Co., King's Road, Chelsea,



HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Buildings or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.



The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

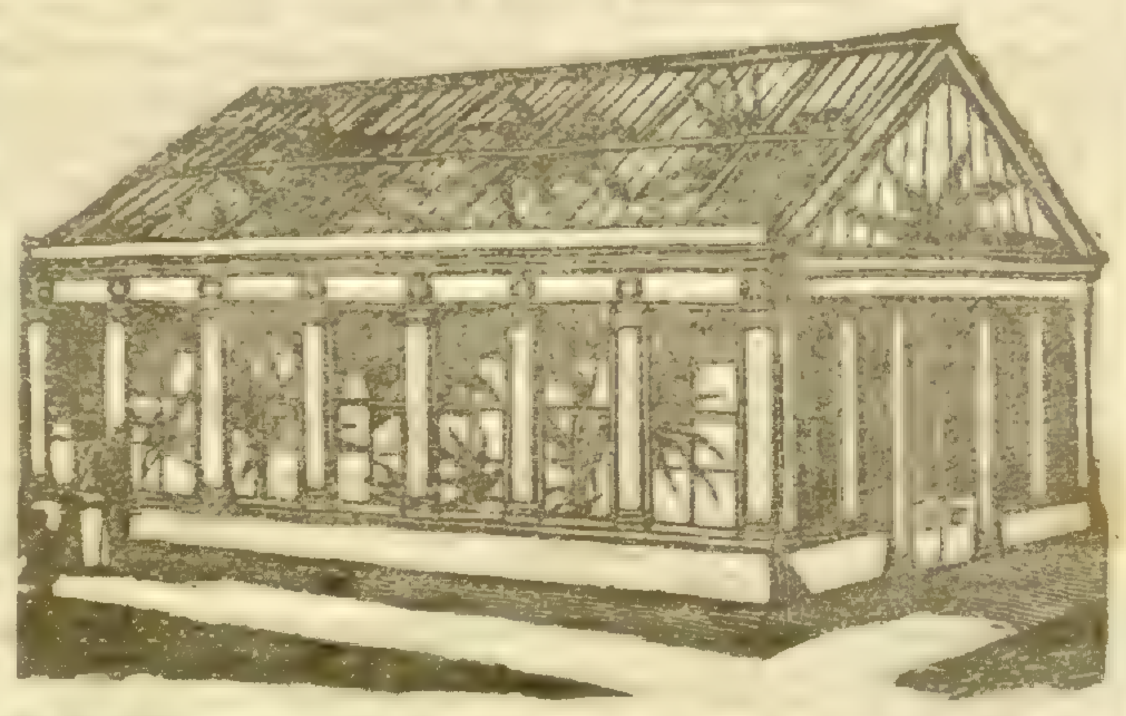
The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. Weeks & Co., King's Road, Chelsea, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

At the Lowest Prices Consistent with Good Materials and Workmanship.



GRAY and ORMSON, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

BY HER MAJESTY'S ROYAL LETTERS PATENT

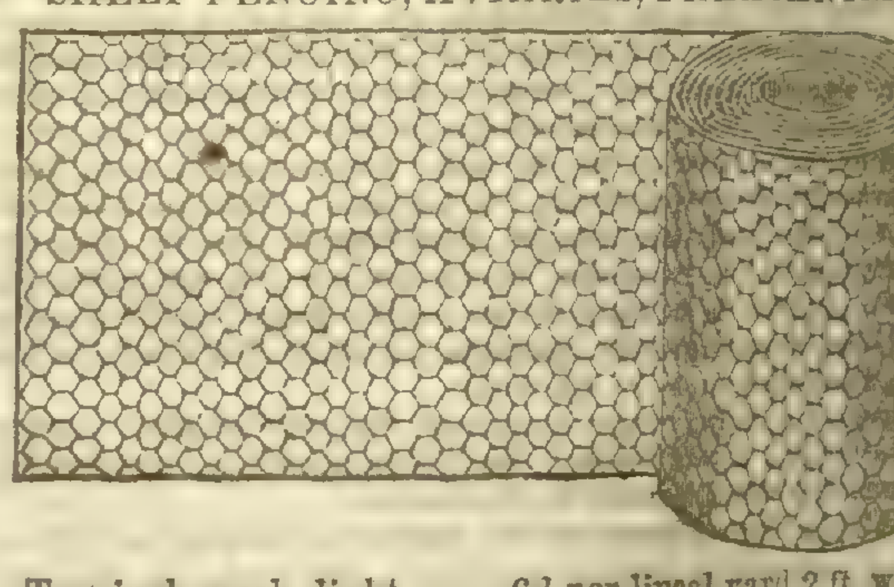
E. DENCH, PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

PATENT HOTHOUSES and excellent Glass at 1*s.* 3*d.* per foot super., which are superior to all others for price with quality, and if known would supersede all others. (See Appendix, in "Book of the Garden," by Mr. M'Intosh.) A Range of Houses and Hot Water Apparatus, was erected by E. D. for E. L. Betts, Esq., Preston Hall, Kent. Mr. J. Frost, head gardener, has shown their efficiency by their produce at the Royal Botanic Gardens, Regent's Park, June 8, and Chiswick, June 11. The editor of the *Gardeners' Chronicle* says: "Beautiful examples of Black Hamburgh, large both in bunch and berry, and as black as Sloes, were furnished by Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall, Kent; these well deserved the first prize which was awarded them."—*Gardeners' Chronicle*, June 18th, 1853. The Grapes were considered the best shown at Regent's Park during the season, and the Houses are as superior for the growth of everything else in horticulture, which has been fully proved, and they have been extensively erected for the nobility and gentry in all parts of the kingdom.

GLAZING WITHOUT PUTTY.—Iron and Glass alone. E. D. has Roofed the Public Baths and Washhouses, Endell Street, on this principle, and others are in hand. Patent Sashes for Peach Walls, Pits, &c., 8*d.* per foot super. Heating by Hot-water, on the most practical principles, and all the best materials used. Printed Price List sent on application.

THE GUTTA PERCHA COMPANY'S TUBING for WATERING GARDENS, with Roses and Union Joints Fitted.—27, CITY ROAD, LONDON.

GALVANISED WIRE NETTING for GAME and SHEEP FENCING, AVIARIES, PHEASANTRIES, &c.



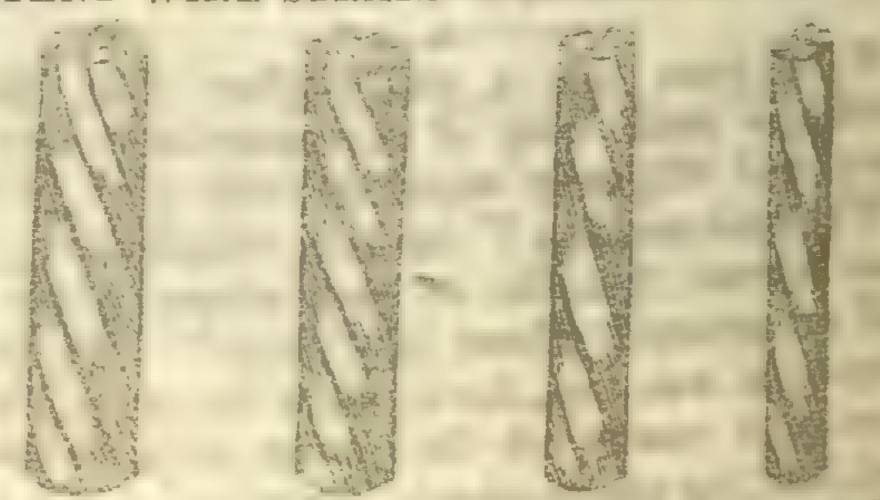
Two-inch mesh, light ... 6*d.* per lineal yard 2 ft. wide.
" " strong ... 8*d.* " "
" " extra strong 1*s.* " "

Any size or quantity made to order on the shortest notice. Special Estimates given for large quantities.

All kinds of Ornamental Wire Work made to any design.

GEORGE CASTON and CO., Wholesale Wire Netting Manufacturers, Howard's Buildings, Brick Lane, St. Luke's, London.
Orders by post punctually attended to.

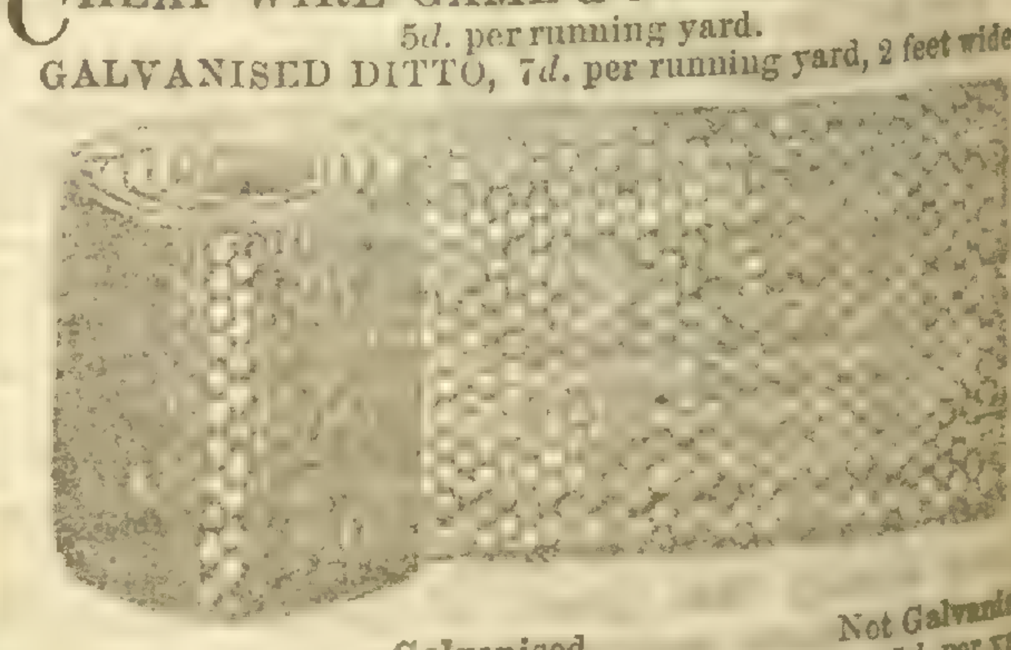
H. J. MORTON and Co., Galvanised Iron Roofing Works, 2, Basinghall Buildings, Leeds.
PATENT WIRE STRAND FENCING FOR PARKS, &c.



This Fencing is the most neat, strong, and durable for Parks and Agricultural purposes in use. It cannot be bent or put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply as above.

IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

CHEAP WIRE GAME & POULTRY NETTING, 5*d.* per running yard.
GALVANISED DITTO, 7*d.* per running yard, 2 feet wide.



		Galvanised.	Not Galvanised.
24 in. wide,	2 in. mesh,	7*d.* per yard.	5*d.* per yard
30 in. "	2 in. "	9*d.* "	6½*d.* "
36 in. "	2 in. "	10½*d.* "	7½*d.* "
48 in. "	2 in. "	1*s.* 2*d.* "	10*d.* "

Sparrow Proof Netting, Galvanised, 3*d.* per square foot, made to any size for the same proportionate price. This article was shown at the Great Exhibition, where it was so much admired for its light and durable appearance, and acknowledged to be the cheapest and best article of the kind ever offered. Extra strong Wire Sheep Netting, 3 feet high, 1*s.* 6*d.* and 2*s.* 3*d.* per yard. Also every description of Flower Trainers, Dahlia Rods, Garden Arches, Bordering, Flower Stands, Tying Wire, Trellis Work, Invisible Wire Fencing, Hurdles, and every description of Wire Work for Horticultural purposes.—Illustrated Catalogues and Patterns forwarded, post free, on application to T. H. Fox, City of London Wire Work and Iron Fence Manufactory, 44, Skinner Street, and 6 and 8, Snow Hill, London.

BECK'S NEW SEEDLING PELARGONIUMS.

AUTUMN, 1854, AND SPRING, 1855.

J. DOBSON & SON, Woodlands Nursery, Isleworth, beg to offer, with the greatest confidence, the following Eight new and beautiful Pelargoniums, the entire stock being in their possession. They have been successfully exhibited throughout the season, and cannot fail to give the greatest satisfaction. Strong healthy plants usually sent out from this Nursery will be ready by the first week in October. The usual allowance to the trade.

CONQUEROR.—A fine smooth constant flower, of first-rate quality, lower petals crimson scarlet, with rich maroon spot on the upper petals, leaving a narrow distinct margin of crimson scarlet, good shape, free bloomer, and excellent habit, quite distinct from anything yet offered, and will prove a first-rate flower for all purposes. 42s. It was exhibited at the National Floricultural Society's Meeting the 15th of June, and was awarded a First-class Certificate. A flower was also submitted to J. Riley, Esq.: the following was received as his opinion, when writing to Mr Beck:—"Dear Sir,—The blooms of your seedling Geranium, 'Conqueror,' arrived in good perfection: it is a lovely, dark-coloured variety, will require no artificial dressing, a great recommendation, and cannot fail to please any purchaser.

"Bickley, 17th June, 1854. "Yours truly, J. RILEY."

FIDELIA.—Large flower, lower petals deep rosy purple with clean white centre, upper petals purplish maroon with narrow margin of rosy purple, good shape, free bloomer, and good habit; a desirable variety for exhibition, being distinct in colour, and coming good throughout the season. 31s. 6d.

SILENUS.—Rich orange scarlet lower petals, with brownish crimson spot on the upper petals, leaving a narrow even margin of orange scarlet, lower petals clouded with brownish crimson, a very striking variety, good shape, free bloomer, and strong habit. It was awarded a Certificate of Merit at the National Floricultural Society Meeting, 15th of June. 31s. 6d.

LAURA.—A very distinct lively purplish rose, with clear white throat, with small dark spot on the upper petals, a very pleasing flower, good shape, and free bloomer, a great improvement on Rosamond, will prove a first-rate variety for exhibition; received a Certificate of Merit at the June Exhibition of the Royal Botanic Society. 31s. 6d.

DIDO.—A large flat setting flower, lower petals rosy orange, with a distinct white eye, upper petals dark maroon, leaving a narrow margin of rosy orange, good habit, and free bloomer, a distinct and striking variety. 21s.

LYDIA.—Upper petals brownish maroon, with narrow margin of rose, lower petals pale lilac, good shape, and free bloomer. 21s.

GEM OF THE WEST (FULLER).—This is unquestionably the best white variety yet raised, fine silvery white, with pure claret spot in the upper petals, good form, excellent habit, and very free bloomer. This variety will be found a very great acquisition for exhibition purposes. It has been successfully exhibited throughout the season. It received a Certificate of Merit at the National, May 4th, also at Hampton Wick, June 29th. 31s. 6d.

COMMANDER-IN-CHIEF (DOBSON).—This variety will be found very desirable on account of its blooming very late in the season, the flowers not having their true colours till July, in the style of Magnificent, but being a better shape, and the flowers much stiffer, it is an improvement on that variety. 21s.

The following were sent out last autumn, and have given very great satisfaction.—Empress, 15s., Leah, 10s. 6d., Neatness, 10s. 6d., Pictum 7s. 6d., Rebecca, 10s. 6d., Marginatum, 7s. 6d., Eliza, 7s. 6d. All the best of other raisers, 7s. 6d. and 10s. 6d. each, good strong plants. All the best Pansies in cultivation, from 9s. per dozen. Cinerarias, 9s. per dozen. Fuchsia, Duke of Wellington (Stokes), good plants in bloom, 3s. 6d. each.

Calceolaria Seed, very choice, 2s. 6d. per packet; Pansy, 1s.; Cineraria, 1s.; Antirrhinum, 6d.; Mimulus, 1s. A Catalogue of Dutch Bulbs will be ready in September.

All the New Flowers of the season at Catalogue Prices.

MAY'S PARAGON CABBAGE.—Prepaid postage. The above superb CABBAGE can still be had in 1 oz. packets, 1s. each. Sow July and August.

Also new CINERARIA SEED from the best named flowers, in packets, 2s. 6d. each.

Address, HENRY MAY, the Hope Nurseries, near Bedale, Yorks.

The Gardeners' Chronicle.

SATURDAY, AUGUST 12, 1854.

MANY years ago a philosopher was observed dividing a small heap of SAWDUST into two equal parts, and diligently WASHING one part in water. "Why wash sawdust?" said his neighbours; "why does he want it to be so very clean? He is not half so particular about his linen." We fear the imputation was true, for it must be owned that his linen much resembled the colour called Isabelline. But, then, the philosopher's linen was not a subject of experiment. In due time the washing ceased, and the clean sawdust was dried in the sun, by the side of the portion which was left unwashed. Each was then placed in a coarse unglazed earthen pan, and conveyed to a damp underground vault. There it remained, and the mystery was forgotten.

One day the experimentalist invited his friends to a little breakfast. When the guests assembled, it was remarked that two covered dishes were placed opposite himself. "My friends," said the host, "I have been lately occupied in some inquiries into the nature of food, and I am happy to say I have succeeded in making a discovery which concerns you all. I have found out what it is that devours your floors, and your beams, and all the forms which wood assumes when converted to rural purposes. There is not much to boast of in that, for many know already that plants of the Mushroom and Toadstool races accompany the decay of timber—some even suspect that they cause it. But why they accompany it, or how they cause it, is an undetermined question. That is what I have settled. I have found out the food of such fungi, and before we commence our own repast I shall have the honour to show you them at their meal. Saying this, the host raised the covers of the two dishes before him. In one was a heap of a nice clean substance, which looked as if it were a preparation of bread crumbs; the other exhibited a foul mass overrun with little Toadstools, fungus-spawn, and mouldiness. "There! gentlemen," resumed the philosopher, triumphantly, "you see your enemies at work, and you can now judge how to guard yourselves against them." The guests were puzzled; they saw no more than we have described. "You are surprised, my friends, and naturally. It is not given to all to view the operations of nature with the eyes of intelligence. Permit me to explain. A few months ago these two heaps were alike; both were sawdust, collected from that old *Saule-marceau* which, you remember, stood opposite the gate. Nothing, you know, is devoured by decay so soon as the *Saule-marceau*. Why is it devoured so soon? That was what I wanted to know. One day, while looking at a rotten stump, it occurred to me that if the Sallow is preyed upon with such avidity, it must be because it contains food of some sort suited to the nature of the bodies that consume it. Those bodies, which we call funguses, are plants. Now, plants will only feed upon what may be dissolved in water. If so, it seemed to me that if the wood was deprived of what will dissolve in water, there would be no food for the funguses to live on, then it would be necessarily deserted by them, and thus would escape decay. How to work out the idea? It is difficult to wash wood without contrivances which I do not possess, and the whole question turned upon the washing being complete. Why is the washing so difficult? because there is no introducing water into the pores of wood. But it would evidently be useless to wash only the surface of wood, because all the race of funguses sends its spawn deep into the substance. It would, however, be easy to introduce water into wood broken into small pieces—that is to say, in the state of sawdust—and the result obtained would be just as satisfactory as if the wood were solid. On this, my friends, I founded the experiment whose issue is now before you.

"Two heaps of sawdust, each exactly alike, were gathered from where the *Saule marceau* had been converted into laths. One heap was washed over and over again, till everything capable of dissolving was removed, the other heap was undisturbed. Both, having been dried, were afterwards placed in one of the dampest and closest vaults of our old neighbour the Chateau Mesnil. Here they remained till yesterday. Behold the result! The wood that was washed till nothing more could be carried off by water is still the clear bright mass it was at first; the other, unwashed, has become the prey of the foul parasites that are now at their repast, and have been so for many weeks. Observe how rank they have grown—how gorged with juice, how eager their attack! And see, too, how their victim has already crumbled and decayed within their deadly grasp! Can anything be plainer than that the funguses have found agreeable nutriment in the unwashed heap, and that the other is to them as destitute of food as the sands of the desert to the hungry Bedouin. Wash your timber then, my friends, wash it thoroughly; water purifies it from the seeds of corruption; force clean water through its pores; spare no pains to do this thoroughly, and your floors, your beams, your buildings will be exempt from all decay, except such as age is inevitably heir to. And now to our own breakfast."

It must be owned that the philosopher's guests were rather mystified by this harangue. They looked at the heaps of sawdust, they were eye-witnesses of the exactness of their host's account of them; they saw nothing but corruption in the one, and all the signs of incorruptibility in the other; and some among them, not before much given to ablution, resolved forthwith to try more zealously the purifying influence of water upon themselves. But they did not understand the advantage of rendering wood incorruptible, if it were to be first converted into dust; some thought, indeed, that it might be as well to leave funguses to do their work in course of time, as to anticipate time with the assistance of a sawyer. In short, their friend was much too clever for sublunary affairs.

Have the philosopher's views even yet been fully appreciated? We fear not. Has water been forced by exhaustion through the pores of timber till nothing is left to dissolve? Has the wood then been dried before being finally applied to building purposes? We think something of the kind was mentioned in connection with BOUCHERIE's experiments; but a lecture by Mr. BURNELL, reported in the last number of the "Mechanics' Magazine," leads us to doubt whether any serious English trials have been made. Our object seems to have been to force *into* wood matters which it is supposed will prevent decay; not to force *out* of wood the soluble azotised matters which so greatly cause decay. Could wood be purified from them, timber would be as imperishable from natural causes as starch itself; and every gardener knows how long the starch in his Potatoes struggles against the decomposing forces which so soon destroy all other parts.

This is a great question, and all the greater because, if answered in the affirmative, the preservation of timber will be effected by the cheapest of all substances.

Now that the progressive transformations which cause the production of the corn WHEAT from the grass ÆGILOPS have become familiar to the well-informed cultivator, everything which throws light upon the tendencies among cereals to change their accustomed condition acquires interest. For that reason we produce in the accompanying woodcut a representation of a monstrous Wheat, remarked last year by Professor HENSLOW in one of his village allotments. It will be seen that at each of the places marked *a a a* there is an additional body, having a very distinct reflexed position; and that at *b* a similar though different appearance occurs. Upon examining the structures carefully, we find that at *a a a* there is, in addition to the usual spikelet, a lateral one, consisting of imperfect chaffs (*glumes* and *paleæ*) containing from two to three florets. This additional spikelet occupies the same position as one of the regular lateral one-flowered spikelets of Barley. At *b* there is an additional chaff or glume, reflexed as before, but imperfect, and merely indicating a tendency in other parts of the ear to assume the peculiar condition of *a a a*.

We entertain little doubt that, in this example, we have before us the elements of that greater change which ultimately resulted in the production of Egyptian Wheat out of the common Revett or *Triticum durum*; and if this be so, we have evidence that the common red or white Wheats may also be expected to branch in the ear, and thus acquire a degree of productiveness at present unknown among them.

Now that all eyes are upon Wheat fields, we, as botanists, would direct attention to this fact, and suggest the propriety of putting aside any ears in the condition of that now represented, with a view to sowing the corn apart, for the sake of the possibility that the tendency to branch may be strengthened and perpetuated. It is entirely consistent with all we know of the nature of plants that this should occur; not, indeed, in every seedling obtained from a branching ear, but in some one of them. Such a case should again be reserved and sown apart; and if but one case of a branched ear should occur in the third generation, the habit of branching may be regarded as fixed; while the degree of it may be expected to go at least as far as in the Egyptian Wheat.

This is a point to which the attention more especially of allotment-holders should be directed. It is even worth consideration whether it might not be desirable to sharpen the perception of the allottees by offering some small rewards for each branched ear that should be brought in.

IT is now about eighteen months since M. TULASNE published his interesting paper on the production of a little purplish stipitate Sphæria from Ergot. He did not give any indications of the method which he used to effect the fructification of the mycelium, but it appears from the observations of Mr. BROOME and ourselves that nothing is more easy, and that it can be reproduced at pleasure by any gardener who has a common greenhouse at his disposal. It is necessary only to fill a well drained pot with light soil, on the top of which the Ergot should be placed with only enough mould to insure its being constantly covered. It must be occasionally watered lightly with a fine rose, and, to prevent its becoming too dry, the whole should be covered with a glass, taking care, however, that the pot should not be positively damp, or the soil mossy, from too strict an exclusion of air. Mr. BROOME's Ergot was sown in September, and produced a crop of Sphæria the following June. Our own was not sown till April 5th of the present year, and the

first Sphæria appeared on the 1st of August. The Ergot in our case was that of Wheat, but Ergot from Rye Grass was sown at the same time, and is now showing little heads, which are, however, at present in an infant state, without the slightest trace of stem. It would be well for those persons who wish to repeat the experiment, to sow the Ergot soon after it is gathered, as they will probably have a more abundant crop. They must also be prepared to exercise a little patience, as the result will not be obtained at once. Mr. BROOME remarks that the growth of the Sphæria has no analogy with that of those species which are produced on insects, as the well known New Zealand species on Hepialus virescens. Any Ergot placed in favourable circumstances would produce its Sphæria, but one could not be sure of a crop of Sphæria entomorrhiza, by sowing Lackey Caterpillars. *M. J. B.*

VEGETABLE PATHOLOGY.—No. XXXII.

142. ALL considerations of temperature, as regards plants, are greatly affected by radiation. Hence plants which flourish in a country where the sky is constantly clouded are ill prepared to sustain the effects of radiation in our northern climate, where the nocturnal sky, especially, is frequently without a cloud, and acts most powerfully in reducing temperature. This, for instance, is one of the great difficulties with which we have to contend in the cultivation of many of the beautiful Rhododendrons which clothe the Alpine steeps of Sikkim and the neighbouring provinces. Radiation, whether upwards or downwards, is easily modified by the intervention of a screen, and it is mainly on this principle that the various instruments used for shading plants in winter act, where no heat is employed, or for the protection of plants from the injurious effects of direct sunlight.

143. Plants often suffer from the convergency of the sun's heating rays by means of discs of water acting as lenses on the leaves. There is, however, reason to believe that water, under such circumstances, especially when it does not readily evaporate, exercises a peculiar chemical action, which is destructive to the subjacent tissues. The mischief done by the concentration of the sun's rays, by means of irregularities in the glass, in conservatories, on delicate leaves, is often very considerable. The tinting of the glass does not seem to be an efficient protection, as was once supposed to be a probable result of using a pale green glass. This, amongst other matters, is needful to be kept in mind in estimating the diseased appearances manifested by plants under cultivation in conservatories.

144. It was stated that each species requires a particular temperature for its normal development. Within certain limits, fruitfulness and health are maintained; but beyond these either or both are apt to fail, if not at once, most commonly after a time. Many plants, for instance, will have fruit year after year when grown in the open air, which are worthless if they have been forced once or twice to bear fruit prematurely. Too great a stress has been laid upon the vital powers, which in consequence suffer reaction, and either a state of rest is required to re-establish them in full vigour, or they are never fully recovered. When plants like Gooseberries or Apples are removed to tropical countries, the effect is soon evident in the unnatural development of foliage, twice a year or more, and the consequent gradual loss of health and fruitfulness; whereas in other cases, where the object of cultivation, as in Cabbages, is to retard the time of flowering to the latest moment, the flower stem at once runs up, and in consequence no mass of blanched nutritive leaves, or, as it is more commonly termed, no heart is produced. In almost every plant of more than annual duration a long period of rest is necessary to prevent the exhaustion of the vital powers consequent on constant excitement. This is sometimes effected by cold, sometimes by heat and attendant dryness of the atmosphere. The nocturnal depression of the thermometer answers the same end; only the rest is one of a few hours instead of as many weeks or sometimes months. The one is, as it were, the long vacation, the other the nightly cessation of labour.

145. Knight has stated that heat has a powerful effect in causing the development of male flowers in diœcious plants. We are greatly inclined, from our own observations, to doubt the correctness of this. In the growth of Melons, at least, we have found rather the contrary law to obtain, a circumstance which, in that instance, may be due to the comparatively greater number of male flowers natural to the plant under all circumstances.

146. It is very rare that plants manifest any immediately sensible degree of proper heat. Such cases are confined to the organs of impregnation, as in the notorious case of certain Arads. It is very possible that such instances, only in a less perceptible degree, may be more common than is imagined, but at present direct observations are wanted in confirmation of the supposition. It has been shown, however, by Dutrochet and others, that when plants are placed in a medium thoroughly saturated with water, so that no evaporation can take place, they do give indications of proper heat, though not so striking as that of *Colocasia odora* (see various notices in Annales des Sc. Nat. ser. 2. v. 12).

147. When the thermometer is very high, and the heat unaccompanied by moisture, the whole plant is rapidly withered, without any marked decomposition of its parts; but when the thermometer is greatly depressed, the effect, like that of boiling, is a solution of continuity in the several parts, inducing rapid decomposition on the re-elevation of the temperature. M. Dunal has published a paper on the effects of congelation on plants, which was read before the French Academy, Feb. 21, 1848, in which he states that the cell walls are not ruptured during congelation. Whether this, however, be the case or not, is of little consequence if the vitality of the inner cell wall be destroyed, as the contents of the cells will in either case be subject to mere chemical or mechanical laws, and decomposition is sure to take place after a short time. The distinction, however, is sometimes only partial, especially in trees and some of the larger herbaceous plants, and consequently even where great mischief is done, life may still be maintained in such a portion as to admit of the proper end for which the plant was intended being fulfilled, or even of the mischief being, after a time, entirely repaired, as far as outward appearances are concerned. One of the most familiar instances is that of the greater or less degree in which such plants as Broccoli are affected by frost. So long as the degree of frost is only sufficient to affect the foliage, little mischief is done; but if the stem is affected, there is always more or less damage, according to the depth to which the frost has reached. If the bark only is affected, the central bud will be supplied with nutriment by means of the still living tissues of the stem, and the head be perfected, though it will be small in size; and if the evil has extended deeper, the head will wither just before its perfection, or entirely decay. The same principle applies to forest trees, and in consequence, in those countries where trees are liable to be injured by severe frosts, the fissures and congealed patches may be traced at every period of growth, however remote, so long as the wood is not decayed, insomuch that the trees are a living calendar, indicative at once of favourable summers, by the breadth of the rings of growth, and of the severe winters, by the number of rings by which the frost-bitten patches are covered. *M. J. B.*

PEAR CULTIVATION.

IN common, I should expect, with many of your readers, I have been interested by the remarks of M. de Jonghe on our Pear culture; it is rarely we can get such from a foreigner—they are therefore of much value, stirring us up, as it were, and making us look more closely into our trees, and our management of them. I cannot help, however, regretting that M. de Jonghe has not lived in England, within thirty miles of London, these last seven years, just to have experienced the effects of severe spring frosts in a humid climate like ours, very unlike, in that respect, the climate of Brussels—he would then have been able to have said to a certainty if thinning out the branches and blossom buds of Pear trees would make the blossoms strong enough to resist eight or ten degrees of frost. Plain facts, in all gardening matters, are far better than speculations, however well based; such, I am sure, you will allow me to give, and it happens that I am able to give the result of grafting Pears on tall stocks, and also those from careful thinning of the trees and bearing spurs. About 14 years ago I purchased from a nursery, then what is called overstocked with Pear trees, about 500 tall Pear stocks, about seven years old, six feet high, and very healthy and vigorous; these were planted in rows in a good sandy loamy soil, resting for the most part on clay, and between each standard was planted a stout dwarf stock. They were suffered to grow one season, and then all grafted with the Beurré Capiaumont Pear—they grew beautifully and vigorously, and in 1844 bore quantities of fine fruit—the same in 1845; their branches were thinned out in the autumn of that year, and the trees were in the most vigorous and healthy state, but a frost destroyed all the blossom in the spring of 1846. In 1847 they gave a good crop of fine fruit; in 1848 5° of hoar frost on the 27th of April destroyed all the blossom, and from that year to the present inclusive, although the trees have been full of health and vigour, the blossom has been destroyed. It thus seems that no health, no vigour, no culture, can make the blossoms of one of our hardiest Pears (for such I have found the Beurré Capiaumont to be) withstand hoar frosts in spring; for in 1848 my trees were in the extreme of health and vigour, and yet 5° of hoar frost in cold damp weather destroyed all the fruit; and last spring (1854), the quantity of fruit perfectly set and rapidly swelling on a large number of Louise Bonne Pear trees, all in fine health and thinned and pruned every year, was quite astonishing; but 7° of frost on the 25th April totally destroyed all. How, then, can we think for a moment that care in pruning will save us from such frosts as we have had in the south of England these seven years past? I have had this season a remarkable opportunity of testing the efficacy of thinning out the blooming spurs of Pear trees, and the ability of vigorous spurs thus thinned out to resist frost; for on a trellis under glass I have some trained Pears in a fruiting state, and owing to the dry and favourable climate they ripened their wood in perfection last year, and formed vigorous fruiting spurs; the trees are six years old, so that I, in order to have a few very fine fruit, did not leave more than 10 or 12 fruiting spurs on each tree, and on a few there were only two or three; the flowers they gave were so vigorous, that those of Beurré Diel were like small Roses. The fruit was all set and swelling fast, but the frost on the 25th of April penetrated through the glass and killed them all, not leaving one perfect fruit.

Thinning the blossom-buds of Pear trees, whether on walls or cultivated as pyramids, is good culture, and cannot be too much recommended. In a pamphlet, the first edition of which was published some 15 years since, in p. 20 I have, in common with others, recommended it, so that it is no novelty; but to a certainty it will not, as asserted by M. de Jonghe, save us from the effects of our hoar frosts in spring. He is, I well know, full of enthusiasm; for on a visit he paid me lately, when, on account of the weather, I could not show him all my trees, he pointed to some trees of Beurré Capiaumont, by far too much crowded with branches, and said triumphantly, but good-naturedly, "Oh, there now, you have lost all your fruit; from such barbarous culture the trees cannot support the enormous quantity of bloom; they exhaust themselves in putting it forth, and consequently all drops off without giving any fruit." I, in this instance, humbly acknowledge the "errors of my ways" in allowing the trees to be too much crowded, but I, knowing our climate well, stoutly resisted the inference, and so I immediately took him to look at some fine healthy pyramids of Louise Bonne of Jersey Pears, 10 years old, which have been thinned and pruned, and regulated *secundum artem.* M. de J. held his peace, but allowed that our frost in spring must have been very severe. I have visited the fruit gardens of Belgium more than once or twice within these seven years, and till this year their crop of Pears has been in most places a total failure, owing to the cold springs. This season Belgium, in common with France, did not suffer to any extent from the severe frost which devastated our gardens, for in p. 453 I have, as "T. R.," mentioned the vast quantity of fruit in France; but till this year those fine and beautifully trained pyramidal trees of Monsieur Cappe, in the Jardin des Plantes, have for the most part been bare of fruit; and I observed when in the garden of M. Jamin, at Bourg la Reine, in June last, that all his well trained and beautiful pyramidal Pear trees were bare of fruit; these are all on Pear stocks, and most vigorous and healthy, and yet they could not resist the season. The situation is low and damp, which M. Jamin alleged as a reason for their shedding their fruit; I mention these facts to show that no pruning or training can resist the adverse effects of climate.

With respect to the observations of M. de Jonghe, in p. 368, I can assert, from the experience of 20 years, that no matter what climate your tree is imported from, if it is a hardy sort, and has good culture, it will grow well. I have, for the sake of experiment, imported some trees of the Glout Morceau Pear from the extreme south of France, and have planted them alongside some received from Belgium and Paris, and others of my own grafting, giving to all the same culture; if there has been any difference after three years it has been in favour of those from the south of France, and I have also proved that Pear trees on seedling stocks—which, according to M. de Jonghe, "send strong roots into the ground, are more vigorous, have more sap, and are better able to resist the drought and cold of spring"—are the worst of all trees for our gardens. In our moist, cool climate it is absolutely necessary to keep the roots of our Pear trees as near the surface of the soil as possible. In a cold deep soil, on which my experiments are tried, I find that the trees of many kinds of Pears can only be kept healthy and in a bearing state by regular biennial lifting, and bringing their roots to the surface.

In his remarks, in p. 388, on the soil and climate of Cheltenham, M. de Jonghe reminds me of too many Englishmen who when they cross the water forget to make a proper use of their eyes; and because they do not see, they fancy certain things do not exist. In the market gardeners' nurseries, and also in the private gardens of Cheltenham, are some of the most healthy and vigorous trees I have ever seen of Marie Louise, Louise Bonne, Passe Colmar, Glout Morceau, and other first-rate Pears; no insects ever trouble them, and in some of these gardens the trees are thinned out, and well regulated. From 1842 to 1846 I never saw finer specimens of fruit of Marie Louise, and others of the above sorts, than I saw at Cheltenham; but since then nearly every year has been a complete failure. In conversing with a fruit-grower there lately, he agreed with me that no trees could be more vigorous and healthy than those in the gardens at Cheltenham, the deep loamy soil of the valley of the Chelt being so highly favourable to their growth; but that he now quite despaired of making his Pear garden profitable, as the spring frost killed all, or nearly all the bloom every season. I consoled him with the idea that our cycle of frosty springs was now over, and that the old good times when he grew such fine Marie Louise Pears would return.

M. de Jonghe thinks that the hardy sorts raised by the late Van Mons and Esperen will withstand our spring frosts; many of them are excellent, and hardier than such sorts as Winter Nelis, Beurré Rance, and Beurré d'Aremberg. I have bearing trees of them all, but not one has withstood the frosts of last spring. The Pears raised by the late Mr. Knight are (although not all of first-rate quality) the hardiest of all I have ever yet seen, but even they are this season bare of fruit.

At p. 484, M. de Jonghe adverts to the trees in the neighbourhood of London being of late years unproductive. In some of the extensive Pear gardens near London, including those in the garden of the Horticultural Society, the trees are thinned out every season and carefully attended to, yet they have all failed to give fruit for several years past; even those fine healthy trees in the valley of the Thames, near Rotherhithe, have had their blossoms killed, but this year, like those on the continent, they have escaped, and are bearing

first crops. I mention this to point out to M. de Jonghe that, for the most part, it is not the lack of culture but the untoward springs that have made our trees barren. With regard to his theory of grafting on tall stocks, I have only to remark that in my plantation adverted to at the commencement of this article, those grafted on the dwarf stocks are much finer trees and more productive than those grafted on the tall stocks; to quote M. de Jonghe, this (grafting on dwarf stocks) "is an error, and contrary to all physiological principles;" yet my trees grafted as dwarfs persist in growing and bearing better than their taller brethren. The recommendation of M. de Jonghe to take grafts from healthy trees is good, and a well established truism; but here again Nature makes strange work and upsets our prettiest theories. Some years ago I found the taking of grafts from the upper part of a bearing tree recommended as the most eligible to form a healthy tree. I did so; and for the first three years I was much struck with the difference in the growth of the trees, but after the fifth year no difference either in size or productiveness of the trees was perceptible. And again, some years ago, I took grafts from a decrepid Golden Pippin tree existing in an old orchard in this parish and in the last stage of decay; the grafts the first season grew weakly, but their progeny are now as fine and as healthy trees as can be seen. I do not, as you perceive, theorise, I only give hard facts, the fruits of 30 years' hard work in frosty and foggy, but healthy and wealthy old England.

In conclusion, I only wish that I had the fine dry warm summers and the sharp dry frosty winters of Brussels in which to grow Pears for the London market. *Thos. Rivers.*

ACHIMENES.

The various attractions of this lovely tribe of plants render them especially adapted for decorative purposes. Their numerous gay and pleasing shades of colour, their variety of form and foliage, combined with a generally compact habit of growth and profusion of bloom, their easy cultivation and their flowering in a small state, are all qualities which especially recommend them to the notice of amateurs of limited means. Though essentially summer-flowering plants, the season of bloom may be prolonged for some months by a succession of younger growth; and where a sufficiency of light and heat can be obtained, some kinds, as Picta, and others of like habit, may be kept in flower during winter. Their more attractive season is, however, the summer and autumn months. During the growing period they delight in a warm, moist atmosphere, and when in bloom they may be removed to a close part of the conservatory or green-house, or, if required, to a sitting-room, but the blooms will not be so fine there as in a more genial atmosphere.

The general method of obtaining plants is from the small scaly-like tubers of the previous year's growth, which are produced in abundance. For winter-blooming it is, however, more desirable to propagate from cuttings put in in the latter part of summer. This method is also adopted for increasing new or rare kinds; but this being more the nurseryman's province than that of the amateur, I shall confine myself to general management.

The time at which the tubers may be started must depend on the season at which the plants are required in bloom; if started in February, the more dwarf-growing kinds will flower early in June, and a succession of tubers planted up to that time will ensure blooming plants to the latter part of autumn. Presuming that a supply of tubers of desirable kinds are at hand, they should be carefully shaken out of the soil they have been kept in during their season of rest, some well-drained pots or pans should be provided, and filled to within 2 inches of the top with a light rich sandy soil. On this the tubers should be placed rather thickly, and covered to the depth of an inch; they should then be moved to a close warm situation; a pit or frame, where a little bottom-heat is available for plunging the pots in, is most suitable when started early in the season. Water should be given sparingly until the plants appear above the soil, when a more liberal supply will be necessary; but in this and the later stages of growth it should be judiciously applied, as the Achimenes is very susceptible of injury by overwatering at the roots. When about 2 inches high, the plants may be potted into 6 or 7-inch pots. If it be desirable to flower them in this size, from four to six plants will be sufficient for each pot; but if larger specimens can be conveniently accommodated, a larger number, say eight to twelve plants, will be requisite. After potting, place them in a close warm house for a few days; when re-established, air may be admitted more freely on favourable occasions, and the plants kept near the glass, to prevent their becoming drawn; a slight shading will be required in bright sunny weather, and a genial moist atmosphere must be maintained.

When well-rooted and in vigorous growth the plants should receive a final shift into pots or pans; the roots delight to ramble near the surface of the soil, and for this reason I prefer pans for large specimens; these are from 12 to 16 inches wide by 6 inches deep; over the bottom I place an inch of broken potsherds, and on this a thin layer of fibrous matter to prevent the soil mixing with the drainage. If pots are used, one-third of the depth may be safely filled in the same manner. In potting, the ball of soil should be placed as entire as possible in the centre of the pot or pan, sufficiently below the top to allow a slight surfacing of mould among the plants when filling up with soil. After completing this operation, remove the plants to their former quarters, where the advantages of light and warmth can be derived; and encourage a vigorous growth by keeping up a moist atmosphere. As it becomes necessary, attention will be required to tie and otherwise neatly train the branches, so that they may present a compact mass of bloom. Some of the more erect strong-growing kinds may be stopped once or twice during their growth, to preserve a dwarf habit. When the plants are in bloom they must be carefully hardened before removal to a cooler situation, and they should at all times be guarded against currents of cold air.

After flowering, the plants should be again placed in a warm house, and water gradually withheld so as to mature the tubers. When the soil becomes quite dry and the foliage decayed, it should be cut off down to the surface of the soil, and the pots should be placed on a dry shelf secure from frost, where they may remain until required for the following season.

The soil most suitable for the growth of the Achimenes is, equal parts sandy loam, peat, and well-decomposed cow-dung, adding a liberal supply of sharp clean sand. The loam and peat should be broken into small pieces, the cow-dung sifted, and all well mixed together previous to use. *Alpha.*

DESCRIPTIONS OF NEW PEARS CULTIVATED BY M. DE LIRON D'AIROLES, AT LA CIVELIERE, NANTES.—By Himself.

(*Continued from p.* 485.)

Zephirin Gregoire.—Tree vigorous, and an abundant bearer, suitable for a pyramid or standard, or it may be planted against a wall with either an east or west aspect. It is better worked on the Quince than on the Pear stock. Fruit middle-sized or small, about 3 inches in length and 2¾ inches in diameter, obovate. Stalk nearly an inch in length, obliquely inserted; eye open, in a shallow cavity; skin smooth, green, dotted with brown, becoming yellow as the fruit ripens; flesh greenish white, fine, melting, buttery, with abundance of sugary perfumed juice. Season, November till February. Obtained by M. Grégoire, at Jodoigne, and is one of the most delicious Pears we know.

Triomphe de Jodoigne.—Tree vigorous, and may be worked either on the Quince or Pear stock, and trained as a pyramid. Fruit large, obovate, about 3½ inches in length, and as much in diameter at the widest part. Stalk short, thick, inserted in a small cavity, near which the fruit forms some strong projections. Eye large, deeply sunk in a ribbed cavity. Skin fine, shining, pale green, marbled with brown, especially near the stalk and eye; it changes to citron yellow when the fruit is mature. Flesh white, buttery, very melting, and juicy, with an agreeable perfume. Season, November and December. Obtained, in 1843, by M. Simon Bouvier, of Jodoigne, Belgium.

Beurré Comice de Toulon.—Tree vigorous and productive. We are of opinion that it is suitable for a pyramid or a wall; but we have only had an opportunity of judging from the growth of some young trees in our nursery. A superb fruit, measuring from 5 to 5½ inches in length, and 10½ inches in circumference. Oblong-obovate, terminating at the stalk with a projection, somewhat resembling a bird's head, of which the stalk, 1½ inch in length, appears like the beak. Eye open, in a deep, moderately wide cavity. Skin fine, smooth and glossy, pale yellow, sprinkled with red dots, which are deeply coloured next the sun; the shaded side and round the eye is freckled with olive brown. Flesh fine, white, melting and juicy. Season, November and December. Raised by M. Flory, a horticulturist at La Valette.

Home Correspondence.

How to destroy Aphides on Bedding Plants.—During a visit to a friend in Devonshire, about a month ago, I was much struck with the appearance of his parterres, then gay with various bedded plants in the best possible condition; all I had theretofore seen and since inspected were in a very different state, the complaint of green fly being general this season, even in grounds where pains and expense are not spared. On inquiring how this was effected, my friend informed me that he was visited like his neighbours with aphides, but that, so far as regarded low-growing plants, the remedy was speedy, certain, and simple; his plan being as follows. He has four slight wooden boxes without bottoms, about 20 inches deep, made to fit just within the edging of the divisions of his parterre, all the divisions being precisely of the same size and pattern, so as to admit of a box fitting either one. He places a box upon each, presses down the edge, and through a hole in the end introduces the spout of his fumigator, and having filled one box with smoke, plugs up the hole and proceeds to another. He uses dried stuff (!) with a mixture of tobacco, and fills four boxes with each charge of his fumigator. The smoke being injected cool, he is able to remove the box after four or five hours, taking care to admit the air gradually; and he contrives to smoke three times, or 12 divisions in the 24 hours, without causing the bloom to drop, as it would do—and does, in fact, when he uses tobacco paper, or ignites within. I saw one operation performed on the four boxes in about as many minutes, and nothing could be more effective. Now, it has occurred to me since witnessing this that we have the solution of a problem which has puzzled me and others, and that I shall be doing my fellow florists a service by making it known. Hitherto it has been easy enough to fumigate houses and frames, either with the fumigator or by burning tobacco paper and other combustibles in them; and even standard Roses I have seen fumigated by covering them with an oil-skin bag distended on a parasol; and, moreover, shrubs and plants of tall growth are often dusted with snuff, or covered with tobacco-water or other solution—all, however, tedious and uncertain operations; but to clean plants, such as Verbenas, &c., pegged to the ground, has hitherto been considered an impossibility. And why should not this plan be applied to borders of any length? It would only be necessary to mark them out in equal divisions, keeping about 3 inches of space unplanted between each division, and so covering them with boxes made to fit these divisions. Again, market gardeners might avail themselves of the process to fumigate Strawberries; and by providing a lot of old casks, with one end knocked out, and past use for other purposes, to be procured very cheap at cooperages and pitched over; or they could cover their shrub fruit, such as Gooseberries, Currants, and Raspberries, and bring it to market in such a clean state as would give it a preference, while they insured the crop, now often injured and sometimes totally destroyed by aphis and other vermin. I would suggest that, when the divisions of flower parterres are cut out in fanciful shapes the covers might be made of tin, fitted to the parterre, and riveted upon an iron frame round the bottom; these being painted occasionally would last for many years. *M. C.*

Influence of the Dark Spots on the Solar Disc on the Earth's Temperature.—The ungenial character of the present season forcibly reminds me of the speculation ventured by Sir John Herschel in 1801—that the dark spots on the solar disc had a very close connection with the temperature of the earth; and as it is possible by opening up the matter for discussion in your pages that many suggestions, valuable alike to the agriculturist and gardener, may be elicited from some of your scientific correspondents, I will offer no apology for introducing the subject. Since the time that Sir John made the observation, I believe other astronomers by repeated observations have decided that the spots move in cycles of 10 years—that they reach their maximum and sink to their minimum in periods respectively of five years, and that the mean annual temperature of the earth is highest when the spots are at their minimum, and *vice versâ*. In the last year the number of spots on the sun's disc was at its maximum, and in our climate the temperature was below the average of our seasons, affording a remarkable instance in support of the correctness of the theory. This year I think affords another instance, and if we look back to the summer of 1832, I presume that an additional proof will be found, that the increase and decrease of the mean terrestrial temperature bears a corresponding ratio to the increase and decrease of the number of solar spots. I need not again insist on the great importance of the subject to all engaged in the cultivation of the soil, nor to the great advantages that would accrue from information affording sufficient data, from which the chances of a bad or good season might be calculated. I say chances, for I believe it impossible ever to afford more than an approximation to the truth; but the slightest addition to our present stock of knowledge cannot fail, in proper hands, to be of essential service not only to those immediately connected with the soil, but to all mankind. Those, therefore, who have made the subject their study cannot do better than give mankind the results of their observations. *Beta, Union Road, Plymouth, August* 7.

Galvanised Iron Wire.—Permit me to ask your correspondent who complains of the ill effects of this wire on his trees trained against it, whether or not the trees had been previously nailed to the wall? If so, whether or not any disease of the kind was observed then? Have they been tied so tightly as to cause injury, or are the borders dry and the roots near the surface? My reason for asking these questions is that the garden walls here are all wired with galvanised iron wire, and after six years' experience with it I have not found a single branch affected by the wire. *G. L., Osmaston Manor, Derby.*

The Potato Disease, I am sorry to say, has manifested itself in South Wales in its most virulent form, and already two-thirds of the crop may be reported as gone. For more than six weeks I have noticed it, more or less, on both early and late varieties; and only on July 25 an unusually wet season was brought to a comparative close by a thunder-storm such as has not been known here for more than half a century, and the destruction of property is immense, in some places whole gardens being washed away—not the plants only, but the soil to the depth of 18 inches, and even the garden walls. The storm was accompanied, and followed for a day or two, by very close hazy weather, and then the disease spread like lightning, and what before were very fine crops now do not yield "two sound Potatoes in 20 yards." Hagues' Seedling was the first to show the disease, but being tolerably ripe it has not spread so rapidly as over later kinds. Ash-leaf Kidneys, left for seed, and planted on a newly broken piece of ground full of Couch and rough herbage, are comparatively sound, but some "Rogues" in the same rows, a late white kidney, are completely rotten. The Potatoes here are planted à la Cuthill, and are manured with soot and salt, as directed by that authority; but they are not more free from disease than others in the neighbourhood planted on the old plan. The garden here is a shallow gravelly loam

resting on a bed of rough gravel, and so open and porous as to be dry and workable directly after a heavy rain. It slopes to the west, and is just such a soil as at the present time would be selected to yield good sound Potatoes. The sets were got in in good time, in rows upwards of 3 feet apart, and the plants were as healthy and promising for a crop as could be desired; but all are gone, or nearly all. I am now hoeing the ground, and sowing Red American Stone Turnips over the rows; these will be ready to pull in October, and then perhaps the ground may yield a few sets fit for planting. This place is 11 miles from the sea in a direct line; but near the sea the disease is not nearly so bad; and it is singular that within the influence of the copper smoke near Swansea and Llanelly, the Potatoes have never suffered much from the disease, though in other respects they do not wear the most healthy aspect. Other crops in this part of the Principality are remarkably fine. Wheat, Oats, and Barley on Mr. Lawford's farms I should think could not be surpassed either in England or Scotland, and Turnips and Mangold Wurzel are very promising, considering the guano mongers had played us a trick to the tune of two-thirds the value of the quantity supplied, *which they have had to refund*. The adulteration of the guano was discovered by the water prepared from it failing to impregnate the atmosphere of the forcing-house with ammonia, as I had been accustomed to, and on examination the fraud was soon discovered. *W. P. Ayres, Tirydail, South Wales.* [Another year try Fluke Potatoes.]

Clerodendron Bungei, alias fœtidum.—Perhaps "A. H." would like to know that a plant of the above survived a sharp winter in Messrs. Standish & Noble's nursery at Bagshot, and pushed up strong shoots from the roots in the spring. This was without any protection. All above ground in the winter was destroyed. M. Ortgies, of Ghent, M. van Houtte's representative, informed me a few weeks since that it is also quite root hardy in Belgium. I think it about as hardy as a Fuchsia. In lately noticing this plant in the *Chronicle*, you said, "If we can trust a figure of it published in the 'Flore des Serres,' it must be remarkably handsome." The drawing for that plate was made by me, and if (as I am assured, for I have not seen the plate), it is a correct copy, I can vouch for its accuracy to nature in size, form, and colour. The plant from which the drawing in question was taken had four such corymbs, and was clothed with its large handsome leaves to the rim of the pots. If well grown, and it requires very liberal treatment, it is indeed very handsome; if starved, it degenerates to a scarecrow. The flowers are very sweet-scented. I should add that a plant which flowered in Belgium was quite equal to the drawing made here. *George Lovell.*

Damp of Limestone Walls, how caused.—Are they damp? It is worth inquiry whether the appearance of damp does not arise from the compactness, the close grain, of the stone, which cannot imbibe. When the atmosphere is charged with moisture and the temperature rises, the vapour which comes in contact with colder surfaces is speedily condensed, and has the appearance of exuding from walls which really reject it, whilst a more porous material rapidly takes it in. Observe the difference of a wall oil-painted and another merely coloured; the former may be seen covered with pretty globules of water when the latter has no appearance of them. So with a China plate and unglazed pan held over steam. The supposition that limestone was in itself damp cost me both trouble and cash, and I suggest the above view to your correspondent "Somerset," in the hope that it may save him both. *D. V.*

Orchids.—May the following be considered good specimens, viz., a Stanhopea insignis with 52 flowers upon it, 22 of which are in perfection to-day (Aug. 7); S. Bucephalus var. guttata (a small plant) with three spikes—the best 21 inches in length, and bearing 16 flowers—the other two having 15 each, but one of them unexpanded; Acropera Loddigesi with 20 spikes, 10 of which are in full flower, with from 15 to 27 blooms on each? *J. N. Corkhouse.* [They would appear to be *very* fine specimens.]

Euphorbias.—The following species are easily cultivable out of doors in England. Those with an asterisk attached to them are half hardy. Shrubby:—E. spinosa, ceratocarpa, mellifera, *dendroides, *fruticosa, and *Pithyusa. Herbaceous (stems annual): E. palustris, Persica, glareosa, carniolica, Gerardiana, Nicæensis, Cyparissias, and dulcis. Herbaceous (stems biennial): E. saxatilis, myrsinites, rigida, Characias, melapetala, veneta, amygdaloides, *Paralias, and portlandica. *S.*

Aquatics.—Having some aquatic plants in earthen and metal pans, I find they get covered with a sort of parasitic verdure, which I believe is a Conferva. Is there any way of getting rid of it? *A. H.* [Only by keeping the water in constant motion.]

Foreign Correspondence.

Melbourne, N. S. Wales, May 4, 1854.—The second exhibition of the season of the Victoria Horticultural Society, instituted 1849, took place in these gardens on the 28th of February, and considering the time of year, the gardens were in good condition. In the morning the weather looked unfavourable, but as the day advanced the clouds cleared off and the afternoon was agreeable. The gardens were opened at 2 o'clock, but the attendance, doubtless owing to the threatening aspect of the morning, was not so great as might have been expected. Surrounded as we are by neatly built English looking villas, together with the many British plants scattered throughout the gardens, and the numerous happy faces that met one at every turn, made us almost imagine we were in England. A military band was in attendance. About 2 o'clock his Excellency and suite paid the gardens a visit. The display of flowering plants was deficient, but fruits were plentiful.

Of plants there were examples of Juannulloa aurantiaca, Ixora crocata, Rondeletia speciosa, Torenia asiatica, Streptocarpus Rexi, Achimenes grandiflora, A. pulchella, A. floribunda, A. longiflora, Chiococca racemosa, Gesnera zebrina, G. tubiflora, Calanthe australis, Gloxinia candidissima, Vinca rosea, Passiflora elata, Salvia splendens, Lantana crocea, Begonia Evansiana, B. semperflorens, B. argyrostigma, Manettia glabra, Justicia picta, Asclepias curassavica, Plumbago Larpentæ, Gloxinia atrosanguinea, and a seedling Mimulus named Sir Charles Hotham.

Of Grapes there were the following sorts: Black Hamburgh, Black Cluster, Black Muscat, Black Damascus, Black Prince, West's St. Peter's, Muscat of Alexandria, Chasselas Musqué, Sweetwater, Muscatel, Wantage, &c. A general collection of all fruits in season consisted of Grapes, water and other Melons, Peaches, Plums, Pears, Apples, Morello Cherries, Almonds, Medlars, Filberts, &c.; dessert Apples comprised Pearmain, Red Quarrenden, Golden Reinette, Early Juneating, Balgony Pippin, Victoria, Golden and Ribstone Pippins, Braddick's Nonpareil, Brown Russet, Cornish Gilliflower, Early Margaret, Sykehouse Russet, and Scarlet Nonpareil; baking Apples were Yorkshire Greening, Kentish Fillbasket, Hawthorndean, Emperor Alexander, Keswick Codlin, Court of Wick, French Reinette, Northwood, and Beauty of Kent; among table Pears were Williams' Bonchretien, Autumn Bergamot, Summer Bonchretien, Chaumontelle, Beurré d'Aremberg, Swan's Egg, Black Achan, Gansell's Bergamot, and Colmar. Of Oranges there was a dish which the judges labelled "worthy of notice." They had been grown in the open air, at Heidelberg, a place within a few miles of Melbourne. Vegetables consisted of Cabbages, Carrots, Turnips, Parsnips, Cucumbers, Vegetable Marrows, Tomatoes, French Beans, Chillies, Rhubarb, Radish, &c.

On the 25th February, 1854, Pine-apples (imported) fetched from 1*s.* 6*d.* to 2*s.* 6*d.* per lb.; Grapes, 1*s.* 6*d.* to 2*s.* per lb.; Apples, 1*s.* to 1*s.* 6*d.* per lb.; Pears, 6*d.* per doz.; Peaches, from 3*s.* to 6*s.* per doz.; Plums, from 6*d.* to 1*s.* per doz.; Water Melon, from 1*s.* to 4*s.* each; Figs, 6*s.* per doz.; Cabbages and Cauliflowers, from 1*s.* 6*d.* to 2*s.* per head; Carrots and Turnips, 9*d.* per bundle; Onions, 8*d.* per lb.; Potatoes, 6*d.* per lb.; Cucumbers, 1*s.* 6*d.* to 2*s.* 6*d.* each; French Beans, 2*s.* per lb. Gardeners' wages per annum, with board and lodging, are from 80*l.* to 100*l.*; or 3*l.* per week, with cottage, wood, and water. General farm-servants, per annum, with rations, get from 70*l.* to 80*l.*

Owing to the extreme dryness of the season, the prospects of the gardener and farmer have been anything but favourable; no rain of any importance has fallen during the last four months. Harvesting has been completed, and the accounts from various districts state that the crops will be about one-third less in yield this year than has generally been obtained. The late crops, especially Wheat and Potatoes, have suffered severely; in some cases the latter crop is not worth lifting. During the summer, bush fires have been of common occurrence, and several stations have been swept with the devouring element, as well as fields of standing corn; and in some cases human life has fallen a sacrifice to it. The bush has been frequently on fire for miles together; the fire sweeps along with fearful rapidity, and for days the whole country is overspread with a thick misty smoke, which makes the sun appear like a ball of red fire. During summer we have found the thermometer to range between 90° and 100° in the shade, and on several occasions have observed it at 100° in the shade at 10 o'clock A.M.

The following plants were in flower around Melbourne during the month of February. Owing to the dryness of the season, there has, however, been a stinted supply of floral beauty, and what flowers were met with were, for the most part, growing by the side of Yarra lagoons and swamps. They consisted of Viola betonicæfolia, Bursaria spinosa, on the banks of the Yarra, its numerous white blossoms forcibly reminding one of our English "May;" Oxalis microphylla, Polycarpon alsinefolium, &c.; Epilobium Billardierianum, Lythrum salicaria, Loranthus sp.; this parasite is found in great abundance, hanging from the branches of the Eucalyptus and Acacia, each of which, I believe, have to bear a distinct species; Eurybiopsis Hookeri, Cotula coronopifolia, Lobelia anceps and pedunculata, Calocephalus lacteus, Goodenia ovata, Senecio odoratus, S. rupicola, Alternanthera denticulata, Damasonium australe, Ottelia ovalifolia (in the lagoons near the Yarra), Sporobolus matrella, Myoporum humile, Verbena officinalis, Mentha australis, Cynoglossum suaveolens, Erythræa australis, Solanum laciniatum or Kangaroo Apple, &c.

Of land, the large quantities which the Government has lately brought into market, coupled with the diffusive tendency of the land societies recently established in the colony, serving as a check upon the land jobber, have enabled every working man to become possessor of a building allotment or Cabbage garden, and small capitalists to become real settlers in Victoria, instead of being driven away by the enormous prices to the adjacent colonies where land is much cheaper. Formerly the greater portion of the lands sold by the Government were purchased by speculators, and who, but for the societies already mentioned, would still form an impassable barrier between the Government and the poor man. As an illustration of the successful working of one of these, I may instance that of the Victoria Land Society, which only started in August, 1853, and now numbers 642 members. It commenced operations on the 12th September, and the first purchases effected were at the Government land sales. The directors expended the sum of 7230*l.* in the purchase of town allotments at North Melbourne Coronilla, and about 30 acres of desirable suburban land at St. Kilda for building purposes, which was subsequently allotted amongst the members. The terms of this Society are 4*l.* per month on each share, until the property allotted to the shareholders be redeemed, the average value of each allotment to be about 100*l.* Thus by a system of co-operation the people are enabled to obtain the land direct from the crown at wholesale cost, instead of, as was formerly the case, obtaining it through the medium of the speculator. The amount added to the original cost of the land is stated to be about 8*l.* per cent. It is said that this society will be enabled to distribute within the first year of its existence 50,000*l.* worth of land amongst its members. *John Walters, Botanic Gardens, Melbourne.*

Reviews.

SILURIA. *The History of the Oldest Known Rocks containing Organic Remains, &c.* By Sir R. I. Murchison. Large 8vo. Murray; pp. 523, with numerous woodcuts and lithographic plates.

THIS important work is neither a revelation of the fancies of speculative progressionists, nor an argumentative treatise on things ethereal brought before mortal eyes by rapt astronomers. We have here no wordy war between Cambridge and Edinburgh settled by the intervention of geological protocols. Siluria is what Mr. Gradgrind would call a record of facts, facts, facts; it is, therefore, to visionaries as distasteful as the Geometry of Euclid, or the "Systema Naturæ" of Linnæus, or as Froissart's Chronicles. But whatever disfavour it may experience from gentlemen who would have men dream away their lives, is more than compensated for by the welcome it has received, and always must continue to receive, from the serious students of that cosmogony which is revealed to us by mighty records long buried beneath the surface of the globe, and only disentombed by modern industry.

When chaos settled into order, and the molten earth cooled down, living things first began to appear. Water teemed with elementary life; the fire-born rocks over which it rolled were worn down into sand and mud; islands appeared in a boundless ocean; land plants and animals were made to inhabit them; at vast intervals of time prodigious geological disturbances occurred; whole races of living things disappeared to be replaced by others; layer after layer of decaying organisms, crumbled rocks, or marine deposits gradually accumulated; and at last man made his appearance; since when no change in the order of things created along with him is known to have occurred.

The succession of deposits thus caused has been grouped and named by geological writers. Each group is sufficient to engage the life-time of an observer; the more recent being the most difficult to investigate, in consequence of the greater abundance of facts which they include. The most ancient are the most simple, but by far the most interesting, because it is here that we have to investigate the origin of life and those primitive forms, which have now assumed a fixed and final state. It is the primæval world that Sir Roderick Murchison has ventured to explore; and he has done so with learning and sagacity. His foundations rest on the evidence derived from organic remains; for that is certain; while all that depends upon mineralogical conditions alone sinks into comparative insignificance.

It is amusing to read the various opinions that have been held, from time to time, concerning the meaning of those fragments of living creatures which are found embedded in rocks and deposits of various kinds, and which we now comprehend under the general name of organic remains. If we remember rightly, Mathiolus, a great man in his day, gravely insisted that such fragments of animal and vegetable forms arose out of a certain *materia pinguis*, or fatty matter, set into fermentation by heat; in the same way, we presume, as Virgil's bees were engendered in the bowels of dead kine. Others substituted "plastic force" for *materia pinguis*, among whom was Dr. Plot, the well-known historian of Staffordshire. And then came Llwyd the Welshman, with his Lithophylacium, shocked at the idea of plastic force, which he regarded as atheistical, and who invented a certain subtle essence, or sperm, to which fossil remains owed their origin. This sperm of living things being carried into the air by vapours, and then deposited in fitting places, became whatever its quantity and efficiency permitted. Llwyd supposed that if the sperm was perfect whole animals or plants would be engendered in the earth—if imperfect, mere leaves would come, the teeth of fishes, or the jaws and bones of animals. Ray did not fail to expose these absurdities, but so little did he contemplate the possibility of organic remains having been buried in the rocks where they are now found, that he believed that animals at least must when young have insinuated themselves between the crevices of rocks, and so have reached their beds by subterranean ways.

We now know better, and can smile at the follies of

our ancestors. We now believe that the same races of animals and plants existed over vast spaces of the earth at the same time, and were swallowed up and exterminated by contemporaneous revolutions; so that a correspondence between the fossils of two distant geological formations affords the best evidence that such formations were coæval. Such is the ground taken by our author, and upon this recognised geological truth he has constructed his history of the primæval world. Caractacus little dreamed, when he led his Silures against the Romans, that his wild mountains would in future ages give a name to science, and that his petty province would extend its authority over all the earth. Siluria is the primitive living world; or, as Sir Roderick calls it, "the vast Necropolis of primæval life." Its history begins from the period of unfossiliferous igneous rocks, and continues till the days that succeeded the overthrow of the coal forests; a vast field for the geologist—an inexhaustible mine for the naturalist.

In space so limited as ours we can add little to what has been said. The reader will find Siluria rich beyond belief in geological facts, ably applied to geological theory; and he will gain a clear insight into the methods by which modern observers identify formations of what seem to be the most dissimilar kinds. How, for instance, it is that the mud and sand of Western Russia are determined to be contemporaneous with the hardest rocks of the Eastern Ural.

It is as well to add that although Siluria has formerly appeared in a more pretending form, the increase of knowledge has of late years been such as to render the present more convenient edition practically a new work. There is, moreover, a learned dissertation upon the gold-bearing rocks, whose riches have so suddenly dazzled the world. We recommend the learned author's opinion concerning this metal in Britain to the calm consideration of gold finders. "As no rich auriferous sand or gravel is known in any part of the British Isles, we may rest satisfied that in our own country, as in many others, the quantity of gold originally imparted to the rocks was small, and has, to a great extent, been exhausted."

New Plants.

74. Torreya myristica, *Hooker in Bot. Mag. t.* 4780; *aliàs* T. californica, *Torrey in New York Journ. Pharm.*

An excellent figure is here given of this fine evergreen coniferous tree, which has been raised by Messrs. Veitch. It is said by Mr. W. Lobb to grow 30 to 40 feet high, in the elevated regions of the Sierra Nevada of California. Its foliage resembles that of Cephalotaxus Fortuni. The seeds are as large as nutmegs, and have the same kind of alburnum (called by botanists ruminated), whence they have gained the name of nutmegs in California. We find the following account of them in the last number of the "Pharmaceutical Journal:"—"About a year ago (says Prof. Torrey) I received from the late Mr. Shelton, who had just returned from San Francisco, a specimen of what was called the California Nutmeg. I immediately considered it a species of Arnott's genus Torreya, belonging to the order Taxineæ of the great natural family of Coniferæ. It had been discovered but a year or two before Mr. Shelton left the country, and had already attracted considerable attention, not only from the beauty of the tree, but from the singular character of the fruit and kernel, the latter strongly resembling the common nutmeg. Indeed, it has been frequently stated in letters from California that the Nutmeg is a native of that country. The foliage has the form and deep rich green of the Florida species, or T. taxifolia, as well as of the Yew; but the leaves are much larger, being from 1½ inch to 2½ inches long. They spread out on two sides, and are tipped with a sharp rigid point. The fruit, as it may be popularly called, is about the size and form of a Greengage Plum, and in the dried state has a pale olive colour, but this may not be its natural tint. The outer covering is a thick, fleshy, nearly closed urceole, or dish, which completely invests the seed, and closely adheres to it, except near the summit. It is smooth and even, and soft to the touch. The seed is usually oblong, and greatly resembles a large Pecane Nut, but frequently it is more ovate. The shell is smooth, thin, and fragile. On each side, near the summit and just below the non-adhering portion of the dish, is a perforation, communicating with an interior canal, similar to what I described in T. taxifolia, and the use of which is still unknown. The kernel is conformed to the shell, and has the external and internal appearance of the Nutmeg. When cut transversely the resemblance is perfect. The seed, however, is wholly destitute of the delicate aromatic odour of the oriental spice, for it has the strong terebinthine character of the Coniferæ. Neither is the fleshy covering of any known use. It is more probable that, like the fleshy cup-a-berry of the Yew, it is of a poisonous nature. Still the discovery of this tree is interesting to the botanist and to the horticulturist. But two other species are known besides. One of them (T. nucifera Sieb. and Zucc) is a native of Japan, and the other has only been found hitherto in Middle Florida, in very confined stations. The latter is erroneously stated by Zuccarini to have a seed as large as a Walnut, by which he undoubtedly means the Juglans regia, or Madeira-nut, as it is called in the United States. As an ornamental tree, the California Nutmeg deserves to be extensively cultivated. It must be hardy, as it grows on the mountains, where the winter is very severe. The enterprising Messrs. Parsons and Co., of Flushing, sent out a person to California for the express purpose of collecting the ornamental and useful plants of that country, and among other varieties he obtained, last year, some ripe and fresh seeds of the Californian Nutmeg. These germinated freely, and, when I saw the young plants last October, they had a healthy appearance, and had attained a good size. I have lately heard, also, that Mr. Lobb, an English collector, who has been exploring California for several years past, has sent seeds of this tree to England."

Garden Memoranda.

Messrs. Standish and Noble's Nursery, Bagshot.—Few nurseries possess more interest than this, not only on account of the number of valuable new hardy and other plants which it contains, but also in consequence of a large portion of ground along the frontage having been appropriated to the purposes of a permanent winter garden, an American garden, and a little farther back towards the centre of the nursery, a Sikkim Rhododendron garden.

The winter garden consists of a series of concentric circular beds divided from each other by gravel walks edged with Cotoneaster microphylla, which, when it shall have grown a little more, and been neatly clipped, will make a most excellent edging, being when trimmed into form extremely close and compact. The whole series of beds is cut through diametrically by a main walk leading from the entrance gate to Mr. Standish's house. The centre bed contains a dark coloured Holly, with a Weeping Yew on either side of the walk, and surrounding it are beds of gold striped Hollies, dwarf growing Conifers and other plants, many of them put in temporarily until it shall have been ascertained what is most suitable for this kind of gardening. Among plants which have been tried and found to answer are Skimmia japonica, whose fine evergreen foliage and brilliant coral red berries are extremely ornamental during the whole of the winter months, and no frost has ever hurt it in the least at Bagshot. What makes this plant all the more valuable, too, is that it fruits abundantly in a very small state. The Darwin Berberry has also stood the winter well, and flowers beautifully in spring; as do likewise Erica carnea, a Daphne called Delahayana, a dwarf kind in the way of Cneorum; and Rhododendron ciliatum and glaucum. In severe springs, like that we have just passed over, however, the flowers of the two Sikkim Rhododendrons get injured, though the plants themselves are perfectly hardy. Escallonia macrantha has also been found suitable for a winter garden, flowering, as it does, beautifully, in September; and Buxus Balearica is likewise a good plant for the same purpose, producing a cheerful effect in winter, and Azalea amœna is said to blossom beautifully in spring, when its rosy purple flowers are an acquisition. The uniform appearance which this garden would present, filled entirely with dwarf shrubs, is broken and well varied by the couple of Weeping Yews in the centre, and standard Bays planted at regular distances apart, while the whole is surrounded by a closely shaven lawn, interspersed with choice upright and conical growing Conifers.

A hedge and a long range of glass-houses divide the compartment just described from the American garden, which contains beds of dwarf Rhododendrons on Grass, with Conifers and standard Rhododendrons dotted here and there among them, producing a good effect either in summer or winter. A main central walk passing through this garden and over some rustic steps, similar to those represented at page 485, between old tree roots ornamented with Ferns, leads to the Sikkim Rhododendron garden, in which are standard plants of the different varieties of these Rhododendrons, rising from among beds of Ghent Azaleas, and the finer kinds of ordinary Rhododendrons, of which there are great quantities here, which, when in blossom, must indeed be brilliant and striking. Most of the Sikkims have proved hardy here, except Edgeworthi, which has been found to be very tender. Roses in pots, young plants plunged in the ground, occupy both borders of the main walk, and intermixed with the Sikkim Rhododendrons are standards of many new and fine kinds of Roses, such as General Jacqueminot and Gloire de Dijon, &c.

Among Conifers, Cephalotaxus Fortuni has wintered unhurt, and it is reported to have done the same in other places, where even Portugal Laurels have been killed to the ground. Funereal Cypresses planted in loam have stood well; but, in the common staple of the nursery (light sandy peat), young plants of it have been sadly cut up, and in many instances killed. Except in stiff loam, Abies Webbiana also suffers much from spring frost; but in that it is said to succeed better. All Conifers here are transplanted every two or three years, in order that they may move safely when required. As an instance of the good effects of this practice, it may be mentioned that while Cryptomerias, Thujas, Arbor-vitæs, &c., which had been so treated, were transplanted this spring without ever appearing to feel the change, red Cedars, coarse rooted on account of not having been periodically transplanted, when moved at the same time have all died.

A Pæony garden is the next thing which Messrs. Standish & Noble contemplate forming. For this the ground is to be trenched 6 feet deep, it having been ascertained that Pæonies, especially tree kinds, like plenty of root room. In this prepared ground are to be planted Mr. Fortune's Moutans, of which great numbers of fine plants are now growing in "craddles" here. They have sustained no injury from frost.

Under glass we observed flowering plants of the beautiful Clematis lanuginosa and its pale variety, both of which are expected to be quite as hardy as azurea; also plants of Podocarpus chilina and nubigena, Clerodendron fœtidum, a handsome half-hardy variety from the north of China, said to be suitable for a conservatory or cool greenhouse; Embothrium lanceolatum, and other promising plants. Examples of the fine Chinese Berberries, for which this nursery is so justly celebrated, were also growing in a border in-doors, with a view to get good sized plants of them quickly for planting out. Of the effects of the winter on these and other plants here, see p. 358.

In the open border we noticed the Chusan Palm, which is perfectly hardy, and a bush of Spiræa callosa, some 4 feet high and as much through, covered all over with broad flat heads of rosy flowers. This is a species whose handsome appearance must doubtless make it a favourite with everybody.

In a large piece of ground detached from the "home" nursery, but well filled with standard Roses, Conifers, and general nursery stock, we remarked a bed of Mount Atlas Cedars, growing luxuriantly, and not at all injured by the winter, while the common Cedar of Lebanon growing by the side of it appeared to have suffered. Juniperus sphaerica has not been touched here in the least, nor has Abies Nordmanniana. In the centre of this ground is a broad walk, on either side of which has been planted specimen Conifers in pairs, which, when they shall have grown a few years more, will have a good effect. These borders are also well stocked with choice ornamental shrubs of all kinds.

FLORICULTURE.

Pot Culture of the Verbena.—As the Verbena merits a place, and most justly, among popular florists' flowers, perhaps a few hints on its cultivation in pots may be acceptable to those who have not hitherto adopted that mode of culture. I know of no plant more useful or ornamental as a pot-plant, for decorating the greenhouse during the summer season, when the proper inmates of that structure are enjoying the open air. If we take into consideration its graceful habit, the variety and brilliancy of its colours, which offer hues for every taste, and above all, the lengthened period it continues to produce its lovely blossoms, it is unrivalled and ought to be more generally grown in pots as specimens, more especially now that the numerous varieties are so much improved, both in form and colour. The present season has been productive of some gems of the first class; and if the Verbena continues to be improved as it has been during these few years past, I have no doubt that the time is not far distant when it will form one of the leading features at our floral exhibitions. I do not know if my system of propagating this favourite be new; but as it is simple, certain, and expeditious, it may be as well to state how I proceed from the commencement. I fill shallow pans (such as are used for placing under flower-pots) to within a quarter of an inch of the top with silver-sand, and pour in water sufficient just to cover the sand. I then make the cuttings in the usual way, and push them into the wet sand; put the labels to them, and place them in a hot-bed frame where the heat ranges from 65 to 70 deg., always keeping the sand wet. The advantages to be realised by propagating the Verbena in this way are, that the cuttings never require to be shaded in the brightest sunshine, consequently the young plants are not drawn up long and lanky; the cuttings never stop growing from the time they are put in until they are ready to pot off, which is in about six or seven days, when they may be drawn out of the wet sand, with a bunch of roots, without injuring a single fibre. The best time to commence operations for growing specimen Verbenas in pots is February, or as soon as vegetation commences for the season. It is desirable to pot a few of the best autumn struck plants for the sake of early bloom; but they never make such handsome specimens, nor continue so long in good health, as plants raised from cuttings in spring. As soon as the cuttings are well rooted, they should be potted into 3-inch pots, and placed in a gentle heat for a few days, until they are established in the pots; then top them, and harden them by degrees; never allow them to remain long in heat after they begin to grow, or they will form long naked stems. As soon as the pots are filled with roots, shift into 6-inch ones, and from these into 11-inch pots. During the growth of the plant, all shoots must be stopped in order to cause the plants to grow bushy; and never allow them to flower until the plant is properly formed, and has as many leading shoots as are wanted. The compost in which I grow the Verbena is, equal parts turfy loam, leaf-mould, and peat, with a little silver-sand added, to keep the soil open. I water twice a-week with liquid manure, and occasionally syringe over head with clean water to cleanse the foliage. If the saving of the seed is no object, all flowers ought to be cut off as soon as they begin to decay. I need scarcely add, that the grand secret in the successful culture of this, as well as of all plants, is efficient drainage; without this no plant will continue long in good health. If green-fly should attack your plants, fumigate with tobacco; for if the fly once gets a-head, the plants will never recover sufficiently to give satisfaction. Mildew is another enemy, which must be looked after. As soon as it is perceived, dust the plants with a little sulphur, which will stop it from doing much mischief. *Y.*

The Fuchsia.—In cultivating this useful flower, I begin by striking the cuttings about the end of this month, using silver-sand and leaf-mould for the purpose, and placing them in a close frame or pit where there is a little bottom-heat. When the sun shines, I shade for four or five hours during mid-day ; and after the cuttings have been in for three or four days, I pull off the light for ten or twelve minutes every morning, in order to allow the confined air and damp to escape. As soon as they are rooted, I pot them off into 3-inch pots, in a mixture of equal parts silver-sand and leaf-mould. I prefer that mixture for the winter potting, for, being light and porous, it allows the water to pass off quickly. When potted off, they are replaced in the frame or pit ; and as soon as they become established, I remove them to a warm and shady part of the greenhouse ; after hardening there for a week or two, they are moved to a more airy part of the house, where they remain until January, when they receive a little artificial heat, say from 40° to 50° during day, and from 40° to 45° during night. When the roots make a fresh start, I shift them, some into 5-inch pots, and some into a size larger, according to the strength of the plants, using a mixture of equal parts silver-sand, turfy peat, and leaf-mould. In February they should have from 50° to 60° of heat during the daytime, and from 40° to 50° during night. As the day lengthens, I increase the day temperature to from 60° to 70°, the night heat being about 5° less, maintaining a moist atmosphere at all times, with air both day and night when convenient. The plants should be kept as near the glass as possible, and should be shaded during bright sunshine. If they do well, they will require shifting about once in five or six weeks ; and before the operation, the mould about the roots should be rather dry than wet. After they are shifted, give a good watering, and replace them in their old situation, keeping them close for a day or two. In shifting, be careful not to break the ball ; for if that is done, it is a long time before the plants recover, and then it is ten to one if ever they make fine specimens. In potting, I drain well, and place some moss (*sphagnum*) over the crocks, then some of the roughest of the compost, which (after the January shift) consists of one part silver-sand, two parts turfy or fibry peat, and one part dry cow-dung, all well mixed together with the spade, and used without sifting. When I resided near London, I used mould from Wimbledon Common with as good success as the above mixture, but as yet I have found no such mould to equal that in this locality. As the season advances, I pot rather firmly ; and I find it a very good plan to put some of the moss on the top of the soil ; when potted, the roots seem quite at home in it, and it prevents the mould from being washed over the pot. I use rain-water both for the soil and for sprinkling the plants overhead with. In the latter operation I am guided by the weather, and in the former by the wants of the plant. I also water about once a week with manure-water not over strong. I train on the single-stem system, allowing them to branch out right and left, never pinching the side-shoots back, except when one seems to take the lead of the others. By following these directions, I am certain that every success will attend your labours. *J. M. P.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Conservatory, &c.—We shall soon have short, sunless, damp days and long nights, therefore look over the stock of pot-plants here, and see that none of them are suffering for want of pot room or other attention necessary to assist them to make young wood for flowering next season. Also see that proper care is afforded any late growing plant in the borders, for while in active growth much more water will be necessary, and insects will be much more troublesome than in the case of plants that have completed their growth. A slight sprinkling overhead should be afforded such as have yet to make their season's growth. Look very carefully after the Luculias, and keep them clear of their great enemy black thrips, giving them plenty of water at the root, and an occasional supply of weak clear manure water to old plants that may not be growing freely until they have made plenty of wood to ensure a grand display of flower; but manure water should not be given to young specimens in vigorous health, as it is apt to induce a too gross habit, in which state they seldom flower profusely. These are amongst the most splendid and useful of our conservatory plants, and well deserving of every care and attention, and when planted in the open border it is also one of the easiest to manage. To secure fine heads of bloom, however, the plants should be afforded a comparative rest of a few weeks after about the middle of next month, keeping the roots rather dry, and exposing the plants as freely to air as can be done without injuring the foliage or the adjacent specimens. Brugmansia sanguinea is also a very useful plant for winter and early spring flowering when managed so as to have it pruned, rested, and starting into growth about this time. See that large old specimens of Camellias are not allowed to get too dry at the root after they have set their buds, for this is what generally causes them to drop their buds, about which we hear so many complaints. Young vigorous plants, however, frequently require to be watered rather sparingly at this period, to prevent their making a second growth. Cinerarias for early flowering should now be growing freely ; attend to these with shifting, &c., as may be necessary ; for if they are to form large specimens for flowering in winter, they must not be allowed to sustain any check after this time ; also take off suckers, and pot for spring flowering as they can be obtained. Calceolarias will now demand attention ; get cuttings of favourite sorts rooted as soon as possible, and sow seed at once. Stove.—Many of the hard wooded spring flowering specimens, when kept growing late in autumn, when there is not sufficient sunshine to properly ripen the wood, seldom flower strongly, therefore give every encouragement to such as have not made their growth, and use the shading very sparingly here after this time. The twiners here will now be in their glory ; keep them well supplied with water at the root, and give frequent attention to regulating the shoots and disposing the blooms in the most effective manner. The Allamandas are fine plants for pot culture, but to have them in perfection they must be planted out in the border of the stove and trained to the pillars or back wall, where they flower magnificently during a great part of the year. The brilliant Clerodendron splendens, the Combretums, Echites splendens, Stephanotis floribunda, and many other first-rate things, do splendidly when treated in the same manner and trained near the glass.

FORCING DEPARTMENT.

Pinery.—The plants expected to afford the winter and spring supply of fruit must be treated with great judgment and care, in order to make sure of their showing at the proper time. Continue to select the most promising plants, marking them, to be sparingly supplied with water, to effectually check growth and induce a comparative state of rest for a few weeks. And those that have properly matured their growth, if wanted to show fruit at once, should be kept warm, giving them a brisk bottom-heat, and properly moistening the soil about their roots. Plants for fruiting late in spring, if not considered sufficiently strong, may be encouraged to grow rapidly for some time yet, as these will be sufficiently early if they can be got to show in November. Look carefully to those swelling their fruit, and keep them properly supplied with water at the root, using manure water in a clear not over strong state. Recently potted stock, especially those that were much pot-bound before being shifted, will also require to be watered with care, to prevent the ball getting too dry or soddening the new soil, for in either case the plants would probably be so checked as to cause them to show fruit. Keep all growing stock warm and moist, syringing them lightly twice a day, and shutting the ventilators early on the afternoons of bright days, allowing the temperature to rise to 90° or 95°, but give air freely in the forenoon and early in the morning, if there is any tendency to weakly growth, which, however, will not be the case if all is right at the roots, and the plants allowed plenty of room and light. Vineries.—In the early house the wood will probably be well ripened, and the foliage turning brown ; and where this is the case, houses that require painting or other repairs should be attended to at once, as the lights can be partly or wholly removed without injury to the Vines. Use gentle fires, and give plenty of air where the fruit is colouring, and in cloudy damp weather a little fire heat will be very beneficial in houses where the fruit is swelling. Where the fruit is ripe, and expected to hang for some time, the outside borders should be covered with something to throw off heavy falls of rain, as, with a continuance of cold sunless weather (of which we have this season already had so much that we hardly expect anything better during the autumn), the fruit will be very liable to damp off. The necessity for covering the borders at present will, however, greatly depend upon the nature of the soil ; for, if this is light and porous, the water will drain through it rapidly, and there will be no danger of such being injured by moderate falls of rain ; but where the soil is of a strong adhesive nature, it will be impossible, by the utmost care in keeping the internal atmosphere dry, to keep ripe Grapes for any length of time without great loss.

FLOWER GARDEN AND SHRUBBERIES.

Propagation of the stock for next season should be commenced at once, and gone about with expedition, so as to secure a lot of strong, well-established plants before winter, and without the necessity of keeping them so close or warm as to induce weakly growth and a watery habit. To be able to winter bedding stock safely with ordinary care, the cuttings should be put in sufficiently early in the autumn to allow of having them well established and fit to be exposed to the open air by the end of next month: Begin with such as are found to be the most tedious to propagate and prepare for winter. Hollyhocks are very general favourites, but do not afford cuttings freely, and are by no means over plentiful about most places. These should be examined often for any cuttings which they may afford, as those rooted about this time will make fine strong plants for next season. Attend to the tying of these and Dahlias, &c., and go over the masses of Verbenas, &c., frequently, for the purpose of regulating the growth and preserving order and neatness. Get Ten-week or Intermediate Stocks for spring flowering sown at once, also transplant Brompton and Queen Stocks, and if the situations in which they are to flower are not at liberty, prick them out in nursery beds, allowing them plenty of space to prevent weakly growth.

FLORISTS' FLOWERS.

Proceed with all expedition to layer Carnations and Picotees. Remove decayed petals from those pods in which seed is formed. Plant out seedlings in beds, where they may stand through the winter for blooming. Plant out Pink pipings on rich well-prepared beds. The amateur must recollect that if he wants fine well-laced flowers, that they must be planted and well established before autumn. Water Dahlias ; at this season they require a good deal. Earwigs are very troublesome, and must be well looked after. Hollyhocks will also need considerable care. Pull up all worthless seedlings as they bloom ; shorten the spike of those which are most promising, and thin out the flowers if overcrowded. Auriculas and Polyanthuses in pots must not be forgotten amid the many demands on the amateur's attention at this season. Keeping in a shady place, and clear of dead leaves and weeds, will be sufficient.

HARDY FRUIT AND KITCHEN GARDEN.

Winter Onions should be sown at once, also Cauliflowers for the early crop next season, a small bed of pickling Cabbage, Brown Cos., and some hardier sorts of Lettuce to stand the winter. The tops of the main crop of Onions had better be laid down, if they are inclined to be too rank, going over the bed with a wooden-headed rake, and pressing the tops down sufficiently to check further growth. Plant out a good breadth of Endive on well enriched soil of a light dry nature, also see to providing a good supply of Lettuce, &c., for autumn use. Attend to Celery, keeping it well supplied wit water in dry weather, giving it as much manure-water as can be spared for it, and keep the early crop rather closely earthed up. Vacant ground, or that which can be cleared of early crops, may still be planted with winter stuff, first giving it a good dressing of manure and a good deep digging. Stir the surface of the soil among growing crops. Cut Box edgings, and keep every corner clean and neat.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending Aug. 10, 1854, as observed at the Horticultural Gardens.

August.	Moon's Age.	Barometer.		Temperature.					Wind.	Rain.
				Of the Air.			Of the Earth.			
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Friday 4	10	29.929	29.916	57	52	54.5	60	61	N.	.39
Satur. 5	11	30.038	29.974	59	54	56.5	59	61	N.	.04
Sunday 6	12	30.110	30.060	67	49	58.0	59	61	N.E.	.00
Mon.. 7	13	30.059	30.037	68	44	56.0	60	61	N.	.00
Tues. 8	○	30.057	29.971	74	48	61.0	60	61½	S.W.	.00
Wed. 9	15	29.944	29.882	73	48	60.5	61	63	S.W.	.00
Thurs. 10	16	29.838	29.791	77	48	62.5	61½	63	N.W.	.00
Average.		29.996	29.947	67.8	49.0	58.4	60.0	61.6		0.43

Aug. 4—Overcast ; rain ; heavy rain at night.
— 5—Rain ; densely overcast throughout.
— 6—Overcast ; fine ; clear at night.
— 7—Overcast ; dull ; clear at night.
— 8—Fine ; very fine ; clear.
— 9—Very fine ; overcast ; very clear at night.
— 10—Very fine throughout ; cloudy and fine at night.
Mean temperature of the week, 4¾ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending Aug. 19, 1854.

August.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 13	72.6	50.3	61.5	13	1.14 in.	—	3	2	2	2	11	2	5
Mon. 14	71.8	50.9	61.4	9	0.68	—	6	5	2	2	[illegible]	4	1
Tues. 15	72.7	50.7	61.7	11	0.61	3	4	4	[illegible]	[illegible]	[illegible]	3	5
Wed. 16	73.1	52.7	62.9	11	0.58	—	3	3	1	4	7	7	3
Thurs. 17	73.5	51.3	62.4	15	0.76	2	1	1	2	4	5	11	2
Friday 18	73.6	52.1	62.9	11	0.55	1	5	3	1	4	7	6	1
Satur. 19	72.7	51.3	62.0	13	0.42	2	2	2	1	1	8	9	3

The highest temperature during the above period occurred on the 18th, 1842—therm. 92 deg. ; and the lowest on the 13th, 1839—therm. 32 deg.

Notices to Correspondents.

Books : *T J G.* The last edition either of "Donn's Catalogue," or "Loudon's Hortus Britannicus," will doubtless answer your purpose.‡

Conifers : *M B.* Pinus insignis will probably not be found sufficiently hardy to withstand the winter in the situation you mention.‡

Frigi Domo : *An Old Sub.* We do not know that any one has asserted that this substance will keep frost out of a cold pit. If such a statement is current it is a monstrous exaggeration. The material is good, and we expect economical in the long run, and it will protect rather more than Russia mats. That is all.

Names of Plants : *A R.* Calystegia pubescens.—*Eracrum.* 400 Campanula glomerata; 543 Phyteuma lanceolatum ; 970 Specularia falcata: 409 Phyteuma near lobelioides.—*Y Z.* It is Scutellaria macrantha, a very fine plant, but not new.—*Santo Domingo.* Epidendrum cochleatum and an indeterminable plant, of whose name we have no idea. No seeds of any importance have come up. The Mirabilis and Amaryllis have arrived ; the Echites is reported dead.—*G W S.* Of a specimen so broken we can only say that there is no apparent reason why it should not be F. elatior.

Peaches : *J. M'P., Renfrewshire.* It appears from your statement respecting the size of the flowers of your Peach trees, and from the specimens of their leaves, which we have received in good condition, that you have the Royal George, the flowers of which are small, the leaves serrated and without glands. The other, which you had for the Noblesse, is certainly not that sort, for the flowers, you say, are large, and the leaves, we see, are *crenated*, with *globose glands*; whereas the leaves of the Noblesse are *serrated* and *glandless*. Of the varieties of Peaches in general cultivation, the sort in question must be either the Acton Scot or the Grosse Mignonne, most probably the latter ; but from the condition of the specimens of the fruit when received, we cannot determine nearer with such absolute certainty as we can affirm, from an inspection of the leaves you sent, that you have two perfectly distinct sorts of Peaches.||

Rats : *T B S.* Try what effect phosphoric rat poison has on them ; or an overbalancing board over a deep glazed pot of water, baited, of course, on the end above the water, into which the rats are precipitated while in the act of going for the bait, makes a good trap for them.‡

Skeleton leaves : *J M.* Steep them for weeks in rain water in a warm place, freely exposed to air; when nearly ready add a small quantity of muriatic acid to it. A great deal of care is, however, required in picking out, with needles, the parts of the leaves that are not rotted away.‡

Strawberries : *Berkeley Hill.* We never recommend dealers. Any respectable nurseryman can supply the Elton Pine if he chooses.‡

Sulphur : *S.* The offensive smell will leave the pipes after a time, but they ought not to have been made so hot.‡

UPPER PERUVIAN GUANO ON SALE.— Apply to W. & J. RAVENSCROFT & Co., Liverpool.
Extract from a Report of Dr. Ure, F.R.S., &c.
"Your Upper Peruvian Guano is worthy of all commendation."
Extract from the Report of George Longton, Esq.
"RAVENSCROFT's Upper Peruvian Guano will last longer, and eventually do more good than Gibbs', or any other I have ever tried. It possesses the very finest qualities of both Guano and Bone Dust."

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures, Linseed Cakes, &c.
WM. INGLIS CARNE, 10, Mark Lane, London.

PEAT CHARCOAL.—The undersigned have a cargo of this valuable Deodoriser and fixer of Ammoniacal matter on Sale. Apply to MARK FOTHERGILL & Co., 204A, Upper Thames Street.

THE LONDON MANURE COMPANY'S WHEAT MANURE, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. EDWARD PURSER, Sec.
Bridge Street, Blackfriars.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7*l.* per ton; Superphosphate of Lime, 7*l.*; Sulphuric Acid and Coprolites, 6*l.*
Office, 69, King William Street, City, London.
N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent. of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

SEWAGE CHARCOAL MANURE.—This highly fertilising Manure, which is Peat Charcoal completely saturated with London Sewage, will be found most efficient for every species of crop; more especially for Peas, Beans, Turnips, Mangold Wurzel, and other root crops. It will produce a greater return for the outlay than Guano or any other Manure at an equivalent value: it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained at the SEWAGE MANURE WORKS, Stanley Bridge, Fulham, at 4*l.* per ton, and in quantities less than half a ton, at 5*s.* per cwt., for ready money only; and in quantities not less than a ton, will be delivered at the London Termini of the Railroads free of charge for cartage. No charge for sacks.
It may also be had from Messrs. G. GIBBS & Co., 26, Down Street, Piccadilly, Agricultural Seedsmen, Agents for London: and from all the other Agents of the Company.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.
"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1*s.* 6*d.* per yard run, of E. T. ARCHER, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey.

THE BIRMINGHAM CATTLE AND POULTRY SHOW, 1854.—The Sixth Great Annual Exhibition of STOCK and DOMESTIC POULTRY will be held in BINGLEY HALL, on the 12th, 13th, 14th, and 15th of December next. The PRIZE LISTS, and any further information, may be obtained from JOHN MORGAN, Jun., Secretary.
Offices—38, Bennett's Hill, Birmingham.

The Agricultural Gazette.

SATURDAY, AUGUST 12, 1854.

MEETINGS FOR THE ENSUING WEEK.

THURSDAY, August 17—Agricultural Imp. Society of Ireland.

NOTHING could be more appropriate than the terms in which the Earl of CHICHESTER introduced the French deputation at Lincoln, unless it was the hearty and hospitable manner in which they were received. It is of the greatest importance, as his lordship observed, that the neighbouring countries should be on good terms, not only nationally, but professionally — that not only as men but as farmers we should be prepared to shake hands with the French. Self-interest, if there were no higher motive, is sufficient to induce this—for the principles of agriculture are the same in both countries, and their results are in many districts of both sufficiently alike to furnish lessons equally useful on both sides of the channel. We hope, therefore, that the cheers which greeted the members of the French deputation were the real expression of a feeling which will exhibit itself in a more substantial manner whenever opportunity is afforded.

Such an opportunity offers itself at present. Prof. WILSON informs us that he has been commissioned by the Board of Trade to secure the fullest possible representation of the agricultural produce of the country for the Paris exhibition next year. We believe he will find no difficulty in the accomplishment of his task—that he will receive offers of assistance from a sufficient number of intelligent occupiers of land in every county to ensure this full exhibition of British agricultural results.

The following is a portion of the letter on the subject with which he has favoured us:—

"I wish to have the finest specimens that can be procured of *all our crops*, both in the *sheaf* and in the grain, with information as to exact varieties; locality where grown; mode of cultivation; seed sown; produce, &c. The sheaves should be about 4 inches in diameter; and the samples of seed 1 peck each. It is most desirable that the samples should be carefully selected, and as I probably shall have many duplicates sent, I must, of course, reserve the right to select those I think most suitable for the purpose. In all cases the name of the grower will be given. Samples of wools, too, I would gladly receive (as animal produce); of these the display would be restricted to specimen fleeces of each of our *different distinct breeds* and to *known crosses* of them. I need hardly add that in all cases I am prepared to pay the market value of them."

We add that the sheaves should be packed in mouse-proof boxes, as then they will not be touched until they arrive in Paris. We hope that some of the readers of this paragraph will be induced immediately to put themselves in communication with Professor WILSON, Marlborough House, Pall Mall, on this subject.

WE have just received specimens of white Wheat from King's County, the ears of which are densely covered with red rust, a disease which is said to be very prevalent and destructive in parts of Ireland. Our attention was more especially called to the loathsome smell of the specimens, a circumstance which surprised us much before examination, as the parasites with orange-coloured spores, when they possess any odour at all, diffuse one very closely resembling that of Orris root, an odour which accompanies many Cryptogams of a similar colour, as the yellow Byssus, Chroolepus odoratus, Æcidium Caladii, &c. An inspection of the ears, however, at once solved the difficulty, for the "antient and fish-like smell" was clearly due not to the rust, but to unmistakeable bunt, every grain of the ears being infested with that fungus, and having already acquired nearly its full dimensions. The matter is worth recording, first, because it shows how necessary it is to examine properly before jumping to any conclusion; and secondly, because the bunt has been perfectly developed, though the spikelets are affected with rust to a degree which we scarcely ever observed before. A hasty judgment might attribute the evil to rust, a complaint which the farmer at present cannot contend against, whereas it is really due to bunt, which ought not to make its appearance in any prejudicial quantity on well cultivated land. Rust is never, we believe, very injurious in this country, except to white Wheat; and even when the spikelets were strongly affected we have often seen the grains perfected. The one parasite has in the present instance not prevented the development of the grain, though infested from its earliest infancy by another and more inveterate foe, and though the development of such thousands of spores must require vital energies at least as strong as those which would otherwise have deposited fecula in the cells of the healthy tissue. *M. J. B.*

WE have recently visited a village secluded among the richly-wooded scenery of Northamptonshire, which, though remote from the traffic of railway or turnpike, and approachable only by lanes and open fields with their innumerable gates, through the corn lands and moist pastures of the oolite hills, has not shut out the spirit of progress and enlightenment; but forms one of those rare examples so attractive alike to the genial thinker and the earnest philanthropist; for at LOIS-WEEDON the same liberal intelligence which, conversing with Nature in this quiet retirement—like NUMA with EGERIA—has won some of her choicest secrets, is also moving with generous activity to lighten the pressure of poverty upon those that toil, and to infuse thought, feeling, taste, and virtue into this little community of young and old.

Hence, in spite of the anti-intellectual, anti-moralising influence of "three packs of fox-hounds and six 'meets' a week," we find there the school-house, with its orderly crowd of rustic youngsters learning how to fund knowledge by means of book, slate, and pen, and joining their voices, too, in harmonious part-singing that must completely unfit them for bird-scaring in future. There, too, is the school garden, where the master refreshes himself from his duties, and watches with evident relish his own successful plot of Wheat in the three-row culture. There we inspected with pleasure a spacious area of labourers' allotments, with corn, Potatoes, and all manner of table vegetables thickly covering the ground—crops that will well repay the toil and replenish the winter meals of the industrious families for their skilful tillage. There also we found existing that credit of agricultural work-people, a thriving benefit society, meeting by the mutual consent of its members at a house where no exhilarating beverages entice to drunkenness. All these things add a charm to the place where the great principles of cultivation discovered to the profound insight of JETHRO TULL are now being practically expounded with the aid of modern scientific researches.

The object of our visit was to view the growing crops cultivated on Mr. SMITH's system; and for the information of those of our readers who have not yet enjoyed the same treat, we will endeavour to say in a few words what we saw, and what was the lesson we gathered from the sight. A whole farm has not been devoted to the row culture; nor on the other hand has the mere corner of a garden bed been selected for its trial; but several acres have sustained this wonderful species of farming—without manure, and without rotation—for a considerable number of years. Thus, no allowances need be made for the difference between gardens and fields, in estimating the probable returns upon a larger scale; the acreage and the produce in any case will be multiples of the same quantities given by Lois-Weedon. The method is so well known, that, of course, we shall not now recur to its peculiarities; but merely report the palpable evidences of its success. We saw two crops of "PAYNE's Defiance" Wheat (this sort being chosen as proof against the ravages of the village birds), both very healthy and promising; one a good crop though not standing on a real Wheat soil, but upon light land covering a yellow oolite gravel; the other a great crop, with amazingly stout strong straw and well loaded ears, the soil being clayey, with small stones intermixed, resting upon a subsoil of yellow clay. When this latter field was first double-dug the old fertile staple being thus buried, and the "nasty stuff" thrown out over all the surface, every farmer and labourer that saw it declared that Mr. SMITH would never get another good crop as long as he lived; but now beholding a magnificent yield upon that surface, what do they say? "No wonder Mr. SMITH has such fine crops, his land is so good!" The amazing size of the ears, and the strength of the long stems which preserve a perfectly upright position, although so heavily laden, astonish every visitor. Indeed, the rows present the appearance of having an immense number of stalks; though, upon counting, we find that it is not so much the great number as the thickness of each one that swells out into such a bulky crop. Taking a length of 2 feet along three rows, we counted 153 stems, equal to 25½ per lineal foot in one drill: an extraordinary heavy crop, drilled at 9 inches apart, which we counted for comparison, gave 28½ stems per foot along a single drill; and another crop drilled at the same distance, and promising 40 bushels per acre, gave only 17½ per foot. Mr. SMITH has generally obtained 36 bushels per acre, and the present crop, though the *eleventh* annually without manure, is the best he has had, so that we may estimate it at 40 bushels per acre. Comparing this with the crop just referred to, we find that 28½ stems of the three-row Wheat produce as much corn as 39 of the common crop. Mr. SMITH's crop was very thinly seeded. Only 1 *peck* per acre was drilled in rows, which average 20 inches apart over the whole surface; and taking the usual calculation of 650,000 grains in a bushel, we have 30½ grains for every lineal foot of drill: the crop grown in the common manner, drilled at 9 inches with 8 pecks of seed, has 110½ grains in the same length,—nearly quadruple the thickness of the other, though the number of stems from all this seed is not one-half greater. However erroneous may be this assumed number of grains in a bushel, the fact still remains that a vastly greater proportion of the grains are developed into plants by the new than by the old system.

As Mr. SMITH annually reaps a good crop of straw as well as corn, without returning a particle of it, or any manure whatever to the soil, he is enabled to manure highly another part of his land for green crops. These are cultivated in yearly succession without any rotation, upon ridges 5 feet wide; Carrots in double rows, but Swedes, Cabbages, and Winter Beans in single rows, one row upon each ridge. The Cabbages are of enormous size and weight; the Swedes are very fine and forward already, and, if they prosper as in other years, will spread their leaves for 5 feet in width; while the bulbs will swell to more than a foot in diameter, still preserving their soundness and fine quality of flesh. Common Turnips would not be likely to answer upon this plan. The Winter Beans, though very thinly dibbled in single rows, are very thick and branching, so that they will probably touch each other over their 5 feet intervals, without falling upon the ground; and the stalks are so podded that there are from 30 to 40 and even 50 upon each one. Single rows of Globe Mangold have also been stolen upon the intervals which will be occupied next year by Beans. The fact is, Mr. SMITH has not to say "What crop will this ground bear?" but "what crop do I want?" By his system, any crop or succession of cropping can be produced without respect to rotation: is not this, indeed, agriculture in a normal state?

As an instance of what farmers call scientific

knowledge triumphing over practical or routine experience, we may mention that Mr. SMITH is growing Lucerne very successfully, although all the local cultivators assured him that this plant inevitably failed there after a few seasons. The voice of the long-gathered experience and observation of any district ought never to be disregarded without good reason; however, Mr. SMITH took a number of young Lucerne plants, *cut off their tap roots*, and set them out like Cabbages. These plants, it is said, do not again send down their tap roots into the noxious subsoil which injures them, but continually spread out their lateral roots, which, by manuring and stirring the land, can be perpetually fed.

In conclusion, we would entreat all enterprising farmers of good Wheat soil, to give the new system an immediate trial; or at least, if manual labour be too scarce for digging, attempt a few acres on the following plan. Take a plot of *sufficiently exhausted* land (otherwise you will fail)—say a Wheat stubble —clean and level it; lay out in lands or stetches about 7½ feet wide; with a common drill sow upon the crown of each land four rows of Wheat, at 12 inches apart; sow thinly, and be sure *sow early*, so as to escape mildew. When the Wheat is up, plough the intervals at full depth, having the horses in length, and taking one bout to each interval—or, perhaps, one furrow more—so as to leave some 4 inches on each side to protect the Wheat; then, with a BENTALL'S or COLEMAN'S cultivator, a horse-hoe, &c., you may till and *pulverise thoroughly* throughout the spring and summer; keep the *land very clean* by horse and hand-hoeing; earth up the Wheat rows just before flowering time, as you would Potatoes, and when harvest is over, pare and clean, or burn the stubble spaces; *plough the entire plot two furrows deep*; and then lay out in lands as before, taking care to have the Wheat rows where the intervals had previously been. Your four rows of Wheat will be pretty equal in bulk, and not thin inside; for Mr. SMITH'S middle rows fully equal, if not surpass, the outside ones; but we would not advise to try more than four, which will just be sufficient to cover the smallest interval you can efficiently plough.

The experiment is simple; the cost moderately easy; the object well worth realising. Are we to leave the Weedon husbandry for future historians, and it may be poets, to lavish praise upon? Shall we let our generation lazily bequeath its profits to posterity? *I. A. C.*

IN pursuing our remarks on STEAM CULTIVATORS, we come to describe in general terms the machine introduced to the public by that friend of agricultural progress, Mr. MECHI, and invented by Mr. ROMAINE, of Montreal. It consists of a common box cart, riding upon two wheels, with broad tires, about 5 feet in diameter, drawn by two horses. Immediately in front of the axle is placed an upright tubular boiler and engine; from the axle of the cart, and outside the wheels, is suspended a framework extending about 6 feet backwards, to the extremity of which is hung a revolving cylinder, carrying a series of 200 steel-pointed picks or knives. This framework is partly supported by two small carriage wheels, and can be raised or depressed, like the levers of a drill, by means of a screw apparatus. Motion is communicated to the cutting cylinder (which, with a 20-horse power engine, is to have a speed of some 240 revolutions per minute) by a shaft extending back from the engine, driving by means of mitre-wheels another shaft fixed immediately over the cylinder and parallel to its axis. A spur-wheel of about 2 feet diameter upon the middle of this transverse shaft gears into another of 1 foot diameter upon the axis of the cylinder, which it thus divides into two equal parts. By this arrangement the framework, cylinder, and gearing can all rise or sink together, without interfering with the action of the wheel-work. The cylinder, consisting of a cage frame of discs and bars, something like the beaters of a threshing machine, about 6 feet long, carries prongs or cutters which describe circles of about 2½ feet diameter; and the depth to which these can work in the ground we should think must be limited by the spur-wheel on the middle of the axis coming in contact with the uncut strip left underneath it—this allowing a depth of about 9 inches. Immediately behind, and over the cylinder, is attached a box acting as a leveller to the pulverised earth; and a small roller following this box gives motion to a small brush seed-sower fixed within it. By removing the cylinder and levelling and sowing apparatus, a reaping or mowing platform may be attached; the cart, of course, being pushed, as it were, backwards by the horses, instead of being drawn forward. In this part of the invention there is an ingenious arrangement of spring arms, which, collecting the cut cropping into bundles or armfuls, releases these at intervals, to be bound into sheaves by men stationed upon the platform. Not having had an opportunity of personally examining this machine, or heard any testimony as to the character of its work, we must stay our pen from criticism, contenting ourselves with the above very general description, and patiently waiting for experimental information from its patron Mr. MECHI.

The form of machine which we regard as ultimately destined to supersede all such as we have yet mentioned—namely, a self-propelling locomotive engine of the lightest possible weight, running with broad wheels upon unmoved ground, and tilling, by means of a rotating cylindrical rasp or cutting tool affixed behind—has appeared in but one or two instances at present.

"USHER'S Steam-plough," consisting of a locomotive engine mounted upon rollers, and driving a shaft carrying 12 curved plough bodies and coulters, certainly comes under this denomination. It was shown in model at the Great Exhibition, has been manufactured and fully tried last year near Edinburgh; and subscriptions have been raised in 10*l*. shares for experimenting with one of lighter and improved make. This implement neither grubs nor digs nor ploughs; but leaves the soil in flakes or small broken pieces, and performs its work at a cost of about 3*s*. per acre. Then there is Mr. GUTHRIE'S invention, by which forks arranged about a steam-driven axis are so moved by mechanism as to till the land by regular digging, the blades being forced into the ground and turned over, so as completely to reverse the earth on coming out again; this belongs also to the same class. The axle is to revolve only 50 or 60 times per minute, and to advance two-thirds or three-fourths of a mile per hour. Sir JOHN FORBES, in describing this clever machine to the Fettercairn Farmers' Club, states that it has been a long time in model, though never yet in actual operation, from want of means and encouragement. It is not only a matter of great regret, but of general loss, when promising inventions are suffered to perish in embryo; and, indeed, there is sometimes even the cruelty of letting the inventors themselves die for lack of proper feeding, like some birds in the very act of sitting. No doubt there are many unhatched ideas of a steam cultivator, which some moneyed CANTELO might develope into existence. Looking at the patents of the past year, we find three inventions of the kind to which we are now alluding. One is by Mr. HOSKYNS, consisting of a frame carrying a steam boiler, mounted upon broad ribbed rollers, and having a rasp behind, which can be set to different depths by screw. Two horizontal steam cylinders work a shaft having two drums or riggers, one on each side the machine; and these have endless chains passing round smaller riggers on both ends of the rasp or tiller. The onward motion of the whole is obtained by means of wheel-work from a worm on the engine-shaft, gearing with the axle of the carriage-wheels or rollers. The rasp consists of a number of discs fast upon a spindle, each carrying two chisel-pointed cutters at opposite diameters—there being a sufficient number of cutters to occupy the entire breadth of the work. The engine is proposed to make about 60, and the rasp 120 revolutions per minute, each tooth taking a half-inch bite.

Another design is by Mons. A. DUSSUC, in which the rasp is driven by a spur wheel at one end, having a second wheel between this and a much larger one upon the axle of the carriage-wheels, which is turned directly by the engine. The peculiarity of the rasp is that a very great number of thin, heart-shaped shares or trowels are set by short stems upon the surface of a cylinder; these cutters not standing out radially, or curved at any angle, but lying flat, nearly concentric with the surface of the cylinder. Instead of cutting down in front and throwing out behind, these cutters, moving with great velocity, seem intended merely to pass clean through the soil, leaving it uninverted, but minutely subdivided and pulverised. The last invention is one patented in November 1853, by PATRICK KELLY. The rasp—a cylinder armed with bent prongs—is driven with an intermediate multiplying motion from a large wheel upon the carriage-wheel axle; and this large wheel is turned by a pinion upon the crank-shaft of the engine. The rasp seems intended to make about one revolution to every stroke of the engine, while the carriage travels forward at a comparatively slow pace.

Many other proposals may be forthcoming. If this class of inventions has been hitherto so miserably lacking in practical trial and experiment, so that single individuals are afraid to venture a full-grown machine—as in other branches of mechanical ingenuity having more data for calculating results—can there not be found a number of 10*l*. shareholders, like those in spirited North Britain, to give working demonstration to some promising steam-cultivator? *I. A. C.*

THE DORKING FOWL.

THE Dorking fowl being the most suitable for the farm-yard, we purpose giving a few hints to those who are desirous of keeping it, and also a few remarks on its management. The chief characteristics of this breed are a square body, broad breast, white legs, and five perfect claws on each foot—colour varies; we have the coloured, comprising the speckled, red, grey, and cuckoo Dorking, and the white; in the latter variety the comb must be double, but in the others it is a matter of taste, although the single combed birds are generally preferred. The red Dorking is equally as large as the speckled or grey, but as it is not in such general repute, does not attract so much attention; in fact, we are inclined to consider it not so highly appreciated as it deserves. The fact that red chickens are frequently bred from grey parents is a sufficient proof that the two varieties are of the same family. The cuckoo Dorking is, to our eye, a more common looking variety, which may account for the small share of public favour it in general experiences at the poultry shows. The weight of the speckled Dorking cock varies from 7 to 10 lbs.; an 8 lb. bird is never to be despised; the hen weighs from 6 to 8 lbs. The white Dorking is a smaller and more delicate fowl, and therefore we consider not so great an acquisition as the larger varieties; however, its neatness and pure white plumage excite many admirers. Having selected our birds, the next thing to be considered is how to manage them. Five hens are about the number to be placed with one cock. We have known several good broods from a cock which ran with eight hens, but it is incurring a risk to allow more than six. If the hens be two years old and upwards, it will be advisable to use a one-year-old cock, or *vice versâ*, remembering that to introduce fresh blood every second, or at the most third year, is the great secret of retaining the size and beauty of our stock. To those who keep fowls chiefly for producing eggs, we do not recommend Dorkings, as in this respect they are far inferior to the Hamburgh class; but where the number of chickens is the object, they will not be surpassed, as the fact that the hen is very frequently "broody," is decidedly a "feather in her cap;" and should she be ever so strongly disposed to "sit," and it be inconvenient to "set" her, by confining her for two or three days (without trying the use of jalap or other still more barbarous means), she will soon cease to "cluck," and will very shortly recommence laying. Pullets hatched early in the spring will often lay in the autumn, but in general we must not expect many eggs before January or February; so much, however, does it depend on the state of the weather, that there is frequently a month, or even more, difference in the time of the hens being in full lay. This season very few of our Dorkings laid before March. Unless breeding for show, it is better not to set any eggs until March, as chickens hatched before that time require a great deal of extra nursing and care. From March until July is the best season; those hatched after never attain the size of earlier ones, and consequently are seldom selected for stock. During March and April we place 11 eggs under each hen; after then 13 or 15, according to the size of the bird. As soon as the chickens are hatched, it is advisable to place them in a coop, and keep the hen confined there during the first week, after which time we would allow her liberty during the middle of the day, gradually increasing her leave of absence. The best food for young chicks during this period is Wheat and a few groats, or a little Rice or Potato once every day. When they are from three to four weeks old, if the yard be given to that most troublesome and fatal disease called "gapes," symptoms of it will in all probability be apparent. "Delays are dangerous" at all times, particularly so now; immediately the cough and accompanying sound of "kick kick" are heard, a feather must be procured, and stripped, with the exception of a very little at the smaller end, dipped in turpentine, and thrust steadily down the windpipe of the chick; it must then be twisted about, and should the operator be desirous of assuring himself that he is successful, let him place the bird on a white sheet of paper or cloth, and if the windpipe be then pressed, the chances are a small red worm or worms will be coughed up; should this occur, he may in general consider the experiment has answered. The cause of the disease is not as yet known, for although many opinions have been expressed on this point, we consider them merely theoretical. If the disease but once get in a yard however, its reappearance may be expected for several succeeding years.

Having passed this stage, the chickens require very little care, and will, with the assistance of a meal a day, obtain a good subsistence in the farm-yard; neither should we anticipate the appearance of any disease until they have nearly reached maturity, when occasionally a few are lost from a disease somewhat like "decline," of which we have seldom effected a cure; the bird gradually wastes away, and however "monstrous," our attempts are generally abortive, for the bird is eventually found dead. Having now followed our Dorking through the various stages of chickenhood, we find it, although still fresh with the vigour and beauty of youth, yet not safe, for mature Dorkings are peculiarly liable to disease of the feet. "Bumble foot" is caused either by the weight of the body, the size of the claws, or frequently by high perches; a cure for this is rarely effected, therefore all that can be done is to prevent it, the means for which are obvious. Corns can be extracted with a penknife, but frequently lameness is caused by the extreme point of the fifth toe pressing upon the ground, inflammation is produced, the claw

rots out, and if not checked mortification ensues; amputation of the claw is now advisable, and, to prevent too great a loss of blood, we have found the application of a hot iron beneficial. During March poultry are frequently seen moping in corners; and on examination it will be found that the head is fearfully swollen to the size which is frequently denominated "swelled blind;" there is a discharge from the nostrils and a gurgling in the throat, commonly called by country dealers "rattles;" when this occurs confine the bird in a warm dry place, bathe its head with vinegar, and administer a table-spoonful of castor-oil, and it will in general be perfectly well in the course of three or four days. Roup may be treated in the same way, but is a more troublesome and lingering disease. When it is desirable to cross our birds, if we consider our own yard reaches the standard, for it frequently does happen that "we may go further and fare worse," it is better to change the male bird alone, get rid of old hens and substitute pullets, filling up all casualties with those bred at home, and which we know to be genuine. As we are not writing about "fancy" but on "profitable" poultry, we have said but little about the requisite feather and minor qualifications of Dorkings as "show" birds; but as poultry shows have done, and still are doing, a great deal towards developing the size and beauty of our farm-yard poultry, there is every reason why they should be encouraged; we will therefore mention that the chief points to be considered by those desirous of exhibiting, are size, colour, characteristics fully developed, and last, though not least, that a good match may be obtained, of whatsoever colour the birds may be, as uniformity of plumage is, in our opinion, of more consequence than colour itself. We have also omitted to say anything respecting the poultry-house, as a good one is generally to be found at the end of a warm ox-stall, with a thatched roof. It only remains for us now to advise the admirers of poultry to "leave well alone," by which we mean that he will find it more profitable in the end to be content with a fair market price for his poultry, than to seek exhibition prices, and at the same time remind him that "what is worth doing at all is worth doing well." *C. P.*

THE PIG.—No. III.

Having determined upon the adoption of a particular breed, the next point is the process of breeding and rearing. The boar and sow must both be selected with great care; they should be free from all natural defects. The sow should possess at least 12 teats, and she ought to give evidence of a capacious frame. Both boar and sow must be at least 10 months old, and may be put together in the months of April and October. The period of gestation extends over about 16 weeks, consequently the sow will farrow in the months of August and February. In the first case the litter will attain sufficient hardihood to brave the winter and obtain their living in the fold-yard; in the latter they will be able to gain their living by grazing, or amongst the roots in the fallowing fields. Sows are said to produce five litters in two years; but it will require close attention and good nursing to get off two good litters annually. The sow will take the boar soon after farrowing, but a reasonable time of rest ought to be allowed, to ensure her safety and future well-doing; thus with care she will retain her breeding powers in full profit for three years. During the period of gestation she should roam at pleasure with the herd; but a short time before farrowing she should be put into a convenient and roomy sty, and be fed with simple food. As her time approaches she should be closely watched, and her bed niggardly restricted, or her progeny would be endangered by smothering or the sow lying upon them. She must be well nursed at this period, and her food should consist of milk, warm wash, whey, or swill, mixed with bran or meal.

A good breeding sow will produce about 10 piglings at a time; but the casualties to which young pigs are exposed is very great, and much loss frequently occurs before weaning; they are usually castrated or spayed while suckling, and in about six weeks from birth; at from eight to ten weeks they may be weaned, when they should be fed with good farinaceous compounds, mixed with warm milk, whey, wash, &c., at least three times a day. In two or three weeks Potatoes or similar food may be given, and the warm feedings may be dispensed with, and cold ones of the same mixtures substituted, till they are strong enough to turn to the herd.

Management of the Pig.—When the piglings are weaned and turned to the general herd they are called young pigs or store pigs; it is to the management of these store pigs that I would now direct attention. The growing pig is usually a great gormandiser, and cannot profitably be fed upon millers' offal, bran, or indeed any similar food—it is too expensive; they must mainly be fed upon the refuse produce of the farm, such as garden stuff, weeds of all kinds, the refuse of the kitchen, the dairy, the barn, the fallowing field, or the fold-yard; these supplies, however, are wholly inadequate for the large herds of swine now very properly kept by every thrifty farmer; hence resort must be had to the ordinary artificial Grasses, *i. e.*, Lucerne, Sainfoin, Tares, Clover, Chicory, Rough Comfrey, Jerusalem Artichoke, and similar crops for the summer; and the Potato, Turnip, Mangold Wurzel, and similar crops for the winter. In the summer many herds are for several weeks sustained in the fallowing fields; they form excellent root weeders, of which they consume large quantities. It is easier to find suitable food in the summer for store pigs than in the winter; in the summer they will quietly graze in Grass, Clover, or fallow fields, or they may be confined in a paddock or large airy yard, and have their supplies of food brought to them; and this, followed by the run of the stubble fields after harvest, will usually put them in good condition for subsequent fattening. Besides this common and inexpensive mode of "summering" pigs, many others are adopted; one is to collect the green weeds growing on the farm, *i. e.*, nettles, thistles, and the like, boil them, and mix with the liquor a small quantity of bran or meal; this is a nutritious food, obtainable on most farms, but is too expensive for summer service; it is, however, very desirable to supply the herd with some such food, after every day's grazing; and if mixed with a proportionate quantity of meal, so as to form a corrective to the too succulent food of the day, will prove of great advantage. The preservation of a part of the last year's Mangold Wurzel, and a few given daily, is of similar benefit. The great supply, notwithstanding, of such artificial aids will be in the application of the crops named above. The Lucerne, Sainfoin, and Broad Clover, are excellent food; but Tares and pasture Grasses are too laxative and require the corrective just named. Chicory, Rough Comfrey, Jerusalem Artichokes, Cabbage, Coleseed, Lettuce, early Turnips, Mustard, Rhubarb, or the common Sow Thistle and the like, may all be grown with surprising advantage for this purpose, and are all relished by the pig. Many of these crops may be cut several times during the summer, and will produce large crops successively under good culture; these kinds of crops being cultivated properly, and in sufficient quantity, will provide nutritious food for any number of pigs; and if, in addition, the porridge named above is given in conjunction as a corrective, the herd will thrive in a highly satisfactory manner; and what is better, on a cheap, healthy, and almost inexhaustible supply of food. Shelters, and a good supply of water, both for drinking and wallowing in in hot weather, is necessary for the well-being of the herd, and the yards or paddocks should be very roomy, in order to promote the healthy development of the younger animals, and occasionally they should be altogether cleared, so that all may be well aired; the transfer to the fallow field or the stubble field gives fine opportunities for this requisite airing.

In winter all the pigs in a forward state ought to be put into the sties for fattening, but those still in a store state must remain in the fold-yards, and every endeavour should be made in an economical way to keep them progressing; for this purpose Mangold Wurzel, Turnips, Potatoes, Carrots, &c., should be supplied to them in moderate quantity, which, with the stray grains, &c., of the fold-yard, will keep them in fair condition till they arrive at proper age for fattening; this will vary with the breed or variety. The best period appears to be when they attain the age of about 20 months, for bacon, and a few months less for pork.

Store pigs cannot to any extent be profitably kept in sties; however beneficial it may be to every family to have a pig or two in the sty to consume the household refuse, it is equally certain that this cannot be beneficially done on a large scale. Sty-fed pigs ought to be animals which have attained a forward state of maturity, and therefore requiring more expensive food to promote their fattening. Growing pigs should have ordinary food and like treatment, till they are gradually prepared for fattening; and as they denote beneficial progress they ought to be pushed forward to maturity, then sold off, and others supply their place.

The fattening of pigs in our next.

Home Correspondence.

Offal of Fishing Villages.—Your remarks on preserving the offal of fish in fishing villages are directed to a subject which might be turned to very good account, and keeping attention to the subject may lead to a valuable return. A desire to contribute a mite toward furthering your object induces me to address you. The offal consists of moisture besides what it is desirable to preserve. Why not expose it thinly on blackened plates of iron to the summer's sun, with pounded shells, and when dry pack it in barrels? You will then have your manure in a concentrated form, to be diluted, moistened, or treated as may be best at the spot where it is required; one man to spread, turn, and mix with the shells during the fishing season could do a great deal; and by treating the offal at once in this way, the stench of its fermentation would be avoided; the labour of carrying diluents, which only add to the weight, and that to the expense of carriage, would be saved. *A Surgeon.*

Detection of Fraudulent Guano.—In your last (p. 494) is a proposal for burning off, as a test for the genuineness of guano. This may answer pretty generally for detection of the adulterations now practised, but if at all extensively adopted, the ingenuity of adulterators will be exerted to elude it, and unfortunately there are chemists as ready and skilful at adulteration as others at detection. Such summary methods of probation are like the private marks on bank notes, secure enough while kept secret, but no sooner made public than they are imitative, so that true chemical assay is the only thing to be permanently depended on. The fraudulent manufacture is now become so extensive that it may be questioned whether agriculture does not lose more by these frauds than it gains by the whole system of portable manures. Every farmers' club should now be a protection society, and where there are no clubs societies should be formed for protection expressly. A number of samples should be assayed every year by trustworthy chemists, at the expense of the societies, and the names of all detected adulterators should be published, with the cases of adulteration, in the agricultural papers generally, and in the local newspapers of the respective neighbourhoods, to drive them out of the market; as the imposture is too gainful to be given up while buyers can be deceived. *J. Pridcaux.*

Foreign Correspondence.

Holstein, *July* 23.—Harvest is just begun. The Rye, now ripe, proves a very superior crop—large heavy ears and plenty of them—a more abundant produce generally than I have before seen. This is of material consequence as regards the British supply of continental grain, as three quarters of the population of the north and middle of Europe subsist chiefly upon Rye when it is sufficiently plentiful. The other crops in Holstein, and eastward in Mecklenburg and Pomerania, also promise well, Oats excepted, which will scarcely reach average. The Wheat here since the middle of this month, in consequence of a moist and sultry atmosphere for several days, has however been attacked by rust, which may injure it to some extent; but the dry weather which followed last week, it is to be hoped, has checked the disease. In the vicinity of Lubeck, where the rust prevailed generally, one field sown with seed from Scotland was quite exempt from rust. The Potato fields also look well—the drills not discernible, and the field light blue at a little distance, from the exuberance of blossom, an index of health not of late years much seen. In the vicinity of towns, where much nitrogenous manure had been given, and the ground clayey and damp, circumscribed spots appeared of the Potato disease about 10 days ago, in the fields as well as in the gardens. This took place after several days of showery sultry weather with thunder. But during last week of dry weather the disease did not seem to extend. Well out into the country, upon the drier land, the disease has not appeared, and the Potato crop is fast maturing, being already further advanced than when stopped in growth last season by the disease. If not checked within two or three weeks, the Potato will equal the Rye and Barley in abundant produce, and cause low prices of food in Germany during the coming year. From the drier soil and atmosphere and colder winter of Germany, the tubers of the Potato, once formed, are not so subject to rot from the disease, whether in the ground or in the store pit, as they are in Britain. During the latter part of last week the weather in Holstein has been unprecedentedly hot, the temperature of the air sometimes exceeding blood heat, and strokes of the sun occurring. One of the seamen on board a British steamer was on Saturday struck down on the deck, while the vessel lay in the Elbe, at Hamburgh, and was only recovered by bleeding, the application of ice to the head, and other medical aid persisted in for several hours. Notwithstanding the greatly increased taxation and contributions levied on the Duchies by the Danish Government since the war, Holstein and Schleswig are rapidly improving in agriculture—in grain and cattle raising, in butter making, in roads, houses, and in whatever concerns human advancement under present circumstances. This is one of the happy results of the English free trade in food, and consequent great intercourse with England. The Holstein butter now rivals that of Holland, and is sold in Britain as Dutch. The making of butter and cheese is here pursued as a separate trade. The milk of a number of farms is bought by the butterman at so much per cow, and the art of butter and cheese making being thus carried on as an especial business, hence receiving the undivided attention of those so engaged, advances nearer to perfection. It is a pity that the Danish Government does not second Britain in these free-trade measures and ameliorations of tariff, by which Denmark and the Duchies profit so much, and might profit a great deal more. But Denmark, notwithstanding that Britain is the chief source of her prosperity and wealth, is inimical to Britain and favours Russia, while in the Duchies quite a contrary feeling prevails. *B. Johnston.*

Societies.

ROYAL AGRICULTURAL IMPROVEMENT OF IRELAND.

Armagh, *August* 9.—A journey through the East of Scotland unfits one for a fair judgment of Irish agriculture. The high polish on Scottish farming makes the negligence of the Irish agriculturist appear more glaring than it actually is. It needs the memory of the same district during the past 10 years to make the journey between Belfast and Armagh gratifying to an agricultural eye. Compared with itself in the past it is no doubt satisfactory enough, while compared with the Lothians in the present it presents a sufficiently disheartening contrast. We are surprised to find little of the Flax crop in this part of the country, and that so late when compared with what we saw some weeks ago in Lincolnshire. The Potatoes seem everywhere attacked with the disease, and the grain crops are very far from good.

The show yard at Armagh indicates life enough in the Society; it, and that within it, presents a very favourable contrast with our remembrance of a similar meeting some years ago in Dublin. The show of short-horns is larger than any we have seen this year; and though it contains many animals below the standard of those

shown at Lincoln, yet most of the prize animals of Lincoln, Ripon, and Berwick are here.

At Lincoln 56 in the bull classes of short-horns, and 55 in the cow classes were exhibited. At Berwick the numbers were 52 and 46 respectively. At Armagh they are 61 and 90. Here, however, the superiority ceases; the other breeds, whether English, Scotch, or Irish, are very imperfectly represented. Devons and Herefords are hardly here at all, and Ayrshire and Kerry both make a very poor show.

There is a very good show of Leicester sheep, and a fair collection of horses, chiefly of the Clydesdale breed.

The following is the list of awards in Short-horns and in horses. The others had not been announced when post left :—

CATTLE.

SHORT-HORNS.—1. *Bulls calved between Jan.* 1, 1849, *and Jan.* 1, 1852: 1st, and Council Gold Medal, to R. Booth, Warlaby; 2d, Sir A. B. Brooke, Brookborough.

2. *Bulls calved in* 1852: 1st, C. Towneley, Towneley Park; 2d, Sir F. W. Heygate, Bellarena.

3. *Bulls calved after Jan.* 1, 1853: 1st, Lord Viscount Monck, Enniskerry; 2d, J. Douglas, Drem.

It was a very general impression, in which we concurred, that Mr. Douglas's bull, which had been commended at Lincoln, and successful at Berwick, should have been higher placed than it was. It is remarkably good in the hind-quarters; but even in front, where it is less perfect, it is better than the white bull, to which the higher prize has been awarded.

4. *Cows in Calf or Milk of any age*: 1st, and Council Gold Medal Charles Towneley; 2d, and Towneley Challenge Cup, to Mr hristy, of Adare.

The first-prize animal is exceedingly fat, and unevenly so.

5. *Heifers in Calf or Milk, calved in* 1851: 1st, R. Booth Warlaby; 2d, Charles Towneley.

Both beautiful animals.

6. *Heifers in calf or in milk, calved in* 1852: 1st, James Douglas, of Drem, for his heifer, shown successfully now at Lincoln, Berwick, and Armagh; 2d, W. Chorley, Belfast.

7. *Heifers calved after Jan.* 1, 1853: 1st, J. Richardson, Lisburn; 2d, Lord Lurgan, of Lurgan.

HORSES.

1. *Cart Stallions foaled in* 1847—52: 1st, C. P. Leslie, M.P., Glasslough, a dark grey Clydesdale stallion; large breed; but not remarkable for power or size; 2d, S. Nait, Edenderry.

2. *Stallions foaled after Jan.* 1, 1852: 1st, Lord Clermont, Dundalk; 2d, J. Ronaldson, Newtown Mount Kennedy.

3. *Cart-mares in foal*: 1st, G. Roe, Donnybrook; 2d, Earl of Annesley, Castlewellan.

4. *Cart fillies foaled in* 1851: 1st, Lord Clermont, Dundalk; 2d, N. M. Archdall, Enniskillen.

5. *Cart fillies foaled after Jan.* 1852: 1st, T. Butler, Clonee; 2d, Lord Clermont.

IMPLEMENTS.

There is a very excellent collection; the only one we have seen where there is a fair mixture of the English, Scottish, and Irish manufactures. At Berwick there were few English machines, and at Lincoln hardly any Scotch. Here Messrs. Ransome, and Garrett, and Richmond, and Smyth are pretty large exhibitors; and the names of Robinson, Ritchie, Gray, and others, ensure a full representation of the Irish makers. But few Scotch makers have exhibited; but the character of *those* shown by Irish makers is the same as that of the Scotch implements. In ploughs, for instance, few parts very strongly put together, and heavy in themselves, are the leading features. The English plough is lighter to lift and to draw, but the appearance of complexity about them is distasteful to the Scottish ploughman. There is a large collection of implements, and it, with the show of short-horns, Leicesters, and horses, makes the Armagh meeting the best the Society has yet seen. We must enumerate some of the prize implements which have almost all been noticed in past reports of Lincoln and of Berwick. Messrs. Richmond and Chandler take the prize in chaff-cutters and for their well-known steaming apparatus. Messrs. Ransome received prizes for their two-horse threshing machine, their whipple trees on the *truss* principle, and they were commended for their Suffolk horse-rake, their double-action Gardners' Turnip cutter, and their self-acting hay rack, in which the hay is pressed upwards against horizontal grating through which the horse feeds upon it. Messrs. Ritchie, of Ardee, received a prize for a drill plough, with mould-boards capable of ingenious adjustment as to width. Mr. Grey, of Belfast, has prizes for a subsoil plough, on the Deanston principle, only with two spurs instead of one; and for a turnwrest plough, with two mould boards, one of which is lifted into the air while the other is at work. This also was invented, if we remember rightly, by the late James Smith of Deanston. Mr. Grey's drill grubber also receives a prize. Mr. Garrett is, of course, justly commended for his horse-hoe. Mr. Smyth, of Peasenhall, receives the gold medal for his simple Turnip and manure drill. The prize churn, one in which the vessel is divided longitudinally, and the churn is, in effect, a mill working in one direction, and, as it works, grinding the milk in its passage round and round, much as rags are ground in the paper-mill, was exhibited by Mr. Robinson, of Belfast. The prize cart was shown by Mr. M'Connell, of Armagh; the prize grubber by Mr. O'Hare, also of Armagh.

It only needed better weather to have made the meeting as it deserved to be. We can as yet speak only of one day; if Thursday and Friday should prove dry, we doubt not large numbers will profit by the examination of the most instructive show yard which the Society has yet exhibited.

YORKSHIRE AGRICULTURAL SOCIETY.—The seventeenth annual meeting and show of the Yorkshire Agricultural Society was held at Ripon, on Tuesday, Wednesday, and Thursday last. The entries of stock and implements were very large; and in that respect the show must be regarded as perfectly successful, but the attendance of company was not quite equal to the years when the show was held at Leeds, at Sheffield, or at York. There were two novel features in this year's show. The first was the offering of premiums to parties growing the best crops of Flax within 10 miles of Leeds, as well as prizes for the best specimens of scutched Flax and Flax straw. The second novelty was the premium of 50*l.* for the best and most complete set of fixed barn works for threshing and dressing grain by steam power. In both instances, the premiums, now offered for the first time, produced all the good effects anticipated. The Flax prizes promise to give an impetus to the Flax cultivation in this part of the kingdom. The Leeds Flax Society, in proposing that these premiums should be offered by the Yorkshire Agricultural Society, saw that the war with Russia was calculated to interrupt the importation of Russian Flax and Flax seed, and they also foresaw that Flax is a crop which must be a profitable one to English farmers. Some objection had been felt, however, by large landed proprietors, to grow the Flax, on the ground that it is an "exhaustive crop;" but it is satisfactory to know that this opinion is rapidly exploding. Another feature of the show also deserves mention. We refer to the exhibition of long and short wool in fleeces. Although there were some good wools shown, the competition was not so keen as could have been hoped for; but it is to be hoped that these prizes may tend to improve the quality of our Yorkshire wools—a matter important alike to manufacturer and grower.

The Yard Implements were tried in a field called Parkfields, on Tuesday. The trial of Reaping Machines was made on Tuesday evening, upon some land belonging to Mr. Harland, at Copt Hewick, three miles from Ripon, the crop being one of green Rye—a very fair crop, about half of which was standing, the rest more or less laid. The attendance at the trial was large. The only implements competing for the prize were M'Cormick's, and Bell's improved; the latter was exhibited by Mr. Crosskill, of Beverley, and the former jointly by Mr. Matthews, of Driffield, and Burgess & Key, of London. Bell's machine was first started, and amongst the corn which stood well it performed its work for three or four times round in a satisfactory manner, considering that the corn was in a green state, and, consequently, more difficult to sever in the stalk than if it had been ripe. M'Cormick's reaping machine was next set in motion, and to some extent was equally satisfactory, but did not get on without some stoppages, so well as Bell's machine. Both reapers were then tried upon the laid corn, but the trial was unsuccessful; in fact, neither machine could deal with the laid corn. The general opinion amongst the company was, that Bell's machine effected its work the more efficiently of the two; but the agriculturists seemed to think that very material improvements must be effected in these machines before they could be brought into general practical use. The opinion of the judges may be opined from the fact that they have withheld the prizes for reaping machines.

The Show Yard, both for cattle and implements, was a short distance out of the city on the Studley Road. Of cattle there were 134 entries, of sheep 84, of pigs 149, of horses 196, and of poultry 288. Of implements there was also a large and interesting display, the articles commanding most attention being a patent combined threshing, winnowing, and cape stripping machine, exhibited by Tuxford & Sons, Boston, Lincolnshire; a set of barn works, constructed for threshing all kinds of grain ready for market, shown by Clayton, Shuttleworth, & Co., Lincoln; and an improved portable combined thrashing, shaking, and dressing machine, shown by R. Hornsby & Son, Grantham. These machines were accompanied by portable steam engines, and as they were kept in motion most of Wednesday and Thursday, the farmers and landowners attending the show had the fullest opportunity of testing the value and utility of these inventions.

At the Council Dinner the subject for discussion was "The best way to obtain yearly servants in agriculture, and to obviate the evils of the present system of hiring without character." Mr. Rutson considered that the present position both of master and servant, but especially that of the latter, stood much in need of improvement. He would, however, merely lay before the Society the question whether the time had now arrived when men should derive a profit from their character as well as from their bodily labour, and also when masters should have a security of good character? He considered the question of great importance.—Mr. Crompton, from an experience of 30 years as a magistrate in an agricultural district, considered that there were very few women or men of good character who had any difficulty in procuring a situation, or were compelled to go to the statutes in search of one. Even if they should be thrown out of place they are invariably, almost, sought by some neighbouring farmer, and in this way they seldom lacked a situation. But before the condition of the farm servant could be materially ameliorated, the statute law affecting them must be altered, and if that could be done, the benefits likely to result from the alteration would be undoubtedly great. He then alluded to the hardships of the present law of statute-hirings, and stated that he had found that the complaints coming before him were generally made by the same persons, good farmers seldom or never appearing to take advantage of the manifest injustice of the law.—Mr. Wells, farmer, Booth Ferry, thought the question was particularly a farmers' question. They had two classes of servants—day servants and hired servants—and he thought character ought to form a very essential part of the contract. He had had some 10 or 12 servants to engage yearly, and he had found an immense deal of difficulty in obtaining men of character. With reference to female servants there was not so much difficulty, for a good female servant, if not retained in the family, was sure to be engaged by some one in the neighbourhood. There was great difficulty with boys, who were fond of change, and seemed to think two years in one place quite sufficient. Unfortunately there was another difficulty. In agricultural towns they had two or three statutes before Martinmas-day, and magistrates knew that though a servant might have received his or her godspenny, if they had not commenced their servitude the engagement was not binding unless it was in writing, and the result was that many after receiving their godspenny re-engaged themselves on the offer of higher wages, and left their previous employer without any remedy. Last Martinmas, after all the statutes were over, he ascertained that four or five of the servants he had engaged had re-engaged themselves, and he was compelled to fill up his complement of servants without character, and the consequence had been that he had had nothing but difficulty ever since. He always inquired as to character, and he thought the engagement ought to be in writing, each party taking a copy, so that there might be something like reciprocal protection.

The following is the award of prizes for Cattle, Sheep, &c. :—

SHORT-HORNED CATTLE.—Best bull, 25*l.*, C. Towneley; 2*l.* Henry Vyner. Best yearling bull, 20*l.*, C. Townley; 5*l.*, Lord Feversham. Best bull calf, 10*l.*, C. Towneley. Best cow, in calf or milk, 15*l.*, C. Towneley; 5*l.*, Earl de Grey. Best three-year-old cow, in calf or milk, 10*l.*; R. Stratton; 5*l.*, R. Stratton. Best two-year-old heifer, in calf, 10*l.*, T. C. Constable; 5*l.*, C. Towneley. Best yearling heifer, 10*l.*, C. Towneley; 5*l.* T. C. Constable. Best heifer calf, upwards of five months old, 7*l.*, C. Towneley; 3*l.*, G. Wentworth.

CATTLE OF ANY BREED.—Best cow for dairy purposes, 7*l.* C. Cradock.

LEICESTER OR LONG-WOOLLED SHEEP.—Best shearling ram, 20*l.*, W. Abraham; 5*l.* J. Borton. Best ram of any age, 10*l.*, W. Abraham; 5*l.* W. Abraham. Best pen of five ewes, 7*l.*, G. Walmsley. Best pen of five shearling wethers, 5*l.*, G. Walmsley. Best pen of five shearling gimmers, 12*l.*, W. Abraham; 5*l.*, G. Walmsley.

SOUTHDOWN SHEEP.—Best shearling ram, 10*l.*, G. S. Foljambe. Best southdown ram of any age, 10*l.*, to Lord Walsingham. Best pen of five southdown ewes, 5*l.*, Lord Walsingham.

BLACK-FACED SCOTCH OR HIGHLAND SHEEP.—Best ram, 5*l.*, R. Pearson. Best pen of five ewes, 5*l.*, R. Pearson.

PIGS.—Best boar, large breed, 5*l.*, T. M. Richardson; 2*l.*, Craven. Best sow, large breed, in pig or milk, 7*l.*, Earl Fitzwilliam; 2*l.*, P. Sturdy. Best boar, small breed, 5*l.*, G. Mangles; 2*l.*, W. B. Wainman. Best sow, small breed, in pig or milk, 7*l.*, G. Mangles; 2*l.*, G. Mangles. Best three store pigs, of the same litter, from four to nine months old, 5*l.*, S. Wiley; 2*l.*, A. Fawkes. Best sow of any breed, not qualified to compete in classes 21 or 23, 5*l.*, T. Craven; 2*l.* J. Dean. Best boar of any breed not qualified as above, 5*l.*, G. Mangles.

HORSES.—Best stallion for hunters, 10*l.*, Mr. H. S. Waring, Darlington; 3*l.*, Mr. T. Groves, Plumpton Hall, Knaresborough. Best stallion for coach horses, 10*l.*, Mr. A. Hairsine, Holme, Hayton; 3*l.*, Mr. T. Marshall, Low Catton, Stamford Bridge. Best stallion for roadsters, 10*l.*, Mr. J. Crompton, Thornholme, Bridlington; 3*l.*, Mr. G. Long, Kearby, Wetherby. Best stallion for agricultural purposes, 10*l.*, Mr. G. Chapman, Thorphill, Whixley; 3*l.* to Mr. J. Stead, Bishop Thornton, Ripon. Best stallion for agricultural purposes, to attend at Ripon on every market day for the season of 1855, and to travel in the district, 20*l.*; Mr. R. Emsley, Markington, Ripley. Best mare and foal for hunting, 7*l.*, Mr. T. Swarbreck, Sowerby, Thirsk. Best mare and foal for coaching, 7*l.*, Mr. J. Lee, Thirsk. Best roadster mare and foal, 5*l.*, Mr. J. T. Robinson, Leckby Palace, Thirsk. Best mare and foal for agricultural purposes, 10*l.*, Mr. T. Wetherell, Kirkbridge, Darlington. Best three-year-old hunting gelding, 5*l.*, Mr. R. Stockdale, Skerne, Driffield. Best three-year-old hunting filly, 5*l.*, Mr. T. Batty, Wallerthwaite, Ripon. Best three-year-old coaching gelding, 5*l.*, Mr. T. Wetherell, Kirkbridge, Darlington. Best three-year-old coaching filly, 5*l.*, to Mr. W. Merton, Ainderby, Quernhow, Thirsk. Best two-year-old coaching gelding, 5*l.*, Mr. B. Johnson, Frodingham Bridge, Driffield. Best two-year-old coaching filly, 5*l.*, Mr. J. Dodsworth, Seamer, Stokesley. Best three-year-old hackney gelding or filly, 5*l.*, to Mr. Vyner, Newby Hall, Ripon. Best hackney gelding or mare, not less than four years old nor exceeding six, 5*l.*, Mr. Swarbreck, Sowerby, Thirsk. Best pair of horses, of either sex, for agricultural purposes, worked during the season, 5*l.*, Mr. Batty, Bishop Monckton, Ripon. Best two-year-old agricultural gelding or filly, 7*l.*, Mr. J. Bennett, Snargill, Skipton. Best yearling gelding or filly for agricultural purposes, 5*l.*, Mr. J. Batty, Bishop Monckton, Ripon.

FLAX.—For the best cultivated and harvested crop of Flax, grown within 10 miles of Leeds, the quantity not being less than 5 acres, 20*l.*; second do., 10*l.* There were two competitors in this class, viz., Mr. Thomas Robinson, Halton, Leeds, and Mr. G. Barker, South Milford, Sherburn. Class 72, for ditto, not less than 2 acres, 5*l.*; 2d do., brought six competitors into the field, namely, Messrs. S. Walker, Normanton; W. D. Lord, Rawdon, Leeds; John Mawson, Burmantofts Grove, Leeds; Thomas Robinson, Halton, Leeds; W. Bayford, Arthington, Otley; and J. W. Scriven, Throstle Nest, Otley. The judges were by the rules required to view the Flax on the land, and take into special consideration the marketable condition of the article. As the state in which the crop is harvested, as well as its cultivation, have to be considered, these premiums cannot be yet awarded.—Best specimen of scutched Flax, not less weight than 2 cwt., 10*l.*, to John Boyle, Whitebeck Mill, Leeds; 2d do., 5*l.*, to R. Beilby, Fairfield, York. Best specimens of Flax straw, not less than 5 cwt., 10*l.*, to John Atkinson, Shaw Mill, Ripley; 2d do., 5*l.*, to John Boyle, Whitebeck Mill, Leeds.

IMPLEMENTS.—For the best and most complete set of barn works for threshing and dressing grain, a prize of 50*l.* was awarded to Messrs. Clayton, Shuttleworth, & Co., Lincoln; best assortment of ploughs, 10*l.*, to John Palmer, Stockton; best assortment of harrows, 5*l.* to do.; best cultivator, or scarifier, 5*l.*, to R. Coleman & Son, Chelmsford; best reaping machine, 15*l.* (prize withheld); best waggon, 5*l.*, to Crosskill, Beverley; best single-horse cart, 5*l.*, to W. Banks, York; best corn drill, 5*l.*, to R. Hornsby & Son, Grantham; best Turnip drill on the flat, 5*l.*, to do.; best Turnip drill on the ridge, 5*l.*, to do.; best manure distributor, 5*l.*, to J. Palmer; best grinding mill, 5*l.*, to Clayton & Co.; best tile machine, 4*l.*, to H. Kearsley, Ripon; best Norwegian harrow, 2*l.*, to do.; Bentall's broad-share plough, 2*l.*, to W. Busby, Newton, near Bedale; roller mill, for corn, Linseed, &c., 2*l.*, to T. Turner, York; morticing machine, 2*l.*, to W. Coulson, York; corn-dressing machine, 2*l.*, to R. Hornsby; Nicholson's cake breaker, 2*l.*, to W. Dove, York; the most useful col-

lection of articles, 1*l.*, to Geo. Meynell, Northallerton; Howard's horse-rake, 2*l.*, to W. Busby; models for horseshoes, 2*l.*, to Matthew Pratt, Ripon; general purpose drill for small occupations, 2*l.*, to Thomas Malthouse, Ripon.

MEDALS.—To P. Stevenson, jun., Thirsk, for traversing web in Turnip drill; to W. Busby, for T. H. Brinsmead's straw shaker; and to John Patterson, Beverley, for washing, wringing, and mangling machine.

HIGHLY COMMENDED.—Crosskill's improved self-cleaning clod-crusher, W. Crosskill, Beverley; quadrant regulator in drill, W. Moore, Ripon; Smith's haymaker, J. Palmer; and portable engine, R. Hornsby, Grantham.

COMMENDED.—Crosskill's clod-crusher, Crosskill; Cambridge's roller, B. Stead, Barnsley; single-horse cart, J. Barker, York; Barley humbler, Lucas & Wright, Lincoln; Chambers's liquid drill, James Kemp, Alford, Lincolnshire.

RECEIPTS AND ATTENDANCE AT THE SHOW.—The money taken for admission to the show yard was quite as much as had been anticipated. On Wednesday there were 3200 persons admitted to the show ground by half-crown tickets; the receipts for the day being 210*l.* On the shilling day (Thursday), however, the number present amounted to 10,000, the receipts that day being about 500*l.*, or 710*l.* in the aggregate. *Abridged from the Leeds Mercury.*

HIGHLAND SOCIETY'S MEETING AT BERWICK.—We append a short paragraph squeezed out of last week's report:—

Horses.—There was a very large show of horses—the Clydesdale breed being fully represented. The first prize in Class I. was taken by a large grey horse, very deficient, as we think, in the hind quarters, exhibited by Mr. Phillips, of Brampton; the second by Mr. Morton, of Lamboletham, near St. Andrew, for a smaller, but more compact and better made black horse; the third by Mr. Smith, of Edinburgh. The following are the awards under this head:—

HORSES FOR AGRICULTURAL PURPOSES.

Best stallion: 30*l.* and the silver medal, Charles Phillips, Brampton, Cumberland; 15*l.*, John Morton, Lamboletham, St. Andrews.

Best entire colt, foaled after 1st January, 1851: 20*l.*, Robert Findlay, of Easterhill, Glasgow; 10*l.*, Thomas Muir, Bowhouse, Lanark.

Best entire colt, foaled after 1st January, 1852: 10*l.*, John Pattie, Tinwald, Dumfries; 5*l.*, James Douglas, Drem.

Best entire colt, foaled after 1st January, 1853: 8*l.*, Andrew Allan, Dundonald; 4*l.*, Robert Murdoch, Cambuslang.

Best brood mare: 20*l.*, Andrew Logan, Kilbarchan; 10*l.*, James Douglas, Drem.

Best filly, foaled after 1st January, 1851: 10*l.*, David Wright, Preston-Pans; 5*l.*, Andrew Logan, Crossflat.

Best filly, foaled after 1st January, 1852: 8*l.*, Robert Jack, Campsie; 4*l.*, Thomas Smith, Alnwick.

Best filly, foaled after 1st January, 1853: 6*l.*, William Kerr, Midcalder.

Sheep.—In Leicesters two very distinct classes of sheep appeared to be exhibited; the border Leicesters being stronger-built, larger-framed, whiter-faced, and longer-woolled sheep than those of English breeders, with which they competed. It so happens that two English and two Scotch judges were appointed, and that in apportioning the work of examination, two parties of one English and one Scotchman examined the several classes, with the understanding that any differences of opinion arising were to be settled by calling in as umpire the Englishman from the other side respectively. These differences of opinion have been continually arising, we have no doubt whatever, and thus an English judgment has been given in every case, where a judgment more in accordance with the experience of the locality would have been more satisfactory, and, as we believe, much wiser. The smaller, finer sheep, of excellent quality no doubt, in every case carried the day; the judgment having, of course, been consistent throughout. The prizemen were Mr. Wiley, of Brandsby, York, who took a great many prizes; Mr. Douglas, of Drem; and Mr. Collie, of Elgin, who bred, we understand, from Mr. Wiley's sheep and those of Mr. Sanday.

The Cheviot sheep were well represented by a number of large animals of good frames well covered by *carefully clipped* fleeces. We regret not having room for more detailed specification, either in this class or the Southdowns, where the Duke of Richmond, Messrs. Aitcheson of Haddington, Forster of Rothbury, Hunter of Thurston, Oliver of Kelso, and Tod of Tranent, were the prize-holders. Among the Cheviots, Messrs. Brydon of Langholm, Elliot of Hindhope, and others, were prize-holders. The following are the awards in the case of sheep and pigs:—

SHEEP.

LEICESTERS.—*Best tup under four shear:* 20*l.*, Samuel Wiley, Brandsley, York; 10*l.*, James Douglas, Drem.

Best Shearling Tup: 20*l.*, second best, 10*l.*, S. Wiley.

Best pen of five ewes under four shear: 10*l.*, S. Wiley; 5*l.*, James Douglas.

Best pen of five shearling ewes: 10*l.*, John Collie, Elgin; 5*l.*, James Douglas.

CHEVIOTS.—*Best tup under four shear:* 15*l.*, 8*l.*, James Brydon, Langholm.

Best shearling tup: 15*l.*, 8*l.*, John Carruthers, Moffatt.

Best pen of five ewes under four shear: 8*l.*, James Brydon, Moodlaw; 4*l.*, Thomas C. Borthwick, Langholm.

Best pen of five shearling ewes: 8*l.*, James Brydon; 4*l.*, T. C. Borthwick.

BLACKFACED BREEDS.—*Best tup, under four shear:* 10*l.*, Robert Patterson, Biggar; 5*l.*, James Tweedie, Nether Abington, Lanarkshire.

Best shearling tup: 10*l.*, James Tweedie; 5*l.*, John Watson, Biggar.

Best pen of five ewes, under four shear: 6*l.*, James Brydon; 3*l.*, Adam Blacklock, Moffat.

Best pen of five shearling ewes: 6*l.*, Allan Pollok, Ronachan; 3*l.*, George Proudfoot, Moffatt.

SOUTHDOWNS.—*Best tup, under four shear:* 10*l.*, James Aitchison, of Alderston; 5*l.*, the Duke of Richmond.

Best shearling tup: 10*l.*, 5*l.*, Mr. Aitchison, of Alderston.

Best pen of five ewes, four shear: 6*l.*, the Duke of Richmond; 3*l.*, Robert Oliver, Lochside, Kelso.

Best pen of five shearling ewes: 6*l.*, Wm. Tod, Tranent; 3*l.*, Robert Oliver, Lochside.

PIGS.

Best boar, large breed: 10*l.*, Jonathan Brown, Wigton; 5*l.*, George Hay, Dalkeith.

Best boar, small breed: 10*l.*, Jonathan Brown; 5*l.*, R. H. Watson, Bilton Park, Wigton.

Best sow, large breed: 6*l.*, Henry Atkinson, Alnwick; 3*l.*, George Murray, Berwick.

Best sow, small breed: 6*l.*, Jonathan Brown; 3*l.*, George Moore Dixon, Morpeth.

Best pen of three pigs, under eight months old: 4*l.*, R. H. Watson; 2*l.*, Nicol Milne, of Faldonside.

In addition to the above there was a considerable exhibition of Poultry.

SOCIETY FOR THE PROMOTION OF THE GROWTH OF FLAX IN IRELAND, *July* 26.—Placards, pointing out the importance of saving seed for next year's sowing, to provide against the probability of there being little or no supply of Riga seed obtainable, had been posted up in 134 towns and villages. It having also been suggested that, in country districts, the most likely means for bringing this important question before farmers would be by posting those placards in the vicinity of places of worship, copies had been sent to upwards of 300 clergymen, with a request that they would have this done, and a parcel of instructions for saving seed had been also sent them for distribution among the members of their congregations. The latter documents had also been forwarded to many landed proprietors and farming societies. By these and other means, it was hoped that a large saving of seed would be secured. Mr. Roche, M.P. for county Cork, had 2500 acres of Flax on his estates, from all of which he purposed saving the seed, which would alone yield upwards of 7000 barrels, at least.

A letter and samples of Flax fibre had been received from Mr. Turnbull, Rosemill, Dundee, who wrote as follows:—

"Having for a period of years devoted great attention to the preparation of Flax straw, previous to scutching, as well as to the latter operation itself, and having tried upwards of 700 experiments, chemical and mechanical, I have succeeded in discovering what I consider to be the key to the treatment of Flax straw, and I can make very fine fibre from straw which will give but a mediocre article under any of the methods in use. I can make, from any Flax straw, an article admirably suited for shoe-threads, and yielding about 90lbs. of dressed fibre from 112lbs. of raw Flax, fit to spin 20 to 30 lea yarn. From the same straw, by other treatment, I can make Flax fit to spin 80 to 100 leas. In both cases great strength and excellent spinning quality. I enclose a small sample of each kind.

"As regards scutching, my machinery, which is very simple, gives all the fibre as *long line*, at a cost, for wages, of less than 4*s.* per cwt. of scutched Flax, reckoning boys' and women's wages at 5*s.* per week. All the fibre is preserved, the waste being only of the very short or broken straws and a portion of the branches. My yield from 100lbs. of seeded straw varies from 18 lbs. to 22 lbs., according to the quality of the straw, the fully-ripened always giving the most fibre, of the best quality, and much the easiest to prepare and scutch.

"All this may appear over sanguine, but I have often tested and proved its accuracy. There are no limits to the changes in organic matters, of which a portion of the Flax plant consists, and the quality of the fibre is very much determined by the changes which can be produced in the easily-soluble organic matter surrounding it.

"The coarser sample was prepared from the straw, and ready to dry for scutching in three hours—the finer requires three days. The scutching machinery is just as well adapted for hand labour in the cottage as for factory. Taking seeded straw at 4*l.* per ton, the Flax can be brought to market under 40*l.* per ton.

"As the society is in communication with the most extensive and enterprising of the Flax manufacturers, its aid in inducing some of these to make trial of my inventions, would conduce to results much earlier and more beneficially than by any other way."

The samples of fibre sent appear very strong, and fairly to warrant Mr. Turnbull's statements as to quality. The Chairman exhibited two specimens of the Flax plant, each upwards of 4 feet long, and in every respect equal; one being grown from Riga seed, and the other from home-saved, the first year's saving from Riga. Both were sown in the same field, on the same day. He was very desirous they should be treated alike, throughout, in order that the result should satisfy farmers as to the value of home-saved seed. Mr. Niven showed samples of plants grown from the Continental white-blossomed variety, and from the yellow seed obtained from America. They appeared of fair quality. The flowers of the latter were differently formed from Flax flowers generally, being more pointed. Mr. J. S. Crawford, of Redemon, reported favourably, also, of the crop growing on his land from the American seed.

Poultry.

Carriage of Eggs.—For the benefit of your correspondent "T. S. W.," and of others who may feel interested, I beg to hand you the following details respecting the eggs I sent to the United States:—

	No. sent	From	How Packed	Broken	Hatched
Sebright Bantams......	12	Manchester	Bran	None	None
Black Spanish..........	12	ditto	do.	do.	8
Ditto	12	Carlisle	Straw & Bran	2	6
Grey Dorkings..........	12	ditto	do.	2	6
Black-Breasted Game...	13	Liverpool	Oats	None	9
	61			4	29

Of the black Spanish from Carlisle, one proved a sickly bird and died, leaving 28 strong healthy chickens, hatched from 45 eggs, that is after deducting breakages, and striking out the bantams as a total failure. My friend says—"I am much pleased with the result. The eggs had every advantage—the hens were ready for them, and they sat better than any I have tried this season. The same day I set the English eggs I set five dozen received from Pennsylvania, and have not more than ten chickens out of the lot." The eggs came to me packed, and with the round end of the egg uppermost, as above, in three boxes, which were afterwards enclosed in a stout case, placing them so as to maintain the eggs in the same position. The case was, by permission, placed under care of the steward of the steamer, with instructions to keep it in a cool place (not the ice house), and to take care that it was not knocked about, and that the top, which had been marked, was kept uppermost. The eggs reported by "J. B.," in your paper of the 29th ult., as having been received by him from America, and hatched under very unfavourable circumstances, were sent in return for part of those I sent out, and were packed in sawdust. These being hatched at all was quite beyond my expectation, and therefore I must presume that sawdust answers exceedingly well for packing eggs in; but were I again sending out eggs, I should give the preference to Oats (free from dust), to pack them in; and for any quantity, I should again adopt the plan of dividing them by means of small boxes inclosed in a large case. *D. J.*

Miscellaneous.

Agricultural Labourers.—The progress of agriculture, like that of every other manufacture, is in no small degree dependent upon the intelligence, trustworthiness, and general carefulness of the workmen. The hinds of East Lothian have been long distinguished by such qualities; and any report on the farming of East Lothian would be defective which did not bear tribute to their general intelligence and trustworthiness. Nowhere does there exist more of that community of feeling, and that friendliness of relation which ought to subsist between the employers and the employed, than in this county. The servants not only occasionally suggest improvements, but endeavour to carry out what is novel, whether in the adoption of new implements or of what is new in practice. On some farms the same families have sustained the relation of master and servant for at least two generations. This, however, is somewhat on the wane, and indeed modern habits scarcely admit of this rather interesting feature in the domestic history of the past being preserved intact. *From the Report on the Farming of East Lothian, by Mr. Stevenson, in the Eng. Ag. Soc. Journal.*

Calendar of Operations.

JULY.

WESTER ROSS: *July* 31.—All hands are busily occupied with Turnip hoeing. On many farms the first hoeing has been completed; on others there is still a good deal to do. Fly has been complained of, but its ravages this year have been limited and comparatively insignificant. The complaint is now loud that "finger and toe" is making alarming havoc. That it has made its appearance in a few fields is true; that it is to become general is not yet manifest. This disease can be ordinarily cured by deep ploughing, and an application of lime some years previous to the Turnips being sown, so that the lime being thoroughly incorporated with the soil, and having had time to operate, the soil may be freed from those noxious substances which are so injurious to Turnips. The earlier Turnips look well, the later ones are regularly braided and promising. Potatoes, although this year unaffected with the disease, will not be such an abundant crop as last year. In many places the braird was irregular, weak, and unhealthy, and generally speaking they are not nearly so luxuriant as last season. About a fortnight ago the disease was observed, and it still continues to spread, so that now there is scarcely a field without symptoms of it. The fields first attacked are now nearly all black, and there is little hope of any of the others. Formerly the disease made its first appearance amongst Potatoes growing in gardens, or in low, deep, richly-manured soils; this year, strange to say, it has first appeared on the higher grounds, and is, as yet, very little seen in the garden or richer soils. There was a larger breadth planted this year than there ever was in any former one, and consequently there was much depending on them. Last year there was 100,000*l.* received for Potatoes shipped at Inverness, Nairn, Beauly, and a few of the northern ports, and the belief was general that, should the root be cultivated, somewhat more extensively, our fortunes would be speedily secured. "The best laid schemes of mice and men gang aft a-glee." For the last few weeks the weather has been very favourable for our grain crops, and harvest comes on speedily. The Wheat is a heavy crop, and is not so much affected with rust as was anticipated, yet it prevails to a considerable extent in the heavier fields, where the wet was not so readily dried up by the wind. Oats and Barley are fully an average crop. The great Inverness sheep and wool fair was held on the usual days. Prices offered for wool were so much below those of last year that farmers preferred keeping on, and scarcely a sale was effected. Sale of sheep was brisk, at a reduction on last year's prices, of from 1*s.* to 2*s.* 6*d.* per head. At this market there is no stock exhibited, the purchaser being previously acquainted with the kind of stock possessed by the disposer, concludes a bargain without having seen his purchase at all. Emigration is producing its natural effect in the north; work-people have had increased wages through the summer, and expect still higher wages for harvest work.

Notices to Correspondents.

CHEVIOT SHEEP: *Young Farmer.* Next week. Or if you have the book, see article MARKETS, "Blackie's Cyclopædia of Agriculture."

CONSUMPTION OF FOOD: *Anon.* Your 80 Down ewes (large size), will need nearly a ton of roots per day, as taken from the heap—which means probably 16 cwt. of cut roots. If kept thinly over Grass land during winter, half that quantity will keep them in "store condition."

TOP DRESSING: *Iscoed.* The absence of the editor from town has occasioned the delay. A pasture field of good soil mown every year for 10 years, wants a good top-dressing by this time. Your mixed lime earth and bone-dust would no doubt be beneficial. And some ammoniacal addition will be advisable as an after application in wet weather—10 bushels of bonedust (fine) and 30 or 40 bushels of soot will probably answer the purpose, the former applied now, the latter in early spring. Or, instead of the soot and much better, apply 3 cwt. of good guano, along with a cart-load of vegetable mould per acre in March next.

ERRATUM: for "many tried implements" in the note on Smith, of Deanston's, subsoil plough, shown at Berwick (see last week's *Gazette*) read "many tined implements."

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

	£	s.	d.
Patent Pump	1	15	0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing	3	0	0

Larger sizes if required.

The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, rom underground Water Tanks, and can e readily fixed in any situation.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,

8, CRESCENT, JEWIN STREET, LONDON.

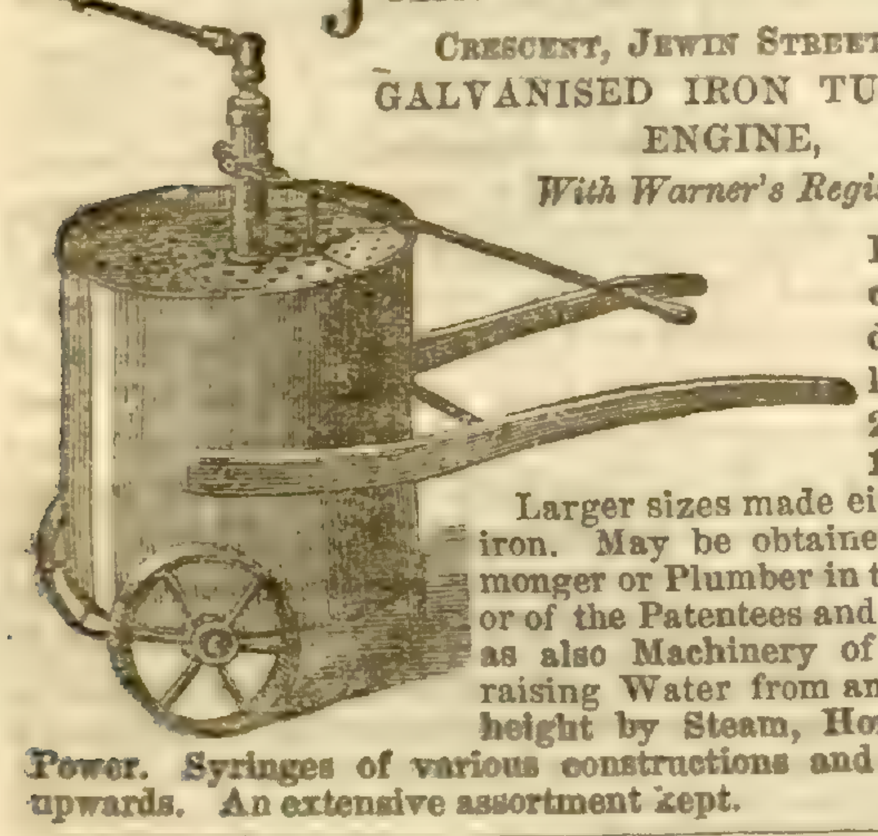
Every description of Machinery for Raising Water; Fire Engines, &c.

JOHN WARNER AND SONS,

CRESCENT, JEWIN STREET, LONDON.

GALVANISED IRON TUB GARDEN ENGINE,

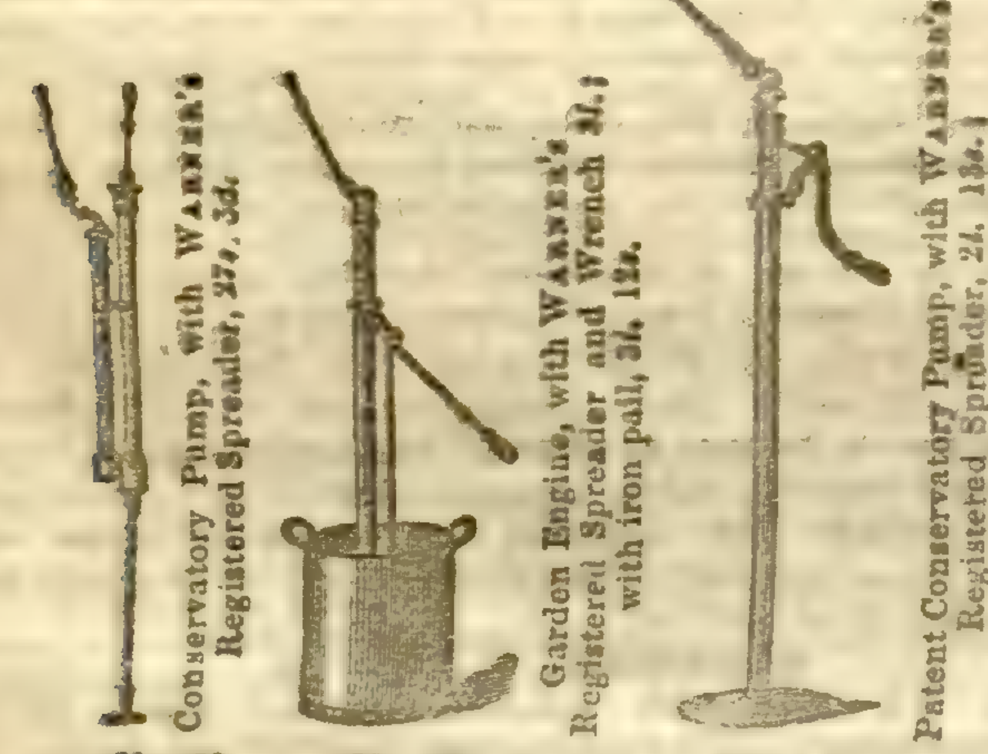
With Warner's Registered Spreader,



Is strongly recommended, for durability and low price, viz., 2*l*. 19*s*., to hold 10 gallons.

Larger sizes made either in wood or iron. May be obtained of any Ironmonger or Plumber in town or country, or of the Patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Syringes of various constructions and sizes from 9*s*. upwards. An extensive assortment kept.

JOHN WARNER AND SONS, 8, Jewin Crescent, London, Manufacturers of FIRE ENGINES, PUMPS, GARDEN ENGINES, and SYRINGES.



No. 32. No. 11. No. 14.

Brass Syringes, 9s. to 18s.

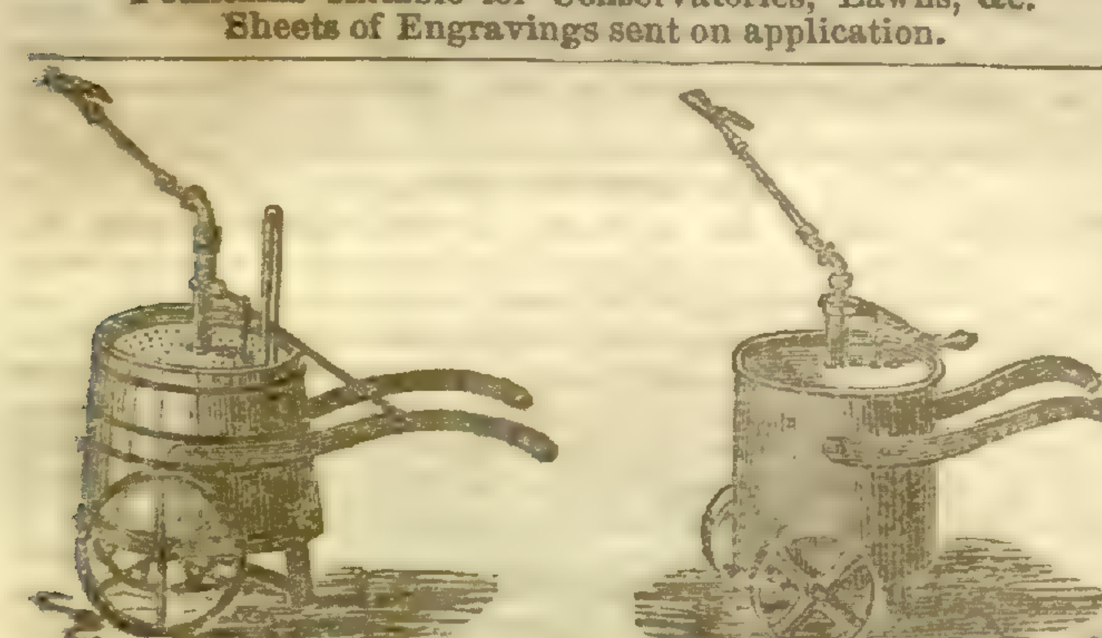
All articles of JOHN WARNER & SONS' manufacture may be obtained of any Ironmonger or Plumber in town or country, at the advertised prices.

JOHN WARNER & SONS having been practical Horticulturists for many years, know exactly the requirements of both Amateurs and Gardeners. A gardener with a properly constructed pump will get through as much work in five minutes as he could with any Syringe in a quarter of an hour, and with half the labour to himself. Syringes are economical only for small houses.

No establishment offers such a variety of effective machines for hydraulic purposes, whether to supply Gardens, Hothouses, Cottages, Farms, Mansions, or Boards of Health, with every requisite connected with the conveyance and distribution of liquids.

Fountains suitable for Conservatories, Lawns, &c.

Sheets of Engravings sent on application.



(Fig. 1.) (Fig. 2.)

J. TYLOR AND SON'S BARROW GARDEN ENGINE (Fig. 1), in best well painted oak tub, fitted with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 1 holds	10 gallons, throws	30 feet high	...	£4	10
No. 2 „	15 „ „	45 „	...	5	10
No. 3 „	28 „ „	45 „	...	6	18

J. TYLOR & SON'S BARROW GARDEN ENGINE (Fig. 2), in strong tinned iron tub, well painted inside and outside, with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 10 holds	8 gallons, throws	25 feet high	...	£2	15
No. 13 „	12 „ „	30 „	...	3	5
No. 11 „	16 „ „	40 „	...	4	0
No. 12 „	24 „ „	45 „	...	5	0
No. 14 „	30 „ „	45 „	...	5	18

A large assortment of every description of Garden Syringes, Pail Engines, Conservatory Pumps, &c., kept in stock.

Full size Syringe, on Read's principle, of the very best quality and workmanship, with two roses and one jet, 21*s*.; Plain Syringes from 10*s*. 6*d*. upwards.

J. TYLOR & SON'S Horticultural Apparatus may be obtained at these prices from any respectable Ironmonger or Seedsman in town or country, through whom alone they will be supplied, and of whom Drawings and Prices may be had.

N.B. Cost of carriage, &c., not included in these prices.

J. TYLOR & SON'S Manufactory, Warwick Lane, Newgate Street, London.

REDUCTION IN PRICE.

WEIR'S IMPROVED GALVANISED WROUGHT IRON LIQUID MANURE PUMP.

The Fittings of these Pumps are wholly of Brass, and there is no leather or other matter which can be affected by the manure.

Price, complete, with 10 feet of Flexible Suction Pipe, 4*l*. 15*s*. Terms, cash on delivery.

EDWARD WEIR, Agricultural Engineer, 16, Bath Place, New Road, London. Removed from Oxford Street.

Catalogues, with Illustrations, sent free by post.

TO AMATEUR GARDENERS, LOCAL BOARDS OF HEALTH, & SANITARY WORKS.

PATENT SLUICE COCKS, Gutta Percha, Combinated ditto, Patent Flexible India Rubber Tubing, and every other Hose for Watering Gardens. The Hydraulic Ram, Fire, Garden, and every other kind of Pump, Hydrants, High Pressure Cocks, and all other articles to be had, Wholesale and Retail, of FREEMAN ROE, HYDRAULIC ENGINEER, 70, Strand, and Bridgefield, Wandsworth.

HOSE PIPING.—GREAT REDUCTION IN PRICE.

PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense pressure, and much more than leather, vulcanised rubber, or any other hose, and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented inventions, the cost of manufacturing it is now reduced at least 50 per cent., which advantage is offered to the public.

BURGESS AND KEY, 103, Newgate Street, and 52, Little Britain, who, on application, will forward wholesale and retail prices.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.

MESSRS. BURGESS AND KEY, as Mr. PARKES' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.

103, Newgate Street, and 52, Little Britain, London.

CORN CRUSHERS AND CHAFF CUTTERS.—A large display of the best Farm Implements shown in operation. Price Lists sent free on application.

BURGESS AND KEY,

103, Newgate Street, and 52, Little Britain, London.

PUMPS AND HOSE PIPES FOR GARDENS AND LIQUID MANURE.—BURGESS & KEY'S Pumps were highly commended by the Royal Agricultural Society of England at Lincoln. Price Lists sent free.

103, Newgate Street, and 52, Little Britain, London.

CHURNS.—ANTHONY'S PATENT AMERICAN CHURN.—Since 1849 this Churn has obtained all the Prizes awarded by the Royal Agricultural Society of England. At the trial before the Judges it made in 10 minutes 4 lbs. 6 oz. of Butter from 4 quarts of Cream, being 8 oz. more than any of the other Churns from the same quantity and quality of Cream.

103, Newgate Street, London.

THE ADVANCE OF SCIENCE IN AGRICULTURE.

RICHMOND AND CHANDLER'S unprecedented celebrity for their improved CHAFF MACHINES and CORN CRUSHERS, achievable only by intrinsic merit, has secured for them the highest character in the trade, together with the confidence of the public, whether as regards true economy or the unapproachable finish and sterling quality which characterise all their productions, and render them worthy the reputation of a Manchester manufacturer.

The most distinguished authorities in all civilised countries report their unqualified satisfaction with the highly beneficial effects resulting from the use of these justly celebrated Machines, and with the now established fact of their not being subject to any of the contingencies inseparable from other machines, they are calculated to meet with general approval in the present advancing state of agriculture.

Address—RICHMOND & CHANDLER, Salford and Manchester; and 32, South John Street, Liverpool.

CHAFF-CUTTERS, of the best workmanship, 25s.; Two-Knifed Chaff Engines, from 63*s*.; Mills for Bruising Oats and Beans, from 45*s*.

WILLIAM DRAY AND CO., Agricultural Implement Manufacturers, Swan Lane, Upper Thames Street, City.

BARTON'S PATENT STABLE FITTINGS AND ENAMELLED MANGERS.—These Fittings have all the newest improvements and are the only patented invention of this description.

JAMES BARTON, Iron Founder, Smith, &c., 370, Oxford Street, a few doors East of the Pantheon.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

IMPORTANT TO STOCK FARMERS

AND FLOCK MASTERS.

SHEEP, LAMBS, HORSES, AND CATTLE,

CAN BE DRESSED WITH

LONG'S NON-POISONOUS SHEEP & CATTLE-DRESSING COMPOSITIONS, without any possibility of danger or injury resulting from the application. These Compositions are admitted by all who have fairly tested them to be the most effective Sheep Dressings ever brought before the agricultural public; and as they are NON-POISONOUS, and do not stain or discolour the Wool, they are gradually superseding the use of all Dipping and other Sheep-dressing preparations, composed of such deadly poisons as ARSENIC OR MERCURY.

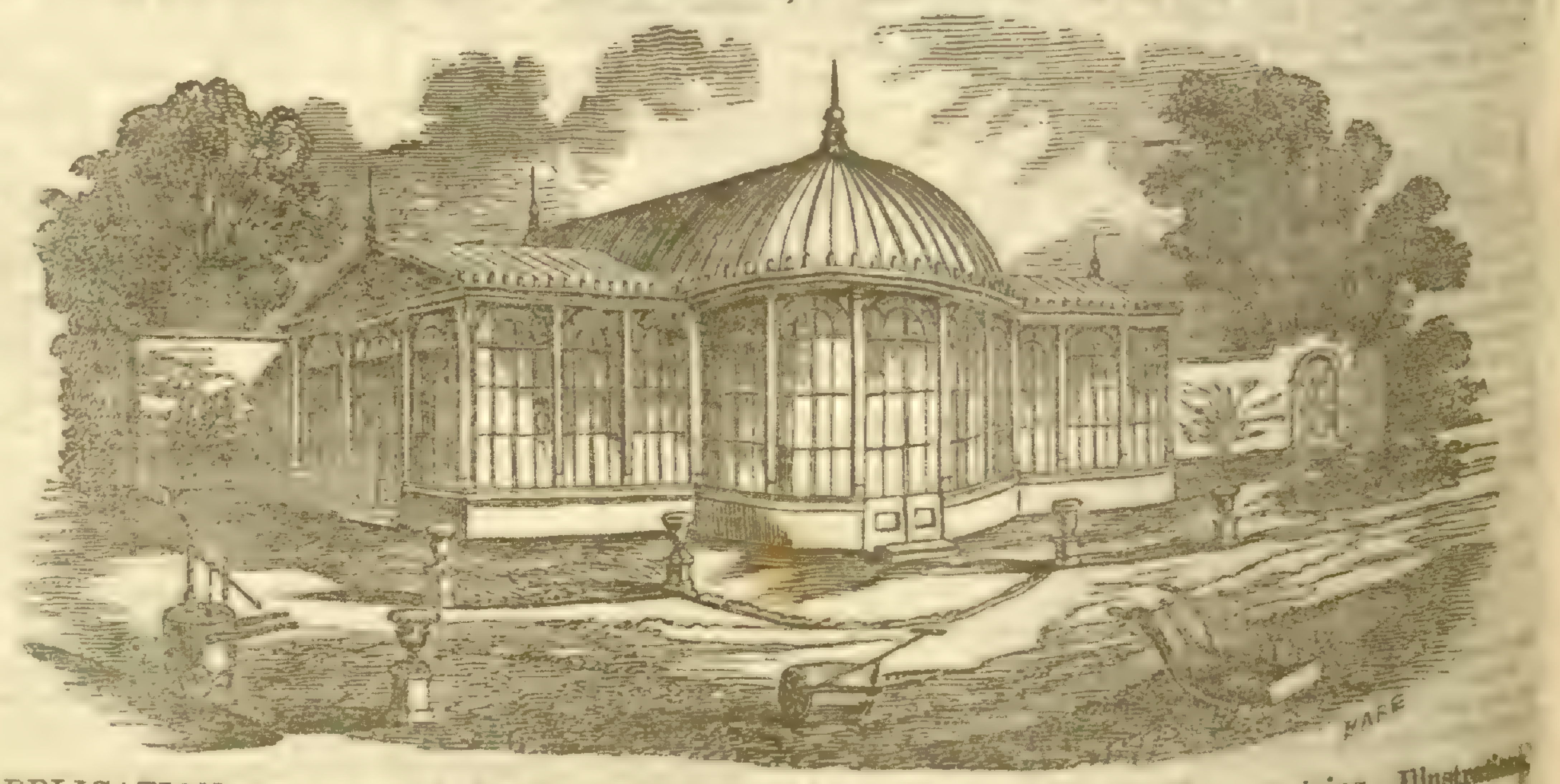
It is a fact now thoroughly established, that Long's Non-Poisonous Sheep Dressings, if liberally and judiciously applied in the dressing of Sheep and Lambs, will—in their consequent effect in removing Disease, destroying Vermin, and keeping the flock in condition—thus PROMOTING INCREASED GROWTH BOTH OF MUTTON AND WOOL—as amply repay flock owners for first outlay as artificial manures when applied to land. They are the only Sheep Dressings also, which, from the fact of their containing NO POISON, can be beneficially and safely applied to Sheep and Lambs at any age and at any season of the year.

Pamphlets, containing full directions for use, and copies of the strongest Testimonials ever accorded to a manufacturer, signed by leading and practical Stock Farmers, residing in all parts of the United Kingdom, together with the names of all Country Agents authorised to vend Long's Patent Sheep and Cattle-dressing Compositions, may be obtained gratuitously on application of any advertised country Agent; or by post, sent free, of

BARRY BROTHERS, AGENTS FOR JOSEPH LONG, Meriton's Wharf, and Shad Thames, London.

COTTAM AND HALLEN,

2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.



APPLICATION is requested for their NEW HORTICULTURAL LIST, containing Illustrations, Descriptions, and Prices of

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Syringes	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.

AGRICULTURAL LIST UPON APPLICATION.

EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

HARTLEY'S PATENT ROUGH PLATE GLASS, 1-8th thick, or 2 lbs. to the foot; 3-16ths, or 3 lbs.; and 1-4th, or 4 lbs. to the foot, for Ridge and Furrow Roofs, Greenhouses, Railway Stations, Engine Sheds, Mills, Market Halls, and Public Buildings generally.

Packed in Boxes of 50 feet each.

6 by 4 and 6½ by 4½	10*s.* 6*d.*	per box.
7 „ 5 „ 7½ „ 5½	12 0	„
8 „ 6 „ 8½ „ 6½	13 6	„
9 „ 7 „ 9½ „ 7½ and 10 by 8 ...	15 0	„

For larger sizes a full List of Prices will be sent on application. Boxes are charged 2*s.* each extra, full price allowed if returned free of expense.—For further information apply to

JAMES PHILLIPS & Co.,
116, BISHOPSGATE STREET WITHOUT.

"Rough Plate has never been, and never can be, prejudicial to the colouring of Grapes; though we can easily believe that it has been charged with such a fault by persons who have not skill enough to manage Grapes under glass."—*Gardeners' Chronicle.*

"There *can be no question now* that Rough Plate Glass is the most beautiful as well as the most useful kind of glass that can be employed in horticulture. It is free from all the faults of transparent glass, and has many advantages peculiar to itself, *without a single disadvantage as a set off.*"—*Gardeners' Chronicle.*

GLASS FOR CONSERVATORIES, GREENHOUSES, DWELLINGS, ETC.

ESTABLISHED MORE THAN ONE HUNDRED YEARS.

THOMAS MILLINGTON requests attention to his present prices of SHEET GLASS in 100 feet boxes.

Squares	6 by 4 and 6½ by 4½	
„	7 by 5 and 7½ by 5½	13 6
„	8 by 6 and 8½ by 6½	
„	9 by 7 and 9½ by 7½	16 3
„	10 by 8 to 12½ by 9½	
„	12 by 10 to 24 by 14 ...	19 0

Orchard House Squares on Mr. Rivers's approved plan, to whom I have sold some thousands of feet:—20 inches by 12, 20 by 13, 20 by 14, 20 by 15, 20½ by 12½, 20½ by 13½, 20½ by 14½, at 19*s.* per 100 ft. 200 feet cases at 42*s.*, and 300 feet case 63*s.*, in large sheets.

Boxes charged 1*s.* extra per 100 feet, and the same allowed if returned free of all charge.

HARTLEY'S PATENT ROUGH PLATE GLASS, Fern Shades, Striking Glasses, Milk-pans, Bee Glasses, Cucumber Tubes, Sheet and Rough Plate Glass Tiles, Wasp Traps; Plate, Patent Plate, Crown and Sheet Window Glass, in every thickness and quality, and Ornamental Glass, plain and coloured; pure white Shades for Ornaments, Crystal Glass for Pictures.

Warehouse, 87, Bishopsgate Street Without—same side as Eastern Counties Railway.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

Priced lists of plant tubs and boxes forwarded on application.

ENCAUSTIC TILE PAVEMENTS.

MAW AND CO., Benthall Works, Broseley, Salop, Manufacturers of the Cloister Pavement of Mediæval Court, and "THE SUCCESSFUL IMITATION OF OPY'S ALEXANDRINUM, IN THE BEAUTIFUL ENCAUSTIC TILE PAVEMENT OF CLOISTERS OF BYZANTINE COURT," Crystal Palace (M. D. Wyatt, Esq., in Official Handbook), forward, without charge, Designs and Estimates, adapted to given dimensions, of Entrance Halls, Conservatories, Verandahs, &c., in every style.

Specimens at 11, Aldersgate Street, City.

JACKSON'S PATENT PREPARATION FOR THE PRESERVATION OF POTATOES, SEEDS, &c.—This valuable discovery, for which letters patent have been obtained, is the successful result of 14 years' study and experiments in the preservation of vegetable matter. It imparts health and vigour to the Plants and Seeds subjected to its action, and effectually prevents the Potato Disease, the Smut in Wheat, Mildew and Rot, all Fungal Diseases, and the attacks of Insects and Vermin, and further recommends itself to the Farmer, the Planter, and the Public generally, by the extreme simplicity of the mode of its application.

It is sold by all Seedsmen and Chemists, in packets of one, two, three, and four pounds each, with instructions for its use; and parties requiring larger quantities for their own use or for exportation can be supplied on advantageous terms, by addressing Mr. JACKSON, the Patentee, 18, Cannon Street, London Bridge; where the article is always on sale, and the fullest particulars and directions for its use can be obtained.

M'ADAM'S ANTI-GRAPE BLIGHT COMPOSITION.—"This will soon become the *standard remedy*, as it fully deserves to be."—(See *Gardeners' Chronicle*, July 1, May 27, June 10, &c.) 1 lb. packets, with full printed instructions, 3*s.* 6*d.* each, sufficient for 18 gallons of wash.

Agents:—DAWE, COTTRELL, & BENHAM, 36, Moorgate Street, London. It can be ordered through any country Bookseller.

PAGE AND CO.'S COMPOSITION FOR THE DESTRUCTION OF MILDEW UPON VINES, BLIGHT UPON ROSES, WALL-FRUIT TREES, CUCUMBERS, MELONS, AND STOVE AND GREENHOUSE PLANTS.—Extra strong, 4*s.* per gallon, sufficient to make four (jars and barrels extra); in bottles, 1*s.* 3*d.* and 2*s.* 6*d.* each. Directions for application forwarded. Ten gallons and upwards carriage free to London.

For testimonials, see whole page of *Gardeners' Chronicle*, March 11, 1854, describing the SATISFACTORY RESULTS derived from its use in cases of Vine Mildew, Thrip, Scale, Green Fly, Red Spider, Mealy Bug, &c., not only without injuring the most delicate flowers or foliage, but promotes a vigorous growth.

From Andrew Toward, Esq., Royal Gardens, Osborne Palace.

"I have great pleasure to add my testimony to the efficacy of your Blight Composition, which has been used with great success upon Rose Trees much affected with the Green Fly."

From Frederick Malleson, Esq., Royal Gardens, Claremont.

"I find it answer the purpose in all respects for Walls, also the Green Fly and Brown Scale in the Houses.—May 9, 1854."

Finest Grasses for Lawns and Parks, and every variety of Garden and Farm Seeds, at B. PAGE & Co.'s, Seed Merchants, Oxford Street, Southampton (20 yards from the Railway and Docks).

THE COMFORT OF A FIXED WATER CLOSET for 1*l.*—Places in gardens converted into comfortable water closets by the PATENT HERMETICALLY SEALED PAN, with its self-acting valve, entirely preventing the return of cold air or effluvia. Any carpenter can fix it in two hours. Price 1*l.* Indispensable for the health and comfort of a family. Hermetically sealed Inodorous Chamber Commodes, 1*l.* 4*s.*, 2*l.* 6*s.*, and 3*l.*; also, Improved Portable Water Closets, with pump, cistern, and self-acting valve. A prospectus, with engravings, forwarded by enclosing two postage stamps.—At FYFE and Co.'s, removed to more commodious premises, at 46, Leicester Square, London.

REAPING AND MOWING MACHINES.—CAUTION.—Notice is hereby given, that any person or persons infringing any of the Patents of Cyrus Hall M'Cormick, for Reaping and Mowing Machines, or making, or vending, or using, or exercising any Machines which in any way infringe upon any such Patents, will be proceeded against according to law. The more prominent features of M'Cormick's Patents consist in a serrated cutting blade, spear-head shaped holding fingers, and a gathering reel.

E. J. & H. LAWFORD, Mr. M'Cormick's Solicitors.
Draper's Hall, 27, Throgmorton Street, London, Aug. 12.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and dispatch.

Gentlemen desirous of receiving instructions in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

COLLEGE OF AGRICULTURE AND CHEMISTRY AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.

Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

ROYAL PANOPTICON OF SCIENCE AND ART, LEICESTER SQUARE. — CHEMISTRY, by Mr. G. F. Ansell, Monday, 2; Wednesday, 3.15; Thursday, 2; Friday, 3.15. FRICTIONAL ELECTRICITY, Monday, 3.15; Saturday, 2. SHOOTING STARS, Tuesday, 7.45; Thursday, 7.45: by Mr. W. R. Birt. NATURAL MAGIC, by Mr. Malcolm, Monday, 7.30; Wednesday, 7.30. MAGNETIC PROPERTIES OF VOLTAIC ELECTRICITY, Tuesday, 2; Structure and use of Pneumatic Instruments, Thursday, 3.15; Effects of Voltaic Electricity on Animal Life, Friday 2; Machinery and its Application to Agriculture, Saturday, 3.15: by Mr. C. F. Partington. Songs and Sayings of Samuel Lover, by Mr. E. L. Hime, Tuesday, 3.15; Friday, 7.30. Climate, by Mr. Hugo Reid, Wednesday, 2. Explanation of Machinery and Manufactures, daily at 1 and 7.15. Dioramic Miscellany, including Views of Verona, the Prismatic Disc, and brilliant Chromatropic Effects, 8.15. Distins' Flügel Horn Union, 4.45 and 10. Fountain at High Pressure, 2.45; and at 9.25, Messrs. Heinke's Improved Diving Apparatus in the Crystal Cistern. Organ performances by Mr. W. T. Best, at intervals. Hours of Exhibition—Morning, 12 to 5; Evening, 7 to 10, Saturday evening excepted. Admission, 1*s.*; Schools, and children under 10, half price.

METCALFE AND CO.'S PERFUMERY DEPARTMENT.—PROPRIETARY ARTICLES. — METCALFE's celebrated ALKALINE TOOTH POWDER is acknowledged as the safest and most efficient now in use. Dupuytren's Medicated Pomade is the most certain remedy for preventing the hair prematurely falling off, and for restoring it when baldness has already commenced. Dupuytren's Medicated Balm strengthens, cleanses, and improves the growth, and is generally acknowledged as the best wash for the hair.—Manufacturers of British and Importers of Foreign Soaps, Perfumery, and J. M. Farina's genuine Eau de Cologne, at METCALFE, BINGLEY, & Co.'s only Establishment, 130B and 131, Oxford Street, second and third doors west from Holles Street.

DINNEFORD'S PURE FLUID MAGNESIA has been for many years sanctioned by the most eminent of the Medical Profession, as an excellent remedy for Acidities, Heartburn, Headache, Gout, and Indigestion. As a mild aperient, it is admirably adapted for delicate females, particularly during pregnancy; and it prevents the food of infants from turning sour during digestion. Combined with the Acidulated Lemon Syrup, it forms an Effervescing Aperient Draught, which is highly agreeable and efficacious.—Prepared by DINNEFORD & Co., Dispensing Chemists (and General Agents for the Improved Horse-Hair Gloves and Belts), 172, New Bond Street, London, and Sold by all respectable Chemists throughout the Empire.

DR. DE JONGH'S
LIGHT BROWN COD-LIVER OIL, PREPARED FOR MEDICINAL USE IN THE LOFFODEN ISLES, NORWAY, AND PUT TO THE TEST OF CHEMICAL ANALYSIS, THE MOST EFFECTUAL REMEDY FOR CONSUMPTION, BRONCHITIS, ASTHMA, GOUT, CHRONIC RHEUMATISM, AND ALL SCROFULOUS DISEASES.

Approved of and recommended by the most distinguished Scientific Chemists, prescribed by the most eminent Medical Men, and supplied to the leading Hospitals of Europe.

EXTRACTS FROM
MEDICAL AND SCIENTIFIC TESTIMONIALS:

THE LANCET, *July* 29, 1854.

"In the preference of the light brown over the pale oil we fully concur. We have carefully tested a specimen of the light brown Cod-liver Oil prepared for medical use under the direction of Dr. de Jongh, and obtained from the wholesale agents, Messrs. ANSAR, HARFORD, & Co., 77, Strand. We find it to be genuine, and rich in iodine and the elements of bile."

"THE MEDICAL CIRCULAR." May 10, 1854.

"The pale oil, even when genuine, is deficient to a considerable extent, if not wholly, of the volatile fatty acid, iodine phosphate of chalk, the cholinic acid, bilifellinic acid, and other elements of bile, which are found in their normal proportions in the light brown oil. The utmost reliance may be placed upon the experimental researches of Dr. de Jongh, who is one of the most eminent of European chemists; the oil prepared by him enjoys also the additional sanction of the opinion of Baron Liebig and the late Dr. Pereira, in favour of its genuineness and efficacy. Our own experience practically confirms their judgment, and we unhesitatingly recommend the light brown oil as the best for medicinal purposes, and well deserving the confidence of the profession."

BARON LIEBIG.

"You have rendered an essential service to science by your researches, and your efforts to provide sufferers with this medicine, in its purest and most genuine state, must ensure you the gratitude of every one who stands in need of its use."

DR. JONATHAN PEREIRA.

"I know that no one can be better, and few so well, acquainted with the physical and chemical properties of this medicine as yourself, whom I regard as the highest authority on the subject. The oil which you gave me was of the very finest quality, whether considered with reference to its colour, flavour, or chemical properties; and I am satisfied that for medicinal purposes no finer oil can be procured."

Sold wholesale and retail, in bottles, labelled with Dr. de Jongh's stamp and signature, by

ANSAR, HARFORD, AND CO., 77, STRAND, LONDON,

Sole Consignees and Agents for the United Kingdom and the British Possessions; at the following prices:—

IMPERIAL MEASURE, half pints, 2*s.* 6*d.*; pints, 4*s.* 9*d.*

*** Four half-pint bottles forwarded, CARRIAGE PAID, to any part of England, on receipt of a remittance of Ten Shillings.

THE SUCCESSFUL RESULTS OF THE LAST HALF CENTURY HAVE PROVED BEYOND QUESTION THAT

ROWLAND'S MACASSAR OIL possesses singularly nourishing powers in the growth, restoration, and improvement of the human Hair, and when every other specific has failed. This celebrated Oil is now universally acknowledged to be the cheapest, and superior to all other preparations for the hair. It prevents it from falling off or turning grey, strengthens weak hair, cleanses it from scurf and dandriff, and makes it beautifully soft, curly, and glossy. Its operation in cases of baldness is peculiarly active; and in the growth of the Beard, Whiskers, Eyebrows, and Moustachios, it is unfailing in its stimulating operation. For children it is especially recommended, as forming the basis of a beautiful head of hair. Price 3*s.* 6*d.* and 7*s.*; Family Bottles (equal to four small) 10*s.* 6*d.*; and double that size, 21*s.* CAUTION.—On the wrapper of each bottle are the words, Rowlands' Macassar Oil, in two lines. The same are engraven on the back of the wrapper nearly 1500 times, containing 29,028 letters.—Sold by A. ROWLAND & SONS, 20, Hatton Garden, London, and by Chemists and Perfumers.

DO YOU WANT LUXURIANT HAIR, WHISKERS, &c.? If so, use MISS GRAHAM'S NIOUKRENE, the most efficacious Hair generant ever introduced. It reproduces the Hair when lost either by disease or decay, prevents its falling off, effectually checks greyness, strengthens weak hair, and is guaranteed to produce those attractive ornaments, Whiskers, Moustachios, Eyebrows, &c., in three or four weeks. For nourishing and beautifying the hair, and sustaining its curling powers in all weathers, it has no equal. Price 2*s.*, and sent post free to any part of the kingdom, on receipt of 24 penny postage stamps, by ELLEN GRAHAM, 3, New Road, Hornsey, Middlesex.—"My hair is quite restored." Miss ORME.—"I have a full pair of Whiskers, thanks to Nioukrene." H. ROSS, Esq.—"It has checked the greyness." Mrs. JONES.—"My hair is restored." Dr. COTTIE.

FRAMPTON'S PILL OF HEALTH.—"For upwards of nine years (writes Mr. Thomas Province, of Winchmore Hall, Middlesex), I have experienced the efficacy of this excellent medicine, and I have the happiness of saying that I never had a better state of health. I beg further to add that this medicine is in general use by my family, and we know of nothing to equal it." For females these pills are truly excellent, removing all obstructions, the distressing headaches so very prevalent with the sex, depression of spirits, dulness of sight, nervous affections, blotches, pimples, and sallowness of the skin, and gives a healthy juvenile bloom to the complexion. Sold by all medicine vendors, price 1*s.* 1½*d.* per box.—Observe that "THOMAS PROUT" is on the Government stamp.

LAND DRAINING PIPES.

WANTED, about 2 millions of AGRICULTURAL DRAIN PIPES, from 1½ to 6 inch bore, to be delivered at the Stations on the Eastern Counties Railway, or River Wharfs, as follows:—At Brentwood or Ingatestone Station, 750,000; Rainham Station or Wharf, 500,000; Waltham Station, 400,000; Romford Station, 150,000; Stratford Station, or Barking Wharf, 100,000. Parties who can supply the whole or part of the quantities are requested to send their Cash Prices, the delivery to commence by the 8th of September.—Address, Messrs. DAVIS & VIGERS, 3, Frederick Place, Old Jewry, London.

WANTED to PURCHASE, the last edition of LOUDON'S ENCYCLOPÆDIA OF PLANTS.—Any person having the same to part with may apply to W. F., Royal Gardens, Frogmore, Berks.

WANTED ON LEASE, One acre or more of ground suitable to erect Hothouses on.—P. WALKER, 46, Blackfriars Road, London.

HAWARDEN, FLINTSHIRE.

TO BE LET ON LEASE, for 21 years, from Michaelmas next, a most desirable TURNIP and BARLEY FARM, with excellent House and Premises, Cottages for Labourers, and 540 Acres of Arable and Pasture Land, well situated for markets, with a turnpike road running through the property; about one mile from the Queen's Ferry, on the Chester and Holyhead Railway, ten miles from Liverpool, and five from Chester, on the banks of the river Dee.—For further particulars, apply to Messrs. HOUGHTON & SON, Broom Hall, Sunning Hill, Berks; and to view the Farm, to Mr. ELLERBY, Sealand, Chester.

TO BE LET ON LEASE, with immediate possession, or at Michaelmas, an excellent FARM, containing 130 acres of Arable Land, situate midway between Guildford and Farnham, 1½ mile from the Ash Station.—Apply to Mr. FINNEY, Guildford, Surrey.

SEATON, ON THE SOUTH COAST OF DEVON.

TO LET, for a Term of Years, from Michaelmas, 1854, a compact FARM, comprising a capital House, convenient Offices, and 205a. 1r. 34 p. of Land, of which 25a. 2r. 2p. is Meadow, 2a. 3r. 4p. Orchard, 18a. 2r. 25p. Pasture, and 154a. 3r. 5p. Arable.—To view, apply to Mr. AYERLEY, at the Farm; and for particulars to Mr. JAS. BABBAGE, Nettlecombe, Taunton.

TO GARDENERS.

TO BE LET, for a term to be agreed upon, a valuable MARKET GARDEN of eight acres, well stocked with Fruit Trees; together with the Dwelling-house and long-established Fruit and Milk Shop. The house is situated in the centre of a flourishing market town within 40 miles of London and adjoining a railway. An additional 3½ or 6½ acres of Garden Ground, and 4½ acres of Orchard and Grass Land, may be had if required.—Apply to Messrs. BATT, RUTLEY, and SILVERLOCK, 412, Strand, London.

TO MARKET GARDENERS AND OTHERS.

TO BE LET, with Immediate Possession, a MARKET GARDEN GROUND, containing about 28 acres, 7 of which are under Fruit Trees; the whole is in a good state of cultivation with the usual crops, well supplied with water, at a low rent, and two miles from the London Markets.—For particulars, apply to Mr. SAMUEL BRANDON, Valuer, 32, Paradise Row, Rotherhithe; Mr. HOWARD, Valuer, Heathfield, Nine Elms; or Mr. HARWOOD, Surveyor, Stepney Green.

TO BE LET, an old established NURSERY, with neat Cottage, Greenhouses, Vinery, and other Buildings, with half an acre of Land.—Apply to Mr. COSSEY, Estate Agent, St. George's Middle Street, Norwich.

TO BE SOLD, BUFF COCHIN CHICKENS, from first-class Prize Birds, Brahma Pootra Chickens, from imported American Prize Birds, and Spanish Chickens. Also some very good one-year-old Birds of the above descriptions. Wire, Game, and Poultry Netting, Poultry Hurdles, Hen-houses, Chicken Coops, Flower Stands, and Trainers, Garden Arches, and every kind of Wire Work, useful and ornamental.—T. H. FOX'S, City of London Wire Works, 44, Skinner Street, and 6 & 8, Snow Hill. Illustrated Catalogues forwarded post free.

NURSERIES, CLAPHAM.

MESSRS. PROTHEROE & MORRIS are instructed by the Administrators of the late Jos. Fairbairn, to offer for unreserved sale, in the early part of September, the entire stock of specimen Greenhouse and Stove Plants, which are all of the most choice sorts, and in the best condition. The lease of the old established Seed Shop and Nursery to be sold; the Stock may be taken by valuation or by agreement; for particulars apply to the administrators, at the Nursery, Clapham, or to Mr. JAMES FAIRBAIRN.

POPULAR WORK ON BOTANY BY DR. LINDLEY.

This day is published, in one vol. 8vo, with numerous woodcuts, price 14s.,

MEDICAL AND ŒCONOMICAL BOTANY; or An Account of the Principal Plants employed in Medicine or Domestic Œconomy.

EXTRACT FROM THE AUTHOR'S PREFACE.

"The Vegetable Kingdom contains, among a large quantity of plants of no known importance to man, various useful species employed in medicine, the arts, or in the many branches of domestic œconomy. The principal part of those which can be brought by teachers in Europe under the notice of students, or which, from their great importance, deserve to be among the earliest subjects of study, are mentioned in the following pages, where they are arranged in the manner proposed in the 'VEGETABLE KINGDOM' of the author, with the sequence of matter departed from in a few instances, when it was believed that the convenience of younger students would be consulted by doing so. The author trusts that this selection will be found to have been made in such a way that all teachers who possess reasonably extensive means of illustrating their lectures, and all Botanic Gardens, may furnish the larger part of the species which are mentioned. A small selection was indispensable; firstly, because a greater work would have been beyond the reach of the majority of purchasers; and secondly, because experience shows us that those who have to study a science of observation, such as Botany, require to concentrate their attention, in the first instance, upon a limited number of objects."

BRADBURY & EVANS, 11, Bouverie Street.

Now ready, carefully revised and wholly reprinted, in One Volume, price 5s.,

HARD TIMES. By CHARLES DICKENS.

BRADBURY & EVANS, 11, Bouverie Street.

On the 16th of August will be published, price 5s. 6d.,

THE NINTH VOLUME OF HOUSEHOLD WORDS. Conducted by CHARLES DICKENS. Containing HARD TIMES, &c.

Office, 16, Wellington Street, North, Strand, and sold by all Booksellers and Newsvenders.

In post 8vo, a New Edition, with 405 Woodcuts, price 14s.,

CATLOW'S POPULAR CONCHOLOGY; or, the Shell Cabinet arranged according to the Modern System. With a Detailed Account of the Animals, and a complete Descriptive List of the Families and Genera of Recent and Fossil Shells. Second Edition, much improved.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

Just published, New and Improved Edition, price 1s.,

THE CURABILITY OF CONSUMPTION. Being a Series of Papers, presenting the most prominent and important Practical Points in the Treatment of the Disease. By F. H. RAMADGE, M.D., Fellow of the College of Physicians, late Senior Physician to the Royal Infirmary for Diseases of the Chest, &c.

Also, by the same Author, price 10s. 6d.,

A TREATISE ON ASTHMA AND DISEASES OF THE HEART.

London: LONGMAN, BROWN, GREEN, & LONGMANS.

THE LATEST DISCOVERIES IN THE HOLY LAND.

This day is published, in two vols., 8vo, price 30s.,

SYRIA AND PALESTINE IN 1851-52: being a Narrative of a Journey undertaken specially with a view to the Elucidation of Biblical History. By C. W. M. VAN DE VELDE, late Lieut. Dutch Royal Navy. Two vols., 8vo, with Map of the Author's Route, Plan of Jerusalem, and other Illustrations, price 30s.

WILLIAM BLACKWOOD & SONS, Edinburgh and London.

This day is published, price 21s., Part III., of a New Edition of

THE PHYSICAL ATLAS. By A. KEITH JOHNSTON. To be completed in 12 Parts, at 21s. each.

The following Maps may be had separately:—

I.

A MORAL AND STATISTICAL CHART, showing THE GEOGRAPHICAL DISTRIBUTION OF MAN, ACCORDING TO RELIGIOUS BELIEF. By ALEX. KEITH JOHNSTON, F.R.S.E., &c., Author of "The Physical Atlas," &c. In Imperial Folio, beautifully printed in colours, with Explanatory Letterpress, price 10s. 6d.

II.

MAP OF THE DISTRIBUTION OF MARINE LIFE. By EDWARD FORBES, F.R.S., Professor of Natural History in the University of Edinburgh, President of the Geological Society. In Imperial Folio, beautifully printed in colours, with letterpress, price 10s. 6d.

WILLIAM BLACKWOOD & SONS, Edinburgh and London.

In One Volume 8vo, price 14s.

HISTORY OF THE FRENCH PROTESTANT REFUGEES, from the Revocation of the Edict of Nantes to the Present Time. By CHARLES WEISS, Professor of History at the Lycée Buonaparte. Translated, with the assistance of the Author, by F. HARDMAN.

WILLIAM BLACKWOOD & SONS, Edinburgh and London.

SIR ARCHIBALD ALISON'S NEW HISTORY.

THE HISTORY OF EUROPE, from the Fall of Napoleon to the Accession of Louis Napoleon.

The Third Volume, now published, contains:—Asia Minor, Greece, Turkey, in 1821. The Greek Revolution, Battle of Navarino, and Establishment of Greek Independence. The War between Russia and Turkey, 1827-1829. France to the Revolution of 1830. Domestic History of England to the Monetary Crisis of 1825, &c. Price 15s.

WILLIAM BLACKWOOD & SONS, Edinburgh and London.

SEBASTOPOL AND THE BLACK SEA.

Lately published, a Fourth Edition of

MR. OLIPHANT'S RUSSIAN SHORES OF THE BLACK SEA, including A VISIT TO SEBASTOPOL. Octavo, with 33 Engravings on Wood, an Enlarged Map of the Crimea, and Map of the Author's Route, &c. 14s.

WILLIAM BLACKWOOD & SONS, Edinburgh and London.

PROFESSOR JOHNSTON'S CHEMISTRY OF COMMON LIFE. Vol. I., price 5s. With 57 Illustrations, engraved on Wood by BRANSTON, &c. To be completed in Two Volumes.

WILLIAM BLACKWOOD & SONS, Edinburgh and London.

FOWLS.—By JOHN BAILY. Now in the press, and will be published, August 1, the Second Edition of the above work, with which is reprinted the fourth edition of "The Dorking Fowl," corrected, revised, and considerably enlarged. It contains descriptive tables of all the fowls now exhibited, giving in few words their chief points and qualifications, with copious rules for their selection and management. Price 2s.; by post, 2s. 6d.

JOHN BAILY, 113, Mount Street, Grosvenor-square, London.

ON MARRIAGE.

Just published (to be had free, by enclosing 1s. or Twelve Postage Stamps, to Mr. WATSON, Clerical Agent, Robert Street, Adelphi, London).

MATRIMONY.—A Pamphlet on Matrimonial Alliances, which merits the attention of those who wish to settle honourably in life. By a Clergyman.

THE FOLLOWING WORKS ARE ALWAYS ON SALE AT THE OFFICE OF THIS PAPER.

Price 5s. 6d. cloth,

SECOND EDITION, REVISED AND ENLARGED,

ORNAMENTAL AND DOMESTIC POULTRY; THEIR HISTORY AND MANAGEMENT.

BY THE REV. EDMUND SAUL DIXON, M.A., Rector of Intwood with Keswick.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden, London.

Third Edition, considerably enlarged, price 5s. 6d.,

RURAL CHEMISTRY. By EDWARD SOLLY, F.R.S., F.L.S., F.G.S., Honorary Member of the Royal Agricultural Society of England, Professor of Chemistry to the Horticultural Society of London, Lecturer on Chemistry in the Hon E. I. Co.'s Military Seminary at Addiscombe, &c., &c.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden.

Price 1s. 6d., free by post 1s. 10d.

LABELS FOR THE HERBARIUM, CONSISTING OF THE NAMES OF THE CLASSES, ALLIANCES, ORDERS, AND SUB-ORDERS, OF PROFESSOR LINDLEY'S "VEGETABLE KINGDOM." So printed in large type, that they can be cut out and pasted into THE HERBARIUM.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden.

Price 8d. each, or 5s. for 25 copies for distribution among Cottage Tenantry, delivered anywhere in London, on a Post-office order being sent to the Publisher, JAMES MATTHEWS, at the office of the *Gardeners' Chronicle*.

In consequence of the new postal arrangements, parties in the country who desire it can have copies sent by post; six stamps, in addition to the cost of the numbers, will pass 10 copies free by post.

The cost of a single copy, free by post, is therefore 7d.; and of ten, free by post, is 3s.

THE COTTAGER'S CALENDAR OF GARDEN OPERATIONS.

By Sir JOSEPH PAXTON.

Reprinted from the GARDENERS' CHRONICLE; above 90,000 have already been sold.

CONTENTS.

African Lilies
Agapanthus
Anemones
Annuals
Apples
Apricot
Auriculas
Beans
Beet
Biennials
Black Fly
Bloks for Cottagers
Borage
Borecole
Box Edgings
Booccoli
Brussels Sprouts
Budding
Bulbs
Babbage
Cactus
Calceolarias
Californian Annuals
Campanulas
Carnations
Carrots
Cauliflowers
Celery
Cherries
China Asters
China Roses
Chrysanthemums, Chinese
Chives
Clarkias
Clematis
Collinsias
Colewort
Cress
Creepers
Crocus
Crown Imperials
Cucumbers
Cultivation of flowers in windows
Dahlias
Daisies
Dog's-tooth Violets
Exhibitions, preparing articles for
Ferns, as protection
Fruit
Fuchsias
Gentianella
Gilias
Gooseberries
Grafting
Green-fly
Heartsease
Herbs
Herbaceous Perennials
Heliotrope
Hollyhocks
Honeysuckle
Horse-radish
Hyacinths
Hydrangeas
Hyssop
Indian Cress
Iris
Kidney Beans
Lavender
Layering
Leeks
Leptosiphons
Lettuce
Lobelias
London Pride
Lychnis, double
Marigold
Marjoram
Manures
Marvel of Peru
Mesembryanthemums
Mignonette
Mint
Mustard
Narcissus
Nemophilas
Œnothera bifrons
Onions
Pæonies
Parsnip
Parsley
Peaches
Pea-haulm
Pears
Peas
Pelargoniums
Perennials
Persian Iris
Petunias
Phlox
Pigs
Pinks
Planting
Plums
Polyanthus
Potatoes
Pruning
Privet
Propagate by cuttings
Pyracantha
Radishes
Ranunculus
Raspberries
Rhubarb
Rockets
Roses
Rue
Rustic Vases
Sage
Salvias
Savoys
Saxifrage
Scarlet Runner Beans
Seeds
Sea Daisy or Thrift
Seakale
Select Flowers
Select Vegetables and Fruit
Snails and Slugs
Snowdrops
Spinach
Spruce Fir
Spur Pruning
Stocks
Strawberries
Summer Savory
Sweet William
Thorn Hedges
Thyme
Tigridia Pavonia
Transplanting
Tree Lifting
Tulips
Turnips
Vegetable Cookery
Venus's Looking-Glass
Verbenas
Vines
Virginian Stocks
Wallflowers
Willows
Zinnias

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden.

Price 3s. 6d., free by post,

THE TREE ROSE.—Practical Instructions for its Formation and Culture. Illustrated by 24 Woodcuts. Reprinted from the GARDENERS' CHRONICLE, with additions.

CONTENTS.

Annual pruning time, principle of execution, &c.
Binding up
Budding knife
Budding, time of year, day, time of day, state of the plant, care of buds
Budding upon body
Bud, insertion of, into stock
Bud, preparation of, for use
Buds, dormant and pushing
Buds, failing
Buds, securing a supply of
Caterpillars, slugs, and snails, to destroy
Causes of success
Dormant buds, theory of replanting with, explained
Guards against wind
Labelling
Loosing ligatures
March pruning
Mixture for healing wounds
Pruning for transplantation
Planting out, and arrangement of trees
Pushing eye, spring treatment of dwarf shoots from
Roses, different sorts on the same stock
Roses, short list of desirable sorts for budding with a pushing eye
Sap-bud, treatment of
Shape of trees
Shoots and buds, choice of
Shoots for budding upon, and their arrangement
Shoots, keeping even, and removing thorns
Shortening wild shoots
Stocks, planting out for budding upon; the means of procuring; colour, age, height; sorts for different species of Rose; taking up, rimming roots, sending a distance, shortening heads, &c.; saw proper for the purpose.

GRAFTING.

Aphides, to keep down
Free-growers, remarks on
Graft, binding up and finishing
[of Grafting, advantage
Grafting, disadvantage of
Operations in different months
Preliminary observations
Roses, catalogue and brief description of a few sorts
Scion, preparation and insertion of
Scion, choice and arrangement of
Stock, preparation of.

APPENDIX.

A selection of varieties
Comparison between budding and grafting.

Post-office orders to be made payable to JAMES MATTHEWS, 5, Upper Wellington Street, Covent Garden, London.

SMART'S WALKER EPITOMISED.

Cheaper Edition, in 12mo., price 6s. cloth,

WALKER'S PRONOUNCING DICTIONARY OF THE ENGLISH LANGUAGE, epitomised on a plan which allows of full Definitions to the leading Words, and large Additions to the Terms of Modern Science. With a Key to the Pronunciation of Greek, Latin, and Scripture Names. By B. H. SMART.

By the same Editor, in 8vo, price 12s.,

WALKER'S DICTIONARY REMODELLED and adapted to the present state of Literature and Science. Fourth Edition, with enlarged Index and Supplement.

London: LONGMAN & Co.; HAMILTON & Co.; WHITTAKER & Co.; SIMPKIN & Co.; F. & J. RIVINGTON; ALLEN & Co.; E. HODGSON; H. G. BOHN; ORR & Co.; SMITH, ELDER & Co.; HOULSTON & Co.; J. TEMPLEMAN; J. VAN VOORST; J. SNOW; and PIPER & Co. Cambridge: J. DEIGHTON.

ELECTRIC TELEGRAPH.—By Dr. LARDNER.— A Series of Popular Tracts on the Electric Telegraph is now in course of Publication in "LARDNER'S MUSEUM OF SCIENCE AND ART." The Tracts will embrace an account of the Telegraph from its invention to the present time, clearly describing the different instruments and their modes of working. The Series will also contain full accounts of the English and Foreign Lines of Telegraph, of the Submarine Cables, Tariffs, &c. &c., and will be illustrated by very numerous Engravings on Wood. Price of each Number, ONE PENNY.

LARDNER'S MUSEUM OF SCIENCE AND ART. Volume I., price 1s. 6d., in handsome boards, contains—

PART I. Price 5d.

No. 1. The Planets, are they Inhabited Globes?
2. Weather Prognostics.
3. The Planets. Chapter II.
4. Popular Fallacies in Questions of Physical Science.

PART II. Price 5d.

No. 5. Latitudes and Longitudes.
6. The Planets. Chapter III.
7. Lunar Influences.
8. Meteoric Stones and Shooting Stars. Chapter I.

PART III. Price 6d.

No. 9. Railway Accidents. Chapter I.
10. The Planets. Chapter IV.
11. Meteoric Stones and Shooting Stars. Chapter II.
12. Railway Accidents. Chapter II.
13. Light.

Volume II., price 1s. 6d., in handsome boards, contains—

PART IV. Price 5d.

No. 14. Common Things. Air.
15. Locomotion in the United States. Chapter I.
16. Cometary Influences. Chapter I.
17. Locomotion in the United States. Chapter II.

PART V. Price 5d.

No. 18. Common Things. Water.
19. The Potter's Art. Chapter I.
20. Locomotion in the United States. Chapter III.
21. The Potter's Art. Chapter II.

PART VI. Price 6d.

No. 22. Common Things. Fire.
23. The Potter's Art. Chapter III.
24. Cometary Influences. Chapter II.
25. The Potter's Art. Chapter IV.
26. The Potter's Art. Chapter V.

PART VII. Price 5d. (*commencing Vol. III.*) CONTAINS—

No. 27. Locomotion and Transport, their Influence and Progress. Chapter I.
28. The Moon.
29. Common Things. The Earth.
30. Locomotion and Transport, their Influence and Progress. Chapter II.

PART VIII. Price 5d., CONTAINS—

No. 31. Electric Telegraph. Chapter I.
32. Terrestrial Heat. Chapter I.
33. Electric Telegraph. Chapter II.
34. The Sun.

London: WALTON & MABERLY, 28, Upper Gower Street, and 27, Ivy Lane, Paternoster Row. Sold by all Booksellers.

PRICE FOURPENCE OF ANY BOOKSELLER.

CONTENTS OF THE NUMBER FOR SATURDAY LAST, AUGUST 5, OF

THE ATHENÆUM.

JOURNAL OF ENGLISH AND FOREIGN LITERATURE, SCIENCE, AND THE FINE ARTS.

Twenty-four large Quarto Pages.

Reviews OF, WITH EXTRACTS FROM—

Memoirs of the Life and Scientific Researches of John Dalton. By Dr. W. C. Henry.
The Nations of Russia and Turkey and their Destiny. By Ivan Golovin.
The Military Achievements of Field-Marshal the Duke of Wellington, contrasted with those of Alexander, Cæsar, Napoleon, and other celebrated Commanders.
Memoirs of a Bourgeois of Paris. By Dr. Véron.
Lives of the Princesses of England, from the Norman Conquest. By M. A. E. Green.
Minor Minstrels, containing—The Haymakers' Histories. By R. Bell—The Wife's Manual. By the Rev. W. Calvert—Little Rhymes, Songs, &c., for the Little People in the Nursery.

WITH SHORTER NOTICES OF—

The Life and Adventures of a Clever Woman. By Mrs. Trollope.
The Cabin by the Wayside: A Tale for the Young. By Lady Campbell.
Wanderings among the Wild Flowers. By Dr. Thomson.
Psychological Inquiries. By B. C. B.
A Catechism of Chemistry. By S. Parkes.

&c. &c.

Original Correspondence.—Obituary: Caroline Southey—National Education.

Weekly Gossip.—Copyright of Foreign Works—Holford House—Bellot Testimonial—Obituary: G. B. Sowerby, and G. Cuitt—Reichardt's Cyclorama—Thompson's Distance Tables—Hood Memorial—Campbell Monument—Origin of Names—Early Closing Movement.

Fine Arts.—Examinations of Masters for Schools of Art.

Fine-Art Gossip.—National Gallery — Van-der Hoop's Pictures—The French Exposition Building.

Music and the Drama.—New Publications—Royal Italian Opera ('Il Conte Ory.')

Musical and Dramatic Gossip. — Discovery of Ancient Music—Scarcity of Musical Performers in Germany—Royal Academy of Music—Obituary: M. Peterssohn.

Miscellanea.—Scarcity of Paper—Our Statute Book.

The Athenæum may be ordered of any Bookseller.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Victoria Street, in the Parish of St. Margaret and St. John, Westminster, both in the County of Middlesex, Printers, at their Office in Lombard Street, in the Precinct of Whitefriars, in the City of London: and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, August 12, 1854.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley

No. 33.—1854.] SATURDAY, AUGUST 19. [PRICE 6*d*.

INDEX.

Acre, seed for a	541 *a*	Kale, Buda	536 *c*
Amateur Gardener's Year-Book	534 *c*	Labourers' friend societies	537 *b*
Anigozanthos rufa	532 *b*	Mangold Wurzel	540 *b*
Apricot, Japanese	531 *c*	Manure drill, Chandler's liquid	540 *c*
Books noticed	534 *c*—540 *c*	Mildew, Vine	531 *b*
B[illegible]'s (Mr.) arrival at Vera Cruz	531 *a*	Note-book, Chinese	533 *c*
Bryologia javanica, rev.	535 *a*	Pansy, culture of	535 *c*
Burgess's Amateur Gardener's Year Book	534 *c*	Parsnip, Finger and Toes	537 *b*
Calendar, horticultural	536 *a*	Pathology, vegetable	532 *a*
— agricultural	541 *b*	Peach, culture of	531 *a*
Carrot, Finger and Toes	538 *b*	— and red spider	535 *a*
Cattle grazing	540 *c*	Pelargonium Unique	535 *c*
Clerodendron fœtidum	533 *b*	Phytological Club	534 *a*
Cock-roach parasite	533 *a*	Plants, new	535 *b*
Conway's (Mrs.) nursery	535 *b*	— naming	533 *b*
Corn, saving damp	540 *b*	— rice paper	533 *c*
Cottage gardens, Scotch	532 *c*	Potato Fluke	533 *c*
Cotyledon umbilicus	534 *a*	Potato disease	533 *c*
Crops, reports of the	537 *a*	Rice paper plant	533 *c*
— in Sussex	540 *a*	Roots, fingers and toes in	538 *b*
Cuttings, to strike	533 *b*	Scotland, cottage gardens in	532 *c*
Drainage bill	537 *c*	Seed for an acre	541 *a*
Entomological Society	534 *a*	Soil, circumstances of the	537 *c*
Fischer (Dr.) death of	532 *a*	Spider, red	536 *a*
Flax, home-grown	538 *c*	Strawberry, Nimrod	533 *b*
Grape, Richmond Villa	533 *c*	Tuinbouw Flora noticed	535 *a*
Guano, essay on	539 *b*	Vegetable pathology	532 *a*
Hay, to steam	540 *a*	Vine mildew	531 *b*
		Walls, damp limestone	533 *c*
		Wheat crop	540 *b*
		Yards, covered	540 *b*

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—15th August, 1854.
NOTICE IS HEREBY GIVEN, that on and after the 29th inst., the Office of this Society will be removed to 14, Tavistock Row, Covent Garden, London, where all Letters and Communications are to be addressed. E. R. CUTLER, Secretary.

A GRAND EXHIBITION OF HOLLYHOCKS, open to the United Kingdom, will be held at the ROYAL SURREY ZOOLOGICAL GARDENS, on TUESDAY, August 22. A Subscription is now open for the purpose of raising a fund of sufficient magnitude to distribute Prizes to Nurserymen and Amateur Growers worthy the merits of this noble and popular flower. It is intended to offer a Silver Cup, value 5*l*. 5*s*., to each class for spikes in flower, with valuable descending Prizes of Gold and Silver Medals. Cut Blooms also will receive their due share of attention. In addition to the above, Gold and Silver Medals will be awarded for Miscellaneous Collections of Stove and Greenhouse Plants, Specimen Plants, Dahlias, Roses, &c.
COMMITTEE.—Messrs. W. Barnes, Peckham; J. W. Bircham, Bungay; W. Bragg, Slough; W. Chater, Saffron Walden; W. Paul, Cheshunt; A. Parsons, Ponder's End; Roake, Clewer; and C. Turner, Slough, by whom subscriptions will be received, also by the Secretary. Lists of Prizes, with Rules of the Exhibition, may be obtained of the Secretary, J. T. NEVILLE, Ebenezer House, Peckham.

BRIGHTON AND SUSSEX FLORICULTURAL AND HORTICULTURAL SOCIETY.—The annual Autumn Exhibition, to be held at the ROYAL PAVILION, Brighton, on WEDNESDAY and THURSDAY, Sept. 13 and 14.
President.
HIS GRACE THE DUKE OF DEVONSHIRE.
Vice-Presidents.
His Grace the Duke of Richmond, Lord Lieut. of county.
His Grace the Duke of Norfolk, E.M.
The Most Noble the Marquess of Bristol.
The Right Hon. the Earl of Chichester.
Admiral Sir G. B. Pechell, Bart., M.P.
Lord Alfred Hervey, M.P.
The Hon. Hanbury Tracy.
The Hon. A. Macdonald.
The Baron de Goldsmid. [R.N.
Rear Admiral Sir G. Westphall, &c., &c., &c.
Upwards of 270*l*. are offered as Prizes (including the RAILWAY CUP, value 10*l*., offered for the best 24 dissimilar Dahlia Blooms), schedules of which can be obtained of the Secretary, among which will be found the following, viz.:—Orchids, 8 vars., 8*l*., 5*l*., 3*l*.; Stove and Greenhouse, 8 vars., 8*l*., 5*l*., 3*l*.; Device—Cut Flowers, 5*l*., first prize; Collection of 8 Dishes Fruit, 7*l*., 4*l*., 3*l*., 2*l*.
The Band of the Coldstream Guards (by permission of Col. the Hon. A. Upton), will attend each day, conducted by Mr. Godfrey; also the Military Band from the Garrison, under the direction of Herr Daverow. The entire suite of Rooms and eastern lawn will be thrown open for the occasion.
Through the liberality of the Directors of the London, Brighton, and South Coast Railway, the Committee have the pleasure to announce to the Exhibitors that all Plants, &c., for Exhibition, will be conveyed to Brighton from all stations, and back whence they came, Free of Charge.
General Superintendent of the Exhibition, Mr. E. Spary.
EDWARD CARPENTER, Secretary.
Brighton, Aug. 19, 1854.
N.B. All communications to be made to the Secretary. Address, 45, Lavender Street.

SALISBURY GRAND ANNUAL DAHLIA EXHIBITION, open to all England, will take place at Milton Park, on Thursday, the 31st August, 1854, when Silver Cups and Plate will be awarded as under.
FIRST CLASS.—Amateurs, 24 blooms: Prizes, 7*l*. 7*s*.; 5*l*. 5*s*.; 3*l*. 3*s*.; 2*l*. 2*s*.; 1*l*. 1*s*.; 10*s*.
SECOND CLASS.—Amateurs, 12 Blooms: Prizes, 5*l*. 5*s*.; 3*l*. 3*s*.; 2*l*. 2*s*.; 1*l*. 1*s*.; 15*s*.; 10*s*.
THIRD CLASS.—Amateurs, 12 blooms, Fancy Flowers: 2*l*. 10*s*.; 1*l*. 10*s*.; 1*l*.; 10*s*.
FIFTH CLASS.—Seedlings, 1853, 3 blooms: Certificates.
SIXTH CLASS.—Seedlings, 1854, single bloom.
RULES AND REGULATIONS.—Flowers to be ready for the umpires as soon as possible after the first train from London. The flowers to be shown in the grower's own stands, which must be the same as the Metropolitan Society's. All entries to be made by the 28th of August. No entrance allowed after the 28th. Entrance for First, Second, and Third Class, 10*s*. each; Fourth, Fifth, and Sixth, 2*s*. 6*d*. No competitor to show unless he sends a letter containing a Post-office order, to the amount of his entries, to the Secretary, which letter shall be produced, if required. No growers that have sold green plants of Dahlias, whether Seedlings or otherwise, will be eligible to show in Classes One, Two, or Three. Prizes will only be given to two-thirds of the entries in all classes. All communications to be directed, post paid, to JOHN KEYNES, Salisbury, Honorary Secretary.
N.B.—No Prizes offered to Nurserymen.

NATIONAL DAHLIA EXHIBITION, under the auspices of the Nottingham Horticultural Society, will be held in Nottingham, together with the Fourth Exhibition of the Nottingham Horticultural Society, on WEDNESDAY, the 13th September, when five Silver Cups and numerous other prizes will be awarded. Schedules may be had by enclosing a postage stamp to S. R. P. SHILTON, Honorary Secretary, Nottingham.

CHICHESTER HORTICULTURAL SOCIETY.—The Autumn Exhibition will be held on THURSDAY, August 31, by the kind permission of the Lord Bishop, in the Gardens of the Episcopal Palace, when, in addition to the usual Premiums, Prizes of 3*l*., 2*l*., and 1*l*., Open to all England, are offered for HOLLYHOCKS, 12 varieties, in spikes. Entrance, 10*s*.
The Band of the Royal Marines will attend.
HENRY SILVERLOCK, Jun., Secretary.

GREAT BOTANICAL AND HORTICULTURAL MEETING AT THE BOTANICAL AND HORTICULTURAL SOCIETY'S GARDENS, MANCHESTER, on the 13th, 14th, 15th, and 16th of September, 1854. The Council of the Manchester Botanical and Horticultural Society, have arranged to open their NEW GLASS PROMENADE, covering an area of 1000 square yards, with a grand Botanical and Horticultural Exhibition. The articles to be exhibited will comprise Plants and Flowers, Fruits and Vegetables, Dried Flowers and Fruits, Wax Flowers and Fruits, Fountains and Vases, Flowerpots and Baskets, Garden Stands and Seats, Labels for Plants, Nets and Mats for covering Trees, Statuary for Garden decoration, Iron and Wirework for Garden purposes, Garden Implements of all kinds, with every other article connected with Gardening. Schedules are in course of preparation, and may be obtained on application to the Secretary.
By order, JOHN SHAW, Secretary.
Council Room, 40, Princes Street, Manchester, Aug. 19.

BULBS FOR EARLY BLOOMING.
B. PAGE AND CO. beg to offer FINE FLOWERING ROOTS.
DOUBLE ROMAN NARCISSUS ... 4*s*. per dozen.
PAPER WHITE DO. ... 4*s*. "
LARGEST DOUBLE JONQUILS ... 2*s*. 6*d*. "
Their first importation having arrived.
Oxford Street Seed Stores, Southampton.
New Seed, OWN GROWTH, CHIVAS'S ORANGE JELLY TURNIP, 1*s*. 9*d*. per lb., large quantities cheaper.

SEEDS OF CALCEOLARIA AND CINERARIA.
E. G. HENDERSON AND SON, of the Wellington Nursery, St. John's Wood, London, are now prepared to forward, by post, the new Seed saved this season from their unrivalled collection, in packets at 2*s*. 6*d*. and 5*s*. each.
The CALCEOLARIA, first quality ... 5*s*. 0*d*.
" " second " ... 2 6
QUALITY, and not QUANTITY, forwarded at the above prices.

CHRYSANTHEMUM "ANNIE HENDERSON," 7*s*. 6*d*. each, or four Plants for 21*s*.
HELIOTROPIUM, "BEAUTY OF THE BOUDOIR," 5*s*. each, or six Plants for 21*s*.
The above Plants are now ready for distribution; they are both the finest in their class, and possess very useful qualities. The descriptions of them, and the following, can be seen in the Catalogue of Messrs. E. G. HENDERSON AND SON, Wellington Nursery, St. John's Wood, London, which will be forwarded post free, on application.
The new French Spotted Geraniums, 5*s*. and 7*s*. 6*d*. each, according to size. The five new bedding Calceolarias, 31*s*. 6*d*.

LISIANTHUS RUSSELLIANUS.
J. AND J. FRASER beg to offer the above, in strong and healthy plants, such as will make large specimens for flowering next season, at 2*s*. 6*d*. each.
Lea Bridge Road, Essex, August 19.

CHRYSANTHEMUMS.
J. AND J. FRASER have a very superior Collection of the above, comprising the newest and best of Large-flowering and Lilliputian varieties. The plants are very strong, and will bloom well in the ensuing winter.
Lilliputians, fine plants ... ... 9*s*. to 12*s*. per doz.
Large flowering ... ... 9*s*. to 12*s*. "
New French varieties of 1854, not yet bloomed in this country ... ... 18*s*. "
Lea Bridge Road, Essex.—August 19.

CHRYSANTHEMUMS.
R. PARKER begs to offer fine bushy plants of the above, well established in 6-inch pots, for flowering this autumn, consisting of all the newest and finest Pompon and large flowered varieties in cultivation. Purchaser's collection at 9*s*. per dozen. A list of names forwarded upon application.
CINERARIAS (Seedlings), from all the finest varieties, carefully selected, including the new varieties sent out last autumn. Established plants, in 3-inch pots, at 3*s*. per dozen.
A remittance or reference to accompany all orders from unknown correspondents.
Paradise Nursery, Hornsey Road, Islington.

CALCEOLARIA SEED.
R. PARKER has now ready for sending out new seed of this year's saving, which he can recommend with the greatest confidence, it having been saved from flowers of the finest form and most beautiful markings, in packets at 1*s*. 6*d*. and 2*s*. 6*d*. each; also a few packets of choice Cineraria Seed at 1*s* 6*d*. and 2*s*. 6*d*. each. Primula sinensis, all saved from fringed flowers, 1*s*. per packet. A remittance or reference to accompany all orders from unknown correspondents.
Paradise Nursery, Hornsey Road, London.—Aug. 19.

CALCEOLARIA SEED.
MR. HENRY MAJOR, Knowsthorpe, near Leeds, begs to announce that his new CALCEOLARIA SEED of this season is now matured, and may be had in packets at 2*s*. 6*d*. each, or 3 packets for 5*s*., post free. The Seed has been produced from rich and beautiful varieties, for which his collection stands unrivalled, and therefore Seedlings possessing good and beautiful properties may reasonably be expected. The present, up to the end of this month, is a proper time to sow for insuring an early spring bloom. Postage stamps are respectfully requested in payment of the Seeds.

GRASS SEEDS.
SUTTON AND SONS *recommend the sowing of* GRASS SEEDS *during the month of August for permanent pasture, and are now prepared to supply excellent fresh Seeds for the purpose.*
Also New Italian Rye Grass and Trifolium incarnatum, at moderate prices.—JOHN SUTTON & SONS, Seed Growers, Reading.

PELARGONIUMS.
J. DOBSON AND SON beg to announce that their annual descriptive Catalogue of the above, containing full descriptions of the best varieties of Beck's, Foster's, Hoyle's, and other raisers, at reasonable prices, may be had on application.
Woodlands Nursery, Isleworth.

NEW PELARGONIUMS.
J. DOBSON AND SON beg to call attention to the advertisement in this Paper of Saturday last, which contains a full description, with prices, of Beck's and Fuller's new and beautiful Seedlings, to be sent out the first week in October.
Woodlands Nursery, Isleworth.

LILIUM LANCIFOLIUM, TRITONIA AUREA, AND VALLOTA PURPUREA.
HENRY GROOM, Clapham Rise, near London, by appointment FLORIST TO HER MAJESTY THE QUEEN, AND TO HIS MAJESTY THE KING OF SAXONY, begs to say that he has an extensive collection of the above BEAUTIFUL BULBS coming into flower, which may be viewed every day (Sundays excepted). Admittance gratis.

STRAWBERRY PLANTS.
CHARLES KIMBERLEY has a large stock of the following to offer at 3*s*. 6*d*. per 100:—Keens' Seedling, British Queen, Hooper's Seedling, Elton Pine, Princess Alice Maude, Stirling Castle Pine, and Comte de Paris.
Stoke Nursery, near Coventry.

STRAWBERRIES.
WILLIAM NICHOLSON is now sending out strong, well-rooted plants of his four new and distinct STRAWBERRIES, viz., AJAX, a very fine large dessert fruit, very beautiful, solid, and juicy. RUBY, do., a great bearer, and forces well. CAPTAIN COOK, market fruit, large, and a great bearer. FILLBASKET, do. 15*s*. per 100, or 25 each of any two sorts for 10*s*., box included. Most of the best old and new sorts can be supplied on reasonable terms. See advertisement July 15. Post-office orders payable at Yarm, Yorkshire, or a cash remittance required with the order.
Egglescliffe, near Yarm, August 19.

LOCKSBROOK NURSERY.
R. SHACKELL has strong plants of his Russian Superb Violet, now in excellent order for potting, at 4*s*. per dozen. Double Purple Perpetual Tree Violet, at 3*s*. per doz. Neapolitan Violet, at 3*s*. per dozen. Other varieties at low prices; hamper included, if the order be above [illegible]. It is requisite to pot the Violet early to insure a good display of bloom [illegible] the winter months.
ROBERT SHACKELL, Florist, Locksbrook Nursery, Bath.

RHODODENDRON JAVANICUM.
A. VAN GEERT, NURSERYMAN, Ghent, Belgium, begs to offer good Seeds of the above, just gathered, at 7*s*. 6*d*. and 15*s*. per packet, containing about 2000 and 4000 Seeds.
A. V. G.'s stock of CAMELLIAS and INDICA AZALEA is well set with bloom, at very moderate prices.
A reference from unknown correspondents. Catalogues may be obtained from his Agent, Mr. R. SILBERRAD, 5, Harp Lane, Tower Street, London.

HOLLYHOCKS.—A collection of this fine old English flower, grown at the Cheshunt Nurseries, is now in bloom, and there will be a succession till the end of October. Admirers of the Hollyhock are respectfully invited to visit the Nurseries to inspect them. In addition to the choicest varieties of other growers, there are many rare and beautiful kinds of their own production, and to be seen only at their grounds.—A. PAUL & SON, Nurseries, Cheshunt, Herts (13 miles from London, on the Cambridge line of Eastern Counties Railway).

STANDISH & NOBLE'S Catalogue for the present season is now ready, and may be had by inclosing two stamps for postage.—The Nursery, Bagshot, August, 1854.

WANTED to PURCHASE Four or Five large CAMELLIAS, 4 to 5 feet high, and well set with flower buds. Also, the same quantity of AZALEAS, about the same size, likewise well set with flower buds; the whole must be good showy kinds.—Applications, with lowest price, to be addressed to Mr. WARD, South Villa, Regent's Park.

NEW FUCHSIAS, VERBENAS, AND PETUNIAS OF 1854 AT REDUCED PRICES, with other NEW and SELECT PLANTS.
For BASS AND BROWN'S Advertised Lists of the above, see *Gardeners' Chronicle* of July 22 and 29, and August 5.
SUPERB NEW CHRYSANTHEMUMS.
12 best new Pompone varieties of last season ... ... 12*s*.
10 best new large flowering do. do. ... ... 10*s*.
60 splendid varieties of Pompone and large flowers, including new, 40*s*., or, per dozen ... ... 9*s*.
These are all fine and strong for flowering.
Catalogues free for three penny stamps. Post-office orders payable to BASS & BROWN, or to STEPHEN BROWN, Post Office, Sudbury, Suffolk.

CHOICE NEW FUCHSIAS, &c.
SAMUEL STAFFORD, NURSERYMAN, Hyde, near Manchester, begs to offer clean healthy plants of the NEW FUCHSIAS of 1854, most of them strong in 36-inch pots, as under:—Fuchsia Duke of Wellington, Autocrat, Charmer, Vanguard, Queen of Hanover, Elegans, Omega, Clio, Magnifica, Macbeth, Otello, Monarch, Trentham, Fanny Webb, Standish's Perfection, Telegraph, Henry Monteith, Globosa splendens, Grandissima, Mr. C. Palmer, and Admiral, 2*s*. each, or 12 for 20*s*. Last season's sorts, 9*s*. to 12*s*. per dozen.
Choice selections of Herbaceous and Alpine Plants, 25*s*. per 100.
He is also prepared to send his very superior Calceolaria Seed, raised from the finest strains, carefully crossed, 2*s*. 6*d*. per packet.
Lists of the above, and other Nursery Stock, may be had on application.

WARD'S "OMER PACHA" STRAWBERRY.

W. J. WARD (by permission of his employer, W. Stephens, Esq.,) offers to his friends and the public the above Seedling Strawberry, which has been proved to possess superior excellence. It is a large handsome fruit, intermediate between the old Carolina Pine and British Queen, partaking of the fine colour of the former, and by many considered superior in flavour to the latter; it is also remarkable for the fine buttery quality of its flesh. Great bearer; ripe as early as Keens' Seedling, affording a long succession of fine fruit. It was exhibited at the Royal Botanic Gardens, Regent's Park, on Wednesday, the 5th of July, and obtained the Bronze Medal. It has also been submitted to Mr. Marnock, Regent's Park, London; Mr. Thompson, Horticultural Society, Chiswick; and Mr. Spencer, Bowood, all of whom speak highly favourably of it. Also the following, who have pronounced it first-rate, and are open to take orders for it:—Messrs. Henderson, Pine-apple Place, London; Mr. C. Turner, Royal Nursery, Slough; Messrs. Standish and Noble, Bagshot; Mr. P. Lydiard, Fruiterer, Batheaston, Bath; Mr. W. J. Epps, Bower Nursery, Maidstone; Messrs. Sutton, Reading; Mr. W. Barnes, Camberwell; Mr. Lewis Solomon, Fruiterer, Covent Garden.

Strong well rooted plants last week in August. Terms, cash or reference.—100 plants, 3*l.*; 50 plants, 1*l.* 15*s.*; 25 ditto, 1*l.* A few strong plants in 32-sized pots, 15*s.* per dozen.

Prospect Hill, Reading, August 19.

MYATT'S new Seedling Strawberry, "ADMIRAL DUNDAS."—This is the most extraordinary variety, for size and productiveness, that has yet been raised at Manor Farm; it is much larger and a better flavour than either the Surprise or Mammoth, and ripens off the late fruit to advantage.

J. M. & SONS can confidently recommend this, as being superior to any large variety that has come under their notice.

Strong, well-rooted runners are now ready, and will be carefully packed and delivered free to any part of London, at the following scale of charges:—100, 50*s.*; 50, 30*s.*; and 25, 16*s.* Also strong Plants of MYATT'S British Queen, Cinquefolia, Eleanor, Surprise, Globe, Eliza, Hooper's Seedling, Keens' Seedling, Black Prince, and Barnes' Bicton Pine, 5*s.* per 100.

Manor Farm, Deptford, August 19.

"SIR HARRY."—The eminent success of this new SEEDLING STRAWBERRY, at the only Floral and Horticultural Exhibitions where it has been shown, viz., Chiswick, first-class Certificate; 21, Regent Street, highly commended; Botanical Gardens, Edgbaston, first prize—induces the proprietor (hitherto an amateur grower only) to offer it for sale.

The characteristics of the plant are these:—Ripening as early as Keens' Seedling, but continuing fruiting a much longer time—a great cropper, bearing a very large handsome dark crimson berry, which carries that superb colour not only quite through but to its very end, whilst, being both firm and juicy, it separates itself entirely from its calyx, without having a tasteless core. The delicious and luscious flavour of the fruit, united with its high perfume, throws utterly into shade the Keen and British Queen. The leaves are few, and the vigorous extension of its bearing branches exposes the fruit to the ripening influence of the sun, the want of which exposure is a great cause of failure in many sorts of this class of plant.

An oil-painting of a one-year-old runner, with its gigantic fruit in the respective stages of growth (as sketched from nature), is now to be seen in the Birmingham Exhibition of the Society of Artists, and coloured Lithographs have been taken from it by an eminent London Artist, which may be had on application, price 2*s.* 6*d.* each, in postage stamps.

The Plants will be ready for sending out (not less than a score) on the 20th September next. Prices—100 plants, 6*l.*; 80 plants, 5*l.* 10*s.*; 60 plants, 4*l.* 4*s.*; 40 plants, 2*l.* 17*s.*; 1*l.* 10*s.* for a score. A few plants in pots may be had. Apply to MR. RICHARD UNDERHILL, Sir Harry's Road, Edgbaston, Birmingham; each application to be accompanied with a Post-office order (on Birmingham) or cash, to receive attention.—August 1854.

WILLIAM BARNES begs to call the attention of his friends and the public generally to his general stock, which will be found to contain the greater part of the very best things in cultivation.

CHINESE AZALEAS, all the best varieties that have been sent out up to the present time, great care having been taken in the growth of this beautiful family of plants, all the weak delicate growing varieties being selected and worked upon strong healthy stocks, and the plants are such as are rarely to be met with for health and vigour, and will bloom fine next season.

GERANIUMS, all the best fancies, large flowering kinds, and bedding, as well as the following variegated varieties, viz., Flower of the Day, Mountain of Light, Golden Chain, Silver Queen, Silver King, Attraction, Lady Cottenham, Brilliant, and Cupped Leaf.

Also the finest varieties of Delphiniums, French and Belgian Phloxes—many of them may now be seen in bloom.

Perpetual Blooming Carnations, fine plants that will bloom through autumn and winter in great variety.

All the new French and English Verbenas, fine strong plants.

Chrysanthemums, Pompons, and large flowering varieties; newest and best fine strong bushy plants.

Roses on own roots, comprising the newest and most approved kinds of Hybrid Perpetuals, Bourbons, Teas, Chinas, Noisettes, Hybrid Chinas, and Hybrid Bourbons. These have all been kept shifted into larger pots, and are now very fine strong healthy plants. Japan and other Liliums, of which W. B. has a very large stock, both in beds and pots.

A very fine selection of all the most approved kinds of Vines from eyes in pots, among them some extra strong plants of Black Barbarossa.

Antirrhinums, Pentstemons, Petunias, Heliotropiums, Lobelias, Fuchsias, and fine plants of Hydrangea japonica variegata.

Fine new Mushroom Spawn.

An inspection of his Stock is respectfully solicited.

N.B.—Catalogues can be had on application.

Camden Nursery, Camberwell, London, Aug. 19.

THE BEST PLANT OF THE SEASON.

"BEGONIA PRESTONIENSIS SUPERBA."

W. J. EPPS has much pleasure in stating that he has purchased this splendid Begonia raised by Mr Frost, Gardener to E. L. Betts, Esq., Preston Hall; the flowers are of much brighter colour than Prestoniensis, and the centre is nearly filled with stamens and petals, resembling a double blossom with a golden tinge, exhibiting a charming contrast. The flowers are delightfully fragrant as a Tea-scented Rose. Habit—dwarf and bushy; the flowers are thrown well above the foliage, in large trusses, and altogether one of the best plants yet offered. It received the highest award in June, at the Royal Botanic Show, Regent's Park, as a new plant; also at Maidstone and Ashford. Plants in October, 10*s.* 6*d.* each; one given where three or more are taken.—Bower Nurseries, Maidstone, Aug. 19.

LORD KEYNON'S FAVOURITE CUCUMBER is the best and most productive for winter cultivation ever grown, requiring less heat than any other of the kind; it is a very handsome fruit and free setter. Good old seed of the above true variety may be had, price 2*s.* 6*d.* per packet, postage free (or penny postage stamps to the amount).

EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Churchyard, Bath, Somersetshire.

NEW FUCHSIAS OF 1854.

JOHN MOORE AND SONS, having a fine stock of their "Duke of Wellington," beg to offer good plants in bloom on the following terms, viz.:—

	s.	d.
One Duke of Wellington and two others, selected from the following	10	6
One do. and 6 do.	20	0
One do. and 12 do.	35	0

Hamper included.

Clio, Omega, Elegans, Charmer, Vanguard, Autocrat, Magnifica, Queen of Hanover, Trentham, Fanny Webb, Telegraph, Henry Monteith, England's Glory, Duchess of Lancaster, Glory, Lady Franklin, King Charming, and Incomparable.

Blooms of most of the above can be sent per post, on receipt of 12 stamps. A liberal discount to the Trade.

Perry Barr Nursery.—August 19.

WILLIAM KNIGHT, FLORIST, 67, High Street, Battle, Sussex, offers the following SELECT FLOWER SEEDS, for present sowing, sent post free at the annexed prices:—Cineraria, extra fine, 6*d.*; Calceolaria, fine spotted varieties, 1*s.*; Hollyhock, from named flowers, 6*d.*; Mimulus, from 12 varieties, 6*d.*; Sweet William, from 50 varieties, 6*d.*; Pansy, extra fine, 6*d.*; Double Daisy, fine, 6*d.*; Antirrhinum, from 50 varieties, 6*d.*; 12 varieties choice hardy Perennial Seeds from America, extra fine, 2*s.*

CHOICE SEEDS.—Splendid mixed Sweet William, Antirrhinum, Primula sinensis fimbriata, Calceolaria, and Cineraria, Chater's Hollyhock, 1*s.* and 2*s.* 6*d.* per packet. Can be strongly recommended; saved only from the best flowers. Catalogues free by post.

DAWE, COTTRELL, & BENHAM (successors to F. Warner), Seedsmen, 36, Moorgate Street, and 3, Laurence Pountney Lane, City, London.

Agents for Butcher's Barbarossa Vines, M'Adam's Anti-Grape Blight Composition, and Cole's Concentrated Animal Manure.

STRAWBERRY PLANTS.—The best varieties for early and late growing which have been thoroughly proved and given every satisfaction are the undermentioned first-rate varieties, now ready.

Nimrod, 15*s.* per 100; Ajax, 5*s.*; Ruby, 5*s.*; Prince of Wales, 10*s.*; Trollope's Victoria, very superior, 5*s.*; Myatt's Surprise, 3*s.*; Myatt's Eleanor, the best and latest bearing Strawberry in cultivation, 3*s.*; British Queen, true, 3*s.*; Alice Maude, 3*s.*; Black Prince, very early, 3*s.*; Eliza, 3*s.*; Prolific, very fine and early, 3*s.*; Cremont's Perpetual, or Double-bearing Strawberry, 3*s.*

A remittance must accompany the order, either by Post Office Order or Penny Postage Stamps, on receipt of which the plants will be sent in hamper and package free, for all orders above 5*s.*

EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Churchyard, Bath, Somersetshire.

CHRYSANTHEMUMS, &c. — The following we consider the best and most distinct varieties at present in cultivation, and are a careful selection from our large collection, and beg to offer them at 9*s.* per doz.

CHRYSANTHEMUMS (large-flowering varieties) at 9*s.* per dozen, viz., Nell Gwynne, Rosa Mystica, Poudre d'Or, Rebecca, Madame Laborde, Norah, Rosée du Ciel, Berryer, Madame Dervaux de Lavarde, Mimosa, Osiris, Madame Andry, Ondine, Jenny Lind, Racine, Baron de Solyman, Atrorubens, Marshal Ney, Arc en Ciel, The Warden, Nonpareil, Bixio, Christine, Ender, Dupont de l'Eure.

CHRYSANTHEMUMS (Pompone and Lilliputian varieties), at 9*s.* per dozen, viz., Drine Drine, Nelly, Cedo Nulli, La Vogue, Alveoflorum, Caroline Gignoux, Sathaniel, Argentine, Princesse Mathilda, Atropos, Daphne, La Sapagon, Vitida, Lais, Mignonette, Madame Rousselon, Solfaterre, Adonis, Cybele, Iris, Model, Zenobia, La Gitana.

PHLOXES.—The following new and beautiful varieties, at 9*s.* per dozen: Striata Superba, Alexandrina, Mrs. Thompson, Maria Vincent, Madame Doublet, Aricie, Nimrod, Deuil de la Comtesse de Marnes, Bois Rose, Roi Leopold, Spenceri, Villaret, Joyeuse, Princesse Marianne, Napoleon, Madame Poivra, Madame Courcelles, Macrantha, Madame Lierval, Imbricata, Eliza, Anais, Diadem, Maria Boulanger, Madame Henderson, Rubra, Nelsoni, Madame Lanier, Rio des Roses, Madame des Princes.

TREE CARNATIONS, in 12 fine and distinct kinds, for Autumn and Winter blooming, 18*s.* per doz.

For particulars of Choice Greenhouse Plants, Gloxinias, &c., see their advertisement of August 8.

Orders of 2*l.* and upwards are delivered Carriage Free to any Railway Station within 150 miles of the Nursery.

YOUELL & Co., Royal Nursery, Great Yarmouth.

THE

NEW RHODODENDRONS OF ASSAM AND BOOTAN.

COLLECTED BY THOMAS J. BOOTH, ESQ.,

And described in the "Journal of Botany," by his Uncle, THOMAS NUTTAL, Esq., *of Rainhill, the well-known Botanist and Traveller.*

E. G. HENDERSON & SON

HAVE much pleasure in announcing that they have for Sale these, the most remarkable new species of RHODODENDRONS ever introduced into the country, many of which surpass those from Sikkim, discovered by Dr. Hooker. Amongst these brilliant discoveries from the Bootan Alps are the most wonderful-sized flowers, delicious fragrance, and distinct colours of any that are known to exist in this the most gorgeous tribe of plants; and being combined with magnificent foliage, and distinct habit of growth, will render them indispensable, and a great acquisition both for the garden and conservatory.

The entire Stock of all these extraordinary species now growing (June 16, 1854) in the gardens at Rainhill have been purchased by them. The plants are fine, healthy, and robust. Many have been planted out in the open ground, and have proved quite hardy, with the exception of one or two slightly injured by late spring frosts.

They are now taking orders for six of the most distinct species, which will be dispatched in October. Full descriptions and prices may be seen on referring to the *Gardeners' Chronicle* of July 1, or in their

NEW CATALOGUE FOR 1854, NOW PUBLISHED,

and which will be forwarded post free on application.

Wellington Nursery, St. John's Wood, August 12.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES, GREENHOUSES, DWELLINGS, ETC.

ESTABLISHED MORE THAN ONE HUNDRED YEARS.

THOMAS MILLINGTON requests attention to his present prices of SHEET GLASS in 100 feet boxes.

Squares	6 by 4 and 6½ by 4½ } 7 by 5 and 7½ by 5½ } 8 by 6 and 8½ by 6½ }	... ... 13 6
"	9 by 7 and 9½ by 7½ } 10 by 8 to 12½ by 9½ }	... ... 16 8
"	12 by 10 to 24 by 14 ...	... ... 19 0

Orchard House Squares on Mr. Rivers's approved plan, to whom I have sold some thousands of feet:—20 inches by 12, 20 by 13, 20 by 14, 20 by 15, 20½ by 12½, 20½ by 13½, 20½ by 14½, at 19*s.* per 100 ft. 200 feet cases at 42*s.*, and 300 feet case 63*s.*, in large sheets.

Boxes charged 1*s.* extra per 100 feet, and the same allowed if returned free of all charge.

HARTLEY'S PATENT ROUGH PLATE GLASS, Fern Shades, Striking Glasses, Milk-pans, Bee Glasses, Cucumber Tubes, Sheet and Rough Plate Glass Tiles, Wasp Traps; Plate, Patent Plate, Crown and Sheet Window Glass, in every thickness and quality, and Ornamental Glass, plain and coloured; pure white Shades for Ornaments, Crystal Glass for Pictures.

Warehouse, 87, Bishopsgate Street Without—same side as Eastern Counties Railway.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

JAMES PHILLIPS AND Co. have the pleasure to hand their present prices of Glass for Cash:—

	SHEET SQUARES. In Boxes of 100 feet.	CROWN SQUARES. In Boxes of 100 feet.
Under 6 by 4	£0 12*s.* 6*d.* ...	8*s.* 6*d.*
6 by 4, and 6½ by 4½	0 13 0 ...	12 6
7 " 5, — 7½ " 5½ } 8 " 6, — 8½ " 6½ }	0 15 0 ...	14 0
9 " 7, — 10 " 8, 12 by 9, 12 by 10, 14 by 10 }	1 0 0	

Larger Sizes, not exceeding 40 inches long.

16 oz. from 3*d.* to 3½*d.* per square foot, according to size.
21 oz. " 4½*d.* to 5*d.* " " "
26 oz. " 6*d.* to 7½*d.* " " "

SHEET GLASS OF ENGLISH MANUFACTURE FOR ORCHARD HOUSES, THE SAME QUALITY AS WE SUPPLY TO MR. RIVERS, and of various dimensions, always on hand.

London Agents for the Sale of HARTLEY'S PATENT ROUGH PLATE GLASS.

Glass Tiles, ¼ of an inch thick, packed in cases, containing 50, at 1*l.* 17*s.* 6*d.* per case. Packages 2*s.* each extra, but allowed for when returned.

Glass Milk Pans, 21*s.* per dozen; Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoys' Milk Syphons, Wasp Traps; Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the trade.

Horticultural Glass Warehouse, 116, Bishopsgate Street Without, London.

TO FLORISTS AND OTHERS.

J. JONES, IRON MERCHANT, has always a great variety of CONICAL and SADDLE BOILERS in STOCK; also Fire and Furnace Bars, Ornamental and Plain Supply Cisterns, Double Doors and Frames, Furnace Grates, Soot Doors, Hot Water Pipes, Elbows, Tees, Syphons, Throttle Valves, Stop Cocks, Flange and Socket Elbows, &c.; also Trough Pipes. Drawings and prices of the above, on application to J. JONES, Iron Bridge Wharf, No. 6, Bankside, London, near the Southwark Iron Bridge.

STEPHENSON AND PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

PRIZE MEDAL—1851.

AT A VERY ECONOMICAL RATE.

SAMUEL CUNDY, MASON and BUILDER, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Lower Belgrave Place, Pimlico, London.

Marble Chimney-pieces manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price. A good Marble Chimney-piece for 40*s.* Marble Work in all its branches at a remarkably cheap rate for Halls, Dairies, Larders, &c. Circulars sent on application.

N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

Priced lists of plant tubs and boxes forwarded on application.

ENCAUSTIC TILE PAVEMENTS.

MAW AND CO., Benthall Works, Broseley, Salop, Manufacturers of the Cloister Pavement of Mediæval Court, and "THE SUCCESSFUL IMITATION OF OPY'S ALEXANDRINE IN THE BEAUTIFUL ENCAUSTIC TILE PAVEMENT OF CLOISTERS OF BYZANTINE COURT," Crystal Palace (M. D. Wyatt, Esq., in Official Handbook), forward, without charge, Designs and Estimates, adapted to given dimensions, of Entrance Halls, Conservatories, Verandahs, &c., in every style.

Specimens at 11, Aldersgate Street, City.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

WELLINGTONIA GIGANTEA.

MESSRS. VEITCH AND SON beg to inform the Public that they have only a limited number of their FIRST LOT OF SEEDLINGS of the above splendid HARDY EVERGREEN TREE left on sale. They would therefore recommend those parties requiring STRONG PLANTS to make EARLY application. Terms AS IN FORMER advertisements.

Messrs. V. & SON beg at the same time to intimate to THE TRADE that they have a second raising of nice healthy young plants in small pots, which they can offer to them on terms varying with the quantity taken, and particulars of which can be had on application.

Nurseries, Exeter and Chelsea, Aug. 19, 1854.

MAY'S PARAGON CABBAGE.—Prepaid postage. The above superb CABBAGE can still be had in 1 oz. packets, 1s. each. Sow July and August.

Also new CINERARIA SEED from the best named flowers, in packets, 2s. 6d. each.

Address, HENRY MAY, the Hope Nurseries, near Bedale, Yorks.

BASS AND BROWN are now saving several of their choice Seeds, and can strongly recommend the following, which have been selected with their usual care from their superb collection:—

CALCEOLARIA, very choice, 1s.; extra superb ...	2s.	6d.
CINERARIA, very choice, 1s.: extra new and choice	2	6
FUCHSIAS, from new and choice	1	0
GERANIUM, very choice, 1s: extra new and choice	2	6
" from finest fancy varieties	1	6
GLOXINIA, fine, 6d. extra from new and choice ...	2	6
ANTIRRHINUM, choice, 6d. extra from superb flowers	1	0

A List of Choice Seeds selected for Autumn sowing may be had free by post on application.

Post-office orders to be made payable to BASS & BROWN, or STEPHEN BROWN. Penny stamps received for small amounts.

Seed and Horticultural Establishment, Sudbury, Suffolk.

BULBS FOR CHRISTMAS FLOWERING.

J. CARTER, 238, High Holborn, London, begs to inform his Customers, and the Public in general, that he has already received a supply of the following BULBS for early flowering, viz.:—

HYACINTHS, double and single, in 6 sorts,	per doz.	8s.	0d.
POLYANTHUS NARCISSUS, in 6 sorts	"	5	0
Double Roman do.	"	3	0
Paper-white do.	"	3	0
JONQUILS, largest double	"	2	0
Do. sweet scented, single	"	1	6
TOURNESOL TULIPS, early	"	2	0
VAN THOL TULIPS, double or single ...	"	1	0
SNOWDROPS, double or single ...	per 100	2	0
CROCUS, various	"	1	6

A comprehensive Catalogue of Dutch and Cape Bulbs will be forwarded gratis, and prepaid to all regular customers as usual, in a few days; and the same may be had by applying, by post or otherwise, to

JAMES CARTER, Seedsman and Florist, 238, High Holborn, London.

*** The Catalogue comprises a List of Seeds proper for present and autumn sowing.

The Gardeners' Chronicle.

SATURDAY, AUGUST 19, 1854.

ADVICES, dated July 19, have been received from J. GIFFARD, Esq., Her Majesty's Consul at Vera Cruz, announcing the arrival in that city of Mr. BOTTERI, the new collector of plants for the Horticultural Society; and of the departure of that gentleman for Orizaba, by way of Cordova. Consignments of plants and seeds may, therefore, be now expected in a few weeks.

IF any one fruit tree has occupied the attention of cultivators more than another, it is surely the PEACH. Endless dissertations and directions about it are to be found in every gardening library—volume upon volume, by gardeners, by amateurs, by physiologists, from LONDON and WISE up to DU PETIT THOUARS and ANDREW KNIGHT, have contributed to its fame, and dwelt upon the difficulties of its treatment; and if there is such a thing now-a-days as a badly managed Peach tree, it is not the fault of authors and publishers. If there *is* such a thing! Where is there *not* such a thing? There is not a country village which is not full of melancholy instances of failure; some trees running to wood, others chlorotic and starved; some devoured by mossiness—others dying of gum and exuberance; none healthy, and all cursed with barrenness.

The reason of this is, undoubtedly, that the Peach tree is too tender for our climate, and can only be retained in health by care and skill. Our summers are too sunless—our soil too damp and cold. By no art can we give it sun enough—by small mistakes we give it far too little, and the temperature of the soil is hardly thought about. Of course we allude to the majority of places, and not to those which are managed by men of skill and intelligence. When the tree becomes unhealthy and unproductive, men never think upon simple common sense explanations of failure, but run to books, perplex themselves with complicated directions, half understand them, try to carry them out, and inevitably fail. In matters horticultural there are martinets as well as in matters military; and many a gardener practically falls into the error of supposing that the goose step, a tight jacket, leather stock and pipe-clay, make the soldier. As to the Peach tree, he measures its angles, pinions its limbs, drills its branches by inexorable rules, cuts hard in, lays in close, and then cries, "See what a tree have I made!" The tree looks well perhaps, but a small matter makes it ill, limb after limb dies away, fruit does not set, and all its spruceness ends in rags and tatters.

This comes of neglect of first principles. Not that we would undervalue in the smallest degree the rules which long experience have established; quite the contrary. It is because, if it is observed without intelligence, and without a thought to first principles, that mere routine, however excellent, is so apt to lead to failure. And we run no risk of contradiction when we venture to assert that in managing such an exotic as the Peach tree, it is better to understand principles and to be ignorant of rules of practice, than to be familiar with the latter and unacquainted with the former.

Since there are so many guides to the art of torturing Peach trees, let us endeavour to explain in what that which we presume to call its rational management consists.—1. First and foremost comes that greatest of all causes of success and failure in cultivation, the soil. The Peach tree abhors a cold soil when growing; it cares little about winter cold provided its roots are not in water; but in summer it must have earth to grow in more dry than wet; such as will permit rain to pass freely into it, *and as freely out*. By that means alone can sufficient warmth be secured in England.—2. In the next place its wood *must* ripen thoroughly; an operation much facilitated by a dry warm soil, and rendered impossible by one in an opposite condition. Everything that interferes with the ripening process is fatal to success. A rich border, for instance, forces the plant into such vigour that its wood never acquires that solid consistency which we call ripeness; therefore all substances similar to animal manures require to be carefully excluded. Neither, be the border what it may, will the wood ripen unless it is nailed close to the wall, so as to take the utmost advantage of absorbed as well as reflected and direct sun heat; hence the necessity of preventing the formation of what is called breast-wood, which keeps off the sun, which is of such vital importance to the tree.—3. The fruit is only produced on the wood of the second year. New wood yields nothing; wood in the third year produces nothing.

On these three simple principles everything turns. It is perfectly useless to perplex oneself with rules for training unless these fundamental truths are remembered. All good practice depends upon them. Such practice as does not is better neglected than observed; it is either false or useless.

We are led to these remarks by a little book written by Mr. HENRY COX,* who, as a practical man, has filled up the details of what we have merely sketched. Although there is nothing in it, or in the previous remarks, of which a great gardener requires to be reminded, there is no doubt that a large proportion of the horticultural world forgets, if it ever thought about, the principles we would now inculcate, and which this author applies. His little book may, therefore, be consulted with advantage by everybody who fails, or succeeds but imperfectly, in Peach culture, and who does not want to learn the ordinary routine of fan training, or Seymour training, or horizontal training, or zigzag training, or any other scheme of training which ingenious persons may have invented. What he says is perfectly true: "It matters little what system of training be adopted, provided a good supply of well-ripened bearing wood be kept in every part of the tree, and its strength as nearly balanced as possible." To be sure. In a climate which suits the Peach, people do without training of any kind. Peaches are orchard trees in the United States; and if we train them to walls in Europe, it is chiefly because it is in that way only that we have a chance of approaching the summer heat of the States.

THE following details respecting the VINE MILDEW have been received from one of the most intelligent wine merchants at Oporto, who has made an especial study of everything connected with the growth and disease of the Vine, without, however, pretending to more than would present itself to the notice of a person free from prejudice, but on the watch for anything that might throw light upon the matter, and desirous of imparting accurately the knowledge he may have acquired. His observations are as follows:—"I still maintain the opinion that the disease is not in the root. With very few exceptions the Vines are covered with bright green leaves and with healthy young wood—that is, strong wood—but they are stained with black blotches, even to the tips of the tendrils.

"The same eccentricity prevails in the progress of the disease as was observed last year. Some of the Grapes are already putrid, while, in others, part of the bunch has withered, and the remainder is ripening. On some Vines half the fruit will be lost, and the other half saved. In some of the vineyards half the Vines are much blighted, and the other half *apparently* untouched. In the heights and the valleys, as in last year, the Grapes have all perished; and on the inclines the heat seems to do more harm than the wet of last year. The whole of Portugal is in the same state, and I believe that there is not a single Vine in the whole country which is not suffering under the blight.

"In my garden all my Potatoes were lost in one night; my Roses shared the same fate, Artichokes, Cucumbers, Melons, Pumpkins, all alike were affected, and the agricultural interests of this unfortunate country run the risk of being all but annihilated; I have not a single bunch of Grapes in Quintas farmed by me, and which ought to give me 300 pipes of the finest wine, which is not seriously affected by the disease. From these estates I shall be glad if I gather 50 pipes of ordinary stuff, merely to pay part of the costs.

"If the heat continues—and it has already putrified many Grapes—much further loss will ensue; and should the rain come about the time of vintage, which, of course, is to be looked for after the season of drought, hardly a bunch of Grapes will escape." *M. J. B.*

* A Practical Treatise on the Cultivation of the Peach and Nectarine. By HENRY COX. 12mo. SIMPKIN.

WE learn from the *Tuinbouw Flora* that the Dutch have succeeded in fruiting the JAPANESE APRICOT, called by botanists *Prunus* (or *Armeniaca*) *Mumè*. A coloured figure in the same work gives so good an idea of the plant that, as an undoubtedly distinct species of hardy fruit tree, the time has arrived for bringing it into notice in this country.

The first account we have of this Eastern fruit is to be found in KÆMPFER, who calls it *Bai*, or *Umè* and *Umè bos*. He calls it a wild spiny Plum with a large fruit, and adds that the fruits preserved in the lees of *sacki* or Japanese beer (Cerevisia japonensis), are exported to India and China. In 1835 SIEBOLD and ZUCCARINI, in their work on Japanese plants, entered into particulars. We give the substance of the statement made by these authors, who call the plant *Mumè*, and give *Bai* as its Chinese name. "The Mumè is found through all the empire of Japan, but thrives best in the northern parts, where it grows 15 or 20 feet high, and much resembles an European Apricot tree. When wild or planted in hedgerows it is a close branching bush, from 8 to 12 feet high. It is much cultivated for the sake of its flowers as well as its fruits. In good seasons the tree is in flower in the beginning of February, and is then used for decorating the altars and dwellings of the Japanese, as a symbol of the return of spring. In the wild plant the flowers are white; when cultivated they vary through every shade of rose and red, even becoming greenish or yellowish. Those most highly valued are the double sorts, which are used for dwarfing as well as for planting in gardens. Several hundred such varieties were collected in the garden of the Prince of TSIKUSEN. The fondness of the Japanese for dwarf trees is well known, and this Mumè is one of the plants most used for the purpose. In 1826, a dealer offered for sale a specimen in flower which was scarcely 3 inches high. This marvel of gardening was growing in a little red varnished box of three stages, like the drug-boxes which the Japanese carry at their belt. The upper stage was occupied by the little Mumè, the middle stage by a Spruce Fir equally small, and the lowest stage by a Bamboo not more than an inch and a half high. As for the fruits, they ripen in June; when quite ripe they are insipid, for which reason they are salted down when green, like Cucumbers, and are eaten as a vegetable with rice and fish. Much, however, as they are esteemed by the Japanese, Europeans do not relish their sour bitter taste. They are usually coloured red, when salted, by adding the leaves of *Ocymum crispum* (a kind of curled Basil). The juice of the green fruit is taken as a refreshing beverage in fevers; and is regarded as indispensable to the preparation of the beautiful and delicate red dye prepared from the Safflower."

It will be seen from this account that we must not reckon the Japanese Apricot as a dessert fruit, unless in the form of a preparation like that of the Olive, for which it seems to be a Japanese substitute. We would therefore guard our readers against being seduced into the purchase of it by a fine-sounding name. From the figure in the "Tuinbouw Flora," the fruit would seem to have much resemblance to the little early Apricots which the French call *Alberges* — pale straw-colour, with a little salmon-red on one side and near the stone. But, although no hope can be entertained of its becoming of any value at table, it is very possible that it may become valuable as a stock for the cultivated Apricot. The climate from which it comes is very severe, and it is certainly a true Apricot. Therefore we have undoubted hardiness on the one hand, and a great constitutional similarity on the other. In the latter respect, it ought to be much better suited to the Apricot than the Plum stock—which is apt to disagree with its Apricot scion—or than the Apricot itself, which is too tender to be

buried underground in our wet and cold winters. As soon as the Mume becomes cheap enough to be so employed, we would recommend it to the notice of the nurserymen. In the meanwhile let us guard the public against imagining that, because it is really an Apricot, it is therefore worth growing for dessert. Such value in horticulture as it possesses, beyond what is now suggested, is wholly confined to its effect as a tree that blossoms at the same time as the Almond.

WE learn from the foreign journals that Dr. FISCHER, known to many persons in this country as the director of the Imperial Botanical Garden in St. Petersburgh, died in June last at the age of 73. He was a meritorious botanist, a skilful horticulturist, and an eager collector. For several years before his decease he had been relieved from the charge of the Botanical Garden; and we believe was latterly employed in the medical department of the Russian Government.

VEGETABLE PATHOLOGY.—No. XXXIII.

148. It was stated above that the effect of temperature is much modified by the condition of the air, and this is no less true of a depression of temperature than of an elevation. A frost which does little damage when the air is dry will be very hurtful where the contrary condition exists. In low situations, therefore, where the air is comparatively moist, frost will sometimes be highly injurious, when an elevation of a few feet at a few hundred yards' distance will prove a perfect protection. A singular instance of this occurred, as a consequence of the frost of April 24 and 25, 1854, at the village of Woodnewton, in Northamptonshire, which for years before the prevalence of railroads supplied Leicester with fruit, though some six-and-thirty miles distant. A small brook runs at the base of a gently sloping declivity, which nowhere rises to an elevation sufficient to entitle it to the name of a hill, even in a flat country. On the table land above the trees were loaded with a profusion of Cherries, having entirely escaped the frost, while those a few feet lower, on the banks of the stream, suffered so much that the crop was comparatively insignificant, the distance between the orchards being not more than 200 yards.

149. The constant drain of the juices of a plant by evaporation, the necessity of that evaporation, the structure of the tissues which admit of nothing which is not soluble, except by actual force or chemical corrosion, to pass through their tissues, and many other points of greater or less importance, indicate the absolute necessity of a proper proportion of moisture according to the exigences of the plant. If the loss by evaporation be not replaced by fluid imbibed by the spongelets, the plant must speedily perish; if the air is too much saturated with moisture, evaporation ceases, or is proportionately diminished, the fluid in the tissues stagnates, and speedily causes disease; or if, on the contrary, there is a deficient supply of moisture to the spongelets, while the air itself is saturated with moisture, the stomates perform the office of the spongelets, and, as in all abnormal actions, disease is pretty certain to ensue. Everything, in fact, points out the necessity of a strict balance being maintained; and as it is not always possible to insure this on a large scale, especially in open field culture, the cultivator can only wrap himself up in the consciousness of having done all in his power, and wait for more propitious times. Where, however, conservatory culture is in question, the skilful gardener has much under his control, and it is no less necessary for him to ascertain the degree of saturation of the air in his houses than it is to regulate the light and temperature.

150. Even under every advantage of light, heat, and a proper saturation of the surrounding air, a plant will not succeed unless the roots have a constant supply of fresh nutriment dissolved in fresh, and not stagnant water. If the soil is once in such a condition as to retain the water in too great quantities, chemical decomposition takes place in its component parts, producing sulphuretted hydrogen and other matters injurious to vegetation. It is on this cause probably, and an accompanying depression of temperature ill suited to the tender roots and young tissues, that the necessity of drainage principally depends, very few plants only being capable of supporting health or even existence under decidedly defective drainage, and when other elementary principles fail—as, for instance, when the light or heat are deficient, and the air fully saturated—the plant must become dropsical and perish. Some bulbs and tubers are able to bear excessive drought, because they are in the condition of seeds, their proper roots being dead, or only sufficient to keep up such a degree of moisture as may be necessary to support life, and the same may be said of many which at certain seasons are constantly immersed in water, and where no moisture can be imbibed except just so much as may be expended by the chemical actions which may be carried on in the body, since the surrounding fluid forbids all loss by evaporation. No cause of disease is more frequent in cultivation than defect of drainage, and none which requires more care or which is more within the power of the cultivator.

151. The presence of a certain portion of fluid, both in the animal and vegetable world, is absolutely necessary to life. The chemical actions connected with vital functions, and inseparable from them, cannot take place without the presence of moisture, and when once the tissues and their contents have been reduced to a state of perfect dryness, any restoration of fluid will not restore their original condition, and the whole will consequently be subject to mere chemical or mechanical laws. Some tissues, however, like certain animals which are wafted about with the dust, as the Emydyæ, are capable of enduring a very considerable degree of drought; and in consequence mosses, which have been dried for the herbarium, lichens exposed to a burning sun, bulbs and tubers in mud baked as hard as a brick, seeds that have been covered with sand at 140°, &c., will revive on the application of moisture; but it cannot be pretended that, in these cases, every particle of free moisture has been expelled. The hardest tissues, so long as life exists, contain some moisture, varying with circumstances, and any marked change of its proportions is equally fatal, though the phenomena exhibited by excess of moisture may be very different from those attending its diminution.

152. Where water holding in solution matters which easily admit of chemical change remains for a long time in cells, which are themselves readily acted upon, decomposition is sure to take place, and consequently one main end of many processes of vegetation is to get rid of every particle of water which is not absolutely necessary for the maintenance of vital action. In that portion of the wood, for instance, which has performed its more direct functions, a very slight quantity only of moisture is contained, and the ripening of seeds during the latter stages of development consists mainly in the absorption and evaporation of the fluids. Dr. Cohn* has lately made some experiments with the seeds of Rye, which show that germination will take place readily three weeks before the seed has acquired its perfect maturity, and that the plants so produced, though at first weak, are soon equally strong with those from perfectly ripe seed sown at the same time. These observations during the succeeding season were applied with equal success to other plants. The remaining process, therefore, is a mere elimination of moisture, in order to fit the seeds for preservation, so that their germination may be deferred till a season more suitable for the young plant, or to give a greater chance for the preservation of the species. *M. J. B.*

* H. R. Göppert in Schlesische Zeitung, quoted in Bonplandia 1854, p. 126.

ANIGOZANTHOS RUFA.

THIS, although an old neglected plant and now seldom met with, is nevertheless much more showy and useful than many that are more highly prized. It is of easy culture, blooms most abundantly with proper treatment, and its fine large scapes of hairy odd-looking flowers last many weeks. It is a native of New Holland, and requires merely greenhouse treatment; but, like everything else, it is possible to render it useless by mismanagement, and this seems to be its ordinary fate, for a good specimen of it is hardly ever met with. It is moreover an excellent plant for amateurs, for it is not easily injured by any neglect in watering, and it is not subject to the attacks of insects.

The present season is too far advanced to allow of doing much with it, even if it was procured at once, but persons intending to commence its culture should provide a nice strong healthy plant, as soon as convenient, so as to have a fair chance of a good start next season. Supposing the plants to be obtained between now and March, about the beginning of the month, if the ball is well covered with healthy roots, shift into pots one or two sizes larger, using a compost of about two parts good rich turfy peat and one part light turfy sandy loam, carefully broken up and well intermixed with a liberal proportion of sharp silver sand. After potting place the plant near the glass in a pit where the temperature may range from 40° to 45° at night and 50° to 55° during the day, with a free circulation of air; or if this should not be at command, place it in the warmest corner of the greenhouse, where it will soon start into free growth if kept rather close. Moisten the foliage overhead morning and evening in bright weather with the syringe, but if proper care is observed to have the ball and fresh soil in a properly moist state when the plant is repotted, which should always be the case, but little water will be required at the root for a fortnight or three weeks after potting. The plant is, however, a rapid grower, and will require a liberal supply of water as soon as it gets into free growth; and this must be attended to, otherwise it will progress but slowly. If all goes on well a second shift will probably be necessary early in May, and as the plant will now be in vigorous growth, it should not be checked for want of pot room. The shift on this occasion may be into a pot two sizes larger, using the same soil as last time, with the addition of some lumpy bits of charcoal to keep it open and porous; also observe the same caution in watering as recommended above. A cold pit or frame forms the best situation for this plant during the summer months, and it should be removed here as early in May as convenient, taking care to regulate the admission of air, &c., according to the state of the weather, so as to prevent any danger of checking the growth through removal. On the forenoons of very bright warm days a thin shade will be useful, but this should be of light material and used sparingly. Also sprinkle over-head morning and evening in fine weather, maintaining as moist an atmosphere as can be done with due regard to a free admission of air. Towards August the plant will be benefited by exposure to the night dews, and the lights may be removed every fine evening, but should be put on again in the morning. When damp cloudy weather occurs in autumn remove the plant to a light airy part of the greenhouse, where it should be wintered, keeping it near the glass, and giving a very moderate supply of water at the root, while the plant is in a comparatively dormant state.

Where good sized specimens are wished before flowering, it will probably be necessary to grow them a second season, and in this case the treatment already recommended should be practised, and of course the flower scapes should be removed as soon as they make their appearance. When the plant is considered large enough for flowering, and with anything like good management a large specimen will be obtained in the course of two seasons, it should be allowed to remain in the greenhouse until it is fully in bloom, removing it farther from the glass as the flower scapes lengthen, to prevent their being injured by growing against the glass, &c. The plant would flower quite as freely if placed in a gentle heat to forward it, as when kept in the greenhouse; but I have found that in a moist warm temperature the flower scapes attain a rather unsightly length, and to have these of only a moderate height, and strong, the plant should be kept in an airy part of the greenhouse, and near the glass. When in flower it may be removed to any cool airy place wherever its flowers will be most acceptable, and if properly supplied with water and preserved from damp they will last for some two months at least. As soon as the flowers decay trim the plant, and replace it in the closest part of the greenhouse to make its growth, repotting it if necessary to afford space to the roots. Propagation is easily effected by division, and well established specimens are soon obtained by placing the young plants in a rather close moist growing temperature. *Alpha.*

COTTAGE GARDENS IN SCOTLAND.

THE following is a description of a cottager's garden at Katesmill, near Slateford, Edinburgh, which received the first-prize for cottagers' gardens at a meeting, the other day, of the Currie Horticultural Society. It is one of four of similar size, and alongside of one another, which received the four first prizes for well-kept gardens on that occasion; and for neatness, fertility, and a happy union of usefulness with beauty, they certainly did great credit both to their owners and to the Society, whose influence in this way has been most beneficial over the few parishes in that neighbourhood to which it confines itself.

Mr. Gray, of Slateford, who has furnished the description, says:—

"In sending you an account of one of our [illegible] gardens, I have chosen that of Alex. Kinnaird, who got the first prize (a hive of bees value 30s.) for the best kept garden. His ground measures 88 feet 4 in. in length, by 15 feet 8 in. in breadth. The divisions, as stated below, are all beds lying across the width of the garden.

"1st Division.—This is a flower bed, 2 feet 8 inches wide, and planted with Tom Thumb Geraniums, 26 in number. In the centre is an oval flower basket filled with two large Geraniums, two Petunias, light and dark, Nemophila insignis, Saponaria calabrica, sweet Alyssum, and other small creeping plants. At the top of the bed is a light wooden rail painted white; this is covered with Verbenas and Petunias, all neatly trained, the whole surrounded with Box edging, and a gravel walk 1 foot 10 inches in breadth.

"2d Division.—This contains such plants as Dielytra, Chelone, Achillea, different kinds of Delphiniums, double scarlet Lychnis, double French Rockets, double white Campanulas, Pentstemons, double Sweetwilliams, of sorts; Fuchsias, and Phloxes; all good kinds. Also two rustic flower vases, filled with scarlet Geraniums, and other creeping plants. A gravel walk two feet wide, with Box edging, finishes this division.

"3d Division.—This is filled with flowers consisting of nine fancy Geraniums, six Pinks, six Carnations, six Antirrhinums, one Cuphea, one Nierembergia gracilis, four Salvias, and seven Ten-week Stocks, together with various other small plants; the whole surrounded with Box edging.

"4th Division.—A gravel walk divides this from the former compartment. This one consists of a bed of spring-sown Onions 2 feet wide, two rows of Potato Onions, two rows of Shallots, one row of Scotch Leeks, two rows of Turnips (Golden Stone), two rows of early Potatoes (Dalmahoy), four rows of Dons, and eight rows of transplanted Leeks. This division is 26 feet long, and finishes with a border of Roses, consisting of William Jesse, Duke of Cambridge, and several other good sorts, surrounded with a Box edging.

"5th Division.—A gravel walk 1 foot 8 inches in width, and a flower border 2 feet in width, commence this compartment. The border contains Ten-week Stocks, China Asters, French and African Marigolds, and a rustic vase filled with plants like the former one. At the end of the walk is a rustic seat, 4½ feet long, covered over with two large scarlet Geraniums, Sweet Peas, Tropæolum canariense, &c. Then there are [illegible] row of triple curled Parsley, eight rows of Potatoes (Prince Regents), one row of Beans (Longpods), [illegible] rows of Peas (Bishop's Dwarf), one row of Cauliflowers, two rows of Cabbages (early), one row ditto [illegible], rows of Savoys, one row of German Greens, [illegible] row of Lettuces, and one row Sweet Peas 6 feet [illegible] trained on a paling, which completes the whole."

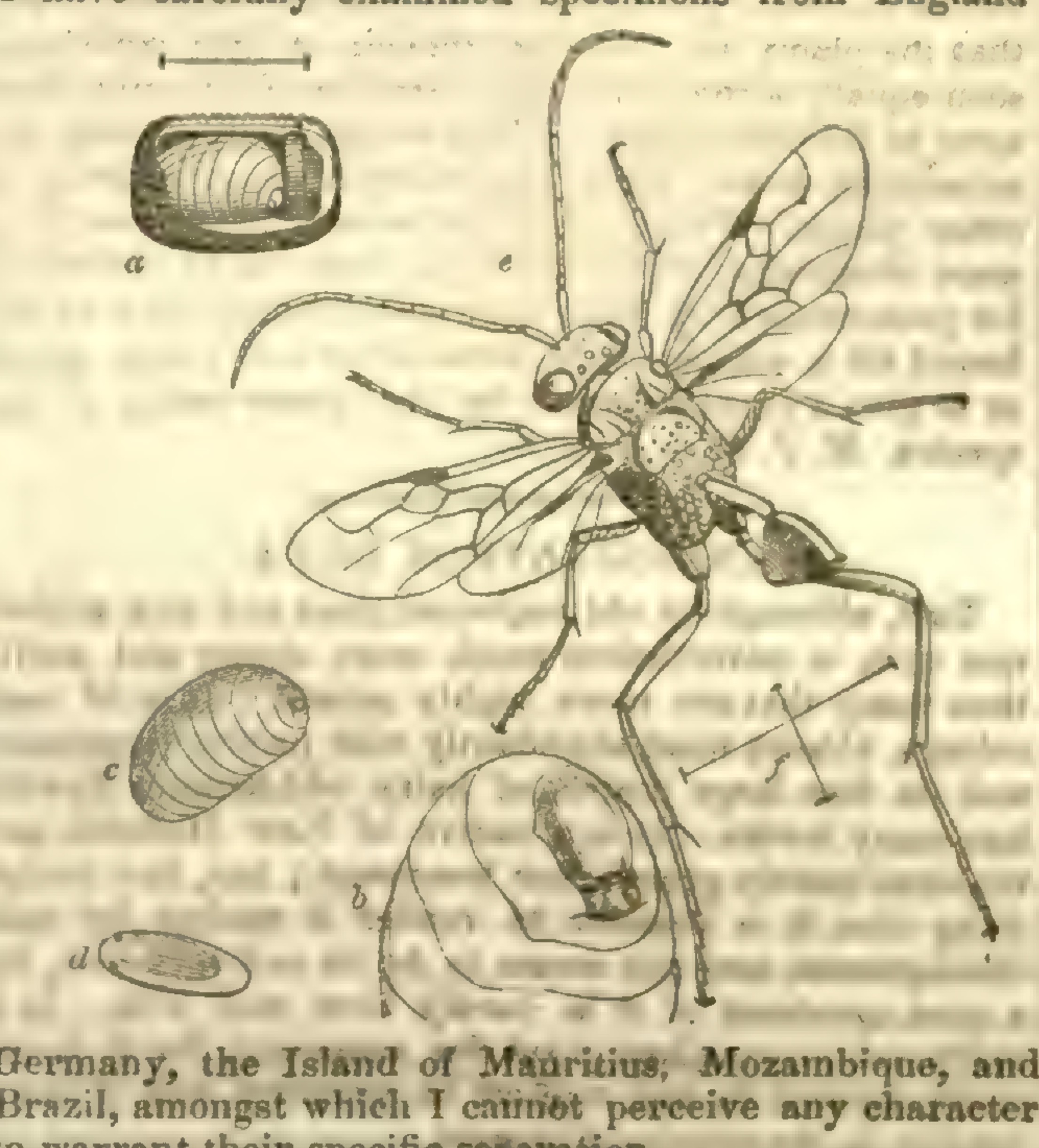
ENTOMOLOGY.

The Cock-Roach Parasite.

The destruction of animal life for the supply of food by other species of animals is one of those *untoward* "harmonies of nature," which we are in the habit of looking upon with regret, but which is required for maintaining the "balance of power" in the natural world. In general, the predaceous species is remarkable for the activity of its movements, the strength of the muscles of its locomotive organs, and a certain lightness of construction, which enables it to perform its determined, though to us apparently unpleasant, duty in the most effectual manner. There is another class of animals, however, which, although preying upon others, possess none of the above characteristics—being, in fact, not only very slow in their movements, but absolutely destitute of distinct organs of locomotion. These are creatures which, therefore, must necessarily perform their destructive functions in a totally different manner from the former. Placed in the midst of a supply of their prey, they need no legs or wings to hunt it down, but insidiously move on, either destroying their single victim by slow and sure degrees, or else finding fresh victims within their reach. Such is the case with the great mass of insect parasites belonging to the families Ichneumonidæ, Chrysididæ, and some other closely allied families. It is in the larva state that these insects take their chief supply of nutriment, and during this state they are naked footless grubs, which (not being fed from time to time by their parents, as in the case of the social bees and wasps) are obliged to be placed by their parents in situations where they can obtain a sufficient supply of food ; hence the females of most of the species have the instinct to introduce their eggs within the living bodies of caterpillars, upon the fatty matter of whose bodies the young when hatched continue to feed until they are full grown, when they either burst forth and become pupæ on the outside of the dead bodies of their victims, or are transformed within the chrysalis, which, instead of bringing forth its proper species, gives birth to one or more of the perfect parasites. Other species deposit their eggs within the eggs of other insects ; these are, of course, insects of very minute size, unless the eggs to be attacked are deposited in a mass, when parasites of a larger size are ready to attack them ; thus from the ball of eggs of some species of spiders we have reared moderately sized Ichneumons. We also possess parasites from the mass of eggs of the Mantidæ, and we are now enabled to illustrate the history of the parasite of the egg case of the Blattidæ or cockroaches.

The first notice of the natural history of this curious parasite, which belongs to the genus Evania, was given by Messrs. Kirby and Spence, in the "Introduction to Entomology," vol. iii., p. 580, where it is stated that "the history of Evania, the parasite of the Blattæ, has been traced by Dr. Reid, who did not, however, live to give his discoveries to the world ; it is, however, hoped they will not be lost, being in most able hands." And in the fourth volume of the same work, p. 216, it is added that the late Dr. Arnold, whose tact for observation with regard to the manners and economy of insects has rendered his loss irreparable, discovered that the remarkable parasitic genus Evania *Fab.*, was appropriated to the all-devouring Blattæ, *whether it attacked it in its egg or larva state the author had not been informed.* This little benefactor is here extremely rare, at least in the country ; perhaps in towns where the cockroach abounds, it may be more common." No further information on the subject was published, either by Dr. Reid or Dr. Arnold, and the uncertainty as to the mode of its attack upon the Blattæ is noticed both in the works of Curtis and Stephens. The former of these authors, however, suggests that, as Evania minuta is found upon Parley Heath, Dorsetshire, where Blatta lapponica abounds, and as these insects are found in company together, the former may be the parasite of the latter (Brit. Ent., pl. 257) ; and hence Mr. Stephens (Illust. Brit. Ent., vii., 118, 119) considering that Evania appendigaster is attached to the true Blatta (B. orientalis the common cockroach) which is not a truly aboriginal insect, rejects its supposed parasites Evania appendigaster and fuscipes (flavicornis Curt.) from the British list ; considering, on the other hand, Evania minuta and fulvipes, which form a separate sub-genus (*Brachygaster* Leach, *Hyptia* Illiger,) as parasites on the indigenous species of the Blattideous sub-genus Ectobius, of which B. lapponica is the type. I am fortunately enabled to confirm and extend the above remarks from information received from several independent observers. From Mr. R. H. Lewis, an excellent entomologist, I received an Evania apparently identical with Evania appendigaster, with the remark—"A citizen of the world, taken at sea, parasitic on a large Blatta which infests ships." The insect was taken on board the ship in which Mr. Lewis sailed to Van Dieman's Land, and which was much infested with Blatta orientalis I am further indebted to Mr. W. S. M'Leay for the information that it is within the egg case of the Blatta that the Evania is parasitic. And now I am enabled, from a communication received from one of our correspondents ("J. S.") to give a more complete illustration of the habits of these curious little insects than has hitherto been given. In the accompanying woodcut, figure *e* represents a magnified and *f* the natural size of a living female specimen of an Evania, which I believe to be identical with the true E. appendigaster of Linnæus,* which I received from "J. S.," together with several egg-cases of a species of Blatta, the natural length of which is indicated by the line above figure *a*. Some of these cases contained the ordinary number of eggs of a Blatta almost fully developed, the inclosed young being still white, with small black eyes, and the limbs lying upon the breast (fig. *b*), whilst others (fig. *a*) were nearly filled by a white fleshy mass (fig. *c*) almost destitute of articulations ; but, upon examining which more attentively, I perceived a distinct head, with a pair of horny jaws, beneath which were the membranous lower jaws and lip (fig. *d*). This I immediately recognised as the larva of the Evania, which had devoured the contents of the egg-case, and which would doubtless have very soon been transformed into a pupa, had it not suffered injury from the case being smashed in its transit by the post. In an other egg-case I found the pupa of the Evania ; and in another the perfect insect fully disclosed and ready to make its escape, so that all the transformations take place within the hard-shelled egg-case, out of which the Evania, when hatched, easily makes its escape with the assistance of its powerful horny jaws. Direct observation is wanting as to the mode in which the parent Evania deposits her eggs in the egg-case of the Blatta, but I have no doubt that this is effected shortly after the egg-case is deposited by the female Blatta, and whilst it is still soft ; the peculiar form of the abdomen of the Evania and its remarkable dorsal position are doubtless of service in effecting this object.

The perfect Evania is black, with transparent wings ; the front of the thorax is very slightly punctured, and the peduncle, or first segment of the abdomen, is smooth. I have carefully examined specimens from England



Germany, the Island of Mauritius, Mozambique, and Brazil, amongst which I cannot perceive any character to warrant their specific separation.

The Evania above described, with the egg cases, were found by "J. S." amongst Orchids recently arrived from Calcutta. I believe, however, that the plants became infected with the Blattæ on board ship, those insects sometimes swarming to an extraordinary extent in vessels from tropical climates. I am, of course, unable to state what species of Blatta is the parent of the egg case in question ; it is, however, nearly as large as that of the common cockroach, but somewhat shorter in proportion to its width. *J. O. W.*

* See my Memoir on these insects, for the determination of the confused synonymy of this insect and its allies. Trans. Entomol. Soc., vol. iii.

Home Correspondence.

Nimrod Strawberry.—I am sorry to be able to confirm your report, in Notices to Correspondents, Aug. 5th, relative to this Strawberry. I received some strong plants in 6-inch pots from Messrs. Lucombe, Pince, and Co., this spring in full bloom. Six of the strongest plants were selected, and having the bloom thinned out to six fruit on each plant they were placed in a cool house, with full air—in fact in a new house, the glazing of which is not yet completed, and received very careful management. The fruit swelled off and coloured beautifully, and the plants were kept comparatively dry, to heighten the flavour ; but it was worthless, sour as a Crab, and very insipid. It is a finely coloured and very handsome fruit, certainly resembling Myatt's Eleanor both in plant and berry ; but as I have not fruited the Nimrod in the open ground, I cannot confirm Mr. Doubleday's identification at present. *W. P. Ayres, Tirydail.*

Striking Cuttings.—It may not be generally known that if a kernel of Barley, or any other quick-growing seed, is inserted in the bottom, near a joint of a cutting, or placed under it, it will (by diffusing its vital power) preserve it until it sends forth roots, and it will also induce it to do so by its vivifying principle. *γεννάω.* [!!!]

Clerodendron fœtidum.—At our establishment, for many years past, we have been accustomed to plant out various plants th t are usually accounted tender. It is needless to report that, in most cases, death has resulted ; but in that of this Clerodendron, about which one of your correspondents enquires, I can assure him that a plant has stood out at the Exotic Nursery for six years, dying down, and becoming herbaceous in its habit. This year the original root stock was killed, but at about a foot from it, in the month of May, a sucker was protruded, and it has now attained a height of between 3 and 4 feet. *William Masters and Son, Exotic Nursery, Canterbury.*

Naming Plants.—I have been for many years a cultivator of plants, and considered myself the owner of a good collection, but Mr. Barnes's account of the varieties growing at Bicton quite startled me ; I felt myself a mere tyro, and that I ought to go to school again. On finishing the article, however, I was much comforted by your remark that the varieties were so in name only, and the feeling was strengthened after consulting the best London catalogues, in which no mention is made of many plants named by Mr. Barnes. What a pity it is that practical men should swell out long lists of plants with names only ! *An Old Sub, Halifax.*

Fluke Potato.—Thanks for your advice ; but it had been anticipated. The Fluke is the only Potato in this neighbourhood that can now be seen with a green leaf upon it, but it is not free from disease, the foliage and stalk are much affected, though at present the tubers have escaped the general wreck. This variety was planted very late, and hence here has not had fair play ; but if under such circumstances it resists disease, I can easily see that, when properly managed, it will be found a valuable acquisition. It is also a very handsome variety and a good cropper. Every tuber of it ought to be saved for seed. *W. P. Ayres, Tirydail.*

Damp in Limestone Walls.—If limestone does not admit damp, which is what I suppose "D. V." means, how is it that two or three washes of lime and size will not get rid of damp ? I am quite aware that part of the damp is precipitated moisture existing inside, but this is precipitated because the walls are cold from moisture. This my lining of hollow bricks will intercept, and I have no doubt that they will render the walls quite dry. I will soon give you a true account of the effects ; much of the damp is likewise owing to the use of ashes (for sand), which contain a good deal of potash in them, and roadsand, which contains much decaying vegetable matter. *Somerset.*

Potato Disease.—Four days and nights constant rain, followed by a warm humid atmosphere, and consecutive heavy showers, have caused no little alarm here. Wheat has been blackened (at least the chaff) as with a soot bag, and in late planted Potatoes, of luxuriant growth, spotted leaves, as if sprinkled with vitriol, and emitting an offensive smell, are making their appearance. Where, however, they are approaching maturity, the crop may be preserved by cutting off the haulm. This should be done as soon as the disease appears in the leaf or bine, or rather before. Pulling up the haulm is not so well, as it shuts in disease, and subjects them to decay. Besides, by this plan, many must be spoiled by the fork when taking them up, as nothing is then left for guidance where the roots are. After amputation, it is advisable (in our opinion) to leave them in the ground, for there they keep best for a time, and many are otherwise torn and wasted by being forced on the market, or by heating in attempting to store them before their skins are set. All the earliest kinds, that were planted early are safe, at least in the neighbourhood of Essex and Suffolk. The late rains have, however, had the effect of removing the sad pest of flies, lice, and other insects, so prevalent of late, on most crops of vegetables, by drowning them all, and kind nature is by a bold effort now striving to overcome the injury sustained by them. *Hardy and Son, Maldon, Aug. 12.*

Richmond Villa Black Hamburgh Grape.—Has any one ever seen this Grape fit to eat, or at any rate fit to be compared with the old Black Hamburgh in quality ? I judged it several times at metropolitan exhibitions, but invariably found it a very poor thing ; and all the gardeners I have mentioned it to condemn it. Has it any good property by which it can be recommended ? If so, I should like to plant it. Has the seedling White Hamburgh exhibited at Regent Street last autumn been found as good as was anticipated ? *W. P. Ayres, Tirydail.*

Foreign Correspondence.

Leaves from my Chinese Note-Book.—No. VI.

The Rice-paper Plant.—On the morning of the 20th of April last, the steamer in which I was a passenger dropped her anchor a little way up one of the rivers on the north-east part of Formosa. As this was my first visit to this fine island, and as I knew we had only a short time to stay, I lost no time in going on shore. Before leaving the vessel I had been examining with a spy-glass some large white flowers which grew on the banks and on the hill-sides, and I now went in that direction, in order to ascertain what they were. When I reached the spot where they were growing, they proved to be very fine specimens of Lilium japonicum—the largest and most vigorous I had ever seen. As I was admiring these beautiful Lilies, which were growing as wild as the Primroses in our woods in England, another plant of far more interest caught my eye. This was nothing less than the Rice-paper Plant—the species which produces the far-famed Rice-paper of China, named by Sir W. Hooker Aralia papyrifera. It was growing apparently wild ; but the site may have been an old plantation, which was now overgrown with weeds and brushwood. The lar e st pecimens which came under my notice were about 5 or 6 feet in height, and from 6 to 8 inches in circumference at the base, but nearly of an equal thickness all up the stem. The stems, usually bare all the way up, were crowned at the top with a number of noble-looking palmate leaves, on long footstalks, which gave to the plant a very ornamental appearance. The under side of each leaf, its footstalk, and the top part of the stem, which was clasped by these stalks, was densely covered with down of a rich brown colour, which readily came off upon

any substance with which it came in contact. I did not meet with any plant in flower during my rambles, but it is probable the plant flowers at a later period of the year. Numerous small plants were coming through the ground in various directions, which a Chinese soldier carefully dug up for me, and which are now safely deposited in Mr. Beale's garden at Shanghae. These, with a few samples of the largest stems I could find, will be sent to England in the course of a few months; the latter will prove an interesting addition to our museums of vegetable productions. The proportion of pith in these stems is very great, particularly near the top of vigorous growing ones, and it is from this pure white substance that the beautiful article erroneously called "Rice-paper" is prepared.

The Chinese call this plant the *Tung-tsaou.* What it was, or to what part of the vegetable kingdom it belonged, was long a mystery to botanists, who were oftentimes sadly misled by imaginary Chinese drawings, as some of these which have been published will clearly show, now that our knowledge has increased. Indeed the only drawing I have seen in Europe, which has any claim to be considered authentic, is that brought from China by Mr. Reeves many years ago, and which I have seen in the library of the Horticultural Society of London.

The *Tung-tsaou* is largely cultivated in many parts of the island of Formosa, and with rice and camphor forms one of the chief articles of export. Mr. Bowring, who read a paper upon the Rice-paper Plant, before the China Branch of the Royal Asiatic Society, informs us that the Canton and Fokien provinces are the chief consumers, and that the town of Foo-chow alone is supposed to take annually not less than 30,000 dollars worth of this curious and beautiful production. The cheapness of this paper in the Chinese market, as Mr. Bowring justly remarks, is evidence of the abundance of the plant in its place of growth, and more especially of the cheapness of labour. "That 100 sheets of this material (each about 3 inches square), certainly one of the most beautiful and delicate substances with which we are acquainted, should be procurable for the small sum of 1¼*d.* or 1½*d.*, is truly astonishing; and when once the attention of foreigners is directed to it, it will doubtless be in considerable request among workers in artificial flowers in Europe and America, being admirably adapted to their wants."* The larger sheets, such as those used by the Canton flower-painters, are sold for about 1½*d.* each.

If the Tung-tsaou proves hardy in England, its fine foliage will render it a favourite amongst ornamental plants in our gardens. Judging, however, from its appearance when growing on its native island, and from the temperature of Formosa, I fear we cannot expect it to be more than a greenhouse plant with us. Plants of it are already in the Royal Garden at Kew, and the point will soon be set at rest by actual experience. *R. F.*

Societies.

ENTOMOLOGICAL, *August* 7.—H. T. Stainton, Esq., in the chair. Mr. Boyd exhibited specimens of the rare Limacodes asellus, taken in the New Forest in July; Mr. Ingpen a large collection of Australian Diptera and Hymenoptera, also a foreign wasp's nest, the outer envelope of which was proved, by a microscopical examination of the texture, to be entirely composed of fungoid matter. He also exhibited a portion of the interior of one of the Cedar of Lebanon trees from Chelsea Physic Garden, which was coated by a layer of fungus, similar to the material of which the wasp's nest was composed. Mr. W. Wing stated, in reference to the same subject, that he had observed a wasp busily engaged stripping off the pile from the mullein. Mr. S. Stevens exhibited a drawing of a remarkable variety of the larva of the death's-head moth; also a specimen of the newly discovered Trachodes hispidus (a weevil), taken by Mr. Plant, near Leicester. Mr. Boddy exhibited a living specimen of the fine Ludius ferrugineus and its larva, from decayed Oaks in Windsor Forest. Mr. Moore sent a further supply of Zygæna minos for distribution, and Mr. Hogan specimens of a Sphæria growing upon a lepidopterous caterpillar; the Sphæria was very thin, and 1½ inch long. Mr. Douglas exhibited specimens of Grapholetha Nisana, reared from the catkins of the Poplar and Sallow. Mr. Westwood exhibited specimens and drawings of a very remarkable minute coleopterous insect recently discovered by Mr. Bates in ants' nests in Brazil, for which he proposed the name of Gnostus formicicola. He also exhibited, from the Economic Museum of Botany at Kew, specimens of a species of Trochilium reared from galls upon the North American Quercus palustris. He also gave an account of his observation of the transformations of Evania appendigaster, a parasite on the egg-capsules of Blattidæ. Mr. Curtis read notices of the capture of two new British species of Hemerobiidæ, also correction of the nomenclature of the species figured by himself in his "British Entomology," notes on nomenclature in general, notices of new captures of rare insects, and on the species of Tortricidæ infesting Pines, and their parasites.

PHYTOLOGICAL CLUB, *March* 8.—The President in the Chair. A communication on COTYLEDON UMBILICUS, from Mr. Gissing, of Worcester, was read. The author said, "I believe that a work on the popular uses of British plants, among the lower classes of the English people, would prove both useful and instructive. Among other things, it would, I think, exhibit the fact that in many of the new remedies introduced into medicine, the practice of the village doctress has furnished the first hint to the supposed discoverer of new virtues in various plants. The one plant, or 'herb,' as all wild plants are called by the common people, that I have now more particularly in view, is Cotyledon umbilicus. This plant, it is well known, is very common in Devonshire, Somersetshire, and the south-west of England, as well as on the rocks in Wales and the counties bordering thereon. In the former counties it grows chiefly on banks, and attains a much greater height than in its more rocky habitats. From Somersetshire I have seen specimens, the flower-stalks of which were 2 feet or more high, but plants growing in more mountainous situations I have seldom seen exceed 8 or 10 inches. Perhaps I may say a few words here upon the shape of the leaf of the Cotyledon umbilicus. In Monmouthshire, Gloucestershire, and Worcestershire, I have gathered plants with some of the root leaves kidney-shaped, and others spathulate, and not peltate, as is usual. I am unable to state whether these leaves would afterwards have assumed the peltate form; but, from the fact of several of the other leaves on these plants having their stalks at various distances from their edges, I thought there was a probability of their having been originally reniform, or spathulate. I know it is by no means a general rule for the leaf-stalks to be central, but the two circumstances united in one plant, caused the supposition that the peltate leaf might be a development of an earlier form. I name this fact because I have never before seen it noticed; if it be general, it is worthy of remark. The leaves of the flower-stalk, I know, are generally nearly reniform, but the leaves I have spoken of were growing long before the flower-stalk made its appearance. One of the common names of 'Cotyledon umbilicus,' is Kidney-wort. Now we know, pretty certainly, that the other vulgar names, Penny-wort, and Navel-wort, are given from the shape of the leaves. Did the person who added to these names kidney-wort do so for the same reason, or from any supposed curative power? Most likely the latter; but still, bearing in mind the leaves I have spoken of, there is a possibility in favour of the former. Respecting the medicinal use of the Cotyledon umbilicus, it is well known to most chemists and druggists that Mr. Salter, of Poole, introduced it a few years since as a cure for epilepsy, since which time it has been used, although I believe to only a limited extent, amongst medical men. In Monmouthshire and Herefordshire I found, on inquiry, that the leaves were taken for urinal obstructions and 'fits;' in Lancashire, amongst other complaints, they are likewise taken for 'fits.' In Herefordshire I find they are used for corns and worts; in Worcestershire they are used for the same purpose; hence they are called 'corn-leaves.' They are likewise used here to make a cooling ointment, and their juice is expressed and mixed with cream, as a cooling lotion for sore faces or chaps in children, in the same manner as the juice of the Houseleek (Sempervivum tectorum). Whether Mr. Salter knew of its use amongst the common people for 'fits,' and examined for what kind of 'fits' it was used, and found it to be epilepsy, of course I am unable to say, but I make no doubt it was used for what the people call 'fits,' very many years before Mr. Salter introduced it into the regular practice of medicine. For it is most unlikely that the people should have recently adopted it, as they generally are violently opposed to all innovations upon their time-hallowed customs. Witness the feeling still prevalent in many parts against vaccination. The word of a village doctress is much more powerful amongst the ignorant peasantry than that of the qualified practitioner. She is a remnant of a bygone age, and I doubt not, as surgeons penetrate more into remote districts, the rising generation will totally discard the only medical adviser of their forefathers. The doctress commenced her practice when it was almost the only mode of treatment; and when, if surgeons differed from her, it was only to prescribe more absurd and disgusting remedies; she kept it when medical men came to be comparatively frequent; and her 'occupation' will only be fully 'gone,' when the class that now constitutes her patients has become intelligent enough to prefer science to quackery. Ray says, that the roots and leaves of Cotyledon umbilicus (or Umbilicus veneris, as it was then named) were used for erysipelas, &c., and refers to Dioscorides and Galen. Dr. Hill, in his 'Family Herbal,' gives it as a general cooling medicine, internally and externally. In the last edition of Gray's 'Supplement to the Pharmacopœias,' it is said to be used in the same manner; and in Meyrick's 'Family Herbal' it is given as cooling and diuretic, and good for burns; but in none of these are 'fits' named. Whether the authors disbelieved the utility of the plant in these diseases, or whether they were ignorant of its use in such cases, I cannot tell. It is likewise very difficult to determine what ignorant people mean by the term 'fits;' apoplexy, paralysis, hysteria, and epilepsy, are all 'fits' with them, they have no discriminating eye for the different symptoms that denote the different kind of 'fits.' The only notice I have seen of Cotyledon umbilicus being used in any of the diseases just named, is in the 'Pharmaceutical Journal' for 1849, where Mr. Ince observes, that it has long been a popular remedy in 'hysteria.' Anything that alleviates the sufferings of humanity should be hailed with satisfaction, and whether Mr. Salter has taken a leaf from the prescription book of the village doctress, or not, is of but little consequence, so long as it is useful, but in that case it is not a new medicine. A friend suggested to me some time since, that probably there was a difference in the extract made from the 'Cotyledon umbilicus' of the southern and western parts of England, and of that made from the plant gathered in more rocky situations, as Wales, &c. I wish I could speak more positively upon this point, but I have had no opportunity of testing it. I can only say that a London manufacturing chemist saw some made from plants gathered in Worcestershire, and declared it the best he had ever seen. I believe the London market is supplied with Cotyledon umbilicus (or the extract) mostly from Devonshire, Somersetshire, &c.; therefore, whether the difference in the extract was caused by the different habitats of the plant, or by greater care in the preparation, remains a question that can only be solved by absolute practice. From what I am able to judge, the amount of extract yielded by the green leaves gathered about February, varies from 4 lbs. to 6 lbs. in the hundred-weight. This extract is also about the consistence of soft butter. I pretend to no originality in these remarks, but have brought them forward, thinking they may induce others, who, perhaps, possess greater advantages than myself, to examine the subject of the local uses and names of British plants. There is scarcely a chemist and druggist who is not, at some time, made aware of his deficiency on these points, through the application of some person for an article which he, in all probability, possesses, but which he fails to recognise under the name given it by the common people, more particularly if he be a comparative stranger in the locality. In examining the subject, they might eliminate all that is worthless, and adopt whatever they found worthy of support. In doing this, they will be just as much assisting truth and progress as if they were engaged in some higher and more ostentatious branch of the sciences."—The President said that in his opinion, whether Mr. Salter was the original discoverer of the virtues of Cotyledon umbilicus in epilepsy, or only the introducer of it into the regular practice of medicine, he was equally entitled to the thanks of the community at large for any benefits that might arise from its use, although, as far as his own experience went, he thought that the value of this remedy in epilepsy had been much overrated. The President also stated that he was very glad to find, from the interesting paper just read, that the local uses of our indigenous plants had begun to excite the attention of the members of the Phytological Club; as this was one of the prominent objects contemplated at its establishment, and one also which he had on several occasions impressed the importance of upon the members, he hoped, therefore, that this paper would soon be followed by others on similar subjects. Mr. Bentley also called attention to that part of the paper referring to the probability of the extract of Cotyledon umbilicus, prepared from plants from different habitats, possessing somewhat different characters. He thought that this was very likely to be the case, as he believed that climate, soil, &c., had far more influence in modifying the properties of plants than was generally supposed, and from the importance of the bearings of this subject upon pharmaceutists, who had continually to make use of plants and their products in the preparation of various medicinal compounds, he urged the necessity of a thorough investigation of the matter upon the members of the club. Mr. Blyth observed, that the extract of the Cotyledon umbilicus had been largely tried at St. Mary's Hospital, more especially by Dr. Sieveking, and the effects had been so satisfactory, in some cases of epilepsy, in causing a remission of the attack, as to justify its further use. Dr. Sieveking had observed, that its exhibition was followed by long intervals of freedom from fits—intervals that had been regarded by the patients themselves as cures—but which, without exciting extravagant hopes of cure in every case of epilepsy, might lead to the further investigation of what, if properly applied, might prove to be a serviceable preparation—he had distinctly traced its action upon the kidneys—it was manifestly a diuretic. Mr. Blyth, from personal communication with Dr. Sieveking, knew this to be his impression, and he (Mr. Blyth) thought pharmaceutists could not be too careful in the preparation of the extract. He did not know from what part of the country the plant was obtained from which the extract itself supplied to the hospital was made—but the extract was most unexceptionable. It was the province of the pharmaceutist to prepare a good extract—it was the province of the physician to judge of its effects. *Pharmaceutical Journal.*

* "Proceedings of the China Branch of the Royal Asiatic Society."

Notices of Books.

Burgess's Amateur Gardeners' Year Book (Black, 12mo) is in a great measure a reprint of some useful practical articles which appeared in our columns in 1846—9. At the time they were much valued by our readers, and we are glad to see them now forming a book which we can recommend to gardeners as well as amateurs, as a collection of plain, unpretending, practical, well written instructions, by which all may profit. Dr. Burgess's account of himself and his horticultural employment is new, and serves as a good introduction to a very good volume:—

"I have watched with great interest, for some years, the movements of a horticultural society in a flourishing country town, and have often been surprised at the difficulties with which it has had to contend, from the prevalence of the habit of estimating everything by its

pecuniary return. A scheme for a gas-house, a railroad, or a town-hall is eagerly embraced, because each will yield, perhaps, an interest for the money invested; but a horticultural society is placed in a different category. It is true its shows are attractive; that fellow-townsmen find their harmony promoted by its meetings; that a taste for the innocent and the beautiful is fostered by its influence; that the labouring classes are taken from low and injurious pleasures by its exertions—all this is conceded; but there is no money return, except to the successful candidates for prizes, and therefore it cannot be warmly espoused. A few kindred spirits, by dint of influence and careful canvassing, get up a subscription-list sufficient to keep the society in existence; but a conviction is always forced upon its promoters, that a love of gardening has yet to be formed, and that nature's beauties, although praised, are thought worthy very little time, attention, or money.

"Now, the situation of this horticultural society will illustrate my meaning, when I say that the amateur gardener feels a momentary blush when called upon to defend his pursuits. The possessor of acres of pleasure-ground would never have this feeling, for no one would laugh at him for his expensive tastes, associated as they are with high life and with wealth. But the owner of a garden a few yards square, to which he devotes his mornings and evenings, often becomes sport to the thoughtless for his attachment to his humble Flora. In his heart he knows that he is right, for he feels ennobled by his blameless occupation; but he is often at a loss to defend himself against the bluster of ignorance, and the heartlessness of mere money-makers. When a friend says, 'Your Cabbages must cost you a shilling a-piece, if your labour is taken into account; and your Roses, judged by the same rule, are each worth half-a-crown,' and evidently thinks he has employed an irrefragable argument, the modest cultivator scarcely knows how to retaliate. The fact is, it is difficult to balance taste against the want of it, or mental pleasures against such as are more sordid; and if I can assist the amateur in defending himself, and confuting his antagonist, I shall probably be of service to him. It is well for the judgment to go hand in hand with the heart, and to be able to show a good reason for the love of gardening and flowers.

"Perhaps my advice and reasoning may be better received if, in a slight autobiographical sketch, I can establish a claim to experience and knowledge of the subject of which I write. I am then like, I presume, many of my readers, an amateur gardener. My practice in this art dates back as far as a quarter of a century, when in the suburbs of London I had a little plot in the garden of my father, made little hotbeds of his stable manure, and gloried in the production of a pungent Radish or an abortive Cucumber. Ignorant country people may sneer at at the mistakes of cockneys as to rural pursuits; but who can disparage with justice their love of gardening and flowers? The Mignonette in a broken pan, or a Hyacinth in a blacking-bottle, which may be seen in London's darkest streets, and the Ward's cases in the drawing-rooms of its wealthiest citizens, furnish sufficient proof of the floral taste of the largest city in the world; and I can testify that, in my boyish days, a love of gardening filled the hearts of multitudes of urchins within the sound of Bow-bells. Since that time my occupations have been those of the wits, not of the hands. At one period, an engrossing affection for literary pursuits threatened my health, and rendered a return to the recreations of childhood necessary, as the means of securing a right mental and bodily state *mens sana in corpore sano.* I took to gardening with a heartiness and love which made its labours pleasant, and its successes delightful. Many persons will tell you they love flowers, who love only to look at them, but would rather see them die than give them a re-potting, or even a careful watering. I did not pursue the craft in this way. I endured the labour that I might enjoy the triumph of success. The preparation of a Ranunculus bed in the winter season; the turning over the soil again and again, that the whole might be mellowed by the frost; the back-aching work of planting in February; the pressing down the soil around every individual plant as it appeared above ground; all this I have done, and been amply rewarded by the exercise itself, but especially when, in the month of June, my bed has developed the matchless charms of these delicate *élèves* of Lightbody and Tyso.

"In these pursuits health has been secured, and peace of mind promoted. A hard ride has been said to be the Englishman's remedy for melancholy, nor is it to be undervalued; but having tried both I give the preference to gardening."

A *Bryologia javanica*, in 4to, by Dozy and Molkenboer, has begun to appear at Leyden, in numbers. Part I. is before us, with 5 plates, containing huge figures of minute species of Fissidens. We are at a loss to understand the use of covering paper with such representations, which add much to the expense and nothing to the utility of books. The five plates in question would have been quite as good if included in one.

With the name of *Tuinbouw-Flora* a horticultural and botanical miscellany has begun to appear at Leyden, under the care of Prof. de Vriese. Five parts in 8vo are before us, but, being written in Dutch, we can give only an incomplete idea of their contents. The first part is chiefly occupied by an account of the Mumè, or Japan Apricot, *Armeniaca Mumè*, and of other Apricots, and with an article on Wellingtonia; it also contains the commencement of a disquisition on window gardening. The succeeding parts are occupied by papers, original and translated, on Vine mildew, on Palms, Cyclanths, &c., cultivated in Europe, Hoyas, and other plants of horticultural interest. In the last number is a long article on Ward's cases, in which the editors propose to construct them taller, shorter, and with upright glass sides. We shall endeavour to give, from time to time, some account of the original articles in the work before us.

New Plants.

75. Arceuthos drupacea, *Antoine and Kotschy in Œsterreiches Botanisches Wochenblatt, Aug.* 3, 1854; *aliàs* Juniperus drupacea. *Lab.*

Under this new name the Juniperus drupacea, mentioned lately at pp. 387 and 455, has been just published at Vienna. The authors furnish a long Latin description of the genus, *more Germanorum*, but they say nothing about the distinction which they imagine to exist between it and a Juniper. They add that the fruit is as large as a Walnut.

We learn from the *Wochenblatt* that the parents of this new genus are about to publish a memoir on the "Coniferous plants of the Cilician Taurus."

76. Thuja gigantea.

The plant, figured in a late number of the "Revue Horticole" under this name, is the same as the *Libocedrus decurrens* of Torrey.

77. Pinus Bourcieri, *Carrière in Revue Horticole*, 1854, *p.* 226, *figs.* 16 *and* 17.

This supposed new Pine from California is the same as the *Pinus contorta* of Douglas, and is a species of no horticultural value. It is very nearly the same as *P. Banksiana.*

78. Oncidium umbrosum, *Rchb. f.; aliàs* Odontoglossum umbrosum. *Id.*

A very ugly straggling small-flowered species, with a green calyx and petals and a dull purple lip. It was found in New Grenada by Moritz, and has reached our gardens through some of the importers. It flowered the other day with Sir Philip Egerton. Mr. Reichenbach originally described it as an Odontoglossum, an error that he has since corrected. It is near the Oncidium Lindleyi of Galeotti, a Mexican plant not yet introduced.

Garden Memoranda.

Mrs. Conway's Nursery, Earl's Court, Brompton.—This is one of the gayest little nurseries in the neighbourhood of London, and one of the best examples with which we are acquainted of how much may be effected in the way of display by means of such materials as scarlet Geraniums, Verbenas, Petunias, bedding Calceolarias, and one or two other plants equally cheap and easily procured. During the whole of the summer and autumn months these furnish an amount of floral beauty which is at once attractive and striking, and which any person having a few square yards of gravel in front of his house may possess; for most of the plants here are kept in pots, and tastefully arranged in clumps on gravel, on which, however, in suitable positions, mounds of earth have been thrown up, so as to break the sameness of appearance which a flat surface would present. These have a grass verge round their base, and are terraced for the convenience of growing plants on them; one of them has been planted as follows:—on the top are scarlet Geraniums, then a band of the blue Ageratum mexicanum, next the yellow Calceolaria viscosissima, and last, or nearest the gravel, Petunias and Frogmore and Tom Thumb Geraniums, the former being preferred. Two other mounds had Hollyhocks (small plants) on their tops, and on their sides common China Roses intermixed with Calceolaria viscosissima and scarlet Geraniums. The Roses flower beautifully in early summer, and again in October, keeping on then till the frost kills the blossoms. Of the beds on the gravel, one consisted of light coloured Petunias; another of purple Petunias (Beauty Supreme); a third, of Œnothera prostrata, with an Araucaria imbricata in the centre; a third scarlet Geraniums; a fourth, Lobelia Erinus, with a Deodar in the centre; a fifth, different kinds of Heliotropes; a sixth, Ageratum mexicanum; a seventh, a Yucca, with Forget-me-Not round it; while others were made up of variegated Geraniums, such as Golden Chain, Mountain of Light, Flower of the Day, and the variety called Osborn's Brilliant, a low growing kind, with leaves narrowly edged with white, and a profuse flowerer. There was also a clump of pink Geraniums, the flowers of which were, however, very much spoiled by the late rains. Of Verbenas there were beds of Blue Bonnet, Andre, and Purple King, all good kinds of different shades of purple; Crimson King, a fiery-scarlet with a small light eye, and good habit; Duchess of Kent, white with a purple centre; and General Bedeau, a brilliant rose with crimson centre. Under glass were examples of the old pink Nosegay Geranium, still one of the best for running up trellis work; Kingsbury Pet, a light salmon with a horse-shoe leaf; Ingram's Princess Alice, a pretty pink variety; Sheltoni, white changing to pink, and having a horse-shoe leaf; and a Seedling called Empress, bearing fine trusses of scarlet flowers, and leaves variegated in the way of Golden Chain. Among strong growing scarlets, Tam O'Shanter will be found a worthy associate for Shrubland Superb, or Ibrahim Pacha. Among Heliotropes, one called Premier appears to be an improvement on Voltaireanum nanum, being brighter coloured and rather a stronger grower; and as regards Lobelias, it may also be worth mentioning that L. racemosa is certainly a better kind for out-door purposes than L. Erinus. Camellias and Fuchsias are also grown here, and the former are well set with bloom. Roses in this neighbourhood, as elsewhere, have been much affected by blight. All kinds of Geraniums are struck here in the open air, not only the coarser-growing scarlets, but also variegated and fancy varieties. A small bed is prepared for them, and the cuttings are put in and shaded for a day or two, and then, with the exception of watering them occasionally, left to take their chance, and they generally strike without a single failure.

FLORICULTURE.

Scarlet and Purple Unique Pelargoniums.—It is generally admitted that it would be difficult to propagate these beautiful varieties in quantities sufficient to meet the demand that might be expected to speedily arise for them, for the purposes of bedding, in the event of their becoming plentiful. With that object in view, therefore, I have several times tried various experiments in the hope of bringing about this much to be wished for result; but my endeavours, with one exception, have only been partially successful. By the following method, however, I have been enabled to strike Unique with facility. Before taking off the cuttings I expose the plants from which they are to be detached, for three days or thereabouts, to the full action of the sun, during which time I give no water; this has the effect of hardening the wood, and prevents the cuttings from fogging off. I insert the latter in a compost consisting of two-thirds finely sifted exhausted mould, one-third sharp sand, round the sides of pots previously filled to the extent of one-half with small potsherds; the cuttings are firmly embedded in the soil in such a manner as that the base of each shall rest on the crocks. By this plan they are not injured by too much moisture while the process of rooting is going on. The store pots are then placed on a level well drained bottom of a cool pit or frame. I abstain from watering the cuttings for the first few days after they are inserted; and the better to enable them to do without it for that period, I keep on the lights, merely tilting them a little at the back, for the purpose of affording a means of escape for the heated air within, and I shade with mats from the mid-day sun. In watering care should be taken to wet the foliage as little as possible, and not to give it until it is really required. Treated in this way, the cuttings will be found to root readily in three weeks, and to become established plants in a month or five weeks more. *R. M.*

Cultivation of the Pansy.—The following remarks on this subject, in addition to those made by your correspondent "D." at p. 503, may perhaps not be unacceptable. I know of no plant so easy to cultivate, and at the same time so difficult to keep from year to year, as the Pansy. It may be raised from seeds and bloomed in a few months, and an endless variety of colour, marking, and texture, may thus be produced. Choice kinds, either selected from the seed beds or procured from the florists, are seldom bloomed more than once, unless by some expert amateur, or in some favourable locality. In winter the Pansy is extremely liable to damp off, although protected in frames; and we all know, to our mortification, the ill effect of a summer's sun on it. It is scarcely possible to point to another tribe of plants so peculiarly the amateur's as this, or one that puzzles him to cultivate more. The following hints may assist him. Seeds sown in autumn in pans, or even in the open border, will come up readily in a few weeks. The seeds should be lightly covered with fine soil, if covered at all, as half the seeds sown rot in the ground, from being covered too deeply. As soon as they have pushed the second set of leaves, they should be planted out in beds, in lines, from 8 to 10 inches asunder. If the seed has been carefully saved from good kinds, an interesting display will be the result; and the raising of new varieties is a labour of peculiar interest. As spring advances, the plants so treated will commence flowering. The next point will be to select those which possess good qualities, with a view to perpetuate them. There are many singular and pleasing varieties that do not come within the arbitrary rules by which florists' flowers are judged, which, nevertheless, are worth retaining for common border decoration; but, if a rigid adherence to these rules is determined upon, then the flowers must be as nearly round as possible, expanding their petals flatly; crumpled petals, with ragged edges, are points that will justify their being cast aside. Round flowers, with flat petals, must always have firmness of texture to recommend them; a flimsy flower in the fancy, although possessing other properties, is universally discarded. The eye should be concentrated, and not starry; the colours soft and clearly defined. These instructions will enable the amateur to select the right kinds from his seedling beds. As soon as he has determined upon those worth retaining, propagation should be commenced, and this is a simple matter. Cuttings taken off at the second and third joints will root readily, placed behind a hedge or wall, on the north side, without any protection whatever. Insert them 2 inches apart, and 1 inch deep, in soil of a light, sandy texture, and they will root in a few weeks. Take care that all damp leaves are removed as soon as they appear. To produce a bed of choice Pansies, select a north aspect, with a cool bottom; soil of medium texture, and moderately enriched, should be preferred for the production of large flowers. Keep the soil frequently stirred round them, and be careful

that the border is free from wireworm. If the plants are put out early next month, they will be established before winter; and I have frequently found that plants so treated get through the winter quite as well as those coddled in frames. As their propagation is easy, depend exclusively upon young plants for the following season's bloom. Seeds should only be saved from beds of selected flowers possessing the best qualities; for, it is only by following this up that improved kinds to any extent can be obtained; and, as seed is readily produced, it is not worth while saving that from doubtful sorts. *S.*

Miscellaneous.

The Peach Tree and Red Spider.—This troublesome little rogue is extremely fond of dry places, and it generally insinuates itself on the underside of the leaf, first in very small patches; and on the approach of a few very hot days, which generally occur about the beginning of August, it spreads over the leaf with inconceivable rapidity, its web being so very fine that it is difficult to see with the naked eye; but its presence is unmistakeable to the practised eye, even at many yards distance, by a sort of dingy reddish brown colour of the leaves. These insects are exceedingly injurious to the health of the plant, because they stop the respiratory organs, and prevent the perspiratory channels from properly performing their functions. Constant washing with pure water, or water impregnated with sulphur, is the only mode that will effectually stop their ravages. Sulphur is very disagreeable to the red spider, but it is very difficult to mix with water without some precaution is first taken to "kill" it (if I may be allowed to use the word). This may be easily done by well working it into a paste, with a little clay, or yellow or soft soap, then stirring into the water 1 lb. of flower of sulphur to 9 or 10 gallons of water. This will be a good dressing for 1400 or 1500 square feet of wall. It should be put on with a syringe, standing sideways of the trees, and directing the stream from the bole of the tree each way, being the only means of getting at the underside of the leaves. Two or three dressings of this sort will generally clear the trees of these troublesome insects, provided they are sprinkled three or four times a week with pure water at the same time, and it should be always done at once; no delay must be permitted, as, besides the insects getting so much a-head, the time is fast approaching when the water and sulphur will be impracticable, as the fruit is fast arriving at maturity, and of course will not be improved in flavour by over-watering. *Cox on the Peach and Nectarine.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Conservatory, &c.—The usual quantity for a season's supply of the kinds of soil used in potting should be laid in as soon as convenient, and before the ground gets sodden with the autumn rains, for even turfy soil should not be carted and stacked up when saturated with water. The soil should be neatly put up in narrow ridges, so as to be safe from wet, and exposed as much as possible to the action of the air. And as success in plant growing very much depends upon having suitable soil for potting, no trouble or expense that may be necessary to procure this should be spared where well grown specimens are expected. Loam of a moderately good quality may be obtained in most neighbourhoods, but good peat is not obtained in many localities. This is absolutely necessary, however, for the growth of choice hard wooded plants, and should be procured at the proper season, so as to have it in a fit state for use when wanted, for nothing is more disheartening to gardeners, or worse economy on the part of employers, than being without suitable soil in a fit state for use, with which to pot plants at the proper time. Stove plants flowering in the conservatory will require attention to prevent their being injured by damp, especially Achimenes and Clerodendrons, which should be gone over every day in cloudy weather, carefully picking off decayed flowers, &c. Any of the twiners on the roof which have done flowering may be thinned out, so as to prevent their shading the house too much; for, after this season, permanent shade should be avoided as much as possible. Cold Pits.—Young stock, intended to flower next season, should be exposed to the midday sun, in order to ripen the wood, taking care not to do this so rashly as to injure the foliage. This, however, will only be proper in the case of such things as have already made plenty of young wood; but it is advisable after this season to be anticipating the approach of winter, and to use every possible means to forward the growth of valuable hard-wooded plants, in order to get it somewhat firm and able to resist damp, &c., as soon as possible; and this is especially necessary where the plants have to be wintered in these structures.

FORCING DEPARTMENT.

Pinery.—Those who think of trying the Meudon system of growing Pines cannot commence at a more favourable period of the year than the present, for there is now no chance of hot, dry weather, to cause the plants to start prematurely into fruit, as is sometimes the case, to the disappointment of beginners and the undue discredit of the system. The bed of soil should be from 18 inches to 2 feet deep, and should consist principally of sandy, turfy loam, with a little leaf-mould or rich peat mixed with a liberal proportion of sharp sand, so as to ensure its taking water, if it is ever from any cause allowed to get dry; for if turfy loam and peat in a rough state are used, and ever get dry, it is nearly impossible to thoroughly moisten the bed again; but if moderately fine soil is used, and carefully mixed with a proper proportion of sand, water will penetrate the mass freely, instead of passing off between the lumps, and the roots will be nearly as much under command as to moisture as those growing in pots. Persons commencing this method of cultivation should also be careful not to plant out pot-bound stock; for such, whether young or old, seldom strike root freely into the soil, but are almost sure to fruit prematurely. For persons who grow Pines largely, and have several houses, or separately heated compartments, devoted to their culture, this system has many advantages over pot culture; but where a regular supply of fruit has to be furnished from a moderate number of plants, and some two houses, we would still prefer the old pot system of cultivating them. Vineries. — Young Vines planted out this season have, in many cases, made very unsatisfactory growth so far, owing, no doubt, to the unusually cold season. Where the border is composed of strong adhesive or clayey loam, it is almost sure to be too wet for the healthy action of the roots—such, at least, has been the case in our own experience—and we have just covered the border with warm stable litter, extending it as far across the border as the roots reach. This has been applied only about a fortnight, and it is astonishing how the Vines have strengthened in that time, and they are also growing rapidly. There is, however, very considerable danger in applying fermenting materials to a recently made border, especially if it contains much undecayed vegetable matter; for if fermentation takes place in the soil, the roots will be ruined; therefore, the litter must be watched, and not allowed to heat too strongly. Plants in pots should on no account be allowed to remain in houses where the fruit is ripe, for every precaution will be necessary this season to prevent damp. Melons.—These will require close attention, for the season has been anything but favourable for their culture. Keep the late plants thin of wood, and never allow any useless spray to crowd the principal shoots or leaves. Endeavour to maintain a regular bottom heat, and also to secure sufficient atmospheric warmth to allow of giving air freely for a few hours every day. Remove decaying leaves immediately they are perceived, and use every means to keep the plants perfectly clear of insects. Be careful not to keep the soil about the collars of the plants too damp, which, after this season, is apt to induce canker.

FLOWER GARDEN AND SHRUBBERIES.

In many neighbourhoods green fly is still very troublesome on the Verbenas, &c. We have used tobacco water and soap-suds with success, and have got rid of the enemy at no great expense, and can recommend nothing cheaper or more efficient to those whose plants are still infested. The strength of the mixture should be tested by dipping some of the worst infested shoots into it, and used sufficiently strong to kill the insects, but not so strong as to injure the leaves. It should be applied in the evening, when there is a prospect of a dry night, using a fine syringe, or fine-rosed watering-pot, and giving enough to moisten the whole of the foliage. Go over the beds frequently, and remedy any defect that may be perceptible, without loss of time, for the bedding out plants are enjoyed but for a comparatively short season; and now that they are in full beauty, every means should be used to render them as enjoyable as possible, by maintaining the most perfect order and neatness. Where the stock is clean and growing vigorously, this will involve considerable labour, and it will be necessary to go over the beds frequently, pegging down where necessary, removing decayed flowers, and cutting back such of the shoots as may incline to encroach upon the edging of the beds. Keep herbaceous plants neatly tied up, and cut off the flower stems of any that are becoming unsightly. Take advantage of every leisure hour to put in cuttings, and use every possible despatch with this work until there is a good stock in a fair way for rooting of such things as are known to be difficult to winter except in well-established plants. Keep gravel walks perfectly clean and smooth by weeding, sweeping, and rolling, as may be necessary. Keep climbers on walls within due limits.

FLORISTS' FLOWERS.

Propagate Hollyhocks by cuttings. Mark good seedlings, digging up all single and semi-double varieties. Take off the tops of seedling spikes, if not already done when the named sorts were; it throws strength into the remaining flowers, and encourages the formation and growth of the seed. Should hot weather set in, which is very likely, take care that newly formed beds of Pinks and Pansies do not suffer from drought. Prick out seedling Pansies on well prepared beds. Carnations and Picotees should be layered; gentle waterings will be required, and the pots must be kept free from weeds; pull out decayed petals from those calyxes where seed pods are forming, otherwise wet will lodge and the seed perish. Prepare the Tulip bed by frequent turnings; add, if required, fresh compost, but avoid dung as you would poison.

HARDY FRUIT AND KITCHEN GARDEN.

The prevalence of damp cloudy weather is causing an excessive amount of growth in fruit trees; and, excepting such as are bearing a good crop of fruit, they have in most cases already made as much or more young wood than there is much chance of getting matured in the course of the autumn. It will therefore be advisable to go over the trees and stop about half the shoots, beginning of course with the strongest; for a general stopping at this time would probably be of little farther service than to induce the production of a mass of useless spray, whereas stopping the stronger shoots or those which incline to grossness, will divert the sap into the weaker ones, which will be strengthened, while the buds on the shoots that have been stopped will become full and plump without starting into growth. The only effectual method, however, of curing a gross habit of growth, when this is the case in ordinary seasons, is root pruning, or keeping the roots within proper limits by means of shallow well drained borders. And should it be found that the shoots after stopping incline to start into growth, it will be advisable as soon as the fruit is gathered to open a trench at a moderate distance from the stem of the tree, cutting the stronger roots. This will be of the greatest service in checking growth, and will probably do more towards securing ripe wood than anything else that could be adopted. Get the Strawberry plantations intended to stand for next season trimmed as soon as convenient, cutting off and clearing away the runners, &c., so as to afford the leaves plenty of room. Attend to providing plenty of Lettuce, Endive, &c., for winter salads; also see that there is a good bed of Parsley provided in some sheltered spot where it can readily be protected in severe weather. Collect and dry horse droppings for making a Mushroon bed. Keep the droppings spread thinly in a dry airy shed, and turn them frequently; for unless they are well dried it is difficult at this season to prevent the bed heating excessively, and this should be guarded against, as it exhausts the manure, and then there is only a poor chance of a good crop.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending Aug. 17, 1854, as observed at the Horticultural Garden.

August.	Moon's Age.	Barometer.		Temperature.					Wind.	Rain.
				Of the Air.			Of the Earth.			
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Friday 11	17	29.947	29.934	75	58	66.5	62	62	W.	.00
Satur. 12	18	29.924	29.897	74	48	61.0	63	63	S.W.	.00
Sunday 13	19	29.962	29.731	86	54	70.0	62	62	S.	.01
Mon. 14	20	29.876	29.726	72	52	62.0	64	63½	S.W.	[illegible]
Tues. 15	[illegible]	29.845	29.836	71	43	57.0	63	63	W.	.00
Wed. 16	22	29.954	29.876	67	42	54.5	62	62½	W.	.31
Thurs. 17	23	30.038	29.987	64	40	52.0	62	61½	W.	.10
Average.		29.921	29.849	72.7	48.1	60.4	62.5	62.5		[illegible]

Aug. 11—Very fine; partially clouded at night.
— 12—Densely clouded; cloudy and fine; very clear.
— 13—Very fine; much overcast at night.
— 14—Cloudy and fine; very fine; clear.
— 15—Very clear; cloudy and fine; clear.
— 16—Fine; cloudy; much overcast.
— 17—Fine; rain; very clear.

Mean temperature of the week, 2 deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending Aug. 26, 1854.

August.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 20	72.7	51.6	62.1	12	0.33 in.	2	1	1	—	5	[illegible]	10	2
Mon. 21	72.3	50.4	61.4	10	0.62	3	2	—	1	6	[illegible]	[illegible]	2
Tues. 22	70.9	51.5	61.2	12	0.67	1	2	2	—	4	10	8	1
Wed. 23	71.0	49.0	60.0	15	0.95	1	3	1	—	3	9	9	2
Thurs. 24	70.8	47.9	59.3	14	0.23	1	6	1	—	5	6	6	3
Friday 25	70.8	51.5	61.1	12	0.32	2	2	1	1	6	9	4	3
Satur. 26	72.0	49.1	60.5	10	0.51	—	2	3	—	6	8	5	4

The highest temperature during the above period occurred on the 20th, 1826, and 21st, 1835—therm. 88 deg.; and the lowest on the 21st, 1850—therm. 32 deg.

Notices to Correspondents.

Ægilopian Wheat: *G Jackson.* M. Fabre's account of his experiments is translated in the last Number of the Journal of the Royal Agricultural Society.

Asparagus Kale: *W H F C.* This is the same as Jerusalem or Buda Kale. It is almost too late to sow seed of it now, as the last plantation for the latest gatherings should be made by this time. Besides, being a good winter green, furnishing a supply much longer than most of the others, and requiring *exactly the same kind of treatment,* it may also be blanched as you would do Seakale by turning a pot over it, and covering it with tree leaves, over which a little rough dung may be put to keep them from blowing about. When cut and dressed in a blanched state it is said to be excellent; and one advantage of this plan is that the same plants will furnish two cuttings, for the sprouts are reported to be even more delicate than the original heart of the plant. Thus it may be made a good substitute for Seakale. ‡

Books: *E M.* "School Botany" is the best book you can have to begin with.—*H H.* Mrs. Loudon's "Every Lady her own Flower Gardener" may possibly answer your purpose. ‡

Climbers: *Reader.* You may try the following in your greenhouse. Mandevilla suaveolens, Kennedya Marryattæ, Hardenbergia macrophylla and monophylla, Tecoma jasminoides, and Tropæolum Triomphe de Gand.‡

Glass: *Lafleur.* By all means use Hartley's patent rough plate.

Insects: *Coniferæ* will be obliged by some of our correspondents informing him which is the best way of getting rid of the insects that are attacking the Coniferous plants this year.

Names of Plants: *Erzeroum.* 24, Gymnandra armena, a fine thing and great rarity. Have you it in fruit? 70, Globularia vulgaris; 995, Valeriana montana; 610, V. Dioscoridis; 621, V. officinalis; 1068, Adiantum Capillus; 1071, Asplenium trichomanes; 1069, Asplenium Ceterach.—*T G.* Ceratonia siliqua, the locust tree or Carob of Syria.—*A S.* Humea elegans.—*J Weeks and Co.* No one can name Melastomaceous plants by the leaves alone.—*J W Carson.* We never before saw your Aerides, but we can scarcely doubt that it is a white variety of A. quinquevulnerum.—*T M.* Asparagus lucidus.—*J Summerfield.* Rodriguezia secunda.

Parasites' Nests: *G U S.* We have seen the specimen of these curious productions presented to the Horticultural Society by Dr. Luna, of Guatemala, and it is by far the finest specimen of the kind which has come under our observation. The donor will no doubt be thanked officially in due time.

Peas: *J Evershed.* Your Long Jonquil is an excellent Marrow Pea, very full in the pod, sweet, and as tender as Knight's Marrow itself.

Potatoes: *J Hayes.* They are *very* fine Potatoes. But your experiment in stopping the disease will hardly be satisfactory this year, when so little disease exists in our part of England.—*R V S.* Much obliged by your communication; but we invariably decline publishing an account of "secret remedies." As to the statement made by Mr. Cuthill in the *Times,* it is at least premature. We have seen very little disease as yet. Of course it *may* appear, for there is plenty of time, in late crops.

Misc: *A B.* We do not publish supplements.

UPPER PERUVIAN GUANO ON SALE.—Apply to W. & J. RAVENSCROFT & Co., Liverpool.

Extract from a Report of Dr. Ure, F.R.S., &c.

"Your Upper Peruvian Guano is worthy of all commendation."

Extract from the Report of George Longton, Esq.

"RAVENSCROFT'S Upper Peruvian Guano will last longer, and eventually do more good than Gibbs', or any other I have ever used. It possesses the very finest qualities of both Guano and Bone Dust."

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures, Linseed Cakes, &c.
WM. INGLIS CARNE, 10, Mark Lane, London.

PEAT CHARCOAL.—The undersigned have a cargo of this valuable Deodoriser and fixer of Ammoniacal matter, on Sale. Apply to MARK FOTHERGILL & Co., 204A, Upper Thames Street.

THE LONDON MANURE COMPANY'S WHEAT MANURE, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. EDWARD PURSER, Sec.
Bridge Street, Blackfriars.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7*l.* per ton; Superphosphate of Lime, 7*l.*; Sulphuric Acid and Coprolites, 6*l.*
Office, 69, King William Street, City, London.
N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent. of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and dispatch.
Gentlemen desirous of receiving instructions in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.
Principal—J. C. NESBIT, F.G.S., F.C.S., &c.
The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.
Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

LONG SUTTON RAM SHOW.

MR. JOHN CLARKE has the pleasure to inform the BREEDERS of SHEEP that his ANNUAL SHOW of RAMS will take place on WEDNESDAY, SEPTEMBER 13, when the favour of their company will be highly esteemed. The Rams will be penned at 12 o'clock. Luncheon from 1 to half-past 2 o'clock. Letting by Auction immediately afterwards.
Arrangements will be made to meet the Wisbeach 12 and 12.40 down, and the 7.5 up Trains; also the Spalding 11.45 and 12.23 morning, and the 8.5 evening Trains.
Long Sutton, Lincolnshire, August 19.

MANCHESTER AND LIVERPOOL AGRICULTURAL SOCIETY.—The Annual Show of this Society will be held at Altrincham on FRIDAY, September 8. Thirteen Prizes are given for HORNED CATTLE, HORSES, and SHEEP, for general competition. In addition to which the local committee at Altrincham, out of special funds raised for the purpose, offer Prizes for CHEESE made in Cheshire or Lancashire, and prizes for POULTRY, HORSES, SHEEP, PIGS, and VEGETABLES, for general competition.
IMPLEMENTS and MISCELLANEOUS ARTICLES from any part of the kingdom may be shown, and Prizes or Medals will be given for such as are considered by the judges entitled to the same. There is expected to be a trial of REAPING MACHINES about the 1st of September, for which prizes are offered.
Entries must be made for the Reapers on or before the 25th August, and for Live Stock, Implements, &c., on or before the 1st September, but competitors are requested to send their entries sooner.
The SPECIAL GENERAL MEETING to award the prizes in classes 1, 2, and 3 (farms, crops, and long servitude), will be at the Unicorn Inn, Altrincham, August 31st, at 10 a.m.
The DINNER will be in the Town Hall, Altrincham, on the day of the Show, at 5 p.m. The Earl of Stamford and Warrington is expected to preside.
Prize Lists, Rules, and any other information may be had by applying to the secretary. HENRY WHITE, Secretary.
Warrington, August 19.

The Agricultural Gazette.

SATURDAY, AUGUST 19, 1854.

MEETINGS FOR THE ENSUING WEEK.
THURSDAY, August 24—Agricultural Imp. Society of Ireland.

It should have been stated that the reports of harvest prospects, published a fortnight ago in our columns, were dated July 29. Since that time the weather, especially in the south of England, has in some districts considerably affected the grain crops, and we have received letters from several quarters in which, independently of this cause, the Wheat crop appears to have suffered materially during the present month. One of these we publish in another column. Notwithstanding these notices, however, our impression, founded upon a hurried observation of a large portion of the country, remains as before, that the Wheat crop will prove unusually productive. We shall be much obliged to any of our correspondents who may have seen reason to change the opinions they expressed a fortnight ago, for any further report which the case may require.

The following errors which we correct here, crept into the report at page 506. Mr. HORSFALL'S report of the Oat crop in Wharfdale, Yorkshire, was "unusually good; one-third to one-fifth more than an average." Mr. FENN, of Beccles, Suffolk, whose name was misprinted "SPENCE," reported of the Barley crop in his neighbourhood that it was "generally very excellent." These reports, by some mingling of the returns, occasioned by the very hurried manner in which unavoidably they were epitomised, were printed respectively as "not average," and "generally short."

THE main argument urged at the last meeting of the London Farmers' Club, in favour of the system which our LABOURERS' FRIEND SOCIETIES adopt of rewarding good character, hinged upon the advantage of the meetings for that purpose in bringing all classes in any locality together—the landowner, clergyman, professional gentlemen, farmers, tradesmen, and labourers—and uniting all in a common object on which all could think, and in which all would act, alike. One of the speakers, we remember, stated that the annual meetings of the society in his locality were the days of all others which he would least willingly lose out of the year for their moral influence on the neighbourhood—that the pulpit addresses on the Sunday to the habitual congregation of the place were not to be compared in value to the addresses of the clergymen and gentlemen on occasions such as these afforded, when a congregation all alive to the influences of the meeting, and predisposed to good impressions, listened to the exhortations and encomiums of their employers and others, who were evidently interested in their wellbeing. It is plain that the argument altogether fails. The value and success of such meetings may be, and we believe they are, unquestionable—quite as important as their keenest advocate asserts—but they are entirely independent of that division of the prize lists of these societies to which we have objected. Such gatherings, quite as social, cordial, and beneficial to all concerned, take place in localities where rewards for families brought up without parish relief would be considered a positive insult by the cottagers and labourers; and where the offer of a money reward for honesty, or sobriety, or kindness to relations, so far from producing the good effects which are expected of them here, would do little more than excite a mixture of amusement, shame, and anger, varying in the proportion of its ingredients according to the temperament of the persons so addressed.

We lately had the pleasure of attending the annual show of the Currie Horticultural Society, held in the parish school and the grounds surrounding it of the village of Currie, near Edinburgh. The population of seven parishes were assembled in the rooms, in the tent, and under the trees. Sir W. GIBSON CRAIG, Lord CURRIEHILL one of the judges of the Court of Session, and others representing the landowners of the district—the clergyman of the parish, and ministers of other denominations—the schoolmaster and other officebearers of the Society—the manufacturers and farmers of the neighbourhood, and a large number of labouring men and their families were present.

The day appeared one of thorough enjoyment to everybody; for the eye there were the faces of friends, the very large and admirable collection of flowers and fruit, and vegetables, contributed for the most part by the cottagers of the neighbourhood, and the beautiful village scene, upon a sunny day—road and bridge and stream, kirk and manse and school, cottages and trees, scattered amid light and shade, over uneven ground; for the ear there was the military band, more vigorous, perhaps, than musical, the general buzz of conversation, any articulate portion of which that reached you having reference generally to the prizes won and the objects shown by the speaker or his friends; and, lastly, there was the noisy Water-of-Leith running in its rocky bed close by. And apart from the mere pleasure of the meeting, the general impression could not fail to be, that it was one of as much social usefulness as any to which the speakers at the Farmers' Club referred. Here, surely, were "all classes united in a common object, one in which all could think and aim alike," and from the highest to the lowest there, we are sure that all were benefited. There was much less of that patronising effort for the benefit of others apparent than one sees in meetings of the Labourers' Friend Societies here; the class who came to do good, and the class who came to receive it were not distinguishable—one did not see the aristocracy on one side and the "clean smiling faces and white smock frocks" on the other, which characterise the descriptions of such gatherings here—words which are all very well applied to children, but simply ridiculous when used as we have heard them in reference to men. And when the whole assembly gathered in the field around the officers of the Society, and the awards were announced and the prizes were awarded, and Lord CURRIEHILL stood forward to congratulate those who had succeeded and encourage those who had failed—to speak of the humanising influence of horticultural pursuits and pleasures, and of those features of the character, such as patience, perseverance, humility, and simplicity, as well as energy, skill, and intelligence, which might thus receive efficient education, he was listened to by men who with all their grateful and respectful attention to his words were, you could see, taking the measure of the speaker all the while, and weighing everything he said, receiving nothing on mere authority, and admitting only what commended itself to their own intelligence and judgment. There was much less noisy expression of feeling, and the meeting separated more quietly, than would have been the case in England; but as to the greater usefulness of gatherings such as this—where men treat one another as equals, or as capable of equality, on the ground of moral character, whatever differences there may be in social rank—there cannot be a doubt.

THE Drainage Bill of this session has been rejected by the House of Lords, after passing through the Commons with considerable discussion on its provisions.

It would appear from what Lord PORTMAN and Lord REDESDALE said, that drainage and land-improvement companies were a discredit rather than a benefit to the country, or why should a measure, supposed to emanate from one of them, be regarded with *suspicion*. The object of Mr. KER SEYMER'S Bill was simply to give facilities of outfall, and could only benefit a company when that company was set in motion by a landowner, and then only to the extent of enabling the work to be better executed than heretofore; for it should always be remembered that a company can do nothing without a customer, and its credit is often prejudiced by insufficiency of outfall—the first desideratum in all drainage works. Mr. MECHI remarked at Tiptree the other day, that every trade, and every branch of the community, excepting the landed interest, had its peculiar means, through class societies and private companies, of raising money for the development of the resources of each, while from that particular interest our London (Mr. MECHI referred to the city) capitalists held aloof. Can this be wondered at when we find Lord PORTMAN stating that, because Mr. KER SEYMER was chairman of the General Land-Drainage and Improvement Company, "the Bill should be regarded with suspicion," and my Lord REDESDALE opposing the bill, because—we hesitate to quote the words—"*it would facilitate the operations of a company.*"

We have no interest in the success of the company here alluded to any more than we have in the success of all such companies; but if the Legislature has sanctioned the establishment of these companies on the ground of the national uses and benefits which they offer, it is obviously a gross inconsistency to refuse such powers as are necessary to their efficiency in these respects, on such grounds as those urged by the opponents of the Drainage Bill in the House of Lords.

THE CIRCUMSTANCES OF THE SOIL.

"Why, I am master of my acres, man!—there's the advantage of being descended from a man of more sense than pride! They cannot oblige me to transmit my goods, chattels, and heritages any way but as I please. No string of heirs-of-entail as unsubstantial as the morsels of paper tied to the tail of a boy's kite!" —*The Antiquary.*

IT appears to me that public attention must, 'ere long, be turned, more energetically than at present is the case, to the consideration of what may be called, for want of a better name, the 'Circumstances of the Soil.' I mean by the phrase, those incidents which in this Country affect Land in reference to Man, in his various relations of Owner, Occupier, Laborer; Seller, Purchaser, Inheritor, Testator; with many other *'ers* and *'ors*, amongst which I would include, but cannot very well alliterate, those not less important relations to it arising out of Birth, Marriage, and Parentship.

A minute's reflection will convince any one, who may not have turned attention to it before, that, in every one of these relations, and probably in far more which no pen could precisely enumerate or define, the land we live on, the broad acres that go to make up what we call our country—England, Wales, Scotland, or Ireland, whichever it may be, constitute an article the "circumstances" affecting which, must also affect and interpenetrate the vital action of society in some of its most important functions, and consequently *every individual* of which society is composed, in a greater or less degree, or rather in a degree more or less *direct*, yet omitting none.

But if this be the case, and if it be also the case, that Land is pre-eminently the Creature of Law and Custom, omitting all mention of Prejudice right or wrong, and Tradition true or false,—how very important it would appear, must those Laws and Customs be, in the influence they exercise, *material* certainly, *moral* we may perhaps see, throughout the various limbs, joints, sinews, and nerves of the "body politic!" So various, indeed, so complex, and so extensive are the ties which connect us, each and all, with the soil, that this very circum

stance perhaps interferes with that keen and active exercise of public opinion upon the subject which would otherwise form and show itself. Like Gulliver in Lilliput, we cannot see the ties that tie us down to it, the filaments are so many and minute; nor see who tied them, what manner of men they be, and whether friends or foes. Like the lifeblood that circulates in our veins, we cannot see, or trace, or even feel it, it is so entirely a part of ourselves: so that it was a matter of "discovery," and very late discovery, to men that in fact it "circulated" at all.

And thus it happens that Reformations, and Revolutions, and Restorations, and Magna Chartas, and Bills of Rights, and Parliamentary Reforms, and Financial Reforms, and Emancipations—Catholic, Secular, and Servile—and Freedom of Trade, and Freedom of Traffic, and every other kind of Freedom and Reform shall be vindicated and achieved in the freest of free countries; and yet at the bottom of it all, for the freedom of the land *itself*, there shall be left, as in Pandora's box, nothing but Hope.

When the Corn-laws were abolished a large portion of the public press, especially of the most liberal party, gave vent to pæans and rejoicings, as though a fundamental and complete emancipation had been effected from the whole system of what they called the Feudal Restrictions that had pressed upon the soil. I believe, on the contrary, that had the cycle of low prices continued a few years longer (which circumstances partly natural, partly accidental, have relieved) it would have been found that the abolition of those restrictive laws was like the tearing off the covering of fetters whose galling would only then have become plainly perceived, and no longer supportable; and that the true shape and material, and every twist of the *coil* would have been developed in a manner highly edifying to the general public; to the legal world not at all surprising; to the "landed" community very much so, especially on discovering that the concatenation was of their own forging for their own wearing; a rather heavy incumbrance to their own bones, yet furnished with a fleece, bearing skin very profitable to those who have the shearing of it. *Sic vos non vobis vellera fertis oves.*

The shearers are the lawyers, you guess; very good: but let us not be hard upon the lawyers. To do them but justice, they have of late years, aye! and for many years, both written and spoken upon this subject, in Parliament and elsewhere,* with a penetration and an honesty that justifies wisdom of her children, and shines in astounding contrast with the obtuseness, equally uncomprehensive and incomprehensible, of those most truly and personally interested in the matter: *alone* interested I will not say, inasmuch as an evil however self-inflicted, hugged, and dissembled, like the Spartan fox, by the wearer, does not, as it eats into his own vitals, injure himself alone, but all who depend on, deal with, or are connected with him. The lawyers are not unwise in their generation; for (as the world only half knows yet) the disinterested man, fully more than the *selfish*, gathers where he seems to scatter.

In every transaction, in this country, between man and man, of which land is the subject, there is an expense, delay, and complication, whose united effect is to lower its value, to arrest its improvement, to lock up capital away from it, to deter the purchaser, and to cripple the resources of the owner. This is felt by thousands, who acknowledge it, but cannot understand it, and by thousands more who do neither one nor the other. But if they would trace the history of the soil, they would see the reason why. The commercial and the feudal principle are two things as incompatible as fire and water, as Light and Darkness. And while the former principle applies to *every other* thing we buy, sell, own, occupy, enjoy, or bequeath, the latter is retained upon the soil *alone*; reminding one of that dark ray which chemists and astronomers tell of, as intersecting the solar light in certain mysterious places. The advocates of the feudal principle admit this, and endeavour to defend it, and to set up for land the claim of an exception. But their arguments are always (and of necessity) arguments of political or social expediency, they openly refuse to argue it on principle.

But even were it otherwise—were the exemption of land from the operation of commerce based upon some real and solid *principle*, that ought to be able to show that the principle is capable of confined and isolated application to that for which they claim it, and that it shall not extend *beyond their own intention*, or come into conflict with the other principle at points out of their own chosen line of demarcation. In a word, if the land were, as in feudal days it was, surrounded by an atmosphere of feudalism, feudalism applied to land would still be, as it then was, no grievance. When land was virtually intransferable, difficulties, delays and expenses of transfer were no cruelty, for they had no existence; and when no one had the power of devising or bequeathing it, and there was little or nothing of what we call personal property to bequeath, it caused no inconvenience or conflict, if land, the only possession known, had a way of its own of descending from eldest son to eldest son, because no statute law existed distributing everything else in a different way. Little did the sternest feudalist of feudal days dream of such an absurdity as that Land should one day come to be commercially transferable and divisible by the act or will of the owner, yet indivisible by the act of the law.

* I may especially instance the Law Amendment Society, and several pamphlets written by eminent conveyancers and country solicitors.

FINGER AND TOE IN ROOT CROPS.

By JAMES BUCKMAN, F.G.S., F.L.S.

THE so-called disease of finger and toe in root crops is a subject which has for a long time occupied the attention of those connected with agriculture, but apparently without at all settling the questions as to its nature and origin, as we find that up to the present time one section of practical men hold the opinion that the malformation of the root, which has given rise to the designation, is caused by uneven manuring; another, that it is due to the presence of stones, or a want of due pulverisation of the soil; whilst a third attributes the whole matter to attacks of insects.

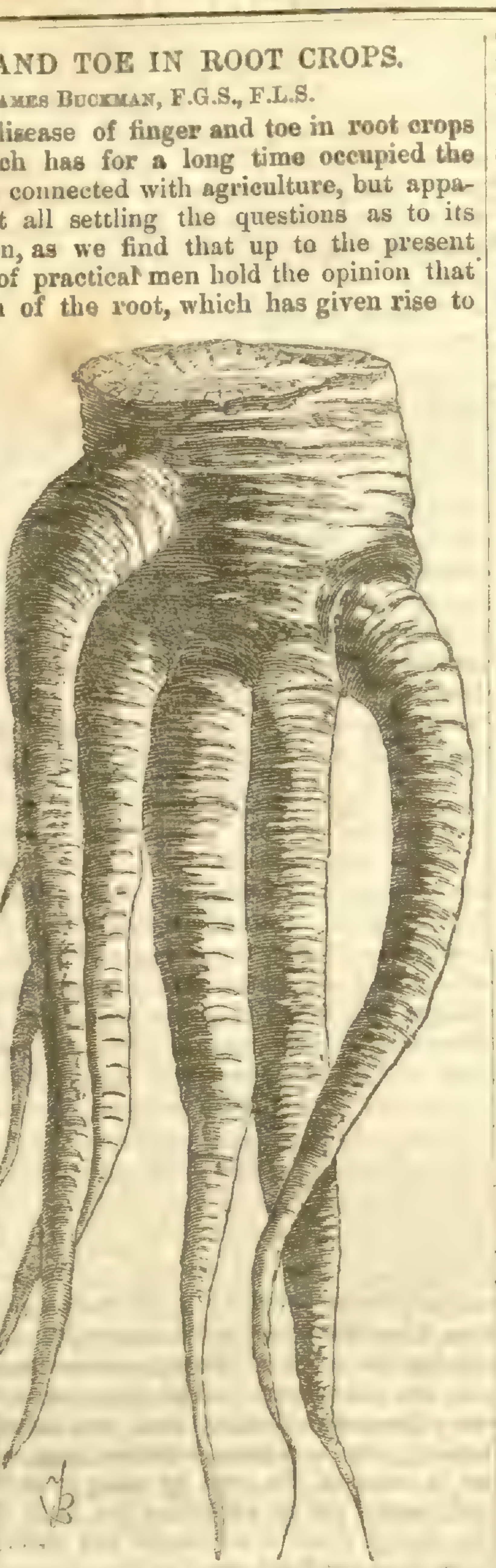


Fig. 1.—Finger and toe in cultivated white Carrot, one half natural size.

Now, this discrepancy of opinion results from a variety of causes, the most prominent of which is a want of agreement as to the nature of the matter under investigation, inasmuch as we find that it is not restricted to a designation of that peculiar branching or growing of the roots in a digitate form, from which the term finger and toe is derived; but the excrescences caused by the bulging out of the root around the larvæ of insects, cracking and splitting of the root, and bletting or rotting of its parts, are all somehow or another included in the category of finger and toe; and though it is possible that most of these may be found to operate under some of the circumstances by which the peculiarity of growth it is my present object to describe is produced, yet the following remarks are meant to apply only to an explanation of the facts connected with the branching or forked method of growth of some roots, as Parsnips, Carrots, and Turnips (see accompanying drawings 1 and 2), as distinguished from the smooth outline and unbranched condition which mark well-developed root crops.

Fig. 2.—Finger and toe in cultivated Parsnip, one half natural size.

As my conclusions upon this subject have been arrived at in experimenting upon the growth of cultivated roots from wild kinds, I shall, in illustrating the subject, describe—1st, Some experiments on the growth of wild roots, and the conclusions I have been led to in consequence of my observations upon these. 2d, I shall attempt to show that the history of root crops confirms the view of "finger and toe," to which such experiments have led.

1st. *Experiments with Wild Roots, &c.*—In the spring of 1848 I planted two of my experimental plots with seeds of the Pastinaca sativa (Parsnip), and Daucus carota (Carrot), both of which grow spontaneously in the garden precincts; the seeds were gathered in the previous summer from wild plants. On being sown, both species came up well; but as they advanced, many of the specimens showed a disposition to run to seed the first year; and as seed from these would have been of no use in my after experiments, which were designed to enable me to note the effect of cultivation upon wild specimens, the plants in which the running disposition showed itself were hoed out. An examination of the crop in the autumn showed, in the Parsnips more particularly, some interesting results, the most prominent of which were, that whilst most of the specimens presented the dark green hairy leaves peculiar to the wild plant, there were a few examples in which the foliage had assumed the light green and smooth aspect, devoid of hairs, which characterises the cultivated plant; and amongst the latter there were a few with larger leaves and broader divisions or leaf-lobes than the rest, the leaves, too, all growing symmetrically around one central bud, whilst others showed a disposition to throw up more buds than one. Here, then, it was evident that the examples with the single central bud were best calculated to carry on

Fig. 3. Wild Parsnips, two thirds natural size.

the experiments, and consequently the remainder were rooted out, when it was observed that the roots were for the most part more fleshy than those of quite wild examples; and while they were as much forked as wild roots (see drawing 3), the increased fleshiness extended to the forks equally with the larger part. *From the Journal of the English Agricultural Society.*

(*To be continued.*)

THE HOME GROWTH OF FLAX.

[MR. FANE has issued a circular on this subject, having especial reference to a discovery by Mr. Pownall, of the advantages of washing the Flax previous to the entire completion of the retting process. We extract this portion from his address.]

THE preliminary paragraphs relate to the products of the crop—1. Oil; 2. Oil-cake; 3. Fibre; to the quantity of Flax fibre used in this country—70,000 tons grown, 80,000 imported; to the whole value of the fibre and of the seed belonging to it—9,840,000*l*; to the processes to which the crop, after being pulled, is subjected—1. Seeding; 2. Steeping; 3. Drying; 4. Scutching; to the mismanagement of which it has hitherto been the subject, so that whilst in England Flax has been cultivated principally for the seed, and the fibre has been neglected, in Ireland it has been cultivated so exclusively for the fibre that the seed has often been thrown away; then in some detail to the proper methods to be pursued in the cultivation of the crop; and, lastly, to the division of labour between the sowing of the seed and the delivery of its produce in a condition fit for use in the linen manufactory. The farmer should not steep or scutch, only grow. The manufacturer should steep and scutch

in mills, where steeping may be in hot water all the year round. Here we commence our extract from the address:—

"The steeping, the drying, and the scutching of the straw, the dressing the fibre after scutching, the second and more careful dressing of the fibre by heckling or combing, the sorting, the spinning, the weaving, the bleaching, and the finishing, are evidently all manufacturing, not agricultural operations. One circumstance, however, has until lately prevented the application of manufacturing principles, including that invaluable one —which is the basis of all cheapness—the division of labour to the first four of the above processes, to the steeping, the drying, and the scutching of the straw, and the first dressing of the fibre, which have in consequence been almost exclusively parts of the agricultural industry of the country. That circumstance is, that until lately the steeping could not be carried on throughout the year, the process of steeping depending on the heat given to water by the autumnal sun, without which the necessary fermentation could not be got up; and hence it followed, that, as the steeping was, of necessity, a farming and local operation, the processes immediately connected with it—drying, scutching, and dressing after scutching—became local and farming operations also. Now, it is well known, that it is only by our great superiority in capital and machinery that we are able in any branch of industry to undersell foreigners. In the Flax industry we have been able to undersell them easily in spinning, our spinning machinery is so superior to theirs, but in no other part. The foreigner can produce and send here the raw material more cheaply than we can; and when we have heckled it, sorted it, and spun it into yarn, and the yarn has been exported, the foreigner can weave the exported yarn into linen, bleach it, and finish it as cheaply as we can. In the earlier parts—that is, the growing and roughly preparing the raw material—they can excel us; in the middle we far excel them; and, in the latter parts, the weaving and the rest, they can at least equal us. The contest is severe. What, then, is the policy we ought to pursue in this contest? Cheapen, if possible, the earlier parts of the process? Cheapness at the commencement is more effective than at any of the later processes; but how can we cheapen the earlier parts of the process? There is one way, and one only, and that is, by making them manufacturing, not agricultural processes. The farmer must be confined to the growing and harvesting of the crop; and the steeping, drying, scutching, and rough dressing, must be made as much manufacturing processes as all the later ones now are. As soon as they are made manufacturing processes, the principle of the division of labour may be fully carried out; effective machinery will be used, and all the elements of cheapness belonging to manufacturing industry, including the concentration of labour under one roof, will be brought into action.

"Two movements in advance in this direction have been made within these three or four years; one unsuccessful, the other rather successful. The first was the invention of a Mr. Schenk, who conceived the idea of steeping in water artificially heated, which, of course, involved the possibility of steeping all the year round, and took out a patent for it. The idea was plausible, and many mills were erected in Ireland to carry it out, but it was not found to answer. Two practical objections presented themselves: one, that the fibre appeared to be weakened by the hot-water fermentation, which seemed almost always to have gone too far; and the other, that a most offensive matter adhered to the straw, and, when the straw had been dried and the scutching commenced, the scutchers could not bear the smell of the almost putrid dust which flew off. The result was, that hot-water steeping was being abandoned.

"The other movement in advance was, the substitution of scutching by machinery moved by water or steam power, for scutching by hand; which was so successful that Acts of Parliament were passed to facilitate the putting up scutching mills; many have been put up, and more are in course of erection.

"Both these were movements in the right direction, and in the most essential part, because in that part, wherein foreigners had the advantage; but the failure of the first, the steeping in hot water, precluded the effectual carrying out of the main object, namely, the substitution of manufacturing cheapness for agricultural dearness.

"At this juncture, an English gentleman, a Mr. Pownall, in endeavouring to work out Mr. Claussen's idea of obtaining from Flax a fibre that would spin on cotton machinery, made a most valuable discovery, as to the preparing of Flax for the common linen purposes, which was this, that if the flax straw, when taken out of the water in which it had been steeped and fermented, were instantly, and before drying, subjected to severe pressure and a stream of cold water, the pressure would press out, and the water would wash away, almost all the gluten remaining in the plant not removed by the fermentation.

"It is almost impossible to over-estimate the value of this discovery. The grand difficulty in the management of the Flax plant had always been the difficulty of hitting the happy mean between over-fermenting and under-fermenting the straw. If the straw were not fermented enough, the gluten was not sufficiently discharged, and then the woody parts of the plant stuck to the fibre so strongly, that nothing short of violent blows of the scutching instrument would remove it, and violent blows broke much of the fibre into short lengths, called tow, of little or no value. On the other hand, if the straw were fermented too much, then the gluten was indeed sufficiently discharged, and moderate blows sufficed to remove the woody matter; but in that case the fibre was weakened, and the blows, moderate as they were, again broke the fibre into tow. In either case the yield of valuable fibre was unsatisfactory, and the reed and quality deteriorated, and it was only in those cases where the exercise of the greatest care and judgment had enabled the steeper to trim most happily between fermenting too much and fermenting too little, that a satisfactory yield of fibre was obtained. Mr. Pownall's discovery at once triumphed over this hitherto almost insuperable difficulty, because it enabled him to stop short in the process of fermentation before he arrived at the point of danger, and yet remove the gluten even more effectually than excessive fermentation had previously done; from which there resulted the following advantages:—1. The squeezing and washing so completely cleansed the fermented straw, that the objection to Schenk's hot-water system, arising from the putrid matter adhering to the straw, and flying off from the straw in dust in scutching at once disappeared; and hence the mills erected for hot-water steeping resumed work, and no impediment now exists to steeping being carried on all the year round. 2. Fermentation need never be carried beyond the perfectly safe point, and hence the fibre is not weakened. 3. The woody matter is easily removed by moderate blows of the scutching instrument, because the sticky matter no longer impedes the operation, and hence the yield of fibre is much greater. 4. The fibre obtained is of a singularly soft and pliable character, and is much preferred by the spinner. 5. The subsequent process of bleaching is greatly facilitated, because it is the gluten which remains in the fibre, which resists the action of bleaching ingredients, and under Mr. Pownall's process the gluten is effectually removed.

"It is obvious that with Mr. Pownall's discovery there remains no longer any natural impediment to the carrying out of the great principle, the great element of cheapness, the division of labour; nothing to prevent the farmer from producing the raw produce, and stopping there, and leaving all the manufacturing operations, from the steeping downwards, to the manufacturer; nothing to prevent manufacturers from establishing, with the aid of the landed interest, steeping mills in every favourable locality, and thus introducing into the farming rotation a most valuable crop, which, if proper use is made of the seed by using it at home as animal food, cannot fail to refertilise the land that supplies it. But though there is no longer any natural impediment, there is an artificial one—an impediment created by the law of unlimited liability; which, by threatening every gentleman of property with the possible loss of 'his last acre and last shilling' (as the phrase is), if he presumes to go shares with others in raising capital for a common purpose, effectually deters them from lending a helping hand to this most useful and patriotic work.

"The desire to grow Flax has long pervaded the agricultural community, and lately it has become quite a passion. All farmers know the value of the seed for feeding, and of the fibre for manufacturing purposes. All feel that they could make excellent use of the seed at home, by crushing it, making it into compound with other food less rich—fattening their animals—enriching their manure—and re-fertilising their land; but what are they to do with the straw? Nobody will buy it. Valuable as it is, capable of being converted into fibre worth 50*l*., 60*l*., 80*l*., and even 100*l*. a ton, still nobody will buy it, because there is no steeping and scutching mill within cartage distance. As regards the straw of the Flax, their position is what it would be as to corn, if there were no mill to grind it within 50 or 100 miles; only that it is worse, because, in the case of corn, they cart to the mill the non-bulky and valuable part, the seed, and keep the bulky part, the straw, at home; whereas, in the case of Flax, their object is to keep the non-bulky part, the seed, at home, and cart away the bulky part. It is obvious that this cartage difficulty is one not to be overcome but in one way, to be illustrated by the old proverb, 'If the mountain won't come to Mahomet, Mahomet must go to the mountain;' in other words, as the straw cannot be carted by the farmer to the distant mill, the mill must come to the farmer.

"But how is this to be brought about? The farmer and steeper have long been trying to get together; the farmer saying to the steeper, 'if you will put up a mill near me, I will grow the Flax;' and the steeper replying, 'No; if you will grow the Flax, I will put up the mill;' but neither has been willing to begin. It is obvious which ought to begin—the steeper—in a few instances he has, and whenever he has, Flax cultivation has followed instantly and extensively; but the great difficulty is to get him to begin."

[The rest of the address is the announcement of a Joint Stock Company, having the above objects in view —which is clearly matter for publication, not here, but in our advertising columns.]

AGRICULTURAL CHEMISTRY.

ROYAL AGRICULTURAL COLLEGE.—SESSIONAL EXAMINATION. JUNE, 1854.

2. Write an essay on guano, with reference to the following points:—
   - *a.* Origin of guano.
   - *b.* Its distribution.
   - *c.* Different varieties.
   - *d.* Relative value of different varieties.
   - *e.* How to determine the commercial value of guano.
   - *f.* Adulterations of guano, and mode of recognising them.
   - *g.* Crops most benefited by guano, and crops to which it ought not to be used alone.
   - *h.* Substitutes for guano.
3. What is the effect of quicklime on fresh and on putrid urine?

[Extracts from the answers of Horatio Chancellor:—]

2. *Guano* is the solid excrements of sea-birds. It has been deposited year after year, and ultimately so collected as to constitute the now vast beds which occur in the several islands and countries of Peru, Patagonia, &c. *a.* The birds that have deposited their excrements lived on fishes, which in their turn lived on animalcules existing in the water, hence it is curious to observe the remains of these fishes, and infusorial animals in the guano, which are found in great abundance, and in many cases in an equally perfect and well preserved state.

b. Guano is found in great abundance in America, and adjacent isles, of course differing very much in extent and nature according to the difference in climate, food of birds, and subsequent circumstances to which it has been exposed. Extensive beds occur in the north and south of Southern America, hence the terms Peruvian, Patagonian, &c.

c. Among many varieties there seem to be the following deserving of attention, which are excessively varied in composition—the Peruvian, the Bolivian, the Saldanha-Bay, and the Patagonian, differing according to the place from whence they are shipped. There are many varieties of these, but those four may be said to comprehend all other guanos.

5. As to their relative value the first variety, Peruvian, ranks undoubtedly as the best, as can be seen by the great difference in its composition; it has been much less subjected to the wasting effects of rain, but its own samples vary, according to the depth of the bed from which it has been obtained, independent of any after-adulterations. The points which indicate the value of a specimen of guano are: *a.* Quantity of organic matter and relative amount of ammonia produced from such on decomposition; *b.* The amount of phosphatic matters; *c.* The amount of alkalies, as potash and soda and their salts.

A good sample of Peruvian guano should be expected to contain from 55—60 per cent. of organic matter, producing 16 per cent. of ammonia on decomposition; 18—19 of phosphatic matters; 6—7 of alkalies; 2 of silica (not more), and not more than 12 per cent. of water.

A sample containing these valuable constituents, and in such proportions, would indicate Peruvian of not more value than any other, but frequently salts of lime somewhat diminish the per centage of those valuable constituents—as being a highly nitrogenised manure, and far more so than any of the other guanos, of course it is relatively of greater value; though, as will be seen in the Bolivian variety, the less amount of ammonia is well made up by the greater per centage of phosphates, thus becoming more valuable for root crops. A sample of Bolivian guano should be expected to contain 35—45 of organic matter, 25—38 of phosphates, 5—6 of alkalies, 2 of sand, and not more than 20 per cent. of water; like Peruvian, however, it varies much, and frequently contains even a greater amount of ammonia than some Peruvian samples; however, as seen by this analysis, it has far less on the average, and a greater per centage of water present; the amount of phosphate, however, makes it a valuable manure for root crops, taking as it were the place of superphosphate.

Saldanha Bay variety is much inferior to either of the above, and frequently contains a great amount of lime and such like inferior constituents, with a proportional less amount of ammonia, &c. As, however, it can be obtained much cheaper, it frequently pays well. The Patagonian likewise contains much lime—as much in some cases as from 30 to 36 per cent. of gypsum —entirely independent of any adulteration, and like the former contains an equally diminished proportion of ammonia and phosphate. In some cases, however, it is much more valuable than in others, as sometimes, if obtained from the bottom of the bed, of course more lime is mixed up with it; it is valuable as a manure for soils deficient in lime, acting as a good manure at the same time, but it has not the invigorating effect of the Peruvian.

e. As a means of determining its commercial value—the simple analysis of the proportions in which the valuable constituents exist—as those already mentioned—ammonia, phosphates, and alkalies—is much the safest policy, calculating, of course, the amount at the usual price per pound—in accordance with the price you would expect to pay for each ingredient in any other manure. 1st, As to the determining the quantity of nitrogen, and phosphoric acid, and alkalies—the nitrogen is easily determined by combustion in several ways [which we do not describe]. And supposing a sample of Peruvian to be analysed—and a certain quantity of ammonia is found; you would calculate its value at 8*d*. per lb. The phosphates and alkalies would be determined by other means—[which we do not describe]. The cost of phosphates is calculated at 2*d*. per lb.; and of alkalies at 1½*d*.

f. As to the adulterations to which guano is liable:—As no organic matters can be economically applied as an adulteration, or, at any rate, in such forms as shall escape ordinary observation, the whole adulterations it is necessary for the farmer to guard against are inorganic, or mineral adulterations. The most common are gypsum, chalk, sand, earth, and clay. They can all easily be detected. Gypsum, by presence of sulphuric

acid, indicated by its action on chloride of barium; also by the lime being precipitated by oxalate of ammonia; chalk, by effervescence of the ash with muriatic acid; sand, by insolubility in water and muriatic acid: earth and clay are indicated at once by the coarse red ash peculiar to earth, due to the iron present.

g. As to the crops not benefited by guano, this materially depends on the variety of guano chosen. Peruvian, due to its great per centage of ammonia and nitrates which it furnishes to plants, is highly stimulating, and better calculated for the growth of cereals. The other varieties, as the Bolivian, &c., as they contain a superabundance of phosphatic matters, are better suited for the growth of roots, and in many cases they are employed to the greatest advantage in the place of superphosphates, provided they can be obtained at a reasonable commercial value. So the other rates, as the Saldanha Bay and the Patagonian, which are very rich in lime, are better calculated for those plants—as the leguminosæ, Peas, Beans, &c., which are much more benefited by it than by even a dressing of the highly nitrogenised Peruvian guano.

It is scarcely advisable to use Peruvian guano alone, as by its highly stimulating properties it is apt to decrease the quantity of grain, and thus its action is seen chiefly in the straw. When land is very light and thin, and especially if roots are to be grown, it is far from judicious to apply too heavy a dressing of such a concentrated manure, as its good effects on the one hand are fully counteracted by the less value of the roots produced. Moreover, in the case of leguminous plants, it would act injuriously rather than otherwise.

h. As substitutes for guano we may reckon any of the highly nitrogenised manures, as farm-yard manure, flesh, blood, and animal matters of all descriptions, those rich in gelatine or any of the protein or albuminous matters, which furnish ammonia on decomposition.—I have omitted a very essential point, viz., the occurrence of lumps of urate of ammonia, which are always to be found in good guanos, and from which uric acid is obtained. It is in a great measure due to this salt that guano is so valuable, as uric acid itself contains as much as 34 per cent. of nitrogen. Also, as to lime; in good Peruvian guano you should obtain no precipitate with oxalate of ammonia, as that would show that lime exists in a pure state. Again, it should always give a white ash—indicative of its purity. It should give off much ammonia when quicklime is mixed with it. A good bushel of good Peruvian guano should weigh about 62—64 lbs.; this is an important point.

3. The effect of quicklime on fresh and putrid urine is very different. 1st, Applied to fresh urine, it at once destroys the fermenting agents, entirely preventing the decomposition of the urea existing in *it*, and thus the urine will keep sweet for some long time; 2nd. Applied, on the contrary, to putrid urine, where the urea is already decomposing, and carbonate of ammonia is given off in great abundance, it assists such decomposition, and the result ultimately is a great loss in a much quicker time. This is also clearly shown in the case of any fermenting organic matter, as guano for example, which is always in a manner decaying, the appliance of a little quicklime rapidly disengages the ammonia. Hence this is of great importance to consider, as while on one hand it is very beneficial to place in a clean tank some considerable amount of quicklime previous to its being filled with urine, so on the other hand the addition of a very small quantity of quicklime to that urine after it has remained in the tank some time, and turned putrid, would be in reality counteracting the very aim and end of its previous application; so spreading lime about stables, if done when the stable is clean, and constantly, has rather a beneficial effect than otherwise.

Home Correspondence.

Crops in Sussex.—Our Wheat, which in June looked in most places very indifferent, slight, and backward, has much improved, and instead of an average of scarcely five sacks, is now likely, with a good harvest, to be above an average—7 sacks—and abundance of straw. Oats have likewise improved, and will be an average, both in straw and grain. Barley good—above an average in both; Grass a fair average where made; hops it is difficult to know anything of; there is a little improvement, possibly the present warm, or rather hot weather, may assist them. Mangold Wurzel and Turnips look well. In respect to Potatoes, the blight is as bad as ever; it commenced six weeks ago in our gardens, which now, in different places, are quite bare. I have begun to cut the haulm off close, and earth them well up, as the tubers are as yet but little affected. We had a severe storm passed over us last night, with heavy rain, and more this morning, and the weather appears very threatening. I earnestly trust we shall have a tolerable harvest, sufficient to feed us with flour, as last year, owing to the bad crop, I have no doubt it cost this populous country parish 5000*l.* or 6000*l.* to find us in food for our consumption, from other sources. *W. Baldock, Rotherfield.*

Hay.—As a good deal of last year's hay is mouldy, and more will be this year, it would be a great boon to many small occupiers if some correspondent would say whether any cheap apparatus is sold for steaming hay, and so purifying it of the mould, or whether such could be easily put up. Or could a wash-house boiler be adapted to the work? In either of these latter cases a description sufficiently full for country workmen should be given. Does steaming consume much coal? Is it possible to steam for two or three days' consumption for four cows and three horses? *Kent.* [It is advisable to steam each day the consumption of that day. Nothing is easier than to direct the steam from a covered boiler into some chamber—a cask, for instance—into which the chaff is placed; and that is all the apparatus needed.]

Mangold Wurzel running to Seed.—I have never, hitherto, been able to obtain a satisfactory reason why Mangold Wurzel is so apt to run to seed prematurely, though I have interrogated many growers on the subject; I think I may safely assert that I have never seen a crop but what was more or less subject to it. This year I think I shall lose half of my crop from this cause. We rarely see a crop of Turnips or Cabbages subject to this complaint; I think it can hardly be attributed either to the time of sowing, or the state of the atmosphere or soil; for if that was the case, it would apply equally to the whole crop. My own opinion is, that it is from the seed being ill-selected; and I fear the growers of it mix the seed of those which have run prematurely with the rest; if this is the case, I think it would account for it, as I can well imagine that roots produced from the seed of those plants which have run would themselves be liable to go to seed. However, if any of your readers could give a satisfactory reason, and, at the same time, suggest a remedy for the evil, they would confer a boon upon the agricultural interest. *A Subscriber.*

The Wheat Crop.—Allow me to suggest that you again call on your various correspondents to furnish you with a further report of the Wheat crop. When I forwarded my statement some three weeks ago, I did so as faithfully as circumstances permitted; and, as regards spring grain, I have reason to believe that I reported correctly, but, I regret to say that my opinion since then, in reference to the Wheat crop, is decidedly changed; indeed, I fear that many, like myself, have been deceived by appearances. I have examined many fields in this district during the last day or two, and scarcely a perfect ear is to be found; in many ears which I pulled, I found from six to 12 kernels either shrivelled or decayed. Should other neighbourhoods be similarly affected, the crop must be decidedly below an average. Harvest will commence here generally about the 21st of this month. *William Cubitt, Bacton Abbey, North Walsham, Norfolk.*

Saving Corn in Damp Weather.—A field of white Oats, near Plymouth, was cut wet, and the weather continuing the same, was at last stacked in layers, with dry straw between. On taking abroad the rick, the grain was found in excellent condition, not sprouted nor damaged in any way. And what answered with so precarious a grain as white Oats, will stand a better chance with Wheat, or even Barley. In this way thousands of acres might have been saved, which have been left to sprout on the ground; and where straw is all used up, other dry stalks, or even shavings, might answer. Where no dry straw, &c., is to be had, it may be dried in sheaf; either by a simple kiln, as in Russia, &c., described in "British Husbandry," vol. ii., p. 206; or without the risk of fire, by lime, as follows:—If the rick be made hollow, with the grain turned inwards, a sufficient quantity of fresh quicklime placed within, and then all closed in from bottom to top, and covered over to exclude the external air, the lime will rapidly dry the air within, which will as rapidly draw moisture from the corn; and so continue until the corn is dry, or the lime fully slaked; and as quicklime will absorb about one-third its weight of water, a ton of lime will take between 6 and 7 cwt. of water, and thus probably dry 6 or 7 tons of corn and straw. For all this water must come from the corn, if the external air is well excluded, and the lime raised from the soil by a bed of stones, gravel, or straw. The lime must not, of course, touch the corn; and therefore room should be left for it to swell in slaking and for turning it over, to slake all through; and a sort of door-way must be left on the side of the rick, which can be opened for putting in the lime, and for turning it over; but must be closed up immediately, and kept close, except at those moments. I am not aware of this lime method having been practised on the large scale; though habitually recommended (by me) in damp seasons. On the small scale the farmer can easily try it for himself, by laying a dozen or two of damp ears upon a large plate, putting about an ounce (more or less) of fresh burnt lime, broken, but not slaked, upon the same, and covering over with a basin that fits the plate pretty close. The lime may be placed on a bit of linen or calico, to prevent its touching the corn as it slakes. Let it stand thus for a week, looking at it once a day, and covering up again quickly. Another like plate of corn, covered up in the same way, but without lime, might stand beside it for comparison. If the damp corn were reaped close to the ears, and dried with lime in this way in a close room, instead of the basin, of course much less lime would do, and the drying would also be much quicker than in stack. *J. Prideaux.*

Covered Yards.—I understand that covered yards have been made of glass in some parts of England. The open space in the centre of a square of farm offices has been covered with strong glass (Hartley's rough plate), which is supported on cast-iron pillars like a railway station. Will you kindly inform me if you know in what part of England it is to be seen, and if it is found to answer the purpose for accommodating cattle and sheep, &c.? One of the Scotch architects here informs me that he will undertake to put up a yard of this description at a less expense and give more accommodation than any other method of enlarging a farm-steading, and afford greater comfort to stock of every description; and also to the people who have the charge of the stock. This may be all quite true; but as I have frequently in making improvements had to incur a large expenditure without reaping a corresponding advantage, I am desirous on that account of seeing and learning from those who have made the experiment whether this plan is worthy of being adopted. Besides it is advantageous to see the system of farming adopted in England at some of the farms where such improvements as above described have been carried out. In going from home one sees many improvements worthy of being put into practice. Mechi has covered yards, but not of the kind I have described. *J. D.* [Perhaps some correspondent will kindly give the information here desired.]

Cattle Grazing.—I suggest the following method of more economically consuming the growing produce of our Grass fields than is at present effected by the indiscriminate pasturing by cattle. The sources of waste at present are two-fold;—1st, the treading down of the Grass while the cattle are feeding; and 2d, the injury done by their droppings, which cover so much land, and render all around them over-luxuriant and distasteful. To obviate both of these evils, I propose to adopt such a plan as, like the system of folding sheep upon Vetches, shall keep the animals confined to the ground which has been fed, allowing them only gradual access to that which remains for consumption. For this purpose I would simply use a rope stretched across the field, fastened at intervals by pegs to the ground. These intervals should be the spaces allowed to the cattle, which should be tethered to the rope, one to each interval, by a running ring, allowing them motion from side to side between the stakes or pegs; the rope should be high enough to hinder the cattle from passing it, and being gradually moved forwards it would have the same use and effect as the hurdles moved forward in the Turnip field or on the Vetches, where the sheep are allowed access to the growing crop only as fast as they are able to consume it. A rank of cattle tethered in this way might commence at one end of the field. A boy ought to attend upon them and shift the pegs forward as fast as was needed. He should also be provided with a wheelbarrow, and gather up the manure in the rear of the advancing rank just as fast as it was produced. This manure should be carried to a tank close by, or at once mixed with water in the barrow itself, and a water cart being in readiness each day's produce of this kind should be spread in the liquid form in the rear of the cattle evenly over the whole of the ground from which it had been produced, and to which it is thus evenly and unwastefully returned. The Grass would spring up evenly instead of in patches, and naturally instead of distastefully and irregularly luxuriant; and the cattle, on reaching the other end of the field, in the course of days, would find the beginning of it ready for them, to recommence the process of grazing upon it. I should like to know what objections there may be to my plan. Perhaps the unevenness of quality in the Grass of the field may be one of them. In that case I would empower the attendant boy to widen the intervals between the separating pegs when that may be needed, and diminish them elsewhere according to his judgment. I know that it is possible to graze land very perfectly under the ordinary system. I have seen in Lincolnshire lately fields which I might say were perfectly grazed; but for one of which, owing to the quality of the Grass or the skill of the farmer, this may be said, there are twenty to be seen where a great deal of waste unquestionably occurs. I believe my plan would diminish this waste; and I should like to know what the practical farmer may have to say against it. *C.*

Reviews.

Report of a Discussion at the Wakefield Farmers' Club, May 5, 1854: On the Merits of Chandler's Liquid Manure Drill. Tyas and Horridge, Printers.

The pamphlet thus entitled contains an essay on Turnip Cultivation, by Mr. Kemp, in which the merits of Chandler's manure drill are illustrated and proved. Our readers are aware of the rivalry between this and Mr. Spooner's water-drill. It was in consequence of Mr. Spooner's paper on this subject, at the London Farmer's Club, that Mr. Kemp's paper, at Wakefield, was prepared, and as the arguments of the former have been given in some detail (see p. 241), it is only fair that the latter, with the testimonials which he quotes, should find publication now.

The following is the report of an experiment made by Mr. Harding, a tenant of Lord Portman's, living at Durweston, near Shroton Blandford, Dorsetshire:—"One cwt. of soluble superphosphate was allotted to drill 1 acre of Turnips, at 18-inch distances, and though done late in the season, the effect produced was very distinctly marked. From the slight calculations I made at the time, I believe it will be found that the cwt. of superphosphate, if it had been placed in one continuous drill only, would have been distributed over 5½ miles of land (lineal measure), and, from what I saw of it, it was most evenly and perfectly distributed, and very distinctly showed the effects of the manure. I spoke of it then (as I do now) as a proof of the power of Chandler's Liquid Drill in nicely distributing the manure—and I have never seen any other implement that would do so. In fact, when we consider that the cwt. of superphosphate is only about 5 or 6 pecks of solid substance, it is

next to an impossibility that any mechanical contrivance can comminute that quantity and evenly distribute it over such a distance in a dry state. I have been in the habit of using all sorts of manure drills, and have personally paid great attention to the mixing of artificial manures with ashes, &c., and till I got the liquid drill, I invariably found, that in spite of all my care and attention, I could not get it on the land evenly. I find now, that with Chandler's drill, if the manure is genuine, and properly prepared, whether you use 1, 2, or 3 cwt. per acre, or 4, 6, 8, 10, or any other quantity of hogsheads of water per acre, you can, with very common care and oversight, get it laid on evenly—as the liquid seems to be all charged alike—much the same (if I may use the simile) as if you threw a pint of brandy into a quart of water, or a pailful, however small the proportion to each other allowed, still the effect is in that proportion, and acts immediately to the extent that you might reasonably expect."

This is reported by Mr. Ingram, of Shrotron Blandford, and on it Mr. Kemp remarks—"This note, I should remark, was written and in my possession before Mr. Spooner read his paper, and consequently has not been obtained for the sake of contradicting his statement."

Mr. Kemp, speaking of his own experience, adds as follows :—"After five years' experience with this liquid drill, during which time I have tried several different manures, I find that bones, dissolved with sulphuric acid, or superphosphate of lime, is the best and cheapest manure. Two bushels of bones, dissolved with 84 lbs. of acid, and drilled with from 200 to 400 gallons of tank manure, I have found sufficient for an acre of poor land, without any other manure. Two cwt. of superphosphate appears also, when applied with Chandler's drill, to produce a greater weight of meat than other management costing three times as much. As an instance of this, I will read an experiment made by Mr. Biggs, of Stockton House, Wilts. In speaking of the liquid drill, Mr. B. says :—

"Stockton House, January 29, 1849.

"Dear Sir,—I have much satisfaction in stating the benefits resulting from the use of your liquid manure drill;—it is a most valuable machine. I was surprised to see the plants come to the hoe so early. I drilled in 6 acres of Swedes, using three different sorts of manure, of which the following is an exact account.

"No. 1. Two acres, drilled May 22d, with 2 sacks of dry bones, 1 sack of dissolved bones, and 40 bushels of compost, at a cost of 2*l.* 13*s.* 2*d.* per acre; produce, 18 tons 18 cwt. 2 qrs. 8 lbs. per acre.

"No. 2. Two acres, May 29th, with 44 bushels of pigeon manure, at a cost of 2*l.* 4*s.* per acre; produce, 20 tons 15 cwt. 2 qrs. 14 lbs. per acre.

"No. 3. Two acres drilled on the same day as No. 2, with 2 cwt. of super-phosphate and 200 gallons of water, at a cost of 16*s.* per acre; produce, 28 tons 4 cwt. 1 qr. 4 lbs. per acre.

"The whole 6 acres were folded precisely alike, Nos. 2 and 3 had a slight coat of muckle. No. 3 was 12 days earlier to the hoe than either of the other two.

"Seeing the Swedes put in with the liquid manure going so much a-head of the others, I broke up 8 acres of two-year-old lay one earth, drilled in red and green round Turnips with 2 cwt. of superphosphate and 200 gallons of water per acre, at a cost of 16*s.* per acre, and had a splendid piece of feed—some of the Turnips measuring 20 inches round. So satisfied am I with your liquid manure drill, that I shall put in all my Turnips and Mangold Wurzels with it this season.

"I am, dear Sir, yours truly,

"To Mr. T. Chandler." HARRY BIGGS."

"You will perceive, by this experiment, that Chandler's drill produces 7 tons 9 cwt. more Turnips per acre than the compost drill, and at 1*l.* 8*s.* per acre less cost. No. 1, drilled with bones, by the compost drill, does not produce so much weight per acre by 9 tons 6 cwt., although 1*l.* 17*s.* 2*d.* more per acre is expended. You will also observe that Mr. Biggs says those sown with the liquid drill were 12 days earlier to the hoe than those put in with the compost drill."

In the subsequent discussion, Mr. Simpson, of Thornes, Mr. Johnson, of Chevet, and others, stated their experience in favour of the drill. The latter said : "He was satisfied with what had been said about the liquid manure drill, and it quite tallied with his own experience of it. The last year, when he had used this liquid manure drill, he used it upon land that was in a clotty state, but independent of this disadvantage, the crop was a good one. The land had been slightly manured before, but not to any amount. It was a capital crop of Turnips. Mr. Ringrose, whom he had called in to ascertain his opinion, said it was the best crop he had seen that year. In consequence of this commendation, he (Mr. Johnson) had got another of the drills, and being desirous of ascertaining the most proper quantity of Simpson's nitrophosphate for producing a good crop, he began by trying 6 cwt. per acre and then reduced it to 3 cwt. per acre ; he had quite as good a crop with 3 cwt. as 6 cwt., thus proving that you may give land more manure than the plants can take up. He certainly approved, however, of the liquid manure drill, and intended testing it more fully in his future operations."

There can be no doubt of the value of the drill ; the question between the merits of Mr. Spooner's and Mr. Chandler's drills is one simply of degree—and that will be determined only by experience in a variety of seasons.

Miscellaneous.

The Quantity of Seed per Acre is regulated in part by the variety grown, the condition of the soil as regards richness, natural texture, friableness, altitude, the period of sowing, and the manner in which the seed is deposited, whether drill or broadcast. The usual practice is to allow too much seed. This arises partly from custom and partly from the destruction caused by crows and game. With high condition and freeness of the land from weeds, the improved practice is to allow less seed. In the case of the Turnip, 2 to 4 lbs., varying according to the fineness of the tilth. Wheat after Turnip, if autumn sown, from 10 to 12 pecks ; if spring sown, from 12 to 14. Barley from 10 to 12 pecks, if sown in March ; 1 or 2 pecks less if sown in April. Oats vary considerably, 8 to 12 pecks on soils in high condition, but the most common quantity is from 12 to 16 pecks. Beans vary from 9 to 13 pecks, the latter being most common. Wheat after Beans from 9 to 13 pecks. Wheat is usually prepared previous to sowing by being steeped in a solution of sulphate of copper, 1 lb. to 2 lbs. being dissolved in water for the quarter of Wheat. *From the Report on the Farming of East Lothian, by Mr. Stevenson in the Eng. Ag. Soc. Journal.*

Calendar of Operations.

JULY.

FORFARSHIRE GLENS, *July* 31.—The weather during the past three months has been generally moist and mild, with a remarkable absence of scorching days and frosty nights, so common in the early part of summer, and the effect has been the production of a more than usually luxuriant vegetation. The corn crops are bulky, but although much earlier sown, are not any nearer maturity than at this date last year. Barley is filling, has a good head, and thick on the ground. Oats are nearly at full length, show a fine ear on a strong clean stalk—clear indications of plenty of porridge meal. We do not expect harvest before the second week of September. Haymaking has been rather ticklish work, but where promptitude and energy have been exercised, it is secured in good condition, the crop is about an average one and the price remunerative. Potatoes are generally healthy and vigorous, and promise a full return ; a few fields are to be seen where the stems are small and lanky, evidently the result of a weak seed ; probably too much economy has been exercised in cutting : no appearance of disease. Turnips have all along been strong and vigorous, so much so that hoeing and thinning were often far in arrear ; the season has been highly favourable to this crop, and present appearances indicate that it will be a full one. Grass has all along been, and still is plentiful, and flocks and herds thriving apace. The clip of wool is very deficient, from 15 to 20 per cent. below average, which it is not easy to account for, seeing the winter was mild, and the sheep in good condition ; probably a general shortness of Grass during last summer and autumn may have been the cause ; the price has also gone back 25 per cent., the highest realised at the Brechin fair for black-faced wool was 7½*d.* per lb. The greater part of the clip has been disposed of, but with this double drawback a comparatively small sum will be realised for the produce. A fair crop of lambs has been weaned, and as far as sold a deduction in price has been submitted to. On the Moors the grouse are numerous and strong, and sportsmen will require to ply well their vocation after the "twelfth," and keep them within proper limits, else they will be both troublesome and expensive to the tenants at the end of harvest. The "Calendar of Operations" at present is light, and opportunity is afforded of repairing the engine, and raising the steam for the labours of the coming autumn and winter. *S.*

WEST SUSSEX, *August* 15.—We have now got into the middle of harvest, and the weather for that purpose is all that we can desire. Wheat is nearly all cut ; and as it has been well hardened before cutting, it will soon be carried. We fear there is not such an abundant crop as we expected. Within the last ten days it has become much blackened in the ear—not all through the field, but in large patches here and there, being worst in that which had been latest in ripening. Some, since being cut, has become discoloured outside the sheaf, while standing in the shock ; and those ears that are so affected are thinner than the others. But, for all this, we must not say that the crop promises badly ; but only that it is not quite so good as we thought it would be. Barley is rather backward, but is coming on fast, and the ears look large and healthy. Peas have been got together in good order, and are a good sample, better than they appear to have been for some years ; they are always regarded as a very doubtful crop. Beans will not be fit to cut for a week or ten days. Cattle food is now getting very short, and the effect will no doubt be to bring down the price of lean stock, which has long been so high, especially as the late Turnips are not likely to progress much with the long-continued dry weather we have had. But the early sown do pretty well : there is still a practice of sowing later than need be done. Potatoes here still look well, and the quality is better than it has been for several years. *G. S.*

Notices to Correspondents.

CHEVIOTS : *A Young Farmer.* Stagshaw fair, near Hexham, Northumberland, is a large fair for sheep ; it is held July 4th ; Brough Hill, Westmorland, Sept. 30th, is your most likely place now. We have hardly any information of fairs in Yorkshire, as regards sheep.

DIPPING APPARATUS : *X.* A good arrangement for the purpose was exhibited by Mr. Rome, of Langholm, at Berwick and Armagh—of which, however, the judges gave no opinion, owing, we believe, to its non-arrival in time.

FARMS : *A Suffolk Reader, Inquirer, and Spes.* We hope to clear off arrears next week.

PARK-PALINGS : *G H.* will be obliged for information on the most economical mixture to put on park-palings, which are made of Larch. Anything that would show the colour of the wood would be best.

POULTRY : *S D.* Give your chickens the most nourishing food you can procure, and to remove their tormenters, apply a little spirits of turpentine and water, or a strong effusion of tobacco. *W. S.*

SEED : *G T., Guernsey.* We cannot direct you to seed *growers.* Many farmers grow some small portion of Swedes, Mangold Wurzel, and Carrots for seed, and we might direct you to where you could obtain any of these seeds from the grower ; but we don't know any one who takes up "seed" growing as the main produce of his farming. "The earliest Vetch in cultivation" is grown near Blandford in Dorsetshire. Messrs. Sutton, of Reading, have seed of it. We shall feel much obliged for information on your methods of cropping and rotation.

SOIL AND AGRICULTURE OF TURKEY : *A B.* We are unable to direct you, except to London's "Cyclopædia of Agriculture," pp. 120, 122, where you will find reference to his authorities.

VETERINARY PRACTICE : *O S.* We have sent your inquiry where it will receive a trustworthy answer.

WHEAT : *W C M.* We would not attempt to grow Wheat on a fresh grubbed Hop garden. It would most likely be laid, mildewed, and spoiled. If forced to it we should apply a dressing of salt, about 1 cwt. each time, during wet weather in November, March, and April.—*General Arbuthnot.* Your ears of Bristol Red are the most magnificent specimens we have seen : and if the sample is anything near the average, the crop must be enormous.

*** As usual, many communications have been received too late ; and others are unavoidably detained till the necessary inquiries can be made. We must also beg the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

CHAFF-CUTTERS, of the best workmanship, 25*s.* ; Two-Knifed Chaff Engines, from 63*s.* ; Mills for Bruising Oats and Beans, from 45*s.*
WILLIAM DRAY AND CO., Agricultural Implement Manufacturers, Swan Lane, Upper Thames Street, City.

BUDDING'S LAWN MOWERS, with SAMUELSON'S registered improvements, *lightening the draught fully one-half*, and enabling an unskilled labourer to make neat work ; free from liability to choke, or get out of order. May be had of all ironmongers in town or country, or from the Works, Banbury ; delivered free in a packing case to any station on the North-Western and Great Western Railways. Testimonials forwarded on application.—Britannia Works, Banbury.

CORN CRUSHERS AND CHAFF CUTTERS.— A large display of the best Farm Implements shown in operation. Price Lists sent free on application.
BURGESS AND KEY,
103, Newgate Street, and 52, Little Britain, London.

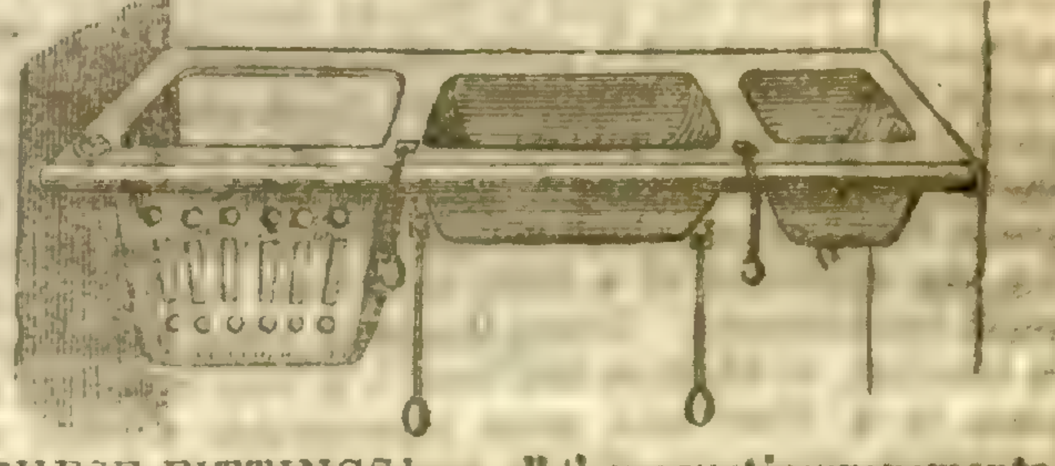
PUMPS AND HOSE PIPES FOR GARDENS AND LIQUID MANURE.—BURGESS & KEY's Pumps were highly commended by the Royal Agricultural Society of England at Lincoln. Price Lists sent free.
103, Newgate Street, and 52, Little Britain, London.

CHURNS.—ANTHONY'S PATENT AMERICAN CHURN.—Since 1849 this Churn has obtained all the Prizes awarded by the Royal Agricultural Society of England. At the trial before the Judges it made in 10 minutes 4 lbs. 6 oz. of Butter from 4 quarts of Cream, being 8 oz. more than any of the other Churns from the same quantity and quality of Cream.
103, Newgate Street, London.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.

MESSRS. BURGESS AND KEY, as Mr. PARKES' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.
103, Newgate Street, and 52, Little Britain, London.

BARTON'S PATENT STABLE FITTINGS, AND ENAMELLED MANGERS.



THESE FITTINGS have all the newest improvements and are the only patented invention of this description. Also Improved Stable Fittings with Rack, Manger, and Water Trough attached, New Pattern Manger and Water Trough combined ; Corner and Straight Mangers, Plain, Enamelled, and Galvanised ; Stable Furniture of every description, Iron Gates, Railing, Hurdles, Sheep and Game Wire Netting, Registered Poultry Troughs, Fountains, Feeders, &c.—JAMES BARTON, IRONFOUNDER, SMITH, &c., 370, Oxford Street, a few doors east of the Pantheon.

IMPORTANT TO

FLOCK MASTERS.

SHEEP, LAMBS, HORSES, AND CATTLE,
CAN BE DRESSED WITH

LONG'S NON-POISONOUS SHEEP & CATTLE-DRESSING COMPOSITIONS, without any possibility of danger or injury resulting from the application. These Compositions are admitted by all who have fairly tested them to be the most effective Sheep Dressings ever brought before the agricultural public : and as they are NON-POISONOUS, and do not stain or discolour the Wool, they are gradually superseding the use of all Dipping and other Sheep-dressing preparations, composed of such deadly poisons as ARSENIC or MERCURY.

It is a fact now thoroughly established, that Long's Non-Poisonous Sheep Dressings, if liberally and judiciously applied in the dressing of Sheep and Lambs, will—in their consequent effect in removing Disease, destroying Vermin, and keeping the flock in condition, thus PROMOTING INCREASED GROWTH BOTH OF MUTTON AND WOOL—as amply repay flock owners for first outlay as artificial manures when applied to land. They are the only Sheep Dressings also, which, from the fact of their containing NO POISON, can be beneficially and safely applied to Sheep and Lambs at any age and at any season of the year.

Pamphlets containing full directions for use, and copies of the strongest Testimonials ever accorded to a manufacturer, signed by leading and practical Stock Farmers, residing in all parts of the United Kingdom, together with the names of all Country Agents authorised to vend Long's Patent Sheep and Cattle-dressing Compositions, may be obtained gratuitously on application of any advertised country Agent : or by post, sent free, of
BARRY BROTHERS, AGENTS FOR JOSEPH LONG,
Meriton's Wharf, and Shad Thames, London.

THE ADVANCE OF SCIENCE IN AGRICULTURE.

RICHMOND AND CHANDLER'S unprecedented celebrity for their improved CHAFF MACHINES and CORN CRUSHERS, achievable only by intrinsic merit, has secured for them the highest character in the trade, together with the confidence of the public, whether as regards true economy or the unapproachable finish and sterling quality which characterise all their productions, and render them worthy the reputation of a Manchester manufacturer.

The most distinguished authorities in all civilised countries report their unqualified satisfaction with the highly beneficial effects resulting from the use of these justly celebrated Machines, and with the now established fact of their not being subject to any of the contingencies inseparable from other machines, they are calculated to meet with general approval in the present advancing state of agriculture.

Address—RICHMOND & CHANDLER, Salford and Manchester; and 32, South John Street, Liverpool.

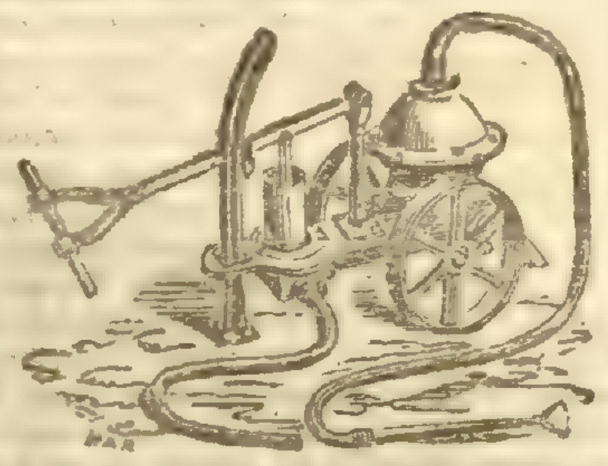
REAPING AND MOWING MACHINES.—CAUTION.—Notice is hereby given, that any person or persons infringing any of the Patents of Cyrus Hall M'Cormick, for Reaping and Mowing Machines, or making, or vending, or using, or exercising any Machines which in any way infringe upon any such Patents, will be proceeded against according to law. The more prominent features of M'Cormick's Patents consist in a serrated cutting blade, spear-head shaped holding fingers, and a gathering reel.

E. J. & H. LAWFORD, Mr. M'Cormick's Solicitors.
Draper's Hall, 27, Throgmorton Street, London, Aug. 19.

WEIR'S IRRIGATORS, LIQUID MANURE PUMPS, FIRE AND GARDEN ENGINES.

	£	s.	d.
Single Cylinder (as engraving) ...	8	8	0
Double Cylinder ...	10	10	0
Horse power size ...	16	16	0

Exclusive of Suction and Delivery Pipes.



Illustrated Catalogues free per post.

Terms Cash on Delivery.

EDWARD WEIR, Agricultural Engineer, 16, Bath Place, New Road, London, removed from Oxford Street.

WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

	£	s.	d.
Patent Pump	1	16	0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing	3	0	0

Larger sizes if required.

The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,

8, CRESCENT, JEWIN STREET, LONDON.

Every description of Machinery for Raising Water; Fire Engines, &c.

JOHN WARNER AND SONS, CRESCENT, JEWIN STREET, LONDON.

GALVANISED IRON TUB GARDEN ENGINE,

With Warner's Registered Spreader,

Is strongly recommended, for durability and low price, viz., 2*l*. 19*s*., to hold 10 gallons.

Larger sizes made either in wood or iron. May be obtained of any Ironmonger or Plumber in town or country, or of the Patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Syringes of various constructions and sizes from 9*s*. upwards. An extensive assortment kept.

JOHN WARNER AND SONS, 8, Jewin Crescent, London, Manufacturers of FIRE ENGINES, PUMPS, GARDEN ENGINES, and SYRINGES.

Conservatory Pump, with WARNER'S Registered Spreader, 27*s*. 3*d*.
No. 32.

Garden Engine, with WARNER'S Registered Spreader and Wrench 3*l*.; with iron pail, 3*l*. 12*s*.
No. 11.

Patent Conservatory Pump, with WARNER'S Registered Spreader, 2*l*. 18*s*.; with iron pail, 3*l*. 5*s*.
No. 14.

Brass Syringes, 9*s*. to 18*s*.

All articles of JOHN WARNER & SONS' manufacture may be obtained of any Ironmonger or Plumber in town or country, at the advertised prices.

JOHN WARNER & SONS having been practical Horticulturists for many years, know exactly the requirements of both Amateurs and Gardeners. A gardener with a properly constructed pump will get through as much work in five minutes as he could with any Syringe in a quarter of an hour, and with half the labour to himself. Syringes are economical only for small houses.

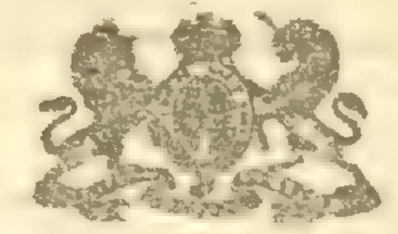
No establishment offers such a variety of effective machines for hydraulic purposes, whether to supply Gardens, Hothouses, Cottages, Farms, Mansions, or Boards of Health, with every requisite connected with the conveyance and distribution of liquids.

Fountains suitable for Conservatories, Lawns, &c.

Sheets of Engravings sent on application.

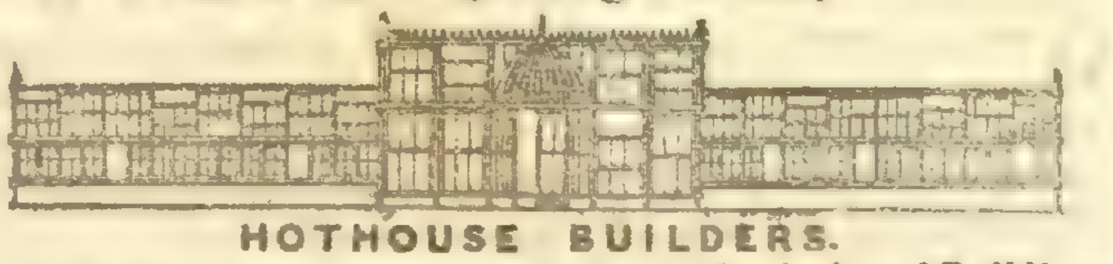
HORTICULTURE IN ALL ITS BRANCHES.

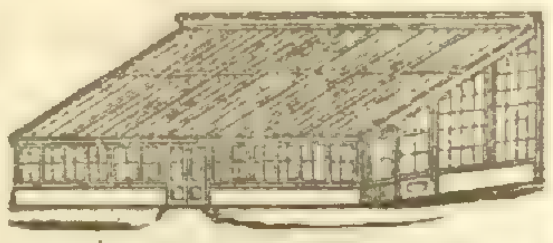
J. WEEKS & Co., King's Road, Chelsea,

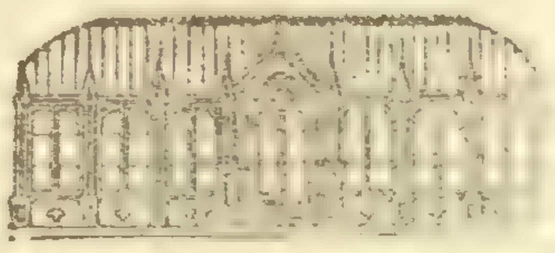


HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Buildings or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.







The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. WEEKS & Co., King's Road, Chelsea, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.

GRAY AND ORMSON, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

BY HER MAJESTY'S ROYAL LETTERS PATENT

E. DENCH, PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA.

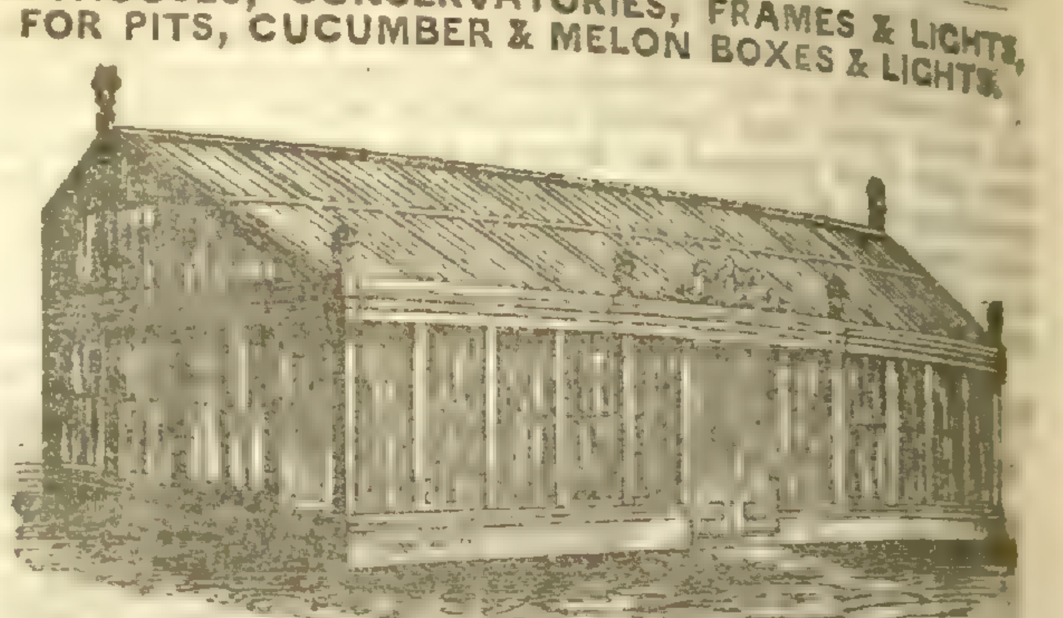
PATENT HOTHOUSES and excellent Glass at 1*s*. 3*d*. per foot super., which are superior to all others for price with quality, and if known would supersede all others. (See Appendix, in "Book of the Garden," by Mr. M'Intosh.) A Range of Houses and Hot Water Apparatus, was erected by E. D. for E. L. Betts, Esq., Preston Hall, Kent. Mr. J. Frost, head gardener, has shown their efficiency by their produce at the Royal Botanic Gardens, Regent's Park, June 8, and Chiswick, June 11. The editor of the *Gardeners' Chronicle* says: "Beautiful examples of Black Hamburgh, large both in bunch and berry, and as black as Sloes, were furnished by Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall, Kent; these well deserved the first prize which was awarded them."—*Gardeners' Chronicle*, June 18th, 1853. The Grapes were considered the best shown at Regent's Park during the season, and the Houses are as superior for the growth of everything else in horticulture, which has been fully proved, and they have been extensively erected for the nobility and gentry in all parts of the kingdom.

GLAZING WITHOUT PUTTY.—Iron and Glass alone. E. D. has Roofed the Public Baths and Washhouses, Endell Street, on this principle, and others are in hand. Patent Sashes for Peach Walls, Pits, &c., 8*d*. per foot super. Heating by Hot-water, on the most practical principles, and all the best materials used. Printed Price List sent on application.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the nobility, gentry, and clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out-door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice.

Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to WALTER CARSON & SON, 9, Great Winchester Street, Old Broad Street, Royal Exchange, London. No Agents. All orders are particularly requested to be sent direct.

HOTHOUSES, CONSERVATORIES, FRAMES & LIGHTS, FOR PITS, CUCUMBER & MELON BOXES & LIGHTS.



JAMES WATTS, HOTHOUSE BUILDER, 8, Claremont Place, Old Kent Road, London.

Green and Hothouses, 9, 10, 11, 12, 13, and 14 feet wide, any length, from 16 to 100 feet. Frames and Lights for Pits, 6 ft. 6 in., 7 ft., 7 ft. 6 in., 8 ft., and 8 ft. 6 in. wide, any length, from 12 to 100 feet. Upwards of 200 Cucumber and Melon Boxes and Lights, from 4 ft. by 3 to 10 ft. 6 in. by 5 ft. 6 in., kept ready glazed with stout sheet glass, painted four times, complete, ready for immediate use, all made of best material, packed and sent to all parts of the kingdom.—Reference may be had to the Nobility, Gentry, and the Trade, in most of the counties in England.

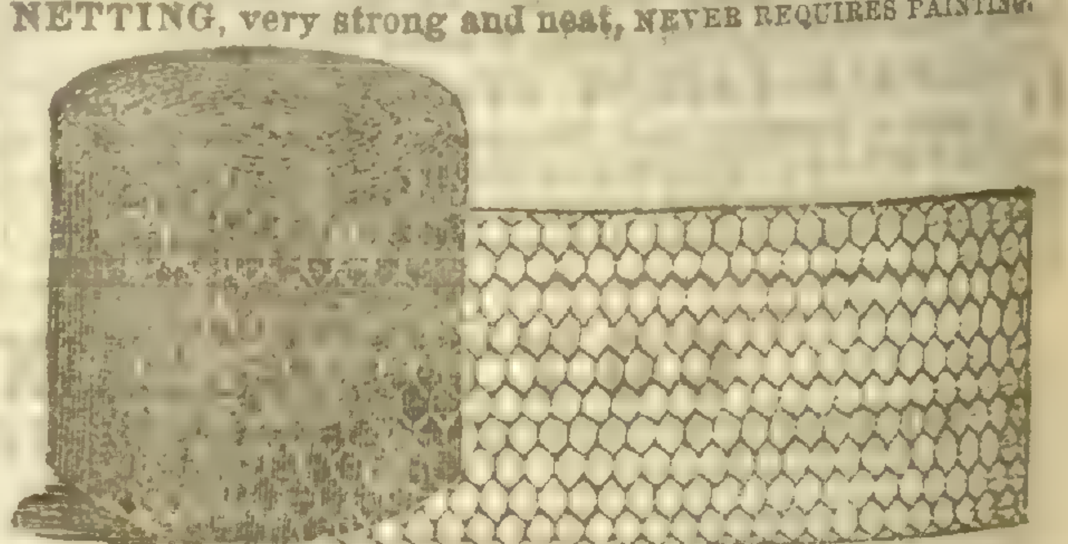
THE GUTTA PERCHA COMPANY'S TUBING FOR WATERING GARDENS, WITH ROSES AND UNION JOINTS FITTED.—27, CITY ROAD, LONDON.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

MESSRS. B. GREENING AND CO. beg respectfully to call attention to their superior WIRE FENCES, of which the following are the principal varieties:—Portable Horse and Cattle Fencing (Economical variety of ditto), Portable Sheep and Lamb, Proof Fencing, Poultry Fence, Portable Hare and Rabbit-proof Fencing, Ornamental Garden Fences, Expert varieties, Poultry and Chicken-proof Fencing. Light and cheap kinds of most of the above. Trainers for Peas, &c., Garden Bordering, Tree Protectors, Hen Houses, Poultry and other Aviaries, &c.

Messrs. B. G. & Co. being the sole patentees for the machinery for manufacturing these Fences, will forward engraved sheets of Patterns, Prize Lists, Prospectuses, &c., gratis, on application to their establishments, 1 and 3, Church Gates, or 2 and 2 A, Cateaton Street, Manchester.

H. J. MORTON AND Co., 2, Basinghall Buildings, Leeds.—GALVANISED GAME AND POULTRY NETTING, very strong and neat, NEVER REQUIRES PAINTING.



24 inches wide, 3-inch mesh, 4½*d*., 6*d*., and 8½*d*. per yard.
24 inches wide, 2-inch mesh, 7*d*., 9½*d*., and 1*s*. per yard.

GALVANISED IRON SPOUTING, for Dwellings, Cottages, Farm Buildings, &c., NEVER REQUIRES PAINTING.

Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalte Roofing Felt, &c.

GALVANISED WIRE GAME NETTING.—*7d*. PER YARD, 2 FEET WIDE.

		Galvanised.	Japanned iron.
2-inch mesh, light, 24 inches wide	...	7*d*. per yd.	5*d*. per yd.
2-inch " strong "	...	9 "	6½ "
2-inch " extra strong "	...	12 "	9 "
1½-inch " light "	...	8 "	6 "
1½-inch " strong "	...	10 "	8 "
1½-inch " extra strong "	...	1 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasantries, 3*d*. per square foot. Patterns forwarded post free.

Manufactured by BARNARD & BISHOP, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

HOSE PIPING.—GREAT REDUCTION IN PRICE.

PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense pressure, and much more than leather, vulcanised rubber, or any other hose, and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented inventions, the cost of manufacturing it is now reduced at least 60 per cent., which advantage is offered to the public.

BURGESS AND KEY, 103, Newgate Street, and 52, Little Britain, who, on application, will forward wholesale and retail prices.

J. TYLOR AND SON'S REGISTERED GARDEN SYRINGE.—Small size, for Amateur use, **21s.** each; Large size, for Gardeners' use, **25s.** each.

By a simple arrangement this Syringe is rendered more effective than any portable Conservatory or Garden Pump ever offered to the public. It is equally adapted for Garden or Conservatory use, and is capable of discharging twice as much water in a given time as any other Syringe now in use. The arrangement consists in attaching a small flexible suction tube to the barrel of the Syringe, through which it is filled with water at every discharge of the previous contents. By this means the Syringe is always charged, and the pull-up stroke of the piston rendered perfectly easy, it having, indeed, no work to do, the barrel being previously full of water. Being thus made self-supplying, a great saving of labour is effected; and the necessity of stooping to fill the Syringe at every discharge being done away with, the direction of the water can be maintained for any length of time. It is perfectly cleanly in its action, as it is not possible for any water to get on the outside of the barrel, which is a well-known inconvenience attendant on the use of every other Syringe. Its construction is perfectly simple, and cannot get out of order; the ground-in ball valves and fittings used for filling all other patent Syringes being entirely superseded. To be had of any respectable Ironmonger or Seedsman in town or country.

J. TYLOR & SONS, Manufacturers of Horticultural Apparatus, Warwick Lane, Newgate Street, London.

N.B. These prices do not include carriage, package, or expenses of delivery in the country.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard run, of E. T. ARCHER, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey.

GLENFIELD PATENT STARCH, used in her Majesty's Laundry, and WOTHERSPOON'S machine-made CONFECTIONARY, MARMALADE, JAMS, JELLIES, &c., which gained the Prize Medal of 1851, may be had of all Grocers: Wholesale of WOTHERSPOON, MACKAY, & Co., 66, Queen Street, Cheapside, London; and ROBERT WOTHERSPOON & Co., Glasgow.

THE COMFORT OF A FIXED WATER CLOSET for 1*l*.—Places in gardens converted into comfortable water closets by the PATENT HERMETICALLY SEALED PAN, with its self-acting valve, entirely preventing the return of cold air or effluvia. Any carpenter can fix it in two hours. Price 1*l*. Indispensable for the health and comfort of a family. Hermetically sealed Inodorous Chamber Commodes, 1*l*. 4*s*., 2*l*. 6*s*., and 3*l*.; also, Improved Portable Water Closets, with pump, cistern, and self-acting valve. A prospectus, with engravings, forwarded by enclosing two postage stamps.—At FYFE and Co.'s, removed to more commodious premises, at 46, Leicester Square, London.

METCALFE AND CO'S NEW PATTERN TOOTH BRUSH, PENETRATING HAIR BRUSHES, AND SMYRNA SPONGES.—The Tooth Brush performs the highly-important office of searching thoroughly into the divisions and cleansing in the most extraordinary manner—hairs never come loose. Peculiarly penetrating Hair Brushes, with durable unbleached Russian bristles, which will not soften like common hair, and immense stock of genuine unbleached Smyrna Sponge, with every description of British and Foreign Perfumery, at METCALFE, BINGLEY, & Co.'s only Establishment, 130 B and 131, Oxford Street, second and third doors west from Holles Street.

CAUTION.—Beware of the word "from" Metcalfe's, adopted by some houses. Metcalfe's Alkaline Tooth Powder, 2*s*. per box.

TO NERVOUS SUFFERERS.

A RETIRED CLERGYMAN having been restored to health in a few days, after many years of great nervous suffering, is anxious to make known to others the means of cure; he will therefore send (free), on receiving a stamped envelope, properly addressed, a copy of the prescription used.—Address the Rev. E. DOUGLASS, 18, Holland Street, Brixton, London.

NO MORE PILLS OR ANY OTHER MEDICINE.

DU BARRY'S DELICIOUS REVALENTA ARABICA FOOD is the natural remedy, which has obtained 50,000 testimonials of cures from the Rt. Hon. Lord Stuart de Decies, Archdeacon Stuart of Ross, and other parties, of indigestion (dyspepsia), constipation, and diarrhœa, nervousness, biliousness, liver complaint, flatulency, distension, palpitation of the heart, nervous headache, deafness, noises in the head and ears, excruciating pains in almost every part of the body, chronic inflammation and ulceration of the stomach, irritation of the kidneys and bladder, strictures, erysipelas, eruptions of the skin, impurities and poverty of the blood, scrofula, incipient consumption, dropsy, rheumatism, gout, heartburn, nausea and sickness during pregnancy, after eating, or at sea, low spirits, spasms, cramps, epileptic fits, spleen, general debility, asthma, coughs, inquietude, sleeplessness, involuntary blushing, paralysis, tremors, dislike to society, unfitness for study, loss of memory, delusions, vertigo, blood to the head, exhaustion, melancholy, groundless fear, indecision, wretchedness, thoughts of self destruction, and many other complaints. It is, moreover, the best food for infants and invalids generally, as it never turns acid on the weakest stomach, but imparts a healthy relish for lunch and dinner, and restores the faculties of digestion and nervous and muscular energy to the most enfeebled.—Barry Du Barry & Co., 77, Regent Street, London. A few out of 50,000 cures are here given:—Cure No. 71, of dyspepsia, from the Right Hon. the Lord Stuart de Decies: "I have derived considerable benefit from Du Barry's Revalenta Arabica Food, and consider it due to yourselves and the public to authorise the publication of these lines.—Stuart de Decies." Cure No. 49,832:—"Fifty years' indescribable agony from dyspepsia, nervousness, asthma, cough, constipation, flatulency, spasms, sickness at the stomach, and vomiting, have been removed by Du Barry's excellent Food.—Maria Jolly, Wortham Ling, near Diss, Norfolk." Cure No. 47,121:—"Miss Elizabeth Jacobs, of Nazing Vicarage, Waltham Cross, Herts: a cure of extreme nervousness, indigestion, gatherings, low spirits, and nervous fancies." Cure No. 48,314:—"Miss Elizabeth Yeoman, Gateacre, near Liverpool: a cure of 10 years' dyspepsia and all the horrors of nervous irritability." Dr. Wurzer's Testimonial:—"Bonn, 19th July, 1852. This light and pleasant Farina is one of the most excellent, nourishing, and restorative remedies, and supersedes, in many cases, all kinds of medicines. It is particularly useful in confined habit of body, and also in diarrhœa, bowel complaints, affections of the kidneys and bladder, such as stone or gravel; inflammatory irritation and cramp of the urethra, cramp of the kidneys and bladder, strictures, and hæmorrhoids. This really invaluable remedy is employed with the most satisfactory result, not only in bronchial and pulmonary complaints, where irritation and pain are to be removed, but also in pulmonary and bronchial consumption, in which it effectually counteracts the troublesome cough: and I am enabled with perfect truth to express the conviction that Du Barry's Revalenta Arabica is adapted to the cure of incipient hectic complaints and consumption.—Dr. Rud Wurzer, Counsel of Medicine, and Practical M.D. in Bonn."—In canisters with full instructions—1 lb., 2*s*. 9*d*.; 2 lbs., 4*s*. 6*d*.; 5 lbs., 11*s*.; 12 lbs., 22*s*.; super-refined, 5 lbs., 22*s*.; 10 lbs., 33*s*. The 10 lbs. and 12 lbs. carriage free.—Barry Du Barry and Co., 77, Regent Street, London; Fortnum, Mason, and Co., 182, Piccadilly; also at 4, Cheapside; 60, Gracechurch Street; 49, Bishopsgate Street Within; 330 and 451, Strand; 63, Oxford Street; 5, Eccleston Street, Pimlico.

HOLLOWAY'S PILLS AN ASTONISHING REMEDY FOR THE CURE OF ASTHMA.—Mrs. Newton, of Hyde, states in a letter to Mr. Wild, Chemist, Hyde, that for many years she had been afflicted with severe attacks of Asthma, great difficulty of breathing, a violent cough and acute pain in the side; she tried various remedies, and was under the treatment of several surgeons for months together, without obtaining any benefit; at length she was induced to try Holloway's Pills—the first dose gave relief, and by continuing them a cure has been effected. Being anxious that others so afflicted should obtain relief, she desires this fact to be publicly known.—Sold by all vendors of medicine and at Professor Holloway's Establishment, 244, Strand, London.

BLAIR'S GOUT AND RHEUMATIC PILLS. Price 1*s*. 1½*d*. and 2*s*. 9*d*. per box.—Mr. William Courtney, of Barton, Stacey, Hants, says:—"I had resort to your Pills, and within two hours I was quite easy. The use of these Pills ought really to be known all over the world." Among the many discoveries, none have conferred such a boon upon suffering humanity as that of Blair's Gout and Rheumatic Pills, they require neither attention nor confinement, and are certain to prevent the disease attacking any vital part. Sold by all medicine vendors. Observe that "THOMAS PROUT, 229, Strand, London," is impressed upon the Government stamp.

THE English public have, by the test of experience, become satisfied that PARR'S LIFE PILLS are composed of simple but powerfully curative ingredients. They are so mild and so excellent that a child may take them. PARR'S LIFE PILLS will be found speedily to reanimate the spirits, improve the digestive powers, and restore the whole nervous system to a happy and natural state; the balsamic powers of this medicine produce that delightful feeling of good spirits so very desirable, and dispose both mind and body to healthy exercise—everything under its influence soon wears a joyous aspect, and the varied duties of life are performed with pleasure. For Liver Complaints, Bilious Disorders, Indigestion, Costiveness, Pains in the Back, Gravel, Lumbago, Sick Headache, Loss of Appetite, and Depression of Spirits, PARR'S LIFE PILLS will be found a safe and admirable remedy. Ask for PARR'S LIFE PILLS, sold by E. Edwards, 67, St. Paul's Churchyard; Barclay & Sons, Farringdon Street; Sutton & Co., Bow Churchyard; Hannay & Co., and Sangar, Oxford Street, London; and by all respectable chemists and medicine vendors in town and country. In boxes, price 1*s*. 1½*d*., 2*s*. 9*d*., and in family packets, 11*s*. each.

FARMS.

TO BE LET, with immediate possession, near Havant, in Hampshire, a tithe-free FARM, 456 acres. About one-third is Underwood, about 40 acres Pasture, remainder Arable. A respectable Residence. Farm Buildings in good repair; five Labourers' Cottages. Rent 300 guineas.

In Surrey, between Dorking and Horsham, 235 acres. About one-third Underwood, about 36 acres Meadow, and remainder Arable. With a comfortable Family Residence, with a Lodge entrance, and two Labourers' Cottages. Rent, including sporting, 155 guineas.—Nearly adjoining, 226 acres; of which about 10 acres are Underwood, 30 acres Meadow, and remainder Arable. There are two Farm Homesteads. Rent 100 guineas.

Berkshire, near Reading, on the Basingstoke Road; 146 acres. About 15 acres Meadow, and remainder Arable. A good Family Residence, suitable Outbuildings, and three Cottages. Rent 140 guineas.—To treat and view, apply to Mr. W. SOUNDY, Pack Farm, Henley-on-Thames.

TO BE SOLD, OR LET FOR A TERM, an Eight-roomed COTTAGE, with Stable, &c., and a good supply of water, having two Orchards about 3½ acres attached. The land is of excellent quality, and freehold, situated at Henbury, four miles from Bristol.—For particulars, address ISAAC JONES, Henbury.

TO BE SOLD, FIRST CLASS BULLS.—HEREFORDS.—"VENISON,"—bred by Mr. STEDMAN: the pedigree will be given in full to a purchaser.

"TRIUMPH,"—1 year and 10 months; sire, Venison; dam, Miss Truman; sire of dam, "The Duke," (493)—bred by Mr. GOUGH.

"CARLISLE,"—1 year and 10 months; sire, Venison; dam, Clara; sire of dam, "The Duke," (493).

SHORTHORN.—"JACK TAR," (11,603)—3 years and 6 months—bred by Mr. BEASLEY, Overstone. By Lord Warden, (7167); dam, Joan, by Lycurgus, (7180); g. d., Joan of Arc, by Javelin, (4093); g.g. d., Jocunda, by M'Ivor, (2237); g.g.g. d., Jacqueline, by Northern Light, &c. &c.

N.B.—For further particulars and price apply to Mr. MOORE, Coleshill, Highworth.

CORN DEALER'S BUSINESS.

TO BE SOLD, an old established Corn Dealer's Business, in the most preferable part of the West End of London, having a large connexion among the Nobility and Gentry, for which a premium of 350*l*. will be required, and the stock and fixtures to be taken at a valuation. For further particulars address to A. B., Mr. Millizan's office, Hungerford Wharf, Strand, or apply at Messrs. Mansell and Elliott's offices, 13 A, Belgrave Square, and 12, Birchin Lane, Cornhill.

TO BE SOLD, by a Gentleman, GUTTA PERCHA HOSE, of 1½ inch diameter, and 210 feet long. It cost him, new, 8*l*. 15*s*. or 10*d*. per foot, and he will take 6*l*. for it. He has not used it more than six times, so that it may be considered as good as new.—Enquire of Mr. CHARLES WALTER, 18, Temple Street, Fleet Street.

TO BE SOLD, BUFF COCHIN CHICKENS, from first class Prize Birds. Brahma Pootra Chickens, from imported American Prize Birds, and Spanish Chickens. Also some very good one-year-old Birds of the above descriptions. Wire, Game, and Poultry Netting, Poultry Hurdles, Hen-houses, Chicken Coops, Flower Stands, and Trainers, Garden Arches, and every kind of Wire Work, useful and ornamental.—T. H. FOX'S, City of London Wire Works, 44, Skinner Street, and 6 & 8, Snow Hill. Illustrated Catalogues forwarded post free.

SILVER PHEASANTS.—A few pairs of these beautiful and valuable Birds to dispose of, in exchange for Gold Pheasants, or at a moderate price.—For particulars, apply to CHARLES ADAMS, Temple House, Maidenhead, Berks.

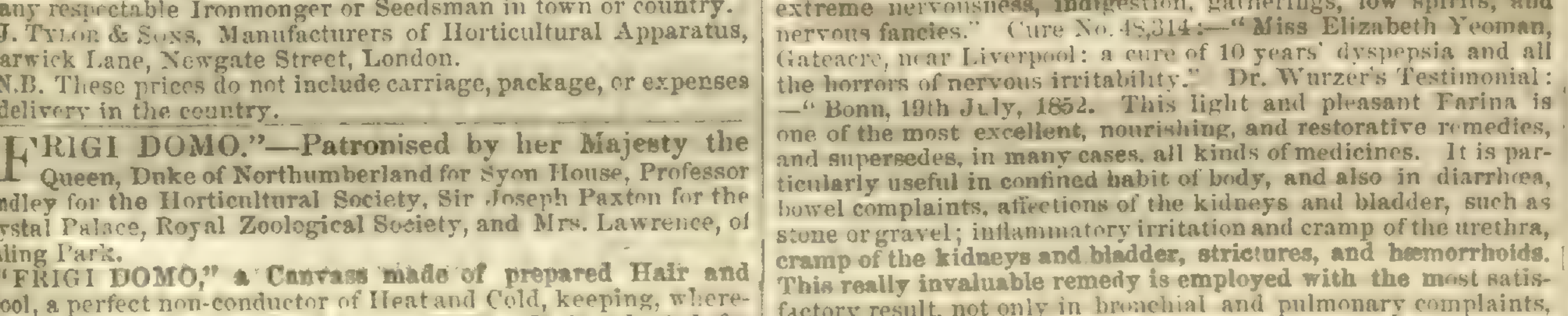
NURSERIES, CLAPHAM.

MESSRS. PROTHEROE & MORRIS are instructed by the Administrators of the late Jos. Fairbairn, to offer for unreserved sale, in the early part of September, the entire stock of specimen Greenhouse and Stove Plants, which are all of the most choice sorts, and in the best condition. The lease of the old established Seed Shop and Nursery to be sold; the Stock may be taken by valuation or by agreement: for particulars apply to the administrators, at the Nursery, Clapham, or to Mr JAMES FAIRBAIRN.

MR. W. T. ATWOOD will sell by Auction, in September next (due notice of which will be given), the unexpired term of Lease of a valuable FRUIT and GARDEN GROUND, in the highest state of cultivation, situate adjoining the high road from Hammersmith to Brentford.—Particulars may be had till day of sale by application to Mr. ATWOOD, Land Agent, Mortlake, Surrey; or Mr. PLOWMAN, 2, Upper Wellington Street, Covent Garden.

COTTAM AND HALLEN,

2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.



APPLICATION is requested for their NEW HORTICULTURAL LIST, containing Illustrations, Descriptions, and Prices of

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Syringes	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.

AGRICULTURAL LIST UPON APPLICATION.

EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

In post 8vo, a New Edition, with 405 Woodcuts, price 14s.,

CATLOW'S POPULAR CONCHOLOGY; or, the Shell Cabinet arranged according to the Modern System. With a Detailed Account of the Animals, and a complete Descriptive List of the Families and Genera of Recent and Fossil Shells. Second Edition, much improved.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

Just published, New and Improved Edition, price 1s.,

THE CURABILITY OF CONSUMPTION. Being a Series of Papers, presenting the most prominent and important Practical Points in the Treatment of the Disease. By F. H. RAMADGE, M.D., Fellow of the College of Physicians, late Senior Physician to the Royal Infirmary for Diseases of the Chest, &c. Also, by the same Author, price 10s. 6d.,

A TREATISE ON ASTHMA AND DISEASES OF THE HEART.

London: LONGMAN, BROWN, GREEN, & LONGMANS.

NEW PRACTICAL WORK ON THE DOG, BY MAYHEW.

In One Volume, price 5s., half-bound.

DOGS: their Management and Treatment. Being a new Plan of Treating the Animal. By EDWARD MAYHEW (author of the "Horse's Mouth, showing the age by the Teeth," &c.) With illustrations by Harrison Weir.

London: GEORGE ROUTLEDGE & Co., 2, Farringdon Street.

WEBB'S IMPROVED GAME BOOK. The Sportsman's Daily Register of Game killed, and how disposed of, with Weekly, Monthly, and Annual Totals. Octavo Edition for the Gun case, 2s. 6d.; Double Books, half bound, 5s. Enlarged Edition, comprising the same columns extended to a Quarto size, to suit larger Establishments, 5s.; Double Books, half bound, 10s.

B. W. GARDINER, Prince's Street, Cavendish Square, London.

FOWLS. — By JOHN BAILY. Now in the press, and will be published, August 1, the Second Edition of the above work, with which is reprinted the fourth edition of "The Dorking Fowl," corrected, revised, and considerably enlarged. It contains descriptive tables of all the fowls now exhibited, giving in few words their chief points and qualifications, with copious rules for their selection and management. Price 2s.; by post, 2s. 6d.

JOHN BAILY, 113, Mount Street, Grosvenor-square, London.

NO MORE PILLS OR ANY OTHER MEDICINE.

For Indigestion, Constipation, Diarrhœa, Palpitation of the Heart, Flatulency, Distension, Acidity, Torpidity of the Liver, Cough, Asthma, Nervousness, Biliousness, Irritation of the Kidneys and Bladder, Strictures, Rheumatism, Gout, Despondency, Spleen, Heartburn, &c.—Price 1d., or 3d. free by Post (in stamps). 76th edition.

THE NATURAL REGENERATOR OF THE DIGESTIVE ORGANS, without medicine, inconvenience, or expense. This treatise is adapted to the general reader, and contains numerous cases, practically illustrating the restoration of health, to the most feeble, delicate, or shattered constitution.

London: JAMES GILBERT, 49, Paternoster Row; JAMES GORDON, 146, Leadenhall Street; and through all booksellers.

PRICE FOURPENCE OF ANY BOOKSELLER.

CONTENTS OF THE NUMBER FOR SATURDAY LAST, AUGUST 12, OF

THE ATHENÆUM.

JOURNAL OF ENGLISH AND FOREIGN LITERATURE, SCIENCE, AND THE FINE ARTS.

Twenty-four large Quarto Pages.

Reviews OF, WITH EXTRACTS FROM—

From Saint Helena to the Invalides. By T. Chautard.
History of the Reigns of Louis XVIII. and Charles X. By Eyre Evans Crowe.
Thirty Years' View; or a History of the Working of the American Government for Thirty Years, from 1820 to 1850. By a Senator.
Books on the War: Fraser's Turkey, Ancient and Modern—Diezel's Russia, Germany, and the Eastern Question—Gore's Harbours and Towns of Krimea and the Khersen.
Personal Narrative of Explorations and Incidents in Texas, New Mexico, California, Senora, and Chihuahua. By J. R. Bartlett.
The Life of Mrs. Sherwood (chiefly Autobiographical). By Sophia Kelly.
Minor Minstrels: The Poetical Works of the late Catherine Grace Godwin. By A. C. Wigan—Hannah and her Chickens. By J. Cochrane—The Hebrew's Daughter. By W. H. Ludlow.

WITH SHORTER NOTICES OF—

Hard Times. For these Times. By Charles Dickens.
Lewell Pastures.
Vivia: A Journal. By Mrs. Elphinstone Dalrymple.
The Church of England and Erastianism since the Reformation. By the Rev. J. R. Pretyman.
The Practical Elocutionist. By C. H. Pinches.
Itinerary (Descriptive and Historical) of Germany. By Adolphe Joanne.
Routledge's American Handbook and Tourist's Guide through the United States.
The Perils and Adventures of Priscilla Eaton: An Historical Tale.
Pamphlets, &c. &c.

Original Correspondence.—Industrial Exhibition at Munich—African Names—Jeremy Taylor at Cambridge.

Weekly Gossip.—Copyright Law—Obituary: J. E. Winterbottom, and T. C. Croker—The Niger-Chadda Expedition—Longitude of Kuka—Sale of the Gray MSS.—Accommodation for Scientific Societies—International Postage—Testimonial to Mr. Hume.

Societies.—Reports of the Proceedings of the Astronomical—Royal Society of Literature.

Fine Arts.—The Opening of the Crystal Palace considered in some of its Relations to the Prospects of Art. By John Ruskin.

Fine-Art Gossip.—Wolverhampton New School of Art—Lucy's Picture of 'Cromwell resolving to refuse the Crown'—London Art-Union Prizes—Regulations as to Painting for the Paris Universal Exhibition.

Musical and Dramatic Gossip. — Closing of the Theatres—Dramatic Performances at Munich—Obituary: H. Lynne—Organist Competition.

Miscellanea—Removal of Ink from Paper—Population Tables—Railways in the United Kingdom.

The Athenæum may be ordered of any Bookseller.

THE FOLLOWING WORKS ARE ALWAYS ON SALE AT THE OFFICE OF THIS PAPER.

Price 3d. each, or 5s. for 25 copies for distribution among Cottage Tenantry, delivered anywhere in London, on a Post-office order being sent to the Publisher, JAMES MATTHEWS, at the office of the *Gardeners' Chronicle*.

In consequence of the new postal arrangements, parties in the country who desire it can have copies sent by post; six stamps, in addition to the cost of the numbers, will pass 10 copies free by post.

The cost of a single copy, free by post, is therefore 7d.; and of ten, free by post, is 5s.

THE COTTAGER'S CALENDAR OF GARDEN OPERATIONS.

By Sir JOSEPH PAXTON.

Reprinted from the GARDENERS' CHRONICLE; above 90,000 have already been sold.

CONTENTS.

African Lilies
Agapanthus
Anemones
Annuals
Apples
Apricot
Auriculas
Beans
Beet
Biennials
Black Fly
Books for Cottagers
Borage
Borecole
Box Edgings
Broccoli
Brussels Sprouts
Budding
Bulbs
Cabbage
Cactus
Calceolarias
Californian Annuals
Campanulas
Carnations
Carrots
Cauliflowers
Celery
Cherries
China Asters
China Roses
Chrysanthemums, Chinese
Chives
Clarkias
Clematis
Collinsias
Colewort
Cress
Creepers
Crocus
Crown Imperials
Cucumbers
Cultivation of flowers in windows
Dahlias
Daisies
Dog's-tooth Violets
Exhibitions, preparing articles for
Ferns, as protection
Fruit
Fuchsias
Gentianella
Gilias
Gooseberries
Grafting
Green-fly
Heartsease
Herbs
Herbaceous Perennials
Heliotrope
Hollyhocks
Honeysuckle
Horse-radish
Hyacinths
Hydrangeas
Hyssop
Indian Cress
Iris
Kidney Beans
Lavender
Layering
Leeks
Leptosiphons
Lettuce
Lobelias
London Pride
Lychnis, double
Marigold
Marjoram
Manures
Marvel of Peru
Mesembryanthemums
Mignonette
Mint
Mustard
Narcissus
Nemophilas
Œnothera bifrons
Onions
Pæonies
Parsnip
Parsley
Peaches
Pea-haulm
Pears
Peas
Pelargoniums
Perennials
Persian Iris
Petunias
Phlox
Pigs
Pinks
Planting
Plums
Polyanthus
Potatoes
Pruning
Privet
Propagation by cuttings
Pyracantha
Radishes
Ranunculus
Raspberries
Rhubarb
Rockets
Roses
Rue
Rustic Vases
Sage
Salvias
Savoys
Saxifrage
Scarlet Runner Beans
Seeds
Sea Daisy or Thrift
Seakale
Select Flowers
Select Vegetables and Fruit
Snails and Slugs
Snowdrops
Spinach
Spruce Fir
Spur Pruning
Stocks
Strawberries
Summer Savory
Sweet William
Thorn Hedges
Thyme
Tigridia Pavonia
Transplanting
Tree Lifting
Tulips
Turnips
Vegetable Cookery
Venus's Looking-Glass
Verbenas
Vines
Virginian Stocks
Wallflowers
Willows
Z[illegible]ias

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden.

Price 3s. 6d., free by post,

THE TREE ROSE.—Practical Instructions for its Formation and Culture. Illustrated by 24 Woodcuts. Reprinted from the GARDENERS' CHRONICLE, with additions.

CONTENTS.

Annual pruning time, principle of execution, &c.
Binding up
Budding knife
Budding, time of year, day, time of day, state of the plant, care of buds
Budding upon body
Bud, insertion of, into stock
Bud, preparation of, for use
Buds, dormant and pushing
Buds, failing
Buds, securing a supply of
Caterpillars, slugs, and snails, to destroy
Causes of success
Dormant buds, theory of replanting with, explained
Guards against wind
Labelling
Loosing ligatures
March pruning
Mixture for healing wounds
Pruning for transplantation
Planting out, and arrangement of trees
Pushing eye, spring treatment of dwarf shoots from
Roses, different sorts on the same stock
Roses, short list of desirable sorts for budding with a pushing eye
Sap-bud, treatment of
Shape of trees
Shoots and buds, choice of
Shoots for budding upon, and their arrangement
Shoots, keeping even, and removing thorns
Shortening wild shoots
Stocks, planting out for budding upon; the means of procuring; colour, age, height; sorts for different species of Rose; taking up, trimming roots, sending a distance, shortening heads, &c.; saw proper for the purpose.

GRAFTING.

Aphides, to keep down
Free-growers, remarks on
Graft, binding up and finishing [of
Grafting, advantage
Grafting, disadvantage of
Operations in different months
Preliminary observations
Roses, catalogue and brief description of a few sorts
Scion, preparation and insertion of
Scion, choice and arrangement of
Stock, preparation of.

APPENDIX.

A selection of varieties
Comparison between budding and grafting.

Post-office orders to be made payable to JAMES MATTHEWS, 5, Upper Wellington Street, Covent Garden, London.

ON MARRIAGE.

Just published (to be had free, by enclosing 1s. or Twelve Postage Stamps, to Mr. WATSON, Clerical Agent, Robert Street, Adelphi, London).

MATRIMONY.—A Pamphlet on Matrimonial Alliances, which merits the attention of those who wish to settle honourably in life. By a Clergyman.

PAGE AND CO.'S COMPOSITION FOR THE DESTRUCTION OF MILDEW UPON VINES, BLIGHT UPON ROSES, WALL-FRUIT TREES, CUCUMBERS, MELONS, AND STOVE AND GREENHOUSE PLANTS.—Extra strong, 4s. per gallon, sufficient to make four (jars and barrels extra); in bottles, 1s. 3d. and 2s. 6d. each. Directions for application forwarded. Ten gallons and upwards carriage free to London.

For testimonials, see whole page of *Gardeners' Chronicle*, March 11, 1854, describing the SATISFACTORY RESULTS derived from its use in cases of Vine Mildew, Thrip, Scale, Green Fly, Red Spider, Mealy Bug, &c., not only without injuring the most delicate flowers or foliage, but promotes a vigorous growth.

From Andrew Toward, Esq., Royal Gardens, Osborne Palace.

"I have great pleasure to add my testimony to the efficacy of your Blight Composition, which has been used with great success upon Rose Trees much affected with the Green Fly."

From Frederick Malleson, Esq., Royal Gardens, Claremont.

"I find it answer the purpose in all respects for Walls, also the Green Fly and Brown Scale in the Houses.—May 9, 1854."

Finest Grasses for Lawns and Parks, and every variety of Garden and Farm Seeds, at B. PAGE & Co.'s, Seed Merchants, Oxford Street, Southampton (20 yards from the Railway and Docks).

JACKSON'S PATENT PREPARATION FOR THE PRESERVATION OF POTATOES, SEEDS, &c.—This valuable discovery, for which letters patent have been obtained, is the successful result of 14 years' study and experiments in the preservation of vegetable matter. It imparts health and vigour to the Plants and Seeds subjected to its action, and effectually prevents the Potato Disease, the Smut in Wheat, Mildew and Rot, all Fungal Diseases, and the attacks of Insects and Vermin, and further recommends itself to the Farmer, the Planter, and the Public generally, by the extreme simplicity of the mode of its application.

It is sold by all Seedsmen and Chemists, in packets of one, two, three, and four pounds each, with instructions for its use; and parties requiring larger quantities for their own use or for exportation can be supplied on advantageous terms, by addressing Mr. JACKSON, the Patentee, 18, Cannon Street, London Bridge; where the article is always on sale, and the fullest particulars and directions for its use can be obtained.

ROYAL PANOPTICON OF SCIENCE AND ART, LEICESTER SQUARE. — CHEMISTRY, by Mr. G. F. Ansell, Monday, 2; Tuesday, 3.15; Thursday, 2; Friday, 8.15. FRICTIONAL ELECTRICITY, Monday, 3.15; Saturday, 2. SHOOTING STARS, explained by Mr. W. R. Birt, Tuesday, 7.45. NATURAL MAGIC, by Mr. Malcolm, Monday, 7.30; Voltaic Electricity, Tuesday, 2; Friday 2. Mechanics, by Mr. C. F. Partington, Thursday, 3.15; Saturday, 3.15. Songs and Sayings of Samuel Lover, by Mr. E. L. Hime, Tuesday, 3.15; Friday, 7.30. Isothermal Lines, by Mr. Hugo Reid, Wednesday, 2. Explanation of Machinery and Manufactures, daily at 1 and 7.15. Messrs. Heinke's Improved Diving Apparatus in the Crystal Cistern, 2.45 and 7.30, Tuesday and Thursday, 8.45. Distins' Piston Horn Union, at 9; Fountain at High Pressure, 4.45 and 9.45; Performances on the Grand Organ, by Mr. W. T. Best, at intervals; and at 8.15, Dioramic Miscellany, including Views of Verona, the Prismatic Disc, and brilliant Chromatropic Effects. Hours of Exhibition—Morning, 12 to 5; Evening, 7 to 10, Saturday evening excepted. Admission, 1s.; Schools, and children under 10, half price.

FRAMPTON'S PILL OF HEALTH.—"For upwards of nine years (writes Mr. Thomas Province, of Winchmore Hall, Middlesex), I have experienced the efficacy of this excellent medicine, and I have the happiness of saying that I never had a better state of health. I beg further to add that this medicine is in general use by my family, and we know of nothing to equal it." For females these pills are truly excellent, removing all obstructions, the distressing headaches so very prevalent with the sex, depression of spirits, dulness of sight, nervous affections, blotches, pimples, and sallowness of the skin, and gives a healthy juvenile bloom to the complexion. Sold by all medicine vendors, price 1s. 1½d. per box.—Observe that "THOMAS PROUT" is on the Government stamp.

DR. DE JONGH'S

LIGHT BROWN COD-LIVER OIL, PREPARED FOR MEDICINAL USE IN THE LOFFODEN ISLES, NORWAY, AND PUT TO THE TEST OF CHEMICAL ANALYSIS, THE MOST EFFECTUAL REMEDY FOR CONSUMPTION, BRONCHITIS, ASTHMA, GOUT, CHRONIC RHEUMATISM, AND ALL SCROFULOUS DISEASES.

Approved of and recommended by the most distinguished Scientific Chemists, prescribed by the most eminent Medical Men, and supplied to the leading Hospitals of Europe.

EXTRACTS FROM

MEDICAL AND SCIENTIFIC TESTIMONIALS:

THE LANCET, *July* 29, 1854.

"In the preference of the light brown over the pale oil we fully concur. We have carefully tested a specimen of the light brown Cod-liver Oil prepared for medical use under the direction of Dr. de Jongh, and obtained from the wholesale agents, Messrs. ANSAR, HARFORD, & Co., 77, Strand. We find it to be genuine and rich in iodine and the elements of bile."

"THE MEDICAL CIRCULAR." May 10, 1854.

"The pale oil, even when genuine, is deficient to a considerable extent, if not wholly, of the volatile fatty acid, iodine, phosphate of chalk, the cholinic acid, bilifellinic acid, and other elements of bile, which are found in their normal proportions in the light brown oil. The utmost reliance may be placed upon the experimental researches of Dr. de Jongh, who is one of the most eminent of European chemists; the oil prepared by him enjoys also the additional sanction of the opinion of Baron Liebig and the late Dr. Pereira, in favour of its genuineness and efficacy. Our own experience practically confirms their judgment, and we unhesitatingly recommend the light brown oil as the best for medicinal purposes, and well deserving the confidence of the profession."

BARON LIEBIG.

"You have rendered an essential service to science by your researches, and your efforts to provide sufferers with this medicine in its purest and most genuine state, must ensure you the gratitude of every one who stands in need of its use."

DR. JONATHAN PEREIRA.

"I know that no one can be better, and few so well, acquainted with the physical and chemical properties of this medicine as yourself, whom I regard as the highest authority on the subject. The oil which you gave me was of the very finest quality, whether considered with reference to its colour, flavour, or chemical properties; and I am satisfied that for medicinal purposes no finer oil can be procured."

Sold wholesale and retail, in bottles, labelled with Dr. de Jongh's stamp and signature, by

ANSAR, HARFORD, AND CO., 77, STRAND, LONDON, Sole Consignees and Agents for the United Kingdom and the British Possessions; at the following prices:—

IMPERIAL MEASURE, half pints, 2s. 6d.; pints, 4s. 9d.

*** Four half-pint bottles forwarded, CARRIAGE PAID, to any part of England, on receipt of a remittance of Ten Shillings.

New Tale by the Author of "MARY BARTON," to be published weekly in HOUSEHOLD WORDS.

On Wednesday, 30th of August,

Will be published in HOUSEHOLD WORDS, the FIRST PORTION of a NEW WORK OF FICTION, called

NORTH AND SOUTH.

By the Author of "MARY BARTON."

The publication of this Story will be continued in HOUSEHOLD WORDS from Week to Week, and completed in Five Months.

OFFICE, 16, WELLINGTON STREET NORTH, STRAND; and Sold by all Booksellers and Newsvenders.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. [illegible], Victoria Street, in the Parish of St. Margaret and St. John, Westminster, both in the County of Middlesex, Printers, at their Office in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul, Covent Garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, AUG. 19, 1854.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley

No. 34.—1854.] SATURDAY, AUGUST 26. [PRICE 6*d*.

INDEX.

Agricultural buildings .... 556 *a*
Aphis rumicis .... 550 *a*
Aphides, to kill .... 552 *c*
Books noticed .... 550 *c*—556 *c*
Buildings, agri. .... 556 *a*
Calendar, horticultural .... 552 *a*
— agricultural .... 557 *a*
Clerodendron fœtidum .... 549 *c*
Continental gardens .... 547 *b*
Crops, report of .... 555 *c*
Cucumbers .... 549 *c*
Dahlias .... 551 *b*
Drainage companies .... 555 *c*
Farm buildings .... 556 *a*
Forests, Royal .... 549 *c*
Fruit trees in pots .... 551 *a*
Fungus, soot .... 547 *a*
Gardens, continental .... 547 *b*
Hadleigh Farmers' Club .... 556 *a*
Lane's (Messrs.) fruit trees in pots .... 551 *a*
Manure and Potato disease .... 549 *c*
Nectarine, Stanwick .... 550 *a*
Organic substances .... 554 *b*
Paint, sulphuric acid as .... 550 *a*
Parsnip, Finger and Toes in .... 555 *a*
Pathology, vegetable .... 548 *a*
Peaches, difference between Royal George and Noblesse . 552 *c*
Pear culture .... 548 *b*—549 *c*
Pelargonium, culture of .... 551 *b*
Physiology, vegetable .... 549 *a*
Plants, new .... 551 *a*
Pond weeds .... 550 *b*
Potato disease and manure .... 549 *c*
Potato, Fluke .... 550 *b*
Poultry, book on, rev. .... 556 *c*
— management .... 557 *a*
Roots, fingers and toes in .... 555 *a*
Seedlings, American way of getting prizes for .... 551 *b*
Sheep, foot rot in .... 553 *c*
Soot fungus .... 547 *a*
Substances, organic .... 554 *b*
Thyrsacanthus rutilans .... 548 *a*
Tiles, colour of .... 550 *a*
Transplanting large trees .... 552 *c*
Trees, to transplant .... 552 *c*
Vegetable pathology .... 548 *a*
— physiology .... 549 *a*
Verbenas, to winter .... 551 *a*
Vines, enormous .... 551 *c*
Walls, damp on lime .... 550 *b*
Water weeds .... 550 *b*
Weeds in ponds .... 550 *b*
Wheat, Black sea .... 557 *a*
Wheat, fine ears of .... 553 *a*
Woods and forests .... 549 *c*

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Notice is hereby given, that on and after the 29th inst., the Office of this Society will be removed to 14, Tavistock Row, Covent Garden, London, where all Letters and Communications are to be addressed.

15th August, 1854. E. R. CUTLER, Secretary.

TROWBRIDGE GRAND FLORAL AND HORTICULTURAL EXHIBITION, Open to all Growers, will be held on WEDNESDAY, August 30. SILVER CUPS and valuable MONEY PRIZES to the amount of 123*l*. 10*s*. will be awarded for FLOWERS, FRUITS, and VEGETABLES.

TO DAHLIA GROWERS.

NORFOLK AND NORWICH HORTICULTURAL SOCIETY.—The DAHLIA SHOW will be held at the Corn Exchange, Norwich, on THURSDAY, the 14th of September next, immediately after the morning performances at the Musical Festival. Amongst others, Prizes of 5*l*., 3*l*., and 2*l*. will be offered for 24 dissimilar DAHLIA BLOOMS (Fancies excluded), open to all Nurserymen and such Amateurs as are subscribers. No entrance fee. ARTHUR PRESTON, Hon. Sec.

Norwich, Aug. 24.

BRIGHTON AND SUSSEX FLORICULTURAL AND HORTICULTURAL SOCIETY.—The annual Autumn Exhibition, to be held at the ROYAL PAVILION, Brighton, on WEDNESDAY and THURSDAY, Sept. 13 and 14.

President.

HIS GRACE THE DUKE OF DEVONSHIRE.

Vice-Presidents.

His Grace the Duke of Richmond, Lord Lieut. of county.
His Grace the Duke of Norfolk, E.M.
The Most Noble the Marquess of Bristol.
The Right Hon. the Earl of Chichester.
Admiral Sir G. B. Pechell, Bart., M.P.
Lord Alfred Hervey, M.P.
The Hon. Hanbury Tracy.
The Hon. A. Macdonald.
The Baron de Goldsmid. [R.N.
Rear Admiral Sir G. Westphall, &c., &c., &c.

Upwards of 270*l*. are offered as Prizes (including the RAILWAY CUP, value 10*l*., offered for the best 24 dissimilar Dahlia Blooms), schedules of which can be obtained of the Secretary, among which will be found the following, viz.:—Orchids, 8 vars., 8*l*., 5*l*., 3*l*.; Stove and Greenhouse, 8 vars., 8*l*., 5*l*., 3*l*.; Device—Cut Flowers, 5*l*., first prize; Collection of 8 Dishes Fruit, 7*l*., 4*l*., 3*l*., 2*l*.

The Band of the Coldstream Guards (by permission of Col. the Hon. A. Upton), will attend each day, conducted by Mr. Godfrey; also the Military Band from the Garrison, under the direction of Herr Daverow. The entire suite of Rooms and eastern lawn will be thrown open for the occasion.

Through the liberality of the Directors of the London, Brighton, and South Coast Railway, the Committee have the pleasure to announce to the Exhibitors that all Plants, &c., for Exhibition, will be conveyed to Brighton from all stations, and back whence they came, Free of Charge.

General Superintendent of the Exhibition, Mr. E. Spary.

EDWARD CARPENTER, Secretary.

Brighton, Aug. 26, 1854.

N.B. All communications to be made to the Secretary. Address, 48, Lavender Street.

SALISBURY GRAND ANNUAL DAHLIA EXHIBITION, open to all England, will take place at Milton Park, on Thursday, the 31st August, 1854, when Silver Cups and Plate will be awarded as under.

FIRST CLASS.—Amateurs, 24 blooms: Prizes, 7*l*. 7*s*.; 5*l*. 5*s*.; 3*l*. 3*s*.; 2*l*. 2*s*.; 1*l*. 1*s*.; 10*s*.

SECOND CLASS.—Amateurs, 12 Blooms: Prizes, 5*l*. 5*s*.; 3*l*. 3*s*.; 2*l*. 2*s*.; 1*l*. 1*s*.; 15*s*.; 10*s*.

THIRD CLASS.—Amateurs, 12 blooms, Fancy Flowers: 2*l*. 10*s*.; 1*l*. 10*s*.; 1*l*.; 10*s*.

FIFTH CLASS.—Seedlings, 1853, 3 blooms: Certificates.

SIXTH CLASS.—Seedlings, 1854, single bloom.

RULES AND REGULATIONS.—Flowers to be ready for the umpires as soon as possible after the first train from London. The flowers to be shown in the grower's own stands, which must be the same as the Metropolitan Society's. All entries to be made by the 28th of August. No entrance allowed after the 28th. Entrance for First, Second, and Third Class, 10*s*. each; Fourth, Fifth, and Sixth, 2*s*. 6*d*. No competitor to show unless he sends a letter containing a Post-office order, to the amount of his entries, to the Secretary, which letter shall be produced, if required. No growers that have sold green plants of Dahlias, whether Seedlings or otherwise, will be eligible to show in Classes One, Two, or Three. Prizes will only be given to two-thirds of the entries in all classes. All communications to be directed, post paid, to JOHN KEYNES, Salisbury, Honorary Secretary.

N.B.—No Prizes offered to Nurserymen.

GREAT BOTANICAL AND HORTICULTURAL MEETING AT THE BOTANICAL AND HORTICULTURAL SOCIETY'S GARDENS, MANCHESTER, on the 13th, 14th, 15th, and 16th of September, 1854. The Council of the Manchester Botanical and Horticultural Society, have arranged to open their NEW GLASS PROMENADE, covering an area of 1000 square yards, with a grand Botanical and Horticultural Exhibition. The articles to be exhibited will comprise Plants and Flowers, Fruits and Vegetables, Dried Flowers and Fruits, Wax Flowers and Fruits, Fountains and Vases, Flowerpots and Baskets, Garden Stands and Seats, Labels for Plants, Nets and Mats for covering Trees, Statuary for Garden decoration, Iron and Wirework for Garden purposes, Garden Implements of all kinds, with every other article connected with Gardening. Schedules are in course of preparation, and may be obtained on application to the Secretary.

By order, JOHN SHAW, Secretary.

Council Room, 40, Princes Street, Manchester, Aug. 26.

BULBS FOR WINTER BLOOMING.

GOOD HYACINTHS, JONQUILS, CROCUSES, &c., for sale, at moderate prices, by the Importers. MESSRS. SUTTON AND SONS, Seed Growers, Reading.

GRASS SEEDS.

SUTTON AND SONS *recommend the sowing of* GRASS SEEDS *at this season for Permanent Pasture, and are now prepared to supply excellent fresh Seeds for the purpose at very moderate prices.*

Also New Italian Rye Grass and Trifolium incarnatum, at moderate prices.—JOHN SUTTON & SONS, Seed Growers, Reading.

LISIANTHUS RUSSELLIANUS.

J. AND J. FRASER beg to offer the above, in strong and healthy plants, such as will make large specimens for flowering next season, at 2*s*. 6*d*. each.

Lea Bridge Road, Essex, August 19.

CHRYSANTHEMUMS.

J. AND J. FRASER have a very superior Collection of the above, comprising the newest and best of Large-flowering and Lilliputian varieties. The plants are very strong, and will bloom well in the ensuing winter.

Lilliputians, fine plants ... ... 9*s*. to 12*s*. per doz.
Large flowering ... ... 9*s*. to 12*s*. „
New French varieties of 1854, not yet bloomed in this country ... ... 18*s*. „

Lea Bridge Road, Essex.—August 26.

SEEDS OF CALCEOLARIA AND CINERARIA.

E. G. HENDERSON AND SON, of the Wellington Nursery, St. John's Wood, London, are now prepared to forward, by post, the new Seed saved this season from their unrivalled collection, in packets at 2*s*. 6*d*. and 5*s*. each.

The CALCEOLARIA, first quality ... ... 5*s*. 0*d*.
„ second „ 2 6

QUALITY, and not QUANTITY, forwarded at the above prices.

BASS AND BROWN are now saving several of their choice Seeds, and can strongly recommend the following, which have been selected with their usual care from their superb collection:—

CALCEOLARIA, very choice, 1*s*.; extra superb ... 2*s*. 6*d*.
CINERARIA, very choice, 1*s*.; extra new and choice 2 6
FUCHSIAS, from new and choice 1 0
GERANIUM, very choice, 1*s*; extra new and choice 2 6
„ from finest fancy varieties 1 6
GLOXINIA, fine, 6*d*. extra from new and choice ... 2 6
ANTIRRHINUM, choice, 6*d*. extra from superb flowers 1 0

A List of Choice Seeds selected for Autumn sowing may be had free by post on application.

Post-office orders to be made payable to BASS & BROWN, or STEPHEN BROWN. Penny stamps received for small amounts.

Seed and Horticultural Establishment, Sudbury, Suffolk.

MESSRS. J. AND H. BROWN offer the following CHOICE PLANTS:—

12 Orchideæ, fine specimens, one of a sort by name, including Dendrobiums, Stanhopeas, Oncidiums, Epidendrums, Maxillarias, Peristerias, Vandas, &c. 40*s*. 0*d*.
50 Greenhouse Plants, choice hard-wooded varieties, one of a sort by name 45 0
12 fine Camellias, best sorts, with buds 30 0
12 Greenhouse Azaleas, do. do. 18 0
12 Hardy Scarlet Rhododendrons, not in pots 12 0
12 Hardy Belgian Azaleas, do. 12 0
Fine choice Ferns, tender and hardy, per doz. ... 10 0
24 Choice Ericas, one of a sort, in small pots 16 0
12 Superb New Climbers, for Conservatory 18 0
12 Hardy Climbers, Roses, Passifloras, Jasmines, &c... 10 0
12 Choice Chrysanthemums, show or Pompon 8 0
Choice Grape Vines, from eyes, in pots, per dozen 18 0

Albion Nursery, Stoke Newington, London.—August 26.

CHOICE FLOWER SEEDS FOR PRESENT SOWING.

PANSY, saved from 100 of the best vars., by name, 2*s*. 6*d*. per pkt.
POLYANTHUS, do. 50 do. „ 2*s*. 6*d*. „
GLOXINIA, from 24 fine varieties, „ 2*s*. 6*d*. „
CALCEOLARIA, from superb spotted prize vars., by name ... ... 2*s*. 6*d*. „
DAISY, do. 50 of the new Belgian do. 1*s*. 6*d*. „
ANTIRRHINUM, do. 20 best named varieties ... 1*s*. 0*d*. „
ANEMONE, from the most showy and brilliant kinds, 1*s*. „

30 packets of Choice Flower Seeds per post free for 5*s*.

The above, per post, free—Postage Stamps received in payment.

YOUELL AND CO., Royal Nursery, Great Yarmouth.

THE PAST WINTER AND SPRING have induced YOUELL & Co. to publish a CATALOGUE of RARE and HARDY CONIFERS and HARDY ORNAMENTAL SHRUBS, that have proved with them perfectly hardy in this well-known bleak district, exposed to the cutting winds from the North Sea.

This Catalogue also contains an extensive selection of the most useful Greenhouse Plants, Camellias, Ericas, Epacris, Chrysanthemums, Hollyhocks, Tree Carnations, Carnations, and Picotees, Fuchsias, Verbenas, Phloxes, &c., which will be forwarded (stamped) on receipt of two postage stamps.

YOUELL AND CO., Royal Nursery, Great Yarmouth.

LILIUM LANCIFOLIUM, TRITONIA AUREA, AND VALLOTA PURPUREA.

HENRY GROOM, Clapham Rise, near London, by appointment FLORIST TO HER MAJESTY THE QUEEN, AND TO HIS MAJESTY THE KING OF SAXONY, begs to say that his extensive collection of the above BEAUTIFUL PLANTS is now in flower, and may be viewed every day (Sundays excepted). Admittance gratis.

CALCEOLARIA AND CINERARIA SEEDS.

GEORGE CLARKE begs to announce that a small quantity is still on hand of his superior seed of the above. For description see *Gardeners' Chronicle*, July 29 and August 5. Packets 2*s*. 6*d*. each, payable in postage stamps.

Streatham Place Nursery, Brixton Hill, near London.

LOCKSBROOK NURSERY.

R. SHACKELL has strong plants of his Russian Superb Violet, now in excellent order for potting, at 4*s* per dozen. Double Purple Perpetual Tree Violet, at 3*s*. per doz. Neapolitan Violet, at 3*s* per dozen. Other varieties at low prices: hamper included, if the order be above 5*s*. It is requisite to pot the Violet early to insure a good display of bloom through the winter months.

ROBERT SHACKELL, Florist, Locksbrook Nursery, Bath.

RHODODENDRON JAVANICUM.

A. VAN GEERT, NURSERYMAN, Ghent, Belgium, begs to offer good Seeds of the above, just gathered, at 7*s*. 6*d*. and 15*s*. per packet, containing about 2000 and 4000 Seeds.

A. V. G.'s stock of CAMELLIAS and INDICA AZALEA is well set with bloom, at very moderate prices.

A reference from unknown correspondents. Catalogues may be obtained from his Agent, Mr. R. SILBERRAD, 5, Harp Lane, Tower Street, London.

STRAWBERRIES.

J. HARGREAVES is now sending out Strong Plants of the four new Strawberries, viz., Ajax, Ruby, Captain Cook, and Fullbasket, at 10*s*. per hundred, or 25 each of any two sorts for 6*s*., package included; also, all the old sorts at 3*s*. per hundred.—Address, JOHN HARGREAVES, High Street Nursery, Lancaster.

STRAWBERRY PLANTS.

CHARLES KIMBERLEY has a large stock of the following to offer at 3*s*. 6*d*. per 100:—Keens' Seedling, British Queen, Hooper's Seedling, Elton Pine, Princess Alice Maude, Stirling Castle Pine, and Comte de Paris.

Stoke Nursery, near Coventry.

STRAWBERRIES.

BARRATT'S MAGNUM BONUM.—In size, this splendid Strawberry very far surpasses the "British Queen," is an exceedingly heavy cropper, and continues in perfection later than almost any other variety. Its flavour is really delicious, most nearly approaching the true Pine Apple of any kind yet known. Price per 100, 2*l*. 2*s*.; per dozen, 6*s*. Good strong Plants of the above are now ready for sending out by

St. John's Nursery, Wakefield. WM. BARRATT.

N.B. W. B.'s List of 40 kinds of Strawberries may be had gratis.

STRAWBERRIES, 3*s*. per 100.—Strong well-rooted runners are now ready. British Queen, Eleanor, Prolific, Kitley's Goliah, Cuthill's Black Prince, Princess Alice Maude, Myatt's Hautbois, Rivers' Eliza, &c.

BASS AND BROWN, Sudbury, Suffolk.

MAY'S PARAGON CABBAGE.—Fine strong plants of the above can be had at 5*s*. per 1000, on receipt of Post-office order for the amount by applying to

HENRY MAY, The Hope Nurseries, near Bedale, Yorkshire.

CHRYSANTHEMUMS.—Fine bushy plants of the above, both large and small varieties, for flowering this autumn, may be had at CHANDLER AND SON'S, Nursery, Wandsworth Road, from 9*s* to 12*s*. per dozen.

WELLINGTONIA GIGANTEA.

MESSRS. VEITCH AND SON beg to inform the Public that they have only a limited number of their FIRST LOT OF SEEDLINGS of the above splendid HARDY EVERGREEN TREE left on sale. They would therefore recommend those parties requiring STRONG PLANTS to make EARLY application. Terms AS IN FORMER advertisements.

Messrs. V. & SON beg at the same time to intimate to THE TRADE that they have a second raising of nice healthy young plants in small pots, which they can offer to them on terms varying with the quantity taken, and particulars of which can be had on application.

Nurseries, Exeter and Chelsea, Aug. 26, 1854.

ARTHUR HENDERSON AND CO. beg to inform their patrons and the public that their CATALOGUES of BULBS are now ready, and they will have much pleasure in forwarding them on application.

They comprise lists of all the finest varieties of Hyacinths, and many other rare and valuable Bulbs.

Their collections of Hyacinths have yearly carried off the metropolitan prizes, not only for their unique growth, but also for their beauty of colouring and distinctness of sorts, either when exhibited in a collection of 36 plants or in pairs.

Pine-apple Place, Edgeware Road, London.

MESSRS. J. WEEKS' NURSERY, KING'S ROAD, CHELSEA.—A great alteration is being effected at this Establishment, where the various Horticultural buildings spread over nearly an acre of ground, and extending together to about 770 feet in length, covering an area of 20,000 feet, have hitherto been heated by seven boilers. These boilers worked efficiently and economically, but as great practice in every art leads to improvement, so in this case have the MESSRS. WEEKS found it desirable to replace these seven boilers by one. This one will heat every house and pit efficiently, either altogether or separately, according to pleasure. This alteration will effect a very important saving annually, as the one boiler will not consume more than two out of the seven boilers superseded, while the time and labour hitherto expended over the seven, will in future be confined to one. The necessary alterations for this important arrangement are now in progress, and will be completed within a fortnight, and the Nobility and Gentry interested in the principle of heating by Hot Water can here see it practically carried out, and have it thoroughly explained in all its details.

THE BEST PLANT OF THE SEASON.
"BEGONIA PRESTONIENSIS SUPERBA."

W. J. EPPS has much pleasure in stating that he has purchased this splendid Begonia raised by Mr. Frost, Gardener to E. L. Betts, Esq., Preston Hall; the flowers are of much brighter colour than Prestoniensis, and the centre is nearly filled with stamens and petals, resembling a double blossom with a golden tinge, exhibiting a charming contrast. The flowers are delightfully fragrant as a Tea-scented Rose. Habit—dwarf and bushy; the flowers are thrown well above the foliage, in large trusses, and altogether one of the best plants yet offered. It received the highest award in June, at the Royal Botanic Show, Regent's Park, as a new plant; also at Maidstone and Ashford. Plants in October, 10s. 6d. each; one given where three or more are taken.—Bower Nurseries, Maidstone, Aug. 26.

STRAWBERRIES.

WILLIAM NICHOLSON is now sending out strong, well-rooted plants of his four new and distinct STRAWBERRIES, viz., AJAX, a very fine large dessert fruit, very beautiful, solid, and juicy. RUBY, do., a great bearer, and forces well. CAPTAIN COOK, market fruit, large, and a great bearer. FILLBASKET, do. 15s. per 100, or 25 each of any two sorts for 10s., box included. Most of the best old and new sorts can be supplied on reasonable terms. See advertisement July 15. Post-office orders payable at Yarm, Yorkshire, or a cash remittance required with the order.

Egglescliffe, near Yarm, August 26.

"SIR HARRY."—The eminent success of this new SEEDLING STRAWBERRY, at the only Floral and Horticultural Exhibitions where it has been shown, viz., Chiswick, first-class Certificate; 21, Regent Street, highly commended; Botanical Gardens, Edgbaston, first prize—induces the proprietor (hitherto an amateur grower only) to offer it for sale.

The characteristics of the plant are these:—Ripening as early as Keens' Seedling, but continuing fruiting a much longer time—a great cropper, bearing a very large handsome dark crimson berry, which carries that superb colour not only quite through, but to its very end, whilst, being both firm and juicy, it separates itself entirely from its calyx, without having a tasteless core. The delicious and luscious flavour of the fruit, united with its high perfume, throws utterly into shade the Keen and British Queen. The leaves are few, and the vigorous extension of its bearing branches exposes the fruit to the ripening influence of the sun, the want of which exposure is a great cause of failure in many sorts of this class of plant.

An oil-painting of a one-year-old runner, with its gigantic fruit in the respective stages of growth (as sketched from nature), is now to be seen in the Birmingham Exhibition of the Society of Artists, and coloured Lithographs have been taken from it by an eminent London Artist, which may be had on application, price 2s. 6d. each, in postage stamps.

The Plants will be ready for sending out (not less than a score) on the 20th September next. Prices—100 plants, 6l.; 80 plants, 5l. 10s.; 60 plants, 4l. 4s.; 40 plants, 2l. 17s; 1l. 10s. for a score. A few plants in pots may be had. Apply to Mr. RICHARD UNDERHILL, Sir Harry's Road, Edgbaston, Birmingham; each application to be accompanied with a Post-office order (on Birmingham) or cash, to receive attention.—August 1854.

WARD'S "OMER PACHA" STRAWBERRY.

W. J. WARD (by permission of his employer, W. Stephens, Esq.,) offers to his friends and the public the above Seedling Strawberry, which has been proved to possess superior excellence. It is a large handsome fruit, intermediate between the old Carolina Pine and British Queen, partaking of the fine colour of the former, and by many considered superior in flavour to the latter; it is also remarkable for the fine buttery quality of its flesh. Great bearer; ripe as early as Keens' Seedling, affording a long succession of fine fruit. It was exhibited at the Royal Botanic Gardens, Regent's Park, on Wednesday, the 5th of July, and obtained the Bronze Medal. It has also been submitted to Mr. Marnock, Regent's Park, London; Mr. Thompson, Horticultural Society, Chiswick; and Mr. Spencer, Bowood, all of whom speak highly favourably of it. Also the following, who have pronounced it first-rate, and are open to take orders for it:—Messrs. Henderson, Pine-apple Place, London; Mr. C. Turner, Royal Nursery, Slough; Messrs. Standish and Noble, Bagshot; Mr. P. Lydiard, Fruiterer, Batheaston, Bath; Mr. W. J. Epps, Bower Nursery, Maidstone; Messrs. Sutton, Reading; Mr. W. Barnes, Camberwell; Mr. Lewis Solomon, Fruiterer, Covent Garden.

Strong well rooted plants last week in August. Terms, cash or reference.—100 plants, 3l.; 50 plants, 1l. 15s.; 25 ditto, 1l. A few strong plants in 32-sized pots, 15s. per dozen.

Prospect Hill, Reading, August 26.

CALCEOLARIA SEED.

R. PARKER has now ready for sending out new seed of this year's saving, which he can recommend with the greatest confidence, it having been saved from flowers of the finest form and most beautiful markings, in packets at 1s. 6d. and 2s. 6d. each; also a few packets of choice Cineraria Seed at 1s 6d. and 2s. 6d. each. Primula sinensis, all saved from fringed flowers, 1s. per packet. A remittance or reference to accompany all orders from unknown correspondents.

Paradise Nursery, Hornsey Road, London.—Aug. 26.

THE FLORAL NURSERY, ACTON ROAD, TURNHAM GREEN.

CHRYSANTHEMUMS, Liliputian and Large Flowering.—Large and remarkably fine Plants of all the best Sorts, in 32-sized pots, fit to make really good Specimens at once, at 18s. per dozen; smaller Plants, in 48s, to flower in the coming winter, at 8s. per dozen.

VERBENAS.—All the new Varieties let out by Smith, Bragg, Mochett, and others, in 1854, at 8s. per dozen; older Varieties, 6s. per dozen—all well established.

FAIRY and FABVIER ROSES.—Large healthy Plants, in 48s, at 8s. per dozen.

SEEDLING HERBACEOUS CALCEOLARIAS, and SEEDLING CINERARIAS, at 5s. per dozen in October. These Plants have been raised from the Flowers which were so highly admired at this Nursery during last season.

FRENCH SPOTTED or NEW FANCY GERANIUMS.—Well-established Plants of these beautiful Flowers, at 2s. 6d. each, or 25s. per dozen, in October next—a large consignment (including all the best raised in France, several of which have not been seen in England) having been just received at the Floral Nursery.

An immense stock of nearly all the new and best Bedding GERANIUMS, FUCHSIAS, HELIOTROPES, TROPÆOLUMS, and other Soft-Wooded Plants, always on hand, at prices equally low.

The Stock of SHOW and FANCY GERANIUMS at the Floral Nursery is unquestionably the largest and best in the kingdom, no expense having been spared to render it perfectly unique; all the new plants of the best raisers are added as they appear. Well-established plants of upwards of 1000 sorts may be had early in October next, at prices which will place competition at defiance.

The trade fairly and liberally dealt with, and all plants sent out will be warranted true to name.

A remittance or satisfactory reference indispensable from unknown correspondents. Catalogues forwarded gratis.

JOHN WESTWOOD, Proprietor.—August 26.

WILLIAM BARNES begs to call the attention of his friends and the public generally to his general stock, which will be found to contain the greater part of the very best things in cultivation.

CHINESE AZALEAS, all the best varieties that have been sent out up to the present time, great care having been taken in the growth of this beautiful family of plants, all the weak delicate growing varieties being selected and worked upon strong healthy stocks, and the plants are such as are rarely to be met with for health and vigour, and will bloom fine next season.

GERANIUMS, all the best fancies, large flowering kinds, and bedding, as well as the following variegated varieties, viz., Flower of the Day, Mountain of Light, Golden Chain, Silver Queen, Silver King, Attraction, Lady Cottenham, Brilliant, and Cupped Leaf.

Also the finest varieties of Delphiniums, French and Belgian Phloxes—many of them may now be seen in bloom.

Perpetual Blooming Carnations, fine plants that will bloom through autumn and winter in great variety.

All the new French and English Verbenas, fine strong plants.

Chrysanthemums, Pompons, and large flowering varieties; newest and best fine strong bushy plants.

Roses on own roots, comprising the newest and most approved kinds of Hybrid Perpetuals, Bourbons, Teas, Chinas, Noisettes, Hybrid Chinas, and Hybrid Bourbons. These have all been kept shifted into larger pots, and are now very fine strong healthy plants. Japan and other Liliums, of which W. B. has a very large stock, both in beds and pots.

A very fine selection of all the most approved kinds of Vines from eyes in pots, among them some extra strong plants of Black Barbarossa.

Antirrhinums, Pentstemons, Petunias, Heliotropiums, Lobelias, Fuchsias, and fine plants of Hydrangea japonica variegata.

Fine new Mushroom Spawn.

An inspection of his Stock is respectfully solicited.

N.B.—Catalogues can be had on application.

Camden Nursery, Camberwell, London, August 26.

DAVIS'S EXTRAORDINARY EARLY WINTER VETCHES,

REPORTED BY THE REV. A. HUXTABLE TO

THE ROYAL AGRICULTURAL SOCIETY,

To be at least ONE MONTH *earlier than any other Early Vetches, and proved to be so by many first-class Farmers in Wilts and Dorset, may be procured of*

B. PAGE & CO., Seed Merchants

To the Agricultural and Horticultural Society of India,

At Mr. Davis's price, viz., 42s. per bushel, 11s. per peck, they having purchased the stock grown by a gentleman, which, being limited, early orders are requested.

TRIFOLIUM INCARNATUM, fine English ... 5d. per lb. | NEW ITALIAN RYE-GRASS ... ... 30s. to 35s. per qr.

PERMANENT GRASSES FOR PASTURE AND LAWN, equal to any house in the trade, Page & Co. having devoted their attention to this department for a number of years.

N.B. See Forty Acres Southampton Public Land sown in April last.

OXFORD STREET SEED STORES, SOUTHAMPTON.

THE

NEW RHODODENDRONS OF ASSAM AND BOOTAN.

COLLECTED BY THOMAS J. BOOTH, ESQ.,

And described in the "Journal of Botany," by his Uncle, Thomas Nuttal, Esq., *of Rainhill, the well-known Botanist and Traveller.*

E. G. HENDERSON & SON

HAVE much pleasure in announcing that they have for Sale these, the most remarkable new species of RHODODENDRONS ever introduced into the country, many of which surpass those from Sikkim, discovered by Dr. Hooker. Amongst these brilliant discoveries from the Bootan Alps are the most wonderful-sized flowers, delicious fragrance, and distinct colours of any that are known to exist in this the most gorgeous tribe of plants; and being combined with magnificent foliage, and distinct habit of growth, will render them indispensable, and a great acquisition both for the garden and conservatory.

The entire Stock of all these extraordinary species now growing (June 16, 1854) in the gardens at Rainhill have been purchased by them. The plants are fine, healthy, and robust. Many have been planted out in the open ground, and have proved quite hardy, with the exception of one or two slightly injured by late spring frosts.

They are now taking orders for six of the most distinct species, which will be dispatched in October. Full descriptions and prices may be seen on referring to the *Gardeners' Chronicle* of July 1, or in their

NEW CATALOGUE FOR 1854, NOW PUBLISHED,

and which will be forwarded post free on application.

Wellington Nursery, St. John's Wood, August 26.

HOLLYHOCKS, DAHLIAS, AND DUTCH BULBS.

GARAWAY, MAYES, and CO. beg to call the attention of Florists, and the Public generally, to their large collections of HOLLYHOCKS and DAHLIAS, which comprise all the newest and choicest varieties in cultivation, and are now coming into full bloom, and which they will be happy to show to all interested in these favourite Plants. Their Hollyhocks this season are particularly fine, and in addition to their collection of named varieties, they have an unusually fine batch of Seedlings, from seed sown in the spring of 1853, now in bloom.

G. M. & Co. also beg to announce that they are now receiving their annual consignment of BULBS from Holland, comprising Hyacinths, Tulips, Crocuses, &c., which are this year in good condition and moderate in price.

Priced Catalogues of Dahlias, Hollyhocks, and Dutch Bulbs may be had on application.—Durdham Down Nurseries, Bristol.

LORD KEYNON'S FAVOURITE CUCUMBER is the best and most productive for winter cultivation ever grown, requiring less heat than any other of the kind; it is a very handsome fruit and free setter. Good old seed of the above true variety may be had, price 2s. 6d. per packet, postage free (or penny postage stamps to the amount).

Edward Tiley, Nurseryman, Seedsman, and Florist, 14, Abbey Churchyard, Bath, Somersetshire.

HUGH LOW and CO. would inform their friends and customers that they are now receiving their BULBOUS ROOTS from Holland. The collection comprises all the kinds of Roots suitable for early forcing, and they have been selected with care from the leading houses in Haarlem. Any orders entrusted to them will have every attention, and they feel satisfied they are in a position to supply them to the satisfaction of their customers.—Clapton Nursery.

STRAWBERRY PLANTS.—The best varieties for early and late growing, which have been thoroughly proved and given every satisfaction, are the undermentioned favourite varieties, now ready.

Nimrod, 15s. per 100; Ajax, 5s.; Ruby, 5s.; Prince of Wales, 10s.; Trollope's Victoria, very superior, 5s.; Myatt's Surprise, 3s.; Myatt's Eleanor, the best and latest bearing Strawberry in cultivation, 3s.; British Queen, true, 3s.; Alice Maude, 3s.; Black Prince, very early, 3s.; Eliza, 3s.; Prolific, very fine and early, 3s.; Cremont's Perpetual, or Double-bearing Strawberry, 3s.

A remittance must accompany the order, either by Post Office Order or Penny Postage Stamps, on receipt of which the plants will be sent in hamper and package free, for all orders above 5s.

Edward Tiley, Nurseryman, Seedsman, and Florist, 14, Abbey Churchyard, Bath, Somersetshire.

THE GRAPE BLIGHT.

M'ADAM'S COMPOSITION (used in the Royal Establishments), is promptly destructive of Vine Mildew (see *Gardeners' Chronicle* of May 27, June 10, and July 1), the Peach, Melon, Cucumber, Rose, and Vegetable Blights.—1 lb. packets for 18 gallons of wash, with full instructions, 3s. 6d. each.

Agents:—Dawe, Cottrell, & Benham, Seedsmen, 36, Moorgate Street, London. Order through any Bookseller.

JACKSON'S PATENT PREPARATION for the PRESERVATION of POTATOES, SEEDS, &c.—This valuable discovery, for which letters patent have been obtained, is the successful result of 14 years' study and experiments in the preservation of vegetable matter. It imparts health and vigour to the Plants and Seeds subjected to its action, and effectually prevents the Potato Disease, the Smut in Wheat, Mildew and Rot, all Fungal Diseases, and the attacks of Insects and Vermin, and further recommends itself to the Farmer, the Planter, and the Public generally, by the extreme simplicity of the mode of its application.

It is sold by all Seedsmen and Chemists, in packets of one, two, three, and four pounds each, with instructions for its use; and parties requiring larger quantities for their own use or for exportation can be supplied on advantageous terms, by addressing Mr. Jackson, the Patentee, 18, Cannon Street, London Bridge; where the article is always on sale, and the fullest particulars and directions for its use can be obtained.

GLASS FOR CONSERVATORIES, ETC.

HETLEY and CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES, GREENHOUSES, DWELLINGS, ETC.

Established more than One Hundred Years.

THOMAS MILLINGTON requests attention to his present prices of SHEET GLASS in 100 feet boxes.

Squares	6 by 4 and 6½ by 4½ } 7 by 5 and 7½ by 5½ }	... 13 0
"	8 by 6 and 8½ by 6½ } 9 by 7 and 9½ by 7½ }	... 16 0
"	10 by 8 to 12½ by 9½	... 19 0
"	12 by 10 to 24 by 14 ...	

Orchard House Squares on Mr. Rivers's approved plan, to whom I have sold some thousands of feet:—20 inches by 12, 20 by 13, 20 by 14, 20 by 15, 20½ by 12½, 20½ by 13½, 20½ by 14½, at 19s. per 100 ft. in large sheets. 200 feet cases at 42s., and 300 feet case 63s.

Boxes charged 1s. extra per 100 feet, and the same allowed if returned free of all charge.

HARTLEY'S PATENT ROUGH PLATE GLASS, Fern Shades, Striking Glasses, Milk-pans, Bee Glasses, Cucumber Tubes, Sheet and Rough Plate Glass Tiles, Wasp Traps; Plate, Patent Plate, Crown and Sheet Window Glass, in every thickness and quality, and Ornamental Glass, plain and coloured; pure white Shades for Ornaments, Crystal Glass for Pictures.

Warehouse, 87, Bishopsgate Street Without—same side as Eastern Counties Railway.

HARTLEY'S PATENT ROUGH PLATE GLASS, 1-8th thick, or 2 lbs. to the foot; 3-16ths, or 3 lbs. and 1-4th, or 4 lbs. to the foot, for Ridge and Furrow Roofs, Greenhouses, Railway Stations, Engine Sheds, Mills, Market Halls, and Public Buildings generally.

Packed in Boxes of 50 feet each.

6 by 4 and 6½ by 4½	10s. 6d. per box.
7 " 5 " 7½ " 5½	12 0 "
8 " 6 " 8½ " 6½	13 6 "
9 " 7 " 9½ " 7½ and 10 by 8 ...	15 0 "

For larger sizes a full List of Prices will be sent on application. Boxes are charged 2s. each extra, full price allowed if returned free of expense.—For further information apply to

JAMES PHILLIPS & CO.,

116, Bishopsgate Street Without.

"Rough Plate has never been, and never can be, prejudicial to the colouring of Grapes; though we can easily believe that it has been charged with such a fault by persons who have not skill enough to manage Grapes under glass."—*Gardeners' Chronicle.*

"There *can be no question now* that Rough Plate Glass is the most beautiful as well as the most useful kind of glass that can be employed in horticulture. It is free from all the faults of transparent glass, and has many advantages peculiar to itself, without *a single disadvantage as a set off.*"—*Gardeners' Chronicle.*

CHRYSANTHEMUMS.

R. PARKER begs to offer fine bushy plants of the above, well established in 6-inch pots, for flowering this autumn, consisting of all the newest and finest Pompon and large flowered varieties in cultivation. Purchaser's selection at 9s. per dozen. A list of names forwarded upon application.

CINERARIAS (Seedlings), from all the finest varieties, carefully selected, including the new varieties sent out last autumn. Established plants, in 3-inch pots, at 3s. per dozen.

A remittance or reference to accompany all orders from unknown correspondents.

Paradise Nursery, Hornsey Road, Islington.

CHRYSANTHEMUM "ANNIE HENDERSON,"
7s. 6d. each, or four Plants for 21s.
HELIOTROPIUM, "BEAUTY OF THE BOUDOIR,"
5s. each, or six Plants for 21s.

The above Plants are now ready for distribution; they are both the finest in their class, and possess very useful qualities. The descriptions of them, and the following, can be seen in the Catalogue of MESSRS. E. G. HENDERSON AND SON, Wellington Nursery, St. John's Wood, London, which will be forwarded post free, on application.

The new French Spotted Geraniums, 5s. and 7s. 6d. each, according to size. The five new bedding Calceolarias, 31s. 6d.

NEW FUCHSIAS, VERBENAS, AND PETUNIAS OF 1854 AT REDUCED PRICES, with other NEW and SELECT PLANTS.

For BASS AND BROWN'S Advertised Lists of the above, see *Gardeners' Chronicle* of July 22 and 29, and August 5.

SUPERB NEW CHRYSANTHEMUMS.

12 best new Pompone varieties of last season ... ... 12s.
10 best new large flowering do. do. ... ... 10s.
60 splendid varieties of Pompone and large flowers, including new, 40s., or, per dozen ... ... 9s.

These are all fine and strong for flowering.

Catalogues free for three penny stamps. Post-office orders payable to BASS & BROWN, or to STEPHEN BROWN, Post Office, Sudbury, Suffolk.

HOLLYHOCKS.—A collection of this fine old English flower, grown at the Cheshunt Nurseries, is now in bloom, and there will be a succession till the end of October. Admirers of the Hollyhock are respectfully invited to visit the Nurseries to inspect them. In addition to the choicest varieties of other growers, there are many rare and beautiful kinds of their own production, and to be seen only at their grounds.—A. PAUL & SON, Nurseries, Cheshunt, Herts (13 miles from London, on the Cambridge line of Eastern Counties Railway).

MYATT'S new Seedling Strawberry, "ADMIRAL DUNDAS."—This is the most extraordinary variety, for size and productiveness, that has yet been raised at Manor Farm; it is much larger and a better flavour than either the Surprise or Mammoth, and ripens off the late fruit to advantage.

J. M. & SONS can confidently recommend this, as being superior to any large variety that has come under their notice.

Strong, well-rooted runners are now ready, and will be carefully packed and delivered free to any part of London, at the following scale of charges:—100, 50s.; 50, 30s.; and 25, 16s. Also strong Plants of MYATT'S British Queen, Cinquefolia, Eleanor, Surprise, Globe, Eliza, Hooper's Seedling, Keens' Seedling, Black Prince, and Barnes' Bicton Pine, 5s. per 100.

Manor Farm, Deptford, August 26.

CUTHILL'S EARLY BLACK PRINCE and LATE PRINCE OF WALES STRAWBERRIES.—Very strong rooted plants will be ready August 28; the Black Prince 5s. per 100, the Prince of Wales 10s. per 100. The two sorts lasted in successive bearing this year for 75 days, in the open ground here. The Prince of Wales is a handsome and good flavoured dessert fruit, and the best late preserver; hundreds of ladies round here have proved it for these last three years.

J. C.'s Pamphlet on the Potato Culture, containing the best and only way of growing early and large crops, and avoiding the disease. It also contains 20 more articles upon the Strawberry, Rhubarb Wine, &c. Price 2s., or by post 2s. 4d. Post-office orders on Camberwell Green.—JAMES CUTHILL, Camberwell.

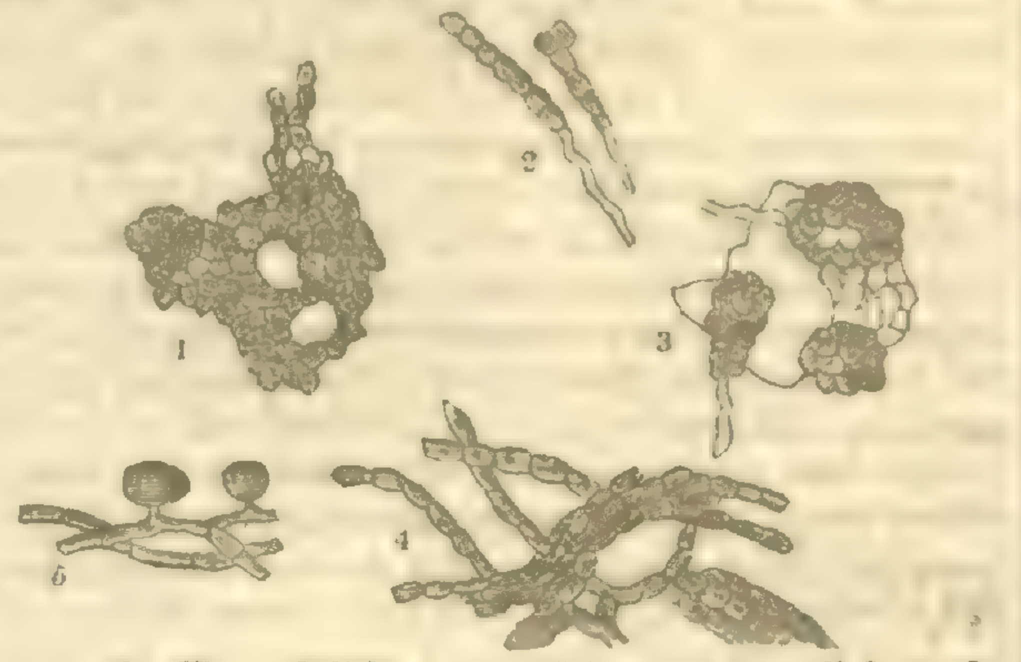
The Gardeners' Chronicle.

SATURDAY, AUGUST 26, 1854.

One remarkable feature of the vegetation during the present summer is the extraordinary degree to which the foliage of plants, of almost every kind, is disfigured by the SOOT-FUNGUS, a parasite appearing in the form of dingy black patches, spoiling their beauty, and often impeding their functions so much as to cause their premature fall. The affection is one which is very general, and by no means confined to the colder parts of Europe; and similar affections, in an extremely exaggerated form, frequently occur, not only in other temperate climates, but even under the tropics. Here the patches are, for the most part, mere dingy strata of a somewhat pulverulent or membranous appearance, according to circumstances, rarely assuming a felt-like appearance; but in New Zealand, Campbell's Island, the Auckland Group, and in many other localities, they put on a looser and more filamentous habit, disfiguring everything on which they grow; while in some parts of the United States a particular form, according to the degree of moisture, appears under the guise of large spongy or lava-like masses of considerable extent and thickness. The genera Antennaria, Capnodium, and Scorias, mixed with such productions as Triposporium, form the principal part of the thicker strata; but the pest of our own woods and gardens, though capable of being referred to a dozen genera, according to varying circumstances, is all due to one and the same species, and that the common Cladosporium herbarum. The felt-like patches are far less common in England, and, like the exotic forms, belong to other genera.

The first cause of the evil is the copious deposit of honey dew upon the leaves, whether accompanied or not by different species of aphis, and it is consequently upon the upper surface of the leaves only that for the most part it makes its appearance. As the stomates are comparatively few in number there, and the under side is, in great measure, free, the injury to the leaves cannot arise from any impediment to the entrance of air into their intercellular cavities, but rather to the immense diminution of light, which must be caused by the thick veil drawn over them.

The velvety forms which infest the Orange, Olive, and other trees in the South of Europe—Madeira and the Azores—is usually accompanied by a species of coccus, as is also the case in the Coffee plantations of Ceylon, which suffer from a similar affection; but we are unable to say whether the presence of insects is universal. As regards the structure of our own smutty fungal, nothing can be more puzzling to the young student, and few productions more instructive as to the various forms which the same plant is capable of assuming. We have figured several varieties, but we could have multiplied these to a very considerable extent, as Dr. LÉVEILLÉ has placed in our hands specimens, on many different leaves, from various parts of Europe and the more contiguous regions of Asia. The thicker forms have been illustrated in two articles in the Journal of the Horticultural Society of London. Information will be found respecting that more immediately under consideration under Cladosporium herbarum in the "English Flora," and Cladosporium



Fumago, in FRIES' "Systema Mycologium," but the learned Swedish mycologist had no definite ideas as to the real nature of the different forms which he had before him. Other fungi forming a much thinner and closer stratum abound in tropical fruit, and are not entirely wanting in our own. These have a totally different structure, and belong to Asterina and allied genera. Our figures represent:—

1. Cladosporium herbarum on Hawthorn, forming a thin cellular membrane, with large lacunæ and erect threads occasionally arising from little elevated patches.

2. Necklaces of cells springing from delicate colourless threads on Hazel. These ultimately are often dilated above.

3. On Quercus appenina. The subjacent membrane is extremely delicate, assuming here and there a cellular aspect, and is studded with little heaps of darker cells, some of which have a colourless thread attached, so as to resemble spores of Mystrosporium.

4. On Salix aurita. The threads still form a membrane with lacunæ, but are looser, and some of them rise from the surface.

5. On common Oak. The threads here are more hyaline, and produce large globular solitary cells simulating fruit.

6. On Populus canadensis. The cells, as in No. 1, are connected with the common fructifying form of Cladosporium.

7. On Privet. The threads approach in character those of Antennaria, and a separate globular mass simulates the fruit of that genus.

8. On Prunus Mahaleb. Another form, somewhat similar to the last, exhibiting pseudo-fructification. The threads here arise from a membranous expansion similar to that in No. 1.

9. On Tilia. A spore producing a new reproductive body from its side, very much after the fashion of the bodies observed on the spores of Dacrymyces by Tulasne. *M. J. B.*

ALL who are acquainted with the old CONTINENTAL GARDENS must have remarked the starved condition in which their hothouse plants are often found. Long-legged half naked stems, small sickly leaves, red spider, and all the other indications of a bad atmosphere, were the rule in 1818, when we first knew Belgium and France, and seem to be so now in many a remote town. And so they were, and so they still are, in even this horticultural country. So far as France was concerned, it always appeared to us incomprehensible what evil influence could be at work to counteract the efforts of gardeners thought to be skilful: and though crowding, bad heating, an uncontrollable dry summer, and underpotting, offered to a considerable extent an explanation of the fact, yet there appeared to be something still behind. A late number of the "Revue Horticole" seems to explain the mystery.

It would appear that in France there is no settled opinion as to the time of syringing hothouse plants, if they syringe at all. "Some," says M. DELAIRE, "pretend that the operation should be performed in the morning, before plants are heated by the sun; others prefer midday or the evening. Which is right nobody knows." If this be the state of French gardening, no wonder that plants should succeed so ill in their hothouses. There is not an apprentice with us that would not stare at being ordered to syringe his plants in the morning or midday; at least there should not be. People might as well water their outdoor plants in the morning or at noon.

Syringing is the imitation of rain or dew; of rain when water is dashed violently upon leaves; of dew when it is forced through fine roses and gently deposited upon leaves. We English confound the two operations under one common name; but it would render horticultural writings more intelligible if the term SYRINGING were confined to the imitation of rain, and the more gentle method were denominated BEDEWING. The French call the latter *bassinage*, and it is with that which we have to do on the present occasion.

In this, as in all things else, the operations of Nature should be imitated with all the exactness possible; we may be certain that what we call Nature is right, and that we, when we neglect her precepts, are wrong. Is dew deposited in the morning? or at noon? No. Then bedewing at noon or in the morning is unquestionably wrong; we want no argument about the matter. Dew falls in the evening, clings to plants during the night, disappears as the sun gains power. Bedewing, then, should be effected in the evening, and in such abundance that it may remain for dispersion by the returning sun. No reasoning is needed to show that this is right. We gather from M. DELAIRE that the French gardeners never think so. Is it possible?

When plants are bedewed at night, no perspiration is going on; all the surface is engaged in absorption. In this way the loss of fluid by day is virtually repaired. During the dark hours the tissues absorb the moisture in contact with them; drooping leaves straighten, bending stems stand once more erect, and the very hairs that clothe the surface of a leaf, on which they lay relaxed at sundown, presently fill, stiffen and rise up, and drink till they can drink no more, the limpid fluid at last hanging in drops from their gorged points. Were it otherwise, vegetation would perish in the autumn, however vigorous it might have been during summer; for in autumn the earth is exhausted of its moisture, and plants feed chiefly by their green surfaces. Each returning sun expels from a plant more fluid than the earth can possibly supply; but the waste is amply made up by the dews which act from sunset to sunrise. What occurs out of doors also occurs in a hothouse, so far as waste of fluid is concerned; but there is little or no restoration there at night, because dew will not form beneath a glass roof, and therefore the process of artificial bedewing becomes indispensably necessary.

Bedewing by day will not answer; it does in fact more harm than good. M. DELAIRE finds that when plants are so treated they lose their verdure and become yellow, especially if the sun shines on them immediately after the operation. Certainly it does no good; for it dries up before it can be absorbed. Certainly too it does harm; for the rapid evaporation from the surface of a wet leaf under bright sun is attended by a degree of cold which paralyses the vitality of the leaf itself. When rain falls by day the sky is overcast; or if we have a rainstorm in sunshine the occurrence is casual and the effect is transient, but in a hothouse so mismanaged a gardener has to encounter the consequences of a continually recurring bad effect.

It would appear from the memorandum which has led to these remarks that M. DELAIRE, who does not approve of dew falling at noontime, has been singularly successful in the cultivation of an unmanageable plant of very great beauty, the *Poinsettia pulcherrima*. M. CELS is represented as having declared that he never before saw so well flowered a plant as one managed by that gentleman in the Botanic Garden of Orleans. The following account of the process by which such great success was attained will be read with interest. The specimen was planted in the open border, at the (back?) wall of an Orchid house. In the spring of 1852 it was a long-legged plant, with four arms which had

been cut back after flowering. These arms had each formed two strong laterals, which, as usual, lengthened without branching. Had the plant been then left to itself, as is often the case, the specimen would have been poor and starved (*très-mesquine*). But each lateral was pinched back to three eyes, from which secondary branches soon proceeded, which, in their turn, were pinched back like the others, and the same process was repeated till the month of October. By this time the shrub had formed a heap of verdure above 6 feet wide, and had more than 100 branches, each of which produced its tuft of scarlet plumes. What a magnificent specimen it must have been! Even the Chiswick exhibitors would have turned pale at the sight of so formidable a rival. Of course M. Delaire bedewed this plant in the evening. As for the soil, it was a mixture of peat, decayed vegetable mould, and loam (*terre franche*) in equal parts.

VEGETABLE PATHOLOGY.—No. XXXIV.

153. Plants are no more capable of living without air than they are without moisture. As the spongelets perform the office of the villous processes of the stomach, imbibing those juices which are to be assimilated, or when they have given out whatever may be necessary for the exigencies of the plant, eliminated from the system, so by means of the stomates the tissues are in immediate connection with the outward air, exactly as the minute ramifications of the lungs in animals place the outward air in direct communication with that which is contained in the tissues, with the intervention only of a delicate membrane, through which the constituent gases enter at different rates, according to their different degrees of penetration, while those which are contained in the plant are given out, and thus oxygen is imbibed or eliminated, according to the absence or presence of light.

154. It is evident that any marked change in the composition of the air, or any sensible admixture of extraneous gases, must prove highly injurious to structures so highly susceptible of modification as those of plants, and which receive their nutritive matter under a form so greatly attenuated as vegetables, in which admixtures of very small quantities of adventitious matter, or even of those matters which are most necessary to health beyond the normal quantities, or in proportions varying very sensibly from those which are calculated to preserve a plant in complete health and vigour, soon impair the walls of the cells and then vitiate the matters contained in them.

155. Now the constituent parts of the air are the same in different parts of the world, as far as has been ascertained. Like a sponge, it holds very variable quantities of water in its interstices, and must of course be locally affected where large quantities of gaseous matter are poured into it, as in the neighbourhood of chemical works and large towns, where enormous quantities of fuel are consumed, involving an immense consumption of oxygen, and the accession of large quantities of heterogeneous gases, arising from the foul air exhaled, the products of putrefaction, fermentation, and the artificial production of noxious gases. In the case of chemical works the effect is notorious. In the neighbourhood of some the air is so sensibly impregnated that no vegetable can remain in health, and the largest trees speedily fall a sacrifice. The injurious effects produced on vegetation in large towns arises partly no doubt from the quantity of impalpable matter wafted about in the air, and deposited on the foliage, clogging up the stomates, and thus suffocating the plant, or preventing the proper action of light and inducing chlorosis; but there can be no doubt that the difficulties which impede the cultivation of plants in such situations, especially of those which delight in the pure air of Alpine regions, arises from the gaseous matter mixed with the air, which depresses the vital functions, induces disease of the cell walls, and ultimately death.

156. It has been asserted with much confidence that the increased consumption of coal and fuel, especially since the introduction of railroads, has made so much difference in the constitution of the air, that disease has, in consequence, been produced in the vegetable world, and that even mankind has suffered from the consequent introduction of new diseases. If, however, we reflect on the small proportion of land to water, and the almost infinitesimal proportion which that portion of the atmosphere which is immediately affected by any increased combustion bears to the whole firmament, it is at once evident that no such alteration in the general composition of the air as can effect vegetation can possibly exist. If the diseases—such as the mildew of Vines and Potatoes—were confined to those portions of the earth where the increased consumption of fuel takes place, there might be greater reason for the supposition; but when it is considered that Madeira has suffered equally with, or even worse, than other countries, in spite of the intervening ocean, and certainly without any marked increase in the consumption of fuel, it seems childish to enter into any computation of the possible change, especially when it is considered that in such questions it is quite impossible for us to eliminate every source of error. *M. J. B.*

THYRSACANTHUS RUTILANS.

This is one of the most useful plants of recent introduction, and although never likely to be a favourite where only dense compact specimens are looked upon as worth cultivation, it is, nevertheless, a very useful plant for winter flowering, and will, doubtless, be largely grown for this purpose. The bright scarlet tube-shaped flowers are produced for months in succession on drooping spikes, some two or three feet long, which look interesting, and form a fine contrast with other plants. So far as my own experience goes, however, there is no possibility of inducing it to form a compact, well-furnished specimen, for if stopped to the extent necessary to do this, it loses its leaves, and refuses to grow at all. But this is of very little importance, as if a large bushy specimen could be grown, the flower spikes, except those from the outside shoots, would not be seen to any advantage.

Cuttings planted in sandy peaty soil, covered with a bell-glass, and placed in a sharp bottom heat, soon emit roots, and if these are put in early in spring they will form nice plants for flowering next winter. The cuttings should be potted singly as soon as they are well rooted, and placed in a close, moist, warm pit or house, till well established; and if they can be afforded a gentle bottom heat, this will greatly assist in promoting the emission of roots, and inducing full growth. The young plants must never be allowed to suffer for the want of pot room, as this tends to make them even more leggy than they are naturally inclined to be; therefore, until the plants are in their flowering pots, attend to shifting before the balls get over matted with roots. The best situation for the young plants during the growing season is a pit or house where they can be kept rather warm, close, and moist; and if they can be afforded a gentle bottom-heat, this will be of great service in promoting vigorous rapid growth. A slight shade will be necessary on the forenoons of bright hot days, and the plants should be sprinkled over-head morning and evening in fine weather, affording them a liberal but careful supply of water at the root, and giving weak manure water occasionally to those that have well filled their pots with roots. Beyond keeping the centre shoot secured to a stake, very little good can be done in the way of training or stopping, for the plant never seems to grow freely or with any vigour, except when one shoot is allowed to take a decided lead of the others. Side shoots, however, are produced very freely when the plants are grown rapidly in a brisk moist temperature, and kept near the glass, and these should be slightly tied out without bending them down, so as to afford the foliage sufficient space. The habit of the plant, however, although it is what is deemed bad by plant growers, is exactly suited to the inflorescence, for the long drooping spikes of bright coloured flowers would not be half so effective if produced on dwarf bushy plants. But if, from any cause, side shoots are not produced freely, the plant should be bent down, leaving the eyes which are wished to start into growth the highest, which will check the growth of the leading shoot, and more effectually promote the growth of others than stopping would do. Discontinue shading and expose the plants freely to sunshine after August, admitting air more freely, to induce short-jointed wood. Attend, however, carefully to watering, and do not let them sustain any check, as with proper attention they will grow very freely till late in autumn. If the plants are wanted to flower early, they should be sparingly supplied with water, and kept rather cool for a few weeks; but they must not be allowed to get too dry, as this would injure the foliage; and, except for plants that are wanted to flower early in winter, there will be no artificial treatment necessary to induce them to flower profusely, which they will do from January till May. The time at which they will blossom will, however, depend upon the temperature; for, unless this is rather warm, they will not flower so early. When in bloom, they must be kept in a temperature of not less than 55° or 60°; for the flowers do not open in the temperature of an ordinary conservatory, nor do the spikes attain any length in a cool place. In order to preserve the plants in beauty as long as possible, avoid wetting the flowers in syringing, and keep the plants in good health by attention to watering, &c. After their beauty is over, remove them to where the temperature may be kept at about 50°, and allow them a month or six weeks to recruit their energies after blooming, cutting back the shoots as may be deemed proper. Before placing them in heat, give a liberal shift if necessary, and when the buds start keep the stronger shoots tied out, bending down and stopping any that may incline to outgrow the others, and syringe, &c., as recommended for last season, only that bottom-heat may be dispensed with in the case of plants that are some size. And as there will be no necessity to keep them growing late in autumn, a plant or two for early flowering may be removed to a rather cool place and sparingly watered until the growth is checked, and then returned to the stove, where they will soon flower.

The Thyrsacanthus is a vigorous grower, and not very particular as to soil, except that it should be rich and light, and efficient drainage should be secured in potting. About equal portions of turfy peat and loam, with plenty of sand, will suit perfectly, and a little thoroughly decomposed cow-dung would do no harm. *Alpha.*

CULTIVATION OF THE PEAR TREE.

On attentively perusing the observations in the *Gardeners' Chronicle*, at p. 499, and those by Mr. Rivers, pp. 516, 517, on the subject of my previous communication, I find that I may not have clearly expressed my views respecting the standard Pear trees which I have remarked near London.

In the first place, I must state that I am far from being an enemy to theory; for every good theory must be founded on sound practice. In the application of principles, the practical man should know when to deviate from them, and how to supply their defects. In fact it is he who suggests to the theorist that which becomes the basis of a formula. This being admitted, we shall pass on to another series of considerations.

To succeed with any plantation, it is not sufficient to possess a knowledge of the principles of the science, but a certain amount of experience is also necessary. The greater the difficulties which have to be overcome, the greater are the cares and precautions necessary to ensure success. The question must be considered in all its aspects.

In the first place, it is to be presumed that the primitive type of the Pear tree is foreign to our climate. The cultivated varieties have been raised from seed, and are the result of successive crossings made during the centuries. The most vigorous and hardy have originated in our own times, and are mostly due to Belgian sowings. (We shall return to this point on another occasion.) It is our duty to preserve these varieties in all their natural vigour, by employing strong wildings for stocks, and by judiciously selecting grafts which are capable of transmitting to their progeny all the inherent qualities of the individual variety.

We know perfectly well the difference which exists between the artificial culture on the Quince stock and in miniature, of which our honourable colleague, Mr. Rivers, gives an admirable example, and that of the culture on the Pear stock, both for dwarf and tall-stemmed pyramids. To the cultivation of the latter, and the most useful, our observations are more especially directed.

Among the new varieties obtained from seed by the late Van Mons, Esperen, Bouvier, and others, there are some varieties which are very vigorous, and which succeed remarkably well as standards. These varieties have succeeded well in our cultures and in those of our friends, and they must necessarily succeed in all similar situations. It is certain, that with respect to climate, there is a great resemblance between England, Flanders, and Brabant—the same latitude, and possessing in many parts the same kind of soil. These facts being established, let us return to the cultivation of the Pear tree as a standard on its own stock.

In raising young Pear trees from seed, in order to obtain new, improved, and hardy sorts, I remarked that the first fruits always appeared on the spurs formed on the upper part of the stock, that is to say, from 7 to 8 feet, or more, above the surface of the ground. The trees trained as pyramids only, showed fruit from year to year, so that fructification did not take place on all the lower branches till seven or eight years after the upper ones had fruited. This observation having been confirmed in our cultures, and in those of our friends, *I believe that I may establish the principle, that the upper parts of a tree raised from seed are the nearest to a fruit bearing state; and, on the contrary, the lowest branches are the farthest from that condition.*

Further, I have grafted a number of standards, some of which showed abundance of fruit the third year, whilst others which pushed vigorously gave no appearance of doing so after six years' growth, although the stocks sprung from seeds of the same sort of Pear—that called Cuisse Madame. In consequence of this prolonged sterility, I resolved to regraft the stocks by means of shoots situated above fruit-spurs; and the third year the trees thus grafted bore fruit. Will not this observation sufficiently justify my establishing another principle with regard to the graft?

I maintain these two principles as being of the greatest correctness, and founded on indisputable facts, of which I can produce numerous proofs in our cultures. I will suppose that these two principles are not new in practice, and that they are known to practical men, who would prefer to keep them as a secret among themselves.

To return to the subject of the article, we maintain that stocks grafted standard high, with scions taken from the upper part of a bearing tree, sooner arrive at a bearing state than those grafted low. A tree grafted standard high, for the open ground, the head trained so as to form a pyramid with a central vertical stem, with branches at equal distances and open angles, appears more likely to succeed near London than those which exist there at the present time. I have weighed the different causes which prevent the trees from bearing fruit, even in the most favourable years; and I hold the above opinion until proof to the contrary be produced. It is probable that if I lived for some years at Sawbridgeworth, I should perhaps discover other causes of barrenness in the nurseries of Mr. Rivers.

On quitting, about the end of May last, these extensive nurseries, which are placed in a very exposed situation, struck with the unfruitfulness of all the trees, large enough, in general, to bear fruit abundantly, I asked myself these questions. 1. If these trees had been judiciously pruned, and completely cleared of insects at the proper time, could we judge whether the fall of the scarcely-formed fruit is to be attributed to the variations of climate in April last or not? 2. Occupied perhaps for more than a century by fruit trees, has the soil preserved all the elements of nutrition; and have these indispensable elements been rendered to the soil in order to restore to it the powers of supporting vegetation which have been lost? 3. This soil, is it not of a stiff retentive nature; and from being too wet in winter, is it not injurious to the spongioles and radicles, of which the action on the formation of fruit-bearing organs is admitted by science and acknowledged

practice! 4. Would it not be advantageous to make deep trenches or to thoroughly drain this, and all soils similarly situated, in order that the water in winter may run off easily, and thus to preserve the fibrils and spongioles of the roots, which are indispensable to the success of fructification?

And lastly, in a foggy, cold and changeable climate, with a heavy, cold and wet soil, no good mode of practice should be neglected when it is our intention to carry on successfully the planting of fruit trees in general, and that of the Pear tree in particular. Neither should we lose sight of the fact that the Pear tree appears to have originally been a native of low hills and other elevated situations, in more favoured latitudes than ours. Notwithstanding the changes effected by raising seedlings, the Pear tree has preserved, to a great extent, its original nature and constitution. In fact, in passing through the different provinces in England, Belgium, and the north of France, we remarked in situations such as those above mentioned, trees in full vigour. In carefully choosing the varieties of a fruit tree, originally a native of a southern climate, and which have been obtained from seed and acclimatised in northern regions, we ought not to neglect anything in selecting and improving the soil, or in respect to the different operations of pruning the tree. There are certain periods of the year when these operations should be performed. They differ essentially, according to the nature of the soil, the aspect, the vigour of the varieties, and the age of the trees. Each of these points deserve consideration in a separate article.

In conclusion, I am led to believe that the barrenness of the Pear tree in England is not to be attributed exclusively to the variations of climate, from the fact that near Brussels there are several gardens in which the trees are unproductive, from the same cause that affects those near London.

Finally, I have no personal interest in this question. By leaving matters on their present footing, England would remain tributary to Belgium and other foreign countries for a considerable quantity of fruit every year. Perhaps some of the more enterprising amateurs will pay attention to and profit by my observations. Their mode of culture will soon redound to their credit. Besides, it is only a tribute and a debt which I owe to your numerous correspondents, whose information has, in many cases, proved of great service to us. *J. de Jonghe, Brussels, Aug. 14.*

SOME

PRINCIPLES OF VEGETABLE PHYSIOLOGY,

BEARING ON THE CULTURE OF PLANTS.

By Professor W. H. DE VRIESE, of the University of Leyden.

(*Translated from the Dutch.*)

If we consider the vegetable kingdom attentively, we are astonished as much with the variety as with the greatness and magnificence of the phenomena which it offers to our contemplation. Almost every season, every day, every hour, and every place, present us plants under different circumstances, with peculiar qualities and in varied forms. Scarcely does the soft air of spring refresh the earth, when every object, in which there is still a germ of life, becomes developed with astonishing rapidity. The plants which spring has graced with foliage, summer decks with a multitude of flowers. In autumn the fruits are collected. In winter those plants, once so beautiful, are found to be some in a state of dissolution, others in a state of rest, or in a continued development, which proves that nature is engaged in an indefatigable activity. But, in winter, the greater number of plants die; the fallen foliage decomposes, returns into the earth, and becomes the rich source of nutriment for a succeeding growth.

But to judge of those changes which are observed in plants such long periods are not required. How great is the variety in the phenomena of flowers and plants daily to be seen! Observe them attentively early in the morning of June or July, when night has scarcely raised its dark veil, and when the sun is hardly risen above the horizon. Everything has another aspect than during the day. The flowers are closed, the leaves have changed their direction; those that were spread out seem disposed to close, and present quite another appearance than by day; you would even think them about to reunite into their former state of buds, and to return to a state of formation and development. The vegetable kingdom sleeps! However, not only the form and position, but also the colours, have quite a different appearance. The fields have often a green colour, like that of the waves of the ocean. And this is not only the effect of vapours fallen from the atmosphere, but also of the fact that the plants, by their altered directions, offer us surfaces that are differently coloured.

Another cause of this phenomenon is that on their surface a cover like wax is left, which the sunbeams cause to disappear afterwards, and then the original colour presents itself again. At mid-day all is in its full splendour. The flowers are opened, the leaves are spread out, and often they reflect the sun-beams from their shining surfaces; sweet smells spread over the fields; vegetation attires itself with its most magnificent raiment, and proclaims to the serious contemplator of nature the greatness and power of Him who called all things into existence.

And in what state does the vegetable kingdom appear to us in the evening? While the last rays of the sun, the source of life in nature, yet linger in the west, the plants seem to be again in a deep sleep. The whole of animated nature, as if wearied with the day, inclines with them to repose. The birds and other animals, inhabitants of the woods, are silent, hiding themselves among the branches and leaves; the insects creep to their holes; silence and calm reign everywhere, till morning comes to revive the whole creation. When reflecting on all this, one tries naturally to mount to the causes which bring about such contrasts, and to give a reasonable explanation of them, which is not founded upon a principle already received, but on one derived from the very phenomena. The science designated the physiology of plants proposes to itself such investigations. A zealous and unprejudiced inquiry has already explained many difficulties. But when we consider the immense field of our labour, the knowledge which we possess is still very limited. There is much, perhaps, that we shall never wholly understand; but this must not discourage us from pressing forward. Every good observation, every remark is an element—a gain for science.

If the reader will follow us, we will centre our thoughts in the great laboratories of nature, and there observe attentively what are her actions, and in what manner she performs them; perhaps we shall be able to explain one or another of those great contrasts which we have just mentioned, and which, at first sight, do not seem susceptible of solution.

In considering a plant externally and superficially, we should not easily presume that its structure is so beautiful. However, it is composed of elements so small, that the most sharp-sighted eye is unable to distinguish them. For this we make use of instruments called microscopes, consisting of a series of polished glasses, which have the apparent power of enlarging small objects some hundreds of times, and which help us in finding out what it would be utterly impossible to perceive with our unaided senses.

The microscope was first invented in Holland about the end of the 16th or the beginning of the 17th century, and in late years it has been brought to a high degree of perfection. By means of it we learn that plants consist of membranes or vesicles, which are hollow, or rather fill up and inclose a certain space, and are generally spherical; which afterwards, on approximating one to another, change their form, and often become elongated, and when joined together form the body called vegetable tissue. This membrane is colourless and transparent, it has no openings and contains fluids, and in those fluids there are different substances, the productions of vegetable life, either in solution or in a solid state. The membranes take up fluids externally, particularly water; they bring them into the nearest vesicles or cells, and in this way the fluid, which the outer cells of the root take up from the ground, is carried up and circulated in all directions through the whole plant, and becomes the source whence are formed all the different organs of which the plants consist; and though all are formed upon one and the same principle, however, each is separately modified to discharge a more or less determined service, and to contribute its particular part in maintaining the organism of the whole. So the root has functions to perform quite other than the leaves, and again these serve to other purposes than the flower, the fruit, the seed, &c. Though the membranes which surround the cells are shut, and have no openings at all, yet they are pervious to fluids. This property is common to membranes of the bodies both of animals and plants. The most simple examples prove this. If I expose in the air a bladder filled with water and well closed, all the water will be lost by evaporation on the surface, and the bladder will fall together, though it has no openings. The thinner the membrane of the bladder the sooner all the fluid will be lost. If we expose membranes with each surface to different fluids, they penetrate through the membranes and mix with each other. The degree in which this takes place depends greatly on the nature of the substances which are used; the thinner fluids penetrate, however, in greater proportion than the thicker ones. This may be proved by a calf's bladder, half filled with the white of eggs, which, when put into water, will swell and burst; such a bladder, filled with water, being put into an albuminous liquid, will become empty and fall together. This is no doubt a remarkable property. The cavity which contains the thicker and more glutinous substance admits through the membranes of the cell a more fluid one. The same is to be observed in this respect in the membranes or vesicles of animals, and in the cells of plants. Gum, slime, sugar, albuminous and other substances are found in a smaller or larger quantity, in the cavities of the young cells of all, particularly younger organs; they are also present in those of the outer points of the root, which takes up from the soil a moisture, consisting chiefly of water, mixed with small quantities of different substances, soluble in that water. The moisture from the earth, being thinner than the fluids in the cells, penetrates the membranes of the cells in the roots, and with it those substances, the nature of which allows them to penetrate through the membrane and to mix and unite with the sap, are admitted into the cells; whereas, on the other hand, those substances which cannot be united with it, are not absorbed by the roots. It is as if the roots had a preference for some nourishing substances in the ground and a dislike for others; and it is alone by this that we must explain how some substances of the ground are taken up by the plants, and others not; why, in fine, each plant requires its own soil and is often unable to grow upon other sorts of ground.

(*To be continued.*)

Home Correspondence.

Woods and Forests.—In the *Gardeners' Chronicle* of the 29th ult., you have some remarks on the subject of the report of Mr. Drummond's committee on crown forests. I have myself just read that report, and beg to advert to one or two points in it. With reference to Alice Holt Forest, it is stated "the evidence adduced to the committee leads them to the conclusion that the management by the present surveyor has been satisfactory and judicious." I believe that just such a statement as this was expected to come from the committee; whether it fairly represents the truth of the case is yet to be proved. When I visited Alice Holt Forest in November, 1852, I found the greater extent of such drains as were on the land so overgrown with Grass, &c., that I frequently stumbled into them without previously observing them; and in them all there was a considerable depth of standing water, which could not escape except by percolation through the soil or by evaporation into the air. The trees on many parts were far apart from one another, and in consequence rough and branchy, while on others they were excessively crowded and drawn up to mere poles; those under both these conditions being of the same age. This I maintain was the truth of the case with respect to a considerable portion of Alice Holt Forest when I visited it; the management which brought about such a condition of forest matters is, however, styled by the committee "satisfactory and judicious!" On the ground of my report on this forest under notice, I was condemned and discharged from Dean Forest by the Treasury; and the only reason that I can yet assign for their dismissing me is that I endeavoured to give a true and faithful account of the state of the property. I could not do this without of necessity exposing the mismanagement of the deputy-surveyor, which course, it would appear, some parties in the Treasury did not approve of, so that I was thrown overboard for no other reason than that I unhesitatingly spoke the truth irrespective of party. In a former communication to you, I think about the middle of May last, I stated that I was prepared to prove on the spot and in the presence of impartial judges, the accuracy of the statements which I had made in my report respecting the size of the trees and the number of these on the acre in Alice Holt Forest,—the principal point in dispute between the deputy surveyor and me, and the one on the ground of which the Treasury thought proper to dismiss me from their service; but such an opportunity has not yet been granted me, nor have the committee even called upon me to ask me one question on the point. Their reasons for thus keeping me and my case so utterly in the dark are best known to themselves; but I would again thus call public attention to the manner in which I have been treated by the Treasury. In the case in question the deputy surveyor, who knows almost nothing about the culture and management of forest trees, is said by the committee to have managed "satisfactorily and judiciously," while I, who in justice to the public endeavoured to guard them against his mismanagement, have been condemned as far as the committee can condemn; for in their report they state (I presume respecting me) that, "It is to be regretted that Mr. Kennedy sent a stranger of very limited experience to examine and report upon the state of the Forest, without apprising either the Treasury or the local surveyors." As to this, I have only to say, that, however limited in their estimation my experience may be, it is too well known to the public generally for my reputation to stand much chance of injury from anything the committee can put forth. I ask nothing from the gentlemen of Downing Street than that the simple truth should be brought out as far as I am concerned, and this, I am persuaded, a discerning public will cause to be done ere long. *James Brown, Grantown, Strathspey, Aug. 18.*

Clerodendron fœtidum.—As it appears, from the interesting communications concerning this plant, that it may be considered root-hardy, the important question remaining is—whether it throws up flowering wood in the course of the summer. The Fuchsia does invariably; but it does not follow that whatever comes up again from the root will blossom. *A. H.*

Cucumbers, &c.—The gardener of the Rev. William Ponsford, the rector of this parish, has this year grown four plants of Cucumbers (Evans's Conqueror of the West) in a two-light frame, 7 ft. 9 ins. wide by 6 ft. 9 ins. long, from which he has cut 82 very fine fruit. He has also grown in the garden a plant of the Impatiens or Noli-me-tangere Balsam, which is very luxuriant, being 6 feet high and 13 feet in circumference, and covered with the pendulous blossoms. *William Collyns, M.R.C.S., Drewsteignton, Exeter.*

Manure and the Potato Disease.—There is here a field which has been for many years in Grass; it was ploughed the beginning of the year (February), and planted with Potatoes called Regents, and sprinkled with salt and soot. The Potatoes were in general free from disease, except in one corner where there had been a manure heap, and there (and extending for some distance from it on all sides) there is a considerable quantity of disease, both in the haulm and tuber, diminishing both in quantity and virulence as the distance from the former manure heap increases. *R. H., Putney.*

Pears, and their non productiveness.—This season I have a fair average crop of Pears, and on three trees of an old kind, called "The Lammas," I have gathered 25 sieves of fruit for market, for which I received 3s. 6d. per sieve. These, however, have been the best of my

trees, other kinds have not been so productive, and some kinds have scarcely any fruit on them. Williams' Bon Chrétien, which I am now gathering, is not at all good, and the Jargonelle has been equally thin; while the Sweet Water, Green Chisel, and some others, having only local names, have been tolerably plentiful where the trees are healthy; but my orchard is old, and I find that the Pear is far from being so long lived as many people affirm. I took up about 20 large old trees that were dead, or nearly so, last winter, and I shall have some more to take up this season. It is, however, proper to observe that the trees had been cut down and grafted some years ago, but it is often just as the trees get into a bearing size again that they begin to die off; the disease seems to be an inability of the stock to maintain the top, and not in any way connected with the union of the two. Now, it is very unfortunate to see trees die one after another just when they arrive at a good bearing size. I am, however, no worse off than my neighbours, who all suffer in the same way, and trees planted, or rather growing on tillage ground, are equally affected with those on Grass; most kinds are subject to it, with me the best one to withstand the evil is the Ashdown Park, a small Autumn Pear, which also bears pretty well, but this season it is a failure. Marie Louise also succeeds pretty well, last year it bore an excellent crop, and this season it is tolerably good; the fruit of this kind is smaller on standards than on walls, but on the former it is much better flavoured. Beurré de Capiaumont is also thin, and the Brown Beurré still more so; in fact, the last named is one of the shyest bearers I have. Of Glout Morceau I have but a few trees, but there is a fair sprinkling of fruit on them. Crassane is a total failure, and I have not a single fruit of Gansel's Bergamot; in fact, I have only one tree and some few grafts of this kind, which never produces a good crop. Beurré de Aremberg, and some others, are better; but as I only grow a very few of them, I cannot speak with certainty as to their productiveness. My principal autumn fruits are Marie Louise, Ashdown Park, and Duchess d'Angoulême, the two first-named especially, but as these rarely realise more than 6*s.* per sieve, and often much less, I do not think that Pears can be called a profitable crop; for even with the little attention and labour which I give them, they still cost a something, and the many adverse seasons we experience add materially to the expense of their culture. Now, having stated this much, what I want to know is, how am I to manage my trees so as to induce them to bear even in the worst of seasons, for be it understood I am far from believing that frost is the only enemy we have to encounter; in fact, I believe that frost often gets the blame that ought to be attributed to something else. Last spring we had no frosts here during the time in which the Apples were in bloom, and yet there is very little fruit, and the trees are in many places in an almost dying state. My opinion is, that where the buds of fruit trees are well formed and perfected in the preceding autumn, they will resist more frost than many people are aware of; but then, how are we to manage to get the buds so perfected? This question I must leave to your readers, and I shall be glad to be favoured with their opinion and experience on the subject. *H. L. H., Maidstone.*

Sulphuric Acid as Paint.—If any of your correspondents have tried diluted sulphuric acid instead of paint for preserving wood-work out of doors, they will oblige by stating if it has proved successful, and the proper strength to use. *B., Aug.* 19.

Red Tiles, their Colour Removed.—Having a cottage under one wide roof, in an exposed situation, I feared that the mass of red, unrelieved by the green of trees, would be too strong. I therefore heated half the tiles at the lime-kiln, and whilst warm tarred the outer side with gas-tar once only, the result is a pleasant brown. *Somerset.*

Stanwick Nectarine.—Having lately called at Trentham, I inquired of Mr. Fleming if he had succeeded in ripening this Nectarine; he replied that he had succeeded in ripening it well and of good flavour, the latter somewhat resembling that of a Green-gage Plum. His practice is to take a young shoot and inarch (or bottle graft) it on the points of the shoots of established trees of other varieties upon its own stock. He found it to grow too luxuriantly even under glass, and the fruit to crack and not ripen well. *William Adderley, gardener to M. Bell, Esq., Bourne Park, Canterbury.*

Aphis Rumicis.—It is singular that a species of plant louse, which is generated on the common Dock, should this year have infested the Turnip crops in Yorkshire. I received the following communication from a gentleman residing near Richmond in Yorkshire:—"I send you specimens of the insect that has committed so much injury on the late sown Turnips this year. Those Turnips that were put in previous to the 24th of May have escaped. All my Turnips had farm-yard manure applied, as well as 2 cwt. of guano. One part had bones instead of guano, which was much worse than the guano. The insects are invariably under the leaf. I have not, or rather I did not, find any to-day at the root. There are now few left. I had some difficulty to find a good sample for you, but I fortunately met with some winged specimens. I had nine acres of the Hybrid Turnips destroyed last year." In a former letter to the Secretary of the Royal Agricultural Society, the same gentleman stated that "hundreds of acres are almost destroyed by this fly in the North Riding of Yorkshire and Durham;" and he added, "I have five acres quite destroyed, and several more acres are more or less injured." Mr. F. Walker says that A. Rumicis is hatched on the Dock, and then migrates to the Bean, Pea, Thistle, Chenopodium, Laburnum, Broom, and Furze, but it is a new plague, I believe, in the Turnip field; as the only species hitherto known to injure the Turnip crops were Aphis Rapæ, A. dubia, A. Brassicæ, and A. Floris-Rapæ.* I believe A. Rumicis was very abundant last year in the north of England. About the beginning of this month there were myriads of this species in the neighbourhood of London, and on the evening of the 1st they were seen in prodigious numbers near Highgate, and soon covered the plants in the gardens, causing considerable mischief to the Dahlia buds. They died, however, in two or three days, after some very heavy showers. There is still a great deal to be learnt about these remarkable insects, for species which at one time seem to be attached to one plant suddenly affect others, and this may be the cause, in some instances, of their sudden death; as the sap of the Dahlia, for instance, may poison a species which was bred on the Dock, whilst the Turnip may be wholesome food for it. Electricity also appears greatly to influence the appearance and disappearance of the aphides. *John Curtis.*

Fluke Potato.—Allow me to inform Mr. Ayres that he need not be alarmed about the Fluke, as there are thousands of acres planted in this neighbourhood, all of which are in the best possible health, with not a symptom of disease about them at present. *J. D., Manchester.*

Water Weeds.—In an artificial stream and small ponds, concreted and cemented to keep the water clean and clear, we are puzzled to prevent the growth of a fibrous and slimy mass of vegetable matter, which accumulates upon the surface, and forms large patches beset with globular heads of water. In a young state, these masses or patches are bright green; but in the course of two or three days they change to brown; putrefaction, and a gradual subsiding to the bottom, then commences. Now these masses of vegetable matter sadly disfigure the water, more particularly the surface. Hitherto, we have removed it by manual labour, but it proves a "tax" which we ought to get rid of; and I am anxious to ascertain whether or not we can employ some cheap chemical agents to prevent or destroy its growth. Although the flow of fresh water is but small, yet it would weaken the power of the agent employed, and this would involve the necessity of a renewal half-yearly, or perhaps quarterly, as the case might be. I calculate the small ponds and streams to contain from 10,000 to 12,000 gallons, and about 200 gallons of fresh water pass through hourly. I may here state that we cannot obtain a stronger stream, as the supply is limited. We have no fish in these waters—consequently, animal life is no consideration. Would common agricultural salt placed at the head of the stream prove effectual? Any useful advice on the subject will be thankfully received. *W. O. E.*

Damp on Lime Walls.—The following not exactly literal extract from the great Liebig's "Letters on Chemistry" may perhaps help "D. V." and "Somerset" as to damp on lime walls. He is speaking of the means of purifying air for respiration, and says "hydrate of lime is a strong purifier" (in reference to carbonic acid, a product of respiration) from its great power of absorbing carbonic acid, which is rapidly removed from air by slaked lime on a board, 0.551 cubic feet, which, when moist, weighs 18 to 20 lbs., and contains two-thirds its weight of dry lime, absorbs in order to be converted into carbonate of lime 36.8 cubic feet of the gas. The inconvenience is that, as the lime combines with the carbonic acid, the water of the hydrated lime is set free and partly evaporates, and the air soon becomes saturated with aqueous vapour. This inconvenience is well known to those who inhabit new houses. It appears during the first months very strikingly in the winter months, by an excess of moisture, condensing in drops on the windows and cold walls. This is observed in houses which have for years been exposed to the action of dry air; and always for the first time such houses are first inhabited. It does not proceed from ordinary moisture in the walls, but from the dry hydrate of lime in the mortar, which only gives out the 24 per cent. of water (which are chemically combined in it) as moisture, when the lime obtains a supply of carbonic acid to combine with and displace the water. This supply is abundantly furnished by the lungs of the inhabitants." The remedy, then, does not consist in building with hollow bricks, though they are excellent in themselves, but in providing for the removal of the carbonic acid and aqueous vapour produced by respiration; by the most efficient ventilation of the building; and that this is the fact I could give a case in point, but as it is not horticultural your journal is not the proper place. *J. P. S., Chesterford, Aug.* 22.

Notices of Books.

The Globe prepared for Man; a Guide to Geology. Adams. 12mo. pp. 339.

THIS little volume is intended as a school book, and the highest compliment that can be paid it is to say that it answers its purpose; for, of all things, school-books are the most difficult to write. The woodcuts, though coarse, are good, and the diagrams excellent. It would form a very useful class book for young people for the first time beginning geology. The style of the author may be gathered from the following fragments:—

"About 60 years ago Mount Hecla, in Iceland, threw out two streams of lava that ran for the distance of 40 and 50 miles. The streams were 10 and 15 miles wide, and 100 feet in height. Moving lava does not sink at once, like water, to the level of the ground. The stony liquid usually begins to flow out of the crater about as thick as honey, and when its outer crust cools, it stiffens with sufficient force to stand up like a high solid wall, yet continues to move on as if pushed forward. 'In the spring of 1852 a large mountain in the Sandwich Islands was presenting a beautiful and grand display of volcanic eruption. By accurate measurement, a column of glowing molten lava rose from the crater 500 feet in height and 100 feet across, presenting a sight that excited, even at a distance of 40 miles, the most lively feelings of admiration and awe. In some places the lava was flowing down the mountain as a river, ½ mile in width; at other points it had filled up ravines one, two, and three hundred feet in depth. It entered a forest, and the giant growth of centuries was cut down before it, like Grass before the scythe; no obstacle arrested its descent to the sea. Mounds were covered over, valleys filled up, and the habitations of man consumed like Flax in the furnace. The eruption began 10,000 feet above the level of the sea, about 50 miles from the Bay of Hela; and if it succeed in reaching the ocean, having filled up the ravines and inequalities of a very broken country, it will be one of the most extensive eruptions of modern times.' Sometimes jets of red-hot dust and ashes are driven by the wind to great distances, and, as they fall, set fire to whole woods and villages. During an eruption of the volcanic mountain of Truxillo, in Mexico, in 1835, its falling ashes killed thousands of cattle. Deer and other wild animals ran into towns for protection, their bodies in many instances, becoming one mass of scorched flesh. Birds, as well as animals, for 24 miles round, were suffocated in the depth of the ashes, and all the neighbouring streams were completely strewed with dead fish."

"Rivers are great blessings to mankind; they afford an easy means of communication between distant places; they supply moisture to the air, and rich stores of water for our domestic, agricultural, and manufacturing purposes. They drain low marshy tracts, and greatly assist in clearing away decaying particles of matter. So various are the substances carried by river streams into the sea, that were the beds of our present oceans to be lifted up, we should behold strange treasures mingled together in their widely-extended layers of sand and mud. We should find the bones of all kinds of land animals, and the wood of trees from all countries, buried among sea weeds, beds of coral, sponges, shells, and skeletons of fishes, together with pieces of wrecked vessels, and shattered furniture. These substances are regularly laid in vast ranges or beds, just as different storms, currents, and eddies in the water have driven them forward over the bed of the sea, until they have finally settled upon its muddy shingly deposits; each layer having in its turn been the uppermost bed, so that if the bottom of the ocean were really to be lifted up, and our eyes were to behold its broken edges, we should find them matching our present sea cliffs, which often display many different materials resting upon each other; such as beds of sand on gravel, gravel upon chalk, layers of hardened mud upon pebbles, and pebbles upon sand. Several qualities of sand may often be seen in banks by the road side. At the top, vegetable mould generally lies, then, perhaps, layers of sand; below the sand may be a line of pebbles, or possibly a thin stratum of stone, and under these substances there may be sand again."

"The earth is a vast collection of minute atoms, forming a ball of heavy matter, flattened at its poles something like an orange. It hangs in the air upon nothing, and spins round itself in 24 hours. The centre or middle part of the earth is believed to be in a thick fluid state, because the flattened shape of the earth is the form that a thick fluid takes when rolling round in the air. And just as the juicy centre of an Orange is covered by two or three rinds, so around the fluid centre of the earth are many rocky layers of varying thicknesses, which are believed to form altogether a depth of eight or ten miles. Yet so large is our globe, that this depth of eight or ten miles is not a thicker crust upon its surface than a sheet of paper would be upon the surface of an Orange. What the fluid substance is that lies in the centre of the globe is not exactly known, but it is believed to be a mass of red-hot metals, about as liquid as iron and silver when, by intense heat, they are thinned down to the consistency of mud. The idea of the globe's internal heat is favoured by the fact that in various parts of the earth flames rise from cracks in the ground, and also out of summits of mountains. These flames are generally accompanied by smoke, steam, and red-hot muds, that roll down the sides of the mountains like broad rivers of fire. And in many parts of the world springs of water rise up sufficiently hot to break glass and to boil eggs. Another striking proof of the intense heat in the centre of the earth is, that the lower men descend under ground the warmer they find the air and rocks. Not that men have been able to go very far under ground; the deepest mines that have been sunk for the purpose of obtaining such ores as lead, silver, copper, and iron, do not exceed the depth of about one mile from the surface. If the workmen tried to go deeper, they would certainly be suffocated for want of fresh air to breathe."

We should add, that at the end of each chapter is a number of questions which the learner is expected to answer.

* Journal of the Royal Agricultural Society, v. iii, p. 49, and pl. c

New Plants.

79. ALLOPLECTUS CHRYSANTHUS. *Planch and Lind.* "This is the fourth species of this genus obtained from the inexhaustible flora of Columbia; several other species from the same countries, and not less beautiful than the first, will in turn, be ready for distribution. The species in question is quite as fine as its predecessor A. Schlimii. The leaves are large, with long stalks; their upper surface is like glossy velvet, and the under is of a violet purple colour. The flowers, which are numerous, are, as the name indicates, golden yellow, the corolla contrasting well with the lively red velvety calyx. This has been described by M. Planchon in the "Flores des Serres," t. viii., p. 211. It was discovered in 1851 by Mr. Schlim, who found it in the province of Ocaña, at a height of from 5000 to 6000 feet above the sea." *Linden's Catalogue*, 1854.

We hope this will prove a still handsomer plant than A. Schlimii, which, although not a favourite in England any more than A. speciosus, is a magnificent plant when really well grown, that is to say, when the true character of its glorious leaves are developed. Among plants with fine foliage these Alloplects are surpassed by few. We see it is marked 15 fr. in Mr. Linden's trade list.

80. COUTAREA DIERVILLOÏDES. *Planchon and Linden.* "This is a shrub belonging to the natural order Rubiaceæ, and reminds one, by the size and shape of its flowers, of Weigela rosea. The flowers, of a pure white inside, and of a beautiful pink outside, form rich terminal panicles. The leaves resemble those of Lonicera tatarica and of Symphoricarpus, but are much larger. Introduced by Mr. Schlim, who discovered it in July, 1851, in the province of Ocaña." *Linden's Catalogue*, 1854. Sold at 25 fr.

Garden Memoranda.

MESSRS. LANE'S NURSERY, GREAT BERKHAMPSTEAD, HERTS.—The culture of small fruit trees in pots, first introduced to notice by Mr. Rivers, has within the last two or three years been adopted to a greater or less extent by several of our leading nurserymen; but, perhaps, nowhere has the plan been more successfully carried out than it has been at Messrs. Lane's this year. Those who had the good fortune to be present at our great metropolitan exhibitions in July last, would see the Cherries and Currants which these gentlemen showed in pots, at that time; and now the display of Peaches, Nectarines, and Plums, which they have grown in this way, is well worth a journey to Berkhampstead to see. Several of the Peaches and Plums are ripe, and some have dropped; but the Nectarines are not quite so forward. Among Peaches all of them small trees in 10-inch pots, we counted 10 fruit on a Royal George, large and well coloured, some of them measuring 9 inches in circumference; on a Noblesse were 13 fruit; on a Bellegarde a similar number; on a Barrington 14; on a Millet's Mignonne a similar number, and on the Catherine Peach were 6 fruit. On a Red Roman Nectarine there were no fewer than 33 fruit; on a Murray ditto 17; a Newington 8; a Hunt's Tawney 16; and on a Violet Hative 22. On a very small tree of the Quetch St. Martin's Plum we counted 34 fruit, all ripe and in great perfection; and on Coe's Golden Drop were two fruit, unusually large and fine. Plums, we need scarcely say, succeed uncommonly well in pots, and if the fruit is kept from wasps, and allowed to hang on the tree till quite ripe, the flavour, in good kinds, is found to be delicious. We noticed one or two plants of the Stanwick Nectarine in pots, but its fruit was cracking and not swelling at all kindly. It is also later than other sorts, but Mr. Lane does not despair of yet having a few fruits of it in perfection.

As regards the kind of treatment pursued, the great object aimed at here (as it should be everywhere), is to get the wood thoroughly ripened and the flower-buds set early in autumn. This is effected by keeping the trees in the open ground plunged in beds, as long as the weather is fine; after that they are moved into a glass house open on one side, where they are wintered. In spring they are placed in the warm end of a long span-roofed house, in which they are allowed to remain plunged in sawdust till they ripen their fruit. This house is heated by a kind of Polmaise stove, and has constantly a nice circulation of air in it. It stands up and down a rather steep hill, and when we say that the plants were in the warmest end of it we mean the highest end, which is that farthest from the stove, and where there is nothing in the shape of scorching, but that mild agreeable warmth in which all kinds of plants so much delight. Under such circumstances, associated with skilful management, the result, as will be seen from what we have just stated, has been eminently successful.

The kind of soil employed is a mixture of loam and dung, and the plants were watered four or five times while they were growing, with liquid manure.

FLORICULTURE.

PELARGONIUMS.—As you have already given the mode of growing these useful plants for exhibition, perhaps the following remarks on their cultivation for the greenhouse of a private gentleman may not prove unacceptable, as my mode of treatment, though nothing new, has invariably been followed by an abundant head of bloom and healthy foliage. After the plants have flowered the first time, they are removed into the open air, placed upon cinder ashes, to protect them against the worms, and are cut down the beginning of August; in a fortnight the shoots will have pushed to about an inch, when I proceed to repot them. My practice is to shake off all the old soil, and to prune the roots to within 3 inches of the stem. This process I consider favours the production of a fine head of bloom, by checking the rapid and vigorous growth of new wood. The plants soon recover, and the destruction of the old roots is succeeded by new and active fibres from the points where the knife had been employed. The following compost I use for the winter potting, viz., two barrowfuls of loam, two of leaf-mould, half a barrowful of peat, with one peck of silver-sand. The plants are placed where they are partially shaded, receiving a little of the morning sun only; in three weeks they will have made new roots sufficient to bear removing to a more open situation, where they will receive plenty of light and air. Here they remain till the weather becomes wet and cold, when I remove them into the greenhouse. I place them as near the glass as possible, and admit all the air I can to prevent their being drawn, and water sparingly during the winter months. In October I stop the shoots to within four or five eyes of the stem. In the beginning of December I prepare to repot for blooming, using the following soil, which is richer and stronger than the compost previously employed. To two barrowfuls of loam I add two of cow-dung one year old (I prefer it of this age, as it affords nourishment a greater length of time), half a barrowful of leaf-mould, and one peck of silver sand. If the loam be heavy and strong, I add peat, but this is not necessary if the loam is of a sandy nature. I give good drainage by giving plenty of potsherds, and shift into pots a size larger than the plants were previously grown in—either 8 or 9-inch ones. I rub off nearly all the old soil and fill up with the compost above described. The house is kept closed for a fortnight or three weeks, and when I see the plants begin to root freely I give air as the weather permits; the temperature of the house ranges from 40° to 45° Fahr. when the plants are growing freely. I keep them well tied out, forming them into broad and uniform heads. I begin to syringe the plants about the middle of February (choosing the afternoon of a fine day for the purpose), and continue this operation twice a week till the plants begin to show their bloom. During the months of February, March, and April, I water twice a week, and increase the quantity as the weather becomes warmer. I fumigate for green fly, and shade from the midday sun. *S.*

DAHLIAS.—These will now require a considerable amount of care. They will not bloom well unless a degree of moisture is kept up at the root; and sedulous attention to this is indispensable. Many fine flowers are stunted in their growth, and deformed in their bloom, because the soil is too dry. Constant watering being attended with trouble, and also being undesirable, because it washes the best properties of the compost beyond the range of the roots, it is best to mulch the surface to about 9 inches all round the plant. I have known persons put the mowings of the lawn to this use, laying on a thick stratum of Grass round each Dahlia. Previous to this being done the soil must be thoroughly soaked, and one such watering will last for a week, although without the mulching, one dry day would render the operation again necessary. These mulchings should be kept moist, and this can be done by sprinkling a little water daily from the rose of a watering-pot. This is necessary to keep the soil beneath equally wet, and also to prevent earwigs and other insects from lodging in the Grass. Earwigs and woodlice hate a wet situation, and are always found in the driest places; hence, the wet state of the Grass will prevent their stopping among it. Earwigs are the worst enemies of Dahlias, feeding on the young and undeveloped petals of the flowers, as every amateur knows to his vexation. Perhaps the best trap is a small flower-pot at the top of the stake, for these insects seem to have a strong propensity to ascend as high as they can for a lodging. This may be turned to good account by the gardener, who will find the pots occupied every morning by the enemies he is in search of. I have killed many thousands in this way. In my neighbourhood earwigs are more than usually abundant, rendering watchfulness highly necessary. A little diluted cow-dung may be applied once a fortnight, and all decaying flowers should be cut off. These contain earwigs, which must not be allowed to run away. *D.*

PROPAGATING CAMELLIAS: *J H.* They are increased by inarching, grafting, and budding on the single red and Middlemas red, cuttings of both of which strike readily. These latter should be taken off in August or September, as soon as the young shoots are ripe. They are prepared by being cut through horizontally at a joint, or better taken of with a "heel," divesting them of a few leaves at the base, and potting them in sand. They should then be well watered, and the pots placed in a cold frame for a month or six weeks. They may then be introduced into a gentle bottom heat, and potted off into small pots next spring; still keeping them in heat until they have made their growths, then gradually hardening them off. In the succeeding season they will be ready to be inarched, budded, or grafted.

SEEDLINGS.

CALCEOLARIAS, &C.: *Cheadle.* There is nothing remarkable in your seedlings.

Miscellaneous.

An American Way of Obtaining Prizes for Seedlings.—At a meeting of the Massachusetts Horticultural Society, held May 27, 1854, the chairman of a committee appointed for the purpose offered the following report:—The select committee appointed by this society to examine into all the circumstances attending the award to Messrs. Hovey & Co. of a gold medal, for a seedling Cherry, and a gratuity of 20 dols. for a seedling Pear, report the following facts: That at the last meeting of the Society (in 1853), previous to the incoming of the newly-elected officers and committees, the chairman of the fruit committee presented a draft of his report, which was recommitted to him for completion. That, in the draft of report so submitted, no mention was made of any award of medal or gratuity to Hovey & Co.; nor up to that time—the last day of their existence—had the question of such awards been discussed in committee. That after the adjournment of the society on the day above mentioned, and after the departure of the chairman of the fruit committee, C. M. Hovey called together three members of the committee (which consists of seven members) and urged upon them, very strenuously, the merits of the seedling Cherry, which he claims to have originated, and of the Pear, which he claims to have introduced. That two of the three members were of opinion that the Cherry had not been exhibited for five years, as required by the rules of the Society. This position was controverted by Mr. Hovey, who also contended that his seedling was conceded to be the best that had been exhibited. Your committee understand that, when the matter was pressed to a vote, one member (of those present) declined to vote, one other voted for the award of a medal, with the proviso that it should be proved to have been exhibited for five years, and the other member voted for the award without conditions. The vote upon the Pear was about the same. The committee are further informed, that the first intimation received by some members of the fruit committee that such awards were even contemplated, was obtained from the printed Transactions of the Society. In the opinion of your committee, this conduct on the part of a competitor for the highest premiums of the society ought not to pass unrebuked. Not only is it subversive of all order and good government that committees should be called together without proper authority, but the offence is magnified when the person usurping the powers of the chairman is himself the claimant before the committee—a party to a suit, before judges whom he may select for himself, and the ex-parte advocate of his own interests. The Society is wronged, because their rules are trampled upon; the committee is wronged, because they are deprived of the benefit of a full discussion and of time for consultation; the unnotified members are wronged because they are allowed no voice in the decision; the members present are wronged, because they are subjected to the personal solicitations and persistive pleadings of the applicant; other competitors for the premiums are wronged, for their claims are pushed aside; the public is wronged, because it accepts as the well-considered action of the Society what is, in truth, but the opinions of one or two members, hastily convened and hurried to a decision by the party most interested. If this instance of irregularity which has been brought to the notice of the Society is suffered to pass without censure, your Committee believe that the public will regard with diminished confidence the decisions of the Society; for they will, with reason, suspect that our medals and gratuities for new varieties of fruit, flowers and vegetables, are indices rather of the adroit management of the applicants than of merit in the articles. The number of exhibitors at our shows and of competitors for premiums will be sensibly diminished; for modest merit will have no chance against unscrupulous assurance. Already complaints, "not loud, but deep," have been heard, that rules, which are stringently enforced against some members, are broken with impunity by others. In view of the facts above stated, your committee present the following resolution for your adoption:—"Resolved, that the conduct of C. M. Hovey, a member of this Society, in procuring the award to Hovey and Co. of a gold medal for a Seedling Cherry, and of a gratuity of 20 dols. for a Seedling Pear, was irregular and improper, and is censured by this Society."

The Vine.—Among the instances given of enormous Vines, we may quote the following: Pliny records a Vine in the Porticos of Livia, which overshadowed the whole area used as a promenade, and yielded annually 22 amphoras (154 gallons) of wine; the same writer states that he had seen at Populonia a statue of Jupiter, made of the trunk of a Vine, and that the columns of the temple of Juno at Metapontus, and the steps of that of Diana of Ephesus, were also of Vine wood. In more modern days, Sodenini mentions a Vine in Portico di Romagna, which extended over 1000 braccia. In the Mémoires de l'Académie of Paris, for 1737, a Muscat Vine at Besançon, is described, which at 20 years old produced 4206 bunches of Grapes. Giovanni Targioni-Tozzetti, our author's grandfather, in his travels in Tuscany, quotes one in the woods near Montebamboli, the trunk of which two men could not embrace. Santi found a Vine at Castellottieri, in the Maremma, torn up by a storm in 1787, whose trunk is preserved in the botanic garden at Pisa, with a stem $5\frac{1}{2}$ feet in circumference; and Prof. Targioni has himself recorded in the article "Botanical Chronology," in the "Dictionary of Natural History," printed at Florence by Botelli, two Vines near Figlini, in the upper Val d'Arno, with trunks 5 feet in circumference. The doors of the Cathedral of Ravenna are made of Vine wood. *Journal of the Horticultural Society.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Conservatory, &c.—Acacias, Kennedyas, and other New Holland plants used as twiners, will flower much more profusely if they can be kept rather dry at the root during the autumn, in order to get the wood well matured, for unless this is effected it will be in vain to hope for a first-rate display of bloom. Care must be observed, however, not to let the soil about the roots become excessively dry; for although these plants are subjected to long periods of drought in their native habitats, and are said to be found growing in soil in which there is hardly any appearance of moisture, they cannot safely be subjected to such excessive dryness in this country; nevertheless, to flower them profusely, they must be as sparingly supplied with water after they have made their growth, as can safely be done. And this treatment will also be proper for many of the permanent occupants of the beds, that is, supposing they have made a fair amount of growth, especially the varieties of Citrus, which flower but very sparingly unless their young wood is well ripened. Shading, if not altogether dispensed with, must be used very sparingly, and unless we experience a decided change of weather there will be no danger in removing it for the season. Give careful attention to large valuable specimens of hard-wooded plants, removing decaying leaves immediately they are perceived, and see that they are nicely supplied with water, especially such as have been recently repotted, for they will be easily injured by any neglect or excess in watering. Many of the Fuchsias will now be past their best, and should be removed to make way for the Liliums, &c., and if cuttings have been rooted the old plants may be thrown away at once, particularly large specimens of worthless old varieties, with which it is folly to crowd the houses in winter, while immense specimens, for early flowering, may be grown from cuttings put in now. Stove.—The unusual amount of cloudy damp weather which we have this season experienced has been more favourable to the rapid growth of stove plants than to securing short-jointed wood, or such as is likely to bloom profusely next season. It will, therefore, be necessary to pay timely attention to getting the young wood of such things as bloom upon last season's growth well ripened; for future success, either as regards growth or blooming, is more dependent upon having the wood well matured in autumn than persons not well conversant with the culture of plants are apt to suppose. Take advantage of any leisure time to get young specimens neatly tied, keeping the shoots rather thin, so as to expose the foliage to light and air, which will greatly assist in preventing mildew and damp in winter. Plants, however, which have not made their season's growth should be encouraged with as much warmth and moisture as they will bear; but avoid shading, which after this season would only tend to the production of long-jointed weakly wood. Gloxinias, Achimenes, &c., removed here after blooming in the conservatory, should be sparingly watered for some time, and not dried off all at once, which is a too common practice, and frequently results in the loss of a portion of the stock. Attend to the repotting of winter flowering stock, and do not let these sustain any check for want of pot room until they are in their flowering pots.

FORCING DEPARTMENT.

Pinery.—Plants growing in dung pits must be freely supplied with air, to prevent their getting drawn, &c., which is apt to be the case with plants in dung heat in cloudy weather. They should also be kept near the glass, and allowed plenty of space; for strong robust plants can hardly be expected unless this is attended to, and weakly drawn plants never throw up fine fruit. Give those swelling their fruit plenty of manure water, and afford them a thoroughly moist atmosphere. Remove useless suckers and gills, as soon as they are perceived, and maintain a steady bottom-heat of from 85° to 90°, but do not exceed this. Young stock in free growth and standing rather closely together should be re-arranged, so as to afford them plenty of room, in order to prevent the foliage getting drawn; also attend to shifting any that require more pot room, keep them near the glass, and encourage rapid growth by means of a brisk moist temperature, giving sufficient air to keep them stocky. These will also enjoy a liberal supply of good strong clear manure water, particularly those that have well filled their pots with roots. Vineries.—Where there is any danger of the border of the early house becoming too wet it should be covered with something to throw off the rain, as there will be considerable difficulty in getting the wood thoroughly ripened, if the borders are saturated with moisture. Keep Vines, from which the fruit is cut, clear of laterals, and expose the principal leaves to all the light possible. Use slight fires on dull damp days in houses where the fruit is ripe, so as to allow of giving air freely, and look over the bunches frequently, cutting out any affected berries. Late Grapes colouring must be assisted with slight fires, especially Muscats. Thrips are frequently very troublesome in late Vineries, and if these make their appearance, no time should be lost in giving the house a heavy smoking, choosing a damp close evening, and shading the Vines slightly the next morning. This repeated two or three times at intervals of about a week or ten days will effectually clear the house of this most destructive pest. Peaches.—Give every attention to ripening the wood, for upon this being properly effected next year's success will largely depend. Keep the foliage clear of insects, and endeavour to preserve it in health as long as possible. Give air abundantly, both day and night, but keep the borders as dry as can conveniently be done, therefore do not leave the sashes down when there is a prospect of a wet night. Any gross shoots should be stopped, as these, when allowed to grow as long as they will, draw the roots and keep up a tendency to growth longer than would otherwise be the case. Loosen the surface of the inside border, in order to expose the roots as much as possible to the influence of the atmosphere; also in case of a continuance of heavy rains, cover the outside border with something to prevent its getting soaked, which would greatly retard the ripening of the wood.

FLOWER GARDEN AND SHRUBBERIES.

The earliest put-in cuttings should be potted off as soon as they are sufficiently rooted to bear the operation, placing them in a close pit or frame until they get fairly established in their pots, when they should be freely exposed to the air, in order to induce short-jointed firm growth, which, with ordinary care, will be easily carried over the winter, whereas, plants got up late in autumn in a close moist atmosphere will, despite every care and attention, be largely thinned before spring. Push forward the putting in of cuttings, and get the autumn propagation out of hand as speedily as possible. Where alterations involving the removal of large trees or shrubs are in view for this autumn, the necessary arrangements for commencing them cannot be made too soon; for although large plants may be removed successfully at almost any season of the year, it can be done more cheaply, and with less risk of failure, in September than at any other period of the year. Therefore, where such work has to be done this season, it should not, as is too frequently done, be put off until the season is so far advanced as to prevent any chance of the plants emitting fresh roots before winter. Get early-struck cuttings of Pansies, &c., planted out as soon as they are well rooted and fit for removal. Also plant out Dianthuses, Sweet Williams, and other things raised from seeds before they suffer through being crowded in the seed beds. Rose cuttings will now be readily obtained; and if planted in sandy soil, and placed in a close frame for a few weeks, and then afforded a slight bottom-heat, they will root with great certainty; especially the autumn-flowering varieties, which are vastly more desirable than those which flower but once in the season. Partially ripened, or firm short-jointed shoots should be selected for cuttings, as there is no possibility of rooting gross soft shoots.

FLORISTS' FLOWERS.

Propagate Hollyhocks. This may be done by taking buds and inserting them in light sandy soil in thumb pots. Care must be taken not to give them too much water, as they are apt to rot off, and it will be requisite to keep them closely covered down in a cold frame. Seed of Tulips may now be gathered; of course care has been taken that none but pure flowers have been saved from. The amateur may purchase good varieties at a moderately low price now; for amateurs are making up their beds, and have often surplus stock to dispose of at a reasonable rate; at all times it is advisable to give a good price for a good strain, rather than have a bad one for nothing. Carnations and Picotees should be layered; gentle waterings will be required, and the pots must be kept free from weeds. Attend to other departments as previously advised.

HARDY FRUIT AND KITCHEN GARDEN.

See that the Strawberry plants for forcing are well cared for, as nothing but proper attention in preparing the plants will ensure a good crop. Keep them regularly supplied with water, expose them fully to the sun, pinch off runners immediately they are perceived, and use every means to secure fine strong plants with bold crowns early in autumn, with which there will be no risk of failure next spring. Cover Morello Cherries with thin nets, to protect them from birds, without excluding the air; also, if not already done, net up some of the latest keeping Gooseberries, to afford a late supply. The Red Warrington is one of the best to hang late on the trees, and is also of good quality. Gather early Apples and Pears as they become ripe, and before the greater portion is blown down and injured. Tomatoes must be kept thin of wood, checking all shoots, and exposing the fruit to the action of the sun's rays as much as possible. Take advantage of dry days to earth up early Celery, sprinkling a good dusting of quicklime or soot about the plants in the lines, and over the surface of the ground for some distance on each side, to destroy slugs, which generally do considerable damage to Celery, especially in wet seasons. The soot or lime should be applied two or three times before soiling up the plants, at intervals of a few days, and early in the morning, before the pests have retired to their hiding places. Take up and dry Onions that have completed their growth. The continued wet and showery weather is exceedingly favourable to the growth of weeds, and most unfavourable to their destruction; therefore lose no favourable opportunity which a few dry days may offer to ply the hoe and rake vigorously among growing crops, or wherever weeds are becoming unsightly. Vacant ground may still be planted with winter greens, if there is any danger of a deficient supply; but as those put in now cannot be expected to attain much size, they should be planted thickly, and the ground should be well manured.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,

For the week ending Aug. 24, 1854, as observed at the Horticultural Gardens.

August.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind.	Rain.
Friday 18	24	30.128	30.095	73	46	59.5	61	61	W.	[illegible]
Satur. 19	25	30.139	30.012	76	58	67.0	60½	62	S.W.	[illegible]
Sunday 20	26	29.996	29.924	75	49	62.0	62	63	W.	[illegible]
Mon. 21	27	29.824	29.765	70	50	60.0	63	63	S.	[illegible]
Tues. 22	28	30.013	29.865	71	41	56.0	62	63	W.	[illegible]
Wed. 23	[illegible]	30.198	30.000	67	57	62.0	61	63	S.W.	[illegible]
Thurs. 24	1	29.996	29.935	72	47	59.5	61	62½	W.	[illegible]
Average.		30.029	29.946	72.0	49.7	60.8	61.5	62.5		[illegible]

Aug. 18—Fine; partially overcast; cloudy.
— 19—Very clear throughout; partially overcast at night; rain.
— 20—Cloudy and fine throughout.
— 21—Overcast.
— 22—Very fine; cloudy; clear at night.
— 23—Overcast; cloudy and fine; boisterous, with rain at night.
— 24—Fine; cloudy and boisterous; very fine.

Mean temperature of the week, ½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,

During the last 28 years, for the ensuing week, ending Sept. 2, 1854.

August and Sept.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 27	72.3	50.2	61.2	9	1.32 in.	1	2	4	—	1	[illegible]	[illegible]	[illegible]
Mon. 28	72.2	50.8	61.5	13	0.20	1	5	3	—	[illegible]	[illegible]	[illegible]	[illegible]
Tues. 29	71.0	49.0	60.0	11	0.58	4	3	4	1	2	[illegible]	[illegible]	[illegible]
Wed. 30	71.4	48.9	60.2	6	0.92	2	4	2	—	4	[illegible]	[illegible]	[illegible]
Thurs. 31	70.3	49.3	59.8	12	0.92	2	5	1	2	[illegible]	[illegible]	[illegible]	[illegible]
Friday 1	70.1	49.0	59.5	15	1.50	2	4	2	4	[illegible]	[illegible]	[illegible]	[illegible]
Satur. 2	70.9	48.1	59.5	10	0.44	5	5	1	1	[illegible]	[illegible]	[illegible]	[illegible]

The highest temperature during the above period occurred on the 1st, 1843—therm. 85 deg.; and the lowest on the 29th, 1850—therm. 32 deg.

Notices to Correspondents.

Aphis: *J M.* With regard to your young Apple trees, on Paradise, which are annually covered with green-fly, we do not suppose that feeding the trees either more or less will render the sap less attractive to the aphis. Tobacco-water, as you observe, if strong kills the leaves; if weak it is useless. You can make sure work if you employ snuff, that is to say genuine snuff made from the Tobacco plant. Rather than be in doubt on this point, you could purchase some good strong oily Tobacco leaves; dry, pound, sift, and apply, with safety, to any kind of plant infested; but with certain destruction to the aphis.

Deodaras: *W C* would be glad to know where the Deodaras and Araucarias at the Crystal Palace grounds were purchased.

Insects: *Rusticus.* The insects taken from the base of your hay-rick are myriads of a minute Acarus closely allied to the common cheese mite. We suppose they were attracted by the hay being put up in too damp a state. They are an exceptional case, and we would recommend that as long as they last (which we do not anticipate will be long) the hay should either not be used, or if cut, each day's supply should be steamed before it is given to the horses. *W.*

Measure Work: *L.* will be greatly obliged if some of our readers will give him the prices of garden piece work, such as the market gardeners pay—digging, picking, hoeing, planting Cabbage, &c.; also the proportion of hands for glass structures per 1000 feet, whether for forcing, early Vineries, Pine stoves, &c.; and where day work is adopted, the number of hands per acre. This is a large question, but for an essay on the same subject in agriculture the Royal Agricultural Society of England awarded a prize.

Melons: *J Miller.* We assure you we are unable to say which is the worst of the two.

Names of Fruit: *W C C W.* Your Plum appears to be the Azure Hâtive.

Names of Plants: *Erzeroum.* 572, Campanula Biebersteiniana; 408, C. alpina? 1215, C. sibirica? specimens bad; 519, Scabiosa syriaca; 452, Pterocephalus brachiatus; 516, Cephalaria alpina; 1101, Scolopendrium vulgare; 6, Crocus [illegible]; 778, Crocus nudiflorus; 777, cannot be determined; is it naked-flowered or not? at what season does it flower? 1131, it is near Caucasica, but apparently different in its roots; 514, Cephalaria syriaca var. pedunculata DC., but surely very different from C. syriaca β; 372, Scabiosa ucranica.—*G R A.* A morsel of some Niphobolus, probably N. rupestris.—*Sphinx.* Campanula rapunculoides, Potentilla collina, Linaria glauco-phylla.—*B Lathom.* 1, Hieracium sylvaticum; 3, Carex panicea.—*Shrewsbury Sub.* It seems to be Æthalium flavum, a great pest. Try the effect 1, of flowers of sulphur; and, failing that, 2, of clear and fresh lime-water, or caustic soda.—*W S.* Hypericum calycinum, Anemone japonica.—*C R.* Impatiens glanduligera.—*Phyllis.* Not Tway-blade, but the rare Peristylus viridis.—*W E.* A variety of Tropæolum majus. We see nothing remarkable in the Heliotrope.—*Hafodunos.* Myoporum parvifolium (white), and Tetratheca hirsuta.

Osage Orange: *F A.* You will find the information you seek respecting this plant at p. 300 of the present year's volume.

Page's Anti-Blight Composition: *J R.* We cannot undertake to print any account of this. If the substance is of any value, why do not Messrs. Page & Co. send it to us for trial and report?

Peaches: *J M.* The following will enable you to distinguish the Royal George from the Noblesse:—The flowers of the Royal George are *small;* those of the Noblesse are *large.* The fruit of the Royal George is deep red, breaking off towards the shaded side in small round dots; the Noblesse is of a duller red, marbled or blotched with dark red, but not dotted. The flesh of the Royal George is rayed with red at the stone; but that of the Noblesse is pale yellowish, white throughout.

Plan of Garden: *Amateur.* Such inquiries as yours cannot be answered without consideration. The plan of the flower garden is good. Look for an answer next week.

Plums: *J M.* Plums in pots are liable to crack if they are irregularly supplied with water. If the variety is very thin skinned, cracking may arise from too much atmospheric moisture; but it is most apt to occur when roots that have been previously rather dry suddenly receive a full supply of moisture.

Potatoes: *W B Jeffries.* It is a very nice Potato, with a particularly even surface, which prevents waste in peeling.

Rhododendrons: *Jas. Smith.* You may graft them in the spring like Apples, or in the autumn—now, if the wood is hard enough. No bottom-heat is wanted if your soil is favourable, but you will find them take all the better for being well shaded from sun till the scions have united, care being taken to expose them to air at night or whenever it is moist.

Transplanting: *M P.* It is no easy matter to move a Cedar of Lebanon, 20 feet high, with certain success. We would proceed thus:—Describe a circle round the tree the radius of which shall equal the length of the lower branches. Along this circle, and with a narrow draining spade, open a trench 2 feet deep, so as to cut through the extremities of all the roots. Then fill in the trench with any soil rich in vegetable mould, [illegible] manured. Perform the operation immediately. By the end of October tufts of new roots will have formed in the space occupied by the trench, and the tree can be taken up without much injury. At that time, by any mechanical power at command, transplant the tree, taking great care of the new tufts of roots, and placing them evenly in the new hole. Fill earth in lightly till near the surface; then drench with water, without treading, and cover up with more earth. Secure the tree by a timber triangle.

Misc: *A Constant Reader.* We believe that the Mahogany tree exists in the hothouses at Kew.

UPPER PERUVIAN GUANO ON SALE.—Apply to W. & J. RAVENSCROFT & Co., Liverpool.

Extract from a Report of Dr. Ure, F.R.S., &c.

"Your Upper Peruvian Guano is worthy of all commendation."

Extract from the Report of George Layton, Esq.

"RAVENSCROFT's Upper Peruvian Guano will last longer, and eventually do more good than Gibbs', or any other I have ever tried. It possesses the very finest qualities of both Guano and Bone dust."

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures, Linseed Cakes, &c.

WM. INGLIS CARNE, 10, Mark Lane, London.

PEAT CHARCOAL.—The undersigned have a cargo of this valuable Deodoriser and fixer of Ammoniacal matter, on Sale. Apply to MARK FOTHERGILL & Co., 204A, Upper Thames Street.

THE LONDON MANURE COMPANY'S WHEAT MANURE, made principally from animal substances, yielding nitrogen by slow decomposition, will be found most valuable at the present season. The London Manure Company supply on the best terms Peruvian Guano, Nitrate of Soda, Superphosphate of Lime, Sulphate of Ammonia, Fishery and Agricultural Salt, and every other Artificial Manure. EDWARD PURSER, Sec.
Bridge Street, Blackfriars.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7*l.* per ton; Superphosphate of Lime, 7*l.*; Sulphuric Acid and Coprolites, 6*l.*

Office, 69, King William Street, City, London.

N B. Genuine Peruvian Guano, guaranteed to contain 16 per cent. of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

SEWAGE CHARCOAL MANURE.—This highly fertilising Manure, which is Peat Charcoal completely saturated with London Sewage, will be found most efficient for every species of crop; more especially for Peas, Beans, Turnips, Mangold Wurzel, and other root crops. It will produce a greater return for the outlay than Guano or any other Manure at an equivalent value: it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained at the SEWAGE MANURE WORKS, Stanley Bridge, Fulham, at 4*l.* per ton, and in quantities less than half a ton, at 5*s.* per cwt., for ready money only; and in quantities not less than a ton, will be delivered at the London Termini of the Railroads free of charge for cartage. No charge for sacks.

It may also be had from Messrs. G. GIBBS & Co., 26, Down Street, Piccadilly, Agricultural Seedsmen, Agents for London: and from all the other Agents of the Company.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and dispatch.

Gentlemen desirous of receiving instructions in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

REAPING AND MOWING MACHINES.—CAUTION.—Notice is hereby given, that any person or persons infringing any of the Patents of Cyrus Hall M'Cormick, for Reaping and Mowing Machines, or making, or vending, or using, or exercising any Machines which in any way infringe upon any such Patents, will be proceeded against according to law. The more prominent features of M'Cormick's Patents consist in a serrated cutting blade, spear-head shaped holding fingers, and a gathering reel.

E. J. & H. LAWFORD, Mr. M'Cormick's Solicitors.
Draper's Hall, 27, Throgmorton Street, London, Aug. 19.

LINSEED AND CORN CRUSHING MILLS.

E. R. AND F. TURNER, St. Peter's Iron Works, Ipswich, have, during the present season, obtained the Prizes of the Royal Agricultural Society at Lincoln, the Bath and West of England Society at Bath, and the Yorkshire Agricultural Society at Ripon, for their celebrated ROLLER MILLS for Crushing Corn, Seeds, &c. These are manufactured of various sizes, particulars of which, with Illustrated Catalogue of Steam Engines, new Prize Chaff Cutter, and a variety of other Implements, manufactured by E. R. & F. TURNER, may be had free on application at the Works, Ipswich, or by Post, inclosing two postage stamps.

TWENTY-FIRST PUBLIC DRAWING.

SECOND ANNIVERSARY OF THE CONSERVATIVE LAND SOCIETY.—On THURSDAY, September 7, at EXETER HALL, after the transaction of the regular business of the 8th Quarterly Meeting, at 3 o'clock, the Drawing for 100 RIGHTS OF CHOICE on the Society's Estates, will take place, and 50 SHARES will be added by seniority, the last number so placed on the order of rights by date of membership, being already 1146. Drawn shares, if in arrear at the drawing, lose their privileges. Rights may now be exercised either to select lots or estates, or to enable the holders to advances for building. Shares, 50*l.*; Monthly Payments, 8*s.* Plans of the Estates, Prospectuses, and Circulars, as to building advances, may be had of CHARLES LEWIS GRUNEISEN, Secretary.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.

Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

YEOVIL AND WEST SOMERSET POULTRY SHOW, WEDNESDAY, September 20. Entries close on September 9. On receipt of a postage stamp, a Prize List will be forwarded on application to the Secretary, at Yeovil.

JOHN GLYDE, Jun., Hon. Sec.

The Agricultural Gazette.

SATURDAY, AUGUST 26, 1854.

MEETINGS FOR THE ENSUING WEEK.

THURSDAY, August 31—Agricultural Imp. Society of Ireland.

MAXIMA AND MINIMA possess but little influence on agricultural statistics. This is true even when they relate to large fields and whole farms. Ayrshire will not stand much higher than Berwickshire or East Lothian in point of beef and mutton made per acre, because of Mr. KENNEDY's luxuriant Italian Rye-grass, or Mr. TELFER's enormous crop of hay; nor will Berks or Yorkshire be so very much affected in its general produce by the local failures of the Wheat reported by some of our correspondents.

Averages and totals are what the statistical inquirer deals with, and these remain almost undisturbed by individual results, however extraordinary. If this be true when such results concern whole farms, how much more so when the instances are single ears; and yet we have before us illustrations of the extremes of quality limited to single ears, which we consider worthy of discussion. For general experience, on which "averages" depend, *might* be influenced by single instances, if the lessons which such instances are capable of teaching were more prominently and generally insisted on; they would thus become as seeds from which, though insignificant themselves, results of great importance might arise.

We have before us some of the finest ears of Wheat we have ever seen—and some of the poorest; the merit is made up of several particulars—number of spikelets on the ear, productiveness of individual spikelets, and size and quality of grain; the demerit is equally compound—we have short and puny ears, long but withered ones, spikelets with abortive florets, and lean and shrivelled grains. It is worth our while to study the limits of productiveness in both directions; causes are most distinctly seen in the extreme instances of their operation, and they can often be read in single flower-stalks, and their produce, as certainly as in the general aspect of whole fields. The specimens on our table include two or three ears of red Wheat, sent to us by General ARBUTHNOT, from Northamptonshire—a few of bearded Wheat, from Lois Weedon, sent us by the Rev. S. SMITH, results of his row culture—an ear of a white Wheat from Cirencester, and some also of white Wheat from Ayrshire. General ARBUTHNOT's specimens are astonishing—5½ inches long, with 11 spikelets on each side, each spikelet containing five large, plump, and well ripened grains, the whole yielding 110 grains, exclusive of tail corn, of which there is hardly any. Those from Ayrshire are as bad as any we have seen—not for deficiency of parts; the ears are tolerably long, there was room and place for twice as many grains upon them as they actually bear, and each grain might have bulked to twice or thrice its actual size—the appearance is that not of over crowded, and therefore small and spindled produce, but of a growth for which ample means had been provided, but only up to a certain stage, at which accordingly it stopped. Other ears could, of course, be easily exhibited whose produce was of little quantity or value, owing to other very different and, perhaps, more frequent causes.

Now between these two extremes, what are the influences whose presence or whose absence has produced this difference of produce? Some of them are within the power of man, and ought therefore to be studied by him. It is evident that General ARBUTHNOT's plants are of a good sort; the "Bristol Red," as it is called, appears, from other specimens we have seen, to possess a good habit of growth; that, then, is one point of importance. It is evident, too, that this habit has been seconded by vigorous life during that early period in the history of the plant, when its different parts in embryo were assuming the distinctive characters of their ultimate products, for we have an ear containing a very large number of spikelets, each spikelet including a large number of florets. It is plain that the plant has not been stunted subsequently to this formation of its parts, for they have all fulfilled the purpose of their formation—none of the spikelets are abortive, each of the florets holds a ripened seed; the nourishment of the plant during its growth has been perfect, the soil in its texture has been suited to the habit of the plant, and in its composition has been able to supply its wants. The plants, too, have not been crowded, and each has had its fitting quantity of air and light. Lastly, they seem to have escaped all insect pests, and the attacks of those vegetable parasites which, however, appear to prosper chiefly when the conditions already indicated have been wanting.

They have been wanting, then, in the case of the Ayrshire specimens, for these are either partially or wholly blighted. "Up to the time of flowering, this crop looked exceedingly well and healthy; but soon the stems began to get yellow from the bottom upwards, the lower leaves withering prematurely, and a mouldy decay, in most cases, had commenced at the root." "The evil appeared in spots, which gradually extended till they nearly met." So says our correspondent; and the description of our own experience, written several years ago in this Journal, will, we have no doubt, apply to his this year:—

"The failure was owing to the appearance, after blossoming, of certain spots, on which the Wheat plants died away; these spots extended gradually all around their respective centres, attacking the several plants as they fell within the widening circle, and killing them in the different stages of growth which they had respectively attained. Adjacent spots occasionally united; in other cases, they had merely approached one another when the natural completion of the ripening process had taken place, and in others they were then still far apart. In the last cases the field presented the appearance of having experienced the influence of several detached and isolated causes of blight, at the respective centres of whose operation the work of destruction was complete; the plants, once fine blooming specimens, being there shrivelled into stunted, blackened, dead straw, with a few dusky, chaffy ears; but as one proceeded outwards from each, plants would be met with having some few shrivelled grains in each ear, until, after traversing a part of the crop in which the occasional appearance of pale dusky straw and chaff indicated the premature death of the plant, he would by-and-by arrive at the ripe and healthy crop."

Probably cases of this kind arise more from absence of the causes which produce the vigour of General ARBUTHNOT's specimens than from the operation of any positive mischief. Vigorous vitality in the seed has probably something to do with it, and the selection of a good sort may be important on this account, as well as for the hereditary style and character of growth which it possesses. Fitness of the soil, in respect both of texture and of composition, is another essential point, affected as these are for any particular plant under the ordinary course of cultivation by the frequency with which it is grown on the same ground. The right proportioning of the seed to the surface sown is a third important point, so that each plant shall have such room for development as is best fitted for its abundant seeding, for which, as for other departments of its growth, air and sunshine are essential. The provision of all these conditions are within the reach of the cultivator; and if they were more generally attended to—if good samples of good sorts were chosen as seed, if every possible means to promote vigorous growth from the very earliest stage were adopted—if attention were paid to everything by which air and rain and sunshine being provided, the plants shall be enabled to make full use of them—then General ARBUTHNOT's Wheat would be a commoner experience than it is, and the limits of productiveness in the case of Wheat (which none have ever seen, and few, perhaps, have ever thought of) might be rather more nearly approached than they are at present.

At present an average ear of Wheat contains perhaps 30 or 3 dozen grains. The ear from Cirencester (sort unknown) to which we have alluded has 11 florets on each side, and 4 grains in each; those from Lois Weedon (Payne's Defiance, a bearded Wheat) have 13 florets on each side, and 3 or 4, generally 4 in each; ears of the same sort of last year, contained 14 spikelets on each side, and 4 in each; the Bristol Red, sent us from Northamptonshire, contained 110 grains, 11 spikelets on each side, and 5 grains in each spikelet!* And that these are not the limits appear from a spikelet from another ear of Bristol Red before us, in which we count six perfect grains, three on each side, and the rudiments of further florets between them!!

What immense scope does this indicate for the development of our averages! They of course will grow out of improvement in individual instances, just as the experience of individual cultivators is to be improved by attention to such lessons in detail as single ears can furnish.

FOOT-ROT IN SHEEP.

[An instructive discussion on this subject took place the other day at Mr. Watkins's ram sale, at Woodfield Ombersley, in the county of Worcester. We abridge the following report of it from the *Worcester Herald*.]

Mr. WATKINS said—"I endeavoured at my last sheep sale to give some opinions I had formed on the subject of foot disease in sheep, as distinguished from the old and well known disease called foot-rot; and I then stated, and still believe, it was very little known in England till the increased imports of sheep and cattle from the continent after the reduced tariffs of 1842. I am still anxious to call attention to this particular point, in order that a remedy might be found, for I am thoroughly convinced that the sheep stock of this country has been greatly deteriorated since the time that disease appeared; and not only has the flockmaster been a considerable loser, but the public generally have been sufferers on more points than one. It is unreasonable to suppose that when a flockmaster finds this disease in his fatting stock that he puts them

* We shall feel much obliged if General ARBUTHNOT will kindly give us the history of the field from which the ears were gathered—when its produce is known.

on one side till a cure is effected. The butcher cares not for a defect so little perceptible to his customers, and by which he loses nothing, or probably gains by the infusion of blood in the inflamed limb; even in bad cases he is enabled to procure a fair price for an unsightly joint from the manufacturers of soups, sausages, &c. And at any rate, it is offensive to suppose we are consuming under any form the meat of an animal slaughtered in a state of inflammatory disease. The foot disease is known to exist in all the richest farming and grazing districts of the country, but the mountain sheep of Wales and Scotland appear to be exempt, and as foreign sheep have not been introduced into those parts, this adds to the probability that it is an imported disease. And I am led to this conclusion from constantly seeing foreign sheep in the districts round London that have been purchased in Smithfield market in a deplorably diseased state. I have often talked to men I have seen dressing them, and I have invariably heard the same remarks from them, that the sheep stock of the country will never be healthy again, as long as diseased sheep are imported and allowed to be driven to our markets; for as soon as one lot is cured or slaughtered fresh ones are purchased, which infect the whole district again. Surely it must be desirable, if not for the health of the public, yet for the sake of economy, that some extraordinary means should be adopted to remedy so great an evil; for it is useless to suggest measures for its cure so long as the disease is allowed to be imported; and it is most desirable that inspectors of stock should be appointed, under very stringent regulations, at every port, to watch the disembarkation of stock, with power to order all ships containing diseased sheep or cattle from our shores.

Mr. G. Whittaker said that to get anything done by the legislature, those who complained of the importation of infected animals must make out a good case. They did not doubt that the disease was imported, but how were they to prove it? No foreign sheep had ever reached the Ombersley district, still the disease had come here to some considerable extent. But they must remember that during the last eight or ten years there had been blights and various diseases such as had never been heard of before.

Mr. Watkins said he was now residing principally within 20 miles of London, and was riding continually about in various directions. He had never yet seen a single flock of imported sheep but what had been more or less diseased. The merinos, which had been largely imported, were the most subject to the disease; and he had seen them huddled together like pigs, and unwilling to stir until they were threshed up with the sheep hook.

Mr. Curtler intimated that the Royal Agricultural Society had already taken up the subject, and that, in his opinion, if the Council of the Society thought they could move the Government to do anything beneficial they would do so; therefore it struck him that the interference of the local societies would not be attended with much good. He agreed with Mr. Whittaker that the strongest proof would be required before the Government would do anything by which the importation of foreign stock would be prohibited, or put under such restrictions as would amount to a prohibition. Mr. Watkins had shown that the sheep on the mountains of Wales and Scotland had been found to be free from this disease. Last year he (Mr. Curtler) saw thousands and thousands of such sheep on Salisbury Plain, and asked the shepherds there questions upon the subject of this disease, and he did not meet with a single shepherd who had it in his flock. It struck him that it was questionable whether the disease was imported. Where pastures were much elevated, and the herbage short, fine, and dry, there was no disease; and so far as his experience went, there was most disease where the pastures were the richest. It was incontestable they had got disease among the sheep in this district, and without the presence of foreign sheep it still broke out again. He observed that last year in the wet season it was very prevalent, but on the disappearance of the wet the disease in a great measure disappeared. In his own flock of 500 or 600 sheep the disease had entirely disappeared, and for months not a single sheep or lamb had had anything the matter with it in the foot. Last year he had not a single ewe, or indeed a single sheep, that was not diseased several times over. No foreign sheep had been near his flock. His plan to get rid of the disease had been to see his flock dressed every day, and often twice a day. He believed he should not have got rid of it without, because every sheep took a long time in dressing; and a great deal of patience and attention were required, as well as much cutting, because, unless every particle of disease, up to the very coronet itself, were removed, and the foot dressed with care, the disease would break out again. He did not think all the efforts of the agricultural societies would induce the Government to interfere, and his advice was, that every man should use his best endeavours to get rid of the disease in his own flock.

Mr. Watkins doubted whether Mr. Curtler and he were alluding to the same disorder. There were three distinct diseases of the feet of sheep. One was the old-fashioned foot-rot, now prevalent about this neighbourhood, which everybody knew by the peculiar appearance and smell of the foot. Then there was another disorder, which became prevalent when he was a young man, which people in the neighbourhood of Kidderminster called "wildfire," in order to distinguish it from the foot-rot. It came on with a violent swelling at the ankle and often at the fetlock joint; matter would form in a large abscess, the sheep very often rubbed its nose or its eye against its foot, and those parts became inoculated, and the sheep was in consequence badly disfigured about the face. Sometimes the sheep would get inoculated on the breast, where there was a little bareness from lying down, and then abscesses would form about the body. But this was not the disease to which he wished to direct their attention. The disease he meant was not known in this country before 1843 or 1844, when it spread rapidly across the country, taking a flock here and there and missing others. The sheep appeared to be palsied when taken with it. He at first fancied his sheep had a complaint in the back or spine, they seemed to have so little power about the legs. It turned out to be a disease in the coronet and round the hoofs. As he said last year, he believed that when the disease appeared the best plan was to puncture the coronet, put a seton in, and drive away the virulent matter before it penetrated between the sensitive part of the foot and the hoof, and caused separation. He still believed the disease was imported, because it was talked of by the old German writers centuries ago, and had not been written of in this country, and moreover first made its appearance on the introduction of the new tariff. Where the sheep had been injured by this disease the old-fashioned foot-rot was sure to follow, but that was very easily cured; if not, it was from the ignorance of the shepherd.—Mr. G. Whittaker mentioned, as a remedy, pyroligneous acid, in which as much blue and white vitriol as possible is dissolved, and then mixed with Armenian bole, in order to make it stick to the sheep's foot. Butter of antimony, which was an old-fashioned remedy, was too strong.

AGRICULTURAL CHEMISTRY.

ROYAL AGRICULTURAL COLLEGE.—SESSIONAL EXAMINATION.

JUNE, 1854.

2. Give a general characteristic of organic substances.
3. Explain the terms putrefaction, decay, fermentation.
4. What is the most probable constitution of fatty substances?
5. Mention the distinguishing properties of albumen, casein, fibrin, legumin, gluten.
6. Describe the most approved modes of preserving organic matters from entering into decay or putrefaction: and explain the chemistry of the various processes you describe.

[Answers by Mr. H. Chancellor.]

2. The following would represent the general characteristics of organic substances:—1st, They are all combustible, *i. e*, burn away, mostly with the simultaneous deposition of black carbon. 2d, Consequently all contain carbon (the characteristic element), and that combined at least with one or more elements, with hydrogen, in some oils, or with hydrogen and oxygen, in starch; and with hydrogen, oxygen, and nitrogen in protein, and then with the addition of sulphur and potash in leguminous seeds, &c. 3d, They are of a very complex character, and give rise to a great variety of fresh products of oxidation; humus, for instance, becomes converted into humic, ulmic, geic, crenic, and apocrenic acids. 4th, The uniting number of their equivalents is very high, as margaric acid, in which 64 equivalents of carbon, 68 of hydrogen, and 8 of oxygen are contained. 5th, They have a peculiar arrangement, and cannot be divided into binary and ternary compounds, &c., having electrical opposition. 6th, As a rule this cannot be obtained artificially, though this has one or two exceptions.

3. The terms *Putrefaction, Decay,* and *Fermentation.* *Putrefaction* may be considered as a spontaneous variety of decomposition of an organic substance, the products of which are very numerous, thus differing from the other variety of true spontaneous fermentation. Among putrefactive processes may be reckoned the lactic acid fermentation—a variety to which all feeding and azotised substances are particularly liable, during which lactic acid is produced, which rapidly increases the already putrifying mass. The more common products of putrefaction, or rather lactic acid fermentation, are—sulphuretted and phosphuretted hydrogen, hydro-sulphate of ammonia, carbonate of ammonia, and many such like. Owing to the great variety of products resulting from the putrefaction of an organic substance, the odour given off is particularly disagreeable; the sour smell is due to the lactic acid. The variety termed lactic acid fermentation proceeds under an elevated temperature from 70° to 100°, while below this the acetic acid fermentation sets up.

Decay is a slow oxidation of an organic substance, the whole being eventually dissipated in the form of carbonic acid gas. This is well seen in the case of decayed trees, where the material is gradually wasted away. *Peat or humus*, which consists of several acids, already mentioned, is an intermediate state of decay, which is still continuing, and carbonic acid gas is evolved, till ultimately the whole of the organic matter is in this way dissipated. It is, in short, a slow oxidation of the organic matters.

Fermentation is properly of but one variety, that known as the vinous fermentation. Lactic acid and acetic acid fermentation cannot be called true sorts of fermentation. It is a spontaneous decomposition of an organic substance, the products of which consist entirely of carbonic acid and alcohol; in fact it is the breaking up of the elements of sugar, and their reconstruction in the form of carbonic acid and alcohol.

4. As to constitution of fatty substances. Fatty substances seem to consist of three essential constituents, which are present, for the most part, in different proportions in different varieties of fats. They are margarine, stearine, and oleine; and it is to the partial absence or preponderance of one or another of these that the great differences of fats are due; those, then, containing much stearine are of a much more solid composition, as is the case with lard and the hard internal fat of the animal structure, while those preponderating in oleine are of a more liquid character; and in cases where margarine abounds intermediate proportions are present. Margarine, stearine, and oleine are, as it were, salts of glycerine—compounds of acid with glycerine; and hence, by the addition of a strong alkali, the composition is broken up, and soaps are formed; and by after adding a strong mineral acid, the peculiar acids are obtained pure, the acid uniting with the base used, as potash or soda.

5. The following would represent, in a measure, the distinguishing properties of the following protein compounds.

Albumen is easily distinguished from either of the following by its coagulating on boiling. It is precipitated by acetic acid, but when in a coagulated state is dissolved by acetic acid. It contains sulphur, and of course all the general characters of protein compounds.

Caseine is likewise precipitated by acetic acid, and is soluble in alkalies; is distinguished easily by its forming a curd in boiling, which is a peculiar characteristic; does not, like albumen, coagulate on boiling.

Fibrine is readily distinguished by its perfect insolubility in water, it has all the peculiar characteristic feel of muscle; like caseine, is precipitated by acetic acid and is soluble in alkalies.

Legumin, a peculiar protein compound, so termed as occurring in all leguminous plants, particularly the seeds, and is in fact the vegetable caseine. It is also distinguished by its forming a curd on boiling, and from albumen by not coagulating on boiling, but is precipitated by acetic acid, soluble in alkalies, rich in sulphur and phosphorus.

Gluten, or vegetable fibrine, distinguished by its perfect insolubility in water, and having the peculiar feel of muscle, and is very sticky.

Besides the peculiar properties I have mentioned, they all contain of course the general properties of protein compounds, as being highly nitrogenised, containing sulphur and phosphorus, or both, being easily soluble in potash, &c.

6. The means in use for preserving organic matters from entering into decay or putrefaction, are chiefly the following, depending on the three principles. *A*, Antiseptic properties and removal of ferment; *B*, the exclusion of air; and *C*, surrounding the organic matters with an atmosphere of nitrogen or carbonic acid, and thus preventing decomposition.

In the first place, as antiseptics, there are a great many for particular uses, as sugar, salt, spices due to volatile oils, &c., which are used chiefly in the preservation of fruits, vegetables, and meats. Also, creosote obtained from the dry distillation of wood has very powerful antiseptic properties, and it is to the agency of creosote that the smoking of hams is due, and the preserving power of tar which contains much creosote. Creosote is used also for the preservation of timber to some small degree, and can stand great dilution. It is a common and good plan, in the place of smoking, to add a drop or two of creosote to the brine of the ham. Charcoal has great antiseptic properties; hence, why game will keep so well in powdered charcoal, and water keep free in charred vessels; also, why timber placed underground is so materially preserved by being charred previously. Besides the more common antiseptics, there are others, as metallic oxides, the agency of which is due to their forming insoluble compounds with the protein compounds in the timber; and thus prevent their setting up decomposition. These are much used in preserving timber, for which purpose they are very useful. Among many others, the bichloride of mercury, or corrosive sublimate, is very useful; but, as being expensive, cannot be economically used in the case of timber: it consists in impregnating the outer exposed portion of the timber, &c., and is termed Kyanising; the mercury forms an insoluble compound, and thus the timber is preserved. There are others, as the acetates of iron and copper and the chloride of iron, which, as being much cheaper, are better adapted for this purpose. Besides the antiseptic agents, the removal of the albuminous or fermenting principle by washing it out, as carried out in the preparation of Flax, either by the slow process of placing bundles in running water or in pits, or by the quick process of boiling or hot water and steam, or by the immediate destruction of the albuminous matter by the agency of potash [1 of potash, 400 of water], which leaves the cellulose perfectly untouched; the potash is afterwards removed by an acid, &c. This washing out of the albuminous materials is also seen in the preparation of timber by soaking it in water, when the protein compounds are removed, and the water entering the cells has an additional antiseptic effect.

The second means, by the exclusion of air, is also much carried out in preserving pickles and fruits and meats of all descriptions.

By placing the organic substance in a tin canister which has an opening, and heating this in a water bath, or so elevate the temperature as to expand the air, and cause it to be expelled at the opening; the opening is then immediately soldered up, and consequently but little fermentation can proceed.

The third mode consists in the surrounding of the organic substance with carbonic acid or nitrogen, or such like gas—as by placing at the bottom of the vessel some protosulphate of iron and lime in a moist state, and covering the jar air-tight, when the oxygen of the confined air is taken up by the iron, which is peroxidized, and the lime is taken up by the sulphuric acid, forming gypsum—which itself materially assists in absorbing water.

FINGER AND TOE IN ROOT CROPS.

By James Buckman, F.G.S., F.L.S.

(*Continued from p.* 538.)

In the spring of 1849 the reserved roots were taken out of the ground with a view to transplantation, for which purpose only the best were put aside; these were rather more fleshy than those just noted, and, though forked, yet the ones less so than others were replanted for seed.

Late in the summer of 1849 the seed was collected, and a patch of it sown in a different part of the garden in the spring of 1850, the result of the second sowing being that the leaves in all indicated the advance to the cultivated form. Some specimens, however, were much finer than others; and in the autumn of that year some examples were taken up for illustration in the lecture room, when it was remarked that those which had been so chosen were of a good size and of tolerably smooth outline, and, in short, showed a disposition to become "respectable roots" (see drawing 6). Of this crop the best roots were reserved for seed and treated as before, the seed of 1851 being planted once more in a different portion of the garden. The result of the roots of 1852, however, showed how futile was the attempt to carry on an advance under the same circumstances, oftimes repeated, of soil, situation, climate, and mode of cultivation, inasmuch as the whole crop evinced a disposition to retrograde rather than advance; the plants had a wilder aspect, and the roots reverted to the form of the first year's cultivation, instead of improving upon the second. However, this year the seed has been saved, not with a view of continuing these experiments in the college garden, but in places where all the circumstances are as distinct from those under which the seed was grown as possible.

Fig. 4. A Seedling Carrot, one-half natural size.

Now, in order to render these experiments with the utmost clearness, I have here repeated their results in the tabular form, and shall again refer to them in the explanation which will follow.

Result of Experiments in the Growth of Wild Parsnips (Pastinaca sativa):—

	First Crop.	
1848.	Spring—wild seed sown ...	Some of the plants had smoother leaves, of a light green colour.
	Autumn—roots examined ...	Their tissues increased, much [forked.
1849.	Roots cultivated for seed.	
	Summer—seed gathered.	
	Second Crop.	
1850.	Spring—seed of 1849 sown ...	All the plants free from hairs.
	Autumn—roots examined ...	Larger, and not so much forked.
1851.	Roots cultivated for seed ...	The plants presenting the stems and foliage of cultivated examples.
	Summer—seed gathered.	
	Third Crop.	
1852.	Spring—seed of 1851 sown	No advance in any stage upon the second crop; but, if anything, a disposition to retrograde.
	Autumn—roots examined	
1853.	Roots cultivated for seed	
	Summer—seed saved ...	

As respects the Carrots, which were cultivated in the same manner, it may be remarked that the change effected in them was not near so great as that observed in the Parsnip. Of the first crop all the specimens manifested a disposition to send up several heads from the crown and most of them ran to seed, the roots were much forked, and but little inclined to increase tissue; however, the most likely ones were reserved for future growth, and, as in the Parsnips, the second crop was certainly improved, the crowns of many displayed but one bud, and the roots, though still forked, became more succulent and enlarged; the third year's growth, however, like that of the Parsnip, was a reversion to the wild state. Still the progress with the Carrot as well as the Parsnip was quite sufficient to show that it is within any one's power to renew both of these plants in a cultivated form from wild specimens by acting in conformity with the physiology of their growth; in short, as will presently be shown, not by growing them in soil suitable for them as wild plants, but by constantly surrounding them with circumstances as totally opposite as possible.

But besides this, these experiments seemed to point out the way to a solution of the mystery of finger and toe in root crops, to which the Parsnips and Carrots of our garden culture have always been peculiarly liable. The time and mode of sowing the seed would naturally tend to an enlargement of the roots in the best examples of the resulting crop, inasmuch as spring sowing induces a more determinate biennial character; and as the roots of the wild plants are always more or less branched, it is but reasonable to suppose that the ramifications as well as the main root would equally put on cellular tissue in the majority of examples; and it is only by putting aside the cleanest roots for seeding—indeed, taking care to get your seed from plants which possess the qualities you require to the greatest possible extent—that you are at all likely to be successful either in ameliorating wild plants or in getting pure stock from acknowledged cultivated varieties.

Fig. 5. A Seedling Parsnip, one-half natural size.

A tap-root (fusiform) with a clear and unbranched outline is not natural to the Parsnip or Carrot, but can only be attained from wild plants by careful cultivation. May we not then conclude that the branching in cultivated roots (finger and toe) results from a reversion of these to a greater or less extent to their original wild form? In other words, inasmuch as in the passage from the wild to the cultivated state the branching of the roots becomes more conspicuous, may we not therefore conclude that, as finger and toe is a mark of cultivation in wild plants, so this deformity in cultivated plants is an evidence of reversion to wildness? These remarks, then, tend to show that the question is one entirely belonging to the inquirer into vegetable physiology; and it is, therefore, no wonder that chemical analysis, either of soils or crops, should have done nothing towards its elucidation.*

2d. *Notes on the Natural History of Root Crops in Cultivation.*—In considering my second position, namely, the confirmation of my theory of the cause of finger and toe from observed facts in reference to cultivated crops, it will be well to state that, having as I thought become experimentally acquainted with the nature and cause of the distortion during the progress of growth of wild plants, I set to work diligently to inquire into the circumstances of the mischief as it affects cultivated crops; and both from observation and inquiry I arrived at the following general conclusions, which I shall state and comment upon *seriatim*.

Finger and toe will always be found to a greater or less extent in every field of Parsnip, Carrots, or Turnips.—Now, if we consider that these, as crops, are at all times derivative—that is, that they are altered states of original wild examples from which they sprang—and that the change from the wild state produces not only one form but several, which we term varieties, and that these sorts are only to be maintained by a rigid adherence to the circumstances which produced them, we must ever expect a tendency to some change; so that, though the mass may be maintained in tolerable purity, others will show a disposition to revert to the position from which they sprang, as varieties can never be absolutely permanent. In this case, then, finger and toe marks degeneracy.

Finger and toe will always prevail where the crop is derived from seed brought from a rich to a poor soil.—Cultivation of roots presupposes that manure has been employed, the result of which is to cause a great increase in cellular tissue or succulency; hence then, as rich soil is an element in advance, so poverty of land is equally a reason for retrogression; it is, then, no wonder that, as a general rule, there should be found more malformed roots in a poor than in a rich soil.

The deformity is likely to result where seed has been grown in the district in which it is sown for the crop.—In cultivating wild specimens our experiments showed clearly that constant growth, under the same circumstances of seed and place, tends to degeneracy; and this is a matter fully proved by the experience of every one with every kind of crop: hence few venture to repeat the sowing of their own seed-corn to any considerable extent. On this subject a case has come before my own observation during the last two years, which may not be without interest in our present inquiry. A poor man in my own district cultivated a patch of White Globe Turnips for seed, and in the summer of 1852 he got so good a crop of seed as to induce him, on clearing off the first crop, immediately to try a second in the same ground. During the past summer, 1853, he again got seed, but much less in quantity, as the roots were all diseased. Now, as I constantly watched this piece of about a quarter of an acre, I am enabled to say that finger and toe was very prevalent throughout the whole patch, whilst many roots had a tendency to decay, so that the flower-stalks dropped away for want of support. I have had no further opportunity of tracing this seed, but nothing can be clearer than that the second year's growth had degenerated from that of the first; and if, as is very probable, the seed be used again in the district in a similar soil, one cannot wonder at an unsatisfactory result.

Degeneracy must always result where a whole patch or field is indiscriminately put by for seed.—Amongst every crop there are sure to be some examples unworthy of being progenitors; and as, with the continued cultivation of any sort, the constant want of keeping up those circumstances of care and attention by which original sorts may be produced necessarily ends in degenerancy, it is no wonder that any kind which has for a long time been a favourite in a particular district should ultimately lose caste. For seeding, the best examples should always be chosen, and these should be transplanted, for it is by these processes of culture that the impress of cultivation can be maintained. And again, this transplantation should in all cases be as far from other patches of the same tribe as possible, in order to prevent the influence of hybridism. *Journal of the Agricultural Society of England.*

Fig. 6. A Parsnip from wild seed, two-thirds natural size.

(*To be concluded next week.*)

* In confirmation of this see a Paper in the Transactions of the Highland and Agricultural Society of Scotland for October, 1853.

Home Correspondence.

Harvest at Brough, Yorkshire, Aug. 23, 1854.—Wheat: Good average, and likely to be a good sample; harvest now pretty general. Barley: Bulky; above average; sample promising to be small. Oats: Considerably under average. Green crops: Looking well, but much finger and toe prevails. Potatoes: Looked promising to a late period; but now disease is fast appearing. The above in my opinion is a correct outline of the present state of the crops within an area of ten miles from this locality. *P. Deane.*

Drainage and Land Improvement Companies.—The agricultural community have to thank you for your remarks on the Drainage Bill of this session, which was rejected by the House of Lords upon the most futile and insufficient grounds. So long as the Corn-laws existed, the question of agricultural improvements, either permanent or temporary, was not much mooted, because the duty operated as a premium upon the growth of grain to the exclusion of foreign articles. On

the withdrawal of the Parliamentary bounties, and with a view of meeting the difficulties of the farmer's position, and of improving the natural resources of the country, a bill for the improvement of agricultural tenant right in England and Wales was proposed and brought in by Mr. Pusey, and the report of the select committee of the House of Lords for inquiring into the expediency of charging entailed estates with the expense of drainage and permanent improvements caused much attention, and 3 and 4 Vict., ch. 55., was passed enabling the owner of settled estates to defray the expense of draining the same by way of mortgage, to be paid off by instalments. This I remember at the time was thought rather piece-meal legislation, and the act 9 and 10 Vict., ch. 101, was introduced authorising the advance of public money to a limited amount, to promote the improvement of land in Great Britain and Ireland by works of drainage, and this act was subsequently enlarged and amended by the 10 and 11 Vict., ch. 11. I need not, I am sure, trouble your readers with all the ramifications of the 12 and 13 Vict., ch. 100, and the 13 and 14th Vict., ch. 31; private money drainage acts, or the Farm Buildings Acts, which extend the provisions of the Drainage of Land Acts, and give powers for the advance of private money for the erection and repair of farm buildings on land in Great Britain and Ireland. I think I have stated enough to show that so much having been done by legislative enactment for the landed interest, the indignant remonstrances of Lords Portman and Redesdale might have been spared on the Drainage Bill, after passing through the Commons, with considerable discussion on its provisions. We know from the reports in the different journals, that the river Nene, on its frequent swellings, often overflowed 10,000 or 15,000 acres between Northampton and Peterborough before it entered the Fens; the Ouse probably damages a greater extent, and the Welland and other Fen rivers inundate in a similar manner, and they all have bad and inefficient outfalls, and which were imperfectly provided for by Lord Lincoln's Act, 10th and 11th Vict. I therefore agree with you that great credit is due to Mr. Ker Seymer, who is a most energetic and enterprising landlord, to attempt by his bill to give greater facilities of outfall; and it has often struck me that the powers of these Drainage and Land Improvement Companies are exceedingly apt and opportune in the present improved condition of agriculture, as they are now doing what the Government ought to have done upon the issuing of the report of the "Agricultural Customs Committee" of 1848, and it would save a vast amount of trouble and litigation if the improvements, particularly in the West of England (so much recommended by the *Times* commissioner) were carried out by these companies, instead of being executed piecemeal, as they now often are, by heavily incumbered landlords, or by tenants on commission under the now fashionable tenant-right agreements which are fast superseding leases. *E. B. Acton.*

Farmers' Clubs.

HADLEIGH.—*The Construction and Arrangement of Agricultural Buildings.*—Mr. Cook, of Holton Hall, recently delivered a lecture on this subject, before this club, from which we make the following extracts:—My landlords having last spring determined to erect entirely new buildings upon Holton Hall Farm, it was left to me in a great measure to suggest and arrange the plan on which they should be constructed. I have therefore inspected many farm homestalls in this and other counties, and I have availed myself of the opinions of several sound practical farmers and others connected with the management of landed property. I find there is a decided preponderance among these authorities in favour of covered homestalls; and I entirely coincide in their views. I will proceed shortly to furnish you with the advantages which I contemplate from its use. First, the greater facility for fatting cattle, and economy in their food. We are all aware that economy in this department of our business is much needed; for the process of yard-fatting, under the old system, is very generally attended with a serious loss to the grazier, and but seldom with a profit. I cannot but think that by the erection of lofty and well-ventilated buildings, thus ensuring a tolerably equal temperature and less exposure to vicissitudes of climate, the animals so treated must fatten faster and at a less cost. I am certain they require less food, and that there is much less waste than in an open yard. I assume also that the cattle so treated will be less liable to disease; and this, at the present time, is a great matter for consideration, as so much sickness and loss of life has prevailed in this locality. That these advantages are to be obtained I have great confidence; and if a saving of only 20*l.* or 30*l.* a year is effected under this head, upon a farm of 400 acres, it is an important item in the balance-sheet. Next, I will take your attention to the increased value of manure made under cover, and the saving which is contemplated in its application to the land. There can, in my opinion, be no question but that manure made under cover is far more valuable than that made in an open yard; and I wish to put a fair and reasonable estimate upon this item. I assume that on a farm of 400 acres (chiefly arable and in a fair state of cultivation) at least 800 loads are made in a year; and it surely is not putting too high an estimate to assume that manure so made is worth 1*s.* per load more than common farm-yard muck; if so, a further saving of 40*l.* a-year is effected; but in order to keep quite within the mark, I will call this 25*l.* per annum, and add to this the further saving which takes place in labour. As the manure thus made is fit for use from the yard, the additional filling, stirring over hills, and preparing earth bottoms is unnecessary. I had a conversation with a gentleman who farms largely near Chelmsford, a short time since, and he has had time to test the advantages we are discussing, and he assured me that his saving under this head is not less than 40*l.* or 50*l.* a-year upon 700 acres. Reducing this in proportion to 400 acres, gives about 25*l.* Formerly the plan pursued was to keep what are called straw-yard beasts fed principally on straw; but experience has taught us that even with the prospect of little or no profit on animals, the farmer must keep a larger quantity of stock, and feed it better, for the sake of improving his manure. The consequence is, that a larger quantity of corn and cake is consumed, and a heavy outlay is thus created. Generally speaking, but little care is bestowed upon the manure so expensively made; and, fortunately, this care is not needed in the covered homestall. There is no surplus moisture; no tanks are required. The straw takes up all the liquid manure, and holds it: thus the quality is retained, and a much less quantity is requisite per acre than of the common farm-yard muck; and by using it direct from the yards no waste ensues from unchecked fermentation. Thirdly, I will call your attention to the "general convenience" and the variety of uses to which a covered homestall may be applied, and to the comparative ease of the farmer in his superintendence. I have already noticed the health of cattle; their aptitude to fatten; and the economy of food: to these I would add their adaptation to summer-grazing. I feel confident that if the buildings are properly constructed, with a sufficiency of height and good ventilation, the cattle will not be incommoded with flies, and that green food may be used during the summer months to advantage. The yards are also more easily subdivided, and a greater amount of accommodation can be obtained than on any other system. Next, their uses in a fickle hay-time and harvest, for securing the loaded waggons from the weather, is, to say the least of it, a great convenience; and if the health of cattle is secured, a less outlay will be required for the veterinary surgeon. I am, perhaps, to a certain extent antiquated in my notions—or, at any rate, I shall be thought so by some for not having enumerated amongst the advantages that of spline-feeding. [Feeding on open boarded floors is, we presume, here meant.] I confess I am not friendly to this discipline. I have had several opportunities of seeing cattle fed upon this plan; but so far as I am able to judge from a short and casual examination, I do not put much faith in the results, and I doubt very much whether they will fatten as fast as they would do in a comfortable covered yard, on an easy bed of dry straw; but if they will, the object which most farmers have in view is defeated, viz., that of converting their straw into manure. I had an opportunity of seeing this system carried out in July last, in some low, badly-constructed boxes; the effluvia from them was most offensive; the poor brutes were punished dreadfully by flies, which were congregated in thousands, and they seemed to me to have just about as much comfort as a fellow on the tread-wheel, and about as likely to get fat. But assuming that all my prejudices against this system may hereafter be dispelled by the greater lights that now rule the day, and that the Mechi and Huxtable plan is the preferable one, then the covered homestall will become doubly valuable on account of the adaptation of the yards for carrying out the spline process. I hope you will pardon the digression in which I have indulged in this division of the subject. I am aware also that there are others whose ideas of progress in other particulars far exceed my own. Some are for dispensing altogether with stables; others with barns; but it will be seen by reference to the plans on the table that I have availed myself of the use of both these old-fashioned appendages. Where stables are dispensed with, boxes generally are used; and this is done to a great extent in some counties. These often are low and much too confined for working horses; and I confess I am unable to detect any advantage over the covered yard either in utility or expense. Others are substituting a circular horse-truck or threshing-room for the barn. I can see no particular advantage in this; if there is any at all, it is in the less cost of erection, and even this is doubtful, for I know of instances, where this plan has been carried out, that it has been necessary afterwards to build open or Dutch barns near. I come therefore to the conclusion that on a large farm the barn is indispensable; and it affords an opportunity for the employment of labourers in the winter months, when often other employment cannot be found; and I still think that a constant and uniform supply of soft corn, straw, and chaff during this period of the year is very desirable, and these cannot be had without barn-room. In the early part of the evening I stated that I had relied more on the opinions of those I had consulted, on account of their long experience in these matters, than on my own; and amongst others I have been favoured with that of Mr. Baker, of Writtle, who is known to most of you. In a letter just received from him he says:—"I some years since wrote an essay for the Royal Agricultural Society on this subject, and I supplied them with plans, &c., for farm premises; but I confess, however, my views are materially changed since that time. Covered yards I now see are best for fatting purposes, but young stock perhaps do as well in open sheds." I have also reasons for knowing that in these views Mr. Beadel, of Chelmsford, entirely concurs, and he has had great experience in his capacity of land-agent, and he has also a covered homestall in use for his own purposes. I will now furnish you with the opinions of a very eminent agriculturist in Essex, who has had five years' use of a covered homestall:—

How long have you used a covered homestall? Five years.—Do you find the dung made in it fit for immediate use? Yes.—Is there any drainage so as to render tanks necessary? No.—Is there any unpleasant smell during the time it is making? No.—Is there more or less straw required for littering the cattle? About the same.—Are the cattle warmer and more protected than in open yards? Yes.—Do they appear to you to fatten quicker on that account? Yes.—Is the consumption of food less? I think it is.—Is the quality of the dung better? A vast deal.—Do you generally use a less quantity per acre? Yes; one-third less, with better effect.—Do you consider the homestall useful for cattle during summer? As much so as in winter.—Do you, from experience, approve of the covered homestalls; and can you recommend them? I should like to have them on all my occupations, and I recommend them most strongly.—State any objection your use of them may suggest. I know of none.—Are they useful for the temporary protection of hay and corn during a fickle harvest? Decidedly so.—Your opinion as to the comparative money value of the dung made in the covered homestall, as compared with that made in open yards? Nearly double.

Having now enumerated the principal advantages contemplated by the uses of the covered homestall, and the opinions of several gentlemen respecting them, I will now lay before you the results as I estimate them:—

Fatting cattle, and economy in food	£25
Additional value of manure	25
Diminution of expense in labour	25
Summer grazing and minor uses	15
	£90

Say, in round figures, 100*l.* a-year upon 400 acres. This surely is an important item in the year's account, and I do confidently hope and believe that this will be realised by a fair trial.

Reviews.

Profitable Poultry, by W. B. Tegetmeier. Darton & Co., Holborn Hill.

A PAMPHLET containing simple descriptions and instructions such as the poultry keeper needs. The object is purely practical—its aim is to place in the hands of persons who have not had much experience a book which should contain all that is most essential to be known respecting the housing, feeding, breeding, and treatment of fowls; and to this has been added such information as the experience of the author has enabled him to give respecting the most profitable varieties viewed as agricultural stock. So the author states in his preface, and as he has fairly hit the mark at which he "aimed," we may adopt as our own the terms in which he describes his work. The following extract on the batching and feeding of chickens, will serve as a specimen of the work:—

"I am aware that these recommendations to leave natural operations to nature are contrary to what are frequently found in books, but I am merely writing the results of my own experience, and I have always found the more the hatching hens are meddled with, the worse the result. It is a notorious fact that when a hen steals a nest in some copse or place where she can remain unmolested, she almost invariably brings forth a more numerous and stronger brood than when she sits in the hen-house.

"The chickens require neither food nor drink on the day on which they are hatched; in fact, *both are injurious*, as they interfere with the natural digestion of the yolk, which is absorbed into the bowels at the period of hatching, and constitutes the first food. If grits, oatmeal, &c., are spread before the hen on the twenty-first day, she is induced to leave the nest, and the last hatched chickens, which are perhaps not yet dried, are unable to follow, and being weakly, perish; or unhatched eggs may be left.

"If undisturbed, the hen seldom leaves the nest on the twenty-first day, and on the twenty-second the chicken will be found strong enough to follow her, and any unhatched eggs may be destroyed, for those chickens that are not then able to follow her will seldom be found to repay the trouble that may be taken with them. The plan of cramming peppercorns and other spices down the throats of chickens is cruel in the extreme, and, moreover, exceedingly injurious. I have found the best food to be two-thirds sweet coarse Oatmeal and one-third Barley-meal, mixed into a crumbly paste with water; this is very much relished, and the chickens make surprising progress upon it, they are also very fond of a little cold oatmeal porridge, and by way of variety I sometimes give them a few scalded grits, dusted over with a little barley-meal, to cause them to separate.

"Milk is frequently used to mix the Barley or Oatmeal, but from the extent to which it is then exposed to the air it soon becomes sour in summer, and is decidedly injurious if employed in that state; no more food, therefore, should be mixed with milk than can be eaten in a couple of hours. Sopped bread is by no means desirable, the chickens become weakly and affected with diarrhœa from its use; in fact it has not that degree of solidity which is requisite to afford an opportunity for the exercise of the natural grinding action of the gizzard. A little chopped Onion, or, still better, some finely chopped green Onion tops mixed with the food, is highly advantageous, and, in the opinion of many persons, lessens very much the susceptibility to roup.

"With regard to animal food there is none equal to the natural supply of worms and insects obtained by the hen; small worms, or a barrowful of mould, containing an ant's nest, may be given if the chickens are in a

fixed situation, and will be found far superior to boiled egg, chopped meat, or any more artificial substitute. Curds are frequently used, and, I believe, furnish the best substitute for the natural insect food, but I have had no experience in their use, as I have never kept, nor even think it desirable to keep fowls, or at all events to rear chickens, in situations where their natural food is unattainable. It is requisite that chickens should either have a constant supply of food or be fed at very short intervals—even every hour is not too often, if practicable."

Miscellaneous.

Increased production of Wheat in the Black Sea.—The exports of Wheat from Odessa and the Black Sea have increased to a vast extent during the past three years, for instance,

	Quarters.
Exports from Odessa in 1851 were ...	... 800,000
" " 1852 " ...	... 1,400,000
" " 1853 " ...	... 3,160,507

Had there been a continuance of peace the supplies to this country would have been overwhelming, in years when no other country required foreign imports of Wheat.

Management of Poultry.—The remark is often made, that chicken reared in the country by cottagers are more vigorous and healthy than those bred in the most expensive poultry houses; this I believe to be entirely owing to the more natural circumstances under which they are brought up. Fresh air, fresh Grass, and fresh ground for the hens to scratch in, far more than counterbalance the advantage of expensive diet and superior lodging, if these latter are unaccompanied with the more necessary circumstances just described.—*Tegetmeier's Profitable Poultry.*

Calendar of Operations.

AUGUST.

Border of the Fens, *August* 22.—Now that the harvest has made some progress it becomes daily more evident that we shall this year have an abundance of corn of excellent quality; the colour of highland Wheat is more uniformly of that bright healthy rich brown tint which does not often gratify the eye; and the weight of the sheaves is every where noticed by the reapers as remarkable; even where the crops are thin the bushel is soon filled, and the country will once more be blessed with corn enough of home growth for home consumption. The Fen Wheats are not yet ripe, and cutting has only partially commenced in the low lands; blight is complained of, but the favourable weather we have lately had has in a great measure restored the injured crops to a more healthy condition. We yesterday noticed a few pieces mildewed and looking dirty, but many heavy crops will, we think, yield a large return of good Wheat; price of reaping, 8*s.* to 12*s.* per acre. Barley is also productive this year, the colour is not acceptable to maltsters, although the grain is heavy, it may be still hoped that the malt will be good; the price has fallen at once below 30*s.* per quarter, and we should not be surprised to find the decline continue still further; cutting fom 7*s.* to 8*s.* 6*d.* per acre. Oats will be lower also, the crop is remarkably heavy and fine, and if secured in good order will be the best we have had for some years; mowing, tying, and dragging, 8*s.* to 12*s.* per acre. Beans are not good; Peas and Tares are spoken of favourably. Turnips and Coleseed are growing fast, and are generally a full and forward plant. Potatoes look well, and we have heard but little at present of disease; they also are cheaper, being 6*s.* to 8*s.* a sack of 16 stone, in place of 12*s.* to 16*s.* Stock of all kinds are now doing better, the pastures are not abundant, but sweet and nutritious. Care is required to see the ponds well cleared out where any water exists, and where water is scarce it is a good plan to have a trough nigh at hand, for the cattle and horses to drink from, instead of trampling in the ponds and wasting the water. Forward beasts have 3 lbs. or 4 lbs. of Linseed cake a day each, which improves them as much by making them quiet and settled as by the nutriment it affords; cows also require a little cake, 1 lb. or 2 lbs. per day will be sufficient, with some green Clover, to keep up a supply of milk and a fresh thriving state of the animal. During dry seasons, like the present, it is necessary to keep in readiness a couple of tools, a horse and a cart-rope, to pull out of muddy ditches such luckless horses or beasts as have a wandering propensity to stray from the limits of their inclosure,—sometimes, alas, compelled by lack of water, sometimes enticed by shortness of keep. Sheep also occasionally make fools of themselves by slipping down a bank, and barely escaping being smothered in mud. Hogs will luxuriate in such places, and wallow the course of several dike bottoms if not well tended, and perchance find their way into neighbours' corn. Smaller fowl also commit great depredations; ducks and hens raised as a perquisite to the farming man will occasionally swarm into fields of Barley, Wheat, or Oats, without leave, and with great loss to the next farmer. This is robbery by connivance, and should not be "winked at" but prevented. The custom is to give such cottage or farming man 3*d* per score for eggs, and 6*d.* each for all chickens raised fit for the market, the farmer providing fowls and food; such custom not uncommonly realising to the watchful cottager's wife 3*l.* or 4*l.* per annum. *J. W., Peterborough.*

Farm near Chelmsford, 17*th August.*—Since the commencement of harvest, on the 9th inst., we have been cutting Wheat and Barley extensively. The Peas which were cut in the preceding week are carried and secured, and yesterday we completed the first Wheat stack, and this morning, in full anticipation of a fine day, we commence another, as well as one of Barley, bu about 3 o'clock the rain fell in torrents and closed our harvest operations, since which not a breeze of air has been stirring. The first two days of the month were partially fine, but the 3d, 4th, and 5th, it rained without intermission, and the Wheat previously reaped is much sprouted, more so than we recollect in any former instance, and in most of the early pieces white Wheat has lost its colour, and has become more or less blighted; some pieces have changed nearly black, and the sample will be very coarse; but the pieces a week later are but little injured, and the major portion is looking as well as can be desired, but those still later are more or less beaten down and will be mildewed to a considerable extent on the portions lodged. Upon this farm we have escaped this pest, and with the exception of those pieces which were cut during the past week, have at present escaped injury, and have every appearance of yielding well. The Wheat in this district is, however, exceedingly variable, and will not, upon the whole, barely exceed an average crop, although many pieces are fine and promising beyond our most sanguine expectation. The Barley upon this farm is principally mown, and is very fine: the yield will be about 6 quarters per acre, and if fine weather succeeds, we anticipate carrying the whole by the middle of the ensuing week, but little Clover or Grass being intermixed to prevent harvesting quickly; and as regards the broad leaf or Red Clover, we never recollect so great a deficiency of plant, which we confess we hardly supposed the case, as it planted well in the spring, but now it appears to have been eaten off by insects. We have also been busily engaged hoeing out the late Swedes and White Turnips, which have planted well, and the latter are promising enough, but the former are irregular, having suffered from an attack of aphides, and the weakest plants have not since, nor will they, recover. The Mangold Wurzel is now progressing rapidly, and recovering a similar attack, but it is more backward than usual, and will not be fine: many pieces upon neighbouring farms are so much injured as to render them almost valueless. The prevalence of these insects during the whole of the season has been without precedent; every description of vegetable, especially Turnips, Mangold Wurzel, and Beans being literally covered with them, and during several of the hot days of July the air literally swarmed with them, but since the first heavy rain they have gradually disappeared. Potatoes have within the last few days become diseased, upon this farm especially so, and since the suspension of our harvest work to-day, we have been busily engaged pulling up the haulm by hand, as a preventive of further mischief; it stops any further growth of the roots, but does not injure the Potatoes, and if commenced before the stems become much affected prevents extensive injury, and our previous experience enables us to state that the Potatoes are not in the slightest degree deteriorated by the process, but if left a sufficient time for the skins to become set before digging, will be found improved in quality. This, however, depends upon the varieties being early, but upon all, either early or late, we recommend the practice as the only means of saving the crop from extensive injury. You have been favoured with an article on Potato growing and thin sowing by Messrs. Hardy, but which, I believe, few Essex farmers accord with. This year the thin Wheat especially is not ripening well, and it is only such pieces that are full in plant, derived from about 6 pecks and upwards of seed per acre, that have ripened well or promise abundantly. There is a description of Rivett Wheat, called Payne's Defiance, very productive and still but little grown, as the millers do not approve of it for mealing, but it is admirably adapted for thin sowing on good land as it tillers well and is stiff in straw. Mr. Mechi states that it makes within 2*s.* per quarter of other varieties. Persons hereabout, however, have not found it so, it is one of the coarsest descriptions of bearded Wheat grown, and Rivetts, unless very fine, never reach the price of Red Wheat by several shillings per quarter, but upon suitable land the extra yield may compensate for the deficient quality. Upon our best lands we can grow as much white as red Wheat per acre, and it would not be worth our while to attempt growing such coarse descriptions, even if we succeeded; but upon land not calculated for the production of white Wheat it is quite another matter, and there, as we before stated, it may answer. The feed in the pastures and meadows is growing rapidly, and upon cool subsoils the second math Clover is good; nearly the whole upon this farm has been foddered green by horses and colts, and we regret to say is nearly consumed.

Monday, 21st Aug.—The foregoing was delayed being forwarded, and since that time we have been actively engaged carting Wheat and Barley. We commenced again on Friday at 10 o'clock, and have continued with four pitchers and loaders to this time; at 4 o'clock this day it again commenced raining, and with the barometer sinking fast we anticipate bad harvest weather. Scarcely any Wheat is carted in this part, except upon forward land, nor could harvest be considered general until this day. The Wheat will undoubtedly be better than we anticipated; the pitchers state the weight to be greater than usual, and the quantity of sheaves per acre exceeds our anticipation. Green crops progress very satisfactorily, but the blight is fast extending with Potatoes.

Rhins of Galloway, *Aug.* 21.—The fears in regard to the Wheat crop, which we hinted at in our last report, have turned out to be too well founded; very few fields are entirely free from rust, and many fields present a black, unhealthy appearance, so that the return will be very much below what was at one time expected. Oats are likely to turn out well, as they agree better with dark showery weather than the Wheat crop. Potato fields present a very desolate appearance, and will in many cases be an entire loss. Turnips, where free from disease, have made rapid progress of late, and promise to be over an average crop. Beans in many places are completely blighted. The pastures have been kept fresh by the occasional showers we have had, and stock are thriving well. Harvest has very partially commenced, but will not be general for ten days or a fortnight.

Notices to Correspondents.

Address: *J D.* We have a letter for you on Covered Yards, about which you inquired at page 540. Please send your address

Boiling Peas: *T L.* Lawson's Manual recommends the Early Charlton Pea as the oldest and best known variety of white Pea. It is much earlier than the Scimitar, longer strawed, and prolific.

Books: *X X.* Blacker's Essay on Small Farms, Nicholls' Farmer, Hints on Agricultural Economy as the Antidote to Agricultural Distress, by O. O. Roberts.

Four-Acre Piece: *Inquirer.* We beg pardon for the delay. The problem does not seem very difficult. You wish to have in spring 1 acre planted with Mangold Wurzel, half an acre with Rape then getting into flower, to be followed by Cabbage; half an acre of autumn-sown Vetches getting forward for use; half an acre to be sown with spring Vetches; half an acre sown with Carrots, and 1 acre planted with Potatoes. Suppose eight half-acre pieces with the following succession upon them:—1, Mangold Wurzel, April till October; 2, Potatoes, February till October; 3, spring Vetches, April till August and September; 4, Carrots, March till October; 5, Mangold Wurzel, April till October; 6, Potatoes (early sort), February till September; 7, Winter Vetches, October till June or July, followed by Rape, August till May; 8, Cabbage, June till November and December.

Gas Liquor: *J T B.* It varies exceedingly in the quantity of ammonia which it contains; 100 gallons may contain from 20 lbs. to 40 lbs. of ammonia. You will find that there is a very full account of it by Professor Way, in Blackie's Cyclopædia of Agriculture, art. Gas Waste. It is not "deleterious," much otherwise.

Guano to Wheat: *Young Farmer.* We would apply some 2 cwt. of Peruvian guano per acre, in moist weather, immediately before the harrow or the horse hoe, in early spring over the young Wheat crop. If your Wheat is liable to lodge and mildew, this will make it more so. Superphosphate, however, will not be of much service to it, and guano certainly will so far improve your promise of a crop that it will increase the straw, which will yield larger and more numerous, and, if weather permits, better filled ears.

Lois-Weedon: *Spes.* The wider intervals suggested by "I. A. C." were to enable horse husbandry. The so-called "exhaustion" of the land is needed, or your Wheat will be all down and mildewed together. On your third question we incline to think that Swedes and Beans alternately will be more productive, than if each on its own ground. We would advise, if labourers are plentiful with you, that you should follow Mr. Smith's plan in its full detail, as made known in his pamphlet.

Plot of Land: *J R, Belfast.* Your field is "out of condition, a sandy soil now in Oats, and one-half next year to be green crop:" the other half might be put to some pulse crop. If you can get it clean before winter, you might apply guano as manure, and sow Peas in March next. It would then easily be brought under alternate husbandry.

Salt and Lime: *T D.* We would not put on more than 30 bush. per acre of a mixture of 1 to 3 of this substance. It might very well be mixed with the damp sawdust you allude to.

Stock: *Suffolk Reader.* A farm of 150 acres, 60 acres being arable, "good land inclining to be heavy," is insufficiently stocked with "10 or 12 cows, 80 breeding ewes, lambs being sold in June and July, a few calves, 3 sows, and a few pigs." You ought to grow food for stock on such a farm equal to 100 tons of green food per month, and that should keep nearly 300 sheep. A cow, or a horse, may be put as equal to 9 or 10 sheep; a pig, or calf, as equal to two sheep, and you can easily perform the calculation.

Veterinary Works: *W O.* White's Compendium of the Veterinary Art, last edition; The Horse, by Youatt; Cattle, by Youatt; Cattle Medicine, by White.

THE ADVANCE OF SCIENCE IN AGRICULTURE.

RICHMOND and CHANDLER'S unprecedented celebrity for their improved CHAFF MACHINES and CORN CRUSHERS, achievable only by intrinsic merit, has secured for them the highest character in the trade, together with the confidence of the public, whether as regards true economy or the unapproachable finish and sterling quality which characterise all their productions, and render them worthy the reputation of a Manchester manufacturer.

The most distinguished authorities in all civilised countries report their unqualified satisfaction with the highly beneficial effects resulting from the use of these justly celebrated Machines, and with the now established fact of their not being subject to any of the contingencies inseparable from other machines, they are calculated to meet with general approval in the present advancing state of agriculture.

Address—Richmond & Chandler, Salford and Manchester; and 32, South John Street, Liverpool.

WEDLAKE'S OAT-CRUSHERS, CHAFF-CUTTERS, CARTS, HARROWS, PLOUGHS, and FLOUR MILLS.—118, Fenchurch Street, London.

CHAFF-CUTTERS, of the best workmanship, 25*s.*; Two-Knifed Chaff Engines, from 68*s.*; Mills for Bruising Oats and Beans, from 45*s.*

WILLIAM DRAY and CO., Agricultural Implement Manufacturers, Swan Lane, Upper Thames Street, City.

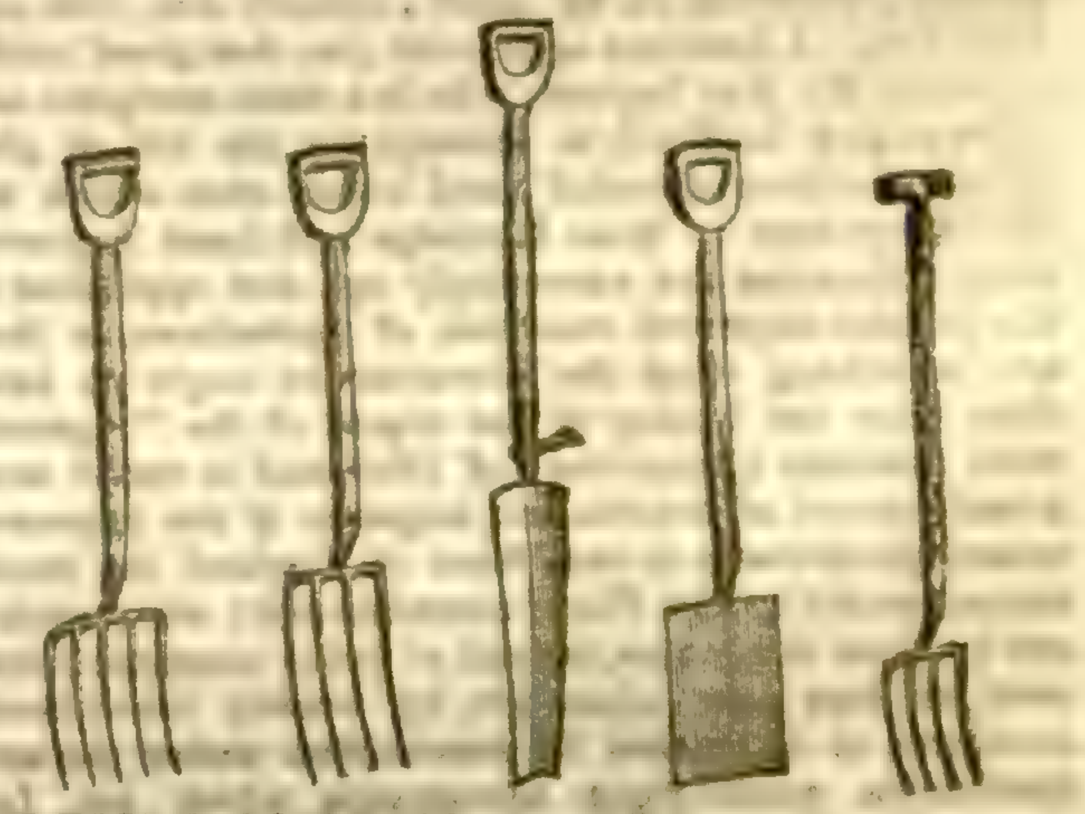
CORN CRUSHERS AND CHAFF CUTTERS.—A large display of the best Farm Implements shown in operation. Price Lists sent free on application.

BURGESS and KEY,
103, Newgate Street, and 52, Little Britain, London.

PUMPS AND HOSE PIPES FOR GARDENS AND LIQUID MANURE.—Burgess & Key's Pumps were highly commended by the Royal Agricultural Society of England at Lincoln. Price Lists sent free.
103, Newgate Street, and 52, Little Britain, London.

CHURNS.—ANTHONY'S PATENT AMERICAN CHURN.—Since 1849 this Churn has obtained all the Prizes awarded by the Royal Agricultural Society of England. At the trial before the Judges it made in 10 minutes 4 lbs. 6 oz. of Butter from 4 quarts of Cream, being 8 oz. more than any of the other Churns from the same quantity and quality of Cream.
103, Newgate Street, London.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.



MESSRS. BURGESS and KEY, as Mr. Parkes' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.
103, Newgate Street, and 52, Little Britain, London.

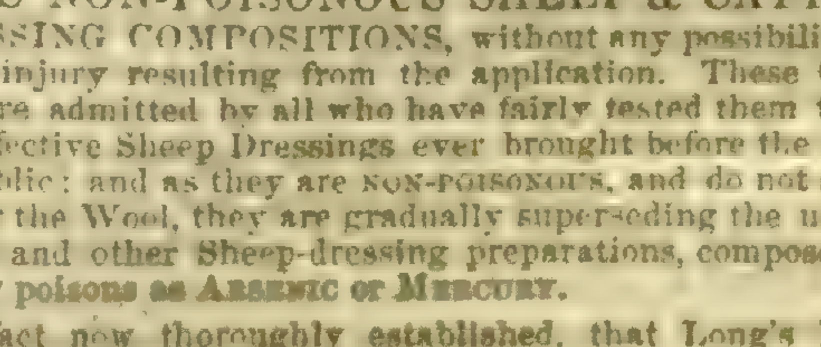
HOSE PIPING.—Great Reduction in Price.

PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense pressure, and much more than leather, vulcanised rubber, or any other hose, and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented inventions, the cost of manufacturing it is now reduced at least 30 per cent., which advantage is offered to the public.

BURGESS and KEY, 103, Newgate Street, and 52, Little Britain, who, on application, will forward wholesale and retail prices.

IMPORTANT TO

STOCK FARMERS,



AND

FLOCK MASTERS.

SHEEP, LAMBS, HORSES, AND CATTLE,
Can be Dressed with

LONG'S NON-POISONOUS SHEEP & CATTLE-DRESSING COMPOSITIONS, without any possibility of danger or injury resulting from the application. These Compositions are admitted by all who have fairly tested them to be the most effective Sheep Dressings ever brought before the agricultural public: and as they are non-poisonous, and do not stain or discolour the Wool, they are gradually superseding the use of all Dipping and other Sheep-dressing preparations, composed of such deadly poisons as Arsenic or Mercury.

It is a fact now thoroughly established, that Long's Non-Poisonous Sheep Dressings, if liberally and judiciously applied in the dressing of Sheep and Lambs, will—in their consequent effect in removing Disease, destroying Vermin, and keeping the flock in condition—thus promoting increased growth both of Mutton and Wool—as amply repay flock owners for first outlay as artificial manures when applied to land. They are the only Sheep Dressings also, which, from the fact of their containing no poison, can be beneficially and safely applied to Sheep and Lambs at any age and at any season of the year.

Pamphlets containing full directions for use, and copies of the strongest Testimonials ever accorded to a manufacturer, signed by leading and practical Stock Farmers, residing in all parts of the United Kingdom, together with the names of all Country Agents authorised to vend Long's Patent Sheep and Cattle-dressing Compositions, may be obtained gratuitously on application of any advertised country Agent; or by post, sent free of

BARRY BROTHERS, Agents for Joseph Long, ...
Meriton's Wharf, and Shad Thames, London.

WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

	£ s. d.
Patent Pump	1 15 0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing	3 0 0

Larger sizes if required.

The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,

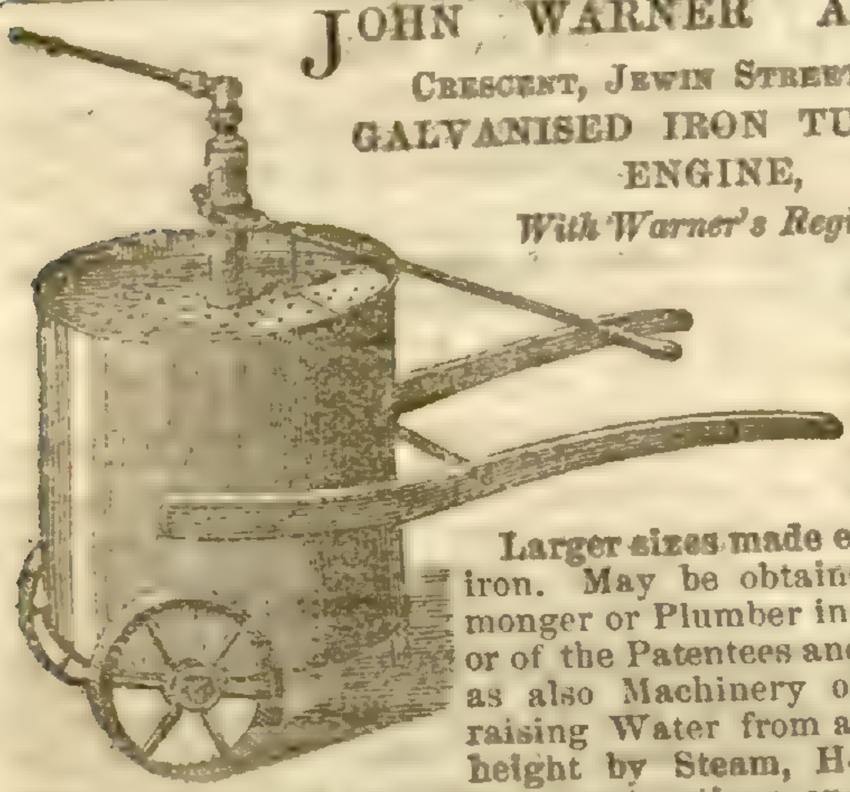
8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water; Fire Engines, &c.

JOHN WARNER AND SONS, Crescent, Jewin Street, London.

GALVANISED IRON TUB GARDEN ENGINE,

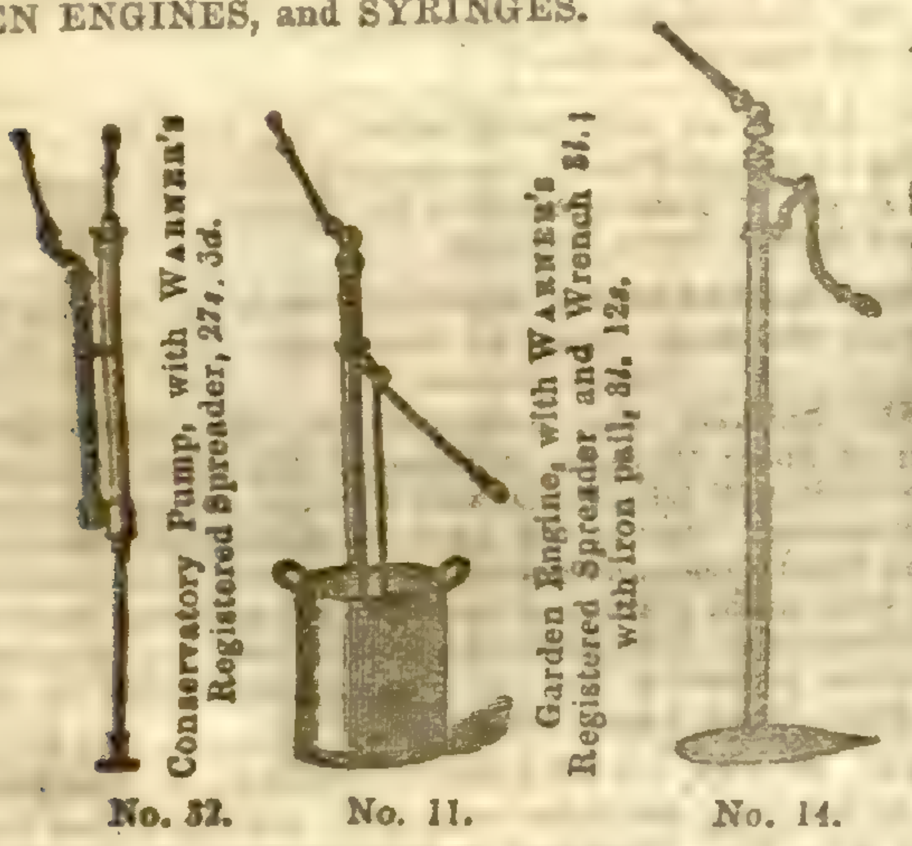
With Warner's Registered Spreader,



Is strongly recommended, for durability and low price, viz., 2l. 19s., to hold 10 gallons.

Larger sizes made either in wood or iron. May be obtained of any Ironmonger or Plumber in town or country, or of the Patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Syringes of various constructions and sizes from 9s. upwards. An extensive assortment kept.

JOHN WARNER AND SONS, 8, Jewin Crescent, London, Manufacturers of FIRE ENGINES, PUMPS, GARDEN ENGINES, and SYRINGES.



Brass Syringes, 9s. to 18s.

All articles of John Warner & Sons' manufacture may be obtained of any Ironmonger or Plumber in town or country, at the advertised prices.

John Warner & Sons having been practical Horticulturists for many years, know exactly the requirements of both Amateurs and Gardeners. A gardener with a properly constructed pump will get through as much work in five minutes as he could with any Syringe in a quarter of an hour, and with half the labour to himself. Syringes are economical only for small houses.

No establishment offers such a variety of effective machines for hydraulic purposes, whether to supply Gardens, Hothouses, Cottages, Farms, Mansions, or Boards of Health, with every requisite connected with the conveyance and distribution of liquids. Fountains suitable for Conservatories, Lawns, &c.

Sheets of Engravings sent on application.

(Fig. 1.) (Fig. 2.)

J. TYLOR AND SON'S BARROW GARDEN ENGINE (Fig. 1), in best well painted oak tub, fitted with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 1 holds 10 gallons, throws 30 feet high	...	£4 10
No. 2 " 15 " " 45 "	...	5 10
No. 3 " 28 " " 45 "	...	6 18

J. TYLOR & SON'S BARROW GARDEN ENGINE (Fig. 2), in strong tinned iron tub, well painted inside and outside, with improved Pump, universal joint, and registered Spreader, which answers the purpose of the separate rose fan and jet.

No. 10 holds 8 gallons, throws 25 feet high	...	£2 15
No. 13 " 12 " " 30 "	...	3 5
No. 11 " 16 " " 40 "	...	4 0
No. 12 " 24 " " 45 "	...	5 0
No. 14 " 30 " " 45 "	...	5 18

A large assortment of every description of Garden Syringes, Pail Engines, Conservatory Pumps, &c., kept in stock.

Full size Syringe, on Read's principle, of the very best quality and workmanship, with two roses and one jet, 21s.; Plain Syringes from 10s. 6d. upwards.

J. Tylor & Son's Horticultural Apparatus may be obtained at these prices from any respectable Ironmonger or Seedsman in town or country, through whom alone they will be supplied, and of whom Drawings and Prices may be had.

N.B. Cost of carriage, &c., not included in these prices.

J. Tylor & Son's Manufactory, Warwick Lane, Newgate Street, London.

REDUCTION IN PRICE.

WEIR'S IMPROVED GALVANISED WROUGHT IRON LIQUID MANURE PUMP.

The Fittings of these Pumps are wholly of Brass, and there is no leather or other matter which can be affected by the manure.

Price, complete, with 10 feet of Flexible Suction Pipe, 4l. 15s. Terms, cash on delivery.

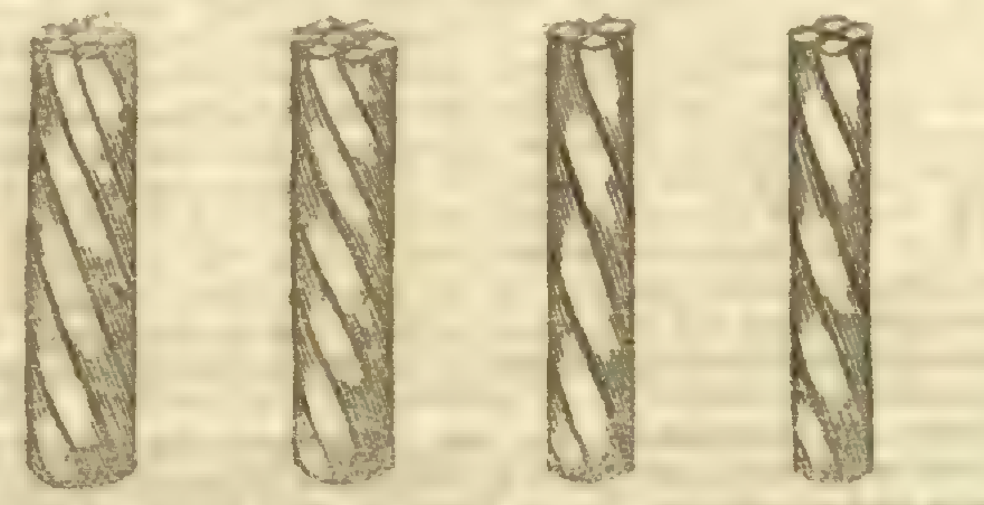
Edward Weir, Agricultural Engineer, 16, Bath Place, New Road, London. Removed from Oxford Street.

Catalogues, with Illustrations, sent free by post.

THE GUTTA PERCHA COMPANY'S TUBING for WATERING GARDENS, with Roses and Union Joints Fitted.—27, CITY ROAD, LONDON.

H. J. MORTON and Co., Galvanised Iron Roofing Works, 2, Basinghall Buildings, Leeds.

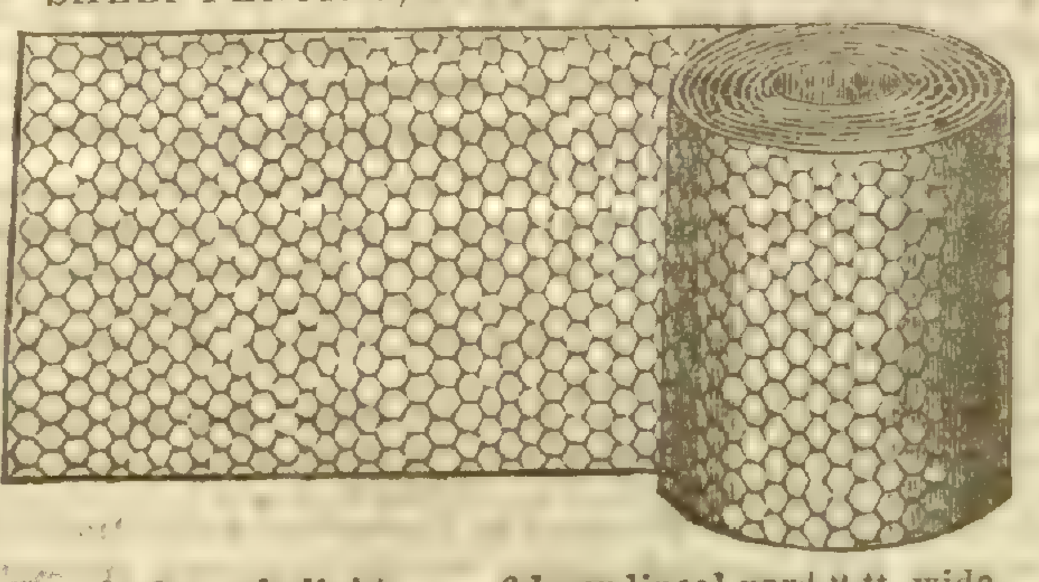
PATENT WIRE STRAND FENCING FOR PARKS, &c.



This Fencing is the most neat, strong, and durable for Parks and Agricultural purposes in use. It cannot be bent or put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply as above.

IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

GALVANISED WIRE NETTING for GAME and SHEEP FENCING, AVIARIES, PHEASANTRIES, &c.



Two-inch mesh, light	... 6d. per lineal yard 2 ft. wide.	
" " strong	... 8d.	" "
" " extra strong 1s.	"	"

Any size or quantity made to order on the shortest notice. Special Estimates given for large quantities.

All kinds of Ornamental Wire Work made to any design.

GEORGE CASTON and CO., Wholesale Wire Netting Manufacturers, Howard's Buildings, Brick Lane, St. Luke's, London.

Orders by post punctually attended to.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener, Sundays excepted.

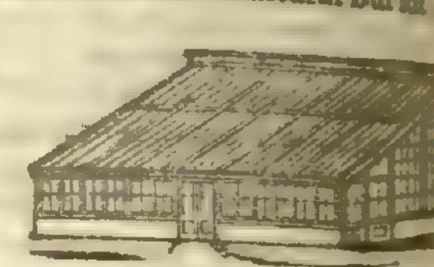
Priced lists of plant tubs and boxes forwarded on application.

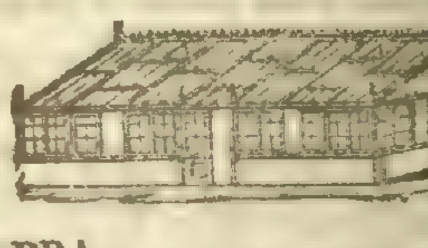
HORTICULTURE IN ALL ITS BRANCHES.

J. WEEKS & Co., King's Road, Chelsea,

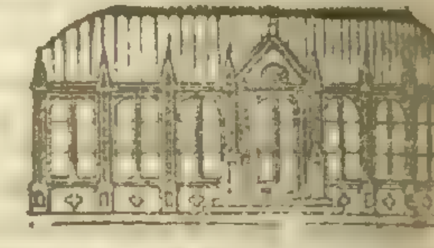
HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Buildings or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.





The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.



The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings: also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. Weeks & Co., King's Road, Chelsea, London.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

At the Lowest Prices Consistent with Good Materials and Workmanship.

GRAY and ORMSON, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

COTTAM AND HALLEN,

2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.

APPLICATION is requested for their NEW HORTICULTURAL LIST, containing Illustrations, Descriptions, and Prices of

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Syringes	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.

AGRICULTURAL LIST UPON APPLICATION.

EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

BY HER MAJESTY'S ROYAL LETTERS PATENT

E. DENCH, PATENT HOTHOUSE WORKS, KING'S ROAD, CHELSEA:

PATENT HOTHOUSES and excellent Glass at 1s. 3d. per foot super., which are superior to all others for price with quality, and if known would supersede all others. (See Appendix, in "Book of the Garden," by Mr. M'Intosh.) A Range of Houses and Hot Water Apparatus, was erected by E. D. for E. L. Betts, Esq., Preston Hall, Kent. Mr. J. Frost, head gardener, has shown their efficiency by their produce at the Royal Botanic Gardens, Regent's Park, June 8, and Chiswick, June 11. The editor of the *Gardeners' Chronicle* says: "Beautiful examples of Black Hamburgh, large both in bunch and berry, and as black as Sloes, were furnished by Mr. Frost, gr. to E. L. Betts, Esq., of Preston Hall, Kent; these well deserved the first prize which was awarded them."—*Gardeners' Chronicle*, June 18th, 1853. The Grapes were considered the best shown at Regent's Park during the season, and the Houses are as superior for the growth of everything else in horticulture, which has been fully proved, and they have been extensively erected for the nobility and gentry in all parts of the kingdom.

GLAZING WITHOUT PUTTY.—Iron and Glass alone. E. D. has Roofed the Public Baths and Washhouses, Endell Street, on this principle, and others are in hand. Patent Sashes for Peach Walls, Pits, &c., 8d. per foot super. Heating by Hot-water, on the most practical principles, and all the best materials used. Printed Price List sent on application.

TO AMATEUR GARDENERS, LOCAL BOARDS OF HEALTH, & SANITARY WORKS.

PATENT SLUICE COCKS, Gutta Percha, Combinated ditto, Patent Flexible India Rubber Tubing, and every other Hose for Watering Gardens. The Hydraulic Ram, Fire, Garden, and every other kind of Pump, Hydrants, High Pressure Cocks, and all other articles to be had, Wholesale and Retail, of FREEMAN ROE, HYDRAULIC ENGINEER, 70, Strand, and Bridgefield, Wandsworth.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard run, of E. T. ARCHER, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey.

TO FLORISTS AND OTHERS.

J. JONES, IRON MERCHANT, has always a great variety of CONICAL and SADDLE BOILERS in STOCK; also Fire and Furnace Bars, Ornamental and Plain Supply Cisterns, Double Doors and Frames, Furnace Grates, Soot Doors, Hot Water Pipes, Elbows, Tees, Syphons, Throttle Valves, Stop Cocks, Flange and Socket Elbows, &c.; also Trough Pipes. Drawings and prices of the above, on application to J. JONES, Iron Bridge Wharf, No. 6, Bankside, London, near the Southwark Iron Bridge.

THE CONICAL HOT-WATER BOILERS, as invented by John Rogers, Esq., are only to be obtained of JOHN SHEWEN, IRONMONGER, Sevenoaks, Kent.
Contracts given for Heating.

STEPHENSON AND PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

ENCAUSTIC TILE PAVEMENTS.

MAW AND CO., Benthall Works, Broseley, Salop, Manufacturers of the Cloister Pavement of Mediæval Court, and "THE SUCCESSFUL IMITATION OF OPY'S ALEXANDRINUM, IN THE BEAUTIFUL ENCAUSTIC TILE PAVEMENT OF CLOISTERS OF BYZANTINE COURT," Crystal Palace (M. D. Wyatt, Esq., in Official Handbook), forward, without charge, Designs and Estimates, adapted to given dimensions, of Entrance Halls, Conservatories, Verandahs, &c., in every style.

Specimens at 11, Aldersgate Street, City.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the nobility, gentry, and clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out-door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of these who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice.

Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to WALTER CARSON & SON, 9, Great Winchester Street, Old Broad Street, Royal Exchange, London. No Agents. All orders are particularly requested to be sent direct.

THE FINEST FRUIT IN ENGLAND will be protected from Wasps by using HAYTHORN'S HEXAGON GARDEN NET, sent immediately by Mr. HAYTHORN, Nottingham.

WASPS! WASPS! WASPS!—No injury can be done to Fruit by Wasps, Flies, Birds, &c., if Haythorn's Hexagon Net is used. Recommended by all the principal gardeners. Direct Mr. HAYTHORN, Nottingham. Testimonials, patterns, and prices free by post.

THE BEST SHOW OF IRON BEDSTEADS in the Kingdom is WILLIAM S. BURTON'S.—He has two very Large Rooms, which are devoted to the exclusive show of Iron and Brass Bedsteads and Children's Cots, with appropriate Bedding and Mattresses. Common Iron Bedsteads from 17s.; Portable Folding Bedsteads from 12s. 6d.; Patent Iron Bedsteads, fitted with dovetail joints and patent sacking, from 21s.; and Cots from 21s. each; handsome Ornamental Iron and Brass Bedsteads, in great variety, from 2l. 19s. to 13l. 13s.

PAPIER MACHE AND IRON TEA-TRAYS.—An assortment of Tea Trays and Waiters wholly unprecedented, whether as to extent, variety, or novelty.

New oval Papier Maché Trays, per set of three	from 20s. to 10 guineas.
Ditto, Iron ditto	from 13s. to 4 guineas.
Convex shape, ditto	from 7s. 6d.

Round and Gothic Waiters, Cake and Bread Baskets equally low.

BATHS AND TOILETTE WARE.—WILLIAM S. BURTON has ONE LARGE SHOW ROOM devoted exclusively to the DISPLAY of BATHS and TOILETTE WARE. The stock of each is at once the largest, newest, and most varied ever submitted to the public, and marked at prices proportionate with those that have tended to make his establishment the most distinguished in this country. Portable Showers, 7s. 6d.; Pillar Showers, 3l. to 5l.; Nursery, 15s. 6d. to 32s.; Sponging, 15s. to 32s.; Hip, 14s. to 31s. 6d. A large assortment of Gas Furnace, Hot and Cold Plunge, Vapour, and Camp Shower Baths. Toilette Ware in great variety, from 15s. 6d. to 45s. the Set of Three.

WILLIAM S. BURTON has TEN LARGE SHOW ROOMS (all communicating), exclusive of the shop, devoted solely to the show of GENERAL FURNISHING IRONMONGERY (including Cutlery, Nickel Silver, Plated, and Japanned Wares), Iron and Brass Bedsteads, so arranged and classified that purchasers may easily and at once make their selections.

Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of.

39, OXFORD STREET (corner of Newman Street); Nos. 1, 2, and 3, NEWMAN STREET; and 4 and 5, PERRY'S PLACE.

MR. MECHI, 4, Leadenhall-street, London, feeling that these are progressive times, has made EXTENSIVE ALTERATIONS in his BUSINESS ESTABLISHMENT, which, he trusts, will be for the comfort and advantage of his customers, by enabling them to inspect readily his general manufactures, consisting of articles of luxury and economy, suitable for presents or for use. Independently of his usual extensive stock of ladies' and gentlemen's Dressing Cases, Work Boxes, and Desks, in Wood, Morocco, and Russia Leather, he has devoted one entire apartment to the most choice productions in papier mâché ware, contrasting strangely with the once much-prized ware of Japan and China. Catalogues will be forwarded gratis on application. Mr. Mechi has prepared a very choice assortment of elegancies and utilities for sale at his depôt, at the New Crystal Palace. His position is in the Nave, at the entrance to the French Court.

TO NERVOUS SUFFERERS.

A RETIRED CLERGYMAN having been restored to health in a few days, after many years of great nervous suffering, is anxious to make known to others the means of cure; he will therefore send (free), on receiving a stamped envelope, properly addressed, a copy of the prescription used.—Address the Rev. E. DOUGLASS, 18, Holland Street, Brixton, London.

DINNEFORD'S PURE FLUID MAGNESIA has been for many years sanctioned by the most eminent of the Medical Profession, as an excellent remedy for Acidities, Heartburn, Headache, Gout, and Indigestion. As a mild aperient, it is admirably adapted for delicate females, particularly during pregnancy; and it prevents the food of infants from turning sour during digestion. Combined with the Acidulated Lemon Syrup, it forms an Effervescing Aperient Draught, which is highly agreeable and efficacious.—Prepared by DINNEFORD & Co., Dispensing Chemists (and General Agents for the Improved Horse-Hair Gloves and Belts), 172, New Bond Street, London, and Sold by all respectable Chemists throughout the Empire.

BLAIR'S GOUT AND RHEUMATIC PILLS. Price 1s. 1½d. and 2s. 9d. per box.—Mr. William Courtney, of Barton, Stacey, Hants, says:—"I had resort to your Pills, and within two hours I was quite easy. The use of these Pills ought really to be known all over the world." Among the many discoveries, none have conferred such a boon upon suffering humanity as that of Blair's Gout and Rheumatic Pills, they require neither attention nor confinement, and are certain to prevent the disease attacking any vital part. Sold by all medicine vendors. Observe that "THOMAS PROUT, 229, Strand, London," is impressed upon the Government stamp.

FRAMPTON'S PILL OF HEALTH.—"For upwards of nine years (writes Mr. Thomas Province, of Winchmore Hall, Middlesex), I have experienced the efficacy of this excellent medicine, and I have the happiness of saying that I never had a better state of health. I beg further to add that this medicine is in general use by my family, and we know of nothing to equal it." For females these pills are truly excellent, removing all obstructions, the distressing headaches so very prevalent with the sex, depression of spirits, dulness of sight, nervous affections, blotches, pimples, and sallowness of the skin, and gives a healthy juvenile bloom to the complexion. Sold by all medicine vendors, price 1s. 1½d. per box.—Observe that "THOMAS PROUT" is on the Government stamp.

HOLLOWAY'S OINTMENT AND PILLS EFFECT EXTRAORDINARY CURES OF BAD LEGS.—Mr. John Stokell of West Harlsey, Northallerton, suffered for upwards of two years with several wounds of his legs; every means were tried in the hope of deriving some benefit, but without success, and the disease ultimately assumed so severe an aspect that it was considered amputation would be necessary in order to save his life. Hopeless as his case appeared he resolved not to undergo the operation, but commenced using Holloway's Ointment and Pills; the result was an almost immediate improvement, and by continuing these wonder-working remedies both legs were completely cured. Sold by all Vendors of Medicine and at Professor HOLLOWAY'S Establishment, 244, Strand, London.

DO YOU WANT LUXURIANT HAIR, WHISKERS, &c.? If so, use Miss GRAHAM'S NIOUKRENE, the most efficacious Hair generant ever introduced. It reproduces the Hair when lost either by disease or decay, prevents its falling off, effectually checks greyness, strengthens weak hair, and is guaranteed to produce those attractive ornaments, Whiskers, Moustachios, Eyebrows, &c., in three or four weeks. For nourishing and beautifying the hair, and sustaining its curling powers in all weathers, it has no equal. Price 2s., and sent post free to any part of the kingdom, on receipt of 24 penny postage stamps, by ELLEN GRAHAM, 3, New Road, Hornsey, Middlesex.—"My hair is quite restored." Miss ORME.—"I have a full pair of Whiskers, thanks to Nioukrene." H. ROBB, Esq.—"It has checked the greyness." Mrs. JONES.—"My bair is restored." Dr. COFFIN.

METCALFE AND CO.'S PERFUMERY DEPARTMENT.—PROPRIETARY ARTICLES.—METCALFE'S celebrated ALKALINE TOOTH POWDER is acknowledged as the safest and most efficient now in use. Dupuytren's Medicated Pomade is the most certain remedy for preventing the hair prematurely falling off, and for restoring it when baldness has already commenced. Dupuytren's Medicated Balm strengthens, cleanses, and improves the growth, and is generally acknowledged as the best wash for the hair.—Manufacturers of British and Importers of Foreign Soaps, Perfumery, and J. M. Farina's genuine Eau de Cologne, at METCALFE, BINGLEY, & Co.'s only Establishment, 130B and 131, Oxford Street, second and third doors west from Holles Street.

SHORT-HORN COWS FROM HORNCASTLE AND MELTON FAIRS.

MESSRS. JOHNSON, of the Manor Farm, Highgate, beg to inform gentlemen and the trade that they will show on TUESDAY next, the 29th inst., about 200 first-rate COWS and HEIFERS from the above Fairs. Out of this lot will be found several Animals of pure blood for breeding or exportation.

FARM WANTED.

WANTED, to rent, a FARM, within 25 miles of London, not exceeding 100 Acres, with Cottage and requisite Buildings. If near a Station on the South Western or Great Western Railway preferred.—Particulars to A. K., 23, Gillingham Street, Pimlico, London.

MITCHAM, SURREY.

TO MARKET GARDENERS, MEDICAL HERB-GROWERS, AND OTHERS.

TO BE LET, with possession at Michaelmas next, a good mixed soil FARM, containing 122 acres, admirably adapted for either of the above purposes, with Residence and Homestead attached, only 8 miles from London, and 3 from the market town of Croydon.—May be viewed by permission of the tenant, and particulars had, on application to Messrs. CRAWTER, Land Agents, Surveyors, &c., 5, Bedford Row, London.

TO BE LET, with possession, at Michaelmas next, WIDNEY GREEN FARM, situate in the parishes of Fyfield and Willingale Spain, near High Ongar, in the county of Essex. It consists of 292 acres of land, of which 61 are Meadow, and the rest Arable. The whole is in very good condition, and has on it a most excellent commodious house with all requisite, very useful, and well arranged farm premises in capital repair. The whole forms a most desirable occupation, and will be let by the year or on lease.—For particulars apply to Mr. OAKLEY, Land-agent and Surveyor, 60, Doughty Street, Mecklenburgh Square, London.

TO BE LET, an old established NURSERY, containing a Cottage, Vinery, Greenhouses, and other Buildings, with half an acre of Land.—Apply to Mr. COSSEY, Estate Agent, St. George's Middle Street, Norwich.

TO MARKET GARDENERS, NURSERYMEN, & FLORISTS.

ADJOINING THE HIGH ROAD TO BRENTFORD AND NEAR TO KEW BRIDGE.

TO BE SOLD, the Interest in the Unexpired Term of about 10 years of Lease of 17½ acres of highly productive GARDEN GROUND, with Cottage and commodious Business Premises. Part of the Land is stocked with healthy full-bearing Fruit Trees, and under crop of bushes, the remainder is cropped with usual Garden Crops, the whole being heavily dressed with manure. The stock may be purchased at a valuation, and immediate possession had.—For particulars, apply to Mr. W. T. ATWOOD, Land Agent, Mortlake, Surrey.

TO BE SOLD, GREENHOUSES—a Bargain. One 12 feet long and 8 feet wide, 15l.; and one 21 feet long and 12 feet wide, 25l. Plans and particulars sent on receipt of a postage stamp, to Mr. SMITH, Builder, &c., 4, Lower Street, Islington Green.

Greenhouses and Garden Lights, Window Sashes, Doors, &c., from 6d. per foot. Country orders forwarded.

SILVER SAND.

TO BE SOLD CHEAP, SILVER SAND, first or second quality.—Applications by letter to J. C. SPENCE, 32, Ludgate Hill, London, will be promptly attended to.

TO BE SOLD, GRASS CUTTING MACHINE.—Budding's Patent Grass Cutting Machine, 22 inches wide, for Lawns, Pleasure Grounds, &c., nearly new, will be disposed of considerably below the original price, the present owner having no further occasion for it. Apply to Mr. S. MULLINGER, Ironmonger, Enfield.

N.B. A large assortment of Gardening Implements, the best manufacture, always on sale at London prices.

TO BE SOLD, FANCY POULTRY, consisting of imported BRAMAH POOTRA, WHITE-FACED SPANISH and PURE BUFF COCHIN, many having taken 12 and 14 Prizes, the property of Mr. Fox, who, in consequence of removing from his present residence, will dispose of the whole of his valuable collection of Poultry, which has been selected from most of the best stocks in this country.—For particulars apply at the City of London Wire Works and Blind Manufactory, 44, Skinner Street, Snow Hill, London. Illustrated Catalogues of Wire Fencing, Garden Arches, Trainers, &c., forwarded by post free, on application.

TO BE SOLD, BUFF COCHIN CHICKENS, from first class Prize Birds, Brahma Pootra Chickens, from imported American Prize Birds, and Spanish Chickens. Also some very good one-year-old Birds of the above descriptions. Wire, Game, and Poultry Netting, Poultry Hurdles, Hen houses, Chicken Coops, Flower Stands, and Trainers, Garden Arches, and every kind of Wire Work, useful and ornamental.—T. H. FOX'S, City of London Wire Works, 44, Skinner Street, and 6 & 8, Snow Hill. Illustrated Catalogues forwarded post free.

MR. W. T. ATWOOD will Sell by Auction, on TUESDAY, September 12, at 1 o'clock, at the Roebuck Inn, Turnham Green, Middlesex, the interest in the unexpired term of Lease of about 50 Acres of valuable FRUIT and GARDEN GROUND in the highest state of cultivation, situate adjoining the high road from Hammersmith to Brentford.—Particulars may be had till day of sale by application to MR. ATWOOD, Land Agent, Mortlake, Surrey; or Mr. PLOWMAN, 2, Upper Wellington Street, Covent Garden, London.

WARWICKSHIRE.

SEVENTH ANNUAL SALE OF PURE-BRED SHROPSHIRE RAMS, EWES, AND THEAVES,

The Property of the Right Hon. the Earl of Aylesford, at the Heath Farm, near Meriden, two miles from Hampton Station, on the North Western Railway, six from Coventry, and nine from Birmingham.

BROWN AND CLARKE are honoured with instructions to submit to sale by Public Auction, on MONDAY, the 4th of September next, 31 SHEAR-HOG RAMS, 8 TWO-SHEAR RAMS, 1 THREE-SHEAR RAM, 100 EWES, and 100 THEAVES. Luncheon at half-past Ten o'clock, and the business to commence at Twelve o'clock precisely. The Sheep have been bred with great care, and will be found to possess all the most desirable qualities of this approved breed.—Catalogues may be had at the *Midland Counties Herald* Office, Birmingham; the Bull's Head, Meriden; Swan Inn, Coleshill; the Eagle, Rugby; and of the Auctioneers, Coventry.

NEW EDITION OF COL. HAWKER'S INSTRUCTIONS TO YOUNG SPORTSMEN.

In the press, the Tenth Edition, corrected, enlarged, and improved, with numerous Plates and Woodcuts,

INSTRUCTIONS TO YOUNG SPORTSMEN IN ALL THAT RELATES TO GUNS AND SHOOTING. By the late Lieutenant-Colonel P. HAWKER. Revised and corrected by his Son.

⁂ The tenth edition of this work having been delayed by the death of the author, the publishers have the satisfaction of stating that, his son having carefully revised the work, it is now nearly ready for publication, with all the new improvements and valuable information collected and in part prepared for the press by Colonel Hawker, up to the time of his decease.

London: LONGMAN, BROWN, GREEN, & LONGMANS.

PROFESSOR LINDLEY'S INTRODUCTION TO BOTANY, 4th Edition, with Corrections and Additions, now ready, in 2 vols. 8vo, with Six Copper Plates and numerous Wood Engravings. Price 24s. cloth.

London: LONGMAN, BROWN, GREEN, & LONGMANS.

Now ready, Part II. of

THE FERNS OF GREAT BRITAIN, illustrated by JOHN E. SOWERBY; descriptions by C. JOHNSON, Esq. To contain about 46 plates, and to be completed in Eight Monthly Parts, full coloured, at 3s., partly coloured at 1s. 6d. per part. To be had through all Booksellers; and of the Proprietor,

JOHN E. SOWERBY, 3, Mead Place, Lambeth.

FOWLS.—By JOHN BAILY. Now in the press, and will be published, August 1, the Second Edition of the above work, with which is reprinted the fourth edition of "The Dorking Fowl," corrected, revised, and considerably enlarged. It contains descriptive tables of all the fowls now exhibited, giving in few words their chief points and qualifications, with copious rules for their selection and management. Price 2s.; by post, 2s. 6d.

JOHN BAILY, 113, Mount Street, Grosvenor-square, London.

GRACE AGUILAR'S WORKS.

ADAPTED FOR PRESENTS, BIRTHDAY GIFTS, &c.

1. HOME INFLUENCE, price 6s. 6d.
2. THE MOTHER'S RECOMPENSE, price 7s.
3. WOMAN'S FRIENDSHIP, price 6s. 6d.
4. THE VALE OF CEDARS, price 6s.
5. THE DAYS OF BRUCE, price 7s. 6d.
6. HOME SCENES AND HEART STUDIES, price 6s. 6d.
7. THE WOMEN OF ISRAEL, 2 vols., price 12s.

GROOMBRIDGE & SONS, Publishers, 5, Paternoster Row, London.

Now ready, carefully revised and wholly reprinted, in One Volume, price 5s.,

HARD TIMES.

BY CHARLES DICKENS.

BRADBURY & EVANS, 11, Bouverie Street.

On the 31st inst. will be published, price 1s., No. XII., completing

THE FIRST VOLUME OF

"THE NEWCOMES." By W. M. THACKERAY.

With Illustrations by RICHARD DOYLE.

BRADBURY & EVANS, 11, Bouverie Street.

POPULAR WORKS ON BOTANY BY DR. LINDLEY.

SCHOOL BOTANY; OR, THE RUDIMENTS OF BOTANICAL SCIENCE.

400 Illustrations. 8vo. Price 5s. 6d. half-bound.

BRADBURY & EVANS, 11, Bouverie Street.

Lately Published,

THE ELEMENTS OF BOTANY, STRUCTURAL AND PHYSIOLOGICAL. With a Glossary of Technical Terms, and numerous Illustrations. 12s. cloth.

This completes the series of Elementary Botanical Works by Professor LINDLEY, of which "School Botany," and "The Vegetable Kingdom," form the other parts.

The first two Parts of THE ELEMENTS OF BOTANY, comprising Structural and Physiological Botany, and a Glossary of Technical Terms, are published in one octavo volume, price 12s.

These three parts form a complete manual of Botany for Medical and other Students who have made themselves acquainted with the author's "School Botany."

N.B. The Glossary may be had separately, price 5s.

BRADBURY & EVANS, 11, Bouverie Street.

This day is published, in one vol. 8vo, with numerous woodcuts, price 14s.,

MEDICAL AND ŒCONOMICAL BOTANY; or An Account of the Principal Plants employed in Medicine or Domestic Œconomy.

EXTRACT FROM THE AUTHOR'S PREFACE.

"The Vegetable Kingdom contains, among a large quantity of plants of no known importance to man, various useful species employed in medicine, the arts, or in the many branches of domestic œconomy. The principal part of those which can be brought by teachers in Europe under the notice of students, or which, from their great importance, deserve to be among the earliest subjects of study, are mentioned in the following pages, where they are arranged in the manner proposed in the 'VEGETABLE KINGDOM' of the author, with the sequence of matter departed from in a few instances, when it was believed that the convenience of younger students would be consulted by doing so. The author trusts that this selection will be found to have been made in such a way that all teachers who possess reasonably extensive means of illustrating their lectures, and all Botanic Gardens, may furnish the larger part of the species which are mentioned. A small selection was indispensable; firstly, because a greater work would have been beyond the reach of the majority of purchasers; and secondly, because experience shows us that those who have to study a science of observation, such as Botany, require to concentrate their attention, in the first instance, upon a limited number of objects."

BRADBURY & EVANS, 11, Bouverie Street.

ON MARRIAGE.

Just published (to be had free, by enclosing 1s. or Twelve Postage Stamps, to Mr. WATSON, Clerical Agent, Robert Street, Adelphi, London).

MATRIMONY.—A Pamphlet on Matrimonial Alliances, which merits the attention of those who wish to settle honourably in life. By a Clergyman.

THE FOLLOWING WORKS ARE ALWAYS ON SALE AT THE OFFICE OF THIS PAPER.

Price 1s. [illegible] by post 1s. 10d.

LABELS FO[illegible]E HERBARIUM, CONSISTIN[illegible] NAMES OF THE

CLASSES, ALLIANCES, [illegible]ERS, AND SUB-ORDERS,

OF

PROFESSOR LINDLEY'S "VEGETABLE KINGDOM."

So printed in large type, that they can be cut out and pasted into THE HERBARIUM.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden.

Price 3d. each, or 5s. for 25 copies for distribution among Cottage Tenantry, delivered anywhere in London, on a Post-office order being sent to the Publisher, JAMES MATTHEWS, at the office of the *Gardeners' Chronicle*.

In consequence of the new postal arrangements, parties in the country who desire it can have copies sent by post; six stamps, in addition to the cost of the numbers, will pass 10 copies free by post.

The cost of a single copy, free by post, is therefore 7d.; and of ten, free by post, is 3s.

THE COTTAGER'S CALENDAR OF GARDEN OPERATIONS.

By Sir JOSEPH PAXTON.

Reprinted from the GARDENERS' CHRONICLE; above 90,000 have already been sold.

CONTENTS.

African Lilies
Agapanthus
Anemones
Annuals
Apples
Apricot
Auriculas
Beans
Beet
Biennials
Black Fly
Books for Cottagers
Borage
Borecole
Box Edgings
Broccoli
Brussels Sprouts
Budding
Bulbs
Cabbage
Cactus
Calceolarias
Californian Annuals
Campanulas
Carnations
Carrots
Cauliflowers
Celery
Cherries
China Asters
China Roses
Chrysanthemums, Chinese
Chives
Clarkias
Clematis
Collinsias
Colewort
Cress
Creepers
Crocus
Crown Imperials
Cucumbers
Cultivation of flowers in windows
Dahlias
Daisies
Dog's-tooth Violets
Exhibitions, preparing articles for
Ferns, as protection
Fruit
Fuchsias
Gentianella
Gilias
Gooseberries
Grafting
Green-fly
Heartsease
Herbs
Herbaceous Perennials
Heliotrope
Hollyhocks
Honeysuckle
Horse-radish
Hyacinths
Hydrangeas
Hyssop
Indian Cress
Iris
Kidney Beans
Lavender
Layering
Leeks
Leptosiphons
Lettuce
Lobelias
London Pride
Lychnis, double
Marigold
Marjoram
Manures
Marvel of Peru
Mesembryanthemums
Mignonette
Mint
Mustard
Narcissus
Nemophilas
Œnothera bifrons
Onions
Pæonies
Parsnip
Parsley
Peaches
Pea-haulm
Pears
Peas
Pelargoniums
Perennials
Persian Iris
Petunias
Phlox
Pigs
Pinks
Planting
Plums
Polyanthus
Potatoes
Pruning
Privet
Propagation by cuttings
Pyracantha
Radishes
Ranunculus
Raspberries
Rhubarb
Rockets
Roses
Rue
Rustic Vases
Sage
Salvias
Savoys
Saxifrage
Scarlet Runner Beans
Seeds
Sea Daisy or Thrift
Seakale
Select Flowers
Select Vegetables and Fruit
Snails and Slugs
Snowdrops
Spinach
Spruce Fir
Spur Pruning
Stocks
Strawberries
Summer Savory
Sweet William
Thorn Hedges
Thyme
Tigridia Pavonia
Transplanting
Tree Lifting
Tulips
Turnips
Vegetable Cookery
Venus's Looking-Glass
Verbenas
Vines
Virginian Stocks
Wallflowers
Willows
Zinnias

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden.

Price 3s. 6d., free by post,

THE TREE ROSE.—Practical Instructions for its Formation and Culture. Illustrated by 24 Woodcuts. Reprinted from the GARDENERS' CHRONICLE, with additions.

CONTENTS.

Annual pruning time, principle of execution, &c.
Binding up
Budding knife
Budding, time of year, day, time of day, state of the plant, care of buds
Budding upon body
Bud, insertion of, into stock
Bud, preparation of, for use
Buds, dormant and pushing
Buds, failing
Buds, securing a supply of
Caterpillars, slugs, and snails, to destroy
Causes of success
Dormant buds, theory of replanting with, explained
Guards against wind
Labelling
Loosing ligatures
March pruning
Mixture for healing wounds
Pruning for transplantation
Planting out, and arrangement of trees
Pushing eye, spring treatment of dwarf shoots from
Roses, different sorts on the same stock
Roses, short list of desirable sorts for budding with a pushing eye
Sap-bud, treatment of
Shape of trees
Shoots and buds, choice of
Shoots for budding upon, and their arrangement
Shoots, keeping even, and removing thorns
Shortening wild shoots
Stocks, planting out for budding upon; the means of procuring; colour, age, height; sorts for different species of Rose; taking up, trimming roots, sending a distance, shortening heads, &c.; saw proper for the purpose.

GRAFTING.

Aphides, to keep down
Free-growers, remarks on
Graft, binding up and finishing [of
Grafting, advantage
Grafting, disadvantage of
Operations in different months
Preliminary observations
Roses, catalogue and brief description of a few sorts
Scion, preparation and insertion of
Scion, choice and arrangement of
Stock, preparation of.

APPENDIX.

A selection of varieties
Comparison between budding and grafting.

Post-office orders to be made payable to JAMES MATTHEWS. 5, Upper Wellington Street, Covent Garden, London.

Third Edition, considerably enlarged, price 5s. 6d.

RURAL CHEMISTRY.

By EDWARD SOLLY, F.R.S., F.L.S., F.G.S.,

Honorary Member of the Royal Agricultural Society of England, Professor of Chemistry to the Horticultural Society of London, Lecturer on Chemistry in the Hon E. I. Co.'s Military Seminary at Addiscombe, &c., &c.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden.

Price 5s. 6d. cloth,

SECOND EDITION, REVISED AND ENLARGED,

ORNAMENTAL AND DOMESTIC POULTRY; THEIR HISTORY AND MANAGEMENT.

BY THE REV. EDMUND SAUL DIXON, M.A., Rector of Intwood with Keswick.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden, London.

Pric 2s. 6d.,

FOLIA ORCHIDACEA.—Part V. By Professor LINDLEY: Containing MILTONIA, BRASSIA, ADA, FERNCHILOS, CORYMBIS, SOBRALIA, CŒLOGYNE, PANISEA.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden.

TO AGRICULTURAL IMPLEMENT MAKERS & OTHERS.

JOHNSON AND SHAW'S FARMERS' ALMANAC for 1855 will be published on the 1st of November. Parties desirous of availing themselves of its Advertising Pages should forward their Advertisements and Blocks to Mr. RIDGWAY, 169, Piccadilly, without delay.

TO BE DISPOSED OF, THE GARDENERS' CHRONICLE from the year 1842 to 1851, half-bound in calf, in good preservation, and equal to new; also the *Gardeners' Chronicle*, not bound, for the years 1852, 1853, and 1854.—Address M. R., Messrs. Dawson & Sons, Abchurch Yard, London.

PRICE FOURPENCE OF ANY BOOKSELLER.

CONTENTS OF THE NUMBER FOR SATURDAY LAST, AUGUST 19, OF

THE ATHENÆUM.

JOURNAL OF ENGLISH AND FOREIGN LITERATURE, SCIENCE, AND THE FINE ARTS.

Twenty-four large Quarto Pages.

Reviews OF, WITH EXTRACTS FROM—

Fifty Years in both Hemispheres; or, Reminiscences of a Merchant's Life. By Vincent Nolte.
The Life of Marguerite d'Angoulême, Queen of Navarre. By Martha W. Freer.
The World encompassed by Sir Francis Drake, &c. By W. S. W. Vaux.
The Nemesis of Power: Causes and Forms of Revolution. By J. A. St. John.
Utah and the Mormons. The History, Government, Doctrines, Customs, and Prospects of the Latter-Day Saints. By B. C. Ferris.

WITH SHORTER NOTICES OF—

The Grammar-School Boys. By Mrs. Burbury.
Tales of Ireland and the Irish. By J. G. MacWalter.
Leather Stocking and Silk; or, Hunter John Myers and his Times.
The Prudent Man. By W. Bridges.
My Haunts and their Frequenters. By E. H. Yates.
Out of Harness. By Sir W. A'Beckett.
The Aquarium. By P. H. Gosse.
Mathematical Essays. By J. H. W. Waugh.
The Stratford Shakspeare. By C. Knight.
Dictionnaire Technologique. By Tolhausen and Gardissal.
Pamphlets, &c.

Original.—Under the Olive Trees. By H. F. C.—Industrial Exhibition at Munich.

Foreign Correspondence.—A Visit to the Island of Formosa. By R. Fortune.

Weekly Gossip.—Literary Announcements—St. John's Wood Literary Society—Educational Exhibition—Obituary: Lord Jocelyn—Marylebone Free Library—Niger-Chadda Expedition—Campbell Monument—Turkish Museum.

Societies.—Reports of the Proceedings of the Horticultural—Entomological.

Fine Arts.—Risdon's Chromolithography of Columbus propounding to the Prior of the Franciscan Convent of Santa Maria de Rabida his Theory of a New World—Wallis' Birmingham School of Art Drawing Book.

Fine-Art Gossip.—Painters in the East—Art-Ecclesiastical in France.

Music and the Drama.—Royal Academy of Music—Strand Theatre ('Hard Times.')

Musical and Dramatic Gossip.—Royal Italian Opera—Sadler's Wells Theatre—Testimonial to M. Benedict—French Operatics—Great Organ at Ulm.

Miscellanea.—Post-office Money Orders—Metropolitan Bridges.

The Athenæum may be ordered of any Bookseller.

FREE EXHIBITION.

ART UNION OF LONDON.—The EXHIBITION of WORKS selected by the Prizeholders of 1854 will be open to the Public, without tickets, from Ten till Six, at the Society of British Artists' Gallery, Suffolk Street, daily, from MONDAY next, 28th instant, till SATURDAY, 2d September.

GEORGE GODWIN, LEWIS POCOCK, } Hon. Secs.

Aug. 26, 1854.

ROYAL PANOPTICON OF SCIENCE AND ART, LEICESTER SQUARE.—The Human Eye aided by Optical Appliances, Monday, 2; Railway Accidents and their Prevention, Tuesday, 3.15; the Galvanic Coil, Wednesday, 3.15; Mechanical Processes Auxiliary to the Fine Arts, Thursday, 3.15; the Electric Telegraph, Friday, 3.15; the History of Acoustics illustrated by Musical Instruments, Saturday, 3.15, by Mr. C. F. Partington. The Leyden Jar, Monday, 3.15; Shooting Stars, Tuesday and Thursday, 7.45; Lightning Conductors, Friday, 7.30; Terrestrial Magnetism, Saturday, 2, by Mr. W. R. Bird; Natural Magic, Monday and Wednesday, 7.30; the Steam Engine, Thursday, 3.15, by Mr. J. D. Malcolm; Glees and Madrigals by Mr. Howe, assisted by other vocalists, Tuesday, 2, Friday, 2; Climate of British Isles, by Mr. Hugo Reid, Wednesday, 2; Explanation of Machinery and Manufactures, daily at 1 and 7.15; Messrs. Heinke's Improved Diving Apparatus in the Crystal Cistern, 2.45 and 8.45, Tuesday and Thursday, 2.45 and 7.15; Dioramic Miscellany, including Views of Verona and Florence; the Prismatic Disc, and a succession of brilliant Chromatropic Effects, 8.15. Distins' Flügel Horn Union, 9 and 9.40; Fountain of High Pressure, 4.45 and 9.25; Performances on the Grand Organ by Mr. W. T. Best, at intervals. Hours of Exhibition—Morning, 12 to 5; Evening, 7 to 10, Saturday evenings excepted. Admission 1s.; Schools, and children under 10, half price.

New Tale by the Author of "MARY BARTON," to be published weekly in HOUSEHOLD WORDS.

On Wednesday, 30th of August,

Will be published in HOUSEHOLD WORDS, the FIRST PORTION of a NEW WORK OF FICTION, called

NORTH AND SOUTH.

By the Author of "MARY BARTON."

The publication of this Story will be continued in HOUSEHOLD WORDS, conducted by CHARLES DICKENS, from Week to Week, and completed in Five Months.

OFFICE, 16, WELLINGTON STREET NORTH, STRAND; and Sold by all Booksellers and Newsvenders.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. [illegible], Victoria Street, in the Parish of St. Margaret and St. John, Westminster, both in the County of Middlesex, Printers, at their Office in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul, Covent Garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, Aug. 26, 1854.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 35.—1854.] SATURDAY, SEPTEMBER 2. [PRICE 6*d*.

INDEX.

Agriculture, Irish .... 569 *b*
Agricultural education .... 573 *a*
Begonia opalifiora .... 567 *a*
Blight composition, Page's .... 565 *c*
Books noticed .... 566 *b*
— agricultural .... 574 *a*
Botanic Garden, Ceylon .... 563 *c*
Brussels Sprouts, to top .... 568 *c*
Calendar, horticultural .... 567 *c*
— agricultural .... 574 *a*
Cattle, prepared food for .... 569 *c*
— spring food for .... 573 *b*
Calyptraria hæmantha .... 566 *c*
Ceylon Botanic Garden .... 563 *c*
Cholera fly .... 563 *a*
Conchology, Mrs. Catlow's .... 566 *c*
Cookery, Soyer's, rev. .... 566 *b*
Dipping apparatus .... 572 *c*
Education, agri., in country schools .... 573 *a*
Eggs, to travel .... 573 *c*
Farming, Irish .... 569 *b*
— stock .... 571 *a*
Ferns .... 565 *c*
Fly, cholera .... 563 *a*
Food, prepared cattle .... 569 *c*
Fruit trees, sale of .... 568 *c*
Guots .... 565 *c*
Grass crop, Mr. Mechi's .... 572 *a*
Hampton Court Gardens .... 567 *a*
Harvest reports .... 572 *b*
Heliotropes .... 566 *a*
Hollyhock exhibition .... 567 *b*
Mangold Wurzel, seeding of .... 570 *b*
— — fine crops of .... 573 *c*
National Floricultural Society .... 567 *b*
Odessa, exports from .... 572 *c*
Orchard houses .... 565 *a*
Paper, material for .... 566 *a*
Pathology, vegetable .... 564 *a*
Peaches, curl in .... 567 *c*
Physiology, vegetable .... 564 *c*
Plants, new .... 566 *c*
Potatoes, diseased .... 566 *a*
Rain gauges .... 565 *c*
Reaping machines .... 570 *c*
Roots, fingers and toes in .... 571 *c*—572 *b*
Stock, farming .... 571 *a*
Trees, sale of fruit .... 568 *c*
Tree wounds, composition for 568 *c*
Vallota purpurea .... 564 *b*
Vegetable pathology .... 564 *a*
— physiology .... 564 *c*
Verbenas, to winter .... 567 *b*
Vines, to prune and train .... 565 *c*
— history of .... 567 *b*
— for pots .... 568 *c*
Wakefield Farmers' Club .... 573 *b*
Wheat in Yorkshire .... 572 *b*

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Notice is hereby given that the Office of this Society is now removed to 14, Tavistock Row, Covent Garden.
Sept. 2. E. R. CUTLER, Secretary.

MAIDSTONE HORTICULTURAL SOCIETY.—The AUTUMN EXHIBITION of this Society will be held at the CORN EXCHANGE, on WEDNESDAY, September 6th. In addition to the usual Prizes, the following open class Prizes will be given:—Dahlias, 24 distinct varieties, 1st Prize, 2*l*.; 2d, 1*l*.; 3d, 10*s*. Six Exotic Orchids, 1st Prize, 2*l*.; 2d, 1*l*. Entrance-fee, 5*s*. J. G. SMITH, Hon. Sec.
Library, Maidstone.

GRAND DAHLIA SHOW AT BARTON-UPON HUMBER, LINCOLNSHIRE.
The Autumn Show of the Barton Horticultural Society will be held on the 13th September, 1854.—For 24 Dahlias, 1st prize, 5*l*.; 2d prize, 20*s*.; 3d prize, 10*s*.—For 12 Dahlias, 1st prize, 10*s*.; 2d prize, 5*s*. Schedules of the Show may be had on application to
WM. H. EDDIS, Hon. Sec.

STOWMARKET HORTICULTURAL SOCIETY, FRIDAY, 22d September, 1854, in the Corn Exchange.
The Committee of the above beg most respectfully to announce that in addition to their usual Prizes, there will be (for Amateurs only) Open to All England, Prizes of 30*s*., 20*s*., 15*s*., and 10*s*., for twelve dissimilar Dahlias, entrance 10*s*. each. Verbenas, in twelve single trusses, 15*s*., 10*s*., 7*s*. 6*d*., and 5*s*.; entrance 5*s*.
Intending Exhibitors to notify the same by amount of subscription, on or before the 20th of September, to
THOMAS BARNES.

NORTHAMPTON AND NORTHAMPTONSHIRE FLORAL AND HORTICULTURAL SOCIETY.
At the Exhibition to be held at the Corn Exchange, Northampton, on the 19th September, 1854, the following Prizes will be awarded for the best 24 Dahlias, Open to All England: First Prize, 2*l*.; Second Prize, 1*l*. 10*s*.; Third Prize, 1*l*.
Northampton, Sept. 2. JOHN MACQUIRE, Hon. Sec.

ROSES AND HOLLYHOCKS.
THE AUTUMNAL FETE OF THE NEWBURY HORTICULTURAL SOCIETY, to be held on FRIDAY, 8th September, 1854, offers the following Prizes, Open to All England, viz.: ROSES—for the best Collection of not less than 12 varieties, in bunches of three blooms each variety, 3*l*.; for the second, 2*l*.; for the third, 1*l*.; Entrance Fee, 2*s*. 6*d*.
HOLLYHOCKS, on spikes—for the best Collection of not less than 6, or more than 12 varieties, 2*l*. 10*s*.; for the second, 1*l*. 10*s*.; Entrance Fee, 2*s*. 6*d*.
The Show Grounds adjoin the Railway Station; Exhibitors will arrive in time by the train from Paddington at 7.40 A.M., which arrives at Newbury 9.55, and can leave Newbury by 5.55 train in the evening. For further particulars apply at 9, Northbrook Street, Newbury.

BRIGHTON AND SUSSEX FLORICULTURAL AND HORTICULTURAL SOCIETY.—The annual Autumn Exhibition, to be held at the ROYAL PAVILION, Brighton, on WEDNESDAY and THURSDAY, Sept. 13 and 14.
President.
HIS GRACE THE DUKE OF DEVONSHIRE.
Vice-Presidents.
His Grace the Duke of Richmond, Lord Lieut. of county.
His Grace the Duke of Norfolk, E.M.
The Most Noble the Marquess of Bristol.
The Right Hon. the Earl of Chichester.
Admiral Sir G. B. Pechell, Bart., M.P.
Lord Alfred Hervey, M.P.
The Hon. Hanbury Tracy.
The Hon. A. Macdonald.
The Baron de Goldsmid. [R.N.
Rear Admiral Sir G. Westphall, &c., &c., &c.
Upwards of 270*l*. are offered as Prizes (including the RAILWAY CUP, value 10*l*., offered for the best 24 dissimilar Dahlia Blooms), schedules of which can be obtained of the Secretary, among which will be found the following, viz.:—Orchids, 8 vars., 8*l*., 5*l*., 3*l*.; Stove and Greenhouse, 8 vars., 8*l*., 5*l*., 3*l*.; Device—Cut Flowers, 5*l*., first prize; Collection of 8 Dishes Fruit, 7*l*., 4*l*., 3*l*., 2*l*.
The Band of the Coldstream Guards (by permission of Col. the Hon. A. Upton), will attend each day, conducted by Mr. Godfrey; also the Military Band from the Garrison, under the direction of Herr Daverow. The entire suite of Rooms and eastern lawn will be thrown open for the occasion.
Through the liberality of the Directors of the London, Brighton, and South Coast Railway, the Committee have the pleasure to announce to the Exhibitors that all Plants, &c., for Exhibition, will be conveyed to Brighton from all stations, and back whence they came, Free of Charge.
General Superintendent of the Exhibition, Mr. E. Spary.
EDWARD CARPENTER, Secretary.
Brighton, Sept. 2, 1854.
N.B. All communications to be made to the Secretary. Address, 45, Lavender Street.

TO DAHLIA GROWERS.
NORFOLK AND NORWICH HORTICULTURAL SOCIETY.—The DAHLIA SHOW will be held at the Corn Exchange, Norwich, on THURSDAY, the 14th of September next, immediately after the morning performances at the Musical Festival. Amongst others, Prizes of 5*l*., 3*l*., and 2*l*. will be offered for 24 dissimilar DAHLIA BLOOMS (Fancies excluded), open to all Nurserymen and such Amateurs as are subscribers. No entrance fee. ARTHUR PRESTON,
Norwich, Sept. 2. Hon. Sec.

GREAT BOTANICAL AND HORTICULTURAL MEETING AT THE BOTANICAL AND HORTICULTURAL SOCIETY'S GARDENS, MANCHESTER, on the 13th, 14th, 15th, and 16th of September, 1854. The Council of the Manchester Botanical and Horticultural Society, have arranged to open their NEW GLASS PROMENADE, covering an area of 1000 square yards, with a grand Botanical and Horticultural Exhibition. The articles to be exhibited will comprise Plants and Flowers, Fruits and Vegetables, Dried Flowers and Fruits, Wax Flowers and Fruits, Fountains and Vases, Flower-pots and Baskets, Garden Stands and Seats, Labels for Plants, Nets and Mats for covering Trees, Statuary for Garden decoration, Iron and Wirework for Garden purposes, Garden Implements of all kinds, with every other article connected with Gardening. Schedules are in course of preparation, and may be obtained on application to the Secretary.
By order, JOHN SHAW, Secretary.
Council Room, 40, Princes Street, Manchester, Sept. 2.

LILIUM LANCIFOLIUM, TRITONIA AUREA, AND VALLOTA PURPUREA.
HENRY GROOM, Clapham Rise, near London, by appointment FLORIST TO HER MAJESTY THE QUEEN, AND TO HIS MAJESTY THE KING OF SAXONY, begs to say that his extensive collection of the above BEAUTIFUL PLANTS is now in flower, and may be viewed every day (Sundays excepted). Admittance gratis.

CHOICE CALCEOLARIA SEED.
JOHN AND CHARLES LEE beg to state, they are now sending out packets of choice Calceolaria Seed, saved from a very SUPERB COLLECTION, price 2*s*. 6*d*. per packet.—Vineyard Nursery, Hammersmith.

PELARGONIUMS.
J. DOBSON AND SON beg to announce that their annual descriptive Catalogue of the above, containing full descriptions of the best varieties of Beck's, Foster's, Hoyle's, and other raisers, at reasonable prices, may be had on application.
Woodlands Nursery, Isleworth.

NEW PELARGONIUMS.
J. DOBSON AND SON beg to call attention to the advertisement in this Paper of August 12, which contains a full description, with prices, of Beck's and Fuller's new and beautiful Seedlings, to be sent out the first week in October.
Woodlands Nursery, Isleworth.

CUTHILL'S BLACK SPINE CUCUMBER.—Any person having any quantity, from an ounce and upwards, please to apply to the undersigned, as it is wanted for the Colonies by the end of September, and his own seed will not be ripe by that time. See last week's advertisement for Strawberry Plants, &c.—JAMES CUTHILL, Camberwell, London.

ARTHUR HENDERSON AND CO. beg to invite the attention of their patrons and the public to the splendid collection of HOLLYHOCKS now in bloom at their Kilburn Nursery. (This Nursery is in the Edgeware Road, and is about one mile from their Home Nursery, Pine Apple Place.)
Pine Apple Place, Edgeware Road, London, Sept. 2.

CHRYSANTHEMUMS.—Fine bushy plants of the above, both large and small varieties, for flowering this autumn, may be had at CHANDLER AND SON'S, Nursery, Wandsworth Road, from 9*s*. to 12*s*. per dozen.

MAY'S PARAGON CABBAGE.—Fine strong plants of the above can be had at 5*s*. per 1000, on receipt of Post-office order for the amount by applying to
HENRY MAY, The Hope Nurseries, near Bedale, Yorkshire.

LISIANTHUS RUSSELLIANUS.
J. AND J. FRASER beg to offer the above, in strong and healthy plants, such as will make large specimens for flowering next season, at 2*s*. 6*d*. each.
Lea Bridge Road, Essex, September 2.

CHRYSANTHEMUMS.
J. AND J. FRASER have a very superior Collection of the above, comprising the newest and best of Large-flowering and Lilliputian varieties. The plants are very strong, and will bloom well in the ensuing winter.
Lilliputians, fine plants ... ... 9*s*. to 12*s*. per doz.
Large flowering ... ... 9*s*. to 12*s*. „
New French varieties of 1854, not yet bloomed in this country ... ... 18*s*. „
Lea Bridge Road, Essex, September 2.

SEEDS OF CALCEOLARIA AND CINERARIA.
E. G. HENDERSON AND SON, of the Wellington Nursery, St. John's Wood, London, are now prepared to forward, by post, the new Seed saved this season from their unrivalled collection, in packets at 2*s*. 6*d*. and 5*s*. each.
The CALCEOLARIA, first quality ... ... 5*s*. 0*d*.
„ second „ 2 6
QUALITY, and not QUANTITY, forwarded at the above prices.

THE PAST WINTER AND SPRING have induced YOUELL & Co. to publish a CATALOGUE of RARE and HARDY CONIFERS and HARDY ORNAMENTAL SHRUBS, that have proved with them perfectly hardy in this well-known bleak district, exposed to the cutting winds from the North Sea.
This Catalogue also contains an extensive selection of the most useful Greenhouse Plants, Camellias, Ericas, Epacris, Chrysanthemums, Hollyhocks, Tree Carnations, Carnations, and Picotees, Fuchsias, Verbenas, Phloxes, &c., which will be forwarded (stamped) on receipt of two postage stamps.
YOUELL AND CO., Royal Nursery, Great Yarmouth.

BULBS FOR WINTER BLOOMING.
GOOD HYACINTHS, JONQUILS, CROCUSES, &c., for sale, at moderate prices, by the Importers.
MESSRS. SUTTON AND SONS, Seed Growers, Reading.

NEW BROWN COS LETTUCE SEED,
FOR PRESENT SOWING.
SUTTON AND SONS, Reading, have just harvested some of their choice sort of BROWN COS LETTUCE for sowing now to stand the winter. Price 1*s*. per packet. Excellent Cauliflower, Onion, Spinach, &c., for autumn sowing.

GRASS SEEDS.
SUTTON AND SONS *recommend the sowing of* GRASS SEEDS *at this season for Permanent Pasture, and are now prepared to supply excellent fresh Seeds for the purpose at very moderate prices.*
Also New Italian Rye Grass and Trifolium incarnatum, at moderate prices.—JOHN SUTTON & SONS, Seed Growers, Reading.

STRAWBERRY PLANTS.
CHARLES KIMBERLEY has a large stock of the following to offer at 3*s*. 6*d*. per 100:—Keens' Seedling, British Queen, Hooper's Seedling, Elton Pine, Princess Alice Maude, Stirling Castle Pine, and Comte de Paris.
Stoke Nursery, near Coventry.

STRAWBERRIES, 3*s*. per 100.—Strong well-rooted runners are now ready. British Queen, Eleanor, Prolific, Kitley's Goliah, Cuthill's Black Prince, Princess Alice Maude Myatt's Hautbois, Rivers' Eliza, &c.
BASS AND BROWN, Sudbury, Suffolk.

STRAWBERRIES.
WILLIAM NICHOLSON is now sending out strong, well-rooted plants of his four new and distinct STRAWBERRIES, viz., AJAX, a very fine large dessert fruit, very beautiful, solid, and juicy. RUBY, do., a great bearer, and forces well. CAPTAIN COOK, market fruit, large, and a great bearer. FILLBASKET, do. 15*s*. per 100, or 25 each of any two sorts for 10*s*., box included. Most of the best old and new sorts can be supplied on reasonable terms. See advertisement July 15. Post-office orders payable at Yarm, Yorkshire, or a cash remittance required with the order.
Egglescliffe, near Yarm, Sept. 2.

SPLENDID BULBS.
DAWE, COTTRELL, AND BENHAM (Successors to Frederick Warner) have just received their imported DUTCH and other BULBS in finer condition than for several years past, more especially their Hyacinths, Crocus, and Tulips. (Catalogues on application.—8, Lawrence Pountney Lane, and 36, Moorgate Street, London (late 28, Cornhill). Established 1720.

LOCKSBROOK NURSERY.
R. SHACKELL has strong plants of his Russian Superb Violet, now in excellent order for potting, at 4*s*. per dozen. Double Purple Perpetual Tree Violet, at 3*s*. per doz. Neapolitan Violet, at 3*s*. per dozen. Other varieties at low prices; hamper included, if the order be above 5*s*. It is requisite to pot the Violet early to insure a good display of bloom through the winter months.
ROBERT SHACKELL, Florist, Locksbrook Nursery, Bath.

HUGH LOW AND CO. would inform their friends and customers that they are now receiving their BULBOUS ROOTS from Holland. The collection comprises all the kinds of Roots suitable for early forcing, and they have been selected with care from the leading houses in Haarlem. Any orders entrusted to them will have every attention, and they feel satisfied they are in a position to supply them to the satisfaction of their customers.—Clapton Nursery.

ORCHARD HOUSE CULTURE.
THOMAS RIVERS will feel pleasure in showing his ORCHARD HOUSE TREES and their culture to any one wishing to see them. In addition to the Peach and Nectarine Trees, now in full bearing, fourteen large houses are fully stocked with Peaches, Nectarines, Figs, and Vines, in various stages of growth, and all in pots. A convenient morning train leaves Bishopsgate Station at 11.30, arriving at Harlow (1½ mile from the Nurseries), at 12.21.
Nurseries, Sawbridgeworth, Herts.

CAMELLIAS.
TO BE SOLD, several fine TREES, 6 to 8 feet high, full of buds.
R. ERRINGTON, Oulton Park, Tarporley, Cheshire.

LARGE CAMELLIAS, AZALEAS, ETC.
TO BE SOLD, on moderate terms, in consequence of a removal, Twenty CAMELLIAS, of good sorts, from 4 to 10 ft. in height, well set with bloom: Two large AZALEAS and other GREENHOUSE PLANTS.
Apply to C. CREAMER, 4, Barnes Street, Stoke Newington.

TO BE SOLD, Sixteen CAMELLIAS, good sorts, from 2 to 8 feet in height; Seventeen ORANGE TREES, 3 to 7 feet; and Two SHADDOCK TREES, 8 feet; in the neighbourhood of Clapham.—Apply, by letter only, to A. GREGORY, Box Cottage, Petersham, Surrey.

TO SEEDSMEN AND OTHERS.
EARLY ASH-LEAF POTATOES.—One Hundred Sacks of Early Ash-leaf Kidney Potatoes, either for immediate delivery or deferred to suit the convenience of purchasers. Large buyers will find this a most eligible opportunity for purchasing.—For price, &c., apply to J. WILSON, Seed Potato Merchant, Ipswich, Suffolk.

EARLY DWARF SEED POTATOES.
ABRAHAM HARDY AND SON'S Ten selected earliest varieties of SEED POTATOES are now ready to send out, warranted free from disease. Retail and trade prices on application.
Also their improved BATH COS and Hardy HAMMERSMITH LETTUCE SEED, growth of 1854. Six-pennyworth of these, or other seeds of Cauliflower, Flower Seeds, &c., for September sowing, will be sent to any address, post free, on receipt of 6*d*., or six stamps. Price per pound to the trade, on application.—Maldon, Essex, September 2.

THE BEST PLANT OF THE SEASON.
"BEGONIA PRESTONIENSIS SUPERBA."

W. J. EPPS has much pleasure in stating that he has purchased this splendid Begonia raised by Mr. Frost, Gardener to E. L. Betts, Esq., Preston Hall; the flowers are of much brighter colour than Prestoniensis, and the centre is nearly filled with stamens and petals, resembling a double blossom with a golden tinge, exhibiting a charming contrast. The flowers are delightfully fragrant as a Tea-scented Rose. Habit—dwarf and bushy; the flowers are thrown well above the foliage, in large trusses, and altogether one of the best plants yet offered. It received the highest award in June, at the Royal Botanic Show, Regent's Park, as a new plant; also at Maidstone and Ashford. Plants in October, 10s. 6d. each; one given where three or more are taken.—Bower Nurseries, Maidstone, Sept. 2.

HOLLYHOCKS, DAHLIAS, AND DUTCH BULBS.

GARAWAY, MAYES, AND CO. beg to call the attention of Florists, and the Public generally, to their large collections of HOLLYHOCKS and DAHLIAS, which comprise all the newest and choicest varieties in cultivation, and are now coming into full bloom, and which they will be happy to show to all interested in these favourite Plants. Their Hollyhocks this season are particularly fine, and in addition to their collection of named varieties, they have an unusually fine batch of Seedlings, from seed sown in the spring of 1853, now in bloom.

G. M. & Co. also beg to announce that they are now receiving their annual consignment of BULBS from Holland, comprising Hyacinths, Tulips, Crocuses, &c., which are this year in good condition and moderate in price.

Priced Catalogues of Dahlias, Hollyhocks, and Dutch Bulbs may be had on application.—Durdham Down Nurseries, Bristol.

STRAWBERRIES.

BARRATT'S MAGNUM BONUM.—In size, this splendid Strawberry very far surpasses the "British Queen," is an exceedingly heavy cropper, and continues in perfection later than almost any other variety. Its flavour is really delicious, most nearly approaching the true Pine Apple of any kind yet known. Price per 100, 2l. 2s.; per dozen, 6s. Good strong Plants of the above are now ready for sending out by

St. John's Nursery, Wakefield. Wm. Barratt.

N.B. W. B.'s List of 40 kinds of Strawberries may be had gratis.

STRAWBERRY PLANTS.—The best varieties for early and late growing, which have been thoroughly proved and given every satisfaction, are the undermentioned first-rate varieties, now ready.

Nimrod, 15s. per 100; Ajax, 5s.; Ruby, 5s.; Prince of Wales, 10s.; Trollope's Victoria, very superior, 5s.; Myatt's Surprise, 3s.; Myatt's Eleanor, the best and latest bearing Strawberry in cultivation, 3s.; British Queen, true, 3s.; Alice Maude, 3s.; Black Prince, very early, 3s.; Eliza, 3s.; Prolific, very fine and early, 3s.; Cremont's Perpetual, or Double-bearing Strawberry, 3s.

A remittance must accompany the order, either by Post Office Order or Penny Postage Stamps, on receipt of which the plants will be sent in hamper and package free, for all orders above 6s.

Edward Tiley, Nurseryman, Seedsman, and Florist, 14, Abbey Churchyard, Bath, Somersetshire.

MYATT'S new Seedling Strawberry, "ADMIRAL DUNDAS."—This is the most extraordinary variety, for size and productiveness, that has yet been raised at Manor Farm; it is much larger and a better flavour than either the Surprise or Mammoth, and ripens off the late fruit to advantage.

J. M. & Sons can confidently recommend this, as being superior to any large variety that has come under their notice.

Strong, well-rooted runners are now ready, and will be carefully packed and delivered free to any part of London, at the following scale of charges:—100, 50s.; 50, 30s.; and 25, 16s. Also strong Plants of Myatt's British Queen, Cinquefoila, Eleanor, Surprise, Globe, Eliza, Hooper's Seedling, Keens' Seedling, Black Prince, and Barnes' Bicton Pine, 5s. per 100.

Manor Farm, Deptford, September 2.

"SIR HARRY."—The eminent success of this new SEEDLING STRAWBERRY, at the only Floral and Horticultural Exhibitions where it has been shown, viz., Chiswick, first-class Certificate; 21, Regent Street, highly commended; Botanical Gardens, Edgbaston, first prize—induces the proprietor (hitherto an amateur grower only) to offer it for sale.

The characteristics of the plant are these:—Ripening as early as Keens' Seedling, but continuing fruiting a much longer time—a great cropper, bearing a very large handsome dark crimson berry, which carries that superb colour not only quite through, but to its very end, whilst, being both firm and juicy, it separates itself entirely from its calyx, without having a tasteless core. The delicious and luscious flavour of the fruit, united with its high perfume, throws utterly into shade the Keen and British Queen. The leaves are few, and the vigorous extension of its bearing branches exposes the fruit to the ripening influence of the sun, the want of which exposure is a great cause of failure in many sorts of this class of plant.

An oil-painting of a one-year-old runner, with its gigantic fruit in the respective stages of growth (as sketched from nature), is now to be seen in the Birmingham Exhibition of the Society of Artists, and coloured Lithographs have been taken from it by an eminent London Artist, which may be had on application, price 2s. 6d. each, in postage stamps.

The Plants will be ready for sending out (not less than a score) on the 20th September next. Prices—100 plants, 6l.; 80 plants, 5l. 10s.; 60 plants, 4l. 4s.; 40 plants, 2l. 17s.; 1l. 10s. for a score. A few plants in pots may be had. Apply to Mr. RICHARD UNDERHILL, Sir Harry's Road, Edgbaston, Birmingham; each application to be accompanied with a Post-office order (on Birmingham) or cash, to receive attention.—September 2.

FLORAL NURSERY, ACTON ROAD, TURNHAM GREEN.

CHRYSANTHEMUMS, Liliputian and Large Flowering.—Large and remarkably fine Plants of all the best Sorts, in 32-sized pots, fit to make really good Specimens at once, at 18s. per dozen; smaller Plants, in 48s, to flower in the coming winter, at 8s. per dozen.

VERBENAS.—All the new Varieties let out by Smith, Bragg, Mockett, and others, in 1854, at 8s. per dozen; older Varieties, 6s. per dozen—all well established.

FAIRY and FABVIA ROSES.—Large healthy Plants, in 48s, at 8s. per dozen.

SEEDLING HERBACEOUS CALCEOLARIAS, and SEEDLING CINERARIAS, at 5s. per dozen in October. These Plants have been raised from the Flowers which were so highly admired at this Nursery during last season.

FRENCH SPOTTED or NEW FANCY GERANIUMS.—Well-established Plants of these beautiful Flowers, at 2s. 6d. each, or 25s. per dozen, in October next—a large consignment (including all the best raised in France, several of which have not been seen in England) having been just received at the Floral Nursery.

An immense stock of nearly all the new and best Bedding GERANIUMS, FUCHSIAS, HELIOTROPES, TROPÆOLUMS, and other Soft-Wooded Plants, always on hand, at prices equally low.

The Stock of SHOW and FANCY GERANIUMS at the Floral Nursery is unquestionably the largest and best in the kingdom, no expense having been spared to render it perfectly unique; all the new plants of the best raisers are added as they appear. Well-established plants of upwards of 1000 sorts may be had early in October next, at prices which will place competition at defiance.

The trade fairly and liberally dealt with, and all plants sent out will be warranted true to name.

A remittance or satisfactory reference indispensable from unknown correspondents. Catalogues forwarded gratis.

JOHN WESTWOOD, Proprietor.—Sept. 2.

NEW CINERARIAS.

ROBERT REA begs to announce that he will send out, the first week in October, the following New CINERARIAS, and, from their first-rate character, and being unequalled by any yet sent out, he feels confident they will give universal satisfaction.

IPSWICH BEAUTY (Rea's).—Clear white, deeply edged with lake, shaded with purple; very dark disc, full size; broad petals, slightly cupped. A fine exhibition flower. First Class Certificates were awarded at Ipswich and Colchester, the only places where it was exhibited. Pronounced by all who saw it to be the finest Cineraria ever exhibited. Plants 10s. 6d. each.

GEM (Parker's).—A self-coloured flower; beautiful puce, with light disc; quite novel in colour, and a very striking first-rate variety. First Class Certificate, Ipswich, 1853. Plants 7s. 6d. each.

In consequence of having only one plant of the first to propagate from, the stock is very limited, early orders are therefore respectfully solicited, which will be executed strictly in rotation as received. The usual discount to the trade, and one sent over when three are ordered.—Ipswich Nursery, Ipswich. Sept. 2.

BASS and BROWN are now saving several of their choice Seeds, and can strongly recommend the following, which have been selected with their usual care from their superb collection:—

CALCEOLARIA, very choice, 1s.; extra superb ...	2s.	6d.
CINERARIA, very choice, 1s.; extra new and choice	2	6
FUCHSIAS, from new and choice	1	0
GERANIUM, very choice, 1s.; extra new and choice	2	6
" from finest fancy varieties	1	6
GLOXINIA, fine, 6d. extra from new and choice ...	2	6
ANTIRRHINUM, choice, 6d. extra from superb flowers	1	0

A List of Choice Seeds selected for Autumn sowing may be had free by post on application.

Post-office orders to be made payable to Bass & Brown, or Stephen Brown. Penny stamps received for small amounts.

Seed and Horticultural Establishment, Sudbury, Suffolk.

ARTHUR HENDERSON and CO. beg to inform their patrons and the public that their CATALOGUES of BULBS are now ready, and they will have much pleasure in forwarding them on application.

They comprise lists of all the finest varieties of Hyacinths, and many other rare and valuable Bulbs.

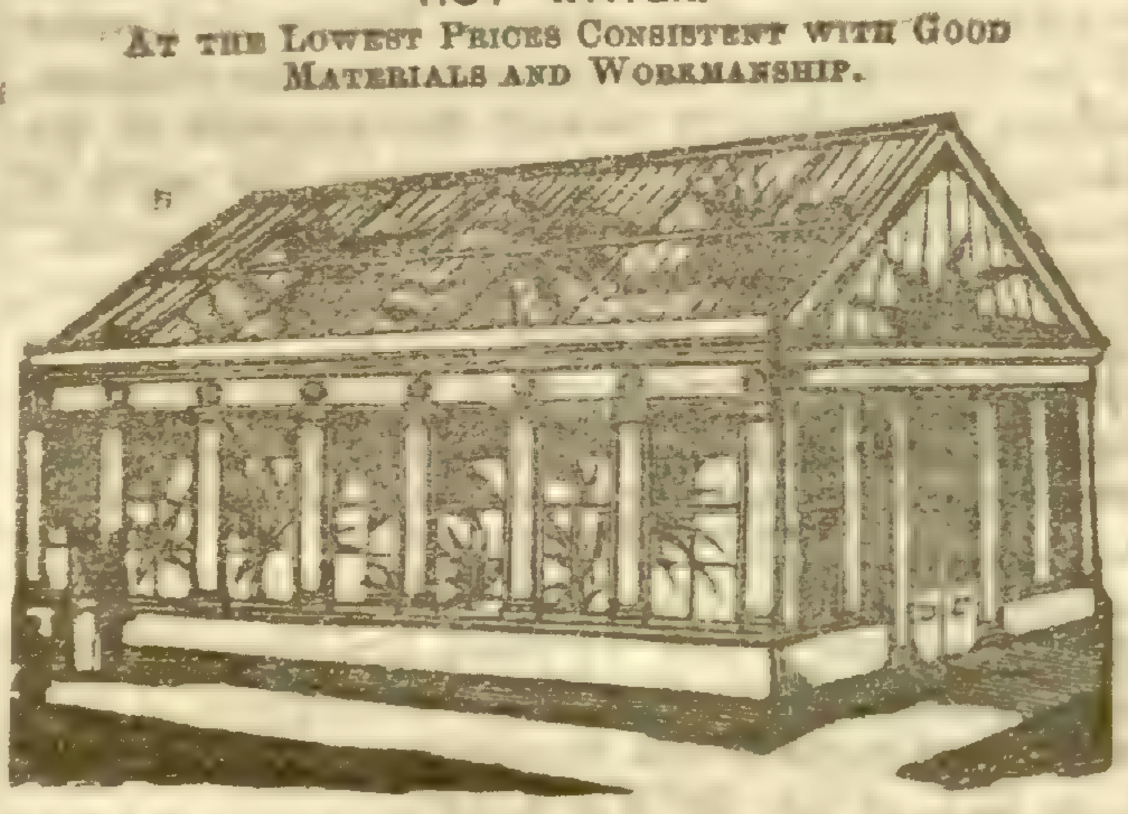
Their collections of Hyacinths have yearly carried off the metropolitan prizes, not only for their unique growth, but also for their beauty of colouring and distinctness of sorts, either when exhibited in a collection of 36 plants or in pairs.

Pine-apple Place, Edgeware Road, London.

HOT WATER APPARATUS, adapted for Horticultural and every other description of Buildings; improved Boilers, requiring no brickwork, Warm Air Apparatus, &c.—S. S. TAYLER, Engineer, Battersea.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

At the Lowest Prices Consistent with Good Materials and Workmanship.

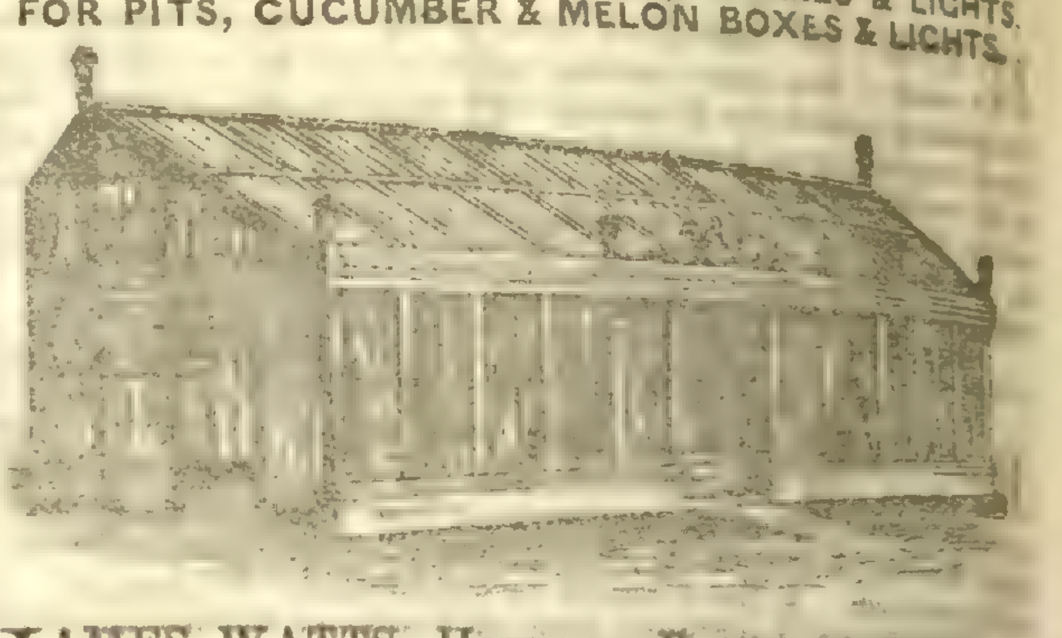


GRAY and ORMSON, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

HOTHOUSES, CONSERVATORIES, FRAMES & LIGHTS, FOR PITS, CUCUMBER & MELON BOXES & LIGHTS.

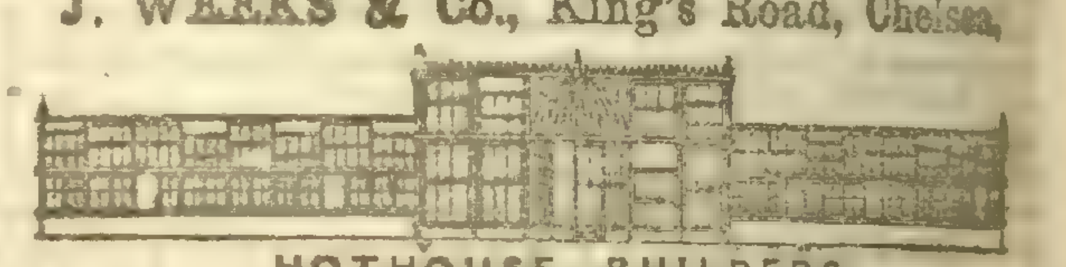


JAMES WATTS, Hothouse Builder, 8, Claremont Place, Old Kent Road, London.

Green and Hothouses, 9, 10, 11, 12, 13, and 14 feet wide, any length, from 16 to 100 feet. Frames and Lights for Pits, 6 ft. 6 in., 7 ft., 7 ft. 6 in., 8 ft., and 8 ft. 6 in. wide, any length, from 12 to 100 feet. Upwards of 200 Cucumber and Melon Boxes and Lights, from 4 ft. by 3 to 10 ft. 6 in. by 5 ft. 6 in., kept ready glazed with stout sheet glass, painted four times, complete, ready for immediate use, all made of best material, packed and sent to all parts of the kingdom.—Reference may be had to the Nobility, Gentry, and the Trade, in most of the counties in England.

HORTICULTURE IN ALL ITS BRANCHES.

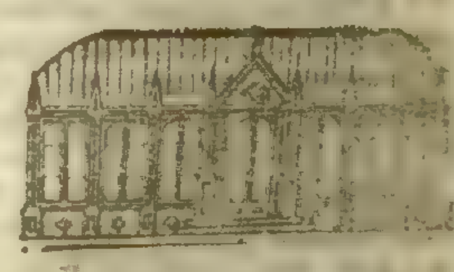
J. WEEKS & Co., King's Road, Chelsea,



HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Buildings or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.



The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings: also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. Weeks & Co., King's Road, Chelsea, London.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruit and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard run, of E. T. Archer, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey.

COTTAM AND HALLEN,

2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.

APPLICATION is requested for their NEW HORTICULTURAL LIST, containing Illustrations, Descriptions, and Prices of

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Syringes	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.

AGRICULTURAL LIST UPON APPLICATION.

EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

CALCEOLARIA SEED.

R. PARKER has now ready for sending out new seed of this year's saving, which he can recommend with the greatest confidence, it having been saved from flowers of the finest form and most beautiful markings, in packets at 1s. 6d. and 2s. 6d. each; also a few packets of choice Cineraria Seed at 1s 6d. and 2s. 6d. each. Primula sinensis, all saved from fringed flowers, 1s. per packet. A remittance or reference to accompany all orders from unknown correspondents.

Paradise Nursery, Hornsey Road, London.—Sept. 2.

CHRYSANTHEMUMS.

R. PARKER begs to offer fine bushy plants of the above, well established in 6-inch pots, for flowering this autumn, consisting of all the newest and finest Pompon and large flowered varieties in cultivation. Purchaser's selection at 9s. per dozen. A list of names forwarded upon application.

CINERARIAS (Seedlings), from all the finest varieties, carefully selected, including the new varieties sent out last autumn. Established plants, in 3-inch pots, at 3s. per dozen.

A remittance or reference to accompany all orders from unknown correspondents.

Paradise Nursery, Hornsey Road, Islington.

LILIUM LANCIFOLIUM.

N. GAINES' Collection of this beautiful Flower is now in bloom, containing hundreds of Seedlings, many of them having obtained Prizes at the Metropolitan Exhibitions.

N. G. begs to inform his friends and customers that he has been very fortunate in Propagating the collection of French and other Pelargoniums, therefore he will be able to supply good Plants of all the leading kinds exhibited this last season.

N.B. N. GAINES' collection of Dahlias is now in flower, and may be seen any day, Sundays excepted.

Nursery, Surrey Lane, Battersea, September 2.

SPLENDID NEW CINERARIA "OCTAVIAN."

JOHN KER, FLORIST, Bristol Road, Birmingham, has the pleasure to announce that he will commence sending out Plants of this truly magnificent Cineraria in October. It possesses more good qualities than any other out, viz., a fine robust habit, continues longer in flower, commencing in December; it will continue through the whole winter, till May, to send up dense trusses of large beautifully scented flowers, filling the whole house with their odour; flowers large, colours well contrasted, petals pure white, tipped with purple, broad and well imbricated, disc dark. Has been awarded a first class certificate of merit by the Midland Floricultural Society, and pronounced by the judges then present a magnificent variety. Has been highly commended in No. 289 of the "Cottage Gardener."

Plants 10s. 6d. each, Post-office orders payable at Birmingham. Parties wishing early attention will please give their orders. Many have been received, and will be sent out in rotation.

HOLLYHOCKS.—A collection of this fine old English flower, grown at the Cheshunt Nurseries, is now in bloom, and there will be a succession till the end of October. Admirers of the Hollyhock are respectfully invited to visit the Nurseries to inspect them. In addition to the choicest varieties of other growers, there are many rare and beautiful kinds of their own production, and to be seen only at their grounds.—A. PAUL & SON, Nurseries, Cheshunt, Herts (13 miles from London, on the Cambridge line of Eastern Counties Railway).

LORD KEYNON'S FAVOURITE CUCUMBER is the best and most productive for winter cultivation ever grown, requiring less heat than any other of the kind; it is a very handsome fruit and free setter. Good old seed of the above true variety may be had, price 2s. 6d. per packet, postage free (or penny postage stamps to the amount).

EDWARD TILEY, Nurseryman, Seedsman, and Florist, 14, Abbey Churchyard, Bath, Somersetshire.

NEW FUCHSIAS, VERBENAS, AND PETUNIAS OF 1854 AT REDUCED PRICES, with other NEW and SELECT PLANTS.

For BASS AND BROWN'S Advertised Lists of the above, see *Gardeners' Chronicle* of July 22 and 29, and August 5.

SUPERB NEW CHRYSANTHEMUMS.

12 best new Pompone varieties of last season ... ... 12s.
10 best new large flowering do. do. ... ... 10s.
60 splendid varieties of Pompone and large flowers, including new, 40s.; or, per dozen ... ... 9s.

These are all fine and strong for flowering.

Catalogues free for three penny stamps. Post-office orders payable to BASS & BROWN, or to STEPHEN BROWN, Post Office, Sudbury, Suffolk.

The Gardeners' Chronicle.

SATURDAY, SEPTEMBER 2, 1854.

THE attempt to discover the connection between effects and their causes, especially in cases where unforeseen or novel results are produced, is amongst the most ordinary occupations of the human mind, constantly leading to inquiries of greater or less value, and often attended with the most remarkable as well as the most important discoveries in matters of science. It needs, however, but little foresight to perceive that the more ignorant the mind set in operation the more likely is it that false deductions will be produced; and the more marvellous the object of inquiry the more likely is it that the more extravagant will be the end arrived at. In natural history, especially, how many popular errors have been and even still are in vogue, even in relation to matters of every-day occurrence, and which a little clear-sightedness, both mentally and ocularly, would dispel. We need not go back to the days when the appearance of a comet or a meteor was looked upon as the forerunner of the direst events,* or when even the emission of the red-coloured fluid by butterflies (recently emerged from the chrysalis state) was regarded with equal dread, being mistaken for bloody rain. Nearer our own times we have been taught the doctrine of spontaneous generation, because ill-educated observers have failed to trace the cause of the sudden appearance of myriads of insects where they had not been previously observed; and at this very day the development of parasitic animals has been referred to the weakened powers of what have been termed the higher objects of creation no longer able to fulfil their own reproductive process, but still endowed with sufficient energy to develope the miscalled less-highly-organised objects. The Vine disease in Lombardy and the cholera in the south of France have, within the last few weeks, been ascribed by the peasantry to the introduction of the railroad, the carriages upon which have even been fired at and damaged as propagators of the maladies in question.

Our own country has also not been without its fallacies of a similar kind. We have had the Potato disease attributed to the attacks of a well-known species of aphis, and no less than three different common phenomena of insect life have been assumed as the origin of the cholera. From numerous communications which have appeared, both in the local and scientific journals, on the subject, we select one,* as more especially calling for comment, both from its having appeared in the "Lancet" (a periodical of sufficient medical importance to lead the reader not to expect any absolutely extravagant views in its pages), and secondly, as coming from a M.D. and a naturalist. The attention of this writer was called to several flies which had died on a window, each being surrounded by a circle of white opaque particles, evidently discharged by the fly; an acquaintance—"a bold and firm person, without fear"—thereupon swallowed about half the matter surrounding one of the flies at bed-time, and early next morning he was seized with an alarming attack of cholera, which left him weak for a day or two. Soon afterwards the cholera disappeared, no new cases had been reported for 18 months, when another dead fly (now termed a *cholera fly*) was seen on the window (he does not say where), and on making careful inquiry he found that two cases of cholera had occurred at Leith. He does, however, add that he called the attention of some friends in London to the cholera flies which stood dead on the windows, whence it was easy to foretell the approach of the disease, "which at the time raged in the north of Europe, and in a few days it fell on Newcastle." Now, the appearance in question is very common, and has been known for years. It was described by KIRBY and SPENCE as a kind of plethora, to which flies are very subject in autumn. Mr. MACLEAY described it at the first meeting of the British Association at Liverpool (at which Dr. LINDLEY compared it to the attacks of the Botrytis Bassiana on silk-worms); and 17 years ago the author of these remarks published magnified figures of it in the Transactions of the Entomological Society (vol. ii. p. lxiv. pl. xx., fig. 2 *a, b, c.*)

Not content, however, with referring the disease in one case to the dead fly on a window hundreds of miles from the place of its outbreak, and in the other to the inward application of half the matter discharged by one dead fly—the writer goes on to ascribe it to vast flights of living flies. Being on the banks of the Solway one day during the autumn of the year the cholera attacked Dumfries, he became unusually languid, and on returning and reaching Annan, he observed "seemingly over the town of Dumfries a vast cloud in motion extending from earth to heaven remaining in the same place, but every particle of it seemed to be in motion." He left the neighbourhood the next day, the languor and feebleness leaving him as he left the valley of the Solway, and next morning he was in the best health and spirits, but on that day he heard that the cholera had rested on Dumfries on the previous evening. Now the appearance given of this great flight of insects is exactly that of a cloud of midges or gnats hovering in the air in the evening. This is so well known a habit as to have entered the domain of poetry; thus SPENSER, in the "Faerie Queen," says—

———" When a swarme of gnats at eventide
Out of the fennes of Allan doe arise,
Their murmuring small trumpets sownden wide,
Whiles in the air their clustering army flies
That as a cloud does seem to dim the skies."

But we are told that the flies seemed to hover over the town of Dumfries, and not over the country. To this we reply that it is not possible to judge precisely of the distances of objects in the air, and that the swarm was evidently much closer to the observer than he fancied, because he distinctly saw the motions of the individual flies.

In his paper, moreover, the writer has confused this flight of gnats with the migrations of aphides, of which, during the course of last autumn, at the period when this cruel malady attacked some of the towns of the north of England, great swarms took place, just as is the case, not in every—but in many seasons—and forthwith these little flies were set down as the propagators of the disease. The attention of the Entomological Society was directed to this circumstance at the November meeting of 1853 by a gentleman who exhibited some of the flies, which proved to be of two or three species of aphides (mostly, however, of A. Rumicis) which feed on a great variety of plants. At the end of September and beginning of October, 1853, we received sundry communications on this subject. From Haddington, in the south of Scotland, one of our correspondents sent us numerous specimens of Aphis brassicæ, which had appeared in swarms at that place, injuring the Turnips as well as the foliage of Peaches and Nectarines, Cherries, and Carrots. Another correspondent sent us the same species from Tesmond, near Newcastle-upon-Tyne, where it appeared at the time the cholera was raging in that district. The aphides have, however, no local connexion with Newcastle, but during the autumnal months the usual migration of the winged females occurs often in immense swarms; thus GILBERT WHITE tells us that in the afternoon of the 1st of August, 1785, the people of the village of Selborne were surprised by a shower of aphides or *smother flies*; those that walked in the street were covered with the insects, which blackened all the vegetables upon which they alighted. They were observed at the same time in great clouds about Farnham, and all along the vale from Farnham to Alton; and WHITE observes that they were then no doubt in a state of migration, and might have come from the great Hop plantations of Kent or Surrey, the wind being at the time in the east. KIRBY and SPENCE mention another instance which they witnessed later in the year in the Isle of Ely, when their clothes were covered by them, the insects incessantly flying into their eyes, nostrils, &c. In 1814, in the autumn, they were also so abundant for a few days in the vicinity of Ipswich, as to be noticed with surprise by the most incurious observers, as they were again on the 26th and 27th September, 1836, at Hull, York, and Derby, as stated in the local newspapers of those dates. Further observations on the migrations and flights of aphides are given by Mr. G. H. K. THWAITES, in the Proceedings of the Entomological Society of the 6th September, 1847, and by Mr. WALKER in the Transactions of the same society, vol. v., p. 61. All these direct observations fully prove that the swarming and migration of aphides is a natural habit in their economy, and has no connection with the disease, which is also fully proved by the experience of the present year. During the past spring, aphides abounded to an unusual extent, and we had no cholera; now we are free from aphides, but the malady has appeared amongst us. Need we dwell longer upon the preposterous "notions" promulgated in the *Lancet? J. O. W.*

WE see with much pleasure that an attempt on the part of the Legislative Council of CEYLON to get rid of the BOTANIC GARDEN of the Island has been defeated by the good sense of Sir GEORGE ANDERSON, the Governor. What the precise reason may have been which led to this proposition we do not know; but we certainly think that those who attempted to carry so absurd a measure must have had very little knowledge of the object of a Botanic Garden in the Colonies. That some Botanic Gardens have failed in answering any good purpose must be admitted; and they have been suppressed, as they deserved to be, for they were little more than kitchen gardens for the support of the Governor's table. But it does not follow that such establishments are useless; on the contrary, with good management, they are among the more powerful agents of civilisation, for they teach men wants and how to meet them, and they indicate the sources of some of that natural wealth which is to be found in every country, did we but know where to look for it.

How far the garden at Peradenia fulfils these conditions we are unable to say of our own knowledge; but we most willingly bear our testimony to the zeal and capability of the present excellent superintendent, who is one of that hard-working phalanx of Indian naturalists represented by ROXBURGH, BUCHANAN-HAMILTON, GRIFFITH, GARDNER, and WALLICH—now alas! all dead—and by WIGHT among the living. He is perfectly able to deal with the subjects that must engage his attention; and if his labours shall eventually lead to no result, it will be owing either to Colonial parsimony or broken health, and not to want of industry and knowledge.

We must admit that the Botanic Garden at Peradenia has been unfortunate. It first came into notice through a miserable catalogue of plants, prepared by one MOON, a man sent out without a single proper qualification. Then came MACRAE, a good gardener and pains-taking man, inured to the West Indies, but he died in two or three years; to him succeeded a half-caste Indian gardener, named

* "Anno Dom. 793. This year dire forewarnings came over the land of the Northumbrians, and miserably terrified the people; there were excessive whirlwinds and lightnings, and fiery dragons were seen flying in the air. A great famine soon followed these tokens; and a little after that, the ravaging of heathen men lamentably destroyed God's church at Lindisfarne through rapine and slaughter, and Siga died." *Anglo-Saxon Chronicle.*

* The Cholera Fly. By ROBERT KNOX, M.D. Lancet, 1853, p. 479.

Watson, who proved entirely unworthy of the recommendation of those who had known him in Hindostan; Normansell, a clever young surgeon, followed, but the climate broke him down before he had accomplished anything; Gardner succeeded, an excellent man, with a constitution seasoned by a long residence in Brazil, and he made considerable progress, but his "Introduction to Botany," his "Flora of Ceylon," and all his plans for developing the vegetable riches of the island, were brought to an end by excessive exertion, which carried him to an untimely grave. And now they have Mr. Thwaites, whose health seems to be proof against a Candian climate, who labours diligently to complete what Gardner began, and to whom alone on this rich island can reference be usefully made when any question belonging to vegetable products is raised; and him the Legislative Council would remove.

Coffee, Cinnamon, and Sugar; Sugar, Cinnamon, and Coffee; Cinnamon, Coffee, and Sugar—these are the words of power in Ceylon. At present they form the peculiar staples of one of the richest islands in the world; for Rice is not worth mentioning. What else do we get from Ceylon? Cotton? Not a bale. Indigo? Not a maund. Textile materials? None. Timber? Next to none. Cacao? None. Tobacco? None. Dyes? We believe none. From so great an island, with an infinite diversity of soil and climate, and rich in everything that Nature can produce without assistance, we receive no vegetable materials worth speaking of except Coffee, Cinnamon, Rice, and Sugar, with a few parcels of Cardamoms and Arrow-root.

The wealth of the country is unknown. If a Ceylon planter wants information he sends to Europe for it; but in Europe none exists. If he is asked why he goes to Europe for that which he should learn at his own door, he answers that in Ceylon nothing is known of Ceylon. That is true; and nothing will prevent its remaining true unless the Botanic Garden is well supported. Instead of cutting down its expenses, the Legislative Council should double the staff, and place more ample funds at the command of the superintendent. He then need not kill himself with work of detail, but could occupy himself with the greater duties of his office. We know that Mr. Thwaites is diligently employed in preparing a systematical account of the vegetation of the island, or a Flora, as it is called. That must be done. It is the foundation; but has never yet been accomplished. According to the *Ceylon Observer*, this work "will be so arranged that any person of intelligence can freely use it to advantage. The publication of such a book will enable us to form an idea of the botanical riches of the island, in other words, of the vegetables in it which are beautiful to behold, which are useful as food for man or beast, for arts and manufactures, such as plants producing fibres, gums, resins, dyes, oils, perfumes, and medicines of great value, or substitutes for them. Such a work will enable us to compare our plants with those of all parts of the world which have been described; and in our reading will enable us in a short time to know whether any vegetable in another country discovered to contain valuable properties exists in Ceylon, and if not, if there exist here allied families of plants some of which could be used with advantage as substitutes."

This is looking at the matter in the right light, and if the Flora is accompanied by the vernacular names of the plants, its importance cannot be over estimated. But such a work is one of enormous labour; it rests on multitudes of minute observations, which, like the foundations of a great building, are unseen by the crowd, which thinks only of the superstructure. There ought to be two or three good assistants employed incessantly in preparing these observations; instead of which, the superintendent is tied down to the labour personally. And so he must remain until the Flora is prepared; for, till that is done, nothing is done—unless desultory statements, ending in nothing tangible, can be called something.

The material interest of this great island is as much bound up with a thorough knowledge of its plants as with an honest administration of its laws. What are its trees, and what their timber? What are its drugs, and what their action? What are its fibres, and what their strength? What its gums, and what their market value? What its dye-plants, and wherein consist their excellence? Until these questions can be distinctly answered, Ceylon may be held as a military post, but it can never be regarded as a great colony. The answers are to be sought in its Botanic Garden, for they are not to be found in any other place.

VEGETABLE PATHOLOGY.—No. XXXV.

157. The whole effect, however, in the most palpable cases of chemical works does not probably arise from the mere admixture of noxious gases with the air. A portion is imbibed by the soil, and there sometimes forms combinations of salts which are difficult of solution, and which only enter by degrees mixed with water into the nutritive juices. I have detailed in the *Gardeners' Chronicle*, for 1852, a curious case, in which many plants fell a sacrifice to the noxious gases which were given off in the course of a chemical lecture, which ended with the production of such an atmosphere as forced every one to quit the room. The plants did not, however, suffer at once, but after a time the greater part perished without the possibility of assigning any other cause than that just mentioned. And in the case of injury to plants from chemical works it is often attempted to evade the question of injury by the circumstance that trees have not perished at once, but only gradually, and that, consequently, the works themselves may not have been the cause of evil, inasmuch as the slow consumption might have taken place had the works never existed. The matter, however, is now too well understood, and the effects of such works are too constant and uniform to allow, except in cases of wilful blindness, of such sophisms having any great weight with sensible men.

158. Besides the air which constitutes the surrounding atmosphere, the soil with which the earth is covered, and which is the medium of nutrition of the greater part of vegetables, like a great sponge, contains large quantities of gaseous matter in its interstices, while the water which runs through it holds a large quantity in suspension. It is well known that the accession of air to the soil, and from thence to the roots, is no less necessary than it is to the leaves. The benefit derived from stirring the earth which surrounds a plant depends on this, and it is notorious that when seeds are difficult of germination those which have immediate access to the air by the insertion of any body into the soil will frequently germinate, while not another individual gives the slightest symptom of moving. It is not, however, to be supposed that the air which is contained in the pores of the soil is identical with atmospheric air. The effect of gas proceeding from a drain the fluid or half-solid contents of which have no immediate contact with the rootlets of a plant, was long since recorded by Sir H. Davy, and in fact is visible by the most ordinary observer; and a moment's reflection will at once bring conviction that, in highly manured land at least, the air contained in its cavities cannot be ordinary atmospheric air. When organic matters are contained in the soil, they give rise, under suitable conditions of air, moisture, and temperature, to carbonic acid and water, or, if they are azoted, to ammonia; the carbonic acid so disengaged must have considerable influence on vegetation, whether absorbed directly by the roots or discharged into the circumambient air ready for reception by the leaves. In estimating, however, the quantity of carbonic acid which can act upon the vegetation of a given surface, inquiries have been hitherto almost exclusively directed to the extremely small portion contained in the atmosphere, or carried into the ground with the moisture which falls from it, to the neglect of that which emanates directly from the soil. Boussingault and Lewy have taken considerable pains to investigate this subject, which is surrounded by many difficulties, and they found that while in its normal condition atmospheric air contains .0004 in volume of carbonic acid, in soil, on the contrary, 12 months after the application of manure, from 22 to 23 times as much were found; and in land recently manured as much as 245 times in weight. Many other results appear in the memoir published in Annales des Sc. Nat., Jan. 1853. As the composition of soil is so different, of course no uniformity in them can be expected. *M. J. B.*

VALLOTA PURPUREA.

There are few plants so showy and useful as this which are so suitable for amateurs, or persons possessing but limited accommodation for plant growing. It is more beautiful than many varieties of Amaryllis, while it is not nearly so troublesome to manage; and its fine umbels of bright-coloured flowers last in perfection for weeks in a cool greenhouse.

It is easily propagated by means of offsets, which are produced freely on established plants. These should be taken off before growth commences in spring, and planted in separate pots, putting one or more into a pot just sufficiently large to conveniently admit the roots, according as the object may be to increase the number of the plants or to have useful-sized specimens for flowering as soon as possible. After potting they should be placed in a close pit, and sparingly supplied with water at the root, sprinkling them over-head morning and evening in fine weather until they emit fresh roots, when a free supply should be given at the root. When fairly established after potting, which will soon be the case, the plants should be placed near the glass and freely exposed to air on every favourable opportunity, affording them a temperature of about 50° at night, and allowing it to rise 10° or 15° with sun-heat. As soon as the pots are well filled with active roots, shift into others some 2 inches wider. During the warm months of summer the plants will do very well in a close part of the greenhouse or a cold frame; the latter, however, will be the most suitable, as the atmosphere can be kept more moist, and the plants will make finer and more robust foliage here than in the greenhouse. Whether flowers will be produced the first season or not will depend upon the age and strength of the offsets, for unless these are strong when taken off they will not flower the first season. But as the Vallota flowers under ordinary treatment towards September, and this without any particular means being used to induce it to do so, beginners cannot do better than treat their plants well during the growing season, exposing them freely to sunshine after the beginning or middle of August; and if they do not bloom the first season they will be sufficiently strong to do so the second. The plant should be more freely exposed to air as winter draws on, and the supply of moisture both at the roots and in the atmosphere should also be gradually decreased; for although it may be dried and allowed to lose its foliage in winter, as is sometimes done, it does better when not allowed to quite die down. Therefore the plants should be wintered in an airy part of the greenhouse, and be very sparingly supplied with water, giving just enough to preserve the foliage in health.

Towards the middle of March the plants should be encouraged to make growth, by removing them to a close pit, or the warmest part of the greenhouse, and gradually increasing the supply of moisture. The same treatment as already recommended will be suitable during the growing season, except that repotting will probably be unnecessary, for the Vallota flowers more profusely when not over potted, and, of course, the plants should be placed in a dry, airy, cool atmosphere while in bloom, in order to preserve the beauty of the flowers as long as possible. If large masses are desired without loss of time, however, a moderate shift should be given in spring to such as have bloomed the previous season, until they are in 12 or 15-inch pots, which will be sufficiently large to grow splendid masses. And as it is not desirable to break up the plants oftener than can be avoided, the offsets should be removed occasionally from established masses, taking care to disturb the flowering bulbs as little as possible, and weak manure water given during the growing season will assist in preserving the vigour of such as have been grown for several seasons in the same pots. But the Vallota will flower finely in 8-inch pots, and those whose accommodation is not suitable for large specimens may with kindly treatment bloom it profusely for two or three years in this sized pot without breaking up or shifting. When it is deemed advisable to break up the specimens, in order to afford them fresh soil, which will be necessary occasionally, this should be done just before starting them into growth in spring, and care should be taken to injure the roots as little as possible, and very little water should be given after breaking up and repotting, especially in the case of large pots being used, until growth commences, as a too free supply while the roots are inactive would tend to sour and ruin the soil.

A compost consisting of about one-half turfy loam, one-third good rich peat, and the remainder decayed leaf soil, well intermixed with a sufficiency of sharp sand, will be found to answer perfectly for the growth of this plant. In potting care should be taken to secure perfect drainage, and this should be effected by the careful arrangement of a moderate quantity of crocks, and not by half filling the pots with them. *Alpha.*

SOME PRINCIPLES OF VEGETABLE PHYSIOLOGY, BEARING ON THE CULTURE OF PLANTS.

By Professor W. H. de Vriese, of the University of Leyden.

(*Translated from the Dutch.—Continued from p. 549.*)

As the plant is fixed in the ground by the roots, so is the stem, with its organs, in relation to the atmosphere. From the different nature of these two situations proceeds a great difference in the development. We have already spoken above of the various forms assumed by the tissue, which we called the tissue of the cells. Among them there is one, of which here, in connection with our present considerations, we must particularly speak. They are, in fact, those cells which are met with on the surface of plants, and which we designate the cuticle. They differ in many respects from all other tissues, though we may believe that they consist of the same types. If the leaf of an Iris be steeped in water during a fortnight, this membrane will become detached from the undermost parts, or the surface may be separated from the fresh leaf with a sharp knife. We see oblong rhomboidal vesicles, which compose the flat cells of the cuticle. Further, we remark small openings or stomata, which may be compared to the pores in the skin of animals, and formed by two vesicles of a curved shape, which unite at the end, and leave an open space in the middle. There are also in the membrane two sorts of vesicles, the oblong and the curvate. These openings in the cuticle are spread over the whole surface, except in the place of the fibres of the leaf, where they are missing.

All this is covered by another thin and transparent membrane, which covers the whole cuticle, the openings only excepted, and in which we discover lines, the marks of those which show in the cuticle membrane the tissue of the cells. If a Cabbage leaf be steeped in water for some days this upper membrane can easily be separated. It is caused in all plants by the evaporation of substances which remain in the cuticle in a fixed state.

It is impossible to enlarge on the subject of the cuticle, which presents itself in innumerable other modifications. This may be said here of the above-mentioned stomata, that it may be accepted as certain that they must be in a very near relation to the respiration of the plants, that is, the relation of plants with the atmosphere, chiefly when we consider in what a great quantity they are often found. In the space of [illegible]

there are 2846 on an Orange leaf, 1000 of that of the Purslain plant, 480 on a Rhododendron leaf, 150 on that of the Oat, &c. More than three millions have been counted on a single leaf of the above-mentioned Iris.

But, however important those spores may be, certain it is that it is not by those parts exclusively that the communication of the exterior world with the interior of the plant is entertained. We are sure that each membrane of plants, and consequently also that which lies on the surface, possesses the property of admitting fluids, of whatever nature they may be, without the presence of determined openings, though the conditions which are required for it are not always known to us. It is a fact that the whole surface exhales or respires—takes up fluids and conveys them to the inner part of the plant.

In order to make our further contemplations useful to our readers, we have been obliged by these observations to introduce them into the structure and nature of plants.

It may be accepted as a truth that the vesicles or cells of the root may be at all times active, in a greater or less degree, even independent of what takes place in the other part of the plant which is above the soil. The "endosmosis," such is called the property of the cells (which contain thicker fluids) of taking up thinner ones—the endosmosis, that peculiar faculty of absorbing, takes place during the colder seasons as well as in the summer in the cells of the roots, and also in more inwardly situated cells. In other words, where there is life there must be movement also. The movement which takes place here consists of the exchange of fluids from one to another cavity of cells. That movement and the supply and exchange of substances which it necessarily brings about, is the only cause of the growth. It must, though in a less degree, take place in the parts under ground, even when the cold of the winter stops all growth and development—when the superficial contemplator does not see in nature the least trace of life. The following causes will explain how this is possible. When the earth seems to be changed into a crust of ice, the temperature of the ground at a relatively small depth is higher than that of the air. It has been proved by experiments that the temperature of the interior of trees is different from that of the surrounding atmosphere. It has been observed that even at periods when the thermometer has fallen below the freezing point, and thus when the air is cold, when water becomes ice, the inner part of the trees is warmer. Incisions were made in the trunks of trees in winter, thermometer-bulbs were inserted, and the quicksilver therein was some degrees higher than in that of thermometers hung up near the trees in the open air. The trees retain their proper degree of heat, notwithstanding all the changes in the temperature of the air. This may be explained by the generally known property of vegetable substances, chiefly of wood (and thus particularly of trunks of trees), preserving their proper temperature. Therefore, those vegetable substances are called "bad conductors of heat."

(*To be continued.*)

ORCHARD HOUSES.

I am induced to trouble you with a few remarks about orchard-house trees, as I fear a wrong impression as to the proper treatment of young potted trees of Peaches, Nectarines, and Apricots may be spread, from its being stated, at p. 551, that, "to get the wood thoroughly ripened and the flower-buds set early in autumn, the trees are plunged in beds in the open ground as long as fine weather lasts." Now, with the above-mentioned species of orchard-house trees, this is just the reverse of the treatment they should receive; for every gardener knows that the young shoots of Peach trees are very tender in spring, and apt to receive injury from cold and wet weather—they cannot therefore be ripened too early in the summer; and to obtain this result the trees should be placed under glass early in March, and remain there all the summer. They may be removed to the open air towards the end of August, and remain out during September and part of October, if the house they have occupied is required for other purposes, and they will not receive any injury, but to a certainty no good can accrue, for they always ripen their shoots perfectly under glass when abundance of air is admitted.

It is very interesting to observe the perfect success with which Peaches, Nectarines, &c., can be cultivated in pots. On the 12th ult. I visited the garden of Thomas Bewley, Esq., at Blackrock, near Dublin, and was much interested with his fine collection of potted fruit trees; about two years since he built two lean-to orchard houses 21 feet by 12 feet, at a very cheap rate, —I think for about 16*l.* or 17*l.* each, with the benevolent motive of showing to his numerous neighbours with gardens without garden walls, that Peaches and other stone fruits could be cultivated without their aid; his success is perfect. I have never seen trees in more perfect health and their fruit in finer condition. Several trees were quite pictures, and full of bright-coloured, full-sized Peaches (measuring from 8 inches to 10 inches in circumference) and Nectarines. This was to me the more extraordinary, for, like the trees mentioned by your reporter as growing with Messrs. Lane, they were all in 11-inch pots. I have at this moment, in a span-roofed orchard house, 70 feet by 20 feet, upwards of 100 trees of Peaches and Nectarines from four to six years old, many of them laden down with fruit, *i. e.*, I have suffered them to bring to maturity from three to five dozen each; but my trees are all in 13-inch pots. The succession of fruit given by the trees in an orchard house is of great import; but very few gardens can afford the necessary space on walls for the very early and very late Peaches, as they are to a certain extent of secondary quality; for instance a large tree against a wall of the Red Nutmeg or Petite Mignonne Peaches would give more than requisite; but a potted tree or two of each sort would give a few dozens, and occupy but little space. I commenced to gather Peaches from my orchard house trees (no fire heat employed), on the 24th of July, and I hope to have them till the end of October. The first to ripen was the white Nutmeg Peach; this sort is now very rare, it is not larger than a middle sized Walnut, and interesting from its delicate flavour and extreme earliness. Then followed the red Nutmeg, a little larger and of a richer flavour than the Petite Mignonne or Double de Troyes, a sort very scarce, but desirable for its earliness, good flavour, and productiveness. My tree, five years old, a pretty standard, with a stem about 3 feet in height, in a 13-inch pot, was crowded with fruit, and upwards of 100 ripened; they were the size of Green-gage Plums, and very juicy and good; the Early Ann ripened its fruit about the same time, and then followed the Early Grosse Mignonne, one of the best early full-sized Peaches at present known—it is exactly like the well-known Grosse Mignonne (perhaps a trifle smaller) and ripens a fortnight earlier; the Early York, an American Peach, and excellent, ripened nearly at the same time; the Noblesse, Royal George, and a crowd of good Peaches, are now following these early varieties; good early Peaches are so desirable that I have spared no pains to procure them. Accordingly I have imported from all parts of the Continent all the "Précoces and Hatives" to be found, and from America all the "earlies." I have as a matter of course met with many disappointments, for many with "précoce" attached to their names have proved October Peaches, and so on; but I have been amply repaid for my trouble by discovering two or three fine early Peaches. How much has pot culture assisted me in this! By the tedious process of planting new sorts of Peaches and Nectarines against walls I might have waited many years before I could have proved their qualities. When cultivated in pots in an orchard house, two years for the most part suffice for this. I have at this moment, to use the French mode of expression, the most perfect school of Peaches and Nectarines ever seen in so small a space; and a promenade in my orchard house, in which I grow my bearing trees, is most interesting. The fine, healthy foliage, ruddy, delicious fruit, and exquisite perfume, are in their way perfect; and then, while tasting and testing with such books in hand as Duhamel, Lindley, Le Bon Jardinier, &c., the trees and the fruit acquire a fresh and delightful interest.

I can now account for the numerous synonymes and incongruities about Peaches and Nectarines from Duhamel to the present day; thus the Alberge Jaune of Duhamel, and the Rosanne, are both described as giving small flowers and fruit with yellow flesh. Lindley describes the Rosanne as differing from the Alberge in having reniform instead of globose glands; I have never seen this yellow-fleshed Peach with reniform glands, but I feel assured that Peaches with this slight difference can be raised from stones of the same sort, and that they are not distinct enough to be worthy of a name. I have at this time seedlings from the Pitmaston Orange Nectarine, some of which have globose glands, like the parent stock; some reniform or reniformish, and some with deeply serrated leaves and glandless; all that have borne have given fruit of the same orange colour as the original, equally good and of no particular distinctive characters. Orchard-house trees give such facilities for fertilising and crossing the different varieties of Peaches and Nectarines, that I feel a new era in their culture is approaching; we shall, I anticipate, have an entirely new race of early and late Peaches and Nectarines; the Stanwick Nectarine will, with the latter, do us good service. You will, perhaps, remember sending me, at different times, some four or five years ago, four fruit of this (the Stanwick) Nectarine, to taste and to give my opinion on; I planted all the stones, and raised four trees, numbering them 1, 2, 3, and 4; they are all growing in 13-inch pots, and all bearing fruit this season; in habit, leaves, and flowers, they are exactly alike, but in fruit they differ. On the tree No. 3 there are 12 fine fruit, larger than those on the other trees, and without the least crack or blemish; while those on the parent stock tree, and on the other seedling trees, are inclined to crack. I therefore hope that in two or three generations, and by recrossing, we shall make this fine Nectarine fit for our walls, and a valuable acquisition.

Very few cultivators are aware of the large quantity of air required when the trees are in bloom: in March they should have all the air that can be given both night and day, when the weather is mild; and the same from the time the fruit commences to swell and colour, till it is fully ripe, as its flavour is much influenced by the plentiful admission of air. I observed in the orchard-houses of Mr. Bewley, before alluded to, some fine Apricot trees in vigorous health quite bare of fruit; they had blossomed abundantly, but had failed to set their fruit. On closely inquiring into their treatment I found that the houses had been kept too close while the trees were blooming, and Mr. Bewley described the atmosphere in his neighbourhood as peculiarly soft and moist; this would prevent the action of the pollen, and lead to failure in the crop. The soft moist air in Ireland should be borne in mind in erecting and managing orchard-houses in that country; means for giving a greater abundance of air than is necessary here must not be omitted, and the giving of abundance of air night and day must never be forgotten when the trees are in blossom. *Thomas Rivers.*

Home Correspondence.

Rain Gauges.—As I have a file of your Paper from time to time from a friend, it is only a day or two ago that I perceived the wish of your correspondent "T. S. P.," that I should give my reasons for thinking that his observations contain "internal evidence of error." A rain gauge, as "T. S. P." seems to be aware, indicates a larger fall of rain when placed on the ground, than it would if suspended vertically over the same spot. I find, upon good authority, that for a height of 42 feet 6 inches an addition of a fourth, or at least a fifth, must be made to ascertain the quantity which would have been indicated if the gauge had stood upon the ground. If, now, the quantity registered by "T. S. P.," as shown by the 5-inch gauge, when placed at that altitude receive such an addition, it will exceed the amount indicated by the 8-inch gauge when placed in the ground. Surely, then, this is conclusive evidence of causes of error at work quite independent of the relative size of the gauges. No one could undertake to offer any satisfactory explanation of this, nor of the discrepancy between the gauges when placed side by side, without an actual survey of the locality; but I should imagine that a dockyard with high roofs and large sheds creating many lateral draughts and eddying currents of air, must prove an unfavourable place for accurate observation; and whilst I allow, as indeed I implied in my former communication, that a 5-inch gauge is too small to yield results that will always be trustworthy, I think it remains to be proved that a 10-inch is not quite large enough to ensure accuracy, if proper care be taken to eliminate other causes of error. *John Slatter, Rose Hill, Oxford.*

Page and Co's. Anti-blight Composition.—We cannot help expressing our regret at the harshness of the expression in this day's number (Aug 26) to some correspondent upon the matter of our "Blight Composition," which, in fact, virtually closes your columns against the subject. We are vexed at this, more particularly because we have seen similar remarks in previous numbers, but toned down to "anonymous communications," "gardeners of your acquaintance," &c., while for several successive weeks we have read half a column, quite advertising another remedy lately advertised. This at first sight would lead us to believe that your columns are made the medium of partiality, but we would much rather dispel than entertain that idea, because we do not consider that the *Gardeners' Chronicle* could be so faithless to its professed principles. We beg to furnish you with the names of a few gardeners, some of whom, we imagine, are known to you, and also the fac-simile of our advertisement inserted in the spring; but if all these go for nothing without a personal trial, we shall be but too happy to place some of the composition at your disposal; and we confess that the reason we had not done so before was that we did not wish to be troublesome. We have now had three years' trial of the composition, this year's sale being treble that of the other two; and we are glad to observe that we have been favoured by an excellent account of it by very many first-class gardeners this year, whose testimonials we hope to advertise in the *Chronicle* next spring. We have now 30 letters before us received within the last two months, and they all agree as to its merits. In fact, there is not one instance in which it has not succeeded beyond our expectation; but attaching, as we do, much importance to editorial remarks, we anticipate no good from the note in question. *B. Page & Co., Oxford Street, Southampton.* [We have intended no incivility to Mr. Page; but we cannot insert statements in favour of his or anybody's "composition" without knowing the persons from whom they come. That is essential. As to the particular substance in question, we know nothing about it. We can, therefore, only repeat that if it is sent to our office it shall have a fair trial.]

Gnats.—Mr. Fortune found in China something burned to drive away mosquitoes. Can any one recommend a sure means of expelling gnats from a sick bedroom? *R. A. H., Aug.* 28. [We are sorry to say nothing is known of the stick used in China for this purpose. It is supposed to be the "Joss-stick," a kind of pastile.]

Ferns.—Rockwork for Ferns should consist of two or three formations; for instance, Asplenium. A. nigrum must have some magnesia, and A. marinum cannot be kept alive without it. Brick clinkers or carboniferous limestone will not alone do for many species. The Hymenophylla, again, require the very minute silex of the "forest range of Sussex" to keep them alive for a week even, and then they must have a cave in which to grow; without this last (a cave) no Fernery is complete. I am about to add one, open only to the north, and screened from winds on that side, as they are the most drying; it will be built of rock, and covered with earth outside, with a small pool within. *Somerset.*

Pruning and Training Vines.—The following is my mode of pruning and training Vines; and as it has been condemned in several important particulars, by one or two of my brother gardeners, without any proper reason having been given for so doing, I shall feel obliged by any of your Vine growing correspondents pointing out to me where my practice is at fault. I consider the best mode of pruning, with a view to produce a good general crop of fine well-flavoured fruit, to be

the spur system, which is practised by most of our best Grape growers. The first season after planting, I train up one shoot to each rafter, stopping at the first joint all laterals, and cutting away the tendrils. When the shoot has attained say three-fourths of the length of the rafter, I cut away the bottom laterals, and so on all the way up as the wood hardens. This season I should not stop the shoot at all, but continue to let it run along the top of the house, so as to obtain as long and strong a shoot as possible. The second season I prune down to three or four eyes from the bottom of each rafter, and allow one bunch of fruit to ripen, in order to prove the kind. I then train the uppermost shoot to the rafter, managing the same way as I did the first season, except that I stop it by pinching the end off near the top of the rafter, to strengthen the lower buds; the two bottom eyes I stop at the third joint, to make spurs. If the Vines are strong, as they ought to be, they will push again; then I stop them at the first joint, repeating this as often as they shoot again. I then tie them so as to give the leading shoots all the benefit of the sun and air. The third season the Vines should be very strong, with short joints and good buds; and I expect this season to have a few bunches of good fruit, and I prune accordingly. If the wood be firm and of a good brown colour, I cut at about one-third the length of the rafter, which will be in most cases 6 feet or upwards. I have then something like 10 buds, from each of which I expect a bunch of fruit. More may show, but that number is quite sufficient for the third year, as the Vine has to make wood as well as bear fruit, a fact which, I am sorry to find, a great many Grape growers do not bear in mind. I then train the top shoot up the rafter again, repeating the operations of removing tendrils, stopping laterals, &c. The side shoots or spurs I stop at the joint which shows fruit, and I only leave one bunch on each spur. This I recommend as a general rule every year afterwards. I then tie the side shoots at proper distances from the centre, so that I have two rows of bunches, one on each side. The fourth season I bring up the spurs to two-thirds the intended length of the Vine, following the system I carried out during the third season, only if any of the shoots are weak I cut off the bunches of fruit so as to strengthen the spur. The fifth season the shoot extends the length of the rafter, so in that time I have all the rafter clothed with fruit-bearing spurs, after which all they require is to cut through the second bud every season. I rarely ever leave more than one bud to each spur, though some cultivators leave two; but in that case the spurs soon become long and unsightly, and the further the bud is from the main stem, the weaker it will be. When the spurs get too long I train up a young shoot from the bottom, and the following year I cut out the old shoot and manage the young ones exactly as I would a young Vine. I do this to every other Vine, if the sorts are good, or every third, just as I can spare them. *R. B.*

Potatoes.—I had in my garden a piece of Potatoes, which were just beginning to die off as the disease appeared. As soon as I discovered the evil I cut off the haulm, and about a week after took the tubers up, laid them in a heap in the garden, and covered them over with bags, not a little pleased in having such a lot of fine sound Potatoes as I have not had for years. Looking at them a few days after, I was much surprised to find that they had taken the disease, and were going very fast. I then had them sorted, but was pleased to find the disease nearly confined to the outside of the heap, so that out of 15 bushels I have about 10 bushels, I hope, saved. As a proof that they had caught the disease after being taken up, I would just say that upon digging the ground I found that those which had been missed were nearly all sound. *W. Bentall, Paper Mills, Halstead.* [They were taken up before they were ripe.]

Material for Paper.—Could not the bine of Hops be made useful for paper making? In this neighbourhood it is produced in great quantities, and appears to be an incumbrance to the farmer. Large quantities of Asparagus also are grown hereabouts. Would that answer for paper-making? *Diamond.* [We should think both the Hop and the Asparagus would furnish good materials. Cannot you get the paper mills at Maidstone to try the former at least?] Among other things I have tried Nettles for paper-making, and I find that they make a strong paper, but with my engines (common rag engines for brown paper), I cannot beat out the woody parts. If you happen to know a paper-maker who has used them, and could inform me what kind of engine is employed for the purpose, I should feel obliged. It would be a great advantage to get them into use for the purpose, now that paper material is so short; and cultivated land need not be wasted to grow them, as a large supply may be had from the hedges and wastes, and employment given to many now idle lads in collecting them. *W. Bentall, Paper Mills, Halstead.* [Perhaps some correspondent will be able to answer this inquiry.]

Heliotropes, owing to their agreeable fragrance and cheerful-looking flowers, are always especial favourites in the flower garden, and when successfully cultivated in pots they are very ornamental in a greenhouse. The only fault belonging to them as bedding plants is their being so tender as to be often destroyed by frost early in the season, while other occupants of the flower garden continue in perfection. Notwithstanding this, however, they must still be cultivated, both out-doors and in, more especially as the varieties have become so greatly improved of late, both in habit of growth and richness of colour. Voltaireanum nanum is one of the very best, having high coloured flowers, and a dwarf, compact habit, as have also corymbosum and Souvenir de Liege; all these answer either for bedding or pot culture. Cuttings taken off early in August, and placed in an old Melon or Cucumber frame, in a mixture of leaf-mould, sand, and garden soil, root freely. They should, however, be inserted rather firmly in thoroughly well drained 6-inch pots, placing a portion of the rough siftings of the soil over the crocks, to keep the mould from b ing washed down amongst them. Many complaints have at different times been made with respect to their damping off. No doubt, if taken off too late in the autumn, or put in badly drained pots, this may happen; but if put in early in August, or early in spring, not one in a hundred will fail. As soon as they are sufficiently rooted, pot them singly into 3-inch pots, in a mixture of leaf-mould, loam, and sand, and replace them in the frame, keeping them rather close and shaded from the midday sun until they have become well established, frequently sprinkling them over-head with a fine rosed watering pot. When well rooted remove them to the most convenient place for wintering them in; and if other accommodation cannot be afforded, they may remain in their cutting pots until spring. Their heads should frequently be pinched out to keep them bushy; for those who have but little convenience for housing bedding plants will find it best to keep a few old plants in pots, and by placing them in a little bottom heat, about the end of February, they will produce abundance of cuttings, which will strike freely if placed in a slight bottom-heat. Care should be taken to harden them off well before they are too fully exposed to the open air, and as a rule they should always be the last plants bedded out. A plant or two should also be turned out in the borders of the conservatory, or in some corner of the greenhouse, to furnish flowers for bouquets. As a pot plant the Heliotrope is valuable both for its fragrance and colour, and under good management the above named varieties will form handsome specimens. Young plants for this purpose should be started in a moist gentle heat about March, and liberally shifted into thoroughly drained pots, when found necessary, frequently pinching off the ends of the shoots, to keep them dwarf and compact. The lower shoots should be tied down to the edge of the pots, and the remainder should be neatly regulated. The plants should then be moved to a cool and more airy situation, and the syringe should be freely used in fine weather, and they should also be liberally supplied with water during the summer months, by which time they will form large handsome specimens, and should be placed in the greenhouse, where they will remain a long time in perfection. Manure water should be given freely during the blooming season. *E. B.*

Notices of Books.

Soyer's Shilling Cookery for the People (Routledge) will be found useful in the dwellings of the lower classes, and may be read advantageously in the kitchens of people in easy circumstances. According to the author, he has reduced his instructions to the simplest form of which they are susceptible, and omitted everything not likely to be wanted by the buyers of shilling books. So far as we can judge, he has kept within these lim ts, and made his directions plain to the meanest capacity, even although he does talk of bouilli, and marinading, and prefers telling a maid of all work to make "incisions" instead of cuts, and to have ready a "sharp" oven instead of a quick one. These, however, are small matters. The intention of the book would recommend it to favour, even if its blemishes were greater; for any competent person who endeavours to teach our poor, and, let us add, our ignorant domestic servants, how to treat economically and skilfully the food at their command, deserves public gratitude. The great difficulty in the way of all teachers of the art of cooking is that in so many cases masters and mistresses are as destitute of taste as their servants are of skill; and are satisfied with any rude mess that is not absolute garbage. Yet, even in these cases, domestic talent would, we imagine, be appreciated in the long run even by the coarsest feeders.

M. Soyer hints at the probable advantages of establishing schools for cooking. The idea is excellent. Some of the occupations of our national and parochial female schools might be advantageously replaced by a strict culinary drill, which, whatever it might cost—and it would be very little—would be more likely to render the girls useful servants and good wives than any other part of their education. Were such a system established it would be easy to have travelling district teachers who would visit the schools frequently, give instructions, watch progress, correct errors, and proceed from simple to more complicated subjects. We have no doubt that M. Soyer would be able to suggest the mode of carrying out such a scheme. In the meanwhile his own powers of teaching may be judged of by the directions he gives for Carthusian cooking, or what the French call *à la Chartreuse.*

Carthusian, or Chartreuse, in French cookery, means any article of food, such as meat, game, or poultry, so surrounded by vegetables that even a vegetarian would be deceived with its appearance, while sitting at dinner, and would not find out his mistake until helped with some of the dishes.

111. *1st Lesson.*—If in winter, cut crossways, in four, a large Savoy Cabbage, or two small ones; take off a few of the outside green leaves; wash the Cabbage well, then put on the fire either an iron pot or a three-legged black pot; put in about 3 quarts of water; when boiling, add your Cabbage, boil them for 10 minutes, or a little longer, then drain them in a cullender or cloth, pressing out the water; cut away the stalk from each piece, then chop your Cabbage, though not too fine, letting it weigh about 2 lbs., when thus prepared, which will be our proportion of vegetable to 1 lb. of meat, previous to chopping them upon the board, season with one tea-spoonful of salt, that is, if salt meat be used; two ditto if the meat be fresh; one teaspoonful of pepper at all times.

Suppose we select for this, our first lesson, three middling-sized pigs' tongues. You have put them to boil with your Cabbage, then cut them through lengthways, then place at the bottom of your pan about an inch deep of Cabbage, and half an inch round the inside of the pan, placing your meat in the centre, thus making the meat invisible to the eye when turned out of the pan; when filled, add a quarter of a pound of butter or dripping, two wineglasses of vinegar, if English, or one if French, 1 gill of water; set it on a brick, placed in the oven, for two hours; then open your pan, and place over your Cabbage a tea saucer; press out all the gravy in a cup, pass a knife round your pot, then put a dish over the mouth inside downwards, turn the pot or basin upside down, when your carthusian will turn out like a pudding; pour the gravy or bread crumb sauce over, and serve.

112. *2d Lesson.*—The above may be done in pudding-basins, or in deep oval pie-dishes, and either baked slowly, as above, or steamed as puddings, but as there will be no cover to it, put over a cover of pudding-paste (see No. 319); fix over as for pies or puddings, making several small holes in the paste, and only putting half the moisture in. When done, remove the paste, which put on the dish you intend to serve it in; press out the gravy, turn your carthusian out on the paste, already laid on the dish; then proceed with the gravy as above described; Red Cabbage is also very good, but requires double the quantity of vinegar, and more pepper; proceed the same; they require boiling in water about 30 minutes, if at all large, and rather old, as they are at Christmas.

113. *3d and General Lesson.*—Having given you the base or foundation in the above receipts on animal food, I will now in a few words describe the extraordinary variations that can be made with this favourite dish of the best judges of good cheer,—viz., the monastic fraternity of olden times.

Instead of the above, you may use pigs' feet, cheek, pickled pork, bacon, ham, liver of all kinds, previously fried, or partly so, sausages, black-pudding, or salt beef, previously boiled and cut in slices, or any part of fresh meat previously roasted, any remains of poultry or game may be done the same by cutting them in slices; if, however, they have not been previously cooked, they will take two hours instead of one. Pigeons, partridges, and all kinds of small birds, may be put in rows, only they should be larded or stuffed previously.

This will give you an idea of the various ways in which this dish can be made, as far as animal food goes.

The second edition of *Mrs. Catlow's Popular Conchology* has been lately issued by Messrs. Longmans in the form of a handsome volume of 370 pages in small 8vo, with numerous good woodcuts, partly new, and partly reproduced from the first edition. In arranging the matter the system of Philippi is now followed, instead of that of Lamarck, which gives the work quite a new character, and forces the student to look to the animal as the basis of classification, and not to the shell itself—a much more scientific method, but unmanageable in the cabinet, and without much experience, unless it is combined with the Lamarckian. In books for learners difficulties of every kind should be removed, as far as possible. This important point does not appear to have engaged the attention of the authoress, who scarcely employs analytical tables, useful as they would be in so complicated a subject; and when she does employ the process, is far from being successful. For instance, in what is called a systematic arrangement of the whole contents of the work at p. 23, there is no explanation of the characters by which the classes, orders, and families, are known; there is no skilful contrast of distinctions, nor is it even shown to which classes the univalve and to which the bivalve shell belongs. Considering how easy analysis would have been, and how greatly it would have helped the learner, we cannot but regret that it should have been disregarded in a volume otherwise deserving of praise, and profusely as well as exceedingly well illustrated. Such matters are trifles in the eyes of the learned, but they are of the greatest importance to the untaught, and the neglect of them by popular writers has contributed more than any other circumstance to impede the study of scientific natural history by the mass of mankind. Linnæus knew how to deal with such subjects, and hence the universal and long enduring popularity of his admirably managed classifications, in which he always rendered simple what was complicated. Too many writers now-a-days succeed best in rendering complicated what is really simple, or might be so. Notwithstanding the great fault we have thus pointed out, and which is common to Mrs. Catlow with so many naturalists of the highest reputation, we cannot dismiss the lady's volume without expressing our belief that it will prove to be the general handbook of collectors of shells in this country.

New Plants.

81. Calyptraria hæmantha, *Planchon and Linden.*

"This is by far the finest Melastomad which has ever been brought to Europe, not even excepting the Medinilla magnifica. The figure in the 'Flore des Serres' will enable the reader to judge of the merits of the plant, without rendering it necessary to speak of the size and abundance of its brilliant flowers, or of the blood-red colour to which it owes its native name of Sangre de toro (Bull's blood). It is a bushy freely flowering shrub, with a rusty down all over its branches, petioles, peduncles, pedicels, calyx, and the lower surface of the leaves. The leaves themselves are extremely thick and coriaceous, and are remarkable for their beautifully reticulated nerves. The racemes of flowers are as much as 2 feet in length, and bear each 15 or 20 flowers, with fleshy persistent petals, and a calyx opening into the shape of a soap-box.

"It was discovered in 1847 by Mr. Schlim upon the subalpine slopes of the far-famed Paramo de Cachiri, and has again been met with by the same traveller in the province of Ocaña, whence he has sent home both suckers and seeds. It grows in a clay soil, at a height of from 5000 to 7000 feet, and in company with several other beautiful plants which have also reached us, and to which we hope shortly to draw attention. Among

them are Purdiea nutans, with gracefully bending spikes of white bracts and delicate pink flowers; Gonocalyx pulcher, a pretty little shrub with thick fleshy nearly orbicular leaves, and numerous bright red tubular flowers; Clethra consimilis, with leaves like Vaccinium, and pretty white corymbose flowers; several magnificent Bejarias; the pretty Begonia miniata, introduced last year, and already known for the ease and abundance with which it flowers; and lastly, several very fine species of Lisianthus, which we succeeded in raising from seed, but which afterwards died in spite of our utmost care." *Linden's Catalogue*, 1854.

There is a specimen of this in our herbarium, from Mr. Linden, which enables us to verify the exactness of the foregoing account to a great extent. The figure in the *Flore des Serres* represents it as being one of the most glorious of plants. It is said to hold its petals, contrary to the habit of Melastomads, and if so, it will far eclipse every crimson flowered species in cultivation. For exhibiting it will rank with Indian Azaleas or crimson Rhododendrons. The high price at which it is about to be "let out," viz, 50 fr. each, shows what a value is put upon it by its spirited importer.

Among Melastomads the genus is remarkable for having the operculate calyx of an Eucalyptus, but buried in ferruginous felt.

82. Begonia opuliflora. *Putzeys.*

"This remarkable species is as beautiful as any of the genus, and will no doubt become a favourite amongst the many persons who admire this interesting family. Some notion of the plant may be obtained by imagining a small bush with thick shining leaves, covered with heads of flowers looking something like those of the common Gueldres Rose (Viburnum opulus), but of a more delicate texture and of a much purer white, and forming an admirable background to golden yellow stamens. The species was discovered by M. Schlim in the cold regions of the province of Soto (New Grenada). Price 15 fr." *Linden's Catalogue*, 1854. We know nothing of this, but it seems to be a desirable acquisition.

Garden Memoranda.

Palace Gardens, Hampton Court.—In no previous season do we recollect having seen these in better condition than they are at present; and that their noble avenues, broad gravel walks, closely shaven verdant lawns, and shady retreats, are appreciated by the public, is evident from the numbers of visitors who daily frequent them. The flower beds are just now at their best; among them are famous masses of Lee's floribunda, integrifolia, and amplexicaulis Calceolarias; Mountain of Light, Flower of the Day, Tom Thumb, Frogmore, and Fair Helen Geraniums; the variegated and blue Mexican Ageratums; the Globe, Riccarton, and Carolina Fuchsias; the dwarf purple flowered Dahlia zelinda, which, when grown on poor soil, does not rise above a foot in height, and is very pretty; variegated Alyssum, quite a compact mass of snowy blossom; together with beds of Robinson's Defiance Verbena mixed with Mangles' variegated Geranium; charming clumps of Clove Carnations, and of Rosa Devoniensis. The latter is found to bloom beautifully here every season, and is much admired, as is also the Souvenir de Malmaison. Surrounding the lawn are several fine pillar Roses, which, when in bloom, are striking and handsome. They vary from 12 to 15 feet in height. The sorts are Brennus, Chénédolé, Coupé d' Hébé, Lamarque, Duchess of Sutherland, Madame Laffay, Fulgens, Mrs. Elliot, and William Jesse, &c. The wall along the side of the broad walk from the "Flower-pot Gate" to the river, is covered with Roses, Honeysuckles, Chimonanthus, Ceanothuses, Magnolias, Jasmines, and Clematises, &c. These are not so trimly trained as to render them stiff and formal; but are allowed such freedom of growth as gives them a luxuriant and graceful appearance. In the "fountain court" the basin is encircled with large scarlet Geraniums in pots, consisting of Tom Thumb, Flower of the Day, and standard Fuchsias, which give to this quiet square a gaiety which it never before possessed. The way in which Mr. Neil, who is gardener here, winters these specimens is as follows:—As soon as frost sets in he packs them closely together in a cold frame, and keeps them perfectly dry till spring, when he fresh pots them, and places them in a gentle heat, in which they push rapidly and soon come into flower, and continue so all the season.

As regards the walks, they are in beautiful order—a condition in which they are maintained by means of boiling salt water applied to them, as often as they require it, from a machine something like that employed for the same purpose by Mr. Fleming. It is an oval copper cylinder encased (except the top) in iron, so as to have a flue all round it; it holds about 37 gallons of water, which is kept boiling by means of a furnace below, and it is spread over the walks from a perforated pipe like that attached to carts for watering streets. It is set on low broad wheels and is easily drawn by a couple of men, and all admit that its working and efficiency are most satisfactory. It was made, we were informed, in Kingston, from a plan furnished by Mr. Neil, and cost about 20*l*.

The large Vine has upwards of 1600 bunches of Grapes on it this season, and appears to be in excellent health. A new greenhouse, aërated by means of Moore's patent ventilators, has lately been put up for the accommodation of tender plants in winter, and we observed that the gold and silver fish-pond and canal have been cleaned and otherwise put in good condition.

FLORICULTURE.

Wintering Verbenas.—Having succeeded in keeping the different sorts of Verbenas in small pots through the winter, when my neighbours have failed, I beg to state the method I adopt. In the first or second week in July I strike in 3-inch pots as many cuttings of the different kinds as I require for filling the beds in the following year, about 6 pots of a sort being sufficient. Early in August, the pots being filled with roots, I prepare as many boxes, two feet square, as I have sorts, filling one-third of each box with broken tiles, and the rest with one part sand, one leaf mould, and two parts good rich loam. The plants are then placed in them at equal distances apart, and the shoots being pegged down they soon take root all over the box, and form one mass. The boxes are placed in a cold frame during the winter, and the lights are thrown off, except in wet or frosty weather. Early in the spring they begin to make young shoots, which I pot in 3 inch pots, and strike in a Cucumber frame; these will be ready to plant out by the end of April, at which time the boxes are turned out, one side being removed, and the mass planted in the centre of a bed. The bed is then filled up with the young plants from the 3 inch pots; those out of the boxes, being oldest and strongest, take the lead and keep it; thus the plants in the centre of the bed, being the highest, a striking effect is produced. *G. F.*

Hollyhock Exhibition.—At the late extensive exhibition of this beautiful flower, which took place at the Surrey Zoological Gardens, the following prizes were awarded: Spikes, 11 dissimilar varieties: 1st prize, Mr. Bircham, with Solfaterre, Yellow Model, Felicia, Pourpre de Tyre, Unique, Comet, Criterion, Lilac Model, Queen of Denmark, Brennus: these were large, clean, even, and of first-rate quality. 2d, Mr. W. Chater, with Spectabilis, Admirable, Lady Braybrooke, Sulphur Queen, Walden Gem, Meteor, Joan of Arc, Pourpre de Tyre, Hon. Mrs Ashley, Comet; 3d, Mr. Turner, with Orestes, Duchess of Sutherland, Pourpre de Tyre, Yellow Model, Souvenir, Eugenia, Eva, Emperor, Walden Gem, Mrs. Forster, Charles Turner; 4th, Messrs. Paul, with Pourpre de Tyre, White Globe, Lizzy, Magnum Bonum, Charles Baron, Beauty of Cheshunt, Sulphur Queen, King of Roses, Metropolitan, Eugenia, and Aspasia. Cut blooms, in 24 distinct varieties: 1st, Mr. Turner, with Agricola, Lizzy, Walden Gem, Susannah, Charles Turner, Emperor, Purpurea, General Bem, Pourpre de Tyre, Orestes, Sulphur Queen, Sir David Wedderburn, Felicia, Hope, Souvenir, Pillar of Beauty, Hon. Mrs. Ashley, Shaded Model, Beauty of Cheshunt, Eleanor, Black Prince (new), Eugenia, Duchess of Sutherland Ovid; 2d, Mr. Chater, with Enchantress, Safranot, Black Prince (new), Rosy Circle, Brennus, Mulberry Superb, Golden Fleece, Lady Neville, Seedling, Charles Lidgard, Souvenir, Comet, Eugenia, Seedling No. 2, Hon. Mrs. Ashley, Elegans, Sir D. Wedderburn, Lilac Model, Seedling Yellow No. 1, Walden Rival, Gen. Bem, Emily, Pourpre de Tyre, Sulphur Queen. Private growers—Spikes in 7 varieties: 1st, Mr. Roake, with Julia, Pourpre de Tyre, Sulphur Queen, White Globe, Walden Rival, Beauty of Cheshunt, Hon. Mrs. Ashley: these were very fine, with large flowers. 2d, G. Holmes, Esq., with Elegans, Penelope, Pourpre de Tyre, Lemonade, Warrior, Meteor, Challenger. Twenty-four cut blooms, in 12 varieties: 1st, Mr. Roake, with Seedling No. 1, 1854, Ovid, Joan of Arc, Walden Rival, Pillar of Beauty, Hon. Mrs. Ashley, Charles Lidgard, Julia, Pourpre de Tyre, Souvenir, Shaded Model, Sulphur Queen; 2d, Mr. Long, Watford, with Pourpre de Tyre, Yellow Model, Hector, Emily, Sir D. Wedderburn, Joan of Arc, Comet, Orestes, Susannah, Gen. Bem, Shaded Model, Eva. The prize for the finest spike was awarded to Mr. Bircham, for a beautifully grown Mrs. Ashley; it was, however, very closely contested with a spike of Lady Braybrook, exhibited by Mr. Chater. The best single bloom was exhibited by Messrs. Paul, who produced Beauty of Cheshunt. There was not a large number of seedlings; the judges selected Bircham's Purple Perfection as the best; it is a full sized, finely-shaped flower, in the way of Pourpre de Tyre, but more purple. Mr. Bircham sent several others, all possessing more or less merit. Schamyl, a dull bronze buff, was awarded a Certificate Mr. Bircham also received a Certificate for his Empress Primrose. From the same grower we also noticed Jenny Lind, a good light kind, and Lemonade, a beautiful smooth flower, of a pale canary colour, with purple at the base, but too "pockety," as it is termed. Mr. Chater sent a large fine yellow (Sulphur No. 1), which will doubtless prove an acquisition. In the collections, but not shown as seedlings, were some fine flowers, seedlings not out, the best of which was Walden Rival, raised by Mr. Roake, a mottled orange, quite new in colour, and of the finest quality. Julia, by the same raiser, another mottled orange, is still more attractive in colour. Solfaterre (Bircham) is a large clear Primrose or pale yellow, good in the spike, and has full close flowers. In addition to Hollyhocks, there was a good exhibition of miscellaneous plants and cut flowers.

National Floricultural Society, *Aug.* 24.—Messrs. Paul exhibited a good collection of seedling Hollyhocks, amongst which was a bright carmine sort of first-rate form, full size, and good substance, named Lord Jocelyn. This received a first class Certificate. Dahlias, seedlings, came from Mr. Keynes of Salisbury, Mr. C. J. Perry, and Mr. Church, of Kingston: two exhibited by Mr. Keynes—Comet, a fancy variety, and Scarlet Perfection—and one of Mr. Church's, named Royal Albert, were certainly good varieties, which, doubtless, would have received some award had more than three blooms of each been shown. A very free blooming new Fuchsia, named Thalia, came from Mr. Turner. It was of good habit, the tube, &c., waxy white, slightly tipped with green, and it had a deep rose corolla. This received a Certificate of Merit. We noticed some nice blooms of a bright rose-coloured bedding Geranium, Cerito, from Mr. Smith, of Hornsey Road; but owing to the plant not being exhibited, no award could be made. Three very pretty seedling Achimenes were produced by Mr Parsons, of Welwyn; blooms of a fancy Geranium, named Sidonia Carminia, shown by Mr. Townsend of Notting Hill, appeared fully to confirm the reward it received in June last, when exhibited by its raiser, Mr. T. Latham, of Dover. Cut flowers of two seedling bedding Calceolarias came from Messrs. Youell, of Yarmouth, and of Fuchsia Duke of Wellington, from Messrs. Moore, of Birmingham.

SEEDLINGS.

Gloxinias: *W J E* and *J A F.* All very handsome, but (as far as can be judged from bruised specimens) not more so than kinds, possessing the same colours and forms already in cultivation.

Miscellaneous.

The Grape Vine (Vitis vinifera) must, as already observed by Pliny, be ranked amongst trees, on account of the prodigious size it will attain. This may be more especially observed in the Maremma, where it grows wild in the greatest abundance. It appears to be there, as in other parts of Southern Europe, truly indigenous, extending from thence over the greater part of South-central Asia, for the Vitis indica: on the testimony of the more recent Indian botanists, is by no means specifically distinct. From these wild Vines have evidently been raised all the innumerable varieties cultivated over the greater part of Europe, Asia, and North Africa, and now carried out to all parts of the globe where the climate will admit of it. But the period when it was first taken into cultivation is lost in the obscure ages of antiquity. We read in the Genesis that after the flood Noah began to plant the Vine; the heathens ascribed its first introduction to their fabulous heroes or divinities, Diodorus Siculus to Osiris, Servius to Saturn, and in the most ancient times Italy was called Œnotria from the wine that it produced. We have already observed that the varieties of the Grape are most numerous; they are also often so strongly marked as to cause many writers to deny the possibility of their having all sprung from the wild Vine, but their apparent permanence is in most instances only due to their universal propagation, by cuttings or layers, not by seed. Pliny records 80 kinds, and many others are mentioned by Virgil, Columella, Varro, Macrobius, and other writers, which it is now impossible to recognise with certainty amongst the modern varieties, amounting in some collections to above 300. Fee, Gallesio, and others have, however, endeavoured to identify some with more or less plausibility, of which the following are a few instances: The Apiana of Pliny, or Apicea of Cato, is supposed to be a Muscat imported from Greece, and it is believed that most of the Muscat-flavoured varieties were originally raised in the Archipelago. The ambrosiaca is believed to be another Muscat. The graecula is the Corinth stoneless, or Currant Grape. The rhaetica the uva passa of Spoleto, another stoneless and Currant Grape. The venicula, sircula, or stacula, is the marzemina of the Venetians. The dactylites is perhaps the uva galetta of modern Italy. The trifera, the uva di tre volte from Chio. The picina, perhaps the uva colore. The trebulana, the Trebbiano, yielding a wine celebrated for its excellence by Tasso. Others of the Roman names are derived from the countries whence the varieties were imported, such as the biturgica from Bordeaux, the phaia from Illyria, the prusina from Broussa in Anatolia, the aegios from Ægia near Corinth, the alexandrina from Alexandria in the Troas, the aminea, a highly prized variety, from Aminei near Falerno, &c. The eagerness to import into Italy the Vines of other countries celebrated for the excellence of their wines has continued to the present day, Prof. Targioni adducing many proofs of its prevalence in the middle ages. It is a pity the Italians do not at the same time introduce the modes of treatment and manipulation, to the deficiencies in which must be mainly attributed the general inferiority of Italian wines to those produced in similar climates in France and Spain. *Journal of the Horticultural Society.*

The Curl in Peach Trees.—The aphis may easily be got under by the use of tobacco-water, and attention. The tobacco-water may be obtained from a manufactory, if you should live near one; but I find it quite as economical to buy the tobacco and make the water myself, as I am obliged to pay nearly as much for jar, carriage, and porterage as the water costs. I get a pound of the best shag tobacco, which costs 3s. 6*d*., and a pound of soda, which costs 1½*d*., and dissolve the soda in two gallons of boiling water; it is then poured on the tobacco, stirred, and allowed to remain a few minutes; the liquor is then strained, and two gallons more of boiling water added; this is again strained, and made up to about eight gallons by the addition of cold water, and put on the trees at 100° of heat, on a still moist evening (if one can be found at that time of year). This is applied with a fine syringe, and the quantity is sufficient for 12 trees, each occupying 140 feet of wall. If you have shading materials at hand, the trees may be shaded, in case the sun break out strongly. The mixture may be left on till the next evening, when the engine should be used pretty freely, in order to wash off not only the mixture, but also the dead and dying insects, and as many as possible of those that the mixture does not kill, which, if properly applied, will be few. But if shading be inconvenient, the engine and clean water must be used in the morning following the application of the tobacco and soda, or the sun, being assisted by the crystals of the soda, may scorch the young leaves. The engine and clean water should be used frequently, to dislodge any insects that may be again establishing a colony on any part of the tree. It has been computed by, I think, Bonnet, that an aphis will multiply itself in one season 5,900,000 of times, if left undisturbed in a favourable situation; and of all places, I know of none more favourable to them, in the early part of the season, than the Peach tree; hence the necessity of observing the old proverb, that "a stitch in time saves nine." The trees will rarely want more than one dressing of tobacco, if well attended to with clean water after the first application—or, at the outside, two dressings of tobacco will suffice for one season. *Cox on the Peach and Nectarine.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Conservatory, &c.—The varieties of Lilium lancifolium will now be coming freely into bloom, and should be neatly staked before the flowers are sufficiently advanced to be injured through being blown about. When removed to the conservatory they should be

placed in a cool, airy part of the house, shaded from bright sunshine, and afforded a liberal supply of water, in order to preserve the beauty of the flowers as long as possible; for without a little attention to these small matters, their beauty is apt to be but short lived. These are our most gorgeous autumn flowering plants, and can hardly be too largely grown wherever there is a show house to be kept gay, and we possess nothing half so beautiful that is so easily accommodated; for they merely require the protection of a glass in spring, and with a good stock and a little management in forwarding the blooming of some, and placing others behind a north wall to keep them back, they may be had in flower from the beginning of August till the end of October. Continue to trim and regulate the growth of twiners, thinning out any of the shoots that have done flowering, which will assist in strengthening the others, and tend to keep them in bloom later than would otherwise be the case. Maintain an active war against insects, and endeavour to get these thoroughly subdued before the damp, cloudy weather of autumn sets in, when it will not be safe to use the engine with the same freedom as now. Any repairs necessary to be done to any of the plant houses should be finished as quickly as possible; for the period is fast advancing when it will be necessary to get the plants into their winter quarters, and it is exceedingly inconvenient having painting or other repairs to be completed after the plants are housed. Cold Pits.—There is now a fair prospect of fine weather, which will be highly serviceable to the inmates of these structures, and during bright weather every possible means should be used to encourage late growers, keeping them rather close and moist, while those that have made a fair amount of growth should be allowed plenty of air, removing the sashes altogether on fine nights, and gradually inuring them to freer exposure to sunshine, in order to get the wood well ripened before winter. Shake out and repot Pelargoniums which are sufficiently advanced after having been cut back, and keep them close in a cold frame until they can make fresh roots. Those, however, which are fairly established after repotting, can hardly be too freely exposed to air, or kept too cool. Attend carefully to Chrysanthemums, and see that the shoots are secured against accidents, to which they will be liable if left unstaked after this time. Give them plenty of rich manure water, and place them thinly in an open airy situation, and remove suckers as soon as they make their appearance. Cinerarias for early blooming should be kept cool and moist, for they are exceedingly subject to be infested with thrips and mildew when kept close, and they are too frequently ruined by over kind treatment. Repot Primulas, and encourage them to make rapid growth, especially the double varieties, which are hardly surpassed as useful subjects for winter decoration. Calceolarias for spring flowering should be sown at once, if not already done, but we have now so many fine varieties of the shrubby kinds, and these are so hardy and easily managed, that for mere decorative purposes the herbaceous sorts are hardly worth the trouble they cost. Cuttings of the shrubby kinds put in now will make useful sized plants for flowering next spring, and with very little attention they will form specimens of any desired size for the following season. But showy and useful as these are, they still want the fine markings of the herbaceous kinds, and until this defect is remedied by the labours of the florists the latter will still be generally grown. Keep Violets clear of red spider by liberal washings with the syringe, and give them plenty of manure water. Also attend to tree Mignonette for winter flowering, keeping the plants well supplied with pot room, and in the most vigorous health possible, and pinch off flowers as they make their appearance.

FORCING DEPARTMENT.

Pinery.—Endeavour to afford plants swelling their fruit a high temperature without making too free with fire heat, which, as it tends to render the atmosphere dry, is not at all conducive towards obtaining large fruit. Therefore, economise the sun's influences as much as possible, shutting up early in the afternoon after syringing the plants, and moistening every available surface, and maintain a high temperature during the day, giving air but sparingly. Fruit approaching maturity will, however, be benefited by a little fire-heat, a freer circulation of air, and a dry atmosphere; and where there are no means of avoiding having those swelling their fruit and those ripening it in the same compartment, then it will be advisable to regulate the atmosphere according to the wants of those ripening, for size is of little consequence unless combined with quality. But with care in keeping the plants swelling their fruit well supplied with water at the root they will not suffer much through the atmosphere being kept rather dry. Those, however, who can remove fruit approaching maturity to a separate house will find it a good practice to do so during the autumn and winter months. Look at former Calendars, and give particular attention to securing a good supply of fruit for winter and spring use. Vineries.—The weather is now very favourable for Vines in all stages. Give abundance of air both night and day while the weather continues warm and dry, to those ripening their wood, and also where the fruit is ripe or ripening. Young Vines will, however, require some attention in the way of shading their tender points; for after the unusually cloudy season which we have experienced, these, if fully exposed to intense sunshine, will be very apt to scorch. But it will be necessary to shade only the points, as there will be no danger of scorching where the foliage has had time to gain substance. Attend to former directions and keep thrips and spider in check; and also protect ripe fruit from wasps, which have here, within the last few days, become very formidable annoyances. Melons.—Take advantage of the present fine weather to give the soil a good soaking of water where this is necessary, and also to trim the Vines, removing all useless growths, &c., which in bright weather can be done without any risk of inducing canker. Give air freely where the fruit is ripening, and keep the atmosphere as dry as possible. If any of the last plants are infested with spider, ply the syringe morning and evening as freely as can be done without bruising the foliage, and use every means to get the plants perfectly clean, while the syringe may be used with safety. Figs.—Some experience is requisite in order to be able to manage these properly at this season; for there is considerable danger to the early crop next season in stopping the young wood too early, or in allowing growth to continue later in the season than will allow of getting the wood well ripened before winter. Unless where the second crop is all but ripe, so as to allow of keeping the trees cool and dry at the root, and exposing them freely to air, the young growth must on no account be stopped, but the shoots should be kept thin, and regularly tied in so as to expose the foliage to light and air.

FLOWER GARDEN AND SHRUBBERIES.

Timely attention should be given to the propagation of the variegated-leaved Geraniums, such as Flower of the Day, Mountain of Light, and Golden Chain, which, forming as they do, most beautiful beds, and serving almost every desirable purpose in the economy of modern "bedding out," are first-rate plants. But, unfortunately, they are rather shy growers, except when planted out in rich light soil, and gross soft wood is not certain to root under any treatment. Cuttings will strike freely, however, if planted where there is a little dry bottom heat, under the shelter of a hand-glass in the open border or in a cold frame, but they are very liable to damp off in the moist atmosphere of the ordinary propagating pit. Look over the beds and see whether their appearance can be improved by any means, and spare no attention at the present time which can be made to render the effect more satisfactory. Go over the Rose beds frequently, removing decaying flowers, &c., and keep mildew in check by dusting affected parts with sulphur immediately they are perceived. Any stocks not yet budded should be seen to at once.

FLORISTS' FLOWERS.

During this splendid weather do not let either Dahlias or Hollyhocks suffer from want of water; propagate the latter by cuttings of the side shoots, remove the faded flowers at the lower part of the spike, and should seed not be wanted pluck it also. Layering Carnations and Picotees should be completed as speedily as possible; examine the seed pods, and cut off the upper part of the capsules, to expose them more to the action of the sun. Watering the layers with a fine-rosed watering-can in the evening, with water which has been exposed to the action of the sun during the day, will materially aid the development of roots. Continue to propagate Pansies by side shoots; they root very freely now. Prepare the bed for offset Tulips, and a turning over will sweeten the main bed; this should not be lost sight of.

HARDY FRUIT AND KITCHEN GARDEN.

Keep the young shoots of Peaches, &c., closely nailed in, and thin, in order that they may be fully exposed to the influence of the sun. Protect the fruit from wasps, by the use of a thin net, if it cannot be done otherwise, but avoid shading the trees at present, unless absolutely necessary. If not previously done, cut off Strawberry runners, and trim and clean the beds so as to expose the plants, for bearing next season, to light and air, in order that they may be strong and well matured, when there will be no danger of their showing plenty of fruit next spring. Another sowing of Lettuce, to stand the winter, should be made, choosing a bit of light dry soil, also a small bed of Cauliflower, and some Cabbage, to succeed the August sowing. Attend to providing a good supply of salad for late use. Plant out Lettuce and Endive on light rich soil. A good breadth of Cabbage may now be planted on deep rich soil; these should be planted at about a foot apart each way, and every other row, and every other plant in the other row, may be used as soon as large enough to be worth cutting. Attend to taking up, drying, and storing Onions. Persevere in the destruction of weeds, which have been unusually troublesome this season, and stir the surface of the soil among growing crops.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending Aug. 31, 1854, as observed at the Horticultural Gardens.

August.		Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind.	Rain.
Friday	25	2	30.466	30.158	70	39	64.5	61	61½	N.W.	.00
Satur.	26	3	30.361	30.330	76	51	63.5	60	62	N.	.00
Sunday	27	4	30.398	30.395	79	63	71.0	61½	63	N.W.	.00
Mon.	28	5	30.438	30.425	82	60	66.0	64	64	N.	.00
Tues.	29	6	30.432	30.319	84	45	64.5	64	64	W.	.00
Wed.	30	7	30.252	30.127	84	54	69.0	64	64	W.	.00
Thurs.	31	8	30.260	30.157	73	40	56.5	64	64	N.E.	.00
Average.			30.344	30.274	78.3	48.8	63.3	62.6	63.2		0.00

Aug. 25—Fine; very fine, with dry air; clear at night.
— 26—Very fine; exceedingly fine throughout.
— 27—Very fine; overcast and warm; cloudy and hot.
— 28—Overcast; very fine throughout.
— 29—Very fine throughout.
— 30—Clear and fine; cloudless and hot.
— 31—Clear and fine; very fine; clear at night.
Mean temperature of the week, 3 deg. above the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 28 years, for the ensuing week, ending Sept. 9, 1854.

Sept.		Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.
Sunday	3	70.1	48.9	59.5	10	0.48 in.	[illegible]
Mon.	4	70.0	48.2	59.1	12	0.58	[illegible]
Tues.	5	69 8	48.5	59.1	14	0.36	[illegible]
Wed.	6	69 8	46.6	58.2	12	0.70	[illegible]
Thurs.	7	69.0	48.3	58.7	15	0.55	[illegible]
Friday	8	68.0	48.4	58.2	12	0.65	[illegible]
Satur.	9	68.1	49.5	58.8	13	1.09	[illegible]

The highest temperature during the above period occurred on the 3d, 1838, 5th, 1848, and 7th, 1843 and 1846—therm. 83 deg.; and the lowest on the 4th and 6th, 1850—therm. 30 deg.

Notices to Correspondents.

Azaleas: *J B.* Your Azaleas are dying because the roots are mismanaged. Three men ought to keep it in excellent order.

Books: *W J.* There is no such book as that about which you inquire.‡

Brussels Sprouts: *Brassica.* Your gardener is right in taking off the side leaves; but he must not do it too soon, or he will make the sprouts branch. As to taking off the crown, opinions differ; in Scotland it is usually left on. The removal, if any, must not be made before October, or it may throw so much strength into the sprouts as to spoil them, unless they are intended for autumn use.

Composition for Tree Wounds: *Sub.* The best with which we are acquainted is Forsyth's, which, for your benefit, we reprint from Lindley's "Guide to the Orchard and Kitchen Garden," pp. 507 and 508:—"Take 1 bushel of fresh cow-dung, half a bushel of lime rubbish of old buildings (that from the ceilings of rooms is preferable), half a bushel of wood-ashes, and a 16th part of a bushel of pit or river sand (the last three articles are to be sifted fine before they are mixed), then work them well together with a spade, and afterwards with a wooden beater, until the stuff is very smooth, like fine plaster used for ceilings of rooms. The composition being thus made, care must be taken to prepare the tree properly for its application, by cutting away all the dead, decayed, and injured part, till you come at the fresh sound wood, leaving the surface of the wood very smooth, and rounding off the edges of the bark with a draw-knife or other instrument, perfectly smooth, which must be particularly attended to; then lay on the plaster about an eighth of an inch thick, all over the part where the wood or bark has been so cut away, finishing off the edges as thin as possible. Then take a quantity of dry powder of wood-ashes mixed with a sixth part of the same quantity of the ashes of burnt bones; put it into a tin box with holes in the top, and shake the powder on the surface of the plaster till the whole is covered with it, letting it remain for half an hour, to absorb the moisture; then apply more powder, rubbing it on gently with the hand, and repeating the application of the powder till the whole plaster becomes a dry smooth surface. If any of the composition be left for a future occasion, it should be kept in a tub or other vessel, and urine poured on it so as to cover the surface, otherwise the atmosphere will greatly hurt the efficacy of the application. When lime rubbish of old buildings cannot be easily got, take pounded chalk or common lime, after having been slaked a month at least. As the growth of the trees will gradually affect the plaster, by raising up its edges next the bark, care should be taken, when that happens, to rub it over with the finger when occasion may require (which is best done when moistened by rain), that the plaster may be kept whole to prevent the air and wet penetrating into the wound." Mr. Forsyth says, farther on, "As the best way of using the composition is found by experience to be in a liquid state, it must therefore be reduced to the consistence of a pretty thick paint, by mixing it up with a sufficient quantity of urine and soap-suds, and laid on with a painter's brush. The powder of wood-ashes and burnt bones is to be applied as before directed, patting it down with the hand."

Fruit Trees: *J S.* Against a flued wall, 180 feet in length, may be planted the Royal George, Noblesse, and Bellegarde Peaches; the Violette Hâtive and Balgowan Nectarines; two Moorpark Apricots; the Royale Hâtive, Greengage, and Purple-gage Plums.‖

Insects: *Constant Reader.* The insects which have attacked your Melons are one of the species of Chelifer. The fact is a new one in their natural history. We should think that if your fumigations had been done with sufficient care under a close cover, the insects would not have escaped.—*T B.* We were aware, by the newspapers, that the Scotch Fir had suffered much from caterpillars this season, but unless you send us specimens, we can give you no more precise direction for their destruction than shaking the trees well over sheets, and collecting and burning the caterpillars.—*W M.* The little beetles which are attacking the White Mustard crops in the fens near Ely are the Chrysomela (Phædon) Beetle. Such a fact has not been previously recorded. As they do not leap, it will be easy to capture them by shaking the plants over a white cloth laid on the ground.—*W F D.* Your fine caterpillar is that of the Privet hawk moth, Sphinx ligustri. *W.*

Names of Plants: We have been so often obliged reluctantly to decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*J A F.* Purple Orache, striped Funkia, and Lucerne!—*P F E.* We cannot undertake to name heaps of plants; four is our limit, as we have over and over again announced. 2, Hymenocallis littoralis; 3, Crinum ... 1, Crinum asiaticum; 12, Viola calcarata.—*A Z.* The broad leaf is Lomaria procera; the other is Asplenium ebeneum.

Plan of Garden: *Amateur.* The pattern is drawn upon the true principles of good taste. Sink it by all means. Grass will look best in winter, but its frequent dampness is an objection. We should prefer gravel. As to fruit trees, wall No. 1 may be planted with Marie Louise, Passe Colmar, 2 Glout Morceau, Knight's Monarch, Beurré Diel, 2 Easter Beurré, and 1 Beurré Rance Pears. Wall No. 2, with Royal Hâtive, 2 Early Orleans, 1 Jefferson, and 1 Mirabelle Plums. Wall No. 3 with 2 May Duke Cherries, and 1 Moorpark Apricot. Wall No. 4 with Jargonelle Pear, Broom Park do., and 3 Morello Cherries. And wall No. 5, with Royal George, Grosse Mignonne, Bellegarde, and Barrington Peaches, Violette Hative and Elruge Nectarines, and a Moorpark Apricot.‖

Seeds: *A H.* The following may be raised with the means you possess; 1, 2, 3, 4, 5, 17, 18, 23, 24. Sow them in a hotbed now, and keep them in a greenhouse over the winter. The others require stove heat. None are very much worth having. Of the creepers, No 2 is the common Convolvulus major. The rest are very tender.

Vines in Pots: *A.* The Black Hamburgh and Royal Muscadine are the best sorts for pot culture. The plants will keep light enough if you place them near the front sashes, as you propose. The Hamburgh may colour black, or only red, but when well ripened the flavour is in either case equally good. You may, however, introduce a few pots of the Black Prince, which is almost sure to colour well, even where the Hamburgh does not, but recollect that after it is black it requires to hang a long time before it is thoroughly ripe. You will do well by adopting Mr. Rivers' plan of allowing the roots of the fruiting plants to extend into the border, or into prepared compost.

UPPER PERUVIAN GUANO ON SALE.—Apply to W. & J. RAVENSCROFT & Co., Liverpool.

Extract from a Report of Dr. Ure, F.R.S., &c.

"Your Upper Peruvian Guano is worthy of all commendation."

Extract from the Report of George Layton, Esq.

"RAVENSCROFT's Upper Peruvian Guano will last longer, and eventually do more good than Gibbs', or any other I have ever tried. It possesses the very finest qualities of both Guano and Bone Dust."

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures, Linseed Cakes, &c.

WM. INGLIS CARNE, 10, Mark Lane, London.

PEAT CHARCOAL.—The undersigned have a cargo of this valuable Deodoriser and fixer of Ammoniacal matter on Sale. Apply to MARK FOTHERGILL & Co., 204A, Upper Thames Street.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7*l.* per ton; Superphosphate of Lime, 7*l.*; Sulphuric Acid and Coprolites, 6*l.*

Office, 69, King William Street, City, London.

N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent. of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and dispatch.

Gentlemen desirous of receiving instructions in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

THE LONDON MANURE COMPANY beg to call the attention of Agriculturists to their WHEAT and CLOVER MANURES for present use. The London Manure Company also offer Genuine Peruvian Guano, Nitrate of Soda, Concentrated Urate, Superphosphate of Lime, Fishery and other Salts, and all Artificial Manures of value. The London Manure Company guarantee Peruvian Guano and every Manure they supply to be strictly genuine. EDWARD PURSER, Sec.

Bridge Street, Blackfriars.

CORN CRUSHERS AND CHAFF CUTTERS.—A large display of the best Farm Implements shown in operation. Price Lists sent free on application.

BURGESS AND KEY,

103, Newgate Street, and 52, Little Britain, London.

PUMPS AND HOSE PIPES FOR GARDENS AND LIQUID MANURE.—BURGESS & KEY's Pumps were highly commended by the Royal Agricultural Society of England at Lincoln. Price Lists sent free.

103, Newgate Street, and 52, Little Britain, London.

CHURNS.—ANTHONY'S PATENT AMERICAN CHURN.—Since 1849 this Churn has obtained all the Prizes awarded by the Royal Agricultural Society of England. At the trial before the Judges it made in 10 minutes 4 lbs. 6 oz. of Butter from 4 quarts of Cream, being 8 oz. more than any of the other Churns from the same quantity and quality of Cream.

103, Newgate Street, London.

BALANCE OF FACTS IN FAVOUR OF

RICHMOND AND CHANDLER, who have, in competition with the best selected CHAFF CUTTERS of the most celebrated makers in the trade, carried off the highest prizes against all comers.

COPY OF TESTIMONIAL.

"Early Court, Reading.

"GENTLEMEN,—I beg to hand you a cheque for your Corn Crusher; I must add, at the same time, that nothing can exceed the goodness of the Machine. I have found in it all I can wish, and, moreover, a very superior finished Machine, and a pattern for other makers. (Signed) "GEO. SHACKELL.

"Messrs. RICHMOND & Co."

Address.—RICHMOND & CHANDLER, Manchester; and South John Street, Liverpool.

REAPING AND MOWING MACHINES.—CAUTION.—Notice is hereby given, that any person or persons infringing any of the Patents of Cyrus Hall M'Cormick, for Reaping and Mowing Machines, or making, or vending, or using, or exercising any Machines which in any way infringe upon any such Patents, will be proceeded against according to law. The more prominent features of M'Cormick's Patents consist in a serrated cutting blade, spear-head shaped holding fingers, and a gathering reel.

E. J. & H. LAWFORD, Mr. M'Cormick's Solicitors.

Draper's Hall, 27, Throgmorton Street, London, Sept. 2.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the nobility, gentry, and clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out-door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice.

Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to WALTER CARSON & SON, 9, Great Winchester Street, Old Broad Street, Royal Exchange, London. No Agents. All orders are particularly requested to be sent direct.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.

Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

STIRLING GENERAL AGRICULTURAL ASSOCIATION.—REAPING MACHINE COMPETITION.—The competition for the following Premiums, offered by the Association, will commence at Steward Hall Farm, near Stirling, on FRIDAY, the 8th September next, viz.:—

For the most approved Reaping Machine, of any price ... £20

For the most approved Machine, not exceeding 25 guineas in price £20

Should the Judges fix on a machine of 25 guineas or under to be the best in the field, it will thereby be entitled to both prizes.

The price and simplicity of construction of all the Machines will be taken into consideration in awarding the premiums, but the Society reserves the power of withholding the premiums if, in the opinion of the Judges, the machines are not of sufficient merit.

ELEVEN MACHINES HAVE BEEN ENTERED FOR COMPETITION.

The Machines will be on the ground at 8 o'clock, A.M., but the public will not be admitted till 12, noon. Tickets to be had of Mr. MURRIE, Agent, National Bank, the Treasurer; and Messrs. W. DRUMMOND & SON, Agricultural Museum, Stirling.

By order of the Committee,

W. HUTTON, } Joint

Stirling, Sept. 2. W. FORRESTER, } Secretaries.

The public will be admitted, by Tickets, at 12 o'clock, at 2*s.* 6*d.* each, and after 2 o'clock, at 1*s.* each.

Dinner at CAMPBELL's Golden Lion Hotel, at 5 o'clock, P.M., after the competition. Tickets 5*s.* 6*d.* each, to be had of Mr. CAMPBELL, to whom parties at a distance wishing to be present at the dinner, are requested to write, and secure their Tickets before Tuesday, the 5th proximo.

THE SALISBURY AND WESTERN COUNTIES EXHIBITION OF DOMESTIC POULTRY.—The Fourth ANNUAL EXHIBITION will take place on TUESDAY and WEDNESDAY, the 21st and 22d days of November, 1854. Prize Lists, &c., to be had of T. PAIN, Hon. Sec.—Salisbury, July 22.

A GRAND EXHIBITION OF POULTRY will be held at CAMBRIDGE, on WEDNESDAY, THURSDAY, and FRIDAY, November 8th, 9th, and 10th, under the distinguished patronage of His Royal Highness PRINCE ALBERT, Chancellor, T. C. GELDART, Esq., LL.D., Vice-Chancellor, A. G. BRIMLEY, Esq., Mayor, and numerous Members of the University, Town, and County.

150*l.* will be given in prizes. Schedule now ready.

C. H. CROSSE, M.A., Hon. Sec., New Square.

The Eastern Counties Railway have consented to convey Poultry, free both ways, and to issue Passenger Tickets at a Single Fare.

The Agricultural Gazette.

SATURDAY, SEPTEMBER 2, 1854.

MEETINGS FOR THE ENSUING WEEK.

THURSDAY, Sept. 7—Agricultural Imp. Society of Ireland.

THE progress of agricultural improvement in Ireland is a matter of congratulation, not only to the Irish but to the English public. The errors of Irish farming are gradually diminishing in number and importance. The old and ill-constructed wooden plough has been almost supplanted by implements of approved construction; well bred and properly tended live-stock are now very generally spread over the country; and, in short, we find in every county unmistakeable evidence that brighter days have dawned for the staple industry of the country.

And while the Royal Dublin Society, the sister Agricultural Improvement Society, the Flax Improvement Society, and several legislative and local measures have largely contributed to this desirable end, we cannot help thinking that the foundation of much of the social regeneration of the country lies in the system of national education. Intelligence is spreading, and diffusing its happy influence on Irish society. The Government system of education in Ireland partakes in an eminent degree of what has been lately so much looked for, namely, the "science of common life." It embraces those subjects which constitute a good English education, and aims at utilitarian objects. Its promoters know full well that every class of society requires an education suited to its calling, and act accordingly. That this is true is evident from the fact that one department of the system is exclusively devoted to agriculture. It is to this department that our subsequent remarks apply.

It must be clear to any person at all acquainted with rural affairs that while the small farmer lives in an isolated state, without education, or any means of becoming acquainted with the improvements made in the multifarious branches of his everyday business, he can neither meet sudden emergencies nor extract the maximum produce from his holding. But afford him a sound education, and he necessarily becomes a very different man. He is no longer blind to the march of improvement, nor excluded from intercourse with others. This seems to us the true light in which to view the agricultural education system in Ireland. There are ramified throughout the country about 100 model and ordinary agricultural schools, all off-shoots from the admirable central institution at Glasnevin, near Dublin. At the latter institution, 75 students are annually educated, while agricultural instruction is afforded to an average of 30 pupils in each of the minor schools. The students who graduate at Glasnevin, are so many pioneers of agricultural progress. We have known several of them who not only set an example of good management on their own farms, but also communicate their knowledge to circles of friends and neighbours. With such machinery in operation, it is not to be wondered that the system has recently attracted so much attention. Its operations have been steady and certain, and its efforts not like those agents of Mushroom growth which die with their rise. We have lately been through the country and made ourselves acquainted with its organisation, from the school gardens in remote districts to the Glasnevin parish training school. We were delighted and instructed. The leading impression relative to the system, on our mind, is that it should be extended and placed on a still firmer basis. We fully coincide with the sentiment of Sir R. KANE, that "every school in Ireland should be an agricultural school if situated in a rural district." As a path of policy (to say nothing of benevolence) every landed proprietor in Ireland should see that agricultural instruction is imparted in the schools on his property.

These remarks are suggested and, indeed, enforced by our recent tour, and the perusal of the quarterly journal published by the Board of Education, and edited by the officers at Glasnevin. Five numbers of this journal have already appeared, conveying not only useful information regarding the system, but also excellent lessons on agriculture and its collateral sciences. We learn from it that there are two classes of pupils in course of training at Glasnevin—an *intern* free class, the sons of farmers, land-stewards, &c., and an *extern* class, the members of which board and lodge at their own expense, and pay a small entrance fee.

The course of instruction embraces the ordinary branches of secular education, surveying, natural philosophy, agricultural chemistry and geology, botany, and veterinary science, under separate professors. The intelligence of the pupils has called forth the highest encomiums of the most competent authorities, among whom we may mention Professors NASH and HITCHCOCK, of Amherst College, United States, the Rev. Mr. GLEIG, Inspector-General of Military Schools, MARTIN DOYLE, &c. The farm offices at Glasnevin are spacious and well arranged; indeed, the cow-house and dairy would well repay a visit. The machinery for economising farm labour is the most complete we have seen. The school and lecture room contain a large collection of most valuable maps, charts, and philosophical apparatus, and a valuable collection of minerals for illustrating the lectures on the relation and application of geology to agriculture. Cleanliness, simplicity, and order, characterise all that came under our observation. The site is healthy, and the farm sufficiently large to illustrate the most improved system of farming. The promoters of national education may well feel proud of such an institution. We cannot too strongly convey our conviction of the great usefulness of the Albert Institution, and of the facilities it affords to the Irish farmer for educating his children.

The Irish agri-industrial education scheme has already effected more than its most sanguine supporters anticipated; and now, that there seems to be no difference of opinion as to its usefulness and efficiency, we would urge upon the legislature the importance of extending the sphere of its operations. We would hail the universal engrafting of the agricultural upon the literary department of national education as one of the most essential steps for ameliorating the condition of the Irish cottier and farmer. Nor can we forget the claims of the schoolmaster, whose prospects it would brighten and whose emoluments it would enhance. To him the school-garden would be a place of healthy recreation, and a source of social comfort and pecuniary gain.

We have thus briefly glanced at the most prominent features in the system; and for further details refer our readers to the reports presented to Parliament and the "Albert Agricultural Journal"—an unassuming little periodical, which, being mainly supported by the students educated at Glasnevin, conveys a good idea of what that institution is accomplishing. We believe it may be had gratuitously by applying to "The Secretaries, Education Office, Dublin," or to "Dr. KIRKPATRICK, Glasnevin, Dublin."

FARMING economy includes a long catalogue of practices, and chaff cutting is one which has been for a considerable period reckoned important. Hay, straw, and other fodder have been thus reduced to a state in which their use has been greatly economised. Nothing has more favoured the extension of this practice than the increased application of steam power in agriculture. Nor is this at all surprising, when we inquire into the merits of the practice. The cutting of different materials into finely divided and minute portions does not add to their

nutritious value; it is, therefore, in the prevention of waste that we must look for advantage; its use and value in feeding such animals as the horse and the bullock are exhibited by their being induced to eat, entirely and indiscriminately, hay, inferior in quality, or in admixture with straw, a considerable portion of which they would refuse in the ordinary state, though it will often be found, upon analysis, to be as nutritious as those portions which are more attractive to them. The object sought for in mixing chaff with oilcake and other feeding materials is not always obtained, for it often happens that the chaff is "routed" out of the feeding troughs by the animals (particularly sheep stock) in their search for the superior food. When the food is composed either of hay or straw, separate or mixed, and moderately steamed, just sufficient to damp it thoroughly, and meal or mucilage of any kind is mixed with the chaff, the whole mass becomes so entirely blended, that in this state there is so little chance of waste, that it certainly answers for feeding beasts better than in any other manner.

There is an opinion, which is too prevalent, that all the animals which require hay should receive it wholly in this form; but this idea we believe to be erroneous. However desirable it may be to adopt the system of chaff-feeding, it will, we believe, be found that all animals should receive at least a quarter part of their daily allowance of hay in the ordinary state, if only, as practical men express it, for the purpose of "cleaning their mouths." There is a disadvantage in feeding horses when the whole allowance of hay is given as chaff; it is apt to injure their wind, where previously impaired, owing to being swallowed without a sufficient quantity of saliva. And a portion of hay in the ordinary state is more especially necessary, in the case of ruminating animals, in order to assist digestion, particularly whilst feeding upon highly nutritious substances. Our attention has been often called to this point, by noticing the avidity with which it is consumed by the stock, showing how they relish and enjoy this natural mode of feeding.

Hay or straw chaff is often used with good effect in connection with Trifolium, Tares, or Clover, &c., being mixed in the proportion of one-fourth dry fodder to three-fourths green food, and passed through the cutter together.* This mixture forms an excellent food at the period of transition from roots to summer produce, and it will also be found a very desirable mode of soiling young animals, or store stock, when they do not receive oilcake, corn, or such like substances.

The use of cut hay for the feeding of fatting sheep in the open field has been much discontinued of late, there not being found sufficient gain in the practice to pay the cost of cutting. If we take the loss of good hay when given in the ordinary state, at regular intervals, and in proper quantities, it will not amount to more than one-twentieth part, or a cwt. in a ton; and it must be remembered that chaff is not always given without some loss, arising from wet or windy weather; we must therefore put the loss on chaff-feeding at half a cwt. per ton, which will only leave an actual difference or loss against feeding with hay in the ordinary state, of 56 lbs. to the ton, and the wasted portion must be considered of some value to plough in as manure. We will, however, place the value of loss at 2s. per ton, and this sum will not pay the cost of converting the hay into chaff; for by the aid of steam-power it will amount to at least 3s. per ton.

Of course, a very important exception to this calculation will be found in cutting inferior hay into chaff; it is made more palatable for store sheep and beasts, and in most instances they may be induced to eat a larger portion of it as chaff than they would if given entire. In the act of cutting hay into chaff, when it has been damaged by mould in the stack, the dusty portion in a great measure flies off, and leaves the hay less tainted and much better for feeding any description of cattle; and when steamed and mixed with other substances, the objectionable flavour of mouldy hay is often removed altogether; and at the time of cutting a further great improvement could be effected by exposing the chaff as it falls from the cutter to the action of a blowing-machine or fanners, by which means the dust might be blown out through a wire sieve or screen sufficiently fine to keep back the chaff.

Loose corn, either Oats or Dredge Corn, which is a mixture of Oats, Barley, and Peas in the straw, is often cut into chaff just as it comes out of the rick or barn, and in some seasons when the straw is not very bulky, and Clover is amongst it, being saved also in fine weather, it is an excellent method of disposing of the crop, for threshing is dispensed with altogether, and the mixture being a good one, it is done without any waste. And, indeed, after being cut into chaff its value may be increased or diminished, by adding bruised corn or hay chaff in such quantity as may be deemed desirable.

Whenever corn or pulse is given with chaff, it should be in the cracked or bruised state, as it insures a more intimate mixture. Chaff cutting has latterly been made available in the preparation of straw for litter; here again it is found that steam power is of the utmost importance, for, by either hand or horse power, there is not sufficient advantage in the practice to pay the cost of cutting. It is proper to remark here that a great deal of one's experience in this matter depends upon many things, such as the food and health of the animals. We have seen cattle lying dry and clean in sawdust; for box-feeding, however, a certain length of litter is necessary. We have noticed animals, bullocks and pigs in particular, when box-feeding, littered with straw chaff cut very fine; but they were in a miserable state; the sinking of the feet of the bullocks, and the digging of the pigs, had so disturbed the accumulated mass of manure under them, that it produced an excessive state of fermentation, highly detrimental to their health. We therefore recommend that in all cases, when straw is cut for the purposes of bedding box-fed animals, that the length should be about 8 inches;† it will then tread down firm, and become more readily converted into dung, and prove more uniform and better in quality than by the use of whole straw or fine chaff.

Some of our correspondents have at different periods inquired for information as to the proper quantities of chaff to be given to the different animals upon the farm. Suppose every animal requiring chaff to receive one-fourth of its daily allowance of hay, or straw in the ordinary state, and the difference required in the food for fatting or store animals to be varied accordingly—the fatting animals getting corn or cake in addition to roots or Grass—the store or stock animals getting only roots or green food in addition—it may then be stated that the working horse would require 18 lbs. of hay and straw chaff, mixed in the proportion of two-thirds hay and one-third straw. Bullocks would require, whilst working, 30 lbs. of mixed chaff; fatting beasts, 24 lbs. of Clover-hay chaff; dairy cows or store cattle, 30 lbs. of mixed chaff. Fatting sheep would require 1 lb. of Clover-hay chaff, whereas, store sheep and breeding ewes would require $1\frac{1}{2}$ lb. of the same. The foregoing statement contains, of course, a mere approximation to the quantities which the different kinds of stock require, and it is calculated only as a guide to the novice, and those who have not had the opportunity of practically noticing the great variation in the requirements of different animals, under varying circumstances.

* We lately saw this plan adopted with excellent effect, and, by means of Balls' adaptation of the ordinary hand chaff-box, in a very economical manner on Mr. Baker's farm at Writtle.

† Chaff cut nominally 4 or 5 inches long will be more than this in reality; and a portion of the material, being of the length recommended above, will answer every useful purpose. Pigs ought not to be bedded on the box-feeding principle at all.

MANGOLD WURZEL RUNNING TO SEED.

YOUR correspondent, in a late number, signing himself "Subscriber," is, like myself, and very many others this year, a sufferer from his Mangolds running to seed, or what is commonly called starting. He appears to have been studying the misfortune, but can neither arrive at the cause nor suggest a prevention, yet he comes to the conclusion that ill-selected seed may have to do with it, and all at once blames the grower for mixing seed saved from what has prematurely run with that which had been saved in the ordinary and only proper way; by prematurely run plants, I presume he means such plants as had been sown for a crop of roots, say in April or May, but instead of bulbing have thrown up a flower stem; if so, "Subscriber," is entirely mistaken, for, although they offer to flower, who ever saw those premature plants ripen seed?—if our summers continued until Christmas we might probably save seed from Mangolds sown the same year, but as this is not the case, it is impossible.

The tendency of bulbing plants to run to seed is, I fear, much on the increase, for of late years not only the Mangolds have run to an alarming extent, but in some particular localities the Swede Turnip has started so freely that many farmers have lost half their crop. I know of one instance where a gentleman procured from an eminent grower a parcel of the seed of Skirving's Improved, with part of which he sowed two acres on his home farm, the remainder he sowed on another farm in a different county; when the two acres grew up he was chagrined and disappointed to see little else than a crop of plants resembling Rape, with hardly any bulbs; he naturally concluded that his seed merchant had by mistake sent him Rape, and that all his crop would be the same, but great was his surprise to find that of the 10 acres sown in the adjoining county there was not a Rape-like plant amongst them, but a field of as fine bulbs as he ever saw. How to account for this strange malformation in the 2 acres he knew not, as both fields were equally well cultivated, and the seed was sown out of the same bag. Besides this, I know of other instances where such strange sporting has taken place, one where the seed was saved by a friend with the greatest care from large selected transplanted bulbs; the first year a heavy crop of fine bulbs was produced from this stock, but part of the same seed kept over by the farmer, and sown the following year, gave hardly anything but Rape-like plants. Again, seed saved from transplanted roots produced, the first year, Rape-like plants, while a portion of it kept over and sown the following year grew large handsome bulbs without the slightest sporting. If any of your numerous readers could account for such a change in the character of the plant, or suggest a preventative, they would confer a favour on agriculturists. This non-bulbing of the Swede has been observed to exist to a greater or less degree in certain localities, but only within the last two or three years, appearing, like the cholera or other epidemic, in one place one year and not in another, while the following year its locality may be quite reversed, but it is most generally observed in the richest and best districts, or where the situation was low, and the soil of an alluvial nature. As in Mangold Wurzel, all the varieties of Swede have shown a tendency to run, with perhaps the exception of Laing's Swede, but with Skirving's variety the cases are the most numerous. This extraordinary tendency to start is not confined to Mangolds and Swedes only, but it is common with many other plants this year, as the Carrot, Cauliflower, Cabbage, &c., and even the Onions are not bulbing, but are in many instances running to flower.

Your correspondent concludes that the running to seed of the Mangold Wurzel cannot be attributed to the time of sowing, or the state of the atmosphere, or soil, for if that was the case it would apply equally to the whole crop. What the mysterious agent may be I am not prepared to say, but this I know, that part of my own Mangold Wurzel which was sown at an early period has shown a decided tendency to run, while what was sown later in the same field, and from the same parcel of seed, has hardly produced any seeding plants; besides, it is not conclusive evidence that, because the whole crop has not been affected, the cause is not in the atmosphere or time of sowing, for we all know that the braird of a field does not take place simultaneously, but the difference of even a week or more in the vegetating of the seed is not uncommon, and this year both crops came up most irregularly; it is therefore quite possible that the plants which came up first may have been influenced by some agent which as yet is not understood, but which was sufficient to cause the change in the habit of the plant, while, what came up later may not have been so affected. *Another Subscriber.*

REAPING MACHINES.

HAVING partially used Hussey's Reaper improved by Garrett (but not made by him) for three harvests, for the purpose of giving it a fair trial, and having finally decided on laying it aside, I am inclined to give you the result of my experience. This reaper certainly cuts upstanding crops very perfectly, provided the straw be dry and the ground hard; and if the men on the machine and those tying up do their duty properly, the work is done at the least as well as by the hand reapers of these parts, and better than by fogging or mowing. But against this has to be put the annoyance of frequent breakages and frequent stoppages. I have met the breakages by having extra knives always in the field, and a second machine; but besides the incidental breakages, which may be called accidental, my bailiff tells me that many breakages are caused by the inaccuracy of the workmanship of the country mechanics, who have to take to pieces and reconstruct the machines, and who must always be inferior to the workmen of the great machinists, but upon whom most agriculturists must depend. The stoppages also by weather are frequent in this uncertain climate, and more than these by breakages, have convinced me of the expediency of giving up the reaper. For instance, we go to work on a fine bright morning, and work merrily for three, four, or six hours, suddenly up comes a heavy cloud from the sea, down comes a heavy shower, the reaper is stopped for the day—all your men are thrown upon your hands. If the rain stops, you may send them off to hand-reaping with only a partial loss of time and money; but if the remainder of the day is wet, you must either find work for them under cover, which it is not easy to do for so many, or you must pay harvest wages for no work. It is clear that interruptions of this sort, occurring frequently, render this reaper too uncertain to depend upon for a harvest; and the money loss caused by the interruptions form a heavy drawback against the saving which otherwise would certainly be made as against hand-reaping, if the reaper could day by day go through its work with regularity. I am aware that various improvements have been made in the machines since I bought mine, but none of them sufficiently meet my objections. The last improvement, and to my mind the most important, is the tipping-board, which delivers the sheaf without the use of the rake. The motion is at present given to the board by raising it with the foot, and again dropping it. Considering that the muscle of the calf is about the least developed part of a labourer's body, it seems to me that in practice no labourer will maintain this motion of the leg so long or so easily as he now does that of the arm. But why should not the board be raised by the arm or any lever movement instead of by the leg? Or rather, why should not the machine itself communicate motion to the board, and in such a

manner that it should be regulated at option to rise every two, four, or six yards, according to the bulk of the crop? I must, however, express an opinion that no machine will be generally available which will not cut somewhat damp straw, and deliver (as Bell's and its modifications do) out of the track of the horses. It could then, with the attendance of at most a couple of men, cut down a field, and leave the corn to be tied up without hurry and by task-work. The farmer would then be provided with an implement, in the use of which, if interrupted in its day's work, the loss and inconvenience would be reduced to a minimum. A more perfect machine is required for this country than for the Americans. Their crops being lighter are more easily cut, their grain being of much less value on the ground, greater waste can be afforded, and their manual labour being at a higher rate is more easily competed with by machinery. Moreover English labourers being bred up in the notion that machines are their enemies feel little willingness to overcome difficulties; and therefore an agricultural machine for this country, unless almost self-acting or of supereminent efficiency, requires too much of the master's superintendence to be entirely successful.

Machinists, have, however, reason to congratulate themselves that in so difficult an operation as harvesting the large crops of an English harvest, and under the severe trial of our variable climate, they can even now meet manual labour in many cases at least on an equality, so as to obviate all apprehension of any great increase of expense in future years from a deficiency of labourers. They are already in sight of the goal. Only let them persevere and perfect success must be attained. Meanwhile, the progress of the country tends daily to make agriculture a better customer to them. Trade, mining, and manufactures, with a constant flow of emigration, demand more and more hands from the agricultural districts, and give room for the introduction of mechanical appliances. This is as it should be. The low-paid agricultural labourer or his progeny is thus converted into a more efficient consumer, beneficially to himself and to the community; while agriculture, relieved of the incubus of an over-numerous labouring population, at once improves her economy and her comfort, and rises in the scale of human occupations by becoming less and less an exercise of mere animal strength, and more and more an exhibition of the subjection of matter to mental intelligence. *Alex. Hall Hall, Watergate, Emsworth.*

ROYAL AGRICULTURAL COLLEGE.

SESSIONAL EXAMINATION IN PRACTICAL AGRICULTURE.

JUNE, 1854.

[The following are some of the questions with their answers, by Mr. H. Chancellor:—]

[1. Define stock, as possessed by any manufacturer. How may it be classified? Illustrate this classification by applying it to farming stock.]

1. The term stock, as respects any manufacturer, implies moveable property, possessed or acquired with a view to, and in connection with, productive industry; hence it is of three characters, as seen clearly in the case of the farmer.

a. The undeveloped material, both live and dead stock; as live stock, herds of cattle, flocks of sheep, pigs, poultry, &c.; dead stock, seed corn, manure (artificial and otherwise), artificial food, as oilcake, linseed (hay and straw to be consumed on the farm).

b. The means which the farmer has of developing such, and rendering fit for obtaining its money value, in the form of implements, &c., as ploughs, harrows, scarifiers, rollers, drills, &c.

c. The developed material, or all ready converted produce, both as regards live stock, fat cattle, and their products of cheese, butter, and calves, sheep, pigs, poultry, and eggs. Dead stock—all corn, Wheat, Barley, Oats, Beans, Peas, Flax, &c., and in this may be included all the produce now existing in the form of stacks, which of course require certain modifications, threshing, cleaning, &c., before the farmer can realise their money value; yet, inasmuch as they have been acquired by productive industry, they may be deemed developed material. Thus the farmer's stock consists of the undeveloped material, the means of developing such, and lastly the already converted produce, ready for realising to the farmer its money value; this is quite different from the dealer, who simply buys the converted material at a certain price, and realises a profit by disposing of it at a higher, as in the case of the corn dealer, who buys the farmer's corn, say 100 qrs. at 50*s.*, and sells it out retail for 55*s.* or 60*s.* per qr., thus carrying on his business in a manner quite unconnected with productive industry.

[2. Describe the harrow and its uses, and show how this has been developed into the grubber and cultivator. Describe also the characteristics and uses of the latter.]

2. The harrow, an implement second only in importance to the plough, and represented on the small scale by the rake, consists of a frame, and the teeth or tines affixed at certain distances from each other on this frame. The frame may either be made of wood, as in the older constructed implements and the heavy drags at present in use, or of iron, as all the more recent ones. In different harrows, according to their required uses, the frame is heavier or lighter, and of a different form; the former, as regards their being heavy or light, depending on the bulk of material used in the construction of the frame, and also on the means by which the several portions are affixed and bound together, as by cross bracing bars of metal, &c. The form is also very different; in some the bars are parallel, and the teeth, consequently, fixed along at certain distances; or the frame may be of a zigzag shape, which seems to have the advantage of covering the greatest amount of land, with the same quantity of constructing material, and doing it effectually. There are many other varieties of frames, and modifications of these. The teeth, or tines, differ as regards their shape, length, situation, and number. The teeth are usually of a straight perpendicular shape, or, in some few harrows, somewhat curved at the bottom. They should, however, always present an angle to the opposing ground, and, therefore, should be angular; the point or edge always placed in front, so as to have the greatest possible cutting properties. The length depends much on the use; as, in the heavy drags, they should be much longer than in the light seed harrows, usually termed short-toothed harrows. Their situation should be so arranged on the frame that no lump of earth of any material size can escape their action, and moreover being so placed, the harrow allows better of the removal of any weeds and rubbish which necessarily always collects during this operation to some degree.

The number, of course, is of no material consequence, as seldom one harrow is used for an operation, except in the case of the heavy drags, in which they are usually three in number on each row, and there being usually three rows, nine in all is the full complement. It is a point then, however, not to have too many teeth, as, if this is the case, the harrow does not act so thoroughly, and does not go so deep.

The fastenings of the several harrows when united usually consist of a bolt, and also of course there are appropriate fastenings for the horses. The uses to which the harrow is generally applied are those of disintegrating the ground, and breaking up all lumps, &c. Also, as particularly seen in the case of the heavy drags, that of bringing up weeds and rubbish to the surface, removing it from the clods, and dragging it upwards; and lastly, as seen in the short-toothed seed harrows, that of covering in the seed, by raking as it were particles of earth over the seed. These are the chief uses to which the harrow is applied: but there are certain important points as regards their working; thus it is far better to join two or more of the light harrows together, using an extra force in horse labour, than it is to use them singly; thus, first, one harrow by itself, which is four feet broad, acts properly only upon about three feet, the other foot being lost by its jingling, &c., while, if three of such be combined, the full complement of 12, or at least 11, feet are well harrowed: and moreover the operation is better done, inasmuch as the weight is better poised, and in the end requires mostly less horse power, as where one horse is required for one harrow, two will mostly suffice for three. The expressions "double" and "single" tine imply—first, the returning with the harrow in the same breadth of land; and, second, the returning in the next breadth.

This implement, by certain changes, becomes developed into the grubber, scarifier, or cultivator by certain important alterations, which are seen partly perfected in the intermediate implements—the Staffordshire or Cambridge Harrow, and the Biddel's Extirpating Harrow; in the first there are, as it were, two sets of harrows, each having nine teeth, but the teeth are much longer, and are curved to a greater extent; and additionally they are attached to an extra frame in front, with wheels; and stilts or handles are placed behind, by which the workman can somewhat regulate their depth. In the second we have, however, a much nearer relation to the true grubber; the teeth, which are nine in number, placed in rows an inch longer, and the machine is on wheels; additionally it can be raised by means of levers; in short, it may be classed as a true cultivator, though certain peculiarities term it a harrow. In the true cultivator or grubber, as the Biddel's scarifier and the Ducie or Uley cultivator, we have the following characteristic points. *a.* The teeth are much longer; in the 1st they are seven in number, four in front and five behind, while in the second they are either five or seven; but they are much more curved and have a share at the end.

b. The frame is constructed on wheels, and is in both cases of the Biddel's and Uley cultivators made of iron.

c. They admit of regulating the depth to any degree required; in the 1st, by means of complex levers; in the 2d by the use of a screw. In fact, they are of a much larger description, and necessarily fit for different work. The uses to which the scarifier is generally applied are those of digging up land in the place of the plough, and are therefore useful in such cases, as admitting of the operation being done at a much less expensive rate. They are used often instead of a second ploughing, or in some cases instead of it cutting or scarifying up a stubble, though seldom quite sufficient for this work. They are of particular use in running across the furrow slices, routing them up, and breaking them ready for the harrows and drags.

[3. Define a weed, and give the best methods of destroying (1) annual or biennial weeds, (2) perennial weeds. Why does the root crop afford more facilities than any other crop for their destruction?]

3. A weed is a term which may be given to any plant out of its place—whether noxious in itself or otherwise; thus a Turnip is a weed in a crop of Wheat, or *vice versa*. They are mostly classed as annuals, or biennials, and perennials, inasmuch as it is on these points (the time or stages of growth as biennial or perennial) that a different mode of eradication is indispensably necessary.

1st. As regards the destruction of the annuals and biennials. These weeds, inasmuch as they propagate themselves chiefly by perfecting seed and depositing it (and which, in some cases, as that of the common Charlock, will remain latent in the ground for some considerable period), should be eradicated or removed as much as possible before the time of seeding; and inasmuch as they are mostly of a variety having shallow roots, are the more easily removed by hoeing and such like. The first operation as respects their destruction of course depends much on the means of preparation of the land for the coming crop, and in this case of course the constant ploughing up or otherwise digging up the land and exposing a new surface to the action of the sun, wind, and air, as often as it is economically possible, tends greatly to their destruction—their roots being exposed soon cause them to wither, and ultimately rot. This, of course, is also materially assisted by the use of the drags and harrows separating the weeds from the clods, and still more perfectly exposing their roots, also by the use of the roller, as disintegrating the land when often harrowed. As a means of destruction, the skim plough, which used on this farm in No. 16 and 17, is very effectual, as it goes to a sufficient depth for the extirpation of the roots of the majority of the annuals and biennials. Besides the immediate preceding operations to the sowing of the crop, the autumn fallowing, and exposing to the winter frosts, tend very greatly to their destruction. The after operations, *i.e.*, when the crop is in the ground, chiefly consist of hoeing, either by the hand, or by means of the horse hoe, or by the patent Garrett's horse hoe. These would represent the more common means of extirpating the annual or biennial weeds; but in the case of the perennials often known as root weeds, the case is somewhat different; for, inasmuch as they propagate themselves much by their roots, and in many varieties run to some considerable depth, the treatment must commence immediately the crop has been removed, *i. e.*, the first thing in the autumn, when hands and teams can be spared. The operations would consist in constant ploughings, scarifyings, draggings, and harrowing, so as to earth up the land, expose the roots of the weeds, and afterwards remove them and bring them to the surface, when they may be either carted off or burned on the land in heaps, as the ashes are somewhat valuable. The skim plough is also very useful in this case, but seldom suffices alone. The land, somewhat clean for the autumn operations, is then left during the winter; and the frosts acting on the land render the removal of any weeds still remaining very easy in the spring, which may be done by scarifyings and harrowings. The land is then in a fine tilth, and any Couch or such like can be picked off, and the land is ready for the coming crop. The after operation of hoeing, of course, is of great use; however, it is not of such great importance in destroying the perennials; but still, of course, the operation carried out in the first instance destroys many weeds. The fallowing is of great importance in the extirpating of all perennials—as by such the land can be well ploughed, and the root weeds brought to the surface, and burnt or removed. Of all the crops which come in rotation, none tends to the destruction of weeds better than the root crops; for all the operations I have alluded to can be performed to advantage in preparing land for a root crop. In the first place, the preceding crop is removed in the autumn, and the land can then be constantly ploughed, scarified, and harrowed at different times throughout the season, and it has the benefit of the winter's frosts and all spring cultivation, and in many cases when the roots are not sown till late, the summer's sun acts as though the whole course of a summer's fallow was had recourse to. The land, though not only well cleaned generally, can be well hoed when the roots are up, and this can be continued throughout the summer till late in the autumn, and then any weeds that are hoed up are effectually destroyed by the sun and air. Thus throughout, both as regards the preparation of the land for the crop, and the whole course of after treatment, the weeds can be removed (economically) and to the best possible advantage.

(To be continued.)

FINGER AND TOE IN ROOT CROPS.

BY JAMES BUCKMAN, F.G.S., F.L.S.

(Concluded from page 555).

Degeneracy is usually a result in districts where the original species is a wild native.—The soil, climate, and situation which are suitable for a plant in the wild state are by no means fit for it in cultivation; it is on this account that so many of our esculents may be traced as natives of the sea-coast; the complete change of circumstances attendant upon their inland cultivation are just those which necessitate such a change in the whole growth of a plant as makes the sum of the difference between a wild and a cultivated example; hence, as both Parsnip and Carrot in the wild form are constant denizens of the neighbourhood of Cirencester, neither of these roots can be cultivated twice with us in the soil without presenting finger and toe in an aggravated form; and if the seed employed be from a degenerate crop, or cultivated at home, the evil is still more conspicuous. This, however, is less apparent in garden than in field culture, as in the former the ground is always dug deeper, and there is such a constant change of crop, mode of cultivation, seed, and addition of manure, that the circumstances are widely different

from those in which the species grows wild; beside this, as the quantity of seed required for the garden is less than that for the field, it is uniformly cultivated from good specimens with the greatest possible care; but I have observed that in my college vegetable garden, where, until recently, the plan of cultivation has been but little in advance of that of the field,* finger and toe is a prevailing complaint in the root crops, and from what has been before advanced it will not be considered surprising, seeing that wild Parsnips and Carrots are weeds in the more neglected part of the garden. Still there are circumstances in garden cultivation which strikingly point out that malformed roots are the result of a retrograde approximation to the wild state. If, for example, seed be sown with a view to get Turnips very early, the major part of them frequently run to seed, and the bulbs of those that do not are mostly ill-formed, woody, and quite devoid of that succulency in which excellence consists. Now here, as the time of the germination of the seed, and consequently the period for its growth, approximate more nearly to that of wild nature, it is not surprising that the crop should thereby assimilate to wild results. All specimens of root crops that seed prematurely, thus showing a tendency to annual growth, may be considered as degenerate, and will present the concomitant of finger-and-toe in the root. The drawing, No. 4, which appeared in last week's *Agricultural Gazette*, represents an example of a seedling Carrot from the Royal Agricultural College Farm.

Late-sown roots are liable to produce a degenerate seed.—It is sometimes the practice to let a patch of late-sown Turnips remain for seed; now, the fate of these is not to produce bulbs, and hence some are often so sown purposely for greens. Here we have the seed sown about the time that it is scattered from the wild plants; and it is no wonder that our result should resemble the wild plant in mode of growth, as in such cases we get a small but woody root, which is more or less branched; as, therefore, the object of the crop is the root, we must fail in this if we cultivate a degenerate form.

Different degree of liability to degeneracy in different species.—My observations lead to the conclusion that the smaller the amount of difference between the wild and the cultivated state of a plant the greater the tendency to ramification in the roots, unless the circumstances of the growth of the latter be widely different from that of the wild state. Hence Parsnips on the farm of the Royal Agricultural College will not pay for cultivation; they are wild all around; and as we have seen how great the change by even two years' cultivation from the wild seed, so we have seen the tendency to reversion to their wild form rapidly develop itself by a continuance of the same circumstances. Carrots, however, in their cultivated form present a wider difference from their wild state than do Parsnips; they take a greater time to civilise, and consequently we should not expect them to revert to their wild condition so readily, and indeed, it will generally be found that they die away if left to chance.† As regards Turnips, it will be observed as a rule that any sorts which have often been grown in the same land have a tendency to degenerate; hence, finger and toe will in such cases prevail. New varieties at first maintain their form much better. Swedish Turnips, in their hybrid nature, being farther removed from the wild type on the same ground, will be found to present less tendency to finger and toe than the common Turnips.

General Conclusions.—From the foregoing remarks it will be seen that finger and toe in roots is not viewed by me as a disease, in the strict sense of the word, but as a natural result of the early stage of change from wildness to civilisation. The enumerated experiments seem to show that finger and toe is the midway from wildness to cultivation; and our observations upon the circumstances connected with cultivated root crops, that the malformation in them is the result of degeneration from cultivation to wildness. *Journal of English Agricultural Society*, Vol. IX, Part 1.

Home Correspondence.

The Failure of Mr. Mechi's Grass Crop.—At Mr. Mechi's gathering, Mr. Caird attributed the failure of the Grass crops at Tiptree, as compared with the enormous produce elsewhere, to the assumed fact that 10 inches more rain falls in the west than the east of Great Britain. I believe that the failure is due to a very different cause. First, on reference to the meteorological tables published by the Registrar-General for the three months ending June 30th, it happens that the excess of rain is rather in favour of the east. Secondly, I have seen an instance this year of Italian Rye-grass treated on the self-same system, most luxuriant, in a place only a few miles westward of London. The difference I believe to be in the soil, and not in the rain-fall. The soil at Tiptree is for the most part clay: it was evident, from the greater freshness of the Grass in the furrow, that the liquid was not easily absorbed; and it may be shown that 10,000 gallons of water per acre, equivalent to about half an inch of rain-fall, would not, under any circumstances, saturate more than 2 inches of such a soil when dried; besides which, the roots of the plant, in spite of the instinct for which Mr. Mechi gives them credit, would not be able to follow the moisture in so stiff a bed with that ease so essential to rapid growth; hence Mr. Mechi's failure. Irrigation on such a soil, when the surface is broken, as in root crops, may be effectual. The instance of success to which I alluded is at Cassiobury, in Hertfordshire, where Lord Essex has adopted the same system of irrigation. The soil is a loamy gravel, such as is found covering the chalk in Herts, Bucks, Berks, and Oxon; one-third at least consists of angular flints, under and between which the liquid readily finds its way, and saturates the soil more effectually and to a greater depth than in a close clay. If the stones are removed, a network of roots is found under them, denoting a rapid growth after irrigation. It is well known to those who farm such soils, that stones retard the evaporation from the soil beneath them. The soil, a sandy loam, is sufficiently retentive of moisture, and with the aid of its open structure, caused by the flints, enables the roots to work freely and rapidly, and so appropriate the nourishment furnished by the liquid. When the surface is well covered by the crop, the moisture will be more readily retained, and the network of roots will be formed even on the surface itself. It is the nature of the soil, and not the longitude, that must be looked to. If Mr. Caird will visit Lord Essex's farm, he will, I think, agree with me; and I need not remind him that we cannot be too careful to attribute the failure or success of any system to its proper cause. *J. C. C.*

Estimate of Harvest of 1853, *compared with the subsequent Imports.*—We shall now restate the question, adopting our previous estimate as to the deficiencies of the harvest of 1853, and including the actual imports of foreign Wheat for the last 11 months up to the 1st of July, 1854.

		Quarters.
Assuming our annual consumption of Wheat as 18 million quarters, and the average imports of the past four years as 4½ millions (or 375,000 quarters per month) it gives the home growth as ... ... (the product of 3,857,142 acres, at 28 bush. per acre)		13,500,000
The lessened breadth of Wheat sown for the crop of 1853, as 1-6th, equal to		2,250,000
		11,250,000
Assuming the crop to be 1-4th deficient in yield on the lessened quantity of acres		2,812,000
Making the total growth for 1853		8,438,000
Estimated deficiency of the crop, 5,062,000 qrs. or 37 per cent. on the growth of 13½ million qrs. And the required additional quantity of Wheat would be for the 12 months		9,562,000
Total		18,000,000
To meet the above deficiency, we allow for the stock of old Wheat in the hands of the farmer on 1st of Sept. 1853		2,000,000
The Foreign Wheat in granary in London and out-ports		1,200,000
The imports of Foreign Wheat.		
September	600,909	
October	536,473	
November	495,189	
December	411,066	
January...	536,173	
February	932,232	
March	738,732	
April	549,650	
May	718,782	
June	420,528	
July	342,000	6,282,034
		9,482,034
The required imports for August will be		80,034
Total		9,562,000

In the above estimate we have made no allowance for the lessened consumption of Wheat from higher prices, or the substitution of other grain for Wheat—believing such consumption has only been lessened to a very small extent—as with the loaf at 9*d.* or 10*d.*, the poorer classes, to a great extent, consume a greater quantity of bread and less of other kinds of food. With respect to the increased import of Wheat in 1853, of 1,755,860 qrs., we allow for 1,200,000 qrs. being in granary on 1st of Sept., and the other half million quarters being used up, by mixing with the inferior quality of Wheat of this country of 1853; and this might in some degree account for the large stock of two million quarters of old Wheat on hand 1st Sept. Whatever may have been the assumed lessened consumption of Wheat from high prices, or the substitution of other grain for Wheat, we feel assured that the failure of the Potato crop in England in 1853, has fully counterbalanced those elements of lessened consumption. *S. Sandars, Hemel Hempstead.*

Wheat in Richmond, Yorkshire.—Since my report on the crops in this neighbourhood was sent in, rust has appeared on Wheat in many places. I have one field which, at the time of sending in my return, I fairly estimated at 40 bushels per acre; on a considerable part of that field rust has appeared, and on that part I do not think there will now be 20 bushels per acre, and that of inferior corn. I have more Wheat similarly affected, and I have to-day seen on a neighbour's farm a field of 25 acres quite as much injured by rust as mine. In other crops I have nothing to alter in my former report. Potatoes are here and there partially affected with disease, but as yet the injury is not extensive. I enclose an ear taken at random from the field of Wheat first named. *H. J. Turner.*

Finger and Toe.—Having just read the last number of the Agricultural Society's Journal, I have been much impressed with the necessity of defining the meaning of terms liable to be misunderstood. There is an article entitled "finger and toe in root crops;" now what is finger and toe? According to Prof. Buckman, it appears a mere forking of the root in Carrots or Parsnips, a case often supposed by farmers in this neighbourhood to arise from the use of long fresh dung in place of fermented, and undoubtedly it does arise at times from a bad quality of seed. But what has this to do with finger and toe, as we understand the term? With us it is a disease resembling the club in Cabbages, and is very common in some parts of the county. When the plants are quite small, it may be felt as a small knot on the root; it soon grows larger, the bulb grows into all sorts of shapes but the right one, and is the abode of insects; the only question with farmers here is, are they the cause or consequence of the disease? If the case I have described is what is usually known as finger and toe, then there can be but little difficulty in proving the theory of Mr. Buckman to be without foundation. I could point out fields that generally have Turnips in this state, and others that had the character of never being free, which now grow good Turnips; now this is without any reference to the character of the seed sown. I know a farm on the oolite, where very deep ploughing has been followed by healthy crops, where none had grown free from disease for many years, and another field in the same farm apparently much benefited by quick lime. I have been told by Lincolnshire farmers that the use of cake as feed for sheep has made it much more rare on their lands; whilst in the north Nottinghamshire district, the growing Turnips once in eight, instead of every four years, is the only remedy relied on. Growing Turnip seed, as I do, for the largest farmers of Nottinghamshire, and the neighbourhood of Lincoln, I have no hesitation in saying that if anyone of them could be found who imagined the seed had anything to do with "finger and toe," he would attribute it to an entirely different cause. To the writer in question, he would say the Turnips were too high bred and delicate; and would instance the "hybrid" Turnips, which are said to be more subject to disease than others; whilst the Swede is much less difficult to grow than white Turnips. [You forget that "hybrid" and "high bred" are exact opposites in the vocabulary, whether of the breeder or the physiologist.] Will you be kind enough to state what we are in future to understand by "finger and toe?" Whilst we are discussing the propriety of defining the meaning of terms in common use, will you tell us what is Turnip seed? Is it half or two-thirds killed Rape? The reason I ask this question is because it is generally considered now to be a mixture of dead seed and good seed, in some proportion, like what we used to buy under the name of coffee—part coffee, part chicory. I see in a capital paper on "Light Land Farming," it is recommended to sow from 4 lbs. to 6 lbs. of Turnip seed per acre. Were the seed known to be genuine, it is, I will venture to say, impossible to point out an instance where it is requisite to sow 6 lbs. of seed per acre, much less on light land; and it only shows how general must be the system of adulteration which would lead a clever man to recommend such a quantity. There are hundreds of acres in the neighbourhood sown with from 1 lb. to 1½ lb. per acre where the land is light and in good condition; the common quantities are 2 lbs. of white, and 2½ to 3 lbs. of Swedes. The largest quantity I ever heard of being sown on clay land was 4 lbs., and this was on account of the fly, and caused a great deal of discussion at the farmer's table. *J. R. Pearson.*

Dipping Apparatus.—Seeing that a correspondent asks for information respecting a dipping apparatus, I forward you the subjoined remarks descriptive of a very simple method of procuring one. Having to dip about 500 sheep annually, I drew a plan about three years ago from which a carpenter under my own direction made an apparatus. It is made throughout of the best red wood deal; the planks joined by groove and tongue, the interstices filled with putty. It is made of inch-and-a-half stuff, the ends, sides, and bottom mortticed together. Its inside measurement is 4 feet 6 inches by 2 feet 6 inches, and 2 feet 6 inches deep. The bottom or floor of the rack is also grooved and tongued. The rack itself is composed of 15 wedge-shaped pieces, tapering from 5½ inches to 2 inches, the upper side left perfectly square; the whole rack made of inch-and-a-quarter stuff, the spaces between each wedge 2 inches within a fraction; they are nailed to the floor from below. The trough is cut down about 1½ inch along one side to admit the rack, which is supported at the other end by two moveable feet, about 3 feet long, which gives sufficient inclination to produce a rapid fall of the liquor back into the trough. The whole well painted with red-lead. I generally place a large door for the sheep to walk down when finished. I am not perfectly certain, but memory suggests between 30*s.* and 40*s.* as the price at that time. *Clathrus Celatus, Aug.* 25.

Exports from Odessa.—I see that in your last number you have drawn attention to the great increase in the exportation of Wheat from Odessa. Your figures are worth repeating:—Exports from Odessa in 1851, 800,000 qrs.; ditto 1852, 1,400,000 qrs.; ditto 1853, 3,160,000 qrs. The fact is that the corn trade of Southern Russia was being ruined by the competition of Wallachia and Moldavia. Hence the attack upon Turkey. Russia has destroyed two harvests in the Turkish provinces, and consequently the Odessa exports of Wheat have increased fourfold since 1851, and a sufficient profit has been made to cover the additional expenses caused by the war. *T. M., Aug.* 27.

* The patch of ground forming the vegetable garden is for the most part situate in a bed of clay, resting on the freestone of the great or Bath oolite, and is only just getting into proper garden work.

† There is on the College Farm, in a waste place by a quarry, a patch of Parsnips derived from a garden which once occupied the spot. I have watched them from the time the cultivation ceased—now five years—and though they get wilder year by year, having roots much forked, yet the leaves are still for the most part without hairs.

Societies.

Educational Exhibition.—St. Martin's Hall, *Aug.* 29.—*The Policy and Possibility of Agricultural Instruction in our Common Country Schools.* Mr. Morton gave a lecture on this subject.—The policy of the thing was to be defended by the same argument as that which justified technical and professional education of any other kind. The possibility of it was limited by the humble means within reach of the teachers of such schools, and by the generally early age at which the labour of children in the fields becomes valuable enough to induce their parents to remove them. The propriety of attempting the agricultural instruction of children in country districts depended on the value of intelligence in agricultural labourers as in all other working men, both to themselves and to their employers. At present boys in the first years of their service are "more plague than profit," the farmer having then to do the work of education for them imperfectly, which might have been better done by the teacher. The ignorance of grown up labourers is often the limit to the successful progress of the farmer. A man who has farmed successfully in Scotland comes south and fails "because of our climate," it is said, and "because of our English clays," neither of which are compatible with Scottish management. Yes, but often and in great degree, because he has not the same machinery here that he could command there; and it is not the implements but the men that are referred to. The more intelligent labourers whose services he could have in Scotland, are, as it were, "self-acting tools," needing but to be "set" correctly at first, and then going through the work correctly to the end. Exchange them for ignorant and uneducated men, and you cannot be sure either that your instructions are understood at first, or will be attended to longer than your superintendence is continued. Lastly, the education of labourers is desirable for its reflex influence on that of farmers, and agricultural ignorance attacked in the van by such institutions as the Royal Agricultural College of Cirencester, and in the main body, it is to be hoped, by schools urged on by Lord Ebrington's scheme of district examinations, under the superintendence of the Society of Arts, will be all the more effectually routed if also attacked in the rear and from below by the efficient education of the labouring class.

The only objections, then, that can be offered to the policy of attempting this must come from those who deny its possibility; and to the consideration of that the rest of the lecture was devoted. The case of a teacher in a country district was supposed; and his means both for self-instruction and for communicating instruction were enumerated. He had friends among the farmers—he had the school garden, he had a few simple pieces of apparatus, he had the aspects of nature all around him, varying with season, soil, and skill; and, lastly, he had his books. The works named were Johnston's "Agricultural Chemistry and Geology," Low's "Elements of Practical Agriculture," Stephens' "Book of the Farm," access to which might be had in some neighbouring library—and then for class books there were "The Farmer," by G. Nicholls; Richardson's shilling Rural Hand-books, "Blacker on Small Farms," &c. The instruction of the teacher was of course the main difficulty. This must be done by properly qualified instructors in our normal schools, as is being done in the normal schools at Edinburgh and Glasgow, where men trained at Glasnevin College are employed. Letters were read on this subject from Dr. Kirkpatrick of Glasnevin, D. Milne Horne, Esq., of Coldstream, and J. Gordon, Esq., Secretary to the Committee on Education of the General Assembly of the Church of Scotland. Then, supposing a qualified teacher, the means at his command of instructing others were discussed. Specimen lessons were recited in the main truths of agricultural chemistry, showing how doctrines in the theory and facts in the practice of agriculture were capable of satisfactory, simple, and even amusing illustration, without the employment of a scientific nomenclature, or the use of any other than common-place and familiar instances and terms. The uses of the garden in agricultural instruction were proved both by testimony and experience. Dr. Daubeny's illustrations of the exhausting power of plants, in his lectures before the English Agricultural Society, were taken from *garden* plots. Tull's argument was built originally upon observation of *garden* rows and single plants. The most complete and satisfactory inquiry into the relative values of our Grasses was conducted by Sinclair in the Woburn *Gardens.* One of the most perfect inquiries into the relative values of our Wheats is reported in the first volume of the Journal of the English Agricultural Society as having been carried out in a *garden* in Gloucestershire. Experiments on manures in *gardens* are perfectly satisfactory. What can be more so than the valuable annual report of a *garden* experience given for many past years in the *Agricultural Gazette* by the Hon. and Rev. L. V. Harcourt. Modes of culture, then, methods of manuring, rotations of cropping, and the merits of the various crops—all these particulars which among them pretty nearly complete the circle of the mere cultivator's experience—are capable of perfect illustration in a garden. And how perfectly the *rationale* of many an operation can be thus presented to both mind and eye can be easily imagined. You may talk to a boy by the hour on the advantage of stirring the soil and of deep cultivation, inasmuch as it admits the air more perfectly throughout the substance of the soil, and thereby facilitates the chemical processes by which the soil and its contents are fitted as the food of plants; but no quantity of merely verbal instruction will equal in its force, either upon the understanding or memory, the lesson on that subject which that same boy would receive if after having dug a hole in the hardened ground he were told to put into it again all the earth he had just taken out of it. *The heap remaining over* which he could not return to its place would represent more distinctly to him the bulk of additional air thus introduced into the soil by its disturbance than any argument unsupported by this simple experiment could do.

The uses of the garden in furnishing practice in the use of tools were proved by the experience of schools in the Highlands and in Ireland. Its uses in adding to the means of the school, or the emoluments of the teacher, were proved by reference to the experience of Mrs. D. Gilbert's schools in Sussex; by the experience of Mr. Batson, late of Kynaston House, in Herefordshire, who lodged, maintained, and instructed boys upon his farm, being repaid by their labour; and by the experience of reformatory schools, the one especially referred to being that at Hardwicke, near Gloucester, now for several years maintained in operation by the wise and painstaking benevolence of Mr. Bengough and Mr. Baker, two magistrates of Gloucestershire.

Lastly, the fact that agricultural instruction *can* be given without endangering the efficiency of the ordinary literary instruction was proved by the testimony of such men as Dr. Kirkpatrick and Mr. Gordon. The policy of giving the latter an agricultural turn by the use of *agricultural* reading books and *agricultural* arithmetic books in our rural schools was adverted to. The value of evening schools for adults, as meeting the deficiencies arising from a too early removal of children to work, and as in some degree a successful rival of the public-house, was insisted on, and Mr. Morton concluded by quoting a saying of the Dean of Hereford, "I am perfectly convinced that many well-meaning efforts in the education of children have not been attended with the success expected from them, entirely owing to their leaving out all instruction relating to the occupations by which they are in after life to earn their bread."

Farmers' Clubs.

Wakefield.—*The most desirable kinds of Spring Food for Cattle.*—At a late meeting of this Club, Mr. Bottomley introduced this subject:—If farmers obtained a good crop of Turnips they could keep them a long time. The Turnip was, after all, the principal Spring crop, and he should be sorry to see any attempt to supersede it. He rather considered that farmers should endeavour to find other plants that would range along with it. The second article he should recommend, to follow Turnips, was Mangold Wurzel, and he had found upon this point some amount of difficulty in convincing farmers of its importance. It would be found, however, that the Mangold Wurzel would succeed by perseverance. It required to be got into the ground from the first week in April to the last. The present season had been a remarkable one. There was scarcely a farmer amongst them but had found that the land was in advance of the season. Turnip seed could be got in later. With regard to Mangold Wurzel, suppose a person had a given number of acres of fallow,—if he was able, by cleaning in the back end of the season, to get 5 acres out of 20 planted with Mangold Wurzel, then he had only 15 acres of Turnips to be anxious about. With regard to the produce of Mangold Wurzel, he (Mr. B.) could speak from 12 years' experience—he had been uniformly successful with his crops of Mangold. Most of the farmers present would agree that the past season had been very trying in respect of spring food for cattle. The Turnips had failed them before they had anything else ready for the cattle. Frost had done the Turnip crop an immense deal of harm. He did not find that the same untoward result had happened to Mangold. Mangold Wurzel was about 20 per cent. superior to Swedes in nutritive matter, weight for weight, but ought not to be used before March; they improve in quality, as a Swede deteriorates. He steeped his seed two nights and a day before dibbling it. There was no doubt that a variety of food was beneficial in the feeding of cattle, and this was also another argument in favour of the growth of Mangold. In changing, however, their food, it was advisable not to do so very suddenly. The food might be mixed for a week or two, and then changed. In the third place, he advised that about a rood or half an acre should be planted with Thousand-headed Cabbage for the cattle. He had also grown the Drumhead, or Scotch Cabbage, for the same purpose. The nutritive properties of Cabbage, in the feeding of cattle, were often underrated; it was a great deal more nutritive than was generally supposed. If the club were generally informed of the quantity that could be grown upon an acre of ground, they would be very much astonished. He did not know anything that would be of greater value to the ewes than that crop. In the next place he was of opinion that a crop of Tares, mown and chopped with hay or Clover, is not only much better for horses and cattle, but will go a great deal further in the using of them. The early crop may be got off in time to plant Cabbage or Thousand-head in succession. He had now recommended Turnips, Mangold Wurzel, Cabbages, and Tares. In respect to the Cabbages, he might observe that the Thousand-headed Cabbage was recommended to sheep-keepers far before others; but for cattle, the Drumhead was decidedly superior. These were valuable food for the whole of the winter. A farmer generally thought that if he got plenty of Turnips he was well off. He found that Flemish farmers, whose farms were generally very small lots, uniformly got good crops of Cabbages, and also usually obtained two crops per year. If the plan of cultivating Cabbages, therefore, was so successful in small experiments, why should not the trial be extended, say upon 4, 5, or 6 acres of land? A farmer, who had a 4-acre field near home, might thus make it very productive. If the plants were purchased, it would be as well to put them in a little water after they had been carried a number of miles, and until they were ready to plant. When they were grown at home, of course they did not need water at all. There was no difficulty at all, and very little expense, attending their cultivation. Scarcely any of those gentlemen present ever yet raised a crop of Turnips but that they found some deficiency in it—some places where the seed had not come up. Well, that had often been the case with him; and when there was a wet day, when his men could not go out on the ground, he gave them a few Cabbage plants, and made them dibble them in among the Turnips, wherever they found a bare place. Cabbages were always very nice eatage for sheep and lambs. He had recently been in Notts, and had seen the liquid manure drill in operation there, where it had given the greatest satisfaction. Farmers with whom he was acquainted were doing 7 acres a day with its assistance, and hoped soon to achieve 8 acres per day. It was considered a likely implement to answer well in Notts. In Notts there was a great deal of Tares grown. They were chopped up with hay for the cattle, and capital eatage they formed. If this variety of food succeeded so well there, and if it was found so useful, he did not see why it should not also succeed in Yorkshire. After Tares, it was possible to raise for next spring a very good crop of Thousand-headed Cabbages for sheep, or the Drumhead or Scotch Cabbage for cattle. This last spring would have convinced them that a rood or half an acre of Cabbages would have been invaluable, in consequence of the scarcity of other spring food.—Mr. J. Simpson, of Ackworth, agreed with what Mr. Bottomley had advanced. As to Mangold Wurzel, this year was the first time he had tried for some years. He had dibbled in his Mangold; and he did not know the reason (perhaps the season had been too dry for them), but his crop had not succeeded to the extent he could have expected. With respect to Thousand-headed Cabbage, he quite agreed with Mr. Bottomley as to the desirability of this being employed as spring food. Last year he had planted half an acre of Thousand-headed Cabbage after Tares, and he had found them very useful during the past spring. Where any one had a large stock of ewes, these could be turned on the Thousand-headed Cabbage, and they would find the advantages of the crop. He had done so, and found the ewes highly relished the food. This year he had got more of the Cabbage set, and it was now ready for transplanting out. He intended having an acre or two this year. Variety of food for cattle he thought very beneficial.

Miscellaneous.

Travelling of Eggs.—When sittings of eggs are forwarded by railway or other public conveyance, it is customary to pack them tightly in bran, with considerable spaces between them; others recommend Oats to be used. My own experience is most decidedly in favour of hay or soft straw, which by its elasticity prevents all shaking, and enables the eggs to be forwarded any distance without injury. This season I forwarded two sittings of eggs to the far north of England, one packed most carefully in bran, the other in hay; of the first not one egg hatched, whilst every one of the second produced a chick; and a sitting that I received this season, which was similarly packed, every egg was fertile, although the basket had travelled from the north by coach, rail, and carrier. *Tegetmeier's Profitable Poultry.*

Crop of Mangold Wurzel in 1854.—Prizes of 4*l.*, 3*l.*, and 2*l.* were given by the Manchester Agricultural Society in the following instances:—To Mr. Robert Birch, Netherton, near Liverpool. This claimant's farm contains 242 acres, and he had four acres in Long Red Mangold Wurzel, on land which had been Clover the previous year. The soil was a good deep loam, on a subsoil of clay, sand, and foxbench, well drained. The drills were 25 inches apart, and the bulbs 10 inches. Four lbs. of seed were dibbled in early in April. Twenty-two tons per acre of the best farm-yard manure and 3 cwt. of guano had been applied. Crop and land very clean, bulbs sound, well grown. Average weight, 50 tons per acre. Weighed November 11, 1853. To Mr. T. Atherton, Speke, near Liverpool. The claimant's farm contains 146 acres, and he had three acres in Mangold Wurzel. Previous crop, hay (three years old Grass). Soil a good deep sandy loam, on a subsoil of sand and gravel, well drained. Drills 27 inches apart, and the bulbs 12 inches. Three lbs. of seed of the Long Red kind was dibbled in, in April; 25 tons of night-soil per acre were applied in the autumn, and 25 tons of cow-dung in the spring, with 1½ cwt. of guano. The crop could scarcely be finer in any respect, or the land cleaner. Average weight, 52 tons 18 cwt. 2 qrs. 8 lbs. Weighed November 15, 1853. *Journal of Manchester and Liverpool Agricultural Society.*

Calendar of Operations.

AUGUST.

Lammermuir Sheep Farm, *Aug.* 23.—Cheviot lambs are now all weaned, and the wedder lambs, when not kept for a wedder hirsel, disposed of. The ewe lambs are separated from their mothers for 10 days or a fortnight, till the milk goes off the ewe; they are then returned to the flock, when most of them mother again, and keep close company, though they do not suckle. The practice of ewe milking is now nearly extinct, though within the last 20 years it was customary to milk them for a period of six weeks or two months, and that twice a day. The damage done to the ewe fully counterbalances the value of the cheese produce, and the trouble and labour are enormous, especially where the hirsels are large. When this practice was everywhere carried out, it was also customary to fold the ewes at night on Grass-land, intended for corn the following year. The ewes thus spent 14 hours out of every 24 within flakes. It is satisfactory to observe that this barbarous mode of management has now all but disappeared. Wool has this year generally weighed light, and the price about 10*s.* per stone less than last year, so that hill clips return one-third less money than last year. The weather for the last 10 days has been very broken and most unpropitious for winning and securing hay. Natural hay, which in this neighbourhood is greatly depended on for winter meat for sheep, is a very abundant crop, and if well secured will see us through a long storm. The Turnip crop looks uncommonly well. *J. B.*

South Devon, *Aug.* 29.—We are now in the midst of the finest harvest known for some years past, as far as the weather is concerned, and every one is busy either cutting or carrying. Corn has generally given up with a rich gold colour, which augurs well for the yield; it is, however, early to give a decided opinion, but I must say appearances make one doubt Wheat being an average crop. Barley and Oats are an average crop, and the Barley sample has much improved by the fine weather. For reaping Wheat, from 6*s.* to 7*s.* per acre, and 8 quarts of cider for cutting, bringing, and standing up, appear to be the usual charge. For mowing Barley and Oats, from 2*s.* to 2*s.* 3*d.*, and 3 quarts of cider per acre. We are now beginning to suffer much from the dry weather in the Grass lands, and the country carries a very parchy look, making frequent change and water the only chance of improving the condition of our cattle. Green crops altogether look well, but are certainly not so far on as the 1st of September generally leads one to expect; this, and the great scarcity of partridges everywhere, will give our sporting friends a troublesome day on Friday. Turnip hoeing appears to have been done at from 4*s.* 6*d.* to 5*s.*, and 4 quarts of cider per acre. The Potatoes are much diseased, but a good yield. Our Apple crop is unfavourable; they do not appear to grow, but fall off the trees as if blighted. I doubt if it will reach a quarter crop. Prices of agricultural produce continue much about the same, with the exception of Wheat, and may be quoted as follows:—Per quarter, Wheat, 64*s.*; Barley, 40*s.*; Oats, old, 29*s.*; Oats, new, 25*s.* 6*d.*; Beef, 60*s.* per cwt.; mutton, 6½*d.* per lb. *J. M.*

Wester Ross, *Aug.* 28.—On the earlier farms harvest has been commenced, and in a few days it will be general. We are about a week later this year than last, and last year was some 10 days later than the previous one. We may expect soon to reach, if we have not already reached, the lowest part of the revolutionary cycle. The great proportion of the crop in this county is still cut with the sickle, and this year, although wages are somewhat higher, the crop can be cut and stooked at an expense of 8*s.* an acre. Hitherto we have had hands enough not only to meet our own requirements in our busiest season, but hundreds of our people went annually to the more thinly populated districts to assist the good folks in cutting and securing their crops. The stream of emigration flows on, the number of work-people is lessening, and the time bids fair to come more speedily than we would desire, when we will not only be unable to give our neighbours any redundant hands, but when, unable to get hands sufficient to cut our crops in the old fashion, we will be anxiously asking where can we find the most satisfactory reaping machine. In the meantime, and until reaping machines be still further improved, mowing becomes more general, and with the scythe an acre can be cut and stooked for 5*s.* Fields that are already cut are thickly stooked; there will be no lack of straw. Oats will be an incomparably better sample than last year. Barley seems well filled; and Wheat, except where it was early lodged, will thresh out largely, although it can scarcely be expected that the sample will be so fine as it is in drier and sunnier seasons. Much still depends on the weather in the weeks of harvest. We have had lately a few dry, good working days, but, on the whole, this month has been wet and ungenial. Turnips have received fully their ordinary share of attention, being more difficult to clean in a moist season. They have been making rapid progress, and are likely to be fully an average crop. A month hence we can speak more confidently of many of these matters. Of one part of the crop we can now speak pretty confidently. We can advise the inhabitants of large towns to place no dependence on the north for any part of their Potato supply. Last year we profited more by Potatoes than in any former year; this year the loss will be greater than in any previous one. They have been arrested in the middle of their growth, and already about one-half of the tubers is diseased. Somewhere about one-fourth of an ordinary crop remains sound, these being small and wet, and of their ultimate soundness we have good reason to be afraid. Notwithstanding, with an abundant grain crop, a plentiful supply of keep for stock through the winter, and with an expectation of fair prices for both corn and cattle, we manage to demean ourselves with becoming cheerfulness.

Notices to Correspondents.

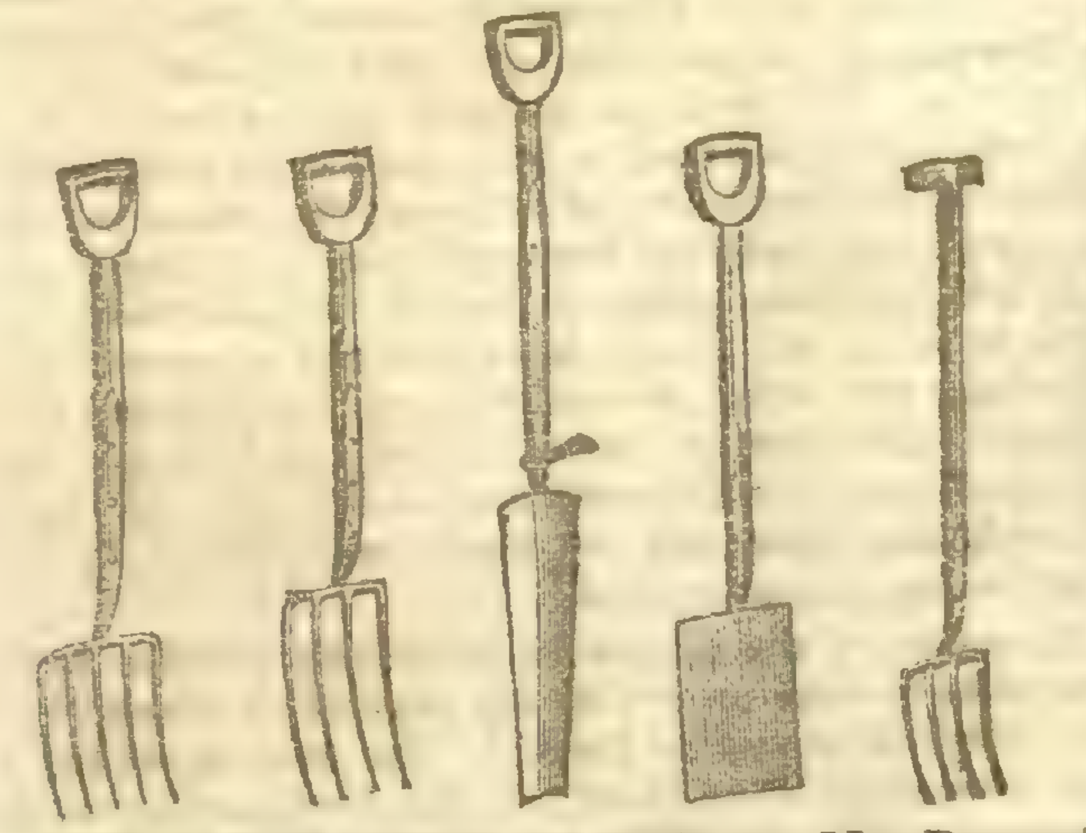
Adulteration in Flour: *Darlington.* Will you send us the particulars. Can you not fill up your blanks and let us know what the deleterious things and processes are? How do you connect the illness you describe with the man's food? It is useless to insinuate and suggest, you must *bear witness* frankly, if any good is to be done by publication.

Books on the Subject of Agricultural Instruction.—*For the information of the Teacher:* (1.) Johnston's Lectures on Agricultural Chemistry and Geology; (2.) Stephens' Book of the Farm; (3.) Low's Elements of Practical Agriculture. *For use as Class Books:* (1.) Johnston's Catechism of Agricultural Chemistry and Geology; (2.) The Farmer, by G. Nicholls; (3.) Essay on Small Farms, by Mr. Blacker, of Armagh; (4.) Hints on Agricultural Economy, by O. O. Roberts; (5–9.) Richardson's Rural Handbooks on the Horse, Ox, Sheep, Hog, Farm Pests, &c. *On the Practicability of Uniting Agricultural and Literary Instruction:* (1.) Reports by Dr. Kirkpatrick to the Commissioners of National Education in Ireland; (2.) Report by J. Gordon, Esq., on Ayrshire, in the Minutes of Council on Education for 1846; (3.) Report of the Educational Committee of the General Assembly of the Church of Scotland on Agricultural Schools, 1853–4. Blackwood, Edinburgh. *Experience on the Profits of Boys' Labour in the School Garden:* (1.) How to improve the condition of the Agricultural Labourer. A self-supporting system, by which boys may be trained in arts of industry, and at the same time receive a suitable education. By T. Batson, Esq., of Colley House, Exeter. Groombridge, 1851; (2.) On increasing the demand for Agricultural Labour. By C. W. Johnson, Esq. Ridgway, Piccadilly: (3.) Manual of Field Gardening in Sussex and Yorkshire. Printed and sold by T. Kemp, Huddersfield; (4.) Report and Rules of Reformatory School, Hardwicke. E. Power, Westgate Street, Gloucester.

Hare Rabbits: *Constant Reader.* Youell & Co., Great Yarmouth, advertised these.

Erratum.—For "floret," p. 582, col. c., lines 16 and 18 from bottom of leader, read "spikelet."

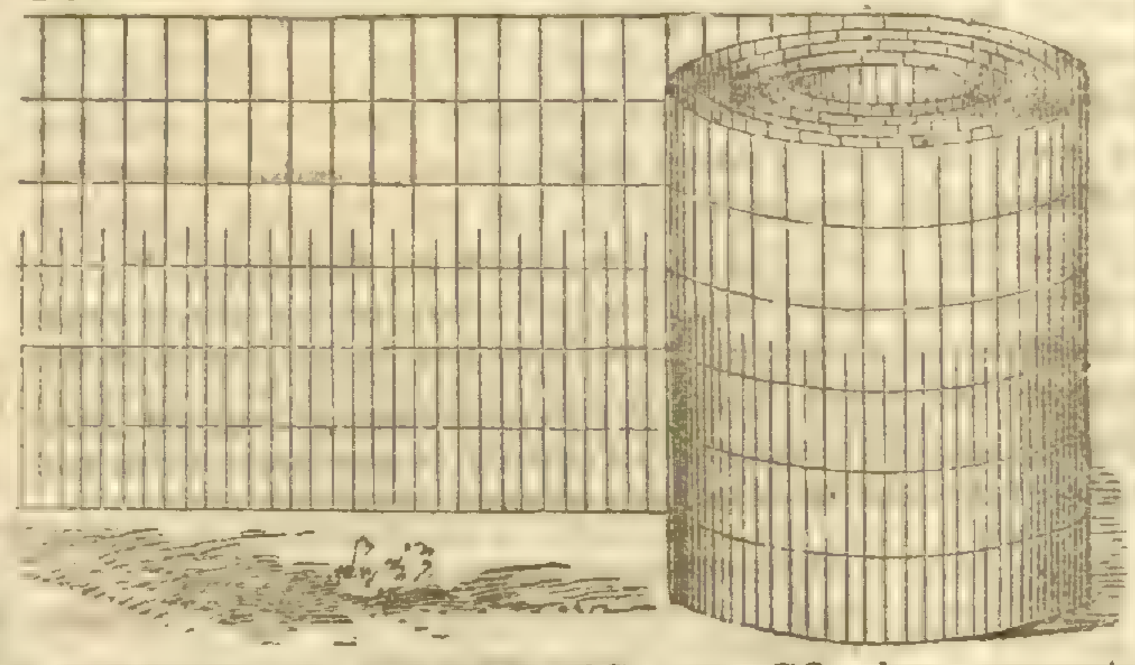
PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.



Messrs. Burgess and Key, as Mr. Parkes' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.
103, Newgate Street, and 52, Little Britain, London.

Budding's Lawn Mowers, with Samuelson's registered improvements, *lightening the draught fully one-half*, and enabling an unskilled labourer to make neat work; free from liability to choke, or get out of order. May be had of all ironmongers in town or country, or from the Works, Banbury; delivered free in a packing case to any station on the North-Western and Great Western Railways. Testimonials forwarded on application.—Britannia Works, Banbury.

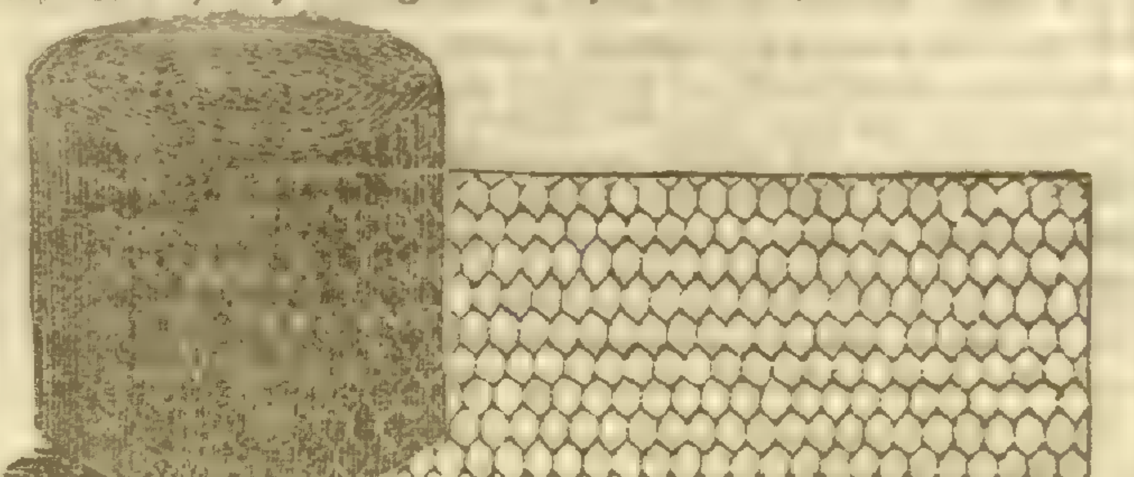
BY HER MAJESTY'S ROYAL LETTERS PATENT.



Messrs. B. Greening and Co. beg respectfully to call attention to their superior WIRE FENCES, of which the following are the principal varieties:—Portable Horse and Cattle Fencing (Economical variety of ditto), Portable Sheep and Lamb, Proof Fencing, Poultry Fence, Portable Hare and Rabbit-proof Fencing, Ornamental Garden Fences, Export varieties, Poultry and Chicken-proof Fencing. Light and cheap kinds of most of the above. Trainers for Peas, &c., Garden Bordering, Tree Protectors, Hen Houses, Poultry and other Aviaries, &c.

Messrs. B. G. & Co. being the sole patentees for the machinery for manufacturing these Fences, will forward engraved sheets of Patterns, Prize Lists, Prospectuses, &c., gratis, on application to their establishments, 1 and 3, Church Gates, or 2 and 2 A, Cateaton Street, Manchester.

H. J. Morton and Co., 2, Basinghall Buildings, Leeds.—GALVANISED GAME AND POULTRY NETTING, very strong and neat, never requires painting.

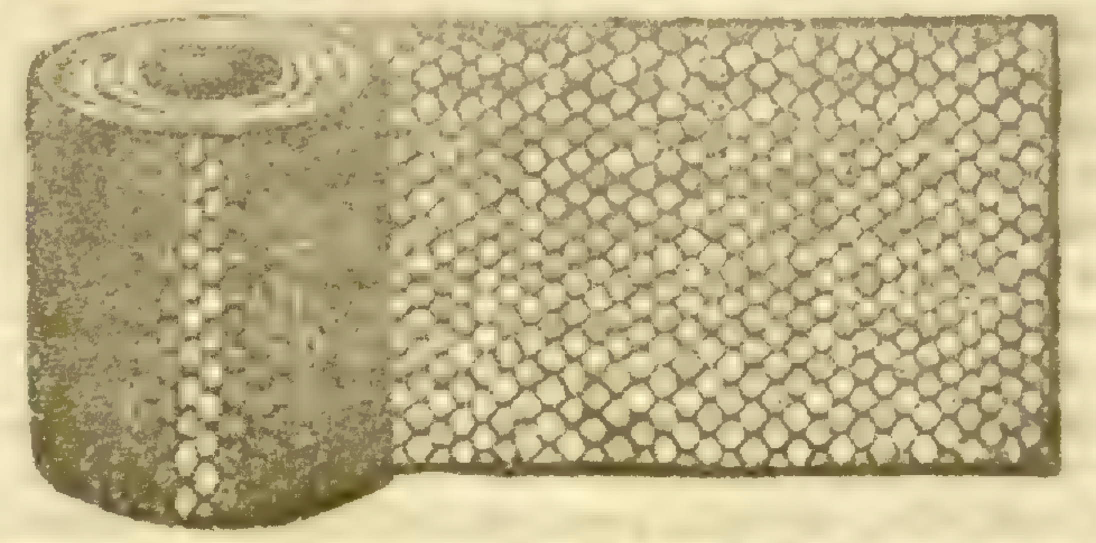


24 inches wide, 3-inch mesh, 4½*d.*, 6*d.*, and 8½*d.* per yard.
24 inches wide, 2-inch mesh, 7*d.*, 9½*d.*, and 1*s.* per yard.

GALVANISED IRON SPOUTING, for Dwellings, Cottages, Farm Buildings, &c., never requires painting.

Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalte Roofing Felt, &c.

Galvanised Wire Game Netting.— 7*d.* per Yard, 2 Feet Wide.



	Galvanised.	Japanned iron.
2-inch mesh, light, 24 inches wide ...	7*d.* per yd.	5*d.* per yd.
2-inch " strong " ...	9 "	6½ "
2-inch " extra strong " ...	12 "	9 "
1½-inch " light " ...	8 "	6 "
1½-inch " strong " ...	10 "	8 "
1½-inch " extra strong " ...	1 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasantries, 3*d.* per square foot. Patterns forwarded post free.

Manufactured by Barnard & Bishop, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

Edward Beck manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

Priced lists of plant tubs and boxes forwarded on application.

John Warner and Sons, Crescent, Jewin Street, London.
GALVANISED IRON TUB GARDEN ENGINE,
With Warner's Registered Spreader

Is strongly recommended for durability and low price, viz., 2*l.* 19*s.*, to hold 10 gallons.

Larger sizes made either in wood or iron. May be obtained of any Ironmonger or Plumber in town or country, or of the Patentees and Manufacturers, as also Machinery of all kinds for raising Water from any depth to any height by Steam, Horse, or Manual Power. Syringes of various constructions and sizes from 6s. upwards. An extensive assortment kept.

Warner's Patent Farm and Cottage Pumps.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

	£ s. d.
Patent Pump	1 18 0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing	[illegible]

Larger sizes if required.

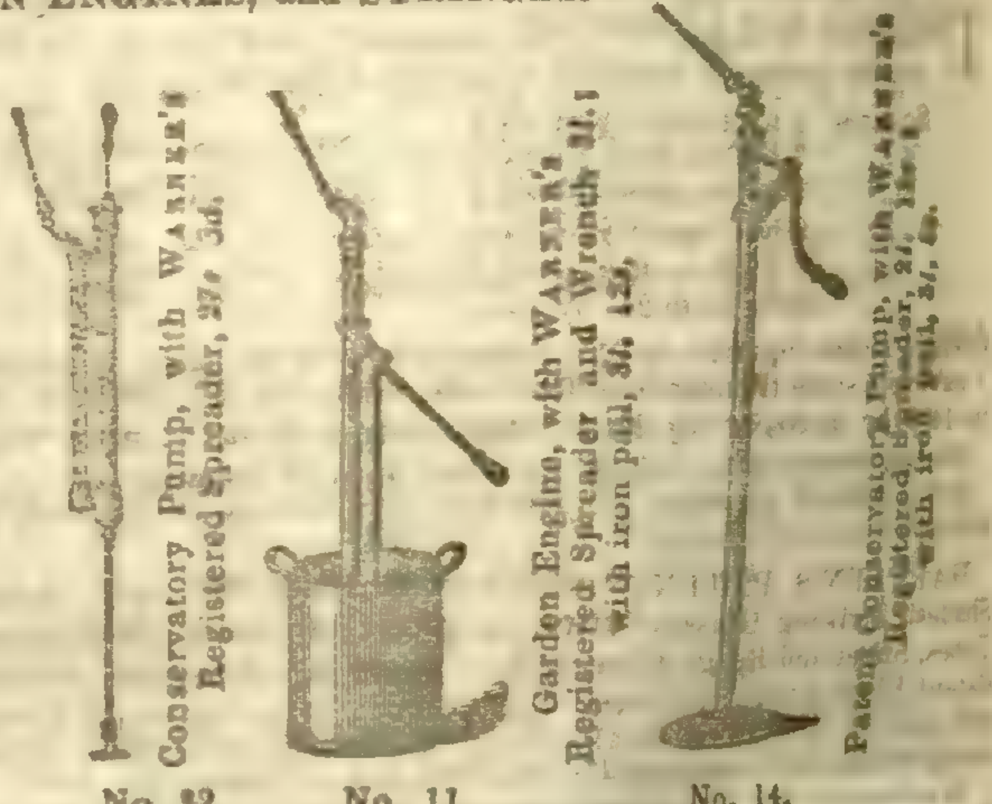
The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,
8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water; Fire Engines, &c.

John Warner and Sons, 8, Jewin Crescent, London, Manufacturers of FIRE ENGINES, PUMPS, GARDEN ENGINES, and SYRINGES.



Conservatory Pump, with Warner's Registered Spreader, 27*s.* 3*d.*
No. 32.

Garden Engine, with Warner's Registered Spreader and Wrench, 3*l.*; with iron pail, 3*l.* 12*s.*
No. 11.

Patent Conservatory Pump, with Warner's Registered Spreader, 2*l.* [illegible]; with iron pail, 3*l.* [illegible]
No. 14.

Brass Syringes, 9*s.* to 18*s.*

All articles of John Warner & Sons' manufacture may be obtained of any Ironmonger or Plumber in town or country, at the advertised prices.

John Warner & Sons having been practical Horticulturists for many years, know exactly the requirements of both Amateurs and Gardeners. A gardener with a properly constructed pump will get through as much work in five minutes as he could with any Syringe in a quarter of an hour, and with half the labour to himself. Syringes are economical only for small houses.

No establishment offers such a variety of effective machines for hydraulic purposes, whether to supply Gardens, Hothouses, Cottages, Farms, Mansions, or Boards of Health, with every requisite connected with the conveyance and distribution of liquids.

Fountains suitable for Conservatories, Lawns, &c.
Sheets of Engravings sent on application.

Wedlake's Oat-Crushers, Chaff-Cutters, Carts, Harrows Ploughs, and Flour Mills.—118, Fenchurch Street, London.

IMPORTANT TO

SHEEP, LAMBS, HORSES, AND CATTLE,
Can be Dressed with

Long's Non-Poisonous Sheep & Cattle Dressing Compositions, without any possibility of danger or injury resulting from the application. These Compositions are admitted by all who have fairly tested them to be the most effective Sheep Dressings ever brought before the agricultural public; and as they are non-poisonous, and do not stain or discolour the Wool, they are gradually superseding the use of all Dipping and other Sheep-dressing preparations, composed of such deadly poisons as Arsenic or Mercury.

It is a fact now thoroughly established, that Long's Non-Poisonous Sheep Dressings, if liberally and judiciously applied in the dressing of Sheep and Lambs, will—in their consequent effect in removing Disease, destroying Vermin, and keeping the flock in condition—thus promoting increased growth both of Mutton and Wool—as amply repay flock owners for first outlay as artificial manures when applied to land. They are the only Sheep Dressings also, which, from the fact of their containing no poison, can be beneficially and safely applied to Sheep and Lambs at any age and at any season of the year.

Pamphlets containing full directions for use, and copies of the strongest Testimonials ever accorded to a manufacturer, signed by leading and practical Stock Farmers, residing in all parts of the United Kingdom, together with the names of all Country Agents authorised to vend Long's Patent Sheep and Cattle dressing Compositions, may be obtained gratuitously on application of any advertised country Agent; or by post, sent free of Barry Brothers, Agents for Joseph Long, Meriton's Wharf, and Shad Thames, London.

TO FLORISTS AND OTHERS.

J. JONES, Iron Merchant, has always a great variety of CONICAL and SADDLE BOILERS in STOCK; also Fire and Furnace Bars, Ornamental and Plain Supply Cisterns, Double Doors and Frames, Furnace Grates, Soot Doors, Hot Water Pipes, Elbows, Tees, Syphons, Throttle Valves, Step Cocks, Flange and Socket Elbows, &c.; also Trough Pipes. Drawings and prices of the above, on application to J. Jones, Iron Bridge Wharf, No. 6, Bankside, London, near the Southwark Iron Bridge.

STEPHENSON and PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

BY ROYAL LETTERS PATENT.

THE COSMOPOLITAN GLASS COMPANY, 298, Oxford Street, London.—The Managers beg to inform the Nobility and Gentry, Farmers, Gardeners, &c., that their new List of Prices may be had free on application at the Company's Depôt.

HARTLEY'S PATENT ROUGH PLATE, for Roofing Conservatories, Halls, and Public Buildings.

PLATE, CROWN, and SHEET WINDOW GLASS.

Coloured and Ornamental Glass of every description.

Glass Milk Pans, Pails, Tests, and Measures; Cream Pots and Syphons; Churns, Butter Tests and Slabs; Tiles and Slates; Bee Hives, &c.

Moore's Patent Ventilator and Lockhead's Patent Perforated Glass, for Dairies and Greenhouses.

Aquavivariums, Fern Shades, Propagating Glasses, Fruit Protectors, Preserve Jars, Cucumber Tubes, Hand Lights, Flower Vases, Labels, &c., and all kinds of Agricultural, Horticultural, Architectural, Domestic, Scientific, and Ornamental Glass, British and Foreign, at the lowest prices.

GLASS FOR CONSERVATORIES, GREENHOUSES, DWELLINGS, ETC.

Established more than One Hundred Years.

THOMAS MILLINGTON requests attention to his present prices of SHEET GLASS in 100 feet boxes.

Squares	6 by 4 and 6½ by 4½; 7 by 5 and 7½ by 5½; 8 by 6 and 8½ by 6½	13 6
„	9 by 7 and 9½ by 7½; 10 by 8 to 12½ by 9½	16 3
„	12 by 10 to 24 by 14	19 0

Orchard House Squares on Mr. Rivers's approved plan, to whom I have sold some thousands of feet:—20 inches by 12, 20 by 13, 20 by 14, 20 by 15, 20½ by 12½, 20½ by 13½, 20½ by 14½, at 19s. per 100 ft.

200-feet cases at 42s., and 300 feet case 63s., in large sheets.

Boxes charged 1s. extra per 100 feet, and the same allowed if returned free of all charge.

HARTLEY'S PATENT ROUGH PLATE GLASS, Fern Shades, Striking Glasses, Milk-pans, Bee Glasses, Cucumber Tubes, Sheet and Rough Plate Glass Tiles, Wasp Traps; Plate, Patent Plate, Crown and Sheet Window Glass, in every thickness and quality, and Ornamental Glass, plain and coloured; pure white Shades for Ornaments, Crystal Glass for Pictures.

Warehouse, 87, Bishopsgate Street Without—same side as Eastern Counties Railway.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

HETLEY and CO. are supplying 16-oz. Sheet Glass of British Manufacture, packed in boxes, containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

Sizes.—Inches.	Inches.	Per foot.	Per 100 feet
	Under 6 by 4 at	1½d. is	£0 12 6
From 6 by 4	„ 7 „ 5 „	2d. „	0 16 8
7 „ 5	„ 8 „ 6 „	2¼d. „	0 18 9
8 „ 6	„ 10 „ 8 „	2½d. „	1 0 10
10 „ 8	„ 12 „ 9 „	2¾d. „	1 2 11

Larger sizes, not exceeding 40 inches long.

16 oz. from 3d. to 3½d. per square foot, according to size.
21 oz. „ 3½d. to 5d. „ „ „
26 oz. „ 3½d. to 7½d. „ „ „

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern, either in sheet or Rough Plate Glass.

Propagating Glasses, Beehive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in Glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the excise duty, reduced one-half. List of Prices and Estimates forwarded on application to James Hetley & Co., 35, Soho Square, London.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

JAMES PHILLIPS and Co. have the pleasure to hand their present prices of Glass for Cash:—

	SHEET SQUARES. In Boxes of 100 feet.	CROWN SQUARES. In Boxes of 100 feet.
Under 6 by 4	£0 12s. 6d.	8s 6d.
6 by 4, and 6½ by 4½	0 13 0	12 6
7 „ 5, — 7½ „ 5½; 8 „ 6, — 8½ „ 6½	0 15 0	14 0
9 „ 7, — 10 „ 8, 12 by 9, 12 by 10, 14 by 10	1 0 0	

Larger Sizes, not exceeding 40 inches long.

16 oz. from 3d. to 3½d. per square foot, according to size.
21 oz. „ 4½d. to 5d. „ „ „
26 oz. „ 6d. to 7½d. „ „ „

SHEET GLASS OF ENGLISH MANUFACTURE FOR ORCHARD HOUSES, the same quality as we supply to Mr. Rivers, and of various dimensions, always on hand.

London Agents for the Sale of HARTLEY'S PATENT ROUGH PLATE GLASS.

Glass Tiles, ¼ of an inch thick, packed in cases, containing 50, at 1l. 17s. 6d. per case. Packages 2s. each extra, but allowed for when returned.

Glass Milk Pans, 21s. per dozen; Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoys' Milk Syphons, Wasp Traps; Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the trade.

Horticultural Glass Warehouse, 116, Bishopsgate Street Without, London.

J. TYLOR and SON'S REGISTERED GARDEN SYRINGE.—Small size, for Amateur use, **21s.** each; Large size, for Gardeners' use, **25s.** each.

By a simple arrangement this Syringe is rendered more effective than any portable Conservatory or Garden Pump ever offered to the public. It is equally adapted for Garden or Conservatory use, and is capable of discharging twice as much water in a given time as any other Syringe now in use. The arrangement consists in attaching a small flexible suction tube to the barrel of the Syringe, through which it is filled with water at every discharge of the previous contents. By this means the Syringe is always charged, and the pull-up stroke of the piston rendered perfectly easy, it having, indeed, no work to do, the barrel being previously full of water. Being thus made self-supplying, a great saving of labour is effected; and the necessity of stooping to fill the Syringe at every discharge being done away with, the direction of the water can be maintained for any length of time. It is perfectly cleanly in its action, as it is not possible for any water to get on the outside of the barrel, which is a well-known inconvenience attendant on the use of every other Syringe. Its construction is perfectly simple, and cannot get out of order; the ground-in ball valves and fittings used for filling all other patent Syringes being entirely superseded. To be had of any respectable Ironmonger or Seedsman in town or country.

J. Tylor & Sons, Manufacturers of Horticultural Apparatus, Warwick Lane, Newgate Street, London.

N.B. These prices do not include carriage, package, or expenses of delivery in the country.

THE BEST SHOW of IRON BEDSTEADS in the Kingdom is William S. Burton's.— He has two very Large Rooms, which are devoted to the exclusive show of Iron and Brass Bedsteads and Children's Cots, with appropriate Bedding and Mattresses. Common Iron Bedsteads from 17s.; Portable Folding Bedsteads from 12s. 6d.; Patent Iron Bedsteads, fitted with dovetail joints and patent sacking, from 21s.; and Cots from 21s. each; handsome Ornamental Iron and Brass Bedsteads, in great variety, from 2l. 19s. to 13l. 13s.

PAPIER MACHE and IRON TEA-TRAYS.—An assortment of Tea-Trays and Waiters wholly unprecedented, whether as to extent, variety, or novelty.

New oval Papier Maché Trays, per set of three	from 20s. to 10 guineas.
Ditto, Iron ditto	from 13s. to 4 guineas.
Convex shape, ditto	from 7s. 6d.

Round and Gothic Waiters, Cake and Bread Baskets equally low.

BATHS AND TOILETTE WARE.—William S. Burton has ONE LARGE SHOW ROOM devoted exclusively to the DISPLAY of BATHS and TOILETTE WARE. The stock of each is at once the largest, newest, and most varied ever submitted to the public, and marked at prices proportionate with those that have tended to make his establishment the most distinguished in this country. Portable Showers, 7s. 6d.; Pillar Showers, 3l. to 5l.; Nursery, 13s. 6d. to 32s.; Sponging, 15s. to 32s.; Hip, 14s. to 31s. 6d. A large assortment of Gas Furnace, Hot and Cold Plunge, Vapour, and Camp Shower Baths. Toilette Ware in great variety, from 15s. 6d. to 45s. the Set of Three.

William S. Burton has TEN LARGE SHOW ROOMS (all communicating), exclusive of the shop, devoted solely to the show of GENERAL FURNISHING IRONMONGERY (including Cutlery, Nickel Silver, Plated, and Japanned Wares), Iron and Brass Bedsteads, so arranged and classified that purchasers may easily and at once make their selections.

Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of.

39, OXFORD STREET (corner of Newman Street); Nos. 1, 2, and 3, NEWMAN STREET; and 4 and 5, PERRY'S PLACE.

IF YOU WANT LUXURIANT HAIR, WHISKERS, &c., use DR. DE CASTRO'S LIXIVIAL EXTRACT, the only Compound for the Hair ever issued by a Physician, and approved of by the Faculty. In hundreds of cases it has succeeded where everything else has failed in restoring the Hair, however it may have been lost, preventing its falling off, strengthening it when weak, neutralising scurf and dandriff, and checking greyness. For the speedy production of Eyebrows, Whiskers, Moustachios, &c., its operation is positively certain. Sufficient for two months' use sent free by post on receipt of 24 penny post stamps, by Dr. De Castro, Hornsey, Middlesex. Persons who have been deceived by the various oils, pomades, &c., now advertised, are earnestly invited to try this Extract. A Quarterly Report of Cures, Testimonials, &c., sent, post free, for a stamped and directed envelope.

BLAIR'S GOUT and RHEUMATIC PILLS. Price 1s. 1½d. and 2s. 9d. per box.—Mr. William Courtney, of Barton, Stacey, Hants, says:—"I had resort to your Pills, and within two hours I was quite easy. The use of these Pills ought really to be known all over the world." Among the many discoveries, none have conferred such a boon upon suffering humanity as that of Blair's Gout and Rheumatic Pills, they require neither attention nor confinement, and are certain to prevent the disease attacking any vital part. Sold by all medicine vendors. Observe that "Thomas Prout, 229, Strand, London," is impressed upon the Government stamp

TO BE DISPOSED OF, Six CYGNETS in very fine condition, and of good size.—Apply to H. T. Humphreys, Kilmacow, Waterford.

TO JOBBING GARDENERS, FLORISTS, &c.

TO BE SOLD, a BUSINESS, established 30 years, in the fast-improving neighbourhood of New Brompton, consisting of about half an acre, with Stock, two Greenhouses, Pits, and Dwelling House, unexpired lease, rent 24l. per annum, to be taken either by valuation or agreement.—Apply to Mr. W. Kemp, News Agent, Fulham Road, New Brompton.

WANTED, to Rent on Lease, Eight or Nine Acres of MARKET GARDEN GROUND, with Dwelling House, Sheds, &c. (small quantity of Glass no objection), within 8 or 9 miles of London.—Address, with particulars, A. B., Post-office, Ealing, Middlesex.

KENT.—NEAR A GOOD MARKET TOWN.

TO BE LET, for a term of 11½ years, a light LAND FARM, of nearly 180 Acres, in a good state of cultivation, with a modern Residence and Homestead.—For further particulars and terms, address to E. Kemmock, Kingston-on-Thames.

FARM AT HARROW AND STANMORE, MIDDLESEX.

TO BE LET ON LEASE, from Michaelmas next, the KENTON LANE FARM, containing about 330 acres of excellent Pasture and Arable Land, with a highly respectable Farm Residence, convenient Farm Buildings, and Cottages. One mile from the Harrow station.

Tenders to be sent to Mr. William Wix, Clerk, St. Bartholomew's Hospital, on or before the 8th September, from whom further particulars may be obtained; or from Mr. Tatham, Land Surveyor, 27, Bedford Place, Russell Square, London. References will be required.

William Wix, Clerk, Bartholomew's Hospital, Aug. 21.

MITCHAM, SURREY.

To Market Gardeners, Medical Herb-growers, and Others.

TO BE LET, with possession at Michaelmas next, a good mixed soil FARM, containing 122 acres, admirably adapted for either of the above purposes, with Residence and Homestead attached, only 8 miles from London, and 3 from the market town of Croydon.—May be viewed by permission of the tenant, and particulars had, on application to Messrs. Crawter, Land Agents, Surveyors, &c., 5, Bedford Row, London.

HAMPSHIRE.

TO BE LET, for a Term of seven or 13 years, a GENTLEMAN'S RESIDENCE, containing 11 Bedrooms and three Sitting Rooms, Bath Room, &c. with 105 Acres of Arable Land, 72 of Park and Meadow, and 150 of Woods and Plantation. Excellent shooting. The whole is in superior order, and has all modern improvements, with the great advantage of immediate proximity to a railway station, and within 1½ hour's journey of London.—Apply to Mr. Charles Spriggs, Auctioneer, 18, Brook Street, Grosvenor Square, London.

TO NURSERYMEN AND OTHERS.

TO BE LET, situate at Epsom, in Surrey, NURSERY GROUND, &c., late in the occupation of Mr. C. Young.—For particulars, inquire of Mrs. Wilkins, 60, Queen's Row, Walworth, Surrey.

A MOST EXCELLENT LIVING.

TO BE LET IMMEDIATELY, as the present occupier is retiring from business, a MILK BUSINESS, established 35 years, situate near a good Common for Sheep and Cattle, with free run, three miles from the Crystal Palace.—Letters addressed to Mr. Thomas Stone, Common Side Mitcham, Surrey.

TO BE SOLD, GREENHOUSES — a bargain. One 12 feet long and 8 feet wide, 15l.; and one 21 feet long and 12 feet wide, 25l. Plans and particulars sent on receipt of a postage stamp, to Mr. Smith, Builder, &c., 1, Lower Street, Islington Green. Greenhouses and Garden Lights, Window Sashes, Doors, &c, from 6d. per foot. Country orders forwarded.

SILVER SAND.

TO BE SOLD CHEAP, SILVER SAND, first or second quality.—Applications by letter to J. C. Spence, 32, Ludgate Hill, London, will be promptly attended to.

TO NURSERYMEN AND GARDENERS.

REIGATE SILVER SAND, 11s. per ton; ditto, delivered 5 miles, 16s. per ton. Loam and Peat at moderate prices.—Kennard Brothers, Swan Place, Old Kent Road, London.

TO BE SOLD, a few Choice WHITE DORKINGS, double rose combed, and five clawed: two pullets and cockerel for a guinea.—Apply to H. Pickett, Police Station, Egham, Surrey.

TO BE SOLD, BUFF COCHIN CHICKENS, from first class Prize Birds. Brahma Pootra Chickens, from imported American Prize Birds, and Spanish Chickens. Also some very good one-year-old Birds of the above descriptions. Wire, Game, and Poultry Netting, Poultry Hurdles, Hen-houses, Chicken Coops, Flower Stands, and Trainers, Garden Arches, and every kind of Wire Work, useful and ornamental.—T. H. Fox's, City of London Wire Works, 44, Skinner Street, and 6 & 8, Snow Hill. Illustrated Catalogues forwarded post free.

LIVING PLANTS AND SEEDS FROM ANGOLA.

MR. S. STEVENS, Natural History Agent, &c., 24, Bloomsbury Street, London, begs to announce that he has lately had consigned to him FOR SALE, from the well-known botanist Dr. Wellwitsch, a small parcel of LIVING PLANTS, consisting of Terrestrial Orchids, Euphorbias, Aloes, Urginias, Crinums, Amaryllis, &c., in all 13 varieties, mostly in good order, and supposed to be new, which he offers for sale at 2l. 10s. the set. Latin descriptions accompany each plant.

Also a COLLECTION of SEEDS in fine state, consisting of about 110 varieties, with Latin descriptions to each packet; many of them are believed to be quite new to this country. They have been made into 10 sets, price 5l. the set.

TO GENTLEMEN, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE and MORRIS beg to announce that they have received instructions from the administrators of the late Mr. W. Watts, of Stoke Newington, to sell by Auction, early in OCTOBER next, the whole of his unrivalled NURSERY STOCK, Greenhouses, and sundry effects. Further particulars will appear in future advertisements.

N.B. The unexpired Lease of the BARRETT GROVE GROUND, of 4 acres, will be submitted to public competition at the same time, unless previously disposed of by private contract.—For particulars apply to Mr. Mackay, Stoke Newington, or of the Auctioneers, American Nursery, Leytonstone, Essex.

CLAPHAM.

To Noblemen, Gentlemen, Exhibitors, Nurserymen, & Others.

MESSRS. PROTHEROE and MORRIS are instructed by the administrators of the late Mr. Joseph Fairbairn to submit to an unreserved Sale by Auction, on the premises, the Nurseries, Clapham, near London, on TUESDAY, Sept. 19th, 1854, and following day, at 11 o'clock each day, the valuable stock of Choice GREENHOUSE and STOVE PLANTS, which is particularly worthy the attention of noblemen and gentlemen enriching their collections, as well as the trade, from its excellence, comprising about 4000 fine Ericas, of all the leading kinds, amongst which are magnificent specimens of Massoni, Massoni major, Tricolor elegans, Cavendishi, Templea, Mcnabiana, Douglassi, Easonia purpurea, Austiniana, Vestita coccinea, Aitonia Turgida, Princeps Templea, Murrayana, Favoides elegans, Ferruginea, Ventricosas, sorts, &c.; also 500 choice Azalea indica, 1000 double Camellias, 1000 Epacris, 500 Aphelexis, Mitraria coccinea, Acacia, Chorozemas, Dillwynia, Diosma, Lilium lancifolium, &c. &c.—May be viewed two days prior to the Sale. Catalogues to be had (6d. each, returnable to purchasers) on the Premises; at the Shop, High Street, Clapham; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex. N.B.—The Lease of the old-established Seed Shop and Nursery to be Sold; the Stock to be taken by valuation or agreement. For particulars, apply to the administrators; or Mr. James Fairbairn, on the premises

MR. MACAULAY'S ESSAYS, People's Edition.—Now complete, in 2 vols. crown 8vo., price 4s. each, cloth; or in 7 Parts, price 1s. each.

London: Longman, Brown, Green, and Longmans.

Just published, New and Improved Edition, price 1s.,

THE CURABILITY OF CONSUMPTION. Being a Series of Papers, presenting the most prominent and important Practical Points in the Treatment of the Disease. By F. H. Ramadge, M.D., Fellow of the College of Physicians, late Senior Physician to the Royal Infirmary for Diseases of the hest, &c. Also, by the same Author, price 10s. 6d.,

A TREATISE on ASTHMA and DISEASES of the HEART.

London: Longman, Brown, Green, and Longmans.

NEW EDITION OF COL. HAWKER'S INSTRUCTIONS TO YOUNG SPORTSMEN.

In the press, the Tenth Edition, corrected, enlarged, and improved, with numerous Plates and Woodcuts,

INSTRUCTIONS TO YOUNG SPORTSMEN IN ALL THAT RELATES TO GUNS AND SHOOTING. By the late Lieutenant-Colonel P. Hawker. Revised and corrected by his Son.

. The tenth edition of this work having been delayed by the death of the author, the publishers have the satisfaction of stating that his son having carefully revised the work, it is now nearly ready for publication, with all the new improvements and valuable information collected and in part prepared for the press by Colonel Hawker, up to the time of his decease.

London: Longman, Brown, Green, & Longmans.

This day, in fcap. cloth, price 8s.,

MOUBRAY'S TREATISE ON DOMESTIC AND ORNAMENTAL POULTRY. New Edition, revised and greatly enlarged by L. A. Meall, with the Diseases of Poultry, by Dr. Horner. With coloured Illustrations.

London: Arthur Hall, Virtue & Co., 25, Paternoster Row.

Now ready, Part II. of

THE FERNS OF GREAT BRITAIN, illustrated by John E. Sowerby; descriptions by C. Johnson, Esq. To contain about 46 plates, and to be completed in Eight Monthly Parts, full coloured, at 3s., partly coloured at 1s. 6d. per part. To be had through all Booksellers; and of the Proprietor, John E. Sowerby, 3, Mead Place, Lambeth.

Now ready, a new edition, greatly enlarged, price 1s. plain, or 1s. 6d. coloured, cloth,

PROFITABLE POULTRY: Their Management in Health and Disease. By W. B. Tegetmeier.

"There is more good sense and practical knowledge in this modest shilling's worth than in many a more voluminous treatise: and it is only necessary to state that the illustrations are by Harrison Weir."—*Fraser's Magazine*, December, 1853.

London: Darton & Co., Holborn Hill.

In a few days will be published, 8vo, illustrated, price 10s. 6d.,

SCENERY, SCIENCE, AND ART: Being Extracts from the Note Book of a Geologist and Mining Engineer. By Professor D. T. Ansted, M.A., F.R.S., F.G.S., F.R.G.S., F.Z.S., F.C.P.S., &c., late Fellow of Jesus College, Cambridge, Honorary Fellow of King's College, London.

London: John Van Voorst, 1, Paternoster Row.

Just published, 4to, cloth, price 24s.,

ENCYCLOPÆDIA BRITANNICA.—Eighth Edition, Volume VI. Illustrated by Maps and numerous Engravings on Wood and Steel.

Principal Contents.

Bishop Butler, by Professor Henry Rogers—Calvin and Channing, by Rev. W. L. Alexander, D.D.—Thomas Campbell, by Professor W. E. Aytoun—Canada, by J. B. Brown—Canary Islands, by J. Y. Johnson, Madeira—Cannon, by Lieut.-Colonel Portlock, Woolwich — Ceylon, by John Capper — Thomas Chalmers, by Rev. W. Hanna, LL.D.—Chemistry, by Professor W. Gregory—China, by Sir John Barrow—Chili, by C. B. Black, Valparaiso—Chivalry, by Sir Walter Scott, Bart.—Chloroform, by Professor J. Y. Simpson—Chronology, by Thomas Galloway, F.R.S.—Cavan and Clare, by Henry Senior, Belfast—Climate, by Sir John Leslie, revised by Dr. Traill.

Edinburgh: A. & C. Black; London: Simpkin & Co.

GRAIN MILLS.

THE PRACTICAL MECHANIC'S JOURNAL, Part 78, September, 1s., illustrated by two large Plate Engravings of Harman's Direct-Acting Screw Engines, and 30 woodcuts. Articles upon Boiler Explosions—Education—The Law as to Patents in Saxony—Harman's Direct-Acting Screw Engines—Notes on Lime—Submarine Electric Telegraph between Europe and America—American Notes, by our Own Correspondent—The Crystal Palace. Specifications of New Patents: Printing Surfaces, Graham; Railway Wheels, Morrison; Railway Breaks, Johnson; Grain Mills, Johnson; Pistons, Hinchcliffe; Zincographic Printing Machine, Reid; Dyeing, Johnson; Safety Floating Dress, Johnson; Foundations of Houses, Bird; Steam-heated Clay Still, Lister; Railway and Alarm Signals, Norton. Reviews of Books, Proceedings of Societies, Monthly Notes, Law Reports in Patents and Designs, Lists of all New Patents.

London: George Hebert, 88, Cheapside; Editor's Offices (Offices for Patents and Designs), 47, Lincoln's Inn Fields, London, and 166, Buchanan Street, Glasgow.

DEAFNESS AND NOISES IN THE HEAD.

Certain Method of Self-cure—Extraordinary Discovery, Instant Relief.

Just published, sent free by post on receipt of 7 postage stamps.

A STOP TO EMPIRICISM and Extraordinary Fees. Sufferers extremely deaf can permanently cure themselves, without pain or use of any instrument, by means of this Book. Thousands have been restored to perfect hearing, and for ever rescued from the snares of the numerous dangerous Pretenders of the present day. It is published by Dr. F. R. Hoghton, Member of the London Royal College of Surgeons, May 2d, 1845, L.A.C., April 30th, 1846, at the Institution for the cure of Deafness, 9, Suffolk Place, Pall Mall, London, where all letters are to be addressed. Consultations Free from 11 till 4 daily.

THE FLORIST, FRUITIST, and GARDEN MISCELLANY.

By Charles Turner and John Spencer.

Price One Shilling.

The number for September, just out, contains Coloured Illustrations of five beautiful New Pelargoniums [illegible] Foster Beck, and Hoyle, and five woodcuts.

The papers consist of—Remarks on Raising Seedling Pelargoniums, by Mr. Beck; Walls and their Overcoats; the Pink, a critique on new varieties; Pomological Society; Descriptive List of Hardy Conifers, with a page woodcut of Taxodium sempervirens, representing the fine specimen of this tree at Dropmore; Lists of Pelargoniums; Reports of the National Carnation and Picotee Society, held at Derby; and of the Grand Exhibition of Hollyhocks held in London (Surrey Gardens), with full descriptions of the new flowers; Tottenham Park, Wilts, the residence of the Marquis of Aylesbury; the New Strawberries of the season, with woodcuts of the more important of them, and which are now being sent out; Hints on Grape Growing; Notes from Kew; and a full Calendar of Operations for the Month.

London: Chapman & Hall, 193, Piccadilly.

Will be published on November 1st,

THE SCOTTISH AGRICULTURISTS' ALMANAC, and YEAR-BOOK of PROGRESS for 1855. Advertisements intended for insertion should be sent to Mr. Lockhart Morton, 7, Pitt Street, Edinburgh, without delay The circulation last year was 4000 copies.

Third Edition, considerably enlarged, price 5s. 6d.,

RURAL CHEMISTRY.

By Edward Solly, F.R.S., F.L.S., F.G.S.,

Honorary Member of the Royal Agricultural Society of England, Professor of Chemistry to the Horticultural Society of London, Lecturer on Chemistry in the Hon E. I. Co.'s Military Seminary at Addiscombe, &c., &c.

J. Matthews, 5, Upper Wellington Street, Covent Garden.

Price 5s. 6d. cloth,

SECOND EDITION, REVISED AND ENLARGED,

ORNAMENTAL AND DOMESTIC POULTRY;

Their History and Management.

By the Rev. EDMUND SAUL DIXON, M.A.,

Rector of Intwood with Keswick.

J. Matthews, 5, Upper Wellington Street, Covent Garden London.

PRICE FOURPENCE OF ANY BOOKSELLER.

CONTENTS of the NUMBER for SATURDAY LAST, AUGUST 26, OF

THE ATHENÆUM.

JOURNAL OF ENGLISH AND FOREIGN LITERATURE, SCIENCE, AND THE FINE ARTS.

Twenty-four large Quarto Pages.

Reviews of, with Extracts from—

The Private Journal and Literary Remains of John Byrom. By Dr. Parkinson.

Fashion and Famine; or Contrasts in Society. By Mrs. Ann S. Stephens.

The Poetical Works of Gray, Parnell, Collins, Green, and Warton. By the Rev. R. A. Willmott.

Reminiscences of the University, Town, and County of Cambridge. By the late Henry Gunning.

Sandwich Island Notes. By a Häolé.

Memoirs of Marshal-General Soult, Duke of Dalmatia. Published by his Son.

Minor Minstrels, containing Alpine Lyrics, Heart Throbbings. By E. King.—The Siege of Silistria. By W. T. Thornton.—Biblical Sketches and Hymns. By A. Neale.—Morning, and other Poems. By R. Harris.

With Shorter Notices of—

On the Material Aids of Education. By Dr. Whewell.

Lectures on the Ecclesiastical History of the First & Second Centuries. By F. D. Maurice.

The Brief Career; or, The Jew's Daughter. By Capt. Horrocks.

Passing Clouds; a Tale of Florence.

History of Worksop. By E. Eddison.

Mental Exercises of a Working Man. By D. M'Burnie.

Gold; a Tale for the Times.

New Editions, &c.

Original.—Cardinal Wiseman's Lecture on Education.

Foreign Correspondence.—Lindau, Lake of Constance—Modern Buildings and Monuments in Munich.

Weekly Gossip.—Public Documents—Antiquarian Discoveries—Campbell's Life of Mrs. Siddons—Popular Education—Longitude of Kuka—Photographers in the East—Publications bearing Newspaper Stamps—Second Sale of Mr. Pickering's Books—The Becker Collection of Coins—Income of the Dean and Chapter of Westminster—Paris Exposition—Industrial Exhibitions in France.

Fine Arts.—Modern Sculpture at Sydenham.

Fine-Art Gossip.—Wellington Statue for Brecon—Statues for the Edinburgh Court of Session.

Music and the Drama.—The Minor Theatres—Marylebone Theatre ('Hamlet')—Royal Academy of Music.

Musical and Dramatic Gossip.—Sadler's Wells Theatre—Obituary: Mdlle. Juliette Dillon—Drama at Munich.

Miscellanea.—Removal of Ink from Paper—Compulsory Education—Ventilation of Mines—Cast Marble.

The Athenæum may be ordered of any Bookseller.

ON MARRIAGE.

Just published (to be had free, by enclosing 1s. or Twelve Postage Stamps, to Mr. Watson, Clerical Agent, Robert Street, Adelphi, London).

MATRIMONY.—A Pamphlet on Matrimonial Alliances, which merits the attention of those who wish to settle honourably in life. By a Clergyman.

HOSE PIPING.—Great Reduction in Price.

PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense pressure, and much more than leather, vulcanised rubber, or any other hose, and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented inventions, the cost of manufacturing it is now reduced at least 50 per cent., which advantage is offered to the public.

BURGESS and KEY, 103, Newgate Street, and 52, Little Britain, who, on application, will forward wholesale and retail prices.

PRIZE MEDAL—1851.

AT A VERY ECONOMICAL RATE.

SAMUEL CUNDY, Mason and Builder, Pimlico Marble and Stone Works, Belgrave Wharf, Lower Belgrave Place Pimlico, London.

Marble Chimney-pieces manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price. A good Marble Chimney-piece for 40s. Marble Work in all its branches at a remarkably cheap rate for Halls, Dairies, Larders, &c Circulars sent on application.

N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank.

ENCAUSTIC TILE PAVEMENTS.

MAW and CO., Benthall Works, Broseley, Salop, Manufacturers of the Cloister Pavement of Mediæval Court, and "the successful Imitation of Opy's Alexandrine, in the beautiful Encaustic Tile Pavement of Cloisters of Byzantine Court," Crystal Palace (M. D. Wyatt, Esq., in Official Handbook), forward, without charge, Designs and Estimates, adapted to given dimensions, of Entrance Halls, Conservatories, Verandahs, &c., in every style.

Specimens at 11, Aldersgate Street, City.

MESSRS. J. WEEKS' NURSERY, King's Road, Chelsea.—A great alteration is being effected at this Establishment, where the various Horticultural buildings spread over nearly an acre of ground, and extending together to about 770 feet in length, covering an area of 20,000 feet, have hitherto been heated by seven boilers. These boilers worked efficiently and economically, but as great practice in every art leads to improvement, so in this case have the Messrs. Weeks found it desirable to replace these seven boilers by one. This one will heat every house and pit efficiently, either altogether or separately, according to pleasure. This alteration will effect a very important saving annually, as the one boiler will not consume more than two out of the seven boilers superseded, whilst the time and labour hitherto expended over the seven, will in future be confined to one. The necessary alterations for this important arrangement are now in progress, and will be completed within a fortnight, and the Nobility and Gentry interested in the principle of heating by Hot Water can here see it practically carried out, and have it thoroughly explained in all its details.

JACKSON'S PATENT PREPARATION for the PRESERVATION of POTATOES, SEEDS, &c.—This valuable discovery, for which letters patent have been obtained, is the successful result of 14 years' study and experiments in the preservation of vegetable matter. It imparts health and vigour to the Plants and Seeds subjected to its action, and effectually prevents the Potato Disease, the Smut in Wheat, Mildew and Rot, all Fungal Diseases, and the attacks of Insects and Vermin, and further recommends itself to the Farmer, the Planter, and the Public generally, by the extreme simplicity of the mode of its application.

It is sold by all Seedsmen and Chemists, in packets of one, two, three, and four pounds each, with instructions for its use; and parties requiring larger quantities for their own use or for exportation can be supplied on advantageous terms, by addressing Mr. Jackson, the Patentee, 18, Cannon Street, London Bridge; where the article is always on sale, and the fullest particulars and directions for its use can be obtained.

DEANE, DRAY, and CO., have a very large and superior stock of FRENCH MODERATOR LAMPS now on sale.—(Opening to the Monument), London Bridge.

Established A.D. 1700.

UMBRELLAS.

DAWSON'S PATENT.—If you require an Umbrella that is superior in every respect to any other made, being not only waterproof, but at least five times more durable, and, according to its quality, equally low in price, ask for, and insist upon having, Dawson's Patent Waterproof.

Wholesale Warehouse, 9, King's Arms Yard, Moorgate Street.

GLENFIELD PATENT STARCH, used in her Majesty's Laundry, and Wotherspoon's machine-made CONFECTIONARY, MARMALADE, JAMS, JELLIES, &c., which gained the Prize Medal of 1851, may be had of all Grocers; Wholesale of Wotherspoon, Mackay, & Co., 66, Queen Street, Cheapside, London; and Robert Wotherspoon & Co., Glasgow.

WOOD ENGRAVING.

ILLUSTRATIONS for BOOKS, PERIODICALS, MANUFACTURERS' CATALOGUES, and every class of Wood Engraving in a superior style, at reasonable prices, by George Dorrington, Designer and Engraver on Wood, 4, Ampton Street, Gray's Inn Road.—Specimens and Estimates post free.

TO NERVOUS SUFFERERS.

A RETIRED CLERGYMAN having been restored to health in a few days, after many years of great nervous suffering, is anxious to make known to others the means of cure; he will therefore send (free), on receiving a stamped envelope properly addressed, a copy of the prescription used.—Address the Rev. E. Douglass, 18, Holland Street, Brixton, London.

ROYAL PANOPTICON OF SCIENCE AND ART, LEICESTER SQUARE.—(Last Week of the Season.) —Experimental Philosophy, and its Application to every-day Life, Monday, 2; the Voltaic Current, Wednesday, 3.15; Elastic Properties of Aeriform Bodies, Thursday, 2; Voltaic Properties of Metals, Friday, 3.15; the Principle and Construction of Weighing Balances, Saturday, 3.15, by Mr. C. F. Partington. Frictional Electricity, Monday, 3.15; Friday, 7.30; Shooting Stars, Tuesday and Thursday, 7.45; by Mr. W. R. Birt. Natural Magic, Monday and Wednesday, 7.30; by Mr. J. D. Malcolm. Glees and Madrigals, by Mr. Howe, assisted by other vocalists, Tuesday and Friday 2. Chemistry, Tuesday and Thursday, 3.15; Saturday, 2; by Mr. Reckett. Climate of British Isles, Wednesday, 2, by Mr. Hugo Reid. Explanation of Machinery and Manufactures, daily at 1 and 7.15; at 2.45 and 8.45, Messrs. Heinke's Improved Diving Apparatus in the Crystal Cistern (Tuesday and Thursday, 7.30); at 4.45 and 9.25, Fountain at High Pressure; at 8.15, Dioramic Miscellany, including Views of Verona and Florence, the Prismatic Disc, and a succession of brilliant Chromatropic Effects; and at 9 and 9.40, Distin's Flügel Horn Union. Performances on the Grand Organ, by Mr. W. T. Best, at intervals. Hours of Exhibition—Morning, 12 to 5; Evening, 7 to 10, Saturday evenings excepted. Admission, 1s.; Schools, and children under 10, half price. The Royal Panopticon will close on Saturday, the 9th inst; and will reopen with a series of New Attractions on Monday, October 2.

In a few days will be published (uniform with "Vanity Fair" and "Pendennis") price 13s. in cloth,

THE FIRST VOLUME OF THE NEWCOMES.

BY W. M. THACKERAY.

WITH ENGRAVINGS ON STEEL AND WOOD BY RICHARD DOYLE.

BRADBURY AND EVANS, 11, BOUVERIE STREET.

NEW EDITION OF THE CRYSTAL PALACE OFFICIAL HANDBOOK.

BY SAMUEL PHILLIPS.

A NEW EDITION, Corrected and Enlarged, with NEW PLANS of the BUILDING and GROUNDS, and many additional Plans of the various Courts, is published this day, price One Shilling.

☞ *The Official Guide-books to all the Courts are always on Sale in the Building, and at all Railway Stations.*

BRADBURY AND EVANS, 11, BOUVERIE STREET.

Printed by William Bradbury, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and Frederick Mullett Evans, of No. 7, Victoria Street, in the Parish of St. Margaret and St. John, Westminster, both in the County of Middlesex, Printers, at their Office in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be Addressed to the Editor.—Saturday, Sept. 2, 1854.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 36.—1854.] SATURDAY, SEPTEMBER 9. [PRICE 6*d*.

INDEX.

Barley, Peruvian .... 588 *c*	Paper material .... 584 *c*
Books noticed .... 582 *b*—588 *c*	Pathology, vegetable .... 580 *a*
Calendar, horticultural .... 583 *c*	Pears, new .... 580 *e*
— agricultural .... 589 *b*	Pinuses, hardiness of .... 579 *a*
Cattle, Simonds on age of .... 588 *c*	Plants, new .... 582 *c*
Carnations, to layer .... 583 *a*	— white .... 582 *b*
Cherry, Merry .... 582 *a*	— New Holland, to propagate .... 582 *a*
Citronworts .... 583 *b*	— collector of, in the Crimea 581 *c*
Clover, Italian .... 585 *b*	Plantations and woods .... 580 *c*
Conifers, hardiness of .... 579 *a*	Pork, American .... 586 *c*
Crimea, a collector in the .... 581 *c*	Roses on Manetti .... 582 *b*
Forests, Royal .... 579 *c*	Rose hedges .... 583 *q*
Fruits for a north wall .... 584 *c*	Royal South London Floricultural Society .... 583 *a*
Fruit crop, French .... 582 *b*	Seeding, thin .... 588 *b*
Gnats, cure for .... 582 *a*	Smoke, Mosquito .... 581 *c*
Harvest, the .... 588 *a*	Stock's (Dr.), death of .... 580 *b*
Horticultural Society's garden 582 *c*	Tritoma uvaria .... 581 *c*
Ireland, agr. tour in .... 587 *b*	Vegetable pathology .... 580 *a*
Law of tenancy .... 584 *c*	Victoria Regia .... 582 *a*
Leidy's (Dr.) Flora, &c. .... 582 *b*	Webb (Mr.), death of .... 580 *b*
Manetti, Roses on .... 582 *b*	Wheat, to sow early .... 588 *c*
Manure, definition of a .... 586 *a*	— blight .... 585 *c*—588 *c*
— "economical" .... 588 *a*	Winter, effect of, on Conifers .... 579 *a*
Marantas .... 581 *b*	Woods and forests .... 579 *c*
Milk, composition of .... 586 *a*	— and plantations .... 580 *c*
Moon plant .... 584 *c*	
Mosquito smoke .... 581 *c*	

SOUTH BUCKS HORTICULTURAL SOCIETY.—The Dahlia Exhibition of the above Society will take place at the Royal Hotel, Slough, on TUESDAY, Sept. 19, 1854.

Particulars may be had of the Hon. Sec., Mr. D. BRUMMELL SMITH, Alpha Road, Slough.

BRIGHTON AND SUSSEX FLORICULTURAL AND HORTICULTURAL SOCIETY.—The annual Autumn Exhibition, to be held at the ROYAL PAVILION, Brighton, on WEDNESDAY and THURSDAY, Sept. 13 and 14.

President.

HIS GRACE THE DUKE OF DEVONSHIRE.

Vice-Presidents.

His Grace the Duke of Richmond, Lord Lieut. of county.	Admiral Sir G. B. Pechell, Bart., M.P.
His Grace the Duke of Norfolk, E.M.	Lord Alfred Hervey, M.P.
The Most Noble the Marquess of Bristol.	The Hon. Hanbury Tracy.
The Right Hon. the Earl of Chichester.	The Hon. A. Macdonald.
	The Baron de Goldsmid.
	Rear Admiral Sir G. Westphall, [R.N. &c., &c., &c.

Upwards of 270*l.* are offered as Prizes (including the RAILWAY CUP, value 10*l.*, offered for the best 24 dissimilar Dahlia Blooms), schedules of which can be obtained of the Secretary, among which will be found the following, viz.:—Orchids, 8 vars., 8*l.*, 5*l.*, 3*l.*; Stove and Greenhouse, 8 vars., 8*l.*, 5*l.*, 3*l.*; Device—Cut Flowers, 5*l.*, first prize; Collection of 8 Dishes Fruit, 7*l.*, 4*l.*, 3*l.*, 2*l.*

The Band of the Coldstream Guards (by permission of Col. the Hon. A. Upton), will attend each day, conducted by Mr. Godfrey; also the Military Band from the Garrison, under the direction of Herr Daverow. The entire suite of Rooms and eastern lawn will be thrown open for the occasion.

Through the liberality of the Directors of the London, Brighton, and South Coast Railway, the Committee have the pleasure to announce to the Exhibitors that all Plants, &c., for Exhibition, will be conveyed to Brighton from all stations, and back whence they came, Free of Charge.

General Superintendent of the Exhibition, Mr. E. Spary.

EDWARD CARPENTER, Secretary.

Brighton, Sept. 2, 1854.

N.B. All communications to be made to the Secretary. Address, 45, Lavender Street.

MANCHESTER BOTANICAL AND HORTICULTURAL SOCIETY.—OPENING OF THE NEW EXHIBITION HOUSE.—A GRAND PUBLIC BOTANICAL and HORTICULTURAL EXHIBITION will be held at the Society's Gardens, Old Trafford, on WEDNESDAY the 13th, THURSDAY the 14th, FRIDAY the 15th, and SATURDAY the 16th of September, 1854, under the patronage of

The Right Honourable the Earl of ELLESMERE
The Right Honourable the Earl of WILTON
The Right Hon. the Earl of STAMFORD and WARRINGTON
The Right Reverend the Lord Bishop of MANCHESTER
Sir HUMPHREY DE TRAFFORD, Bart.
WILBRAHAM EGERTON, Esq.

The Mayor of Manchester	The Mayor of Salford
The Very Rev. the Dean of Manchester	Stephen Heelis, Esq.
Sir Benjamin Heywood, Bart.	James Hertz, Esq.
Sir John Potter, Knight	Edward Loyd, Esq., London
Sir J. L. Bardsley, Knight, M.D.	Edward Loyd, Esq.
James A. Bannerman, Esq.	E. R. Langworthy, Esq.
Robert Barbour, Esq.	James M'Laren, Esq.
Samuel Brooks, Esq.	John Reid, Esq.
Robert Barnes, Esq.	Martin Schunck, Esq.
Richard W. Barton, Esq.	Colonel C. R. Scott, Assistant Quartermaster-general
William Entwistle, Esq.	William Slater, Esq.
William Fairbairn, Esq., C.E.	S. Stern, Esq.
Colonel Foster, R.E.	T. W. Tatton, Esq.
Daniel Grant, Esq.	Col. Brook Taylor, Adjutant-gen
James C. Harter, Esq.	James Aspinall Turner, Esq.
Edmund Haworth, Esq.	J. P. B. Westhead, Esq.

The articles exhibited will comprise Plants, Flowers, Fruits, Vegetables, Artificial Flowers and Fruits, Fountains, Vases, Flower-pots, Baskets, Garden Stands, Seats, Iron and Wire work, Garden Implements, &c., which may be exhibited from all parts of the kingdom free of charge.

Schedules of the prizes offered, and any further information, may be obtained on application to the Secretary.

The City and Stretford Brass Bands will attend every day during the exhibition; and, by permission of Lieut.-Col. Unett, the Band of the 3d Light Dragoons on Wednesday and Friday.

Members of the Society and the privileged members of their families will be admitted (on presenting their tickets) on the 13th at 2 o'clock, and subsequent days at 1 o'clock, free. Non-members on payment of 5*s.* each on the 13th, on payment of 2*s.* 6*d.* each on the 14th and 15th, and on payment of 6*d.* each on the 16th. Children under 12 years of age half price.—Non-members' Tickets are now ready, and may be obtained at the Office of the Secretary, 40, Princess Street. By order,

JOHN SHAW, Secretary.

THE SOUTH LONDON SOCIETY OF AMATEUR FLORISTS.—The Fifth Exhibition of Flowers of the above Society will be held at the HORNS TAVERN, KENNINGTON, on Tuesday, the 19th September, 1854, when Prizes will be awarded for Miscellaneous Plants, Dahlias, including Fancy varieties, Verbenas in Pots, and Cut Blooms.

An efficient Band will be in attendance.

Members and Honorary Members of the Society, and their Two Free Tickets, will be admitted to the Rooms from 2 till 6 o'clock. Admission to Non-Members 1*s.* each.

The last Exhibition for this season will also take place at the Horns Tavern, Kennington, on Wednesday, the 22d November, for Chrysanthemums.

List of Prizes, and the Rules of the Society, may be obtained from JOHN BUSHELL, Esq., Hon. Sec., *pro tem.*, Lower Kennington Lane, Lambeth.

TO DAHLIA GROWERS.

NORFOLK AND NORWICH HORTICULTURAL SOCIETY.—The DAHLIA SHOW will be held at the Corn Exchange, Norwich, on THURSDAY, the 14th of September next, immediately after the morning performances at the Musical Festival. Amongst others, Prizes of 5*l.*, 3*l.*, and 2*l.* will be offered for 24 dissimilar DAHLIA BLOOMS (Fancies excluded), open to all Nurserymen and such Amateurs as are subscribers. No entrance fee. ARTHUR PRESTON, Hon. Sec.

Norwich, Sept. 9.

NATIONAL DAHLIA EXHIBITION, under the auspices of the Nottingham Horticultural Society, will be held in Nottingham, together with the Fourth Exhibition of the Nottingham Horticultural Society, on WEDNESDAY, the 13th September, when five Silver Cups and numerous other prizes will be awarded. Schedules may be had by enclosing a postage stamp to S. R. P. SHILTON, Honorary Secretary, Nottingham.

LISIANTHUS RUSSELLIANUS.

J. AND J. FRASER beg to offer the above, in strong and healthy plants, such as will make large specimens for flowering next season, at 2*s.* 6*d.* each.

Lea Bridge Road, Essex, September 9.

CHRYSANTHEMUMS.

J. AND J. FRASER have a very superior Collection of the above, comprising the newest and best of Large-flowering and Lilliputian varieties. The plants are very strong, and will bloom well in the ensuing winter.

Lilliputians, fine plants	9*s.* to 12*s.* per doz.
Large flowering	9*s.* to 12*s.* "
New French varieties of 1854, not yet bloomed in this country	18*s.* "

Lea Bridge Road, Essex, September 9.

SEEDS OF CALCEOLARIA AND CINERARIA.

E. G. HENDERSON AND SON, of the Wellington Nursery, St. John's Wood, London, are now prepared to forward, by post, the new Seed saved this season from their unrivalled collection, in packets at 2*s.* 6*d.* and 5*s.* each.

The CALCEOLARIA, first quality	5*s.* 0*d.*
" second "	2 6

QUALITY, and not QUANTITY, forwarded at the above prices.

STRAWBERRIES.

J. HARGREAVES is now sending out Strong Plants of the four new Strawberries, viz., Ajax, Ruby, Captain Cook, and Fillbasket, at 10*s.* per hundred, or 25 each of any two sorts for 6*s.*, package included; also, all the old sorts at 3*s.* per hundred.—Address, JOHN HARGREAVES, High Street Nursery, Lancaster.

STRAWBERRIES.

BARRATT'S MAGNUM BONUM.—In size, this splendid Strawberry very far surpasses the "British Queen," is an exceedingly heavy cropper, and continues in perfection later than almost any other variety. Its flavour is really delicious, most nearly approaching the true Pine Apple of any kind yet known. Price per 100, 2*l.* 2*s.*; per dozen, 6*s.* Good strong Plants of the above are now ready for sending out by

St. John's Nursery, Wakefield. WM. BARRATT.

N.B. W. B.'s List of 40 kinds of Strawberries may be had gratis.

STRAWBERRIES, 3*s.* per 100.—Strong well-rooted runners are now ready. British Queen, Eleanor, Prolific, Kitley's Goliah, Cuthill's Black Prince, Princess Alice Maude Myatt's Hautbois, Rivers' Eliza, &c.

BASS AND BROWN, Sudbury, Suffolk.

"OMAR PACHA" STRAWBERRY.

WILLIAM JAMES WARD is now sending out well rooted plants of the above excellent Strawberry, which was awarded a Medal by the judges at the Royal Botanic Gardens Exhibition, July 5th, 1854. It has also been submitted to Mr. Marnock, Mr. Spencer, Mr. Thompson, and several practical gardeners, who have all pronounced a favourable opinion of it. Also by Mr. Powell, of the Royal Gardens, Frogmore, in the descriptive list of new Fruits, in the "Florist and Fruitist" for the present month, accompanied with a woodcut.

	£	*s.*	*d.*		£	*s.*	*d.*
100 plants	3	0	0	25 plants	1	0	0
50 "	1	15	0	12 "		12	0

Prospect Hill, Reading.—9th Sept., 1854.

REAL GENUINE SEEDS.

H. KNIGHT, SEEDSMAN, Senford, Sussex, will send any of the following extra choice Seeds, post-free, to any address, on receipt of postage stamps to the amount in sealed papers.

CALCEOLARIA, from the same stock that gained the Prize, open to all England, at Brighton last June; 1*s.* 6*d.* and 2*s.* 6*d.* per paper.

ANTIRRHINUM, 70 kinds, 1*s.* PANSY, 100 kinds newest, 1*s.*; ditto from newest fancy kinds, 1*s.*

HOLLYHOCK, 50 kinds, 1*s.*

HOLLYHOCKS.—A collection of this fine old English flower, grown at the Cheshunt Nurseries, is now in bloom, and there will be a succession till the end of October. Admirers of the Hollyhock are respectfully invited to visit the Nurseries to inspect them. In addition to the choicest varieties of other growers, there are many rare and beautiful kinds of their own production, and to be seen only at their grounds.—A. PAUL & SON, Nurseries, Cheshunt, Herts (13 miles from London, on the Cambridge line of Eastern Counties Railway).

NEW BROWN COS LETTUCE SEED,

FOR PRESENT SOWING.

SUTTON AND SONS, Reading, have just harvested some of their choice sort of BROWN COS LETTUCE for sowing now to stand the winter. Price 1*s.* per packet. Excellent Cauliflower, Onion, Spinach, &c., for autumn sowing.

BULBS FOR WINTER BLOOMING.

GOOD HYACINTHS, JONQUILS, CROCUSES, &c., for sale, at moderate prices, by the Importers.

MESSRS. SUTTON AND SONS, Seed Growers, Reading.

GRASS SEEDS.

SUTTON AND SONS *recommend the sowing of* GRASS SEEDS *at this season for Permanent Pasture, and are now prepared to supply excellent fresh Seeds for the purpose at very moderate prices.*

Also New Italian Rye Grass and Trifolium incarnatum, at moderate prices.—JOHN SUTTON & SONS, Seed Growers, Reading.

CHOICE CALCEOLARIA SEED.

JOHN AND CHARLES LEE beg to state, they are now sending out packets of choice Calceolaria Seed, saved from a very SUPERB COLLECTION, price 2*s.* 6*d.* per packet.—Vineyard Nursery, Hammersmith.

CALCEOLARIA AND CINERARIA SEEDS.

GEORGE CLARKE begs to announce that a small quantity is still on hand of his superior seed of the above. For description see *Gardeners' Chronicle*, July 29 and August 5. Packets 2*s.* 6*d.* each, payable in postage stamps.

Streatham Place Nursery, Brixton Hill, near London.

CALCEOLARIA SEED.

R. PARKER has now ready for sending out new seed of this year's saving, which he can recommend with the greatest confidence, it having been saved from flowers of the finest form and most beautiful markings, in packets at 1*s.* 6*d.* and 2*s.* 6*d.* each; also a few packets of choice Cineraria Seed at 1*s.* 6*d.* and 2*s.* 6*d.* each. Primula sinensis, all saved from fringed flowers, 1*s.* per packet. A remittance or reference to accompany all orders from unknown correspondents.

Paradise Nursery, Hornsey Road, London.—Sept. 9.

LILIUM LANCIFOLIUM, TRITONIA AUREA, AND VALLOTA PURPUREA.

HENRY GROOM, Clapham Rise, near London, by appointment FLORIST TO HER MAJESTY THE QUEEN, AND TO HIS MAJESTY THE KING OF SAXONY, begs to say that his extensive collection of the above BEAUTIFUL PLANTS is now in flower, and may be viewed every day (Sundays excepted). Admittance gratis.

DUTCH FLOWER ROOTS JUST IMPORTED.

JAMES CHARTRES AND CO. beg to draw the attention of purchasers of the above to their establishment, where they can be supplied with the finest BULBS at the lowest possible prices, they are remarkably fine this season, more especially Hyacinths, Tulips, Narcissus, &c. A Catalogue will be sent on application.

J. C. & Co. have a large stock of choice Chrysanthemums (show varieties), which they can supply at 6*s.* per dozen.

Seed Warehouse, 74, King William Street, City, London.

DOUBLE ROMAN AND PAPER WHITE NARCISSUS, 4*s.* per dozen. The above bulbs, the former of which is so justly esteemed for its early blooming and excessive fragrance, and the latter for its purity and elegance, have just arrived, and may be obtained at A. CORBETT's Italian and Foreign Warehouse, 18, Pall Mall, near Waterloo Place, London.

HUGH LOW AND CO. would inform their friends and customers that they are now receiving their BULBOUS ROOTS from Holland. The collection comprises all the kinds of Roots suitable for early forcing, and they have been selected with care from the leading houses in Haarlem. Any orders entrusted to them will have every attention, and they feel satisfied they are in a position to supply them to the satisfaction of their customers.—Clapton Nursery.

TORREYA MYRISTICA (CALIFORNIAN NUTMEG)—The SUBSCRIBERS have to offer strong healthy plants, three years from seed, of the above-named beautiful hardy Evergreen Tree. It is figured and described by Sir W. J. Hooker, in "Botanical Magazine" for May, 1854, to which the Subscribers refer their friends. Price on application.

HUGH LOW AND CO., Clapton Nursery, London.

CHRYSANTHEMUMS.

R. PARKER begs to offer fine bushy plants of the above, well established in 6-inch pots, for flowering this autumn, consisting of all the newest and finest Pompon and large flowered varieties in cultivation. Purchaser's selection at 9*s.* per dozen. A list of names forwarded upon application.

CINERARIAS (Seedlings), from all the finest varieties, carefully selected, including the new varieties sent out last autumn. Established plants, in 3-inch pots, at 3*s.* per dozen.

A remittance or reference to accompany all orders from unknown correspondents.

Paradise Nursery, Hornsey Road, Islington.

EARLY DWARF SEED POTATOES.

ABRAHAM HARDY AND SON'S Ten selected earliest varieties of SEED POTATOES are now ready to send out, warranted free from disease. Retail and trade prices on application.

Also their improved BATH COS and Hardy HAMMERSMITH LETTUCE SEED, growth of 1854. Six-pennyworth of these, or other seeds of Cauliflower, Flower Seeds, &c., for September sowing, will be sent to any address, post free, on receipt of 6*d.*, or six stamps. Price per pound to the trade, on application.—Maldon, Essex, September 9.

MAY'S IMPROVED EARLY ASH-LEAVED KIDNEY POTATOES FOR SEED.—For autumn and early spring planting the above are the best variety of Ash-leaved Potatoes known; the following opinion of them is from a party who has grown them for some years, and is selected from a number of favourable opinions of them:—"I can truly say, from a number of years' experience in growing them, that I never met with any Potato to equal them for cropping and sale."—*George Keynon, Market Gardener, Brierley, near Wakefield.*

STRAWBERRIES.

WILLIAM NICHOLSON is now sending out strong, well-rooted plants of his four new and distinct STRAWBERRIES, viz., AJAX, a very fine large dessert fruit, very beautiful, solid, and juicy. RUBY, do., a great bearer, and forces well. CAPTAIN COOK, market fruit, large, and a great bearer. FILLBASKET, do. 15s. per 100, or 25 each of any two sorts for 10s., box included. Most of the best old and new sorts can be supplied on reasonable terms. See advertisement July 15. Post-office orders payable at Yarm, Yorkshire, or a cash remittance required with the order.

Egglescliffe, near Yarm, Sept. 9.

MYATT'S new Seedling Strawberry, "ADMIRAL DUNDAS."—This is the most extraordinary variety, for size and productiveness, that has yet been raised at Manor Farm; it is much larger and a better flavour than either the Surprise or Mammoth, and ripens off the late fruit to advantage.

J. M. & Sons can confidently recommend this, as being superior to any large variety that has come under their notice.

Strong, well-rooted runners are now ready, and will be carefully packed and delivered free to any part of London, at the following scale of charges:—100, 50s.; 50, 30s.; and 25, 16s. Also strong Plants of Myatt's British Queen, Cinquefolia, Eleanor, Surprise, Globe, Eliza, Hooper's Seedling, Keens' Seedling, Black Prince, and Barnes' Bicton Pine, 5s. per 100.

Manor Farm, Deptford, September 9.

NEW CINERARIAS.

ROBERT REA begs to announce that he will send out, the first week in October, the following New CINERARIAS, and, from their first-rate character, and being unequalled by any yet sent out, he feels confident they will give universal satisfaction.

IPSWICH BEAUTY (Rea's).—Clear white, deeply edged with lake, shaded with purple; very dark disc, full size; broad petals, slightly cupped. A fine exhibition flower. First Class Certificates were awarded at Ipswich and Colchester, the only places where it was exhibited. Pronounced by all who saw it to be the finest Cineraria ever exhibited. Plants 10s. 6d. each.

GEM (Parker's).—A self-coloured flower; beautiful puce, with light disc; quite novel in colour, and a very striking first-rate variety. First Class Certificate, Ipswich, 1853. Plants 7s. 6d. each.

In consequence of having only one plant of the first to propagate from, the stock is very limited, early orders are therefore respectfully solicited, which will be executed strictly in rotation as received. The usual discount to the trade, and one sent over when three are ordered.—Ipswich Nursery, Ipswich. Sept. 9.

BASS AND BROWN are now saving several of their choice Seeds, and can strongly recommend the following, which have been selected with their usual care from their superb collection:—

CALCEOLARIA, very choice, 1s.; extra superb ...	2s. 6d.
CINERARIA, very choice, 1s.; extra new and choice	2 6
FUCHSIAS, from new and choice	1 0
GERANIUM, very choice, 1s; extra new and choice	2 6
„ from finest fancy varieties	1 6
GLOXINIA, fine, 6d. extra from new and choice ...	2 6
ANTIRRHINUM, choice, 6d. extra from superb flowers	1 0

A List of Choice Seeds selected for Autumn sowing may be had free by post on application.

Post-office orders to be made payable to Bass & Brown, or Stephen Brown. Penny stamps received for small amounts.

Seed and Horticultural Establishment, Sudbury, Suffolk.

ARTHUR HENDERSON AND CO. beg to inform their patrons and the public that their CATALOGUES OF BULBS are now ready, and they will have much pleasure in forwarding them on application.

They comprise lists of all the finest varieties of Hyacinths, and many other rare and valuable Bulbs.

Their collections of Hyacinths have yearly carried off the metropolitan prizes, not only for their unique growth, but also for their beauty of colouring and distinctness of sorts, either when exhibited in a collection of 36 plants or in pairs.

Pine-apple Place, Edgeware Road, London.

TO PLANT GROWERS, NURSERYMEN, AND OTHERS.

WANTED, a few fine Large PLANTS of the undernamed, not less than 8 feet high, or any other good Greenhouse Plants not named below.

Banksia grandis	Edwardsia, sorts
„ latifolia	Telopea speciosissima
„ coccinea, &c.	Orange trees
Calothamnus, of sorts	Lemon, &c.
Poinciana Gilliesii	Sparmannia africana
Pittosporum, sorts	Beaufortia decussata
Enkianthus reticulatus	Pimelea lanata
„ quinquiflorus	Luculia gratissima
Lambertia formosa	„ Pinceana
Grevillea, sorts	Dryandria, sorts
Eucalyptus, sorts	Cunonia capensis
Burchellia capensis	Hovea Celsi
Brugmansia, sorts	Myrtles, sorts

Any one having any of the above to dispose of may hear of a purchaser by stating the names and price, and any of the particulars to A. B., to the care of Mr. Thomas Goodwin, Helmsley Place, Hackney, London.

RARE AND HARDY CONIFERÆ.

THE following CONIFERS having proved perfectly hardy during the past winter and spring in this well-known bleak district, exposed to the cutting winds from the North Sea, induces YOUELL AND CO. to offer the same with every confidence, and beg to annex a scale of prices for good Plants.

	Each. s. d.	P. doz. s. d.	P. 100. s. d.
Abies morinda, 1 year	...	3 0	15 0
„ 2 years	...	4 0	25 0
„ 6 to 9 inches	...	6 0	
„ 9 to 12 inches	...	9 0	
„ 12 to 18 inches	...	12 0	
„ 2 to 3 feet	2 6	24 0	
„ 4 to 5 feet	3 6		
(This species is synonymous with A. Khutrow and A. Smithiana. Is very distinct and ornamental.)			
Abies Menziesi, 1 to 1½ foot	1 6	12 0	
„ „ 1½ to 2 feet	2 0	24 0	
„ orientalis, strong	2 0	18 0	
„ pumila, very bushy	2 6	24 0	
„ pygmæa	3 6		
„ Whitmaniana, 3 to 4 inches	5 0	42 0	
Araucaria imbricata, 15 inches to 1½ foot ...	5 0	42 0	
„ „ 1½ to 2 feet	7 6	72 0	
„ „ 2 to 2½ feet	15 0	150 0	
„ A few fine specimens 3 to 5 gs. each.			
Cedrus atlantica, 9 to 12 inches	2 0	18 0	
„ „ 12 to 15 inches	2 6	24 0	
„ „ 1½ to 2 feet	3 6	36 0	
„ Deodara, 1 year	...	...	20 0
„ „ 4 to 6 inches	0 9	6 0	40 0
„ „ 6 to 9 inches	1 0	9 0	60 0
„ „ 12 to 15 inches	1 6	15 0	100 0
„ „ 1½ to 2 feet	2 6	24 0	150 0
„ „ 2 to 2½ feet	3 6	36 0	
„ „ 2½ to 3 feet	5 0	42 0	
„ „ 3 to 4 feet	7 6	72 0	
„ „ 4 to 5 feet	10 6		
„ „ 5 to 6 feet	21 0		
„ „ 6 to 7 feet	31 6		
„ Libani, 2 to 2½ feet	2 6	24 0	
„ „ 2½ to 3 feet	3 6	36 0	
Cephalotaxus Fortuni, 1½ to 2 feet	25 0		
„ „ 3 inches	7 6		
Cryptomeria japonica, 2 to 3 feet	2 6		
Cupressus elegans, 1½ to 2 feet	3 6	30 0	
„ funebris, 3 to 4 inches	0 9	6 0	
„ „ 1 to 1½ foot	2 0	18 0	
„ „ 1½ to 2 feet	2 6	24 0	
„ Goveniana, 9 to 12 inches ...	2 6	24 0	
„ „ 2 to 3 feet	3 6	42 0	
„ Lambertiana, 12 to 15 inches ..	2 6	24 0	
„ „ 1½ to 2 feet .	3 6	42 0	
„ macrocarpa, 12 to 18 inches ..	2 6	24 0	
„ „ 2 to 3 feet	5 0	42 0	
„ sempervirens of India, 1 year ..	...	12 0	
„ „ 9 inches to 1 foot	...	30 0	
„ Tourneforti, 2 years	...	9 0	50 0
„ Uhdeana, 1½ to 2 feet	2 6	24 0	
„ „ 2½ to 3 feet	3 6	36 0	
„ Whitloeana, 1½ to 2 feet	5 0	42 0	
Dacrydium Franklini, small	1 6	12 0	
„ „ 6 to 9 inches	2 6	24 0	
„ „ 2 to 2½ feet	15 6		
Fitz-Roya Patagonica, nice plants, 3s. 6d. to	5 0		
Juniperus Bedfordiana, 9 to 12 inches ...	1 6	12 0	
„ „ 1 to 1½ foot	2 0	21 0	
„ „ 2 feet...	2 6	24 0	
„ excelsa, 6 to 9 inches	2 0	21 0	
„ „ 15 to 18 inches	3 6	36 0	
„ echiniformis	3 6		
„ hibernica or Irish	1 6	12 0	
„ recurva	2 6		
„ sinensis, 9 inches	1 6		
„ squamata, 6 to 9 inches	1 0	9 0	
„ „ 9 to 15 inches	1 6	18 0	
„ Sabina	1 0	9 0	
„ „ elegans	2 6		
„ „ variegata	2 6		
„ Virginiana, 2 to 3 feet	1 0		
Libocedrus chilensis, 5s. to	7 6		

	Each s. d.	P. doz. s. d.	P. 100. s. d.
Picea amabilis, true, 1 foot	15 0		
„ cephalonica, 1 to 1½ foot	2 6		
„ „ 1½ to 2 feet	3 6		
„ nobilis, 1 foot	10 6		
„ Nordmanniana, from cuttings 4 to 6 in.	5 0		
„ „ 9-inch stout seedlings	21 0		
„ pinsapo, cuttings, 2 years	1 6	12 0	
„ „ 6 to 9-inch seedlings	5 0		
„ „ 2½ to 3 feet, fine, 31s. 6d. to ...	42 0		
„ Pindrow, 2 years	...	4 0	25 0
„ „ 9 to 12 inches	1 0	9 0	
„ „ 12 to 15 inches	1 6	12 0	
(This species is sometimes sold for Webbiana, which it much resembles.)			
Picea Webbiana, true, 1 year...	...	4 0	25 0
„ „ 9 to 12 inches	2 6	24 0	
„ „ strong	3 6		
Pinus Abschasica	7 6		
„ austriaca, 9 to 12 inches	...	6 0	
„ canariensis, 1½ foot	2 6		
„ cembra, 15 to 18 inches...	...	12 0	
„ „ 2 to 3 feet	...	24 0	
„ cembroides, 1½ foot	3 6		
„ Edgariana, 2 feet...	10 6		
„ excelsa, 2 years	...	...	12 6
„ „ 12 to 15 inches, in pots ...	...	9 0	
„ „ 18 inches to 2 feet, ditto ...	...	12 0	
„ „ 18 inches to 2 feet, bedded ...	...	...	60 0
„ „ 2 to 3 feet, ditto	...	...	75 0
„ „ 3 to 4 feet, ditto	..	...	100 0
„ Fremontiana, 4 inches	21 0		
„ Gerardiana, 9 to 12 inches	1 0	9 0	
„ „ 12 to 15 inches	1 6	15 0	
„ „ 1½ to 2 feet...	3 6		
„ Hamiltoniana, 1 foot	2 6		
„ insignis, 1 year, in pots...	...	12 0	
„ „ 12 to 18 inches	3 6		
„ „ 1½ to 2 feet	5 0		
„ „ 2 to 2½ feet	7 6		
„ „ 6 to 7 feet	31 6		
„ Lambertiana, 15 inches	5 0		
„ Llaveana	2 6		
„ macrocarpa, 1 foot	10 6		
„ „ 2½ feet	21 0		
„ maritima, in pots, 9 inches	...	6 0	
„ Massoniana, 1 year, in pots			
„ Montezumæ, 1 foot	15 0		
„ ponderosa, 2 years	5 0		
„ „ 1 foot	15 0		
„ Sabiniana, 4 to 6 inches, very fine ...	5 0	60 0	
„ Teocote, 1½ foot	5 0		
Saxe-Gothæa conspicua	5 0		
Taxus adpressa, 1 to 1½ foot	1 6		
„ baccata, common Yew, 2 to 2½ feet ...	...	9 0	50 0
„ „ elegantissima, 4 to 9 inches	2 0	24 0	
„ „ Dovastoni or Weeping, 1½ to 2 ft	2 0	21 0	
„ „ gold striped, 4 to 9 inches ...	1 6	12 0	
„ „ „ 9 to 12 inches...	2 6	25 0	
„ „ „ 12 to 18 inches, ex	5 0		
„ „ fastigiata, the Irish Yew, 2 to 2½ ft	...	6 0	30 0
„ „ „ 3 to 4 ft	...	12 0	75 0
„ „ variegata	3 6		
„ „ pyramidalis, 9 to 12 inches ...	...	12 0	
„ „ „ 18 inches to 2 feet	.	18 0	
„ „ Harringtoni, 3s. 6d. to	5 0		
„ „ japonica, 3s. 6d. to	5 0		
Thuja aurea, 6 to 9 inches	2 6		
„ flagelliformis	5 0		
„ plicata, 18 inches	2 6		
„ sinensis, 2 to 3 feet	...	9 0	
„ „ 4 to 5 feet	...	12 0	
„ Wareana, 2 to 2½ feet	3 6		
Taxodium sempervirens, 1½ to 2 feet ...	2 6		
„ „ 2 to 3 feet	3 6		
Wellingtonia gigantea	31 6		

All orders of £2 and upwards are delivered carriage free to London, Hull, and Newcastle on-Tyne, as well as to any Railway Station within 150 miles of the Nursery. Communications by Steamers and Railway to all parts of England, Ireland, and Scotland, as well as the Continent. Post-office Orders to be made payable to Youell & Co.

ROYAL NURSERY, GREAT YARMOUTH.

FLORAL NURSERY, ACTON ROAD, TURNHAM GREEN.

CHRYSANTHEMUMS, Liliputian and Large Flowering.—Large and remarkably fine Plants of all the best Sorts, in 32-sized pots, fit to make really good Specimens at once, at 18s. per dozen; smaller Plants, in 48s, to flower in the coming winter, at 8s. per dozen.

VERBENAS.—All the new Varieties let out by Smith, Bragge, Mockett, and others, in 1854, at 8s. per dozen; older Varieties, 6s. per dozen—all well established.

FAIRY and FABVIA ROSES.—Large healthy Plants, in 48s, at 8s. per dozen.

SEEDLING HERBACEOUS CALCEOLARIAS, and SEEDLING CINERARIAS, at 5s. per dozen in October. These Plants have been raised from the Flowers which were so highly admired at this Nursery during last season.

FRENCH SPOTTED or NEW FANCY GERANIUMS.—Well-established Plants of these beautiful Flowers, at 2s. 6d. each, or 25s. per dozen, in October next—a large consignment (including all the best raised in France, several of which have not been seen in England) having been just received at the Floral Nursery.

An immense stock of nearly all the new and best Bedding GERANIUMS, FUCHSIAS, HELIOTROPES, TROPÆOLUMS, and other Soft-Wooded Plants, always on hand, at prices equally low.

The Stock of SHOW and FANCY GERANIUMS at the Floral Nursery is unquestionably the largest and best in the kingdom, no expense having been spared to render it perfectly unique; all the new plants of the best raisers are added as they appear. Well-established plants of upwards of 1000 sorts may be had early in October next, at prices which will place competition at defiance.

The trade fairly and liberally dealt with, and all plants sent out will be warranted true to name.

A remittance or satisfactory reference indispensable from unknown correspondents. Catalogues forwarded gratis.

JOHN WESTWOOD, Proprietor.—Sept. 9.

FLORAL NURSERY, ACTON ROAD, TURNHAM GREEN.

PELARGONIUMS.—The undermentioned have been selected from upwards of 1200 named sorts. The whole stock (including all the newest and best Show, Fancy, Scarlet, and other Bedding kinds) consisting of upwards of 150,000 plants.

A comparison of the prices named will at once show how very far they are below all others. The quality of the plants will prove equally satisfactory.

SHOW GERANIUMS.—Carlos, Empress, Leah, Majestic, Rosa (Foster's), Regalia, Sanspareil, Virginia, Zeno, Neatness, Picta, Rebecca, Marginata, Eliza, &c. 5s. each, or 48s. per dozen.

Optimum, Pilot, Queen of May, Glow-worm, Indian Chief, Leonora, Pasha, Sunrise, Vulcan, Calpe, Hylas, Splendidum, Portia, Novelty, Commander, Incomparable. 2s. 6d. each, or 25s. per dozen.

Annie Laurie, Astrea, Basilisk, Butterfly, Capella, Charming May, Colonel of the Buffs, Cordelia, Cœur de Lion, Eleanor, Gertrude, Jupiter, Hulla, Magnet, Alderman, Medora. 1s. 6d. each, or 15s. per dozen.

FANCY GERANIUMS.—Bribette, Bellinzona, Constance, Conqueror, Dandy, Lady Alice Peel, Lady Hume Campbell, Madame Sontag, Macranthum, Madame Staub, Mary Howitt, Empress of France, Illuminator, Magnum Bonum, Ocean Queen, Beauty of Blackheath, Figaro, &c. 3s. 6d. each, or 40s. per dozen.

Autumna, Argus, Bouquet de Venus, Ceres, Darling, Duchess of Sutherland, Megæra, Ossa, Charles Dickens, Conspicuum, Marco Polo, Mirandum, Lady Mary Labouchere, Victoria Magna, Cassandra, &c. 2s. each, or 21s. per dozen.

All the above are now ready to send out. See also preceding advertisement.—John Westwood, Sept. 9.

"SIR HARRY."—The eminent success of this new SEEDLING STRAWBERRY, at the only Floral and Horticultural Exhibitions where it has been shown, viz., Chiswick, first-class Certificate; 21, Regent Street, highly commended; Botanical Gardens, Edgbaston, first prize—induces the proprietor (hitherto an amateur grower only) to offer it for sale.

The characteristics of the plant are these:—Ripening as early as Keens' Seedling, but continuing fruiting a much longer time—a great cropper, bearing a very large handsome dark crimson berry, which carries that superb colour not only quite through, but to its very end, whilst, being both firm and juicy, it separates itself entirely from its calyx, without having a tasteless core. The delicious and luscious flavour of the fruit, united with its high perfume, throws utterly into shade the Keen and British Queen. The leaves are few, and the vigorous extension of its bearing branches exposes the fruit to the ripening influence of the sun, the want of which exposure is a great cause of failure in many sorts of this class of plant.

An oil-painting of a one-year-old runner, with its gigantic fruit in the respective stages of growth (as sketched from nature), is now to be seen in the Birmingham Exhibition of the Society of Artists, and coloured Lithographs have been taken from it by an eminent London Artist, which may be had on application, price 2s. 6d. each, in postage stamps.

The Plants will be ready for sending out (not less than a score) on the 20th September next. Prices—100 plants, 6l.; 80 plants, 5l. 10s.; 60 plants, 4l. 4s.; 40 plants, 2l. 17s.; 1l. 10s. for a score. A few plants in pots may be had. Apply to Mr. RICHARD UNDERHILL, Sir Harry's Road, Edgbaston, Birmingham; each application to be accompanied with a Post-office order (on Birmingham) or cash, to receive attention.—September 9.

NEW HARDY CONIFERS.

HUGH LOW AND CO. announce to their friends and the public that they have been appointed by Messrs. Parsons & Co., of Flushing, New York, Sole Agents in this country for the sale of the undernamed CALIFORNIAN CONIFERS. The Plants are raised from seed, and will be delivered as soon as the growth of the present season is sufficiently matured.

Thuja gigantea (Nuttall).	Thuja Menziesi (Douglas).
Libocedrus decurrens (Torrey).	„ Craigiana (Jeffrey).

A magnificent species, and the most desirable Tree known to exist in California. It was discovered by the botanists of the United States Exploring Expedition, and is described by Professor Torrey, in "Plantae Fremontianae," as growing near the upper waters of the Sacramento, from lat. 38° 40' to 41° N. He also states it is a noble tree, attaining a height of 120 to 140 feet, with a trunk 7 feet in diameter, rising from 80 to 100 feet without a limb. This tree will be perfectly hardy, and will take the foremost rank amongst our ornamental trees, as the foliage is most beautiful, reminding an observer of some of the more graceful species of Lycopodium.

The Plants when delivered will average 1 foot to 1½ foot in height, and being of such unusual size for a new Conifer, will produce an immediate effect. Price 31s. 6d. each.

ABIES NOBILIS.—This well-known Fir requires no description. Plants from seed have long been desiderata, and those now offered are strong and well shaped, from 6 inches to 1 foot in height. Price 31s. 6d. each.

In addition to the above, H. L. & Co. have to offer from the same source strong Plants of several species of hardy CALIFORNIAN PINES, collected in districts little explored. Amongst them will be found Pinus Jeffreyana, Pinus Parryana, offered for the first time; and judging from the CONES of the different species, it may with certainty be inferred that several others will prove entirely new to this country. Price [illegible] per dozen.

Messrs. Parsons & Co. having been successful in raising these fine Conifers in considerable numbers, have determined on offering them at the low prices quoted above, with a view to insure their speedy introduction into every collection in Europe.

Discount allowed only when twelve plants of a sort are taken.

Clapton Nursery, London, Sept. 9.

THE BEST PLANT OF THE SEASON.
"BEGONIA PRESTONIENSIS SUPERBA."

W. J. EPPS has much pleasure in stating that he has purchased this splendid Begonia raised by Mr. Frost, Gardener to E. L. Betts, Esq., Preston Hall; the flowers are of a much brighter colour than Prestoniensis, and the centre is neatly filled with stamens and petals, resembling a double blossom with a golden fringe, exhibiting a charming contrast. The flowers are delightfully fragrant as a Tea scented Rose. Habit dwarf and bushy; the flowers are thrown well above the foliage in large trusses, and altogether one of the best plants yet offered. It received the highest award in June, at the Royal Botanic Show, Regent's Park, as a new plant; also at Maidstone and Ashford. Plants in October, 10s. 6d. each; one given where three or more are taken.—Bower Nurseries, Maidstone, Sept. 9.

HOLLYHOCKS, DAHLIAS, AND DUTCH BULBS.

GARAWAY, MAYES, AND CO. beg to call the attention of Florists, and the Public generally, to their large collections of HOLLYHOCKS and DAHLIAS, which comprise all the newest and choicest varieties in cultivation, and are now coming into full bloom, and which they will be happy to show to all interested in these favourite Plants. Their Hollyhocks this season are particularly fine, and in addition to their collection of named varieties, they have an unusually fine batch of Seedlings, from seed sown in the spring of 1853, now in bloom.

G. M. & Co. also beg to announce that they are now receiving their annual consignment of BULBS from Holland, comprising Hyacinths, Tulips, Crocuses, &c., which are this year in good condition and moderate in price.

Priced Catalogues of Dahlias, Hollyhocks, and Dutch Bulbs may be had on application.—Durdham Down Nurseries, Bristol.

THE PAST WINTER AND SPRING have induced YOUELL & Co. to publish a CATALOGUE of RARE and HARDY CONIFERS and HARDY ORNAMENTAL SHRUBS, that have proved with them perfectly hardy in this well-known bleak district, exposed to the cutting winds from the North Sea.

This Catalogue also contains an extensive selection of the most useful Greenhouse Plants, Camellias, Ericas, Epacris, Chrysanthemums, Hollyhocks, Tree Carnations, Carnations and Picotees, Fuchsias, Verbenas, Phloxes, &c., which will be forwarded (stamped) on receipt of two postage stamps.

YOUELL AND CO., Royal Nursery, Great Yarmouth.

NEW FUCHSIAS, VERBENAS, AND PETUNIAS OF 1854 AT REDUCED PRICES, with other NEW and SELECT PLANTS.

For BASS AND BROWN'S Advertised Lists of the above, see *Gardeners' Chronicle* of July 22 and 29, and August 5.

SUPERB NEW CHRYSANTHEMUMS.

12 best new Pompone varieties of last season	12s.
10 best new large flowering do. do.	10s.
60 splendid varieties of Pompone and large flowers, including new, 40s., or, per dozen	9s.

These are all fine and strong for flowering.

Catalogues free for three penny stamps. Post-office orders payable to BASS & BROWN, or to STEPHEN BROWN, Post Office, Sudbury, Suffolk.

The Gardeners' Chronicle.

SATURDAY, SEPTEMBER 9, 1854.

THE last winter has enabled us to judge more correctly than before of the effects of as low a temperature as we usually experience, even in extreme cases, upon most of the NEWLY INTRODUCED TREES AND SHRUBS. From information communicated to the *Gardeners' Chronicle*, and from several other sources, the Horticultural Society have been able to cause an instructive return to be prepared, which is published in the number of their journal just out. It is needless to say that this is a subject of the highest interest to the innumerable lovers of "hardy" plants, who spend large sums of money upon their acquisition, and who are greatly annoyed when the assurances that they have received of a costly plant being certainly quite hardy, prove to be fallacious.

To be hardy, in the proper sense of the word, a tree must be able to bear not only our ordinary winters, which are remarkable only for their mildness, but those instances of much lower temperature which are certain to occur every 10 or 15 years, and of which we have no previous warning.

The question of hardiness is by no means easy to determine conclusively. Mere identity of temperature does not indicate identity of climate; the thermometer may fall to zero in two places, of which one has a warm, dry, well drained soil, the other a cold, damp, heavy soil, and plants will escape in the first which perish in the last. A great variety of analogous circumstances, unobserved, and perhaps inappreciable, assist in complicating the matter, so that, for absolute exactness, each species of tree would require to be made the subject of a dissertation. But life is too short for us to wait for elaborate inquiries, and we must be satisfied with such an approximation to truth as can be readily obtained. The most satisfactory way of arriving at such truth is by obtaining returns from many different places, in different situations, and comparing the evidence relating to each new species with that collected in the same places concerning well-known plants now familiar in all gardens. To say that a species will bear an ordinary winter is too vague an assertion to be useful. To say that it is as hardy as an evergreen Oak or a Sweet Bay, or a common Laurel, is intelligible to every one. The memoranda published by the Horticultural Society furnish data for such a comparison, which every reader can make for himself. Our limited space only enables us to give the result of the inquiry as regards a few of the more interesting cases.

Among the true PINES it may be regarded as certain that in all places, except the warm south and south-western districts, the following are too tender to be worth planting, viz.: *Devoniana, Grenvilleæ, filifolia, leiophylla, apulcensis, Hartwegi, patula, Teocote, Russelliana, canariensis, Massoniana, Winchesteriana, Gordoniana, halepensis, sinensis, Orizabæ, occidentalis,* and *pseudo-strobus.* On the other hand, the hardy constitution of the following seems to be established, viz.: *Llaveana, Gerardiana, tuberculata, palustris, radiata, macrocarpa, Benthamiana, Lindleyana, Fremontiana, muricata, Montezumæ, Ayacahuite, cembroides, osteosperma, Peuce, persica,* and *Brutia.* With regard to *P. insignis* the evidence is conflicting: there is a circumstance, indeed, within our own knowledge which is inexplicable; in the garden of the Horticultural Society were two good sized specimens, one rather younger than the other; the former sheltered partially by a wall, the latter as much or more sheltered by a conservatory; the younger died, the older sustained no injury: so again at Congleton, some are returned killed, others as having escaped; at Ossington, where the Sweet Bays perished, this plant was uninjured, and it is returned by Mr. LOWE, of Nottingham, where the frost was more intense than elsewhere, as being merely "injured." We incline to regard the plant as hardy after it is eight or nine years old.

Of SPRUCES the following seem hardy, viz., *Abies Smithiana, Morinda, orientalis,* and all the Oregon kinds; but *A. Brunoniana* is undoubtedly tender.

Among SILVERS and their allies, *Abies Pinsapo, Webbiana, jezoensis, cephalonica, Nordmanniana,* and *Pichta* are hardy; on the contrary, *A. religiosa* will not stand.

All LARCHES except *Griffithi* seem to be hardy.

The *Cedar of Lebanon* represents sufficiently the constitution of other CEDARS; the reports respecting the Deodar are much the same; in both cases plants have died, or suffered, or escaped. Practically we may regard the Deodar when old and well established, quite as hardy as the Cedar of Lebanon; when young it grows so fast as to be more susceptible of very severe spring frosts. Thus when the thermometer fell to 18°, on the 24th of last April, the young Deodars were in full growth in Mr. GLENDINNING'S nursery, at Turnham Green, and nearly all perished. The young wood of the common Walnut was killed at the same time.

Among CYPRESSES, *Cupressus funebris* appears to be unsuited to Nottinghamshire and the counties to the North, probably because it has not summer heat enough; the same may be inferred of *C. Uhdeana, Goveniana, torulosa* and *thurifera; C. macrocarpa* appears to be more hardy, for no plant was quite killed even at Ossington, and at Oulton it sustained little injury. On the other hand it is returned by Sir OSWALD MOSLEY among his killed. We have some hope that all these Cypresses will become hardier as the specimens acquire age; while young they grow so fast and so late as to be peculiarly susceptible of cold.

The returns relating to JUNIPERS show how little they are cultivated. It, however, appears certain that *J. excelsa, squamata, recurva, chinensis, japonica,* and *mexicana* are hardy; and *Bermudiana, tetragona,* and *Bedfordiana* unmistakeably tender.

Among other Coniferous plants, ARAUCARIA *imbricata* has suffered far more than was expected, and evidently will not bear the climate of Derbyshire and the bordering counties; this is a very unexpected result; it seems also to be ascertained that in a climate that suits it it will bear well exposure to the sea, a quality of which those who live on the coast, where there is no chalk, will do well to avail themselves. The other *Araucarias* are not worth further trial. All species of CALLITRIS are tender. All the CEPHALOTAXI are as hardy as Yews; a great discovery, considering how handsome these evergreens are. CRYPTOMERIAS, when in health, suffer nothing: even the fine variety Lobbi, obtained from the Dutch Botanic Garden at Buitenzorg in Java, was untouched so far north as Cheshire; but unhealthy specimens were turned brown in many places. Concerning CUNNINGHAMIA we have no northern evidence; up to the latitude of London it may be regarded as about as hardy as a Sweet Bay or Magnolia grandiflora. DACRYDIUMS, PHYLLOCLADES and DAMMARS are not worth further trial. Of FITZROYA we have the following account: "Not injured, *Chiswick;* cut back to the main stem, but recovering, *Acton Green;* not affected during the winter, *Bagshot;* stood well, not being injured in the least, *Ware;* leader killed down—supposed to be hardy, *Alton;* unhurt, *Rolleston;* escaped with slight injury, *Congleton;* not hurt, *Exeter;* uninjured, *Singleton;* under a south-east wall, leader killed about 5 or 6 inches, *Southampton;* slightly protected, uninjured, *Bicton;*" we therefore regard it as hardy, the injury it sustained being probably caused by the youth and rapid growth of the specimens. GLYPTOSTROBUS is hardy. LIBOCEDRUS *chilensis* is an unanticipated addition to hardy Conifers; it seems to be undoubtedly as hardy as a Chinese Arbor Vitæ. Concerning the PODOCARPS all remains uncertain; they are worth further trial. Ke[illegible]sporas seem to be tender. Of SAXE-GOTHÆA the reports are contradictory; the following is the return concerning it:—"Is scarcely alive, but not quite killed, although hopeless, *Chiswick;* cut back to the main stem, but recovering, *Acton Green;* not affected during the winter, *Bagshot;* stood well, not being injured in the least, *Ware;* perfectly hardy, *Alton;* unhurt, *Rolleston;* escaped with slight injury, *Congleton;* not hurt, *Exeter;* uninjured, *Singleton;* promises to prove as hardy as any of the Yews, *Bicton.*" We hope the Bicton judgment will be confirmed; we know that the plant which died at Chiswick was out of health; and that the specimen at Acton Green, although it had grown very fast and failed to ripen its wood, exhibited no sign of suffering till the thermometer fell to 4°, and was succeeded by a bright morning sun. TAXODIUM *sempervirens* must receive a verdict of hardy, although its leaves and young shoots were nipped and turned brown; the common YEW was as much hurt in some places, especially plants transplanted in the previous autumn. THUJAS, all hardy. About TORREYA *nucifera* there is but one return, from Hampshire, and that is favourable.

Beyond this we cannot go to-day. Next week the returns relating to plants not Coniferous shall be examined.

WHILE waiting for the evidence obtained by Mr. DRUMMOND'S Committee on the WOODS and FORESTS, a parliamentary paper has caught our attention, which shows that the Treasury system in this department of the state is everywhere the same, and that we must expect in all directions the same jobbing, with the same indifference to the interests of the Crown.

In the late session of Parliament the Earl of DONOUGHMORE obtained a Select Committee to inquire into "the management of the Crown estate of Kilconcouse, in the King's County," &c. &c. From the Lords' report and evidence now before us, we learn that this Kilconcouse is a small Irish estate, of something less than 900 acres, the tenants on which, of course, would not pay their rents; that in 1850 they were three years in arrear; and that the late Commissioner, Mr. KENNEDY, after failing to sell the estate, endeavoured to realise something by other means. To effect this, and acting upon the opinion of persons of undoubted competency to advise him, he proposed certain measures, which received in the fullest sense the *approval* of the Treasury, who *commanded* the Commissioner to carry them into execution. Among these measures was the removal of the Rev. FRANCIS M'MAHON, a parish priest, who had acquired some interest in the lands of one DELANY, without the knowledge or consent of the Crown. When Mr. M'MAHON was informed that he must quit possession he made no sort of objection, but begged permission to reap a crop then standing, which permission was granted. This being settled, the *promise of the Crown* was given to DELANY that the priest's holding should be transferred to him upon certain conditions, which conditions he, DELANY, fulfilled. Here was a complete transaction, and one would have supposed that the honour of the Crown would have been considered sacred by every Government officer. Those who think so little understand the Treasury system, as will be seen by the sequel.

After the promise of the Crown had been given to DELANY, the man's house was attacked, in the usual Irish fashion, when he and his wife were "severely assaulted," threatened with death, and so on. It does not appear that the priest had anything to do with the outrage, but it was undoubtedly made in his interest, and with the belief that it would be acceptable to him. The Commissioner immediately communicated with the Lord Lieutenant of Ireland, representing the importance of sustaining the authority of the Crown at all hazards, and the Irish Government forthwith placed a guard of police upon the lands of DELANY.

Although there is nothing to show the complicity of the priest with the outrage, we find that when the Crown required him to quit possession, in order that the land might be transferred to DELANY, he refused to stir, and eventually it became necessary to take legal proceedings to evict him. About this time Messrs. SADLEIR, KEOGH, and other Irish members of that distinguished class, thought fit to support the case of the priest; and eventually, through the instrumentality of Mr. JAMES WILSON, the Secretary of the Treasury, they succeeded in obtaining a reversal of all the proceedings previously taken. And thus was perpetrated an Irish job, the effect of which was to encourage outrage, to stultify both the English and Irish

Governments, and to violate the pledged faith of the Crown. In vain the Commissioner remonstrated; in vain he resisted to the extent of his power; the *fiat* of the Treasury came forth, the Commissioner was commanded to break the promise of the Crown pledged to DELANY, and not only to stay proceedings against the priest, but to continue the priest in possession of the land given to DELANY. We beg it will be observed that this discreditable proceeding could not have taken place without the active concurrence of that very Secretary to the Treasury whose conduct in the removal of the Commissioner who endeavoured to prevent the perpetration of this job has met with such universal disapprobation.

And what was the consequence of this unprecedented conduct? "Then," says Mr. KENNEDY in his evidence, "a curious result arose from this proceeding—another priest got into a very rampant state immediately, in the county of Galway. He wrote me a most insolent letter." Of course he did, and so would every tenant of the Crown as occasion presented itself.

We have purposely omitted a loose heap of matter more or less irrelevant to this case, and under which it is well nigh smothered. It is evidently immaterial whether the priest or DELANY was the better tenant, or whether the priest's demand for compensation was fair or unfair; the real question is, as we have already said, whether or not outrage is to be punished, and the honour of the Crown maintained. To both these Mr. WILSON has given the most emphatic NO he has the power to pronounce. Although the excuses which the honourable gentleman offered the Committee were in no respect to the purpose, yet they are curious, as an example of official fencing. For instance, he thinks the outrage lost all its importance as soon as he had the declaration of the priest that he the priest was not concerned in it; though it was undeniable that the outrage was committed *in the interest of the priest*, and it was cowardly truckling to permit him to profit by it. Then, Mr. WILSON thought the priest *a better* tenant, although he had burnt the very thin land and taken four crops in succession off it, a circumstance denied by no one; so that passing by the honourable gentleman's notions of what improves an estate, we learn, that in the opinion of the Secretary of the Treasury, the promise of the Crown ought to be broken because something is to be got by doing so. And this is the functionary in whose hands Her Majesty's Woods and Forests are now virtually vested: for Mr. GORE, as matters stand, and with the fate of Mr. KENNEDY before him, can be nothing more than a registrar of the will of Mr. WILSON.

There are circumstances connected with the working of Lord DONOUGHMORE's committee by the Government officers which we trust some one will expose. For ourselves, we must refrain from entering upon topics foreign to the purpose of our journal. As much as we have said was necessary, in order to show into what sort of hands the management of the Woods and Forests has been permitted to fall; other questions must, and we hope will, be discussed by others.

VEGETABLE PATHOLOGY.—No. XXXVI.

159. The uniform composition of atmospheric air is mainly secured by the never-ceasing currents known by the name of winds, without which a complete admixture of its component gases would never take place, even supposing that the exhaustion of its several constituents were properly compensated by the vital or dynamical processes which are constantly carried on in nature. A stagnant atmosphere is notoriously incompatible with the health of most animals, but in the case of many vegetables, where no noxious vapours arise from the soil or structures in which they are cultivated, it is not so necessary that the air should be constantly changed, the nocturnal and diurnal absorption and emission of oxygen compensating each other with sufficient exactness to secure the conditions necessary to health. Where, however, plants are grown in frames heated with manure, or where noxious matters are generated by the fuel, a good system of ventilation is absolutely necessary, to set free the superabundant moisture, which is as prejudicial as water stagnating in the soil, and at the same time to regulate the temperature. All ventilation, however, of plants grown under artificial conditions requires caution, as disease is often induced by sudden changes, especially of temperature, disturbing vital action, and thus impairing health. That plants may be maintained in health with extremely slight ventilation is proved by the condition in which many can be maintained in Wardian cases, but in them the probable sources of any great depravation of the air are far smaller than in ordinary systems of culture. We have more than once seen death or inveterate disease arise from the gas produced by decaying vegetable matter introduced into the stove to produce heat, as in the case of fires, or from rotting vegetables placed round a frame, the gas from which found its way inwards, and caused death in a very few hours.

160. One main object of ventilation is to secure such a degree of dryness in the air as may be incompatible with the growth of fungi, for their abundance depends far more upon the humidity of the air than upon the quantity of water which may fall upon the soil in a given locality. If the air be too moist proper evaporation does not take place, the vital powers are depressed, a multitude of little parasites find a fit matrix for the first stages of growth, and a putrefactive process is soon induced which spreads from the immediate seat of the fungus to the other tissues, and the whole plant dies, or is said by gardeners to damp off; and as many kinds of mould flourish at a very low temperature in winter, when sufficient ventilation cannot be secured without depressing the vital energies of the plants too much, these little parasites are under such circumstances peculiarly destructive.

161. On a larger scale, however, ventilation answers a most important end, apart from any effect it may have in driving away noxious gases, or, what amounts to the same practical effect, mixing them so intimately with the general atmosphere as to render their action so extremely small as to be inappreciable. It appears from the observations of Mr. Knight that the motion communicated by wind to vegetables is by no means unimportant as regards the development of wood. Those parts of trees which were so bandaged as almost to prevent motion increased but very little in comparison with those which were exposed to the full action of the wind. The subject has not at present been thoroughly investigated; but it is almost impossible to look on a field of corn, waving like the surface of the sea, without being convinced that the active motion must have a strong influence upon the circulation, without taking into account the increased evaporation which must be consequent on such a rapid change of contact.

162. Noxious vapours seem capable of affecting the roots as well as the free portions of a plant; for, whether absorbed with water or free, they are capable of penetrating, though at different rates, the tender coats of the spongelet; and inasmuch as it appears by the late observations of Mr. Graham * that chemical change always accompanies exosmose and endosmose, at least of non-elastic fluids, the effect of the entrance of such matters as sulphuretted hydrogen, the impure carburetted hydrogen of coal gas, may very soon prove fatal. *M. J. B.*

* For the knowledge of this I am indebted to Dr. Hooker, not having immediate access to the paper.

DR. STOCKS AND MR. BARKER WEBB.

DEATH has been busy among botanists. It is, in the first place, our melancholy duty to announce the sudden death of Dr. JOHN ELLERTON STOCKS, of the Bombay medical staff, one of the most able and promising of Indian botanists, who, at the early age of 34, has been carried off by apoplexy.

Dr. Stocks has long been known both in this country and in India, as a most enterprising traveller and investigator of the natural productions of Scinde and Beluchistan, countries which he indefatigably explored, and in the latter of which he held important posts; first that of vaccinator, and afterwards that of inspector of drugs for the East India Company. In addition to an extensive herbarium, Dr. Stocks had collected materials for a general work on the natural history, manners, customs, arts, and manufactures of Scinde. In this he had made great progress, and his many friends were anxiously looking for its appearance, well assured from the ability and energy of its author, as well as from the novelty of the materials at his command, that it would be a work of very high interest, and of deep importance to all who are interested in the welfare of India.

Dr. Stocks arrived in England on furlough in the winter of 1853, bringing with him a large herbarium of Bombay plants, formed when officiating as inspector of forests during the absence on furlough of Dr. Gibson. These Dr. Stocks brought to Kew, and he took up his abode at that place for the purpose of publishing and distributing them, and of preparing for the press the work mentioned above.

For some years Dr. Stocks had suffered intermittently from severe neuralgic pains in the head and neck, which he attributed to the effects of fever, contracted during his arduous labours in the burning deserts of Scinde. They, however, in reality indicated a serious lesion of the vessels of the brain, which ended in two strokes of apoplexy, which succeeded each other with an interval of very few days, and the second of which carried him off in a few hours. This occurred at the house of a very intimate friend, at Dottingham, near Hull, the place of his birth, whither he had repaired for relaxation, after having completed the arrangement of his herbarium.

Besides being an excellent botanist, Dr. Stocks was a man of great and varied attainments in science and literature. From his childhood his career had been a remarkably promising one, and his friends in the service and in England looked confidently forward to his becoming one of the most useful and sound men of science of his day. To great energy of character, and an indomitable perseverance, Dr. Stocks united a singularly amiable and agreeable disposition, a temper proof against every source of irritation, and an amount of tact and skill in gaining the affection of his servants, and in overcoming the jealousies of the half civilised races amongst whom he travelled, which bore him safely through great dangers and difficulties, both of the climate and the natives. In his intercourse with his brother officers in India, and with his friends of all classes in England, he was no less distinguished for the facility with which he won their regard and esteem; and when to this we add that he was as liberal with his collections as with his information, and had the means and power both of interesting and instructing by his conversation, the severity of his loss to the rapidly diminishing numbers of scientific botanists can scarcely be overrated.

Information has also just reached us of the sudden death of another and very distinguished botanist, PHILIP BARKER WEBB, Esq., well known as joint author with Mr. Berthelot of the "History of the Canary Islands."

Mr. Webb was a native of England, but had resided for many years in Paris, where he was well known as the possessor of one of the largest private herbaria in Europe, and where he enjoyed the society of a large circle of scientific friends.

As a botanist, Mr. Webb was chiefly distinguished by his critical knowledge of South European plants, acquired from personal observation made during extensive journeys in the Mediterranean regions, Spain, Italy, and the Canary Islands. His published works are remarkable for the knowledge of the literature of botany which they display, the classical elegance of the language, and the minute accuracy of his observations, though the latter too often led him to overlook general truths in specialities and to multiply species in an excessive degree.

It is, however, as a most liberal and enlightened patron of botany in all its branches, that Mr. Webb's loss will be most severely felt; he was not only a generous contributor to every botanical traveller, but also the projector of various scientific expeditions, and a charitable friend of all in every case of need. His house was seldom without some young aspirant for botanical fame, who found there a home and occupation when in need of pecuniary assistance.

Mr. Webb's attainments were not confined to botany; he was a most accomplished and elegant scholar and linguist, and added to a highly cultivated intellect an aptitude for conveying his information in the most agreeable and instructive manner. In his intercourse with his fellow-botanists he displayed the most generous appreciation of the labours of all, whilst his amiable disposition, urbane deportment, and freedom from jealousies and distrust of his *confrères* secured him the regard and esteem of the whole corps of botanists in the French capital. Mr. Webb was carried off suddenly by cholera in his sixty-second year.

DESCRIPTIONS OF NEW PEARS CULTIVATED BY M. DE LIRON D'AIROLES, AT LA CIVELIERE, NANTES.—BY HIMSELF.

(*Continued from p. 517.*)

Poire Maria (de Nantes).—Tree very vigorous as a standard on the Pear stock, and is entirely destitute of spines. It seems well adapted for orchards; however, if cultivated as a pyramid the fruit would probably attain a larger size. Fruit nearly middle-sized, turbinate, about 2½ inches in length. Stalk thick and short; eye open, in a wide shallow cavity; the segments of the calyx drop off. Skin almost entirely covered with russet; brown reddish next the sun, and everywhere sprinkled with pale red dots; it becomes yellowish when the fruit approaches maturity. Flesh white, fine, melting, with abundance of sweet perfumed juice. Season, November. Raised from seed by M. Garnier, and fruited for the first time in 1853.

Beurré Antoinette.—Tree of moderate vigour, and is likely to be very productive. It will probably succeed best on the Pear stock and trained as a pyramid. However, as it has been but lately obtained, we cannot speak from experience as regards the mode of culture best adapted to it. Fruit variable in form, about 3 inches in length, and as many in diameter. Stalk rather more than 1 inch in length, woody, slender, yellowish-brown, inserted between some small projections. Eye open, shallow, and irregular. Skin smooth, pale green, changing to yellow at maturity, sprinkled irregularly with small russet specks. Flesh fine, melting, buttery, very juicy, and sugary, with a remarkably perfumed flavour. Season, October and November. Raised by M. A. Bivort.

Poire Fondante de Noël.—Tree very vigorous and productive, suitable for a pyramid, a form which it naturally assumes. Fruit Bergamot-shaped, about 2¾ inches in diameter each way; sometimes, however, it is longer from the base to the eye than it is across. Stalk nearly an inch in length, thickened and fleshy at its junction with the fruit. Eye open, irregular, in a shallow depression. Skin smooth, green, spotted with cinnamon coloured russet and sprinkled with some brown dots, especially next the sun; the colour changes to golden yellow when the fruit is ripe. Flesh fine, melting, very juicy, with a deliciously perfumed flavour. Season, December and January.

Belle après Noël is a synonyme of the above. The variety was obtained by Major Espéren. ||

WOODS AND PLANTATIONS.—No. III.

WOODS are usually divided into a certain number of "cuts," by which means a portion of the underwood is saleable every year, having had eight years' growth. After its division into lots, it is sold by auction to the highest bidder, the woodman having marked such Oaks as he thinks should be left standing for a future crop of timber. In almost all cases, too, many of these trees are left to do justice to the underwood, and owing to the inherent sentiment of veneration for everything

the shape of an Oak which our labourers entertain (probably derived from Druidical tradition) many weak etiolated things are left, being Oaks, which never thrive again, being suddenly deprived of all their shelter. The lots of underwood when sold are cut by the purchasers; too generally by persons unaccustomed to the use of the adze, the implement itself being frequently dull and notched; the roots of the stools are thus much strained and loosened, and the face is left high, and with rough jagged cuts, preventing the moisture from running off. It is seldom that the stools are cut down sufficiently near to the surface, and becoming higher with every successive cutting, they produce weaker and weaker shoots; and from not being cut upwards with a clean cut, they soon get rotten. Much of the work is deferred till too late, and, consequently, the supplies accumulated by the action of the roots are wasted and misappropriated.

When after being cut down the stools start into new growth, it is customary to leave every bud that pushes into existence, it may be to become a vigorous, straight, clean growth, but too often to be smothered and die, after having robbed, to no purpose, those which still survive.

This is not an overcharged picture of the way in which this department of sylvan economy is conducted. I will now proceed to suggest measures for its improvement.

In a former paper I proposed the separation of the growth of underwood from that of timber, and I fully believe that such a step would be a leading one in the proper direction. Every intelligent practical cultivator admits the importance of a free access of light, and the advantage of circulation of air. It is beyond doubt, that in the absence of light the wood of trees does not become properly constituted and solidified, and it was proved by that great philosopher and vegetable physiologist, the late Thomas Andrew Knight, Esq., that air in motion exercises a most salutary influence on the growth of trees. By the separation of timber trees from underwood, the latter would have the advantage of unmitigated light, while the stems of the former would not be wrapped in the gloom of tall, toppy undergrowths; and the air would penetrate among them, its gentle motion "enabling their fluids to circulate more freely," and conduce to the formation of woody matter. It is admitted by competent practical authority, that the wood of those trees which grow on the exposed side of a plantation or forest is of much greater density than that of those nursed in the interior, and it is of course more durable and valuable; with this well-known fact staring us in the face at every turn, is it not strange that we still persist, most doggedly, in excluding the light of heaven from our woods, and guard most effectually lest a zephyr should enter?

As the bright sun of scientific discovery cannot too often illumine the atmosphere of traditionary ignorant practices, or dispel too much the misty exhalations of empirical usage, I venture to quote from Mr. Knight's paper, printed in the Philosophical Transactions for 1803, the following account of an experiment on some young Apple trees, which is most conclusive:—

"Early in the spring of 1801, I selected a number of young seedling Apple trees, whose stems were about an inch in diameter, and whose height between the roots and first branches was between 6 and 7 feet. These trees stood about 8 feet from each other, and, of course, a free passage for the wind to act on each tree was afforded. By means of stakes and bandages of hay, not so tightly bound as to impede the progress of any fluid within the trees, I nearly deprived the roots and lower parts of the stems of several trees of all motion, to the height of 3 feet from the ground, leaving the upper part of the stems and branches in their natural state. In the succeeding summer much new wood accumulated in the parts which were kept in motion by the wind; but the lower parts of the stems and roots increased very little in size. Removing the bandages from one of these trees in the following winter, I fixed a stake in the ground, about 10 feet distant from the tree, on the east side of it, and I attached the tree to the stake at the height of 6 feet, by means of a slender pole, about 12 feet long, thus leaving the tree at liberty to move towards the north and south, or, more properly, in the segment of a circle, of which the pole formed the radius, but in no other direction. Thus circumstanced, the diameter of the tree from north to south, in that part which was most exercised by the wind, exceeded that of the opposite direction, in the following autumn, in the proportion of 13 to 11."

Here we have a decided proof of the advantage of a certain amount of air in motion, as evinced by the augmentation of the bole of the tree "most exercised." But while we would avoid the Charybdis of excluding all circulation of air, we must not split upon Scilla by giving no shelter; for in exposed situations it is a most important element of success. The point to attain is that happy medium which gives moderate shelter, but does not impede the play of light or air round every Oak or other tree of the wood, in all stages of its growth.

It strikes me that this could not be better accomplished than by having large woods divided into alternate zones of trees and underwood, the trees and bushes in the outside one being mixed, and left thicker for the purposes of shelter and matsine-nets, and thus the margin of it thinned and grouped with a view only to picturesque effect. It would certainly be better if proprietors, instead of selling their underwood standing, were to have it cut, sorted, and allotted by their own people, selling it by auction when cut. They would thus avoid the injury inflicted on the stools by unskilful hands. Nothing is more important than to cut down low and to level the stool all round with a clean upward cut for a finish. It greatly renovates very old and high stoolings to saw them down low, and finish them off smoothly with a sharp axe. [Certainly.]

The want of judgment which we constantly see in the practice of the spring cutting of hedges and underwood is much to be reprehended, and can only be accounted for by a want of knowledge of the laws which regulate vegetable life, or a blind adherence to old habits and customs. In the course of my experience I have not unfrequently heard it affirmed that late cutting would succeed best with thin hedges; but my own conviction is, and I give the opinion most advisedly, that the sooner after the "sere and yellow leaf" has fallen, our underwoods, which are in a fit state for the purpose, are cut down, the more vigorous the shoots of the succeeding year will be, while, if the operation is deferred till spring, the sap will have ascended, the buds will be swelling, and the energies of the plant will have been expended to no purpose. [Hear, hear.]

Dr. Lindley says, "Theory of Horticulture," p. 17, that roots "are perpetually attracting food from the earth and conveying it into the interior of a plant, where it is stored up till it is required by the young shoots of the succeeding season." Read this, ye foresters! Mark it, ye woodmen! And remember that you cannot practise late cutting with impunity. The vessels of every pole cut in the spring are full of sap, and therefore they will be less lasting for stakes or hurdles, while by that practice you are abstracting the food prepared in Nature's laboratory for the nourishment of a future growth.

I believe that there is no one thing "under the sun" on which more misconception prevails than there is with regard to pruning, simply because most persons regard it as a remedial art rather than a preventive one. It is too often accepted as the practice of amputating large branches, which have grown with undue vigour, or the removal of mutilated limbs by the saw; but by good gardeners it is generally understood to be the science of assisting the operations of nature in the growth of trees for specific purposes, and concentrating their energies to some particular end. For this, the gardener who would induce luxuriant and vigorous growth, thins the nascent shoots with his finger and thumb, not allowing the superfluous ones to become large, only to be removed by cutting; he prunes, too, as soon as the leaves have fallen, and wastes not the matter slowly accumulated by the roots. On the contrary, when he would induce a state of fruitfulness, he uses means of an opposite kind to attain his object—he resorts to late pruning, to pinching the summer wood, and other ingenious devices. The farmer, too, leaves not his Turnips to struggle for existence till the weakest are destroyed, to the infinite injury of the survivors. Why, then, are the principles which are recognised in the horticultural and agricultural world unworthy of the attention of the managers of woods? There can be no doubt that the produce of copse or underwood would be greatly improved if the embryo shoots were, in garden parlance, to be "disbudded," or, in more intelligible language, to be thinned, rubbing off the weakest as soon as formed, instead of retaining all that are produced to struggle together for existence.

I have hitherto confined my remarks to useful and profitable undergrowths, but on many estates it is necessary to have covert for game. Happily for this country the preservation of game is carried to a much less extent than formerly, and gentlemen in the present day attach more value to their waving crops of golden grain than to the annual massacre of hares, pheasants, and rabbits which used to take place. Game, too, from the facility of purchase, is now within the reach of tradesmen, and in common with many other things which were not, but now are, within reach of the million, it is less valued by the higher classes. It is probable that in the great progress of population and civilisation our wild animals will ere long become extinct, or "few and far between."

It is essential that a covert for game should be thick at bottom, but as our woods are managed we generally find that it is thinnest where it should be the most dense, the long straggling branches impeding the progress of the beaters, and holding next to nothing.

There are few persons of fortune who do not wish to have a limited supply of game, those who do so cannot do better than follow the advice of Mr. Brown, of Arniston, viz., to plant masses of evergreens in open spaces, such as Holly, Rhododendrons, &c., which would greatly enliven our woods and produce that charming variety which all who value the charms of a country life must fully appreciate. *Henry Bailey, Nuneham, Oxford.*

MARANTAS.

Plants with variegated foliage are now in much esteem for decorative purposes, and well they deserve to be so, for many of them are exceedingly useful, being striking and interesting objects irrespective of their flowers; and hence their beauty is of a more enduring character than that of plants which have no particular beauty except while in bloom. Unfortunately, however, the flowers of most of our finest variegated plants are very uninteresting; but this is of little importance, as the beauty of their foliage will always render them attractive and useful for decorative purposes. Several varieties of Maranta deserve to be ranked among the finest of our variegated plants, being free growers, with large finely marked foliage, which is not so tender and liable to become disfigured by any little mismanagement as is the case with many of our variegated plants. Persons about to commence the culture of this genus, who can only accommodate a few varieties, should procure the red and white veined kinds, which are very beautiful; but vittata is my own favourite, and is probably the most useful variety of the genus. These are somewhat expensive at present, but there is no risk of losing them, hence there is no danger of having to purchase a second plant, as frequently happens with amateurs in the case of hard-wooded plants. Young plants cannot be procured at a better season of the year than the present, for there will be no danger of injury on the journey while the weather is mild. When received, the plants should be placed in a close but not over warm house or pit, and kept rather dry for a few days until they get over any little injuries they may have received in travelling. Then examine the state of the roots, and give a moderate shift if necessary, using nice fibry peat with a small proportion of loam carefully broken up, and well intermixed with plenty of sharp sand and some lumpy bits of charcoal, to ensure the free percolation of water through the mass. Likewise have the pots well drained, for the Maranta requires a free supply of water while in active growth; but stagnant moisture about the roots is very injurious, spoiling the markings of the foliage as well as the general health of the plant. After potting, place the plants in a close warm pit or house, where they will not be exposed to bright sunshine, and water carefully at the root until they get hold of the fresh soil; but dew them overhead with the syringe every fine afternoon. If a brisk bottom-heat can be commanded, this will greatly assist in promoting active growth; but fine strong specimens will soon be obtained without it. When dull cloudy weather occurs it will probably be necessary to place the plants in a light rather airy part of the house, in order to prevent the foliage being injured by damp; but unless damp appears inclined to be troublesome, they may be allowed to remain in the warmest corner, and be kept growing on slowly. Syringing will of course be unnecessary in winter, except an occasional wipe on a fine morning, to clear the foliage of dust, &c.; and too much water must not be given to the soil. Attend to repotting in spring as early as may be necessary, giving moderate shifts, which are safer than large ones. If scale or insects of any kind attack the foliage, these must be carefully removed by means of a sponge and water, and this should be attended to before the foliage gets disfigured. By continuing this treatment for a season or two, fine large specimens will be obtained; and when this is the case they may be removed from the stove and placed in the conservatory, where, if they are afforded a close corner, and not over-watered or allowed to suffer from damp, they will be quite at home all the summer season. But they must be removed to where a temperature of not less than 55° is maintained as soon as cold damp weather sets in in autumn. Large specimens will of course require to be repotted occasionally, and this should be done as early in spring as there may be an opportunity of affording them a brisk temperature to stir the roots. With proper management, specimens will last for any number of years; and propagation is easily effected by dividing the old plants, or by means of offsets, which should be taken off with as many roots as possible, and kept close for a few weeks after potting, when they will be sufficiently rooted to be treated as established plants. *Alpha.*

Home Correspondence.

A Collector in the Crimea.—Allow me to suggest that it might be worth while for some members of the Horticultural Society to send a collector to the Crimea and Asia Minor, especially for Acorns, Pinus, and hardy plants. The officers in the army have other things to think of; and, alas! many are cut off by cholera. Now, there are in London, doubtless, plenty of young men, such as gardeners or nursery foremen out of place, who would be glad of such an errand; the expense would not be much, as a passage would be obtained in a Government vessel. If a number, say 10 or 20, were to join, the cost of the collector could be easily defrayed, and the results distributed among the 10 or 20 subscribers. I should be, for one, anxious to join in such a subscription. Or why does not some intelligent young man propose to go out of himself, and open a list publicly for subscriptions? The time of Acorns ripening is now near at hand. *C. D.* [We fear it is too late for the present season; otherwise the plan might pay.]

Mosquito Smoke.—In answer to "R. A. H." (see p. 565) respecting the passage referred to in Fortune's book on China, I have made the following note, unfortunately without the reference. "For keeping off mosquitoes the Chinese use the resinous sawdust of Juniper wood smeared upon Bamboo, which they find very efficacious." The word "smeared" is not clear; but the Bamboo can be only the vehicle, and the sawdust stuck upon paper, or other material, so as to hang up and burn gradually, with smoke and no flame, seems to answer the conditions. Whether, where Juniper cannot be got, other highly resinous woods (not medicinal) would answer the purpose, and whether the sick patient could bear enough of the smoke to expel the gnats, experiment may decide. *J. Prideaux, Plymouth, Sept. 5.*

Tritoma Uvaria.—This evergreen herbaceous plant, though introduced from the Cape of Good Hope so far back as the year 1707, is yet comparatively little cultivated in this country. In the course of my perambulations I have rarely ever met with it; and where

in one or two instances I had the good fortune to encounter it, I found it in anything but a flourishing or perfect condition. When so found, however, it forms an object of surpassing beauty. About four years ago I received a small plant of it from Kew, which, after growing some time in a pot, was turned out in the spring of 1851 into an open border (having a north-east aspect, but sheltered from the south-west winds, which are very prevalent and destructive here), by a terrace wall. Here it appeared to be at home, for it grew vigorously, and in the autumn of the following year it rewarded me with a few heads of bloom, giving an earnest of what was in store for me when the plant itself should be more fully developed. This year my brightest hopes with respect to this plant have been realised. At the present time it is the most conspicuous object among the many plants by which it is surrounded. Its flower-stalks, which number 24, are thrown well above its flag-like and graceful foliage, some of them rising to the height of 5 feet, and sufficiently strong to bear unsupported the magnificent display of blossoms which cluster round their summits. It is a plant which, whether viewed from a distance or in close proximity, cannot fail to captivate, while it must be regarded as one of the brightest gems ever introduced from that rich world of floral loveliness, the Cape. Those whose object in flower-gardening is to combine beauty with effect cannot do better than grow this plant extensively, for it will be sure to reward them for any labour or skill bestowed on its cultivation. It appears to delight in a deep rich loamy soil; and as a proof of its capability to resist frost, I may mention that it withstood the severity of last winter uninjured. *Charles Winchester, Osborne, Sept.* 4.

Cherries.—I have forwarded you a specimen of the Merry, gathered from a tree growing in my garden at Wootton Bridge, Isle of Wight. The sort was procured from an old tree about five years ago; and the fruit, now sent with four others, were the first fruits of the young tree raised from the budding of that season. As I have known this sort of Merry these 50 years, and as it had the recommendation of being a large good kind of fruit, I was induced to procure some cuttings from the original tree, which is now become very old, and bud some young stocks; and having done so, I have now several young trees which will prevent its becoming extinct. The original is now standing in an old garden which is for the most part walled in, and, consequently, but little known. The weight of the fruit sent, when gathered, was about a quarter of an ounce with the stem. *J.* [The fruit is middle-sized, heart-shaped, black; flesh dark red, sweet and rich. The stone is large in proportion to the size of the fruit. It is a good variety of the wild Cherry called "Merry" in some parts of this country, and corresponds with the Merisier of the French ||]

Gnats.—If "R. A. H." will hang a few small bunches of Rue at the bed's head of the sick patient, he will find that the gnats will cease to annoy him. I have always found this simple remedy effectual, but perhaps a sick person may not like the smell of the Rue, but I should think it the least evil of the two. *G. D. V.*

Propagation of New Holland Plants.—September is the best month for putting in cuttings of New Holland plants. The compost in which the cuttings are to be inserted should consist of finely sifted peat and clean silver sand in equal parts; each pot should contain one-third of clear broken potsherds for drainage, one-third of the above compost, surmounted by one-third of clean silver sand; the whole should be pressed firmly together. The cuttings should be neatly inserted at convenient distances apart, under bell-glasses. A close pit or frame in a north aspect, where the bottom is both cool and dry (where the conveniences are limited), is the best situation that can be provided for the cuttings until they are rooted, when the glasses may be dispensed with. At the approach of winter the pots should be removed, washed, and should occupy a shelf near the glass, in the most airy part of the greenhouse. In order to ward off the effects of damp, the bell-glasses should be carefully dried every morning, about the same hour; and to still further guard against the silent though desolating ravages of this, often till too late, unseen enemy, the cuttings from half-past 7 to 8 o'clock should be exposed to the influences of the atmosphere. Early the following spring, the plants should be potted singly into 3-inch pots, in a compost consisting of two-thirds turfy peat, broken into lumps (previously scalded, to kill insects), and one-third sharp sand; pot firmly and drain well. The cool pit, but in a warm aspect, should again be resorted to, as furnishing the young plants with the best possible situation that they can have during the first growing season. *R. Miles, London.*

Victoria Regia.—It may not be uninteresting to know that this fine Water Lily can be grown in perfection in a much smaller tank and house than many suppose it possible for it to thrive in. It may now be seen in the most robust health, and flowering profusely, at Flitwick Manor, Bedfordshire, the seat of Mr. Brooks. The gardener, Mr. Hewetson, had a seedling plant of it sent him a distance of more than 100 miles, on the 12th of April last; he planted it as soon as he received it in a slate tank, 9½ feet long by 9 feet wide, and 3½ feet deep, in a compost of strong turfy loam and decayed cow manure, and I have not seen any plant of this Lily growing so luxuriantly, or flowering so freely. The leaves measure 5½ feet in diameter, many of them hanging over the sides of the tank. Other aquatics are growing in similar tanks with equal vigour, and are flowering abundantly. At present there are many beautiful flowers open on Nymphæa spodiana (?) and others are showing for flower. All were planted in the same compost, and have had comparatively but little fire-heat. *J. F., Luton Hoo Park.*

Roses on the Manetti Stock.—I have lately seen the most beautiful little Rose garden, in the picturesque grounds of J. Morris, Esq., at Sandgate, I ever beheld. Its history is as follows: for 20 years this spot had been appropriated to Roses, and the soil being very light and sandy, became at last so exhausted that Roses budded on the Dog-Rose refused to grow, even with abundance of manure mixed with the soil. As a last effort, the ground was cleared of all the dead and dying Roses last November, some manure was applied, and the soil was well stirred. Three hundred young dwarf Rose trees, all budded on the Manetti, were then planted. Their luxuriance is now quite remarkable; I never saw such beautiful growth or finer flowers. So vigorous are their young shoots that they will to a certainty (as they are nearly all Hybrid Perpetuals) give a succession of flowers till November. This for a Rose garden which has been planted barely nine months is, I think, a fact worthy recording. It is indeed great encouragement for those, and there are many, who have failed in cultivating Roses in light and exhausted soils. It is also most interesting and rare to see such beautiful Roses thus flourishing only 200 yards from the sea. *Rosa.*

Fruit crop at Honfleur, Calvados, France.—I may mention for your information, that fruit of all kinds, except Grapes, is plentiful in this neighbourhood; and apropos of your controversy with M. de Jonghe, I may add, that a friend of mine has for some years covered his fruit trees, espaliers and all, with nets, removing them when the fruit is fairly formed, and frost not likely to recur; he has found an immense advantage in this plan, his fruit being always finer and more abundant than his neighbours.' *J. T. H.*

Turning Plants White.—I have recently visited a garden in the midland district, the gardener of which seems to take a particular delight in turning everything he can lay hands on white. I particularly noticed some Balm having quite an ivory-like appearance. Can you inform me by what process this is effected? [No.] *Banbury Cross.*

Notices of Books.

Dr. Leidy's Flora and Fauna within Living Animals.—It appears from an article in the "Florist and Horticultural Journal," published in the United States, that we have inadvertently given great offence by our review of the work above mentioned. On a reperusal of that review we find it very difficult to conceive why it has been taken in such bad part, and the more especially as our object in writing it was to induce those persons who had already purchased Dr. Robin's work, which has had a very large sale in England, to add to their libraries the work of Dr. Leidy, as containing information not to be found in Robin; and we were the more desirous of recommending it, because the only remuneration, as far as we believe, which the authors of communications to the Smithsonian Institution can look to, is the sale of the copies which are placed at their disposal by the society.

The passage which is more particularly called in question stands as follows. "It may be true that it does not contain much which may not be found in Robin's second edition of his admirable work on those fungals which grow on animals; but the illustrations are in some instances far more complete, and well worth the attention of every botanist and physiologist who may chance to be interested in the subject. We would point out more especially the plates which represent the curious parasites which infest the intestines of different species of Julus, and the several entozoa which live in their company; for though the principal of them are not overlooked by Robin, there is nothing in his plates as regards these particular productions which can for a moment be compared with Dr. Leidy's copious and excellent figures." Now, what "remarkable errors" or "perversions" are contained in the above passage we cannot conceive.

There is no question whatever as to the originality of the observations of Dr. Leidy, a question altogether beyond the scope of our journal, which aims at little more in its reviews than an indication of the sources from whence trustworthy information can be obtained; and the whole tendency of the passage is to show that, on some points, Dr. Leidy's work contains information and illustrations superior to what is presented by the popular publication of Dr. Robin. We beg, too, to observe that at the time our notice was written, we had read every word of Dr. Leidy's book, and had gone through that of Dr. Robin page by page with a view to ascertain what additions had been made in his second edition. If, therefore, we have erred, it has been with our eyes open. If we had reason to believe that we had given the slightest pain to Dr. Leidy, we should at once write to him personally to express our regret; for we have received too many kindnesses from American botanists, and are in too intimate relation with several, to wish to give a moment's dissatisfaction where we have met with nothing but the most kind and honourable feeling, without a particle of captiousness or jealousy—a fact to which we have more than once borne testimony in this journal, as also to the rapid strides which every branch of botany is making in the United States; and those American botanists, such as Asa Gray, who know most of England, are well aware that such kindly feelings are universal amongst those who are most worthy of estimation for diligence and talent. Much as we admire genuine patriotism, we have no sympathy for the man of science, however great his abilities may be, who confines his powers of vision to his own horizon, and will acknowledge no merit with which he is not personally or nationally identified.

New Plants.

83. Chætogastra Lindeniana. *Planchon.*

"This is another of those woody Melastomads belonging to the fine and well marked group which inhabits the sterile and snowy regions (paramos) of the Columbian Andes. These alpine plants, which are remarkable for the splendour of their flowers, form the principal ornament of the high stormy places in which they are found, and are protected from the inclemencies of their natural climate by their coriaceous or velvety leaves and persistent fleshy flowers, whose corollas resist the action of frost and wind. These species from the Andes must not therefore be confounded with those with deciduous short-lived flowers found in hot and temperate climates, and which have deservedly fallen in estimation. The C. Lindeniana is a bushy shrub with hairy leaves having a rusty under surface (in their native country) and large blackish-purple flowers. It was discovered on the top of Monserrat (one of the highest peaks of the plateau of Sta. Fé de Bogota), at a height of 9840 feet. Mr. Schlim again found it in the paramos of the province of Pamplona, and thence introduced it into Europe." Price 25 fr. *Linden's Catalogue for* 1854.

It, as we suppose, a plant in our herbarium, without name, from Mr. Linden, numbered 1311, be this, it will be very near the *Chætogastra muricata* of Peru, another very fine thing found by Hartweg; but, like the rest of that collector's Peruvian and Grenada plants, never received alive in England.

84. Fraxinus (*Ornus*) dipetala. *Hook. et Arn. Bot. Beech*, p. 362, t. 87.

This Ash, first described from Douglas's specimens from New California, by Hooker and Arnott, has been introduced into this country from Chihuahua, one of the northern states of Mexico, by Mr. J. Potts, and is now growing in the garden of Mr. F. Scheer, at Northfleet. It has stood the last two winters well, and may therefore be considered as perfectly hardy. Its compact, lively green foliage, its purple branches, and its elegant white flowers, render this species as great an acquisition to our gardens as the other ornamental plants, for the introduction of which we are indebted to Mr. Potts. *Berthold Seemann.*

Garden Memoranda.

Horticultural Society's Garden, Turnham Green.—Since our last report the great Lælia superbiens in the curvilinear stove has thrown up three more flower spikes, which now number seven in all, being about as many as it has had on it in any previous year. As brilliant a display of flowers as usual may therefore be expected from it. Seldom have the glass houses presented a larger amount of floral beauty at this season than they now offer. In the stoves, this is kept up principally by means of Achimenes, which have been and are still beautifully in blossom; and in greenhouses such plants as Fuchsias, Calceolaria rugosa, which for autumn display is invaluable; Balsams, Japan Lilies, &c., maintain an agreeable amount of gaiety. Chrysanthemums for the conservatory are progressing most favourably, the plants being dwarf, bushy, and covered with leaves to the very pot; some early ones even promise soon to be in flower. In pits were numbers of young plants of Selago distans, which is struck in quantity every spring and grown on all the summer for the decoration of cool greenhouses and the conservatory shelves in winter, for which it has been found most valuable, its multitudes of small white flowers being much admired at that season. The magnificent Brugmansias, both white and red, which flower so beautifully in the conservatory three or four times a year, have just been close pruned, and have had their wood well painted over with a mixture of soft soap, clay, and sulphur, to keep them free of insects. Hedychium Gardnerianum, growing in the bed, is just coming into blossom, its great heads of yellow and orange flowers producing a brilliant effect. Few plants succeed better or look gayer than this in the bed of a conservatory. Camellias this year are well set with flower-buds, as is also a tree of Paulownia imperialis, which, though quite hardy, was brought in here in order to ascertain whether or not it could be made to flower after having a good roasting under glass. The result is as stated; it is now covered all over with flower buds which will probably open next spring. Cestrum aurantiacum a week or two ago was literally one mass of blossoms; it is again well furnished with flower buds, which, when they shall have expanded, make the third time it has blossomed this year. Statice arborea planted out in the bed has bloomed much better and longer than it does in a pot—its showy blue flowers remaining good quite three months; for conservatory beds few plants could possibly be more suitable.

In the Arboretum the bedding plants are just now at their best, and altogether this department of the garden is at present very enjoyable, the Grass being short, soft, and beautifully green, while the shade of the trees keeps the turf cool for walking on. The Mexican Pinuses, which were so much injured by the winter and

spring, have recovered wonderfully, the worst of them being now nearly covered with healthy foliage. Saxe-Gothæa, which had been killed more than half way down, is pushing afresh near the root; but whether or not it will survive the ensuing winter remains to be seen. The Fitz-Roya, which was much less hurt, has made young wood pretty freely.

In the orchard department the Apple trees have been badly affected with American blight. Brushing the parts affected with a painter's brush dipped in strong vinegar (No. 24) has been tried as a remedy.

On the Peach wall there is a good sprinkling of fruit, more especially on the Bellegarde, Late Admirable, Noblesse, Barrington, and Shanghae. The latter is a handsome Peach, which in a warm season like the present is even more sugary than the Bellegarde. It however requires a roasting autumn to have it in perfection. It is melting, with a good many fibres adhering to the stone where it is very red; the skin is pale yellow, streaked and mottled on the side next the sun with delicate red. As respects season it is rather later than the Bellegarde. The good early sorts of Peaches, such as the Acton Scot and Grosse Mignonne, are now all but over. On some of the trees the fruit is encased in Halliman's Glass Fruit Protectors, which exclude wasps, and keep such fruit as drop off from falling.

Pears on walls are in good health and well set with buds for another year, and if next spring be favourable a good crop may be expected. On Beurré Rance a few good fruits are swelling well under the present warm weather, and on Glout Morceau and Duchesse d'Angoulême is also a fair average crop.

In the kitchen garden Potatoes have caught the disease, from which even the Fluke is not exempt. It must be admitted, however, that it is more so than other kinds, and that all are much less affected this season than in previous years. Onions are very badly affected by a kind of rot at the root; they have been pulled up and laid out to dry with a view to stop its progress.

FLORICULTURE.

Layering Carnations.—The operation of layering is one of some nicety, and consequently there are many who do not do it at all well. Much has been written about it; but it requires practice and patience to do it properly. The system generally followed, and the one which I find to answer best, is, after having provided an equal quantity of road dust and decayed leaves, or other vegetable soils, well mixed, and a quantity of pegs, either made of Fern, or what is better leaden ones cast in a mould, I place my pot in a wheelbarrow or on a low table, and take my seat in front. I then, with a sharp knife, remove the lower leaves close to the stem, and shorten the ends of the others; but I am not fond of cutting away too much. When all the layers are trimmed some of the compost must be put on the pot; and, having selected the joint to cut through, I place my finger at the back, to keep it steady, and gently insert the point of my knife in the centre of the stem, pushing it gently forward with the edge downward till the blade is half through; I then give the handle a slight twist, and bring the blade out below the joint on the under side, thus forming a nice tongue. The nib is then cut back to a joint, and the piece of leaf stripped off, leaving a small bud at the bottom. It is then carefully pegged down in the fine soil which had been placed on the pot. Each layer is operated on in a similar manner. When all are down, they have a little more soil put on them, but they should by no means be buried deeply. It sometimes happens that there are shoots so high as not to be conveniently brought down to the same level as the others; when this is the case, a large piece of broken pot is placed within the rim, which holds up the soil, and makes a higher surface, in which they are layered; or sometimes they will be long enough to insert in small pots placed close to the stem. After having got all the shoots down and slightly covered with soil, I place smooth flat stones, about the size of a halfpenny, over the cut of each layer. This not only prevents the soil from being washed away from that particular part, but it very much accelerates the rooting; for if the weather is hot, and the soil in other parts of the pot dry, if you examine beneath these stones, a genial moisture will be perceived; yet the pebbles absorb heat, which they slowly give out, much to the benefit of the layers. I must here notice the operation of piping; and though the Carnation is much more difficult to root than the Pink, yet I have adopted it with tolerable success; the great matter is to do them early, for they require plenty of time. I insert them in a light soil, under a north-east wall, and having watered, to settle the soil about them, when perfectly dry, they are covered with a hand-glass. They sometimes require a slight shade, and I do not remove the glass till I see they are establishing themselves, unless any damp off; in that case they are taken away. Worms sometimes prove injurious, both to pipings and to layers. When that happens a little water, in which hot lime has been slaked, should be poured over their holes. The layers must be constantly watched, and soil added now and then, but it must be with a sparing hand. They may be watered most evenings in hot weather, but it should be with water which has been exposed to the action of the sun during the day; and but little other attention will be required till they are ready to take off. If seed has been saved it should remain in the pods till next spring; about the latter end of April it may be rubbed out, and sown in shallow pans, or on a bed, covering it slightly with soil. It may remain there till the plants are about 3 inches high, when they may be planted out on a moderately rich bed. It is well not to have them too strong the first winter; but the following spring the surface of the soil may be covered with a rich compost. As the seedlings spindle, the single ones should be removed, to give the others room; and should the raiser be fortunate enough to have one which strikes his fancy, he may layer it, and adopt the same means and precautions as I have before stated. *W.*

Royal South London Floricultural Society.—The last meeting for the season took place on Wednesday last at the Surrey Zoological Gardens, and the day being fine it was well attended. Hollyhocks, in 12 spikes, were exhibited by Mr. Chater, of Saffron Walden, to whom the 1st prize was awarded. His varieties were—Eugenia, Beauty of Cheshunt, Meteor, Hon. Mrs. Ashley, Lilac Model, Walden Gem, Rosy Circle, Joan of Arc, Sulphur Queen, Pourpre de Tyre, Pope's Napoleon, and Emily. These were all very fine. Messrs. Paul and Son were 2d with Agricola, Boadicea, Emperor Louis Napoleon (Seedling), Flambeau, Queen of Denmark, Lizzy, King of Roses, Joan of Arc, Glory of Cheshunt, Yellow Model, and Metropolitan, a bright crimson seedling. As regards Dahlias, there was a very good display. In the Nurserymen's Class, of 24 blooms, Mr. Keynes, of Salisbury, was 1st, with Sir R. Whittington, Exquisite, Lilac King, Louisa Glenny, Negro, Sir C. Napier, Essex Triumph, John Keynes, Miss Caroline, Mr. Herbert, Primrose Perfection, Fearless, John Edward, Ariel, Sir F. Bathurst, Rachel Rawlings, Morning Star, Port Royal, Duchess of Kent, Miss Susan, Fanny Keynes, Duke of Wellington, Red Gauntlet, and Plantagenet. Mr. Legge, of Edmonton, was 2d. In the Amateur Class, for 24 blooms, J. Sladden, Esq., of Deal, was 1st, and J. S. Proctor, jun., Esq., 2d. In the same class for 12 blooms, Mr. Robinson, of Pimlico, was 1st. For 24 Fancies, Mr. Keynes was 1st in the Nurserymen's Class, and Mr. Robinson in that of Amateurs. Several Seedling Dahlias were exhibited, the best being Ringleader (Holmes's), which received the Society's First Class Certificate last year. Wheeler's Lord Bath is also a fine dark flower, to which a First Class Certificate was awarded. Church's James Andrews is a pretty buff-coloured flower. Pope's Omer Pacha, a ruby crimson, received a First Class Certificate. Rawlings' Miss Frampton, a good fancy variety, white and crimson, fine in shape, and good in substance, also received a First Class Certificate. Mr. Keynes furnished a good flower called Ruby Queen, which was awarded a First Class Certificate. Several others were exhibited, the best being Comet (Keynes) pale yellow and pink, slightly striped with crimson; Lady Folkestone (Keynes); Dr. Reid (Rawlings); Beauty (Rawlings); and Thunderer (Rawlings), a striking pale scarlet flower. In addition to the above there was a good show of cut flowers, Miscellaneous and other plants.

Roses: *A K.* In pruning standards, the end bud should be left under the branch, in order that the lower branches may incline downwards; and these end shoots being left two or three eyes long every time the trees are pruned, the latter soon arrive at the desired size; but when any portion of the tree wants filling up, four or five eyes may be left. As the trees advance to a large size, they require less assistance from us.

Miscellaneous.

Roses in the United States.—I have seen whole hedges of Tea Roses in South Carolina 6 feet high covered with bloom, have cut them down with the shears as I would clip Box-edgings, and have set the cuttings, without any preparation, in a trench 8 to 12 inches deep, in November; in June following they were rooted, and had reached a height of from 6 to 10 inches, and were in full bloom. At Natchez I have seen hedges of Roses in bloom in January without receiving any special attention. Tea Roses are the most common in the south. *Country Gentleman.*

Citrons and Oranges.—A long chapter is devoted by Professor Targioni to the Agrumi, that is, to the Oranges, Lemons, Citrons, and others belonging to the genus Citrus of the family of Aurantiaceæ. They have long been objects of great interest to the Italians, and the subject of many valuable works, being extensively cultivated for profit wherever the climate will admit of it, and for ornament or curiosity in public or private gardens in the more northern parts of the Peninsula, where they still require protection in winter. They are all of Eastern origin, and mostly introduced into Europe in comparatively modern days, but of very ancient and general cultivation in Asia. The varieties known are very numerous and difficult to reduce accurately to their species, on the limits of which botanists are much divided in opinion. Those who have bestowed the most pains in the investigation of Indian botany, and in whose judgment we should place the most confidence, have come to the conclusion that the Citron, the Orange, the Lemon, the Lime, and their numerous varieties now in circulation, are all derived from one botanical species, Citrus medica, indigenous to, and still found wild in, the mountains of East India. Others, it is true, tell us that the Citron, the Orange, and the Lime are to be found as distinct types in different valleys, even in the wild states; but these observations do not appear to have been made with that accuracy and critical caution which would be necessary in the case of trees so long and so generally cultivated. With regard to the Shaddock (Citrus decumana), it is almost universally admitted as a distinct species, although at present only known in the state of cultivation. It must be admitted also that it appears to present more constant characters than most of the others in the pubescence of its young shoots and in the size of its flowers, besides the differences in the fruit; but Dr. Buchanan Hamilton, who is of great authority on such matters, and some others, are inclined to believe that this also may have originated in the Citrus medica. This point requires much further investigation, and a better knowledge of the floras of South-eastern Asia, before we can come to any plausible conclusion. Professor Targioni gives copious details of the introduction into Tuscany and other parts of Italy, of many of the varieties there cultivated, for which we must refer to the work itself. It may suffice, for our present purpose, to extract a few notes on some of the more important races or species according as they may be considered. Among them all the earliest known was the Citron. It is not, however, that fruit nor any other Citrus, according to Professor Targioni, that we read of in the Bible, under the name of Hadar, as is asserted by some, nor yet is it anywhere alluded to by Homer. The first mention we have of it is in a comedy of Antiphanes, quoted by Athenæus, in which it is said that the seeds of the Citron had then recently been sent by the King of Persia as a present to the Greeks. Theophrastus is the first who describes it; he tells us that the fruit was not eaten, but solely prized for its odour and as a means of keeping the moths off woollen clothing. Among the Romans we find an allusion to the Citron in Virgil's Georgics, but it does not appear to have been then yet introduced into Italy, for Columella, long after Virgil's death, made no mention of it, and Pliny, in his paraphrase, as it were, of the passage of Theophrastus, adds that it had been endeavoured to transport plants of the Citron, which he calls malus medica, or malus assyria, into Italy, but without effect, as it would only grow in Media and Persia. Palladius, however, in the fifth century, gives many details of the modes of propagating and cultivating this tree, which he says he had carried on with success on his Sardinian and Neapolitan possessions. It was, therefore, in all probability, in the course of the third or fourth centuries that the Citron was introduced and established in Italy. The mass of evidence collected by Professor Targioni seems to show that Oranges were first brought from India into Arabia in the ninth century, that they were unknown in Europe, or, at any rate, in Italy in the 11th, but were shortly afterwards carried westwards by the Moors. They were in cultivation at Seville towards the end of the 12th century, and at Palermo in the 13th, and probably also in Italy, for it is said that St. Dominic planted an Orange for the convent of S. Sabina, in Rome, in the year 1200. In the course of the same 13th century, the crusaders found Citrons, Oranges, and Lemons very abundant in Palestine; and, in the following 14th, both Oranges and Lemons become common in several parts of Italy. It appears, however, that the original importation of Lemons from India into Arabia and Syria occurred about a century later than that of Oranges. The Shaddock is believed to have followed a different route in its migration into Europe. Most abundantly cultivated in, and possibly indigenous to, the south-eastern extremity of the Asiatic continent, it is said to have been carried from thence to the West Indies, and from Jamaica and Barbadoes to England early in the 18th century. It was, however, certainly previously known in Italy, for it is described and figured by Ferrari, in 1646, as having been sent from Genoa to the garden of Carlo Cadenas, near Naples. There is no record of its first introduction to Genoa, whether from the East or the West. Innumerable varieties of Citrons are cultivated at Florence, where they have ever been great favourites as objects of curiosity as much as for their flowers and fruits. Among them is a very singular one called bizzarria, raised by hybridising and cross-grafting, in which the same tree produces Oranges, Lemons, and Citrons, often on the same branch, and sometimes combined into one fruit, a curious case analogous to that of the well-known hybrid, by grafting between the Cytisus laburnum and C. purpureus. *Journal of the Horticultural Society.*

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

Conservatory, &c. — Hyacinths and other Dutch bulbs, if wanted to flower early, should be potted at once, so as to allow of their being well rooted before introducing them to the forcing-house. It is, moreover, advisable to procure these immediately they are to be obtained, in order to avoid having the weak bulbs; for, of course, first comers see to being best served and carry off the finest bulbs. Many persons still prefer deep pots for Dutch bulbs, but these are of very little importance; and those who, like ourselves, dislike their appearance, will find the ordinary make of pots to answer perfectly, and a little extra manure water can easily be given, to make up for the want of the extra depth, and consequently the small extra quantity of soil. The best compost for Dutch bulbs is two parts good strong mellow loam, and one part of old thoroughly decayed cow-dung, with a sprinkling of sharp clean sand, which should be well intermixed, and used in a healthy state as to moisture. Select a dry, cool, shady place on which to place the bulbs after potting, covering them with about three inches of sand, old tan, or sifted ashes, to keep them cool and prevent exciting the tops until the pots get well filled with roots. Plants of the Citrus tribe, intended for flowering early in winter, should now be fully exposed to the sun, in order to get the young wood thoroughly ripened, upon which their flowering early and abundantly will altogether depend. We prefer the variety known as the Mandarin for this purpose, as it is a free grower with a comparatively dwarf, bushy habit, and small foliage; but any of the varieties will bloom profusely if the wood is well ripened in autumn. These, with sweet Indian Daphne, are invaluable for winter decoration, and should be largely grown for this purpose. Some of the Daphnes, which are well set for flower, may now be placed in a warm part of the greenhouse, where they will soon begin to exhale their delicious fragrance. Provision should be made at once for protecting valuable, or, indeed, all hard-wooded plants, from heavy rains; for the present fine weather cannot be expected to last long, and may soon be succeeded by drenching rains, and it will, at all events, be advisable to be prepared for the worst.

Those, however, who can afford their plants proper accommodation under glass will not need to provide any temporary contrivances, but the plants will be better out of doors until there is absolute danger of frost, than crowded together in the houses. Skeleton pits with a waterproof covering to throw over them when necessary, form the best means of sheltering hard-wooded plants in autumn; for the plants should be freely exposed to light and air, and these are not expensive, and come in very useful in spring for bedding out stock. Stove.—Some judgment and care are necessary here at this season, especially where there is but one house for the accommodation of the whole of the tropical plants; for some things grow more freely in autumn than at any other season, and these should be encouraged with a moist warm atmosphere, while others that have made their season's growth require to be kept comparatively dry and cool. Very much may be done, however, to overcome these difficulties by a proper arrangement of the plants, placing those that have made their growth by themselves at one end of the house, where air should be admitted in sufficient quantities to prevent any attempt at a second growth; while the other end of the house containing the portion of the plants in active growth may be kept very much closer and moister. The Thyrsacanthus rutilans and Conoclinium ianthimum, which are two fine things for winter blooming, should be encouraged with plenty of pot-room, &c., particularly the latter, which is a free growing plant at this season, although somewhat shy in summer unless placed in a shady situation. Keep the plants clear of insects by smoking as frequently as may be necessary; and if leisure offers, look over the Ixoras, &c., for scale, and well clean their foliage by means of a sponge and soapy water.

FORCING DEPARTMENT.

Pinery.—Where the pot system of cultivation is practised, any of the stock that may be considered likely to want repotting this autumn should be examined at once, and shifted if necessary; for repotting should not be put off until the plants cannot be safely encouraged to make free growth, and strike their roots into the fresh soil before winter; and any necessary arrangements amongst plants growing in the open bed may also now be made without any danger of throwing them into fruit, especially if cloudy weather occurs, and if otherwise, shading can be used for a few hours in the middle of the day, to ward off the drying effects of the bright sunshine; therefore if any of the plants require to be removed this should be done without any unnecessary loss of time, so as to allow of their getting established after shifting, before the weather necessitates the use of much fire-heat. Encourage those expected to show fruit next January to make free growth, and remember that they should be sufficiently advanced to allow of keeping them rather cool and dry by the middle or end of next month. Plants wished to show fruit now should be assisted with a little extra heat if they are backward, and see that the soil about their roots is in a properly moist state, as the plants cannot be expected to show fruit unless this is the case, and some persons fear to apply water freely to plants that have been kept dry to check their growth, until the fruit is perceptible. This is an error, however, and only tends to injure the roots and waste time. If artificial treatment must be resorted to in order to induce the plants to show fruit, there is no method so certain and so little injurious to the plants as keeping them cool and dry for a month or so, and exposing them to as much sunshine as the foliage will bear without scorching, and then placing them in a brisk bottom-heat, with a moist growing atmosphere, taking car to thoroughly moisten the soil. Take off and pot, or plant out, suckers at short intervals as they can be obtained, for there is no more certain method of securing a steady supply of fruit than by having a regular succession of young plants. Attend well to the watering of stock in small pots, otherwise the bright sunshine with which we are now being favoured may cause many of these to fruit prematurely. Vineries.—While the present glorious weather continues give air freely to ripening fruit, using very little fire-heat. Keep houses in which the fruit is ripe as cool as possible, in order to prevent the berries losing their plumpness; and if any covering has been applied to the border of this house, to throw off the late heavy rains, it will be advisable to remove this, lightening up the surface of the border slightly, to promote evaporation; for the borders can hardly be too dry where the fruit is ripe and expected to hang for some time, but every possible precaution should be used to avoid exposing the border to a heavy fall of rain, which at this season of the year may be expected any time. Where a covering of warm manure has been applied over the roots of recently planted Vines this will require to be carefully watched to prevent its getting too hot, or fermentation taking place in the soil. Keep a sharp look out for red spider, and if it appears where the syringe or engine cannot be used lose no time in painting the heating apparatus with sulphur, which, although a very inefficient remedy, is the best we can recommend where water cannot be used. Peaches.—Give abundance of air both day and night, in order to get the wood well ripened while the weather is favourable. Keep the atmosphere and border as dry as possible, but if red spider is at all troublesome, which, owing to the sudden change of the weather is not unlikely, give the trees a good washing with the engine, for a little excess of moisture will be of little consequence compared with the mischief which red spider will do if allowed its own way for a week or two of bright weather.

FLOWER GARDEN AND SHRUBBERIES.

Get cuttings potted off into their winter pots as soon as they are sufficiently rooted to bear handling, and keep them rather close and warm until fairly established, after which they cannot be too freely exposed to light and air. Proceed with the work of propagation until there is an ample stock, for although we do not subscribe to the old doctrine, "that bedding out plants to be of any use before autumn the following season, must be propagated before winter," we, nevertheless, like to make sure of having plenty of strong cuttings early in March. But with proper convenience for growing the plants in spring and propagating, there is no propriety in wintering above one-fourth of the quantity of anything that will be wanted at planting out time, and such things as the dwarf Lobelias and Ageratums, &c., grow so freely, and are so rapidly increased in spring, that there is no necessity for wintering more than a few old plants, which will afford endless cuttings in spring, which will form equally fine plants as those propagated in autumn. Plant out Stocks, &c., where they are to bloom as soon as showery weather occurs. Sow Californian annuals in the reserve ground, for transplanting, to afford an early display, for which they are exceedingly useful. Persevere with mowing, cleaning, &c., and while the flower garden is in full beauty, endeavour to heighten the effect as much as possible by having everything in and around it in perfect keeping.

FLORISTS' FLOWERS.

During this splendid weather do not let either Dahlias or Hollyhocks suffer from want of water; propagate the latter by cuttings of the side shoots, remove the faded flowers at the lower part of the spike, and should seed not be wanted pluck it also. They may also be propagated by taking buds and inserting them in light sandy soil in thumb pots. Care must be taken not to give them too much water, as they are apt to rot off, and it will be requisite to keep them closely covered down in a cold frame. Layering Carnations and Picotees should be completed as speedily as possible; examine the seed pods, and cut off the upper part of the capsules, to expose them more to the action of the sun. Watering the layers with a fine-rosed watering-can in the evening, with water which has been exposed to the action of the sun during the day, will materially aid the development of roots. Continue to propagate Pansies by side shoots; they root very freely now. Seed of Tulips should now be gathered; of course care has been taken that none but pure flowers have been saved from. The amateur may purchase good varieties at a moderately low price now, for amateurs are making up their beds, and have often surplus stock to dispose of at a reasonable rate; at all times it is advisable to give a good price for a good strain, rather than have a bad one for nothing. Prepare the bed for offsets, and a turning over will sweeten the main bed; this should not be lost sight of. Attend to other departments as previously advised.

HARDY FRUIT AND KITCHEN GARDEN.

Take advantage of the present dry state of the ground to get Celery earthed up, first thoroughly soaking the lines with manure water, also apply quicklime where slugs are troublesome. On heavy soils it is sometimes necessary to surround the plants with sand or sifted ashes to prevent their rotting off in winter, which they are apt to do if surrounded with soil that holds much water. Where anything of this kind is necessary it will be advisable to defer earthing up till later in the season, as frequent soilings of this sort would be very troublesome. Also pull Onions where ripe, and get them dried while the weather is favourable. Thin young crops of Turnips, Spinach, &c., before they become weakly and drawn, through standing too closely together. Stir the surface of the soil deeply among growing crops, to admit air to the roots, and keep down weeds. Let nothing suffer for want of water, especially recently planted Strawberries; these will be benefited by liberal applications of manure-water. Get spare ground manured and dug or trenched, in readiness for another crop whenever time can be spared for this kind of work.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending Sept. 7, 1854, as observed at the Horticultural Gardens.

Sept.		Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind.	Rain.
Friday	1	9	30.314	30.274	72	39	55.5	62	63	E.	.00
Satur.	2	10	30.353	30.339	74	37	55.5	61	[illegible]	E.	.00
Sunday	3	11	30.333	30.282	78	37	57.5	60	62	E.	.00
Mon.	4	12	30.351	30.302	80	35	57.5	60	62	E.	.00
Tues.	5	13	30.421	30.410	68	36	52.0	59	62	E.	.00
Wed.	6	○	30.378	30.236	73	38	55.5	59	61	N.E.	.00
Thurs.	7	15	30.237	30.206	76	46	61.0	59	61½	E.	.00
Average			30.341	30.292	74.4	38.3	56.3	60.0	62.1		0.00

Sept. 1—Very fine throughout.
— 2—Slight fog; very fine; clear at night.
— 3—Foggy; very fine; clear.
— 4—Foggy; slight haze; air excessively dry; very fine, cold at night.
— 5—Very fine; hazy; damp air; very fine; cold at night.
— 6—Very fine throughout.
— 7—Very fine; overcast; clear and fine.

Mean temperature of the week, 2¾ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK.
During the last 28 years, for the ensuing week, ending Sept. 16, 1854.

Sept.		Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday	10	69.3	47.6	58.4	17	1.27 in	—	3	2	1	6	6	8	2
Mon.	11	68.3	46.8	57.6	9	0.46	2	3	1	2	4	4	8	4
Tues.	12	67.2	45.1	56.2	9	0.49	4	4	1	3	1	4	11	1
Wed.	13	67.0	45.6	56.3	12	0.40	2	3	6	1	2	6	6	3
Thurs.	14	66.6	46.8	56.7	13	0.84	1	3	6	3	2	5	6	2
Friday	15	66.5	46.1	56.3	14	0.63	—	5	4	2	6	1	5	5
Satur.	16	67.7	47.7	57.7	11	0.50	3	5	4	1	9	1	4	1

The highest temperature during the above period occurred on the 12th, 1841—therm. 84 deg.; and the lowest on the 12th, 1848—therm. 31 deg.

Notices to Correspondents.

Bird-stuffing: *T W P.* Any book on what is called Taxidermy will give you, for a few pence, the information you desire, and with all the details which the subject requires, but for which we could not possibly find room.

Books: *Assa. fœtida.* Pereira's "Materia Medica," and Lindley's "Flora Medica."—*D T.* Hoppus, for timber measurement, and Dix, for land surveying.‡

Cotoneasters: *J T H.* These are all shrubs. That called C. microphylla is a dwarf small-leaved evergreen, from the Himalaya mountains, and an extremely pretty plant. It is now very common in English nurseries, but has no English name.

Diseases: *T C.* Your Grapes are not all affected in the same way. The Frontignan exhibits merely an aggravated form of rust. The Assyrian presents a sample of the Grape-rot, which is prevalent in almost every part of England, and which certainly is aggravated by dampness of soil, though we have seen cases where, as in your own specimens, the canes were of enormous length and strength, and the ground apparently well drained, and yet every bunch more or less diseased. The Alicant is differently affected from the others, the disease consisting of a thickening of the cuticle in round distinct spots, which we have never before witnessed. The presence of Ferns is scarcely consistent with the health of the Vines. To keep the Ferns in beauty the atmosphere must be too moist for the Vines, and if your Grapes are healthy where there are no Ferns, the disease probably arises from that source. Excellent Grapes, indeed, are often produced where Peaches, Nectarines, and Apricots are cultivated but where Ferns are added the chances of disease are immensely multiplied.—*A North Briton.* Your Grapes and their leaves are affected nearly in the same way with multitudes which we have received from the North and South of England, and others which we have ourselves examined. The only difference is that in your case the rot arises from a rusty spot which gradually spreads without becoming depressed. The affection of the leaves, however, is so similar that it is evidently a mere variety. We have great doubts about the sulphur doing good, as there is no fungus. Either the state of the roots, after all, is not good, perhaps, as you indicate, from the use of stable dung, or the peculiar season is in fault. If the latter be the case, you can, of course, do nothing, but if the former, you will easily find a remedy.—*H N.* Yours is a less aggravated case of the disease which is so prevalent amongst Vines, for happily the leaves only are affected, or at least the produce has not rotted. By all means ascertain that the roots are not subject to strong alternations of drought and moisture, and that the soil is not sodden. If you neglect to examine their condition now, the disease may be more fatal next year.—*J C.* The Vine root which you have sent is mouldy and decomposed. Whether designedly or not it has evidently penetrated into raw manure, as is manifest from the grains of Barley, particles of dung, &c., which are attached to it, or through which it has made its way. Vines do not like gross manure, either in gardens or vineyards, and either the plant or produce is sure to suffer from its presence.—*T F.* The spots on the Camellia leaves do not arise from fungi. They are probably due to some defect of drainage, or to the pots in which they are grown not being sufficiently porous. Examine the state of the roots, at all events. *M J B.*

Fruit Trees for a North Wall: *Fife.* Apples: 2 [illegible] Pippin, 2 Blenheim Pippin, Early Harvest, Wormsley Pippin, Pearson's Plate, Pitmaston Nonpareil. Pears: 2 Jargonelle, Knight's Monarch, Broom Park, Suffolk Thorn, Autumn Bergamot. Cherries: 3 Morello, 2 Kentish, 2 May Duke. Plums: Royale Hâtive, 2 Jefferson, 2 Early Orleans, Shropshire Damson.‖

Insects: *F D.* For want of their ordinary food (aphides), the lady-birds (coccinellidæ), especially the smaller kinds, will attack wall fruit, eating small holes through the skin and lodging within.—*W B.* The insect known in the Highlands under the name of the "serpent's-bill," and elsewhere as the "adder-bolt," is the commonest species of dragon-fly, Gomphus vulgatissimus, occurring, we believe, all over the kingdom.—*M G.* The Onion maggot is the well-known larva of a fly (Anthomyia Ceparum) very much like the domestic fly. It abounds most in dry hot seasons, and may be best checked by pulling up the plants as soon as they appear to droop, and picking out and destroying the grubs. This will prevent the attacks of future generations, which otherwise occur with great rapidity at this season. *W.*

Material for Paper. A question is asked in the number of this Journal for September 2, 1854, whether Hop bine may not answer this purpose. The same question was asked by ourselves, a few days since, of Dr. Plumley, who is a successful cultivator of Hops, and his reply was, that the only manure he used is the bine, cut up by a machine after the fashion of chaff, and dug in between the rows. For land less rich in phosphates other manure may be necessary; but so long as the bine is beneficial when returned to the soil, its probable value as a material for paper will not be sufficiently great to admit of the purchase of artificial manure to replace the loss. *M. J. B.*

Mealy Bug: *A M.* The only mode of getting rid of this pest is continual brushing, sponging, and washing, with a mixture of tobacco water and soft soap.

Names of Fruits: *Sub.* Probably the Black Prince and Royal Muscadine; but it is impossible to determine with absolute certainty from the fruit alone.‖

Names of Plants: We have been so often obliged reluctantly to decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*J D.* Plants out of flower cannot be named.—*A L.* 1, Lastrea spinulosa, barren frond; 2, Ditto, fertile frond. *S.—Grantham.* Colchicum autumnale.—*E L A.* G. Gandavensis, one of the many mules obtained between G. psittacinus and others.‡—*M K.* Pteris serrulata, a native of the East Indies, and a weed in most hothouses. In your case the spores (seeds) no doubt came with the Orchids; you will soon have abundance of it. *S.—J W & Co.* Epidendrum floribundum.

Potatoes: *H M.* We will endeavour to learn what your sort is and tell you next week. It is of good quality, but the tubers you have sent are in some cases diseased.

Syringing: *G N.* An answer to your remarks will occupy more space than we can spare to-day. You shall have a full reply next week. You seem to misunderstand the article to which you refer.

Tenancy: *F S.* You should never ask advice upon points of law except of lawyers. The question you put is very insufficiently explained; all we can say is—1, That you must quit with six months' notice from the end of your year; 2, That you ought not to go on cropping; and 3, That the law does not entitle you to be paid for anything that is not specially agreed for. You had better consult a solicitor.

The Moon Plant: *A W.* It is Calyniction speciosum, a kind of night-flowering Convolvulus, with large white blossoms. It's not common, because it is not a favourite, and takes up too much room, but is handsome and very well known.

. As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg the indulgence of these numerous correspondents, the insertion of whose interesting contributions is still delayed.

UPPER PERUVIAN GUANO ON SALE.—Apply to W. & J. RAVENSCROFT & Co., Liverpool.

Extract from a Report of Dr. Ure, F.R.S., &c.

"Your Upper Peruvian Guano is worthy of all commendation."

Extract from the Report of George Layton, Esq.

"RAVENSCROFT'S Upper Peruvian Guano will last longer, and eventually do more good than Gibbs', or any other I have ever tried. It possesses the very finest qualities of both Guano and Bone Dust."

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures, Linseed Cakes, &c.

WM. INGLIS CARNE, 10, Mark Lane, London.

PEAT CHARCOAL.—The undersigned have a cargo of this valuable Deodoriser and fixer of Ammoniacal matter, on Sale. Apply to MARK FOTHERGILL & Co., 204A, Upper Thames Street.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7*l.* per ton; Superphosphate of Lime, 7*l.*; Sulphuric Acid and Coprolites, 6*l.*

Office, 69, King William Street, City, London.

N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent. of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and dispatch.

Gentlemen desirous of receiving instructions in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

THE LONDON MANURE COMPANY beg to call the attention of Agriculturists to their WHEAT and CLOVER MANURES for present use. The London Manure Company also offer Genuine Peruvian Guano, Nitrate of Soda, Concentrated Urate, Superphosphate of Lime, Fishery and other Salts, and all Artificial Manures of value. The London Manure Company guarantee Peruvian Guano and every Manure they supply to be strictly genuine. EDWARD PURSER, Sec.

Bridge Street, Blackfriars.

SEWAGE CHARCOAL MANURE.—This highly fertilising Manure, which is Peat Charcoal completely saturated with London Sewage, will be found most efficient for every species of crop; more especially for Peas, Beans, Turnips, Mangold Wurzel, and other root crops. It will produce a greater return for the outlay than Guano or any other Manure at an equivalent value: it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained at the SEWAGE MANURE WORKS, Stanley Bridge, Fulham, at 4*l.* per ton, and in quantities less than half a ton, at 5*s.* per cwt., for ready money only; and in quantities not less than a ton, will be delivered at the London Termini of the Railroads free of charge for cartage. No charge for sacks.

It may also be had from Messrs. G. GIBBS & Co., 26, Down Street, Piccadilly, Agricultural Seedsmen, Agents for London; and from all the other Agents of the Company.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

IMPORTANT TO

STOCK FARMERS

AND

FLOCK MASTERS.

SHEEP, LAMBS, HORSES, AND CATTLE,

CAN BE DRESSED WITH

LONG'S NON-POISONOUS SHEEP & CATTLE-DRESSING COMPOSITIONS, without any possibility of danger or injury resulting from the application. These Compositions are admitted by all who have fairly tested them to be the most effective Sheep Dressings ever brought before the agricultural public; and as they are NON-POISONOUS, and do not stain or discolour the Wool, they are gradually superseding the use of all Dipping and other Sheep-dressing preparations, composed of such deadly poisons as ARSENIC or MERCURY.

It is a fact now thoroughly established, that Long's Non-Poisonous Sheep Dressings, if liberally and judiciously applied in the dressing of Sheep and Lambs, will—in their consequent effect in removing Disease, destroying Vermin, and keeping the flock in condition thus PROMOTING INCREASED GROWTH BOTH OF MUTTON AND WOOL—as amply repay flock owners for first outlay as artificial manures when applied to land. They are the only Sheep Dressings also, which, from the fact of their containing NO POISON, can be beneficially and safely applied to Sheep and Lambs at any age and at any season of the year.

Pamphlets containing full directions for use, and copies of the strongest Testimonials ever accorded to a manufacturer, signed by leading and practical Stock Farmers, residing in all parts of the United Kingdom, together with the names of all Country Agents authorised to vend Long's Patent Sheep and Cattle-dressing Compositions, may be obtained gratuitously on application of any advertised country Agent; or by post, sent free, of

BARRY BROTHERS, AGENTS FOR JOSEPH LONG,
Meriton's Wharf, and Shad Thames, London.

STEPHENSON AND PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

WEDLAKE'S OAT-CRUSHERS, CHAFF-CUTTERS, CARTS, HARROWS, PLOUGHS, and FLOUR MILLS.—118, Fenchurch Street, London.

CORN CRUSHERS AND CHAFF CUTTERS.—A large display of the best Farm Implements shown in operation. Price Lists sent free on application.

BURGESS AND KEY,
103, Newgate Street, and 52, Little Britain, London.

PUMPS AND HOSE PIPES FOR GARDENS AND LIQUID MANURE.—BURGESS & KEY'S Pumps were highly commended by the Royal Agricultural Society of England at Lincoln. Price Lists sent free.

103, Newgate Street, and 52, Little Britain, London.

CHURNS.—ANTHONY'S PATENT AMERICAN CHURN.—Since 1849 this Churn has obtained all the Prizes awarded by the Royal Agricultural Society of England. At the trial before the Judges it made in 10 minutes 4 lbs. 6 oz. of Butter from 4 quarts of Cream, being 8 oz. more than any of the other Churns from the same quantity and quality of Cream.

103, Newgate Street, London.

BALANCE OF FACTS IN FAVOUR OF

RICHMOND AND CHANDLER, who have, in competition with the best selected CHAFF CUTTERS of the most celebrated makers in the trade, carried off the highest prizes against all comers.

COPY OF TESTIMONIAL

"Early Court, Reading.

"GENTLEMEN,—I beg to hand you a cheque for your Corn Crusher; I must add, at the same time, that nothing can exceed the goodness of the Machine. I have found in it all I can wish, and, moreover, a very superior finished Machine, and a pattern for other makers. (Signed) "GEO. SHACKELL."

"Messrs. RICHMOND & Co."

Address.—RICHMOND & CHANDLER, Manchester; and South John Street, Liverpool.

REAPING AND MOWING MACHINES.—CAUTION.—Notice is hereby given, that any person or persons infringing any of the Patents of Cyrus Hall M'Cormick, for Reaping and Mowing Machines, or making, or vending, or using, or exercising any Machines which in any way infringe upon any such Patents, will be proceeded against according to law. The more prominent features of M'Cormick's Patents consist in a serrated cutting blade, spear-head shaped holding fingers, and a gathering reel.

E. J. & H. LAWFORD, Mr. M'Cormick's Solicitors.
Draper's Hall, 27, Throgmorton Street, London, Sept. 2.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.

Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

LONG SUTTON RAM SHOW.

LETTING AND SALE OF RAMS.

MR. JOHN CLARKE has the pleasure to inform the Breeders of Sheep that his next ANNUAL SHOW OF RAMS will take place on Wednesday, the 13th day of SEPTEMBER, when the favour of their company will be highly esteemed. About 120 will be Shown, the half of which number, owing to the wishes of distant friends, will be offered for SALE. They will be Penned at 12 o'clock. Luncheon from 1 to half-past 2 o'clock. Letting by Auction immediately afterwards. Arrangements will be made to meet the Wisbech 12 and 12 40 down and the 7.5 up-trains, and also the Spalding 11.45 and 12.23 morning and the 8.5 evening trains.—Long Sutton, Lincolnshire, Sept. 9.

THE BIRMINGHAM POULTRY SHOW, 1854.—In addition to the Prizes enumerated in the List issued on the 23d of February last, the General Purposes Committee of the Council have resolved to offer First Prizes of 2*l.*, and Second Prizes of 1*l.*, for SINGLE COCK BIRDS, of any age, of all the following varieties, namely:—Dorking, Spanish, Cochin China, Bramah Pootra, Pencilled Hamburgh, Spangled Hamburgh, Game, and Polish; and that the same shall be entered under Letters A to H on the ordinary Certificate.

JOHN MORGAN, Jun., Secretary.
Offices, 38, Bennett's Hill, Birmingham, Sept. 9.

The Agricultural Gazette.

SATURDAY, SEPTEMBER 9, 1854.

MEETINGS FOR THE ENSUING WEEK

THURSDAY, Sept. 14—Agricultural Imp. Society of Ireland.

AMONG the recent additions to the cultivated plants of British agriculture, probably none exceeds in importance the Trifolium incarnatum, or Italian Clover. And as the present is its proper seed time, the following particulars regarding its cultivation and value as a forage plant, given from personal experience, may possibly be read with some interest.

It has now become one of the most valuable of all green crops usually cultivated for early spring food; and whether it is used for soiling cattle in their stalls or for the folding of sheep in the open field, there is no sort of green crop which will afford so heavy a crop of the most nutritious food.

It is worthy of remark, also, that this crop furnishes one of the safest kinds of green food which can be obtained—the cattle and sheep whilst feeding on it being generally remarkably healthy, and much less subject to scouring and other disorders incidental to the use of early spring crops in general. The cultivation is far more difficult than that of other sorts of Clover, or green crops in general, in proof of which, for some years after its first introduction, it got in disfavour with a large majority of farmers, and its cultivation was well-nigh abandoned. Some few, however, who knew how to cultivate the crop, were very successful, obtaining immense crops year after year. By them it was appreciated; and from perseverance in its culture, it has at length become a favourite kind of early spring food, is justly appreciated, and not likely to recede in general estimation until some more valuable crop can be discovered to supersede it.

The time of sowing is of more consequence in the growth of Trifolium than that of almost any crop under cultivation. In Belgium and other continental states it is sown as early as the last week in July or the first week in August; and we have noticed the best crops produced in this country have been sown at the earliest period. It generally succeeds well when sown after a crop of Tares which have been fed on the land by sheep; but it will also do well sown after winter Oats, Rye, Wheat, or other grain, provided it be sown as soon as the crop of corn is removed.

The land should not be ploughed previously to sowing, for although we have known good crops grown after ploughing, it is quite the exception; and the best rule in its cultivation will be found to be to sow the seed upon the stubble, or bare ground, and then to work the land with the drags or harrows sufficient to produce a good tilth and bury the seed, leaving the land rolled.

The only insect enemy from which the crop suffers is a small white slug, and it is the more desirable to sow early in order to avoid its depredations, which are always most destructive late in the season, when the sun has less power and the nights become lengthened.

The soil best adapted for the growth of Trifolium is a good sandy or clay loam, yet excellent crops may be grown upon almost all kinds of land in good condition. The quantity of seed sown per acre should never be less than 20 lbs., and, in case the time of sowing is delayed beyond the usual period, 25 lbs. or 30 lbs. per acre will be no more than sufficient.

Trifolium seed being nominally cheap, not more than 4*d.* or 5*d.* per pound, although a large quantity of seed is necessary, yet the acreable cost is not great, being much less than the cost of seeding for most other green crops. This crop, when fed upon the land and managed in a proper manner, is certainly the best preparatory green crop with which we are acquainted. Swedish Turnips, as well as other varieties, generally take well after this crop; for not only does it furnish a large bulk of food for the consumption of stock, which will return a proportionate quantity of manure, but the land will be found in an exceedingly mellow and kind state, from the effect of the gross and luxuriant foliage peculiar to the Trifolium plant.

It must, however, be borne in mind that this crop is very short-lived, the season for feeding or soiling being limited to about a month at the farthest; it is therefore desirable not to sow a greater number of acres than can be consumed within that period, the stalks being very wiry, and showing much woody fibre, when the seed begins to form.

As a seed crop, although the produce generally sells at a low price, yet the large quantity obtained makes it a remunerative crop upon some soils. We have known it saved for seed upon some light gravel soils, and taken instead of a Wheat crop, and the return has proved very satisfactory, as compared with the crop of Wheat usually obtained upon such soils, and the crop has also been removed from the land in time for sowing Turnips.

When the seed is sown at the first season here recommended, it often becomes very gross towards the month of November; it does not, however, suffer from the effects of frost on this account, and it may sometimes be fed by sheep in the autumn, if not eaten too close; yet it is not generally so forward in the spring by a week or 10 days when thus fed; but, although it may be somewhat later in the spring from the effect of feeding, it does not diminish the bulk of the crop ultimately.

Sometimes the crop is mown for the purpose of conversion into hay; it is not, however, to be recommended as a system, but may be attempted, in case the crop proves to be more than can be consumed as green food within the usual period. It should be cut very early when intended for hay; and the risk is always very great, as a comparatively small quantity of rain will seriously damage it.

This crop will be found an excellent substitute for the broad Clover upon those soils which have become what is called Clover-sick; and we have known instances where such land had been cropped with Trifolium, on which red Clover has afterwards succeeded admirably.

IN our Number for August 1, 1846, an account was given of a curious case of blight in Wheat, which has been transferred to the article "BLIGHT," in the "Cyclopedia of Agriculture," and has therefore been very widely diffused amongst agriculturists. We have already, during the course of the present year, again adverted to the subject, in consequence of several applications for information, though we

are far from thinking that so many blighted plants have occurred this year as are usually to be found in Wheat crops. Such was the conclusion to which the Editor of this journal arrived in the course of a late extensive journey through England and Scotland, and his report is borne out by the observations of others. A case, however, from the neighbourhood of Stranraer is so curious and circumstantial, that it appears worthy of especial record. The blight made its appearance, shortly after the ears had shot out, in spots which gradually extended till they nearly met. Up to the time of flowering, the crop looked exceedingly well and healthy. The stems began to get yellow from the bottom upwards, the lower leaves withering prematurely, which induced me to examine the roots, where a mouldy decay had in most cases commenced. The whole stem and root now appear to be dried up and entirely destitute of sap, which will necessarily prevent the seed coming to perfection. The field is a stony red soil, resting on trap rock, sloping to the west near the sea, and at an elevation of about 200 feet above it. Within the last 12 years it has been drained, first on the shallow system, and afterwards 4 feet deep, thoroughly subsoiled and limed, and has been twice trench-ploughed 12 inches deep besides.

The following has been the course of cultivation:—

1850. Wheat, a good average crop.

1851. Swedish Turnips. Manured with farm-yard manure, dissolved bones, and guano.

1852. Wheat: an excellent crop, 6 quarters to the imperial acre on the part where the present disease is the worst, 6—8 bushels more than had ever been grown there before.

1853. Part Carrots, part Turnips: well manured with farm-yard manure, dissolved bones, and guano.

1854. Winter Wheat on the Turnip land: March sown Wheat after the Carrot, both equally affected.

The disease is confined to about 8 acres, which were originally a separate enclosure, but for the last 10 years have formed part of a field of 30 acres in extent. Now the above account agrees so closely with that before recorded in the *Agricultural Gazette*, that it is difficult not to believe the diseases identical, though what is commonly called blight may arise from several causes. The radiation from distinct centres of growth, and the constant presence of mycelium about the roots, indicate at least that the spawn of some fungus in this case has been the principal agent; but whether spreading from a plant or plants, unhealthy from some other cause, or being previously present in the soil and actually causing disease, is uncertain. Nor as regards the practical view of the question is it very important. It is well known that the similar progress of the Rhizostonia—which is so destructive to Asparagus and many kinds of agricultural produce, as Carrots, Mangold Wurzel, Potatoes, Lucerne, Madder, Saffron, &c.,—may be arrested by insolating the plants which first exhibit traces of disease, and it is very probable that if the same course were taken in land subject to the kind of blight above mentioned, it would be attended with success. It is only in land subject to serious attacks that we should recommend such a practice, and where the disease has been observed to spread from different centres. In ordinary cases the attack is confined to individual plants, and is often entirely independent of the agency of fungals, being purely constitutional. In such cases no remedy whatever can be applied. How far it may be wise to cultivate Wheat every alternate year, without any other cereal intervening, may perhaps admit of question. *M. J. B.*

ROYAL AGRICULTURAL COLLEGE.

SESSIONAL EXAMINATION IN PRACTICAL AGRICULTURE.

JUNE, 1854.

[4. DEFINE a manure. Why is it not necessary unless in a long-settled, well-peopled, and civilised country? What principles should guide us in the choosing between farm-yard or artificial manure for a particular field? Enumerate some of the best known artificial manures. Which is the best according to the experiments tried on the R. A. College farm?]

4. A manure is any substance or fertilising material applied to or incorporated with cultivated land with a view to increase its productive properties, both as regards, first, its acting as a certain stimulus upon plants, as particularly seen in the case of the powerful top-dressings, nitrate of soda, &c.; and 2dly, as affording a source of direct food to the plants. In Australia, and certain countries where land (of a virgin soil) can be obtained at a mere nominal price, or even by inclosure alone, it does not pay the owner of such land to apply such fertilising constituents to his exhausted land; inasmuch as land in a productive state, which has never been exhausted by any such crops, can be so easily obtained, though it may require much management to render it available for growing the crops he requires, still it is cheaper, at least in the majority of cases, to enclose new land; but on the contrary, where the district is thickly populated and all the produce of the land sells at a high price, and land is proportionately dear, it would never answer to leave exhausted land and buy in fresh; in fact fresh cannot be obtained here, therefore it becomes necessary for the farmer to employ such means as shall render his land somewhat productive, and this can be done by the application of manures, of different descriptions, most suitable for the land and the intended crop—the object of the farmer, however, being to obtain a certain sort of produce economically as shall pay for the expense of applying such manures, and, of course, somewhat remunerate him in the end. The relative value of farm-yard manure and artificials depends on a great variety of circumstances, as regards the following points:—

1st. The nature of the land as requiring simply a certain stimulus, and not as requiring any great alteration of its nature.

2d. As regards the intended crop to be sown—thus, where farm-yard or highly nitrogenised manure is most valuable, as applied to a Wheat crop, and alkalies are about equally important to a Turnip crop, and here a dressing of bone-ash or dust, or dissolved bones pays better.

3d. On the distance of the field to be manured from the homestead—as, if near, the cartage of the farm-yard manure is not so great; whilst, if a great distance, it cannot be economically applied, and an artificial applied pays much better.

So that under these and many other circumstances, the relative value of farm-yard compared with artificials is materially different; for where a certain crop is desired, the manure adapted to that most economically should of course be applied. As regards some of the best artificial manures:—The value of a manure, as already remarked, varies according to the crop which the farmer wishes to raise. Thus, a highly nitrogenised manure, as guano, at 10*l.* per ton, is cheaper than superphosphate at 7*l.* for application to a Wheat crop; yet the superphosphate at 10*l.* is as cheap as the guano at 10*l.*, as regards its application to a root crop. Among the valuable are—Guano, Peruvian, Bolivian, and certain stimulants, as nitrate of soda, flesh manures, and all highly nitrogenised substances, for grain crops. Superphosphate, dissolved bones, bone ash, half-inch bones, and all home manures, for the raising of a Turnip crop, Mangolds, &c. Beside these, there are certain others more useful for mixing with the land than for any decided manuring action, as gypsum, which are only useful under some circumstances. The manure which paid best on the Royal Agricultural College Farm, as regards the experiment in the Swedes in No. 1, was, undoubtedly, the bone phosphate, which, though less in bulk, yet raised a considerably greater amount of Turnips than either of the others, and yet this must not be considered as the most valuable article for general purposes, but only for the root crops; for if Wheat had been sown instead, the greatest amount of grain would have been realised, most likely, by some other.

[5. What are the relative advantages and disadvantages of applying farm-yard manure in a fresh and in a highly decomposed state?]

5. The relative advantages and disadvantages of applying farm-yard manure in a fresh or highly decomposed state are very numerous. In the first place, farm-yard manure on decomposing gives off its most valuable constituents in the form of ammonia, and necessarily, therefore, a great amount of its fertilising substances is lost; but still, taking a given weight of fresh and highly fermented manure, the amount of ammonia, pound for pound, in the latter is much greater, showing that the loss of ammonia is not in equal ratio to the loss in bulk. The following shows:—

Fresh manure	...	100 cwt. contain	40 lbs. ammonia		
After a time...	...	80	„	35	„
„ ...	...	60	„	30	„
„ ...	...	40	„	20	„

Showing that while in fresh manure 100 cwt. contain 40 lbs. of ammonia, *i. e.*, less than half, 40 cwt. of highly fermented contain quite half that weight of ammonia; and, therefore, a pound of fresh is not worth so much as a pound of highly fermented by some considerable amount. Though fermentation results in the dissipation of ammonia, yet under certain circumstances the highly fermented manure is much more valuable, as in cases where the immediate action is required; and thus the manure in a certain stage of fermentation imparts its action at once to the crop. Yet, on the other hand, when winter manuring is carried out, the application of fresh manure is far more advantageous, as the parts which are dissipated are greatly kept in the soil, particularly in the case of clay soils. It follows that a medium is far the best for ordinary purposes; thus, it is far from judicious to let manure ferment till it has lost all heat, and then cart it with a view of its imparting an immediate action; good fresh manure is better even for immediate action than rotten manure, which has lost the most of its fertilising constituents, and is quite cold.

[7. What are the three principal component parts of milk? Describe briefly the process of making butter and cheese, and specify the share therein which is taken by these parts respectively.]

7. The three principal component parts of milk are the cream, consisting of fatty globules enclosed in a case of caseine or cheesy material, and which, on breaking up, form fresh butter; curd, the portion which coagulates on addition of an acid or rennet; and whey, the remaining portion usually consumed by pigs, calves, &c. The process of making butter consists in breaking up the case of caseine, and allowing the fatty matters to come together. The butter is made from the milk in several states. 1st, milk, cream, &c., altogether, by which means the greatest amount is obtained, but which is of an inferior quality to the butter made from—2d, the cream alone; the cream may be either in a sweet state, which, of course, makes the sweetest butter, or it may be allowed to turn sour, or it may be clotted, either of which has certain peculiar differences. The first system of churning the whole is carried out in Ayrshire and in large dairies; but, on a smaller scale, when quality is the grand point, and it is not required to keep so long, the other means are of course preferable. The cheese is obtained by coagulating the milk by means of an acid, mostly rennet is used (which consists of the inside of a calf's stomach, prepared, salted, and dried, and packed in jars ready for use). The rennet solution is best prepared by boiling a portion of the mass in the water, and letting it stand 24 hours, when the clear solution is sufficiently acid to coagulate the milk; one half pint is sufficient to 50 gallons of milk. The curd thus coagulated is taken out, squeezed, exposed to a medium temperature, well salted, and placed in vats, in which it is pressed down, left at a medium temperature till it becomes mellow. Certain peculiarities in making it influence the cheese as soft or hard, and thus as well adapted for keeping or not.

[8. Describe the artificial pasture crops usually sown on arable land, with any of their peculiarities which you may remember.]

8. The artificial pasture crops in general use consist chiefly of the following varieties of Trifolium.

1. The Trifolium pratense, broad-leaved or red Clover yields a great amount of good hay, if the weather is favourable, but inasmuch as it is very succulent, it is liable to be injured much by the action of wet, and therefore by itself is not sown to advantage; it is not so sure of forming a good sward, and hence cannot be entirely depended upon. It is, however, highly nutritive, and grows well on good deep rich loamy soils, though it yields but a poor crop on the poorer lands.

2. The Trifolium pratense perenne is a variety of the red, being somewhat perennial, and easily known as the Cow-grass, partakes of somewhat the same characters as the red Clover; it yields a great supply of hay on good rich soils, but as it is very succulent it requires good warm weather for making it, and it is liable to be decayed by wet. It, like the former, is not so sure of forming a sward, though if anything it is more so than the former: it is not, however, on the whole so nutritious. The Trifolium repens, little white or Dutch Clover, is advantageously sown in the alternate husbandry, combined with others. Though a small plant, yet it grows very thick at the bottom, forming a rich bottom sward. It is highly nutritious, and makes good hay. It has the advantage of growing on nearly all soils, and is a plant by which the farmer can always insure some crop, as by its fibrous roots it can stand the excess of wet, or *vice versâ*, equally well, and is well adapted as a portion of a mixture on all soils. The Medicago lupulina, or common Trefoil (Hop Trefoil), differs from the true Trefoil in the pod. It, like the Dutch Clover, will grow on nearly all soils, yielding a somewhat remunerative crop under all circumstances, and therefore should always be sown. The Sainfoin, a plant belonging to Leguminosæ, is particularly adapted for soils rich in lime, and by its long roots penetrates the ground to a great depth in amongst the fissures of the rock, extracting food from places that few or no other plants could reach. It is highly nutritious, and sown occasionally on the Cotswold Hills as a means of resting the land. It is sown alone generally, and left down for some two or three or ten years, as it thrives. It is usually in its prime about the third or fourth year, and after that period dwindles off. It will not grow on soils deficient in lime, and is only of importance on such soils as ours. The Grasses sown on the Royal Agricultural College Farm this season, are chiefly mixtures of three—Red Clover, Dutch (Cow Grass), Trefoil, and Rye Grass, in No. 1: 10 lbs. of Red Clover, 6 lbs. of Trefoil, half a bushel Rye Grass, &c.

THE PORK MANUFACTURE OF AMERICA.

THIS industry appears to have originated in, and indeed is still confined to the Western States, where the natural luxuriance of the soil yielded a return far greater than sufficed the wants of its occupiers. Situated at a vast distance from the populous centres of commerce and manufactures, and being beyond the range of demand for foreign markets, owing to the then undeveloped system of railroads and water communication, the early occupiers of the soil, with a ready perception of the difficulties of their situation, and the remedy, resolved to breed hogs on a scale sufficient to enable them to convert their corn into living flesh, and thus travel it at a low cost to far distant markets. It is now some 25 to 30 years ago since this new system of farming commenced, and in the course of a few years assumed the character of a distinct and promising industry. Cincinnati, then (1830) numbering about 25 000 inhabitants, and being the business centre of an immense corn-growing and hog-rearing district, and at once became the most important rising city of the west, at once became the seat of the new trade. Now the "Queen City of the West" numbers upwards of 150,000 inhabitants—an increase of population largely due to the success of this new industry.

As it possesses some peculiar features in relation to agriculture, a brief sketch of it from the farm to the factory may not be without interest. The hogs are kept in numbers, great or small, according to the circumstances of the case, either as regards the possessions of the owner or the proximity of markets, at which he

could in the ordinary manner dispose of his corn. They are usually allowed to run in the woods, and to seek their food on Acorns, Beech-mast, Grass, &c., until the end of August or the beginning of September, when those intended for slaughtering are turned into the corn-fields, where they remain eating and fattening until the end of October, when they are collected and sent up to market. In cases where small lots only are kept, they are usually purchased by drovers or jobbers, who again dispose of them to the large dealers; in other cases, the farmer drives them to market himself, and deals directly with the consumer. Some of the more extensive farmers will have as many as from 800 to 1000 hogs, but from 100 to 500 is the more common average.

The age at which they are sent to market varies from 12 to 18 months, the average weight is about 200 lbs. The breeding appears to be less attended to than it deserves, some specimens are to be met with possessing those points which in this country are esteemed desirable, while the generality are very deficient in them. The season for slaughtering and packing begins in November and ends in March.

The following table shows the relative numbers slaughtered annually in Cincinnati alone, from 1830 to the present time:—

In the year 1830	60,000
„ 1835	162,000
„ 1840	95,000
„ 1845	213,000
„ 1850	401,000

This large number gives full employment to 10 slaughter-houses and about 35 establishments for curing and packing the salted provisions.

The entire operation of slaughtering and preparing the dead meat for market is conducted upon a system and a scale of magnitude with which we are totally unacquainted in this country. Each of these slaughter-houses employs about 100 hands, selected for skill, activity, and bodily strength; the packing and preparing-houses give employment to about 2500 hands also. In the best arranged slaughter-houses the hog-pens are placed at the uppermost story, which is approached by an inclined plane from the outside, up which the animals are driven. On the next floor beneath is the killing-room, into which they are packed as closely as possible, and a man walking over their backs strikes them on their heads with a small pole-axe contrived for the purpose. They are then dragged out immediately into the sticking-room, where their throats are cut, and their blood collected either in tanks or receivers below, or run away direct into the river. Adjoining the sticking-room are the scalding tanks, which are of large capacity and heated by steam. In these the hogs are immersed, and when sufficiently scalded, are tossed upon a cradle on to long benches, where they are vigorously attacked by a gang of men, who speedily detach the outer cuticle with every particle of the hair and dirt. They are then lowered to another floor and suspended by the hind legs on hooks ready for the last process, that of dis-embowelling or gutting, as it is termed. This operation is rapidly performed, a good hand finishing them off at the rate of three per minute. The entrails are all preserved for "rendering."

In this state the carcase leaves the slaughter-house and passes on to the packers, whose first operation is to weigh it, and thus determine its price. It is then cut up into the various divisions suitable for the trade with a rapidity and exactness quite astonishing, and which can only be acquired by great practice. As a specimen of the amazing activity which characterises all the details of cutting, dressing, &c., it may be stated, that in one of the leading packing houses two hands in less than 13 hours cut up 850 hogs, averaging 200 lbs. weight each; two other men lifting them on to the blocks for them. All these hogs were weighed singly on the scales in the course of 11 hours. Another hand trimmed the hams, 1700 in number, as fast as they were cut off the carcase. The hogs were thus cut up and disposed of at the rate of more than one per minute.

The hams and shoulders are salted and cured in the usual manner, and form a very large and important article of commerce both in the home and foreign markets. The middle pieces are salted as pork, and are chiefly intended for the naval and commercial marine service, considerable quantities being also exported for the supply of foreign navies. The heads, the trimmings, and the leaf-lard, are laid aside and sold for manufacturing purposes, which will be described hereafter.

Such is a brief sketch of the method adopted in Cincinnati of working up the great hog crop of that portion of the United States. The practice pursued in other districts is very similar, though not upon the same commercial scale. The number of hogs slaughtered in Cincinnati in 1850-1 was 401,755, or about 30 per cent. of the whole amount of the State of Ohio, which was given at 563,645.

We must now turn to the other portions of the hog, those used in the various manufacturing processes. These comprise, 1st, the cuttings or trimmings; 2d, the heads; 3d, the entrails; 4th, the fat; and 5th, the bristles. The two first are submitted to a process of digestion termed "rendering," in steam tanks, by which all the fatty matter is speedily extracted. This is sold for various purposes, according to its quality; the remaining portions being sold to prussiate of potass and animal charcoal manufacturers.

Some of these steaming or rendering establishments are upon a very large scale: not only are the ordinary refuse portions here operated upon, but large quantities of the cut meat which has got spoilt in the curing houses; entire hogs that have been bruised or injured in any way thus, and are not suited to the packer's purpose, are all thrown in together. Indeed, in many cases, where the relative prices of the two products, flesh and lard, are in such a state as to affect the market, it is found advantageous merely to retain the hams, and to sacrifice the rest of the carcase for the sake of the lard, which is extracted from it. In one of these establishments, as many as 36,000 hogs have passed through the steaming tanks in one season, or at the rate of about 400 per day, the produce in lard amounting to nearly 3,000,000 lbs.; a large proportion of which was of the "number one" quality. The steam employed has a pressure of from 50 to 75 lbs. to the square inch. As regards the third portion, the leaf lard is first cut out, the entrails are then washed, and the lard drawn out by handling; the small gut is reserved for sausage casings, and the larger boiled down for soap-grease, or other coarse purposes.

For manufacturing purposes there are three qualities of lard—leaf, gut, and head; in the markets for export and home consumption, it is sold in two shapes as keg lard, and as prime barrelled lard. In the latter shape it is used extensively in the States for cooking, as a substitute for butter, and exported for the same purpose to the Havannah. It is also sent in large quantities to our markets, and those on the Continent, where it is used both for culinary and trade purposes.

The portion of the lard not sold for direct consumption as an article of food, finds a ready sale for manufacturing purposes. The most important of these is the separation of its constituent parts, the oil and the stearine: the one used largely in the adulteration of finer oils and for soap-making; the other being the substance from which candles are extensively manufactured. This separation is effected by simple pressure. The lard is placed in quantities of about 7 lbs. in coarse cotton or hair cloths, and then submitted to pressure in the ordinary way. The oil is squeezed out and runs down into suitable vessels, and the stearine remains in the form of a clear white solid cake. The best quality of lard yields the finest oil, and also the largest quantity, amounting to from 65 to 70 per cent. The second quality yields only from 40 to 50 per cent. The oil pressing is usually carried on in the winter, as the separation is more perfect at a low temperature; all the best lards are then used. In the summer, the second qualities only are used, and even then the temperature of the press-room is lowered by artificial means. The oil is submitted to a subsequent process of refining, in which it is heated up to 200°, and about 1 per cent. of alcohol added to assist its fluidity. There are upwards of 30 lard-oil manufactories in Cincinnati, on a scale of more or less importance, the larger ones working up on the average 50 to 70 tons of lard per month.

A fact worthy of notice in reference to this industry is, that while the receipts of the raw material have increased, the exports have diminished. This is an indication of the extended home consumption by manufacturers. The total production of last year, 1852-3, was 22,180,750 lbs.; exports during the year, 13,462,900 lbs.; leaving a balance for consumption of 8,720,000 lbs. In the year 1851-2 the gross production was 21,243,000 lbs.; the exports amounted to 15,364,000 lbs., leaving for home consumption, 5,879,000 lbs. This gives an increase in the consumption of the year 1852-3 of 2,841,000 lbs. In the manufactured products, lard-oil, stearine, candles, and soap, like satisfactory results may be gleaned from the trade returns. In lard-oil, the price of which averaged from 80c. to 85c., an increase over last year is shown in the exports of 6760 barrels. In candles an increase is shown of 18,072 boxes, and in soap of 9003 boxes. In neither of the latter manufactures were there any points worthy of particular notice; the processes employed were the same as those used in this country, upon a very much larger scale.

The portions of hoof and bristles of the hog are utilised to a certain extent. From the former, glue is extracted upon a small scale, and the bristles give employment to about 100 workmen in dressing and assorting them for the Atlantic markets. *Professor Wilson's Report on the New York Industrial Exhibition.*

NOTES OF AN AGRICULTURAL TOUR IN IRELAND.—By Martin Doyle.

A Munster Agricultural School and Model Farm has been recently formed in the vicinity of the Queen's College, Cork, under the following circumstances:—An unapplied surplus of the reproductive loan fund, amounting to 4400*l*., with subscriptions and a trifling balance from the Cattle Show fund held in 1850, of 500*l* more raised by an active committee, under the presidency of the Earl of Bandon, has led to the establishment of this Agricultural School, under the patronage of the Commissioners of National Education, who, with legal powers which the original committee could not command, have carried to a successful issue the original project to which the talents and activity of Professor Murphy of the Queen's College have mainly contributed. The farm accounts, which commence November 1850 and end March 1, 1853, are drawn up in a thoroughly business-like manner, and exhibit very satisfactory returns; for instance, on one farm of 76 cultivated acres, the crop of 1851 produced 591*l*., and that of 1852 560*l*. + 92*l*. for live stock sold. The abstract of account on the combined farms of 186 acres, of which 95 are cultivated, 71 are in permanent pasture, and 20 waste, is as follows:—

Farm		Dr.
Two years' rent and taxes		£504 0 0
Manure and seed purchased		170 0 0
Labour and superintendence		390 0 0
Interest for two years at 5 per cent per annum, on 200*l*. expended in stock and implements		20 0 0
Deterioration of implements and machinery, 10 per cent. per annum		20 0 0
Tradesmen's bills and small items		24 0 0
Balance being profit		128 0 0
Farm		**Cr**
By amount received for produce of 1851	£591 0 0	
Do. do. of 1852	560 0 0	
Difference between cost and selling price of pigs, received	30 0 0	
		£1181 0
Seed and labour in preparation of crop of 1853	51 0 0	
Manure on hand	15 0 0	
One horse handed over to the Board of Education ...	8 10 0	
		74 10
		£1255 10

On my way to the house of a relative near Ballinhassig by railway, I was surprised to see within two miles of the city land undrained, though in a miserable condition from confined springs, and yet with a considerable fall for carrying off the water. At Ballinhassig, Mr. Molony, who has purchased a property there of 1200 acres, has effected the greatest improvements that I witnessed along the line to Bandon, and he has shown how barren looking hills and bleak vales may be converted into a smiling demesne. Excepting this gentleman's young plantations I could not distinguish any trees within a considerable range, though I know that they do exist on properties not very distant.

On my way westwards towards Dunmanway I passed through two nearly deserted villages, whose roofless houses, shattered window-frames, and desolated hearths, in the more eastern of the two especially, gave mournful evidence of the retrograde condition of a locality which, though at no period within my long recollection of improving habits, as regards the peasantry or common farmers, is now most miserable.

Considerable exertions have been made in that quarter by the Earl of Bandon and Lord Bernard to promote the culture of Flax, and a large area of land has been sown with it, and a scutch mill and Flax market have been provided. The want of decided progress is certainly not attributable to any illiberalities on the part of the two great proprietors in that part of the county, for they charge very moderate rents, and give every due encouragement to tenants. One farmer of about 100 acres of apparently good land by the river side admitted that he was charged but 10s an acre for it—that he did not realise much profit by it seemed to me to be the result of the great deficiency of cattle and sheep in proportion to the extent of tillage.

Associations and feelings of a personal nature led me to visit an ancient churchyard by the river side, about two miles from the more wretched village. The vestiges of the church had long since disappeared. Memorials of the famine and plague were around me. The decayed boards of coffins too lightly covered with earth; crowded unsculptured grave stones gave fearful intimation of the work of death. The river, which during the progress of centuries had been undermining the high bank on whose level summit the church had stood, at length caused a land slip, which took away the remnants of the church walls and much of the church, and at the same time the greater part of one of those tumuli whose origin has perplexed antiquarians.

To avoid prolixity, I shall only add, of my journey to the more western parts of the county of Cork, that everything looks pretty much as it did 30 or 40 years ago, but with ruined villages, and solitary huts yet uncleared from the soil; the village of Glandore on one side of a very pretty bay, alone showing the march of decided progress in taste and civilisation. The workhouse of Skibbereen, a locality which suffered so intensely from famine and fever, is one of the best managed in the county as to diet, and in every respect. The statistics of the mortality in that parish are fearful—1500 died, being two in seven of the population.

There were 1560 paupers in the Union when I entered it, of whom 512 were in hospital, and the number had decreased within a month very considerably in the south-west of the county of Cork. Agriculture, whether by the sea-coast or inland, has not I fear advanced much among the common farmers (the gentry and large tenant farmers have improved in tillage, and the breeding of cattle and sheep every where) since the publication in 1810 of the statistical survey of the county by the late Rev. Horace Townsend.

The richness of soil, the capabilities of the highest agricultural improvements, the evident progress in husbandry, and social improvements generally, which I perceived about Carrick, on the way to Waterford, and finally, after a dreary drive through a great part of the county of Wexford, until I approached the almost entirely English environs of Wexford and Enniscorthy, contrasted very strikingly in my mind with the many bleak neglected tracts that I had traversed.

I shall end with some notes on the workhouse of Enniscorthy, which is one of those with which a model industrial farm is combined. Omitting the statistics of the inner department, regarding numbers and diet, which is in the general principles similar to those given in other unions, excepting that vegetable soup (of oatmeal, rice flour, Leeks, Onions, Parsnips, Carrots, &c.) is given in abundant quantities at dinner, with 12 ozs. of

the best white bread to the able-bodied of both sexes, and the same allowance of bread, with a pint of sweet milk to the infirm, I shall describe the farm management.

There are 40 acres which were under pasture, as town parks for cow feeding, when possession of it was obtained at per (statute) acre. The land required draining in the first instance, and the removal of many old fences, besides subsoiling, all which operations have been effected. It was first broken for Flax, for which lea is very suitable, and produced good crops. Twenty-four cows were purchased, with the intention of supplying the inmates with milk, and the economy that resulted from this management was very marked; but unhappily pleuro-pneumonia attacked the cows, of which 12 died in 1852, causing a direct loss of 128*l.* The remaining stock was sold off, and since that time all the farm produce is either sold in the market or consumed in the house. The farm is cultivated under the superintendence of Mr. Hawkins, the agricultural master, in whom the guardians have found an able and faithful officer, on the half garden and half farm system. Last year the allotments were 6 acres of Flax; 12 of Mangold Wurzel; 8 of Turnips; 4 of Carrots; 2 of Parsnips. The remainder under Onions, Leeks, and Cabbages. One acre of the Mangold Wurzel was planted out for seed, three quarters of a rood having produced in the previous year 7 cwt. of seed, sold in Dublin for 11*l.* 4*s.* The balance-sheet on the year showed a balance in favour of the farm of 97*l.*, though the annual rent and county rates amount to upwards of 100*l.* The secret of this advantage lies in the important facts, that there is no charge for labour, this being discharged by paupers, who would otherwise be idle; that all the produce is sold; and that no manure, excepting a small portion of charred peat for deodorising the night-soil (which is alone sufficient for nourishing the crops) is bought. The agricultural master, who has effected all profitable returns by the very moderate labour of pauper men, women, and children, receives but 33*l.* a year with rations. The Mangold Wurzel sold produced 56*l.* in cash; Cabbages, 21*l.*; and Flax upwards of 40*l.* A donkey and a jennet have been kept for market and other occasions, but the cost of keeping them is inconsiderable.

I only wonder at the apathy or the prejudices which prevent the guardians of the poor from generally urging the adoption of a similar system, which has been found so reproductive and self-supporting in Enniscorthy and other unions. Where there is a supply of ready labour, why not apply it in the best manner? From Enniscorthy many of the best specimens of industrial manufactures were exhibited in Dublin at the Crystal Palace, and obtained prizes. The farm productions are equally creditable to the Enniscorthy Union. Why is not a self-supporting system more the object of attainment by all persons concerned in the relief of paupers? And with land—the ready raw material of industry to many pauper localities—why is it neglected and unused? But, is the Enniscorthy Pauper Agricultural Farm a perfect model? No,—the stringent Poor-law rules admit of no relaxations. The most industriously disposed and willing labourers, who dig and trench the ground, and perform all the labour of it, have no claim to a better meal than that which is given to the most worthless individual on the premises; the master has no power of giving it. Not having the disposal of any rewards or inducements for labour, powerless in supplying the ordinary motives for action, he is left to his own contrivances and ingenuity for effecting objects which ought to be promoted by some authorised system of easy and general application.

Home Correspondence.

The Harvest.—I have just returned from a journey through a great part of Cheshire, Warwickshire, Staffordshire, Leicestershire, and the North and West Ridings of Yorkshire, and in the whole of this district I found crops nearly of the same character. Wheat and Barley both heavy crops; and Wheat, in consequence of the sunny weather we have lately experienced, has suffered far less from rust than was at one time feared. Oats are not so regularly good, but in many places they are a very heavy crop. Beans, though long in the straw, are not very well laden. Turnips show a little shrivelled in the leaves, and in some places yellow leaves are appearing, from the severe drought of the last 10 days. Potatoes, from the same cause, appear to be ripening without much indication of the disease. The high winds we had about a fortnight ago having been succeeded by continuous bright sunshine, caused grain of all kinds to ripen at once, as it were; every available hand is actively employed with the sickle, scythe, or reaping machine, and this week will see nearly all the white corn cut, and much of it in the stack-yard. We have had comparatively few Irish reapers this year, and corn being all ripe together, has caused a great advance in wages. Men and women were this morning engaged here (Yorkshire) at 2*s.* 8*d.* a day and a quart of beer; and 12*s.* per imperial acre is a general price for cutting, binding, and stooking Wheat. *Roaldus, Sept.* 4.

The "Economical Manure."—I hope the exposure you gave in your paper some weeks since concerning the "economical manure," will have sufficient weight to caution people from using it; and I am desirous of adding my testimony to the truth of its worthlessness. I employed it in manuring four different crops, and applied it to each in different ways, and in no case with the least benefit; and from my placing confidence in the testimonials written in its favour, I have entirely lost my Turnip crop where I used it; and I think it is doing a public duty to make known such statements, in order that others may not be taken in as I have been this year by it. I used a small portion of another artificial manure, which was given me by a friend, alongside of it, which answered well; and the Turnips can be easily distinguished even some little distance from the field. Should you wish it, I am ready to give my name and address; but for the present, I subscribe myself your *Constant Subscriber, Sept.* 4.

The worst of Thin Seeding.—Half the seed in a field of Wheat not coming up, the other half tillered beautifully, but this very warm weather has ripened the main stalks so quickly that the tillered stalks have their ears still green all over the field. *Somerset.*

Wheat, early sowing.—In addition to our main breadth of Wheat, grown this year at 1 foot apart, which is extraordinarily fine, with most ears containing 80 to 100 grains, not yet threshed, and therefore we are not able to give its result at present, we have experimented on one square yard of Piper's Thickset, at 6 inches apart, or 18 plants, equal to something less than one peck of seed per acre. The result is, one plant failed, and the remainder produced 466 ordinary ears. One plant inadvertently crept in close to another, which produced only six weak ears, whilst the other 16 averaged about 28 ears, at 40 grains each (not extraordinary). The exact produce is one quart, equal to 18 quarters 7 bushels 1 peck per acre. [An experiment of this kind is, of course, entirely useless for the purpose (to which it is here put) of calculating from it acreable produce.] This was sown at the end of August, with our main breadth. The stubble is reserved for the inspection of any one who may doubt the correctness of this statement. We also sowed a small plot last July, which proved productive in a superlative degree, with ears surpassing any we had ever before seen; but unhappily the birds devoured it all, notwithstanding it had been netted, to protect it. It stood the winter well. *Hardy and Son, Maldon, Essex, August* 30.

Disease in Wheat.—I beg to direct your attention to the enclosed ears of Wheat, and should feel much obliged if you can inform me of the cause of their singular appearance. They are taken from a field of 14 acres in my occupation, and nearly one-fourth of the crop is in the same state as the enclosed ears. The Wheat was sown on the 1st February in the present year, of the kind known as Nursery Wheat, after Turnips fed off in the winter, the field having been drained in the spring of 1853. The soil is a brash of about 6 inches in depth, resting on the rock, with layers of clay between each bed of rock. A few days after the Wheat was in bloom we had a succession of cold frosty nights, and I would ask if the frost acting on the immature grain whilst in a soft and pulpy state, would be likely to produce the singular appearance they now present. The ears labelled No. 1 present the most usual appearance of the blighted ears. There are, however, many which contain two grains in a husk, as those marked No. 2; whilst some, like No. 3, seem to show a remarkable tendency, after the first grains were checked in their growth to develope others. I have never before seen any Wheat in the state like those I now forward to you. *W. Sulway, Newnton, Tetbury, Aug.* 26. [Your Wheat is affected by "Ear-cockles, purples, or pepper-corns." If you crush one of those black grains, moisten it, and leave it for a while in the warm sunshine, you will find, on examining it with a microscope, that it is a mass of "minute eel-shaped animalcules, which are in active movement, twisting and wriggling to and fro like so many snakes." Your experience is extraordinary only as regards the great quantity present in your crop. It is not unfrequently met with, but not in such large quantity. The animalcule is called Vibrio Tritici. The following is Professor Henslow's account of it:—"When a sound grain of Wheat is sown by the side of one infested with the vibrio, the young plant which springs from the former is not infected before March; but then the animalcules begin to find their way from the blighted grain into the earth, and thence into the young corn. They gradually ascend within the stem till they reach the ovule (or young state of the seed) in the flower bud, even before the ear has shown itself. Roffredi believed that they do not increase in size till they have reached the young seed, but that after this they grow very rapidly, soon deposit a large number of eggs, and then die. Mr. Bauer has questioned the accuracy of Roffredi's observation, and supposes the specimens found in the stem to belong to another species. The young are hatched in about 8 or 10 days after the eggs are laid, and speedily attain to about the $\frac{1}{33}$ of an inch in length, and the $\frac{1}{1200}$ of an inch in diameter. When full grown, the vibrio acquires a monstrous size compared with one of the multitude which composes the cottony mass in the blighted grains, becoming a quarter of an inch long, and the $\frac{1}{85}$ of an inch in diameter. I am not aware whether any precise estimate of the numbers actually found in a single grain has ever been made, but a slight calculation will show us that not less than 50,000 of the young might be packed in a moderately sized grain of Wheat. Mr. Bauer seems to think that more than one generation is produced in the course of a season. The most curious circumstance which observers have noticed in the economy of this animal, and which I have had an opportunity of fully verifying, is the wonderful property it possesses of retaining its vitality under circumstances in which we should have supposed it impossible that it could have lived. If a mass of them is suffered to become so perfectly dry that the slight touch of a hair might reduce them to powder, and they are again moistened in a drop of water, they will speedily revive, and become as active as before. They may thus be dried and revived many times before they are killed. Mr. Bauer states the limit to such revivals to lie between six and seven years."]

Peruvian Barley.—I have sent you a few ears of Peruvian Barley. I planted about 20 perches 15 inches from row to row, and 12 inches in the row. From the long-continued dry weather, more than half did not vegetate, but the produce is, I consider, large, although it has ripened very unevenly, as you will see by the sample sent, all having been cut from the produce of one grain. I had the produce of one grain rubbed out, which counted 3924 grains, the stubble of which I have sent you; some of the ears contained 90 and 96 grains. *J. S.* [Your specimen, a single plant bearing about 90 stems, is the common naked six-rowed Barley or Bere. It is called Siberian Barley. Siberia and Peru, however, are *near enough*—!—to justify the alteration now-a-days, when novelty depends on name. It is a hardy sort, and might very well serve as a winter Barley.]

Reviews.

The Age of the Ox, Sheep, and Pig; being the substance of two Lectures delivered before the Royal Agricultural Society of England on the structure and development of the teeth of these animals, by James B. Simonds, Professor of Cattle Pathology in the Royal Veterinary College. Published by order of the Society. W. S. Orr and Co., Paternoster Row.

The importance of the subject here treated of needs no vindication in the eyes of those engaged every year in the purchase and sale of farm stock. The need of a new work upon it, containing information up to the present date, is plain to all who are aware how entirely altered all the indications of age have become in the case of our domesticated animals by the increased precocity and early maturity induced by the attention of our breeders. Animals which, at two years of age, exhibit all the external character, as regards size, weight, and general development, which they used to do at three or even four years old, will be found as far in advance of their former indications in detail as they are upon the whole; and their teeth, as well as frame and flesh, are proof of this. The tables in which Prof. Simonds gives the results of more than 2000 observations are strikingly illustrative of this. They are as follows:—

DENTITION OF THE OX.

Table of Early Average. The breed and other causes favouring development.

Yrs.	Months.	
1	9	Two permanent incisors
2	3	Four "
2	9	Six "
3	3	Eight "

Table of Late Average. The breed and other causes retarding development.

Yrs.	Months.	
2	3	Two permanent incisors
2	9	Four "
3	3	Six "
3	9	Eight "

DENTITION OF THE SHEEP.

Table of Early Dentition.

Yrs.	Months.	
1	0	Central pair of temporary incisors replaced by permanent
1	6	Second pair " "
2	3	Third pair " "
3	0	Fourth pair " "

Table of Late Dentition.

Yrs.	Months.	
1	4	Two permanent incisors
2	0	Four "
2	9	Six "
3	6	Eight "

DENTITION OF THE PIG.

	At Birth.	One Month.	Three Months.	Nine Months.	Twelve Months.	Eighteen Months.
Fœtal incisors	4	4	4	...	...	...
Fœtal tusks	4	4	4	...	...	...
Temporary incisors	...	4 central	8 central & lateral	8 central & lateral	4 lateral	...
Permanent incisors	...	...	...	4 corner	8 central & corner	12 central, lateral, & corner
Permanent tusks	...	...	...	4 (cutting)	4	4
Total in both jaws	8	12	16	16	16	16

The two former of the tables indicate what a variety of stages of development may exist at any one age in different animals, and how completely in the rear of existing facts the publications existing on them are which take for granted the truth of all the dilatory developments indicated in the second column. Many instances could be given in which animals have been disqualified by judges for competition, owing to the certificates of age being held to be falsified by the state of the animal, when the certificate was perfectly true, and the only thing in error was the rule which has hitherto guided judges in determining age. Professor Simonds has done a great service by putting us all right on these points; the immense number of facts on which he has based his inferences seems to be conclusive as to their trustworthiness.

The introductory chapter contains material of high interest to the comparative anatomist and scientific man. The remaining parts of the book are more practical and descriptive, and to an extract taken here we direct the attention of the reader. The following gives the contrast between previous authorities and Professor Simonds on the dentition of the ox.

"There are few questions which have a more direct influence upon the success of agricultural exhibitions than that of a prize being obtained by an animal of proper age. The information which we have hitherto

possessed upon the subject of dentition has availed us but little in disputed cases. Practice here has not harmonised with theory. Several years since I became satisfied that nothing which had been written upon the dentition of either the ox or sheep in this country could be relied upon, and I resolved, by an extensive examination of animals of all breeds and under all circumstances, to ascertain what the facts were which belonged to the process. My position in the Royal Veterinary College first required this, for, being ever desirous of imparting practical information, I felt the want of this knowledge when speaking to the class year after year on the subject of dentition. It is true that my examinations had extended over a considerable period of time and were numerous, but from the uncertainty which belonged to many of them, with respect to the exact ages of the animals, I was impressed with the belief that they were insufficient to found correct conclusions upon.

"On the honour being conferred upon me by the Royal Agricultural Society of electing me as its veterinary inspector, this subject assumed a more important aspect. Forthwith I determined to examine all the animals brought together at the annual exhibitions, and make records of the facts relating to their dentition. This was done to some extent at the Windsor meeting, but at Lewes and Gloucester it was fully carried out. Note-book in hand I went from stall to stall and recorded the condition of the animal's teeth without reference at that time to its stated age. Subsequently the two things were compared, and I have now before me the notes of upwards of 800 oxen of certified age, the condition of the teeth of each standing on the opposite page to that which gives the age, breed, and sex of the animal. The data thus obtained are embodied in a tabular form for more easy reference.

"Before proceeding to these details, however, it is right for the better elucidation of the subject, that I should first bring before my readers the observations of other persons upon the dentition of the ox. I select for this purpose the statements which are contained in the work on cattle, published by the Society for the Diffusion of Useful Knowledge. The writer of this, when speaking of the age of oxen as indicated by their teeth, says that—

"'The mouth of the newly-born calf presents an uncertain appearance, depending on the mother having exceeded or fallen short of the average period of utero-gestation. Sometimes there will be no vestige of teeth, but generally, either two central incisors will be protruding through the gums, or they will have arisen and attained considerable bulk.

"'About the middle or close of the second week a tooth will be added on either side, making four incisors. At the expiration of the third week, the animal will have six temporary incisors, or front teeth.

"'At a month, the full number of incisors will have appeared These are the temporary or milk teeth. The enamel will be seen covering the whole of the crown of the tooth, but not entering into its composition, as in the horse, and it will be observed, that the edge is exceedingly sharp. The only indication of increasing age will be the wearing down of these sharp edges, and the appearance of the bony substance of the tooth beneath. The two corner teeth will be scarcely up before the central teeth will be a little worn. At two months, the edge of the four central teeth will be evidently worn; yet as the wearing is not across the top of the tooth, but a very little out of the line of its inner surface, the edge will remain nearly or quite as sharp as before. At three months the six central teeth, and at four months the whole set will be worn, and the central ones most of all; but after the second or third month, the edge of the tooth will begin to wear down, and there will be more of a flat surface, with a broad line in the centre.

"'About this time a new change will begin, but very slowly, to be seen. The central teeth will not only be worn down on their edges, but the whole of the tooth will appear diminished, a kind of absorption will have commenced. There will be a little but increasing space between them. The face of the tooth will likewise be altered, the inner edge will be worn down more than the outer, and the mark will change from the appearance of a broad line to a triangular shape. The commencement of this alteration of form and diminution of size may be traced to about the fourth month. The two central incisors at eight months are not above half the size of the next pair, and they are evidently lessened. At 11 months the process of diminution will have extended to the four central teeth. The vacuities between them will now be evident enough. At 15 months six of the incisors will have this shrunken appearance. . . . At 18 months old, the corner teeth will not be more than half their natural size; the centre ones will be yet more diminished, and the vacuities between them will be almost equal to the width of the teeth. . . . All this while, the second set of teeth, the permanent ones, have been growing in their sockets, and approaching towards the gums; but not, as is said to be generally the case with other animals, and with the human being in particular, pressing upon the roots of the milk teeth, and causing them to be absorbed, until at length, losing all hold in the socket, they fall out. The process of absorption commences here in the whole milk tooth, and as much in the crown or body of it as at its root.

"'The process of general diminution seems now for awhile retarded: it is confined to the central teeth, and they gradually waste away until they are no larger in the body than crow-quills. About the expiration of the second year, or a little before, the milk teeth are pushed out or give way, and the two central teeth appear. The process of absorption will be suspended with regard to the two outside pairs of milk teeth, but will be rapid with regard to the second pair, and a little before the commencement of the third year they will disappear. Thus the three-year-old beast will have four permanent incisors, and four milk teeth.

"'Now the remaining milk teeth will diminish very fast, but they show no disposition to give way, and at four years old there will be six permanent incisors, and often apparently no milk teeth; but if the mouth is examined, the tooth that should have disappeared, and the tooth that is to remain until the next year, are huddled together, and concealed behind the new permanent tooth.

"'At the commencement of the fifth year the eight permanent incisors will be up, but the corner ones will be small; so that the beast cannot be said to be full mouthed—*i. e.*, all the incisors fully up—until it is six years old.'

"The author finishes this account by alluding to the writings of others who have described dentition as being perfected at an earlier date, and adds, 'we have no hesitation, however, in appealing to the experience of the breeders of cattle for the general accuracy of our account.'

"It is evident from this that the author was satisfied with the correctness of his conclusions; and as his work is regarded as the standard one on the diseases, &c., of cattle, so we cannot be surprised that his views of dentition should have been generally received. Much might be said to show that many of the rules laid down in the above description are rather the result of imagination than of practical investigation, notwithstanding the confidence with which the author appeals to the experience of the breeders of cattle. I refrain, however, entirely from this task, rather desiring to lay before the reader the facts as I have found them."

These facts are given in a tabular form above, and will be given in greater detail in an extract from the work which we shall next week publish.

Calendar of Operations.

SEPTEMBER.

BERWICKSHIRE MERSE FARM, *Sept.* 4.—All hands are now engaged in securing the grain crop. In spite of the cloudy weather in August (as well as during summer), corn changed colour rapidly, and we had a full week's shearing in the end of that month, which is not much later than an average of seasons. Wheat bulks well in the stook: but the all but universal ravages of the fly after blooming time will reduce the yield to not more than an average. Barley is much superior to the produce of last year, in length both of straw and ear. Oats, however, are generally but a light crop, and below an average as to quantity of grain. Few Beans are ready yet. They present a luxuriant haulm, but must be sadly deficient in corn, for just when the bloom fell off, they were covered with myriads of black flies, which prevented the formation of one single pod on the upper half of the stalks. There are one or two good crops of Peas, but they are mostly the reverse. The fine, drying, westerly breezes of last week have induced most people to begin carrying; and never having got a drop of rain, the first cut grain is in fine order. The weather has, however, changed suddenly for the worse. This afternoon the wind veered to the north, and fell at night, and we are now enveloped in a slight but steady drizzle. But this, if it pass soon, will leave no bad effects behind. Turnips, in some instances, begin to suffer from mildew, but generally are rooting well. Potatoes are much affected within the last two or three weeks—some think worse than last year. Pastures are good yet, but not very feeding, and half fat cattle are now laid on to Purple-top Yellow Turnips. *J. T.*

WEST SUSSEX, *Sept.* 5.—We have once more finished harvest, and we may put it down as one of the finest that we ever remember. From the beginning to the end we have not had rain to stop any of our work; and whatever the produce may be, such as it is, it will be fit to come into market as early as it can be threshed out, so that we may expect prices to be soon at their lowest ebb. Already the steam engines are at work threshing out, and they appear to have established themselves in favour of the farmer, but this may be called the first year that they have made much progress in this part of the county. The case will no doubt be the same here as we have seen it further west, very few trials will be needed to reconcile us to them. There are but few that like them the first time, because they will not believe before trial that they can thresh from 80 to 100 sacks a day, and not being prepared to clear away such a quantity of corn and straw they get in a mess, and it takes some time to get the barn toned down to its old quiet state. But once prepared for it, then dispatch is pleasant, and the weary round of the horse machine is anything but agreeable after it. We have heard various reports respecting the return of the Wheat, some putting it at 7, others at 10 sacks per acre, and the latter, I think, will not be far from the mark on the rich coast lands here. Barley that we have seen in the market is very good, although it has not had any of those fine dews that are supposed to do it so much good, and perhaps the present season may do something to prove that the less damp it gets after cutting so much the better. They say the dew swells it out; so it may, but it adds nothing but water to it, and that must evaporate before it is harvested. Oats are heavier than they have been for some years, and in every way good. The same may be said of Peas; we have seen several samples of new, and they are all above the average in quality. Beans have not yet made their appearance in the market, and they are likely to be the only drawback. Respecting the root crops we can hardly speak favourably now. They have held on well, when we might have expected that the severe drought would have stopped their growth; but now that the under leaves are beginning to fade (which is ordinarily a sign that the roots are beginning to swell faster), the whole plant seems inclined to flag, and without rain they must come to a stand-still. As for Grass in the field, that is out of the question. We may safely say that there has been no vegetation in it for the past two months, and the cattle have now to look into the straw yards for assistance. We are not able to get ploughing for Wheat, the land being so hard, but have sown a few acres of Trifolium, though certain that it will not show itself till rain comes. We have ploughed the land for it, and we think that must be best: it is more likely to prevent the ravages of the slug, which proved so destructive to it last year. We shall now take advantage of the weather to get some of the Wheat stubbles cleaned, as we can never have a better chance. *G. S.*

Notices to Correspondents.

BRANCHED BARLEY: *G S.* Much obliged. It is very curious and shall be figured.

BRISTOL RED: *Anon.* Those who grow it must advertise it.

DISEASES: *Constant Reader.* See answer in p. 537.

EARS OF WHEAT: *J. B. Maunsell.* The ear sent appears to be the "Bristol Red," a very productive sort. We have no personal experience of it, and do not know what the millers say of its quality.

FAIRS: *Anon.* Stagshaw Bank Fair (for Cheviots). The first fair is held on Whit-Friday for ewes and lambs, hogs, and wedders; on Saturday for short-horn cattle, Scotch and Irish cattle and horses. The fair is held on July 3, for sheep, principally hogs and wedders. This is the last show for unclipped sheep; July 4 is again for cattle and horses. Third fair is on August 6, for lambs only. The fourth is on October 24, for ewes and tups. Nine-tenths of the sheep shown at these fairs are Cheviots and mixed breeds.

LINSEED AND CORN CRUSHERS. We should have mentioned in past reports of the English and Yorkshire agricultural meetings, that the prizes at both for this implement were awarded to Messrs. Turner, of Ipswich.

MANURE: *Urban.* 3 cwt. of guano per acre, and an equal quantity of common salt, mixed with a cart-load of black turf ashes, will be a good dressing for Mangold Wurzel; and 2 cwt of guano, 1 cwt. of nitrate of soda sown broadcast in wet weather will do for Grass land.

POULTRY: *Reader.* By all means procure "Fowls," by Baily; you will there obtain the best information respecting the fattening of fowls for table.—*Robert Watts.* The white game fowl must be of a pure white plumage, without any foul feathers. A red and white, or yellow and white game bird, is a "Pile." The Staffordshire, Worcestershire, and Cheshire Piles are the most famous. A preference given to either variety is purely a matter of taste; they are all of equal value. Piles will not be bred from white game fowls, but they can be by crossing the red and white varieties.—*H. M. Cladge.* In our next.

SPRING FEED: *Leisurely.* You had better sow Rye than Rape for the earliest chance of spring feed now.

THISTLES: *L E.* Pull them in wet weather whenever big enough to lay hold of, and never allow them to flower.

WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

	£	s.	d.
Patent Pump	1	15	0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing	3	0	0

Larger sizes if required.

The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,

8, CRESCENT, JEWIN STREET, LONDON.

Every description of Machinery for Raising Water: Fire Engines, &c.

TO AMATEUR GARDENERS, LOCAL BOARDS OF HEALTH, & SANITARY WORKS.

PATENT SLUICE COCKS, Gutta Percha, Combinated ditto, Patent Flexible India Rubber Tubing, and every other Hose for Watering Gardens. The Hydraulic Ram, Fire, Garden, and every other kind of Pump, Hydrants, High Pressure Cocks, and all other articles to be had, Wholesale and Retail, of FREEMAN ROE, HYDRAULIC ENGINEER, 70, Strand, and Bridgefield, Wandsworth.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.

MESSRS. BURGESS AND KEY, as Mr. PARKES' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.

103, Newgate Street, and 52, Little Britain, London.

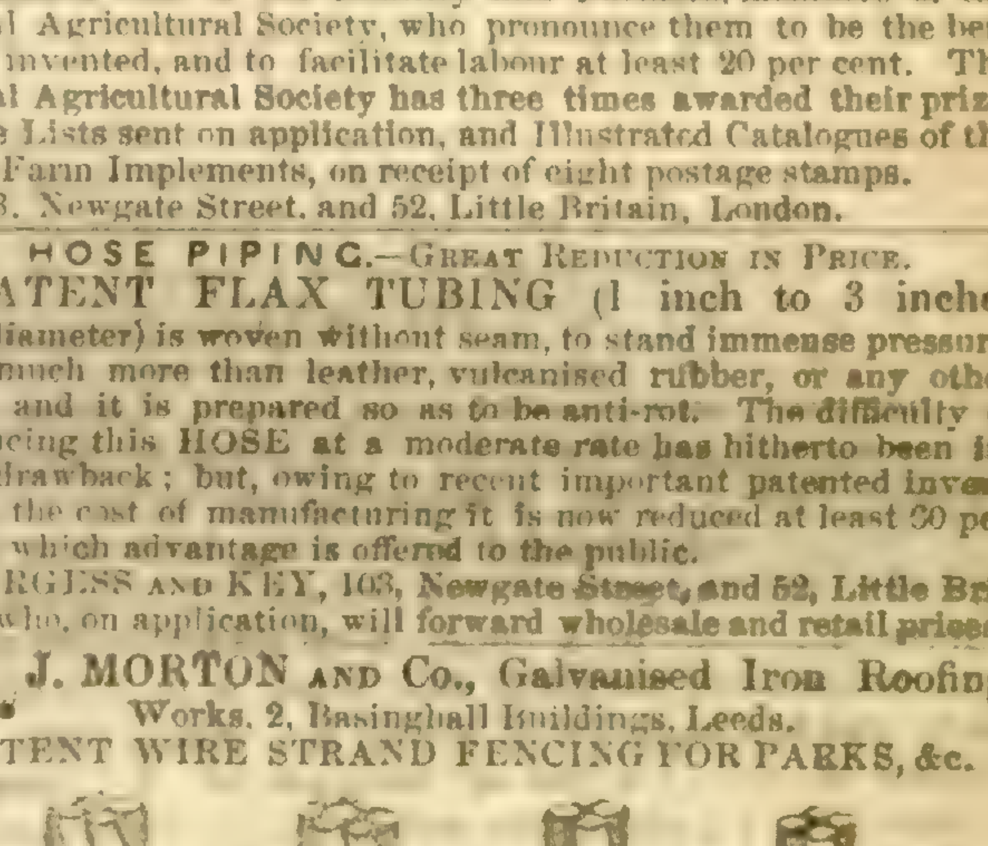
HOSE PIPING.—GREAT REDUCTION IN PRICE.

PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense pressure, and much more than leather, vulcanised rubber, or any other hose, and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented inventions, the cost of manufacturing it is now reduced at least 50 per cent., which advantage is offered to the public.

BURGESS AND KEY, 103, Newgate Street, and 52, Little Britain, who, on application, will forward wholesale and retail prices.

H. J. MORTON AND Co., Galvanised Iron Roofing Works, 2, Basinghall Buildings, Leeds.

PATENT WIRE STRAND FENCING FOR PARKS, &c.

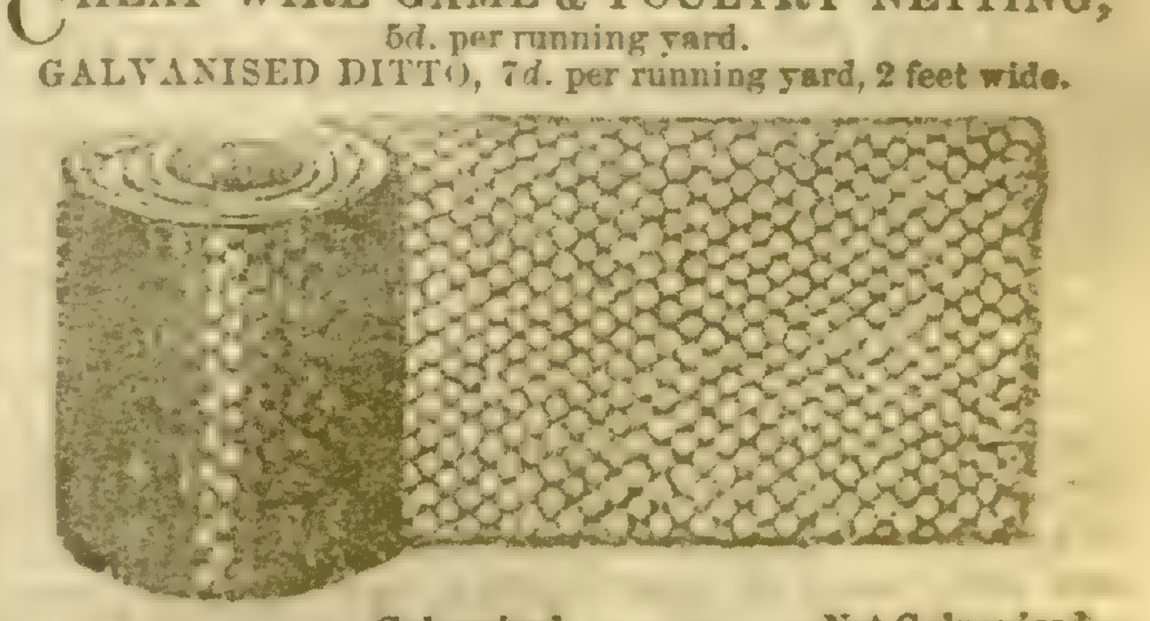


This Fencing is the most neat, strong, and durable for Parks and Agricultural purposes in use. It cannot be bent or put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply as above.

IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

CHEAP WIRE GAME & POULTRY NETTING, 5*d.* per running yard.

GALVANISED DITTO, 7*d.* per running yard, 2 feet wide.



	Galvanised.	Not Galvanised
24 in. wide, 2 in. mesh,	7*d.* per yard.	5*d.* per yard
30 in. „ 2 in. „	9*d.* „	6½*d.* „
36 in. „ 2 in. „	10½*d.* „	7½*d.* „
48 in. „ 2 in. „	1*s.* 2*d.* „	10*d.* „

Sparrow Proof Netting, Galvanised, 3*d.* per square foot, made to any size for the same proportionate price. This article was shown at the Great Exhibition, where it was so much admired for its light and durable appearance, and acknowledged to be the cheapest and best article of the kind ever offered. Extra strong Wire Sheep Netting, 3 feet high, 1*s.* 6*d.* and 2*s.* 6*d.* per yard. Also every description of Flower Trainers, Dahlia Rods, Garden Arches, Bordering, Flower Stands, Tying Wire, Trellis Work, Invisible Wire Fencing, Hurdles, and every description of Wire Work for Horticultural purposes.—Illustrated Catalogues of Patterns forwarded, post free, on application to T. H. Fox, City of London Wire Work and Iron Fence Manufactory, 44, Skinner Street, and 6 and 8, Snow Hill, London.

GLASS FOR CONSERVATORIES, ETC.

HETLEY and CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2d. to 3d. square foot, for the usual sizes required, many thousand feet which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

BY ROYAL LETTERS PATENT.

THE COSMOPOLITAN GLASS COMPANY, 296, Oxford Street, London.—The Managers beg to inform the Nobility and Gentry, Farmers, Gardeners, &c., that their new List of Prices may be had free on application at the Company's Depôt.

HARTLEY'S PATENT ROUGH PLATE, for Roofing Conservatories, Halls, and Public Buildings.

PLATE, CROWN, and SHEET WINDOW GLASS.

Coloured and Ornamental Glass of every description.

Glass Milk Pans, Pails, Tests, and Measures; Cream Pots and Syphons; Churns, Butter Tests and Slabs; Tiles and Slates; Bee Hives, &c.

Moore's Patent Ventilator and Lockhead's Patent Perforated Glass, for Dairies and Greenhouses.

Aquavivariums, Fern Shades, Propagating Glasses, Fruit Protectors, Preserve Jars, Cucumber Tubes, Hand Lights, Flower Vases, Labels, &c., and all kinds of Agricultural, Horticultural, Architectural, Domestic, Scientific, and Ornamental Glass, British and Foreign, at the lowest prices.

HARTLEY'S PATENT ROUGH PLATE GLASS, 1-8th thick, or 2 lbs. to the foot; 3-16ths, or 3 lbs.; and 1-4th, or 4 lbs. to the foot, for Ridge and Furrow Roofs, Greenhouses, Railway Stations, Engine Sheds, Mills, Market Halls, and Public Buildings generally.

Packed in Boxes of 50 feet each.

6 by 4 and 6½ by 4½ ... ... 10s. 6d. per box.
7 „ 5 „ 7½ „ 5½ ... ... 12 0 „
8 „ 6 „ 8½ „ 6 ... ... 13 6 „
9 „ 7 „ 9½ „ 7½ and 10 by 8 ... ... 15 0 „

For larger sizes a full List of Prices will be sent on application. Boxes are charged 2s. each extra, full price allowed if returned free of expense.—For further information apply to

JAMES PHILLIPS & Co.,
116, Bishopsgate Street Without.

"Rough Plate has never been, and never can be, prejudicial to the colouring of Grapes; though we can easily believe that it has been charged with such a fault by persons who have not skill enough to manage Grapes under glass."—*Gardeners' Chronicle.*

"There *can be no question now* that Rough Plate Glass is the most beautiful as well as the most useful kind of glass that can be employed in horticulture. It is free from all the faults of transparent glass, and has many advantages peculiar to itself, *without a single disadvantage as a set off.*"—*Gardeners' Chronicle.*

TO FLORISTS AND OTHERS.

J. JONES, Iron Merchant, has always a great variety of CONICAL and SADDLE BOILERS in STOCK; also Fire and Furnace Bars, Ornamental and Plain Supply Cisterns, Double Doors and Frames, Furnace Grates, Soot Doors, Hot Water Pipes, Elbows, Tees, Syphons, Throttle Valves, Stop Cocks, Flange and Socket Elbows, &c.: also Trough Pipes. Drawings and prices of the above, on application to J. Jones, Iron Bridge Wharf, No. 6, Bankside, London, near the Southwark Iron Bridge.

THE CONICAL HOT-WATER BOILERS, as invented by John Rogers, Esq., are only to be obtained of JOHN SHEWEN, Ironmonger, Sevenoaks, Kent.
Contracts given for Heating.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard run, of E. T. Archer, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey.

ENCAUSTIC TILE PAVEMENTS.

MAW and CO., Benthall Works, Broseley, Salop, Manufacturers of the Cloister Pavement of Mediæval Court, and "the successful Imitation of Opy's Alexandrinum, in the beautiful Encaustic Tile Pavement of Cloisters of Byzantine Court," Crystal Palace (M. D. Wyatt, Esq., in Official Handbook), forward, without charge, Designs and Estimates, adapted to given dimensions, of Entrance Halls, Conservatories, Verandahs, &c., in every style.
Specimens at 11, Aldersgate Street, City.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.
Priced lists of plant tubs and boxes forwarded on application.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the nobility, gentry, and clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable outdoor Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice.

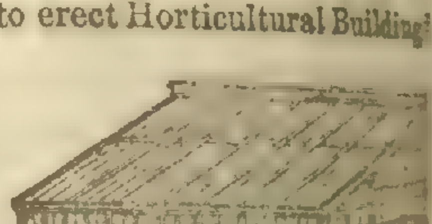
Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to Walter Carson & Son, 9, Great Winchester Street, Old Broad Street, Royal Exchange, London. No Agents. All orders are particularly requested to be sent direct.

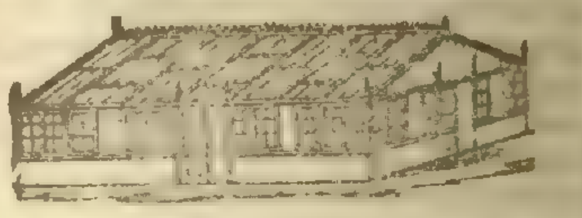
MESSRS. J. WEEKS' NURSERY, King's Road, Chelsea.—A great alteration is being effected at this Establishment, where the various Horticultural buildings spread over nearly an acre of ground, and extending together to about [illegible] feet in length, covering an area of 20,000 feet, have hitherto been heated by seven boilers. These boilers worked efficiently and economically, but as great practice in every art leads to improvement, so in this case have the Messrs. Weeks found it desirable to replace these seven boilers by one. This one will heat every house and pit efficiently, either altogether or separately, according to pleasure. This alteration will effect a very important saving annually, as the one boiler will not consume more than two out of the seven boilers superseded, whilst the time and labour hitherto expended over the seven, will in future be confined to one. The necessary alterations for this important arrangement are now in progress, and will be completed within a fortnight, and the Nobility and Gentry interested in the principle of heating by Hot Water can here see it practically carried out, and have it thoroughly explained in all its details.

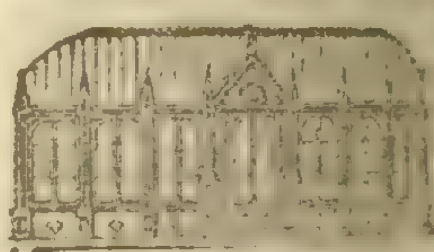
HORTICULTURE IN ALL ITS BRANCHES.

J. WEEKS & Co., King's Road, Chelsea,

HOTHOUSE BUILDERS.







The Nobility and Gentry about to erect Horticultural Buildings or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.
J. Weeks & Co., King's Road, Chelsea, London.

GLASS.

THOMAS MILLINGTON, Importer of Foreign Sheet Glass, requests attention to the present Prices of Glass and Stock sizes, which are cheaper and better than those of English manufacture:—

PACKED IN ONE HUNDRED FEET BOXES, THIRDS QUALITY, BOXES INCLUDED.

Inches.	Per 100 ft.	Inches.	Per 100 ft.	Inches	Per 100 ft.	Inches.	Per 100 ft.	Inches.	Per 100 ft.	Inches.	Per 100 ft.
6 by 4	12s.	12 by 10		14 by 11		16½ by 12½		18 by 13		18 by 14	
6½ „ 4½		12½ „ 10½		14½ „ 11½		17 „ 12		18½ „ 13½		18½ „ 14½	
7 „ 5	14s. 6d.	13 „ 10		15 „ 11		17½ „ 12½		19 „ 13		19 „ 14	
7½ „ 5½		13½ „ 10½		15½ „ 11½		18 „ 12		19½ „ 13½		19½ „ 14½	
8 „ 6		14 „ 10		16 „ 11		18½ „ 12½		20 „ 13		20 „ 14	
8½ „ 6½		14½ „ 10½		16½ „ 11½		19 „ 12		20½ „ 13½		20½ „ 14½	
9 „ 7	17s. 3d.	15 „ 10	20s.	17 „ 11	20s.	19½ „ 12½	20s.	21 „ 13	20s.	21 „ 14	20s.
9½ „ 7½		15½ „ 10½		17½ „ 11½		20 „ 12		21½ „ 13½		21½ „ 14½	
10 „ 8		16 „ 10		14 „ 12		20½ „ 12½		22 „ 13		22 „ 14	
10½ „ 8½		16½ „ 10½		14½ „ 12½		16 „ 13		16 „ 14		22½ „ 14½	
11 „ 9		17 „ 10		15 „ 12		16½ „ 13½		16½ „ 14½		23 „ 14	
11½ „ 9½		17½ „ 10½		15½ „ 12½		17 „ 13		17 „ 14		23½ „ 14½	
12 „ 9		13 „ 11		16 „ 12		17½ „ 13½		17½ „ 14½		24 „ 14	
12½ „ 9½		13½ „ 11½									

IMPROVED PATENT ROUGH PLATE, PLAIN, FLUTED, AND IN QUARRY PATTERNS.
British Plate, Patent Plate, Sheet, Crown, and Coloured Window Glass. Pure White Shades for Ornaments.
Pumps, Water Closets, and Plumbers' Brass Work. Genuine White Lead, Paint, Colours, Varnishes, Brushes, &c.
Tariffs of the above on application to

T. MILLINGTON, 87, Bishopsgate Street Without, London.

COTTAM AND HALLEN,

2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.

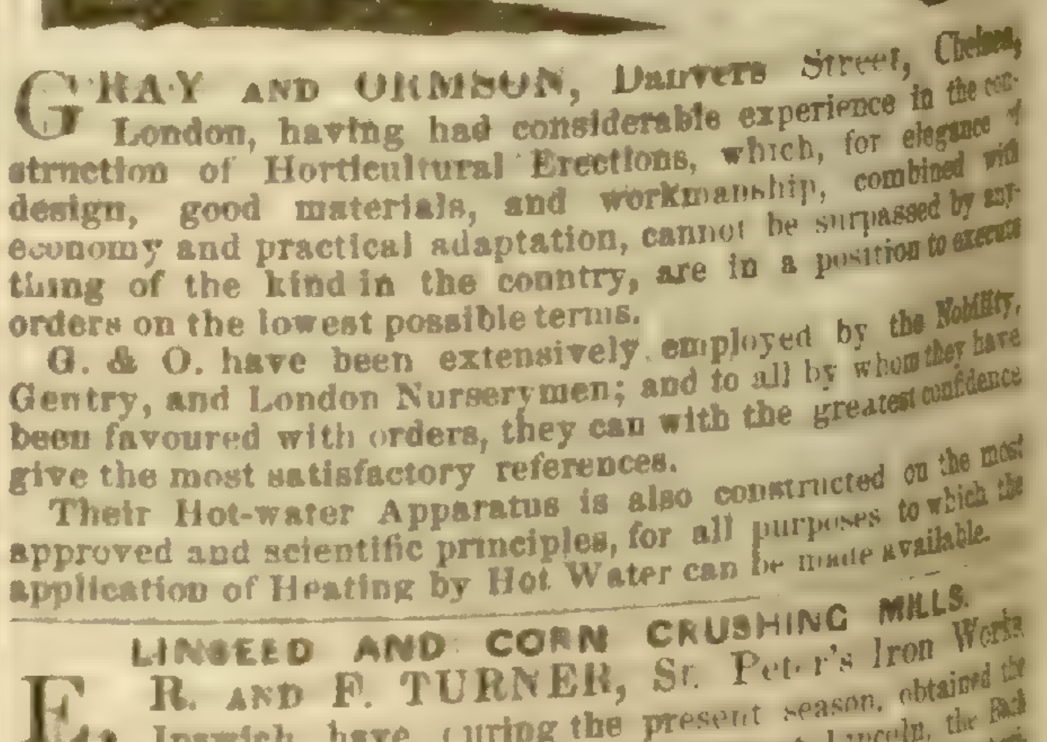
APPLICATION is requested for their NEW HORTICULTURAL LIST, containing Illustrations, Descriptions, and Prices of

Conservatories	Mowing Machines	Hand-glass Frames	Flower Sticks
Greenhouses	Fountains	Game Netting	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Garden Arches, &c.
		Garden Engines	
		Do. Syringes	
		Do. Rollers	
		Flower Labels	

IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.
AGRICULTURAL LIST UPON APPLICATION.
EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.
EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

HOT WATER APPARATUS, adapted for Horticultural and every other description of Buildings; improved Boilers, requiring no brickwork, Warm Air Apparatus, &c.—S. S. TAYLER, Engineer, Battersea.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER,
At the Lowest Prices Consistent with Good Materials and Workmanship.



GRAY and ORMSON, Danvers Street, Chelsea, London, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and to all by whom they have been favoured with orders, they can with the greatest confidence give the most satisfactory references.

Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

LINSEED AND CORN CRUSHING MILLS.

E. R. and F. TURNER, St. Peter's Iron Works, Ipswich, have, during the present season, obtained the Prizes of the Royal Agricultural Society at Lincoln, the Bath and West of England Society at Bath, and the Yorkshire Agricultural Society at Ripon, for their celebrated ROLLER MILLS for Crushing Corn, Seeds, &c. These are manufactured of various sizes, particulars of which, with Illustrated Catalogue of Steam Engines, new Prize Chaff Cutter, and a variety of other Implements, manufactured by E. R. & F. Turner, may be had free on application at the Works, Ipswich, or by Post, inclosing two postage stamps.

SOUND and WHITE TEETH are not only indispensably requisite to a pleasing exterior in both sexes, but they are peculiarly appreciated through life as highly conducive to health and longevity. Among the various preparations offered for the purpose, ROWLAND'S ODONTO, or PEARL DENTIFRICE, stands unrivalled in its capability of embellishing, purifying, and preserving the teeth to the latest period of life. Prepared from Oriental herbs with unusual care, transmitted to this country at great expense, it will be found to eradicate all tartar and concretions, and impart a pearl-like whiteness to the enamelled surface, remove spots of incipient decay, render the gums firm and red, and thus fix the teeth firmly in their sockets, and from its aromatic influence imparts sweetness and purity to the breath. Price 2s. 9d. per box. Caution.—The words "Rowlands' Odonto" are on the label, and "A. Rowland & Sons, 20, Hatton Garden," engraved on the Government stamp affixed on each box. Sold by them, and by chemists and perfumers.

UMBRELLAS.

DAWSON'S PATENT.—If you require an Umbrella that is superior in every respect to any other [illegible], being not only waterproof, but at least five times more durable, and according to its quality, equally low in price, ask for, and [illegible] having, DAWSON'S PATENT WATERPROOF.

Wholesale Warehouse, 2, King's Arms Yard, Moorgate Street.

GLENFIELD PATENT STARCH, used in her Majesty's Laundry, and WOTHERSPOON'S machine-made CONFECTIONARY, MARMALADE, JAMS, JELLIES, &c., which gained the Prize Medal of 1851, may be had of all Grocers; Wholesale of WOTHERSPOON, MACKAY, & Co., 66, Queen Street, Cheapside, London; and ROBERT WOTHERSPOON & Co., Glasgow.

MR. MECHI'S DRESSING BAGS, of an entirely novel construction, as Exhibited and Sold at the Crystal Palace, combine all the advantages of an ordinary Desk and Dressing-case, with numerous other conveniences for Apparel, and are varied in cost to suit the economic, utilitarian, or the luxurious, either for ladies or gentlemen.—4, Leadenhall Street, September 9.

METCALFE AND CO.'S PERFUMERY DEPARTMENT.—PROPRIETARY ARTICLES.—METCALFE'S celebrated **ALKALINE TOOTH POWDER is acknowledged as** the safest and most efficient now in use. Dupuytren's Medicated Pomade is the most certain remedy for preventing the hair prematurely falling off, and for restoring it when baldness has already commenced. **Dupuytren's Medicated Balm strengthens,** cleanses, and improves the growth, and is generally acknowledged as the best wash for the hair.—Manufacturers of British and Importers of Foreign Soaps, Perfumery, and J. M. Farina's genuine Eau de Cologne, at METCALFE, BINGLEY, & Co.'s only Establishment, 130B and 131, Oxford Street, second and third doors west from Holles Street.

ASTROLOGY.—Persons residing in London or elsewhere can send any Address, Christian and Surname, and Age, in a letter containing 13 postage stamps, to Professor MELVILLE, Prince's Road, Lambeth, London (the only Acrostic Astrologer in the universe), and they will receive by return of post, special Poems on their names, in which their destinies will be revealed.

DO YOU WANT LUXURIANT HAIR, WHISKERS, &c.?—No other compound for the Hair has maintained such an enduring celebrity as EMILY DEAN'S CRINILENE. It is guaranteed to produce Whiskers, Moustachios, Eyebrows, &c., in a few weeks, and restore the Hair in Baldness, from whatever cause, strengthen it when weak, prevent its falling off, and effectually check Greyness in all its stages. For the nursery, Dr. Wilson says it is unrivalled.—Price 2s. per Package (elegantly perfumed); sent post free, on receipt of 24 penny postage stamps, by Miss DEAN, 37 A, Manchester Street, Gray's Inn Road, London. Sold by every Chemist in the Kingdom.—"In one fortnight it produced a beautiful set of Moustachios." H. ADAMS.—"It has prevented my Hair falling off." J. HICKSON.—"It has quite checked the greyness that was coming on." Mrs. ELDER.

RUPTURES EFFECTUALLY CURED WITHOUT A TRUSS.—All sufferers from this alarming complaint are earnestly invited to consult or write to Dr. LESLIE, as he guarantees them relief in every case. His remedy has been successful in curing thousands of persons during the last 11 years, and is applicable to every kind of single and double Rupture, however bad or long standing, in male or female of any age, causing no confinement or inconvenience in its use whatever. **Sent post free to any part of the world,** with full instructions for **use, on receipt of 7s. 6d. in postage stamps**, cash, or **Post-office** order, payable at the General Post-office, to Dr. HERBERT LESLIE, 37A, Manchester Street, Gray's Inn Road, London. At home daily (except Sunday) from 11 till 3 o'clock. A Pamphlet of Testimonials sent post free on receipt of one postage stamp.

DINNEFORD'S PURE FLUID MAGNESIA has been for many years sanctioned by the most eminent of the Medical Profession, as an excellent remedy for Acidities, Heartburn, Headache, Gout, and Indigestion. As a mild aperient, it is admirably adapted for delicate females, particularly during pregnancy; and it prevents the food of infants from turning sour during digestion. Combined with the Acidulated Lemon Syrup, it forms an Effervescing Aperient Draught, which is highly agreeable and efficacious.—Prepared by DINNEFORD & Co., Dispensing Chemists (and General Agents for the Improved Horse-Hair Gloves and Belts), 172, New Bond Street, London, and Sold by all respectable Chemists throughout the Empire.

TO NERVOUS SUFFERERS.

A RETIRED CLERGYMAN having been restored to health in a few days, after many years of great nervous suffering, is anxious to make known to others the means of cure; he will therefore send (free), on receiving a stamped envelope, properly addressed, a copy of the prescription used.—Address the Rev. E. DOUGLASS, 18, Holland Street, Brixton, London.

NERVES.

DR. GRANDISON'S PILLS for strengthening the Nerves are sold in London by Mr. RICHARDS, 40, New Bridge Street; Mr. SANGER, 150, Oxford Street, and other respectable Chemists. Boxes can be sent by post.—Price 1s. 1½d., 2s. 9d., and 4s. 6d. each.

BLAIR'S GOUT AND RHEUMATIC PILLS. Price 1s. 1½d. and 2s. 9d. per box.—Mr. William Courtney, of Barton Stacey, Hants, says:—"I had resort to your Pills, and within two hours I was quite easy. The use of these Pills ought really to be known all over the world." Among the many discoveries, none have conferred such a boon on suffering humanity as that of Blair's Gout and Rheumatic Pills, they require neither attention nor confinement, and are certain to prevent the disease attacking any vital part. Sold by all medicine vendors. Observe that "THOMAS PROUT, 229, Strand, London," is impressed upon the Government stamp.

HOLLOWAY'S OINTMENT AND PILLS THE FIRST REMEDIES IN THE WORLD FOR THE CURE OF BAD LEGS.—Annie Williams, of Village Place, Ciaton Street, Liverpool, states in a letter to Mr. Robinson, Druggist, 51, Copperas Hill, Liverpool, that she had an ulcerated leg for many months, and that she tried various remedies in anticipation of effecting a cure, which appeared quite hopeless, as it became worse every day until she made use of Holloway's Ointment and Pills; by the first dressing there was a decided improvement, and in a few weeks the wounds were completely healed, and she now enjoys excellent health.—Sold by all Vendors of Medicine, and at Professor HOLLOWAY'S Establishments, 244, Strand, London, and 80, Maiden Lane, New York.

FRAMPTON'S PILL OF HEALTH.—"For upwards of nine years (writes Mr. **Thomas Province,** of Winchmore Hall, Middlesex), I have **experienced the efficacy** of this excellent medicine, and I have the happiness of saying that I never had a better state of health. I beg further to add that this medicine is in general use by my family, and we know of nothing to equal it." For females these pills are truly excellent, removing all obstructions, the distressing headaches so very prevalent with the sex, depression of spirits, dulness of sight, nervous affections, blotches, pimples, and sallowness of the skin, and gives a healthy juvenile bloom to the complexion. Sold by all medicine vendors, price 1s. 1½d. per box.—Observe that "THOMAS PROUT" is on the Government stamp.

THE BEST SHOW OF IRON BEDSTEADS in the Kingdom is WILLIAM S. BURTON'S.—He has two very Large Rooms, which are devoted to the exclusive show of Iron and Brass Bedsteads and Children's Cots, with appropriate Bedding and Mattresses. Common Iron Bedsteads from 1[illegible]; Portable Folding Bedsteads from [illegible]; Patent Iron Bedsteads fitted with dovetail joints and patent sacking, from 21s.; and Cots from 21s. each; handsome Ornamental Iron and Brass Bedsteads, in great variety, from 2l. 13s. to 13l. 13s.

THE PERFECT SUBSTITUTE for SILVER.—The real NICKEL SILVER, introduced 20 years ago by WILLIAM S. BURTON, when Plated by the patent process of Messrs. Elkington & Co., is beyond all comparison the very best article next to sterling silver that can be employed as such either usefully or ornamentally, as by no possible test can it be distinguished from real silver.

		Fiddle Pattern.	Thread or Brunswick Pattern.	King's Pattern.
Tea Spoons, per dozen	... ...	18s. ...	26s. ...	32s.
Dessert Forks	"	30s. ...	40s. ...	46s.
Dessert Spoons	"	30s. ...	42s. ...	48s.
Table Forks	"	40s. ...	56s. ...	64s.
Table Spoons	"	40s. ...	58s. ...	66s.

Tea and Coffee Sets, Waiters, Candlesticks, &c., at proportionate **prices.** All kinds of replating done by the patent process.

CHEMICALLY PURE NICKEL, NOT PLATED.

	Fiddle.	Thread.	King's
Table Spoons and Forks, full size, per doz.	12s. ...	28s. ...	30s.
Desert ditto and ditto	10s. ...	21s. ...	25s.
Tea ditto	5s. ...	11s. ...	12s.

CUTLERY WARRANTED.—The most varied assortment of TABLE CUTLERY in the world, all warranted, is on Sale at WILLIAM S. BURTON'S, at prices **that are remunerative only because of the largeness of the sales;** 3½-inch ivory-handled table knives, with high shoulders, 11s. per dozen; desserts to match, 10s.; if to balance, 1s. per dozen extra; carvers, 4s. per pair; larger sizes, from 14s. 6d. to 26s. per dozen; extra fine, ivory, 32s.; if with silver ferrules, 37s. to 50s.; white bone table knives, 7s. 6d. per dozen; desserts, 5s. 6d.; carvers, 2s. 3d. per pair; black horn table knives, 7s. 4d. per **dozen; desserts, 6s.; carvers, 2s. 6d.; black wood-handled table knives and forks, 6s. per dozen; table steels, from 1s. each. The largest stock in existence of plated dessert knives and forks, in** cases and otherwise, and of the new plated fish carvers. Also a large assortment of Razors, Penknives, Scissors, &c., of the best quality.

WILLIAM S. BURTON has TEN LARGE SHOW ROOMS (all communicating), exclusive of the shop, devoted solely to the show of GENERAL FURNISHING IRONMONGERY (including Cutlery, Nickel Silver, Plated, and Japanned Wares), Iron and Brass Bedsteads, so arranged and classified that purchasers may easily and at once make their selections.

Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of.

39, OXFORD STREET (corner of Newman Street); Nos. 1 and 3, NEWMAN STREET; and 4 and 5, PERRY'S PLACE.

DR. DE JONGH'S

LIGHT BROWN COD-LIVER OIL, PREPARED FOR MEDICINAL USE IN THE LOFFODEN ISLES, NORWAY, AND PUT TO THE TEST OF CHEMICAL ANALYSIS. THE MOST EFFECTUAL REMEDY FOR CONSUMPTION, BRONCHITIS, ASTHMA, GOUT, CHRONIC RHEUMATISM, AND ALL SCROFULOUS DISEASES.

Approved of and recommended by BERZELIUS, LIEBIG, WÖHLER, JONATHAN PEREIRA, FOUQUIER, and numerous other distinguished Scientific Chemists, prescribed by the most eminent Medical Men, and supplied to the leading Hospitals of Europe—**effecting a cure or alleviating symptoms much more rapidly than any other kind.**

Extract from **THE LANCET,** *July 29, 1854.*

"After a careful examination of the different kinds of Cod Liver Oil, Dr. de Jongh gives the preference to the Light Brown **Oil over the Pale Oil, which contains scarcely any volatile fatty acid, a smaller quantity of iodine, phosphoric acid, and the ele**ments of bile, and upon which ingredients the efficacy of Cod Liver Oil no doubt partly depends. Some of the deficiencies of the Pale Oil are attributable to the method of its preparation, and especially to its filtration through charcoal. In the preference of the Light Brown over the Pale Oil we fully concur.

"We have carefully tested a specimen of the light brown Cod-liver Oil prepared for medical use under the direction of Dr. de Jongh, and obtained from the wholesale agents, Messrs. ANSAR, HARFORD, & Co., 77, Strand. We find it to be genuine, and rich in iodine and the elements of bile."

Sold wholesale and retail, in bottles labelled with Dr. de Jongh's stamp and signature, by

ANSAR, HARFORD, AND CO., 77, STRAND, LONDON.

Sole Consignees and Agents for the United Kingdom and the **British Possessions; at the following prices:—**

IMPERIAL MEASURE, half pints, 2s. 6d.; pints, 4s. 9d.

⁎ Four half-pint bottles forwarded, CARRIAGE PAID, to any part of England, on receipt of a remittance of Ten Shillings.

TO NURSERYMEN AND OTHERS.

TO BE LET, at Epsom, in Surrey, the EPSOM NURSERY, late in the occupation of Mr. Young, being about 4½ acres. There is a small NURSERY STOCK, which it is desirable should be taken to. For particulars, inquire of Mrs. WILKINS, 60, Queen's Row, Walworth.

TO MARKET GARDENERS, FARMERS, AND OTHERS.

TO BE LET, a MARKET GARDEN GROUND, with immediate possession, about 30 acres, 7 of which are under Fruit Trees; the whole is in a good state of cultivation, with the usual crops; well supplied with water; at a low rent, and two miles from the London markets.—For particulars, apply to Mr. S. BRANDON, 32, Paradise Row, Rotherhithe; Mr. HAYWARD, Heathfield, Nine Elms; or Mr. HARWOOD, Stepney Green.

TO NURSERYMEN, GARDENERS, AND FLORISTS.

TO BE SOLD, with immediate possession, a NURSERY of about an Acre, with Dwelling House and Seed Shop, to which is attached a good jobbing business. It is situated in a respectable and new neighbourhood, within three miles of London Bridge, on the Surrey side. The Stock, Fixtures, and Good-will to be taken at a valuation. This is a favourable opportunity for any persevering man.—Address, post paid, to Mr. B. ANDREWS, Horticultural and Agricultural Auctioneer and Valuer, Peckham, Surrey.

TO MARKET GARDENERS, NURSERYMEN, AND FLORISTS.

NEAR TO KEW BRIDGE, AND ONLY SIX MILES FROM LONDON.

TO BE SOLD, with immediate possession, the Interest in the unexpired term of about 10 years of Lease of 17 acres of highly cultivated FRUIT and GARDEN GROUND. Any person wishing to enter into Market Gardening or Nursery Business will find this a very eligible opportunity, the whole of the Land being in the highest state of cultivation, and the Trees in full bearing condition.—For particulars, apply to **Mr. ATWOOD,** Land Agent and Valuer, Mortlake, Surrey.

TO BE SOLD, GREENHOUSES—a bargain. One 12 feet long and 8 feet wide, 15l.; and one 21 feet long and 12 feet wide, 25l. Plans and particulars sent on receipt of a postage stamp, to Mr. SMITH, Builder, &c., 1, Lower Street, Islington Green. Greenhouses and Garden Lights, Window Sashes, Doors, &c. from 6d. per foot. Country orders forwarded.

TO IRONMONGERS, NURSERYMEN, AND SEEDSMEN.

The Trustee on the Sequestrated Estate of HAMILTON LAIRD, Cupar Fife, is prepared to receive Tenders for the following subjects, either together or separately, viz.:

I.

THE IRONMONGERY STOCK AND FITTINGS in Shop and Cellars at the Cross of Cupar, consisting of a new and well assorted class of goods fitted for the trade of the district, and valued at about [illegible]. The Lease to Martinmas 18[illegible] of the Shop, &c., and Dwelling-house above may be obtained along with stock if desired. The Shop is in the very best position for the trade of the town and district, and has been occupied as an Ironmongery Shop for the last [illegible] years. It is seldom that so good an opening for a profitable business occurs.

2. The LEASE of the NURSERY situated about half a mile to the south of Cupar on the [illegible] Road, well known throughout the whole Eastern District of Fife for the last 50 years, together with the valuable and well selected Stock thereon, of Forest Trees, Shrubs, Flowers, &c. The extent is about Five Acres, and the Lease is current for 15 years from Martinmas next at a rent of 35l. The Stock is in the very best condition for an immediate entry, and is valued at about [illegible].

3. A STOCK of SEEDS in Lofts, consisting of Rye Grass, Clover, Turnip, Cabbage, Garden Seeds, &c., valued at about 90l.

Sealed Tenders to be lodged on or before the 26th inst., with ANDREW TAYLOR, Bank Agent, Cupar, the Trustee; or W. A. TAYLOR, Writer, Cupar, either of whom will shew the Stocks and Valuations, and furnish further information.

Cupar Fife, September 9, 1854.

TO BE SOLD, cheap, nearly new, HOT WATER APPARATUS, fitted with Stephenson's Patent Copper Boiler, and about 100 feet of 4-inch Iron Pipes, Bends, Small Tank, Chimney, and all complete.—Inquire of Mr. POTTER, Builder, Edmonton.

TO BE DISPOSED OF, Six CYGNETS in very fine condition, and of good size.—Apply to H. T. HUMPHREYS, Kilmacow, Waterford.

SILVER SAND.

TO BE SOLD CHEAP, SILVER SAND, first or second quality.—Applications by letter to J. C. S[illegible], 32, Ludgate Hill, London, will be promptly attended to.

TO NURSERYMEN AND GARDENERS.

REIGATE SILVER SAND, 11s. per ton; ditto, delivered 5 miles, 16s. per ton. Loam and Peat at moderate prices.—KENNARD BROTHERS, Swan Place, Old Kent Road, London.

TO BE SOLD, BUFF COCHIN CHICKENS, from first class Prize Birds. Brahma Pootra Chickens, from imported American Prize Birds, and Spanish Chickens. Also some very good one-year-old Birds of the above descriptions. Wire, Game, and Poultry Netting, Poultry Hurdles, Hen-houses, Chicken Coops, Flower Stands, and Trainers, Garden Arches and every kind of Wire Work, useful and ornamental. T. H. Fox's, City of London Wire Works, 44, Skinner Street, and 6 & 8, Snow Hill.

Illustrated Catalogues forwarded post free.

GOLDEN SPANGLED HAMBURGH FOWLS, Four Months Old. Cockerels, 10s. each; Pullets, 15s. each—very handsome.—Address Mr. TAYLOR, Godalming, Surrey.

LIVING PLANTS AND SEEDS FROM ANGOLA.

MR. S. STEVENS, NATURAL HISTORY AGENT, &c., 24, Bloomsbury Street, London, begs to announce that he has lately had consigned to him FOR SALE, from the well-known botanist Dr. Wellwitsch, a small parcel of LIVING PLANTS, consisting of Terrestrial Orchids, Euphorbias, Aloes, Urgineas, Crinums, Amaryllis, &c., in all 13 varieties, mostly in good order, and supposed to be new, which he offers for sale at 2l. 10s. the set. Latin descriptions accompany each plant.

Also a COLLECTION of SEEDS in fine state consisting of about 110 varieties, with Latin descriptions to each packet; many of them are believed to be quite new to this country. They have been made into 10 sets, price 5l. the set.

Sales by Auction.

MR. W. T. ATWOOD will Sell by Auction, on TUESDAY, September 12, at 1 o'clock, at the Roebuck Inn, Turnham Green, Middlesex, the interest in the unexpired term of Lease of about 50 Acres of valuable FRUIT and GARDEN GROUND, in the highest state of cultivation, situate adjoining the high road from Hammersmith to Brentford.—Particulars may be had till day of sale by application to Mr. ATWOOD, Land Agent, Mortlake, Surrey; or Mr. PLOWMAN, 2, Upper Wellington Street, Covent Garden, London.

TO GENTLEMEN, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS beg to announce that they have received instructions from the **administrators of the late Mr. W. Watts, of** Stoke Newington, to sell by Auction, early in OCTOBER next, the whole of his unrivalled NURSERY STOCK, Greenhouses, and sundry effects. Further particulars will appear in future advertisements.

N.B. The unexpired Lease of the BARRETT GROVE GROUND, of 4 acres, will be submitted to public competition at the same time, unless previously disposed of by private contract.—For particulars apply to Mr. MACKAY, Stoke Newington, or of the Auctioneers, American Nursery, Leytonstone, Essex.

BINFIELD ROAD NURSERY, STOCKWELL.

To NURSERYMEN, AMATEURS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are directed by the Proprietor, who is retiring from the business, to offer to public competition by auction at the Mart, Bartholomew Lane, on MONDAY, September 18, at 12 o'clock, the valuable lease of the above Nursery, of which 80 years are unexpired, consisting of 1¼ acre of Land, walled round; also a substantial brick-built Cottage, Greenhouses, Sheds, Stock in trade, &c. May be viewed any day previous to the sale. Particulars may be obtained on the premises; of Mr. WEEKS, Solicitor, 10, Tokenhouse Yard, Bank; and of the Auctioneers, American Nursery, Leytonstone, Essex.

CLAPHAM

To NOBLEMEN, GENTLEMEN, EXHIBITORS, NURSERYMEN, & OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by the administrators of the late Mr. Joseph Fairbairn to submit to an unreserved Sale by Auction, on the **premises, the Nurseries, Clapham, near London,** on TUESDAY, **Sept. 19th, 1854, and following day, at 11 o'clock each day, the valuable stock of Choice GREENHOUSE and STOVE PLANTS, which is particularly worthy the attention of noblemen and** gentlemen enriching their collections, as well as the trade, from its excellence, comprising about 400 fine Ericas, of all the leading kinds, amongst which are magnificent specimens of **Massoni,** Massoni major, Tricolor elegans, Cavendishi, **Templea, Mouleflora,** Douglassi, Fastigiata purpurea, Austiniana, Vestita coccinea, Aristata Turgida, Princeps [illegible], Murrayana, Favoides elegans, Ferruginea, Ventricosas, sorts, &c.; also 500 choice Azalea indica, 1000 double Camellias, 100 Epacris, 500 Aphelexis, Mitraria coccinea, Acacia, Chorozema, Dillwynia, Diosma, Lilium lancifolium, &c. &c. May be viewed two days prior to the Sale. Catalogues to be had 6d. each, returnable to purchasers, on the Premises; at the Shop, High Street, Clapham; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex. N.B.—The Lease of the old-established Seed Shop and Nursery to be sold; the Stock to be taken by valuation or agreement. For particulars, apply to the administrators or Mr. JAMES FAIRBAIRN on the premises.

NEW EDITION OF THE CRYSTAL PALACE OFFICIAL GUIDE-BOOK.—BY SAMUEL PHILLIPS.

A NEW EDITION, Corrected and Enlarged, with NEW PLANS of the BUILDING and GROUNDS, and many additional Plans of the various Courts, is published this day, One Shilling.

*** The Official Guide-books to all the Courts are always on sale in the Building, and at all Railway Stations.

London: Bradbury & Evans, 11, Bouverie Street.

OFFICIAL GUIDE-BOOK TO THE CRYSTAL PALACE.—By Samuel Phillips.

TO ADVERTISERS.—The first contract for One Hundred Thousand Copies being nearly completed, the Publishers are prepared to receive renewals or fresh Advertisements for a Second Series of One Hundred Thousand Copies.

11, Bouverie Street, September 9, 1854.

BY AUTHORITY OF THE REGISTRAR-GENERAL.

Now ready, in royal 8vo, price 5s.

THE CENSUS of GREAT BRITAIN in 1851: Comprising an Account of Numbers and Distribution of the People; their Ages, Conjugal Condition, Occupations, and Birth-place: with Returns of the Blind, the Deaf-and-Dumb, and the Inmates of Public Institutions; and an Analytical Index. Reprinted, in a condensed form, from the Official Reports and Tables.

London: Longman, Brown, Green, and Longmans.

In fcp. 8vo, with Woodcuts, price 7s. 6d. cloth.

PROFESSOR BRANDE'S LECTURES on the ARTS connected with ORGANIC CHEMISTRY, as APPLIED to MANUFACTURES, including Dyeing, Bleaching, Calico-Printing, Sugar-Manufacture, the Preservation of Wood, Tanning, &c., delivered before the Members of the Royal Institution. Arranged by permission from the Lecturer's Notes by J. Scoffern, M.B.

London: Longman, Brown, Green, & Longmans.

Now ready, in foolscap 8vo, with Woodcuts, price 7s.,

LECTURES ON POLARISED LIGHT, together with a Lecture on the Microscope, delivered before the Pharmaceutical Society of Great Britain, and at the Medical School of the London Hospital, by the late Jonathan Pereira, M.D., F.R.S., &c. Second edition, greatly enlarged from materials left by the author. Edited by the Rev. Baden Powell, M.A., V.P.R.S.

London: Longman, Brown, Green, and Longmans.

Just published, New and Improved Edition, price 1s.,

THE CURABILITY OF CONSUMPTION. Being a Series of Papers, presenting the most prominent and important Practical Points in the Treatment of the Disease. By F. H. Ramadge, M.D., Fellow of the College of Physicians, late Senior Physician to the Royal Infirmary for Diseases of the chest, &c. Also, by the same Author, price 10s. 6d.,

A TREATISE on ASTHMA and DISEASES of the HEART.

London: Longman, Brown, Green, and Longmans.

This day, in fcap. cloth, price 8s.,

MOUBRAY'S TREATISE ON DOMESTIC AND ORNAMENTAL POULTRY. New Edition, revised and greatly enlarged by L. A. Meall, with the Diseases of Poultry, by Dr. Horner. With coloured Illustrations.

London: Arthur Hall, Virtue & Co., 25, Paternoster Row.

Will be published on November 1st,

THE SCOTTISH AGRICULTURISTS' ALMANAC, and YEAR-BOOK of PROGRESS for 1855. Advertisements intended for insertion should be sent to Mr. Lockhart Morton, 7, Pitt Street, Edinburgh, without delay. The circulation last year was 4000 copies.

LITTLE ENGLISH FLORA, by G. Francis, F.L.S. A Botanical and Popular Account of our common Field Flowers, with numerous Engravings and Poetical Illustrations. 7s. 6d.

FRANCIS'S FAVOURITES of the FLOWER GARDEN, 6s.

FRANCIS'S GRAMMAR OF BOTANY, 3s.

WAX FLOWERS, FRUIT, &c., ART OF MODELLING, 2s. 6d.

London: Simpkin, Marshall, & Co., Stationers' Hall Court; and all Booksellers.

LOUDON'S ENCYCLOPÆDIA of GARDENING, 8vo, 600 woodcuts (published at 50s.), bds., 21s., 1822. Loudon's Encyclopædia of Agriculture, 8vo, 1100 woodcuts (published at 50s.) bds., 20s., 1831. Another Copy, cloth, 21s., 1839; or half russia, 24s., 1839. Loudon's Arboretum, 8 vols., 8vo, 3000 plates and woodcuts (published at 10l.), cloth, 4l. 4s. Loudon's Gardeners' Magazine, 19 vols., 8vo (published at 18l.), half calf, 3l.; or vols. I. to V., half calf, 10s. Loudon's Encyclopædia of Cottage, Farm, and Villa Architecture, &c., 8vo, 2000 woodcuts (published at 3l.), bds., 25s. 1839. Gardeners' Chronicle, &c., folio, for 1848, half calf, 6s.; for 1852, half calf, 8s. Hooker's Niger Flora, 8vo (published at 21s.), cloth, 12s. Hooker's London Journal of Botany, 6 vols., 8vo, in numbers, 144 plates (published at 9l.) 32s., 1843-47. A Catalogue of Books on Botany, Agriculture, Gardening, &c., gratis.

London: John Petheram, 94, High Holborn.

WORKS ON BOTANY AND GARDENING.

I.

CLASS BOOK OF BOTANY, being an introduction to the Study of the Vegetable Kingdom. 8vo, with 1800 Illustrations. Price 31s. 6d. By J. H. Balfour, Professor of Botany in the Edinburgh University.

II.

OUTLINES OF BOTANY, being an Introduction to the Study of the Structure, Functions, Classifications, and Distribution of Plants. Illustrated. Fcp. 8vo. Price 7s. 6d. By Professor Balfour.

III.

NEILL'S FRUIT, FLOWER, AND KITCHEN GARDEN. New edition. Price 5s.

IV.

THE AMATEUR GARDENER'S YEAR BOOK, a Guide for those who cultivate their own Gardens. By the Rev. Henry Burgess, L.L.D. Price 5s.

Edinburgh: A. & C. Black; London: Longman & Co.

Just published, 4to, cloth, price 24s.,

ENCYCLOPÆDIA BRITANNICA.—Eighth Edition, Volume VI. Illustrated by Maps and numerous Engravings on Wood and Steel.

Principal Contents.

Bishop Butler, by Professor Henry Rogers—Calvin and Channing, by Rev. W. L. Alexander, D.D.—Thomas Campbell, by Professor W. E. Aytoun—Canada, by J. B. Brown—Canary Islands, by J. Y. Johnson, Madeira—Cannon, by Lieut.-Colonel Portlock, Woolwich—Ceylon, by John Capper—Thomas Chalmers, by Rev. W. Hanna, LL.D.—Chemistry, by Professor W. Gregory—China, by Sir John Barrow—Chili, by C. B. Black, Valparaiso—Chivalry, by Sir Walter Scott, Bart.—Chloroform, by Professor J. Y. Simpson—Chronology, by Thomas Galloway, F.R.S.—Cavan and Clare, by Henry Senior, Belfast—Climate, by Sir John Leslie, revised by Dr. Traill.

Edinburgh: A. & C. Black; London: Simpkin & Co.

THE FOLLOWING WORKS ARE ALWAYS ON SALE AT THE OFFICE OF THIS PAPER.

Price 5s. 6d. cloth,

SECOND EDITION, REVISED AND ENLARGED,

ORNAMENTAL AND DOMESTIC POULTRY; Their History and Management.

By the Rev. Edmund Saul Dixon, M.A., Rector of Intwood with Keswick.

J. Matthews, 5, Upper Wellington Street, Covent Garden, London.

Price 3d. each, or 5s. for 25 copies for distribution among Cottage Tenantry, delivered anywhere in London, on a Post-office order being sent to the Publisher, James Matthews, at the office of the *Gardeners' Chronicle*.

In consequence of the new postal arrangements, parties in the country who desire it can have copies sent by post; six stamps, in addition to the cost of the numbers, will pass 10 copies free by post.

The cost of a single copy, free by post, is therefore 7d.; and of ten, free by post, is 3s.

THE COTTAGER'S CALENDAR OF GARDEN OPERATIONS.

By Sir Joseph Paxton.

Reprinted from the Gardeners' Chronicle; above 90,000 have already been sold.

CONTENTS.

African Lilies, Agapanthus, Anemones, Annuals, Apples, Apricot, Auriculas, Beans, Beet, Biennials, Black Fly, Books for Cottagers, Borage, Borecole, Box Edgings, Broccoli, Brussels Sprouts, Budding, Bulbs, Cabbage, Cactus, Calceolarias, Californian Annuals, Campanulas, Carnations, Carrots, Cauliflowers, Celery, Cherries, China Asters, China Roses, Chrysanthemums, Chinese, Chives, Clarkias, Clematis, Collinsias, Colewort, Cress, Creepers, Crocus, Crown Imperials, Cucumbers, Cultivation of flowers in windows, Dahlias, Daisies, Dog's-tooth Violets, Exhibitions, preparing articles for, Ferns, as protection, Fruit, Fuchsias, Gentianella,

Gilias, Gooseberries, Grafting, Green-fly, Heartsease, Herbs, Herbaceous Perennials, Heliotrope, Hollyhocks, Honeysuckle, Horse-radish, Hyacinths, Hydrangeas, Hyssop, Indian Cress, Iris, Kidney Beans, Lavender, Layering, Leeks, Leptosiphons, Lettuce, Lobelias, London Pride, Lychnis, double, Marigold, Marjoram, Manures, Marvel of Peru, Mesembryanthemums, Mignonette, Mint, Mustard, Narcissus, Nemophilas, Œnothera bifrons, Onions, Pæonies, Parsnip, Parsley, Peaches, Pea-haulm, Pears, Peas, Pelargoniums, Pere[illegible], Persian Iris, Petunias, Phlox, Pigs, Pinks, Planting,

Plums, Polyanthus, Potatoes, Pruning, Privet, Propagation by cuttings, Pyracantha, Radishes, Ranunculus, Raspberries, Rhubarb, Rockets, Roses, Rue, Rustic Vases, Sage, Salvias, Savoys, Saxifrage, Scarlet Runner Beans, Seeds, Sea Daisy or Thrift, Seakale, Select Flowers, Select Vegetables and Fruit, Snails and Slugs, Snowdrops, Spinach, Spruce Fir, Spur Pruning, Stocks, Strawberries, Summer Savory, Sweet William, Thorn Hedges, Thyme, Tigridia Pavonia, Transplanting, Tree Lifting, Tulips, Turnips, Vegetable Cookery, Venus's Looking-Glass, Verbenas, Vines, Virginian Stocks, Wallflowers, Willows, Zinnias

J. Matthews, 5, Upper Wellington Street, Covent Garden.

Price 3s. 6d., free by post,

THE TREE ROSE.—Practical Instructions for its Formation and Culture. Illustrated by 24 Woodcuts. Reprinted from the Gardeners' Chronicle, with additions.

CONTENTS.

Annual pruning time, principle of execution, &c. — Binding up — Budding knife — Budding, time of year, day, time of day, state of the plant, care of buds — Budding upon body — Bud, insertion of, into stock — Bud, preparation of, for use — Buds, dormant and pushing — Buds, failing — Buds, securing a supply of — Caterpillars, slugs, and snails, to destroy — Causes of success — Dormant buds, theory of replanting with, explained — Guards against wind — Labelling — Loosing ligatures — March pruning — Mixture for healing wounds — Pruning for transplantation — Planting out, and arrangement of trees — Pushing eye, spring treatment of dwarf shoots from — Roses, different sorts on the same stock — Roses, short list of desirable sorts for budding with a pushing eye — Sap-bud, treatment of — Shape of trees — Shoots and buds, choice of — Shoots for budding upon, and their arrangement — Shoots, keeping even, and removing thorns — Shortening wild shoots — Stocks, planting out for budding upon; the means of procuring; colour, age, height; sorts for different species of Rose; taking up, trimming roots, sending a distance, shortening heads, &c.; saw proper for the purpose.

GRAFTING.

Aphides, to keep down — Free-growers, remarks on — Graft, binding up and finishing [of — Grafting, advantage — Grafting, disadvantage of — Operations in different months — Preliminary observations — Roses, catalogue and brief description of a few sorts — Scion, preparation and insertion of — Scion, choice and arrangement of — Stock, preparation of.

APPENDIX.

A selection of varieties — Comparison between budding and grafting.

Post-office orders to be made payable to James Matthews, 5, Upper Wellington Street, Covent Garden, London.

New Edition, 12mo, 550 pages, antique cloth, gilt edges, price 6s.

TRUTHS ILLUSTRATED by GREAT AUTHORS: a Dictionary of 4000 Aids to Reflections and Quotations from great Writers in Prose and Verse, including 1000 from the Works of Shakspeare. Also may be had, the Library Edition, in 8vo, in vellum paper, gilt edges, or in cloth, price 10s. 6d.

"Every imaginable topic of interest or inquiry finds an apt illustration or felicitously selected apothegm." *Globe.*

London: W. White, 70, Piccadilly, and all Booksellers.

ON MARRIAGE.

Just published (to be had free, by enclosing 1s. or Twelve Postage Stamps, to Mr. Watson, Clerical Agent, Robert Street, Adelphi, London).

MATRIMONY.—A Pamphlet on Matrimonial Alliances, which merits the attention of those who wish to settle honourably in life. By a Clergyman.

DAHLIAS.

MR. KEYNES was awarded a first-class Certificate for fancy Dahlia COMET, one of the finest striped spotted flowers yet seen; also to Dahlia RUBY QUEEN, self, with good properties; also to Mr. Wheeler, Warminster, for Dahlia LORD BATH, fine dark puce; also PREMIERE PEERLESS, fine form, and very good; Mr. Dodds also received a first-class Certificate for a Seedling Fancy called MISS HERBERT, very beautiful form and colour. The Cup, value seven guineas, was awarded to Rev. C. Fellowes, Norwich; and the Silver Cup, value five guineas, was gained by Mr. Robinson, of Pimlico, as the second prize.—Salisbury, Sept. 9.

SPLENDID BULBS.

DAWE, COTTRELL, and BENHAM (Successors to Frederick Warner) have just received their imported DUTCH and other BULBS in finer condition than for several years past, more especially their Hyacinths, Crocus, and Tulips. Catalogues on application.—3, Lawrence Pountney Lane, and 36, Moorgate Street, London (late 28, Cornhill). Established 17[illegible].

GUERNSEY LILIES.—Persons desirous of procuring the above rare and choice Bulbs, can be supplied by S. BARBET, jun., 2, Cleveland, Doyle Road, Guernsey. Fruits and Vegetables bought on Commission, and carefully packed for exportation. Chaumontel Pears.

DUTCH FLOWER ROOTS.

PETER LAWSON and SON, of Edinburgh, Seedsmen and Nurserymen to the Queen, beg respectfully to acquaint their customers and the Public that they have now opened a place of business in London for the convenience of their English correspondents, and will be prepared to execute orders of every description there. They have just received a supply of DUTCH FLOWER ROOTS, consisting of all the esteemed varieties, of which Catalogues may be had on application, and for which they solicit early orders.

London, 27, Great George Street, Westminster, Sept. 9.

NEW CLIMBING HYBRID PERPETUAL ROSE, THE "DUCHESS OF NORFOLK."

To be sent out for the first time about the end of October.

WM. WOOD and SON have much pleasure in offering the above superb Rose to the notice of their Friends, feeling assured it will prove entirely distinct from any Rose at present known, and which cannot fail to give every satisfaction. The colour is a bright vivid crimson, the under side of the petals most delicately shaded with a fine glossy pink, presenting a pleasing contrast; but the most valuable property of this superb variety consists in its extraordinary vigour, and as a perpetual-flowering dark-coloured Climbing Rose surpasses any variety that has yet been offered.

Standards, Half Standards, or Dwarfs will be supplied at 10s. 6d.

N.B. A very liberal allowance to the Trade.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

SPLENDID NEW CINERARIA "OCTAVIAN."

JOHN KER, Florist, Bristol Road, Birmingham, has the pleasure to announce that he will commence sending out Plants of this truly magnificent Cineraria in October. It possesses more good qualities than any other out, viz., a fine robust habit, continues longer in flower, commencing in December; it will continue through the whole winter, till May, to send up dense trusses of large beautifully scented flowers, filling the whole house with their odour; flowers large, colours well contrasted, petals pure white, tipped with purple, broad and well imbricated, disc dark. Has been awarded a first class certificate of merit by the Midland Floricultural Society, and pronounced by the judges then present a magnificent variety. Has been highly commended in No. 289 of the "Cottage Gardener."

Plants 10s. 6d. each, Post-office orders payable at *Birmingham*. Parties wishing early attention will please give their orders. Many have been received, and will be sent out in rotation.

WANTED, Old WALNUT TREES, also various other TIMBER. Send lowest price and description to S. R., Thomas Davies & Co., Advertising Offices, 1, Finch Lane, City. (Copy the Address.)

TO NURSERYMEN, GARDENERS, AND OTHERS.

WANTED, by the Holbeach Burial Board, the following TREES and SHRUBS:—120 Deodara, 50 Cedars of Lebanon, 40 Red Cedars, 60 common Cypress, 60 Arbor-vitæ, 20 Irish Yews, to average 4 feet high. Also 14 Lombardy Poplars, 32 Huntingdon Elms, to average 9 feet high. Also 25 common Weeping Willows, to average 7 feet high. Also 1500 Evergreen Shrubs, in equal proportions, or thereabouts, the kinds to be submitted by the grower to the Board for their approval, to average 2 feet high. All the evergreens to have been moved in the nursery or repotted within two years. Separate prices to be stated for evergreens taken from pots and those from lines. The whole of the above to be included in one tender. Also a separate tender for Yew plants, to form a hedge or fence of 750 lineal yards, or thereabouts, to inclose the cemetery ground. The plants to average 2 feet high. Tenders to state the distance the Yews are proposed to be planted apart. Tenders to state when and where the above can be inspected. The whole will be required to be delivered free of expense at the Spalding Station of the Great Northern Railway, or at the Cemetery Ground in Holbeach, between the 1st and 15th days of October next. Tenders to be delivered at the Clerk's Office in Holbeach not later than 4 o'clock on Friday, the 15th of September instant. The Board do not pledge themselves to accept the lowest tender.

By order of the Board,

E. G. Ayliff, Clerk.

Holbeach, Sept. 9.

JACKSON'S PATENT PREPARATION for the PRESERVATION of POTATOES, SEEDS, &c.—This valuable discovery, for which letters patent have been obtained, is the successful result of 14 years' study and experiments in the preservation of vegetable matter. It imparts health and vigour to the Plants and Seeds subjected to its action, and effectually prevents the Potato Disease, the Smut in Wheat, Mildew and Rot, all Fungal Diseases, and the attacks of Insects and Vermin, and further recommends itself to the Farmer, the Planter, and the Public generally, by the extreme simplicity of the mode of its application.

It is sold by all Seedsmen and Chemists, in packets of one, two, three, and four pounds each, with instructions for its use; and parties requiring larger quantities for their own use or for exportation can be supplied on advantageous terms, by addressing Mr. Jackson, the Patentee, 18, Cannon Street, London Bridge, where the article is always on sale, and the fullest particulars and directions for its use can be obtained.

THE CRYSTAL PALACE FLOWER BASKETS, as exhibited in Nave and Transepts of the Crystal Palace, Sydenham, made to the original and other new elegant designs, by W. RICHARDS, at the Wire Works, 370, Oxford Street, nearly opposite the Princess's Theatre. Conservatories and Aviaries fitted up. Wire work in all its varieties. Game and garden fence—parrot cages and all others. Choice birds kept on sale. Window blinds of every possible description, of the very best materials and workmanship.

N.B. An allowance to nurserymen and the trade.

Printed by William Bradbury, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and Frederick Mullett Evans, of No. [illegible], Victoria Street, in the Parish of St. Margaret and St. John, Westminster, both in the County of Middlesex, Printers, at their Office in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be Addressed to the Editor.—Saturday, Sept. 9, 1854.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 37.—1854.] SATURDAY, SEPTEMBER 16. [PRICE 6*d*.

INDEX.

Berberries, hardiness of ...... 595 *a*
Cabbages, culture of.......... 599 *a*
Calendar, horticultural........ 600 *a*
Carnations, to winter.......... 599 *c*
Cholera fly .... 596 *a*
Conifers, hardiness of.......... 598 *b*
Cricket trap .... 600 *c*
Dairy stock .... 602 *a*
Education, French agri. ...... 603 *a*
Exhibition, Report of the New York .... 605 *b*
Farming, Lois Weedon .... 602 *a*
Fish manure .... 602 *b*
Flax crop .... 606 *a*
France, agri. education in .... 603 *a*
Fruit, to preserve............. 600 *c*
Grass, growth of ....602 *a*—604 *b*
Herbarium, Mr. Webb's ...... 598 *a*
Hitcham Hort. Soc. .... 597 *a*
Holland House Gardens ...... 599 *b*
Hop disease .... 595 *b*
Labour, skilled .... 604 *a*
Liverpool and Manchester Agri. Society..........602 *c*—604 *b*
Lois Weedon farming .... 602 *a*
Mangold Wurzel, seeding of.. 604 *b*
Manure, town .... 602 *c*
— fish .... 602 *b*
Mildew, Hop................. 597 *b*
Milk, preserved............... 605 *b*
Mosquito smoke .... 599 *b*
New York Industrial Exhibition, Report of, rev............ 605 *b*
Oats, winter, for feed.......... 606 *a*
Palm, Chusan .... 595 *a*
Paper, material for .... 599 *a*
Pathology, vegetable .... 596 *b*
Physiology, vegetable .... 597 *c*
Plants, new.................. 599 *b*
— hardiness of .... 595 *a*
Potato seed .... 600 *c*
Prangos pabularia .... 604 *b*
Preserving fruit .... 600 *c*
Pulteneas .... 597 *b*
Rain gauges .... 598 *b*
Reaping, cost of machine...... 601 *c*
Road reform .... 604 *c*
Roses from cuttings .... 598 *b*
Seeding, thin.................. 601 *c*
Sewage, town .... 602 *c*
Smoke, mosquito.............. 599 *b*
Stock, Grass feeding .... 602 *a*
Strawberry, culture of .... 595 *c*
Sunflower, the .... 599 *a*
Syringing, time for............ 599 *b*
Timber, Chinese .... 598 *b*
Trafalgar Agri. Society ...... 604 *c*
Vegetable pathology .... 596 *b*
— physiology .... 597 *c*
Village horticultural societies 597 *a*
Walls, limestone .... 598 *a*
Winter, effects of.............. 595 *a*

NORTH LONDON FLORICULTURAL SOCIETY.—The Annual Exhibition of DAHLIAS, &c., will take place at the HIGHBURY BARN GARDENS, Highbury, on TUESDAY, September 26.—Particulars may be had of G. SMITH Hon. Sec., Hornsey Road, Islington.

SOUTH BUCKS HORTICULTURAL SOCIETY.—The Dahlia Exhibition of the above Society will take place at the Royal Hotel, Slough, on TUESDAY, Sept. 19, 1854.

Particulars may be had of the Hon. Sec., Mr. D. BRUMMELL SMITH, Alpha Road, Slough.

DUTCH AND CAPE ROOTS.

BASS AND BROWN'S Importation of DUTCH ROOTS has come to hand in fine condition. Their AUTUMN CATALOGUE will shortly be completed. The part containing the roots is now ready, and will be forwarded immediately on application.

BASS & BROWN, Sudbury, Suffolk.

CHOICE CALCEOLARIA SEED.

JOHN AND CHARLES LEE beg to state, they are now sending out packets of choice Calceolaria Seed, saved from a very SUPERB COLLECTION, price 2*s*. 6*d*. per packet.—Vineyard Nursery, Hammersmith.

BECK'S NEW PELARGONIUMS.

J. DOBSON AND SON will forward a Coloured Drawing of LYDIA, CONQUEROR, and LAURA, post free, on receipt of 14 postage stamps. Gratis to purchasers of Plants.

Woodlands Nursery, Isleworth.

PELARGONIUMS.

J. DOBSON AND SON beg to announce that their annual descriptive Catalogue of the above, containing full descriptions of the best varieties of Beck's, Foster's, Hoyle's, and other raisers, at reasonable prices, may be had on application.

Woodlands Nursery, Isleworth.

NEW PELARGONIUMS.

J. DOBSON AND SON beg to call attention to the advertisement in this Paper of August 12, which contains a full description, with prices, of Beck's and Fuller's new and beautiful Seedlings, to be sent out the first week in October.

Woodlands Nursery, Isleworth.

SPLENDID BULBS.

DAWE, COTTRELL, AND BENHAM (Successors to Frederick Warner) have just received their imported DUTCH and other BULBS in finer condition than for several years past, more especially their Hyacinths, Crocus, and Tulips. Catalogues on application.—3, Lawrence Pountney Lane, and 36, Moorgate Street, London (late 28, Cornhill). Established 1720.

IMPORTED DUTCH BULBS.

LUCOMBE, PINCE, AND CO. beg leave to announce that they have just received their choice collection of the above, comprising all the newest and best varieties in cultivation, which are exceedingly fine, and in excellent condition, such, indeed, as cannot fail to give great satisfaction.

A Catalogue may be had on application.

Exeter Nursery, Exeter.

RARE AND HARDY CONIFERS.—A detailed List, with prices of the most Hardy and Ornamental Conifers, suitable for planting on the sea coast and other exposed situations, will be found in YOUELL AND CO.'s Advertisement of last week.

Royal Nursery, Great Yarmouth.

STRAWBERRIES.

J. HARGREAVES is now sending out Strong Plants of the four new Strawberries, viz., Ajax, Ruby, Captain Cook, and Fillbasket, at 10*s*. per hundred, or 25 each of any two sorts for 6*s*., package included; also, all the old sorts at 3*s*. per hundred.—Address, JOHN HARGREAVES, High Street Nursery, Lancaster.

STRAWBERRIES.—The BLACK PRINCE, 5*s* per 100; the PRINCE OF WALES, 10*s*. per 100. The two lasted in successive bearing here this year for 75 days.

Also CUTHILL'S Pamphlet on the Potato containing the best way of producing large and early crops, and avoiding the disease. With 20 more articles upon Fruits, Vegetables, and Salads. Price 2*s*., or by post 2*s*. 2*d*.

JAMES CUTHILL, Camberwell, London.

STRAWBERRIES.

BARRATT'S MAGNUM BONUM.—In size, this splendid Strawberry very far surpasses the "British Queen," is an exceedingly heavy cropper, and continues in perfection later than almost any other variety. Its flavour is really delicious, most nearly approaching the true Pine Apple of any kind yet known. Price per 100, 2*l*. 2*s*.; per dozen, 6*s*. Good strong Plants of the above are now ready for sending out by

St. John's Nursery, Wakefield. WM. BARRATT.

N.B. W. B.'s List of 40 kinds of Strawberries may be had gratis.

GRASS SEEDS.

SUTTON AND SONS *recommend the sowing of* GRASS SEEDS *at this season for Permanent Pasture, and are now prepared to supply excellent fresh Seeds for the purpose at very moderate prices.*

Also New Italian Rye Grass and Trifolium incarnatum, at moderate prices.—JOHN SUTTON & SONS, Seed Growers, Reading.

SUTTON'S IMPROVED ITALIAN RYE-GRASS.—If this Seed is sown in September, it will produce an earlier crop next spring than any other Grass, and three successive cuttings during the summer and autumn. Price 6*s*. 6*d*. per bushel.

Address, JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

THE BEST TWELVE HYACINTHS, imported by SUTTON AND SONS, Reading, for 9*s*., or, fine mixed, double for beds, 4*s*. per dozen.

Also JONQUILS, ANEMONES, CROCUSES, &c., cheap (as per Catalogue). Parcels of not less than 20*s*. value sent carriage free.

Address, JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

FINE NEW GERANIUMS, £1 1*s*. *per dozen.*—*For names of varieties, see* RENDLE'S *New Plant Catalogue, just published.*

Apply to WILLIAM E. RENDLE AND CO., NURSERYMEN and SEED MERCHANTS, Plymouth.

LISIANTHUS RUSSELLIANUS.

J. AND J. FRASER beg to offer the above, in strong and healthy plants, such as will make large specimens for flowering next season, at 2*s*. 6*d*. each.

Lea Bridge Road, Essex, September 16.

CHRYSANTHEMUMS.

R. PARKER begs to offer fine bushy plants of the above, well established in 6-inch pots, for flowering this autumn, consisting of all the newest and finest Pompon and large flowered varieties in cultivation. Purchaser's selection at 9*s*. per dozen. A list of names forwarded upon application.

CINERARIAS (Seedlings), from all the finest varieties, carefully selected, including the new varieties sent out last autumn. Established plants, in 3-inch pots, at 3*s*. per dozen.

A remittance or reference to accompany all orders from unknown correspondents.

Paradise Nursery, Hornsey Road, Islington.

DICKINSON'S ITALIAN RYE-GRASS SEED is ready for delivery (by permission of Mr. East), from 7, Curzon Street, May Fair, London, as before. 7*s*. per bushel for present payment only. Post-office orders Piccadilly.

CATTELL'S EARLY BARNES CABBAGE,
" " RELIANCE "
" GREEN COLEWORT "

Plants of the above are now ready, 5*s*. 6*d*. per 1000, stout bedded; 1*s*. 6*d*. per 1000 good seedlings. No charge for crates, baskets, or packing. Packages of 5000 or more, delivered to the Edinbridge Station, South-Eastern Railway, carriage free.

Orders from unknown correspondents to be accompanied with post-office orders made payable here.—Address,

JOHN CATTELL, Westerham, Kent.

FINE BLOOMING BULBS, Carriage paid.
GUERNSEY and BELLADONNA LILIES, 4*s*. per doz.
VALLOTA PURPUREA ... ... 21*s*. "
AMARYLLIS FORMOSISSIMA ... ... 6*s*. "

Hyacinths, Gladiolus, Narcissus, Anemones, Ranunculus, Crocus, &c., may be obtained of

B. PAGE & Co., SEED-MERCHANTS, Southampton.

Trifolium incarnatum, 5*d*. per lb.; Davis' Winter Vetches, 42*s*. per bushel, 11*s*. per peck. Trade price of Guernsey Lilies to be had on application.

HUGH LOW AND CO. would inform their friends and customers that they are now receiving their BULBOUS ROOTS from Holland. The collection comprises all the kinds of Roots suitable for early forcing, and they have been selected with care from the leading houses in Haarlem. Any orders entrusted to them will have every attention, and they feel satisfied they are in a position to supply them to the satisfaction of their customers.—Clapton Nursery.

TORREYA MYRISTICA (CALIFORNIAN NUTMEG).—The SUBSCRIBERS have to offer strong healthy plants, three years from seed, of the above-named beautiful hardy Evergreen Tree. It is figured and described by Sir W. J. Hooker, in "Botanical Magazine" for May, 1854, to which the Subscribers refer their friends. Price on application.

HUGH LOW AND CO., Clapton Nursery, London.

CLARKE AND CO., WHOLESALE AND RETAIL SEEDSMEN AND FLORISTS, 86, High Street, Borough, London, beg to say they have imported a choice collection of DUTCH BULBS (which are not to be surpassed by any other house in London), and they will be happy to forward Catalogues upon application. Terms, cash, or a reference in London.

CHOICE SWEET WILLIAM SEED.—Any person wishing for good SWEET WILLIAMS can be supplied with half an ounce of seeds from an Amateur's garden, by sending six postage stamps, addressed to A. Z., Post Office, Louth, Lincolnshire. The proceeds to be given to the Irish Mission.

TO NURSERYMEN AND OTHERS.

WANTED, Fifty CEDRUS DEODARA, well grown bushy Plants, measuring not less than 3 feet high as they stand.—Address tenders, containing faithful description of Plants, and price, including package and delivery in London, to X. Y., Office of this Paper.

LARGE CAMELLIAS.

TO BE SOLD, about 30 large Camellias, of the best kinds. A gentleman leaving his present residence wishes to dispose of the above. The Plants are from seven to nine feet high, bushy, and full of flower buds. The price (which is very low) may be had on application to Messrs. FRASER, Lea Bridge Road Nursery.

RENDLE'S NEW AUTUMNAL CATALOGUE *of Geraniums, Camellias, Fuchsias, Azaleas, Chrysanthemums, Stove and Greenhouse Plants, &c., can now be had in exchange for two postage stamps.*

Apply to WILLIAM E. RENDLE & CO., Nurserymen and Seed Merchants, Plymouth.

TULIPS.

HENRY GROOM, Clapham Rise, near London, by appointment FLORIST TO HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to inform the AMATEURS OF TULIPS that his CATALOGUE is ready, and will be forwarded by post on application. He is happy to say that from the superior growth of last spring, he has been enabled to make a considerable reduction in the prices.

AMERICAN PLANTS.

JOHN WATERER begs to announce that he has published a new Catalogue of his Rhododendrons, &c., as exhibited by him in the Gardens of the Royal Botanic Society, Regent's Park, London. It describes the colours of all the Rhododendrons considered worthy of cultivation, with a Treatise on their successful management, and may be had by enclosing two postage stamps.

The American Nursery, Bagshot, Surrey, near Farnborough Station, South-Western Railway.

THE PAST WINTER AND SPRING have induced YOUELL & Co. to publish a CATALOGUE of RARE and HARDY CONIFERS and HARDY ORNAMENTAL SHRUBS, that have proved with them perfectly hardy in this well-known bleak district, exposed to the cutting winds from the North Sea.

This Catalogue also contains an extensive selection of the most useful Greenhouse Plants, Camellias, Ericas, Epacris, Chrysanthemums, Hollyhocks, Tree Carnations, Carnations and Picotees, Fuchsias, Verbenas, Phloxes, &c., which will be forwarded (stamped) on receipt of two postage stamps.

YOUELL AND CO., Royal Nursery, Great Yarmouth.

ARTHUR HENDERSON AND CO. beg to inform their patrons and the public that their CATALOGUES OF BULBS are now ready, and they will have much pleasure in forwarding them on application.

They comprise lists of all the finest varieties of Hyacinths, and many other rare and valuable Bulbs.

Their collections of Hyacinths have yearly carried off the metropolitan prizes, not only for their unique growth, but also for their beauty of colouring and distinctness of sorts, either when exhibited in a collection of 36 plants or in pairs.

Pine-apple Place, Edgeware Road, London.

AMBROISE VERSCHAFFELT, NURSERYMAN, Editor of the "Iconographie des Camellias," and "L'Illustration Horticole," begs to inform amateurs and the trade, that his new Catalogue for the present autumn is just published, and can be obtained *free* from his agent, Mr. R. SILBERRAD, 5, Harp Lane, Great Tower Street, London. A. V. begs to offer to the trade.

Fine DOUBLE CAMELLIAS, well set with bloom buds.
Fine AZALEA INDICA, do. do. do.
LILIUM LANCIFOLIUM, ALBUM, and SPECIOSUM (strong bulbs).

The 9th number of "L'Illustration Horticole," by A. VERSHCAFFELT contains:

DESFONTAINEA SPINOSA, ISMENE AMANCAËS, CHORIZEMA SUPERBUM.—N.B. Price on application.

LILIUM LANCIFOLIUM, TRITONIA AUREA, AND VALLOTA PURPUREA.

HENRY GROOM, Clapham Rise, near London, by appointment FLORIST TO HER MAJESTY THE QUEEN, AND TO HIS MAJESTY THE KING OF SAXONY, begs to say that his extensive collection of the above BEAUTIFUL PLANTS is now in flower, and may be viewed every day (Sundays excepted). Admittance gratis.

H. GROOM begs to state that his CATALOGUE OF BULBS for this autumn is ready, and will be forwarded by post on application.

DUTCH BULBS.

THOS. CRIPPS, NURSERYMAN, SEEDSMAN, and FLORIST, respectfully announces that his annual importation of the above has just arrived in excellent condition, Catalogues of which, comprising, amongst others, many new and choice varieties of Hyacinth, Crocus, Tulips, Anemones, &c., may be had on application.—Tunbridge Wells, Sept. 16.

OMAR PACHA PEA.

W. NICOL, GARDENER, Roslyn House, Hampstead, begs to announce that he has put his incomparable Pea "Omar Pacha" into the hands of Mr. Sommerville, Landscape Gardener, Nurseryman, Seedsman, &c., for Sale, in sealed quarts at 10*s*. 6*d*., and pints, 7*s*. 6*d*. The above Pea is not only the earliest but the most prolific, and best flavoured hardy variety in cultivation. As the stock is small, he would recommend true lovers of a good Pea to make immediate application to Mr. Sommerville, as above.

DOUBLE ROMAN AND PAPER WHITE NARCISSUS, 4*s*. per dozen. The above bulbs, the former of which is so justly esteemed for its early blooming and excessive fragrance, and the latter for its purity and elegance, have just arrived, and may be obtained at A. CORBETT'S Italian and Foreign Warehouse, 18, Pall Mall, near Waterloo Place, London.

SPLENDID NEW CINERARIA "OCTAVIAN."

JOHN KER, FLORIST, Bristol Road, Birmingham, has the pleasure to announce that he will commence sending out Plants of this truly magnificent Cineraria in October. It possesses more good qualities than any other out, viz., a fine robust habit, continues longer in flower, commencing in December; it will continue through the whole winter, till May, to send up dense trusses of large beautifully scented flowers, filling the whole house with their odour; flowers large, colours well contrasted, petals pure white, tipped with purple, broad and well imbricated, disc dark. Has been awarded a first class certificate of merit by the Midland Floricultural Society, and pronounced by the judges then present a magnificent variety. Has been highly commended in No. 289 of the "Cottage Gardener."

Plants 10*s*. 6*d*. each, Post-office orders payable at Birmingham. Parties wishing early attention will please give their orders. Many have been received, and will be sent out in rotation.

NEW CLIMBING HYBRID PERPETUAL ROSE,
THE "DUCHESS OF NORFOLK."

To be sent out for the first time about the end of October.

WM. WOOD AND SON have much pleasure in offering the above superb Rose to the notice of their Friends, feeling assured it will prove entirely distinct from any Rose at present known, and which cannot fail to give every satisfaction. The colour is a bright vivid crimson, the under side of the petals most delicately shaded with a fine glossy pink, presenting a pleasing contrast; but the most valuable property of this superb variety consists in its extraordinary vigour, and as a perpetual-flowering dark-coloured Climbing Rose surpasses any variety that has yet been offered.

Standards, Half Standards, or Dwarfs will be supplied at 10s. 6d.

N.B. A very liberal allowance to the Trade.

Woodlands Nursery Maresfield, near Uckfield, Sussex.

NEW HARDY CONIFERS.

HUGH LOW AND CO. announce to their friends and the public that they have been appointed by Messrs. Parsons & Co., of Flushing, New York, Sole Agents in this country for the sale of the undernamed CALIFORNIAN CONIFERS. The Plants are raised from seed, and will be delivered as soon as the growth of the present season is sufficiently matured. THUJA GIGANTEA (Nuttall); *synonyms* LIBOCEDRUS DECURRENS (Torrey); THUJA MENZIESI (Douglas); THUJA CRAIGIANA (Jeffreys).—A magnificent species, and the most desirable Tree known to exist in California. It was discovered by the botanists of the United States Exploring Expedition, and is described by Professor Torrey, in "Plantæ Fremontianæ," as growing near the upper waters of the Sacramento, from lat. 38° 40 to 41° N. He also states it is a noble tree, attaining a height of 120 to 140 feet, with a trunk 7 feet in diameter, rising from 80 to 100 feet without a limb. This tree will be perfectly hardy, and will take the foremost rank amongst our ornamental trees, as the foliage is most beautiful, reminding an observer of some of the more graceful species of Lycopodium.

The Plants when delivered will average 1 foot to 1½ foot in height, and being of such unusual size for a new Conifer, will produce an immediate effect. Price 31s. 6d. each.

ABIES NOBILIS.—This well-known Fir requires no description. Plants from seed have long been desiderata, and those now offered are strong and well shaped, from 6 inches to 1 foot in height. Price 31s. 6d each.

In addition to the above, H. L. & Co. have to offer from the same source strong Plants of several species of hardy CALIFORNIAN PINES, collected in districts little explored. Amongst them will be found Pinus Jeffreyana, Pinus Parryana, offered for the first time; and judging from the CONES of the different species, it may with certainty be inferred that several others will prove entirely new to this country. Price 84s. per doz.

Messrs. Parsons & Co. having been successful in raising these fine Conifers in considerable numbers, have determined on offering them at the low prices quoted above, with a view to insure their speedy introduction into every collection in Europe.

Discount allowed only when twelve plants of a sort are taken.

Clapton Nursery, London, Sept. 16.

FLORAL NURSERY, ACTON ROAD, TURNHAM GREEN.

CHRYSANTHEMUMS, LILIPUTIAN AND LARGE FLOWERING.—Large and remarkably fine Plants of all the best Sorts, in 32-sized pots, fit to make really good Specimens at once, at 18s. per dozen; smaller Plants, in 48s, to flower in the coming winter, at 8s. per dozen.

VERBENAS.—All the new Varieties let out by Smith, Bragg, Mockett, and others, in 1854, at 8s. per dozen; older Varieties, 6s. per dozen—all well established.

FAIRY AND FABVIA ROSES.—Large healthy Plants, in 48s, at 8s. per dozen.

SEEDLING HERBACEOUS CALCEOLARIAS, AND SEEDLING CINERARIAS, at 5s. per dozen in October. These Plants have been raised from the Flowers which were so highly admired at this Nursery during last season.

FRENCH SPOTTED OR NEW FANCY GERANIUMS.—Well-established Plants of these beautiful Flowers, at 2s. 6d. each, or 25s. per dozen, in October next—a large consignment (including all the best raised in France, several of which have not been seen in England) having been just received at the Floral Nursery.

An immense stock of nearly all the new and best Bedding GERANIUMS, FUCHSIAS, HELIOTROPES, TROPÆOLUMS, and other Soft-Wooded Plants, always on hand, at prices equally low.

The Stock of SHOW and FANCY GERANIUMS at the Floral Nursery is unquestionably the largest and best in the kingdom, no expense having been spared to render it perfectly unique; all the new plants of the best raisers are added as they appear. Well-established plants of upwards of 1000 sorts may be had early in October next, at prices which will place competition at defiance.

The trade fairly and liberally dealt with, and all plants sent out will be warranted true to name.

A remittance or satisfactory reference indispensable from unknown correspondents. Catalogues forwarded gratis.

JOHN WESTWOOD, PROPRIETOR.—Sept. 16.

JAMES IVERY AND SON, NURSERYMEN, &c., Dorking and Reigate, Surrey, are now prepared to receive orders for the following new and beautiful varieties of AZALEA INDICA and RHODODENDRON PONTICUM COCCINEUM, which will be ready for delivery in October next. The Advertisers beg to say they can recommend them with the greatest confidence as being superior to any others of their kind. The Azaleas were figured in the "Florist" for July, 1852, at which time the editor remarked as follows:—"As regards the beauty of the flowers little need be said, as the representations will speak for themselves; they have been much admired, and will, no doubt, speedily find their way into every collection." Again, in the same journal for June, 1854, the editor says:—"Your two Azaleas, Admiration and Criterion, are certainly very beautiful, and fully maintain the opinion expressed of them, at page 137 volume for 1852, when we figured them." Criterion is a very fine bold flower; size, shape, and habit of that old favourite Iveryana; colour, light salmon, distinctly margined with white, and thickly spotted with deep crimson on the upper petals; 21s. each. First-class Certificate at the National, April 20, 1854—the only time it has been exhibited since it was figured. Admiration is a medium sized flower, of greater substance than the former, with the same shape and habit; colour pure white, with broad flakes of carmine, resembling the marking of a Carnation; 21s. each. Has not been exhibited since it was figured, owing to an accident to the flowering plant.

RHODODENDRON PONTICUM COCCINEUM.—This is the finest crimson variety ever offered to the public; it is a free bloomer, with a fine large truss of brilliant crimson, being brighter than the old Arboreum, and perfectly hardy. Dr. Lindley, in this journal (page 342), says:—"This fine variety has the deep crimson flowers of the red tree Rhododendron, which was evidently one of its parents, and the foliage of R. ponticum, which it resembles in all respects except in colour—thus uniting the brilliant flowers of the tender Indian kind with the hardy vegetation of the Black Sea." 21s. to 63s. each. Has received three Certificates of Merit. A few extra-sized plants of both Azaleas at 42s. each.

The above have been ordered by most of the principal nurserymen, and many of the nobility and gentry.

N.B. Figured Plates of the two Azaleas may be had by enclosing nine postage stamps to either of the above-named Nurseries. A remittance, or reference, is respectfully requested from unknown correspondents.

Reigate Nursery, September 16.

DUTCH FLOWER ROOTS.

WILLIAM E. RENDLE & Co., SEED MERCHANTS, Plymouth, have just received, direct from one of the first establishments in Holland, a very large assortment of

DUTCH FLOWER ROOTS,

comprising all the best varieties of Hyacinths, Tulips, Ranunculuses, Anemones, Gladiolus, Iris, Liliums, Crocus, Ixias, and all other kinds of Flowering Bulbs.

They are all come to hand in most excellent condition, and will insure satisfaction to all purchasers.

COLLECTIONS OF FLOWERING BULBS.

	£	s.	d.
No. 1. A Selection of all the most approved sorts for a large garden	3	0	0
No. 2. A Selection, in smaller quantities	2	0	0
No. 3. A Selection, for a small garden	1	0	0

These Collections have given the greatest satisfaction to all who have had them, and can be recommended with the greatest confidence.

All Orders for Roots above 2l. Carriage paid to any station on the South and Western Railways, and above 5l. to any station in England.

CHRYSANTHEMUMS.

JOHN CLARK begs to offer a large collection of all the best varieties of the above, both large flowering and Lilliputian kinds; fine strong bushy plants to flower this autumn, at from 6s. to 12s. per dozen.

Also a large number of fine, compact, grafted plants of EPIPHYLLUM TRUNCATUM for winter flowering, many of them fine specimens in 8-inch pots, 2 feet high, and exceeding 6 feet in circumference, in splendid condition, from 5s. to 15s. each.

Also a first-rate collection of PELARGONIUMS, FUCHSIAS, VERBENAS, &c.

Belle Vue Nursery, and 58, High Street, Cheltenham.

EARLY DWARF SEED POTATOES.

ABRAHAM HARDY AND SON'S Ten selected earliest varieties of SEED POTATOES are now ready to send out, warranted free from disease. Retail and trade prices on application.

Also their improved BATH COS and Hardy HAMMERSMITH LETTUCE SEED, growth of 1854. Six-pennyworth of these, or other seeds of Cauliflower, Flower Seeds, &c., for September sowing, will be sent to any address, post free, on receipt of 6d., or six stamps. Price per pound to the trade, on application.—Maldon, Essex, September 16.

NEW CINERARIAS.

ROBERT REA begs to announce that he will send out, the first week in October, the following New CINERARIAS, and, from their first-rate character, and being unequalled by any yet sent out, he feels confident they will give universal satisfaction.

IPSWICH BEAUTY (REA'S).—Clear white, deeply edged with lake, shaded with purple; very dark disc, full size; broad petals, slightly cupped. A fine exhibition flower. First Class Certificates were awarded at Ipswich and Colchester, the only places where it was exhibited. Pronounced by all who saw it to be the finest Cineraria ever exhibited. Plants 10s. 6d. each.

GEM (PARKER'S).—A self-coloured flower; beautiful puce, with light disc; quite novel in colour, and a very striking first-rate variety. First Class Certificate, Ipswich, 1853. Plants 7s. 6d. each.

In consequence of having only one plant of the first to propagate from, the stock is very limited, early orders are therefore respectfully solicited, which will be executed strictly in rotation as received. The usual discount to the trade, and one sent over when three are ordered.—Ipswich Nursery, Ipswich. Sept. 16.

"OMAR PACHA" STRAWBERRY.

WILLIAM JAMES WARD is now sending out well rooted plants of the above excellent Strawberry, which was awarded a Medal by the judges at the Royal Botanic Gardens Exhibition, July 5th, 1854. It has also been submitted to Mr. Marnock, Mr. Spencer, Mr. Thompson, and several practical gardeners, who have all pronounced a favourable opinion of it. Also by Mr. Powell, of the Royal Gardens, Frogmore, in the descriptive list of new Fruits, in the "Florist and Fruitist" for the present month, accompanied with a woodcut.

	£	s.	d.		£	s.	d.
100 plants ...	3	0	0	25 plants	1	0	0
50 „ ...	1	15	0	12 „		12	0

Prospect Hill, Reading.—Sept. 16 1854.

CHARLES TURNER begs to offer very choice SHOW GERANIUM SEED, saved from the best sorts, 2s. 6d. per packet.

	Pr pkt.
Very choice FANCY GERANIUM SEEDS	2s. 6d.
Do. do. CALCEOLARIA, from some splendid flowers ...	2 6
Do. do. CINERARIA, extra good quality	2 6
Do. do. PRIMULA SINENSIS, first quality	2 6

The new Autumn List of Pelargoniums, containing all the new varieties raised by Mr. Foster, Mr. Hoyle, and others, and to be sent out by C. T., is now ready, and can be had on application.

The Autumn List of Hollyhocks, Carnations, Picotees, Pinks, Pansies, Cinerarias, &c., will shortly be ready. A full collection of Hyacinths and other flower roots. Lists sent on application.

Royal Nursery, Slough, Sept. 16.

TO PLANT GROWERS, NURSERYMEN, AND OTHERS.

WANTED, a few fine Large PLANTS of the undernamed, not less than 8 feet high, or any other good Greenhouse Plants not named below.

Banksia grandis	Edwardsia, sorts
„ latifolia	Telopea speciosissima
„ coccinea, &c.	Orange trees
Calothamnus, of sorts	Lemon, &c.
Poinciana Gilliesii	Sparmannia africana
Pittosporum, sorts	Beaufortia decussata
Enkianthus reticulatus	Pimelea lanata
„ quinquiflorus	Luculia gratissima
Lambertia formosa	„ Pinceana
Grevillea, sorts	Dryandria, sorts
Eucalyptus, sorts	Cunonia capensis
Burchellia capensis	Hovea Celsi
Brugmansia, sorts	Myrtles, sorts

Any one having any of the above to dispose of may hear of a purchaser by stating the names and price, and any of the particulars to A. B., to the care of Mr. Thomas Goodwin, Helmsley Place, Hackney, London.

NEW BULB CATALOGUE.

E. G. HENDERSON AND SON, Wellington Nursery, St. John's Wood, London, will be happy to forward, post free, on application, their NEW BULB CATALOGUE for this season, containing a choice selection of Dutch and other Flower Roots. They would draw particular attention to the Hyacinths, no other varieties but those which they have proved in their nursery as possessing the best properties for which this tribe is admired, such as brilliant colours, large close truss, and good habit (the Dutch growers offer such a number of useless cheap varieties that great disappointment is caused unless a good selection is obtained). Among their Miscellaneous Roots they would mention their choice and extensive stock of Gladiolus, and section 8, the Hybrids of Gandavensis, they can highly recommend, particularly "Couranti fulgens," "Fanny Rouget," and "Monsieur Blouet," as most deserving of notice.—September 16.

NEW AND SPLENDID PETUNIAS.

T. ANSELL begs to announce that he intends sending out, the first week in October, the following new and splendid Petunias, viz.:—Mrs. Beecher Stowe, Uncle Tom, Eva, and Aunt Chloe, they have been very generally admired by all parties who have seen them, and from their novel and splendid colours (crimson and rose, of various shades, beautifully edged with green), have been pronounced unique. Price 3s. 6d. per plant, or the collection of four varieties for 10s.; discount allowed where three sets are taken. The stock being limited, early orders for them are respectfully solicited. An extensive collection of Geraniums, Chrysanthemums, &c.; also a quantity of strong Passiflora Mayana, at two guineas per 100.

Camden Nursery, Camden Town.

STRAWBERRIES.

WILLIAM NICHOLSON is now sending out strong well-rooted Plants of his four new and distinct Strawberries, viz., AJAX, a very fine large dessert fruit, very beautiful, solid, and juicy; RUBY, ditto, a great bearer, and forces well; CAPTAIN COOK, market fruit, large, and a great bearer; FILLBASKET, ditto: 400 Plants of the above sorts for 2l.; 200 do., 1l. 4s.; 100 do., 15s.; 50 do., 10s.; box included. Most of the old and new sorts can be supplied.

*** See Mr. J. W. KINMONT'S remarks on the above Strawberries, printed in No. 31, 1854, page 501, of this Paper.

Post-office Orders, payable at Yarm, Yorkshire, or a cash remittance required with the order.

Egglescliffe, near Yarm, Sept. 16, 1854.

MYATT'S new Seedling Strawberry, "ADMIRAL DUNDAS."—This is the most extraordinary variety, in size and productiveness, that has yet been raised at Manor Farm; it is much larger and a better flavour than either the Surprise or Mammoth, and ripens off the late fruit to advantage.

J. M. & SONS can confidently recommend this, as being superior to any large variety that has come under their notice.

Strong, well-rooted runners are now ready, and will be carefully packed and delivered free to any part of London, at the following scale of charges:—100, 50s.; 50, 30s.; and 25, 16s. Also strong Plants of MYATT'S British Queen, Cinquefolia, Eleanor, Surprise, Globe, Eliza, Hooper's Seedling, Keens' Seedling, Black Prince, and Barnes' Bicton Pine, 5s. per 100.

Manor Farm, Deptford, September 16.

MAY'S IMPROVED EARLY ASH-LEAVED KIDNEY POTATOES FOR SEED.—For autumn and early spring planting the above are the best variety of Ash-leaved Potatoes known; the following opinion of them is from a party who has grown them for some years, and is selected from a number of favourable opinions of them:—"I can truly say, from a number of years' experience in growing them, that I never met with any Potato to equal them for cropping and sale." —*George Keynon, Market Gardener, Brierley, near Wakefield.*

Price per bushel, 10s.; per cwt., 14s.; per ton, on application: HENRY MAY, the Hope Nurseries, Bedale, Yorkshire.

JACKSON'S PATENT PREPARATION FOR THE PRESERVATION OF POTATOES, SEEDS, &c.—This valuable discovery, for which letters patent have been obtained, is the successful result of 14 years' study and experiments in the preservation of vegetable matter. It imparts health and vigour to the Plants and Seeds subjected to its action, and effectually prevents the Potato Disease, the Smut in Wheat, Mildew and Rot, all Fungal Diseases, and the attacks of Insects and Vermin, and further recommends itself to the Farmer, the Planter and the Public generally, by the extreme simplicity of the mode of its application.

It is sold by all Seedsmen and Chemists, in packets of one, two, three, and four pounds each, with instructions for its use; and parties requiring larger quantities for their own use or for exportation can be supplied on advantageous terms, by addressing Mr. JACKSON, the Patentee, 18, Cannon Street, London Bridge, where the article is always on sale, and the fullest particulars and directions for its use can be obtained.

TO NURSERYMEN AND GARDENERS.

REIGATE SILVER SAND, 11s. per ton; ditto, delivered 5 miles, 16s. per ton. Loam and Peat at moderate prices.—KENNARD BROTHERS, Swan Place, Old Kent Road, London.

THE CRYSTAL PALACE FLOWER BASKETS, as exhibited in Nave and Transepts of the Crystal Palace, Sydenham, made to the original and other new elegant designs, by W. RICHARDS, at the Wire Works, 370, Oxford Street, nearly opposite the Princess's Theatre. Conservatories and Aviaries fitted up. Wire work in all its varieties. Game and garden fence—parrot cages and all others. Choice birds kept for sale. Window blinds of every possible description, of the very best materials and workmanship.

N.B. An allowance to nurserymen and the trade.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the nobility, gentry and clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out-door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice.

Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to WALTER CARSON & SON, 9, Great Winchester Street, Old Broad Street, Royal Exchange, London. No Agents. All orders are particularly requested to be sent direct.

PRIZE MEDAL—1851.

AT A VERY ECONOMICAL RATE.

SAMUEL CUNDY, MASON and BUILDER, Pimlico MARBLE and STONE WORKS, Belgrave Wharf, Lower Belgrave Place, Pimlico, London.

Marble Chimney-pieces manufactured by improved machinery. The public are invited to view the stock, unequalled for design and price. A good Marble Chimney-piece for 40s. Marble Work in all its branches at a remarkably cheap rate for Halls, Dairies, Larders, &c. Circulars sent on application.

N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank.

ENCAUSTIC TILE PAVEMENTS.

MAW AND CO., Benthall Works, Broseley, Salop. Manufacturers of the Cloister Pavement of Mediæval Court, and "THE SUCCESSFUL IMITATION OF OPY'S ALEXANDRINE IN THE BEAUTIFUL ENCAUSTIC TILE PAVEMENT OF CLOISTERS, BYZANTINE COURT," Crystal Palace (M. D. Wyatt, Esq., Official Handbook), forward, without charge, Designs and Estimates, adapted to given dimensions, of Entrance Halls, Conservatories, Verandahs, &c., in every style.

Specimens at 11, Aldersgate Street, City.

SHEEPFOLDING NETS.—Cocoa Nut Fibre, of superior make. Hemp square mesh Sheepfolding Net, of a much stronger description, 4 feet high, 4d. per yard; ditto of a much stronger description, 6d. per yard. Netting for Lamb Fencing, 3-inch mesh, 4 feet high, 6d. per yard. The Cocoa Nut Fibre is the lightest and most durable article made, and was approved of by the Royal Agricultural Society. The 3-inch mesh makes good Poultry Fencing.—WILLIAM CULLINGFORD'S, 1, Edmund Terrace, Ball's Pond Road, Islington, London.

DUTCH FLOWER ROOTS.

PETER LAWSON AND SON, of Edinburgh, Seedsmen and Nurserymen to the Queen, beg respectfully to acquaint their customers and the Public that they have now opened a place of business in London for the convenience of their English correspondents, and will be prepared to execute orders of every description there. They have just received a supply of DUTCH FLOWER ROOTS, consisting of all the esteemed varieties, of which Catalogues may be had on application, and for which they solicit early orders.

London, 27, Great George Street, Westminster, Sept. 16.

EARLY SHORT-TOP ASHLEAF, for Autumn or spring Planting.—This "Stock" cannot be excelled. Having been carefully preserved, they will be warranted free from disease; they are remarkably fine in quality, and prolific in yield. Price 30*s.* per sack of 2 cwt. This includes the sack and carriage paid to London. All orders must be accompanied with a remittance, and letters of inquiry with a stamped envelope.—Address JOSEPH WILSON, SEED POTATO MERCHANT, Ipswich.

P.S. Two new varieties, named the "Early Ranger" and "Lackford Kidney," will be shortly ready to send out.

HOLLYHOCKS.—A collection of this fine old English flower, grown at the Cheshunt Nurseries, is now in bloom, and there will be a succession till the end of October. Admirers of the Hollyhock are respectfully invited to visit the Nurseries to inspect them. In addition to the choicest varieties of other growers, there are many rare and beautiful kinds of their own production, and to be seen only at their grounds.—A. PAUL & SON, Nurseries, Cheshunt, Herts (13 miles from London, on the Cambridge line of Eastern Counties Railway).

CHOICE NEW CINERARIAS, FUCHSIAS, &c.

WILLIAM RUMLEY AND SONS are now sending out the following first-rate new CINERARIAS, at 18*s.* per dozen, 6 for 10*s.*, or 2*s.* each, or, if left to our selection, 12*s.* to 15*s.* per dozen, viz.:—Advancer, Constellation, Estelle, Etoile de Vaise, Garland, Empress Eugenie, John Bull, Lord Stamford, Lablache, Lady Camoys, Mrs. Beecher Stowe, National, Nimrod, Novelty, Polyanthiflora, and Scottish Chieftain. Good show varieties, 6*s.* to 9*s.* per dozen.

FUCHSIAS, all the best new varieties of 1854, 12*s.* to 15*s.* per dozen.

VERBENAS and PETUNIAS, all the best of 1854, 9*s.* per doz.

PANSIES, extra fine varieties, 6*s.* to 12*s.* per dozen.

CHRYSANTHEMUMS, strong blooming plants, 12*s.* per doz.

The above will be forwarded immediately, in fine healthy plants, hamper included, or free by post on receipt of a post-office order payable at Richmond.

A Descriptive CATALOGUE of the above may be had on application.—Gilling, Richmond, Yorkshire.

The Gardeners' Chronicle.

SATURDAY, SEPTEMBER 16, 1854.

THE remarks we made last week upon the EFFECTS OF THE WINTER are, we are happy to see, likely to elicit some important criticism. For this we shall be greatly obliged; the writers will consult the best interests of horticulture by communicating fully the result of their experience, and by correcting the conclusions to which insufficient evidence may have possibly led us. To such criticisms we shall carefully address ourselves hereafter; in the meanwhile we proceed to consider the facts belonging to the more important non-Coniferous races.

It must be regarded as hopeless to grow *New Holland Acacias* out of doors with any prospect of permanent success. Here and there, in very warm districts, they may live, but all these are exceptional cases. Even *A. dealbata* and *affinis*, the hardiest of the race, were all but killed in the southern counties. The Persian *A. Julibrissin*, however, took little harm at Kew, and is no doubt quite hardy wherever the wood can ripen.

Among SYCAMORES the Nepal *A. villosum* seems to be tender; *A. palmatum* is more hardy; and the Acers *caudatum* and *circinatum* may be regarded as secure.

ARALIAS, with their magnificent foliage, seem to rank in hardiness with Fuchsias.

Among ARBUTUSES it has been found that *A. Andrachne* is not so hardy as has been expected. This Crimea plant was totally killed in some places, and even its Oregon form, *procera*, had the edges of its leaves destroyed at Chiswick. It is, however, evidently more capable of bearing cold than *A. Unedo*, and may be regarded as fit for plantations anywhere south of the Trent.

Some BAMBOOS, such as that from the Himalayas, although killed to the ground, have sprung up freely upon the return of warm weather. There is, however, only one northern case recorded, and that is at Oulton, in Cheshire, where the plant is reported among the killed; at Liverpool, which is milder, it was only cut to the ground.

BENTHAMIA is shown conclusively to be unfit for the winters of the midland counties. Even at Osborne it does not thrive, and it can only be regarded as suitable for such a mild damp climate as that of Cornwall.

The important race of BERBERRIES generally bore the weather well; even the Mexican *trifoliata* sustained no injury at Chiswick against a south wall, although it perished in the open ground. *B. nepalensis* was damaged in its foliage, but more from wind than cold; and we feel justified in believing that this noble species will bear our winters in places well sheltered from wind, and not too much exposed to sun. About the Chinese and Japanese Berberries we have no sufficient intelligence, and they remain for further experiment; it, however, seems evident that *B. Fortuni* is not so robust as was expected. Above all, it is important to know, as we now do, that *B. Darwini*, the most beautiful of all the species, will become a thoroughly domesticated plant. Southampton, Exeter, Bagshot, Chiswick, Shiffnal, and Congleton, all declare its hardiness; we can also report, from our own observation, that the species thrives equally in a wet place and on the face of a dry bank exposed to the sea, as at Osborne.

BUDDLEAS are no hardier than Fuchsias.

The New Holland genus CALLISTEMON seems likely to take a place among hardy shrubs; and if so, there will be none to eclipse it. At all events C. salignum was scarcely touched at Kew, and we know that, with only such shelter as a glass wall affords, the *C. lanceolatum* bore the winter perfectly at Chiswick. The possessors of these plants would do well to turn them out of doors generally next year.

CAMELLIAS bore the cold wherever they are reported on, with the exception of *Sasanqua*, which died on an east wall at Kew; it is true that they are returned as having suffered considerably at Singleton, near Swansea; but it is certain that this arose from local causes, and not from cold.

The CANTUAS must, we fear, be wholly excluded from hardy shrubs.

CERASUS ILICIFOLIA, an evergreen from California, whose hardiness no one doubted, proves to be much more tender than the Portugal Laurel, and only fit for very good climates.

Of CEANOTHUS, the only quite hardy ones have proved to be *C. integerrimus* and *verrucosus*, whose character may be regarded as established; *cuneatus*, *rigidus*, *azureus*, and *papillosus* can only be regarded as safe, even in the southern counties, when trained to walls.

Of the Indian species of CLEMATIS, *nepalensis* is the tenderest; all the other newly-introduced kinds lived when trained to south walls.

Of THORNS, the Chinese *C. Layi*, and the Nepal *C. crenulata*, escaped against walls, where *C. mexicana* was much injured; but the trial has been insufficient.

No result has been more satisfactory than the establishment of the complete hardiness of the CHUSAN PALM, where it was tried; Kew, Chiswick, Bagshot, and Osborne, as well as South Devon, attest its fitness for the climate; and we may add that, in the trials which have been made, there is not one symptom to the contrary. Being a native of Chusan, where Mr. FORTUNE found it on hill-sides, it might have been expected to be as hardy as the Glycine sinensis, which comes from the same place. But, on the other hand, Palms are so universally tender—even the Palmetto of Italy detesting our English winters—that it was supposed that this would possess the constitution of its order. Such is not the case. While at Chiswick the *Chamærops humilis* was much cut at the foot of a south wall, in a dry border, this plant resisted the frost on a cold, north bank, in a hollow below the general level of the garden. Here, then, we at last possess the means of varying the landscape of these islands with one of the most peculiar forms of vegetation of the tropics. In his wanderings Mr. FORTUNE speaks of it as a Palm *tree* cultivated on the hill sides of Chusan, as well as in similar situations all over the province of Chekiang, for the sake of a strong fibre obtained from its floral leaves (bracts), which also yield materials for the manufacture of garments and capital hats. What species of Chamærops this may be is, we believe, still uncertain. It is, however, supposed to be the same as the Himalayan *C. Martiana*, which Dr. HOOKER tells us ascends to 8000 feet in the Western Himalaya, where it is annually covered with snow; a fact which explains the hardiness of the plant in Europe, and which we submit to the consideration of our geological friends, who think that Great Britain *must* at one time have enjoyed a tropical climate, *because* remains of Palm trees occur in our coal fields.

The further consideration of this subject want of space compels us to postpone for a week or two.

IN our number for July 28, 1849, we published some observations on the DISEASES OF HOPS, which we had then an opportunity of studying in the neighbourhood of Maidstone. It appeared that the diseases, though known under various names, were mere modifications of two only, and for each of these we suggested a probable remedy.

A visit to the same district last week afforded us the greatest gratification, inasmuch as we found that, thanks to Mr. WYKEHAM MARTIN and Dr. PLOMLEY, the seed of 1849 had fructified, and that there is really a prospect in the course of a few years of both the diseases being greatly under the control of the cultivator. As regards that which depends upon the presence of aphis, the existing high duty upon tobacco, and consequent enormous price, has prevented any very general experiments; but we have seen an extensive Hop-ground, belonging to Mr. ELLIS, consisting principally of the variety called COLEGATES, in which a solution of tobacco and soft soap has been used by means of an engine at a considerable expense, and evidently with great benefit.

In Sussex and in many parts of Kent, the plants have been so much injured by aphis, that there is absolutely not the slightest attempt to produce bur in hundreds of gardens. About Maidstone, however, though the Hop-flies were unusually abundant, many of the plants recovered, and gave out vigorous shoots with a prospect of a good harvest. Indications of mould, however, soon appeared, and in many instances the blight has advanced so rapidly as to destroy all hope of a remunerating produce. The mould was at first confined principally to the young bur, and indeed has never spread much upon the leaves, so that, except to very close observers, its presence was not suspected till it was almost too late to check its progress very materially.

We have, however, now before us specimens of GOLDINGS, which is the finest and most delicate variety, from Leeds, to which sulphur was applied by Mr. ERSKINE, from the 18th to the 20th of July, when the mould first made its appearance, and others from the same ground which were undressed, the former of which are in admirable health, and will afford ample remuneration, while the produce of the others will be extremely small, and of a very inferior quality. The difference, indeed, in the specimens is at once obvious to the most common observer, as it was equally *in situ*, where the eye could detect to the greatest nicety what plants had been dressed, and where they had been accidentally or designedly neglected. In the next parish to Leeds, in the grounds above-mentioned in which tobacco had been applied, the state of health and luxuriance was still greater, though in a Hop of inferior quality, and the beneficial effects of sulphur were to a greater or less extent visible at Maidstone and in many intermediate gardens, in which the variety called GRAPES and the two other varieties were cultivated. In a few cases, indeed, where no sulphur had been applied, there was a tolerable crop, especially of the variety called JONES's; but where nothing had been done the crops were in general, to a great extent, if not completely, eaten up with mildew.

In practice it is found that the easiest, most economical, and at the same time the most effectual mode of applying the sulphur is by a common dredging box at the end of a long pole. Little at present has been done with solutions, but we should strongly recommend the trial of GRISON's mixture,* especially in the later stages of disease, as more speedy in its action. In all cases, however, the grand point is to watch the first indications of the mould, and to apply the remedy at once.

In the course of our rambles lately, through the Hop grounds near Maidstone, certain peculiarities in the growth of the Hop mildew suggested themselves, which seem worthy of being recorded. The first thing which struck us was, that the crops were attacked by the mould exactly in proportion to their height. On JONES's, for instance, which require very short poles, there was very little mildew, while the GOLDINGS on their poles of 13 feet or upwards were in great measure destroyed; at least, where no sulphur had been used. The state of the GRAPES and COLEGATES was exactly intermediate between the two. Now, this is quite in accordance with the experience of Vine growers. The Vines on trellises are far more subject to mould than those on short stakes. Some of the Hop growers seem to recognise this fact in the notion that weeds are useful in keeping the mould low; but this probably arises from the circumstance that such weeds as the common Groundsel are extremely subject to a kind of mildew, which in outward appearance closely resembles that of the Hop.

A second point was that the mould was principally confined to the bur, and very rare upon the leaves, a fact which may have prevented all but very close observers being aware that mildew really commenced its attack some weeks before its prevalence was generally recognised. The cultivator, then, must watch the bur as soon as it makes its appearance, and apply the sulphur at once, if he hopes to do much good. The mould may not appear upon the leaves till the injury is irreparable.

A third point worthy of remark was, that although the mildew on the leaves remains for weeks in the form of an Oidium, without producing a single

* One pound flowers of sulphur and an equal volume of fresh slaked lime are to be boiled for 10 minutes in an iron pot in five pints of water, so as to give four pints of clear solution. This is to be mixed with 100 parts of water or to such other strength as may be found most efficacious, and applied with an engine. See *Gardeners' Chronicle*, 1852, p. 419.

sporangium or pycnidium,* while on the young bur, which when attacked at an early period of growth never arrives at its full development, it immediately produces its fruit so as to discolour the bracts, and ultimately, in combination with the exhaustion consequent on its presence, to produce the appearance known by the cultivators under the name of red rust.

Still a fourth peculiarity was exhibited by the fact, that the mould was spreading like wildfire in extremely hot weather, and under a very dry atmosphere; the nights, however, from radiation, being rather cold, and sometimes within a few degrees of freezing, and from the same cause attended by a copious deposit of dew. Meanwhile, the Botrytis, which was attacking the neighbouring Potatoes, could scarcely hold its way, though abundantly present on the green borders of the brown spots upon the leaves, which crumbled under the fingers into dust. The Hop bine, however, when divided, dripped with moisture, while the Potato haulm was almost dry, and their respective parasites were not, therefore, equally dependent on atmospheric moisture.

It is curious, moreover, that though the joints of the Oidium in the Vine readily germinate, in the Hop mildew it seems to be the grains within those joints which are fertile. Dr. Plomley has taken great pains to ascertain this, and has shown us specimens in which the granular matter of the joints first separated into four distinct masses, and these again divided and subdivided, and as we believed germinating *in situ*, and finally protruding beyond the mother cell, and becoming entirely free on its absorption.

As the Hop mildew was daily on the increase, and the estimate of the ultimate harvest daily diminishing, we could not help suggesting the immediate securing of the Hops which did exist upon the bine. This proposition, however, was met by the supposed injury done to the bines from bleeding by early division at the base. We are inclined to think that the consequent weakness is much overrated; but even supposing this to be as great as is imagined, the flow of sap might probably be easily staunched by the application of a little acid, or possibly of collodium to the divided surface, which might be done almost as quickly, by an intelligent lad, as the several poles are removed for picking. *M. J. B.*

The uprooting of fallacies being the first step in the road to the attainment of truth, we thought it advisable in a late Number to notice the false conclusions which have been attached to some *ordinary* phenomena of insect life observed at *extraordinary* (choleraic) periods. The most widely spread of these erroneous ideas is certainly that connected with the swarming and migrations of aphides; and having received numerous specimens of Aphis Brassicæ from the north of England (observed in swarms concurrently with the outbreak of the cholera in those particular parts of the country) we have considered that it would be further useful to give a magnified figure of this species (copied from a drawing by Mr. Curtis, published in the Journal of the Royal Agricultural Society) with a few notes on its economy, showing what are its real habits, and that its swarming has no connection with the prevailing epidemic beyond the fact that the latter happened to break out last year just at the period when the ordinary migratory swarms take place.

The disease in question has, however, sometimes made its appearance at other periods of the year, and of course unattended, at such times, by the swarming of the aphides, a circumstance of itself sufficient to disprove the charge raised against the insects, which have enough, as it is, to answer for. A further observation may be made, not only upon this particular charge, but equally bearing on others of a similar nature, in which it is asserted that particular results are produced by the agency of particular insects, fungi, &c. To support such a charge it is necessary to prove not only that the appearance of the insects or fungi in question has always been accompanied by the results observed; but also that the results themselves have never been produced unless accompanied by the appearance of the insects, &c. If, indeed, it could be shown that the insects, &c., in question had never before been seen, and consequently might be assumed either to be fresh importations or even new creations, there would be better grounds for the charge; but the natural result of our argument at once overthrows the charge whenever, as in the case of the Potato blight or the cholera, effects have been attributed to well known insects which have never before been accompanied by similar results.

The particular species of aphis in question infests the Cabbage and Swedish Turnip, the latter especially being subject to its attacks, "the under sides of the curled leaves being sometimes densely covered with them of all sizes; the old wingless females are seen resting in August, September, and October, surrounded by their young broods, with here and there a winged male, walking lazily over his kindred." Mr. Curtis has further observed myriads of this species under Cabbage leaves in July, and secreted in the leaves of the crumpled Broccoli, as late as the end of November, when they were of all ages and sizes, both winged and apterous.

Of course the period of swarming varies not only in different species but in different seasons; a creature so delicate in its structure as the aphis is necessarily very susceptible to atmospherical changes, and it is also owing to these variations that differences take place in the numbers of winged specimens which are developed. Entomologists are also well aware what striking effects upon insect life are

produced by electrical changes in the atmosphere; a hot lowering state of the weather accompanying the approach of a thunder-storm being especially favourable to calling insects into full activity. Hence it is at an earlier period of the year, when electrical storms are more frequent, that the Bean aphis often swarms to an equal extent with the A. Brassicæ and its allies in autumn. It is this species, we believe, to which the name of "smother fly" has from this circumstance been applied. *J. O. W.*

VEGETABLE PATHOLOGY.—No. XXXVII.

163. Since the diseases of plants are for the most part dependent on chemical changes in their component parts, and since such changes are intimately connected with, if not in themselves electrical phenomena, it will at once be readily conceived that electricity is capable of exercising important, though in many cases possibly inappreciable influence on vegetation. As the earth and atmosphere are for the most part in different states of electricity, there must be constantly an interchange between the plants and the air, and the currents will be in different directions according as the air is charged with positive or negative electricity; and it is probable, *à priori*, that as, in its usual condition, the air contains positive electricity, the chemical processes will be promoted by the consequent direction of the current, as in a contrary condition they would be retarded.

164. The destructive effects of lightning on plants is too notorious to admit of question. The largest trees are shivered, partly by mechanical agency, and partly by the sudden expansion of gaseous matter,* and death is often the consequence, as it is from the shock of a powerful battery. The effect of a sudden fall upon the vegetative powers of partially dried yeast has often been recorded, and that instant death should, in some cases, be the consequence of a severe electric shock, even though the individual cells may not be separated, seems not more wonderful than that similar effects should take place from the same cause in animals, even taking into consideration the higher attributes of animal organism. Many cases, however, of apparent sudden death in plants are referred to electricity where the cause is altogether different, as the withering of branches in trees suffering from gumming, where life has been sustained for a long time by a mere thread of living tissue, or where plants have been destroyed by the attack of the spawn of fungals at their roots, or of insects devouring the young pith, as in the common Currant. In such cases the cause has been present, and actively engaged, for a long time, though the ultimate effect may appear almost momentary.

165. It has been observed that vegetation is sometimes more than usually active during thunder-storms, and it is pretty certain that an atmosphere highly charged with electric fluid, probably from the formation of nitric acid in the atmosphere, is favourable to the development of certain fungi, the spawn of which scarcely produces fruit under any other combination of atmospheric conditions. These effects, moreover, are not attributable to the mere quantity of rain which may have fallen, or to any increased quantity of free moisture in the atmosphere, because such conditions, unaccompanied by electric action, are not observed to lead to the same consequences.

166. As in the case of all other agents, the effect of which is difficult of exact appreciation, differences of electric condition have been confidently appealed to as capable of producing prevalent diseases. The ravages of Asiatic cholera and influenza have accordingly been referred to this source, as have the diseases which have been of late so active in the vegetable world, as in Potatoes and Vines. As such opinions, however, do not rest, or pretend to rest upon a single well ascertained fact, but are merely conjectural, they cannot be regarded as more than mere theories, however possible it may be that peculiar electric conditions may be absolutely necessary for perfect health. Till, however, we know what those conditions are, and what effect any alterations in them are capable of exercising, it is quite vain to attempt to build anything capable of proof upon foundations so utterly without stability.

167. Great interest was excited some 10 years since by a statement of the important results which had arisen from the isolation of portions of crops by means of wires, so as to subject them to more powerful electric agency. Experiments with a view to prove or disprove this were undertaken by various persons, as at the Royal Botanic Garden at the Regent's Park, and on a more extensive scale at the gardens of the Horticultural Society at Chiswick. A full account of the latter, by Mr. Solly, was published in the first volume of the Horticultural Transactions, p. 81, together with much historical matter,* and the result of the experiments was, upon the whole, opposed to the supposition of the great influence of electricity on vegetation, or tended at least to show that the electrical effects produced by such apparatus as those described have very little if any influence on the growth of plants; and from these and other experiments made during the past year, Mr. Solly adds, I am led to believe that a great part, if not the whole, of the effects recently described as electrical are accidental or due to adventitious causes. Experiments with a view to diminish the quantity of electricity, it should be observed, led to no more positive result than those which had in view its increase. *M. J. B.*

CULTIVATION OF THE STRAWBERRY.

Until within the last 30 years but little attention was paid to the cultivation of this fruit, and not above five or six varieties were known; the largest of these was the Hautbois, so called from being originally found in the high *bois* or woods of Bohemia. Till lately Keens' Seedling ranked first, as an early Strawberry, both for bearing and flavour; and Myatt's British Queen as a later crop. To the cultivation of these two sorts I have for many years (as an amateur grower) bestowed much care and attention, and with such success as always to take the first prize at our local exhibitions. Of course, I have grown many other sorts; but, on testing their qualities, I have at once removed them from my garden.

My mode of cultivation is to fix on a piece of ground entirely free from shade. About the beginning of July I commence preparing it by thoroughly manuring it, and if the soil be light I add some marl, as most Strawberries are fond of a stiff loamy soil, for the latter tends to throw them into bearing, instead of leaf. When the ground is dug and the plants ready, I tread well where they are to be planted. I choose runners with short roots, indeed those that have scarcely tasted the soil are to be preferred, as they more readily fix themselves in the ground. Though care should be taken to plant them a little below the surface, pressing the soil firmly to the roots, yet the heart must not be covered with earth, and if the weather be not rainy they will require water. The second, third, or fourth runners, or even runners from either of them, will bear equal to the first runner.

The great object is early planting, so as to get your plants well and deeply rooted before frost sets in, otherwise the frost, by raising the soil, will loosen the plants; then comes a thaw, the soil sinks and leaves the plants worse than fresh transplanted, nay almost out of the ground. Again, by early planting you obtain the finest and largest fruit the first year, the greatest crop the second; then directly root up your plants, and on no account keep them for a third year, indeed, for quality alone, annual plantings are best.

It rarely happens in a prolific sort by this early mode of cultivation that two plants out of 100 miss fruiting, but should they fail doing so the first year, the finest will their fruit be the next, though some persons entertain an idea that they are barren, and throw them away as worthless. In order to strengthen your young plants they should be deprived of all their autumnal runners as they make their appearance, for they necessarily weaken the parent.

Strawberry beds should always be kept entirely free

---

* These are the two principal forms of fructification. The sporangium is globose, and contains transparent sacs filled with sporidia, the pycnidium oblong, and stuffed with naked spores. The sporangia sometimes contain naked spores, larger than those in the pycnidia.

* The mode of action of lightning upon trees has lately been considered at length by Dr. Cohn in the Jubilee Memoir of the Breslau Society. He has observed that the electric fluid first takes the course of the alburnum, as the best conductor, splitting off the bark by the sudden expansion of the fluid; a part enters at the same time the older portions of the wood, which are comparatively bad conductors, taking the course of the medullary rays, or the points of contact of the annual rings, or both, and thus, according to circumstances, splitting the tree in various directions, and occasionally threading it to the extremity of the roots. See Denkschrift zur Feier ihres funf zig jährigen Bestehens, herausgegeben von der Schlesischen Gesellschaft, &c. Breslau, 1853.

* We beg leave to state that we have availed ourselves in this part of our subject of the valuable matter contained in that memoir.

from weeds, and the plants as distinct as when first planted out. April is the best time for removing the old leaves and refuse, for if cleaned earlier a severe frost, which sometimes occurs in March, cuts off the tender shooting leaves, which otherwise would be sheltered and protected from it. In the autumn, when you have taken sufficient runners for your new plantations, clear the old roots of all that remain. When the beds are cleaned in the spring some rotten manure should be put over the surface, and great advantage will arise from it, as the rains will wash the goodness of the manure to the fibrous roots, or you may give some weak liquid manure. Guano will be found to be perhaps the best; but this must be used sparingly, as few may be found to apply it with a sufficiently light hand.

Strawberry beds must never be dug or forked amongst, for by doing so you destroy a number of fibrous roots, which the plant requires in order to ripen fine fruit, and the soil is also so loosened by these operations that in the fruiting season the hot sun more easily penetrates to the roots, which require to be kept cool, to the great injury of the fruit. When the latter commences setting, and until the first berries begin to change colour slightly, you may apply to the roots any quantity of water, perhaps the more the better; but when that change takes place the beds cannot be kept too dry, or the flavour of your fruit will be impaired. One great object in giving plenty of water is that in dry weather land will crack, and such roots of the plants as cross the opening are broken, or so much strained and injured as to be of little or no service afterwards. Now, the watering will prevent this dividing of the ground. When the berry is about half-grown commence putting some loose straw between the plants in the row and then spread some clean Wheat straw between the rows about an inch thick, or you may take the cleanest of stable litter well shaken for both purposes; this prevents your fruit from being damaged by the grit and soil which would be washed up with heavy rains, keeps the ground cool, and tends to give that air of cleanliness, neatness, and order, without which a good article loses half its value. If the strawing be delayed till the berry is getting ripe, you may chance to bruise the fruit, and a ripe Strawberry bruised or handled never recovers its beauty; it is perhaps the most perishable and tender of all ripe fruits.

The method practised by many persons of putting the mowings of their Grass plots round their plants should be avoided as decidedly bad, for it is better to have the fruit damaged by grit than spoiled by mould. Even the name of the plant suggests the use of straw. The proper distance for planting the larger and better sorts is 2 feet each way.

Frogs and toads should be encouraged, they seek the beds for shade and subsist upon snails, black bats, and other insects that so frequently disfigure and destroy the finest of the fruit. If a Strawberry grower will observe a frog or toad gape, he will be convinced by the formation of its mouth that it was not made by nature to injure or feed on fruit; indeed more harmless and useful creatures do not exist in a garden.

I have now given all the information I possess relative to this subject, and I conclude with this advice to all growers of Strawberries. Get rid of old prejudices in planting and growing, and time, produce, and flavour will show the decidedly superior advantages of the above method of cultivation, though I do not pledge myself that any one, even by following my plan, will produce a fruit that will equal my "Sir Harry," much more surpass it. *R. Underhill, Sir Harry's Road, Edgbaston, Birmingham.*

VILLAGE HORTICULTURAL SOCIETIES.

As it is well known that one of the most successful managers of these highly useful associations is the Rev. Prof. Henslow, of Hitcham, we think it worth printing his programme for Monday next, as a guide to those who have less experience in such matters, and for the sake of showing by what simple means a few hundred villagers may be pleased, instructed, and improved.

HITCHAM HORTICULTURAL SHOW.

Programme for Monday, September 18, *instead of September* 20.

8 to 10 A.M. Specimens received at the rectory. Short days necessitate getting forward with our work.
12 A.M. Marquee Museum ready for inspection.
1 P.M. Flowers, fruit, and roots ready for inspection.
N.B. *Lecturets* on objects in the Museum.*
3 " Report of the judges. Prizes announced, but, to save time, not distributed till another day.
4 " Stewards to receive check tickets, and return specimens to competitors.
5 " Tea, orderly and sociably.
6 " God save the Queen. Good night; and may God see fit to grant us further opportunity for meeting in like friendly intercourse.

* Chief novelties in the Marquee Museum.

ANIMAL KINGDOM.

Birds.—Nine species of British owl; carrion and hooded crows, hoopoe, Bohemian wax-wing, European goat-sucker, common cuckoo, scarlet ibis; case of albino British birds; case of hybrid canaries, goldfinches, and linnets; two nests of Ceylon weaver-bird, suspended from a Palm-leaf.

Reptiles.—Cast skins of snakes.

Fish.—Sea bull (Ostracion).

Mollusks.—Additions to those of Hitcham.

Insects.—Economy of wasps' nests in regard to those of the common wasp and anchor-faced wasp.

VEGETABLE KINGDOM.

Dicotyledons.—Appearance called "tree in tree" in a Poplar. A large legume. Curious spiny stipules.

Monocotyledons.—Sugar-cane.

Acotyledons.—A very hygrometric Club-moss (Lycopodium).

MINERAL KINGDOM.

Decomposing nodules to be preserved by those who find such. What are called "St. Paul's teeth," in Malta.

MISCELLANEOUS.

Beautiful Box-wood model of a frigate. Two finely carved figure heads for ships. Madagascar paddles. Illustrations of the mode of preparing inlaid Tunbridge ware for boxes. Implements, type, &c., used in a printing establishment. Antiquities, how to preserve such when accidentally found: viz. vases, celts, coins, querns, &c. Hints for Industrial Amusement, ex. gr. wooden objects prepared by a shepherd on Salisbury Plain: carved stick by a labourer at St. Albans: Hitcham shells in ornamental patterns; Plantain, Grass, and Rush fruits imitated in small land shells from the rectory lawn.

HINTS TO ALLOTTEES.

Advantages of securing seed for improvement of races.
N.B. Wheat-ears on J. Curnall's allotment, 1853.
Cause of Fingers and Toes in root crops.

Results of Mr. Freeman's experiments with six Potatoes weighing ¾ lb.

On No.	107	were raised	34½ lbs.	by	James Bull (mainly assisted by his sister Susan)
"	1	"	30	"	Jos. Knock (by water-run)
"	63	"	30	"	Jonathan Grimwood.
"	38	"	29	"	W. Reynolds.
"	78	"	29	"	Wm. Levett.

N.B. Mrs. Henslow, of Bildestone, will increase the three prizes offered to five, to meet the difficulty of dividing the rake and the hoe between those who are equal as second and third respectively.

Although the highest produce obtained by any one is 1 lb. less than last year, yet the lowest now, which is 11½ lbs., is more than double that of last year. The average obtained by 23 experimenters amounts to 21½ lbs., equal to what the third best obtained last year. The judges consider that great pains have been taken with the cultivation, and it appeared to them that No 63 would probably have beaten No. 1, if he had not used manure in too raw a state, which they consider the cause why they found so many diseased tubers in this allotment, whereas they met with scarcely any among the rest. No. 107 seems to have best pulverised the soil before planting, which probably accounts for the greater produce obtained, whilst some of those who did not obtain more than 18 lbs. seem to have neglected this important consideration. The cleanest tubers were from No. 44, where there seems to have been less manure applied than to most of the others; but the produce was not more than 18 lbs.

Miss Henslow, of Bildestone, will produce some seed of a prolific dwarf Pea called Mummy Pea, and offers a prize of 2*s.* 6*d.* for the largest produce obtained by any of the allottees classed by the judges for "superior cultivation" this year; and Mrs. Henslow, of Bildestone, offers 1*s.* 6*d.* for the second, and 1*s.* for the third in amount.

Mr. Clover gives first and second prizes of 2*s.* and 1*s.* respectively for Red Wheat.

PULTENÆA.

Most of the species of this genus are exceedingly handsome greenhouse shrubs, being of a very compact habit of growth, profuse bloomers, and the flowers, if guarded from damp and bright sunshine, remain long in perfection in a cool house. Beginners should be careful in procuring young plants from the nursery to select such as are dwarf and healthy, with short-jointed robust wood; for they will find, if they procure weakly or sickly plants, that they are difficult subjects. If the young plants are obtained at once they should be placed in an airy part of the greenhouse close to the glass, and be very carefully supplied with water, for it is too late in the season to do much in the way of encouraging growth; but if they are found to be much pot bound, a small shift may be given, which will induce the formation of active roots, and cause them to break strongly in spring. Shifting, however, should be deferred until spring, unless the plants are in actual want of more pot room; for, in the case of beginners, there is some risk in repotting such things as are at all delicate just before winter. The principal points to be attended to during the winter season are giving a proper supply of water at the root, and admitting air on every favourable opportunity, avoiding exposing the plants to cold wind, and keeping them near the glass. Towards the middle of March encourage growth by keeping the plants rather close, but the night temperature should not exceed 40° or 45°, and air should be admitted by day whenever the state of the weather will admit, and the plants must be kept near the glass. Before inducing growth any straggling shoot should be cut back, and the branches neatly tied out, keeping them well down towards the pot, and rather thin, so as to admit light and air, and induce them to break closely and strongly. The state of the roots should also be seen to, giving more pot-room to such as require it; but it will be safer to defer shifting until growth has fairly commenced, unless in the case of such as are found to be much pot-bound. The atmosphere should be kept moist, giving the plants a gentle syringing on the afternoons of fine days, and shutting up early, so as to avoid having to use fire-heat, which is apt to render the atmosphere too dry for these plants.

As soon as the buds are started into growth will be the proper time for repotting, and this should be attended to before the plants suffer through the want of pot room. See to having the ball and soil in a proper state as to moisture at the time of repotting, and make the new soil rather firm about the ball. Very little water will be required for some time after potting, if the atmosphere is kept rather close and thoroughly moist, and no more should be given than may be wanted; for over-watering directly after potting is very apt to saturate the fresh soil, which, in the case of delicate rooted plants, is most injurious. Whenever the weather becomes sufficiently mild to allow of managing the plants in a cold frame without exposing them to a lower temperature, this will be the best situation for them, as the atmosphere, &c., will be more under control. The treatment here during the summer will consist in giving free admission to air on all fine days, a proper supply of water to the soil, and a slight shade from the direct rays of the mid-day sun. Any shoots that incline to out-grow the others, or to become straggling, should be pinched back, in order to maintain a close bushy habit; and when the nights become warm the lights may be thrown off the last thing in the evening, so as to expose the plants to the dew, which will greatly assist in keeping the wood strong; but the glass should be kept on while the air inclines to coldness, or during the prevalence of drying winds, and the plants should be moistened overhead in the afternoon, and shut down close for the evening. Vigorous growing specimens will probably require a second shift early in summer, and this should be attended to whenever it is necessary, and every means used to maintain vigorous growth. Use the shading very sparingly towards autumn, and discontinue the use of the syringe whenever the weather becomes damp and cloudy, and expose the plants freely to air, in order to ripen the wood before winter. A light airy situation near the glass in the greenhouse should be afforded them in winter, and they should be removed to this place whenever damp cloudy weather sets in. By subjecting the plants to similar treatment a second season, and with good management, they should be nice sized specimens for flowering, but those intended to flower should not be kept growing too late in autumn, as in this case they would probably not bloom so freely. Flowering specimens should be allowed to remain in some cool airy part of the greenhouse until the blossoms open, and should be shaded from sunshine to preserve the beauty of the flowers, which soon fade under bright sunshine. After blooming, cut the shoots back sufficiently to insure a close growth; give a moderate shift, and keep rather moist and close, but not warm, until they get into free growth, and otherwise attend to them as already recommended, but large plants may be gradually inured to exposure to the open air, and removed to a sheltered situation out of doors, where they will be screened from the mid-day sun. If placed in the open air, however, they must be carefully protected from heavy falls of rain, for they are very impatient of too much moisture at the root.

Cuttings of the half-ripe wood root freely enough; but beginners will find it to their advantage to leave their propagation to those who have proper convenience, and give their attention to this part of plant culture. For soil, use the very best peat that can be procured, selecting prime fibry pieces, which should be broken up rather small, and well intermixed with a liberal allowance of sharp silver sand and a sprinkling of lumpy bits of charcoal or clean small potsherds, to ensure the free percolation of water through the mass. *Alpha.*

SOME

PRINCIPLES OF VEGETABLE PHYSIOLOGY,

BEARING ON THE CULTURE OF PLANTS.

By Professor W. H. DE VRIESE, of the University of Leyden.

(*Translated from the Dutch.—**Continued from p.* 565.)

We are already upon the way to understand some of the phenomena, which, without the preceding remarks, we should be unable to comprehend. The proper temperature which all plants and all animals possess, is one of the thousand proofs of the wisdom with which everything in nature is established by the Creator. It also renders the plants in a certain degree independent of the vicissitudes of the circumstances in which they are found. There is life and movement, there is change of substances in the root, there is an increasing of the cells therein, and consequently growth; there is a movement and raising up of liquids from cell to cell, and thus higher and higher, though it is not brought about by causes visible to the eye, but by that power of absorption in the cells themselves, that we called "endosmosis." By this it is to be explained that the roots are active in the midst of winter, when there seems to be no trace of life in those parts of the plant which are above the soil. Therefore, the wood, which is felled in winter, is moist in the inner part; and the rising fluid ascends in trunks of trees and often causes large trees, the expansion of which is prevented by the cold, to split from top to bottom, and the juice that is taken up streams out through crevices on the surface. Thus the generally known phenomenon called "weeping, or bleeding," takes place in the Vine because the superfluity of fluids which the tissue could not contain, and which are forced up from the root, streams out from the trunk.

But as the internal temperature of the plant must have its own part in bringing that power of absorbing into action through the membranes of the cells, and in transmitting the fluid from cell to cell, so the exterior forces of nature have also their work to perform, though in a less degree. It is by the increasing heat—nay, it is even by the cold also of the atmosphere, that great influence is exerted; and the most immediate influence is the evaporation on the surface of the plants. It consists in the evaporation of water which is present in the plant in exuberant quantity, and is chiefly taken from the soil by the root.

Evaporation takes place outside the plants also during the cold season. A mass of ice diminishes always in circumference because its surface changes continually into vapour. If we expose to the air two vessels with equal quantities of water, but bring fire under one of them, the water will evaporate much sooner in the latter, but at last it will disappear entirely from both. The application of this principle to plants gives us the result that in winter also their surface may and must lose water, but that the loss of water must be greater in summer when the temperature of the atmosphere is higher.

We have the best proofs that dry cold produces and promotes the exhalation on the surface of plants; in other words, the "evaporation," as we shall henceforth

use that term. The cold north winds are injurious to plants in general. Whenever we say that trees are "scorched" by the wind, this means nothing else than that the air streaming by the leaves without ceasing causes evaporation in a much stronger degree than the moisture which must arise from the root is produced. The equilibrium between the evaporation and the supply of moisture is broken off, the tissue becomes exhausted, the membranes of the cells lose the power of further absorption and fall together, the leaf becoming dry and brown, falls off. Though the phenomena are not in all respects the same, the effect of cold on young field plants is not different. North and east winds bring cold currents of air, west and south winds damper currents. Therefore the former are injurious, particularly in the spring, and we are accustomed to protect our trees and plantations from their influence as much as possible. This injurious effect on fine fruit trees is particularly known by the nurserymen. They fear nothing more than the cold of the night, which is the more injurious when the days are hot, as occurs frequently in the spring, and when the position of the plants against walls or hedges causes the hot sunbeams to concentrate on the trees in a greater degree. A difference of temperature of 50° Fahr. between day and night is not rare in such circumstances. When the flower-buds cover the branches in thousands, and the hot sunbeams during day make the juices ascend in the heated plants, then the buds open, and the beautiful but extremely tender flowers expand with an astonishing rapidity. But when the cold of night succeeds the heat of that beautiful day of spring, it causes the fluids to evaporate out of the tender flower leaves, which crumple together; but the ascension of fluids through the branches for filling and re-strengthening the exhausted organs is not produced by it in an equal degree. The flowers and all they contain become unfit for the formation of the fruit; they fall before the time; the object of their existence is lost. Can there be a more reasonable explanation for the frequent failure of the harvest of our fruit trees, than in the premature opening of their flowers? Are not the means which art, based on experience, uses for protecting the trees against the cold of night, indicated by science itself? That influence of evaporation can be ascertained much better by other phenomena, and especially by a higher degree of temperature; so great is the influence, that we see in it the key to the explanation of many phenomena of vegetable life.

When leaves are put under an inverted glass, a moisture is seen on the inner surface. This is water, which is discharged from the leaves. What takes place in that glass happens also in the atmosphere in the natural state. Expose a plant to a great heat without bringing water within its reach, and very soon you will see it decay. But apply water to it before it is quite exhausted, and it will return to its former fulness. Put cut branches into a red, yellow, or violet liquid, and you will find that the inner tissue takes that colour, and consequently that the fluid has mounted into the plant. A French mechanic, Boucherie, some years ago, invented a means of preserving timber from decay. His object was to saturate with a substance which served to prevent all growth in the newly cut wood in which sap still existed. He cut the trunks from trees in their foliage, and placed them with the surface of the section in a mixture of acidum pyrolignosum with oxidium of iron. The black fluid was to be attracted upwards by continual evaporation, which would soon fill the younger branches, and take the place of the fluids which exuded through the leaves; thus the evaporation on the surface has exactly the action of a pump. In proportion as moisture is evaporated, water must be supplied, for the tissue cannot be empty.

(To be continued.)

Home Correspondence.

Limestone Walls.—As the economy of heat is of importance to gardeners and farmers, it may not be uninstructive to renew the subject of damp from limestone walls. "Somerset" will, doubtless, have a drier wall by a brick lining, but he must prove that it is "by intercepting damp" from the limestone; the question is, has it innate moisture? I thought so once, and lifted 5 or 6 limestone flags in an old entrance which were positively wet during warm, damp weather, but I found them so thoroughly dry on every side but that exposed to the atmosphere, that I replaced them; perhaps we may come nearer the cause of the damp appearance of limestone walls by considering the heat-conducting property of the stone as compared with brick. We know that clay houses covered with thatch are the warmest known; stone and slate the coldest. I think that following this idea may lead us to the proof that there is no innate damp in limestone. I cannot admit "T. P. S.'s" solution of the difficulty either; I have in this house a staircase descending to an outer door along a kitchen wall *flued*; this wall is painted 6 feet high in oil, above the plaister is merely coloured: in damp weather the smooth oil surface is pearled over with moisture, whilst the rest of the wall gives no sign of it. The enquiry seems to me full of interest and utility, and I wish some person, at once practical and learned, would set us all right. *D. V.*

Mr. Webb's Herbarium.—It may interest our botanical readers to know that the herbarium of the late P. B. Webb, Esq., whose sudden decease we reported last week, has been left by will to the Grand Duke of Tuscany; it will therefore be shortly conveyed to Florence, and be deposited in the museum there, where it will remain under the conservatorship of M. Parlatore, the Italian botanist. This herbarium had few or no rivals in the continent of Europe, except the Musea of the Jardin des Plantes, Berlin, Vienna, and St. Petersburgh, and was kept in admirable order; it contained the whole of Labillardiere's collection amongst others of great value. Mr. Webb seems to have succumbed to a complication of maladies; for two months he had suffered under a very severe attack of gout, which was succeeded by gastro-enteritis, symptoms resembling cholera and typhoid fever, which carried him off. The English service was read over his remains at his residence in the Champs Elysées, in the presence of a large concourse of scientific men, by whom his loss is most sincerely mourned. His remains were transported to England for interment in the family vault at Milford House. *J. D. H.*

Chinese Timber.—Can any one oblige the undersigned by saying what the tree is whose fragrant timber is constantly used by the Chinese as we use deal. It is some coniferous tree, no doubt, but quære what? Not a Pine, I suspect. Does your veteran friend, Mr. John Reeves, know? *Jacl.*

Rain Gauges.—I have attentively considered Mr. Slatter's communication at p. 565, on the subject of my rain gauges in Pembroke Dockyard, but I do not think he has shown any error in the observations. I will not dispute the theory from which he infers that some additional amount of rain would have been received by the 5-inch gauge had it been placed at the same level as the 8-inch gauge, instead of 37 feet 6 inches above it, although I am inclined to doubt whether sufficient data exist for determining invariably what the exact increase per foot should be. But I very much doubt whether a 5-inch gauge at the same level, and by the side of the 8-inch gauge, would actually have received as much as the latter, for this simple reason that when it was so placed it did not do so. The two gauges were side by side for two years, during which time the excess in the 8-inch gauge was 4.957 inches, being an annual excess of 2.478 inches, which is only 0.188 inch more than the difference between them when the 5-inch gauge was on the tower. Besides, if an addition is to be made to the amount really received by the 5-inch gauge while it occupied the higher position, the same in proportion must be added to the receipts of the 8-inch gauge when it was there; and there will then be an excess on the side of the larger gauge more than sufficient to neutralise the correction added to the smaller one, and enough to make the total excess on the $4\frac{1}{2}$ years considerably on the side of the 8-inch gauge, under the three different relative positions in which the gauges were placed. It would, perhaps, strengthen the argument if I were to give up that series of observations to which alone Mr. Slatter refers, because the remaining three years' results give an excess over the smaller gauge, which would be still more increased by applying the proposed correction to the 8-inch gauge at the high level. But I am not disposed to do so, because I think all careful *bonâ fide* observations (which these were) are, as far as they go, useful, and are much more valuable when given as actually taken than if corrected by any assumed rule, to suit a theory, however correct that theory may be. But are we in a position to assert that that theory is absolutely and invariably true in all cases? Mr. Miller's extensive and careful experiments in the mountains of the lake district prove beyond question that the amount of rain increases the higher the gauges are placed, until about 2000 feet are reached, above which height it again decreases; and this, I think, was not expected, until found to be so by actual observation. There may be an anomaly in the results I have recorded, but certainly it is not because they were observed in a dock-yard. The one in question occupies 73 acres; the high sheds over the building ships are ranged along the north side of it; the tower stands at the opposite side of the yard, near the western angle, entirely isolated and removed from any other building. A more exposed situation for a gauge cannot well be found. The lower gauge was also quite open to all the wet quarters, and on the north and east sides the buildings were sufficiently far off to be incapable of affecting it. I think, therefore, that I may still maintain that during four and a half years the larger gauge received a greater amount of rain on the average, invariably, than the smaller, which is all I ever attempted to show. I am not concerned to argue whether a 10-inch gauge is or is not large enough for all practical purposes; I dare say it is so, but the question in hand is whether a 12, 18, 24, or other larger size will not record a larger amount of rain in proportion than a 10-inch or smaller size. *T. S. P.*

Roses by the Million.—It may not be much known with what facility cuttings of the Hybrid Perpetual and Hybrid China Roses strike, and what nice plants they make. The cuttings may be taken at any time when ripe, and planted in a border with a north aspect, or, if shaded, in any other; of Géant des Batailles hardly one will miss, and Louis Bonaparte, Madame Laffay, Magna Rosea, H.C., strike nearly as well; the H.P. may, when rooted, be potted, introduced into heat in the winter or early spring, and soon will produce their flowers. *N., Newport, Isle of Wight.*

Hardiness of Conifers.—Your leading article of Saturday last, on the hardihood of newly introduced trees and shrubs (in regard to which you appear not to have received returns from this county) induces me to presume you will find the following report acceptable from this place:—Pinus insignis, planted in 1850, turned brown in the winter and spring 1853-54, but it is now (September) perfectly recovered and growing well; it is about 9 feet high; P. excelsa, planted in 1837 and 1850, is quite uninjured, growth rapid; P. Gerardiana, planted in 1851, is uninjured, growth very slow; P. Lambertiana, planted in 1849 and 1851, is uninjured, growth rapid; P. Fremontiana, planted in 1852, was killed in 1853; P. Llaveana, planted in 1851, is uninjured, growth slow; P. Benthamiana, do. do. do.; P. Sabiniana, planted in 1852, is uninjured, growth rapid; P. radiata and Montezumæ, do. do. do.; other varieties, as apulcensis, Ayacahuite, Hartwegi, leiophylla, filifolia, longifolia, oocarpa, orizabæ, religiosa, Teocote, died a season or two after being planted out. Abies Douglasi, planted in 1837, and now from 15 to 20 feet high, is much injured; A. Menziesi, planted in 1839 and 1851, the former plant is much hurt by insects, but neither is injured by the season; growth rapid. A. cephalonica, planted in 1840, is uninjured, growth slow; A. Smithiana and morinda, planted in 1841, are uninjured, growth slow; A. Brunoniana, planted in 1852, was protected in winter but injured in spring, growth rapid; Picea Nordmanniana, planted in 1852, is perfectly uninjured; P. Pinsapo, planted in 1849 and 1852, do.; P. nobilis, planted in 1850 and and 1852, do.; P. Webbiana, planted in 1851, has had its side shoots killed, leading shoots uninjured; P. Pindrow, planted in 1849, side shoots uninjured, leading shoots killed (in a very exposed east aspect); P. amabilis, planted in 1849, is uninjured, growth slow; P. grandis, do., uninjured; African Cedar, planted in 1849, is uninjured, growth rapid; Deodars, planted from 1838 to 1852, are uninjured; Araucarias, planted from 1839 to 1850, uninjured; A. brevifolia, planted in 1850, do.; Cryptomerias, planted from 1848 to 1851, in very exposed situations, much injured, in others perfectly uninjured; C. viridis, planted in 1852, is perfectly uninjured and growing rapidly, although in an exposed situation (east); Taxodium sinense pendulum, planted in 1850, is uninjured; T. distichum sempervirens, planted in 1849, died in 1850; T. sempervirens (Sequoia gigantea), planted in 1849 and 1850, uninjured; Cupressus Goveniana, planted in 1850, died in 1853; C. torulosa, planted in 1849 and 1850, uninjured; C. Uhdeana, planted in 1850, do., growth rapid; C. Lambertiana, planted in 1850, do., growth very rapid; C. thurifera, planted in 1850, died in 1853; C. elegans, planted in 1851, do.; C. Corneyana, planted in 1851, is uninjured; C. Knightiana, planted in 1851, died in 1853; C. funebris, planted in 1851, side shoots injured in 1852-53, but uninjured in 1853-54; C. majestica, planted in 1851, lost the leading shoots in 1853-54, otherwise uninjured; Juniperus recurva, planted in 1849, uninjured; J. hibernica and chinensis, do. do.; J. excelsa, planted in 1852, injured (this was not a healthy plant); J. Bedfordiana, do., dead in 1853; Thuja Warreana, planted in 1849, uninjured; T. aurea, planted in 1850, do; Biotia orientalis stricta, planted in 1851, do.; B. glauca, planted in 1852, do.; Larix pendula, planted in 1849, do.; Cephalotaxus Fortuni, planted in 1851, do.; Libocedrus chilensis, planted in 1852, do.; L. viridis, planted in 1852, do.; Fitz-Roya patagonica, planted in 1852, do.; Saxe-Gothæa conspicua, planted in 1852, slightly injured in 1853-54, but now quite recovered. *A. Townley Parker, F.H.S., Cuerdon Hall, Preston, Lancashire.*——I have just read your leading article, in last week's Paper, relative to the hardiness of the Pine tribe, and as my experience differs from that of your other correspondents in a few instances, I will mention them. In the first place, among the true Pines, which you say are too tender to be worth planting, halepensis has with me been totally uninjured; while among those whose hardiness you say seems to be established, Ayacahuite has been so much injured as to necessitate its removal. Among Spruces, again, Morinda has all the young wood killed, including the leading shoot some 18 inches long; and among Silvers, the Webbiana and Pichta, which you pronounce hardy, are killed to a stump, and must be removed, though the former is undoubtedly breaking again. Among Cypresses, those you mention have all stood perfectly well (including macrocarpa), except two plants of torulosa, out of a good many, one of the latter being a fine plant 12 or 15 feet in height, but is so completely spoilt that I have cut it down. Lastly, as regarding Junipers, whilst tetragona was completely killed, Bedfordiana, standing within a few yards of it, was uninjured. None of my Araucarias have suffered, but the Deodar suffered a little by the spring frosts. P.S. I have made a mistake in including Cupressus thurifera in my notices—I do not possess the plant. *W. F. G. Farmer, Nonsuch Park, near Cheam, Surrey, Sept. 11.*——I perceive my name mentioned, as having returned Cupressus macrocarpa among my plants that were killed by the intense frost of January last. It had all the appearance of being so, and I was about to remove it altogether, when my gardener and I perceived some signs of vitality about it, particularly in the leading shoot. Encouraged by this appearance, we permitted it to remain, and we now have the satisfaction of seeing a vigorous branching head, but its lower laterals were completely destroyed. My Deodars have not yet recovered, and I am very doubtful whether some of them ever will. Libocedrus chilensis, although apparently unhurt by the winter, has withered away since, and I am very doubtful of its flourishing in this climate. *Oswald Mosley, Rolleston Hall.*——With reference to Pinus insignis, I beg to state that various specimens of it are planted on my property in different situations, sheltered and exposed, but not one of them (to my knowledge) was injured during last

winter and spring. The climate here (Clevedon, Somersetshire) is mild, but the sea-breezes are very keen and fresh. An Abies morinda also lost its young shoots. P. insignis grows here far more rapidly than any evergreen tree with which I am acquainted. I have two or three specimens planted amongst Scotch and Pinasters on a hill-side, facing south, but rocky, and exposed to the westerly gales. They are outstripping all the trees around them, and are rendered conspicuous by their rich green foliage and shapely growth. The Cedrus Deodara, at least whilst young, does not seem to like an exposed situation. Some specimens I have are stunted and distressed. The excelsa seems nearly as hardy as the insignis, but not quite so fast in growth; its shape, however, seems better adapted for resisting the wind. I should think that the insignis, if not carefully planted, would be liable to be blown over. *E.* ——Here (High Elms) P. halepensis has been perfectly hardy, but I have not been able to raise P. macrocarpa and P. Cembroides, several having failed, but not from frost. P. insignis flourishes—one died, I know not from what cause, when it was apparently in a most vigorous state. One Taxodium sempervirens died, cut off by the frost, others close by were uninjured. I have lost this summer many Apple trees and Laburnums, apparently in full vigour; I cannot understand the cause. *L.* ——In my opinion your correspondents have all omitted one great essential, while writing of the hardiness of Conifers, viz.—the distance of the plants from water. Here in West Suffolk, on high ground, I had a plant of A. Khutrow a good deal injured, close to a pond, although a much larger plant, and much more exposed, but near no water, is perfectly unharmed. Also near water Picea Pindrow turned rather yellow, and made very little growth; and Cupressus torulosa lost its leader. Pinus excelsa, not mentioned in your summary, stood near water quite untouched. Is there much risk in moving a very growing plant of this latter, about 8 feet high, of course taking up as good a ball as we can manage? I propose operating within the next fortnight. *G. J. B., Sept.* 12. [We should not fear to move it.]

The Sunflower.—Among my papers I find the enclosed —it was drawn out from information I had received of the value of the Sunflower, and sent some time since to New South Wales, where I thought it might eventually prove useful when labour became cheap, which at present does not seem very probable. It has struck me that it might be well suited for introduction into the Madeira Islands, where they require some new export, since their staple product, the wine, is failing from the effect of Vine disease. It may also serve, if my information on the subject is correct, as a material for paper-making. There is time this season to try the experiment on a small scale, from any small number of seeds and stems which you may be able to collect; and if it turns out that only one-half can be done of that which is stated, it will be useful, and worth the trial. "The Sunflower (Helianthus annuus) is propagated by seed, which sown in the spring produces seed again in the autumn. It grows rapidly and exhausts the soil like Tobacco or any other drawing crop, and is particularly suited for woodland or rich alluvial land newly broken up, which generally renders the growth of Wheat, &c., too luxuriant for the production of seed. The plant grows large, and 2½ lbs. of seed are required for an acre of land, which it is stated will produce 1½ ton of seed, 2 tons of stems and branches, which when stripped will yield 1½ ton of silky fibre, and ½ ton of coarse fibre, and 2 tons of leaves. The ton and a half of seed husked will produce 810 lbs., or 93 gallons of oil fit for table use or for lamps, as well as for machinery and manufacturing purposes. The oil is so pure and free from aqueous particles that it is particularly suited for watchmakers and all the finer parts of machinery. The seeds are also valuable as an article of food, making, when ground into flour, excellent bread, pastry, and biscuits. The fine fibre of the stems is suited for making all descriptions of paper, and the coarse for the manufacture of ropes, mats, cordage and canvas. The leaves are superior green food for cattle, and the cake remaining, after the oil is pressed from the seeds and husks, is valuable for fattening them. Any part of the plant not required for any of the above purposes, yields by burning excellent potash for manufactures or for manure." *B.*

Material for Paper.—Amongst the various plants that have been proposed as substitutes for rags in the manufacture of paper, I have seen very few that could be easily produced without somewhat encroaching on land that could be more profitably employed. There are numbers of plants that will grow by our roadsides and river banks—plants that cannot be uprooted without great difficulty—that I think might be used with great advantage for paper making. Amongst these I may mention more particularly the Butterbur (Petasites vulgaris), Coltsfoot (Tussilago farfara), Burdock (Arctium Lappa), &c. The first two, more particularly, are everywhere very abundant. To these I think might be added Hemp Agrimony (Eupatorium cannabinum), the different species of Epilobium, &c. I see Mr. Bentall is interested in this question; would he be willing to make an experiment of some of these plants? The Coltsfoot and Butterbur are now in perfection by all streams, and could be collected at a trifling expense, even by children. *T. W. Gessing, 44, High Street, Worcester.*

An Article for Cottagers.—Culture of Cabbages.—Trench the ground lengthways in the direction in which the drills are to run, at least one spit deep, with a paring off the surface, which turn over into the bottom of the open trench. The dung should be buried regularly in the bottom of every second trench, the middle of which is to be marked at each end with bits of sticks to mark out the centre of the dung over which the line is to be stretched when the plants are to be set. This kind of digging is by the Scottish cottagers called hough trenching; this mode of culture should be always adopted when littery dung or night-soil is used. The plants may be set as the digging proceeds, or if not the surface should be left rough-ridged until planting time. When Cabbages are to be cut for the kitchen or the market they should not be left too long uncut; cut them with a little slope, and no more than is necessary for cooking, leaving all the under leaves entire for some time. Thus 20 or even 30 crops of excellent Cabbages may be obtained from the ground in one season, viz., from the end of May to the end of February, cutting the heads regularly as they advance to maturity, and as above hinted. Like Brussels Sprouts, each successive cutting will be found of better relish than the preceding one. The Early Vanack is a good kind for this mode of culture, as it is not so ready to burst or crack as the other early sorts, a point of much importance to the cottager, especially during the present state of the Potato crop. *Robert M'Nab, Morningside, near Edinburgh.*

Syringing.—In perusing your leading article at p. 547, I noticed a passage, which is, in my opinion, calculated to somewhat mislead. After describing the condition of continental gardens, you say, "There is not an apprentice with us who would not stare at being ordered to syringe his plants in the morning, or mid-day, at least there ought not to be." Now, what are we to learn from this? I believe, in fact I am positive, that it is the practice of many of the best cultivators of fruits and plants (of course I allude to those grown under glass) at the present time, to thoroughly moisten their plants overhead, as well as the entire internal surface of the structure in which they are grown, in the morning, more especially if there is a prospect of the occurrence of a bright, sunny day. Those who are in the habit of forcing French Beans during winter and spring, know that without an abundant supply of water overhead in the morning and during the day, it would be almost an impossibility to keep down those pests, red spider and thrips. Now, if we admit the correctness of the remarks referred to, then I say that numbers of gardeners at the present time are wrong in their practice. I certainly think that the subject will admit of an explanation, which will be of service, more especially to young gardeners; and I also think that the practice of experienced men is, or ought to be, more relied upon than mere theory. *G. N., Ealing.* [Be practice what it may, it is certain that plants should not be syringed in the morning as a rule. Of course when weather is overcast, or in the early year, when the sun has no power, morning syringing does no harm: but at such times it is not wanted, if the business of the gardener is properly performed. When plants are well wetted, in well-managed houses in the evening, there will have been no loss of moisture during the night, unless by the action of brick flues and a high temperature. But both the latter are wrong. Flues, when moisture is wanted, should be furnished with evaporating pans, and night temperature should be carefully kept down at the time when plants want atmospheric moisture. If a house is too dry in the day, it should be moistened by flooding the floors, or watering the walls, and not by syringing the plants in bright sunshine. With regard to winter and spring forcing, as the sun has no power at that time, it is of no consequence when the syringing is done; but with good management it is not wanted even then, except at night.]

Mosquito Smoke.—In answer to your correspondent, who asks for information as to the plant mentioned by Mr. Fortune as burned by the Chinese to drive away mosquitoes, I may state that I have somewhere read or heard of the plant in question being a species of Artemisia. I wish that I could remember my authority, which I at the time considered to be good; I have already delayed in the hopes of more precise information turning up, and send this in the hope that the suggestion may prove useful. *J. D. Hooker, Kew.*

New Plants.

85. Escallonia densa. *Pl. and Linden.*

"A bushy shrub and small tree, growing in the highest parts of the province of Merida. It is a pretty species, with small, shining, very dense leaves, and having numerous pinkish white flowers. With a little shelter it would probably stand our ordinary winters, for it has often been met with covered with snow, and on the banks of streams which are frequently frozen." Stands in Mr. Linden's catalogue at 15 fr.

We are unacquainted with this plant.

86. Lobelia Ghiesbreghti. *Linden.*

"This elegant little species is a native of Mexico, and was introduced by M. Ghiesbreght. It flowers very abundantly; its pretty red blossoms expand in succession during the whole summer, and continue as late as October." Priced in Mr. Linden's catalogue at 10 fr.

Only known to us from the above announcement.

Garden Memoranda.

Holland House, Kensington.—The flower garden here, which consists of beds edged with Box on gravel, is now as gay as bright-coloured flowers can possibly make it. The beds are for the most part filled with Verbenas, which make a brilliant display and last long in perfection, and their varieties being now so numerous, they comprise nearly every colour which is required for out-door decoration. Among good deep purple sorts, which are still comparatively scarce, the best appears to be Purple King, whose uniform growth and profusion of flowers render it difficult to be superseded for bedding purposes. Some of the best delicate pink kinds with a crimson eye were Jane, Lady Holland, and Etiole de Venus. Louis Philippe is a dark velvety crimson, compact in habit, and good, and Macrantha is a very desirable rosy pink variety. Lady of the Lake and St. Margaret's are well-known kinds, and even where Verbenas are extensively grown, as they are here, the old Tweediana cannot well be dispensed with. White Perfection is employed for white beds, as is also white Campanula, which, if deprived of its decaying blossoms and seeds after the first flowering, will bloom profusely a second time. Œnothera macrocarpa has been brilliant as a yellow bed, but its beauty is now over. Among masses of Calceolarias, one made up of a band of bright yellow on the outside, with an inner band of deep brown and the centre filled with stronger growing pale yellows, had a good effect. Of Heliotropes, Corymbosum, owing to its compact growth, deep rich colour, and the freeness with which it flowers, is the greatest favourite. Scarlet Pelargoniums are cultivated here in great quantities both for beds, borders, and vases. For the last, which are made of Maltese stone, and set at regular distances apart on all the terrace walls, Tom Thumbs are exclusively employed, and when uniformly grown and well flowered, as those here are, they produce, as may be imagined, an effect truly striking. When their blossoming is over, their tops are pruned in, and their roots cut back, so as to allow them to go into small pots, in which they are wintered in a greenhouse in which the fire heat employed is just sufficient to keep out frost, and no more. In beds, Flower of the Day and Robinson's Defiance Verbena were mixed together, and edged with the pretty little Lobelia racemosa; and in a border in front of the Orangery were the following Geraniums, planted in rows, viz.:—Cerise Unique and Compactum in the middle, with Frogmore Scarlet next the house, and two rows of Tom Thumb and one of Mangle's Variegated, and Flower of the Day in front. On the lawn was a good bed of the dwarf deep purple Dahlia Zelinda, edged with a band of white Alyssum. The low terrace walls which divide the parterres from the lawn are covered with crimson China Roses, which are now beautifully in bloom, a condition in which they are more or less all the summer and autumn, even up till frost comes. For ornamental facings for dwarf walls what can therefore be more suitable than this, or even the common China Rose?

The magnificent Orange trees, of which there is an admirable collection here, are now all in the open air; their fresh green colour and luxuriant growth, show them to be in the best of health, and, owing to the bright weather we have lately been experiencing, their young wood has got nicely ripened. The largest of them measures about 10 feet in diameter of head, which is beautifully symmetrical in shape. Several others are, however, nearly as large. None of them have been retubbed for some time. The arches and walls of the Orangery are finely clad with Cobæa scandens, which flowers and fruits abundantly, and permitted as it is in places to festoon from the roof, it has a charming effect. The square pillars which support the roof are covered quite 10 feet in height with Fuchsia corallina, which is at present one mass of blossoms, and extremely ornamental, the long slender branches hanging tier above tier in graceful succession from top to bottom.

Fruit has been a good crop here this year. The orchard has only been planted five years, and it is well sheltered from the north and east. Marie Louise and Crassane Pears are bearing famously as standards; and of Plums, such as Denyer's Victoria, and other good kinds, there have been abundance, small trees yielding more than a bushel each. Gooseberries are also said to have been a heavy crop, and quite free from the blight which has been so common elsewhere this year. Plums are, however, a little affected with it. Wall fruit has also been good. Both Apricots and Peaches on young trees have been plentiful. The latter are on a concreted border, and have proved most satisfactory.

FLORICULTURE.

Wintering Carnations.—It is a fact which I think cannot be disputed that many layers are annually lost by over kindness; being made more susceptible of cold than they otherwise would be by the nursing and coddling they get in frames; and where the plan can be followed, of wintering them under a glass roof with open sides, I would most certainly recommend it. But for those who either cannot or will not be at the expense of such an erection, the old system of protection must suffice. They must, therefore, choose a north aspect for their frames, and put a thick layer of coal-ashes on the bottom, on which rows of bricks must be laid, sufficiently far apart, that the pots may stand just touching each other: the frame should be tilted at bottom, to admit a free current of air, which it is desirable to obtain as long as possible. Brick pits or frames, which are decidedly preferable, should have square apertures, both before and behind, with a sliding panel or door, in order that in rainy weather, when the lights are down, a circulation could not be obtained; and on this I would lay great stress, for being kept too close engenders

mildew, and too often ruins a whole stock. While in their winter quarters, attention must be paid to taking off the lights on every opportunity, and drawing them over again on the appearance of rain. In fact, it must be borne in mind that abundance of air, without unnecessary exposure to cutting winds, is essentially requisite for the health of the layers. During the time they are in the frames, the soil or compost in which they are to be flowered should be well looked after. The heaps should be often turned, and especially in frosty weather, when a vigilant look-out must be kept for wire-worm. The compost I would recommend is two barrowfuls of rotten turf, well broken with the spade; two barrowfuls of very rotten horse-manure, from a Melon or Cucumber-bed; one barrowful of rotten leaves, *i.e.* leaf mould; and one barrowful of road sand. All this should be well mixed and repeatedly turned, so that the incorporation may be complete. The turf ought, every bit of it, to go through the hand, and the lumps be pulled to pieces, to detect the hidden foe; and though only one wireworm may be found, still you may consider yourself amply repaid for your trouble. The soil having been well turned, about a fortnight before the time of planting the layers out, which is generally about the latter end of March, sometimes sooner or later, according to the season, I put plenty of drainage in the pots, and fill them to the rim with the compost, which will then subside before I plant; and, in order that the soil may be perfectly clear, or to make assurance doubly sure, I insert pieces of Carrot and slices of Potatoes, to entrap any grubs or insects which may have before escaped; a more certain way than this, however, has lately been adopted by a friend of mine; he puts about 2 pecks of soil at a time into his side-oven, and, after subjecting it to a heat destructive to vitality, whether in the shape of worms or eggs, he removes it, and subjects another parcel to the same process, till he has sufficient for his use: and in parts of the country where ovens are common, and where, of course, there is a constant and abundant heat, a great deal can be effectually cleaned with no other expense than the trouble. All this may to some growers appear needless, and a trouble which the difference will not repay; but it is punctuality and care in small matters which very often enable the grower of 50 pairs to beat the careless cultivator of 500, and at the same time prevent the loss and mortification of seeing layer after layer of some favourite sort go off in rapid succession. If this then can be prevented, I think it will be acknowledged that no trouble is too great that will accomplish it. I now come to the planting of the layers out in the pots. They should be set a pair in each, and the pots ought not to be less than half pecks. A hornbeam, or other hedge, having a south or south-east exposure, will be found most suitable for them. A wall ought to be as much as possible avoided; such a situation will be found extremely prejudicial, being so liable to draughts and eddies. After having been planted a short time, the sticks may be inserted in the pots, for if delayed, it is very probable the roots may be injured. As the layers grow, or spindle, as it is usually termed, they must be carefully tied up to the sticks with soft worsted, or fastened with Rowland's metallic wire. After they have grown about a foot high, a top-dressing of very rotten cow manure will be found beneficial; and as the weather gets warmer, they must be carefully watered, the soil in the pot never being allowed to get thoroughly dry. As the buds appear, and you have decided which to remove, they may be reduced in number, and the laterals, or side buds, also taken away, in order that all the energies of the plants may be directed towards to those that remain, which will increase their size, if intended for exhibition. The number of these should be regulated according to the strength of the plants; some think that three flowers are enough for each layer to bring to perfection, but five, I think, is generally about the mark. I understand that some cultivators reduce to one, when intended for exhibition. The buds and plants will now be subject to the attacks of various pests. The cuckoo spit is one of them, and is easily seen and removed. The green-fly is more common and troublesome, but may easily be got rid of by using a small bag of India-rubber, filled with Scotch snuff, with which the buds must be dusted very early in the morning, or immediately after rain; the insects will then generally be found clustered together, and a puff or two of snuff destroys them effectually.

Calendar of Operations.
(For the ensuing week.)

PLANT DEPARTMENT.

Conservatory, &c.—The bright dry weather which has prevailed of late has been very favourable for the increase of red spider, and any specimens which are at all inclined to be weakly or sickly should be carefully examined, and if they are found to be at all infested with this pest, immediate steps must be taken to clean them; for if the foliage is allowed to become disfigured now it will be unsightly for months to come. Give air freely, in order to get the young wood well matured, which is the only way of avoiding the attacks of mildew, insects, and all the many ills to which plants with badly ripened wood are subject in winter. Trim and thin the twiners on the roof, so as to admit light freely, particularly over winter flowering plants that have not ripened their growth, such as the Luculias, &c., for such things will now require all the light that can be afforded them; but if they have hitherto been kept closely shaded from bright sunshine, the shading should be gradually discontinued. Preparations should be made for housing or protecting tender plants from heavy rains without loss of time, for it is not safe to calculate upon the continuance of the present delightful weather much longer, and persons who may be under the necessity of resorting to temporary protections, such as skeleton pits, &c., should lose no time in getting these ready, so as to be prepared for the worst. While fine weather continues, however, everything will be better left out of doors, exposed to the free action of the air and the night dews; only be prepared to place them under some protection immediately heavy rains or frosty nights occur. Cold Pits.—The temperature, &c., of these must be regulated in accordance with the wants of the inmates.

FORCING DEPARTMENT.

Pinery.—The whole stock of plants should be carefully attended to with water, giving them a liberal supply, excepting of course those maturing their growth; for, with the bright weather which we are experiencing, there will be considerable risk of a portion of the stock fruiting prematurely, unless they are well supplied with water at the root. Also keep the atmosphere moist by gentle syringings, and frequently sprinkling the paths, &c.; but plants showing fruit should not be syringed overhead until after flowering. Dispense with the use of shading as far as can be done without risk, and expose the plants to all the light possible, to induce fine strong robust foliage, and a stocky habit of growth; for plants of this character are always found to produce the finest fruit. Young plants growing in open beds will enjoy an occasional watering with chilled manure water; and those swelling fruit will also be benefited by a liberal supply of the same. Keep Black Jamaicas and Montserrats intended to show fruit towards the end of next month dry at the root, and expose them to sunshine, to thoroughly check and mature their growth; and if this is properly effected, there will be no danger of their showing fruit at the proper time. Vineries.—If bright weather continues it will be advisable to shade Grapes that are thoroughly ripe and wanted to hang for some time, to prevent their losing their plumpness, which some sorts soon do when kept too warm. Give abundance of air at all times, but where the Grapes are ripe avoid allowing drying currents to blow through the house. Stop laterals in the late house, keeping the foliage regularly exposed to light, so as to have it as healthy and vigorous as possible. Late fruit beginning to colour should be encouraged with plenty of warmth and air; for fruit ripened during this fine weather will be very superior in quality, and will also be more likely to hang than if it has to be ripened by artificial means later in the season, when there will be comparatively little sunshine. Keep thrips in check by repeated fumigations, and use every means to prevent red spider injuring the foliage. Peaches.—As the trees will now be freely exposed to the air day and night, very little attention will be required here for the present. The foliage should, however, be guarded from red spider by occasional washings with the engine, in order to preserve it in health until it has performed its functions, and decays naturally. If any trees have to be removed from the open wall to here this may be done immediately the present crop of fruit is gathered, as the removal, if very carefully effected, will not prevent the wood ripening, and there will be plenty of time for the trees to make fresh roots and get sufficiently established to be able to carry an average crop of fruit next season, if not forced too early. Melons.—The late crops of these, unless wanted for some special purpose, should be pushed on as rapidly as possible, for besides being very uncertain late in autumn, fruit ripened after cloudy damp weather sets in is never good for much. Maintain a brisk steady bottom-heat. Keep the Vines clear of laterals, and look sharply after red spider. Give air freely during the day, but shut up early in the afternoon with a rather high moist temperature, giving a little air late in the evening, if necessary, to prevent damp.

FLOWER GARDEN AND SHRUBBERIES.

It is not improbable that the delightful weather of the last few weeks, and the pressure of other work, &c., may have induced some persons to delay the work of propagation; winter is, however, fast creeping upon us, and every possible dispatch should be used with this work, where it is at all in arrears; for cuttings put in after this time will be difficult to winter, unless very carefully managed, and every possible dispatch used to get them rooted and hardened off without loss of time. Get those that are rooted placed in their winter pots, and treat them carefully till well established, and such as are moderately established in the pots in which they are to be wintered should be freely exposed to the night dews, and stopped, &c., to induce them to form sturdy short-jointed growth. It will be advisable, however, to shade them from bright sunshine for a few hours in the middle of the day, while bright dry weather continues. If any of the beds appear to be suffering for the want of water, lose no time in giving them a good soaking. As stated in a previous Calendar, the present month is a very favourable season for the removal of large shrubs or trees, and preparations should be made for commencing such work immediately the weather may become damp or showery; and where a large amount of this kind of work has to be effected this season, we would not hesitate to commence it at once, for it will be more expeditiously and safely done now than after the plants will have no chance of making fresh roots before winter.

FLORISTS' FLOWERS.

Collect Carnation and Picotee seed as the pods turn brown, leaving a small portion of the stem attached. We usually tie a dozen together, placing the pods in a thin gauze bag, and hanging them up by the stems in a dry airy room; here they keep well till the period arrives for sowing, when they may be rubbed out. Attend to Hollyhock cuttings; do not water too much, as they are apt to rot. Early layered Carnations will be ready to pot off. We like to do it in good time, that the roots may establish themselves; much of the well doing of the layers during winter depends on this. Prick out seedling Auriculas in store pans, about an inch apart. This will be sufficient room to allow them during winter.

HARDY FRUIT AND KITCHEN GARDEN.

If any of the Peach trees are infested with spider they should be well washed with the engine directly the fruit is gathered, but in order to avoid saturating the borders, which would be injurious to the ripening of the wood, endeavour to make a little water serve by using a fine jet and applying it carefully to the affected parts of the tree. Trees that are at all inclined to over luxuriance should be gone over, stopping all strong growing shoots, which will cause the buds left to become plump, and there will be no danger of their starting into growth after this season. Exhausted crops, as Peas, &c., should be cleared away as quickly as possible, getting the ground manured, dug, or trenched, and planted with Cabbage from the July sown beds. But sufficient spare ground must be reserved for early Peas and other spring crops, and such as may require trenching should be selected for this purpose, as there will probably be leisure in course of the autumn and winter for getting such work done. Tie up Endive to blanch, and plant out, in a sheltered warm situation, the late crop; also attend to blanching Lettuce, and plant out the August sown on a warm dry border. A quantity of Kidney Beans should be sown in pots, to be removed in-doors when the weather becomes unfavourable, when, if a proper place can be spared for them, they will bear abundantly, and come in very useful. Attend to Tomatoes, keeping the shoots closely stopped, and exposing the fruit fully to the sun's influence.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending Sept. 14, 1854, as observed at the Horticultural Gardens.

Sept.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind.	Rain.
Friday 8	16	30.221	30.176	67	43	55.0	59	60½	N.E.	[illegible]
Satur. 9	17	30.174	30.139	68	32	50.0	59	61	N.E.	[illegible]
Sunday 10	18	30.191	30.101	68	33	50.5	58	61	N.E.	[illegible]
Mon.. 11	19	30.174	30.092	73	31	52.0	57	60	S.E.	[illegible]
Tues. 12	20	30.016	29.901	81	58	69.5	57	60	S.E.	[illegible]
Wed. 13	21	29.912	29.779	72	58	65.0	58	61	S.E.	[illegible]
Thurs. 14	[illegible]	29.814	29.682	69	50	59.5	59	62	S.W.	.23
Average.		30.071	29.9–0	71.1	43.5	57.3	58.1	60.8		0.39

Sept. 8—Clear; very fine throughout.
— 9—Clear; very fine throughout.
— 10—Partially overcast: very fine; clear and fine at night.
— 11—Dense fog; very fine, quite cloudless; very fine.
— 12—Dense fog; very fine; partially overcast.
— 13—Cloudy; much overcast, with slight rain at night.
— 14—Cloudy; cloudy with small rain at intervals; overcast.
Mean temperature of the week, 1-5th deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending Sept. 23, 1854.

Sept.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 17	68.6	46.5	57.5	10	0.90 in.	1	4	5	1	[illegible]	[illegible]	[illegible]	[illegible]
Mon. 18	66.1	44.9	55.5	13	0.84	1	[illegible]	2	1	[illegible]	[illegible]	[illegible]	[illegible]
Tues. 19	66.8	45.7	56.2	12	0.60	3	5	3	1	[illegible]	5	[illegible]	[illegible]
Wed. 20	66.7	44.9	55.8	13	0.45	—	6	2	3	3	[illegible]	[illegible]	[illegible]
Thurs. 21	66.3	45.3	55.8	14	0.50	2	3	5	2	6	[illegible]	[illegible]	[illegible]
Friday 22	67.0	46.3	55.7	12	0.40	—	2	7	[illegible]	5	[illegible]	[illegible]	[illegible]
Satur. 23	65.8	46.2	56.0	14	1.21	—	6	5	11	6	[illegible]	[illegible]	[illegible]

The highest temperature during the above period occurred on the [illegible], 1843—therm. 84 deg.; and the lowest on the 17th, 1840—therm. 28 deg.

Notices to Correspondents.

Books: *T B B O.* We have requested the publisher to send you a prospectus by post.—*A S.* We do not know.—*A B.* Brown's "Forester."

Church Heating: *A Churchwarden.* Although our opinion of the principle remains unaltered, yet heating by warm water is so much cheaper than it was, and is so much better understood than the other, that we advise it in preference. We should use 4-inch pipes. Apply for tenders to the advertisers in our columns.

Crickets: *Reader.* Treacle spread about half an inch thick in the bottoms of saucers is said to make a good trap for them. They stick fast in the treacle, and are thus easily secured and destroyed.‡

Names of Plants: We have been so often obliged reluctantly to decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*Lightcliffe.* Ophioglossum vulgatum.—*A A.* We have repeatedly said that we cannot undertake to name plants not in flower. 1 seems to be some Solanum, and 2 some Plumbago. If on another occasion you receive no answer, you will know the reason why.

Potatoes: *H M.* Your variety (alluded to last week, at p. [illegible]), which you have found to be fully a fortnight earlier than the Ash-leaved Kidney, is the Fortyfold, a well-known kind, and a good cropper.‡

Potato Seed: *Sub.* Sow it in April or early in March, on a slight hotbed in rows 4 inches apart, adding a little soil between them as the plants advance. Give air freely on fine days, and water gently. As soon as all danger of frost is over, plant them out in rows, placing the plants pretty thickly in the rows. Nothing more is needed, but to attend to them in the usual way.‡

Preserving Fruit: *Sub.* The recipe you seek for is, we presume, Mr. Lovejoy's, which is as follows: "Pick the fruit from the stalks; put them into the bottles. Put one drachm of alum into four gallons of boiling water; let it stand till it is cold; then fill the bottles; bung them tight; then put them into a copper of cold water, and heat it to 176 degrees. Then tie them over with bladder and seal them." ‡

UPPER PERUVIAN GUANO ON SALE.—Apply to W. & J. RAVENSCROFT & Co., Liverpool.

Extract from a Report of Dr. Ure, F.R.S., &c.

"Your Upper Peruvian Guano is worthy of all commendation."

Extract from the Report of George Layton, Esq.

"RAVENSCROFT'S Upper Peruvian Guano will last longer, and eventually do more good than Gibbs', or any other I have ever tried. It possesses the very finest qualities of both Guano and Bone Dust."

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures, Linseed Cakes, &c.
WM. INGLIS CARNE, 10, Mark Lane, London.

PEAT CHARCOAL.—The undersigned have a cargo of this valuable Deodoriser and fixer of Ammoniacal matter, on Sale. Apply to MARK FOTHERGILL & Co., 204A, Upper Thames Street.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7*l*. per ton; Superphosphate of Lime, 7*l*.; Sulphuric Acid and Coprolites, 6*l*.
Office, 69, King William Street, City, London.
N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent. of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and dispatch.
Gentlemen desirous of receiving instructions in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

THE LONDON MANURE COMPANY beg to call the attention of Agriculturists to their WHEAT and CLOVER MANURES for present use. The London Manure Company also offer Genuine Peruvian Guano, Nitrate of Soda, Concentrated Urate, Superphosphate of Lime, Fishery and other Salts, and all Artificial Manures of value. The London Manure Company guarantee Peruvian Guano and every Manure they supply to be strictly genuine. EDWARD PURSER, Sec.
Bridge Street, Blackfriars.

BALANCE OF FACTS IN FAVOUR OF
RICHMOND AND CHANDLER, who have, in competition with the best selected CHAFF CUTTERS of the most celebrated makers in the trade, carried off the highest prizes against all comers.

COPY OF TESTIMONIAL.

"Early Court, Reading.

"GENTLEMEN,—I beg to hand you a cheque for your Corn Crusher; I must add, at the same time, that nothing can exceed the goodness of the Machine. I have found in it all I can wish, and, moreover, a very superior finished Machine, and a pattern for other makers. (Signed) "GEO. SHACKELL."
"Messrs. RICHMOND & Co."

Address.—RICHMOND & CHANDLER, Manchester; and South John Street, Liverpool.

CORN CRUSHERS AND CHAFF CUTTERS.—A large display of the best Farm Implements shown in operation. Price Lists sent free on application.
BURGESS AND KEY,
103, Newgate Street, and 52, Little Britain, London.

PUMPS AND HOSE PIPES FOR GARDENS AND LIQUID MANURE.—BURGESS & KEY'S Pumps were highly commended by the Royal Agricultural Society of England at Lincoln. Price Lists sent free.
103, Newgate Street, and 52, Little Britain, London.

CHURNS.—ANTHONY'S PATENT AMERICAN CHURN.—Since 1849 this Churn has obtained all the Prizes awarded by the Royal Agricultural Society of England. At the trial before the Judges it made in 10 minutes 4 lbs. 6 oz. of Butter from 4 quarts of Cream, being 8 oz. more than any of the other Churns from the same quantity and quality of Cream.
103, Newgate Street, London.

THE CONICAL HOT-WATER BOILERS, as invented by John Rogers, Esq., are only to be obtained of JOHN SHEWEN, IRONMONGER, Sevenoaks, Kent.
Contracts given for Heating.

STEPHENSON AND PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.
From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

TO FLORISTS AND OTHERS.
J. JONES, IRON MERCHANT, has always a great variety of CONICAL and SADDLE BOILERS in STOCK; also Fire and Furnace Bars, Ornamental and Plain Supply Cisterns, Double Doors and Frames, Furnace Grates, Soot Doors, Hot Water Pipes, Elbows, Tees, Syphons, Throttle Valves, Stop Cocks, Flange and Socket Elbows, &c.; also Trough Pipes. Drawings and prices of the above, on application to J. JONES, Iron Bridge Wharf, No. 6, Bankside, London, near the Southwark Iron Bridge.

BUDDING'S LAWN MOWERS, with SAMUELSON'S registered improvements, *lightening the draught fully one-half*, and enabling an unskilled labourer to make neat work; free from liability to choke, or get out of order. May be had of all ironmongers in town or country, or from the Works, Banbury; delivered free in a packing case to any station on the North-Western and Great Western Railways. Testimonials forwarded on application.—Britannia Works, Banbury.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.
THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, water does not soak through it, to give a fall from the middle of the path towards the sides.
The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.
Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

SMITHFIELD CLUB, 1854.
CHRISTMAS FAT CATTLE SHOW.—The Annual Show of Fat Cattle, Sheep, and Pigs, will take place on the 5th, 6th, 7th, and 8th of December 1854, at the Carriage Bazaar, King Street, Portman Square, London.
All Certificates must be returned to the Honorary Secretary on or before Saturday, the 4th NOVEMBER, 1854.
Prize Sheets, and the necessary Printed Forms of Certificates, are now ready, and can be obtained on application to
B. T. BRANDRETH GIBBS, Hon. Sec.
Corner of Half-Moon Street, Piccadilly, London.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.
Principal—J. C. NESBIT, F.G.S., F.C.S., &c.
The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.
Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.
PATRON—His Royal Highness PRINCE ALBERT.
PRESIDENT OF COUNCIL—Earl BATHURST.
PRINCIPAL—Rev. J. S. HAYGARTH, M.A.
PROFESSORS, &c.
Chemistry—J. A. C. Voelcker, Ph.D., F.C.S.
Zoology, Geology, and Botany—James Buckman, F.G.S., F.C.S.
Veterinary Medicine and Surgery—G. T. Brown, M.R.C.V.S.
Surveying, Civil Engineering, and Mathematics—F. Armstrong, C.E.
Manager of Farm—G. Austin.
Students are admitted after the summer and winter vacations, also in April and October. The Annual Fees for Boarders vary from 45 to 80 guineas, according to age and other circumstances. The Fee for Out-Students is 40*l*. per annum. The College Course of Lectures and Practical Instruction is complete in one twelvemonth—though a longer course is recommended. There is a department for general as well as for agricultural purposes. Prospectuses and information can be had on application to the Principal.

The Agricultural Gazette.

SATURDAY, SEPTEMBER 16, 1854.

MEETINGS FOR THE ENSUING WEEK.
THURSDAY, Sept. 21—Agricultural Imp. Society of Ireland.

FROM time immemorial farmers have been familiar with the advantages of carefully attending to the ripening and harvesting of that portion of the crop destined for the seed of next year. The middle of a ridge, for instance, may make very good seed, while both ends the reverse, or *vice versâ*; and to reap and carry hurriedly the whole into one stack, mixing the good and bad together, is obviously contrary to sound practice.

They have also been familiar with the facts that a large portion of what is sown never vegetates, however carefully covered, especially in seasons like that of 1853 in reference to the quality of the seed; that much of what does so, often fails to arrive at maturity; and that adversities of this kind are more severely experienced in bad climates than in good. Hence the common practice of testing by sowing a given number of seeds in flower-pots or boxes within doors, or under a sod at the sunny side of the corn-stack, in order to ascertain the proportion which may fail. Whatever per-centage does not germinate, a similar proportion of seed requires to be added to the ordinary quantity sown—a proportion greater in bad climates than in good.

The imperfect organisation of the seed may be the cause of its unproductiveness, or it may be injured in the harvesting, stack-yard, or threshing by various other causes. Examples of the latter kind are generally known from observation, and are therefore shunned as much as possible; but those of the former are less perceptible, and though often anticipated or guessed, as it were, from outward appearances, and the kind of weather about flowering and ripening, yet the most satisfactory method of examining quality is by experiment as above; and even with this precaution the greatest circumspection is necessary, for seeds of a very weakly constitution sometimes germinate more favourably than sounder ones, and yet the young plants hardly appear above ground when they instantly die. In this respect the vegetable kingdom is similarly circumstanced with the animal, the first period of life being liable to many constitutional casualties.

Even after an experiment has been made, and the number of barren and productive seeds fairly ascertained, under given circumstances, such circumstances, in nine cases out of ten, are very different from what seasons subsequently exemplify, so that the wise maxim of "making provision for the worst" has to be adopted. Take the present season as an illustration—where the seed was, in many cases, but of a second-rate quality. No one will say that the same quantity of seed ought to be sown next year, under the glorious harvest we have experienced, as was sown last year.

High farming and thin seeding go together, producing results incredible almost to all save those who have reaped them; but the practice requires if possible better seed, in order to avoid blanks, than is needed under thick sowing, and therefore more attention at this season to its selection and harvesting. If the best samples are secured in harvest, and stacked and threshed with equal care, a very small quantity will suffice in seed time, if the soil is properly cultivated and prepared for receiving it.

WE have received calculations from Cirencester of the expenses of reaping by machinery, which are certainly not very encouraging to the purchasers and employers of reaping machines.

The week before last, at the Royal Agricultural College, M'CORMICK's reaper was used for the cutting of a field of 17 A. 1 R. 11 P., and the following calculation has been handed to us of the actual expense incurred in the operation. It is based upon the following data:—

One horse per diem	do.	2s. 0d.
One man	do.	3s. 8d.
One boy	do.	1s. 0d.

We should usually credit a horse 2*s*. 6*d*. for a day's work, but as the work with the reaper is rather too severe for the same horses to go on with it for the whole day, the farmer is charged with 3*s*. 6*d*. a day for a single horse, to cover the expense of an occasional change; for while two horses cannot well do the whole work of drawing a reaper for ten hours, it is not exactly work sufficient to employ four, as those which have drawn the reaper in the morning can be employed in the afternoon in some lighter work; with this explanation we give the calculations of the expense of cutting, binding, and stooking the field of Wheat on the Royal Agricultural College Farm, of 17 A. 1 R. 11 P.:—

			£	s.	d.
August 19	2 horses, 7 hours	... ...	£0	4	11
—	15 men, 6 hours	... ...	1	13	0
22	2 horses, 5 hours	... ...	0	3	6
—	14 men, 5 hours	... ...	1	5	8
23	2 horses, 7 hours	... ...	0	4	11
—	12 men, 7 hours	... ...	1	15	11½
—	2 boys, 7 hours	... ...	0	1	4
—	1 man, 5 hours	... ...	0	1	10
—	1 boy, 5 hours	... ...	0	0	6
24	2 horses, 3 hours	... ...	0	2	1½
—	14 men, 3 hours	... ...	0	15	3½
—	4 boys, 3 hours	... ...	0	1	2½
			£6	11	4½
Use of machine (costing 20*l*.) for 20 hours, at 5 per cent. per annum		... ...	0	0	1½
			£6	11	6

The cost per acre on this calculation amounts to 7*s*. 7*d*. and a fraction. The time of the horses is calculated from their leaving their stable to their entering it again; and the time reckoned for the men was the time they were actually in the field; while the 20 hours' work of the machine was the time during which it was occupied in cutting.

It is to be remarked on this, that 22 hours were occupied in the reaping of 17 acres of land. We do not understand what the 15, 14, 12, and 14 men employed on the successive days were about all this time. Is it meant that 14 men are wanted to tie and stook after a machine which does not cut one acre per hour? The cost calculated may be, as the *Journal* from which this statement has been sent us puts it, *below* the truth, when we come to consider how much more of the Wheat cut by machine is not tied at all, but raked together and threshed out as tail and refuse corn; but it is much *above* what under ordinary management the expense would amount to, if the tying and stooking were performed at the rate at which it generally stands.

There never was a more magnificent harvest season than the present, hitherto, and one great difficulty which reaping machines experience—viz., the clogging of the driving wheels owing to the dampness of the surface soil, notwithstanding the fitness of the straw for the sickle, has been hardly felt this year. We shall be surprised if we do not hear some more favourable reports of their operation than either that of Mr. HALL, or this from Cirencester.

THE fact that grazing stock after this season feed more industriously than previously, is not undeserving of notice. A dairyman's herd of some 12 or 14 cows and a bull, are just now grazing in an enclosure in front of our window, where they have been so for the season. In the early part of it they were to be seen more frequently lying, or when feeding less actively engaged, or not browsing in such haste. At present they are obviously in better condition than at the former period, and yet apparently more hungry, and even starved, as it were, and therefore eating more greedily. The bite is rather shorter than it was, but closer and thicker, and therefore insufficient to account for differences. In an adjoining close, occupied by a butcher who has some five or six fat bullocks, and about 30 southdown sheep in it, we find a similar state of things, and might quote hundreds of acres within sight corroborative of the same. In each case the ox or sheep not only feeds more actively now than formerly in June, but longer. How are such circumstances to be accounted for?

The causes are many, and, although less or more influenced by the peculiar circumstances of each case, are yet of a general character. For example, there is a difference in the quality of the Grass, irrespective of the quantity, and a difference in the condition of the alimentary system consequent on the change of season, and probably also an instinctive disposition on the part of nature to make provision for coming wants, or lay up a store of fat for winter use. The first of these causes is no doubt the most efficient and important.

From time immemorial farmers have been familiar with the fact that Grass is more nourishing in the early part of the season than at a more advanced period, and consequently less of it is required to produce a given effect or uphold the animal system at a given weight. At the first period the growth of the Grass may be slower, from the absence of moisture and presence of greater drought, than at the latter, and yet support a larger stock. In the one case, bullocks and sheep will lay on fat rapidly, without the addition of artificial food, if they are only sheltered from the mid-day sun, while in the other such cannot be accomplished without a little cake or corn, even with a fuller and fresher bite.

They are also familiar with the fact that Grass grown after July and August, as the aftermath, goes into little bulk when made into hay, and that this does not wholly arise from the absence of stem in the latter case and abundance of leaves, but from the leaves themselves containing more water. And besides deficiency of weight, the quality is also inferior, proving that there is a difference between the other constituent elements at the two periods, besides a difference in the quantity of water, which may have a greater effect upon the physical wants of cattle than is indicated by the mere weight of solid and liquid matter consumed; for if a decrease takes place of any individual element absolutely necessary for the building and keeping in repair the body, to the extent say of 50 per cent., then twice the quantity of Grass will require to be consumed before a sufficiency of this element can be obtained, and, consequently, the excess will have to go to the ordinary waste or offal not worked up in the animal system at all, but rejected in the fæces; and in proportion to the per centage wanting, will the waste be, or the bullock ceases to fatten at the same rate, and the cow to give an equal quantity of rich milk.

The nature of the season, the fertility of the soil, and climate of the district, must for similar reasons exercise a peculiar influence upon the quality of Grass at both of those periods. Instances may occur, that Grass grown in June may not be more nourishing than the produce of September. A warm September, for instance, with a sufficiency of moisture, and an ample supply of manure, may produce richer Grass than a cold, wet June. It is a well-known fact, that Grass grown in some of our southern provinces will fatten a bullock as fast, and even faster, in September, than what is grown on an equally fertile soil in the north in June—a result illustrative of the influence of the weather and climate upon the quality of Grass.

LOIS WEEDON SYSTEM.

It may be somewhat presumptuous in one who, in whatever degree he may be an inquirer, does not pretend to science, to dispute on any point with Professor Anderson; yet I trust I may be permitted, with due diffidence, to consider the views he has taken of the Lois Weedon system, as to its supposed exhausting effects; vide *Agricultural Gazette*, p. 490. His words are—

"I do not conceive that the method he (Mr. Smith) advocates is likely to come into general use, nor do I think it possible that it can be carried out without, in the long run, impoverishing the land. Conceal it as we may, frequent tillage is only a means of bringing the valuable constituents of the soil rapidly into an available condition; and sooner or later the supply contained in it must be diminished or exhausted. Mr. Smith seems to think that something is absorbed from the air—probably ammonia and nitric acid; but even this would not suffice to counterbalance the loss continually going on. The whole quantity of nitrogen deposited annually by the rain on an acre, in these forms, amounts, as has been stated in a former part of this paper, to 20 lbs.; but a crop of Wheat removes from 50 lbs. to 60 lbs. of that element. The whole matter comes to this:—There are two methods of increasing the produce of land—tillage and manuring; and that system cannot be a good one which relies upon the one to the exclusion of the other."

The first part of this sentence of Professor Anderson would lead us to infer that he supposes, in some not distant period, by Mr. Smith's tillage, an exhaustion of the inorganic constituents of the soil, for it is they that are brought by it rapidly into an available condition; but this can scarcely be his meaning, for in a previous observation of his, in the same article, he states as "the unequivocal fact that all fertile soils contain their valuable mineral constituents in quantity sufficient to supply an almost endless succession of crops." Liebig reckons the supply by thousands. Indeed Mr. Anderson glides immediately from the sweeping declaration of the valuable constituents of the soil becoming diminished or exhausted by this frequent tillage, and resolves his argument into the mere want of sufficient nitrogen. Admitting the statement of the Professor with respect to the amount of nitrogen deposited by rain as correct, though much under the estimate of Liebig, Mr. Smith, and I believe all others, still we are to recollect that it falls upon the surface of every acre of the globe, while, possibly, not one acre in a thousand bears a crop of Wheat, nor even, let Mr. Smith's plan meet with what success it may, can we expect to double the number of acres under that crop. Now, over much of this surface, the nitrogen which is brought down by rain falls only to evaporate and pass again into the air, while in the fields so tilled as Mr. Smith's, nearly the whole that falls is imbibed and retained. Carried by the currents of the air, the ammonia not absorbed is brought over those lands which have drunk in already that which was previously superincumbent, and which is prepared to receive it. But I am not disposed to admit that any measurement of ammonia in rain water can convey to us even an approximation to the true quantity which a soil receives from the air; new stirred earth must, even in the absence of moisture, lay hold of any ammonia floating on the surface, it must also imbibe that which falls on it in dews. But is it not possible—can it be otherwise—that in the various combinations in the soil in which oxygen enters, and to many of which the presence of water is necessary, the nitrogen of the air and hydrogen of the water may be liberated, and, in their nascent state, unite and form ammonia, in which state nitrogen is believed to be taken up by plants. If this surmise is well founded, the frequent tillage of Mr. Smith will, in facilitating the combinations of oxygen with the mineral constituents of the soil, set free much nitrogen and hydrogen; and so, instead of exhausting the soil of ammonia, increase the amount of it, while the minute division of its clayey particles will increase its retentive powers.

It is shown that Mr. Smith has had, in his field, ten successive crops of Wheat; according to Professor Anderson's estimate they have used up from 300 lbs. to 400 lbs. of nitrogen beyond what the soil has received from the air. Mr. Smith says, "When I first double dug my field, I found the staple but 5 inches deep, the subsoil of four-fifths of the land being yellow clay, the rest a mixture of sand, gravel, and clay." And it does not appear, and we have no reason to suppose that its organic condition was other than the ordinary one of land under tillage, in which the supply of manure or nitrogen had been merely sufficient to give remunerative crops for a very limited period. But Mr. Smith has had ten crops of Wheat, fully up to the average of his neighbourhood; and as they indicate no diminished fertility in the soil, his field must be supposed still to contain sufficient nitrogen for a great number of crops. Can we credit such an accumulation of nitrogen? Can we imagine that the organic matters in his field, under such favourable conditions for their decomposition, are yet to be broken up? Can we believe "Mr. Smith is now spending the dormant capital of his land?" But should it be so? Would not a very small outlay in nitrate of soda restore to his Wheat field its used-up nitrogen?

Professor Anderson says, he does not conceive that Mr. Smith's method can come into general use; to me it appears to offer such inducements to the farmer that nothing but that inertness which seems to be equally a property of mind as of matter, and which ever stands in the way of change and improvement, will delay its progress. I do not mean to say that the details which Mr. Smith thinks indispensable must be preserved, but they may and I think will be modified, while the principle of perpetual fallow shall be maintained. But surely, in what are commonly called Wheat soils, and in soils which may be rendered so, the profitable culture that gives ten crops of Wheat in succession, even were no more to be obtained, will induce trials which must inevitably lead to its general adoption; and the more so when to this is added the profits arising from the more than ordinary green crops produced by the annual application to them of the whole of the manure raised on the farm, and on which hereafter as many more valuable crops of Wheat may be grown, while the worn out, if worn out it may be, Wheat ground will then produce its future magnificent green crops. *J. M. Goodiff, Granard.*

P.S. Mr. Anderson is not quite correct in inferring that Mr. Smith's system excludes manuring. What is manure? Is it not that which supplies food to plants? What is the disintegration of the soil which permits such an action of the atmosphere as compels its mineral constituents to give themselves to the use of the vegetable world, which facilitates the passage of air to the roots of plants? Mr. Smith says in this he differs from Tull; "I do not refuse manure. The essence of the scheme I propose is, not that it dispenses with manure, but that with manure, where required, it enables the farmer to draw from half an acre of land a produce beyond his now average produce from a whole acre."

FISH MANURE.

For many years past M. Molon, a French gentleman, farming land in the department of Ille and Vilaine, has made use of fish for manure. For the purpose of diminishing the bulk of the manure, and of obtaining as concentrated a substance as possible, his plan is to dry the fish, and to reduce it to powder. The following method is that which several years' experience shows to be the best.

The fish is first disintegrated in a copper with double walls, by the action of steam of several atmospheres of pressure, introduced between the walls. After the water and oil contained in the fish have been allowed to run off, the residue is submitted to considerable pressure, and the cakes thus obtained are then rasped down. The broken fish is next spread in thin layers on canvas stretchers, which are placed in stoves constructed for the purpose, and are there exposed to currents of hot air. The process of drying is by this means quickly completed, and as the dried fish is taken from the stoves it is ground to powder in a mill. When pulverized the manure is ready for immediate use, but may be kept for any length of time. Analysis and experience both show that the powder possesses all the properties of a good manure. Large quantities have now for two years been used by other farmers, and the result has always been superior to that obtained from Peruvian guano. The oil derived from the fish is saleable, and the price obtained for it enables the manufacturer to deliver the manure to the farmer at a rate sufficiently low for agricultural purposes. *Comptes Rendus.*

APPLICATION OF THE REFUSE OF TOWNS: LIQUEFIED MANURE FARMS.

In reference to the proceedings at the recent meeting of the Liverpool and Manchester Agricultural Society, and to one of the important topics of discussion there, we have been favoured with the following information, which, we believe, will prove acceptable to a large class of our readers:—During the last week, Mr. Chadwick, *en route* to the north, in company with Mr. Mechi, has visited some new works in progress for the application of the refuse of towns, and farms worked on the new system of liquefying the solid manures, and applying them in the liquid manure, of which some account may be of interest.

In 1840, when Mr. Chadwick first commenced his investigations of the means of improving the health of towns, having established the principle that the cheapest and best mode of removing the refuse of towns was by smooth channels instead of rough, and in suspension in water, the next difficulty was how to deal with the foul accumulations. Mr. Smith, of Deanston, proposed to apply the sewerage to agricultural production by the method of the water meadow, or submersion, which has been in use nearly half a century near Edinburgh, with extraordinary success in productiveness, four and five-fold crops being obtained by the tenants, and rentals of 20*l.* and 30*l.* per acre by the owners. But when Mr. Chadwick, as the Government commissioner, visited Edinburgh, the town council preferred sanitary objections against that method, and he reported generally in their favour. These objections have been confirmed on further investigations, as set forth in the blue books, as occasioning the ague and typhus in men, and the rot in sheep. In Lombardy, the formation of water meadows within six miles of towns is forbidden. On further investigation, Mr. Chadwick was led to propose, as a means of obviating entirely the sanitary objection to the formation of sewer lakes or marsh surfaces near towns, the systematic application of sewer and other manures by the means of a flexible hose and jet, worked by steam power, propelling it through underground pipes, or by gravitation. He induced the late Mr. James Thomson, of Clitheroe, to make an experimental trial of the distribution of sewerage from his works by this method. He afterwards promoted trial works of distribution by steam power from the Worsley canal, conducted with the aid of Mr. Philip Holland and Mr. Joseph Whitworth, of Manchester. He afterwards promoted similar trial works under the Metropolitan Sewers Commission, in London, of which an official account was given and circulated amongst agriculturists.

He obtained Mr. Huxtable as one of his first disciples. Mr. Smith, of Deanston, became a convert to the new practice, and recommended it to Mr. Harvey, of Glasgow. Mr. Kennedy, of Myer Mill, in Ayrshire, then adopted it, and was followed by Mr. Telfer, of Ayr. The Duke of Sutherland directed an examination of Mr. Kennedy's very complete works, and, upon the report, has had a new farm laid down on the same principle, at Trentham. Mr. Harold Littledale, of Liverpool, has laid down a large liquid-manure farm at Birkenhead. The results of all these and other works were published by the late Board of Health in "Minutes of Information," which have been adopted as text books for the agricultural school at Glasnevin, in Ireland, where a model farm is laid out on this principle; and have been translated for official circulation on the continent. Mr. Mechi followed next as a practical convert, and reports that the system has enabled him to turn his balance-sheet in the right direction triumphantly.

The new practice does not consist merely in the application of the natural liquid manures, such as urine, but in the liquefaction of all the solid manures. In the Minutes of Information it is shown that one load of stable manure put in water, and applied in solution or suspension, will either fertilise an area of five times the extent fertilised by the same quantity of solid manure form, or give a five-fold fertility to the same area. It was imagined by Liebig himself that liquid manure would be washed out by the first shower; but the experiments on the Worsley canal showed the line of the flaxen hose, through which the manure transuded, in excess during the second year. Mr. Kennedy, of Myer Mill, goes on pumping liquefied manure upon his fallows, during the winter, and it shows the quantity pumped in the fertility of the succeeding crop. Instead of single dressings, as under the old system, 10, 12, or more are given under the new system, and the pumping with graduated supplies of food is always going on. Mr. Mechi throws into his tank or cauldron, dead horses and dead cows, which are dissolved, bones and all, and reappear as flesh-producing corn. A similiar use is in preparation for the dead dogs and cats which now pollute the water and the air of towns.

The local boards of a number of towns under the Public Health Act are now struggling with the difficulty of obtaining land for applying, by the new method, the sewerage of their districts. When the commoners can be settled with, common and Lammas lands will be used; new works are however in progress in 13 towns. The first instance of their completion is at Rugby. The outfall of the town sewer was unavoidably carried into a stream before the mansion of G. R. Walker, Esq., and he was led to pay attention to the serious prospective nuisance and the means of getting rid of it, when he was advised that the most effectual and beneficial means of doing so was to apply it to his own land by the method of pipe distribution. After visiting the farms of Mr. Kennedy and Mr. Telfer at Ayr, and examining also that of Mr. Mechi, he made an offer, which was accepted by the town, for the whole of the sewerage for 20 years. When visited on Tuesday it was found that between 500 and 600 acres were under irrigation. Seven miles of pipe had then been laid down, and five hydrants were kept constantly at work for the distribution by steam-power. Mr. Walker assured Mr. Chadwick that the nuisance was entirely abolished, and that he was so perfectly satisfied that he was about to extend the area irrigated to about 700 acres, which would fully use the sewerage from 700 or 800 houses. The results in the improved quality and increased quantity of the Grass, and the line of irrigation, were perceptible at a distance, by the resort of the sheep thither to feed by preference.

The next works for irrigation with town-manures, inspected by Mr. Chadwick, accompanied by Mr. Mechi and Mr. W. Wilmot, were the new works just completed for Mr. Worsley, of Platt Hall, Rusholme, near Manchester. The local board of health of the suburban district of Chorlton had been compelled to carry their outfall sewer into the stream which passes through his park and before his mansion. He too was advised, and adopted the advice, to dissipate the nuisance by taking up the sewerage before it came into the stream, and distributing it by pipes and

jets upon his land. This land had been previously prepared by under drainage for its reception; and the Rush had been dislodged from its primitive seat as denoted by the name of the place. A small steam-engine of four-horse power was at work, forcing the sewerage through underground pipes, and its distribution was going on through a gutta percha flexible hose upon about 70 acres of meadow land. The drainage works for Rusholme were commented upon as imperfect, and as supplying an inferior quality of sewerage for comparison.

On Tuesday afternoon, Mr. Chadwick and Mr. Mechi attended a gathering of some of the principal landowners of Cheshire, at the farm of Mr. W. Wilmot, at Hulme Walfield, near Congleton. This farm had been laid down upon the new principle. When taken in hand by Mr. Wilmot, it was an old exhausted dairy farm. It consisted of 120 acres, of which 16 were laid down in corn. It only kept 23 beasts, and the corn land yielded 23 bushels. Mr. Wilmot drained it. With the stream of drainage water obtained, he works an hydraulic ram, forcing a portion of the water to a tank on the top of a cattle shed. With this water, and by means of hose and jet, the dung is constantly removed and cleared away into a contiguous manure tank, which receives also the urine. The whole is diluted, and distributed over the fields by wooden pipes (Mr. Chadwick and Mr. Mechi avowed their preference for iron, notwithstanding the lower first cost of the wood), at a pressure of 90 feet by a flexible gutta percha hose and jet.

Forty acres are now laid down in corn, and 10 acres in market garden for the supply of Congleton. The crops of corn, Mangold, Beans, and Celery, were splendid and unrivalled. Mr. Mechi acknowledged that some of the crops exceeded his own. The yield of corn had been increased in quantity from 22 bushels to 45, and the others in the like proportion as to quantity, and improved greatly in quality. In the place of 23 beasts, Mr. Wilmot is now enabled to keep 100. On the following day, the judges at the agricultural meeting at Congleton awarded to Mr. Wilmot a prize for these irrigations. The outlay for the drainage works was about 5*l.* per acre, and for the irrigation about 2*l.* per acre. The additional value of the land estimated for these improvements was more than 1*l.* per acre per annum.

Mr. J. May, of Macclesfield, stated that he had laid down a small farm on the new principle, and parties were considering of the application of the sewerage of the town.

The results spoken of by Mr. Alderman Neild, at the Lancashire agricultural meeting, as having been obtained on his farm from the use of liquefied manure, were obtained by manure distributed by the water-cart. In the Minutes of Information, it is stated that the comparative expense of the distribution of 15 loads of solid manure from about a mile of distance was, by cart, 1*l.* 7*s.*; of 15 loads by water-cart, including the expense of poaching the land, was 18*s.* 9*d.*; and of 15 loads of liquid manure, by short hose, from a stand pipe (as at Mr. Worsley's), was only 6*d.* This reduction of the expense by the new method of distribution facilitates repeated applications to be made of the manure, and also enables applications to be made of plain water. The expense of a watering equal to a thunder shower, where there is water, is little more than 6*d.* per acre. Mr. Mechi stated at the meeting that if he had more water he could use it, and he acknowledged that if, instead of 24 inches of rain, he had 44, as in Lancashire, it was so much additional power with drained land, for which he would be willing to pay an additional rent. In the evening, it was matter of observation at Mr. Wilmot's that his land was free from the mist which distinguished the surrounding land which was undrained. *Manchester Guardian.*

AGRICULTURAL EDUCATION IN FRANCE.

[Our able contemporary the *North British Agriculturist* has lately published some valuable papers on Agricultural Education in France from a correspondent in that country, the following being his report on the principal regional school, that of Grignon, about 20 miles from Paris.]

The period of education extends to three years. The students at entry are generally from 17 to 20 years old. The course commences in November and extends over the whole year, with two short vacations of two weeks each. Before entry they are examined upon arithmetic, the four first books of geometry, the general properties of bodies, the thermometer and barometer, geography. They require also to write an essay, to show their proficiency in grammar and orthography. During the year they are examined each fortnight by an assistant to the professor upon the subject of the previous lectures, who gives them a note at the end of each year, when they undergo a general examination by each professor for passing to the superior division. At the end of the third year they receive a certificate from the Minister of Agriculture, if the last examination has been satisfactory. The examination is done principally by having subjects connected with agriculture given to them to write essays upon—such as irrigation, drainage, the construction of farm buildings, &c. Each year the students pay the sum of 30*l.* When the students can show that their parents are unable to support them at the school, they receive from the Minister of Agriculture one half, and also from the Departmental Council one half; this being granted only when the student passes a satisfactory examination at entry. Sometimes the sum is extended to 40*l.*

The "personnel" of the establishment is composed in the following manner:—one director, one sub-director, five professors, five repetiteurs, assistants to professors, one "econome," taking charge of the food, clothing, &c., of the establishment; one assistant for direction, secretary, treasurer, a clergyman, one master of practical farm operations, with two inspectors.

The first professor lectures upon rural economy and agricultural legislation; the second upon practical agriculture; the third upon "Zootechnie," or economy of cattle; the fourth on botany, chemistry, and geology, applicable to agriculture; the fifth, rural engineering, comprehending irrigation, draining, rural buildings, land surveying, &c. Each professor is assisted by a "repetiteur," who explains to the students the subject of lecture, when they feel any difficulty in following the lecturer. They also demonstrate, examine the students, and see that their note-books are well kept.

The professors are not required to live at Grignon, but all the "repetiteurs" and students require to board and lodge in the establishment. The repetiteurs and students take their meals together. The students sleep in large rooms, small divisions of 3 yards square being set apart for bed and other furniture. The divisions are of wood 3 yards high. The entrance is shut by drawing a curtain. There are attached a library, a museum of physics and chemistry, and all that relates to the "region;" accordingly, the geology, zoology, botany, and agricultural products are represented. Each professor has a collection for illustrating his lectures.

The students are expected to be up by half-past 4 o'clock in the morning, a bell being rung at that time. Breakfast at half-past 5, coffee, or milk and bread. Second breakfast at 11 o'clock; dinner at half past 5, beef, vegetables, &c., with wine; one half pint is allowed, the same also at the second breakfast. Thus each student has one bottle of wine per day. They are expected to be in bed by 9 o'clock. The time which is allowed for amusement is one hour in the morning, one hour in the middle of the day, and one from 6 to 7 o'clock in the evening. The time for study is from 6 to 11 A.M., and from 7 to 9 P.M. The remainder of the time being for the inspection of the fields and also for attending to the cattle.

The lectures by the professors are generally delivered at half-past 6 and half-past 9 A.M. The time occupied in delivering usually one hour and a half. Each professor also makes a practical application in the field upon the subject of the lecture. The remainder of the students' time is taken up with writing out notes and studying in the library, examining cattle or field operations, or in working in the experimental field, in which several experiments are always in the course of being made. The number of students is on an average from 30 to 40 in each division, in all under 100. They are chiefly the sons of small proprietors or tenant farmers. The greatest number come from the neighbouring counties; some are, however, from the eastern and other parts of France. There are no out students. At Versailles all were out students, and consequently the number was greater. The average number at Versailles was 250, and among these were many upwards of 40 years of age—gentlemen, who, having acquired property, wished to acquaint themselves with the cultivation and general management of land.

The expense of Grignon School in 1850 was as follows, 96,000 fr. in whole, from which have to be deducted the fees of scholars amounting to 27,500 fr.; and, for the sale of farm produce sold off the experimental field 3500 fr.; granted by Parliament, 65,000 fr. annually, equal to 96,000 fr.

The students, of previous years at Grignon, have formed themselves into a society for correspondence for mutual improvement. A director and counsel of administration have been named. As many of these students have become farmers in Algeria, keeping up the connection with Grignon enables them to become acquainted with the progress of agricultural improvement in France. Such an association is otherwise well calculated to extend the knowledge of a better system of cultivation than is generally practised in France.

Farm of Grignon.—[We must here condense the report]. The extent of the estate is 1162 acres, the soil of which varies very considerably, partly resting upon a chalk or a calcareous rock, part on clay, and part being an alluvial soil. The appearance of the farm is a deep valley; the two sides being chalky, the declivities clay, and the bottom alluvial. The elevation at the farm buildings is between 200 and 300 feet above the sea. There are no fences in the cultivated land. The extent which is under regular rotation is only 677 acres, the remainder being under meadows, garden ground, and water (a small lake). The farm offices are in the middle of the farm.

Rotation.—The 677 acres are divided into nine breaks of 75 acres each. One break natural meadow, irrigated; two breaks in Lucerne and Sainfoin; the other six are in regular cultivation.

1. One break, green crop—Carrot, Beet, and Potatoes, all manured. 2. One break in Oats, Barley, and occasionally Wheat. 3. Trefoil Red Clover. 4. Wheat, autumn sown. 5. Colza Rape, land manured; sown in September, cut by the end of June or middle of July. 6. Wheat, autumn sown. The rotation is not very strictly adhered to, varying according to circumstances.

Of the green crops, Carrots vary most in weight; of Beet the weights per acre vary from 13 to 16 tons; of Potatoes, previous to the blight, the average produce was 8 tons per acre. The early variety now grown does not average more than 5¾ tons. Part of all green crops is sold at Versailles, and part consumed by stock. Oats average 30 bushels per acre; Barley averages 41½ bushels per acre; Wheat averages 31 bushels per acre; Colza Rape is grown for the seed. The straw is used for litter, and the cake given to the horses, cows, and sheep. Average crop of seed is 26.7 bushels per acre. As much as 10*l.* per acre is obtained for the oil.

Cows.—The number kept is about 80, and eight bulls. They are housed all the year and stall-fed, with the exception of being turned out each day to pasture, principally for exercise; when the cows are not in milk they are worked upon the farm. They are fed during summer on green food, chiefly Lucerne and Sainfoin; the quantity of Sainfoin they were consuming during the month of June was about 80 lbs. daily. During winter they are fed upon steamed Potatoes, hay, and straw; a little Rape-cake is also occasionally given. A part of the heifer calves are reared for keeping up the stock. There are, therefore, about 100 cattle kept upon the farm. The dairy being the principal object, the cows kept are good milkers. Crossing different breeds has been much practised, but always subservient to their milking qualities. There were 13 of a cross between the Normandy and the Schwitz. One, the best, gives in the year more than 1043 gallons of milk, being at the rate of 2.86 gallons per day during the whole year.

Sheep (1100 are kept).—One portion was a cross, one part Dishley, and seven-eighths Merino; the other portion were also a cross, one-fourth Southdown, and three-fourths Merino. M. Bella has found these two crosses the best adapted for producing fineness of fleece with average produce of mutton. The cross from the Dishley and Merino was the largest sheep; would weigh, when fat, above 18 lbs. per quarter; the other cross Southdown and Merino rather less, but the carcase handsomer, appearing much better adapted for ranging over a pasture field. None of the sheep were fat, being in good holding condition. The weight of the fleece of the hogget was about 8 lbs.; but being in the grease and very full of yolk (the sheep are not washed before shearing), the weight of wool would be a little under 6 lbs.

Swine.—There are 30 breeding sows kept, all of English breeds, chiefly Berkshire and Hampshire. The average number of pigs each sow rears at each litter is between eight and nine; this, with two litters twice in the year, is 16 to 18 pigs, or, in all, upwards of 480 pigs.

Poultry.—About 300 fowls are kept, chiefly the barn-door hen of the Norman breed. There are also a few geese and ducks. The produce is sold.

Besides the common produce of the farm, silk is also produced. A "magnonerie" of two rooms, each about 12 feet square. These rooms are fitted up with shelves, on which are kept the silkworms. It was stated that 1 oz. of eggs of the worms will give per year 80 lbs. of cocoons of silk, the value of which is from 2*s.* to 3*s.* per lb. In these two small rooms can be kept the produce of 4 oz. of eggs. The quantity of food each room requires is about 200 lbs. daily. Their food is chiefly the "Murier," a tree which requires a mild climate. The Murier does not grow well further north than the region of Grignon. The temperature of the rooms for the silkworms is kept up to 75°. Fahr. Deducting attendance and the necessity of maintaining the worms at a high temperature, the keeping of silkworms cannot be profitable, except when the climate is suitable, even estimating that 1 oz. of eggs gives 80 lbs. of silk, at 2*s.* 6*d.* per lb., equal to 40*l.*

Labour.—The number of horses kept is 20. These are of various native breeds. There are besides horses, the working oxen and cows already referred to. At present they are fed upon 65 lbs. of green Sainfoin and Lucerne, with 5 lbs. of hay and 10 lbs. of Wheat-straw. The Oats allowed is 1.2 gallon. During winter they are fed upon hay, Carrot, Oats, and a little cake. They are worked 10 hours per day, the time they leave the stable being included.

Workmen.—Forty men and two females are employed upon the farm. Of the workmen, 15 (seven ploughmen and eight dairymen) are boarded and lodged. They sleep in the stables and byres. Their food is bread, meat, &c., with wine or cider. The wages are 12*l.* per annum. All the workmen upon the farm appear to be allowed cider. The wages are high; a common workman during the year receives 4 francs per day—Paris attracting the workmen from the surrounding districts. Harvesting is always done by the piece; the rate allowed is 8*s.* to 9*s.* per acre. This includes cutting the crop with the scythe, binding, and stooking.

Manures.—There is little or no outlay for portable manures; poudrette is preferred to guano, having been proved by experiment to be superior, but these are seldom used. Their use, as we understood, was confined to the experimental field, which is set apart for the students. In our attempt to explain the profit which which would result from an extensive use of guano, we were met with an assertion that the English farmer did not conserve "the manure of the farm like the French farmer," that there were manufactured annually upon the farm from 14 to 15 dunghills as the one pointed out to us. This we found to be 62 feet in length, 21 feet in breadth, and 9 feet high. The heap was composed of farm-yard manure, mixed with chalk and earth—about equal proportions of dung and chalk or earth. The stream of brown liquid which was leaving the manure heap is used for irrigating the meadows. These manure heaps being frequently watered by the use of the pump, the quantity of liquid is considerable. The top of the heap being covered by earth, and fermentation being regulated by the adding of water, the manure appears to be well decomposed previous to application. The calculation is, that a ton of such manure costs about 8*s.* With the quantity of farm-yard manure must be taken into account the system of cultivation practised. The reader must bear in mind that more than the half of the farm is under Grass, which furnishes manures for the cultivated portion. It will be seen that portable manures are not much required, the desire being to improve the farm by itself. This is deemed in France the grand desideratum of good farming, the expending of capital in purchasing manure being not regarded with much favour.

The estate of Grignon has been much improved by the above system of farming; many pieces of land which were purchased 20 years ago at 4*l.* per acre (250 francs per hectare)! and which were unsuitable for the growth of Lucerne and Clover, give now as full crops of these as land adjoining, which was at that time in value equal to 10 times as much.

The example of Grignon has exercised a powerful influence upon the farming of the surrounding districts, it being now followed in almost every detail; and so far the intention of the founders of the Association, and latterly of the Government, has been answered. As a school for teaching the young farmers from a distance, its example must be healthy; as, while the outlay for

labour and for manufacturing of manure is much above the average of French farming, the books of the farm, from being open for their inspection and for full examination, show them that it is highly profitable.

SKILLED LABOUR.

Is not skilled labour the most urgent want of the farmer? Has he any which occasions him more anxiety, more vexation, and more loss of time? In the agricultural district with which I am best acquainted, labourers who set about any operations of the farm methodically, so as to economise time and labour, and then execute them neatly and cleverly, are extremely rare. Our improved implements and machinery, and more careful tillage, render this want more and more pressing, and it behoves agriculturists to turn their attention to the early training of the rising generation of the peasantry. As respects adults, competition for prizes has been a fruitful source of improvement. Draining matches, ploughing matches, and trials of skill at thatching, mowing, sheep shearing, &c., have produced good results. I have invariably observed a manifest improvement in the execution of those operations in the immediate neighbourhood in which annual meetings for such trials are held.

Having been favoured with an invitation recently to view the admirable and extensive farm buildings at Coleshill, lately erected by Lord Radnor, from the designs and under the superintendence of his very intelligent, able, and zealous steward, Mr. Moore, of which you gave a description in the *Gazette* some time ago, I went to Coleshill without any previous knowledge of a still more interesting exhibition which came off on the same day, some account of which will, I think, interest you.

My friends and myself found on our arrival a great assemblage of all classes interested in agriculture. In the yards, a great many sheep-shearers congregated from different parts, competing for prizes in shearing some magnificent subjects from the Coleshill flock; and in a very extensive meadow some 80 or 90 mowers steadily and carefully at work on portions previously set out by measure, also competing for prizes. These were, for the most part, accompanied by their families or friends anxious for their success, and busily engaged going from plot to plot, comparing the relative excellence of the work. Young aspirants were also to be observed watching the setting on, and the various attachments to the scythe of the different mowers, the mode of sharpening, and the handling of the tool, and the character of the work accomplished; farmers and gentlemen from the neighbourhood completed the group in the meadow. I had never seen before any mowing or shearing at all to be compared with that done on this occasion, and I fancied it would puzzle the judges to award the prizes, though one of the competitors considered himself competent to this task without any hesitation, and the result gave more weight to his judgment than we had attributed to it. We asked a little wiry fellow who had been mowing, after the whole was completed, what his opinion of the performances was, and who he thought would get the first prize. He replied, "I knows who ought to have it." "Who is that, my friend?" "Why, I, tho' I says it." We were much amused, on hearing the call for the man to whom that was awarded, to see our friend step forward to receive it.

An additional prize was offered for competition by the veterans who were disqualified for the general competition by having obtained prizes in former years. As soon as the shearing and mowing were finished, the judges appointed proceeded to examine the work and award the prizes; and all the competitors adjourned to an extensive building in the yards, where a very abundant supply of meats, vegetables, puddings, and good beer had been provided, at long tables, which were completely filled. When the men were thoroughly filled with this substantial cheer, the good old lord, with Lord and Lady Folkestone and their friends and the visitors, entered the building, where the host and his family were received, as may be readily conceived. The men were kindly addressed by his lordship, and then, preceded by a band of music, walked up to a tent which contained an exhibition of fruit, vegetables, and flowers, the produce of the gardens of the labourers on the domain. Prizes were also given for the best collections. The competition in this case was limited to these labourers, but those given for the sheep-shearing and mowing were open to all the kingdom. The fruit, vegetables, and flowers, evidenced considerable care and skill, and would have done credit to any gentleman's gardener. After these had been inspected, and the judges had made their awards, the competitors were assembled in a circle to hear them read by the steward in the centre, accompanied by his venerable lord, who handed the prizes to the men as they were called forth. Soon after this the assemblage separated, with many a hearty blessing upon the real nobility which had conceived and so liberally provided for this most useful congregation, and with many an expression of kindly feeling to Mr. Moore, who had so zealously and successfully carried his lord's wishes into effect.

I understand there has been an annual meeting of this description at Coleshill for a considerable period. If noblemen and large landed proprietors who have the opportunities and enjoy the means of establishing such annual meetings for the like or similar trials of skill, would do that in their respective neighbourhoods, it would lead to material improvement in the performance of the ordinary operations of the farmer, and be amply compensated by the immediate gratitude of those assembled, and still more by the reflection in the widely spread and useful results to those in whose improvement in such labours we are so deeply interested. *Charles Lawrence, Cirencester, July* 21.

[We have to express our regret to Mr. Lawrence and to our readers also for the non-appearance of this paper long before this. The original copy was lost in the post-office, a fact which was some weeks in making itself known.]

Home Correspondence.

Prangos pabularia.—This valuable agricultural hay plant ought to be sown on all waste lands, whether they be wet or dry; it will last for years, produce large crops, and is an antidote to the rot in sheep. It is most strange that this plant has been so long overlooked, considering its numerous good qualities. It is well adapted for railway slopes—the seed might be dibbled in holes a foot apart, and then left to nature. Σπερμα. [The unfortunate thing is, that the seed has never yet vegetated in England—so, at least, Mr. Lawson tells us.]

Growth of Grass.—If the gentlemen assembled at Tiptree Hall were startled at the instances cited of enormous crops of Grass being grown on the western side of Great Britain, there were many who disagreed with the inference drawn by Mr. Caird, that the eastern side of the country was not adapted to the production of Grass, because Mr. Mechi had not succeeded in exhibiting this Rye-grass in such a favourable condition as his corn crops of Wheat, Barley, and Oats. The soil and the season were against Mr. Mechi, and Rye-grass alone does not seem the best kind of "seeds" for pasturing sheep, nor was his mode of turning cattle into forward Rye-grass economical or calculated to obtain a great return for green produce. The general practice is different, and numerous instances might be found, wherever deep loams or alluvial deposits occur, of a large production of Rye-grass and of mixed seeds being grown sufficient for the ordinary purposes of husbandmen to maintain large numbers of stock and provide abundance of green and dry fodder. It is true that dairy farms are more prevalent in the west from Devon and Gloucester to Chester and Ayrshire, the proportion of arable land being small as compared with permanent pastures, and a far larger quantity of rain falling than on the eastern side; but whence do the 2000 or 3000 short-horns come from that are weekly announced as a "seasonable" supply in the Smithfield Monday's market? Why, from Lincolnshire, Northamptonshire, and Norfolk; from the fens and marshes and old bullock pastures, the meadows and Grass growing districts of the Eastern Counties. Doubtless, the artificial Grasses are not so successfully grown as they may be quoted in some few favoured instances where intelligent men with sufficient capital devote themselves to this feature of agricultural economy, but that any natural impediment exists to an ample yield of Grass I must beg leave to doubt; and to excuse Mr. Mechi's Rye-grass stubble by affirming that climate alone will not permit him to grow 25 tons an acre, is approaching a "leetle bit of soft sawder;" and to recommend a monster of a crop as an example to emulate can only be compared to an invitation to grow 10 quarters of Wheat an acre, or make the produce of every farm equal on an average to the carefully-tended growth of a model cottager's garden. When instruction or advice is tendered to grown up agriculturists, undigested conclusions should be avoided, and deductions be carefully drawn when a wide field is employed in argument, or romantic incidents alone serve for illustration. *J. W., Peterborough.*

Mangold Wurzel Running to Seed.—Several of your correspondents appear to have suffered from their Mangold Wurzel running to seed this year, and attribute the cause respectively to bad seed and early sowing. The root is rather extensively grown in this district, and from personal observation and inquiry, I am convinced that the peculiar season we have experienced has been the cause of its starting so generally this year. My own Mangold Wurzel (Elvetham Long Red and Orange Globe), has run considerably. The seed, purchased from an eminent grower, was dibbled the last week in April, and the crop is a very heavy one, but I find that my neighbours who purchased their seed at other places, and sowed at different and later periods, are no better off regarding the roots running away, and have not so good crops. Whilst on the subject of roots, I may mention that Professor Buckman, in his able paper on the "Finger and Toe in Root Crops," which appeared in the "Journal of the Royal Agricultural Society," states an instance of a poor man's raising seed from White Globe Turnips two or three years together on the same plot of ground, and that finger and toe and degeneracy was the result. In this parish a piece of ground has borne Turnip seed for upwards of 40 consecutive years. The plants set for seed are sometimes taken from another field, but are raised from the original seed; here finger and toe has not been known, neither has the seed degenerated, though I believe it has never been changed, as I can testify, having used it for several years. The crop of seed this year has been a very full one. *J. B. Maunsell, Thorpe Malsor, Northamptonshire.*

Societies.

Liverpool and Manchester, *Sept.* 8.—The annual show of this Society took place at Altrincham, in Cheshire, midway between the two towns. Whether as regards the number or quality of the stock exhibited, the show was decidedly better than that of any former year. The attendance on the show-ground was very numerous. The Earl of Stamford and Warrington presided at the meeting. The toast of "The Royal Agricultural Society of England" was proposed by Mr. E. Chadwick. In eulogising the services which the society had rendered to agriculture, he stated that the "Transactions" of the society contained valuable papers, such as had never before appeared in the agricultural literature of the country. Among the papers published by the society, the last number of the "Transactions" contained an excellent article on the application of the liquid manure of towns for agricultural purposes. It had been calculated that the liquid manure in some of the large towns would serve to raise 200,000 head of cattle. It would be a great question for the agriculture of Lancashire in particular, because the manure that was allowed to go into the ditches and the solid manure that was misplaced were more than equivalent to a rent in their productive power. After addressing the meeting for some time on the modern improvements in agriculture, he remarked that no county in England had a brighter future before it than Lancashire.—Mr. Mechi, of Tiptree Hall, acknowledged the toast. Speaking of the present position of British agriculture, he said it ought to be more elevated both in profit, in sentiment, and in character. The farmer required more education and more intelligence, as well as more capital; and this state of things could only be realised by the concurrence of both landlord and tenant. Referring to the state of agriculture in Lancashire, he expressed his opinion that it was very deficient. He recommended the adoption of the system which had been pursued by Mr. Coke, of Norfolk, under which the greatest quantity of both corn and meat was produced by the farmer. What he wanted to see both in Lancashire and Cheshire was, that while they produced plenty of corn and cheese, they would produce plenty of meat also; but he told them plainly that they could not do this with their present plans. Their farm buildings were unfit for respectable farmers; their fields were too small, and their hedgerows too numerous. He had been told, but he did not believe it, that it was because game was respected that their fields were small. Now, he could not credit this, because he knew that the aristocracy of this country were ever ready to fall in with what would be for the benefit of the farmer. What the farmer in these districts wanted was to become better acquainted with the requirements of agriculture. Now, in the largest fields in Norfolk he had seen four fields for 1000 acres, and there were more partridges in the fields of Norfolk than he had seen in Lancashire and Cheshire; and how was this brought about? Why, because the farmers of Norfolk, liking to see the liberal landed proprietors enjoy their sports, drilled a few rows of Buckwheat in their Turnips, and the consequence was that there were always plenty of partridges in them. He then spoke of the benefits of the railway, which would enable farmers from one poor district to go into well-farmed districts in other parts of the country, which had been reclaimed and improved by the investment of capital and intelligence. He strongly advised the erection of an agricultural college in the county, in which agriculture should be taught as a science. Such colleges were formed in the south of England, and there was one at Cirencester in which he took an especial interest. He would say to the Lancashire people, "establish a noble college, in which the agriculture of the county should be taught." He next urged the importance of having the liquid manure of large towns like Liverpool and Manchester conveyed to the land in the country through pipes, and showed that he had himself laid down two miles of piping on his own farm for the purpose of conveying liquid manure. He assured them it would pay. He could bring down liquid manure a distance of five miles, throw it down like a shower, and spread it on the soil for three farthings a ton. He would tell the Lancashire and Cheshire farmers to do all they could to mitigate the vicissitudes of the seasons, which were sometimes so frequent here. They could only do that by proper drainage and other similar means—by putting on water where it was dry, and taking it off where it was wet. They ought to be the richest agricultural county in the world, because they not only consumed all they grew, but they also imported every imaginable thing that was good for man. He would conclude by saying, on public grounds, that his farm was open to every gentleman who might choose to carry out these great and important measures, so beneficial to agriculturists.

Among the implements exhibited in the yard was a stand by Messrs. Richmond and Chandler, of Salford and Liverpool, containing their various chaff machines and corn crushers. Their haymaking machine, combining several very important improvements, was also exhibited. In the first process of tedding or making hay it goes across the swathes, throwing the Grass in the usual manner, when having laid for a short period you can reverse the motion, and it will throw it out loose and light, so that the air can operate upon it much more speedily than when heavily laid down. Price 16l. 16s. Their well known steaming apparatus was also shown. It consists of a 30 gallon boiler and one 4 bushel wrought-iron pan fitted on brackets to empty: the boilrr and appurtenances being complete in themselves the whole is easy to manage.

Trafalgar, Fifeshire.—*Road Reform.*—We were unable to report a discussion of this Society on the

subject at the time at which it occurred. We make room now for an extract or two from an opening paper by Mr. Landale, of Colzie':—In the injustice of the present turnpike system, in the immense expense of collecting tolls, in the hardships to which individuals and districts are exposed from the ill-working of the numerous trusts in the county, and in the benefits which others in more favoured localities derive from the same cause, we are all at one. The fact of there being so many road trusts in the county of Fife adds very much to the expense of management, and affords a striking example of how unjustly the public pay in different districts for the use of the roads. I may mention one or two cases in proof of this. For instance, the whole inhabitants of the parish of Auchtermuchty, with a population of nearly 4000, can drive all their coals, lime, &c., and get to three, aye, five stations on the railway without paying a single toll. One gentleman who uses the roads a good deal in that district, informs me that, from this cause alone, he saves more than 50*l.* a year. On the other hand, the inhabitants of Strathmiglo cannot drive to Newburgh, a distance of six miles, without paying three tolls—the reason being, they pass over a road managed by three different trusts; whereas the inhabitants of Newburgh can drive to Auchterarder, a distance of 21 miles, without putting their hand into their pocket to pay a single toll. This certainly shows that a consolidation of the road trusts is not only desirable but absolutely necessary. By a plan which Mr. Pagan proposes of consolidating the 28 road trusts in the counties of Fife and Kinross into five, a great saving would accrue to the public and to the road trustees, and the unequal distribution of toll bars would be of rarer occurrence. As to the expense of the toll-bar system, Mr. Pagan estimates, as compensation to tacksmen, and in payment of toll collectors, a sum of about 4000*l.* per annum; and, considering there are 100 toll bars in the two counties, I do not consider this an over-estimate. If all these sums could be saved to the public—if, by any system, we could in an equitable manner raise the necessary sum for maintaining the roads without the aid of toll-bars—it must be evident that all would be gainers. Mr. Pagan proposes to abolish tolls and statute-labour assessments altogether, and to raise the necessary sum by an assessment of an annual rate on horses. I object to this part of Mr. Pagan's plan on four grounds, each of which I will notice. My first objection is that, instead of being gainers, the farmers would be losers if his system were substituted even for the present expensive and cumbersome one. Mr. Pagan estimates that an assessment of 30*s.* on each horse would be required to raise a sum necessary for the support of the roads; but that sum I consider Mr. Pagan has taken too low. Under the existing system we pay 18*s.* a horse for statute labour, and 5*s.* a horse for tolls—in all, 23*s.* a horse—a sum considerably less than what it would have been under Mr. Pagan's plan. We would therefore be losers by the change, not gainers. My second objection is, that the towns would be relieved at the expense of the country. The spirit of the original road acts bore that every one should contribute to keep the roads in repair; better far the existing extensive plan, than one which would relieve one class at the expense of another. My third objection is, that it proposes a uniform rate on all horses. If an equitable mode of taxation was to be substituted for the toll system, surely that proposition could never be deemed just which would make horses employed in agriculture pay as much as those horses that use the road 10 times as much. My fourth objection is, that if any saving is to take place in the management of the roads, the agriculturists are entitled to participate in the advantages resulting therefrom. That there would be a very considerable saving from the abolition of toll-bars, there can be no doubt, and certainly if any party has a right to receive any benefit from the sum so saved, it most unquestionably is that class who contribute most to the maintenance of the roads; but the very reverse, as we have seen, would be the effect of the change.

My proposal is, to abolish tolls and statute labour, and by a uniform assessment on the valued rental of the county and the burgh rental of towns, and also, in addition, by a rate of 1*l.* 10*s.* on all taxable horses, to raise the necessary sum for the support of the roads. The following shows how this proposition would work as regards the Cupar district—all the calculations and dates being taken from the most reliable sources:—

The annual repairs from last year's report being ...				£2095	0	0
The interest on the debt, which is 4110*l.*, at 4 per cent.				165	0	0
For salaries under this plan				340	0	0
And for redemption of debt				400	0	0
				£3000	0	0
To raise this sum, the number of taxable horses is 400, which, at 30*s.*, would give yearly	£600	0	0			
And a rate of 2 per cent. on 130,000*l.*, the valued rental, and burgh rental, in Cupar district	2600	0	0			
	£3200	0	0			
Leaving a balance for contingencies of				£200	0	0

The assessment on valued rental, I propose, should be assessed and collected along with the county rates, which will involve very little additional expense. The assessment on burgh rental, I propose, should be taken from the assessment books made up for the support of the poor. The machinery required for laying on and collecting an assessment of 30*s.* on every taxable horse, I consider we have at present. The great recommendation of my plan is, that it is conceived in the spirit of the original road acts, which provide that not one class alone, but that all classes of the community should contribute to the maintenance of the roads. To those farmers whose valued rental is high, my proposition may not confer any great saving, but to the great majority of the occupiers of land, I have no doubt, based as my calculations are on facts, that my plan will prove of considerable benefit. To their careful consideration, then, I recommend it.

Reviews.

New York Industrial Exhibition. Special Report of Professor Wilson. Presented to the House of Commons by command of her Majesty in pursuance of their address of February 6, 1854.

The reports of the commissioners from this country appointed to indicate the interest felt by Great Britain in the progress of national skill and industry in America, on the occasion when these were to be specially represented in the Great Exhibition in New York, are among the most important of the results which seem to have followed it.

Professor Wilson's report includes those classes of objects then and there collected, having reference to "raw material," and the industries immediately connected with them, and to these were added the examination of the machines and implements used in agriculture. The mineral produce and economic geology of the States generally—the industries connected with iron, lead, zinc, copper, &c.—were pretty fully represented in the exhibition; and the *reports* upon these several departments, of course, very much more fully represent their extent and importance than could be, or at any rate *was*, done by the collection arranged within the exhibition building.

The report commences with a statement on the economic geology of the States. The first department of the detailed report includes minerals, mining, metallurgy, &c., discussed first geographically, *i. e.*, in reference to the different States contributing to the collection, and then in the order of the minerals exhibited, as—1, coals; 2, iron; 3, lead; 4, copper; 5, zinc; 6, gold and silver. The second class of objects described includes chemical and pharmaceutical products and processes. The third class includes substances used as food; and here we have a long report on the wine industry of the States, and on the produce of tobacco, on various cereal manufactures, on Rice produce, &c. From this part of the report we make the following extract on milk:—

"Preserved milk was exhibited by Gail Borden, whose preparation termed 'meat biscuit,' received a Council Medal in 1851; and by C. Alden, of New York, prepared either for direct use, or in combination with coffee, chocolate, &c. In concentrating milk for the purpose of preserving it for future use, a difficulty always presents itself in regard to the sugar of milk being so sparingly soluble in water as compared with ordinary sugars. This, by concentration of the milk, becomes crystallised, and then is with difficulty redissolved when the milk is required for use. To obviate this it is customary to remove the crystallised portion, and to substitute the more soluble cane-sugar for it.

"The use of preserved milk has increased much of late years, owing to the great increase in marine travelling; for home purpose it is now of less importance, as the facilities of railway carriage for bringing up daily supplies from wide districts of country to the large central points, are so great, that good and pure milk ought to be obtainable in all the larger cities, as well as in the rural districts. With us in London, however, constant and serious charges are made in respect to the quality of milk supplied by the dealers; and it appears upon inquiry that our friends at New York have fully as much cause for complaint as we have.

"In a recent number of 'Hunt's Merchant's Magazine,' a paper appeared containing a digest, with some additions and remarks on a pamphlet 'On the Milk Trade of New York,' published during the last winter. From this we glean some curious though unpleasant statistics, in reference to the milk supply, dating back to the period immediately preceding the introduction of country milk, through the medium of railway conveyance.

"In 1841 it was estimated that the supply of milk to the city of New York was about 16,405,000 quarts, or 45,000 quarts daily, a very small portion of which was pure; the entire trade being in the hands of the swill milk manufacturers. Now (1852) the total consumption amounts to 270,000 quarts daily, or nearly 100,000,000 quarts annually. According to the returns of the four principal railways, carrying milk into New York, for the year 1851, we find that there were carried by the

	Quarts.		Dols.	Cents.
Haarlem Railroad ...	12,634,178	selling at	63,120	89
Erie Railroad	12,610,556	"	63,052	78
Hudson River Railroad ..	596,338	"	2,221	72
Newhaven Railroad ...	90,732	"	4,336	69
Total ...	26,658,404	"	132,726	08

"The returns for the first year of 1852 again show a considerable increase, the quantities being by the—

	Quarts.	Freight.
		Dols.
Haarlem Railroad	7,789,318	38,946
Erie Railroad	6,402,230	32,011
Hudson River Railroad	684,688	2,996
New Haven Railroad	621,220	3,126
Jersey Railroad	482,000	945
Ramape and Patterson Railroad ...	182,500	657
Steamboats	273,750	912
Barges	273,750	1,3[illegible]
Total	16,700,456	80,988

giving a total amount for the year equal to 33,418,912 quarts, or 182,826 quarts per day: from which it appears that the supply of country milk in 1851-2, more than quadrupled the entire supply in 1841. In 1842, the year after the opening of the Erie Railroad, the quantity of milk brought up amounted to 388,505 quarts; last year (1852), it nearly reached 15,000,000 quarts. Thus much for country milk; but another great source of supply exists—the swill milk manufactories in and about the city. According to the best estimates, these furnish a supply about double that obtained from the country, being somewhere about 60,000,000 quarts per annum, or 160,000 quarts per day.

"It appears also that both the country and the swill milk are adulterated by the dealers to the extent of one-fourth of the original amount; this would give us something like the following amounts for the annual consumption of New York:—

	Quarts.
Country milk brought	33,418,912
Swill milk	60,000,000
Per-centage of adulteration to country milk ...	8,000,000
Ditto to swill milk	15,000,000
Total	116,418,912

and would require an annual outlay by the consumers equal to about 5,500,000 dols., which, taking the population at about 600,000, would give an average of 9 dols. 16 cents per head for the supply of milk, equivalent to about 204 quarts per annum, or ·56 of a quart per day per head.

"Notwithstanding the cheap rate of railway carriage, and the great inducements both to suppliers and consumers to encourage that mode of supplying the market, the swill milk trade increases still more rapidly. The number of cows kept for the supply of country milk is estimated at 10,000, having a value of 250,000 dols. Those kept in the city and its vicinity are estimated at 13,000, and valued at 200,000 dols. These latter are fed almost entirely on 'swill'—distillery wash. This is carried for 3 or 4 miles round to the outlying establishments. The adulteration of the milk seems to be the act of the city dealers, very little taking place in the country districts; however, even the doctored and sophisticated country milk is considered far preferable to the swill milk.

"The largest establishment in the city is at the end of Sixteenth Street, by the North river, which contains, in three parallel rows, from 600 to 700 feet in length, large cow stables, having altogether accommodation for nearly 2000 cows, and extending from the Tenth Avenue down to the river. In these stables they are confined in very close order, in a heated and tainted atmosphere, and are fed upon the 'swill,' with which their feeding troughs are liberally furnished. Occasionally a small quantity of other food, as hay, meal, &c., are given. It requires about a fortnight before the animal will take to the food, after that the average consumption by each cow amounts to from 28 to 30 gallons per day, for which a charge is made of 6 cents per day per head. No litter is allowed for bedding, and the accumulation of filth is painfully evident as you approach the premises. The effect upon the health of the animal soon becomes evident; the jaws are affected, the hair falls off, and the ulcerated condition of the hoofs renders it difficult to keep it on its legs. Nevertheless, on all occasions, when practicable, it is rendered available to the slaughterer. The loss by deaths is 12 per cent. per annum. Another large establishment exists in Fortieth Street, where the cows are kept in a manner quite as bad as the foregoing; and in Williamsburgh, adjoining an extensive distillery, may be seen a similar establishment where the cows are forced together in a still more reprehensible manner. Here, indeed, the mortality is frightful, averaging from 60 to 65 per cent. annually."

The fourth class of objects reported on, including vegetable and animal substances used as food, forms a very interesting portion of the report. Cotton, wool, and flax are, of course, the principal objects mentioned, and full statistical statements inform the reader very satisfactorily on the progress and present condition of American produce under these three heads.

It appears that "in 1840 there were 19,311,374 sheep, furnishing 35,802,114 lbs. of wool, or a fleece equal to 1·84 lbs. per head. According to the returns in 1850, the number of sheep was 21,721,814, producing 52,789,174 lbs. of wool, which is equal to 2·43 lbs. per head. It would appear from these comparative statements that not only has the sheep farming of the States been successful in regard to numbers, which present a very satisfactory appearance, the increase in the decennial period amounting to about 12 per cent., but also that a great improvement had taken place in the breeds, as the average weight of the fleece has increased in the same period from 1·84 lb. to 2·43 lbs., or about 32 per cent. In some of the States where sheep-farming is more particularly attended to, the results have been even more encouraging."

The rest of this section of the Report is devoted to an account of the pork manufacture of the country, from which we have made some extracts, and published them in a past number of this Paper. On the report of agricultural implements exhibited, we postpone our remarks, and conclude for the present with this general commendation of the Report, that not only should it receive, as it doubtless will, the attention of those more intelligent among us who desire to be informed of agricultural progress and position in other countries within the same parallels of latitude as ourselves, but that others also who read merely for immediate professional benefit, will find it to be their interest to study its pages.

Miscellaneous.

Flax Crop of 1854 : *Ireland.*—The following police report on the Flax crop of the present year has been compiled, by the express desire of His Excellency the Lord Lieutenant, out of the regular course of the agricultural police reports, in compliance with the desire of, we believe, the Belfast Flax Society, in order to obtain reliable statistical details of the amount of the crop—rendered, now, of the greatest importance to the linen trade by our present unhappy relations with Russia. By it we learn that the present crop is less by 15,341 acres than the crop of last year ; this is certainly a very considerable falling off, and one that will, no doubt, be severely felt by our manufacturers, who cannot make good the deficiency from the Russian ports. However, much as this serious reduction in the area is to be deplored, we believe that the crop of this year is far superior in quality to that of last year, which will, in some degree, compensate the loss. The Belfast Society and the *Farmers' Gazette*, very early in the season, urged this important subject on the attention of our agricultural classes, with, we are sorry to see, so little effect. The saving of Flax-seed has also been repeatedly urged upon them, which, we trust, a perusal of these very opportune returns will excite them to, with more effect than the former advice respecting the breadth of Flax for fibre ; and we hope that the coming season will find our farmers more alive to their interest than they have been. The country is well able, and highly suitable, for the production of Flax of superior quality ; and we put it to the farming classes, whether it be right to leave ourselves depending on a foreign supply of not only Flax but any other commodity that we can produce, and from which, if dependent, we may be very unceremoniously cut off, at a very short notice.

Return of the Acreable Extent of Flax in Ireland in 1854, compiled by the desire of His Excellency the Lord Lieutenant, in anticipation of the General Tillage Returns:—

Counties.	1853.	1854.	Increase.	Decrease.
	Acres.	Acres.	Acres.	Acres.
Antrim	11,252	11,265	13	...
Armagh	19,537	18,155	...	1,382
Carlow	43	31	...	12
Cavan	12,105	8,840	...	3,265
Clare	1,008	843	...	165
Cork, E.R.	1,552	1,985	433	...
Cork, W.R.	840	748	...	92
Donegal	25,610	26,581	978	...
Down	26,957	22,404	...	4,553
Dublin	2	1	...	1
Fermanagh	3,988	4,070	82	...
Galway	784	801	17	...
Kerry	1,035	829	...	206
Kildare	28	8	...	20
Kilkenny	78	54	...	24
King's County	197	214	17	...
Leitrim	1,350	1,014	...	336
Limerick	347	315	...	32
Londonderry	19,233	18,484	...	749
Longford	732	843	111	...
Louth	2,091	692	...	1,399
Mayo	1,192	605	...	587
Meath	588	478	...	110
Monaghan	17,394	15,185	...	2,209
Queen's County	14	10	...	4
Roscommon	528	429	...	99
Sligo	695	736	41	...
Tipperary, N.R.	176	83	...	93
Tipperary, S.R.	162	91	...	71
Tyrone	24,232	22,756	...	1,476
Waterford	105	47	...	58
Westmeath	259	230	...	29
Wexford	461	399	...	62
Wicklow	4	5	1	...
Total	174,579	159,238	1,693	17,034
			Total Decrease, 15,341	

The agricultural returns for 1854 have not yet been received from several constabulary districts. As to them, the extent of Flax for this year has been estimated from the best available information, and also from the returns of 1853. *William Donnelly, Registrar-General, in Dublin Farmers' Gazette.*

The Value of Winter Oats for Feed.—I think many farmers, and amongst them will be found some of your readers, are not aware of the value of winter Oats as a spring feed for sheep. Sown either alone or with Tares, they are very valuable, on account of their keeping eatable so much longer than any other corn ; from the amount of sap the stem contains, they do not get hard. In the middle of September last year, I sowed Tares after harvesting winter Oats, and the wasted Oats coming off with the Tares made a valuable piece of early feed, and although the sheep were six or eight weeks eating them, there was no waste from being too old. I have seen great waste with Rye and Barley this season, which has induced me to mention the advantage of sowing winter Oats instead. If they are fed early in the spring, they can be left for seed after, and no other kind of Oats are so good for feed, generally weighing 40 lbs. per bushel, and upwards. *A Wiltshire Farmer, in Bell's Messenger.*

Notices to Correspondents.

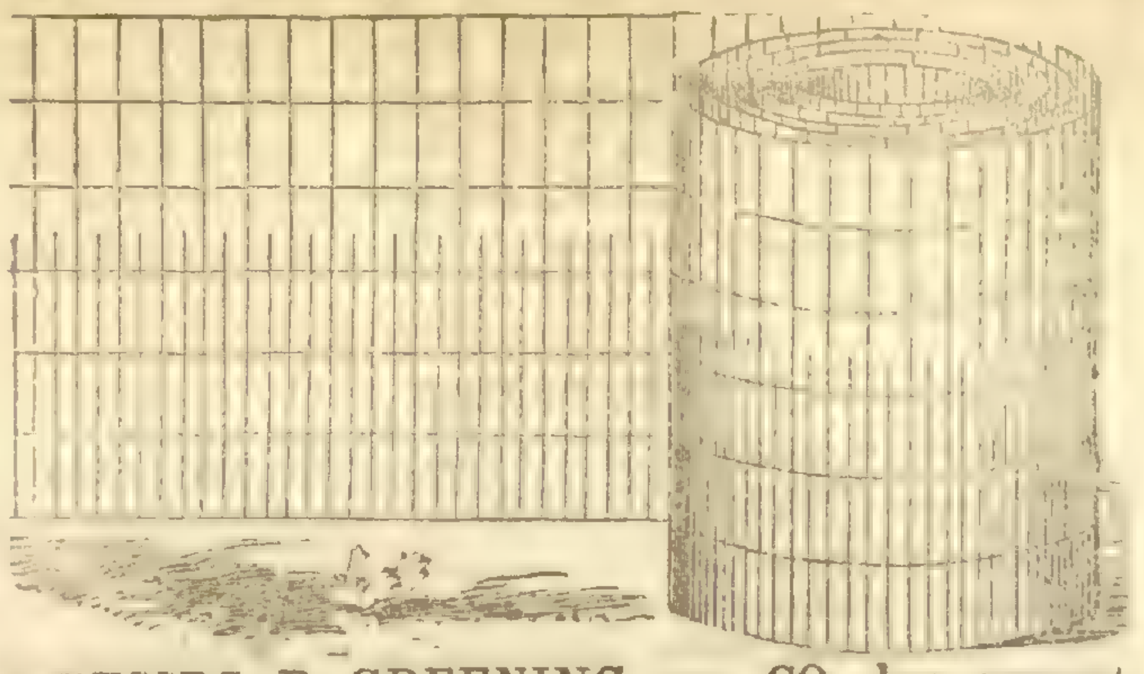
ADDRESS. We have a letter for Mr. J. R. Pearson, but are unable to address it.

ANALYSIS: *H W/N.* You had better apply to Professor Way, 32. Holles Street, London. We are not sure of his terms, but they no doubt vary according to the questions asked.

SMALL FARM: *A Youngster* may grow what crops he pleases. If he will tell us his object, we might suggest a plan of cropping, but can hardly do so otherwise. Is it to be a dairy farm, or a market garden, or a corn farm on a small scale—or what? If a good year's money produce is wanted, it might answer to grow seeds, as Mangold Wurzel; or Turnips, or Carrots, arranging beforehand for the sale of the produce.

*** We shall be glad to communicate personally with "Constant Subscriber."

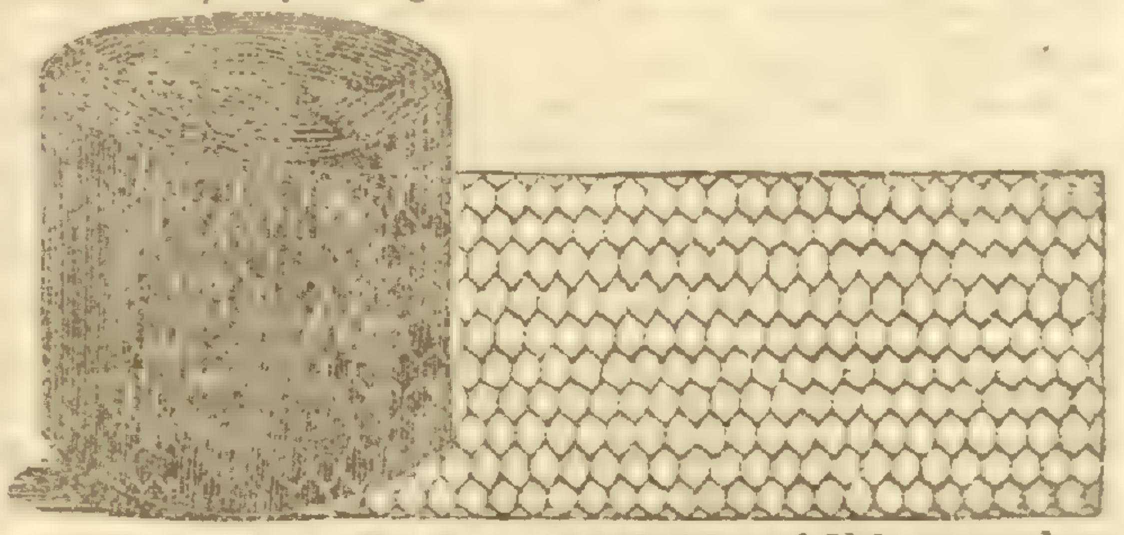
BY HER MAJESTY'S ROYAL LETTERS PATENT.



MESSRS. B. GREENING AND CO. beg respectfully to call attention to their superior WIRE FENCES, of which the following are the principal varieties:—Portable Horse and Cattle Fencing (Economical variety of ditto). Portable Sheep and Lamb, Proof Fencing, Poultry Fence, Portable Hare and Rabbit-proof Fencing, Ornamental Garden Fences, Export varieties, Poultry and Chicken-proof Fencing. Light and cheap kinds of most of the above. Trainers for Peas, &c., Garden Bordering, Tree Protectors, Hen Houses, Poultry and other Aviaries, &c.

Messrs. B. G. & Co. being the sole patentees for the machinery for manufacturing these Fences, will forward engraved sheets of Patterns, Prize Lists, Prospectuses, &c., gratis, on application to their establishments, 1 and 3, Church Gates, or 2 and 2 A, Cateaton Street, Manchester.

H. J. MORTON AND Co., 2, Basinghall Buildings, Leeds.—GALVANISED GAME AND POULTRY NETTING, very strong and neat, NEVER REQUIRES PAINTING.

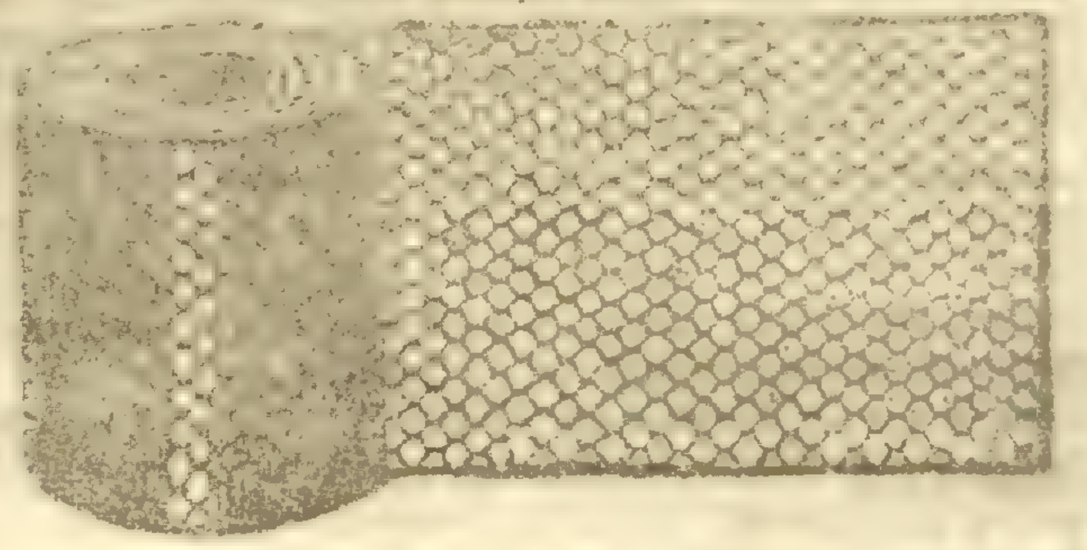


24 inches wide, 3-inch mesh, 4½d., 6d., and 8½d. per yard.
24 inches wide, 2-inch mesh, 7d., 9½d., and 1s. per yard.

GALVANISED IRON SPOUTING, for Dwellings, Cottages, Farm Buildings, &c., NEVER REQUIRES PAINTING.

Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalte Roofing Felt, &c.

GALVANISED WIRE GAME NETTING.—
7d. PER YARD, 2 FEET WIDE.



				Galvanised.	Japanned iron.
2-inch	mesh, light,	24 inches wide	...	7d. per yd.	5d. per yd.
2-inch	"	strong "	...	9 "	6½ "
2-inch	"	extra strong "	...	12 "	9 "
1⅝-inch	"	light "	...	8 "	6 "
1⅝-inch	"	strong "	...	10 "	8 "
1⅝-inch	"	extra strong "	...	14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasantries, 3d. per square foot. Patterns forwarded post free.

Manufactured by BARNARD & BISHOP, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

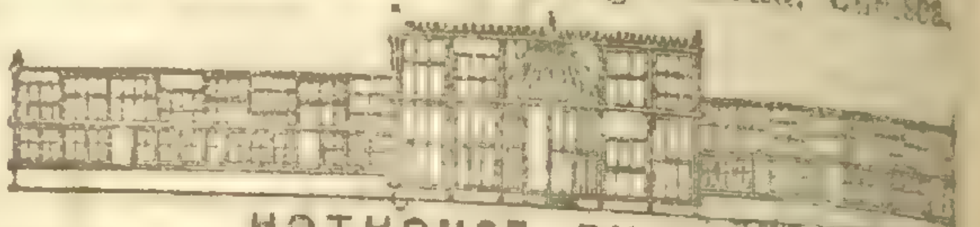
SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

Priced lists of plant tubs and boxes forwarded on application.

HOT WATER APPARATUS adapted for Horticultural and every other description of Buildings; improved Boilers, requiring no brickwork, Warm Air Apparatus, &c.—S. S. TAYLER, ENGINEER, Battersea.

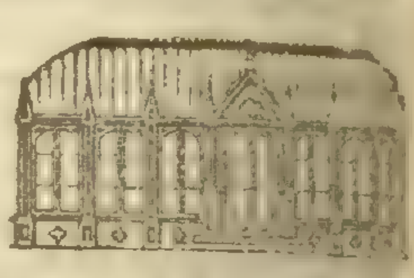
J. WEEKS & Co., King's Road, Chelsea.



HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Buildings or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

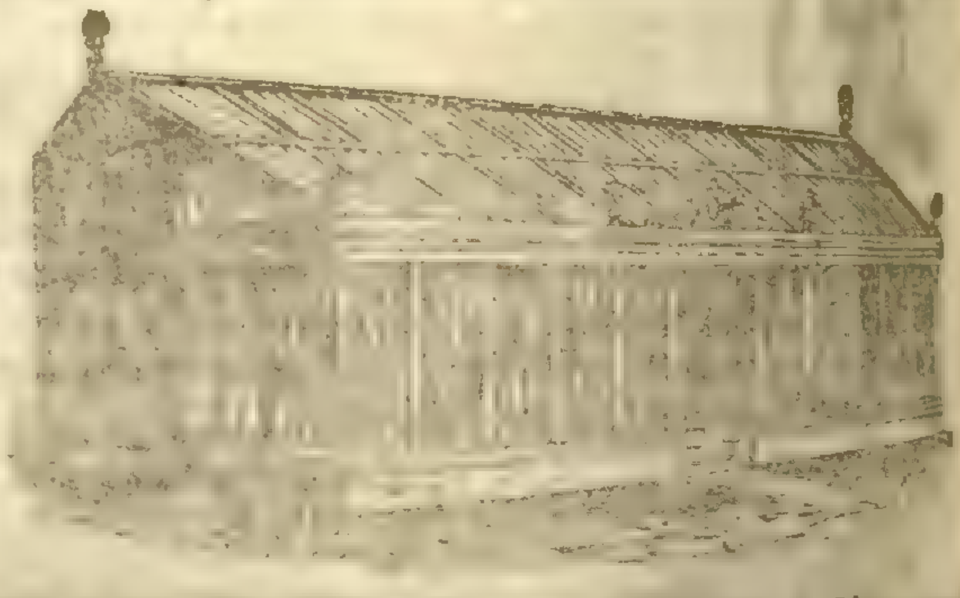
The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.



The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.
J. WEEKS & Co., King's Road, Chelsea, London.

HOTHOUSES, CONSERVATORIES, FRAMES & LIGHTS FOR PITS, CUCUMBER & MELON BOXES & LIGHTS.



JAMES WATTS, HOTHOUSE BUILDER, 8, Claremont Place, Old Kent Road, London.

Green and Hothouses, 9, 10, 11, 12, 13, and 14 feet wide, any length, from 16 to 100 feet. Frames and Lights for Pits, 6 ft. 6 in., 7 ft., 7 ft. 6 in., 8 ft., and 8 ft. 6 in. wide, any length, from 12 to 100 feet. Upwards of 200 Cucumber and Melon Boxes and Lights, from 4 ft. by 3 to 10 ft. 6 in. by 5 ft. 6 in., kept ready glazed with stout sheet glass, painted four times, complete, ready for immediate use, all made of best material, packed and sent to all parts of the kingdom.—Reference may be had to the Nobility, Gentry, and the Trade, in most of the counties in England.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard run, of E. T. ARCHER, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey.

COTTAM AND HALLEN,
2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.

APPLICATION is requested for their NEW HORTICULTURAL LIST, containing Illustrations, Descriptions, and Prices of

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Syringes	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.
AGRICULTURAL LIST UPON APPLICATION.
EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.
EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

HOSE PIPING.—Great Reduction in Price.

PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense pressure, and much more than leather, vulcanised rubber, or any other hose, and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented inventions, the cost of manufacturing it is now reduced at least 50 per cent., which advantage is offered to the public.

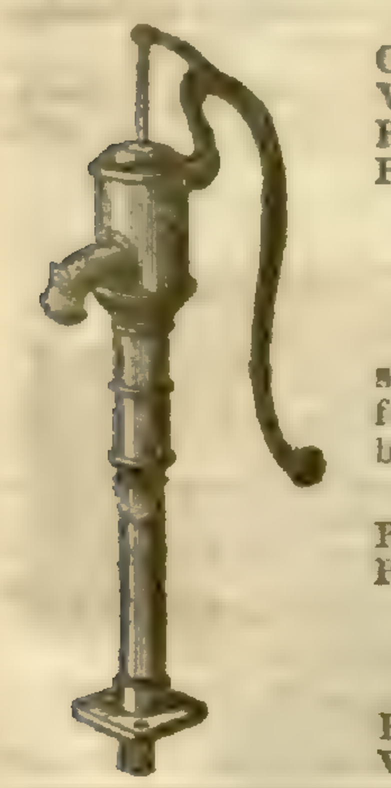
Burgess and Key, 103, Newgate Street, and 52, Little Britain, who, on application, will forward wholesale and retail prices.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.

MESSRS. BURGESS and KEY, as Mr. Parkes' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.

103, Newgate Street, and 52, Little Britain, London.

WARNER'S PATENT FARM AND COTTAEG PUMPS.



Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

	£ s. d.
Patent Pump	1 15 0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing	3 0 0

Larger sizes if required.

The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,

8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water: Fire Engines, &c.

PURVEYORS OF LIVE BIRDS

BY SPECIAL APPOINTMENT TO HER MAJESTY AND H.R.H. PRINCE ALBERT.

DISEASES OF POULTRY.

BAKER'S POULTRY RESTORATIVE, having been used for many years with uniform success, is recommended with the greatest confidence; and will be found invaluable during and after the periods of the various Exhibitions. Not least among its many advantages being the easy manner in which, in its liquid form, it is administered, and thus obviating the troublesome necessity of handling the birds. Great economy will result from the use of the Restorative in the improved condition and well-doing of Poultry, in testimony whereof an inspection of the extensive and choice Collection at the Pheasantry is invited.

"It cannot but be extensively brought into use."—*The Field*, Jan. 7, 1854.

Price, with full directions for Roup, &c., 2s. 6d., either in Liquid or in Pills. May be obtained through any respectable Chemist.

BAKER'S REGISTERED POULTRY, PHEASANT, and PIGEON FOUNTAIN is gradually and surely supplanting all others, being found the most simple, useful, and economical.

"We have seen the Fountains; they look well, and cannot fail to answer. Being well made of strong metal, are durable and cheap."—*Gardeners' Chronicle*, Feb. 12, 1853.

"The article is both neat in appearance and durable, and will no doubt meet with a great sale; it deserves it."—*The Field*, March 19, 1853.

Price—4 quarts, 6s. 6d.; 9 quarts, 8s. 6d. Drawings by post.

S. C. and C. N. Baker, City, and the Pheasantry, Chelsea.

EGGS-HATCHING MADE EASY.

MINASI'S PATENT INCUBATOR.—The Patentee of this most successful and cheap mode of Incubation is now ready to supply the Public with his Machine at the following very low prices:—For Hatching and Rearing 100 Eggs, 8l. complete, including two burners and two reservoirs, and the regulating stand; for 200 Eggs, 12l.; for 360 Eggs, 18l.; for 500 Eggs, 25l.; and for 1000 Eggs, made to order, 40l. 100l. challenge against any other Incubator in the world, and the further sum of 100l. to 50l. against any machine with top contact.

Mr. C. M. will, upon the receipt of a postage stamp, have much pleasure in forwarding full printed particulars of his Improved Method of Hatching, with impartial testimonials in favour of it.

Address, Brecknock Place, Camden Road, London.

The Successful Results of the last Half Century have proved beyond Question that

ROWLAND'S MACASSAR OIL possesses singularly nourishing powers in the growth, restoration, and improvement of the human Hair, and when every other specific has failed. This celebrated Oil is now universally acknowledged to be the cheapest, and superior to all other preparations for the hair. It prevents it from falling off or turning grey, strengthens weak hair, cleanses it from scurf and dandriff, and makes it beautifully soft, curly, and glossy. Its operation in cases of baldness is peculiarly active; and in the growth of the Beard, Whiskers, Eyebrows, and Moustachios, it is unfailing in its stimulating operation. For children it is especially recommended, as forming the basis of a beautiful head of hair. Price 3s. 6d. and 7s.; Family Bottles (equal to four small), 10s. 6d.; and double that size, 21s. Caution.—On the wrapper of each bottle are the words, Rowlands' Macassar Oil, in two lines. The same are engraven on the back of the wrapper nearly 1500 times, containing 29,028 letters.—Sold by A. Rowland & Sons, 20, Hatton Garden, London, and by Chemists and Perfumers.

BY ROYAL LETTERS PATENT.

THE COSMOPOLITAN GLASS COMPANY, 296, Oxford Street, London.—The Managers beg to inform the Nobility and Gentry, Farmers, Gardeners, &c., that their new List of Prices may be had free on application at the Company's Depôt.

HARTLEY'S PATENT ROUGH PLATE, for Roofing Conservatories, Halls, and Public Buildings.

PLATE, CROWN, and SHEET WINDOW GLASS.

Coloured and Ornamental Glass of every description.

Glass Milk Pans, Pails, Tests, and Measures; Cream Pots and Syphons; Churns, Butter Teats and Slabs; Tiles and Slates; Bee Hives, &c.

Moore's Patent Ventilator and Lockhead's Patent Perforated Glass, for Dairies and Greenhouses.

Aquavivariums, Fern Shades, Propagating Glasses, Fruit Protectors, Preserve Jars, Cucumber Tubes, Hand Lights, Flower Vases, Labels, &c., and all kinds of Agricultural, Horticultural, Architectural, Domestic, Scientific, and Ornamental Glass, British and Foreign, at the lowest prices.

GLASS FOR CONSERVATORIES, ETC.

HETLEY and CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES, GREENHOUSES, DWELLINGS, ETC.

Established more than One Hundred Years.

THOMAS MILLINGTON requests attention to his present prices of SHEET GLASS in 100 feet boxes.

		s.	d.
Squares	6 by 4 and 6½ by 4½ } 7 by 5 and 7½ by 5½ } 8 by 6 and 8½ by 6½ }	13	6
"	9 by 7 and 9½ by 7½ } 10 by 8 to 12½ by 9½ }	16	3
"	12 by 10 to 24 by 14	19	0

Orchard House Squares on Mr. Rivers's approved plan, to whom I have sold some thousands of feet:—20 inches by 12, 20 by 13, 20 by 14, 20 by 15, 20½ by 12½, 20½ by 13½, 20½ by 14½, at 19s. per 100 ft.

200 feet cases at 42s., and 300 feet case 63s., in large sheets.

Boxes charged 1s. extra per 100 feet, and the same allowed if returned free of all charge.

HARTLEY'S PATENT ROUGH PLATE GLASS, Fern Shades, Striking Glasses, Milk-pans, Bee Glasses, Cucumber Tubes, Sheet and Rough Plate Glass Tiles, Wasp Traps; Plate, Patent Plate, Crown and Sheet Window Glass, in every thickness and quality, and Ornamental Glass, plain and coloured; pure white Shades for Ornaments, Crystal Glass for Pictures.

Warehouse, 87, Bishopsgate Street Without—same side as Eastern Counties Railway.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

JAMES PHILLIPS and Co. have the pleasure to hand their present prices of Glass for Cash:—

	SHEET SQUARES. In Boxes of 100 feet.		CROWN SQUARES. In Boxes of 100 feet.
Under 6 by 4	£0 12s. 6d.	...	8s 6d.
6 by 4, and 6½ by 4½	0 13 0	...	12 6
7 " 5, — 7½ " 5½ } 8 " 6, — 8½ " 6½ }	0 15 0	...	14 0
9 " 7, — 10 " 8, 12 by 9, } 12 by 10, 14 by 10 }	1 0 0		

Larger Sizes, not exceeding 40 inches long.

16 oz. from 3d. to 3½d. per square foot, according to size.
21 oz. " 4½d. to 5d. " " "
26 oz. " 6d. to 7½d. " " "

SHEET GLASS OF ENGLISH MANUFACTURE FOR ORCHARD HOUSES, the same quality as we supply to Mr. Rivers, and of various dimensions, always on hand.

London Agents for the Sale of HARTLEY'S PATENT ROUGH PLATE GLASS.

Glass Tiles, ¼ of an inch thick, packed in cases, containing 50, at 1l. 17s. 6d. per case. Packages 2s. each extra, but allowed for when returned.

Glass Milk Pans, 21s. per dozen; Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoys' Milk Syphons, Wasp Traps; Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the trade.

Horticultural Glass Warehouse, 116, Bishopsgate Street Without, London.

NURSERY AND SEED BUSINESS.

Established in the Year 1819.

TO BE LET, with immediate possession, the old-established NURSERY and SEED TRADE at Taunton, Somerset, for some time past in the occupation of Messrs. M'Intyre and M'Intosh. The Grounds and Stock are in excellent condition, moderately rented, and are well worthy the attention of any person wishing to carry on the business. If required, the quantity of ground may be reduced. The Nursery is five minutes' walk from the Railway Station.—For further particulars, apply to Mr. M'Intosh, the Nurseries, Taunton; or to Mr. Young, the Proprietor, Elm Cottage, Taunton.

TO BE LET, MARKET GARDEN GROUND, within 12 miles of London, adjoining the Great Western Railway. About 11 acres of excellent ground, with nearly half a mile of brick wall, 14 feet high, and having a south-west aspect.—For terms, apply to Mr. Meggins, Dauley Court, Uxbridge; or to Mr. Peter Broad, Auctioneer, 20, Tavistock St., Covent Garden.

TO NURSERYMEN AND OTHERS.

TO BE LET, at Epsom, Surrey, the EPSOM NURSERY, late in the occupation of Mr. Young, being about 4½ acres. For particulars enquire of Mrs. Wilkins, 60, Queen's Row, Walworth.

TO BE SOLD, GREENHOUSES — a bargain. One 12 feet long and 8 feet wide, 15l.; and one 21 feet long and 12 feet wide, 25l. Plans and particulars sent on receipt of a postage stamp, to Mr Smith, Builder, &c., 1, Lower Street, Islington Green. Greenhouses and Garden Lights, Window Sashes, Doors, &c. from 6d. per foot. Country orders forwarded.

TO BE SOLD, the NURSERY STOCK of PETER BOOTH, Nurseryman, Falkirk, who, wishing to retire from business, would give a Lease of all his Nursery Grounds, which belong to himself, to a person wishing to pursue that line of business. These grounds are stocked with a most excellent, healthy, and general stock of Nursery Plants, of which a good bargain could be got, and the good will of the business, which has been carried on in a very favourable locality, formerly by his relatives and latterly by himself, for more than 70 years past, and with great success.

TO GARDENERS, FLORISTS, AND OTHERS.

TO BE SOLD, a NURSERY and FLORIST'S BUSINESS, with a good connection of Jobbing, &c. The Stock can be reduced to suit the purchaser.—Apply, by letter only, to J. H., 3, Edward Street, Hampstead Road, London.

TO BE DISPOSED OF, Six CYGNETS in very fine condition, and of good size.—Apply to H. T. Humphreys, Kilmacow, Waterford.

SPANIELS.

WANTED, a Brace of well-broken SPANIELS, two years old.—Address, stating price and colour, Beta, *Gardeners' Chronicle* Office, London.

WANTED, a COCK and one or two HENS, healthy, white common PHEASANTS.—Address post paid, priced, packed, delivered, at a Railway Station), E., Wrington, Bristol.

BRAHMA POOTRA CHICKENS.

TO BE SOLD, a few very prime Birds of the above breed from imported stock. The white pure, and hackles well pencilled, short-legged, and well feathered. Also a few remarkably diminutive White Bantams.—Address Y., Box 36, Post Office, Great Yarmouth.

TO BE SOLD, BUFF COCHIN CHICKENS, from first class Prize Birds. Brahma Pootra Chickens, from imported American Prize Birds, and Spanish Chickens. Also some very good one year old Birds of the above descriptions. Wire, Game, and Poultry Netting, Poultry Hurdles, Hen-houses, Chicken Coops, Flower Stands, and Trainers, Garden Arches and every kind of Wire Work, useful and ornamental.—T. H. Fox, City of London Wire Works, 44, Skinner Street, and 6 & 8, Snow Hill. Illustrated Catalogues forwarded post free.

TO IRONMONGERS, NURSERYMEN, AND SEEDSMEN.

The Trustee on the Sequestrated Estate of Hamilton Laird, Cupar Fife, is prepared to receive Tenders for the following subjects, either together or seperately, viz.:

1. THE IRONMONGERY STOCK and FITTINGS in Shop and Cellars at the Cross of Cupar, consisting of a new and well assorted class of goods fitted for the trade of the district, and valued at about 1050l. The Lease to Martinmas 1858 of the Shop, &c., and Dwelling-house above, may be obtained along with stock if desired. The Shop is in the very best position for the trade of the town and district, and has been occupied as an Ironmongery Shop for the last 30 years. It is seldom that so good an opening for a profitable business occurs.

2. The LEASE of the NURSERY situated about half a mile to the south of Cupar on the Edinburgh Road, well known throughout the whole Eastern District of Fife for the last 50 years, together with the valuable and well-selected Stock therein, of Forest Trees, Shrubs, Flowers, &c. The extent is about Five Acres, and the Lease is current for 13 years from Martinmas next at a rent of 35l. The Stock is in the very best condition for an immediate entry, and is valued at about ——.

3. A STOCK of SEEDS in Lofts, consisting of Rye Grass, Clover, Turnip, Cabbage, Garden Seeds, &c., valued at about 90l.

Sealed Tenders to be lodged on or before the 26th inst., with Andrew Taylor, Bank Agent, Cupar, the Trustee; or W. A. Taylor, Writer, Cupar, either of whom will show the Stocks and Valuations, and furnish further information.

Sales by Auction.

KINGSTON, SURREY.

MR. J. C. STEVENS is directed by Mr. Bruce to sell by Auction, on the premises, Ham Lane, Kingston, Surrey, on THURSDAY, 28th September, 1854, at Twelve for One o'clock precisely, 4000 HEATHS, including Hyemalis, Wilmorea, Cavendishi, Sindryana, Ventricosa, Perspicua nana, pyramidalis, gracilis, and other good sorts; about 100 of the true Acacia Drummondi, some of them specimens; 500 Gardenia radicans, Fortuni, and intermedia: 500 Clianthus puniceus, and other well-grown Plants, deserving the attention of Amateurs and the Trade.—May be viewed on the day prior and morning of sale, and Catalogues had on the premises, and of Mr. J. C. Stevens, 38, King Street, Covent Garden.

TO MARKET GARDENERS, NURSERYMEN, & OTHERS.

MR. W. T. ATWOOD will sell by Auction on WEDNESDAY, September 27, at 12 for 1 o'clock precisely, on the premises, near the Coach and Horses, Turnham Green, Middlesex, all the Live and Dead Stock, comprising excellent Block and Spring Waggons, Dung and Market Carts, Barrows, two powerful Cart Horses, Sets of Harness, 100 three-light Cucumber Frames, 1200 Bell and Hand Glasses, a quantity of Baskets, Implements, and Tools, Garden Pots, and a number of useful articles. May be viewed the day previous and morning of Sale. Catalogues may be had at the Roebuck Tavern, Turnham Green; the Rainbow Tavern; and Mr. Way's Coffee House, Covent Garden Market; and of Mr. Atwood, Land Agent, Mortlake, Surrey.

TO GENTLEMEN, NURSERYMEN, AND OTHERS.

Consignment from Belgium for absolute Sale.

MESSRS. PROTHEROE and MORRIS will Sell by Auction, at the Mart, Bartholomew Lane, on FRIDAY, October 22, at 12 o'clock, about 600 Double Camellias, 800 Indian and Ghent Azaleas, &c., with a few first class Dutch Bulbs. On view the morning of Sale.—Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

LINFIELD ROAD NURSERY, STOCKWELL.

To Nurserymen, Amateurs, and Others.

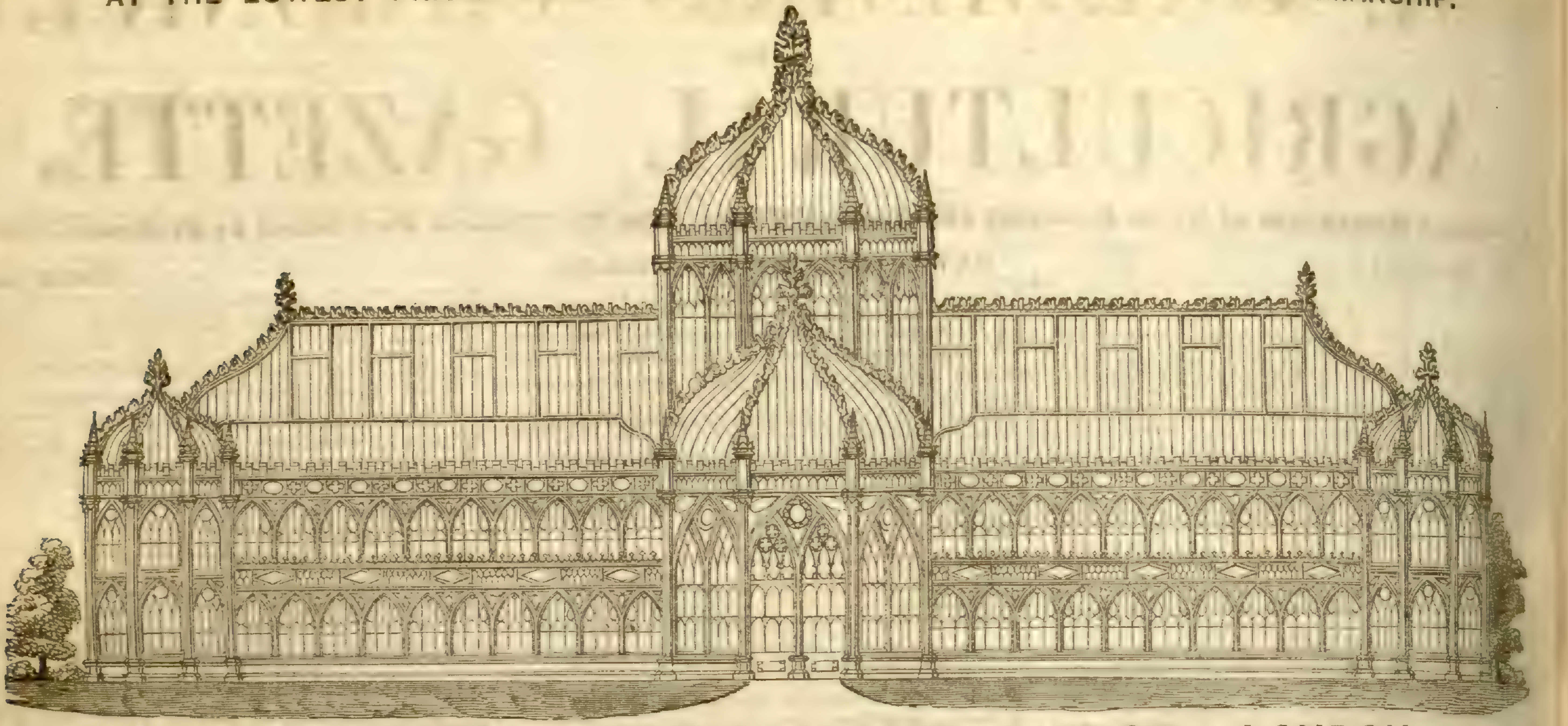
MESSRS. PROTHEROE and MORRIS are directed by the Proprietor, who is retiring from the business, to offer to public competition by Auction at the Mart, Bartholomew Lane, on MONDAY, September 18, at 12 o'clock, the valuable Lease of the above Nursery, of which 8½ years are unexpired, consisting of 1½ acre of Land, walled round; also a substantial brick built Cottage, Greenhouses, Sheds, Stock in trade, &c. May be viewed any day previous to the sale. Particulars may be obtained on the premises; of Mr. Weeks, Solicitor, 10 Tokenhouse Yard, Bank; and of the Auctioneers, American Nursery, Leytonstone, Essex.

CLAPHAM.

To Noblemen, Gentlemen, Exhibitors, Nurserymen, & Others.

MESSRS. PROTHEROE and MORRIS are instructed by the administrators of the late Mr. Joseph Fairbairn to submit to an unreserved sale by Auction on the premises, the Nurseries, Clapham, near London, on TUESDAY, Sept. 19th, 1854, and following day, at 11 o'clock each day, the valuable stock of Choice GREENHOUSE and STOVE PLANTS which is particularly worthy the attention of noblemen and gentlemen enriching their collections, as well as the trade, from its excellence, comprising about 4000 fine Ericas, of all the leading kinds, amongst which are magnificent specimens of Massoni, Massoni major, Tricolor elegans, Cavendishi, Templaea, Metulaeflora, Douglassi, Easonia purpurea, Austiniana, Vestita coccinea, Aitonia Turgida, Princeps Templaea, Murrayana, Favoides elegans, Ferruginea, Ventricosas, sorts, &c.; also 500 choice Azalea indica, 1000 double Camellias, 1000 Epacris, 500 Aphelexia, Mitraria coccinea, Acacia, Chorozema, Dillwynia, Diosma, Lilium lancifolium, &c. &c.—May be viewed two days prior to the sale. Catalogues to be had 6d. each, returnable to purchasers, on the Premises; at the Shop, High Street, Clapham; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex. N.B.—The Lease of the old-established Seed Shop and Nursery to be Sold; the Stock to be taken by valuation or agreement. For particulars, apply to the administrators, or Mr. James Fairbairn, on the premises.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER,
AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS AND WORKMANSHIP.



GRAY & ORMSON, DANVERS STREET, CHELSEA, LONDON.

GRAY and ORMSON, Danvers Street, Chelsea, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; they can with the greatest confidence give the most satisfactory references to all by whom they have been favoured with orders. Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

Just published, price Twopence,

BOTANY. PART I.

BY EDWARD SMITH, M.D., LL.B.,

LATE LECTURER ON BOTANY AT THE CHARING CROSS HOSPITAL.

Being No. XXXIX. of ORR'S CIRCLE OF THE SCIENCES.

LONDON: WILLIAM S. ORR AND CO., AMEN CORNER.

Will be published on November 1st,

THE SCOTTISH AGRICULTURISTS' ALMANAC, AND YEAR-BOOK OF PROGRESS FOR 1855. Advertisements intended for insertion should be sent to Mr. LOCKHART MORTON, 7, Pitt Street, Edinburgh, without delay. The circulation last year was 4000 copies.

GRAIN MILLS.

THE PRACTICAL MECHANIC'S JOURNAL, Part 78, September, 1s., illustrated by two large Plate Engravings of Harman's Direct-Acting Screw Engines, and 30 woodcuts. Articles upon Boiler Explosions—Education—The Law as to Patents in Saxony—Harman's Direct-Acting Screw Engines—Notes on Lime—Submarine Electric Telegraph between Europe and America—American Notes, by our Own Correspondent—The Crystal Palace. Specifications of New Patents: Printing Surfaces, Graham; Railway Wheels, Morrison; Railway Breaks, Johnson; Grain Mills, Johnson; Pistons, Hinchcliffe; Zincographic Printing Machine, Reid; Dyeing, Johnson; Safety Floating Dress, Johnson; Foundations of Houses, Bird; Steam-heated Clay Still, Lister; Railway and Alarm Signals, Norton. Reviews of Books, Proceedings of Societies, Monthly Notes, Law Reports in Patents and Designs, Lists of all New Patents.

London: GEORGE HEBERT, 88, Cheapside; Editor's Offices (Offices for Patents and Designs), 47, Lincoln's Inn Fields, London, and 166, Buchanan Street, Glasgow.

ON MARRIAGE.

Just published (to be had free, by enclosing 1s. or Twelve Postage Stamps, to Mr. WATSON, Clerical Agent, Robert Street, Adelphi, London).

MATRIMONY.—A Pamphlet on Matrimonial Alliances, which merits the attention of those who wish to settle honourably in life. By a Clergyman.

Price 3s. 6d., free by post,

THE TREE ROSE.—Practical Instructions for its Formation and Culture. Illustrated by 24 Woodcuts. Reprinted from the GARDENERS' CHRONICLE, with additions.

CONTENTS.

Annual pruning time, principle of execution, &c.
Binding up
Budding knife
Budding, time of year, day, time of day, state of the plant, care of buds
Budding upon body
Bud, insertion of, into stock
Bud, preparation of, for use
Buds, dormant and pushing
Buds, failing
Buds, securing a supply of
Caterpillars, slugs, and snails, to destroy
Causes of success
Dormant buds, theory of replanting with, explained
Guards against wind
Labelling
Loosing ligatures
March pruning
Mixture for healing wounds
Pruning for transplantation
Planting out, and arrangement of trees
Pushing eye, spring treatment of dwarf shoots from
Roses, different sorts on the same stock
Roses, short list of desirable sorts for budding with a pushing eye
Sap-bud, treatment of
Shape of trees
Shoots and buds, choice of
Shoots for budding upon, and their arrangement
Shoots, keeping even, and removing thorns
Shortening wild shoots
Stocks, planting out for budding upon: the means of procuring; colour, age, height; sorts for different species of Rose; taking up, trimming roots, sending a distance, shortening heads, &c.; saw proper for the purpose.

GRAFTING.

Aphides, to keep down
Free-growers, remarks on
Graft, binding up and finishing [of
Grafting, advantage
Grafting, disadvantage of
Operations in different months
Preliminary observations
Roses, catalogue and brief description of a few sorts
Scion, preparation and insertion of
Scion, choice and arrangement of
Stock, preparation of.

APPENDIX.

A selection of varieties
Comparison between budding and grafting.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden.

Price 3d. each, or 5s. for 25 copies for distribution among Cottage Tenantry, delivered anywhere in London, on a Post-office order being sent to the Publisher, JAMES MATTHEWS, at the office of the *Gardeners' Chronicle*.

In consequence of the new postal arrangements, parties in the country who desire it can have copies sent by post; six stamps, in addition to the cost of the numbers, will pass 10 copies free by post.

The cost of a single copy, free by post, is therefore 7d.; and of ten; free by post, is 3s.

THE COTTAGER'S CALENDAR OF GARDEN OPERATIONS.

By Sir JOSEPH PAXTON.

Reprinted from the GARDENERS' CHRONICLE; above 90,000 have already been sold.

CONTENTS.

African Lilies
Agapanthus
Anemones
Annuals
Apples
Apricot
Auriculas
Beans
Beet
Biennials
Black Fly
Books for Cottagers
Borage
Borecole
Box Edgings
Broccoli
Brussels Sprouts
Budding
Bulbs
Cabbage
Cactus
Calceolarias
Californian Annuals
Campanulas
Carnations
Carrots
Cauliflowers
Celery
Cherries
China Asters
China Roses
Chrysanthemums, Chinese
Chives
Clarkias
Clematis
Collinsias
Colewort
Cress
Creepers
Crocus
Crown Imperials
Cucumbers
Cultivation of flowers in windows
Dahlias
Daisies
Dog's-tooth Violets
Exhibitions, preparing articles for
Ferns, as protection
Fruit
Fuchsias
Gentianella
Gilias
Gooseberries
Grafting
Green-fly
Heartsease
Herbs
Herbaceous Perennials
Heliotrope
Hollyhocks
Honeysuckle
Horse-radish
Hyacinths
Hydrangeas
Hyssop
Indian Cress
Iris
Kidney Beans
Lavender
Layering
Leeks
Leptosiphons
Lettuce
Lobelias
London Pride
Lychnis, double
Marigold
Marjoram
Manures
Marvel of Peru
Mesembryanthemums
Mignonette
Mint
Mustard
Narcissus
Nemophilas
Œnothera bifrons
Onions
Pæonies
Parsnip
Parsley
Peaches
Pea-haulm
Pears
Peas
Pelargoniums
Perennials
Persian Iris
Petunias
Phlox
Pigs
Pinks
Planting
Plums
Polyanthus
Potatoes
Pruning
Privet
Propagation by cuttings
Pyracantha
Radishes
Ranunculus
Raspberries
Rhubarb
Rockets
Roses
Rue
Rustic Vases
Sage
Salvias
Savoys
Saxifrage
Scarlet Runner Beans
Seeds
Sea Daisy or Thrift
Seakale
Select Flowers
Select Vegetables and Fruit
Snails and Slugs
Snowdrops
Spinach
Spruce Fir
Spur Pruning
Stocks
Strawberries
Summer Savory
Sweet William
Thorn Hedges
Thyme
Tigridia Pavonia
Transplanting
Tree Lifting
Tulips
Turnips
Vegetable Cookery
Venus's Looking-Glass
Verbenas
Vines
Virginian Stocks
Wallflowers
Willows
Zinnias

Post-office orders to be made payable to JAMES MATTHEWS, 5, Upper Wellington Street, Covent Garden, London.

NEW EDITION OF THE CRYSTAL PALACE OFFICIAL GUIDE-BOOK.—BY SAMUEL PHILLIPS.

A NEW EDITION, Corrected and Enlarged, with NEW PLANS of the BUILDING and GROUNDS, and many additional Plans of the various Courts, is published this day, price One Shilling.

*** The Official Guide-books to all the Courts are always on sale in the Building, and at all Railway Stations.

London: BRADBURY & EVANS, 11, Bouverie Street.

OFFICIAL GUIDE-BOOK TO THE CRYSTAL PALACE.—By SAMUEL PHILLIPS.

TO ADVERTISERS.—The first contract for One Hundred Thousand Copies being nearly completed, the Publishers are prepared to receive renewals or fresh Advertisements for a Second Series of One Hundred Thousand Copies.

11, Bouverie Street, September 16, 1854.

This day is published (uniform with "VANITY FAIR," and "PENDENNIS"), price 13s. in cloth,

THE FIRST VOLUME of THE NEWCOMES. By W. M. THACKERAY. With Engravings on Steel and Wood by RICHARD DOYLE.

BRADBURY & EVANS, 11, Bouverie Street.

SIR DAVID BREWSTER'S NEW WORK.

This day, Third Thousand, thoroughly revised, with additional Chapters, Post 8vo., 6s.

MORE WORLDS THAN ONE; the Creed of the Philosopher and the Hope of the Christian. By SIR DAVID BREWSTER.

London: JOHN MURRAY, Albemarle Street.

PROFESSOR LINDLEY'S INTRODUCTION TO BOTANY, 4th Edition, with Corrections and Additions, now ready, in 2 vols. 8vo, with Six Copper Plates and numerous Wood Engravings. Price 24s. cloth.

London: LONGMAN, BROWN, GREEN, & LONGMANS.

In fcp. 8vo, with Woodcuts, price 7s. 6d. cloth.

PROFESSOR BRANDE'S LECTURES on the ARTS connected with ORGANIC CHEMISTRY, as APPLIED to MANUFACTURES, including Dyeing, Bleaching, Calico-Printing, Sugar-Manufacture, the Preservation of Wood, Tanning, &c., delivered before the Members of the Royal Institution. Arranged by permission from the Lecturer's Notes by J. SCOFFERN, M.B.

London: LONGMAN, BROWN, GREEN, & LONGMANS.

Now ready, in foolscap 8vo, with Woodcuts, price 7s.,

LECTURES ON POLARISED LIGHT, together with a Lecture on the Microscope, delivered before the Pharmaceutical Society of Great Britain, and at the Medical School of the London Hospital, by the late JONATHAN PEREIRA, M.D., F.R.S., &c. Second edition, greatly enlarged from materials left by the author. Edited by the Rev. BADEN POWELL, M.A., V.P.R.S.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

WORKS ON BOTANY AND GARDENING.

I.

CLASS BOOK OF BOTANY, being an introduction to the Study of the Vegetable Kingdom. 8vo, with 1800 Illustrations. Price 31s. 6d. By J. H. BALFOUR, Professor of Botany in the Edinburgh University.

II.

OUTLINES OF BOTANY, being an Introduction to the Study of the Structure, Functions, Classification, and Distribution of Plants. Illustrated. Fcp. 8vo. Price 7s. 6d. By Professor BALFOUR.

III.

NEILL'S FRUIT, FLOWER, AND KITCHEN GARDEN. New edition. Price 5s.

IV.

THE AMATEUR GARDENER'S YEAR BOOK, a Guide for those who cultivate their own Gardens. By the Rev. HENRY BURGESS, LL.D. Price 5s.

Edinburgh: A. & C. BLACK: London: LONGMAN & Co.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. [illegible], Victoria Street, in the Parish of St. Margaret and St. John, Westminster, both in the County of Middlesex, Printers, at their Office in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul, Covent Garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, Sept. 16, 1854.

THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 38.—1854.] SATURDAY, SEPTEMBER 23. [PRICE 6d.

INDEX.

Araucarias on chalk .... 614 a
Cabbages, culture of.......... 613 b
Calendar, horticultural........ 616 a
— agricultural .... 621 b
Cattle, sale of short-horns .... 620 c
Chalk, Araucarias on .... 614 a
College, Agricultural.......... 619 b
Conifers, hardiness of.......... 614 a
Crystal Palace, Phillips' Guide to .... 615 a
Cyrtoceras reflexum .... 613 a
Entomological Society......... 614 c
Farm, Armagh Palace .... 620 c
Grasses, agricultural .... 619 b
Grass crop, Tiptree .... 621 a
Harvest, causes of the late good 620 a
Harvesting, cost of............ 617 c
Hop disease ....611 a—614 b
Ker's (Mr.) Cheshunt .... 615 c
Labour, skilled and moral .... 620 a
Law, railway, &c., traffic act .. 612 a
Lysimachia, westphalica, British...... .... 614 c
Manure, sewage .... 611 c
Ox, dentition of .... 618 c
Paper, material for .... 613 c
Pathology, vegetable .... 612 b
Physiology, vegetable .... 612 c
Pigs, management of.......... 618 a
Pine-apple, Bacaxi............ 612 c
Plants, new .... 615 b
— effect of winter on ...... 614 b
— new British .... 614 c
Polyanthus, the .... 616 a
Potatoes, kiln dried .... 613 c
Railway traffic act .... 612 a
Reaping machines .... 617 b
Savings' banks................ 618 a
Seeding, thin.................. 620 b
Sewage manure .... 611 b
Steropus madidus .... 613 a
Timber, fragrant Chinese...... 614 c
Town sewage.................. 611 b
Trees, bursting of, from frost.. 614 c
Vegetable pathology .... 612 b
— physiology............... 612 c
Wheat, ears of .... 620 a
Winter, effects of............. 614 b

SCOTTISH GARDENERS' AND LAND STEWARDS' ASSOCIATION.—ELECTION OF PENSIONERS.—Notice is hereby given, that Applications from Candidates desirous of being placed on the roll at the next Election must be lodged with the Secretary on or before Monday the 16th October ensuing. Printed forms of application, for both Male and Female Candidates, may be obtained of Messrs. Dickson & Co., Waterloo Place; Messrs. James Dickson and Sons, Hanover Street; Messrs. Peter Lawson and Son, George IV. Bridge; Mr. M'Nab, Royal Botanic Gardens, Edinburgh; and from the Secretary. BY ORDER OF THE BOARD.
Committee Rooms, 6, York Place, Edinburgh, Sept. 23.

RENDLE'S NEW AUTUMNAL CATALOGUE *of Geraniums, Camellias, Fuchsias, Azaleas, Chrysanthemums, Stove and Greenhouse Plants, &c., can now be had in exchange for two postage stamps.*
Apply to WILLIAM E. RENDLE & Co., Nurserymen and Seed Merchants, Plymouth.

RENDLE'S NEW DESCRIPTIVE CATALOGUE OF DUTCH ROOTS *is just published, containing lists and prices of the best Hyacinths, Tulips, Ranunculuses, Anemones, Crocus, Iris, Narcissus, Jonquils, Gladiolus, &c., to be had in exchange for two penny stamps, from*
WILLIAM E. RENDLE AND CO., SEED MERCHANTS, Plymouth

DUTCH AND CAPE ROOTS.

BASS AND BROWN'S Importation of DUTCH ROOTS has come to hand in fine condition. Their AUTUMN CATALOGUE will shortly be completed. The part containing the roots is now ready, and will be forwarded immediately on application.
BASS & BROWN, Sudbury, Suffolk.

HYACINTHS AND DUTCH BULBS.

HENRY GROOM, Clapham Rise, near London, by appointment FLORIST TO HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to say that he has received his HYACINTHS AND DUTCH BULBS, in excellent condition, and that they are much finer than usual.—His CATALOGUE of BULBS, &c., will be forwarded on application.

AMERICAN PLANTS.

JOHN WATERER begs to announce that he has published a new Catalogue of his Rhododendrons, &c., as exhibited by him in the Gardens of the Royal Botanic Society, Regent's Park, London. It describes the colours of all the Rhododendrons considered worthy of cultivation, with a Treatise on their successful management, and may be had by enclosing two postage stamps.
The American Nursery, Bagshot, Surrey, near Farnborough Station, South-Western Railway.

AMERICAN PLANTS. — A Descriptive Priced CATALOGUE of HARDY AMERICAN PLANTS for the coming season is just published, and may be had by enclosing two stamps for postage. As everything in the way of American Plants is grown to an unequalled extent at this Nursery, intending purchasers would do well to provide themselves with this Catalogue.
WATERER AND GODFREY, Nephews and Successors to the late Hosea Waterer, Knap Hill Nursery, Woking, Surrey.

JOHN SCHOFIELD AND SON beg respectfully to inform their Friends and the Public that their AUTUMN CATALOGUE of Carnations, Picotees, Pinks, Pansies, Hollyhocks, &c., is now ready, and may be had on application, free.
N.B. Pansy Seed, selected from the finest show flowers, 2s. 6d. per packet; also a few packets of extra fine Calceolaria Seed, 2s. 6d. each.—Knowsthorpe, near Leeds, Yorkshire.

ARTHUR HENDERSON AND CO. beg to inform their patrons and the public that their CATALOGUES OF BULBS are now ready, and they will have much pleasure in forwarding them on application.
They comprise lists of all the finest varieties of Hyacinths, and many other rare and valuable Bulbs.
Their collections of Hyacinths have yearly carried off the metropolitan prizes, not only for their unique growth, but also for their beauty of colouring and distinctness of sorts, either when exhibited in a collection of 36 plants or in pairs.
Pine-apple Place, Edgeware Road, London.

HOLLYHOCKS.—A collection of this fine old English flower, grown at the Cheshunt Nurseries, is now in bloom, and there will be a succession till the end of October. Admirers of the Hollyhock are respectfully invited to visit the Nurseries to inspect them. In addition to the choicest varieties of other growers, there are many rare and beautiful kinds of their own production, and to be seen only at their grounds.—A. PAUL & SON, Nurseries, Cheshunt, Herts (13 miles from London, on the Cambridge line of Eastern Counties Railway).

PERMANENT AND LAWN GRASS SEEDS.

WILLIAM E. RENDLE AND CO., SEED MERCHANTS, Plymouth, *have a fine stock of* NEW GRASS SEEDS, *and can supply any quantity for present sowing.*
Also new Winter Tares, White Mustard, Trifolium incarnatum, New Italian Rye-grass, &c.
WILLIAM E. RENDLE & Co., Seed Growers, Plymouth.

FINE NEW GERANIUMS, £1 1s. *per dozen.*—*For names of varieties, see* RENDLE'S *New Plant Catalogue, just published.*
Apply to WILLIAM E. RENDLE AND CO., NURSERYMEN and SEED MERCHANTS, Plymouth.

TWELVE SUPERIOR HYACINTHS *for* 6s.; *mixed sorts, 4s. per dozen, as well as every kind of Bulbous Root, can be obtained carriage free from*
WILLIAM E. RENDLE AND CO., SEED MERCHANTS, Plymouth.

THE BEST TWELVE HYACINTHS FOR POTS OR GLASSES. (*Parcels if not less than 20s. value carriage free.*)

The Best 12 HYACINTHS Imported (by name) ...	9s.	0d.
Fine Double Ditto for open ground (mixed)	4	0
CROCUSES (many sorts mixed) per thousand ...	12	6
TULIPS, fine mixed, early for pots or borders, per 100	6	0
ANEMONES, fine double mixed	5	0

And all other Bulbous Flower Roots at low prices, as per Catalogue just published.—JOHN SUTTON and SONS, Seed Growers, Reading, Berks.

JUST HARVESTED.

SUTTON AND SONS, SEED GROWERS, Reading, have now harvested some fine seed of true Early Shorthorn Carrot, Mustard, Cress, Lettuce, Early Peas, and other Seeds for early sowing.
The crops being fine and the harvest favourable, prices will be very moderate this season.

FINE BLOOMING BULBS, Carriage paid.
GUERNSEY and BELLADONNA LILIES, 4s. per doz.
VALLOTA PURPUREA ... ... 21s. „
AMARYLLIS FORMOSISSIMA ... ... 6s. „
Hyacinths, Gladiolus, Narcissus, Anemones, Ranunculus, Crocus, &c., may be obtained of
B. PAGE & Co., SEED-MERCHANTS, Southampton.
Trifolium incarnatum, 5d. per lb.; Davis' Winter Vetches, 42s. per bushel, 11s. per peck. Trade price of Guernsey Lilies to be had on application.

SEEDLING FUCHSIAS.

STEWART AND NEILSON will have ready to send out by the first week of May next small plants of the following Twelve varieties, which have been pronounced by good judges to be excellent, at the following prices, or 3l. for the 12:—

Mr. Ewart, dark ...	10s.	6d.	Dr. Parr, dark... ...	7s.	6d.
Mr. Daniel Neilson, do.	10	0	Mrs. Gardner, do. ...	7	6
Mr. Lawrence, do. ...	10	0	Miss A. J. Wright, do.	5	0
Miss France, do. ...	10	0	Mrs. Maxwell, do. ...	5	0
Mr. Littledale, do. ...	7	6	Mrs. Perry, do. ...	5	0
Mrs. E. Hill, light ...	7	6	Mrs. Bouch, light ...	5	0

Nursery, Liscard, Cheshire, near Liverpool, Sept. 23.

SPLENDID GLADIOLI.

A. VAN GEERT, NURSERYMAN, Ghent, Belgium, begs to offer to the Trade and Amateurs the following Gladiolus, all fine and new varieties of Gandavensis.

Apollon	40s. per 100	Vicomte d'Narcillac	105s. per 100
Madame Herincq	105s. „	Fanny Rouget ...	60s. „
L'Aurore... ...	45s. „	Couranti fulgens...	85s. „
Rosea carnea ...	42s. „	Triomphe d'Enghien	63s. „
Rubens	45s. „	DWARF VARIETIES.	
Ulysse	35s. „	Fulgens aurea picta	40s. per 100
Mr. Blouet ...	50s. „	Intermedius ...	35s. „
Mr. Georgeon ...	60s. „	Psittacinus major	25s. „
Madame Coudert	60s. „		

Berberis Neubertii, new and hardy, with beautiful foliage, fine young plants, 15s. each; and strong, 30s. each.
A. V. G.'s New Catalogue of Plants, just published, may be had from his Agent, Mr. R. Silberrad, 5, Harp Lane, Great Tower Street, London.

CATTELL'S EARLY BARNES CABBAGE,
„ „ RELIANCE „
„ GREEN COLEWORT „
Plants of the above are now ready, 5s. 6d. per 1000, stout bedded; 4s. 6d. per 1000 good seedlings. No charge for crates, baskets, or packing. Packages of 5000 or more, delivered to the Edinbridge Station, South-Eastern Railway, carriage free.
Orders from unknown correspondents to be accompanied with post-office orders made payable here.—Address,
JOHN CATTELL, Westerham, Kent.

"OMAR PACHA" STRAWBERRY.

WILLIAM JAMES WARD is now sending out well rooted plants of the above excellent Strawberry, which was awarded a Medal by the judges at the Royal Botanic Gardens Exhibition, July 5th, 1854. It has also been submitted to Mr. Marnock, Mr. Spencer, Mr. Thompson, and several practical gardeners, who have all pronounced a favourable opinion of it. Also by Mr. Powell, of the Royal Gardens, Frogmore, in the descriptive list of new Fruits, in the "Florist and Fruitist" for the present month, accompanied with a woodcut.

	£	s.	d.		£	s.	d.
100 plants... ...	3	0	0	25 plants	1	0	0
50 „	1	15	0	12 „		12	0

Prospect Hill, Reading.—Sept. 23, 1854.

MAY'S EARLY ASH-LEAVED KIDNEY POTATOES, free from disease, 10s. per bushel, 14s. per cwt., 12l. per ton, sacks included.
EARLY FORTYFOLD POTATOES.—The editor of the *Gardeners' Chronicle* says, "These are a well-known kind, of good quality; a good cropper, and is found by us to be quite as early as the Ash-leaved Kidney, if planted early, escaping all disease, yielding immense crops." They are of the red kind, and round. 8s. per bushel, 11s. per cwt., 9l. per ton, sacks included.
Address, HENRY MAY, The Hope Nurseries, Bedale, Yorkshire.

LISIANTHUS RUSSELLIANUS.

J. AND J. FRASER beg to offer the above, in strong and healthy plants, such as will make large specimens for flowering next season, at 2s. 6d. each.
Lea Bridge Road, Essex, September 23.

STRONG VINES FROM EYES.

THOMAS PERKINS begs to draw the attention of purchasers to the above, which are very good, and true to name, at 30s. per dozen. The usual discount to the trade.
Atherstone, Warwickshire.

PRIMULA SINENSIS.

T. AND T. HAYES begs to offer their fine fringed varieties of Red and White PRIMULAS; fine strong plants, in 60-sized pots, ready for shifting, at 6s. per dozen, packing and carriage, included to any railway in London. All orders from unknown correspondents to be accompanied with a Post Office order payable to T. & T. HAYES, Edmonton, Middlesex.

DUTCH BULBS.

JOSEPH HARRIS begs to announce that he has received his annual consignment of Bulbs from Holland, comprising the best sorts of Hyacinths, Tulips, Crocuses, Narcissus, &c. They are very fine and moderate in price. Catalogues may be had on application. Cheltenham Road Nursery, Bristol.

CLARKE AND CO., WHOLESALE AND RETAIL SEEDSMEN AND FLORISTS, 86, High Street, Borough, London, beg to say they have imported a choice collection of DUTCH BULBS (which are not to be surpassed by any other house in London), and they will be happy to forward Catalogues upon application. Terms, cash, or a reference in London.

R. SMITH is now sending out his New Seedling Strawberry, SIR CHARLES NAPIER, the best forcing one of the day, admired by all who have seen its growth, and for colour not one to equal it.—Price, 3l. per 100; 50 for 30s.; 25 for 1l.
R. SMITH, Market Gardener, Richmond Road, Twickenham; or G. GLADMAN, Salesman, Covent Garden Market, London.

DICKINSON'S ITALIAN RYE-GRASS SEED is ready for delivery (by permission of Mr. East), from 7, Curzon Street, May Fair, London, as before. 7s. per bushel for present payment only. Post-office orders Piccadilly.

DOUBLE ROMAN AND PAPER WHITE NARCISSUS, 4s. per dozen. The above bulbs, the former of which is so justly esteemed for its early blooming and excessive fragrance, and the latter for its purity and elegance, have just arrived, and may be obtained at A. CORBETT's Italian and Foreign Warehouse, 18, Pall Mall, near Waterloo Place, London.

LILIUM LANCIFOLIUM, TRITONIA AUREA, AND VALLOTA PURPUREA.

HENRY GROOM, Clapham Rise, near London, by appointment FLORIST TO HER MAJESTY THE QUEEN, AND TO HIS MAJESTY THE KING OF SAXONY, begs to say that his extensive collection of the above BEAUTIFUL PLANTS is now in flower, and may be viewed every day (Sundays excepted). Admittance gratis.
H. GROOM begs to state that his CATALOGUE OF BULBS for this autumn is ready, and will be forwarded by post on application.

NEW PROLIFIC POTATO.

WM. B. JEFFRIES, ARBORETUM NURSERIES, Ipswich, is now prepared to send out his New Seedling Potato, which he can with confidence recommend, as being the best ever grown for Autumn or early planting; it is an abundant cropper, very early, and has always proved free from disease. The *Gardeners' Chronicle* thus speaks of it at p. 552:—"It is a very nice Potato, with a particular even surface, which prevents waste in peeling."—Price per peck, 3s. 6d.; or per bushel, 12s.

STRAWBERRIES.

WILLIAM NICHOLSON is now sending out strong well-rooted Plants of his four new and distinct Strawberries, viz., AJAX, a very fine large dessert fruit, very beautiful, solid, and juicy; RUBY, ditto, a great bearer, and forces well; CAPTAIN COOK, market fruit, large, and a great bearer; FILLBASKET, ditto: 400 Plants of the above sorts for 2l.; 200 do., 1l. 4s.; 100 do., 15s.; 50 do., 10s.; box included. Most of the old and new sorts can be supplied.
*** See Mr. J. W. KINMONT's remarks on the above Strawberries, printed in No. 31, 1854, page 501, of this Paper.
Post-office Orders, payable at Yarm, Yorkshire, or a cash remittance required with the order.
Egglescliffe, near Yarm, Sept. 23, 1854.

MYATT'S new Seedling Strawberry, "ADMIRAL DUNDAS."—This is the most extraordinary variety, for size and productiveness, that has yet been raised at Manor Farm; it is much larger and a better flavour than either the Surprise or Mammoth, and ripens off the late fruit to advantage.
J. M. & SONS can confidently recommend this, as being superior to any large variety that has come under their notice.
Strong, well-rooted runners are now ready, and will be carefully packed and delivered free to any part of London, at the following scale of charges:—100, 50s.; 50, 30s.; and 25, 16s. Also strong Plants of MYATT's British Queen, Cinquefolia, Eleanor, Surprise, Globe, Eliza, Hooper's Seedling, Keens' Seedling, Black Prince, and Barnes' Bicton Pine, 5s. per 100.
Manor Farm, Deptford, September 23.

GOLIATH STRAWBERRY.—This well tested and excellent variety has now outgrown all the prejudice that has been raised against it, and has fully borne out the high character which was at first given of it; and most, if not all the market gardeners in this neighbourhood, as well as gentlemen, are growing it very extensively. It has proved itself to be the very best in the absence of its parent, the British Queen, or where that variety does not succeed.
A Post-office order for 3s. 6d., or stamps to that amount, will secure 100 strong well-rooted plants, package included; or 1s. 6d. for six plants, by post, to any part of the Kingdom. Also Trollope's Victoria, the very best for forcing, 3s. 6d. per 100.
Also the following varieties at 2s. 6d. per 100:—Keens' Seedling, Elton Pine, Myatt's Surprise, Comte de Paris, and Hooper's Seedling.—JAMES KITLEY, Lyncombe Vale Nursery, Bath.

CHRYSANTHEMUMS.

R. PARKER begs to offer fine bushy plants of the above, well established in 6-inch pots, for flowering this autumn, consisting of all the newest and finest Pompon and large flowered varieties in cultivation. Purchaser's selection at 9s. per dozen.

CINERARIAS (Seedlings), from all the finest varieties, carefully selected, including the new varieties sent out last autumn. Strong established plants, in 4-inch pots, at 4s. per dozen. A choice collection of named Cinerarias in strong established plants, purchaser's selection, at 9s. per dozen. List of names forwarded upon application. A remittance or reference to accompany all orders from unknown correspondents.

Paradise Nursery, Hornsey Road, Islington.

CHOICE NEW GERANIUMS, FUCHSIAS, ETC.

HENRY WALTON, Florist, &c., Edge End, Marsden, near Burnley, Lancashire, begs to state that he will be prepared to send out nice plants of Foster's, Hoyle's, Beck's, Dobson's, and Henderson's New Geraniums, sent out last autumn, early in October, well established in 4-inch pots, at 36s. to 40s. per dozen. All the Choice New Fuchsias, sent out last spring, 1s. 6d. to 2s. each, or 18s. per dozen. New Verbenas, sent out in spring, 1s. each, or 9s. per dozen. New Petunias, sent out in spring, 1s. 6d. each, or 15s. per dozen. Choice New Cinerarias, 2s. each, or 18s. per dozen, or 6 for 10s.; older ditto, 6s. to 9s. per dozen. Pansies, newest and best varieties, 18s. per dozen.—Carnations, Picotees, Pinks, &c. &c., equally cheap.

Descriptive Lists of the above may be had for one postage stamp.

SWEETWILLIAMS.

"THE most extraordinary movement that has ever taken place in the floral world." Such is Mr. Glenny's opinion of Mr. Hunt's SWEETWILLIAMS, in the "Horticultural Journal," for July 15, 1854.

The "Florist," for August, in its report of the National Floricultural Society, says, "Mr. Bragg exhibited a very fine collection of Mr. Hunt's Sweetwilliams, remarkable for form and texture, the petals being stiff, smooth, and well rounded, and varying in colour from white, with carmine centres, to brilliant crimson."

The editor of the "Midland Florist," in the number for August, describes them as "round, smooth on the edge, close in the truss, distinct in colour; in fact, beautiful in the extreme."

See also "Midland Florist," for September, 1853.

In the "Gardeners' Record," for September, 1853, Mr. Neville pronounces them as "large, perfectly smooth, and possessing properties worth the notice of amateur florists, and will, no doubt, if sent out, soon become general favourites."

W. BRAGG, of the Star Nursery, Slough, has much pleasure in informing the admirers of the above new and truly beautiful Flowers, that he is now prepared to send out strong healthy Plants, at 7s. 6d. per dozen.

The usual Allowance to the Trade. A list of those Nurserymen who ordered Plants will be published.

JAMES IVERY and SON, Nurserymen, &c., Dorking and Reigate, Surrey, are now prepared to receive orders for the following new and beautiful varieties of AZALEA INDICA and RHODODENDRON PONTICUM COCCINEUM, which will be ready for delivery in October next. The Advertisers beg to say they can recommend them with the greatest confidence as being superior to any others of their kind. The Azaleas were figured in the "Florist" for July, 1852, at which time the editor remarked as follows:—"As regards the beauty of the flowers little need be said, as the representations will speak for themselves; they have been much admired, and will, no doubt, speedily find their way into every collection." Again, in the same journal for June, 1854, the editor says:—"Your two Azaleas, Admiration and Criterion, are certainly very beautiful, and fully maintain the opinion expressed of them, at page 137 volume for 1852, when we figured them." Criterion is a very fine bold flower; size, shape, and habit of that old favourite Iveryana; colour, light salmon, distinctly margined with white, and thickly spotted with deep crimson on the upper petals; 21s. each. First-class Certificate at the National, April 20, 1854—the only time it has been exhibited since it was figured. Admiration is a medium sized flower, of greater substance than the former, with the same shape and habit; colour pure white, with broad flakes of carmine, resembling the marking of a Carnation; 21s. each. Has not been exhibited since it was figured, owing to an accident to the flowering plant.

RHODODENDRON PONTICUM COCCINEUM.—This is the finest crimson variety ever offered to the public; it is a free bloomer, with a fine large truss of brilliant crimson, being brighter than the old Arboreum, and perfectly hardy. Dr. Lindley, in this journal (page 342), says:—"This fine variety has the deep crimson flowers of the red tree Rhododendron, which was evidently one of its parents, and the foliage of R. ponticum, which it resembles in all respects except in colour—thus uniting the brilliant flowers of the tender Indian kind with the hardy vegetation of the Black Sea.' 21s. to 63s. each. Has received three Certificates of Merit. A few extra-sized plants of both Azaleas at 42s. each.

The above have been ordered by most of the principal nurserymen, and many of the nobility and gentry.

N.B. Figured Plates of the two Azaleas may be had by enclosing nine postage stamps to either of the above-named Nurseries. A remittance, or reference, is respectfully requested from unknown correspondents.

Reigate Nursery, September 23.

NEW HARDY CONIFERS.

HUGH LOW and CO. announce to their friends and the public that they have been appointed by Messrs. Parsons & Co., of Flushing, New York, Sole Agents in this country for the sale of the undernamed CALIFORNIAN CONIFERS. The Plants are raised from seed, and will be delivered as soon as the growth of the present season is sufficiently matured. THUJA GIGANTEA (Nuttal); *synonyms* LIBOCEDRUS DECURRENS (Torrey); THUJA MENZIESI (Douglas); THUJA CRAIGIANA (Jeffreys).—A magnificent species, and the most desirable Tree known to exist in California. It was discovered by the botanists of the United States Exploring Expedition, and is described by Professor Torrey, in "Plantæ Fremontianæ," as growing near the upper waters of the Sacramento, from lat. 38° 40′ to 41° N. He also states it is a noble tree, attaining a height of 120 to 140 feet, with a trunk 7 feet in diameter, rising from 80 to 100 feet without a limb. This tree will be perfectly hardy, and will take the foremost rank amongst our ornamental trees, as the foliage is most beautiful, reminding an observer of some of the more graceful species of Lycopodium.

The Plants when delivered will average 1 foot to 1½ foot in height, and being of such unusual size for a new Conifer, will produce an immediate effect. Price 31s. 6d. each.

ABIES NOBILIS.—This well-known Fir requires no description. Plants from seed have long been desiderata, and those now offered are strong and well shaped, from 6 inches to 1 foot in height. Price 31s. 6d. each.

In addition to the above, H. L. & Co. have to offer from the same source strong Plants of several species of hardy CALIFORNIAN PINES, collected in districts little explored. Amongst them will be found Pinus Jeffreyana, Pinus Parryana, offered for the first time; and judging from the CONES of the different species, it may with certainty be inferred that several others will prove entirely new to this country. Price 84s. per doz.

Messrs. Parsons & Co. having been successful in raising these fine Conifers in considerable numbers, have determined on offering them at the low prices quoted above, with a view to insure their speedy introduction into every collection in Europe.

Discount allowed only when twelve plants of a sort are taken.

Clapton Nursery, London, Sept. 23.

DUTCH FLOWER ROOTS.

WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth, have just received, direct from one of the first establishments in Holland, a very large assortment of

DUTCH FLOWER ROOTS,

comprising all the best varieties of Hyacinths, Tulips, Ranunculuses, Anemones, Gladiolus, Iris, Liliums, Crocus, Ixias, and all other kinds of Flowering Bulbs.

They are all come to hand in most excellent condition, and will insure satisfaction to all purchasers.

COLLECTIONS OF FLOWERING BULBS.

No. 1. A Selection of all the most approved sorts for a large garden	£3	0	0
No. 2. A Selection, in smaller quantities	2	0	0
No. 3. A Selection, for a small garden	1	0	0

These Collections have given the greatest satisfaction to all who have had them, and can be recommended with the greatest confidence.

All Orders for Roots above 2l. Carriage paid to any station on the South and Western Railways, and above 5l. to any station in England.

A. VERSCHAFFELT, Nurseryman, Ghent, Belgium, begs to offer the following Plants:—

	£	s.	d.
Begonia Verschaffelti	£0	5s.	0d.
Brugmansia albido-flava	0	5	0
Isoloma Trianei	0	5	0
Sciadocalyx Warscewiczi	0	2	6
Clematis Helena	0	2	6
„ Sophia	0	2	6
Embothrium lanceolatum	0	7	6
Camellia Imperatrice Eugenia	0	7	6
Azalea indica Bealii	0	5	
Berberis Neubertii—hybrid from Mahonia fascicularis and Berberis atropurpurea. This is one of the finest plants obtained for many years, quite hardy, strong plants	1	10	0
Ilex cornuta	0	3	6
„ furcata	0	2	6
Quercus filicæfolia (beautiful)	0	15	0

YEWS! YEWS! YEWS!

To Gentlemen, Contractors for Cemeteries, Nurserymen, and Others.

WILLIAM YOUNG, of the Milford Nursery, near Godalming, Surrey, begs to inform the above, that he has from 3000 to 4000 fine healthy Yews, standing in the following hedges:—

No. 1.	Hedge	contains	300,	average 6 feet in height	
2.	„	„	300,	„ 7 „	
3.	„	„	300,	„ 6 „	
4.	„	„	250,	extra-large fanned 6 ft.	4 feet wide
5.	„	„	150,	„ 6 ft.	4 feet wide
6.	„	„	150,	„ 6 to 7 ft.	4 feet wide
7.	„	„	100,	„ 7 to 8 ft.	4 feet wide
8.	„	„	150,	„ 9 ft.	4 feet wide
9.	„	„	150,	„ 6 to 7 ft.	

500 Fine Quartered Yews, 7 to 9 feet in height.
500 „ „ „ 4 to 5 „ „
250 „ „ „ 6 to 7 „ „

All the above will remove with safety, and the price will be regulated according to the quantity taken. The plants should be seen on the grounds to form an opinion of their value.

Milford Nursery, two miles from the Godalming Station, South Western Railway.—Sept. 23.

AUTUMNAL ROSES.

G. CLARKE respectfully invites the attention of the lovers of ROSES to his unrivalled Collection, extending over Ten Acres of ground, which may now be seen in full bloom. Orders taken now, and executed in November. Standards, fine heads and straight stems, 18s. per dozen. Dwarfs, in pots, of all the leading sorts of Hybrid Perpetuals, Bourbons, Teas, and Chinas, on their own roots and budded on the Manetti (suitable for Bedding or pot Culture), 12s. per dozen. The following new Roses are also in pots, fine strong Plants; those marked thus * are budded on the Manetti.

HYBRID PERPETUALS.

Gloire de France
General Jacqueminot
Jules Margottin
La Quintinie
*Lady Shelley (Mitchell's)
*Prince Kotchouby
*Paul Dupuy
*Baronne de Heckeren
*Madame de Manoil
*Madame Rivers
*Souvenir de Madame Lille
*General Castellane
*Eugene Sue
*Queen Victoria (Paul's)
*Joan of Arc
Alexandrine Bachmeteff—Bourbon
*Prince Albert (Paul's)—Tea
Gloire de Dijon

FRUIT TREES.

G. C. also begs to state that he has a large stock of Trained Trees, Apricots, Peaches, Nectarines, &c., which are very fine; they being planted on maiden soil, have remarkably fine wood and fibrous roots. Also a fine stock of every description of Evergreens, Coniferæ, &c. &c.

N.B. Catalogues may be had on application at the Nursery, Streatham Place, Brixton Hill, Surrey.—Sept. 23.

TO GENTLEMEN ENGAGED IN PLANTING.

WATERER and GODFREY respectfully invite attention to their stock of the following very desirable HARDY PLANTS.

Araucaria imbricata, from 2 to 7 feet high; as handsome as plants can be.
Cedrus Deodara, in any quantity, from 1 to 3 feet high
Do. do., 4, 5, 6, 7, 8, and 10 feet high; splendid plants
Cedars of Lebanon, 3, 4, 6, and 10 feet high
Pinus Douglasi, 3 to 10 feet
„ insignis, 2 to 7 feet
„ Menziesi, 3 to 7 feet
„ pinsapo, fine plants, 3 to 6 feet
„ Nordmanniana, 1½ to 3 ft., all from seed and remarkably handsome
„ nobilis, 1½ to 2 feet; a few larger, 5 and 6 feet high, on their own roots, and with perfect leaders
„ Montezumæ, 2 to 4 feet
Pinus canadensis, 3 to 8 feet
Cupressus macrocarpa or Lambertiana, 4 to 7 feet
„ thyoides variegata, 3 to 4 feet (the variegated white Cedar)
Juniperus, Upright Irish, perfect columns, 3 to 7 feet
„ chinensis, 2 to 8 feet
Yew, common English, 3 to 8 feet
„ Irish, 4 to 10 feet
„ gold-striped, 1½ to 3 feet
„ do., tall standards, 4 to 7 ft.
„ Dovaston, or Weeping, worked on tall straight stems
Thuja aurea, the finest plants in the country
Libocedrus chilensis, the finest plants in the country
Large variegated Hollies
„ Standard Bays

Also an immense stock of large Evergreens, Standard Ornamental Trees, &c.

All the plants here offered may be seen, growing in our nursery; they are removed every year, and will travel any distance with perfect safety. Of some, such as Araucarias, Deodaras, Golden Yews, Thuja aurea, Pinus nobilis, Nordmanniana, we have any quantity; and the plants, for root and branch, are not to be surpassed. Priced Catalogues will be forwarded on application, enclosing two postage stamps, to Waterer and Godfrey, nephews and successors of the late Hosea Waterer, Knap Hill Nursery, Woking, Surrey, near the Woking Station, South-Western Railway, where all trains stop, and where capital conveyances can be obtained.

The 2d. stamp will also include a descriptive Catalogue of their American Plants, Roses, and Nursery Stock in general.

NEW FRENCH GERANIUMS.

JOHN SCOTT, Florist, Bathford, near Bath, can supply the following nine spotted FRENCH GERANIUMS with a plant of Extravaganza and hamper included, for [illegible]. J. S. has proved them to be beautiful for bedding, as well as for pot culture. They continue flowering the whole of the summer. Auguste Midley, Colonel Fossey, Edoile des Jardins, General Cavai, Gustave Odier, James Odier, Jaques Duval, Madame Lamoriciere, Triumph de la Tour.

The following new Geraniums of last year:—Carlos, Governor General, Regalia, 5s. each; Majestic, Zeno, Lady Bird, Rosa, 3s. 6d. each.

The following, 18s. per dozen:—Optima, Leonora, Laguna, Cordelia, Medora, Eleanor, Kulla, Queen of May, Rachael, Butterfly, Challenger, Portia, National, Astrea.

The following, 10s. per dozen:—Ambassador, Ariadne, Enchantress, Elise, Magnet, Mochanna, Lord Mayor, Lablache, Ganymede, Flying Dutchman, Purple Standard, Magician, Pulchra.

The following new Fancies:—Constance, 3s. 6d.; Lady Home Campbell, Mary Howitt, The Ocean Queen, and Illuminator, 2s. 6d. each. The above are nice Plants, and could not fail to please. Post Office orders, payable at Bath, are requested from unknown correspondents.

MUSHROOM SPAWN.

To Mushroom Growers, Gentlemen's Gardeners, Nurserymen, Seedsmen, and the Trade in General.

S. CHEESE begs to inform his Patrons he has now ready for delivery, and in fine condition, a large STOCK of his far-famed SPAWN, that has stood the test upwards of 50 years, and never known to fail. Any quantity can be safely packed and forwarded to any part of the world, on receipt of Post-office order.—Address, 231, Oxford Street (late of the Flora Gardens, Bayswater), London.

THE CRYSTAL PALACE FLOWER BASKETS, as exhibited in Nave and Transepts of the Crystal Palace, Sydenham, made to the original and other new elegant designs, by W. RICHARDS, at the Wire Works, 370, Oxford Street, nearly opposite the Princess's Theatre. Conservatories and Aviaries fitted up. Wire work in all its varieties. Game and garden fence—parrot cages and all others. Choice birds kept on sale. Window blinds of every possible description, of the very best materials and workmanship.

N.B. An allowance to nurserymen and the trade.

TO NURSERYMEN AND GARDENERS.

REIGATE SILVER SAND, 11s. per ton; ditto, delivered 5 miles, 16s. per ton. Loam and Peat at moderate prices.—Kennard Brothers, Swan Place, Old Kent Road, London.

TO FLORISTS AND OTHERS.

J. JONES, Iron Merchant, has always a great variety of CONICAL and SADDLE BOILERS in STOCK: also Fire and Furnace Bars, Ornamental and Plain Supply Cisterns, Double Doors and Frames, Furnace Grates, Soot Doors, Hot Water Pipes, Elbows, Tees, Syphons, Throttle Valves, Stop Cocks, Flange and Socket Elbows, &c.; also Trough Pipes. Drawings and prices of the above, on application to J. Jones, Iron Bridge Wharf, No. 6, Bankside, London, near the Southwark Iron Bridge.

THE CONICAL HOT-WATER BOILERS, as invented by John Rogers, Esq., are only to be obtained of JOHN SHEWEN, Ironmonger, Sevenoaks, Kent.

Contracts given for Heating.

STEPHENSON and PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

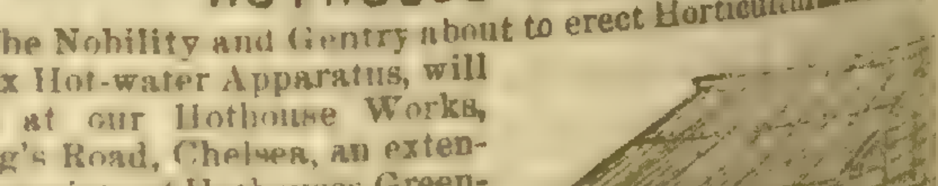
From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

GREEN AND HOT-HOUSES made by machinery, at J. LEWIS'S Horticultural Works, Stamford Hill, Middlesex. Sent to all parts of the United Kingdom. These buildings are warranted of the best materials, and put together in a superior manner. Being manufactured by steam-power, they are considered the cheapest and best made in England. The Trade and Merchants supplied at wholesale prices. List of Prices by enclosing two postage stamps.

HOT WATER APPARATUS, adapted for Horticultural and every other description of Buildings; improved Boilers, requiring no brickwork, Warm Air Apparatus, &c.—S. S. TAYLER, Engineer, Battersea.

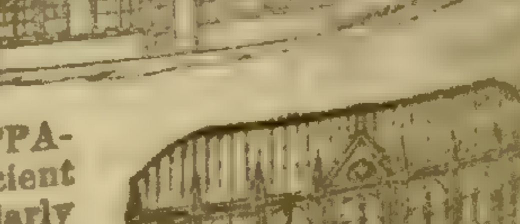
HORTICULTURE IN ALL ITS BRANCHES.

J. WEEKS & Co., King's Road, Chelsea.

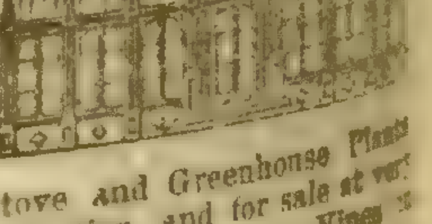


HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Buildings or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.



The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.



The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. Weeks & Co., King's Road, Chelsea, London.

NEW BULB CATALOGUE.

E. G. HENDERSON AND SON, of the Wellington Nursery, St. John's Wood, London, begs to inform the public that their Catalogue of Bulbs is now published, and will be forwarded post free on application.

The collection is selected with much care, and they would draw particular attention to the Hyacinths which have been proved in their nursery to possess those properties for which this tribe is celebrated, viz., brilliant colour, close, compact truss, and good habit. The Dutch collections have such a number of cheap varieties which are offered to the London market, that it is requisite for them to be proved before being offered to the public.

Among the other lists of Bulbs, they would call attention to the Gladiolus, particularly to Section III. (hybrids of Gandavensis), and can recommend such as Fanny Rouget, Monsieur Blouet, and Couranti fulgens, as possessing first-rate merits.

NEW CLIMBING HYBRID PERPETUAL ROSE, THE "DUCHESS OF NORFOLK."

To be sent out for the first time about the end of October.

WM. WOOD AND SON have much pleasure in offering the above superb Rose to the notice of their Friends, feeling assured it will prove entirely distinct from any Rose at present known, and which cannot fail to give every satisfaction. The colour is a bright vivid crimson, the under side of the petals most delicately shaded with a fine glossy pink, presenting a pleasing contrast; but the most valuable property of this superb variety consists in its extraordinary vigour, and as a perpetual-flowering dark-coloured Climbing Rose surpasses any variety that has yet been offered.

Standards, Half Standards, or Dwarfs will be supplied at 10*s.* 6*d.* A very liberal allowance to the Trade. N.B. The above will be figured in the October number of "The Florist."

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

SEED POTATOES: the "BRITISH QUEEN."—The above variety is well worthy of the attention of private growers, where yield and quality are objects. They do not require any forcing, and are ready to take up in May, and quite ripe in June. Numerous testimonials have been received from parties who had small quantities sent on trial last season. The following is from Mr. J. Basting, Gardener to Mrs. Kemble, Birkfield Lodge. "Sept. 16th, 1854.

"Sir,—The quarter peck of British Queens you sent me last year on trial have produced me over two bushels of very fine Potatoes; they are the best crop that I have seen for the last 20 years, and I have much pleasure in recommending them to your numerous customers.—J. Basting, Gardener to Mrs. Kemble, Birkfield Lodge, Suffolk."

Price 30*s.* per sack of 16 stone; this includes Carriage paid to London and sack. All orders must be accompanied with a remittance.—A fresh supply of the Early Short-top Ash-leaf Kidney will be ready to send out on Wednesday next, price 30*s.* per sack.

JOSEPH WILSON, Seed Potato Merchant, Ipswich.

STRAWBERRIES.—*This is the best time for planting Strawberries, especially after the late rains we have had. The Subscribers have a very superior stock of the following choice varieties* :—

INGRAM'S PRINCE OF WALES.—The principal sort grown at Frogmore for the Royal table, 20*s.* per 100.

PINCE'S NIMROD—highly recommended by Lucombe, Pince, & Co., 40*s.* per 100.

NICHOLSON'S AJAX ... ...
" RUBY ... ...
" CAPTAIN COOK
" FILLBASKET ...
} Four excellent varieties, fully described by Mr. Nicholson. Price 7*s.* 6*d.* per 100.

TROLLOPE'S VICTORIA—A very superior and most prolific variety, 5*s.* per 100.

CUTHILL'S BLACK PRINCE—5*s.* per 100.

KITLEY'S GOLIATH—5*s.* per 100.

All the other choice varieties in cultivation. For prices and further particulars, consult RENDLE'S NEW AUTUMNAL CATALOGUE, *just out, to be had in exchange for two penny stamps.*—Apply to

WILLIAM E. RENDLE AND CO., SEED MERCHANTS, Plymouth.

HYACINTHS ... ... 4*s.*, 6*s.*, and 9*s.* per doz.
ANEMONES, best double varieties ... ... 5*s.* per 100.
RANUNCULUS " ... 3*s.* to 5*s.* "
CROCUS ROOTS, very large ... 1*s.* 6*d.* to 2*s.* "

And all other kinds of Dutch Roots, imported direct from the first houses in Holland, at the lowest remunerative prices.

Apply to WILLIAM E. RENDLE AND CO., SEED MERCHANTS, Plymouth.

THOMAS JACKSON AND SON, having a large healthy Stock of STOVE, ORCHIDACEOUS, and GREENHOUSE PLANTS, respectfully invite intending purchasers to an inspection; in addition to the established favourite kinds will be found many novelties now offered at very low prices. Kingston, near London.

The Gardeners' Chronicle.

SATURDAY, SEPTEMBER 23, 1854.

IN our notice of the efforts which had been made by the Hop growers, near Maidstone, we inadvertently made a misstatement with respect to the Hop garden, near Leeds, in which tobacco had been used so perseveringly to destroy the aphis, before the mildew made its appearance. The garden in question is occupied by Mr. THIRKEL, than whom no one has taken greater pains to counteract the prevalent maladies. Under any circumstance we should be anxious to correct the error, but in addition to considerations of mere justice, we are desirous of doing so, because it gives us an opportunity of stating that he had not confined his experiments to the use of crude sulphur, but has employed GRISON's fluid too. Although, however, he found it beneficial in the early stages, in a more advanced period of growth it discoloured the Hops, and was, in his opinion, less efficacious than the older remedy. Mr. BANNERMAN, of Hunton, has also used GRISON's mixture, but he prefers the sulphur, under an impression that the powder remains longer in the plant, while the liquid application soon disappears. This has always been the great objection to its use in the case of the Vine mildew, though in that disease confessedly more speedy in its effects than crude sulphur. The same objection does not, however, apply to the sulphuret of potassium employed by M. BECQUEREL for the same purpose, inasmuch as the addition of a small quantity of acid causes the precipitation of the sulphur, which, in the form of what was called by the old chemists a magisterium or impalpable powder, lines the minutest cavity or inequality. The sulphur happily is not detrimental to the quality of the Hops, as, even in the absence of all disease, a certain quantity is generally applied in the kiln. In all such questions comparative expense is as necessary an element as comparative efficacy; and the raw sulphur is so beneficial, its application so easy and simple, and its use attended by so small an outlay, that without better evidence than exists at present, the experimental cultivator alone can be expected to resort to other means. *M. J. B.*

"BEWARE of amateur theorists: they are dangerous men. They mean to fill your pockets, but they only succeed in emptying them." We venture to address these words of advice to all concerned in manure speculations, and who expect an Elysium to be produced by city cesspools. Nor is the warning needless; for in the eagerness to get rid of the offensive matter of towns, everybody is disposed to believe all the fine things that anybody will tell them, provided the speaker has a sufficient stock of such words as sanatory, augmented productiveness, organic matter, ammonia, phosphoric acid, gaseous decomposition, precipitation, fermentation, and similar learned terms. Never was caution more needed than at the present moment, when municipalities are besieged by all sorts of sewage and drainage projectors.

About the year 1846 a friend of ours, a common sense kind of person—a sort of horticultural GRADGRIND—known to understand these questions, was entreated by the secretary of a nascent sewage company to give his opinion to the young board of directors which had undertaken to watch over the interests of the juvenile speculation. He was assured that the directors attached great importance to the expression by him of a favourable opinion of the plan. "It will be the making of the company, I assure you, if you declare yourself in favour of our scheme," said Mr. Secretary; "and there can be no doubt that you will entirely approve of it, as soon as the details are fully explained; for Mr. RETORT, the eminent chemist, and Mr. EDWARD GRADIENT, whose merits as an engineer you of course acknowledge, have been our advisers." Thus solicited, our friend consented to be present at a Board meeting, and there to express his opinion of the project. Without the loss of a moment he was ushered into the presence of a cluster of eager-looking gentlemen, among whom he recognised the face of an Essex farmer of some celebrity. Nothing could be more gracious than the chairman, or more smiling than the secretary. The latter explained for the Board the scheme of a vast system of drainage, that was to clear a whole quarter of London of sewage, to render the neighbourhood more fertile than the banks of the Nile, to quintuple the crops of market gardeners and farmers, and to be an inexhaustible source of profit to the patriotic shareholders. Not the persuasive voice of a SCARLETT, nor the eloquence of a CANNING, could have produced such effect as the glowing narrative of the secretary. Visions of high premium and fat dividends floated before the eyes of his auditors, and they seemed to have forgotten the presence of their horticultural adviser, whose opinion was evidently expected to be an echo of the secretary's speech. As soon, however, as mutual congratulations ceased, the stranger addressed the chairman to the following effect:—

"I have listened, sir, with great pleasure to the highly interesting statement of the honourable gentleman who has now sat down. Nothing can be more admirable than the arrangements which have just been explained; or, as far as I can judge, more certain to purify one of the most densely peopled neighbourhoods of this large metropolis. I think, sir, you are completely justified in saying that, if the Legislature should give you power to carry out the proposed plans, you will be entitled in every sense of the word to the name of public benefactors. (Hear, hear, hear.) I say, advisedly, public benefactors; for you will have restored health to a most sickly district, and you will have reduced the chance of future contagion to a *minimum*, regardless, as all true patriots are, of the consequences to yourselves. That those consequences must be rather serious will be evident from the single fact that the works of construction alone require an outlay of something more than a million sterling. Now, a million sterling is a considerable sum; indeed, I may call it, without exaggeration, a very considerable sum for any body of gentlemen to devote gratuitously to the public service. (Here the secretary hinted something which was inaudible to all but the speaker.) I am told, sir," he continued, "that is is not the intention of this company to expend their capital gratuitously; be the intention what it may, I cannot entertain a doubt that such will be the result; for—gentlemen—the—scheme—cannot pay."

It would be difficult to describe the sensation produced by this unexpected announcement. "Not pay!" cried the chairman. "Not pay," repeated the imperturbable GRADGRIND.—"Do you mean to say, sir, that sewage is not the richest of all manuring substances?"—"Suppose it is, how will you render it portable?"—"Oh, that is provided for; we shall filter it and run off the water."—"Very well; but the only valuable part is the water and the substances dissolved in it, and that you propose to waste."—"Oh! but Mr. RETORT has pointed out a highly scientific mode of precipitating all the soluble matter, so that we shall have that after the water is run off."—"That will not render your solid matter any better."—"No better! why, sir, you told us just now that the best part of sewage is what is dissolved in the water; and that we shall precipitate and save, so that your objection falls to the ground."—"Not at all. Let me explain. Your manure is intended to fertilise the soil, that is to say to put crops through a course of high feeding. But plants can only feed on what is soluble. When Mr. RETORT tells you he saves the soluble matter by precipitating it, you do not seem to perceive that he effects his object by rendering it insoluble, or, in other words, by bringing it into a state in which plants can make no use of it. It is, therefore, clear that the only valuable part is still practically wasted, although it is no longer run off with the water; for you will observe the solid matter can derive no advantage from being incorporated with that which, although once valuable, has ceased to be so."—"Then are we to understand, sir, that it is your deliberate opinion that the solid matter of sewage has no value?"—"It has very little; hardly so much as would pay for cartage; it will rank with clay, or sand, or chalk, all which have some value when properly applied, but not such as justifies their being even called manures." Here the interview terminated; and it is needless to add that nothing more was heard of that patriotic and enlightened sewage company.

This is no fictitious narrative. One reader, at least, of this paper will remember the occurrence, and we trust with gratitude, for it perhaps saved him from utter ruin.

The off-hand opinion expressed on the occasion in question has just received entire confirmation from Mr. WAY, whose report upon the use of town sewage as manure is an elaborate explanation of the real facts which belong to this most important subject. (See *Journal of Royal Agricultural Society*, vol. xv., p. 135.) His words are these:—

"We learn that of the fertilising matters of sewage, by far the largest portion exists in the liquid state; that the solid portion has not even the agricultural value of ordinary excrement, far less that of night-soil, to which we are unthinkingly in the habit of comparing it; that the liquid is so largely diluted with water, that any attempt to concentrate it is totally out of the question: that the greater number of plans that have been proposed for the production of a solid manure from sewage are only so far valuable that they assist in the separation and filtration of the matter in suspension, which, as well as the liquid, they deodorise and render manageable. Thus, we have seen that charcoal does not retain the ammoniacal or alkaline salts, and in no way adds to the value of the solid refuse, except in rendering it inoffensive and in assisting its desiccation; that lime is merely useful in the filtration and deodorising of the sewage, whilst on the other hand it introduces into the solid manure a large proportion of useless matter; that the salts of alumina, iron, and zinc, deodorise and coagulate, but nothing more; and, finally, that the processes which really are adapted to the separation of the soluble fertilising matters of the sewage, namely, those in which salts of magnesia and compounds of silica are employed, may altogether fail of success on account of the diluted character of the liquid and its other solvent properties.

"But there is a further difficulty, and one which may prove insurmountable. The manufacture of solid manure from sewage, to be successful, must furnish an article of such value as to bear the expense of carriage to a considerable distance. It is not in the immediate neighbourhood of towns, where stable manure and other fertilising matters are abundantly available, that the product of the sewers is most wanted, or would be most appreciated. The market gardens in the neighbourhood of London and other large towns will always have the command of abundance of manure, which is obtained at a very low cost and with little or no expense of carriage, being brought by the market carts in their return journey. The market for sewage manure ought to be found in a wider zone. I feel persuaded that *cheap* manures—that is to say

manures of small value, at an equally small price—are a mistake, and every step that we take now is in the opposite direction, namely, in the concentration of fertilising qualities. If, then, in the act of producing sewage manure in the solid state *a low per centage* of manuring ingredient is obtained—the great bulk of the manure being useless to vegetation—such a result is a failure, not a success, however much of the manure may be produced.

"It may be asked, Is there then no plan by which a solid manure of sufficient value can be prepared from sewage? My own conviction is that, as yet, no plan has been suggested which, with a due regard to the farmers' interests, unites the prospect of a paying speculation. Of course I speak now of a manufacture in which sewage is the staple raw article. It is quite possible to mix other matters, such as the refuse substances of large towns, with the solid deposit of sewage, so as to make a good manure, at a fair or even a low price; but in this the merit lies with the substances added, not with the sewage itself; and such a manufacture is obviously very partial and limited in its application.

"It has always appeared to me that this question of sewage-water is regarded in a wrong light. A most exaggerated opinion of the prospects of manufacturing manure from it is entertained by local Boards of Health, and town corporations. Not content with making arrangements by which the removal of the refuse and the cleansing of their watercourses is to be obtained, they in many cases stipulate for a rental for the right of taking the sewage matter. I do not doubt that if the *liquid sewage* could be properly distributed over the extent of surface which it is capable of fertilising, a revenue would be forthcoming towards the reduction of the town-rates. But, *in the absence of arrangements for liquid distribution*, and unless we should discover some process far better than any we possess for the solidification of the sewage, I am convinced that the results must be all the other way: that is to say, the towns must be content to *pay* towards the operation, instead of looking to it as a source of income. The question is indeed a compound one—sanitary and agricultural. It is of the utmost importance to the town populations to remove their refuse matter without polluting the neighbouring streams. By the aid of existing processes this object can be satisfactorily accomplished; and the water supplied to a town may be restored to the watercourses in a comparatively unobjectionable form. But the manure so produced cannot be sold at a profit—unless, indeed, the farmer, by giving more than its value, is made to pay for the sanatory improvement of the towns. It is useless to urge that a manure made in this way can be sold, and has been sold, largely at an amply remunerative rate. No one who is acquainted with the nature of farming operations, and with the difficulty of estimating and tracing to their true source the effects of manure, will doubt that for a time even the very poorest manures may have a sale, particularly if the price is temptingly low. But this state of things does not last: and the price at which the solid sewage manure will ultimately find buyers will be below the cost of its production.

"*The true policy of towns is to take this matter, in some shape or other, into their own hands. Their primary concern should be to effect the sanatory objects thoroughly, looking to the manure as a set off, greater or less, against the expenses incurred in securing the increased health and cleanliness of their populations.*"

We heartily join in the advice given in the paragraph marked in italics. It is very improbable that the cost of town drainage can be repaid by the sale of town sewage, except, perhaps, in places peculiarly situated. Towns must execute their drainage irrespective of money returns; and must be contented if gardeners and farmers will carry it away for them; beyond that, should they be able to make anything of it, let them take it gratefully as a partial set-off to their expenses.

If, indeed, the "arrangements for liquid distribution," to which Mr. Way refers, and upon which Mr. Chadwick and Mr. Mechi so ably insist, should be carried out economically, the question will assume a different form. But those arrangements are not made, nor are likely to be made very soon. When they shall have been carried into effect on a scale commensurate with the magnitude of the important work of removing the liquid metropolitan sewage in its natural condition, we shall then think that the dreams of enthusiasts are approaching realisation; for it is in its fluid undoctored state, and in no other, that town sewage can be made to pay the cultivator.

Many of our readers having, doubtless, occasion to transmit valuable plants by railway, it may be useful to direct their attention to an important statute just passed, and called "The Railway and Canal Traffic Act, 1854." Since railway companies have acquired a virtual monopoly in the carriage of goods between distant places, they have, as is well known, been accustomed to deliver to the sender of valuable goods a ticket with a notice endorsed to the effect that the company will not be answerable for any loss, however occasioned, and have then been permitted to escape the payment of damages, even in cases where the goods have been injured by the gross negligence of their servants.

This disgraceful state of the law is fortunately at an end, for by the above statute, § 7, it is enacted that every company "shall be liable for the loss of or any injury done to any horses, cattle, or other animals, or to any articles, goods, or things, in the receiving, forwarding, or delivering thereof, occasioned by the neglect or default of such company or its servants, notwithstanding any notice, condition, or declaration made and given by such company contrary thereto, or in anywise limiting such liability, every such notice, condition, or declaration being hereby declared to be null and void." And although there follow several provisions which somewhat restrain the above clause, a person can, we hope, be no longer told to keep his things at home or to send them by persons who shall not be liable for damage arising from their own want of proper care.

VEGETABLE PATHOLOGY.—No. XXXVIII.

168. Many observations have been recorded in favour of the action of an increase of electricity on the germination of seeds and the growth of plants. A series of experiments were, however, carefully conducted at Hawkstone, as recorded in the Horticultural Transactions for 1847, vol ii., p. 42, in which plants and seeds were either isolated on stools with glass feet, or electricity was communicated by induction, by means of wires, both under glass and in the open air, and the result, except in one solitary instance, capable of explanation by other considerations, was certainly opposed to the idea of much influence being exerted by free electricity on the growth of plants under ordinary circumstances. In most cases where marked differences have been exhibited, as in the different action of the copper and zinc wires of the galvanic battery, chemical conditions were present capable of accounting for any increased activity, apart from any direct agency of electric or galvanic fluid.

168. It was observed, for example, by Sir H. Davy that seeds germinated in pure water at the positive portion of the circuit far more rapidly than under ordinary conditions, while at the negative portion they did not germinate at all; but then the water in the one part gave out oxygen and in the other hydrogen, which are respectively favourable and unfavourable to germination. Becquerel, however, found that the germination of seeds placed in contact with the copper extremity was accelerated, while those in contact with the zinc was retarded, the negative extremity accelerating, the positive retarding the process. This he attributed to the effects of negative electricity on the decomposition of salts by which alkali was set free, which is known to promote germination by neutralising the acetic acid which is formed during the process.* The same acute observer made many other experiments with a view to ascertain the action of electricity on the processes of vegetation; and though allowing the existence of some influence, he arrived at the conclusion that whatever this might be, it was exerted in the promotion of chemical action, and not in any special and independent effects. The application of an alkali in fact produced the same effect in accelerating germination, and of an acid in retarding it, as the negative and positive wires of the battery.

169. Though, however, it does not appear from more recent observation that the effect of electricity is very powerful in the promotion of the growth of plants in general, or possibly even of germination, it is very conceivable that where a plant is already in a low state of vitality, or, in other words, in a condition in which it has a tendency to disorganisation, it may have a powerful effect in promoting decay. That electricity accelerates the putrescence of animal bodies, and promotes acetous fermentation in vinous liquids, are facts which are matters of common notoriety; and we can easily conceive that where the constituent chemical elements of a plant are not in their normal condition, a strong absorption of electric fluid may have a very powerful effect. On such considerations only can we allow the mischievous effects of electricity in promoting disease already present; the probability of the effect of a current from the atmosphere to the plant upon organs in a healthy condition of active vitality would be an increase of vital energy; the contrary, of course, might be predicated of a contrary direction, which is however of comparatively rare occurrence, and the advocates of the electric theory of disease have not attempted to show the prevalence of such an inverted action during the years in which disease has more especially prevailed in certain portions of the vegetable world. It is, however, probable that a state of equilibrium is the most conducive to the maintenance of health, and for the most part everything tends to keep up this equilibrium both in the plant itself and its component parts. *M. J. B.*

* The conversion of starch into sugar, which is perhaps universal in the germination of phænogams, gives rise to the elimination of carbonic acid, and also to a portion of acetic acid.

THE BACAXI PINE-APPLE.

In the year 1851 our correspondent, Mr. Graham, of Cranford, sent us suckers of a Pine-Apple from Para, called the Bacaxi; with the following note. "The fruit of this variety was of a handsome long conical form, rich red orange colour, and very high flavour. I never tasted so good a fruit. It weighed 7½ lbs." These suckers were entrusted to Mr. Fleming, of Trentham. When received by him they were nearly dead, and blanched as white as writing-paper; and when they began to move the growth was so weakly that he doubted for some time if ever they would do more than give a fruit as large as an egg. In this he has been agreeably disappointed, for at last a fruit has been produced weighing 4 lbs., with all the indications of being a large sort when more vigorous; he believes that 8—10 lbs. will not be unattainable.

The specimen shown us answers to Mr. Graham's description in all respects. Its perfume was delicious, and its flavour more rich and delicate than that of any firm white-fleshed sort with which we are acquainted. The variety seems to be quite distinct, and a valuable addition to those already in cultivation.

SOME

PRINCIPLES OF VEGETABLE PHYSIOLOGY,

BEARING ON THE CULTURE OF PLANTS.

By Professor W. H. de Vriese, of the University of Leyden.

(*Translated from the Dutch.—Continued from* *p.* 598.)

A plant cannot live, but much less grow, by means of water only; however, water performs here a very important service, for it conveys much of that which must be a means of nourishment to the plant. The substances under ground, whether they have their origin from dissolved remains of plants or animals, or are of an earthy nature, contribute, in fact, to the formation and development of the plants substances which are found in the ashes of burned plants. Potash and soda, *e. g.*, form a principle of the composition. The former substance is prepared in great quantities from wood ash; the soda is manufactured from many plants found on the sea-shore. Lime, one of the substances which are most scattered through the whole of nature, is likewise present in almost all plants. Investigation proves to us that in plants many other substances known to us as solid bodies exist; the water dissolves those substances either as such or united with other bodies, and so they penetrate the plants. Thus water is chiefly the fluid through which matter is conveyed; but when we observe how great a mass of such substances exists in plants, and how small a quantity of them may be dissolved in the water, if, on account of too great a degree of density, it is not in a state to penetrate the plants, then we must be convinced of the immense quantity of water which must pass through a plant during its whole life, before it has attained its full development and finished its whole growth.

If the use of the evaporation to the plant must be measured by the degree in which it takes place, we may be sure that it is indeed of the greatest service to its vegetation. We can prove this by remarkable examples.

At the end of the 17th century, an English naturalist, Stephen Hales, wrote a book, entitled "Vegetable Statics," in which he described the following observation: A Sun-flower, which was 3½ feet high, evaporated during a very hot day 1 lb. 14 oz. of water. The evaporation averaged per day 1 lb. 4 oz. He observed that plants with hard wood and evergreen leaves evaporate less than those which fall off, such as Cabbage leaves, leaves of Apple trees, and others. However, it is not easy to make such experiments, for the evaporation of the soil in which the plants are must not be computed; and if the amount of the evaporated substance is to be exactly determined, it is necessary to inclose the plants. Attention must also be paid to the condition of the tissue of the mass of which the leaves consist. But, above all, the extension of the surface over which the evaporation takes place during a certain time must be known, and also the exact quantity of water which is required by the root. A thick cuticle, hard like leather, such as is found in succulents, Houseleek, Crassula, and Aloe, evaporates little, and these plants want but little moisture. They grow often on stones and rocks. On the contrary, the more tender the leaves and the thinner their membranes are, the more they perspire; and the greater the number of leaves the more liquid the stem must supply. The leaf of a Linden tree has a mean size of 0.01 □ metre; the amount of both surfaces is thus 0.02 □ metre. If a Linden tree has 25,000 leaves, the amount of all the leaves makes a surface of 500 □ metres, consequently 2000 trees make a surface of 593 □ miles, or the extent of the kingdom of the Netherlands.

We readily confess that this calculation may not be precisely correct, or it may be even exaggerated. We allow that to determine the number of leaves can be only an approximation. Yet, we dare pretend that many a tree has half a million of leaves, and that the extent of the leaves of many a large well-wooded estate surpasses that of the whole Netherlands. If, after these considerations, we remark how luxuriant nature is between the tropics, how gigantic are the trees, how luxuriantly the plants grow under those huge trees, how elevated is the temperature, then it may be explained why there is an incessant dampness in those forests, on account of which they are often impenetrable; and in what is their relation with the state of the atmosphere on account of the continual evaporation at the surface. It would require a series of experiments

to determine the quantity of moisture evaporated by a single tree. What we can say of it now rests greatly on an approximation, for the foundation of which an experiment was made on another plant many years ago. If each Linden leaf evaporates from June to October, during 137 days, the 5000th part of a pound of water, the mass of liquid which passes through a tree, covered with 25,000 leaves, is of 171½ cubic metres. This approximation must be, however, far beneath the truth.

(*To be continued.*)

CYRTOCERAS REFLEXUM.

Although not one of the most showy of plants this is certainly one of the most useful, being, under proper management, covered with its clusters of rather pretty and singular-looking flowers for several months at a time; they are produced from the axil of almost every leaf on the young wood, and the flowers remain long in perfection. But to have it in perfection it requires to be grown in a close, moist, warm temperature, and enjoys a gentle bottom heat; and unless these conditions can be afforded it, there will be little chance of having it in a thriving state.

Propagation is easily effected by means of cuttings of the rather firm young wood, which root readily under a hand-glass in bottom heat. The cuttings should be potted singly in small pots as soon as they are well rooted, and replaced in a moist, warm temperature, affording them bottom heat until they become well established, if possible; shade slightly from bright sunshine, keeping the atmosphere thoroughly moist, and sprinkling the plants frequently over-head, but water very cautiously at the root, for a soil saturated with water is very injurious to this plant. As soon as well established, the point of the shoots should be pinched out, and they will require to be stopped occasionally as they progress in growth, if a bushy habit is to be secured; but this is of no importance in the case of small plants, as, if allowed to grow in the form of a single shoot, this can be coiled round stakes which, with stopping, will cause the production of numerous shoots. Young plants should not be kept growing too late in autumn, for unless they are afforded a period of rest, in order to thoroughly mature the wood, they will not break so freely the following spring. As soon as the object is to ripen the wood, the plants should be placed near the glass in a rather dry atmosphere, where they will be exposed to light and air on favourable occasions—and where they may remain for the winter, giving very little water to the soil. Except an occasional wipe to clear the foliage of dust, the syringe should not be used; and at this season the temperature should not fall below 50°, nor rise above 60° without a circulation of air. Towards the middle or end of January the plants should be placed in a growing temperature, such as directed above, giving sufficient water to the soil to thoroughly moisten it, and repotting them as soon as the roots make a start. But before inducing growth, the shoots should be stopped and brought down, to cause them to break freely and assume a bushy habit. If well attended to, affording them a moist warm temperature, with a moderate bottom-heat, nice little specimens will be obtained by the end of the second season, and they will grow more freely if the flowers are picked off as they make their appearance, for these will be produced from the axil of almost every leaf on the young wood. Attend to stopping and training as may be necessary during the growing season, giving a second shift if requisite, and winter them as already directed. Plants for flowering will require exactly similar treatment to that recommended for growing them; and if they are placed in bottom-heat early in spring, and otherwise properly cared for, they will be in flower in May; and if kept in bottom-heat, &c., will go on growing and flowering till late in autumn. Or if desirable to remove them to a cooler place, this may be done; and the blossoms will last long in a cool dry atmosphere, but others will not be produced to succeed them, as is the case when the plant is retained in heat. See to getting the wood well-ripened annually before winter, and cut back and trim the specimens as may be necessary, before inducing growth in spring, and immense bushes will be obtained in the course of a few years.

As this Cyrtoceras is impatient of any excess of moisture at the root, a hard fibrous peat should be used, such as water will pass through very freely; this should be broken up into small lumpy pieces, rejecting the fine, and mixed with about one-third its bulk of charcoal, broken small, and a moderate quantity of sharp white sand. In potting avoid large shifts, and secure efficient drainage by using plenty of potsherds, and covering them with some fibry pieces of soil. *Alpha.*

ENTOMOLOGY.

Steropus madidus.

Is the earth-worm beneficial or obnoxious to the horticulturist? On the answer to this question depends the question whether Steropus madidus is to be regarded as an enemy and to be destroyed, or as an auxiliary and to be protected. The assertions that worms are useful to plants by penetrating the soil, loosening it, rendering it permeable to air and water, and even adding to the depth of the soil by bringing their casts to the surface, have been opposed by various practical horticulturists, who assert that soil is not loosened by boring through it, but rather rendered firmer in the parts not bored through; the casts are always water tight, and prevent the current of water, except in impervious loamy subsoils, where, indeed, the presence of these animals is admitted to be beneficial. On the other hand, the direct injuries caused to plants by cutting through the roots, more especially of tender and weak plants, which they always select, and seedlings which, when the points of their tap roots are cut through, have no other resource, and, unless vigorous enough to throw out lateral shoots, must die, evidently turn the balance against the earth-worm, and therefore its natural enemies are to be reckoned amongst the gardeners' friends.

In one of the early volumes of the *Gardeners' Chronicle* (1842, p. 748), a black beetle was figured under the name of the fetid rove beetle (Staphylinus olens), much better known under that of the devil's coach horse, which has the ugly habit when alarmed of throwing up its tail and emitting two white points at the extremity of its body, as well as opening wide a pair of powerful jaws. This beetle was stated to be an enemy to the common earwig, which it would devour in considerable numbers; it, however, is not particular in the kind of insects which falls in its way, but will make a meal of any soft bodied sort which it meets with, and will also, as we have repeatedly seen, attack and devour small earth-worms.

During the past spring the larva of another of our very common beetles has been found to be as great an enemy to the worm as the Staphylinus. For a considerable time a number of worms were daily observed in a small garden in the northern suburbs of London to be lying about the walks dead and dying, having been gnawed during the night time, and after some care in watching for the cause it was discovered that the worms were attacked by the six-legged larva of a coleopterous insect. This larva is represented in the lower part of the accompanying woodcut, its natural size being indicated by the line above the figure; its body is rather fleshy and

depressed, with the head and upper part of the fore segment scaly, sparingly clothed with fine hairs, and three pairs of short-jointed legs attached to the three segments succeeding the head, which is armed with a pair of very sharp sickle-shaped jaws, having an acute tooth on the inside about the middle. The right hand detached outline figure represents one of these jaws, with the corresponding lower jaw and the lower lip with the palpi, whilst the outline figure on the left hand side of the cut represents one of the antennæ, and the eyes on the left side of the head. The hinder extremity of the body is furnished with a fleshy proleg, which assists the animal in walking, above which is a pair of long-jointed slender processes, sparingly clothed with fine bristles. From the form of the jaws, it may be easily conceived what a little chance of escape a worm can possibly have when once it has been seized by one of these voracious larvæ, which seem rather to suck it to death than to gnaw it to pieces, for which its jaws are but ill suited. The transformations of this larva have not been observed, but as Steropus madidus is the only beetle found equally common in the garden alluded to, there is good reason to believe that the larva in question is that of the ground beetle above mentioned.*

Steropus madidus belongs to the family of the ground beetles Carabidæ, and sub-family Harpalides; it measures from half to nearly three quarters of an inch in length, is black and shining, the thorax with a deep channel down the middle and deep impressions within the hinder angles; the elytra are striated, the striæ simple, not punctured, and the legs are entirely black, or with the thighs red. It is very common throughout England and Scotland, occurring under stones and in damp situations, such as cellars and outhouses. *W.*

* So little is known with certainty respecting the transformations of the Coleoptera, that we are not without some doubts whether the larva above described may not be that of one of the large species of rove beetles. The habits of the Steropus are, however, so identical with those of the larva, both occurring, also, in the same situation, that we have deemed it not unlikely that the larva is really that of the Steropus.

Home Correspondence.

Cabbages for Cottagers.—In Number 37 of this year, p. 599, it is recommended to cottagers, having cut the first head of a Cabbage, to allow the stem to remain to produce a successional crop of sprouts. Excepting where the rent of land is low and labour dear, I do not conceive this to be a profitable plan, and as cottagers generally pay high rents for their little plots, and have abundance of leisure time, I do not think that the method should be adopted by them. Let any one make the experiment of cutting off in spring the heads of a small plot (say a quarter of a perch, i.e., 2¾ yards square), and on the same day plant an equal portion of ground with good well-rooted plants, and let both crops be frequently hoed. The result will soon show the superior value of the latter for the pot. This is only an example of a general error. Things placed at random have an exaggerated appearance of magnitude, the delusion being at once dispelled by reducing them to order. This irregular summer crop of sprouts moreover appears to be great, because it is seldom cut, there being then abundance of other vegetables. When it is said that 20 or 30 crops (I presume full crops) of Cabbages can be obtained from the same ground in a year, an average of only a fortnight (say a week in summer and a month in winter), is allowed for the sprouts to grow from the state of an eye to a full Cabbage—a manifest absurdity. The profitable course for a cottager (or any one else) to pursue, who wishes to have Cabbages all the year, is to sow three times and plant four, which is fully explained in Sir Joseph Paxton's "Cottager's Calendar of Garden Operations." As soon as a crop is ready for use, the remains of the previous one should be given to cattle or dug in, and the ground cropped with some other vegetables. I will repeat the advice, often given in your columns, never to mould up Cabbages. It prevents the stirring of the soil, so essential for the rapid growth of the plants and the destruction of weeds. *L. S.*

Material for Paper.—I enclose a specimen of fibre, from the leaf-stalk of Horse-radish. Would it not be of use for paper-making? It is readily cleaned similar to the piece sent. The manner in which I separated the fibre from the pulpy matter was by first cutting the leaf-stalks close to the ground, and allowing them to nearly dry, and then removing them to a damp situation. The pulp soon becomes decayed, and, washed in water with the hand, a delicate fibre is left, not unlike Flax, for which, if properly dressed, it might not form a bad substitute. *J. T., Mordon, Surrey.* [The fibre is coarse, but not strong.]

Kiln-drying Potatoes.—Professor Bollman's plan of half roasting the sets was said to entirely eradicate the disease; but this was tried by one of my neighbours without any beneficial results. In thinking on this plan it occurred to me that if any benefit was derived from it, it might be owing to the fact that the spores (or, perhaps, the mycelium) of the fungus, to which the disease is attributed, might be destroyed by a temperature considerably lower than was required to destroy the vegetative power of the Potato itself; this appears to be the case with some fungi, for example. I believe (although I do not grow them) that the proper temperature of an artificial Mushroom bed is somewhere about 60°; but that if the fermentation of the dung, of which it is formed, is so strong as to raise the temperature to 90°, all the spawn is destroyed—there is no crop. Whether this will be found true with regard to the cause of Potato distemper I do not know; but it was the idea on which I acted, and with the following results. My friend having again supplied me in the spring of last year with a few more of his early Potatoes, when dug up, instead of being spread on the garden bed, as before, they were put on the upper floor of an engine-house, where, owing to peculiar circumstances, the temperature was about 90°, and left there a month: the consequence was, that with the exception of two or three that were tainted when they went in, every Potato was quite sound, and continued so until they were planted last spring; and the crop they produced had not one tainted tuber in it. The whole have again been treated in the same manner (they were dug in July) and up to the present time there has not been an unsound one in them. The same plan was also tried with some red Kidney Potatoes peculiarly liable to the disease, both in top and tuber, and with the exception of two or three that appeared to have been diseased before they were exposed to the high temperature, with the same result. These were again planted last spring, and, although the tops were attacked by the distemper, yet, as the tubers were immediately dug and taken into the engine-house, there is not, so far as I know, a failing one among them. Encouraged by these results, I have now tried the plan with some store Potatoes of two varieties of Kemps, and although they were dug up in the wet weather in August, in one of the sorts which were quite ripe only four Potatoes have been found tainted in 120 lbs., in the other kind the loss has been 4 per cent., 10lbs. in 240; but other persons who had supplied themselves out of the same lot of Potatoes at the same time lost 60 per cent. of them. This latter kind was not ripe (which is easily seen by the epidermis peeling off with a slight touch), and when they had been exposed to the high temperature for three or four days they began to soften, and though they were removed immediately this softening still remains in some of them, but otherwise they are perfectly good, and seem likely to keep very well; the sort which was quite ripe keeps firm, and the quality is excellent. To all this it may be objected that, even supposing the plan to succeed, there are not many engine houses with a temperature of 90° applicable to the drying of Potatoes. Perhaps not, but there are malt kilns, Hop kilns, and Oat kilns (and possibly brick and tile kilns might be made available), in very many localities, where the same plan could be carried out, if it be found to succeed. I do not think I have determined the proper time for keeping the Potatoes exposed to this high temperature, but a month does not destroy their vegetative powers, and three or four days seem sufficient to check the disease; how much less will be sufficient

I do not yet know, nor do I know how much higher a temperature the Potato will bear with impunity. These remarks are submitted rather to suggest what may be done than to say what is the best mode of doing it; and they are offered with much diffidence, seeing how many attempts have already been made, and how little success has been achieved. *T. G., Clitheroe.* [We have been obliged to defer a portion of this letter, relating to other matters, for want of room.]

Araucaria imbricata on Chalk, and effects of the Winter on other Conifers.—You mention the Araucaria imbricata as bearing exposure to the sea, and say, "A quality of which those who live near the coast, where there is no chalk, will do well to avail themselves of." Has the Araucaria been found not to succeed on a chalk soil? At Boynton, which is near the sea, it is thriving remarkably well, and, I think quite as much so, upon chalk with only a very thin covering of soil as upon deeper sand and loam. I remarked some curious results of the winter there, with respect to situation. Two or three specimens of Pinus Pinsapo had their leading and other young shoots killed, where they were partly shaded by trees, whilst young Cryptomerias planted with them were quite uninjured, the only specimens of Cryptomeria which showed symptoms of having felt the cold being those in the most open and exposed places where the P. Pinsapo was quite untouched by the frost; of P. insignis, one or two were completely killed, whilst others out of the same seed bed, of the same age and size (about four years, and 18 inches high), and planted out in the same place, were almost unhurt. Of the Cypresses at Boynton, C. torulosa appears to have borne the winter best. C. macrocarpa was very much injured, and generally killed. I regret that I was unable to make out a list of the plants injured or otherwise by the winter, at the time when you were collecting information on the subject. *C. W. Strickland.*——Deodar and Silver Cedar are uninjured. P. insignis planted out, is hardy; but in a bed of 24, from 20 to 24 inches high, 6 or 7 were killed on the 3d of January. P. macrocarpa is uninjured, as is also P. excelsa. P. Montezumæ is hardy. A. Douglasi is hardy; one, planted in 1839, is now 34 feet 6 inches high; some of its lower branches measure 10 feet 3 inches, the circumference of the plant exceeding 52 feet—the magnesian lime rock is within 2 feet of the surface. A. cephalonica is hardy, as is also morinda, Nordmanniana, and Pindrow. Araucaria imbricata and Cryptomeria japonica are hardy. Taxodium sempervirens has had the side shoots browned by frost, but its rapid growth this summer proves it uninjured. Cupressus Goveniana is uninjured, as is also macrocarpa, Cephalotaxus Fortuni, and Libocedrus chilensis. Jezoensis was killed by the frost in 1853. All these plants grow on the magnesian lime, and are at a considerable distance from, and rather elevated above the nearest water. On the 3d January, 1854, the lowest quotation of the thermometer on the banks of the Swale, in this part, was 8°. *W. Lawson, Brough Hall, Catterick, Yorkshire.*——I see in some of your accounts of Conifers, plants stated to be injured during the past winter which, with us, appear to be perfectly hardy. Permit me, therefore, to furnish you with a few notes from this place. Pinus macrophylla, Grenvillæ, filifolia, Wincesteriana, and Devoniana were killed. P. Russelliana, patula, Teocote, apulcensis, and palustris had their leaves much browned, but they now look nearly as well as ever they did. P. Gerardiana, radiata, halepensis, tuberculata, macrocarpa, Sabiniana, monticola, Lambertiana, excelsa, Fremontiana, muricata, Montezumæ, adunca, cembroides, persica, Ayacahuite, Benthamiana, Lindleyana, and insignis were not injured. We have plants of the latter sort from 2 to 20 feet high, and none of them were hurt. Abies Pinsapo, amabilis, grandis, nobilis, Douglasi, Jezoensis, Nordmanniana, cephalonica, orientalis, and Menziesi have not been injured. A. Brunoniana, a fine plant, has been killed to within 2 feet of the ground. A. Webbiana and morinda escaped injury from the winter, but nearly all their young shoots were killed by the frost of the 24th April. Deodars, also, were quite unhurt by the winter, but some of them had their young shoots killed by the spring frosts. Respecting Araucaria imbricata, some of our plants had a few of their leaves browned, but most of them escaped untouched. Cryptomeria did not suffer in the least. Cupressus macrocarpa, Goveniana, torulosa, and Uhdeana (many specimens) are all uninjured, except a small plant of the last, which had a few of its branches killed. C. thurifera, funebris, Knightii, and sempervirens were a little hurt, but they have quite recovered. Juniperus Bermudiana, macrocarpa, and flaccida were killed. J. oblonga, pendula, recurva, squamata, chinensis, sphærica, thurifera, phœnicea, Gossainthania, fragrans, excelsa, oxycedrus, Bedfordiana, and tetragona were perfectly unhurt. I see that you consider the two last-named tender; tetragona here is one of the most ornamental hardy plants we possess. It is above 6 feet high and as much across, with a beautiful pendant habit. All the Cephalotaxus proved hardy with us. Fitz-Roya patagonica and Saxe-Gothæa conspicua were unhurt. Cunninghamia sinensis was a good deal injured, but it is now growing vigorously. Of four plants of Libocedrus chilensis three were not the least injured, and the fourth had only the points of its shoots killed. Glyptostrobus heterophyllus and pendulus proved quite hardy; so did all the Thujas. I may state that our place is high (about 500 feet above the level of the sea), and considerably above the neighbourhood, consequently we do not suffer so much from a severe winter as from late spring frosts. We have not sustained half the damage last winter that we received in 1853. *M. Henderson, Gardener to Sir G. H. Beaumont, Bart., Cole-Orton Hall, Leicestershire.*

Hardiness of Plants.—You state, at p. 595, that it is "hopeless to grow New Holland Acacias out of doors with any prospect of permanent success." Allow me to say, that I have here an Acacia dealbata, planted in 1835, and now about 22 feet high, in full vigour and beauty, preparing to flower, as usual, in every part. In the winter of 1837-8, it was cut down to the ground by the frost, being then young, but it has not since been injured until last winter, when some branches were so much damaged by the frost that I cut them off. It is now completely recovered, and bears no traces of permanent injury. I may also add, that a Benthamia fragifera is growing near it; and so far from "not thriving," it has flowered abundantly this summer for the first time, and is 10 feet high. My Cunninghamia sinensis is 32 feet high, and though the frost last winter, as usual, browned some of its leaves, the tree has quite recovered itself. My Deodara, about 30 feet high, was in no way injured. It may be interesting to some to know that all the above plants are growing on the northern slope of my garden, well sheltered from the prevailing south-west winds, situated seven miles due north of Lewes, Sussex. The mean temperature of 1853 was 47° here, and the thermometer fell to 16° Fahrenheit on January 2, 1854. My elevation above the sea is about 240 feet. *W. H. Blaauw, Beechland, Uckfield.*——The plants in the following list proved themselves to be quite hardy last winter. Those marked thus * were against a wall: — *Forsythia viridissima, *Cratægus mexicana, Magnolia grandiflora, and other varieties of the same species (12 in number); Daphne collina, *Clematis graveolens, *Euonymus undulatus, *Myrtus communis flore-pleno, *Camellias, various, Taxodium sempervirens, *Hydrangea quercifolia, *Plumbago Larpentæ, *Garrya elliptica, *Ceanothus azureus, *Ceanothus divaricatus, Gynerium argenteum, or Pampas Grass. *J. Weeks and Co., King's Road, Chelsea.*——My experience here does not entirely coincide with your statements. Pinus Hartwegi with me is quite hardy. Thuja Doniana not so; it survived the winter, but did not flourish. The Himalayan Bamboo suffered last winter, but did not perish. The only one of the new Berberries that is delicate with me is Fortune's. Quercus glabra (which you do not mention yet) has all but perished. One of the most beautiful of the new shrubs is Ilex dipyrena, and it is perfectly hardy. Would you like to have a complete list of all that I have found to be hardy here? *Henry R. Sandbach, near Llanrwst.* [Yes, if you please.]

Hop Disease.—I am pleased to find that "M. J. B." has been in this neighbourhood inspecting the mould in Hops. I have for the last 10 years used every means to induce the growers to eradicate this pest by the application of sulphur vivum, and not until the last four years have I been successful. The first cultivators who applied the remedy were Mr. Thos. Harryman, of Mereworth, and Mr. Chas. Leney, of Wateringbury, both extensive growers. I have heard Mr. Harryman state that if he had adopted the remedy when it was first suggested, it would have saved him thousands of pounds. I find the grounds or gardens which are most subject to this disease are those situated on the hills of Kentish rag-stone, and in many years it make its appearance on the leaves when the bine is about half or two-thirds up the pole; but it is pretty general when they make the midsummer shoot and are coming into "bur." There is now little doubt that if genuine sulphur vivum be properly and efficiently applied, the grower may bid defiance to this disease; but I regret to say that there is still great prejudice and want of application in remedying this destructive blight. I know of several cultivators who would have grown this year from 15 to 20 cwt. per acre, which would have realised from 18*l.* to 20*l.* per cwt. if this blight of mould had been prevented, but now the crop is worthless. In no case do I consider the sulphur properly applied. No gardener would expect to destroy mould in his Grapes unless the whole of the parts affected were thoroughly dressed with the sulphur; and in the case of Hops it is impossible to do this by the means generally adopted, which consist in throwing the sulphur on by the hand, or with an instrument similar to a flower-dredge stuck upon the top of a pole and shook over the hill. In one instance I have found it applied by a powerful syringe, and this gentleman is the most successful grower in his parish, and his large crop is entirely owing to his destroying the fly or black blight in the first place by syringing the plant with a solution of tobacco water, &c., and then the mould, by mixing the sulphur in water and throwing it on with a large syringe. It is a singular fact that many respectable practical growers still ridicule and laugh at these remedies, although they are at the same time smarting under the blight. There can be no doubt that if growers would adopt the means I have frequently suggested (even our successful Hop grower Dr. Plomley), this disease would be kept in subjection as much as that of Vines and Heaths. The course I suggest is as follows—viz., for every 10 acres employ an intelligent active man; let him be provided with a bag which will hold about 10 lbs. of sulphur strapped round his body (to be filled when necessary), get a machine strong and efficiently made, upon the principle of those invented by me and sold by Barber and Groom, a light step ladder to enable him to ascend to the top of the pole if necessary, let this man be constantly in the garden (from the time of the midsummer shoot being formed till the picking commences) watching every hill of Hops as they advance, and when the least symptoms of mould appear, let the parts be well covered with sulphur; and the power of this machine will throw the sulphur into the most minute parts of the plant or Hops, which will thoroughly arrest the disease, and in most cases prevent its spreading. This may appear an expensive and troublesome remedy; but, compared with the value of the crop, it is trifling, and in some cases will not much, if any, exceed the sum expended in the large quantity of sulphur used and wasted by the ordinary mode of applying it. I have known nearly a ton an acre thrown on the plants, and been of little service, in consequence of the parts most diseased not being touched. The expense for 10 acres I consider to be as follows, viz.:—

Man's wages for 10 weeks, at 16*s.* per week	...	£8	0	0
1 ton sulphur vivum	...	11	10	0
Machine and ladder	...	3	0	0
Total	...	£22	10	0

Average cost, 2*l.* 5*s.* per acre.

If 10 acres be too much for one man to attend to, have two, and the cost will not exceed the value of ½ cwt. of Hops. If the plant be attacked with vermin or black blight, adopt the course mentioned above before applying the sulphur, as it will not do to throw the sulphur on the plant when it is covered with vermin or black blight; but, even in this case, it may be beneficially applied on the "bur" or Hops without touching the leaves. I had nearly forgotten to mention that Grison's mixture has been tried, but with little success. *W. J. Epps, High Street, Maidstone.*

New British Plant.—We have lately received from a lady at Exmouth, specimens of what we take to be the *Lysimachia westphalica* of Weihe, found in the neighbourhood of Dulverton, growing by a brook in a meadow. Although this plant is usually referred to *L. vulgaris* as a variety, it really belongs to *L. punctata*, if we can trust the evidence of specimens in our herbarium, and must bear the latter name. It differs from *L. vulgaris* in having solitary axillary pale yellow flowers, and a corolla fringed with glandular hairs.

Fragrant Chinese Timber.—We have received many boxes from China made of very fragrant wood, resembling deal, and which we have no doubt is the same as that alluded to by "Jael." When Mr. Fortune was in England last, he informed us that it was the timber of Cunninghamia lanceolata. *Standish & Noble.*

Bursting of Trees in Frosty Weather.—I have hitherto accounted for the bursting of large trees under the influence of excessive cold, by attributing it to the expansive force of the sap while undergoing congelation; but this theory seems now to be set aside by Prof. de Vriese's explanation of the fact, according to which we are to suppose that the tree goes on feeding like Jack's giant, till it is obliged to slit itself open for ease, the cold not permitting the trunk to expand. Now, without disputing for a moment that the sap does circulate to some extent during winter, I am really not prepared to charge trees with such monstrous gluttony, especially in cold climates, where the phenomenon usually occurs. In the same countries rocks split as well as trees; are we to apply the same mode of reasoning to them? Again, the professor attributes the destruction of flower-buds by cold to the evaporation of their juices by the wind; but how will this account for their destruction when, as often happens, the sun's heat has raised such a large amount of vapour during the day as at night to cover every flower and twig first with dew and then with hoar frost? Surely in this case there is more than sufficient moisture to counterbalance evaporation. Besides, how can the juices of the plant be dried up when the surface is covered with moisture? I confess it appears to me more in accordance with observation to say, that vegetable life requires a certain amount of heat (varying according to species) to enable it to perform its functions. When our fingers or toes are frost bitten and rot off, we do not attribute it to evaporation, but rather suppose that they have lost the heat requisite for the circulation of the vital fluid, and in consequence have become mere dead matter, subject to the usual processes of decomposition, and the same explanation seems applicable to plants. I admit that this does not throw much light upon the actual mode in which cold operates upon plants; but it is probable that among its destructive effects the rupture of the sap vessels may hold a prominent place. Not having microscopically examined the tissues of frozen plants, I merely suggest the idea in the hope that some of your readers may be able, from personal observation, to confirm or negative the supposition. *R. E. E.*

Thorn Hedges.—Having read Mr. Bailey's valuable articles on Woods and Plantations, permit me to inquire if I understand him to say that autumn is the best season for cutting over old Thorn hedges? And if he or any other of your correspondents would give me their experience of transplanting old Beech and Thorn hedges, with their system and success, they would greatly oblige *A Hedger.*

Societies.

Entomological, *September* 4.—The President in the chair. Donations to the library and museum were announced from the Royal Academy of Berlin, the Royal Societies of Spain, London, and Van Diemen's Land, the Society of Arts, and various Continental and native correspondents. The President communicated a letter received from Professor Edward Solly, F.R.S., who is engaged in organising the Museum of Man-

factures for the Society of Arts, requesting the contribution of specimens of beneficial or obnoxious insects from the members. Specimens of a very beautiful Noctua, new to this country, captured in North Wales by Mr. Evans, of Darley Abbey, were exhibited by Mr. S. Stevens, as well as specimens of Agrotis valligera and other rare species from Freshwater, Isle of Wight, and a box of Coleoptera just received from Mr. Wallace, who has undertaken a Natural History Voyage to the Islands of the Eastern Archipelago. The present collection was the first fruits of his expedition, and contained a great number of new and remarkable species from Singapore. Mr. F. Bond exhibited Orthosia hyperborea from Perthshire, Rusina tenebrosa from the New Forest, and various rare moths from the Isle of Wight. Another box of insects, of various orders, captured by Mr. Foxcroft, at Rannock, Perthshire, intended for distribution among his subscribers, was also exhibited, as well as a box of interesting Coleoptera from the New Forest, exhibited by Mr. Edward Shepherd. Mr. Hudson exhibited an interesting specimen of the common blue butterfly Polyommatus Alexis, the wings on the right hand side of the body being female and those on the left side male. Mr. Edwin Shepherd stated that he possessed a specimen in which the wings exhibited an opposite arrangement. Mr. F. Smith exhibited specimens of rare and new Hymenoptera, recently captured near Southend, including Myrmica cæspitum in all its states, and various species of Bombus, the specimens of the different states having been taken from the nests. Mr. Oxley exhibited several boxes of insects of different orders from the neighbourhood of the gold diggings in Australia. Mr. Curtis presented specimens of the male of the remarkable insect figured by him under the name of Acentropus Garnonsii, and exhibited the female and a mass of eggs from the collection of Mr. Dale. Mr. Westwood stated that he had been informed by a correspondent that the white Mustard crops near Ely were at present infected by Phædon Betulæ in myriads which gnawed the rind off the stems and seed-pods. He also exhibited drawings of a species of Acarus which had been found in great masses at the foot of a recently made hay-rick; and also specimens of a species of Chelifer which he had received from a correspondent, by whom it had been found in considerable numbers upon Melons. Messrs. Curtis and Walker, however, considered that its object in seeking such a situation was to feed upon the other insects which were attacking the plant, and that it was not itself injurious to the Melons. Mr. Walkeys communicated an observation in which the common wasp had been seen gnawing off the outside of dried stalks of stinging Nettles; and Mr. F. Smith stated that he had had a nest of Vespa rufa for two or three months, the specimens of which were very fond of gnawing the outside of his deal store boxes, to obtain material for their nests. It thus appears evident that it is not always of fungoid matter, as recently has been asserted, that the covering of wasps' nests is made. Mr. G. F. Wilson communicated some seeds of Copernicia cerifera, which yields the carnahuba wax which had been devoured by the larvæ of Caryoborus Bactris, a large species of Bruchidæ.

Notices of Books.

Phillips' Guide to the Crystal Palace has reached a new edition, in which we discover many improvements, that the haste with which the first edition was prepared rendered desirable. Among other things is an excellent ground plan of the garden, as it is to be, corresponding with the description given of it in this journal, at p. 739, 1853. This was very much wanted, the unfinished state of the ground rendering the ultimate plan incomprehensible to the uninitiated.

With regard to the plants in the interior of the palace, concerning which we have hitherto been silent, we have now to state that when we last saw them they gave great promise of a fine effect, and that they were all in a satisfactory state of health. The noble Orange trees, and far more noble Pomegranates, from Neuilly, were most especially deserving of notice. But we have no intention of examining this branch of the great work until after the succeeding winter. In the meanwhile the reader must rest satisfied with Mr. Phillips' description, which we quote entire:—

"And first let us speak of those trees and plants which are common to the whole length of this splendid avenue—the Orange and Pomegranate trees—of which there are altogether 110, forming a bright perspective of converging green, giving additional effect to the long vista of the nave. These trees, some of which are 400 years old, were originally selected from the different palaces of the Orleans family by Louis Philippe, in order to decorate Neuilly, his favourite residence. When the property of the Orleans family was sold by public auction, this fine collection was purchased by Sir Joseph Paxton for the Crystal Palace Company, much to the regret of his Majesty, the Emperor of the French, who greatly desired to preserve the beautiful and matchless natural productions for his country. Suspended above the lower galleries, the visitor will notice long lines of baskets filled with flowers. From these ornamental and floating vases, of which there are upwards of 800 in the Palace, fall trailing plants. Around and across the columns creepers are planted, which in course of time will clamber over every part of the building and line with grateful shade the great arches of nave and transept. Among these creepers will be found the Bignonia, Wistaria, and Tacsonia.

"The south end of the palace and the south transept contain a selection of plants, consisting chiefly of Rhododendrons, Camellias, Azaleas, and other choice conservatory plants, most carefully selected; in the south transept, especially, are arranged the finest specimens of these plants that can be seen. Opposite the Pompeian Court are placed two fine specimens of Aloes, and, conspicuous opposite the Birmingham Industrial Court, are two Norfolk Island Pines. Opposite the Stationery Court are two specimens of Moreton Bay Pine, as well as several specimens of Telopea speciosissima from Australia. Under the first transept may be noticed two remarkably fine Norfolk Island Pines, presented by his Grace the Duke of Devonshire.

"The garden facing the Egyptian Court is principally filled with Palms; and on either side of its entrance are two curious plants (resembling blocks of wood) called 'Elephant's Foot;' they are the largest specimens ever brought to Europe, and were imported from the Cape of Good Hope by the Crystal Palace Company. This plant is one of the longest-lived of any vegetable product, the two specimens before the visitor being supposed to be 3000 years old. Before this court will be noticed also two fine Indian-rubber plants—a plant that has latterly acquired considerable interest and value, on account of the variety and importance of the uses to which its sap is applied. Here will also be noticed an old conservatory favourite, though now not often met with, the Sparmannia africana. Amongst the Palms will be remarked many of very elegant and beautiful foliage, including the Seaforthi elegans, one of the most handsome plants of New Holland, and the Chamædorea elegans of Mexico. On the left of the entrance to the Egyptian Court will be seen perhaps the largest specimen in Europe of the Rhipidodendron plicatile from the Cape of Good Hope. Opposite the central entrance to the Greek Court, and in front of the beds, are two variegated American Aloes. The beds are filled with a variety of conservatory plants, and have a border of Olive plants. In front of the Roman court will be observed, first, on either side of the second opening, two large Norfolk Island Pines, presented by her most gracious Majesty and his Royal Highness Prince Albert. The beds, like those before the Greek Court, are principally filled with Camellias and Rhododendrons, and are also bordered by several small specimens of the Olive plant. Between the two foremost statues, at the angles of the pathway leading to the second opening, are placed two specimens of the very rare and small plant, which produces the winter bark of commerce, and which is called Drymus Winteri. The garden in front of the Alhambra is devoted to fine specimens of the Pomegranate. Having passed the Alhambra, we find the garden of the whole of this end of the building devoted to tropical plants, including a most magnificent collection of different varieties of Palms.

"Between the sphinxes are placed 16 Egyptian Date Palms (Phœnix dactylifera), recently imported from Egypt, and which owe their present unflourishing appearance to the delay that took place in their transmission, on account of the steamer in which they were conveyed having been engaged, on her homeward passage, for the transport of troops. Amongst the different varieties of Palms, the following may be noted, either for their large growth or beautiful foliage: an immense specimen of the Sabal palmetta from Florida, and a fine Sabal Blackburniana; also several fine specimens of the Cocos, amongst which is the Cocos plumosa, reaching the height of 35 feet; numerous specimens of the Wax Palm (Ceroxylon andricola), natives of Columbia, and the curious Calamus maximus, which, in the damp forests of Java, grows along the ground to an immense length, and forms with its sharp prickles an almost impenetrable underwood, are also here. Saguerus saccharifera of India, noted for its saccharine properties, and the vegetable Ivory Palm (Phytelephas macrocarpa), deserve attention. The specimen of Pandanus odoratissimus, from Tahiti, is also remarkable, on account of its sweet smell.

"Opposite the Byzantine Court, the garden is filled with different varieties of Palms brought from South America, Australia, and the Isle of Bourbon. Before the Mediæval Court may be noticed two Norfolk Island Pines, and close to the monuments at the entrance of the English Mediæval Court, are two Funeral Cypresses, brought from the Vale of Tombs, in North China. Close to the Norfolk Island Pine, on the right, facing the court, is a small specimen of the graceful and beautiful Moreton Bay Pine. The garden in front of the Renaissance Court is filled with conservatory plants, consisting of Camellias, Azaleas, &c. On either side of the entrance to the Italian Court are two very fine American Aloes, the beds here being filled with Olives, and other greenhouse plants. In the garden, in front of the Foreign Industrial Court, will be noticed two fine Norfolk Island Pines."

New Plants.

87. Thujopsis dolabrata, *Zuccarini in Siebold's "Flora Japonica," vol. II., p. 34, figs.* 119 *and* 120.

This noble evergreen Coniferous tree from Japan, which it has for so many years been in vain attempted to procure, has at last been secured in the Botanic Garden, Leyden, as we learn from Prof. de Vriese. It has the flattened branches of a Thuja, but its scales are broad, and dark green on the upper side of the branches, but glaucous on the under side, thus producing a singular mixture of colour. Siebold's account of it is as follows:—"The Hiba is a very lofty tree, with a majestic aspect. Its head is pyramidal, and formed by open or even pendulous branches. It is found in the mountains of Nipon, especially in the Hakone chain, where it prefers the damp slopes of valleys. Its wood is much sought after for building purposes." It is also one of the trees used by the Japanese for dwarfing. We presume it will prove quite hardy.

88. Eugenia oleoides, *Pl. and Linden.* (Myrtus fimoha, *Lind. Cat.*)

"A graceful Myrtaceous plant, with elegant drooping branches, nearly filiform leaves, and numerous white flowers proceeding in axillary panicles from the leafy ends of the branches. The plant is a universal favourite. It requires to be kept in a greenhouse." Marked in the catalogue of Mr. Linden at 25 fr.

Garden Memoranda.

Swiss Cottage, Cheshunt, the Residence of H. Bellenden Ker, Esq.—It may perhaps interest some of our readers to know that, notwithstanding the unusual severity of last spring, this autumn's experience of a Peach trellis, put up here some years ago by Mr. Ker, has been quite as satisfactory as that of former seasons. The contrivance merely consists of a rough trellis covered with glass sashes some 10 feet in length, resting on posts 4 feet high at the back, and on 14 foot supports in front. The back part is quite open; but the ends are closed with deal boards, and an 11 inch plank is also nailed along the front; but so as to admit plenty of air. From this trellis, which is about 16 yards long, and contains four trees, Mr. Ker has had a crop of between 40 and 50 dozen first-rate well ripened Peaches, which for colour, size, flavour, and juiciness have certainly surpassed those on walls. The success of the plan this year, unfavourable though the spring is well known to have been, is perfect, and therefore the advantages arising from contrivances of this description, where wall and house accommodation is limited, must be obvious; and it will be seen that they are so simple in their construction that a handy labourer might erect one with the greatest facility. No mildew, we understand, has attacked the trees on this trellis, and although red spider began to make its appearance during the late hot weather, it was soon checked. The lights have recently been removed from the trellis, which with its trees is now exposed to the open air. The latter have made good wood for next year, in which a full crop may again with confidence be expected from them. We should add that we believe the gardener (Mr. Woolley) covers the lights of this frame with hay during such nights in spring as are very cold or frosty.

A new house 56 feet in length and 20 feet in width is now being built here for Peaches; those on the trellis just mentioned, and on walls, though plentiful on both, coming in at a time when the family is from home. It is to be what is called half-span-roofed, and heated with hot water in 4-inch pipes. It is also intended to be furnished with large trees, in order that as little time as possible may be lost in waiting for them to fruit.

The quarters of the kitchen garden are bordered with dwarf pyramidal root-pruned Pear trees, which are this year, as usual, literally loaded with large and fine fruit, while in an orchard on the same kind of ground, and about equally exposed, but on a lower level, scarcely a fruit can be found, although the trees were quite as well furnished with blossoms in spring as those on the higher ground. In neither case was artificial protection afforded; the failure in the low ground must therefore be attributed to the severe frost we experienced on the night of the 24th of April taking more effect there than on the higher level. To the small trees round the borders of the kitchen garden just spoken of, therefore, the greatest interest attaches, not only on account of the heavy crops with which they are furnished, but also on account of the different fruits being so near the eye that they can all be closely examined with the greatest ease from the walks, and their peculiarities, if any, noted day by day as they grow and ripen. These trees receive very little winter pruning, that being, for the most part, performed in autumn, as early as it is seen that growth has terminated. The trees are, therefore, not encumbered with wood, which must be removed at a later period, and what is left has a better chance of ripening. Apples here, where they are sufficiently out of the valley to have escaped the spring frost, are also a heavy crop, more especially on trees of Lemon and Fearn's Pippin, which are quite loaded with fruit. Many other good sorts are also equally productive.

The glass houses here, though of the most inexpensive kind, answer the purposes for which they are intended uncommonly well. A Vinery, on the principle of Mr. Rivers' orchard-houses, has a fair crop of Grapes in it, which are netted to keep wasps from them. Excellent wood has been made for another year, some of the rods being quite 10 feet in length, as thick as the thumb, and brown and hard. A brick Arnott stove offers the only means of warming this house; but we understood Mr. Woolley to say, that even this is seldom if ever used. On the north side of this Vinery are two span-roofed Orchid houses, one heated by a tank, the other by 4-inch hot-water pipes, all from one boiler. The walls of the latter house, as well as those of the Vinery just mentioned, consist of deal boards covered on the outside with tarred felt, and, as has already been stated, they answer every purpose to which they are applied admirably. The Orchids, which have been so successful in obtaining prizes at the great London shows this year,

are in the best of health, and some of them, as the beautiful Harrison Cattleya, are even now in full bloom. The Cœlogynes maculata and Wallichi, also promise to flower charmingly in a month or six weeks' time, their pseudo-bulbs being unusually strong, and well furnished with bloom buds. Few of the smaller growing Orchids are so useful or handsome as these favourite late-flowering plants.

Out of doors the grounds are everywhere in good order, and as full of flower as could well be desired. The bedding plants, though perhaps now a trifle past their best, are still very beautiful; and the vases filled with Pelargoniums on the terrace round the house have been and are still very striking. In one is a variegated kind called Lady Plymouth, the leaves of which are beautifully scented. On the lawn a fine specimen of the Pampas Grass has wintered safely, and is now throwing up flower stems. It appears to succeed here perfectly, growing and blossoming every year satisfactorily.

FLORICULTURE.

CULTURE OF THE POLYANTHUS.—Some prefer growing this plant in pits, a system I never adopt; as they require much greater attention, are far more delicate in habit, and never increase so well under this mode of treatment. Others separate and replant in the beginning of August, and too frequently lose a great many plants by so doing, which, in my opinion, is one reason why Polyanthuses are so scarce; but they quietly content themselves that some few are spared, and directly attribute the loss to hot weather, which is a mistake; for at this season the plants are almost, I may say, in a dormant state; in fact the old foliage is fading, the new is not advanced, and if removed, however suitable the weather, a great many will most assuredly die. The situation most suitable for them is a well raised border on the north side of a Quick or Hawthorn fence; this serves as a shade during the hot months of summer, and also allows sufficient sun to reach the plants in spring. About this time (middle of September) or as soon as the new foliage is advanced 2 or 3 inches (not before), take up your plants, separate the increase, and plant them in the border, prepared of loamy turf, leaf-soil, and rotten sheep dung. Give them sufficient water to settle the soil at the roots, and should the weather prove dry, repeat the watering accordingly. The plants may then be left without any further care. I never give mine any protection whatever through the winter, and although the season may be severe, I do not lose a single plant. In the first week in April I select such as have made the best trusses, for exhibition, and taking them from the border, with as much soil as possible, I place them in 6-inch pots, give a gentle watering, and remove them to a more shady situation. I guard against snails by scattering a little Barley chaff or common salt about the pots, or they would destroy the blooms, and my labour would be in vain. The careful removing of the plants rather improves the quality of the flowers than otherwise; but as soon as the day of exhibition is over, I replace them in the border, in their former situation. During the months of May, June, July, and August, a few branches stuck on the border will be of great service, and effectually prevent the sun from scorching the plants, which would injure them to a serious extent. Plenty of water must be supplied daily; should the weather prove dry and hot, regularly soak them, or they will probably be attacked by red spider, which undoubtedly destroys numbers of plants every season. Should you be troubled with this pest, syringe the foliage without delay on the under side with some strong soap-suds. This will drive it away, if not destroy it, and there is no fear of being troubled a second time, as it will never return to the plants any more that season. I have always found one application effectual, and the plants have not suffered in the slightest degree. By the above treatment I have always had a fine bloom. *S.*

SEEDLINGS.

CARNATION: *Q.* A useful variety for ordinary purposes.
DAHLIA: *T A.* Good in colour and petal; centre faulty.
FUCHSIAS: *S & N, Liverpool.* All good, but not better than kinds we have already.
HOLLYHOCKS: *J B.* All more or less "pockety," and otherwise inferior to kinds possessing the same colours already in cultivation. The best is the one named Essex Champion.
PETUNIAS: *S & M.* A good bloom of a sort now not uncommon.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—All tender-rooted plants should be got under cover at once, if not already done; for these cannot with any measure of safety be exposed to drenching rains at this season of the year. If it should be inconvenient to house the whole stock at present, select for remaining out such things as require a plentiful supply of water at the root, and are under rather than over-potted. For instance, many of the stronger sorts of Azaleas, Acacias, Camellias, Cytisus, &c., if not over-potted, will not be easily injured by wet, and will bear a slight frost with impunity. But useful specimens of even hardy things should not be exposed to heavy falls of rain. If the gaiety of the conservatory is dependent to any extent upon plants brought from the stove, these will require some care, in the event of wet cloudy weather continuing, to prevent their being injured by damp. Give air freely on every favourable occasion, and if this is found to be insufficient use slight fires at once; for flowering plants are not generally so plentiful at this season as at some others, and hence any care that will tend to preserve their beauty will be well bestowed. Keep everything in this house as clean and neat as possible, and take advantage of unfavourable weather for out-door work, to thoroughly clean the glass and paint, &c. Also go over the twiners frequently, and cut back those that have done flowering, in order to admit light freely. Examine specimens in pots, particularly such as are not in the fittest places for them, which is often the case with plants brought into the conservatory while in bloom, and turn them once a week, so as to expose all their parts equally to light and air.

FORCING DEPARTMENT.

PINERY.—Plants on which the fruit is approaching maturity must not be over-watered at the root, and moderate fires should be used on dull days, to allow of giving air to prevent a damp stagnant atmosphere, which would be most injurious to the quality of the fruit. Fruit in less advanced stages, however, will enjoy a damp atmosphere, and these may be syringed early in the afternoon, shutting up early on fine days, with a high moist temperature. Give these moderate supplies of manure-water at the root, but avoid getting the soil too wet, and endeavour to afford them a steady bottom-heat of about 85°. Young plants, especially those growing in dung pits, must not be kept over close and warm in dull cloudy weather, as this would tend to induce weakly growth, therefore admit air freely on fine days, and, if necessary to keep the plants stocky, leave a little at night. Young stock in pits properly heated by means of hot-water pipes may, however, with careful attention, be grown on freely for some time longer yet, without the least danger of inducing weakly growth; but to effect this the temperature must be regulated according to the amount of light, and every care must be observed to secure a vigorous root action, without which healthy vigorous growth is impossible. VINERIES.—Use slight fires, with a gentle circulation of air, when the weather is damp in houses where ripe fruit is hanging, and endeavour to keep the atmosphere dry and cool, in order to preserve the fruit against damp, &c.; also look over the bunches once or twice a week, or oftener, as may be necessary, and remove any tainted berries immediately they can be perceived; for these, if left in the bunches, communicate the malady to others. It is a too common practice to expose the Vines to the weather directly the fruit is cut; and some persons deem this practice essential to the ripening of the wood. Such treatment may answer very well when the weather happens to be warm and dry, and the foliage not so tender as to be injured by exposure; but to expose Vines in damp cloudy weather, when the object is to ripen the wood, is merely preparing for disappointment in next year's crop: therefore, where the wood is not thoroughly ripe, keep the atmosphere as dry and warm as can conveniently be done, and maintain a constant circulation of air night and day. Keep the foliage clear of insects, particularly black thrips, which are often very troublesome at this season, especially where plants are grown under the Vines. In houses where the fruit is not yet ripe, use brisk fires with plenty of air, and endeavour to get the fruit properly ripened as speedily as possible.

FLOWER GARDEN AND SHRUBBERIES.

The most important matter in this department at present is the propagation of a sufficient stock for wintering of everything likely to be wanted at next planting out season. If previous directions have been attended to, however, this work will by this time be in an advanced state. But where cuttings are still to be put in, not an hour should be lost; and of Verbenas, &c., at least twice the quantity which it may be desired to have in spring should be put in; for besides the probability of losing a considerable proportion in winter, they will be weakly, and will not afford so many cuttings in spring as those that were put in earlier. Those which are established in their winter pots should be freely exposed to air, but they will not be benefited by exposure to long-continued drenching rains, and, where it can be done, they should be kept under glass, or placed where some covering can be used to throw off heavy rains. Secure as many cuttings as possible of the scarcer sorts of variegated Geraniums before they are injured by frost, for it is not easy to have too many of these beautiful plants. Cut off the decayed flower-stems of herbaceous plants, and keep those in beauty secured against the ill effects of high winds. Also keep the beds trim and orderly, and avoid as much as possible allowing it to be seen that the knife has been used, but keep them within proper limits. Queen and Brompton Stocks may still be planted in their flowering situations, choosing showery days for the operation. If any of the beds which are to be planted with Dutch bulbs after the frost destroys their present occupants require a dressing of fresh soil, this should be mixed in readiness, for the sooner the bulbs can be planted after this time the more likely will they be to bloom freely.

FLORISTS' FLOWERS.

Prepare beds in which to plant Hollyhocks for next year's bloom; procure strong plants in pots, and put out at intervals of four or five feet. Gather seed as soon as ripe. It is advisable as much as possible to keep the seed separate when intended for the amateur's own growing. There is a better chance of comparing the relative merits of seedlings when growing together. Continue to pot off Carnation and Picotee layers, choosing dry mild weather for the operation; when potted, place in a cold frame for a few days, till they have again taken root, when they may be gradually inured to the full air. PINKS and PANSIES should be planted out forthwith; pot a few of each as a reserve to fill up vacancies in the spring.

HARDY FRUIT AND KITCHEN GARDEN.

Give careful attention to the preservation of fruit from wasps, which seem to be more than usually numerous this season. Late Peaches, Plums, &c., must be closely netted up, and Pears, &c., must be frequently examined, gathering them as soon as they are fit, for if any of these are allowed to hang after they are ripe, and the wasps once find them, the probability is that unless they can be covered with a net, the finest fruit will be spoiled. Where Currants are covered with mats they should be opened occasionally after wet weather, choosing a fine forenoon, so as to expose them to a free circulation of dry air. Trim and dress Strawberry beds, but be careful to injure the leaves of the plants as little as possible, and avoid deep digging between the plants, which is of no use except to injure the roots, for the Strawberry rather prefers a somewhat firm soil. Make a last sowing of Lettuce on a dry warm border, which, as they will be dwarf and stocky, will stand the winter better than those that were sown earlier. Get the August sown planted out on a sheltered warm border, also transplant Cauliflowers where they are to be wintered under hand-glasses, but do not use these until the weather becomes severe. Clear off exhausted crops, and keep down weeds, and maintain neatness, &c. Also get manure wheeled on vacant ground, and proceed with digging and trenching as opportunity offers.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,

For the week ending Sept. 21, 1854, as observed at the Horticultural Garden.

Sept.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Min.	Mean	Of the Earth. 1 foot deep.	2 feet deep.	Wind.	Rain.
Friday 15	23	29.951	29.9?3	71	58	64.5	62	61	S.	[illegible]
Satur. 16	24	29.876	29.82?	71	62	66.5	62	62½	S.W.	[illegible]
Sunday 17	25	29.89?	29.719	74	49	61.5	62	62	S.W.	[illegible]
Mon. 18	26	30.0?2	30.01?	69	59	64.0	62	62	S.W.	[illegible]
Tues. 19	27	29.990	29.936	72	58	65.0	62	62	S.W.	[illegible]
Wed. 20	28	30.066	29.890	71	41	56.0	62	62	N.	[illegible]
Thurs. 21	29	30.193	30.144	72	34	53.0	60	61	W.	[illegible]
Average.		30.001	29.9?3	71.4	51.5	61.5	6?.7	61.8		[illegible]

Sept. 15—Fine; very fine; overcast; slight rain.
— 16—Cloudy; overcast; rain; warm at night.
— 17—Slightly overcast; very fine throughout.
— 18—Fine; cloudy; overcast; rain.
— 19—Overcast and windy; rain; overcast.
— 20—Fine; cloudy; boisterous with rain; overcast.
— 21—Very clear and fine; lightning in the evening.

Mean temperature of the week, 1½ deg. above the average.

RECORD OF THE WEATHER AT CHISWICK,

During the last 28 years, for the ensuing week, ending Sept. 30, 1854.

Sept.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 24	65.3	46.0	55.6	13	0.75 in.	2	6	2	1	4	5	4	[illegible]
Mon. 25	65.8	45.8	55.8	13	0.30	1	4	2	2	4	[illegible]	4	1
Tues. 26	65.1	45.6	55.3	15	0.72	—	4	5	1	8	7	[illegible]	[illegible]
Wed. 27	64.7	45.3	55.0	17	0.63	—	2	4	1	4	8	4	3
Thurs. 28	64.4	44.6	54.5	13	0.30	—	3	3	1	8	6	3	3
Friday 29	64.1	45.2	54.7	18	0.46	1	2	3	2	5	[illegible]	2	3
Satur. 30	63.6	44.1	53.9	16	0.58	2	2	3	1	[illegible]	[illegible]	7	1

The highest temperature during the above period occurred on the [illegible], 1832—therm. 82 deg.; and the lowest on the 27th, 1828—therm. 24 deg.

Notices to Correspondents.

BOOKS: *Earn.* Moore's "British Ferns" (Groombridge, 2d edit.) is, we suppose, the book you are in search of.—*Tuancaga.* Kemp, "How to Lay Out a Small Garden." Bradbury & Evans.—*L Y Z.* Lindley's "Theory of Horticulture," the forthcoming edition, if you want applied Physiology.

CALATHEA ZEBRINA: *H S.* This common plant blossoms every year abundantly when in the hands of a cultivator of any sort of skill.

CLIANTHUS PUNICEUS: *J Sm.* We fear your plant will hardly ripen its wood enough to bear the winter at Ambleside. All you can do is to mat it well up, and remove in the spring what may have died during the winter.

NAMES OF FRUITS: *A Subscriber.* The Plum, which you believe to be a seedling, is not known. Received—*Iscoed; a Constant Subscriber.*

NAMES OF PLANTS: We have been so often obliged reluctantly to decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*J Y J.* 1, Pterospermum acerifolium. 2, Jatropha multifida.—*E J P.* Cochlearia anglica, or Scurvy grass.—*Erzeroum.* 779, Campanula alliariæfolia (?), specimen bad; 11, Fritillaria tulipifolia; 565, Allium Schœnoprasum; 365, A. rubellum; 534, A. flavum; 1, Bulbocodium vernum; 223, Ornithogalum umbellatum; 1055, Asparagus amarus.—*Z Z.* Vallota purpurea.—*M P.* Euphorbia Lathyris.—*A Subscriber, Ilay.* Saponaria orientalis, a very pretty annual, by no means common.—*W. Glover.* Amaranthus tricolor, an old fashioned tender annual.

PORTABLE CIRCULAR SAW: *Breakneckdean* will be obliged by any of our correspondents instructing him of the existence of a portable circular saw, with a flywheel, that can be easily conveyed from one spot to another in woodlands of a broken and rough character, by means of which thinnings, &c., may be reduced to a portable size. And if so, he would consider it a great additional kindness were he told where he could procure it.

TENANT RIGHT: *J M.* We apprehend you have a right to remove the trees, provided you state your case fully and fairly. But all will depend upon whether you can show yourself to be a nurseryman, and that the trees have been planted for the purpose of being resold. Your having occasionally sold one or two will not justify your removing the remainder. This, however, is a matter on which, if you are wise, you will consult a solicitor and not a newspaper.

THE HERBARIUM: *A Young Botanist.* Let the spirit dissolve as much of the corrosive sublimate as it will. Then weaken the solution by adding to it an equal quantity of mere spirit. This for ordinary purposes. For the heads of Compositæ, plants and succulent specimens, use the first solution without diluting it.

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures, Linseed Cakes, &c.
WM. INGLIS CARNE, 10, Mark Lane, London.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7l. per ton; Superphosphate of Lime, 7l.; Sulphuric Acid and Coprolites, 6l.
Office, 69, King William Street, City, London.
N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent. of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

SEWAGE CHARCOAL MANURE.—This highly fertilising Manure, which is Peat Charcoal completely saturated with London Sewage, will be found most efficient for every species of crop; more especially for Peas, Beans, Turnips, Mangold Wurzel, and other root crops. It will produce a greater return for the outlay than Guano or any other Manure at an equivalent value: it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained at the SEWAGE MANURE WORKS, Stanley Bridge, Fulham, at 4l. per ton, and in quantities less than half a ton, at 5s. per cwt., for ready money only; and in quantities not less than a ton, will be delivered at the London Termini of the Railroads free of charge for cartage. No charge for sacks.
It may also be had from Messrs. G. GIBBS & Co., 26, Down Street, Piccadilly, Agricultural Seedsmen, Agents for London; and from all the other Agents of the Company.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and dispatch.
Gentlemen desirous of receiving instructions in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

THE LONDON MANURE COMPANY beg to call the attention of Agriculturists to their WHEAT and CLOVER MANURES for present use. The London Manure Company also offer Genuine Peruvian Guano, Nitrate of Soda, Concentrated Urate, Superphosphate of Lime, Fishery and other Salts, and all Artificial Manures of value. The London Manure Company guarantee Peruvian Guano and every Manure they supply to be strictly genuine. EDWARD PURSER, Sec.
Bridge Street, Blackfriars.

WHEAT SOWING.—The undersigned beg to call attention to their WHEAT MANURE, which has been successfully used during the last two seasons, and which they are prepared to deliver at 6l. per ton, free to Railway.
They are also Sole Agents for the sale of PEAT MOSS CHARCOAL, which is a valuable deodoriser and distributor of ammoniacal matter.—English and Foreign Linseed and Rape Cakes, Guano, Superphosphate of Lime, Salt, Bones, and all other Manures of known value on sale.
Apply to MARK FOTHERGILL & Co., 204, Upper Thames Street.

THE PATENT ALKALI COMPANY manufacture on a large scale, at their extensive works in Lancashire, Sulphate of Copper (Blue Vitriol), Soda Ash, and Crystal Soda of first-rate quality, which may be fully depended on for purity. The Company's Purple Brown Metallic Paint is also held in high repute as a pigment for Iron, Roman Cement, &c. &c. Orders, &c., to be addressed to Mr. JOHN A. WEST, Secretary of the Company, 1, New Broad Street, London.

JACKSON'S PATENT PREPARATION FOR THE PRESERVATION OF POTATOES, SEEDS, &c.—This valuable discovery, for which letters patent have been obtained, is the successful result of 14 years' study and experiments in the preservation of vegetable matter. It imparts health and vigour to the Plants and Seeds subjected to its action, and effectually prevents the Potato Disease, the Smut in Wheat, Mildew and Rot, all Fungal Diseases, and the attacks of Insects and Vermin, and further recommends itself to the Farmer, the Planter, and the Public generally, by the extreme simplicity of the mode of its application.
It is sold by all Seedsmen and Chemists, in packets of one, two, three, and four pounds each, with instructions for its use; and parties requiring larger quantities for their own use or for exportation can be supplied on advantageous terms, by addressing Mr. JACKSON, the Patentee, 18, Cannon Street, London Bridge; where the article is always on sale, and the fullest particulars and directions for its use can be obtained.

Extracts from numerous Testimonials in favour of JACKSON'S PREPARATION.

"Belmont Farm, Eltham, Kent, August 28th, 1854.
"Sir,—I am now about to perform my promise, to let you know how your prepared Potatoes have turned out here. As a practical farmer of some experience I had despaired of finding any remedy for the disease; but I must confess that a stronger proof of the efficacy of your process in Preserving Potatoes, could not have presented itself than I have now to relate. One of the fields of this farm, the property of Mrs. Stanbury, was planted with Regents Potatoes in April last, some of which were prepared by you. The result now is, that the whole of the crop from the unprepared sets is thoroughly diseased and hardly worth the trouble of taking up; while those raised by the side of them from the prepared sets, are not only in a beautiful state of preservation from the disease, but the produce is much greater,—the Potatoes are more numerous than the others; indeed, if there were no such thing as the disease to be feared, it would be worth the trouble and expense of preparing the sets by your process, even for the sake of the improved crops. I shall certainly, for the future, prepare all my Potatoes for seed by your process; and I intend to adopt it for preserving my Wheat from the smut. Any person may see the difference of the prepared and unprepared Potatoes at a glance. You are at liberty to make any use you please of this letter, and I remain, Sir, your obedient Servant,
"G. B. BAXTER.
"To Mr. Jackson, "Late of Ruxley Farm, Kent.
"18, Cannon Street, London Bridge."

CORN CRUSHERS AND CHAFF CUTTERS.—A large display of the best Farm Implements shown in operation. Price Lists sent free on application.
BURGESS AND KEY,
103, Newgate Street, and 52, Little Britain, London.

PUMPS AND HOSE PIPES FOR GARDENS AND LIQUID MANURE.—BURGESS & KEY'S Pumps were highly commended by the Royal Agricultural Society of England at Lincoln. Price Lists sent free.
103, Newgate Street, and 52, Little Britain, London.

CHURNS.—ANTHONY'S PATENT AMERICAN CHURN.—Since 1849 this Churn has obtained all the Prizes awarded by the Royal Agricultural Society of England. At the trial before the Judges it made in 10 minutes 4 lbs. 6 oz. of Butter from 4 quarts of Cream, being 8 oz. more than any of the other Churns from the same quantity and quality of Cream.
103, Newgate Street, London.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.
PATRON—His Royal Highness PRINCE ALBERT.
PRESIDENT OF COUNCIL—Earl BATHURST.
PRINCIPAL—Rev. J. S. HAYGARTH, M.A.
PROFESSORS, &c.
Chemistry—J. A. C. Voelcker, Ph.D., F.C.S.
Zoology, Geology, and Botany—James Buckman, F.G.S., F.C.S.
Veterinary Medicine and Surgery—G. T. Brown, M.R.C.V.S.
Surveying, Civil Engineering, and Mathematics—F. Armstrong, C.E.
Manager of Farm—G. Austin
Students are admitted after the summer and winter vacations, also in April and October. The Annual Fees for Boarders vary from 45 to 80 guineas, according to age and other circumstances. The Fee for Out-Students is 40l. per annum. The College Course of Lectures and Practical Instruction is complete in one twelvemonth though a longer course is recommended. There is a department for general as well as for agricultural purposes. Prospectuses and information can be had on application to the Principal.

COLLEGE OF AGRICULTURE AND CHEMISTRY AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.
Principal—J. C. NESBIT, F.G.S., F.C.S., &c.
The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.
Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

GLOUCESTERSHIRE AGRICULTURAL ASSOCIATION.—21st ANNUAL MEETING, at GLOUCESTER.
EXHIBITION OF STOCK, &c., THURSDAY, November 23. The Premiums, amounting to 174l., open to all Subscribers of 1l. or upwards.
POULTRY EXHIBITION, WEDNESDAY and THURSDAY, November 22 and 23. The Prizes, amounting to 97l., open to general competition. Entrance Fees, 2s. per Pen for Bantam Classes, and 5s. per Pen for all other Classes.
Entries for Stock and Poultry close October 20. Prize Lists and Forms of Certificate may be had on application to
A. G. JONES, Secretary, Gloucester.

SMITHFIELD CLUB, 1854.
CHRISTMAS FAT CATTLE SHOW.—The Annual Show of Fat Cattle, Sheep, and Pigs, will take place on the 5th, 6th, 7th, and 8th of December, 1854, at the Carriage Bazaar, King Street, Portman Square, London.
All Certificates must be returned to the Honorary Secretary on or before Saturday, the 4th NOVEMBER, 1854.
Prize Sheets, and the necessary Printed Forms of Certificates, are now ready, and can be obtained on application to
B. T. BRANDRETH GIBBS, Hon. Sec.
Corner of Half-Moon Street, Piccadilly, London.

The Agricultural Gazette.

SATURDAY, SEPTEMBER 23, 1854.

MEETINGS FOR THE ENSUING WEEK.
THURSDAY, Sept. 28—Agricultural Imp. Society of Ireland.

NOWHERE, perhaps, is the old proverb "A bad hand never gets a good tool," more applicable than in the harvest field; for let it be sickle, "bagging hook," or scythe, its effective operation becomes very different in the hands of workmen of unequal skill, and, we presume, the reaping machine will not be found an exception to the proverb.

This being the case, various questions naturally arise as to how far the comparative value of machines can be judged from the quality of the work performed; for if this furnished little or no evidence in the case of the sickle and scythe, what dependence can be placed upon it in that of the reaping machine? To determine, for instance, which of two is the best scythe, the judge has to try them himself. Are we approaching a similar practice in the case of reaping machines? Or can their value be determined by observation only, owing to their greater abridgment and condensation of labour?

The more labour is abridged by any machine the less, as a matter of course, will the several details of it be under its control. Machines, for instance, which gather the corn into swathes, as BELL's, or into sheaves, as is aimed at by the automaton, will be less dependent upon the quality of manual labour in this department than the American reapers, which require a man and rake to perform the work; for in the latter case such a workman may be a good or bad hand. He may after a very short term of apprenticeship become an expert workman, making good work, or he may be the very reverse, never being able to gather successfully. In the hands of the one, the machine, under such circumstances, would be a good one, but in those of the other a bad, just as has been experienced in the case of the sickle and scythe.

Analogous, again, to mowing with the scythe or reaping with the sickle or hook, the successful cutting of a reaping-machine must necessarily depend upon the proper direction and manner in which it is driven; and this, as in the former case, will very much depend upon the peculiar state of the crop and atmosphere.

With the scythe, for example, a calm day and a standing crop are not considered a favourable state of things; for, under these, a mower will mow from one-third to one-fourth less than with a fair wind—and when laid in different directions, not more than one-half. With a good breeze on his back, or rather some degrees to his right (the direction which the most successful generally choose), he may cut down 2 acres per day of standing corn; if calm, 1½ acre; and if laid, not more than 1 acre. We have seen the scythe, when introduced into a northern province, condemned because it would not cut standing corn on a calm day, and laid corn in any direction the wind blew! and yet subsequently entirely supersede the sickle.

With the reaping machine, a comparatively calm day and a standing crop would obviously be the most favourable state of things, because it cuts going and returning; whereas, the scythe only cuts in one direction, the mower returning empty. Returning empty is a great waste of time, which cannot be avoided in the case of the scythe or hook, for no mower or reaper would attempt cutting against the lie or inclination of the corn. In learning to work reaping machines successfully, a practical question may arise as to the propriety of making a similar sacrifice with them on a very windy day, even in the case of standing corn.

What may be the ratio of speed or areas of cut corn under different circumstances of this kind with reaping machines—whether 100, 75, and 50, as in the case of the scythe—is a question which must be left for experience to answer; but there cannot be a doubt that some such differences will ultimately be realised, for it would be unreasonable to suppose the contrary. If a mower, for instance, expends three times the amount of labour or power in cutting an acre of lying corn, which he does on one of standing, can we suppose that the same amount of horse-power will perform the work in the former case, when that power is less favourably applied? It would require six horses at least instead of two to get over the ground in equal times under such circumstances, an increase not generally calculated upon, we fear, in trials of cutting the partially laid corn, which can be attempted with machinery.

In the harvest field such an increase of power is impracticable, and therefore the other alternative must be adopted. Like the successful mower, we must learn to wheel about machines so as to cut the corn in the most favourable direction.

We may add here, in connection with this subject, that at the trial of reaping machines at Stirling last week, the Highland Society's prize of 20l. was awarded to CROSSKILL for BELL's reaper; the Stirling prize of 20l. was also awarded to CROSSKILL for the same machine; and the prize of 20l. given by the Stirling Agricultural Association for machines under 25 guineas in price was awarded to DRAY & Co.'s patented modification of HUSSEY's reaper. We learn from the *North British Agriculturist* that by the arrangement of the committee of management, each machine had to operate upon the different crops in the following order:—Oats, Wheat, Barley, and Beans; and for each machine a portion of the respective crops was marked off, for which the owners drew lots, and to these lots the respective numbers were affixed. The five lots of each crop were, of course, in the same field, and it fortunately happened that the crop in each was tolerably uniform in quality. The Oat field was a fair stand-up sample; the Wheat rather thin on the ground, and consequently upright, with a strong undergrowth of creeping weeds; the Barley, without being laid, was considerably distorted and trying for a machine; the Beans were on the whole a strong crop, but less uniform than any of the others; and as for the surface state of all the fields, it was that of land under the best system of modern management, hence in the most favourable state for machine reaping. The work done was considered satisfactory.

IN reference to the heavy cost of harvest work at Cirencester, to which we alluded last week, we have received the following explanation. The point particularly named was the cost of binding, or rather of attendance generally on the machine—MCCORMICK's reaper—used. On this it is said—

"Two of the men are always with the machine and two more raking after it, leaving 10 to gather, bind, and stook. The work of these 10 is considerably harder than it would be after hand-reaping, as the corn is delivered in inconvenient bundles, which require some manœuvring and handling to tie them up into a shapely sheaf. It will therefore always take more time and labour to tie and stook an acre of corn cut by the reaper than when cut by the sickle. Add to this the ridiculous repugnance felt by our rustic labourers to any new implement, which prevents them doing their best, and you will have a sort of explanation of the seeming extravagance of the cost per acre. Perhaps there is no agricultural operation which so requires all hands to work with a will together, as the one in question. And this *will* is so subtle, and so unreachable by ordinary authority, that no care in supervision can make up for the want of it."

The cost of reaping, tying, and stooking, amounted

on the whole to 7*s.* 7*d.* per acre. It may be well to contrast this with a report we have just received from a correspondent, "E. T. B.," near Stranraer, who thus states his experience of the expense of mowing, binding, and stooking, calculated from work performed on his farm in a field of 28 Scotch acres:

Sept. 5,	Nine mowers,	6	hours	=	54 hours.
" 6,	Nine "	$11\frac{1}{2}$	"	=	$103\frac{1}{2}$ "
" 9,	One "	$5\frac{1}{2}$	"	=	$5\frac{1}{2}$ "
" 10,	Seven "	3	"	=	21 "
	Total...	...	...	...	184 hours.

184 hours = 16 days; $11\frac{1}{2}$ hours being a harvest day's work here.

The expenses per day are—

One mower	2*s.* 6*d.*
One woman lifting	1 10
One boy making straps	0 10
One man tying and stooking	2 6
Total per day	7 8

Giving 6*l.* 2*s.* 8*d.* as the amount for the whole field, or 4*s.* $4\frac{1}{2}$*d.* per Scotch acre, or 3*s.* 6*d.* per imperial acre.

"If, in order to make a fairer comparison with the statement of the expenses of reaping by machine in your last Number, we add 47 per cent. for the difference in the price of labour, the result is 5*s.* $1\frac{3}{4}$*d.*, still 2*s.* $5\frac{1}{4}$*d.* below the estimated expense with the machine; 3*s.* 8*d.*, however, seems to me unreasonably high for a day's work of 10 hours. The week before last, eight mowers cut down, in good workmanlike style, nearly 80 Scotch acres of Wheat and Oats, some of the latter especially a good deal laid; the whole above the average in bulk and grain, and at a cost of a trifle over 4*s.* 6*d.* per acre. Everything depends on the scythe and its perfect adjustment. A man will accomplish half as much more and with less labour to himself, if his implement is correctly set."

Some years since, we remember a farmers' club astonished itself by coming to the knowledge of the enormous differences of cost at which its members respectively maintained their horses. Some were at something like double the expenditure of others in the provision of food. We believe that equal instruction and surprise would be the result if our readers would compare notes as to the cost of harvest work by different methods in their respective neighbourhoods. We hope some may be induced to follow the example of our correspondent "E. T. B."

THE SCOPE FOR SAVINGS BANKS.

[Extract from a village lecture—the reference in the first paragraph is to a well-known, widely published diagram.]

What I propose doing is to point out some broad facts, which must convince any reasonable mind that working men, as a body, can save to a considerable extent if they choose. You see these parti-coloured patches on the calico—*this* is the amount of our annual taxation, 50,000 000*l.* of money; so much goes to pay the interest of the national debt, so much to pay for ordnance, army, and navy, and so much to defray the other charges of the government of this country. Now, what is this much higher column by its side? It represents the amount annually spent by the working classes alone in beer, spirits, and tobacco; the amounts are given by the late Mr. Porter, of the Board of Trade, a man than whom no one was better qualified to state the truth, both by his knowledge of it and his love for it. 25,000,000*l.* are spent by the working classes of this country annually in beer and porter; 24,500,000*l.* in spirits; 7,500,000*l.* in tobacco, and no account is taken in these large amounts of the large quantities smuggled into the country, nor of the quantities of cider and home-brewed beer that must be drunk. Now, just contrast all this with the small column by its side, 6,000,000*l.* spent in poor-rates, and 1,000,000*l.*, or rather less, which includes all the contributions to 12 of our largest and most influential benevolent societies, such as missionary, bible, and pastoral aid societies—57,000,000*l.* spent by the labouring classes in intoxicating liquors and tobacco annually! It is one-half more than the whole rental of the land of this country; it is far more than the whole taxation of the country; 10 times as much as all our poor-rates; 60 times as much as we give to these benevolent societies. Were only 50,000,000*l.* of this money devoted to the purchase of land, it would afford every year a quarter of an acre each to 2,000,000 labouring men, reckoning the land at 100*l.* per acre. I take these facts from a little publication which I have seen, which well deserves the thoughtful study of the working man. It is a sheet entitled British Taxation, published by Tweedie, Wellington Street, London, price one penny. I have been a teetotaller for many years, and if working men generally were teetotallers as well, what an addition to the material wealth of the population would accrue. That such drinks are unnecessary as an article of diet is proved by the experience of thousands of working men, and others in all parts of the kingdom. That you may safely, as regards health, give up their use is proved by the following opinions signed by 2000 medical men.

"We, the undersigned, are of opinion—I. That a very large portion of human misery, including poverty, disease, and crime, is induced by the use of alcoholic or fermented liquors as beverages.—II. That the most perfect health is compatible with total abstinence from all such intoxicating beverages, whether in the form of ardent spirits, or as wine, ale, porter, cider, &c. —III. That persons accustomed to such drinks, may, with perfect safety, discontinue them entirely, either at once, or gradually after a short time.—IV. That total and universal abstinence from alcoholic liquors and intoxicating beverages of all sorts, would greatly contribute to the health, the prosperity, the morality, and the happiness of the human race."

That the intoxicating liquor used in this country is the great source of all the crime which disfigures our daily history, is amply proved by the very best of evidence. What says

Judge Coleridge: "There is scarcely a crime comes before me that is not, directly or indirectly, caused by strong drink." —Judge Gurney: "Every crime has its origin, more or less, in drunkenness."—Judge Patteson: "If it were not for this drinking, you (the jury) and I would have nothing to do."—Judge Alderson: "Drunkenness is the most fertile source of crime; and if it could be removed, the assizes of the country would be rendered mere nullities."—Judge Wightman: "I find in every calendar that comes before me, one unfailing source, directly or indirectly, of most of the crimes that are committed—intemperance."

Now, undoubtedly, this way of presenting the general results of a whole country before the eye has its advantages in the imposing magnitudes to which it calls attention—but it has its disadvantages as well. An individual loses himself in the multitude, and forgets that he is personally interested in the case. Many a young man has thus looked at the subject without feeling any necessity that he should himself lend a hand to the temperance movement, or himself join the party who aims at putting down the evil; and I would not wonder if there be not many a young man here who is saying to himself "I shall not make myself singular, and get laughed at, for no reason at all. I know plenty of respectable men who are not teetotallers, and I see neither harm nor danger in the moderate use of beer and spirits." Well! be it so. Many no doubt will think and say all this, and hold it to be conclusive and satisfactory upon the subject; and I feel sure that it must somewhat stagger them to think that there never yet was one who died of delirium tremens, or drank himself to death, who did not *once* just think and say the very same. But it is not to the moral bearing of this subject that I wish particularly to refer,—it is to the material relations of the subject; and I believe that it is in the matter of intoxicating drinks that working men will find their chief means of saving. I was talking with a gentleman some time since upon this subject, and he said that he did not believe that working men as a body were able to save; that he did not believe that, as a general rule, men *were* able unassisted to maintain themselves from youth till death: but what a confession was this;—it involves the idea that the nation is essentially pauper and insolvent. Why, I would say it with confidence, whether I had studied the subject or not, but merely from my certainty of His wisdom and His goodness whose Providence maintains us all, that as a general rule, let a man act from youth till manhood in the right use of all his abilities and faculties, yielding implicit submission all the while to the commands of an intelligent conscience, and, if he please, he may increase in worldly wealth as well as mental and in moral wealth from year to year. I submit to you that these facts regarding the consumption of spirits and intoxicating drinks prove as much; the fact is, after all, that a man must be dependent either on the one column or the other—either on his own share in the 57,000,000*l.* saveable by the disuse of these intoxicating stimulants, or in the 6,000,000*l.* collected for the maintenance of paupers; he had better, like a reasonable man, choose his share in the larger sum, and commence to lay it up at once. And this commencing at once is a very important matter indeed. Boys and girls may have deposits in the savings banks, as I shall immediately explain; and this reminds me of another source of saving in which they can, I believe, take part. I am unable of my own knowledge to say much upon the subject, but I was told that it is worth while to make a reference to the article of dress.

I will here merely refer to it and dismiss it in a single sentence. I do not know whether it be necessary to remind them of it, but I can assure young men that the old proverb does not speak the truth—the tailor does not make the MAN; and whether there be any corresponding profession which pretends in some similar way to confer true womanhood I do not know, but I am quite sure that if there be, its pretensions are equally absurd. Let us seek for that higher standing among our neighbours which is a proper and legitimate object of pursuit in the possession of moral and of mental superiority, and not in that petty spirit of mere outward dandyfication, which really is not only a very paltry but a very expensive affair, and by the abandonment of which, therefore, I believe that there is considerable room for the acquisition of wealth.

Well then, I now come to modes of investing all these savings, which is a very important part of the subject, and on which I have still to occupy your time for a quarter of an hour. They may be arranged in three classes:—1st, Benefit societies, by which maintenance during sickness is provided, and which are a very necessary institution to any one, whether he join a savings bank or not; 2d, Life assurance societies, by which means are, to a certain extent, provided for a family after the death of the head of that family; and 3d, Savings banks, properly so called, by which means can be accumulated for use at any future period during life; and under this class I would name what are called benefit building societies, and also—for it is a means of saving fragments of time and labour which would otherwise be wasted—the allotment system. Of course, on all these many subjects I can do little more than enumerate and characterise, without much criticism.

(To be concluded next week.)

THE PIG.—No. IV.

The Fattening of Pigs.—This will in a great measure depend upon the age of the pig and its ultimate destination. As *Roasters* they should be fed while sucking the dam. The sow, while suckling with the view of fatting the progeny, must be supplied with the most nutritive diet, as Oatmeal and milk, of which the young piglings should be taught to partake, or she may have warm whey or wash mixed with Barley, Bean or Pea-meal, or bran, on which all will thrive well, and the major part get fat; they should then immediately be sold from her. It is usual to castrate the males and spay the females at the age of six or seven weeks, and while with the sow, but roasters should not undergo these operations. As *Porkers* the fattening may be advantageously proceeded with so soon as they are weaned from the sow; for this purpose great attention is required, and the most suitable and nourishing food must be supplied to them; their bed must be kept as clean and their sty as wholesome and airy as possible; their food should be milk, mixed with Pea-meal or Barley-meal, given with great regularity three times a day, for at least the first three weeks subsequent to the weaning, when warm whey or wash and a little admixture of bran or pollard, may be added to the meal to reduce the cost of feeding. It will also promote their improvement if they can be occasionally washed with warm water; this is quickly done by pouring it over them from a watering pan. When gathered into a corner, their little feet will scour each other's backs pretty well, if they are made to jump over each other, as they will do for a short time; this must be discontinued as they become well fatted.

The above applies exclusively to fattening pigs from the sow; there are several things to be considered in the ordinary process of fattening pigs; and the choice of pigs for fattening must depend, as we have just said, on the purpose for which they are intended. If fattened for bacon the large breed of a good age must be sought for; if for pork the smaller breed is best, and the most profitable age for feeding will be at about 15 to 20 months. The pig in either case that evidences the most good points, and appears to carry the greatest relative amount of good lean flesh, is to be preferred, and will prove the best on being slaughtered.

The Pig-sty.—The choice being made, the next thing for consideration is to provide for their ease and comfort, so as in the speediest time to complete the fattening; the aim should be to give them a good home or sty for this purpose; this should be airy and have sufficient space for all the inmates to rest quietly, without crowding or disturbing each other, and it should front the south. Two compartments are almost indispensable; the one an open yard, the other covered and nearly closed up, having merely an entrance just sufficiently large to permit a well fed pig to pass in; it must be raised a few inches, and well paved. The pig, notwithstanding he has the misfortune to sustain a character for filthiness, is in reality a very cleanly animal. His sleeping apartment is always clean and comfortable, that is, if he has the means to make it so; his droppings are invariably deposited in his yard, and as his sense of smell is very acute, he will become more or less restless if they are not taken away; and some time must elapse before a cleanly pig will become accustomed to a dirty sty. The old adage, that "pigs can see the wind," has its origin in this keen olfactory sensitiveness. It is absolutely necessary for their best progress that they be kept quiet, clean, and free from either cold or heat. The pig trough should be fixed in the front wall of the open yard, so as to be fed from without, provided with spouts or doors, to prevent intrusion from the poultry or the other animals, who generally throng round the pig-feeder at feeding time. The pigs' or feeding side should be divided by slabs, so as to give every pig a berth, which they will soon learn to take, and thus feed less voraciously than when pushing each other from side to side, each trying to obtain the largest share. Many contrivances are resorted to where litter is scarce. An open floor made of deal evenly sawn, and leaving narrow interstices for drainings and droppings, appears to be most popular. Sand, peat, fine gravel, form very pleasant lairs for a short time.

The various articles recommended as food for the economical fattening of pigs would almost exceed belief. We have all the varieties of grain commonly grown in this country; we have nearly all the varieties of root crops commonly grown, besides some foreign introductions. We have them before us in so many ways and means, and under innumerable modifications; we have Barley-meal, Bean and Pea-meal, Oat-meal, Wheat-meal, Indian Corn-meal, Linseed-meal; then we have Mangolds, Turnips, Carrots, Potatoes, and almost all other roots. Again, we have bran, pollard, starch refuse, brewers' grains, malt coomb, greave cakes, &c. And to form suitable mixtures of the above ingredients we have milk, whey, butter-milk, distillers' wash, and various soups and porridges, all to promote the fattening and tempt the feeding propensities of "poor piggy." G.

ON THE DENTITION OF THE OX.

[The following remarks on this subject are taken from Professor Simonds' lately published instructive Lectures, pp. 59—78.]

To commence with the birth of the calf. The condition of the teeth at birth is subject to great variation. It not unfrequently happens that as many as six of the temporary incisors have thrust their edges through the gums, while in other cases none as yet have made their appearance. These differences probably depend rather on the variations in the periods of utero-gestation than on any other circumstance. The offspring, it is true, inherits the qualities of its parents, and among these may be an aptitude to arrive at early maturity; but it

is stretching the point to infer that such a power is the true cause of cutting the teeth while the fœtus is *in utero.* This ground might probably be defended by some; but when we see the great differences there are in the times of gestation, it appears to me that here is sufficient to account for all the variations we observe.

The presence of four incisors at birth is, I believe, the rule; more or less being an exceptional number. At this time, also, the outline of the other teeth, as ready to cut the gum, is distinctly visible beneath the tissue. The third pair is usually through by the 12th or 14th day; but the corner or fourth pair seldom penetrates the gum until about the end of the third or beginning of the fourth week. By the time the calf is about a month old all the incisors will therefore be *in situ.*

The eight temporary incisors of the calf are in all respects, excepting size, the counterparts of the permanent by which they will be succeeded. The first or middle pair is the largest of the set, and the corner the smallest, a gradual decrease taking place from the one to the other. These teeth, by the end of the fourth week from the growth of the maxillary bone, are less crowded together than when first cut, although they are still observed to be partially overlapping each other. Not only are the incisors all up by this time, but the temporary molars are also in their place. It may be again necessary to state that they are 12 in number, three occupying each side of both jaws (upper and lower). The temporary molars have many peculiarities, the chief of which must be named, as these teeth likewise furnish important evidence of age during the early period of the animal's life. At birth none of the molars have cut the gum, and it is not until the calf is a month old that they are well developed. Like the incisors, they follow no special order of eruption, but more frequently than otherwise the first in position is the last to be cut. The first and second of the temporary molars in either jaw do not differ essentially in form from the permanent, by which they are succeeded. If we compare, however, the teeth of the upper jaw with those belonging to the lower, it will be found that the two anterior ones in the latter are much smaller than the corresponding molars of the former, still these points are of less practical importance than others which have to be named. The third in position of the temporary molars in the lower jaw varies considerably from all the others, as also from its permanent successor. It differs likewise as greatly from the fourth in situation, the first permanent which is put up, and with which it can scarcely be confounded even in a casual examination, if the following particulars are borne in mind. It is the last of all the temporary molars which, as a rule, is renewed, and consequently throughout it furnishes much assistance in determining a question of age. It occupies a space in the jaw equal or even greater than both the molars together which stand before it, in consequence of its increased width from front to back, which however would be more correctly called its long diameter. It is composed of three main parts or lobes of a semi-cylindrical form, having in the hollows between them, on the outer side, two smaller portions which also rise into asperities or cusps. The latter, when the tooth is somewhat worn down, add both to the strength of its body as well as to the irregularity of its grinding surface. Each of the three principal lobes likewise rises into cusps, an inner and an outer, of which the inner are always the highest.

These particulars suffice to distinguish the third temporary molar so well, that in examinations of the mouth it is quickly recognised. By merely bearing in mind that this tooth has three lobes, while both the fourth and fifth molars have but two, and that when it falls it is renewed by a tooth similar in size and form to them, we recognise immediately both the number and kind of molars which occupy the mouth. It may be added that the form of this tooth beautifully adapts it to its office, for in the act of mastication each of its projections intersect those of the corresponding molar of the upper jaw, and thus effectually grind down the food which is submitted to their action. The putting up of the temporary incisors and molars at about a month completes "first dentition," and as there are now a given number of teeth, so any addition to them will mark an important stage in the further process of teething. When this addition takes place, the temporary teeth, merely by their number, cannot avail in our inquiries, nor can they be said materially to do so up to that period by the slight wear they may have undergone. The general appearance of the young animal, for the first few months, suffices to form a fair estimate of its age. As the temporary incisors agree in number with the permanent, but the temporary molars are but a moiety of the whole of these teeth, so the addition is necessarily made to the latter. Inquirers into the age of the ox have assigned very different dates for the appearance of the first permanent molars. Most of our authorities concur in saying that these teeth are cut when the animal is about a year old. These statements, however, are far from being correct, as these teeth are put up when the calf is six months old.

The next important stage in dentition is the cutting of the fifth molar in situation, the second permanent. This takes place at 15 months; but as in the interim well marked changes have come on in the temporary incisors, so it is necessary to direct attention in the first instance to these. From six to nine or ten months, the edges of the incisors, which at the former date were rather blunted, have been gradually giving way to attrition; this perhaps would be scarcely recognised in an ordinary examination. After the latter period, however, it becomes more and more apparent, and when the animal is a year old, the four centrally-placed teeth, in particular, will be worn rather flat on their crowns. These teeth also are now beginning to show spaces between their fangs. These changes are regulated partly by the system of management the young animal has received, and the kind of food on which it has been kept, and partly by the natural width of the lower jaw. If the food has been coarse and the jaw a wide one, the incisors will be more flat and the distance between them greater than otherwise it would have been.

From one year we pass to 15 months, when, as before stated, the fifth molar tooth is put up. This tooth does not essentially differ in its shape or dimensions from the fourth. Its cutting, however, at 15 months, at a time that the incisors do not offer any satisfactory evidence of the precise age of the animal, is a point of some utility to an investigator of age. The regularity in the periods of the appearance of the permanent molars is pretty uniform. The fourth, as we have seen, is cut at six months, and the fifth at 15, the sixth follows at two years—an interval of nine months elapsing between each. This gradation is easily remembered. Like the fourth molar, this tooth also acquires its full height in the jaw about three months from the time of its cutting. Attention must now be directed to the state of the incisor teeth at 18 months. It was shown that at a year old the four middle-placed incisors, in particular, gave indications of wear, by the loss of their sharp edges and increasing flatness of their crowns. By 18 months this flatness has considerably increased; it is not now, however, confined to the teeth placed in the centre of the mouth, but has extended to all. The jaw of the animal has also grown wider, thus increasing the spaces between the teeth, so as to leave not merely their fangs apart, but likewise their crowns. To compensate, in part, for their diminished length the teeth have likewise risen in their sockets; and as some of them are soon to be renewed by the permanent incisors, the process of absorption has commenced in their fangs. These various causes, more or less modified in different animals, give to the mouth an appearance which is quickly recognised. To these indications of age have to be added a diminished whiteness of the teeth, the part of their crowns which is exposed being that which is covered by a thin layer of enamel; the existence also of yellowish lines on their wearing surfaces, which indicate the outline of the once open pulp cavities; and the discoloured state of their fangs, from the action of the food and secretions of the mouth upon the crusta.

(*To be continued.*)

NOTES ON EXPERIMENTS IN THE GARDEN OF THE ROYAL AGRICULTURAL COLLEGE.

By Professor James Buckman.—No. VI.

It remains, in completing these notes, to make a few observations on the Grasses which I have had in cultivation, as although these are few (only 23 forms) yet as they belong to a tribe of plants of such great use to the agriculturist, every individual is capable of furnishing matter of interest to him; for those that do not possess value for their feeding properties will be found to be indicators of peculiar and unexpected facts regarding the nature of the soil in which they grow spontaneously, whilst the cultivated ones are no less indicative of natural barrenness and fertility than of good or bad husbandry.

My list of Grasses comprehends the following.*

1. Anthoxanthum odoratum; Sweet Vernal.
2. Alopecurus pratensis; Meadow Foxtail.
3. Phleum pratense; Timothy Grass.
4. Hordeum pratense; Meadow Barley.
5. „ murale; Wall Barley.
6. Avena fatua; Wild Oat.
7. Arrhenatherum avenaceum; Oat-like Grass.
8. „ var. bulbosum; Knotted Couch.
9. Holcus lanatus; Soft Grass.
10. Dactylis glomerata; Cock-foot.
11. Poa pratensis; Smooth-stalked Meadow Grass.
12. „ trivialis; Rough-stalked Grass.
13. „ nemoralis; Wood-stalked Grass.
14. Festuca pratensis; Meadow Fescue.
15. „ elatior; Tall Fescue.
16. „ loliacea; Upright Fescue.
17. „ duriuscula; Hard Fescue.
18. „ ovina; Sheep's Fescue.
19. „ rubra; Red Fescue.
20. Bromus erectus; Upright Brome Grass.
21. Lolium perenne; Perennial Rye Grass.
22. „ Italicum; Italian Rye Grass.
23. Triticum caninum; Fibrous-rooted Couch Grass.

These examples were originally drilled in plots of $2\frac{1}{2}$ yards square; the drilling being adopted, to facilitate weeding. Since their original planting, many of them have stooled out, and now cover the beds as a matted turf; some others have made a turf by seeding, whilst others still grow in distinct and separate bunches—'hassocks.'

Now, allowing the examples to seed exhausts the individuals thus left, the consequence of which is that many of the old plants die out yearly, and a narrow observation of this tendency to die after seeding would show us in a clear light the evils of getting late into the hay field, for though by this we may increase present bulk, it is at an after expense or loss.

* It will be observed that this list does not contain any examples of what are usually called artificial Grasses, but only include, plants belonging to the natural order Gramineæ, to which remarks upon Grasses should, at least in scientific journals, be confined. It is, however, curious to find how the term Grass, which was in old time used generically for any green herb, should still be misapplied: thus we have Scurvy Grass, Grass of Parnassus, Rib Grass, and the like. As regards the latter, one of my pupils informed me that he was much ridiculed by a Cheshire farmer, to whom he showed a collection of the British pasture Grasses, for not having included the Rib-grass (*Plantago media*).

There is always a great difficulty experienced in keeping patches of separate Grasses pure from admixture of other kinds, as the original crop has a tendency gradually to diminish with seeding,* and one or two individuals of another species will then make rapid advances; in their turn being expelled by others, and thus as new circumstances and conditions arise there is constantly going on a change of crop. Now on carrying these observations into the field, the same facts will be observed; judicious management of meadows for a few years will cause not only an increase in quantity of produce, but there will be a large increase in the proportions of good feeding Grasses as compared with those of a low standard in this respect; and, indeed, what are termed sour Grasses, will be almost, if not entirely, eradicated. How immediately is the Aira cæspitosa, Turfy Hair Grass, or Hassock Grass, killed by draining; and on poor uplands the tufts of Brachypodium pinnatum, and sylvaticum, Avena pratensis, and the like hard Grasses, give place to the advance of better kinds by a single dressing of bone-dust and guano, or what is perhaps more valuable, folding sheep upon a small space of such land at a time, feeding them with hay, corn, and Turnips.

Indeed, such exact indicators are Grasses of all the circumstances connected with the nature of soil and its treatment, that I feel convinced that a more careful study of their habits would afford the most valuable lessons the farmer could learn, whilst the land-agent and valuer would find the evidence this tribe of plants is capable of yielding, an unerring testimony in many of the matters upon which he has to adjudicate.

Another circumstance in the cultivation of Grasses in the separate form and small patches is the impossibility of rolling or treading it firmly, without which no pasture can continue good. In truth, though we talk of natural meadow, yet there is no meadow that would continue as such without its proper cultivative processes. It is these that keep the Grasses matted together, and hay-making and depasturing are both important in maintaining its condition; in proof of this I may quote some recent observations in the United States. Here the native Grasses are scattered in tufts and patches, much like other herbaceous plants, while all the pasture has been made from the cultivation of British Grasses. In my own researches into this tribe in America, I made out as many as 30 species of introduced British Grasses entering into the pasture, especially of the States of New York, Pennsylvania, and Ohio.

1. The two first species of Grasses on our list were recommended by a writer in the *Gardeners' Chronicle* some three years' since, for separate culture as an early feed; as regards the Anthoxanthum odoratum, my experiments show that though early the herbage is too scanty to be of much use, and besides, though it is a most valuable Grass to mix with others, from the flavour which it imparts, yet, by itself, it is too bitter to be greatly relished by cattle in continued use. Its culms soon die, and although of perennial habit, it throws up but a very slight second herbage.

2. The Alopecurus pratensis might be profitably employed as a self Grass, especially in rich lowlands. In such a situation, at the foot of Silbury Hill, Wilts, during a visit in the first week in May, 1849, an unusually cold spring, I walked through a field of this Grass which was being folded off by sheep, and a more luxuriant crop, or better herbage, I never remember. It also does well where irrigation can be adopted, but it does not succeed well on the uplands. My garden specimen, however, yields an average crop, which endures cutting admirably, and throws up a tolerable second culmiferous and leafy growth.

3. Phleum pratense, Timothy Grass, is not employed in England as a self crop, yet my experiments show that it is admirably adapted for the purpose; indeed, better in this country than in America, where it is the most commonly used self Grass crop. With us the herbage is not so rank and coarse as in America, where it often grows as much as 5 feet high, with flower spikes 4 inches in length. In the States of New York and Pennsylvania I saw hundreds of acres of the best cleared land occupied solely with this Grass, of which, indeed, the great bulk of the Grass-hay of the country is made. Here so strong does it grow as, at a slight distance, to be capable of being mistaken for a grain crop, a circumstance which will doubtless explain how it is that the American reaping machine should be capable of cutting Grass in its own country, while experiments with this implement on British hay-fields have been signal failures. The Timothy is a Grass which yields a great deal of nutritious produce; it is eminently perennial, bears cutting tolerably well, but on account of the lateness of its ripening cannot be expected to produce an abundant aftermath. One great advantage it possesses is its capability of resisting drought, which is doubtless a great cause of its employment in the States, where the summer is intensely hot, and with often whole months almost without rain. On this account it may be worth trying on some of our dry uplands, or on light sandy soils, where, even in England, in a dry season, we often observe Grass vegetation as scant as in the warmer parts of America.

4 & 5. Hordeum pratense and murale are both examples of Grasses which cannot be esteemed for hay, on account of the long awns which are attached to the flowers. The awns of most Grasses, but especially of the Barleys, being themselves armed with a double row of minute spines, which causes them to stick on the tongue and in

* My specimens being grown in order to show them to the students in all their phases, are obliged to seed.

the throat, and produce great irritation. Otherwise these Grasses would be highly valuable, as they rank high in nutritive properties ; the first, however, does not yield a great abundance of leaves ; the H. murale, on the contrary, though late in flowering, grows a great quantity of leaves, and that, too, very early. From my experiments of last year I am inclined to give this a higher position as a pasture Grass than I at one time thought it deserved. Its proper habitat is in sandy places, where it grows hard stiff culms, but it can be cultivated on clays, where it increases in abundance, and is not so coarse.

Home Correspondence.

Skilled and Moral Labour.—Having observed some articles in the *Agricultural Gazette* recently, bearing on the want of skilled labour, I am led to call your attention, and that of your readers who may be rack-renting farmers, to the want of moral labour, which is no small grievance. In a general sense this is mainly a question of education, but as the annual hiring fairs are near at hand, I desire to point out, from among many loose habits of farmers, a most impolitic practice of hiring their farm servants without any inquiry into their characters. Character is the main capital of household servants. With all careful and experienced housekeepers it is the subject of strict enquiry and scrutiny ; and in such houses the honesty, sobriety, and general behaviour of servants is very remarkable, amid the temptations always before them. Such has been my experience of household servants. Now, as respects farm servants and labourers, my observation has led me to form a very different opinion ; and that, generally speaking, there is little dependence on their honesty, their industry, sobriety, or decent conduct, though I have known many worthy exceptions. Yet this is the class from which our household servants are supplied. I believe this difference arises solely from the circumstance that, in the one case, character is an essential qualification, and is not in the other. The household servant learns by experience that character is a valuable property, and always available ; whereas, in the other case, mere physical power, accompanied by some experience in the particular service required, is deemed all-sufficient. I recollect having once written to a large farmer to inquire the character of a man who offered his services to me as a shepherd. I got no answer to my letter, which I thought uncivil, and on complaining of this to a neighbour, the master was excused, on the ground that farmers did not require, nor were expected to give, characters of farm servants. I can hardly conceive anything more grossly improvident and injurious than such a practice, whether as respects the hirer or the hired. If the mischievous results of this practice were confined to the former, no one need complain , but it unfortunately destroys, amongst a very large class of the population, the most powerful motive to abstinence from all offences which would be a bar to their preferment. *Magister.*

Ears of Wheat.—The object in sending you the enclosed ears of Wheat is to make known that they were taken from a sheaf, the produce of seed sown after Turnips on marled land, on March 31, 1853, which attained to perfection, and was harvested by Sept. 25 following, yielding 3½ qrs. per acre ; in six weeks after, however, a portion of it was again sown as seed after Rape, and the produce is that of the present harvest, say about 6 qrs. to the acre, and it would in all probability have been greater had the plants stood thick enough on the ground ; besides this variety of Wheat having many properties to commend it for extensive cultivation, there is one that deserves mention, viz., that (with us) it resists the heaviest rains without being beaten to the ground. Perhaps the above remarks may tend to dispel the idea so prevalent, that Wheat sown in spring should not be used for seed in the succeeding autumn. *P. Deane.*

Are Farmers sufficiently grateful for Abundance and fine Weather?—This query has been lately presented in a variety of shapes ; in some cases the assumption of a superior degree of thankfulness would seem to require that some parties should first examine the grounds on which their own pretensions to gratitude are raised. It is so easy for a certain class of persons to claim virtue at the expense of their neighbours ! Favourable weather and a large comparative addition to the actual resources of the country must afford to all reasonable men great satisfaction, and heartfelt acknowledgment to the Giver of All Good for so merciful an interposition in a nation's favour ; and shall any particular interest or party arrogate so much greater sanctity, or propriety, as to constitute itself a judge and decry the merits of any other interest or party, on a subject about which all may equally desire to express thanks without derogating from the joy of any ? The consumers of food include the producers of food, and if they (the consumers) rejoice in the prospect of a cheap and a good loaf, the producers have this season, at least, additional reason to be glad at the uninterrupted fine weather that has lessened the cost of securing so bountiful a harvest ; and also that their labourers and poorer countrymen will, in all probability, have a better description of sustenance than usual to partake of during the ensuing year, at such a moderate cost as, with plenty of employment, the resources of almost every family will be able to command enough ; considering also that prices are likely to be remunerative, no better security for a cheap loaf in future can be found than in the good crops of the present year. The addition to the capital of careful and judicious farmers will ensure so much more improvement in the treatment of the land, in the employment of labourers, in the attraction of further capital to the agricultural interest, and in, perhaps, other modes not anticipated, that after, we will say, a proper expression of thanksgiving has been fervently and unhesitatingly offered for the immediate and direct consequences of an unusually large growth of corn, we may all join in congratulation on its indirect advantages, in the fact of all connected with farmers being able to spend more money in the industrial products of the manufacturing and commercial part of the community, and in the ability of farmers to avail themselves of the spirit of enterprise and improvement to provide in future years, under the blessing of divine Providence, a larger supply of home-grown corn to meet the growing wants of an increasing population : a fair and impartial view of the question will exclude Pharisaical uncharitableness, and unite all in a due sense of the benefits accruing to the country from a plenteous supply of food ; the importance of the agricultural part will be recognised without envy or malevolence, and the blessings of unrestricted industry be so much better appreciated that we shall be able to approach further ameliorations and improvements, so as to remove some of the remaining evils which are still permitted to lurk in our institutions and habits, and hence derive additional cause of gratitude by using the gifts bestowed upon us in a right spirit for the advancement of civilisation. *J. W., Peterborough.*

Thin Sowing.—In reply to your remark on our article of the 9th inst., that our experiment of growing corn on small plots is "entirely useless for the purpose of calculating from it acreable produce," permit us to say that if the principle were carried out on a broad scale all in square yards alternately, thus, only half cropping the land, and only half as much produce were obtained upon them, as we have described we grew on one square yard, it would even thus very far supersede crops usually grown. We agree with you that it is no just criterion that a proportionate yield could be obtained from an acre, as from a yard, as there would be more outside rows on the yards than on the acre, but it goes very far to prove that a very considerable larger crop could be grown on such a principle, than is usually produced from ordinary thick seeding; and the plan is but just tantamount to Mr. Smith's, of Lois Weedon, and goes to confirm his principle to be correct and good, viz , cropping only half the land ; but with all due deference to Mr. Smith, his row system is the best of the two, inasmuch as it admits of fallowing and cleaning by horse labo r, &c. His principle is the same as our own ; with this difference, however, that we improve by sowing thinner than he does, and take credit for persisting in our motto, "sowing early, and isolating each plant with more precision, whether thick or thin, than he and many others consider essential, to realise the best of crops." *Hardy & Son, Maldon, Essex.*

The Causes of the late Good Harvest.—The harvest of the present year (1854) has been so universally excellent, both in quantity and quality, that it would be profitable to inquire what causes, meteorological or otherwise, have conspired to produce so favourable and unexpected a result. I say "unexpected" because, when we consider the remarkably long sunless period of May and June, and the prevalence of insects and disease on trees and plants generally during the past season, one would have been disposed to predict anything but such an abundant harvest as we have had. Since 1844 we have certainly experienced no harvest like it ; and I am told (though I do not remember it) that the harvest of 1815 was just such another. Now, were the meteorological features of 1815, 1844, and 1854 at all alike ?—and, if so, in what particulars ? This is the question I would respectfully propound to your numerous meteorological readers ; and I think the subject an important one, because if it should appear that those seasons were alike in certain great features, it would afford grounds hereafter, when we meet with a recurrence of those features, for looking forward with some confidence to a repetition of the abundance and quality of the memorable harvest of 1854. You will see I have limited the inquiry to causes meteorological. The result has been so uniform throughout the country, that the cause which has produced it must be an equally universal one. Indeed, the present harvest proves that if only the meteorological conditions are propitious, almost any land and any sort or style of farming will produce a fair crop. Now how is this ? The glorious sun adds no inorganic constituent to any soil. It puts nothing in, which was not there before, and yet the plant finds somewhere and somehow the indispensable phosphorus, sulphur, and ammonia, without which corn is an impossibility. The proximate cause of all this cannot be in the farming, nor in the land ; we must look for it further a-field, viz., in a happy coincidence of physical causes, or, in other words, meteorology. If genial airs, genial showers, and genial sunshine can add no inorganic constituent to the soil, they may and do so invigorate the constitutional powers of the plant as to enable it to dive its roots deeper and spread them further, and to seek out, seize hold of, and assimilate more of its real pabulum than under ordinary circumstances of seasons it could do. It is clear that the causes of a universally good harvest must be either positive or negative. Positive in the presence of favourable conditions, negative in the absence of unfavourable conditions. Now the positive must be solely meteorological. The negative, on the other hand, may be both meteorological, entomological, and fungal, and it would be a highly interesting fact, if in the progress of an inquiry such as I have indicated, the last two causes of mischief, viz., insects and fungi, should be enumerated, as being in fact dependent wholly upon the former, and that, therefore, it is to meteorological causes alone that we must ascribe both our good and bad harvests. Without much acquaintance with meteorology I speak diffidently ; but I venture a guess, that dry weather will be found to have had more to do with our late magnificent harvest than anything else. The old proverb that—

> "A dry May and a dripping June
> Brings all things into tune,"

at any rate will not hold good this season, for the month of June was unusually dry. To my mind, there is far greater truth in another proverb, which, I believe, is more current among millers than farmers, viz., that "it was never known to *rain* flour." *W. Marshall, Ely, Sept.* 21.

Farm Memoranda.

THE PALACE FARM, ARMAGH.—While at the great national show at Armagh, in August last, we took advantage of the opportunity afforded to visit and examine the Palace farming, under Mr. Yule. On inquiry we found the area available for farming purposes, exclusive of those portions of the demesne under plantations, pleasure grounds, &c , amounted to about 300 statute acres—viz , grazing 130, meadow 90, and tillage 80 acres. The Grass lands are rather light and wet, and in some places the rock lies near the surface, surrounded and interspersed by woods and plantations ; but that part to which the tillage is confined is a heavy clay, and exposed to a north-west aspect. The rotation adopted by Mr. Yule is a peculiar one, being a modification of the four-course, and admirably suited, in a general way, to the requirements of the farm, which will be best understood by the following :—

No. 1. 20 acres of manured green crops, consisting of [illegible], 5 Mangolds, and 10 of Swede Turnips.
No. 2. 20 acres of Wheat; one-half of the Turnip break being sown with Spalding's Prolific spring Wheat.
No. 3. 20 acres of winter and spring-sown Beans, after Wheat, without manure, but the ground thoroughly cleaned and pulverised.
No. 4. 20 acres Wheat, after Beans, which is invariably a superior crop to that sown after a manured green crop.

Which finishes the rotation, and it begins again.

Mr. Yule sows no Clover or Grasses, having so much permanent Grass land, and it being so situated as to render it inconvenient and disagreeable to break it up ; and it will also be observed that he grows neither Oats, Barley, Vetches, Rape, nor Clover. Now for the results. We find an account of stock is taken every year on the 1st May, and the accounts closed up to that period. We were favoured with a view of the balance-sheet for the year ending May 1, 1854, which, after deducting all expenses, including a very high rent (427*l.* 3*s.* 9*d.*), poor-rate, cess, insurance, income tax under schedule B, steward's salary, and five per cent. on floating capital, leaves a net profit of 825*l.* 6*s.* 5½*d* To put the matter beyond a doubt, the accounts have been passed and signed by the agent, Mr. Paton, and audited by a gentleman named Smith. ["To put the matter beyond a doubt," we incline to think that every one will feel the accounts need to be audited by *himself*] Mr. Yule estimates the profit at 87½ per cent. on the capital employed; but as a great deal of his time is occupied in other duties beyond the farm, he very properly considers that the entire of his salary should not be charged against the farm, and that by charging one-fourth of his salary against the other duties performed, and adding the five per cent. interest charged in the current account on the capital employed, he would have a clear gain of upwards of 90 per cent. Mr. Yule intends making an important change in his rotation, in consequence of the winter-sown Beans having suffered much from blight this season, by substituting a Flax crop for half the crop of Beans, when the rotation will stand thus :—

20 acres of manured green crop,
20 acres of Wheat after green crop,
10 acres of Beans after Wheat,
10 acres of Flax after Wheat; and
20 acres of Wheat after Beans and Flax.

The ground for the Flax to be autumn grubbed and cleaned, and after the Flax is removed to fallow and clean the land for Wheat, and by changing the Flax and Bean crop every rotation, the Flax will occur only once in eight years on the same land, by which he expects to add to the profits considerably.

In going over the farm and steadings we were particularly struck with the great weight and evenness of the Wheat crop, and the luxuriance, cleanness, and regularity of the Turnip crops ; the spring-sown Beans were a splendid crop, podded almost to the ground, but the winter-sown had suffered considerably from blight. The utmost order, cleanliness, and neatness pervaded the offices and steadings ; and the cattle-houses, though empty till the feeding season comes on, were admirably arranged with troughs and fastenings. *Dublin Farmers' Gazette.*

Miscellaneous.

The Hagnaby Sale of Short-horns.—The sale of this [illegible] able stock, the property of John Kirkham, Esq., took place at Hagnaby lately, under the auspices of Mr. Strafford. The interest excited in agricultural circles by the announcement of this sale was very considerable, Mr. Kirkham being well known throughout the kingdom as one of the most spirited breeders of short-horns in this part of the country. The herd consisted of upwards of 80 bulls, cows, and heifers, descended from some of the best stock in the country;

and early in the day the yards and fields were crowded by a numerous company, many of them from a great distance. There had been no attempt to get the stock up for sale, yet they were in useful condition, and the prices realised by several showed that their merits were duly appreciated; one beautiful heifer, 15 months old, after a spirited competition with Mr. Mason Hopper, of Newham Grange, being knocked down to Lord Feversham for 160 guineas; whilst a bull, about a month older, fetched 100 guineas. These two, unfortunately, leave the country, but a fair portion of the stock remains amongst us, including a nine months' old bull bought by Mr. Wingate, of Hareby, for 72 guineas, a price with which he appeared highly gratified; others selling as high as 70, 65, 62, 61, 57, 50 guineas each. The average price realised for the bulls, cows, heifers, and calves was upwards of 35*l.*, the aggregate of the sale being 2945*l.* 5*s.* Mr. Strafford briefly prefaced the proceedings by announcing the conditions of sale, and explaining that, although after the purchase the animals would be at the buyer's own risk, yet every care would be taken of them, and all reasonable accommodation offered. He felt highly honoured in the compliment that had been paid him in requesting him to offer for sale the splendid stock that would be brought before them, and with an inspection of which they must all have been highly gratified. He had had the pleasure of knowing Mr. Kirkham for upwards of 20 years, during which time his name had been familiar to all as a breeder of first-rate stock; any eulogium from him, therefore, was unnecessary, his name being as well known as his judgment was respected. Mr. S. next briefly adverted to the superior breeding of some of the animals, which were then put up and disposed of in the order of catalogue:—

Amount of sale of cows, heifers, and calves	£2284 16 0
Average price... ...	£32 0 0
Amount of sale of bulls and bull calves ...	£660 9 0
Average price...	£44 0 0
Total amount of sale	£2945 5 0

The Grass Crop at Tiptree.—Some remarks which I made at the last agricultural gathering at Tiptree, have caused a discussion, in which I feel that I have been misunderstood, and therefore beg the favour of a little space for explanation. The most interesting feature of Mr. Mechi's farm this year was his liquid manure system, and on this he chiefly enlarged in the way of instruction. It is not used directly to the corn crops, but the excellence of the Mangold fields shows how beneficial it is to them. The Italian Rye-grass is the only unsuccessful crop, and Mr. Mechi, when his own illustration failed him, very fairly adduced the experience of others. He told us of the marvellous results obtained by Mr. Kennedy, in Ayrshire, whose Italian Rye-grass affords keep at the rate of 70 house-fed sheep an acre. And Mr. Telfer, of Ayr, who was on the ground, corroborated this statement from his own experience, he having got from three cuttings of this prolific Grass, in one season, as much green food as would have made 20 tons of hay per acre! It was, perhaps, no wonder that many were startled by such statements, seeing that this is ten times the number of sheep, and ten times the weight of hay which are usually got. Men cried out, "Impossible!" They would not believe it. Perhaps it is impossible in the eastern counties, and, at any rate, it may be useful to point out the advantage which the moister climate of the west gives it in the growth of Grass. The difference between the annual rainfall of the east and west of Great Britain is reckoned at 10 inches. An inch of rain is equivalent to 100 tons of water to an acre; so that, on the average, nature gives to the western farmer 1000 tons more water per acre than to his eastern competitor. In the growth of Grass we know that all is needed, for in Ayrshire, where these enormous crops of Grass are grown, both Mr. Kennedy and Mr. Telfer feel the necessity of permitting no waste of liquid. During summer they apply the liquid manure early in the morning and late at night; not showering it high into the air, but directing the stream straight to the roots of the Grass, so that none may be dissipated in mist, and as little as possible lost by evaporation. The possibility of growing such crops of Grass under any circumstances was doubted by many. But wherefore impossible! A good crop of meadow hay weighs about two tons. A stalk of Italian Rye-grass is twice the length of meadow Grass. If the stalks stand equally thick on the ground, the Italian Rye-grass will weigh twice as much as the meadow Grass. But if there are two stalks of Italian Rye-grass for one of meadow Grass, the crop of the former will be four times the weight of the latter. To those who have seen Mr. Kennedy's and Mr. Telfer's crops it is unnecessary to say that both these conditions are fulfilled; and it needs but the repeated application of farm sewage to this rapidly-growing Grass, in a favourable climate, to secure three such cuttings in the season as Mr. Telfer affirmed he had got. To the diligent, as Mr. Mechi said truly, time is money, and the axiom could not be better illustrated than by growing three crops in a single season in place of one. A startling statement of any kind is always doubted, and disbelief in matters of this kind is usually in proportion to limited knowledge. Many farmers, because they have never seen it themselves, would say that it is "impossible" on any land in this country to grow superb crops year after year without manure—to have Beans, Wheat, Mangold, Potatoes, Cabbages, Oats, and Swedes following each other in any succession (provided the land is kept clean), each crop most luxuriant, all carried off the ground, and not a particle of manure applied. And yet this may be seen in half an hour's ride from town by the North Kent Railway, on the drained portion of Plumstead marsh, occupied by Mr. Russell. When guano was first introduced, many deemed it impossible that a brown powder, brought thousands of miles across the ocean, would be a hundred times more valuable for the growth of crops than an equal weight of good farm-yard manure. In truth, one of the most serious obstacles to agricultural improvement is to be found in the limited standard which some agricultural teachers have set up as the fixed boundary of agricultural progress. There is no presumption so great as that which glibly cries "impossible" in an age which has produced the electric telegraph. *Extract from Mr. Caird's Letter in the Times.*

Calendar of Operations.

SEPTEMBER.

Cheshire, *Sept.* 13.—In our last report we spoke of the grain crops generally as being very promising, more especially the Wheat crop, and we have now the satisfaction of stating that with very few exceptions our expectations have been fully realised; the yield, we may confidently assert, is a full average one, and the quality equal to any we have seen for years. Barley is also good, and has been secured in the finest possible condition, but the sample is not quite so even as the Wheat, owing to its coming up at different times, in consequence of the dry weather at the sowing season. Oats are well filled, but in some instances the crops were light on the ground; the bulk of the corn has been secured, and after about a month of as fine harvest weather as we ever remember may safely say the result is highly satisfactory both to the grower and consumer. Potatoes have, within the last fortnight, shown unmistakeable signs of disease; but probably, owing to the very dry weather, it has not progressed in the way it usually does in wet seasons; in fact, some of our best kinds seem scarcely affected at the time of getting up, probably they will show themselves more or less affected when they have lain in the pit a short time. Pastures and Clover roots are very bare, and on dry land are past recovery for the season. The teams are now very busy, "pin fallowing," and preparing the land for Wheat, or working the land intended for green crops next year, and there never was a more favourable time for these operations. It is to be feared the green crops are suffering materially from so long a continuance of hot dry weather, the early sown Turnips are mildewing, and on dry land Mangold Wurzel has received a severe check. *W. P.*

Border of the Fens, *Sept.* 19.—Harvest is over sooner than usual, although it did not commence so early as it generally does; the thatching is completed, and the scarifiers are at work wherever the land is cleared of stubble. Potatoes are raised; Mangolds and Turnips have their last hoeing, the latter are better hoed by turning a lamb or two per acre among them; preparations are made to plough, clean, and manure an acre or two of fallows, near the homestead, for winter Tares; and already inquiries are made for seed Wheat, winter Beans, and winter Oats. The threshing machine is again heard buzzing far and near, and the smoke of the steamer is confirming or correcting the anticipations of the farmer, as to whether the yield will average 4 or 5 qrs. per acre. In the mean time the grumblers are mightily deceived in the range of prices, which have baffled their prophecies and calculations; and, in spite of their hurry in bringing corn to market, will keep rising far beyond their expectations. And, as if there should be no possible excuse for complaint remaining, we have had some most refreshing showers during the last few days, which have already restored a tinge of green to the thirsty pastures—arrested the fall of leaves from the excessively dry, and even withered, trees—and given promise of a supply of water to wells and ponds which have taxed the memory of the "oldest inhabitant," as to when they were so low before; and truly the rain is acceptable. Many farmers have been obliged to stock their Coleseed, to keep sheep alive, others regularly fodder their cattle, and the hay and Clover stacks have thus early been cut, although unusually scanty, from the dryness of the summer. Work is still plentiful in these parts;—dykes require cleaning out, stubble is mown or pecked, numerous gaps made by gleaners and cattle must be repaired in hedges, gravel raised for roads, and the hovels and fences round the homestead put in a state of defence against the severity of winter. One hint upon the latter point:—Farm-yards are chiefly guarded against the north and east; but we have for the last year or two suffered equally against the violent winds which so often set in from the south-west, and which sometimes are very cutting, and accompanied by both sleet and snow. Protection from this quarter may be cheaply and readily obtained at this season, by making a stubble wall if there is an open side next a field, or faggots may form a temporary shelter. Wages are dropping to the ordinary rates paid before harvest—12*s.* or 13*s.* a week: labourers seem at present to have no difficulty in obtaining employment, indeed so many are drawn off for building, and for the railways, as well as a few for the army, that it is probable higher wages may be demanded, and good labourers be more wanted, particularly if corn continue to advance, or even retain the present rates. Now is the time to make a final arrangement of the flock of sheep, to cull objectionable ewes, or to fill up deficiencies by drafting a sufficient number of thaves, or buying the requisite addition of ewes at market; and above all things select the right sort of rams. At our great fair on the 2d October there will be some hundreds offered for sale by auction by seven or eight eminent breeders, of Lincoln sheep. They form the great attraction of the fair, and they are by this means distributed annually all over the kingdom. *J. W., Peterborough.*

Notices to Correspondents.

Account Books: *C O.* We regret our inability to name any published form of keeping accounts of the produce, &c., of dairies and poultry-yards.

Blackie's Cyclopædia. *Subscriber.* The last part, No. 28, is nearly all in the printer's hands.

Books: *J R.* For a work of reference on farming generally, "Blackie's Cyclopædia of Agriculture." For information on light land farming, see Mr. Haxton's paper in the last Journal of the English Agricultural Society. For information on Flax growing, read Demann's pamphlet on Flax.—*Mr. J. Ramsden.* White's "Compendium of the Veterinary Art," Youatt on the Horse. *W. C. S.*

Diseases: *C R P.* The ears of Wheat are infested with the common red rust, and every grain is bunted. You say that it is very prevalent in the neighbourhood of Andover. Are not proper precautions taken against bunt by dressing the seed grain with lime or some other substance which is capable of destroying the spores of the bunt? *M. J. B.*

Prices: *A F B.* Many thanks for your note. The prices of ordinary farm operations differ materially in different localities. We will give a list next week. The cost of a man and pair of horses may be put at from 6*s.* 6*d.* to 8*s.* per day, and this will enable you to calculate some of the items.

Probang: *T S B.* If you have any better plan for removing obstructions from the throat of cattle than the ordinary instrument for that purpose, you had better publish it, or patent it. Such a thing would, no doubt, benefit many of our readers.

Weights: *F D.* A truss of hay we believe weighs 56 lbs., and of straw 36 lbs.

*** As usual, many communications have been received too late and others are unavoidably detained till the necessary inquiries can be made.

TO NOBLEMEN, STEWARDS, AND OTHERS.

J. WRIGHT, 36, Boar Lane, Leeds, begs to call the attention of parties about to improve their Farm Estates to his O G. Rain Water Spouting, which, for lightness, durability, and cheapness, cannot be equalled. 4 inch, at 1*s.* 1*d.* per yard; 4½ inch, 1*s.* 2½*d.* per yard; 5 inch, 1*s.* 5*d.* per yard.

Wire Working, Sheep Fencing and Hurdles, at reasonable prices. Garden Implements of every description.

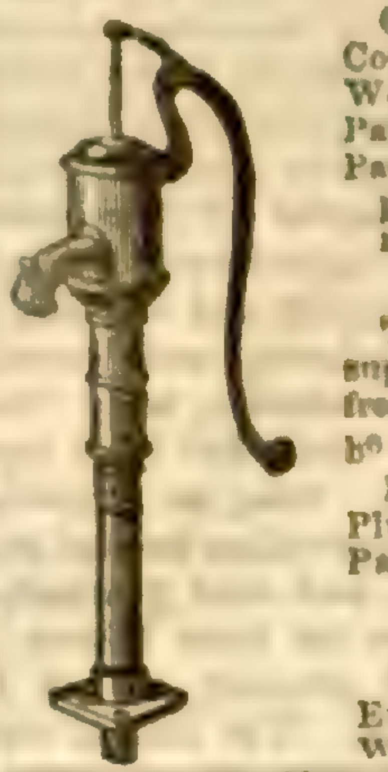
N B. To be Sold, a bargain, a Large Wire Aviary.

TO AMATEUR GARDENERS, LOCAL BOARDS OF HEALTH, & SANITARY WORKS.

PATENT SLUICE COCKS, Gutta Percha, Combinated ditto, Patent Flexible India Rubber Tubing, and every other Hose for Watering Gardens. The Hydraulic Ram, Fire, Garden, and every other kind of Pump, Hydrants, High Pressure Cocks, and all other articles to be had, Wholesale and Retail, of

FREEMAN ROE, Hydraulic Engineer,
70, Strand, and Bridgefield, Wandsworth.

WARNER'S PATENT FARM AND COTTAGE PUMPS.



Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

	£ s. d.
Patent Pump	1 15 0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing	3 0 0

Larger sizes if required.

The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.

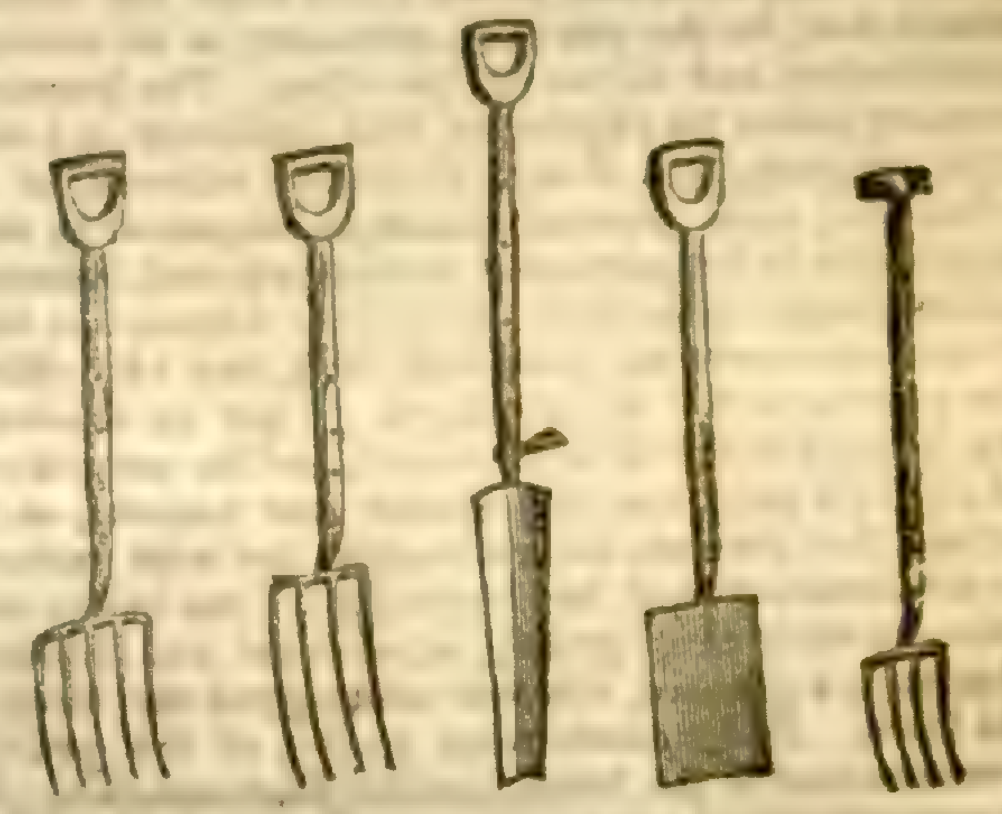
May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,

8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water; Fire Engines, &c.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.



MESSRS. BURGESS and KEY, as Mr. Parkes' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.

103, Newgate Street, and 52, Little Britain, London.

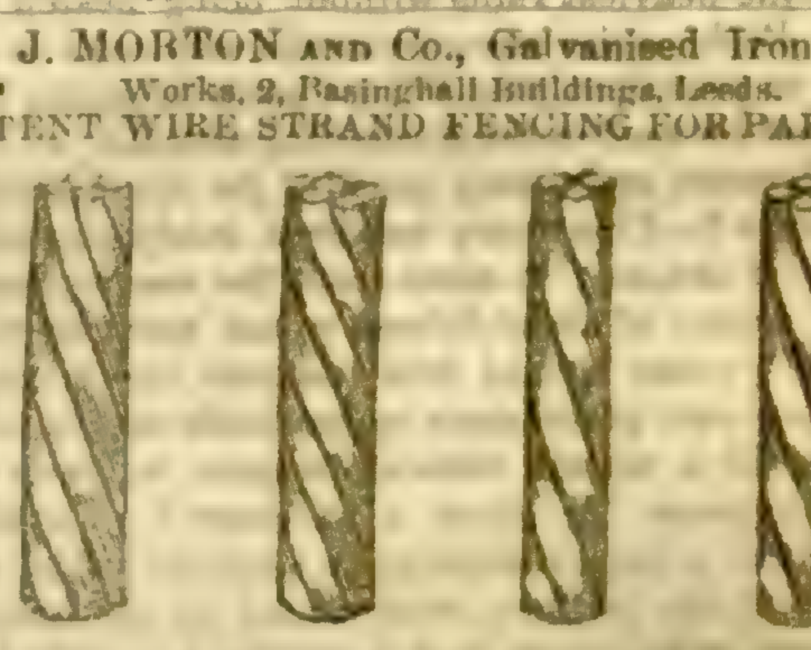
HOSE PIPING.—Great Reduction in Price.

PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense pressure, and much more than leather, vulcanised rubber, or any other hose, and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented inventions, the cost of manufacturing it is now reduced at least 60 per cent. which advantage is offered to the public.

BURGESS and KEY, 103, Newgate Street, and 52, Little Britain, who, on application, will forward wholesale and retail prices.

H. J. MORTON and Co., Galvanised Iron Roofing Works, 2, Basinghall Buildings, Leeds.

PATENT WIRE STRAND FENCING FOR PARKS, &c.



This Fencing is the most neat, strong, and durable for Parks and Agricultural purposes in use. It cannot be bent or put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply as above.

IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement, J. B. White & Brothers, Millbank Street, Westminster.

LINSEED AND CORN CRUSHING MILLS.

E. R. and F. TURNER, St. Peter's Iron Works, Ipswich, have, during the present season, obtained the Prizes of the Royal Agricultural Society at Lincoln, the Bath and West of England Society at Bath, and the Yorkshire Agricultural Society at Ripon, for their celebrated ROLLER MILLS for Crushing Corn, Seeds, &c. These are manufactured of various sizes, particulars of which, with Illustrated Catalogue of Steam Engines, new Prize Chaff Cutter, and a variety of other Implements, manufactured by E. R. & F. Turner, may be had free on application at the Works, Ipswich, or by Post, inclosing two postage stamps.

M'GLASHEN'S PATENT TRANSPLANTING APPARATUS.

MR. M'GLASHEN, the Inventor of this Apparatus, has to express his regret that delay has hitherto occurred in the execution of orders, from causes over which he had no control. He begs to state that he has now taken entirely into his own hands the Manufacture and Sale of the Apparatus, and that orders will henceforth receive punctual attention.

The Apparatus is suited for Raising and Removing to any distance Trees, Shrubs, and Flowers, of all sizes, with attached Balls of Earth, so that the operation is not only perfectly safe, but does not affect the vigorous growth of the Plants. The use of this Apparatus greatly facilitates planting operations, and saves much labour and expense. The delay that occurred, while to the inventor a cause of regret, afforded him the opportunity of introducing several important improvements, which have served to cheapen the cost of the Apparatus, and increase the facility and security of its use.

Agents will ultimately be appointed throughout the kingdom. In the meantime all orders and other communications are respectfully requested to be addressed to Mr. Stewart M'Glashen, Canonmills Bridge, Edinburgh, who will be happy (either personally or by letter) to supply information to Landed Proprietors, Landscape Gardeners, Nurserymen, Foresters, and others.

Canonmills Bridge, Edinburgh, Sept. 1854.

NOTICE TO AGRICULTURAL ENGINEERS.

DRILLING MACHINES of easy and reliable working, being a general want of the present day. The undersigned begs to call attention to his invention, preferable in every respect to the machines now used in England and on the Continent, and which is constructed on an entirely new principle.

The recommendations are :—

I. The mechanism is so simple that it will last very long, and although there are neither brushes nor spoons employed, the adjustment is nevertheless very easily and successfully accomplished.

II. The adjustment for straitening or widening it is not only easily effected, but at once, without the least loss of time, and without any insecurity.

III. It is better fit for drilling corn and seeds of the finest description, as well as for the quantity of seed, depth of furrows, and drilling distance.

IV. It is of a very simple construction, yet lasting and effective.

V. It is much cheaper than anything hitherto invented, the construction costing about half the price of English Drills of the same breadth.

There is also an instrument (called snake) peculiar to this machine for cultivating the space between the drilled seed; and it will stand in about 3*l*. It may easily be managed after a little practice even by common labourers, and the seed, when drilled at nine or seven inches, may be worked with perfect ease and safety at any depth wished for, and quite as well as it is effected by the expensive English instruments.

Any gentleman desirous of purchasing the invention will please to call upon the inventor, Domainrath Sibeth, Güstrow, Mecklenburgh-Schwerin, Germany, six hours' distance from Hamburgh by railway, where the Improved Drilling Machine may be tried, and the purchase effected.

Güstrow, F. G. Sibeth.
Mecklenburg-Schwerin, Germany, Sept. 1854.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the nobility, gentry, and clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable outdoor Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice.

Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to Walter Carson & Son, 9, Great Winchester Street, Old Broad Street, Royal Exchange, London. No Agents. All orders are particularly requested to be sent direct.

GLASS FOR CONSERVATORIES, ETC.

HETLEY and CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2*d*. to 3*d*. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES, GREENHOUSES, DWELLINGS, ETC.

Established more than One Hundred Years.

THOMAS MILLINGTON requests attention to his present prices of SHEET GLASS in 100 feet boxes.

Squares	6 by 4 and 6½ by 4½	...	13 6
„	7 by 5 and 7½ by 5½		
„	8 by 6 and 8½ by 6½	...	16 3
„	9 by 7 and 9½ by 7½		
„	10 by 8 to 12½ by 9½		
„	12 by 10 to 24 by 14	...	19 0

Orchard House Squares on Mr. Rivers's approved plan, to whom I have sold some thousands of feet :—20 inches by 12, 20 by 13, 20 by 14, 20 by 15, 20½ by 12½, 20½ by 13½, 20½ by 14½, at 19*s*. per 100 ft.

200 feet cases at 42*s*., and 300 feet case 63*s*., in large sheets.

Boxes charged 1*s*. extra per 100 feet, and the same allowed if returned free of all charge.

HARTLEY'S PATENT ROUGH PLATE GLASS, Fern Shades, Striking Glasses, Milk-pans, Bee Glasses, Cucumber Tubes, Sheet and Rough Plate Glass Tiles, Wasp Traps; Plate, Patent Plate, Crown and Sheet Window Glass, in every thickness and quality, and Ornamental Glass, plain and coloured; pure white Shades for Ornaments, Crystal Glass for Pictures.

Warehouse, 87, Bishopsgate Street Without—same side as Eastern Counties Railway.

BY ROYAL LETTERS PATENT.

THE COSMOPOLITAN GLASS COMPANY, 296, Oxford Street, London.—The Managers beg to inform the Nobility and Gentry, Farmers, Gardeners, &c., that their new List of Prices may be had free on application at the Company's Depôt.

HARTLEY'S PATENT ROUGH PLATE, for Roofing Conservatories, Halls, and Public Buildings.

PLATE, CROWN, and SHEET WINDOW GLASS.

Coloured and Ornamental Glass of every description.

Glass Milk Pans, Pails, Tests, and Measures; Cream Pots and Syphons; Churns, Butter Tests and Slabs; Tiles and Slates; Bee Hives, &c.

Moore's Patent Ventilator and Lockhead's Patent Perforated Glass, for Dairies and Greenhouses.

Aquavivariums, Fern Shades, Propagating Glasses, Fruit Protectors, Preserve Jars, Cucumber Tubes, Hand Lights, Flower Vases, Labels, &c., and all kinds of Agricultural, Horticultural, Architectural, Domestic, Scientific, and Ornamental Glass, British and Foreign, at the lowest prices.

HARTLEY'S PATENT ROUGH PLATE GLASS, 1-8th thick, or 2 lbs. to the foot; 3-16ths, or 3 lbs.; and 1-4th, or 4 lbs. to the foot, for Ridge and Furrow Roofs, Greenhouses, Railway Stations, Engine Sheds, Mills, Market Halls, and Public Buildings generally.

Packed in Boxes of 50 feet each.

6 by 4 and 6½ by 4½	...	10*s*. 6*d*. per box.
7 „ 5 „ 7½ „ 5½	...	12 0 „
8 „ 6 „ 8½ „ 6½	...	13 6 „
9 „ 7 „ 9½ „ 7½ and 10 by 8	...	15 0 „

For larger sizes a full List of Prices will be sent on application. Boxes are charged 2*s*. each extra, full price allowed if returned free of expense.—For further information apply to

JAMES PHILLIPS & Co.,
116, Bishopsgate Street Without.

"Rough Plate has never been, and never can be, prejudicial to the colouring of Grapes; though we can easily believe that it has been charged with such a fault by persons who have not skill enough to manage Grapes under glass."—*Gardeners' Chronicle*.

"There *can be no question now* that Rough Plate Glass is the most beautiful as well as the most useful kind of glass that can be employed in horticulture. It is free from all the faults of transparent glass, and has many advantages peculiar to itself, *without a single disadvantage as a set off*"—*Gardeners' Chronicle*.

SLATE WORKS, ISLEWORTH, MIDDLESEX.

EDWARD BECK manufactures in Slate a variety of articles for Horticultural purposes, all of which may be seen in use at Worton Cottage, on application to the Gardener. Sundays excepted.

Priced lists of plant tubs and boxes forwarded on application.

ENCAUSTIC TILE PAVEMENTS.

MAW and CO., Benthall Works, Broseley, Salop, Manufacturers of the Cloister Pavement of Medieval Court, and "the successful Imitation of Opus Alexandrinum in the beautiful Encaustic Tile Pavement of Christian Byzantine Court," Crystal Palace (M. D. Wyatt, Esq., Official Handbook), forward, without charge, Designs and Estimates, adapted to given dimensions, of Entrance Halls, Conservatories, Verandahs, &c., in every style.

Specimens at 11, Aldersgate Street, City.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruit and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1*s*. 6*d*. per yard run, of E. T. Archer, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey.

SUBSTITUTE FOR GARDEN MATS.—Waxed Sheeting nearly 2 yards wide, 1*s*. per yard run—admits light and excludes cold; thick Canvas Tarpauling, 1*s*. per square yard; thick Canvas Waxed Sheeting, 1*s*. per square yard, may be had various widths. These Canvases are excellent for roofing sheds and Outhouses, as they are quite waterproof.—R. Richardson, 21, Tonbridge Place, Judd Street, New Road, London. N.B. Waterproof Capes, large size, 3*s*.; Police Capes, 18*s*. and 24*s*. per dozen; Driving Aprons, Capes, and Coats of India Rubber, Horse's Loin Cloths, Waggon and Cart Covers, Sacks, &c.

GARDEN NETS, FISHING NETS, SHEEP NETS, and RABBIT NETS, made by Machinery, are supplied at very low terms. Samples sent free.—R. Richardson, 21, Tonbridge Place, New Road, near King's Cross, London.

WIRE FENCING, 6¾*d*. per square yard, in various widths, from 6 feet to 15 inches, mesh less than 2 inches. An effectual fence against Hares, Rabbits, Sheep, Deer, &c., and for the enclosure of Poultry, Pheasants, &c. 4-inch mesh, 4*d*. per square yard.

R. Richardson, 21, Tonbridge Place, New Road, London.

METCALFE and CO.'S PERFUMERY DEPARTMENT.—PROPRIETARY ARTICLES.—Metcalfe's celebrated ALKALINE TOOTH POWDER is acknowledged as the safest and most efficient now in use. Dupuytren's Medicated Pomade is the most certain remedy for preventing the hair prematurely falling off, and for restoring it when baldness has already commenced. Dupuytren's Medicated Balm strengthens, cleanses, and improves the growth, and is generally acknowledged as the best wash for the hair.—Manufacturers of British and Importers of Foreign Soaps, Perfumery, and J. M. Farina's genuine Eau de Cologne, at Metcalfe, Bingley, & Co.'s only Establishment, 130B and 131, Oxford Street, second and third doors west from Holles Street.

FENDERS, STOVES, AND FIRE-IRONS.—Buyers of the above are requested, before finally deciding, to visit William S. Burton's SHOW ROOMS, 39, Oxford Street (corner of Newman Street), Nos. 1 and 2, Newman Street, and 4 and 5, Perry's Place. They are the largest in the world, and contain such an assortment of FENDERS, STOVES, RANGES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with bronzed ornaments and two sets of bars, 2*l*. 14*s*. to 5*l*. 10*s*.; ditto with ormolu ornaments and two sets of bars, 5*l*. 10*s*. to 12*l*. 12*s*.; Steel Bronzed Fenders complete, with standards, from 7*s*. to 3*l*.; Steel Fenders from 2*l*. 15*s*. to 6*l*.; ditto, with rich ormolu ornaments, from 2*l*. 15*s*. to 7*l*. 7*s*.; Fire-irons from 1*s*. 9*d*. the set to 4*l*. 4*s*. Sylvester and all other Patent Stoves, with radiating hearth plates. All which he is enabled to sell at these very reduced charges,

1st.—From the frequency and extent of his purchases: and

2dly.—From those purchases being made exclusively for cash.

THE PERFECT SUBSTITUTE for SILVER.—The real NICKEL SILVER, introduced 20 years ago by William S. Burton, when Plated by the patent process of Messrs. Elkington & Co., is beyond all comparison the very best article next to sterling silver that can be employed as such, either usefully or ornamentally, as by no possible test can it be distinguished from real silver.

	Fiddle Pattern.	Thread or Brunswick Pattern.	King's Pattern.
Tea Spoons, per dozen	18*s*.	26*s*.	32*s*.
Dessert Forks „	30*s*.	40*s*.	46*s*.
Dessert Spoons „	30*s*.	42*s*.	48*s*.
Table Forks „	40*s*.	56*s*.	64*s*.
Table Spoons „	40*s*.	58*s*.	66*s*.

Tea and Coffee Sets, Waiters, Candlesticks, &c., at proportionate prices. All kinds of replating done by the patent process.

CHEMICALLY PURE NICKEL, NOT PLATED.

	Fiddle.	Thread.	King's.
Table Spoons and Forks, full size, per doz.	12*s*.	28*s*.	[illegible]
Dessert ditto and ditto	10*s*.	21*s*.	[illegible]
Tea ditto	5*s*.	11*s*.	[illegible]

CUTLERY WARRANTED.—The most varied assortment of TABLE CUTLERY in the world, all warranted, is on Sale at William S. Burton's, at prices that are remunerative only because of the largeness of the sales. 3½-inch ivory-handled table knives, with high shoulders, 11s. per dozen; desserts to match, 10*s*.; if to balance, 1*s*. per dozen extra; carvers, 4*s*. per pair; larger sizes, from 14*s*. 6*d*. to 26*s*. per dozen; extra fine, ivory, 32*s*.; if with silver ferrules, 37*s*. to 50*s*.; white bone table knives, 7*s*. 6*d*. per dozen; desserts, 5*s*. 6*d*.; carvers, 2*s*. 3*d*. per pair; black horn table knives, 7*s*. 4*d*. per dozen; desserts, 6*s*.; carvers, 2*s*. 6*d*.; black wood-handled table knives and forks, 6*s*. per dozen; table steels, from 1*s*. each. The largest stock in existence of plated dessert knives and forks, in cases and otherwise, and of the new plated fish carvers. Also a large assortment of Razors, Penknives, Scissors, &c., of the best quality.

DISH COVERS AND HOT-WATER DISHES in every material, in great variety, and of the newest and most *recherche* patterns. Tin Dish Covers, 6*s*. 6*d*. the set of six; Block Tin, 12*s*. 3*d*. to 28*s*. 9*d*. the set of six; elegant modern patterns, 34*s*. 0*d*. to 58*s*. 6*d*. the set; Britannia Metal, with or without silver-plated handles, 76*s*. 6*d*. to 110*s*. 6*d*. the set; Sheffield Plated, 10*l*. to 16*l*. 10*s*. the set; Block Tin Hot-water Dishes, with wells for gravy, 12*s*. to 30*s*.; Britannia Metal, 22*s*. to 77*s*.; Electro-plated, on Nickel, full size, 11*l*. 11*s*.

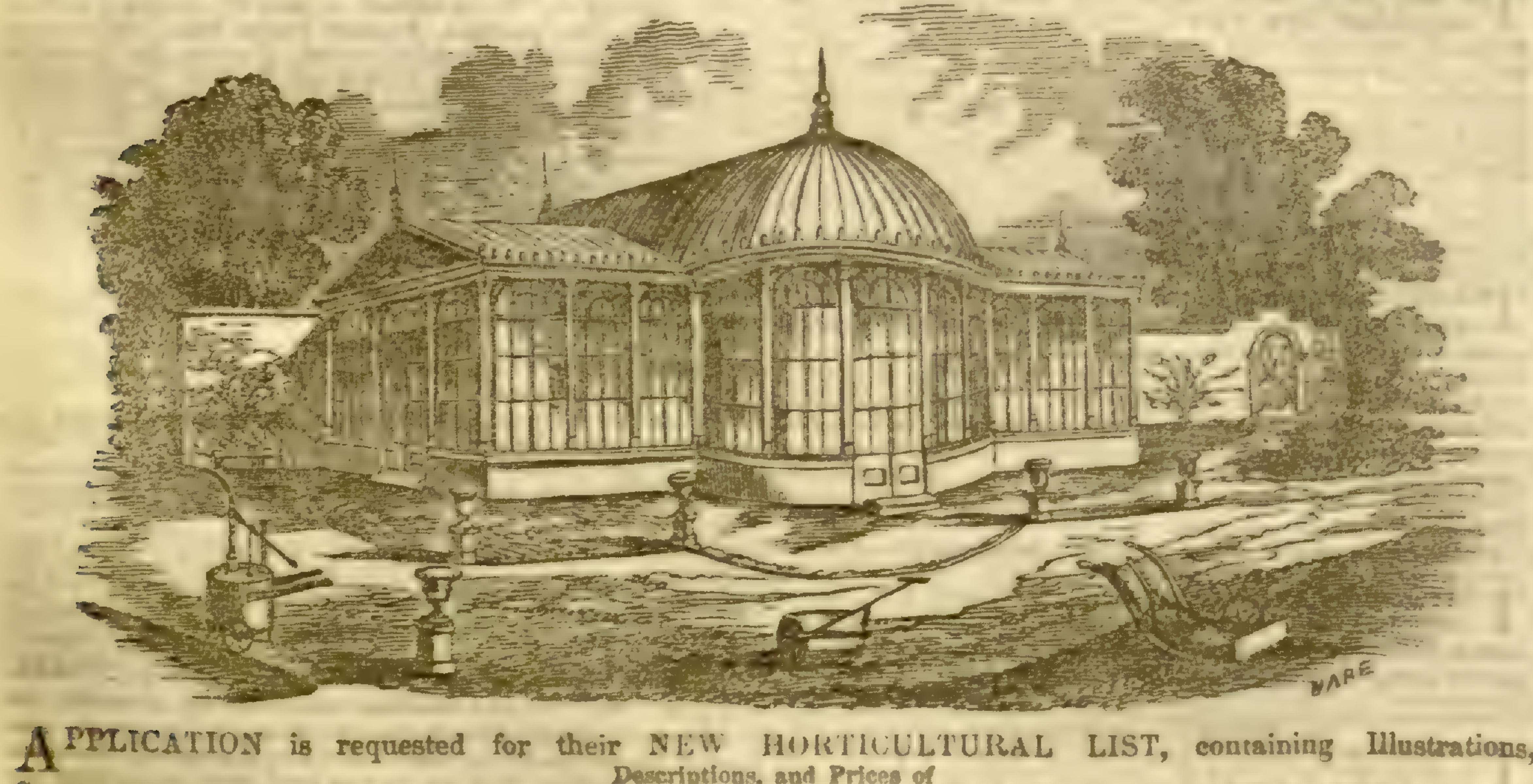
William S. Burton has TEN LARGE SHOW ROOMS (all communicating), exclusive of the shop, devoted solely to the show of GENERAL FURNISHING IRONMONGERY (including Cutlery, Nickel Silver, Plated, and Japanned Wares, Iron and Brass Bedsteads, so arranged and classified that purchasers may easily and at once make their selections.

Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of.

39, OXFORD STREET (corner of Newman Street); Nos. 1 and 2, and 3, NEWMAN STREET; and 4 and 5, PERRY'S PLACE.

COTTAM AND HALLEN,

2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.



APPLICATION is requested for their NEW HORTICULTURAL LIST, containing Illustrations, Descriptions, and Prices of

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Syringes	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.

AGRICULTURAL LIST UPON APPLICATION.

EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

TO LOVERS OF FISH.—100 Genuine Yarmouth Bloaters for 6s., package included, forwarded to all parts on receipt of Penny Postage Stamps, or Post Office Order for the amount preferred.
Address, THOMAS LETTIS, Jun., Fish Curer, Great Yarmouth.

UMBRELLAS.

DAWSON'S PATENT.—If you require an Umbrella that is superior in every respect to any other made, being not only waterproof, but at least five times more durable, and, according to its quality, equally low in price, ask for, and insist upon having, DAWSON'S PATENT WATERPROOF.
Wholesale Warehouse, 9, King's Arms Yard, Moorgate Street.

OVER-COATS, CAPES, &c., at W. BERDOE'S, 96, New Bond Street, and 69, Cornhill, one of the largest stocks in London, superior Garments at reduced charges. SHOOTING JACKETS; BERDOE'S well-known LIGHT OVER-COAT, for all seasons, price 45s.; LADIES' CLOAKS, MANTLES, HABITS, &c.; all made thoroughly impervious to any amount of rain, without obstructing free ventilation, and without extra charge, or made to order at a day's notice.

GLENFIELD PATENT STARCH, used in her Majesty's Laundry, and WOTHERSPOON'S machine-made CONFECTIONARY, MARMALADE, JAMS, JELLIES, &c., which gained the Prize Medal of 1851, may be had of all Grocers; Wholesale of WOTHERSPOON, MACKAY, & Co., 66, Queen Street, Cheapside, London; and ROBERT WOTHERSPOON & Co., Glasgow.

MR. MECHI wishes it to be clearly understood, that he CHARGES the SAME PRICES at the CRYSTAL PALACE as at Leadenhall Street; that his manufactures are varied to suit all classes. For instance, Dressing-cases at 25s., or at 150l.; Penknives at 1s. or 21s.; Tooth Brushes at 6d. or 2s.; each article being good of its sort. Mr. MECHI'S Assistants at the Crystal Palace will attend constantly to receive orders and dispose of his manufactures there.—4, Leadenhall Street, Sept. 23.

DO YOU WANT LUXURIANT HAIR, WHISKERS, &c.?—No other compound for the Hair has maintained such an enduring celebrity as EMILY DEAN'S CRINILENE. It is guaranteed to produce Whiskers, Moustachios, Eyebrows, &c., in a few weeks, and restore the Hair in Baldness, from whatever cause, strengthen it when weak, prevent its falling off, and effectually check Greyness in all its stages. For the nursery, Dr. Wilson says it is unrivalled.—Price 2s. per Package (elegantly perfumed); sent post free, on receipt of 24 penny postage stamps, by Miss DEAN, 37 A, Manchester Street, Gray's Inn Road, London. Sold by every Chemist in the Kingdom.—"In one fortnight it produced a beautiful set of Moustachios." H. ADAMS.—"It has prevented my Hair falling off." J. HICKSON.—"It has quite checked the greyness that was coming on." Mrs. ELDER.

DO YOU WANT BEAUTIFUL HAIR, WHISKERS, MOUSTACHES, &c.?—ALICE MELVILLE'S PALMAPILLA in all cases strengthens weak hair, prevents its falling off, checks greyness, produces a thick and luxuriant growth, dispels scurf and dandriff, and makes it clean, soft, curly, and brilliant in appearance. For baldness from any cause it is certain and effective; and for the production of Whiskers, Moustaches, Eyebrows, &c., in three or four weeks, it can be fully depended upon. Price 2s. 6d., sent post free (anywhere) on receipt of 30 penny postage stamps, by Miss MELVILLE, 25, Argyle Square, King's Cross, London. —"My whiskers are growing very thick." R. Mede, Esq.—"It restored my hair, which I had lost in patches." W. Sturt.—"It has quite checked the greyness." Miss Ellis.—"My Moustache is greatly improved." Capt. Ross.

NERVES.

DR. GRANDISON'S PILLS for strengthening the Nerves are sold in London by Mr. RICHARDS, 40, New Bridge Street; Mr. SANGER, 150, Oxford Street, and other respectable Chemists. Boxes can be sent by post.—Price 1s. 1½d., 2s. 9d., and 4s. 6d. each.

PARR'S LIFE PILLS.

THE English public have, by the test of experience, become satisfied that PARR'S LIFE PILLS are composed of simple but powerfully curative ingredients. They are so mild and excellent in their action that a child may take them. For Bilious Disorders, Liver Complaints, Indigestion, Costiveness, Sick Headache, Depression of Spirits, Pains in the Back, Gravel, and Lumbago, PARR'S LIFE PILLS will be found a safe and admirable remedy. Invalids should make an immediate trial of this excellent, long-tried, and successful medicine.

TO LADIES.

PARR'S LIFE PILLS are especially efficacious in all the variety of ailments incidental to the fair sex. Ladies, even of the most delicate constitutions, will find them particularly beneficial both before and after confinement; and, for general use in schools, they cannot be too strongly recommended. They mildly and speedily remove all skin eruptions, sallowness of complexion, nervous irritability, sick headache, depression of spirits, irregularity, or general derangement of the system.

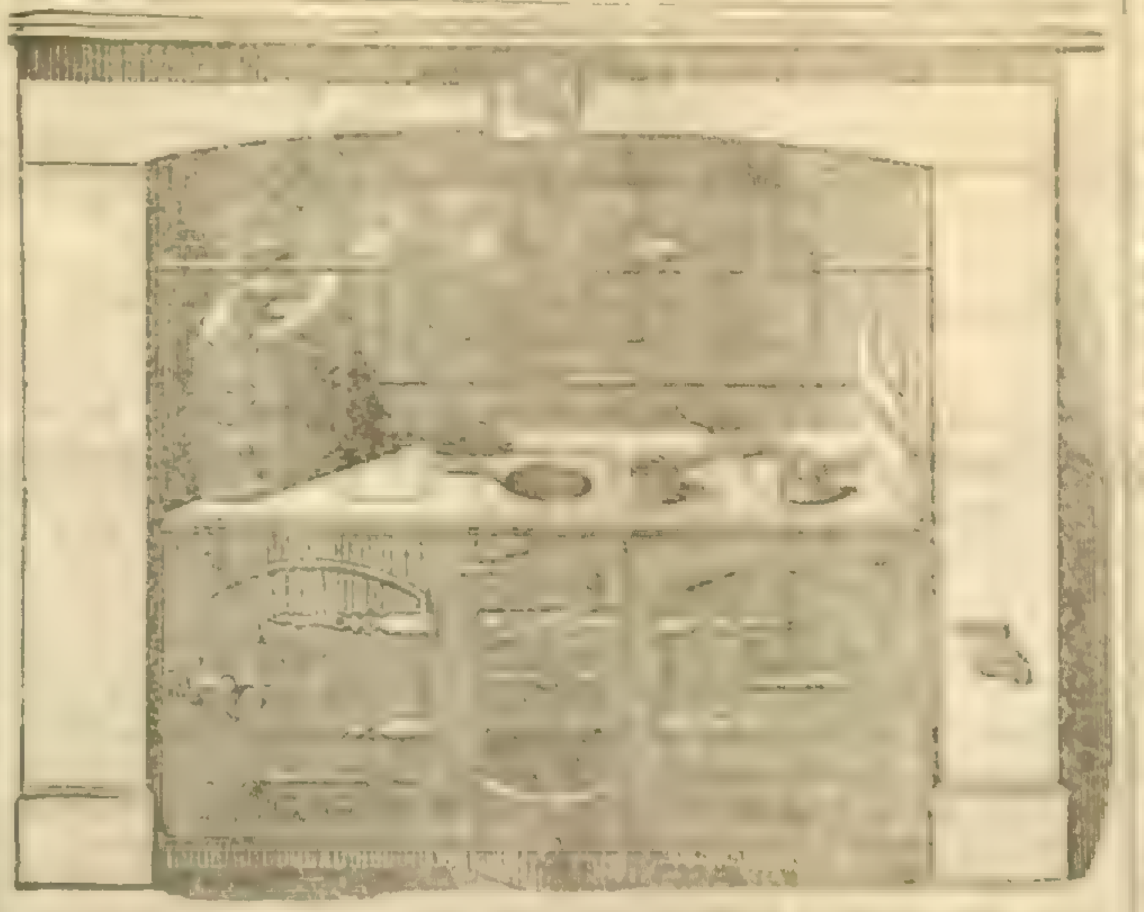
Observe the signature of the proprietors, "T. ROBERTS & Co., Crane Court, Fleet Street, London," on the directions. Sold in boxes at 1s. 1½d., 2s. 9d., and family packets at 11s. each, by all respectable chemists and medicine vendors in town and country. Full directions are given with each box.
☞ Be sure to ask for PARR'S LIFE PILLS.

HOLLOWAY'S OINTMENT AND PILLS WONDERFUL REMEDIES FOR THE CURE OF BAD LEGS. —Mr. Slater, of Stone, states in a letter to Professor HOLLOWAY, that he has seen many cures effected by his invaluable Ointment and Pills, one in particular he mentions as most extraordinary, that of a stonemason, working on the new Catholic chapel in that town, whose foot and ankle were one complete mass of sores, the worst he ever beheld, but by the application of the remedies for a short time it was really astonishing to see the rapid cure these valuable medicines perfected, as his foot is soundly and permanently healed.—Sold by all vendors of medicine, and at Professor HOLLOWAY'S Establishments, 244, Strand, London; and 80, Maiden Lane, New York.

FRAMPTON'S PILL OF HEALTH.— "For upwards of nine years (writes Mr. Thomas Province, of Winchmore Hall, Middlesex), I have experienced the efficacy of this excellent medicine, and I have the happiness of saying that I never had a better state of health. I beg further to add that this medicine is in general use by my family, and we know of nothing to equal it." For females these pills are truly excellent, removing all obstructions, the distressing headaches so very prevalent with the sex, depression of spirits, dulness of sight, nervous affections, blotches, pimples, and sallowness of the skin, and gives a healthy juvenile bloom to the complexion. Sold by all medicine vendors, price 1s. 1½d. per box.—Observe that "THOMAS PROUT" is on the Government stamp.

BLAIR'S GOUT AND RHEUMATIC PILLS. Price 1s. 1½d. and 2s. 9d. per box.—Mr. William Courtney, of Barton Stacey, Hants, says:—"I had resort to your Pills, and within two hours I was quite easy. The use of these Pills ought really to be known all over the world." Among the many discoveries, none have conferred such a boon on suffering humanity as that of Blair's Gout and Rheumatic Pills, they require neither attention nor confinement, and are certain to prevent the disease attacking any vital part. Sold by all medicine vendors. Observe that "THOMAS PROUT, 229, Strand, London," is impressed upon the Government stamp.

DEANE, DRAY, AND CO., have a very large and superior stock of FRENCH MODERATOR LAMPS now on sale.—(Opening to the Monument), London Bridge.
ESTABLISHED A.D. 1700.



FLAVEL'S PRIZE KITCHENER.—These Ranges are strongly recommended for their simplicity of construction and their economy and cleanliness in use. The top forms a Hot-plate, and the open fire removes many of the objections which are felt to close Ranges. They are made in all sizes, from 3 feet to 18 feet in width, suitable for large or small establishments. They are admirably adapted for the Cure of Smoky Chimneys. London agency removed to Wigmore Street, from 92, Jermyn Street, Piccadilly. BENHAM & SONS, 19, Wigmore Street, London. And in the Hardware Court of the Crystal Palace, Sydenham.

RUPTURES EFFECTUALLY CURED WITHOUT A TRUSS.—All sufferers from this alarming complaint are earnestly invited to consult or write to Dr. LESLIE, as he guarantees them relief in every case. His remedy has been successful in curing thousands of persons during the last 11 years, and is applicable to every kind of single and double Rupture, however bad or long standing, in male or female of any age, causing no confinement or inconvenience in its use whatever. Sent post free to any part of the world, with full instructions for use, on receipt of 7s. 6d. in postage stamps, cash, or Post-office order, payable at the General Post-office, to Dr. HERBERT LESLIE, 37A, Manchester Street, Gray's Inn Road, London. At home daily (except Sunday) from 11 till 3 o'clock. A Pamphlet of Testimonials sent post free on receipt of one postage stamp.

TO NERVOUS SUFFERERS.

A RETIRED CLERGYMAN having been restored to health in a few days, after many years of great nervous suffering, is anxious to make known to others the means of cure; he will therefore send (free), on receiving a stamped envelope, properly addressed, a copy of the prescription used.—Address the Rev. E. DOUGLASS, 18, Holland Street, Brixton, London.

DEAFNESS, NOISES IN THE HEAD AND EARS, &c.

DR. BARKER'S remedy restores hearing in ALL cases, however it may have been lost—removes all those harassing noises in the head and ears, arising from cold, nervousness, &c., checks discharges—and allays pain and earache. Sent post free to any part of the kingdom, with full instructions for use, on receipt of 7s. 6d. in penny postage stamps, or by post-office order (payable at the General Post Office), by ALFRED BARKER, M.D., 25, Argyle Square, King's Cross, London. Consultation hours, 11 till 3 daily, except Sundays.

A TREATISE ON DEAFNESS, 68 pages, with a host of cases, testimonials, &c., sent post free for 8 penny stamps. Dr. B.'s treatment cured 3970 cases in 1853, many of which had been tampered with by the various quacks and impostors who profess to cure deafness.

DINNEFORD'S PURE FLUID MAGNESIA has been for many years sanctioned by the most eminent of the Medical Profession, as an excellent remedy for Acidities, Heartburn, Headache, Gout, and Indigestion. As a mild aperient, it is admirably adapted for delicate females, particularly during pregnancy; and it prevents the food of infants from turning sour during digestion. Combined with the Acidulated Lemon Syrup, it forms an Effervescing Aperient Draught, which is highly agreeable and efficacious.—Prepared by DINNEFORD & Co., Dispensing Chemists (and General Agents for the Improved Horse-Hair Gloves and Belts), 172, New Bond Street, London, and Sold by all respectable Chemists throughout the Empire.

WANTED, a SMALL NURSERY, near London, or any of the large provincial towns.—S., Post-office, Stratford, Essex.

NURSERY AND SEED BUSINESS.
ESTABLISHED IN THE YEAR 1819.

TO BE LET, with immediate possession, the old-established NURSERY and SEED TRADE at Taunton, Somerset, for some time past in the occupation of Messrs. M'Intyre and M'Intosh. The Grounds and Stock are in excellent condition, moderately rented, and are well worthy the attention of any person wishing to carry on the business. If required, the quantity of ground may be reduced. The Nursery is five minutes' walk from the Railway Station.—For further particulars, apply to Mr. M'INTOSH, the Nurseries, Taunton; or to Mr. YOUNG, the Proprietor, Elm Cottage, Taunton.

ALTHORNE, ESSEX.

TO BE LET, on Lease, from Michaelmas next, the STOKES HALL ESTATE, containing about 370 acres of excellent Arable and Pasture Land, in a high state of cultivation, with Gentlemanly Residence, suitable Farm Buildings, Cottages, Wharf, &c., pleasantly situated on the River Crouch, and within 3 miles of the Port of Burnham, and 8 miles of the market town and Port of Maldon.—Further particulars may be obtained from Mr. WILLIAM WIX, Clerk of St. Bartholomew's Hospital; or from Mr. TATHAM, Land-Surveyor, 27, Bedford Place, Russell Square, London. References will be required.
St. Bartholomew's Hospital, Sept. 23. WILLIAM WIX, Clerk.

TO BE LET, together or separately, a FARM of 200 acres, with a comfortable Residence, situate one mile from a Railway Station near Shrewsbury. The Mill, with House and 20 acres, adjoin the above.—Apply to J. P., Post Office, Shrewsbury.

TO MARKET GARDENERS.

TO BE LET, ON LEASE, about Thirty-six ACRES of LAND (or a part of it), situate in the Parish of Beddington, near Croydon, Surrey, a considerable portion of which is well Cropped, abundantly stocked with Fruit Trees, and in a high state of cultivation. The Stock, Crops, and Sheds standing upon the premises are to be taken at a valuation, and possession will be given on September 29.—For particulars, apply to Messrs. DRUMMONDS & Co., Solicitors, and Messrs. BLAKE, Auctioneers, Croydon; to Mr. J BATCHELOR, Market Gardener, Waddon; to Mr. COLLYER, Beddington; or to Mr. A. A. COLLYER, Solicitor, 4, Bedford Row, London.

SPANIELS.

WANTED, a Brace of well-broken SPANIELS, two years old.—Address, stating price and colour, Beta, *Gardeners' Chronicle* Office, London.

TO BE DISPOSED OF, Six CYGNETS in very fine condition, and of good size.—Apply to H. T. HUMPHREYS, Kilmacow, Waterford.

TO BE SOLD, BUFF COCHIN CHICKENS, from first class Prize Birds. Brahma Pootra Chickens, from imported American Prize Birds, and Spanish Chickens. Also some very good one-year-old Birds of the above descriptions. Wire, Game, and Poultry Netting, Poultry Fences, Hen Houses, Chicken Coops, Flower Stands, and Trainers, Garden Arches, and every kind of Wire Work, useful and ornamental.—T. H. FOX'S, City of London Wire Works, 44, Skinner Street, and 6 & 8, Snow Hill. Illustrated Catalogues forwarded post free.

Sales by Auction.

FANCY POULTRY,
FROM THE YARD OF CHRISTOPHER RAWSON, ESQ., THE HURST, WALTON-ON-THAMES.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, Sept. 26, at 12 o'clock precisely, a VERY CHOICE SELECTION OF POULTRY, many prize Birds and Chickens, all bred from first-rate and Prize Stock, including Black, White, and Buff Cochins, Brahma Pootras, Spanish, Dorking, Golden and Silver Polands and Hamburghs, Horned Fowls, Algerine Silk ditto, Ptarmigans, Toulouse and Pomeranian Geese, Aylesbury Ducklings, Wild American Turkeys, and Turkeys from Mr. Fairlie's celebrated breed, &c. &c.—May be viewed on the morning of Sale, and Catalogues had.

TO PLANT EXHIBITORS.
IMPORTANT SALE OF MAGNIFICENT SPECIMEN HEATHS, &c.

MR. J. C. STEVENS begs to announce that he will Sell by Auction, on the premises, Crown Hill, Norwood, on TUESDAY, October 10, at 12 for 1 o'clock precisely, about 100 HEATHS, the finest specimen plants ever offered for public sale, and including all the best exhibition varieties grown by Mr. S. Smith, gardener to W. Quilter, Esq., of Norwood.—May be viewed on the day prior and morning of sale; and Catalogues had of Mr. J. C. STEVENS, 38, King Street, Covent Garden, London.

KINGSTON, SURREY.

MR. J. C. STEVENS is directed by Mr. Bruce to sell by Auction, on the premises, Ham Lane, Kingston, Surrey, on THURSDAY, 28th September, 1854, at Twelve for One o'clock precisely, 4000 HEATHS, including Hyemalis, Wilmorea, Cavendishi, Sindryana, Ventricosa, Perspicua nana, pyramidalis, gracilis, and other good sorts; about 100 of the true Acacia Drummondi, some of them specimens; 500 Gardenia radicans, Fortuni, and intermedia; 500 Chantilus puniceus, and other well-grown Plants, deserving the attention of Amateurs and the Trade.—May be viewed on the day prior and morning of sale, and Catalogues had on the premises, and of Mr. J. C. STEVENS, 38, King Street, Covent Garden.

ORCHIDS.
ESTABLISHED PLANTS OF THE BEST SORTS.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King Street, Covent Garden, on THURSDAY, 5th October, at Twelve for One o'clock, a COLLECTION of CHOICE ORCHIDS, including Vanda suavis (Veitch's true), V. tricolor, Aerides maculosum major, A. quinquevulnerum, A. crispum; Saccolabium guttatum, S. retusum, S. furcatum, Cypripedium Lowi, C. caudatum, Cattleya lobata, C. Quindios, C. maxima and elegans; Trichopilia suavis, Angraecum eburneum, A. virescens, &c. &c.—May be viewed on the morning of Sale, and Catalogues had of Mr. J. C. STEVENS, 38, King Street, Covent Garden.

TO GENTLEMEN, NURSERYMEN, AND OTHERS.
IMPORTANT SALE—1000 DOUBLE CAMELLIAS.

MESSRS. PROTHEROE AND MORRIS are directed by Mr. A. Van Geert, of Ghent, to Sell by Auction, at the Mart, Bartholomew Lane, on THURSDAY, October 5, at 12 o'clock, 1000 Double Camellias, 1 to 4 feet, consisting of all the approved kinds beautifully set with bloom buds; also 12 magnificent Standard Sweet Bays.—On view the morning of Sale. Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS beg to announce that they have received instructions from the administrators of the late Mr. W. Watts, of Stoke Newington, to sell by Auction, early in OCTOBER next, the whole of his unrivalled NURSERY STOCK, Greenhouses, and sundry effects. Further particulars will appear in future advertisements.
N.B. The unexpired Lease of the BARRETT GROVE GROUND, of 4 acres, will be submitted to public competition at the same time, unless previously disposed of by private contract.—For particulars apply to Mr. MACKAY, Stoke Newington, or of the Auctioneers, American Nursery, Leytonstone, Essex.

FULHAM.
TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are directed by Mr. Lockhart to Sell by Auction, without reserve, on the premises, Parson's Green Lane, Fulham, on MONDAY, October 9th, at 11 o'clock, a costly and extensive collection of BULBS and FLOWER ROOTS, being about 50,000 in number; also choice Vegetable and Flower Seeds, Fruit Trees in good condition, Standard Roses, a collection of Herbaceous Plants, Two three-light Boxes, and Sundries.—May be viewed three days prior to the Sale. Catalogues may be had (6d. each, returnable to purchasers) of Mr. LOCKHART, on the Premises; of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

CLAPHAM.
TO NOBLEMEN, GENTLEMEN, NURSERYMEN, MARKET GARDENERS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by the administrators of the late Mr. Joseph Fairbairn to sell by Auction on the premises, The Retreat, Larkhall Lane, Clapham, on MONDAY, October 23d, and following days, at 11 o'clock each day, the whole of the valuable stock of FRUIT TREES, consisting of Standard, Dwarf, Trained and Untrained Peach, Nectarine, Apricot, Apple, Pear, Plum, Cherry, Gooseberries and Currants, &c.; also Ornamental Trees, Evergreens and Deciduous shrubs, &c.—May be viewed one week prior to the Sale; Catalogues to be had 6d. each, returnable to purchasers on the premises; of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO MARKET GARDENERS, NURSERYMEN, & OTHERS.

MR. W. T. ATWOOD will sell by Auction on WEDNESDAY, September 27th, at 12 o'clock precisely, on the premises, near the Coach and Horses, Turnham Green, Middlesex, all the Live and Dead Stock, comprising excellent Block and Spring Waggons, Dung and Market Carts, Barrows, two powerful Cart Horses, Sets of Harness, 100 three-light Cucumber Frames, 1200 Bell and Hand Glasses, a quantity of Baskets, Implements, and Tools, Garden Pots, and a number of useful articles. May be viewed the day previous and morning of Sale. Catalogues may be had at the Red Lion Tavern, Turnham Green; the Rainbow Tavern; and Mr. Way's Coffee House, Covent Garden Market; and of Mr. Atwood, Land Agent, Mortlake, Surrey.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER,

AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS & WORKMANSHIP.

GRAY & ORMSON, DANVERS STREET, CHELSEA, LONDON.

GRAY AND ORMSON, Danvers Street, Chelsea, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and they can with the greatest confidence give the most satisfactory references to all by whom they have been favoured with orders. Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

HOUSEHOLD WORDS.
CONDUCTED BY CHARLES DICKENS.

On the 30th September will be published, price 11*d.* Part 54 of HOUSEHOLD WORDS, containing the First Five Portions of a New Tale, by the Author "MARY BARTON," entitled "NORTH AND SOUTH," and the usual variety of articles.

Office, 16, Wellington Street North, Strand, and sold by all Booksellers and Newsvendors.

On the 30th September will be published, price 1*s.*, No. 13 of

"THE NEWCOMES." By W. M. THACKERAY. With ILLUSTRATIONS by RICHARD DOYLE.

*** The First Volume is ready, price 13*s.* in cloth.

BRADBURY & EVANS, 11, Bouverie Street.

On the 30th September will be published, price 1*s.*, the 17th Number (completing the work) of

HANDLEY CROSS; or, MR. JORROCKS'S HUNT. By the Author of "MR. SPONGE'S TOUR." Illustrated with Coloured Plates and Numerous Woodcuts by JOHN LEECH, uniformly with "SPONGE'S TOUR,"

BRADBURY & EVANS, 11, Bouverie Street.

On the 30th September will be published, price 2*s.*, Part XVIII. of the

ENGLISH CYCLOPÆDIA, extending the NATURAL HISTORY DIVISION from HORNBLENDE to INSECTA, and the GEOGRAPHICAL DIVISION from HAMBURG to ILLE-ET-VILAINE, and comprising, among others, articles on Hanover, Havanna, Helsingfors, Herat, Hermannstadt, Hesse-Cassel, Hesse-Darmstadt, Hesse-Homburg, Hildesheim, Hindustan, Hispaniola, Hoang-hi, Hoang-ho, Holland, Holstein, Honduras, Hong Kong, Hudson's Bay Territories, Hungary, Iceland, &c. &c.

*** Vols. I. and II. of each Division are published, price 10*s.* each, in cloth.

London: BRADBURY & EVANS, 11, Bouverie Street.

POPULAR WORKS ON BOTANY BY DR. LINDLEY.

SCHOOL BOTANY; or, THE RUDIMENTS OF BOTANICAL SCIENCE.

400 Illustrations. 8vo. Price 5*s.* 6*d.* half-bound.

BRADBURY & EVANS, 11, Bouverie Street.

Lately Published,

THE ELEMENTS OF BOTANY, STRUCTURAL AND PHYSIOLOGICAL. With a Glossary of Technical Terms, and numerous Illustrations. 12*s.* cloth.

This completes the series of Elementary Botanical Works by Professor LINDLEY, of which "School Botany," and "The Vegetable Kingdom," form the other parts.

The first two Parts of THE ELEMENTS OF BOTANY, comprising Structural and Physiological Botany, and a Glossary of Technical Terms, are published in one octavo volume, price 12*s.*

These three parts form a complete manual of Botany for Medical and other Students who have made themselves acquainted with the author's "School Botany."

N.B. The Glossary may be had separately, price 5*s.*

BRADBURY & EVANS, 11, Bouverie Street.

This day is published, in one vol. 8vo, with numerous woodcuts, price 14*s.*,

MEDICAL AND ŒCONOMICAL BOTANY; or An Account of the Principal Plants employed in Medicine or Domestic Œconomy.

EXTRACT FROM THE AUTHOR'S PREFACE.

"The Vegetable Kingdom contains, among a large quantity of plants of no known importance to man, various useful species employed in medicine, the arts, or in the many branches of domestic œconomy. The principal part of those which can be brought by teachers in Europe under the notice of students, or which, from their great importance, deserve to be among the earliest subjects of study, are mentioned in the following pages, where they are arranged in the manner proposed in the 'VEGETABLE KINGDOM' of the author, with the sequence of matter departed from in a few instances, when it was believed that the convenience of younger students would be consulted by doing so. The author trusts that this selection will be found to have been made in such a way that all teachers who possess reasonably extensive means of illustrating their lectures, and all Botanic Gardens, may furnish the larger part of the species which are mentioned. A small selection was indispensable; firstly, because a greater work would have been beyond the reach of the majority of purchasers; and secondly, because experience shows us that those who have to study a science of observation, such as Botany, require to concentrate their attention, in the first instance, upon a limited number of objects."

BRADBURY & EVANS, 11, Bouverie Street.

SIR DAVID BREWSTER'S NEW WORK.

This day, Third Thousand, thoroughly revised, with additional Chapters, Post 8vo., 6*s.*

MORE WORLDS THAN ONE; the Creed of the Philosopher and the Hope of the Christian. By SIR DAVID BREWSTER.

London: JOHN MURRAY, Albemarle Street.

On Saturday next, price 2*s.* 6*d.*, cloth, or in 2 Parts, 1*s.* each,

RAMBLES IN ICELAND. By PLINY MILES. Forming Parts 68 and 69 of the "Traveller's Library."

London: LONGMAN, BROWN, GREEN, AND LONGMANS.

Price 5*s.* 6*d.* cloth,

SECOND EDITION, REVISED AND ENLARGED,

ORNAMENTAL AND DOMESTIC POULTRY; THEIR HISTORY AND MANAGEMENT.

BY THE REV. EDMUND SAUL DIXON, M.A., Rector of Intwood with Keswick.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden, London.

Third Edition, considerably enlarged, price 5*s.* 6*d.*

RURAL CHEMISTRY.

By EDWARD SOLLY, F.R.S., F.L.S., F.G.S., Honorary Member of the Royal Agricultural Society of England, Professor of Chemistry to the Horticultural Society of London, Lecturer on Chemistry in the Hon E. I. Co.'s Military Seminary at Addiscombe, &c., &c.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden.

Price 1*s.* 6*d.*, free by post 1*s.* 10*d.*

LABELS FOR THE HERBARIUM, CONSISTING OF THE NAMES OF THE CLASSES, ALLIANCES, ORDERS, AND SUB-ORDERS, OF PROFESSOR LINDLEY'S "VEGETABLE KINGDOM."

So printed in large type, that they can be cut out and pasted into THE HERBARIUM.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden.

Price 3*s.* 6*d.*, free by post,

THE TREE ROSE.—Practical Instructions for its Formation and Culture. Illustrated by 24 Woodcuts. Reprinted from the GARDENERS' CHRONICLE, with additions.

CONTENTS.

Annual pruning time, principle of execution, &c.
Binding up
Budding knife
Budding, time of year, day, time of day, state of the plant, care of buds
Budding upon body
Bud, insertion of, into stock
Bud, preparation of, for use
Buds, dormant and pushing
Buds, failing
Buds, securing a supply of
Caterpillars, slugs, and snails, to destroy
Causes of success
Dormant buds, theory of replanting with, explained
Guards against wind
Labelling
Loosing ligatures
March pruning
Mixture for healing wounds
Pruning for transplantation
Planting out, and arrangement of trees
Pushing eye, spring treatment of dwarf shoots from
Roses, different sorts on the same stock
Roses, short list of desirable sorts for budding with a pushing eye
Sap-bud, treatment of
Shape of trees
Shoots and buds, choice of
Shoots for budding upon, and their arrangement
Shoots, keeping even, and removing thorns
Shortening wild shoots
Stocks, planting out for budding upon; the means of procuring; colour, age, height; sorts for different species of Rose; taking up, trimming roots, sending a distance, shortening heads, &c.; saw proper for the purpose.

GRAFTING.

Aphides, to keep down
Free-growers, remarks on
Graft, binding up and finishing [of
Grafting, advantage
Grafting, disadvantage of
Operations in different months
Preliminary observations
Roses, catalogue and brief description of a few sorts
Scion, preparation and insertion of
Scion, choice and arrangement of
Stock, preparation of.

APPENDIX.

A selection of varieties
Comparison between budding and grafting.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden.

ON MARRIAGE.

Just published (to be had free, by enclosing 1*s.* or Twelve Postage Stamps, to Mr. WATSON, Clerical Agent, Robert Street, Adelphi, London).

MATRIMONY.—A Pamphlet on Matrimonial Alliances, which merits the attention of those who wish to settle honourably in life. By a Clergyman.

AGRICULTURAL (COUNTY) REPORTS FOR GREAT BRITAIN AND IRELAND, published by the Board of Agriculture, 55 vols., 8vo, maps and plates (published at 32*l.*) 5*l.* 10*s.*; another set, 40 vols., 4*l.*—Stephens' Book of the Farm, 2 vols., royal 8vo, plates, half morocco, 2*l.* 8*s.*, 1851. Miller's Gardeners' Dictionary, 4 vols., folio, half calf, 30*s.*, calf, 30*s.*, 1811. Donn's Gardening and Botany, 4 vols., 4to (published at 14*l.* 14*s.*), cloth 26*s.*, 1831-37. Marshall's Rural Economy and other Agricultural Works, 18 vols. in 10, 8vo, half calf, 24*s.* Loudon's Encyclopædia of Gardening, 8vo, 600 woodcuts (published at 50*s.*), bds., 20*s.*, 1830. Loudon's Encyclopædia of Agriculture, 8vo, 1100 woodcuts (published at 50*s.*) bds., 20*s.*, 1831. Another Copy, cloth, 21*s.*, 1839; or half russia, 24*s.*, 1839. London's Arboretum, 8 vols., 8vo, 300 plates and woodcuts (published at 10*l.*), cloth, 4*l.* 4*s.* Loudon's Gardeners' Magazine, 19 vols., 8vo (published at 18*l.*), half calf, 3*l.*, or vols. I. to V., half calf, 10*s.* Loudon's Encyclopædia of Cottage, Farm, and Villa Architecture, &c., 8vo, 2000 woodcuts (published at 3*l.*), bds., 25*s.* 1839. Gardeners' Chronicle, &c., folio, for 1851, half calf, 6*s.*; for 1852, half calf, 8*s.* Hooker's Niger Flora, 8vo (published at 21*s.*), cloth, 12*s.* Hooker's London Journal of Botany, 6 vols., 8vo, in numbers, 141 plates (published at 9*l.*) 32*s.*, 1813-47. A Catalogue of Books on Botany, Agriculture, Gardening, &c., gratis.

London: JOHN PETHERAM, 94, High Holborn.

PRICE FOURPENCE OF ANY BOOKSELLER.

CONTENTS OF THE NUMBER FOR SATURDAY LAST, SEPTEMBER 16, OF

THE ATHENÆUM.

JOURNAL OF ENGLISH AND FOREIGN LITERATURE, SCIENCE, AND THE FINE ARTS.

Twenty-four large Quarto Pages.

Reviews OF, WITH EXTRACTS FROM—

The Life and Times of Sir Walter Ralegh. By C. Whitehead.
Laura. By George Sand.
Forest Scenes in Norway and Sweden. By the Rev. H. Newland.
Paris in Little [Les Petits Paris—Paris Boursier; Paris Comédien]. By the Authors of Mémoires de Bilboquet.
Shooting: A Manual of Practical Information on. By R. Blakey.
Hermœ (Hermen). By Paul Heyse.
The History of Magic. By J. Ennemoser.
Descriptive and Historical Notices of Northumbrian Castles, &c. By W. S. Gibson.
Fish and Fishing in the Lone Glens of Scotland. By Dr. Knox.
Minor Minstrels: Poetical Tentatives. By Lynn Erith—The Deluge. By the Rev. J. S.—Poetical Works of Andrew Park—The Last of the Ravenserth. By W. G. Starbuck.

WITH SHORTER NOTICES OF—

The Battles and Battle-Fields of Yorkshire. By W. Grainge.
Theologia Germanica. By Dr. Pfeiffer.
The Chronicles of Merry England rehearsed unto her People.
Evenings with the Romanists. By the Rev. M. H. Seymour.
The Vision of a Midsummer Morning's Dream. By P. Starr.
Lectures on some of the Arts connected with Organic Chemistry. By W. T. Brande.
Report of Twenty-one Years Experience of the Dick Bequest. By A. Menzies.
Educational Books—Reprints—New Editions, &c.

Original.—"Stay with Us." By Frances Brown.

Foreign Correspondence.—Alexandria—An Organ Concert in Switzerland.

Weekly Gossip.—Materials for Paper—Dr. Henry's 'Life of Dalton'—Provincial Festivals—Marochetti's Introduction to England—Longitude between Greenwich and Paris—Ornamental Productions—Shepherd's Electric Clocks—Wilts Archæological Society—Stoke Newington Literary Institution.

Societies.—Report of the Proceedings of the Entomological.

Fine Arts.—Cresswell's Sketches of the Voyage of H.M.S. Investigator—Barnard's Landscape Painting—Dictionary of Architecture—New Publications.

Music and the Drama.—Provincial Musical Festivals—Paris Music—Drury Lane Theatre—Mrs. Fitzwilliam—Paris Season—Italian Church Music—English and French Theatricals.

Miscellanea.—Number of Deaf and Dumb.

The Athenæum may be ordered of any Bookseller.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. ... Victoria Street, in the Parish of St. Margaret and St. John, Westminster, both in the County of Middlesex, Printers, at their Office in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul, Covent Garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, Sept. 23, 1854.

THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 39.—1854.] SATURDAY, SEPTEMBER 30. [PRICE 6d.

INDEX.

Agri. Society of Ireland	636 c	Ox teeth	635 c
Blight in Wheat	636 b	Pathology, vegetable	628 a
Books noticed	631 c	Pavettas	629 c
Calendar, horticultural	632 a	Pears, to prune	628 b
— agricultural	637 b	Pinus Pinaster, to sow in sand	632 c
Cattle, Rape-cake for	634 a	Plants, new	631 b
Census of 1851, rev.	630 c	Potatoes, large crop of	630 c
Cholera and fungi	627 c	Prescient fic school	627 c
Dahlias, seedling	631 b	Reaping, cost of	636 b
Desfontainia	630 c	Revalenta arabica	632 c
Drainage	636 b	Rivers' (Mr.) nursery	631 b
Food, Rape-cake as	634 a	Savings' Banks	635 a
Fungi and cholera	627 c	Seats, sheltered	630 b
Grass crop, Ayrshire	633 b	Strawberry, Black Prince	630 c
Hitcham Hort. Soc.	629	Tree-lifter, M'Glashen's	630 c
Labourers' shows	633 c	Turnips, Finger and Toe in	636 b
M'Glashen's tree-lifter	630 c	Vegetable pathology	628 a
National Floricultural Society	631 c	Walks, cure for, weeds on	630 c
Northampton Agri. Soc.	637 a	Weeds, cure for on walks	630 c
Orchard houses	631 b	Wheat blight	636 b
Ovules, fertilising	629 a	Woods and forests	627 a

LISIANTHUS RUSSELLIANUS.

J. AND J. FRASER beg to offer the above, in strong and healthy plants, such as will make large specimens for flowering next season, at 2s. 6d. each.
Lea Bridge Road, Essex, September 23.

CHRYSANTHEMUMS.

JOHN CLARK begs to offer a large collection of all the best varieties of the above, both large-flowering and Lilliputian kinds; fine strong bushy plants to flower this autumn, at from 6s. to 12s. per dozen.

Also a large number of fine, compact, grafted plants of EPIPHYLLUM TRUNCATUM for winter flowering, many of them fine specimens in 8-inch pots, 2 feet high, and exceeding 6 feet in circumference, in splendid condition, from 5s. to 15s. each. Also a first-rate collection of PELARGONIUMS, FUCHSIAS, VERBENAS, &c.

Belle Vue Nursery, and 58, High Street, Cheltenham.

CATTELL'S EARLY BARNES CABBAGE,
" RELIANCE "
GREEN COLEWORT "

Plants of the above are now ready, 5s. 6d. per 1000, stout bedded; 4s. 6d. per 1000 good seedlings. No charge for crates, baskets, or packing. Packages of 5000 or more, delivered to the Edinbridge Station, South-Eastern Railway, carriage free.

Orders from unknown correspondents to be accompanied with post-office orders made payable here.—Address,
JOHN CATTELL, Westerham, Kent.

MAY'S EARLY ASH-LEAVED KIDNEY POTATOES, free from disease, 10s. per bushel, 14s. per cwt., 12l. per ton, sacks included.

EARLY FORTYFOLD POTATOES.—The editor of the *Gardeners' Chronicle* says, "These are a well-known kind, of good quality; a good cropper, and is found by us to be quite as early as the Ash-leaved Kidney, if planted early, escaping all disease, yielding immense crops." They are of the red kind, and round. 8s. per bushel, 11s. per cwt., 9l. per ton, sacks included.

Address, HENRY MAY, The Hope Nurseries, Bedale, Yorkshire.

STRAWBERRIES.

J. HARGREAVES is now sending out Strong Plants of the four new Strawberries, viz., Ajax, Ruby, Captain Cook, and Fillbasket, at 10s. per hundred, or 25 each of any two sorts for 6s., package included; also, all the old sorts at 3s. per hundred.—Address, JOHN HARGREAVES, High Street Nursery, Lancaster.

STRAWBERRIES.

WILLIAM NICHOLSON is now sending out strong well-rooted Plants of his four new and distinct Strawberries, viz., AJAX, a very fine large dessert fruit, very beautiful, solid, and juicy; RUBY, ditto, a great bearer, and forces well; CAPTAIN COOK, market fruit, large, and a great bearer; FILLBASKET, ditto: 400 Plants of the above sorts for 2l.; 200 do., 1l. 4s.: 100 do., 15s.; 50 do., 10s.; box included. Most of the old and new sorts can be supplied.

*** See Mr. J. W. KISMONT'S remarks on the above Strawberries, printed in No. 31, 1854, page 501, of this Paper.

Post-office Orders, payable at Yarm, Yorkshire, or a cash remittance required with the order.

Egglescliffe, near Yarm, Sept. 30, 1854.

"OMAR PACHA" STRAWBERRY.

WILLIAM JAMES WARD is now sending out well rooted plants of the above excellent Strawberry, which was awarded a Medal by the judges at the Royal Botanic Gardens Exhibition, July 5th, 1854. It has also been submitted to Mr. Marnock, Mr. Spencer, Mr. Thompson, and several practical gardeners, who have all pronounced a favourable opinion of it. Also by Mr. Powell, of the Royal Gardens, Frogmore, in the descriptive list of new Fruits, in the "Florist and Fruitist" for the present month, accompanied with a woodcut.

	£	s.	d.		£	s.	d.
100 plants	3	0	0	25 plants	1	0	0
50 "	1	15	0	12 "		12	0

Prospect Hill, Reading.—Sept. 30, 1854.

R. SMITH is now sending out his New Seedling Strawberry, SIR CHARLES NAPIER, the best forcing one of the day, admired by all who have seen its growth, and for colour not one to equal it.—Price, 3l. per 100; 50 for 30s.; 25 for 1l.

R. SMITH, Market Gardener, Richmond Road, Twickenham; or G. GLADMAN, Salesman, Covent Garden Market, London.

MYATT'S new Seedling Strawberry, "ADMIRAL DUNDAS."—This is the most extraordinary variety, for size and productiveness, that has yet been raised at Manor Farm; it is much larger and a better flavour than either the Surprise or Mammoth, and ripens off the late fruit to advantage.

J. M. & SONS can confidently recommend this, as being superior to any large variety that has come under their notice.

Strong, well-rooted runners are now ready, and will be carefully packed and delivered free to any part of London, at the following scale of charges:—100, 50s.; 50, 30s.; and 25, 16s. Also strong Plants of MYATT'S British Queen, Cinquefolia, Eleanor, Surprise, Globe, Eliza, Hooper's Seedling, Keens' Seedling, Black Prince, and Barnes' Bicton Pine, 5s. per 100.

Manor Farm, Deptford, September 30.

JUST HARVESTED.

SUTTON AND SONS, SEED GROWERS, Reading, have now harvested some fine seed of true Early Short-horn Carrot, Mustard, Cress, Lettuce, Early Peas, and other Seeds for early sowing.

The crops being fine and the harvest favourable, prices will be very moderate this season.

THE BEST TWELVE HYACINTHS FOR POTS or GLASSES. (*Parcels if not less than 20s. value carriage free.*)

The Best 12 HYACINTHS Imported (by name)	...	9s. 0d.
Fine Double Ditto for open ground (mixed) ...	...	4 0
CROCUSES (many sorts mixed) per thousand	...	12 6
TULIPS, fine mixed, early for pots or borders, per 100		6 0
ANEMONES, fine double mixed ...	...	5 0

And all other Bulbous Flower Roots at low prices, as per Catalogue just published.—JOHN SUTTON AND SONS, Seed Growers, Reading, Berks.

HYACINTHS	4s., 6s., and 9s. per doz.
ANEMONES, best double varieties	5s. per 100.
RANUNCULUS " ...	3s. to 5s. "
CROCUS ROOTS, very large ...	1s. 6d. to 2s. "

And all other kinds of Dutch Roots, imported direct from the first houses in Holland, at the lowest remunerative prices. Apply to WILLIAM E. RENDLE AND CO., SEED MERCHANTS, Plymouth.

TWELVE SUPERIOR HYACINTHS *for 6s.; mixed sorts, 4s. per dozen, as well as every kind of Bulbous Root, can be obtained carriage free from* WILLIAM E. RENDLE AND CO., SEED MERCHANTS, Plymouth.

FINE NEW GERANIUMS, £1 1s. *per dozen.— For names of varieties, see* RENDLE'S *New Plant Catalogue, just published.*

Apply to WILLIAM E. RENDLE AND CO., NURSERYMEN and SEED MERCHANTS, Plymouth.

PERMANENT AND LAWN GRASS SEEDS.

WILLIAM E. RENDLE AND CO., SEED MERCHANTS, Plymouth, *have a fine stock of* NEW GRASS SEEDS, *and can supply any quantity for present sowing.*

Also new Winter Tares, White Mustard, Trifolium incarnatum, New Italian Rye-grass, &c.

WILLIAM E. RENDLE & CO., Seed Growers, Plymouth.

PRIMULA SINENSIS.

J. AND J. HAYES beg to offer their fine fringed varieties of Red and White PRIMULAS; fine strong plants, in 60-sized pots, ready for shifting, at 6s. per dozen, packing and carriage included, to any railway in London. All orders from unknown correspondents to be accompanied with a Post Office order, payable to J. & J. HAYES, Edmonton, Middlesex.

FINE BLOOMING BULBS, Carriage paid
GUERNSEY and BELLADONNA LILIES, 4s. per doz.
VALLOTA PURPUREA ... ... 21s. "
AMARYLLIS FORMOSISSIMA ... ... 6s. "

Hyacinths, Gladiolus, Narcissus, Anemones, Ranunculus, Crocus, &c., may be obtained of
B. PAGE & Co., SEED-MERCHANTS, Southampton.

Trifolium incarnatum, 5d. per lb.; Davis' Winter Vetches, 42s. per bushel, 11s. per peck. Trade price of Guernsey Lilies to be had on application.

EARLY FLOWERING BULBS.

12 HYACINTHS, to name, best kind	... ...		9s. 0d.
12 " mixed	... ...		4 6
TULIPS, best, mixed		per 100	5 0
CROCUS and SNOWDROPS ...		"	2 0
NARCISSUS and JONQUILS ...		per dozen	2 0

Every other kind at equally low prices, and true to name, at W. CULLINGFORD'S, 1, Edmund Terrace, Ball's-pond Road, Kingsland and Islington, London.

SPLENDID GLADIOLI.

A. VAN GEERT, NURSERYMAN, Ghent, Belgium, begs to offer to the Trade and Amateurs the following Gladiolus, all fine and new varieties of Gandavensis.

Apollon	40s. per 100	Vicomte d'Narcillac 105s. per 100
Madame Herincq	105s. "	Fanny Rouget ... 60s. "
L'Aurore... ...	45s. "	Couranti fulgens. 85s. "
Rosea carnea ...	42s. "	Triomphe d'Enghien 63s. "
Rubens	45s. "	DWARF VARIETIES.
Ulysse	35s. "	Fulgens aurea picta 40s. per 100
Mr. Blonet ...	50s. "	Intermedius ... 35s. "
Mr. Georgeon ...	60s. "	Psittacinus major 25s. "
Madame Condert	60s. "	

Berberis Neubertii, new and hardy, with beautiful foliage, fine young plants, 15s. each; and strong 30s. each.

A. V. G.'s New Catalogue of Plants, just published, may be had from his Agent, Mr. R. Silberrad, 5, Harp Lane, Great Tower Street, London.

DICKINSON'S ITALIAN RYE-GRASS SEED is ready for delivery (by permission of Mr. East), from 7, Curzon Street, May Fair, London, as before. 7s. per bushel for present payment only. Post-office orders Piccadilly.

PINE PLANTS.

WILLIAM OLIVER has a few strong, clean, and healthy FINE PLANTS of the famous winter sorts—the Montserrats, Black Jamaica, &c.—to dispose of. Price, &c., on application.—Combe Gardens, near Coventry, Sept. 30.

TO BE SOLD, PINE PLANTS, Fruiting and Succession.—For particulars enquire at Mr. MILLER'S, Hartshill Nursery, Newcastle-under-Lyne, Staffordshire.

SEED WHEAT.

TO BE SOLD, improved BROWICK RED SEED WHEAT, grown on Bushey Grove Farm, part on sandy loam, with chalk subsoil, and part on strong loam, with clay subsoil.—Apply to Mr. TALLANT, Bushey Grove Farm, Watford, Herts.

PELARGONIUMS.

J. DOBSON AND SON beg to announce that their annual descriptive Catalogue of the above, containing full descriptions of the best varieties of Beck's, Foster's, Hoyle's, and other raisers, at reasonable prices, may be had on application.
Woodlands Nursery, Isleworth.

NEW PELARGONIUMS.

J. DOBSON AND SON beg to call attention to the advertisement in this Paper of August 12, which contains a full description, with prices, of Beck's and Fuller's new and beautiful Seedlings, to be sent out the first week in October.
Woodlands Nursery, Isleworth.

HYACINTHS AND DUTCH BULBS.

HENRY GROOM, Clapham Rise, near London, by appointment FLORIST TO HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to say that he has received his HYACINTHS AND DUTCH BULBS in excellent condition, and that they are much finer than usual.—His CATALOGUE of BULBS, &c., will be forwarded on application.

TULIPS.

HENRY GROOM, Clapham Rise, near London, by appointment FLORIST TO HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to inform the AMATEURS OF TULIPS that his CATALOGUE is ready, and will be forwarded by post on application. He is happy to say that from the superior growth of last spring, he has been enabled to make a considerable reduction in the prices.

CLARKE AND CO.'S CATALOGUES OF DUTCH BULBS are out.

RARE AND HARDY CONIFERS.—A detailed List, with prices of the most Hardy and Ornamental Conifers, suitable for planting on the sea coast and other exposed situations, will be found in YOUELL AND CO.'s Advertisement of Sept. 9.
Royal Nursery, Great Yarmouth.

JOHN SCHOFIELD AND SON beg respectfully to inform their Friends and the Public that their AUTUMN CATALOGUE of Carnations, Picotees, Pinks, Pansies, Hollyhocks, &c., is now ready, and may be had on application, free.

N.B. Pansy Seed, selected from the finest show flowers, 2s. 6d., per packet; also a few packets of extra fine Calceolaria Seed 2s. 6d. each.—Knowsthorpe, near Leeds, Yorkshire.

GEORGE JACKMAN begs to announce that he has just published a new and complete CATALOGUE of his Ornamental Evergreens, Conifers, Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., and may be had on application by enclosing two postage stamps.

Woking Nursery, 1½ mile from Woking Station, South Western Railway, where all Trains stop, and where capital conveyances may be had.—September 30.

THOMAS JACKSON AND SON, having a large healthy Stock of STOVE, ORCHIDACEOUS, and GREENHOUSE PLANTS, respectfully invite intending purchasers to an inspection; in addition to the established favourite kinds will be found many novelties now offered at very low prices.
Kingston, near London.

DUTCH BULBS.

THOMAS CRIPPS, NURSERYMAN, SEEDSMAN, and FLORIST, respectfully announces that his annual importation of the above has just arrived in excellent condition, Catalogues of which, comprising, amongst others, many new and choice varieties of Hyacinth, Crocus, Tulips, Anemones, &c., may be had on application.—Tunbridge Wells, Sept. 30.

DUTCH BULBS.

JOSEPH HARRIS begs to announce that he has received his annual consignment of Bulbs from Holland, comprising the best sorts of Hyacinths, Tulips, Crocuses, Narcissus, &c. They are very fine and moderate in price. Catalogues may be had on application. Cheltenham Road Nursery, Bristol.

DUTCH BULBS.

GARAWAY, MAYES, AND CO. beg to announce that they are now prepared to execute orders for the above, consisting of Hyacinths, Tulips, Crocus, Narcissus, Anemones, Ranunculus, and all kinds of BULBS for early forcing, which they have carefully selected from the leading growers in Holland. The Roots are unusually fine this season, as well as moderate in price. All orders entrusted to them shall have strict attention, and they feel assured cannot fail to give satisfaction.

G. M. & Co. having for many years flowered annually several hundred Hyacinths, Tulips, &c., have had an opportunity of selecting those flowers only which are most constant and distinct for glass and pot culture.

Good Border Hyacinths, 4s. per dozen; fine named ditto, 6s., 9s., to 12s. per dozen.—Durdham Down Nurseries, Bristol.

DUTCH FLOWER ROOTS.

PETER LAWSON AND SON, of Edinburgh, Seedsmen and Nurserymen to the Queen, beg respectfully to acquaint their customers and the Public that they have now opened a place of business in London for the convenience of their English correspondents, and will be prepared to execute orders of every description there. They have just received a supply of DUTCH FLOWER ROOTS, consisting of all the esteemed varieties, of which Catalogues may be had on application, and for which they solicit early orders.

London, 27, Great George Street, Westminster, Sept. 30.

NORTHGATE NURSERY, CHICHESTER.

JAMES GRAHAM, late Gardener and Steward to Mrs. Smith, Bersted Lodge, Bognor, begs most respectfully to announce to the Nobility, Clergy, and Gentry, and to the public generally, that he has succeeded to the long established NURSERY and GARDEN SEED BUSINESS of Messrs. SILVERLOCK and SON. J. G. trusts that by constant personal attention, and from his experience in the practice of Horticulture, as well as from his being well known in the neighbourhood, he may venture to solicit a continuance of the patronage and support so long bestowed on his predecessors.—September 30.

NEW HARDY CONIFERS.

HUGH LOW AND CO. announce to their friends and the public that they have been appointed by Messrs. Parsons & Co., of Flushing, New York, Sole Agents in this country for the sale of the undernamed CALIFORNIAN CONIFERS. The Plants are raised from seed, and will be delivered as soon as the growth of the present season is sufficiently matured. THUJA GIGANTEA (Nuttall); *synonymes* LIBOCEDRUS DECURRENS (Torrey); THUJA MENZIESI (Douglas); THUJA CRAIGIANA (Jeffreys).—A magnificent species, and the most desirable Tree known to exist in California. It was discovered by the botanists of the United States Exploring Expedition, and is described by Professor Torrey, in "Plantæ Fremontianæ," as growing near the upper waters of the Sacramento, from lat. 38° 40′ to 41° N. He also states it is a noble tree, attaining a height of 120 to 140 feet, with a trunk 7 feet in diameter, rising from 80 to 100 feet without a limb. This tree will be perfectly hardy, and will take the foremost rank amongst our ornamental trees, as the foliage is most beautiful, reminding an observer of some of the more graceful species of Lycopodium.

The Plants when delivered will average 1 foot to 1½ foot in height, and being of such unusual size for a new Conifer, will produce an immediate effect. Price 31*s.* 6*d.* each.

ABIES NOBILIS.—This well-known Fir requires no description. Plants from seed have long been desiderata, and those now offered are strong and well shaped, from 6 inches to 1 foot in height. Price 31*s.* 6*d.* each.

In addition to the above, H. L. & Co. have to offer from the same source strong Plants of several species of hardy CALIFORNIAN PINES, collected in districts little explored. Amongst them will be found Pinus Jeffreyana, Pinus Parryana, offered for the first time; and judging from the CONES of the different species, it may with certainty be inferred that several others will prove entirely new to this country. Price 84*s.* per doz.

Messrs. Parsons & Co. having been successful in raising these fine Conifers in considerable numbers, have determined on offering them at the low prices quoted above, with a view to insure their speedy introduction into every collection in Europe.

Discount allowed only when twelve plants of a sort are taken.

Clapton Nursery, London, Sept. 30.

THE LARGEST AND CHEAPEST ESTABLISHMENT IN ENGLAND for GERANIUMS (show and fancy), FRENCH GERANIUMS, FUCHSIAS, VERBENAS, FAIRY ROSES, CHRYSANTHEMUMS, HELIOTROPES, CINERARIAS, CALCEOLARIAS, PRIMULAS, and other soft-wooded plants, is the Floral Nursery, Acton Road, Turnham Green, near London. More than 250,000 plants are there cultivated annually.

The stock of show Geraniums exceeds 50,000, and comprises upwards of 750 varieties, amongst which almost every known kind will be found. The newest sorts, such as Carlos, Virginia, Rosa (Foster's), Leah, Picta, Marginata, Empress, Neatness, &c., can be had at 4*s.* 6*d.* each, or 50*s.* per dozen. The older varieties from 9*s.* to 40*s.* per dozen.

Of FANCY GERANIUMS there are upwards of 10,000, including 450 sorts, at prices surprisingly low.

VERBENAS (of which more than 30,000 comprise the stock) are 8*s.* per dozen for all the varieties sent out in 1854 by Smith, Bragg, Chauviere, Turner, Mockett, and others, and 6*s.* per dozen for the older kinds.

The selection of FRENCH GERANIUMS consists of 40 distinct sorts (exclusive of those English Geraniums which some class with them), at 2*s.* 6*d.* each, or 25*s.* per dozen.

SEEDLING CINERARIAS (10,000), from seed of first-rate flowers, at 4*s.* per dozen, in 60-sized pots.

20,000 SEEDLING HERBACEOUS CALCEOLARIAS now on hand at 4*s.* per dozen in 60 sized pots. These flowers have been raised from the seed of the best of last year's stock, which received general praise.

An immense quantity of good fimbriated PRIMULAS at 4*s.* per dozen in 60 sized pots, and 6*s.* per dozen in 48's.

CHRYSANTHEMUMS (Lilliputian and large flowering) at 6*s.* and 9*s.* per dozen for plants which will flower this season. Large magnificent plants at 18*s.* and 15*s.* per dozen—all the best sorts.

The foregoing have been selected as examples only, it being impossible within the limits of an advertisement to afford particulars of a stock so extensive; Catalogues will, however, be forwarded to all parts gratis.

Every possible exertion will be made to give the most perfect satisfaction to all who may favour this Establishment with their patronage. None but thoroughly established Plants will be sent out, and full reliance may be placed on prompt attention and fair dealing.

The Trade will be liberally dealt with. Provincial Nurserymen and Florists will do well to try this Establishment.

Terms cash or a satisfactory reference.

JOHN WESTWOOD, PROPRIETOR.

THE PERPETUAL TREE VIOLET, or DOUBLE VIOLA ARBOREA.—The original grower of this, the true variety of the above beautiful Violet, now offers it to the public; it has surpassed all others, and now stands without an equal for its size of flowers, fragrance, and perpetual blooming; and as a plant for the Conservatory or Greenhouse, nothing can equal it. Large plants, 6*s.* per dozen; smaller ditto, 3*s.*

DOUBLE WHITE TREE VIOLET.—This is also a fine variety, and resembles the other in many respects, with the exception of its colour. The stock of this is small, in consequence of the great demand for it last season; parties requiring plants should not delay their orders. 6*s.* per dozen.

THE RUSSIAN SUPERB VIOLET.—One of the finest of single Violets, large blooms, with long stems, and most delightful fragrance; will bloom well through the season if sheltered from the heavy rains and severe frosts during the dead of winter. Plants 3*s.* per dozen.

A TREATISE on the best and most effectual mode of cultivating the VIOLET, post free for 12 stamps, or sent gratis with all orders above 5*s.*

GIANT SCARLET BROMPTON STOCK plants are now ready for planting out; the spikes of flower are very large, (measuring from 18 to 24 inches in length) and so fragrant that they are admired by all who have seen them. Fine strong plants, 6*d.* per dozen, or 4*s.* per 100.

STRAWBERRY PLANTS.—Good strong plants of the following superb varieties can be supplied:—Nimrod, 10*s.* per 100; Prince of Wales, 10*s.* do.; Ajax, 5*s.* do.; Ruby, 5*s.*; Myatt's Eleanor, 3*s.* do.; British Queen (true), 3*s.* do.; Black Prince, 3*s.* do.; Cremont's Perpetual, 3*s.* do.; Victoria, 5*s.* do.; Surprize, 3*s.* do.; and a great number of other good old varieties, at 3*s.* per 100.

POLYANTHUS SEED, saved from the best laced varieties, 1*s.* per packet.

ANTIRRHINUM SEED, all saved from the best named varieties, 1*s.* per packet.

EXTRA FINE SWEET WILLIAM SEED, saved from all the best and most beautiful varieties, 1*s.* per packet.

VERY SUPERIOR WELL RIPENED HOLLYHOCK SEED, 1*s.* per packet.

LORD KEYNON'S FAVOURITE CUCUMBER is the best and most productive for winter cultivation ever grown, requiring less heat than any other of the kind. It is a very handsome fruit and free setter. Good old seed of the above true variety may be had, price 2*s.* 6*d.* per packet.

The Violets and Seeds will be sent postage free, but the Strawberry Plants and Stocks will be sent by hamper, package free.

Any of the above will be forwarded on receipt of Post Office Order, or Penny Postage Stamps, for the amount by

EDWARD TILEY, Nurseryman, Seedsman, & Florist,
14, Abbey Churchyard, Bath, Somersetshire.

DUTCH FLOWER ROOTS.

WILLIAM E. RENDLE & Co., SEED MERCHANTS, Plymouth, have just received, direct from one of the first establishments in Holland, a very large assortment of

DUTCH FLOWER ROOTS,

comprising all the best varieties of Hyacinths, Tulips, Ranunculuses, Anemones, Gladiolus, Iris, Liliums, Crocus, Ixias, and all other kinds of Flowering Bulbs.

They are all come to hand in most excellent condition, and will insure satisfaction to all purchasers.

COLLECTIONS OF FLOWERING BULBS.

	£	s.	d.
No. 1. A Selection of all the most approved sorts for a large garden	3	0	0
No. 2. A Selection, in smaller quantities	2	0	0
No. 3. A Selection, for a small garden	1	0	0

These Collections have given the greatest satisfaction to all who have had them, and can be recommended with the greatest confidence.

All Orders for Roots above 2l. Carriage paid to any station on the South and Western Railways, and above 5l. to any station in England.

STRAWBERRIES.—*This is the best time for planting Strawberries, especially after the late rains we have had. The Subscribers have a very superior stock of the following choice varieties:—*

INGRAM'S PRINCE OF WALES.—The principal sort grown at Frogmore for the Royal table, 20*s.* per 100.

PINCE'S NIMROD—highly recommended by Lucombe, Pince, & Co., 40*s.* per 100.

NICHOLSON'S AJAX ...
" RUBY ...
" CAPTAIN COOK
" FILLBASKET ...
} Four excellent varieties, fully described by Mr. Nicholson. Price 7*s.* 6*d.* per 100.

TROLLOPE'S VICTORIA—A very superior and most prolific variety, 5*s.* per 100.

CUTHILL'S BLACK PRINCE—5*s.* per 100.

KITLEY'S GOLIATH—5*s.* per 100.

All the other choice varieties in cultivation. For prices and further particulars, consult RENDLE'S NEW AUTUMNAL CATALOGUE, *just out, to be had in exchange for two penny stamps.*—Apply to

WILLIAM E. RENDLE AND CO., SEED MERCHANTS, Plymouth.

A. VERSCHAFFELT, NURSERYMAN, Ghent, Belgium, begs to offer the following Plants:—

	£	s.	d.
Begonia Verschaffelti	0	5	0
Brugmansia albido-flava	0	5	0
Isoloma Trianei	0	5	0
Sciadocalyx Warscewiczi	0	2	6
Clematis Helena	0	2	6
" Sophia	0	2	6
Embothrium lanceolatum	0	7	6
Camellia Imperatrice Eugenia	0	7	6
Azalea indica Bealii	0	5	
BERBERIS NEUBERTII—hybrid from Mahonia fascicularis and Berberis atropurpurea. This is one of the finest plants obtained for many years, quite hardy, strong plants	1	10	0
Ilex cornuta	0	3	6
" furcata	0	2	6
Quercus filicæfolia (beautiful)	0	15	0

AUTUMNAL ROSES.

G. CLARKE respectfully invites the attention of the lovers of ROSES to his unrivalled Collection, extending over Ten Acres of ground, which may now be seen in full bloom. Orders taken now, and executed in November. Standards, fine heads and straight stems, 18*s.* per dozen. Dwarfs, in pots, of all the leading sorts of Hybrid Perpetuals, Bourbons, Teas, and Chinas, on their own roots and budded on the Manetti (suitable for Bedding or pot Culture), 12*s.* per dozen. The following new Roses are also in pots, fine strong Plants; those marked thus * are budded on the Manetti.

HYBRID PERPETUALS.

Gloire de France	*Souvenir de Madame Lille
General Jacqueminot	*General Castellane
Jules Margottin	*Eugene Sue
La Quintinie	*Queen Victoria (Paul's)
*Lady Shelley (Mitchell's)	*Joan of Arc
*Prince Kotchouby	Alexandrine Bachmeteff—Bourbon
*Paul Dupuy	*Prince Albert (Paul's)—Tea
*Baronne de Heckeren	Gloire de Dijon
*Madame de Manoil	
*Madame Rivers	

FRUIT TREES.

G. C. also begs to state that he has a large stock of Trained Trees, Apricots, Peaches, Nectarines, &c., which are very fine; they being planted on maiden soil, have remarkably fine wood and fibrous roots. Also a fine stock of every description of Evergreens, Coniferæ, &c. &c.

N.B. Catalogues may be had on application at the Nursery, Streatham Place, Brixton Hill, Surrey.—Sept. 30.

TO GENTLEMEN ENGAGED IN PLANTING.

WATERER AND GODFREY respectfully invite attention to their stock of the following very desirable HARDY PLANTS.

Araucaria imbricata, from 2 to 7 feet high; as handsome as plants can be.	Pinus canadensis, 3 to 8 feet
Cedrus Deodara, in any quantity, from 1 to 3 feet high	Cupressus macrocarpa or Lambertiana, 4 to 7 feet
Do. do., 4, 5, 6, 7, 8, and 10 feet high; splendid plants	" thyoides variegata, 3 to 4 feet (the variegated white Cedar)
Cedars of Lebanon, 3, 4, 6, and 10 feet high	Juniperus, Upright Irish, perfect columns, 3 to 7 feet
Pinus Douglasi, 3 to 10 feet	" chinensis, 2 to 8 feet
" insignis, 2 to 7 feet	Yew, common English, 3 to 8 feet
" Menziesi, 3 to 7 feet	" Irish, 4 to 10 feet
" pinsapo, fine plants, 3 to 6 feet	" gold-striped, 1½ to 3 feet
" Nordmanniana, 1½ to 3 ft., all from seed and remarkably handsome	" do., tall standards, 4 to 7 ft.
" nobilis, 1½ to 2 feet; a few larger, 5 and 6 feet high, on their own roots, and with perfect leaders	" Dovaston, or Weeping, worked on tall straight stems
" Montezumæ, 2 to 4 feet	Thuja aurea, the finest plants in the country
	Libocedrus chilensis, the finest plants in the country
	Large variegated Hollies
	" Standard Bays

Also an immense stock of large Evergreens, Standard Ornamental Trees, &c.

All the plants here offered may be seen, growing in our nursery; they are removed every year, and will travel any distance with perfect safety. Of some, such as Araucarias, Deodaras, Golden Yews, Thuja aurea, Pinus nobilis, Nordmanniana, we have any quantity; and the plants, for root and branch, are not to be surpassed. Priced Catalogues will be forwarded on application, enclosing two postage stamps, to WATERER and GODFREY, nephews and successors of the late Hosea Waterer, Knap Hill Nursery, Woking, Surrey, near the Woking Station, South-Western Railway, where all trains stop, and where capital conveyances can be obtained.

The 2d. stamp will also include a descriptive Catalogue of their American Plants, Roses, and Nursery Stock in general.

WILLIAMS' EVERGREEN CLIMBING ROSE.

TO BE SENT OUT THE END OF OCTOBER.

WM. WOOD AND SON, of Woodlands Nursery, Maresfield, near Uckfield, Sussex, have been appointed agents for the sale of the above splendid ROSE. This interesting and valuable addition to the class of Evergreen Climbing Roses was raised by the late John Williams, Esq., Pitmaston; it is a seedling from Ayrshire splendens crossed with Yellow Tea; its rapid growth and elegant habit is precisely like the Ayrshire splendens, while its glossy foliage, and long lemon-coloured buds, partake of the character of the Yellow Tea; its flowers are creamy white, deliciously sweet-scented, and are borne in long racemes of 12 to 20 on a single shoot, being produced from every axil. It is highly desirable for covering Walls, Lattice Work, Verandahs or Buildings of any kind, and as a Pillar Rose is unequalled, being of an extremely elegant habit for forming festoons or arches, and is also very hardy. For Bouquets it is a most beautiful variety, producing an immense number of its finely-formed buds. It only requires to be seen to be pronounced the best Climbing Rose for all purposes of cultivation. Good established plants at 3*s.* 6*d.* each, with the usual allowance to the Trade.

SEED POTATOES: the "BRITISH QUEEN."—The above variety is well worthy of the attention of private growers, where yield and quality are objects. They do not require any forcing, and are ready to take up in May, and quite ripe in June. Numerous testimonials have been received from parties who had small quantities sent on trial last season. The following is from Mr. J. Basting, Gardener to Mrs. Campbell, Birkfield Lodge. "Sept. 16th, 1854.

"Sir,—The quarter peck of British Queens you sent me last year on trial have produced me over two bushels of very fine Potatoes; they are the best crop that I have seen for the last 20 years, and I have much pleasure in recommending them to your numerous customers.

"J. BASTING,
"Gardener to Mrs. Campbell, Birkfield Lodge, Suffolk."

Price 30*s.* per sack of 16 stone; this includes Carriage paid to London and sack. All orders must be accompanied with a remittance.—A fresh supply of the Early Short-top Ash-leaf Kidney will be ready to send out on Wednesday next, price 30*s.* per sack.

P.S. An abundant supply of the Early Ashleaf Kidney has been received this week, and orders to any extent can now be executed; price 30*s.* per sack.

JOSEPH WILSON, Seed Potato Merchant, Ipswich.

SWEETWILLIAMS.

"THE most extraordinary movement that has ever taken place in the floral world." Such is Mr. Glenny's opinion of Mr. HUNT'S SWEETWILLIAMS, in the "Horticultural Journal," for July 15, 1854.

The "Florist," for August, in its report of the National Floricultural Society, says, "Mr. BRAGG exhibited a very fine collection of Mr. Hunt's Sweetwilliams, remarkable for form and texture, the petals being stiff, smooth, and well rounded, and varying in colour from white, with carmine centres, to brilliant crimson."

The editor of the "Midland Florist," in the number for August, describes them as "round, smooth on the edge, close in the truss, distinct in colour; in fact, beautiful in the extreme."

See also "Midland Florist," for September, 1853.

In the "Gardeners' Record," for September, 1853, Mr. Neville pronounces them as "large, perfectly smooth, and possessing properties worth the notice of amateur florists, and will, no doubt, if sent out, soon become general favourites."

W. BRAGG, of the Star Nursery, Slough, has much pleasure in informing the admirers of the above new and truly beautiful Flowers, that he is now prepared to send out strong healthy Plants, at 7*s.* 6*d.* per dozen.

The usual Allowance to the Trade. A list of those Nurserymen who ordered Plants will be published.

GEORGE SMITH has to offer the following new and CHOICE GERANIUMS, in fine healthy plants, at 36*s.* per dozen, viz.:—Attraction (Foster's), Cloth of Gold, Lucy, Rosa, Carlos (Hoyle's), Regalia, Sanspareil, Virginia, Duchess of Wellington (Turner's), Picta (Beck's), Neatness, Leah, Empress, Rebecca.

Fine Plants at 20*s.* per dozen.—Ariadne, Astrea, Albina, Amazon, Basilisk, Butterfly, Bride of Abydos, Commissioner, Chieftain, Exhibitor, Eurydice, Enchantress, Eleanor, Gertrude, Ganymede, Harriet, Incomparable, Kulla, Leonora, Lagoon, Magnet, Mochanna, Medora, National, Novelty, Optimum, Oscar, Pasha, Portia, Rubens, Rachael, Ringleader, Vulcan, and Zara. Older Varieties, from 9*s.* to 12*s.* per dozen.

FANCY GERANIUMS at 30*s.* per dozen.—Beauty of Blackheath, Constance, Conqueror, Cassandra, Charles Dickens, Cleopatra, Conspicuum, Criterion, Delicate, Dandy, Duchess of Sutherland, Eminent, Fanny, Figaro, Illuminator, Lady Downe, Lady Hume Campbell, Lady Alice Peel, Madame Sontag, Marginata, Mary Howitt, the Ocean Queen, and Viola. Older Varieties from 9*s.* to 20*s.* per dozen.

Strong plants of FUCHSIA TELEGRAPH, at 2*s.* 6*d.* each. One of the very best dark Fuchsias ever offered. Also all the new Fuchsias and Verbenas of the season at moderate prices.

. Post Office orders made payable at Islington.

Tollington Nursery, Hornsey Road, Islington, London.

JAMES IVERY AND SON, NURSERYMEN, &c., Dorking and Reigate, Surrey, are now prepared to receive orders for the following new and beautiful varieties of AZALEA INDICA and RHODODENDRON PONTICUM COCCINEUM, which will be ready for delivery in October next. The Advertisers beg to say they can recommend them with the greatest confidence as being superior to any others of their kind. The Azaleas were figured in the "Florist" for July, 1852, at which time the editor remarked as follows:—"As regards the beauty of the flowers little need be said, as the representations will speak for themselves; they have been much admired, and will, no doubt, speedily find their way into every collection." Again in the same journal for June, 1854, the editor says:—"Your two Azaleas, Admiration and Criterion, are certainly very beautiful, and fully maintain the opinion expressed of them at page … volume for 1852, when we figured them." Criterion is a very … bold flower; size, shape, and habit of that old favourite Iveryana, colour, light salmon, distinctly margined with white, and the top petals spotted with deep crimson on the upper petals; 21*s.* each. First class Certificate at the National, April 20, 1854—the only time it has been exhibited since it was figured. Admiration is a … sized flower, of greater substance than the former, with the same shape and habit; colour pure white, with broad flakes of carmine, resembling the marking of a Carnation; 21*s.* each. Has not been exhibited since it was figured, owing to an accident to the flowering plant.

RHODODENDRON PONTICUM COCCINEUM.—This is the finest crimson variety ever offered to the public; it is a … bloomer, with a fine large truss of brilliant crimson, … brighter than the old Arboreum, and perfectly hardy. Dr. Lindley, in this journal (page 342), says:—"This fine variety has the deep crimson flowers of the red tree Rhododendron, which was evidently one of its parents, and the foliage of R. ponticum, which it resembles in all respects except in colour—thus uniting the brilliant flowers of the tender Indian kind with the hardy vegetation of the Black Sea." 21*s.* to 63*s.* each. Has received three Certificates of Merit. A few extra-sized plants of the Azaleas at 42*s.* each.

The above have been ordered by most of the principal nurserymen, and many of the nobility and gentry.

N.B. Figured Plates of the two Azaleas may be had by enclosing nine postage stamps to either of the above-named Nurseries. A remittance, or reference, is respectfully requested from unknown correspondents.—Reigate Nursery, Sept. 30.

NEW CLIMBING HYBRID PERPETUAL ROSE,
THE "DUCHESS OF NORFOLK."

To be sent out for the first time about the end of October.

WM. WOOD AND SON have much pleasure in offering the above superb Rose to the notice of their Friends, feeling assured it will prove entirely distinct from any Rose at present known, and which cannot fail to give every satisfaction. The colour is a bright vivid crimson, the under side of the petals most delicately shaded with a fine glossy pink, presenting a pleasing contrast; but the most valuable property of this superb variety consists in its extraordinary vigour, and as a perpetual-flowering dark-coloured Climbing Rose surpasses any variety that has yet been offered.

Standards, Half Standards, or Dwarfs will be supplied at 10s. 6d. per plant.

A very liberal allowance to the Trade. N.B. The above is figured in the October number of "The Florist."

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

TO THE PURCHASERS OF THE BEST VARIETIES OF GERANIUMS OF 1853 AND 1854.

MITCHELL AND CO. having a large Stock of the above, consisting of the most select varieties of their different seasons, will be prepared, on and after the second week in October, with well established (in large 60-sized pots), good healthy bushy plants, consisting of the following varieties, our own selection of 1854, at 30s. per doz., purchasers at 36s. per doz. Foster's Attraction, Cloth of Gold, Rosa, Lucy, Rhoda, Purple Perfection, Sunrise, Ladybird, Duchess of Wellington, Pilot, Lord Hardinge, Mogul, Hoyle's Splendidum, Regalia, Carlos, Virginia, Governor-General, Zeno, Mary, Rival, Queen, Majestic, Indian Chief, Tamberlisk, Sanspareil, Eugenia.

The following varieties of 1853 in healthy bushy plants, our own selection, 12s. per doz.; purchasers, 15s. per doz. Optimum, Rachael, Heroine, Leonora, Lagoma, Cordelia, Galatea, Butterfly, Kulla, Ringleader, Eleanor, Challenger, Astrea, Zaria, Portia, Basilisk, Amazon, Medora, Alberia, Novelty, Spot, Vulcan, Gertrude, Pasha, Harriet, Jupiter, Rosa, Commander, First of May, Queen of May.

M. and Co. have also a large surplus stock of fine old varieties, at 6s. per dozen, strong bushy healthy plants. A remittance by post-office order is most respectfully requested from unknown correspondents, made payable to JOHN FAIRBROTHER.

Bristol Nurseries, Kemp Town, Brighton.

GOLIATH STRAWBERRY.—This well tested and excellent variety has now outgrown all the prejudice that has been raised against it, and has fully borne out the high character which was at first given of it; and most, if not all the market gardeners in this neighbourhood, as well as gentlemen, are growing it very extensively. It has proved itself to be the very best in the absence of its parent, the British Queen, or where that variety does not succeed.

A Post-office order for 3s. 6d., or stamps to that amount, will secure 100 strong well-rooted plants, package included: or 1s. 6d. for six plants, by post, to any part of the kingdom. Also Trollope's Victoria, the very best for forcing, 3s. 6d. per 100.

Also the following varieties at 2s. 6d. per 100:—British Queen, Black Prince, Eleanor, Keens' Seedling, Elton Pine, Myatt's Surprise, Comte de Paris, and Hooper's Seedling.

JAMES KITLEY, Lyncombe Vale Nursery, Bath.

DOUBLE ROMAN AND PAPER WHITE NARCISSUS, 4s. per dozen. The above bulbs, the former of which is so justly esteemed for its early blooming and excessive fragrance, and the latter for its purity and elegance, have just arrived, and may be obtained at A. COBBETT's Italian and Foreign Warehouse, 18, Pall Mall, near Waterloo Place, London.

The Gardeners' Chronicle.

SATURDAY, SEPTEMBER 30, 1854.

THE evidence taken before Mr. DRUMMOND's committee on the WOODS and FORESTS is now before us. It is much what we expected. There is some discussion about practical matters, especially the curing of bark, and a long examination of witnesses in defence of the Treasury against the charges brought by Mr. KENNEDY against the officers of that department, and that is pretty nearly all. We should have been happy to declare that the disclosure of new facts gave a new colour to acts of official management, or placed them in a more favourable light; but we must declare that such is not the case as regards any point of importance. What there is of opinion upon practical matters we shall discuss hereafter. For the present we confine ourselves to a sketch of some of the more important parts of the evidence as to facts.

Mr. HIGINBOTHOM, the surveyor of Alice Holt and Woolmer, was the first witness examined, and we are bound to say that his evidence is that of a person acquainted with his duties. Those, indeed, who have attentively read the criticisms it has for some time been our unpleasant duty to publish upon the forest management of crown property, will have observed that there was little in it to touch Mr. HIGINBOTHOM till he became a party to that proceeding which led to the scandalous Treasury intrigue that has been so universally condemned.

Of Sir JAMES CAMPBELL's examination we cannot say much. As far as it goes it produces the impression that he is a very inferior person to Mr. HIGINBOTHOM. He has been for nearly 12 years deputy surveyor of Bere and Parkhurst, before which he was nothing; he was appointed by Lord LINCOLN. He prefers drains with upright sides to those with slanting ones, where the soil will permit them to be formed; he prefers, for planting, trees from 4 to 5 feet high, and complains that the late Commissioner made him throw such away, the latter being of opinion that plants 1½ to 3 feet high were as large as it is safe to use; in which we suppose that most men acquainted with forest management would concur.

Upon Mr. MACHEN's examination, as he is not now in office, we refrain from offering any comment. Reports have reached us at variance with his experience concerning a saw-mill in the forest of Dean, and we may possibly refer to them on another occasion.

Mr. LUSCOMBE's case is, upon his own showing worse than we could have imagined possible, bad as we knew it to be. Two examples must suffice. He informed the committee that he has Oaks now standing of 25 years' growth "very little higher than this table." He might have grubbed up such trees and planted something else, but he did not; he has left these valuable trees in their places up to the present moment: "he presses in Oak wherever he could possibly get it to grow;" "it is left entirely to himself to put in Oaks wherever the land will bear it." (According to the Treasury referees, nine-tenths of this forest are unfitted to bear Oak at all.) A second example of Mr. LUSCOMBE's style of management is, that he pays his weekly labourers once a month, and he does not think it a bad plan. Those who imagine that we have expressed too strong an opinion of the management of Royal forests will, we trust, read the excellent evidence of Colonel TOMKINSON and Mr. EDWIN CORBETT on this part of the case.

The examination of Mr. KENNEDY occupies about 40 pages, and we recommend its careful perusal to all who fondly believe that the Treasury management of the Woods and Forests deserves approbation. So much has already been said in our columns upon the course taken with reference to the late Commissioner that we dismiss it with the single remark, that Mr. WILSON, who had succeeded in getting placed upon the committee, entirely failed in his cross-examination of Mr. KENNEDY to shake that gentleman's former statements.

This want of success seems to have led to calling Mr. GEORGE ARBUTHNOT, a clever Treasury officer, in whose department the business of the Woods and Forests is placed. Undoubtedly the best case which can be made for the Treasury is to be found in this gentleman's evidence. Mr. ARBUTHNOT says that when Mr. KENNEDY dismissed the surveyor of Delamere for notorious incapacity, the Treasury did not intend to keep him in his office; that delays, indeed, occurred in replacing him; and that the Treasury at last, in consequence of the surveyor's appeal to them, waited for a report on Delamere from the three referees who had been formerly employed to report on Alice Holt. But it will be remembered that the surveyor was dismissed in the early part of January; the report of the referees for which Mr. ARBUTHNOT told the commissioners that the Treasury was waiting, is dated June 20; and to this day he retains his office so far as we know; it is therefore clear that there are other causes of delay. One of the complaints made by Mr. KENNEDY was that Mr. CLUTTON exercised some unseen influence at the Treasury, the effect of which was to thwart his measures. This, Mr. ARBUTHNOT positively denies, and we own that it does seem inconceivable how Mr. CLUTTON, who undoubtedly possesses extensive acquaintance with timber management, should have been a party to some official acts. Mr. ARBUTHNOT seems to think that there is no occasion for the employment in the office of Woods of persons conversant with rural affairs, and that the proper advisers of the department are the deputy-surveyors themselves. To this theory we do not object, provided the surveyors are properly appointed. But will Mr. ARBUTHNOT say that in his opinion the dismissed surveyor of Delamere would have been a proper adviser of the Commissioners? Mr. ARBUTHNOT thinks it no more essential that a Commissioner of Woods should be acquainted with rural affairs than that the First Lord of the Admiralty should be acquainted with ship building; but he forgets that the First Lord is surrounded by professional advisers of the highest rank, and that a Commissioner of Woods has no one to assist him except the gentlemen at the Treasury, who do not and cannot be expected to know anything of such subjects; but to whom nevertheless it appears that a Commissioner must assign detailed reasons for his acts, although the Treasury is unable to judge of the validity of those reasons. We particularly recommend to perusal the questions put by Mr. DRUMMOND, with his usual acuteness, and the further examination of the witness by Mr. VERNON SMITH, and Mr. EVELYN DENISON; the enquiry of the hon. member for West Yorkshire into a certain correspondence in which Mr. KENNEDY was to give some directions about rails, but was reminded that he must wait for orders about posts, is extremely amusing, and well illustrates the manner in which Government officers of rank may be tormented by Treasury subordinates.

In the course of the examination of the last witness it was incidentally mentioned that Professor LINDLEY had been named (by Mr. KENNEDY) as one among others from whom he wished referees to be selected for settling the disputes in the Woods. We are authorised by Dr. LINDLEY to say that he knew nothing of this proposal having been made, and that he should certainly have declined to act in the matter. The witness, however, took advantage of the opportunity to designate some articles on the Woods and Forests in this Journal as "virulent." We must suppose the word to be a misprint for violent. Upon this we beg permission to offer a remark or two. The *Gardeners' Chronicle* has been established for many years, during which time we have necessarily become acquainted with the public opinion concerning this department of the State; we have had many communications upon the subject, but we have refused them insertion; we have been requested to examine for ourselves—we have declined the task; when Lord DUNCAN's committee sat we were silent, and, so far as we were concerned, the conduct of Government was unnoticed. We were silent because we regarded the state of the Woods as the result of former mal-administration, and we feared to embarrass the service by reflections upon events which were past cure. It was our hope and belief that such appointments, and such proceedings as had then been exposed, could not recur; and we thought it better to leave Government unembarrassed.

The reconstruction of the Board of Woods seemed an assurance that our long forbearance would be justified; but when we heard of the appointment of Mr. CLUTTON's clerk, at the age of 21 years and 6 months (see Report for 1853, p. 431), to the highly responsible charge of the New Forest, and read the Blue-books that appeared in 1852, we felt that nothing was to be hoped for from Government except upon compulsion, and we then spoke out. Since then, the subject has never been lost sight of, and we appeal to the public whether a more important question could have engaged the attention of a journal devoted to rural economy. The country has sustained enormous losses by the way in which Crown property has been recklessly dealt with, and the trust reposed in us made it imperative to arrest further jobbing if possible; or at all events to ensure its taking place at the peril of the official culprits.

In whatever we have said we have been guided by authentic documents, and in no degree by flying reports; there is not a statement which we are not able to substantiate by parliamentary papers. That we have spoken strongly we admit; we have felt strongly; but we hope we have never been unjust. As to Mr. ARBUTHNOT, he must permit us to tell him that there is no other way of dealing with such cases as that of the Woods and Forests. A man does not grasp a Thistle with silk gloves; nor when it is necessary to arouse general attention to great abuses can a public journalist limit himself to the gentle accents of a drawing-room. No one, we suppose, undertakes the office of reforming public abuses for the pleasure of the thing; like other odious duties it is performed because it *is* a duty; and it is we who have a right to complain of Mr. ARBUTHNOT and his friends, that they should force us to do that which is abhorrent to our feelings.

LORD DERBY is by no means the only public man amongst us that belongs to the PRESCIENTIFIC SCHOOL, though perhaps few might be so candid in their professions of utter ignorance on subjects which have so great an influence on the credit and prosperity of our country. If such ignorance were not very widely diffused, the interests of many a public institution would not so often be postponed to the merest jobbery, and the merits of men who have devoted their health and fortunes to the pursuit of knowledge would not be so grossly overlooked. That the evil is one of public importance, even in an economical point of view, is amply proved by the most rapid glance at the reports on the present condition of our Woods and Forests; and this is not the only national property which does not yield its proper return. Such ignorance extends, however, much further than to the dealings of statesmen and legislators;—our literature and jurisprudence, our medical theory and practice, all suffer from the same cause; and those public journals which have the greatest influence in forming public opinion or supplying information, are constantly imposed upon by pretenders to knowledge, whose crude notions and ignorant assertions would at once be scouted and rejected if their readers possessed a tenth part of that general information which is acquired by every well-educated European, with the exception of Englishmen. That such erroneous information as was published respecting the Vine mildew last year, accompanied by figures which had scarcely a vestige of truth about them, should have been circulated by a journal which has an enormous circulation, can only be accounted for upon some such supposition; and that a paper like the *Times* should be a party to

the publication of such trash as has appeared on three occasions in the form of letters, signed "Investigator," on the fungoid origin of cholera, is positive proof that our assertion of the vast extent of the prescientific school is by no means unfounded.

We have indeed no wish to deny that the author of these letters has a little smattering of knowledge on the subjects with which he rashly intermeddles; he may possibly be a tolerable microscopist, and may perchance have some slight skill at manipulation, though this in all probability is more credit than he deserves. Allowing such to be the case, like the greater part of his "brethren of the lens," as he is pleased facetiously to term them, he can see nothing beyond his microscope. The moment he enters into particulars, he shows that he has no notion even of the commonest matters; he uses the term analogous where he means to speak of affinity, he calls the contents of the spores by the same name as the reproductive bodies themselves, confounds fungi with their spores, and brings forward a parade of learning to prove that the seeds of fungi float about in the air—a fact which the commonest observer must have been convinced of a thousand times, who ever had a mouldy stalk in his hand, or witnessed the explosion of a common dunghill Peziza. And, after all, what does the whole of his prosy twaddling amount to?—to nothing more than this, that because there are fungi which produce disease in plants, or, as he expresses it, which are *invited* by plants already diseased to consummate their maladies, there may be fungi which have a similar effect in producing disease in man. Had he been better qualified for giving an opinion, he would have known that many a disease in man is really the produce of fungi; that such diseases may be inoculated by their reproductive bodies; and that, in the disease so produced, the same fungus will constantly reappear. But there is not the slightest pretence for believing that such fungi even exist in cholera, much less that one particular species is uniformly its attendant; and when he writes about clouds of spores or fungi emanating from drains, he would be far more wisely employed in examining such places, to see whether they really exist there, even at the risk of inhaling such dangerous enemies as he supposes them, than misleading people into a belief that with every breath of air they inhale, or every mouthful of food they take, they are absorbing death. That he may succeed in catching a cloud of spores by his apparatus we have no reason to doubt; for even in the dust of the Trade Winds, Ehrenberg succeeded in detecting the reproductive bodies of fungi: but that he could recognise the species to which those spores belonged, except possibly in one or two rare instances, especially when of the dimensions he describes—and we know species with true, and not supposititious, spores which have far smaller dimensions—we no more believe, after the experience of at least a quarter of a century, than we do that Mitchell could detect the species to which the spores belonged in the soil, which he professes to have sifted and searched for that purpose, "pry and botanise" as he may. We have already occupied more than enough space with such trashy stuff. There are more senses than one in which "Science and ignorance may occasionally interchange information with advantage."

VEGETABLE PATHOLOGY.—No. XXXIX.

170. The soil in which the plant is fixed by its roots, and into which they penetrate, is the grand medium of nutriment. There are a few phænogams, indeed, which derive their subsistence either from the water in which they float or are submerged, or from the air; but in all cases alike the extremities of the roots are most active, and the main nutriment is received, and can only be received, in the state of an aqueous solution. And, as the spongelets have but little power of choice, whatever noxious matters may be contained in the soil, whether injurious in themselves or in their excess, will be received into the system, and set up a diseased condition in the plant: and inasmuch as certain constituents are necessary for the perfect health of the species, and these within strict limits, it is not only needful that they should be present in the soil, but that they exist very nearly in the proportions in which they are contained in the healthy plant.

171. If, for instance, there be an excess of ammonia or phosphates in the soil, though vegetation may be highly luxuriant for a time, and though the purposes of the cultivator may be answered by this abnormal luxuriance, yet where permanence is looked for there is sure to be mischief in the end. And, on the contrary, where the same crop is cultivated year after year, and no care is taken to restore the loss of certain principles which are requisite for the particular crop, the produce is sure to be gradually diminished, so as to yield no profitable return; and this, independently of any noxious matter which may be given out by the roots of the plant, and which may, in the course of long continued culture, accumulate in the soil.

172. For the most part those substances which are hurtful, even in small quantities, to animal life, are equally so to vegetables. Mineral poisons and strong narcotics, as arsenic, copper, opium, hydrocyanic acid, &c., are rapidly destructive to most vegetables; but some moulds seem able to endure the most powerful poisons. The mycelium of more than one species, for instance, is abundantly developed in arsenious acid, specimens of which were kindly sent me by Dr. Pereira, and a curious mould, *Periconia thebaica* flourishes and fructifies on opium.* Though a concentrated solution of bark is fatal to most vegetables, there is a peculiar fungus, or rather a peculiar state of some fungus, the perfect form of which is at present unknown, which luxuriates upon the wood of tan pits.

173. The power which the spawn or myceline of such fungi has of resisting poisons may, however, possibly be explicable by a curious fact recorded by Dr. Harvey in the "Nereis Boreali-Americana," on the authority of Prof. Bache. A slender production of this nature infests the vats containing sulphate of copper, which are kept in the electrotyping department of the Coast Survey Office, at Washington, in which it decomposes the salt, and assimilates the sulphuric acid, rejecting the copper, which is deposited round its threads in a metallic form. It sometimes appears in great quantities and is very troublesome. It is now ascertained that chemical action always takes place where endosmose and exosmose are in action, and it is probably in consequence of this that the copper is not absorbed, which would otherwise be destructive. The same principle may apply in the case of other metallic poisons, and on this may depend whatever small degree of choice plants in general may have in the selection of their nutriment; this is, however, far smaller than in the case of such fungi as Penicillium and Aspergillus, and it may be added of marine Algæ, which "effect chemical changes which the chemist can imitate only by the agency of the most powerful apparatus." They actually sometimes reverse the order of chemical affinity, driving out the stronger acid from the salts which they imbibe, and causing a weaker acid to unite with the base. Thus they decompose the muriate of soda which they absorb from sea water, partly freeing and partly appropriating the chlorine and hydrogen; and the soda is found combined in their tissues with carbonic acid.

174. It is curious, too, that anæsthetic agents and animal poisons act more or less powerfully upon plants as they do on animals. Jaeger has lately called attention in Bonplandia to two treatises, the one by Dr. Salisbury, of Albany, U.S., on the influence of the poison of the northern rattlesnake, and the other by Leclerc, on the effect of anæsthetic agents on plants. The poison of a rattlesnake was inserted with a lancet in the common Lilac, Horse Chesnut, Maize, Sunflower, &c., under the inner bark. The upper leaves faded, though the plants ultimately recovered. The effect was extremely slow, not being visible till after the lapse of four days. The effect is, in fact, analogous to that which is produced by the same poison when placed in contact with the inner surface of the mucous membrane of the intestines. A Sensitive Plant placed by Leclerc in a bell-glass and subjected to the fumes of ether, in 10 or 15 minutes expanded all its leaves, which had quite lost their sensitiveness. The heaviest blow, acids, fire, and extensive mutilation, did not induce the least motion; and when a leaf was cut it produced not the slightest effect on the rest of the plant. When removed from the influence of the ether, it seemed gradually to awake as from a trance. The long-continued application of ether, however, produced death. After four hours the plant had a corpse-like rigidity, and its temperature was below that of a plant which had not been exposed to ether. Chloroform was more rapid in its effects than ether. A single leaf or leaflet may be placed under the effect of the ether. Other plants also were evidently affected. The stomates of Polypodium vulgare became flaccid, the circulation of Chara vulgaris was arrested, as was also that in the hairs of many phænogams. More or less similar effects have been long since observed on the application of opium or hydrocyanic acid. Bruised Laurel leaves, when placed in a frame to destroy insects, have sometimes, it is said, proved injurious to the plants infested by them.

175. The destructive effects of bichloride of mercury and caustic potash upon vegetable life is taken advantage of in the remedies which are used against dry rot and bunt, and salts of copper, arsenic, &c., are employed with more or less success for the same purpose. The effect of sulphur upon mildew, especially when used in the crude state without admixture of lime, is at present imperfectly understood; it is probable, however, that it forms an acid which is immediately destructive to the delicate tissues of the mould. *M. J. B.*

* The opium, however, contained only narcotine, having been used for the preparation of morphine.

ON THE PRUNING OF PYRAMID OR DWARF STANDARD PEAR TREES.

By M. De Jonghe, of Brussels.

In our cold, moist, and variable climate, it is highly important that the Pear tree should suffer as little as possible from the prunings which are performed at the fall of the leaf, especially as regards trees in deep light soils, and at the end of winter where the soil is cold and moist.

The removal of all the shoots, not required for the formation of a pyramid, during the first flow of the sap in the early part of the season, following this practice up by the pinching of laterals during the whole of the summer, contributes greatly towards simplifying the winter pruning, which is thereby reduced to the shortening of the leading shoots to a good eye. In the climates of Belgium and England, and in those analogous, or indeed colder, we might even dispense with winter pruning. This method is more especially applicable to young trees which have not borne fruit, as it tends to bring them into a bearing state. After the second or August flow of sap is over, the tree still possesses sufficient powers of vegetation to heal the wounds which have been made upon it. Trees, although vigorous, always suffer from even the most moderate winter pruning.

To untimely and injudicious pruning may be partly attributed the barrenness of trees which are old enough and sufficiently vigorous to bear fruit; and to the same cause may be equally attributed the dropping of fruit when setting in spring. From these considerations, and in consequence of a series of experiments made during several years, I believe that it would be more advantageous to shorten the leading shoots of pyramid Pear trees between the 15th and 25th of September, than during or after winter.

Six years ago I commenced to experiment on some wild Pear trees, which had been raised with the view of obtaining new and improved varieties of fruits; and afterwards on some young trees in my collection of pyramids. Having attentively observed the results of these experiments, I remarked that there was a reflux of the sap into the twigs, spurs, stem, and terminal branches of the trees. The whole tree thus acquired a stronger constitution, and could, therefore, better resist the cold of winter. The roots, in direct communication with the branches, increase greatly during the period when vegetation ceases and the elaborated sap returns, which it continues to do till the winter solstice. This emission of fresh roots promotes, even in winter, the formation of fruit buds, and gives them strength and consistence for vegetating with greater energy in the following spring. But, it should be understood, that all wounds, or cuts, made in the Pear tree during winter, tend to produce a contrary effect. The experiments which have been successfully tried on a great number of seedling Pear trees, and on some pyramids, of 4, 5, or more years from the bud, have convinced me of the utility of this new method of pruning in our cold and variable climate.

In order that this method may be understood by any amateur who may wish to try it, some preliminary details will be necessary. Supposing that one or more trees are to be planted with the intention of being trained as pyramids, it is advisable to select such as have been worked 2 or 3 years, and that they should be well furnished with fibrous roots, in consequence of the trees or stocks having been 2 or 3 times transplanted. They ought to possess good forms, and should be taken up with all their fibres, but without shortening the stems or branches; then planted with due care, if in light deep soil, in the first fortnight of November; but not till the first fortnight of March, if the soil is heavy and moist. If the trees, whether on the Pear or Quince stock, are planted in November, they should not be cut back till the end of the following March. The branches of trees planted in the beginning of March should be left entire throughout the summer; they should not be pruned till the following March. The trees planted in November may be again pruned at the same time. This pruning commences with the stem. It is cut back to the sixth or seventh bud, taking care that the bud to which we cut back is opposite to the one to which the shoot had been shortened at the preceding pruning. The leading shoots of the branches should be cut back to 5 buds; and they should always be cut to a bud pointing outwards, in order that the shoots may form a wide angle with the stem. Young pyramid trees of 5 years from the bud should appear vigorous and well established in the soil; and to such trees we may commence to apply the proposed method of pruning. If, at the time of the winter pruning, we observe a lateral, situated either on the stem itself or on the branches, and that it is likely to grow too vigorously, give it an outwardly inclined position, by tying its end to a lower branch. Let us also take care to cut close to the bark all those shoots which are situated on the upper side of a branch, as they are apt to become over luxuriant, and to produce nothing but confusion among the branches. The inclination given to the lateral twigs induces them to form fruit buds in one, two, or more years. When one or two lateral branches is observed growing too vigorously, instead of cutting them off close to the branch from which they proceed, also bend them down like the shoots. The result of this operation is the checking of the too great vigour of the branch on which these lateral branches grow, and the bringing them more promptly into a fruiting state. The bending down of shoots and lateral branches ought, however, to be practised with moderation. On a young pyramid, five years from the graft or bud, there should not be inclined more than two or three shoots and as many lateral branches; for we can never expect to see fruit on either of them in full perfection.

The tree being thus brought into a bearing state, its over-luxuriance will in consequence be checked. After bearing two or three years, the lateral twigs and branches will appear weak, and should then be cut off quite close, and thus do away with the temporary confusion which they occasion among the lower branches

of the young pyramid. After the removal of the bent twigs and lateral branches, the branches and vertical stem will be seen furnished with fruit spurs sufficient for the production of as much fruit as the tree will be able to bear; and it is from the fruit spurs so situated that the cultivator may with confidence expect to obtain fruit in full perfection as regards both size and flavour. Presuming that these observations will be readily understood, we may now return to our principal subject.

When the buds have pushed, about the beginning of May, commence disbudding. This consists in removing, with a knife, all badly placed shoots from the branches and stem; so that the shoots on the stem and branches may be at proper distances, and bifurcations prevented. The operation should be continued during the periods when the sap is in greatest flow, which is generally in May and August.

Pinching is done at the same time as the disbudding, and is practised on the lateral as well as other young shoots. The branches of trees worked on the Pear stock are stopped or pinched when the shoots have developed six or seven leaves, and always to an eye pointing outwards, and on the side opposite to the vertical stem. As regards trees worked on Quince stocks, their shoots are pinched when they exhibit five or six leaves. In order to avoid heels of dead wood, and bruising, the pinching is done between the knife and thumb. This pinching and repinching three or four times is followed up during the growing season. At the repinching, that is in shortening the shoot pushed by that previously pinched, only three eyes are left. The operation of pinching may be performed on a young tree in a few minutes. It does not extend to the terminal shoots of either the stem or branches; these are left untouched to attract the sap to the different parts of the tree.

At the end of the second flow of ascending sap, or from the 15th to the 25th of September, when there is no longer any danger of the emission of laterals, and when all the flow of sap is towards the extremities of the stem and branches, instead of wasting this valuable nourishment by allowing it to accumulate in the parts which must necessarily be cut away in spring, it is more advantageous to shorten these shoots to the proper length whilst the ascending sap has still sufficient energy to heal the wounds.

After this operation, which is the principle of the method here recommended, one will soon see the effects of the reflux of the ascending sap on all parts of the tree, which will consequently exhibit, at the time of the fall of the leaf, a greater degree of firmness, and more consistence for resisting the rigorous variations of our climate during winter.

In spring the young pyramidal trees, perfectly cleared from insects, with neither cuts nor wounds to heal, and well-conditioned in every respect, will set their fruit readily; and, being healthy and vigorous, they will not afterwards drop it. Under the condition above mentioned, the trees, from their strong and active vegetation, will contain sufficient power to enable them to resist the inclement weather to which they are liable in our variable springs.

When the pyramids are about 6 years old, and commence bearing, it will be advisable to defer this shortening of the leading shoots of the stem and branches till after the fruit is gathered. Probably this method of pruning is not applicable to climates warmer than ours; but I believe it may be advantageously adopted throughout England. Practical men after trying it could communicate the results through the medium of the *Gardeners' Chronicle;* and such information would be very useful to a great number of amateurs.

Finally, it is by selecting the more vigorous kinds of Pear trees, reared on a good system, and planting them with due care in proper soil, by judicious pruning, and by keeping the trees in good condition, that the English amateur will be enabled to obtain, every year, delicious fruits, such as could not be procured even in the markets at any price. If, by my instructions, I could contribute towards the attainment of such desirable results, I should feel highly gratified.

ON THE

POSSIBILITY OF IMPREGNATING OVULES AFTER THE REMOVAL OF THE STIGMA.

During last summer I was induced to experiment upon the possibility of effecting impregnation in phænogamic plants, without the intervention of the stigma; in other words, to try and fertilise the ovules of such plants as have their ovules enclosed in an ovarium, by direct application of the pollen to the micropyle of the ovule. After various attempts, which are not worth recording, to apply the pollen artificially to the ovules—and which failed on the spot from the rapid withering of these delicate organs when exposed to the air, amongst other causes—it suggested itself to me that I should have a better chance of success by inducing Nature to try it for herself, than by clumsily imitating her, or attempting to force her against her will. I therefore selected three species of plants, which, from having large ovaries, numerous ovules, ovaria with large empty cavities, and perianths that could be mutilated at an early period, without preventing their future expansion, offered the best chance of success. All were Papaveraceæ, viz., the common garden Poppy, Escholtzia, and Meconopsis cambrica. I carefully opened the flowers of these 10 or 12 days before expansion, by a longitudinal incision, ascertained that the pollen was not even formed in the anthers, cut away the stigmas of the Poppy, and the stigmas and styles of the Meconopsis and Escholtzia, and freely opened the ovaria by a longitudinal slit. This done I left them to Nature; the incision through the perianth closed at once (of course without any union), and all the flowers opened in due course. When expanded, the petals showed comparatively little signs of injury, and none that could possibly exert any influence on the experiment; the stamens were perfectly matured and full of good pollen; but the ovaries were all more or less unhealthy or unsound; those of the Poppy were least injured, but the incisions into the ovary had been completely gummed up by opium, so that no pollen could gain access to the ovules; and whenever a fresh opening was made, the flow of milk from the walls and placenta wholly prevented the action of the pollen on the ovules, and the experiment was a complete failure.

The Escholtzia flowers were in an equally satisfactory state, and owing to the unequal growth of the cut and uncut sides of the ovary, the latter acquired a curve that caused the incision to gape and expose the ovules freely to the pollen, which was abundantly shed upon them. Almost all the ovules, however, withered soon after the expansion of the flower, and owing to the thinness of the walls of the ovary, it too dried up, and this experiment likewise was a total failure.

The expanded Meconopsis promised better, though the petals showed more signs of injury when expanded than those of the Poppy and Escholtzia did. The ovaries were all green, their cavities were freely exposed by a similar curvature to what took place in the Escholtzia, most of the ovules were plump and green, and the pollen was shed abundantly upon them. The flowers were all expanded in the third week in June, and from 12 to 14 days after I had opened the flowers and removed the stigmata. I watched them for the following six days progressing favourably, when having to leave the scene of my experiments, I begged that the capsules might be collected when dead, or ripe, and sent to me.

On the 19th of July I received five ripe capsules; three of them small, shrivelled, and full of withered ovules, some of which, however, had swollen considerably; the two others were much larger, and contained a profusion of swollen ovules, about one-half of the whole, amongst which I have found a considerable number—one or two in every 20 or 30—to all appearance perfectly ripe, having a fully formed albumen, and perfect embryo.

I am very far from attaching too much importance to this experiment, which should be repeated often, with a fair share of success, before any conclusions can be drawn from it; and I record it in the hope that the physiological interest of the question will induce those who have more time than I can command, to attend to such observations, and to repeat them upon many plants. It is very possible, indeed, that similar experiments have been instituted and their results recorded; and I should be glad, if such be known to any of your readers, that they would kindly inform me of them through the columns of the *Gardeners' Chronicle*. As it may be asked why I did not complete my experiment by sowing the apparently ripened seed, I may add, that for my purpose the full formation of the perfect embryo was enough, and I require all the seeds I have to demonstrate the (apparent) success of the experiment to botanists. Should a second experiment give the same result, the seeds they produce shall be sown, but if no success attends properly conducted operations of others, I shall consider my case as fallacious, though I cannot, at present, conceive any source of fallacy.

One object of these experiments was to ascertain the physiological importance of the gymnospermous structure of Coniferæ, &c., which, it is well known, requires the application of the pollen to the ovule itself. I have always considered Gymnosperms as genuine members of the great group or class of Dicotyledons, by whatever name we designate the latter (Exogens, Exorhizeæ, or Acramphibrya), and that the fact of the ovules being provided with only a rudimentary ovary, however important in both a physiological and structural point of view, is not of itself sufficient to raise Gymnosperms to the rank of a separate and equivalent class. I shall be more confirmed in that opinion if it can be proved that other Phænogams may be impregnated without the intervention of stigmatic tissue, which would diminish the value of the character in a purely physiological aspect, without however affecting its value in a structural or morphological point of view. In taking this view I do not overlook the important peculiarities in the embryogeny of some or all *Coniferæ* and *Cycadeæ* (which, however, do not appear to me to affect the question, and which have not as yet been traced in Gnetaceæ) nor the structure of the wood, upon which much undue stress has been laid, vascular tissue being abundant in some parts of most Conifers, and the dotted or disc-marked woody fibres being far from peculiar to them.

I may mention here that the amount of perfection of the ovary, as regards its forming a more or less complete covering to the ovules and seeds, varies more than is at first sight supposed, and that the consequent importance of the organ, in a purely physiological point of view, is here somewhat overrated. In both Monocots and Dicots genera occur in which the cavity of the ovary communicates freely with the air for a longer or a shorter period, and always during the season of impregnation. Dr. Lindley has pointed this out in Babingtonia, and has also suggested to me the common Mignionette. I have long been familiar with it in Datisca and some genera of Orchids, as the New Zealand and Australian species of Gastropodium, and in their ally, the Himalayan Gamoplexis, amongst many others. On the other hand, in several genera the ovary opens soon after impregnation, and the second office of the ovary, that of protecting the ripening ovules, is dispensed with. Mr. Brown first indicated this structure in two genera of Berberideæ, and we find it repeated in Ophiopogon and allied genera of Monocots. *J. D. Hooker.*

PAVETTAS.

These useful plants require to be wintered in a house where the temperature may average about 50°, and should be kept rather dry at the root in winter. As soon after the beginning of February as circumstances will permit, place them in a moist growing temperature of from 60° to 70°, and if they can be afforded a mild bottom-heat this will greatly assist in promoting active growth. Keep the plants near the glass, and expose them to all the light possible, admitting air whenever the weather permits. If the plants are at all straggling the shoots should be tied down in nearly a horizontal position, and stopped to cause them to break close and form nice bushy foundations; and the foliage, if at all infested with insects, should be carefully washed before placing them in heat. Attention must also be paid to the state of the roots, giving a moderate shift to such as have well filled their pots with active roots before placing them in growing circumstances. If in bottom-heat the plants must be very sparingly watered for some time after shifting; for when the pots are plunged in any damp material, very little water is required, and inexperienced cultivators are apt to suppose that because the surface appears dry the ball must be so also, and very often rot the roots by giving too much water. But in the case of young plants this little difficulty is easily overcome, as the pots can be easily lifted and weighed in the hand, which is the safest way of ascertaining the state of the soil as to moisture. Endeavour to keep the atmosphere regularly moist, and syringe the plants over-head on the evenings of fine days, and as the sun becomes powerful afford them a slight shade on the forenoons of bright days, but use this merely when necessary to prevent the leaves scorching.

As the plants advance in growth attend to keeping the shoots regularly tied out and stopped, so as to secure compact bushy growth, and shift into larger pots before they sustain any check through the want of sufficient space for their roots. If properly attended to the plants will make rapid progress, and will form nice sized specimens in course of the season; but if they are intended for flowering the following spring they must not be kept growing later in autumn than will allow of getting the young wood well ripened before winter, for unless this is attended to there may be some disappointment experienced through their not flowering freely; but if good sized specimens are desired they should be encouraged to grow as late in autumn as strong short-jointed wood can be obtained. Shading should, of course be discontinued as early in autumn as it can be safely dispensed with. When vigorous short-jointed wood cannot be obtained in autumn, remove the plants to a cooler house, where the atmosphere can be kept rather dry, and air admitted on fine days to ripen the wood. During winter they should be afforded a temperature of about 55°, and be kept rather sparingly supplied with water at the root. If treated a second season as recommended above, they will form nice sized specimens; but they must not be stopped too late in the autumn, as they will be expected to flower in the spring; and the wood must be well matured, to ensure having a profusion of fine large heads of bloom. While in flower they should be shaded from bright sunshine, and not kept too warm nor damp, as the flowers will last longer in a rather cool dry atmosphere. After flowering, and allowing the specimens a fortnight or so to recruit their energies, cut back any of the shoots as may be necessary to maintain a dwarf bushy habit, and thoroughly clean the foliage. Examine the state of the roots, and give a moderate shift if the ball is heavily matted with roots, and place them in a moist growing temperature; but give air rather freely, and avoid keeping too warm, until the buds start into growth, otherwise they will be apt to break thinly. Good rich fibry peat, and sandy turfy loam, in the proportion of three parts of the former to one of the latter, forms a suitable compost for these plants. The peat and loam should be carefully broken up, and well intermixed with a liberal proportion of silver sand, to ensure the free percolation of water through the soil after the decay of the fibre. Cuttings of half ripe pieces of the young wood root freely in a sharp bottom heat, and soon form useful sized plants. *Alpha.*

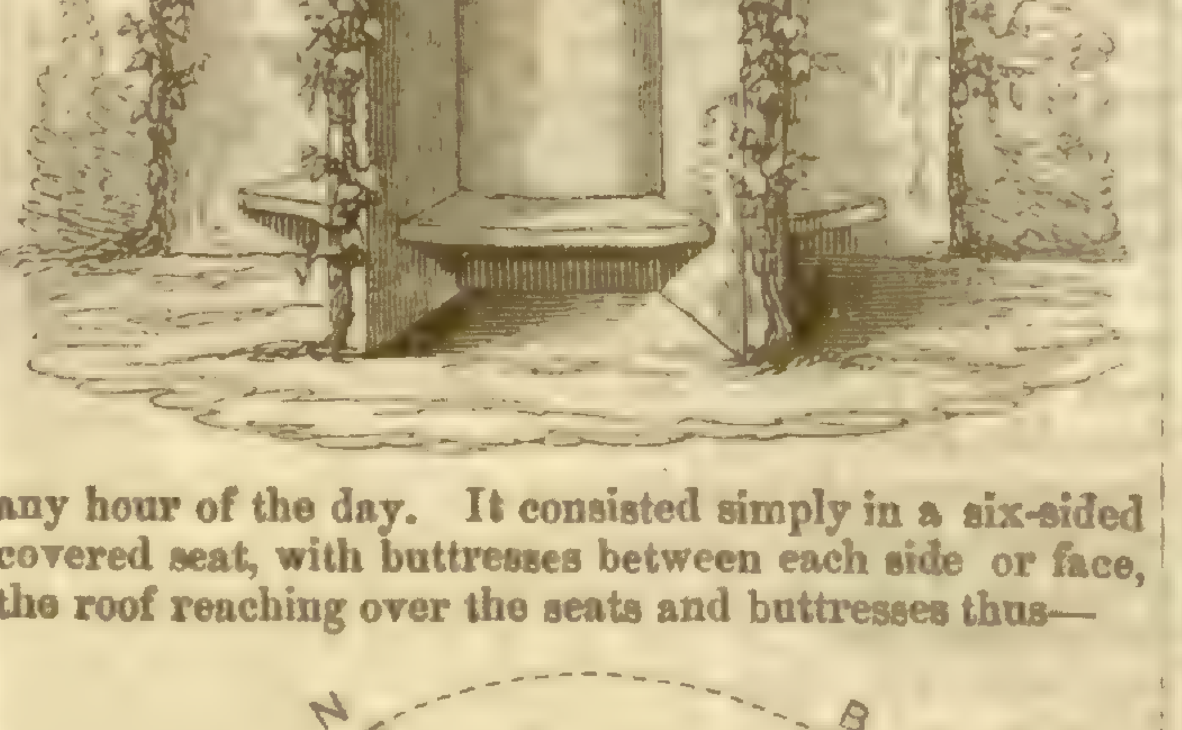
Home Correspondence.

A Peep at the Hitcham Second Horticultural Show.—Monday, the 18th instant, the day appointed for Prof. Henslow's village horticultural show, was, in pleasing contrast to the last, everything that could be wished—perfectly fine, with just enough of cool breezes to tell us that autumn was approaching. It must be admitted that much of the success of these interesting and useful exhibitions depends upon the weather; just, in fact, in proportion as the day was from "cold, wet, and uncomfortable," up to "fine, clear sunshine, with southerly breezes," does the temper of Englishmen oscillate. If we make "grumbler" the zero of this scale, so may we call "cheerful, elastic, good-humoured spirits" the

"boiling point;" and it was just this last figure to which the visitors at Hitcham Rectory arrived on Monday week, and therefore the success of the exhibition was complete. We arrived at the rectory early in the day, and made one or two notes in our mind purposely for the benefit of the numerous and intelligent readers of the *Gardeners' Chronicle*. On the ground, as usual, were two tents, one of them 50 or 60 yards long, to which the productions of the cottagers were devoted; and the other, as an ingenious inscription told us, was the "marquee museum." We have a word to say about this inscription, but will first take a peep into the exhibition tent, where the judges were busy in deciding the merits of the various competitors. The first thing which struck us in this tent was the admirable order and regularity in which everything was arranged. "There was a place for everything, and everything was in its proper place;" and just as fine weather outside is an element of success, so is method within the best essential to the proceedings of the day. Everything that was to be exhibited, Wheat, Potatoes, Cabbages, fruit, and flowers, &c., had each its proper amount of space set out on the tables and marked by printed papers. A short description of the Wheat department will illustrate the system of arrangement. The samples of Wheat were divided into three classes, Revett, red, and white; each sample was contained in a bag provided by Mr. Henslow, and hung upon a hook fastened into the upright rod of a separate stand, and the stands were then arranged in rows, one above the other; white at the bottom, red in the middle, and Revett at the top, the number on each being clearly shown. When the award of the judges was made they were provided with printed tickets of 1st, 2d, 3d, and extra prizes, having holes drilled in the card which exactly fitted into the hook on the stand. At the end of the Wheat stage a vast number of ears of Wheat were nailed or fastened to an upright board, each bunch of ears of three being carefully numbered, the numbers corresponding with Mr. Henslow's private records. These ears of Wheat are brought by each exhibitor from the allotment in which his prize sample was taken. If then there is any doubt in the minds of the judges, or any complaint lodged by one exhibitor against another, the three ears of Wheat are at once appealed to and compared with the sample. Of course this arrangement gives some trouble, but that is never thought of at Hitcham Rectory. The judges (Mr. Barnes, the well-known nurseryman from Stowmarket, assisted by two portly-looking gentlemen from the neighbourhood) gave upwards of 20 prizes to the Wheat, and pronounced the sample very superior. It is, however, a good year for Wheat, and I shall not be accused of affectation if I say here—Thank God for a plentiful harvest, and may the poor be sensible of and grateful for such a blessing. Potatoes came next, and the specimens were never excelled. We took the liberty of questioning one of the judges, and found that in only one instance was there any appearance of disease among the samples. This is very cheering. The disease came fortunately three weeks later than usual, and in that time most of the crops were saved. Perhaps they will not keep so well in store, but we are inclined to take this late appearance as a symptom of decadence not in the Potato, but in the type of the disease. Upwards of 20 prizes were adjudged to Potatoes. Onions, Carrots, Parsnips, and a collection of vegetables came next, and we were getting on fast towards the Plums when our attention was arrested by an enormous Cabbage. We have no hesitation in saying that the man who raised that Cabbage ought to be immortalised in the *Gardeners' Chronicle*. His name has escaped our memory, but we hope Mr. Henslow will supply this information. We saw the judges cunningly devising all sorts of means, such as tasting the stalk, &c., to find out its defects and vindicate the pre-eminence of quality over size; but it would not be found out, and it carried off in triumph the first prize for size and weight, and quality, too. All honour to the genius of a man who can grow such a Cabbage! Apples, Plums, Grapes, Dahlias, Hollyhocks, and German Asters, filled up the rest of the table, all and each possessing various degrees of merit. We have rambled on about the exhibition because we confess to a feeling of pride and pleasure and sympathy, as we reflect upon the ups and downs of a poor working man's hopes and fears in entering the lists of this honourable and useful competition, and we watched their faces when their names were read over, and the successful ones announced, with the conviction that we were reading a page in their "simple annals" full of interest, and much material for thought to those who ever think upon the welfare and social position of the poor. From the exhibition tent we in due season migrated to the marquee museum, just in time to hear what Mr. Henslow terms his *lecturette*. In front of this tent was erected a very tastefully and scientifically arranged design on canvas, containing in the centre the words "Marquee Museum," surrounded by an elaborate border, and surmounted by three still more elaborate stars and ornamental devices, all worked with the shells of mollusks indigenous to the parish. The writing was formed of Helix aspersa entirely, while our fresh-water Anodon cygneus, with Helix cantiana, ericetorum, &c., furnished *material* for the border and its ornaments. Every bivalve with its pearly inside, amounting to some hundreds, was tacked on by a hole bored in the centre, and secured with a brass-headed nail, while aspersa had the honour of being pierced by needles which fair hands only know how to yield. Owls came in for the first notice, and all the British family save one (Funerea) were present to illustrate the professor's remarks upon their classification, habits, &c. The Corvidæ were represented by three crows, while several other more or less rare or interesting birds spoke for the other branches of the great ornithological family. Curious nests, suspended by weaver birds, from the branches of Palm trees, to keep out snakes, &c., were next shown, and near this part of the tent we observed about a dozen spirited sketches of a chameleon, in its various phases of colour, done, we believe, by Miss Henslow, of Bildeston, from a specimen kept in confinement 30 years ago. Here, also, we were shown specimens of Plantain Grass, and the fruit of the Rush, made by the shells of Hitcham mollusks! and very pretty and interesting objects they were—Zonites pygmeas, Zua lubrica, Clausilia bidens, and Carichium minimum were the principal species used. A large Java bat, Pteropus Javanensis, 4 feet from tip to tip, the curious sea bull, the flying fish, and sturgeon, were successively shown, and remarks made about each. Then we had a succinct account of printing, with boxes of type, type set up, and type stereotyped, all shown. Geology now came in for its share, which was illustrated by decomposing limestone nodules, "St. Paul's teeth," &c.; and then we were shown a curious specimen of "tree within tree," and the cause clearly explained—the pith of the tree producing rice paper; and the singular hygrometric Lycopodium, expanding as it imbibed the cold water with which it was entertained, and finally, after many other observations upon a vast number of interesting objects, the lecturette was wound up by some admirable remarks about wasps and their nests, their parasites and instincts. The prizes were then given out, and after several hearty rounds of cheers for the professor, the judges, and the servants of the establishment, who must have worked like horses for some days previous, all the exhibitors sat down to tea, where we left them quite happy, and during our drive home three successive times did we catch ourselves mentally giving sundry hip, hip, hurrahs! for the amiable and indefatigable rector of Hitcham. *B.*

Sheltered Seat in all Weathers.—Whilst at Guernsey I saw seats round the lighthouse which, by a simple plan, allowed one to escape any wind, and enjoy sun at

any hour of the day. It consisted simply in a six-sided covered seat, with buttresses between each side or face, the roof reaching over the seats and buttresses thus—



Care should be taken to make two sides face S. E. and S. W., as near as may be, and having none due south. There is one such at the asylum at Wells. *Somerset.*

How to Clear Walks of Weeds has been a subject of frequent inquiry, and in some instances the application of salt and boiling water has been recommended with, I doubt not, unsatisfactory results. I believe, however, that I can inform your querists of a method of laying down walks that will answer to their heart's content. Let the box of the intended gravel walk be cleared of its earthy contents to such a depth as may be thought advisable, and having first procured a quantity of tan-bark, the fresher from the pit the better, lay on the bark, well trampled down to the thickness of 6 or 8 inches, and fill up with gravel. If this work is performed properly, I pledge my word that weeds will cause very little trouble for many years to come. No doubt a few annual weeds may take root in the gravel, but these will be easily got rid of by a dressing of salted water. I may mention that there is a vast accumulation of bark in the tan-yards in Bermondsey. A gentleman in the trade informed me lately, that there was a time when he could sell exhausted bark for 1*s.* per load, whereas he would almost feel inclined now to give 1*s.* per load to have it taken away. *James Munro, Easton Maudet.* [But what will you do with the fungi that are certain to start up?]

Cuthill's Black Prince Strawberry.—Every amateur Strawberry grower must feel greatly indebted to Mr. Underhill for the useful details he has given of his excellent practice, however little he may sympathise with his exclusiveness in keeping solely, as I understand him, to Keens' Seedling and the British Queen. On this point I beg permission to give the result of my small amateur experience. I grow these two deservedly favoured sorts; but I cannot give up the Black Prince. For, over and over again, I have this season tested and compared the three; and, for richness, freshness, delicacy of flavour, approaching the fragrant peculiarity of the Hautbois, the Prince, to my taste, was greatly the superior. He must be taken, however, at his prime, when the dark colour which gives him his name is fully come, or the victory will lie the other way. I must add, too, that I grow the plant in the healthy method your correspondent suggests, well separated in the rows, extending the distance every way to 2 feet 6 inches; and, thus grown, the plant becomes a mass of early fruit, lasting week after week, almost exhaustless and endless. It is but fair to the grower, Mr. Cuthill, of Camberwell, that testimony should be given, such as it is, to the merits of his production; and I only hope the late sort which he has just introduced, and which he calls the Prince of Wales, will be equally successful. *S. S., Lois Weedon, Sept.* 20.

Desfontainia spinosa.—I find this plant so tardy and reluctant in the development of its shoots, in a warm situation, that I am led to inquire whether it demands any particular soil. *A. H.* [We should say that it wants peat, shade, and moisture.]

M'Glashen's Transplanting Apparatus.—I had an opportunity of witnessing an exhibition of this apparatus in the Edinburgh cemetery on Saturday last, and was happy to observe that the inventor had considerably improved upon its details, and thereby greatly increased the safety and facility of its use. By means of a simplified construction of carriage, by driving in the cutters by iron hammers instead of wooden mallets, and other apparently trivial improvements, Mr. M'Glashen was enabled to accomplish the operation of transplanting in much less time than formerly. The plant operated upon on Saturday was a broad and bushy Holly tree, about 12 feet high, and estimated to be about 30 years old. The tree was lifted with a large adherent ball of earth, and being drawn by a horse to another part of the cemetery, was expeditiously and quite safely planted in a pit previously prepared for its reception. The whole operation was regarded by the gentlemen present as the most successful experiment that had ever been made with the apparatus. *G. Lawson, 7, Hill Square, Edinburgh, Sept.* 19.

Potatoes.—An acre of York Regents, planted in February last, which about six weeks ago became black in the haulm and smelt very strong, are turning up a capital crop, with scarcely a diseased tuber amongst them. Soil stiff, and well manured; previous crop Wheat. Great care was taken of the seed in 1853. *Spade.*——I have just dug a few Potatoes, of which I think the produce very great. At one stem there were 15 Potatoes; one of them 14 oz., one, 13; one, 10; three, 16; and nine, 11; in all, 4 lbs. I attribute the large increase more to the sort, which I believe is called Martin's Globe, than to cultivation, as I have several other varieties growing along-side the above, planted on the same day, and attended to in the same manner, which are not in any way remarkable. I do not think the soil in which the above were grown had due justice done it, being adjoining a building site, it was trodden and carted over all last summer; and as I did not get possession until late in March, it was too late, there being no rain for some time, to get the ground properly broken up and pulverised, else I believe the produce would have been much greater. *L. T. F., Berwick.*

Tropæolum speciosum.—Has this ripened fruit elsewhere? Here the plant has done so for the first time this season, and the colour of the seeds is so brilliant and so peculiar that it (*i. e.* the plant) seems to deserve special notice and commendation, when in such an interesting state. The bright red of the flower, and brilliant purple of the seeds, produce a most striking effect. *J. B., Biddulph Grange.* [It is a very brilliant plant in every way. We saw the porcelain blue fruit on it at Exeter two or three years ago.]

Notices of Books.

The Census of Great Britain in 1851. By authority of the Registrar-General. Longmans. 8vo, pp. 199.

Here we have, in a very convenient form, "An account of the numbers and distribution of the people, their

ages, conjugal condition, occupations and birthplace," &c. This account does not consist of a mere collection of figures. Nearly one-half of the work is devoted to an admirable summary of the state of the United Kingdom, in which much extremely valuable and interesting information is given in a form as agreeable and intelligible as is possible.

On the 31st of March, 1851, it appears that Great Britain contained 20,959,477 persons, namely 10,223,558 males, and 10,735,919 females. Half a million represents the number of females in excess of the males present in Great Britain on that day. In Scotland this disparity was greater than elsewhere. The above immense number of people constituted 4,312,388 families, inhabiting 3,648,347 houses. The proportion of persons to families was 48 to 10; persons to inhabited houses 57 to 10; and families to houses 12 to 10. The town population exceeds the country population by a little more than 100,000. In the towns there are a little more than 5 persons to an acre; whilst in the country there are rather more than 5 acres to a person. London alone contained 2,362,236 souls on the census day; so that very nearly one-tenth of the whole population of Great Britain may be considered as concentrated in its metropolis. Of the male population nearly 5½ millions are 20 years old and upwards, and more than 3 millions are of a soldier's age, viz., between 20 and 40. More than half a million of persons, male and female, are 70 years of age; nearly 130,000 are over 80; and more than 10,000 have lived 90 years or more. Such are a few of the main facts revealed by an enumeration of ourselves.

If we turn to the occupations of the people, we find, from a very elaborate alphabetical table, the number of persons engaged in every profession, trade, and calling. From this table we select, as most interesting to our readers, the following facts:— Artificial flower-making employs 3510 persons; there are nearly 81,000 gardeners, in addition to 5000 domestic gardeners; 6 persons are returned as herb-growers, 1156 as seedsmen, 2675 as nurserymen, and 85 as Teazle-growers. Of the various trades, boot and shoemakers are the most abundant; next to them come milliners, there being upwards of 270,000 of the former, and 267,000 of the latter: on the other hand, we find several trades returned as employing only 2, 3, or 4 persons each.

Further extracts are not required to show the kind of information to be derived from the volume before us. "The Census" itself is far too bulky to be accessible to all who may be interested in its general results, and the present summary, published by authority, is an excellent substitute for all ordinary purposes.

The new number of *Sowerby's Ferns of Great Britain* contains figures of the Lastreas Thelypteris, Filix-mas, cristata, and rigida.

Of the *Micrographic Dictionary* (Van Voorst) Part IV. is before us. It reaches Botr., and contains some excellent articles; that on Bone, with well drawn and well executed woodcuts, especially deserves commendation. The authors rightly refer Leidy's genus (?) Arthromitus, found in the intestines of a millipede, to some imperfect filamentous fungoid form, as we doubt not will in time happen to the whole race of entophytes, which appear to be merely nascent states of fungal species. It is now evident that this work is about to take its place in the highest class of books on natural history.

New Plants.

89. Tecoma spectabilis, *Planch. and Linden.*

"A shrub, or small tree, found by M. Schlim in the high regions of the Andes in New Granada, where it grows at the entrance of the Paramos, on the borders of woods called Boquerones, and at an elevation of from 9000 to 10,000 feet. The leaves are very large (the lower ones being as much as 2 feet across), opposite, digitate, with five petioled, oblong, acute, leaflets. The flowers are arranged in terminal clusters, and form large and very handsome corymbs; the calyx, bracts, peduncles, pedicels, and the under side of the leaves, are all ferruginous; the corolla is a fine yellow, 3 inches long, hairy externally, and has roundish wavy lobes. This is one of the prettiest things introduced of late, and is admirably adapted for a greenhouse, where it would be conspicuous, both by its general elegance and by the richness of its inflorescence." *Linden's Catalogue.*

90. Hydrolea azurea, *Linden.*

"This pretty little plant is very nearly allied to H. extra axillaris, Morren. It is covered with a multitude of pretty flowers of the most beautiful azure colour, against which the stamens stand out like so many silvery stars. It attracted universal attention at the exhibition of the Royal Floral Society of Brussels in July, 1853, and there gained the first prize as a new plant. It is a native of the state of Mechoacan, in Mexico, whence it was sent over by M. Ghiesbreght." Priced in Mr. Linden's catalogue at 10 fr.

Garden Memoranda.

Mr. Rivers's Nursery, Sawbridgeworth.—One of the most interesting features of this nursery is its orchard houses, of which there are now no fewer than 25. Mr. Rivers has found such contrivances so extremely useful, not only for the growth of small fruit trees in pots, but also for a variety of other purposes besides, that he has during these last two or three years been constantly adding to their number. His fruiting house this year has been, as it well deserved to be, the admiration of all who have seen it. It is span-roofed, 70 feet in length and 20 feet in width, with boarded sides and ends, and fixed glass roof, and it has upwards of 100 trees of Peaches and Nectarines from four to six years old in it, many of the later kinds being now literally laden with fruit. As an example of the way in which the trees have borne, we may mention that on one of them we counted between four and five dozen Peaches. The effect of a whole house full of such fruit-bearing trees may therefore be more easily imagined than described.

The trees are all in 13-inch pots, and are set on beds of soil, the centre one being about 6 feet in width, and the two side ones each 5 feet in width. These beds contain about 18 inches in depth of mould, which is kept out of the paths by brick edgings. The pots, which have several holes in the bottom, or at least have the hole there very much enlarged, are set on these beds, into which the roots are allowed to enter. To sustain a good sized Peach tree in a pot, however (and some of them are quite 4 and 5 feet in height), something more is necessary than merely allowing its roots to go into the border; annually in March, therefore, every tree has a top-dressing of some strong stimulant. Mr. Rivers has employed, with much success, stiff loam mixed with horse-droppings saturated with night-soil, exposed to the air two or three months, placed on the surface of the pots, previously stirring the soil with a pointed stick, and taking out a portion of it 2 or 3 ins. in depth. Liquid manure, not too strong, is also applied once a week during the summer; weak guano water, 1 lb. to 30 gallons, has been found as good as any. A good soaking of this once a week has been found preferable to using it more frequently. Under this kind of treatment the trees are kept in the very best of health, and they bear, as has just been shown, enormous crops of fruit, and their being in pots which permit them to root into the beds, the control over them is perfect, for when any tree becomes at all what is termed pot proud, its luxuriance is easily checked by merely inclining it on one side sufficiently to break off a portion of the roots. At the end of October, when the trees are put to rest, the whole of them are root pruned, *i. e.*, all the roots which have entered the bed are cut off, and after two or three years the soil of the bed or border itself is removed 2 or 3 inches in depth, and filled up with a compost of burnt earth, manure, 1-inch bones, and turfy loam, all very rough. During winter the trees are kept as dry as possible, and sometimes, if the weather then is excessively severe, dry hay or litter is laid on and around the pots. This, however, is seldom needed.

No fire heat is ever employed, indeed no means have been provided in the fruiting house for applying it, and yet, with the exception of the Stanwick Nectarine, and one or two of the latest Peaches, all have ripened most satisfactorily, the fruit—owing to the health of the trees and foliage, and the abundance of ventilation which is afforded—being large, juicy, highly coloured, and, as a matter course, of extremely good flavour. Such as have not yet ripened, Mr. Rivers intends putting into another house, in which a little fire-heat will be applied, just to gently accelerate their maturity.

One of Mr. Rivers' orchard-houses, also a span roofed one—instead of having boarded sides and ends, with means of giving plenty of air, for that is much insisted on in this kind of culture—has the sides, one a Yew hedge, the other Siberian Arbor-vitæ. It is 12 ft. wide, 3 ft. high at the sides, 6½ feet high in the centre, with a sunken path 2 ft. wide, 1 foot deep, and borders on each side 5 ft. wide. An improvement, however, on this, Mr. Rivers thinks, will be one of the following dimensions—12 ft. wide, 4 ft. high at the sides, 8 ft. high in the centre, borders 4 ft. 8 in. wide, sunken path in centre, 2 ft. 4 in. wide, and 8 or 10 inches deep; this, with a well-clipped hedge of Yew or Siberian Arbor-vitæ on each side, will ripen such Peaches as, Royal George, Noblesse, and Grosse Mignonne, about a fortnight after their usual period of ripening, and give Apricots, Cherries, and Plums (more particularly the late sorts, which shrivel on the trees), in the highest perfection. Owing to the constant percolation of air through the hedges, no injury ever occurs from ventilation (as is too often the case), being forgotten in hot weather; but with syringing and water the trees are always in fine health. The situation for such houses should not be too much exposed in windy situations, for then too much air may perhaps be admitted for ripening fruit. Peaches and Nectarines, however, appear to succeed perfectly in a house made of good deal boards, and the latter, well painted with Carson's anti-corrosion paint, will last good a long time. It has been found, however, that, in the case of *lean-to* houses against a Beech hedge, the cutting north-east winds which pass through the latter in spring are too much for the trees, and, therefore, the few earlier put up houses which Mr. Rivers has on this plan have had painted canvass put along their back walls or hedges, half the height of the latter. This has been found to answer perfectly, and it may be worthy of mention to show the effect good ventilation has in keeping off the mildew and red spider, that when the canvas covered all the back or hedge, these pests made their appearance; but as soon as half the canvas was removed, and air freely readmitted, they disappeared.

As regards variety, Mr. Rivers has gathered together here all the sorts of Peaches and Nectarines, &c., which he can possibly get hold of with a view to ascertain their comparative merits, and to prove their synonyms. He has raised several seedlings from the Stanwick Nectarine, which are numbered 1, 2, 3, and 4. They have all borne fruit this year; in habit, leaves, and flower, they are all exactly alike, but in fruit they differ. No. 3 has borne 12 fruit, equally as well flavoured as the Stanwick, and without crack or blemish. It is also said to ripen its fruit about 14 days earlier than its parent, so that hopes may be entertained that in two or three generations, and by means of recrossing this fine Nectarine, it may yet be made fit for our walls. The flavour of Seedling No. 4 is delicious; but it is as late in ripening as the Stanwick. Among Peaches, Scott's Early Red and George the 4th, both American varieties, are said to be of most excellent flavour.

Of young Peach and Nectarine, Apricot, Plum, and Cherry trees in pots, suitable for bearing next year, there are several housefuls here, as well as numbers set out in the open air for want of sufficient accommodation in-doors. They are in 11-inch pots, and extremely healthy.

Figs succeed perfectly in an orchard-house here, in which there is a brick Arnott stove; and Black Hamburgh Grapes—not large bunches, but well coloured—are ripening well in a lean-to house, in which there is no fire-heat, but merely a glazed roof and wooden ends and back, the latter furnished with sliding ventilators, which are nearly constantly open.

We have only room to add that, in addition to their other advantages, Mr. Rivers has found orchard-houses to be extremely useful in the facility they give of retarding for some weeks Peaches, Nectarines, and Apricots; so that Royal George Peaches and Moor Park Apricots may be eaten in perfection in October. The method by which this is effected is very simple; towards the end of July the trees should be gradually prepared for removal by tilting up the pots on one side, so as to break off half the young roots; the pots must then be replaced, and suffered to rest a week or 10 days, and then the other side should be tilted, so as to break off the remaining roots. The trees should then be moved to the north side of a wall or fence in the open air, guarding carefully against snails, which often injure Apricots; they may remain there till the first or second week in September, and then be removed to the orchard-house to ripen their fruit. Apricots retarded in this way are delicious, and so are Coe's Golden Drop Plums; they should be netted to keep wasps from them, and allowed to hang on the trees till they have begun to shrivel—eaten then they will be found to be admirable. In a season like the present, when here, as elsewhere, there is very little fruit out of doors, orchard-houses must, therefore, be regarded as a great acquisition, and we are certainly greatly indebted to Mr. Rivers for not only contriving them, but also for showing us how much may be effected by means of them. Their borders, in addition to affording support to the trees, might be applied to many useful purposes. At Sawbridgeworth a little spawn has been put into those in the fruiting house, and they are now producing a good crop of Mushrooms.

FLORICULTURE.

Raising Seedling Dahlias.—This is, perhaps, attended with more interest and pleasure than any other part of the culture of this noble flower. Much has been said and written respecting which sorts are best to save seed from. I will not attempt to instruct, further than give the system practised by me; which is, to remove all thin, or otherwise inferior blossoms as they appear; for the fewer petals there are, the greater the quantity of seed, with little or no chance of its producing a good double flower. By this, it will be seen, much ultimate trouble will be saved. In small select collections, there will not be so much to do on this point; but in large collections there will be many varieties from which it is not desirable to save seed. This accounts for the number of fine seedlings that have been produced by amateurs from small collections; when many, who annually raise thousands, do not produce a good one. It is worthy of remark that those seedlings that take the lead and bloom first seldom, if ever, produce a flower worth preserving; these are from the finest seeds and thinnest blooms; they vegetate first, and keep a-head all through the season, and can easily be distinguished by their tall habit, without side branches: whereas the late small plants, that require nursing to make them bloom before the frost arrives, generally produce the best flowers; it is well known that very few of our best seedlings are ever shown the first season of their blooming. These are from the smallest seeds, and very double flowers. *T.*

National Floricultural Society, *September* 7.—Several seedling Dahlias were produced. Mr Dodds, of Salisbury, had Miss Herbert, bronzy pink, with light tip, Lord Raglan, a flower like Sir John Franklin, but lighter; and Mrs. Stowe, bright lilac pink, to which a Certificate of Merit was awarded. Mr. Wheeler sent blooms of Lord Bath, a deep maroon, good in form and substance, and Primrose Peerless, a promising flower. Mr. Keynes sent Fairy Queen, a well formed medium sized flower, to which a first-class Certificate was awarded; Comet, pale yellow and pink, slightly striped with crimson, which received a Certificate of Merit; and Lady Folkestone, yellowish buff tipped with bright rosy purple, which also received a Certificate of Merit. Mr. Rawlings sent Miss Frampton, deep red ground with shaded white tip, good form and substance, and well deserving the first-class Certificate which was awarded to it. Mr. Pope, of Paulton, exhibited Omer Pacha, scarlet, and Mrs. Howard, light yellow, shaded and tipped with deep salmon; a Certificate of Merit was awarded to the latter variety. A few good seedling Hollyhocks came from Mr. Parsons, of Welwyn,

but as single blooms only of each variety were shown the judges could not give any awards. Messrs. Dobson and Son sent a dwarf white Phlox, called Omniflora compacta, to which a Certificate of Merit was awarded; and blooms of a seedling light-coloured Verbena, called Fragrans. Mr. Cole, of St. Alban's, exhibited cut blooms of his very pretty pure white bedding Calceolaria, Purity, a variety that should be extensively grown for bedding purposes. Mr. Rawlings also exhibited his seedling Dahlias, Dr. Reid, dark purple, and Mr. Critchett, deep scarlet.

September 21.—Dahlias were again exhibited in considerable numbers. The Rev. C. Fellowes, of Shottisham Rectory, near Norwich, sent eight varieties, consisting of Cossack, a brilliant carmine, full sized flower, with close, well-formed centre; the Nigger, which is perhaps the darkest flower grown, being nearly black, and smaller in the petal than Essex Triumph. Three blooms of each of the above two varieties were shown, and both had certificates awarded them. Mr. Fellowes also sent 12 blooms of his Pre-eminent, a large deep purple, and very constant, but not in a condition to receive any award. The other five were—Tasso, dark shaded puce, rather small, but fine in petal and form; Portrait, a light orange scarlet; Harbinger, an improved Shylock, a very deep flower; Agincourt, bright purple, and very promising; and Glenlyon and General Washington: the two latter not good. Mr. C. J. Perry, of Birmingham, was awarded a first class Certificate for his seedling fancy Dahlia, Baron Alderson, orange, tipped with white. Mr. J. S. Prockter, of Bermondsey sent three varieties—Fanny Russell, Empress, and Miss Russell. The first named is a pretty fancy flower, of good shape and medium size, salmon buff, tipped with pale flesh colour; this is a neat, smooth flower, and had a Certificate awarded to it. Empress is a pretty light kind, something like Annie Salter. Miss Russell, lilac, is all that can be desired in form, but has a loose imperfect centre, the petal standing upright instead of incurving. Lollipop, exhibited by G. Holmes, Esq., is a large reflexed flower, with a high centre; the outline is very good, being nearly half a globe, of a curious pinkish buff colour. Three blooms were exhibited, and a Certificate was awarded to it, although a seedling of 1854. A first class Certificate was awarded to Mr. C. Turner, of Slough, for Espartero, a flower of great substance, smooth, and of good form; the centre is close and high; the petals small, close, and well-arranged, nine blooms of this variety were exhibited. Dr. Reed, a dark maroon Dahlia, was exhibited by Mr. Rawlings, and has some good points, but as exhibited there was not enough of it. There were also 9 blooms of Holmes' Ringleader, exhibited in excellent condition. Mr. Holmes sent 12 blooms of named varieties, in which we noticed a fine bloom of Sir John Franklin, which, when large, is without an equal in form; this bloom was deservedly admired. Of other subjects, the most interesting were some varieties of Phlox Drummondi, exhibited by Mr. Cole, two of which were large and very round, with distinct white eyes. The same exhibitor sent cut blooms of shrubby Calceolarias, amongst which we noticed Prince of Orange, a good bedding variety, of dwarf habit, small, with compact heads of flower, and of rather a novel colour—yellowish brown.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Persons who are under the necessity of wintering New Holland plants in this house should regulate the temperature, &c., so as to prevent these sustaining any injury, endeavouring at the same time to furnish suitable flowering plants. This, however, is no easy matter, and forms one of the greatest difficulties which many gardeners have to surmount, for the majority of our favourite hard-wooded plants require a cool temperature and free exposure to the air on mild days, whereas nearly all plants require while in flower to be kept a shade warmer, with the atmosphere in circulation, to prevent the blossoms being injured by damp. It is anything but advisable to attempt to winter valuable specimens of New Holland or Cape plants in a house where there is a continual temptation to keep the temperature rather warm, so as to render it suitable for miscellaneous plants in bloom, but those who have no more suitable place in which to winter their best specimens should endeavour to be provided with a large quantity of Camellias, Cytisus, Acacias, Daphne odora, Epacrises, and the winter flowering Heaths, which, if properly prepared, bloom profusely in a cool house, and require no more artificial heat than will just suffice to prevent the settlement of damp; and if provided in proper quantities these form no mean display. There are also many other plants almost equally suitable for flowering in a cool house in winter, so that a house of this sort may be kept equally gay with one, where the temperature can be kept at any desired degree. But to attempt to winter New Holland plants, especially large thick specimens, in a house where miscellaneous pants in flower are introduced, and the temperature regulated for these, is sure to end in the ruin of the specimens, and disappointment of all parties concerned. Any specimens which it may be deemed safe to risk in the open air for some time longer, should be placed where they can have a canvas screen, or some more suitable protection afforded them, to throw off heavy rains or frost. Keep all greenhouse plants cool and airy, and avoid crowding, especially in the case of things that have made their growth out of doors, for these require plenty of light and air for some time after being placed under glass, in order to get their wood properly ripened. Some late-flowering things, however, will form an exception, such as have not made their wood, as these will require to be kept rather close and moist, with a sufficiently high temperature to promote vigorous growth. STOVE.—Such things as Allamandas, Clerodendrons, Echites, &c., which have done their season's work, should be placed in the driest part of the house, and be sparingly supplied with water at the root, in order to get their wood well ripened; for unless this is attended to there will be no chance of their breaking strongly next season. If damp weather continue, slight fires should be used by day to allow of securing a moderate circulation of air, in order to avoid damp; for many plants will not be prepared for the sudden change, and will be subject to the attacks of mildew, &c., and to having their foliage disfigured. Keep a sharp look-out for insects, especially thrips and red spider, for if these are allowed to disfigure the foliage now, it will, in the case of many plants, be unsightly for months.

FORCING DEPARTMENT.

PINERIES.—Attend to last week's directions, and afford fruit approaching ripening a dry, rather warm atmosphere; also endeavour to keep young stock growing as freely as may consist with obtaining stocky growth, keeping them properly supplied with water at the root, and using moderate fires on cloudy days to keep the temperature regular. Be careful to avoid syringing to such an extent as to cause water to lodge in the hearts of the plants, which tends to blanch and weaken the leaves; and where a moist atmosphere is maintained by means of tanks or other contrivances, the syringe may be almost laid aside for the season, or at most used only on the afternoons of fine days, when the house can be shut up at a high temperature, so as to cause rapid evaporation. Look over the young stock growing in pots, and shift any that require more pot room while there is a chance of their laying hold of the fresh soil before winter. See to having the balls moist at the time of shifting, for neglect of this is a frequent cause of young plants fruiting prematurely. VINERIES.—Vines that are to be forced early, provided the wood is well ripened, and the leaves mostly off, should now be pruned and dressed, and the house should be kept as cool as possible after pruning to prevent bleeding; for it is difficult to get the Vines sufficiently dormant at this season as that bleeding will not occur to some extent after pruning. And so injurious is this in weakening the Vines, that where there is any danger of its occurring to any serious extent, the pruning should be deferred until the Vines seem to be fairly at rest. It will also be advisable to cover the outside borders of houses, intended to be forced early, with something to throw off the wet, so as to keep the roots rather dry while the Vines are at rest, and secure having the border in a dry healthy state when forcing is commenced. Ripe Grapes will require to be frequently gone over, cutting out any diseased berries, and to have the atmosphere kept dry by using gentle fires when necessary, with a free circulation of air; but a warm temperature is nearly as injurious as damp, therefore use no more fireheat than will serve to dry the atmosphere, and this only when indispensable. Of course, all pot plants have already been removed from houses in which ripe Grapes are expected to hang for any length of time, and the inside borders, &c., kept quite dry. FIGS.—The second crop of these will now be getting over, and every possible attention should be given to the ripening of the wood. The young shoots should be kept thin and closely tied in, so as to distribute them equally over the trellis, in order to fully expose the foliage to light, keeping the atmosphere dry and rather warm; and the borders can hardly be kept too dry after the fruit is gathered. Any over-strong shoots should be stopped, and trees that incline to be of a gross habit should be severely root pruned; for unless short-jointed, firm wood can be obtained, an abundant crop of fruit need hardly be expected. PEACHES.—Keep cool and dry where the wood is ripe, and draw up the sashes at night, when there is any appearance of rain, so as to avoid getting the borders saturated with wet. Where the wood is ripe and the leaves off, any little pruning that may be necessary should be done, and the paint, &c., well cleaned. The trees should also be retied, taking care to loosen any old ties that might bind the wood in course of next season's growth, for those will be more readily seen now than when the foliage is on. After thoroughly cleaning the house, &c., it may be used for storing various plants, but care should be observed not to introduce plants infested with insects. MELONS.—Keep the atmosphere dry and warm, with a regular bottom-heat of from 85° to 90°, and endeavour to get the remaining fruit ripened as quickly as possible; for unless they can be ripened before damp cloudy weather sets in they will be good for but little. If water must be given to the soil, let this be done early in the day, while air can be given to prevent damp at night. Remove decaying leaves immediately they are perceived, and use every means to keep the foliage healthy.

FLOWER GARDEN AND SHRUBBERIES.

The season is now so far advanced that frost may be expected any night, and any scarce plants which it may be desirable to lift before they are injured should be potted at once. The whole stock of such things as the variegated Geraniums, where room can be spared for them, is well worth the trouble of potting and wintering in good sized plants; for, being rather weakly growers, large old plants are vastly preferable to cuttings rooted in autumn; for the latter, unless planted very thickly, do not soon cover the ground, and flower but sparingly till late in the season. Those who intend to preserve large quantities of these, or of other plants with which the garden is now furnished, will not of course remove them until the beauty of the garden is destroyed, but they should be prepared to cover them in the event of frost, for they will be much more liable to damp and die back if allowed to get injured by frost before potting. The late heavy rains have washed off all exhausted flowers of Verbenas, &c., and those who are in favoured localities and have any prospect of escaping frost for some time longer, should go over the beds and carefully remove the exhausted trusses of flowers, which, besides being unsightly, tend to weaken the plants, as they generally contain seed. Now that the ground has had a good soaking of rain, shrubs and trees of all sorts and sizes may be shifted at as small an expense as at any season of the year, and with the very best chance of their succeeding. Therefore where alterations involving the removal of large shrubs or trees are intended to be executed this season they should be proceeded with as soon as possible. The winter and spring arrangement of the garden should be decided upon at once, and everything got ready for replanting the beds immediately they are cleared of their present occupants, for it is of importance to get spring flowering bulbs planted as soon as circumstances will admit, and also shrubs, &c., so as to allow of their making fresh roots before severe weather sets in. It is a too common practice when the beauty of the garden begins to fade, to be less particular in its keeping; the reverse of this would, however, be more judicious; therefore let there be no flagging in the necessary perseverance to keep every corner clean.

HARDY FRUIT AND KITCHEN GARDEN.

Look over choice Pears and Apples at short intervals on dry days, and gather such of the fruit as is found to readily part from the tree. Net up late hanging Plums, to preserve them from wasps and flies, &c. Espalier and dwarf standards, or indeed any kind of fruit trees which exhibit more disposition to form useless wood than fruit spurs, should be root pruned directly the fruit is gathered; and any useless shoots should be cut out at the same time, so as to keep the wood thin and expose that expected to bear fruit next season to all the light possible, which will assist in getting it well ripened. Provision should be made for protecting a quantity of French Beans from frost, should this occur, and the Cauliflowers should be looked over, turning down a few of the leaves over the hearts, for a slight frost spoils the colour of these, particularly while the hearts are young. Also be prepared to protect a lot of Lettuce and Endive, and get a quantity of brown Dutch or Bath Cos, which are the best of the hardy sorts, planted where they can be protected with frames or hand-glasses for winter and spring use. See to having a good supply of good rotten manure in readiness when wanted; also turn the refuse heap, to hasten its decomposition, and collect and char prunings of shrubs, &c.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending Sept. 28, 1854, as observed at the Horticultural Garden.

Sept.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind.	Rain.
Friday 22	[illegible]	30.314	30.255	63	44	53.5	59	59	N.W.	[illegible]
Satur. 23	1	30.218	30.197	63	55	59.0	57	59	W.	[illegible]
Sunday 24	2	30.063	30.058	70	36	53.0	58	60	W.	[illegible]
Mon. 25	3	30.300	30.247	64	34	49.0	57	59½	N.	[illegible]
Tues. 26	4	30.342	30.304	69	34	51.5	56	59	N.W.	[illegible]
Wed. 27	5	30.332	30.219	70	33	51.5	57	59	S.E.	[illegible]
Thurs. 28	6	30.158	30.080	71	33	52.0	57	59	E.	[illegible]
Average		30.248	30.268	67.1	38.4	52.8	57.3	59.2		[illegible]

Sept. 22—Very clear; fine throughout; rain at night.
— 23—Densely overcast; cloudy; fine.
— 24—Fine; very fine throughout.
— 25—Clear and fine; cloudless; very fine; cold at night.
— 26—Slight fog; very fine; clear; cold.
— 27—Foggy; very fine; clear.
— 28—Slight fog, with heavy dew; very fine throughout.

Mean temperature of the week, 2¾ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK.
During the last 28 years, for the ensuing week, ending Oct. 7, 1854.

Oct.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 1	63.1	45.6	54.4	15	0.53 in.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Mon. 2	63.2	43.3	54.3	16	0.48	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Tues. 3	62.5	44.1	53.3	14	1.01	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Wed. 4	63.1	43.5	53.3	14	1.06	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Thurs. 5	62.4	40.6	51.5	12	0.57	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Friday 6	61.0	43.2	52.1	15	0.78	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Satur. 7	61.9	41.8	52.9	12	1.58	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

The highest temperature during the above period occurred on the 6th, 1834—therm. 80 deg.; and the lowest on the 2d, 1833—therm. 27 deg.

Notices to Correspondents.

BEEHIVES: *T L W H.* The best are undoubtedly those made of straw. Box-hives answer in very skilful hands, but cottage hives answer with anybody who lives in a good bee country. For prices apply to dealers.

NAMES OF PLANTS: We have been so often obliged reluctantly to decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*P Q.* Clematis tubulosa.—*A H.* The one which you find a hardy aquatic, seems to be J. grandis... sima.—*Erzeroum.* 10, Gagea stenopetala; 4, G. circinata; ...—*L M R.* Crepis tectorum...fera; 1046, Smilax excelsa.—*Gaunt.* We are unacquainted with the names A... linifolia, and Shortia californica. If you will send us specimens we will give their real names.—*Rudolph.* It is Apio... gracilis; blue, Aster Amellus; red, Lychnis viscaria; double yellow, Rudbeckia fulgens; white, Double Chamomile... is too low, double Feverfew. By hardy herbaceous plants we understand you to mean hardy perennials. But better effects are producible by modern "bedding out" plants, which ... in winter.

NAMES OF FRUITS: *A Sub.* Pears: 1, Williams' Bon Chrétien; 2, Black Achan; 3, 5, 7, Chaumontel; 6, Passe Colmar; ... Marie Louise; 9, Winter Nelis; 10, Beurré d'Aremberg; ... Stagg's or Early Nonpareil; Napoleon. Apples: 1, Downton; 2, ... 3, Wheeler's Russet; 4, Sturmer Pippin; 6, Court of Wick; ... Kentish Codlin; 8, King of the Pippins; 11, Hawthornden; 12, Cornish Gilliflower.

REVALENTA ARABICA: *A H.* We believe, in common with others, that the substance sold under this name is the meal of the Ervum Lens or common Lentil.

SALT: *W H.* We presume that if you irrigate a heathery mountain with sea water you will kill the Heather. When what is called Pinus maritima, that is to say, P. Pinaster, is sown in sand, various means are employed. The most approved ... to be to sow the seed broadcast with Oats, which protect the young Pines till they have established themselves. Others sow Furze or plant Jerusalem Artichokes in rows ... apart, running east and west, and drill the Pine seed in the intervals. When the ground is covered with Heather, the French sometimes sow the Pine seed broadcast, and then give the Heather to the poor, upon condition that they pull it up immediately; the scuffling about of the ground during the operation being regarded by the French foresters as insuring a sufficient covering for the seed.

THE LONDON MANURE COMPANY beg to call the attention of Agriculturists to their WHEAT and CLOVER MANURES for present use. The London Manure Company also offer Genuine Peruvian Guano, Nitrate of Soda, Concentrated Urate, Superphosphate of Lime, Fishery and other Salts, and all Artificial Manures of value. The London Manure Company guarantee Peruvian Guano and every Manure they supply to be strictly genuine. EDWARD PURSER, Sec.
Bridge Street, Blackfriars.

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures, Linseed Cakes, &c.
WM. INGLIS CARNE, 10, Mark Lane, London.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7*l.* per ton; Superphosphate of Lime, 7*l.*; Sulphuric Acid and Coprolites, 6*l.*
Office, 69, King William Street, City, London.
N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent. of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

WHEAT SOWING.—The undersigned beg to call attention to their WHEAT MANURE, which has been successfully used during the last two seasons, and which they are prepared to deliver at 6*l.* per ton, free to Railway.
They are also Sole Agents for the sale of PEAT MOSS CHARCOAL, which is a valuable deodoriser and distributor of ammoniacal matter.—English and Foreign Linseed and Rape Cakes, Guano, Superphosphate of Lime, Salt, Bones, and all other Manures of known value on sale.
Apply to MARK FOTHERGILL & Co., 204, Upper Thames Street.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and dispatch.
Gentlemen desirous of receiving instructions in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

THE PATENT ALKALI COMPANY manufacture on a large scale, at their extensive works in Lancashire, Sulphate of Copper (Blue Vitriol), Soda Ash, and Crystal Soda of first-rate quality, which may be fully depended on for purity. The Company's Purple Brown Metallic Paint is also held in high repute as a pigment for Iron, Roman Cement, &c. &c. Orders, &c., to be addressed to Mr. JOHN A. WEST, Secretary of the Company, 1, New Broad Street, London.

JACKSON'S PATENT PREPARATION FOR THE PRESERVATION OF POTATOES, SEEDS, &c.—This valuable discovery, for which letters patent have been obtained, is the successful result of 14 years' study and experiments in the preservation of vegetable matter. It imparts health and vigour to the Plants and Seeds subjected to its action, and effectually prevents the Potato Disease, the Smut in Wheat, Mildew and Rot, all Fungal Diseases, and the attacks of Insects and Vermin, and further recommends itself to the Farmer, the Planter, and the Public generally, by the extreme simplicity of the mode of its application.
It is sold by all Seedsmen and Chemists, in packets of one, two, three, and four pounds each, with instructions for its use; and parties requiring larger quantities for their own use or for exportation can be supplied on advantageous terms, by addressing Mr. JACKSON, the Patentee, 18, Cannon Street, London Bridge; where the article is always on sale, and the fullest particulars and directions for its use can be obtained.

Extracts from numerous Testimonials in favour of JACKSON'S PREPARATION.

"Belmont Farm, Eltham, Kent, August 28th, 1854.
"Sir,—I am now about to perform my promise, to let you know how your prepared Potatoes have turned out here. As a practical farmer of some experience I had despaired of finding any remedy for the disease; but I must confess that a stronger proof of the efficacy of your process in Preserving Potatoes, could not have presented itself than I have now to relate. One of the fields of this farm, the property of Mrs. Stanbury, was planted with Regents Potatoes in April last, some of which were prepared by you. The result now is, that the whole of the crop from the unprepared sets is thoroughly diseased and hardly worth the trouble of taking up; while those raised by the side of them from the prepared sets, are not only in a beautiful state of preservation from the disease, but the produce is much greater,—the Potatoes are more numerous than the others; indeed, if there were no such thing as the disease to be feared, it would be worth the trouble and expense of preparing the sets by your process, even for the sake of the improved crops. I shall certainly, for the future, prepare all my Potatoes for seed by your process; and I intend to adopt it for preserving my Wheat from the smut. Any person may see the difference of the prepared and unprepared Potatoes at a glance. You are at liberty to make any use you please of this letter, and I remain, Sir, your obedient Servant,
"G. B. BAXTER.
"To Mr. Jackson, "Late of Ruxley Farm, Kent.
"18, Cannon Street, London Bridge."

M'GLASHEN'S PATENT TRANSPLANTING APPARATUS.

MR. M'GLASHEN, the Inventor of this Apparatus, has to express his regret that delay has hitherto occurred in the execution of orders, from causes over which he had no control. He begs to state that he has now taken entirely into his own hands the Manufacture and Sale of the Apparatus, and that orders will henceforth receive punctual attention.
The Apparatus is suited for Raising and Removing to any distance Trees, Shrubs, and Flowers, of all sizes, with attached Balls of Earth, so that the operation is not only perfectly safe, but does not affect the vigorous growth of the Plants. The use of this Apparatus greatly facilitates planting operations, and saves much labour and expense. The delay that occurred, while to the inventor a cause of regret, afforded him the opportunity of introducing several important improvements, which have served to cheapen the cost of the Apparatus, and increase the facility and security of its use.
Agents will ultimately be appointed throughout the kingdom. In the meantime all orders and other communications are respectfully requested to be addressed to Mr. STEWART M'GLASHEN, Canonmills Bridge, Edinburgh, who will be happy (either personally or by letter) to supply information to Landed Proprietors, Landscape Gardeners, Nurserymen, Foresters, and others.
Canonmills Bridge, Edinburgh, Sept. 1854.

HOSE PIPING.—GREAT REDUCTION IN PRICE.
PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense pressure, and much more than leather, vulcanised rubber, or any other hose, and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented inventions, the cost of manufacturing it is now reduced at least 50 per cent. which advantage is offered to the public.
BURGESS AND KEY, 103, Newgate Street, and 52, Little Britain, who, on application, will forward wholesale and retail prices.

CORN CRUSHERS AND CHAFF CUTTERS.—A large display of the best Farm Implements shown in operation. Price Lists sent free on application.
BURGESS AND KEY,
103, Newgate Street, and 52, Little Britain, London.

PUMPS AND HOSE PIPES FOR GARDENS AND LIQUID MANURE.—BURGESS & KEY'S Pumps were highly commended by the Royal Agricultural Society of England at Lincoln. Price Lists sent free.
103, Newgate Street, and 52, Little Britain, London.

CHURNS.—ANTHONY'S PATENT AMERICAN CHURN.—Since 1849 this Churn has obtained all the Prizes awarded by the Royal Agricultural Society of England. At the trial before the Judges it made in 10 minutes 4 lbs. 6 oz. of Butter from 4 quarts of Cream, being 8 oz. more than any of the other Churns from the same quantity and quality of Cream.
103, Newgate Street, London.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.
PATRON—His Royal Highness PRINCE ALBERT.
PRESIDENT OF COUNCIL—Earl BATHURST.
PRINCIPAL—Rev. J. S. HAYGARTH, M.A.
PROFESSORS, &c.
Chemistry—J. A. C. Voelcker, Ph.D., F.C.S.
Zoology, Geology, and Botany—James Buckman, F.G.S., F.C.S.
Veterinary Medicine and Surgery—G. T. Brown, M.R.C.V.S.
Surveying, Civil Engineering, and Mathematics—F. Armstrong, C.E.
Manager of Farm—G. Austin.
Students are admitted after the summer and winter vacations, also in April and October. The Annual Fees for Boarders vary from 45 to 80 guineas, according to age and other circumstances. The Fee for Out-Students is 40*l.* per annum. The College Course of Lectures and Practical Instruction is complete in one twelvemonth—though a longer course is recommended. There is a department for general as well as for agricultural purposes. Prospectuses and information can be had on application to the Principal.

COLLEGE OF AGRICULTURE AND CHEMISTRY AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.
Principal—J. C. NESBIT, F.G.S., F.C.S., &c.
The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.
Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

SMITHFIELD CLUB, 1854.
CHRISTMAS FAT CATTLE SHOW.—The Annual Show of Fat Cattle, Sheep, and Pigs, will take place on the 5th, 6th, 7th, and 8th of December, 1854, at the Carriage Bazaar, King Street, Portman Square, London.
All Certificates must be returned to the Honorary Secretary on or before Saturday, the 4th NOVEMBER 1854.
Prize Sheets, and the necessary Printed Forms of Certificates, are now ready, and can be obtained on application to
B. T. BRANDRETH GIBBS, Hon. Sec.
Corner of Half Moon Street, Piccadilly, London.

SOUTH DURHAM AND NORTH RIDING OF YORKSHIRE FAT STOCK & POULTRY SOCIETY.—The SECOND ANNUAL EXHIBITION of this Society will be held at DARLINGTON, in the County of Durham, on THURSDAY and FRIDAY, December 7 and 8. Prize Lists of which are now ready, and can be had on application to the Secretary. JOHN HODGSON, Hon. Sec.
Darlington, September 30.

The Agricultural Gazette.

SATURDAY, SEPTEMBER 30, 1854.

MEETINGS FOR THE ENSUING WEEK.
THURSDAY, October 5—Agricultural Imp. Society of Ireland.

SOME rather warm discussion is proceeding as to what was or was not said at the late Tiptree gathering, in reference to the Ayrshire crops of Italian Rye-grass under the irrigation system of applying farm manure; and with the view, we presume, of damaging his reputation as an agricultural teacher, some of our contemporaries seem disposed to fasten a responsibility upon Mr. CAIRD, which really rests upon altogether different shoulders. We have no wish to screen Mr. CAIRD from any of the results of that sanguine temperament and agricultural enthusiasm with which it seems on all hands determined to endow him; but we must confess that, believing he has done good service as an agricultural teacher, by his publications of late years, we always feel, on the first opening of any fresh charge against him, the same desire to listen favourably to explanations on his behalf, that others seem to feel on behalf of his accusers or traducers, as the case may be.

In the present instance, having been present on the ground, and having had the advantage of occasional conversation both with Mr. CAIRD and with Mr. TELFER during the day, having sat close to the one gentleman and within one of the other at the dinner table, we have the advantage of a perfectly confident memory as to what was said upon the occasion of all this discussion; so that it is not of the testimony of others that we have to judge at all. Let it be remembered, too, that whatever was said was uttered within two yards of Mr. TELFER himself, who though actually appealed to, uttered no word of disapprobation or dissent. We heard one of the gentlemen present utter, after dinner, his incredulity in the extravagant manner* to which the *Mark Lane Express* this week refers, but the danger which he threatened would have befallen Mr. TELFER, not Mr. CAIRD, on whom it seems determined to lay the responsibility of asserting an agricultural impossibility, for we heard the *former* gentleman state, of the Scottish acre, that in one season he had cut of Italian Rye-Grass 25 tons, 25 tons, and upwards of 15 tons, and that upwards of 20 tons of hay had been made by him per acre. A correspondent of the *Mark Lane Express* says Mr. TELFER makes no hay—but that he has cut 70 tons of Italian Rye-grass per acre at three cuttings, which he believes would make 11 tons of hay! Seventy tons of the leafiest aftermath of Clover, cut after constant rain throughout its growth, might make no more than 11 tons of hay: but 70 tons of Italian Rye-grass, such as we have ordinarily seen, would be a great deal more likely to make "upwards of 20 tons of hay," than the same weight of ordinary Grass would be to make 17, as probably it would. Be this as it may, our *impression* was and is that the assertion made had reference to the current year—our *confident testimony* is that to whatever year it related *it was made*, and not originally by Mr. CAIRD. We do not know to what extent of land the assertion itself related; probably many of our readers would be surprised if they knew the small number of acres to which the more important truth—for so we quite believe it, that 25 tons of green food per Scotch acre can be provided at a cutting by Italian Rye-grass—related in Mr. TELFER'S case. It is on a small scale, and in experiments thus permitting careful superintendence that these great strides in agricultural progress first are made; and such startling announcements, however small the scale on which their truth is proved, and though raising little else, perhaps, than anger, first, are useful nevertheless as proving that, however great the advance of late years may have been, the goal is still a-head.

We venture to suggest to the *Mark Lane Express* the propriety of exact quotation, when by inverted commas exact quotation is professed. We should not have referred to this but for the easy possibility, under such circumstances, of conveying a wrong impression by a very slight, and it may be accidental, inaccuracy; and we should not have referred to it at all, but that it is the second time in which the same words are attributed to us by it—words which are not to be found in our columns.

* The words used were, "If that had been said at my ram sale, I would not have answered for the man's life. *We must have* TRUTH!" Very true! but truthfulness sometimes demands the risking of the dangers which it seems sometimes attend attendance upon English ram sales.

THERE cannot be a more important subject for the consideration of the farmer than that alluded to in the letters lately published by Mr. LAWRENCE and "MAGISTER." The provision of skilled and moral labour is *felt* as one of the great necessities of his position by every agricultural employer in the kingdom, and it is *acknowledged* as such by the very many among them who take an interest in our labourers' friend societies. That these societies might be of the greatest service towards the end they have in view, we perfectly agree with the warmest of their partisans. That they fall wofully short of the possibilities of their usefulness we are equally certain. How differently our correspondents "MAGISTER" and Mr. LAWRENCE look upon the subject, compared with the feeling generally entertained about them by the managers of these societies, is plain. The attainment of skill, by prizes offered for the proofs of it, is a point on the propriety of which all are agreed, but the possibility of attaining moral worth in such a manner is not so universally admitted; and, for our own part, we would rather have the influence of one year's inquiry after character in those applying for situations over all the farms of the country, than the influence of all the certificates, and sovereigns, and coats and buttons, that have been granted for honesty, and benevolence, and propriety, and abstinence from parish relief, since the commencement of all these benevolent institutions established in it. We know of one farmer who, when hiring servants, whether at so-called "mops" or other hiring markets, used to put the question, "Can you do as you are bid?" and judge of fitness by the answer given to that alone; others, as "MAGISTER" asserts, are satisfied with proofs or certificates of skill alone; very few, indeed, require certificates of *character*; and yet their own interests, as well as those of servants, would be obviously served by their doing so.

Meanwhile, we venture again to call the attention of our labourers' friend societies, by the experience of Mr. LAWRENCE at Lord RADNOR'S July meeting, and by our own experience at a somewhat similar gathering lately at the Earl of DUCIE'S, to the fact that the best moral influence can be exerted upon labouring men without the degrading effect of direct money payments for character. At Tortworth, last week, an exhibition was held of allotment and farm produce in the park; 200 or 300 exhibitors gathered specimens of the several sorts of vegetable produce cultivated by them—roots, sheaves, fruit, and flowers—and prizes were awarded for the best specimens under a dozen or two different heads. A large number of the county gentlemen from con-

siderable distances, all those resident in the neighbourhood, and, above all, many hundreds of the labouring men and their families were present. The first meeting of this kind is, of course, liable to partial failure (which, however, was not experienced here) from inexperience on the one side, and ignorance on the other of its special objects; but apart from these the general result of so many in such different classes of society uniting in any common beneficial object, must have all the moral influence that these "labourers' friends" desire; and better far that it should be attained in this way than by the course at present followed of rewarding character directly.

We happen to know personally 60 or 70 of the working men of Tortworth and its neighbourhood, and can venture to answer for the good feeling that Lord DUCIE's gathering of them, with his friends and neighbours, to look upon the specimens of their growth, there competing for his lordship's prizes, will have occasioned. But it needs no personal acquaintance, or special knowledge of localities, to determine this. The heart of a working man is, we imagine, in very nearly the same place as that of a nobleman or gentleman; and if a little more credit were given for this, and for the fact that he has a head as well, and plenty of shrewdness to guide his criticisms, we fancy that some of the absurd and mischievous rewards now offered by our labourers' friend societies would be discontinued. But on this we must refer our readers to past articles in this journal.

RAPE-CAKE FOR FEEDING.

THE Rape plant in its green state is well known for its feeding properties; it is rich in albumen and in oil. It will be obvious that the maintenance and increase of the fibrine or flesh is due to the albumen, and its fattening property mainly to the oil of the Rape plant. In oil, or fatty matter, it is probably richer than any other green food. Rape seed has the same properties more concentrated; it is about equal to Linseed in albuminous matter, and richer in oil. Rape-oil being more valuable than Linseed-oil, its seed obtains a higher price. I am not aware of any experiment having been tried with it for feeding; if, however, the price allowed, I should not hesitate to purchase it for this purpose, and should look for a result at all events equal to that from Linseed.

Linseed is much used for fattening, as far as my recollection serves; it bears a higher price than any other material used for feeding. It ranges from 4*l.* to 5*l.* per ton, or nearly 50 per cent. higher than Linseed-cake. As, however, the cake is richer in albumen and nitrogen, and also in phosphoric acid and phosphates, this superiority in price can be ascribed solely to its greater proportion of oil, which is valuable for fattening but not for manure.

From various analyses which have been published, it appears that Rape-cake is somewhat richer in albumen than Linseed-cake. The per centage of oil depends on the skill of the manufacturer, whose interest it is to press out of it as much as he can. The published analyses show a very similar per centage in each, and this agrees with the opinion of the manufacturer from whom I purchase. I am not aware of any analysis defining what are termed the heat-supplying elements, gum, sugar, dextrine, &c., of Rape-cake. There appears, however, a very like proportion in each, 41 per cent., which includes the husk or fibre. There is a difference in the quality of the oil; Rape-oil is of the unctuous or fluid class, while Linseed belongs to the drying or stiffening oils. It has occurred to me that Linseed-oil, having more of the stearine property, might conduce more to the increase of solid fat, or tallow, but my experience has tended to remove this impression. There is a great difference in the taste or flavour, that of Rape-cake being acrid and somewhat unpleasant, that of Linseed sweet and palateable. This is imparted by the essential or volatile oil, which has no influence on the fattening property.

I have thus sought to trace the grounds on which it is concluded that Rape-cake is equal to Linseed for feeding, a conclusion which is insisted upon by chemistry. If we look at the market price we shall find that in practice, by which this is regulated, there is a marked distinction. That of Rape-cake rules lower than that of Linseed by 4*l.* to 5*l.* per ton. This is attributable to the latter serving a double purpose, that of food and manure, whilst the former is mainly used direct for manure. We thus find that practice allows 4*l.* or 5*l.* per ton for the attribute of food only, as the fertilising value of the two is very similar, Rape-cake rather having the advantage.

It is a remarkable feature in the animal economy, and one to which attention has been scarcely sufficiently called, that the elements of food which serve the purpose of nutrition, together with the phosphates and minerals, and which are alone held of value as manure, are accounted for either in the gain of flesh and bone, or are otherwise found in the excrements which are deposited in the soil to serve as manure, whilst of the elements of respiration a great proportion is dissipated, and seeks the atmosphere—the source from which it is supplied to vegetation. Liebig states that the excrements from plants used as food are of the very highest value for those plants from which they are derived. May it not be assumed that plants have the twofold attribute of food for the maintenance of animals, and in their excrement, the means, or otherwise food, for reproducing those very plants in their full integrity. It will then appear that the application of food direct for manure is a great waste. In the case of Rape-cake, admitting the conclusions of chemistry to be sound, it is equal to 4*l.* or 5*l.* per ton.

When at the Lincoln meeting, amongst other topics of inquiry, I made a point of introducing the use of Rape-cake as food. I held conversation with some of the prominent agriculturists of the day, from Norfolk, from near the Tweed, Kent, Lincolnshire, and other counties. Nearly all had tried it, but had given it up, in consequence of their cattle refusing to eat it; one or two from not perceiving advantage from it. As my practice has led me to different conclusions, I beg to describe it for the consideration of your readers. It is now several years, say four to five, since my attention was called to the use of Rape-cake as food. The price of beef was low, the practice of stall feeding, and the use of artificial food in this district, which is chiefly in permanent Grass, was much on the decrease. Graziers who formerly tied up their 50 to 80 for winter feeding have reduced their number to 6 or 8, or have wholly relinquished the practice, preferring to sell off their half-fat animals to other Turnip-growing districts. My first attempts were a mixture of Linseed and Rape-cake. After numerous comparative trials, which I will not occupy your pages with recounting, I discontinued the use of Linseed-cake altogether in favour of Rape-cake. I have found from experience that it is important to procure Rape-cake of good quality. The manufacturer with whom I deal requires notice of my wants, in order to insure its being made from proper seed. The cake he supplies me with is of a rich green colour, and appears free from admixture of extraneous materials. It is of great advantage to keep it some time before using it. I have frequently found that cake refused when quite fresh has been eaten readily by the same cattle when a few months old. It becomes milder, and somewhat softer, and more easy to masticate by keeping. To prevent the too great access of the atmosphere and its moisture, I cover the cake with saw-dust, chopped straw, or other similar material. This preserves it sweet and free from mould.

For several years I used it when crushed, mixed with shells of Oats, chopped straw, and a sprinkling of Bean-meal. The mess was moistened with cold water, and well-blended, and though the cattle did not take it at first, yet, by beginning with a little at a time, and persevering, I found that I could accustom them to eat any quantity I thought it desirable to give them. I limit them to 4 or 5 lbs of cake, and 1 lb. of Bean-meal each per day. More recently, since 1853, I have had recourse to steaming, and now use a portion of Bean straw, rough seeds, and chopped straw, together with 4 lbs. of Rape-cake and 2 lbs. of Bran. The whole is previously mixed and then steamed together. The Bean-straw and bran give a relish to the mess, and the cattle devour it greedily. There is an advantage in this method, as they do not require time to accustom them to eat the requisite quantity. I now call attention to the components of my fattening food. Up to 1852 it consisted of—

Chopped Oat straw, and shells of Oats	16 lbs.
Swede Turnip per day, for use	60
4 lbs. Rape-cake, and 2 lbs. Bean-meal; or 5 lbs. cake, and 1 lb. Bean-meal...	6
	82 lbs. per day.

My food at present consists of steamed—

	lbs.
Chopped Oat straw, shells of Oats, and Bean-straw, 16 lbs.; 4 lbs. Rape-cake, and 2 lbs. Bran, blended together before steaming	22 per day.
60 lbs. Swede Turnips, or 50 lbs. Mangold, given in a raw or natural state	60
	82
Of dry chopped straw in addition	2
	84

On this fare my cattle make satisfactory progress. On light heifers, say, from 7 to 9 cwt. each, I look for an average gain, through a lengthened course, of not less than 14 lbs. per week each, and on cattle of a larger size, say from 10 to 12 cwt. each, a gain of from 14 lbs. to 18 lbs. per week each. When bought in fresh condition it requires 16 weeks, or, when lean, 20 to 24 weeks to make them fit for the market.

The economy of feeding milch cows varies with the circumstances of the locality. In the neighbourhood of towns, where milk is sold at 2*d.* per quart, the gross receipts from cows will average 24*l.* each; and in London, where the price is 4*d.* per quart, the yearly receipts will be 48*l.* from each, on an average yield of 8 quarts per day. Food is consequently dear: hay is much used at the cost of 4*l.* to 5*l.* per ton; Turnips sparingly at 16*s.* to 20*s.*, and Mangold Wurzel as high as 1*l.* 10*s.* per ton. The dairy keepers in such localities buy their cows at the fairs, brought thither from a distance. It is of importance to look to the condition of the cow, and, other things being equal, they will give a higher price in proportion for a cow well stored with flesh and fat. It is a common saying, that condition in a milch cow is of equal value as when for fat. The disposition of the cow to yield milk is so much stronger than to lay on flesh or fat, that not only is the aliment of the food diverted to this purpose, but to all appearance the accumulated stores of fibrine or flesh, and also of fat, are drawn upon and converted into components of milk, casein, or butter; with the disadvantage of dear food, it may probably be consistent with economy in such localities to afford their milch cows such supplies of food as tend to the yield of milk without giving due attention to the maintenance of their condition. When the yield of milk is reduced, the condition of the cows is almost invariably reduced likewise, and they are then disposed of to some purchaser in a farming district for fattening or for breeding. Being, however, differently circumstanced, in a farming district, I not only fatten my own dairy cows, but purchase, in addition, such as are sold off by dairy-keepers. I, therefore, find it of great advantage to supply my milch cows with food to maintain and improve their condition. With this view, I pay great regard to the composition of the produce, milk, which is rich in casein and also in phosphate of lime. Experience tells that inattention to the supply of albuminous matter in the food will be attended with a marked diminution in the condition of the animal, a lessening in the stores of flesh and fat; and I see no reason to doubt that a like result will follow as to the supply of phosphates in the effect on the bones. It is also certain that if a due proportion of these elements be not supplied in the food, the milk will be deficient in properties so essential for the purpose for which it is intended, that of building up the muscle and bones of young animals. With these prefatory remarks, I now invite attention to my treatment of milch cows.

For extra food, and during winter, I give them the same materials and quantity as to my fattening stock, with a more limited supply of roots, say 30 lbs. of Kohl Rabi up to February, and after then a like quantity of Mangold Wurzel, with an addition of 12 lbs. of meadow hay each per day. It will be observed that Rape-cake and bran are rich in phosphate of lime, and also in phosphoric acid; and it admits of computation, that of these elements the quantity in the extra food is amply sufficient to supply the requisite proportion to a full yield of milk. I now proceed to describe the result of this treatment on my milch cows, of which I maintain about 15. In March 1854 I first began the practice of weighing such of my milch cows as are not in calf, a practice which has given me a far more accurate idea of the doings of my cattle than I could previously pretend to. I find that those in full milk giving from 6 to 9 quarts per meal, or 12 to 18 quarts per day, are fully maintaining their weights. There is a variation, some having slightly increased, others slightly decreased, the balance on the whole being rather to gain. I particularise the one which has given the greatest quantity of milk. Soon after calving, her yield was near 10 quarts per meal, or 19 quarts per day. After milking 16 weeks, the quantity is reduced to 15 quarts per day. She is in full condition, and has weighed at each of the times exactly 11½ cwt.; and likewise one which has been longest under observation. She was bought in November, 1853, a week after calving. The first few days she gave but 5 quarts per meal; with better keep she increased to 6 quarts, and when at the height gave nearly 8 quarts a meal, or 15 quarts per day, which quantity she continued up to July. From that time till September her yield averaged about 6 quarts per meal, or 12 quarts per day. My weighing did not commence till February, up to which time she had fully maintained her condition. Her weight was in—

	Cwt.	qr.	lb.		Cwt.	qr.	lb.
February	9	2	0	June	9	2	0
March	9	1	0	July	9	2	4
April	9	1	14	August	9	2	12
May	9	2	0	September	9	3	20

It will be observed that in the March weighing a diminution of 28 lbs. occurred. A supply of grains was furnished for trial, which were brought once a week from a brewery at some little distance; the whole of the cattle in this feeder's care being similarly affected, showing a loss of weight, it was ascertained that the quantity assigned to him had been given too freely in the first two days, instead of being apportioned over the week. This had the effect of hastening the evacuations. On the practice being regulated, the animals recovered their weight. I may here remark that a change to more relaxing food is always attended with an apparent loss in weight, whilst a change to more binding or costive food shows an increase. This decrease or increase will affect the quantity of material in process of evacuation, but may not influence the condition of the animal. From the early part of May to October my cattle, both in milk and for fattening, are turned out into pasture during the day, and housed during the night; they are supplied each evening and morning with the steamed mixture. From June to October they are supplied with mown Grass each morning and evening, having a less quantity of the steamed mixture during June, July, and the early part of August, when the Grasses are richer. From thence to October they have their full quantity.

I now proceed to examine the produce of the cows from the treatment described. Milk varies in quality. If you give cows highly succulent food, which supplies water in greater quantity than is requisite for their wants, the milk will be weak, having a greater proportion of water. Turnips given freely with straw, and more especially brewers' grains, are known to give poor milk. Men of experience in town-side dairy practice tell me that no food has such an effect in reducing the condition of an animal as brewers' grains, if given freely. They are deficient in gluten, a property essential for milk, and it is fair to infer that the stores of flesh are drawn upon to supply in some degree this deficiency. If you give proper food containing less of water than is needed, the animals will take water in addition to the extent

they require. The milk from cows so treated will be of good quality, an analysis of such milk shows the following composition :

Water	873.00
Butter	30.00
Casein	48.20
Milk sugar	43.90
Phosphate of lime	2.31
" magnesia	.42
" iron	.07
Chloride of potassium	1.44
" sodium	.24
Soda in combination with casein	.42
	1000.00

From what has been said, the importance of noticing the weight of a cow in milk, with a view to trace the results of food, will be obvious ; the cow under observation showed a remarkable steadiness, having maintained her weight from November to July—33 weeks—with an average yield of 14 quarts per day. From July to September, with 12 quarts per day, she increased in weight 56 lbs., being at the rate of 7 lbs. per week for the 8 weeks. From the above analysis, it appears that 3½ gallons, equal to 35 lbs. per day, contain of casein 1.68, to supply which the albumen of 5.70 lbs. of Rape-cake will be required ; it will thus appear that the bulky food which I have described has been fully adequate to maintain the condition of the cow, whilst the casein of the milk is almost wholly represented by the albumen of the Rape-cake, of which 4 lbs., and of the bran of which 2 lbs., were given per day. I may be allowed the remark that, in my reading on such subjects, I do not recollect to have observed an instance in which the relation of cause and effect of food and its results was so clearly defined and accounted for. The doings of this cow may be regarded as a fair average of those under similar treatment, being singular only in holding to its yield of milk.

My cows, giving 6 quarts to 3 per meal, or 12 to 6 per day, and of which I keep 9 to 10 on the average, are not so long under treatment ; many of them are bought on as "strippers," giving about 3 quarts at a meal. With this yield of milk, which will average about 7 quarts per day, they, without exception, when free from ailment, gain in weight from 7 to 8, and some even as much as 12 and 14 lbs. per week each. I now think it proper to notice what may occur as an objection to the use of Rape-cake on dairy produce—its flavour. Being in a district where wholesome sweet milk, which in the summer months is wholly from Grass, is produced, and having amongst my purchasers those who attach importance to the flavour and quality of their milk and butter, my attention has been particularly directed to insure these qualities. With this view, I give roots but sparingly (Kohl Rabi) during the early part of winter, till the close of February, from thence till May. Mangold Wurzel, not more than 30 lbs. per day to each cow. On commencing with Rape-cake, I was careful to observe its effects on the flavour ; it was tested at my own table, and has undergone a like test by my purchasers. After years of experience I have no hesitation in saying that any objection of this sort is groundless. My dairy produce, milk and butter, maintain the repute of being good in quality and nice in flavour. I feel particularly called upon to notice this, from observing it stated in the report of a Leipsic agricultural society, that the feeding with Rape-cake had an unpleasant effect on the taste of the produce. Y.

[Many thanks. We shall give the rest of this paper next week.]

THE SCOPE FOR SAVINGS BANKS.

[Extract from a village lecture.]

(*Concluded from page 618.*)

1st. Benefit societies :—Most workmen do join such societies. I wish I knew more than I do about the clubs (if any such exist) of this neighbourhood ; if I did, I should feel myself at liberty frankly and fully to criticise their rules and their constitution, as I have before now those of such clubs as I was acquainted with in the neighbourhoods in which they exist. If any people interested in the maintenance of such clubs should be present, they must remember that, in these days of free trade, it is the recognised rule that the interests of the masses who consume, and not the interests of classes who produce, are the proper things to look to ; and if any one should establish an institution so as to be personally interested in its success—it is not his interest but that of those who partake of what he offers them that is the proper thing for us to inquire about. In the absence of any exact knowledge of the state of things in this neighbourhood, I must content myself with one general remark, and that is this—I warn labouring men against joining any of them which break up annually, and divide the profits and the losses of the year. If you do, 10 to 1 when you come to be old they will not let you join again, and then you are of course utterly dependent. I know one of my workmen who joined yearly a society of that kind, and at length, at the last winding-up, he was not allowed to join again. I also warn them against all such as meet at public-houses for their annual or periodical jollification. In some places where I have spoken on this subject the warning was needed : whether it be here or not I do not know ; but if I did know I should of course be the more anxious to utter it. I should have been glad to have obtained the rules of such societies in this neighbourhood, if any such exist, and I should not have hesitated to criticise them fully and honestly as I have done before now those (which I hold in my hand) of such societies in other neighbourhoods. In many there is hardly any important public-house which has not its benefit club ; and I have no hesitation in saying that the only motive for their establishment is the benefit of the public house in question, and in the long run it is not seldom that the landlord of the public-house is the only person benefited. I would have nothing whatever to do with those societies which tax their members annually for providing beer and feasts—it is a tax for the benefit of the landlord, and for the benefit of no one else—that it is utterly wasted—that it *tends* merely to what may be declared to be riotous brutality—is acknowledged by the very men who establish these societies, and this I will prove by reading some of their rules. I regret exceedingly my ignorance of the circumstances of this neighbourhood in these respects ; if there are any such societies here my remarks will, I dare say, apply to them ; if there are not they will be useful only in so far as they express a general rule, which finds its exemplification if not here then elsewhere. Well, listen to some of these rules :—

"That there shall be an assistant steward, (and when the society consists of 80 members, two assistants), who shall serve for three months; and that he attend every society meeting night by half-past 6 o'clock the winter half year, and by half past 7 in the summer, under a fine of 6*d*., and if not within half an hour of the time, 1*s*. for each neglect ; that his office be to assist the stewards, and serve the beer to all the members, which he shall serve equally, keeping a true account, under the fine of 6*d*. for each default ; or if intoxicated, so as not to be able to serve it without spilling, or giving to members out of the society room, without the consent of the president and stewards, he shall for each offence be fined 6*d*., and make up all deficiency."

I declare the picture of the intoxicated officer foreseen by the man who wrote this rule is perfectly disgusting.

Well, here again is the case of another club :—

"Any member during the quarterly or anniversary meetings who, before the close of business, shall get noisy, quarrelsome, or intoxicated ; or who shall curse, swear, or use any abusive or indecent language, or shall refuse to keep silence after being requested to do so by the clerk or either of the stewards, shall be fined 1*s*."

And of another yet :—

"That should any member offer to lay wagers in club hours in the club room, he shall forfeit 6*d*. or be excluded ; and further, on feast day or on any club night, should any member fight, or strip to fight in the club hours, or on the way home, on the same being proved, the offender shall forfeit 2*s*. 6*d*. or be excluded."

It appears plain enough that the people who drew up these rules knew perfectly well what was the natural tendency of all this drinking, and they must needs therefore have rules which I am ashamed to read, and which I should be ashamed to write, or to think were necessary to restrain my fellow-man. I do not know if these remarks apply to any society in this neighbourhood, but if they do I would strongly dissuade working-men from joining them. I believe that the sooner all such clubs die out the better. Let me recommend, on the other hand, such clubs as—[naming two or three]. Young men as well as those above 21 may join them. The contribution of the former is 1*s*. a month, and of the latter 1*s*. 3*d*. ; the full pay being 4*s*. a week to the former, and 8*s*. a week to the latter in case of sickness. Life annuities are also granted, payable to members after they have attained the age of 65 or 70 years—their payments on account of such annuities ceasing when their annuity commences. There are also other central societies, of which branches might be established here—the Christian Provident Society for instance—of which a branch might well and usefully be started in any locality where these public-house clubs exist. But details like these are not adapted for announcement here, as they will not be remembered. There is an anniversary meeting, but the attendance of members is altogether optional, and those who are absent are not liable to any charge.

The second class of these savings' banks includes those whose object is to provide for the families of deceased members. I can, however, do little more than name this class of institution, and pass on to the next. There are departments in many of the existing benefit clubs whose object is this provision of means for the families of deceased members ; and they ought to be patronised certainly by every married man. I know one instance within the past fortnight where a young man, a journeyman shoemaker about 29 years of age, died after a week's illness, leaving a widow and four children, who had but shortly before joined an institution of the kind. It was in a very small way that he commenced—but now this family of orphans find the sum which they have received from the institution, about 35*l*., the only independent means of support that they have.

It is, however, more especially to savings banks, properly so called, that I wish to call attention. There is a savings banks in ———, and every information may be had upon the subject. I would strongly advise young men to become depositors ; and even boys and girls may do this. It is necessary that the funds deposited should be placed there in the name of trustees, in the case of those who are under 21 years of age ; but it is so capital a thing to start early in life with this habit of laying by and not wasting, that any little difficulties of this kind ought not to stand in the way. One shilling a week laid by in this way will amount (principal and interest) to nearly 30*l*. in 10 years, and 50*l*. in 15 years. But I must not, although I might, illustrate the benefit of a gradually increasing savings bank deposit. It not only, as Mr. Chambers puts it, proves a succour in the evil day, but it improves a man's whole moral nature. Wealth has been the subject of many bitter remarks ; but it is, after all, a greater friend to virtue than it is to vice ; certainly one of the best of the immediate efforts of saving is that it proves a preservation from extravagances and vices ; hence it has been universally observed that when once a practice of saving has commenced, a great revolution takes place in character—irregularities and improper self-indulgence disappear, and steadiness, sobriety, and reflection take their place.

I would like to name benefit building societies as useful as savings banks. By a payment of 2*s*. 6*d*. weekly for 14 years you become the owner of a share worth 120*l*. ; but a person can take up so small a portion as a quarter of a share, with, of course, a subscription of 2*s*. 6*d*. monthly instead of weekly. He will be always enabled to borrow of the general fund within the amount of his paid up subscriptions, or to sell his share to others, so that he can realise at any time the full value of what he has paid, and the institution thus acts as any other savings bank would. The main object of the institution, however, is fully realised only when the money contributed is invested in the purchase of freehold property, for the cheap purchase of which its co-operative character offers great facilities, and members thus obtain the qualification which has for many centuries in this country conferred the privilege of a county vote.

I will conclude these desultory, and, I am afraid, tedious remarks by referring to the allotment system as a capital savings bank for odds and ends of labour and of time. I have for several years had the management of about 20 acres of land let to 50 labouring men, and I can assure any landowner of this neighbourhood who might be willing to start anything of the sort, not only from my own experience but from that of many thousand instances in all parts of the country, that while it is a most useful social institution, conferring great benefit upon the labouring men of any neighbourhood, it is a capital speculation for himself—full rent punctually paid will be given him.

You will remember, then, that I have referred to wages as representing that branch of our subject in which the efforts of the labouring man to improve his circumstances can be least successfully applied, and I have referred to savings banks, benefit clubs, life assurance societies, building societies and allotments, as being the modes in which the accumulation of the fragments and the savings of one's income, now to some extent no doubt wasted on useless and even on injurious objects, may be best invested. It is just as a man uses or neglects these means of his personal advancement in material wealth and social position, that he will gain or lose that independence to which he has a right, and which, let him but begin in time, he can easily attain.

Remember ! The second purse, as poor Richard says, is much easier to fill than the first ; and Benjamin Franklin—the man of all others possessed of sound common sense and homely wisdom—tells us truly that it is hard for an empty bag to stand upright.

ON THE DENTITION OF THE OX.

(*Continued from p. 619.*)

With increasing evidence of a speedy fall of the middle incisors, we arrive at one year and nine months. At this time the central incisors are often removed by the permanent. This change is generally observed in animals whose vigour of constitution and power of arriving at early maturity has been aided by a liberal diet. It is, therefore, that we see it principally among our competing breeds of short-horns, Herefords, and Devons. Such cases, however, are met with in other breeds, and even more frequently than is generally supposed. In the preparation of the tables which accompany this description, this date has been taken as one of the standards of comparison by which the limits of the range of dentition may be ascertained. Many oxen, however, do not put up the first pair of permanent incisors until they have passed their second year ; a fact which at once shows that a single average table would have been next to useless in assisting our decisions in doubtful cases of age. Very soon after penetrating the gums, these central teeth acquire a height equal to that represented in the figure 27. At first they press somewhat against each other for want of space, but this soon yields to the altered position they take when their broad chisel-shaped crowns are clear of the jaw and their fangs properly located within their sockets. The thinness of the bony partitions between the sockets, and the spongy nature of the bone, as a whole, often leads to the permanent incisors pressing the fangs of the temporary closer together, so that these teeth will have a more compact appearance than before the permanent were cut. These things are more clearly marked in oxen with a comparatively narrow jaw, such as the Devons. The general condition of the mouth at this time is shown in the preceding figure. It represents a front view of the lower jaw of an Hereford ox at one year and ten months old. The permanent incisors, 1, 1. are as yet not fully up, so that the gum is rather embracing the lower part of their crowns than their necks. Although the observation will apply generally to all the permanent incisors, this will be a proper place to state that the conclusions which are arrived at with respect to age, must be always regulated by the amount of the protrusion of these teeth from the gum, as well as by their number.

At two years of age the last addition to the number of the molar teeth is made by the cutting of the sixth in situation. This tooth follows, as has been previously explained, the fifth molar, after an interval of nine months. It being in the mouth at two years, although not fully developed, is a circumstance to be kept in mind in our investigations of age.

The sixth permanent molar in the lower jaw has many of the special characters of the third temporary

molar. Its long diameter exceeds that of the fourth or fifth, but its short diameter is only equal to theirs at its front part, decreasing gradually from before backwards. The tooth is therefore thicker at its front than at its hinder part. It is also tri-lobular, like the third temporary; but its lobes are scarcely so perfectly formed, or so distinct from each other. The hindermost one, not being of equal height with the others, is not unfrequently concealed by the gum long after the tooth is cut. Differing, however, as it does in so many particulars, the sixth molar cannot be confounded with the others, and therefore its existence in the mouth is quickly detected.

We have given a representation of the incisors at two years and four months, in a case of early dentition. The crowns of the second pair are as yet encircled by the gum at their lower part. In most cases these teeth will crowd upon the first pair, and overlap their outer edges. As time steals on, however, by further rising from their sockets they will stand more easy in the jaw.

The temporary incisors are now much diminished. These teeth, after the animal has completed the second year of his age, get rapidly smaller, and chiefly from the circumstance that the thin covering of enamel which they have about the neck is unable to stand against the daily attrition to which they are subjected. My note-book furnishes so many cases of the second pair of incisors being out at two years and a quarter, especially in short-horns and Hereford bulls, that I have taken this date in the preparation of the table of early dentition, as the time of the cutting of these teeth. In our Devon cattle there are fewer instances of this, but both they and our other breeds furnish some cases of the same kind. I have only met with about half a dozen cases where the second pair of incisors was cut before two years and three months, and these were in animals certified to be two years and two months old.

The existence of four permanent incisors, as a general rule, may be said to indicate two years and a half old, there being some oxen that do not cut the second pair until after this time. Such animals come under our second table of dentition, which gives the average periods of the changes, when breed and other unfavourable causes are in operation. The case just cited, when contrasted with the latter named fact, will tend not only to confirm the propriety of classifying dentition under two heads, but to prove the absolute necessity of such being done. At about two years and a half the two anterior molars are also shed, and their places occupied by the permanent These teeth vary with reference to the order of their fall; occasionally the first in position is changed before the second, but generally the second gives place to its permanent successor before the first. From two and a half to three years the third molar of the ox falls, and the permanent occupies its place, thus completing the series of the changes in these teeth. The importance of the subject may justify my repeating, that the fourth molar is cut at about six months, the fifth at fifteen, and the sixth at two years, and that each attains its level in the jaw in three months after these respective dates; that at two years and a half the two anterior temporary molars give place to the permanent, as likewise does the third before the animal has attained the third year of his age.

To return again to the incisors. At two years and three quarters, the third pair of incisors are frequently cut, and as such this date is assigned to them in the early table. The variations in the putting up of these teeth being similar to the others, I have selected for my illustration the mouth of a three-year-old animal, fig. 32. In this engraving these teeth are marked 3, 3. They are smaller in size even when fully developed than the second pair, but larger, as will be seen by-and-by, than the fourth or corner permanent teeth. Besides there being six "broad teeth" in the mouth at three years, those first put up will now begin to show slight wear. Their enamel edge will be cut through, exposing the dentine and forming thereby a slight hollow immediately behind the reflection of enamel which covers the front surface of the tooth. The colour of this hollow contrasts with that of the enamel, being of a darker shade. Its depth and size mark the amount of wear.

The two temporary teeth which are still standing are often so reduced in size, from absorption and attrition, as to be overlooked when the mouth is hurriedly examined. From this date we pass to three years and a quarter, when, in animals of early maturity, the fourth pair of incisors will occupy the places of the temporary, and perfect the dentition of the ox. These teeth, as we might expect, will offer most variations as to the time of their cutting. By far the larger number of oxen will not put them up till after three years and a quarter; and I have repeatedly examined animals whose ages ranged from three and three quarters to four years, and found these teeth in the act of cutting. On the other hand, I have occasionally seen them in short-horn bulls, fairly through the gum at three years and a month. These things should guide the opinions of an examiner.

If an animal is certified to be three years old, or wanting that time by a week or two, and all the incisors are permanent, it most certainly is a proper case for investigation, so few are the exceptions to these teeth being cut before three years and a quarter.

When dentition is completed, any opinion which is given of age must be drawn from the general appearance of the animal, rather than exclusively from the condition of the teeth. Nevertheless, the changes they are gradually undergoing will assist in the inquiry. At four years old the edges will be worn off both the second and third pairs of incisors, which will now present a similar appearance to that described as denoting the attrition of the central pair at three years.

From four to five years the hollows on the wearing surface of all the incisors will increase, and by five years they will have lost the broad chisel form they had when young, and there will be no longer any overlapping of their edges.

Increasing age after five years is indicated by a diminished height, a flat or broad wearing surface, a less cone shape of the crowns of the incisors, discoloration of the enamel, and spaces between each tooth.

Home Correspondence.

Land Drainage.—Will you favour me with space to ask a favour of such of your readers as may be interested in the subject of land drainage. I have undertaken to introduce for discussion at the central (London) farmers' club, a paper "On the results of the various systems of drainage in practice," and I shall be most thankful for any information to be gained from agriculturists who have formed opinions which are the results of practice. Mere opinions based on partial doings or on prejudice are valueless. To such as will favour me with any statements of facts bearing on controversial points, or connected with actual works of importance, whether those statements be favourable or not to prevalent rules or opinions, I repeat I shall feel most obliged. *J. Bailey Denton*, 52, *Parliament Street.* [As our readers will have the benefit of seeing the results and opinions thus asked for, we venture to press Mr. Denton's request on their attention.]

Blight in Wheat.—In a late leading article of the *Agricultural Gazette* there is a notice of a blight in Wheat, the cause of which seems to puzzle the editor as well as his Stranraer correspondent. It seems that the Wheat looked very well up to the time of flowering, but then the stems began to get yellow from the bottom upwards, the lower leaves withering prematurely; the whole stem and root appear dried up, and destitute of sap, which necessarily prevents the seed coming to perfection; it appears, also, that the field had been cropped with Wheat every alternate year. I mention this because the same thing happened to myself in 1848. I had from 1841 been attempting to grow Wheat on the same ground year after year, and with very fair success up to 1847; but being then carried away by the arguments of the thin seeders, so little was sown, that, a bad winter following, so many of the plants perished that it became a question whether to plough it up again or drill in some other crop among the Wheat; the latter plan was adopted, and Barley was sown among the Wheat; both ripened at the same time, and the crop was 48 bushels per acre of Wheat and Barley together. When the crop was reaped the field was again ploughed and sowed with Wheat (in the autumn of 1847), and seemed, until it came into bloom, to promise an abundant crop, but then it began to wither at the root and dry up prematurely, and did not yield two quarters per acre, and that of miserable quality. This put an end to my experiment, for I supposed I had entirely exhausted the soil for Wheat, and the field was laid down to permanent pasture; but in the autumn or winter of that year a number of the Journal of the Royal Agricultural Society came into my hands, containing an essay on the husbandry of the East Riding of the county of York, wherein it was stated that the farmers of that district had in a great measure ceased to grow Barley in consequence of the after crops of Wheat being subject to "night ripening." The writer described this night ripening, which, so far as I could understand it, seemed to be identical with what had happened in my fields, and also in that at Stranraer. I have not the paper at hand, but from what I have said you will easily refer to it in the Agricultural Society's Journal, and will then be able to judge whether it is the same disease. I attribute it to the Barley in my case taking out a much larger portion of the soluble silica (the field had been frequently manured with small quantities of silicate of soda) than the Wheat, but I shall be glad to have your opinion. I have repeatedly seen the same thing in Wheat—a few straws or perhaps a patch of a few square feet; but until 1848 I never saw a whole crop destroyed by it, nor have I ever seen the like since that time. *T. G., Clitheroe.*

Cost of Reaping.—In your number of the 16th inst. is a calculation of the expense per acre of reaping by machine at Cirencester. It contains a curious mistake in the estimate of the interest on the machine. At 5 per cent. per annum the interest on 20*l.* would amount to 1*l.*, and to pay this at the rate of 1¼*d.* per 20 hours, the machine must work 12 hours per diem for 320 days every year. I should have reckoned the expense in this way.

Interest on 20*l.* at 5 per cent.	£1 0*s.* 0*d.*
Depreciation at 10 per cent.	2 0 0
Repairs, at 5 per cent.	1 0 0
Annual expense of machine	£4 0 0

Ten per cent. depreciation appears little enough for a reaping machine, which must almost inevitably be thrown aside in a few years, in order to adopt some improved implement. The 4*l.* must be divided over the number of acres cut every year; for instance, if 80 acres be cut, the charge for the machine will amount to 1*s.* per acre; but if only 40 acres we must charge it 2*s.* per acre; 1*s.* 6*d.* would perhaps be a medium charge, in which case the total cost at Cirencester would amount to 9*s.* per acre. *J. P.*

Finger and Toe in Turnips.—In reference to this subject I may be permitted to give the following account of a practical man's experience frequently communicated to me; the person in question farms extensively on an adjoining wold farm. It would appear that he at one period suffered much from this disease, and on being advised to try a top-dressing of chalk as a preventative both for finger and toe and wireworm, he accordingly applied, in the first instance, about 250 cart-loads per acre on a field hitherto much subject to finger and toe. The result was most satisfactory; for in the next Turnip crop there were no symptoms of this disease, nor yet of wireworm. Since then he has been frequently obliged to repeat this experiment on other portions of his farm, and in quantities varying from 200 to 300 loads to the imperial acre; there is, however, an unlimited supply of this material at command; but the practice, "it should be borne in mind, is an expensive one;" yet this person affirms that he could not attempt to grow Turnips successfully without having recourse to it. This statement coming from a first-rate practical man does, in my opinion, deserve some amount of public consideration, more especially as he asserts positively that he has never known an instance of finger and toe occur where he has applied a good dressing of chalk. Another opinion gaining ground among practical men here is that finger and toe does not occur after cropping land with Potatoes. This opinion I find corroborated by the writer of the essay on Light Land Farming in the latest number of the Journal of the Royal Agricultural Society, who says, at page 114, that he has succeeded in completely preventing the disease by occasionally breaking up the Grass fields after they have lain only one year, and taking a crop of Potatoes instead of a second year's pasture;—thus, 1st, Grass pasture; 2d, Potatoes; 3d, either Wheat or Oats; 4th, Turnips; and 5th, Barley. Doubtless, if an arrangement of this sort could be come to, it would be a means of preventing so much finger and toe; perhaps, too, the length of time that would intervene in the above rotation would tend also to obviate so much Clover sickness. I myself have witnessed the good effects of lime-marl in arresting both diseases alluded to for a number of years; but I am not prepared to say, with my friend, that either of the two agencies are so effectual in exterminating wildness, and bringing Turnips to such a high state of civilisation, "as chalk." *P. Deane.*

Societies.

Agricultural, of Ireland.—Arising out of the prizes awarded at the Armagh Show, there is one incident which, we think, will identify Armagh in a remarkable manner with one of the most memorable epochs of the Society's history. It will be remembered, that to the patriotic feeling and unwearied exertions of the late Peter Purcel, Esq., Ireland is mainly indebted for the institution of the Royal Agricultural Improvement Society of Ireland. In order to keep up an interest in its welfare he, in the most handsome manner, presented the Society with two silver cups, each of the value of 100 guineas, one to be competed for for agricultural drainage, the other for the best bred cattle shown, each cup to be won three years successively by the same competitor before being carried away from the Society. The drainage cup, now in the hands of Lord Monck, as the last successful competitor, has not yet been finally carried off; but it was reserved for the Armagh—the peaceful—battle field, to see the 100 guinea Purcell cup fairly and honourably carried off in triumph by Charles Towneley, Esq., of Towneley Park, whose great exertions and success in the improvement of the short-horn breeds of Great Britain and Ireland are everywhere well known to short-horn breeders. Armagh then saw one of Mr. Purcell's stimulating prizes thus carried off in triumph by one of England's best breeders; but she was privileged to see this without seeing the wise intentions of the founder in any degree impaired, for no sooner was Mr. Towneley proclaimed victor of the Purcell challenge cup, than he, in the most appropriate and handsome manner, offered to present the Society with a cup of equal value, to be competed for on the terms prescribed by the original donor, in order to preserve a memorial of gratitude to him, for his noble encouragement of husbandry, as well as to stimulate others to follow a similar course. This offer was greatly enhanced, coming, as it did, so soon after the present made by Mr. Towneley, last year, of the Towneley challenge cup, of 50 sovereigns, for the encouragement of Irish farmers; and, as will be seen by the minutes of Council, his liberality was thankfully acknowledged, and a vote of the Society conveyed to Mr. Towneley accordingly. After the example of Mr. Towneley in this matter, we cannot help anticipating that, however often won, the cup, as a memorial of its original donor, will never be lost, as it may be replenished by some spirited agriculturists as often as won.

The Press and the Armagh Show.—Our congratulations thus expressed, however well founded, are not without a mixture of regret. Many members of this Society have doubtless seen the complaints of some metropolitan and local Irish papers, which reflect upon the Society's proceedings as regards the reporters for the press. As considerable misapprehension exists on this subject some explanation seems called for. The press complain that they did not get access to the show yard previous to 2 o'clock on Wednesday, when the public were admitted. This matter was submitted to the Council when sitting at Armagh, and it was doubtless with regret that the Council declined to accede to the proposal of the reporters, to admit them previous to the public, and while the judges were inspecting and framing their awards. At the great national show of England, and the Scotch shows, reporters are not admitted till the judges have furnished their awards, and the yard is opened to the public. What was done in this respect at Armagh is the invariable practice at the

national cattle shows of England and Scotland, and has been always practised at the show of the Royal Agricultural Improvement Society of Ireland. Whether the press and reporters might be introduced into the yard a few hours previous to the public, (attended by a couple of stewards), in order to take notes of the arrangements, classification, &c., of stock, is a question which we doubt not the Council would not object to consider, but hitherto the rule now explained has been acted upon both on this and the other side of the channel. *Journal of the Royal Agricultural Improvement Society.*

NORTHAMPTON.—At the meeting of this Society last week, the health of its former president was given. Sir C. Knightley rose to return thanks, but was for some time prevented from proceeding by reiterated bursts of cheering. When silence was restored, Sir Charles said he was very glad to see his old friends, and he was more gratified than he could express at finding that they had not forgotten him altogether, though he had ceased to hold the honourable situation among them which he so long filled. It was so long since he was in a large meeting that, if it had been anywhere else, or in another company, he should have almost felt modest and abashed, and should probably have been unable to express the few remarks which he desired to utter. He supposed they had come there to tell each other all they knew. He hoped, however, they would say it in plain English, and not talk in a style alike unintelligible to themselves and to other people. He was one of the old brown-coated farmers, and he confessed that he was not illumined by the fresh lights of modern days. Although he did not depreciate modern improvements and modern science, still he believed that many of them were such as farmers could not profitably put into practice. Many of them, no doubt, were useful, but many were worthless. He remembered, for instance, once going to a Shropshire meeting, where he heard of an experiment, at Lord Hill's, of putting a quantity of iron conductors into the ground to draw down the lightning to fertilise the corn. (Laughter.) He subsequently asked his lordship whether he thought that any benefit had been derived, and received a reply in the negative. As to the modern manures, he was ready to allow that great improvements had been made. He contended, however, that men should know what their manures were made of. He read of guano and superphosphate of lime, but he believed that much of the so-called guano had never crossed the seas, and that the phosphate was often nothing more than bones dissolved in sulphuric acid. Oilcake, again, if good, was most valuable. He had bought it, however, filled with sand, and he believed there was no greater fraud practised upon the farmers than in the supply of adulterated oilcake. With regard to the breed of cattle, he might be allowed to say that he was an old practitioner, and he had lived long enough to discover that there was as much humbug in that as in anything else. (Loud laughter.) Perhaps they might not be aware of the fact, but it was so nevertheless. The man who made the money was not the man who had got the best stock, but he who was reputed to have the best—the man who could get his friends to hold his stock up and puff it up for him, and run down that of his neighbours. (Renewed laughter.) For his own part, he had been trying a great many years to get his stock with good shoulders and bosoms; but now he found that he was all wrong. The modern plan was to get wide heavy shoulders like steam-engines, such being the only animals, he was told, to carry flesh. Well, he supposed he must conform, or he should lose the sale of his stock. There was one thing worthy of notice. Owing to free-trade alterations, and the unrestricted importation of cattle, the value of cattle in this country had become materially changed. His advice to his friends, therefore, was to breed the best animals they could. It was the fashion to go into the fairs and buy a lot of Scotch and black cattle, that had perhaps been done as well as they could in their own country, and looked and handled well. When they got them home they gave them oilcake, &c., but after all they were disappointed that the beasts did not get on, and eventually they were displeased with their Smithfield salesman for making so small a price of them. The fact was, they were a set of animals that never would do well, and if farmers continued to buy them they would go to the wall. Every man ought to breed the best for himself, and not to be dependent upon another. Some might say that their land was too good for breeding. He knew the land of the county as well as any man in it, and he knew that there was a great deal of it supposed to be good that was not good. Much of it that was used for feeding land would not feed. Now, the great thing was, for farmers to adapt their system to the land they occupied. Much of it now used for feeding would dairy to much greater advantage. Cheese-making, too, was but little pursued in this county, possibly because the operation devolved upon the lady part of the family, and required the operator to go to bed early and get up early. The young ladies did not like this, and the old ladies were not up to it; hence there was no cheese-making. (Laughter.) He believed, nevertheless, that on many farms it would be a much better way of employing time and capital than was now pursued. He congratulated them on the bountiful harvest which, through God's goodness, had been granted to them. He did not think that corn would rule at either a low or high price; but he hoped that the price would be such as to remunerate the producer, while it was not too high for the consumer. He should be glad to see it range between 7s. and 8s. per bushel. He never wished to see it higher, and he hoped it would not go lower. He cautioned them, however, against regarding the present year as a criterion for another. Next year's harvest might possibly be as plentiful as the present. But corn would not probably bear the same price. This was an exceptional year. There was drought in America, which had caused the Indian Corn crop to fail, and had materially affected the Wheat crop. The Black Sea ports were shut up, and we were mainly dependent upon our own supplies. Sufficient for the day, however, was the evil thereof. We were well off for this year, and he hoped we should be more happy and comfortable than we had been for several years past. He had lived among them many years, and he hoped to remain among them as long as he lived, and he could assure them that their kind feeling and estimation would be the greatest comfort of his life. He had been desired to propose a toast—"The Successful Candidates for Stock." The stock show had been most excellent. It was an invidious thing to make remarks, or to eulogise one man's stock in preference to another's; but he must say that he admired more than anything a pair of heifers exhibited by Mr. Robinson, of Clifton. One of them was as good as any he had ever seen, and it would be an ornament to any herd in the kingdom. He knew Mr. Robinson to be a spirited, enterprising man, and he hoped he would meet with the encouragement and success he so well deserved. (Cheers.)—Mr. Robinson returned thanks, and expressed his sorrow that he had not had the pleasure of meeting Sir Charles in the field as a competitor. *Abridged from the Northampton Herald.*

Calendar of Operations.

SEPTEMBER.

SOUTH HANTS, *Sept.* 25.—The Wheat crops on the heavy loams of this county have been very fine, and the quality good; but at the commencement of the harvest many fields of Wheat were carried as fast as cut, before even the sap of the straw or the grain had become properly dry or in order to carry, so afraid of rain were the farmers. Those who left their Wheat out and carried at leisure, ricked the crop in fine condition and fit to grind. Large quantities have been threshed out for money, and many an acre sold before the crop was harvested. Some have sold nearly all their Wheat, and many a fourth or fifth of their whole crop; for last year wages were high and money scarce, and some farmers had not even a single rick of Wheat in their stack-yards. The Barley crops are abundant in straw, but the grain will prove to be of various qualities, as the plant came up in two shares, and the blight affected some of the early sown, as well as the frosts. Oats are good, but vary as to bulk, but on good land they are a heavy crop. Peas were well kidded, but the cutting winds arrested the filling of the pods. Beans are good in some districts; in others, a poor crop. The sowing of Peas and Beans in small quantities may answer, but the large breadths sown of late years may be very questionable as to profit, the stubbles so foul and grassy in a wet season, rendering it unfit for the reception of Wheat; and the slug is more destructive after Peas and Beans, as in the roots of these leguminous plants they harbour and breed. This year, however, has been most favourable for bastard fallows, as the land has been scorched and dried up by a continuance of hot suns and drying winds. Turnips have been nearly extinguished by the heat, but a few rainy days came very opportunely to restore this root, and also for the young Grass seeds, but these plants, especially seeds, lack moisture. Very few, after the Barley and Oat crops are carried, roll their seeds; we should not hear so much of the failure of the Clover plant during winter if farmers rolled their seeds and dressed them with guano. The Tares this year were the finest ever seen. Grass is scarce, and feed of all kinds difficult to procure. Turnips backward, but are mending fast since the rains, but pastures and Grass seeds are again dried up. The operations on the farm are ploughing Wheat stubbles, hoeing Swedes, carting manure to fallows; threshing Wheat, Barley and Oats; rolling Grass seeds, and dressing fallows. *R. S., Hants.*

Notices to Correspondents.

AGRICULTURAL EDUCATION: *Agricola* should apply directly to the Principal, to whom we should have to send his letter. We do not know of any other college of the same standing. Probably the next best is that at Glasnevin, in Dublin, under Dr. Kirkpatrick.

AMERICAN HORSE POWER: *Alpha.* We will next week publish Professor Wilson's account of it, and also that given in a work on Agricultural Mechanics, by Mr. Thomas, an American writer.

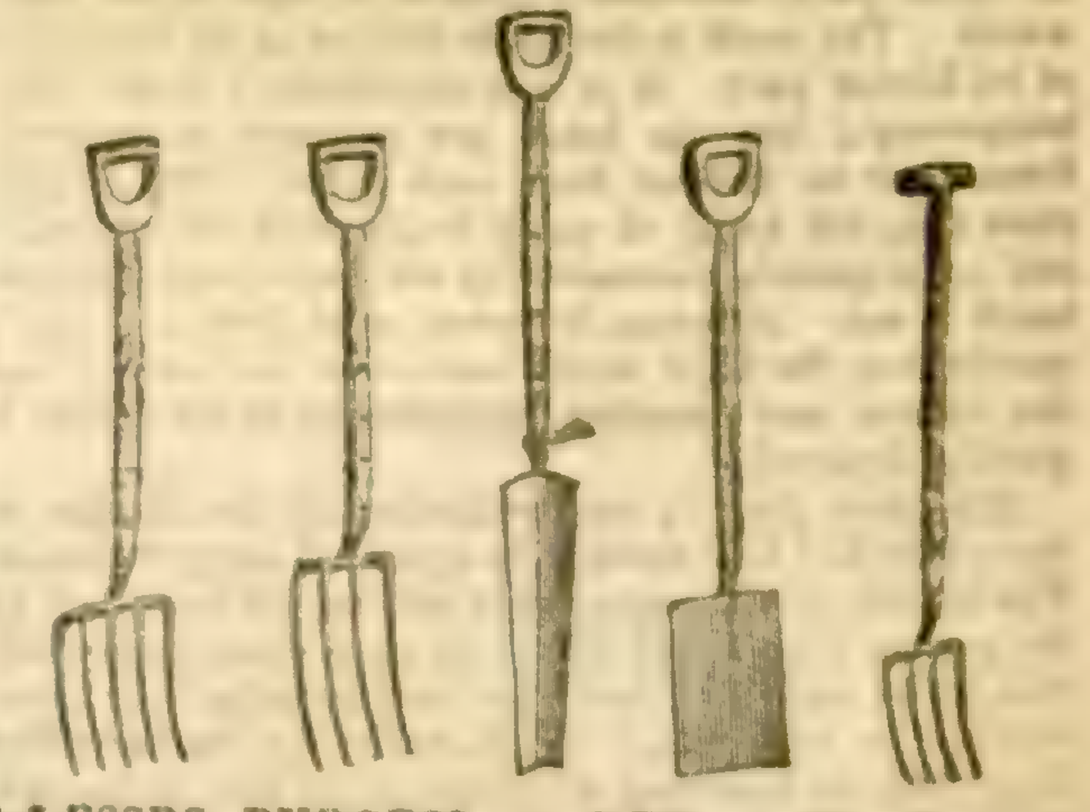
DAIRY AND POULTRY BOOK: *C. Galloway* has kindly sent us two leaves of dairy and poultry books respectively, in reply to the request of "C. O." for information. The former contains 23 columns; viz., seven columns and a £ *s. d.*, and then five times two columns and £ *s. d.*; or, more particularly, headed thus: 1, No. of cows; 2, No. of cows milking; 3, 4, 5, 1st, 2d, and 3d meal; 6, total daily; 7, value per quart, then £ *s. d.* Again, cream and value per quart, £ *s. d.*: butter, value per lb. £ *s. d.*; cheese, value per lb. £ *s. d.*; skim-milk, value per quart, £ *s. d.*; whey, value per quart, £ *s. d.*; and, lastly, "Remarks." The leaf from the Poultry book contains 20 columns—viz. five and £ *s. d.*; again, five, and £ *s. d.*: and then three times two and £ *s. d.*; or 1st, a column containing, printed in succession, the names of all the sorts of "poultry" kept; then No. of birds; No. laying eggs daily; value per dozen, and £ *s. d.*; the eggs set; birds hatched; birds reared; birds used, value each, £ *s. d.*; birds sold, value each, £ *s. d.*; eggs used, value per dozen, £ *s. d.*; eggs preserved, value per dozen, £ *s. d.*; and "Remarks." We do not think the scheme by any means either so compendious or complete as it might be made.

GRASSES: *J N L.* Sinclair's "Hortus Gramineus Woburnensis," is a thick large octavo volume; it goes fully into the subject, but is in some respects superseded by more recent information, which, however, is not to be found in any work specially on the subject. Perhaps Lawson's (Edinburgh) pamphlet on the subject may be the thing you want. We have not its exact title.

GRUBS ON GRASS LAND: *E W.* asks—"Can you, or any of your readers, help me to get rid of an annoyance I have experienced for the last two or three years from grubs on Grass land. They seem to be produced by a small species of cockchafer, which we see in great numbers during the months of May and June. The starlings are doing much for me; but to give you an idea of how much still remains to be done, I pulled up some turf (which is quite brown and loose in patches) from a space of about a yard square, and which had already been visited by a large flock of starlings, and I picked up and counted 352 grubs! My pigs, although they have rings, have turned up the turf in many parts of the field (a 14 acre one) to look for the grubs. I have another field of 10 acres which looks almost as bad, and it has occurred to me that you could suggest some application to the surface which would effectually rid me of them." [Possibly the use of a sub-turf plough, followed by some such application as gas water, would be usefully influential.]

POTATOES: *A B.* In our opinion 5 cwt. of guano will *not* perfectly replace 30 loads of good dung, except, perhaps, in the case of an already fertile soil.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.

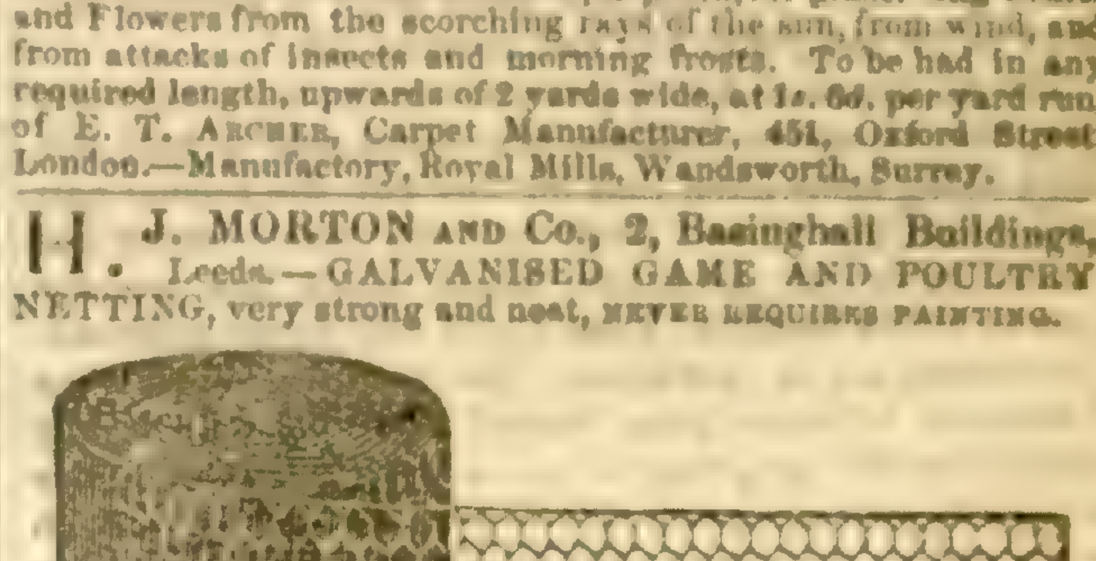


MESSRS. BURGESS AND KEY, as Mr. PARKES' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.
103, Newgate Street, and 52, Little Britain, London.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1*s.* 6*d.* per yard run, of E. T. ARCHER, Carpet Manufacturer, 451, Oxford Street, London.—Manufactory, Royal Mills, Wandsworth, Surrey.

H. J. MORTON AND Co., 2, Basinghall Buildings, Leeds.—GALVANISED GAME AND POULTRY NETTING, very strong and neat, NEVER REQUIRES PAINTING.

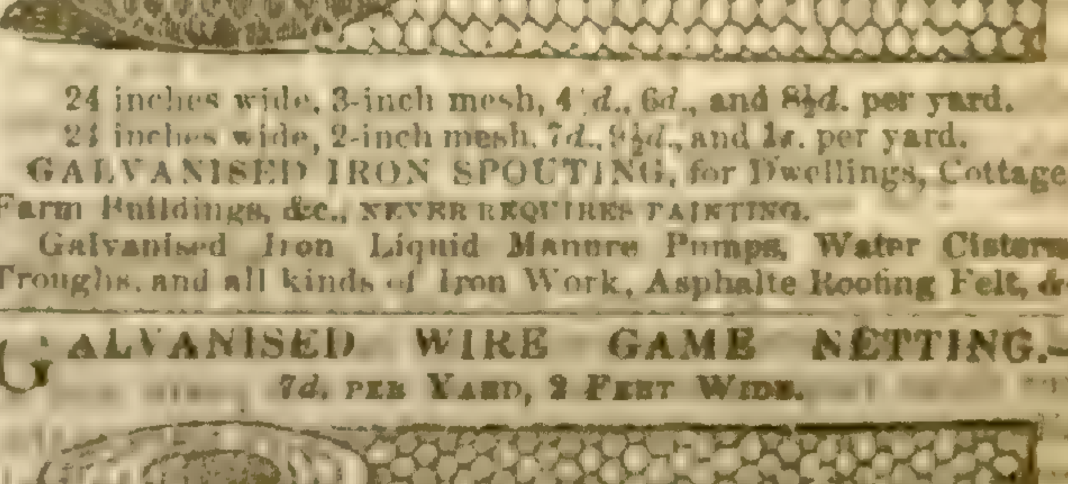


24 inches wide, 3-inch mesh, 4½*d.*, 6*d.*, and 8½*d.* per yard.
24 inches wide, 2-inch mesh, 7*d.*, 9½*d.*, and 1*s.* per yard.

GALVANISED IRON SPOUTING, for Dwellings, Cottages, Farm Buildings, &c., NEVER REQUIRES PAINTING.

Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalte Roofing Felt, &c.

GALVANISED WIRE GAME NETTING.—
7*d.* PER YARD, 2 FEET WIDE.

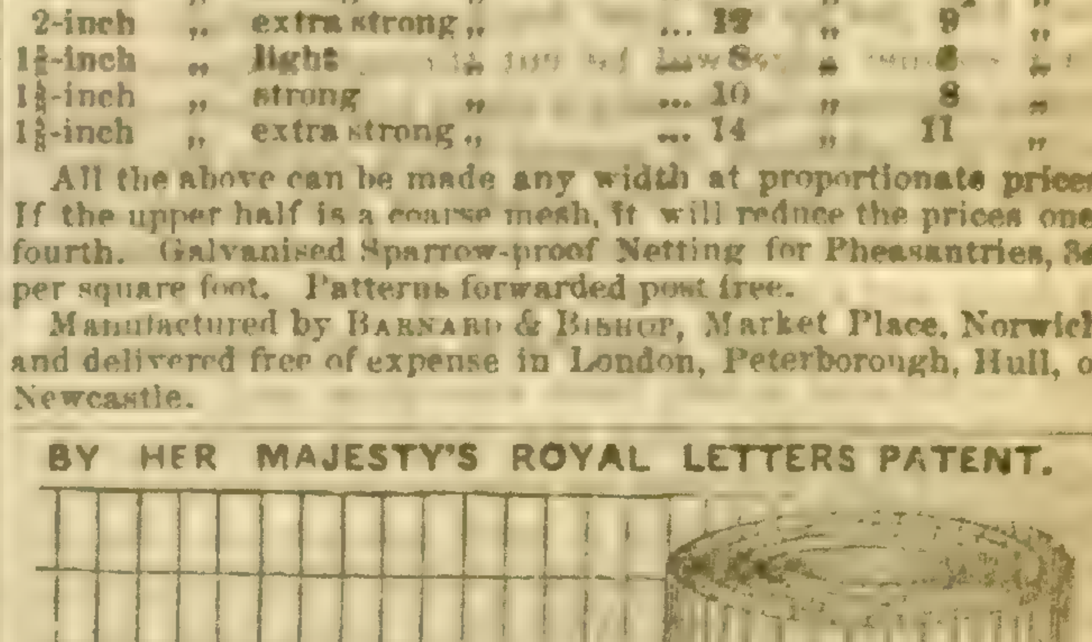


		Galvanised.	Japanned iron.
2-inch mesh, light, 24 inches wide	...	7*d.* per yd.	5*d.* per yd.
2-inch „ strong „	...	9 „	6½ „
2-inch „ extra strong „	...	12 „	9 „
1½-inch „ light „	...	8 „	6 „
1½-inch „ strong „	...	10 „	8 „
1½-inch „ extra strong „	...	14 „	11 „

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasantries, 3*d* per square foot. Patterns forwarded post free.

Manufactured by BARNARD & BISHOP, Market Place, Norwich and delivered free of expense in London, Peterborough, Hull, or Newcastle.

BY HER MAJESTY'S ROYAL LETTERS PATENT.



MESSRS. B. GREENING AND CO. beg respectfully to call attention to their superior WIRE FENCES, of which the following are the principal varieties:—Portable Horse and Cattle Fencing (Economical variety of ditto), Portable Sheep and Lamb, Proof Fencing, Poultry Fence, Portable Hare and Rabbit-proof Fencing, Ornamental Garden Fences, Expert varieties, Poultry and Chicken-proof Fencing. Light and cheap kinds of most of the above. Trainers for Peas, &c., Garden Bordering, Tree Protectors, Hen Houses, Poultry and other Aviaries, &c.

Messrs. B. G. & Co. being the sole patentees for the machinery for manufacturing these Fences, will forward engraved sheets of Patterns, Prize Lists, Prospectuses, &c., gratis, on application to their establishments, 1 and 3, Church Gates, or 2 and 3, Cateaton Street, Manchester.

CLASS FOR CONSERVATORIES, ETC.

HETLEY and CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

CLASS FOR CONSERVATORIES, GREENHOUSES, DWELLINGS, ETC.

Established more than One Hundred Years.

THOMAS MILLINGTON requests attention to his present prices of SHEET GLASS in 100 feet boxes.

Squares 6 by 4 and 6½ by 4½		
" 7 by 5 and 7½ by 5½	... ...	13 6
" 8 by 6 and 8½ by 6½		
" 9 by 7 and 9½ by 7½		
" 10 by 8 to 12½ by 9½	... ...	16 3
" 12 by 10 to 24 by 14 ...	... ...	19 0

Orchard House Squares on Mr. Rivers's approved plan, to whom I have sold some thousands of feet:—20 inches by 12, 20 by 13, 20 by 14, 20 by 15, 20½ by 12½, 20½ by 13½, 20½ by 14½, at 19*s.* per 100 ft.

200 feet cases at 42*s.*, and 300 feet case 63*s.*, in large sheets.

Boxes charged 1*s.* extra per 100 feet, and the same allowed if returned free of all charge.

HARTLEY'S PATENT ROUGH PLATE GLASS, Fern Shades, Striking Glasses, Milk-pans, Bee Glasses, Cucumber Tubes, Sheet and Rough Plate Glass Tiles, Wasp Traps; Plate, Patent Plate, Crown and Sheet Window Glass, in every thickness and quality, and Ornamental Glass, plain and coloured; pure white Shades for Ornaments, Crystal Glass for Pictures.

Warehouse, 87, Bishopsgate Street Without—same side as Eastern Counties Railway.

BY ROYAL LETTERS PATENT.

THE COSMOPOLITAN GLASS COMPANY, 296, Oxford Street, London.—The Managers beg to inform the Nobility and Gentry, Farmers, Gardeners, &c., that their new List of Prices may be had free on application at the Company's Depôt.

HARTLEY'S PATENT ROUGH PLATE, for Roofing Conservatories, Halls, and Public Buildings.

PLATE, CROWN, and SHEET WINDOW GLASS.

Coloured and Ornamental Glass of every description.

Glass Milk Pans, Pails, Tests, and Measures; Cream Pots and Syphons; Churns, Butter Tests and Slabs; Tiles and Slates; Bee Hives, &c.

Moore's Patent Ventilator and Lockhead's Patent Perforated Glass, for Dairies and Greenhouses.

Aquavivariums, Fern Shades, Propagating Glasses, Fruit Protectors, Preserve Jars, Cucumber Tubes, Hand Lights, Flower Vases, Labels, &c., and all kinds of Agricultural, Horticultural, Architectural, Domestic, Scientific, and Ornamental Glass, British and Foreign, at the lowest prices.

CLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

JAMES PHILLIPS and Co. have the pleasure to hand their present prices of Glass for Cash:—

	SHEET SQUARES. In Boxes of 100 feet.		CROWN SQUARES. In Boxes of 100 feet.
Under 6 by 4	£0 12*s.* 6*d.*	...	8*s.* 6*d.*
6 by 4, and 6½ by 4½ ...	0 13 0	...	12 6
7 " 5, — 7½ " 5½			
8 " 6, — 8½ " 6½ ...	0 15 0	...	14 0
9 " 7, — 10 " 8, 12 by 9. 12 by 10, 14 by 10	1 0 0		

Larger Sizes, not exceeding 40 inches long.

16 oz. from 3*d.* to 3½*d.* per square foot, according to size.

21 oz. " 4½*d.* to 5*d.* " " "

26 oz. " 6*d.* to 7½*d.* " " "

SHEET GLASS OF ENGLISH MANUFACTURE FOR ORCHARD HOUSES, the same quality as we supply to Mr. Rivers, and of various dimensions, always on hand.

London Agents for the Sale of HARTLEY'S PATENT ROUGH PLATE GLASS.

Glass Tiles, ⅛ of an inch thick, packed in cases, containing 50, at 1*l.* 17*s.* 6*d.* per case. Packages 2*s.* each extra, but allowed for when returned.

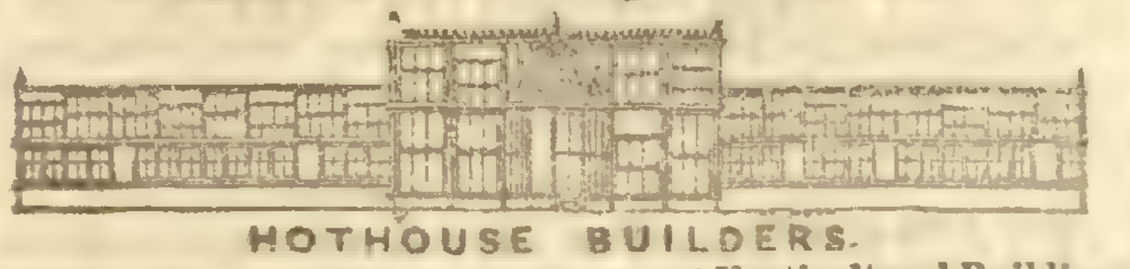
Glass Milk Pans, 21*s.* per dozen; Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoys' Milk Syphons, Wasp Traps; Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the trade.

Horticultural Glass Warehouse, 116, Bishopsgate Street Without, London.

HOT WATER APPARATUS adapted for Horticultural and every other description of Buildings; improved Boilers, requiring no brickwork, Warm Air Apparatus, &c.—S. S. Tayler, Engineer, Battersea.

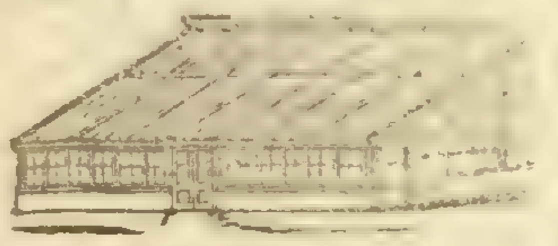
HORTICULTURE IN ALL ITS BRANCHES.

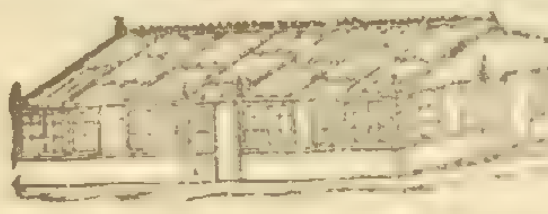
J. WEEKS & Co., King's Road, Chelsea.



HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Buildings or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.





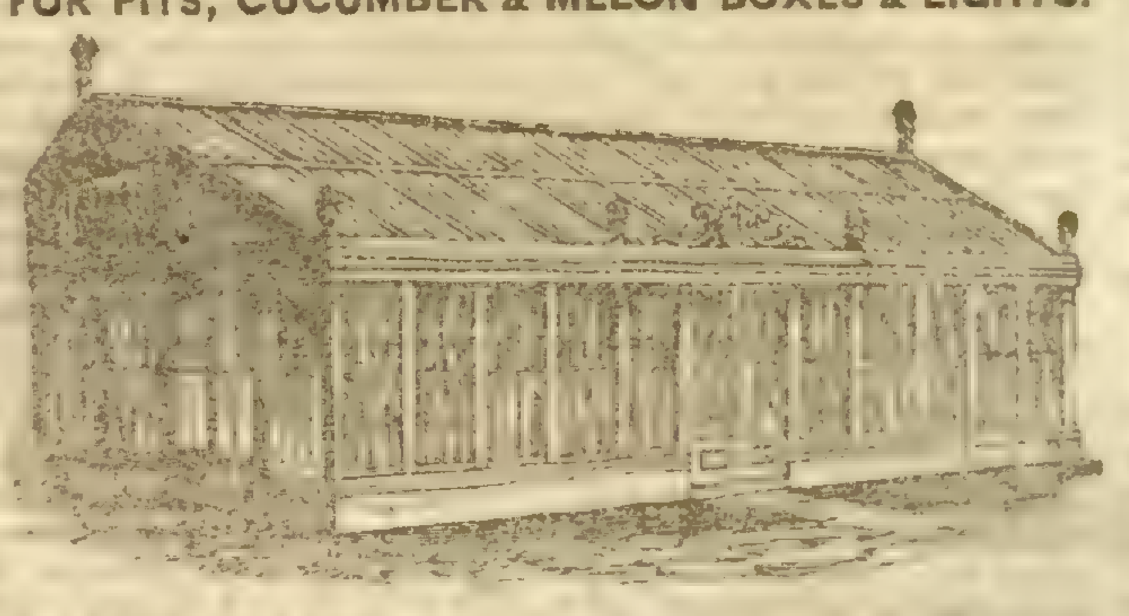
The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application

J. Weeks & Co., King's Road, Chelsea, London.

HOTHOUSES, CONSERVATORIES, FRAMES & LIGHTS, FOR PITS, CUCUMBER & MELON BOXES & LIGHTS.



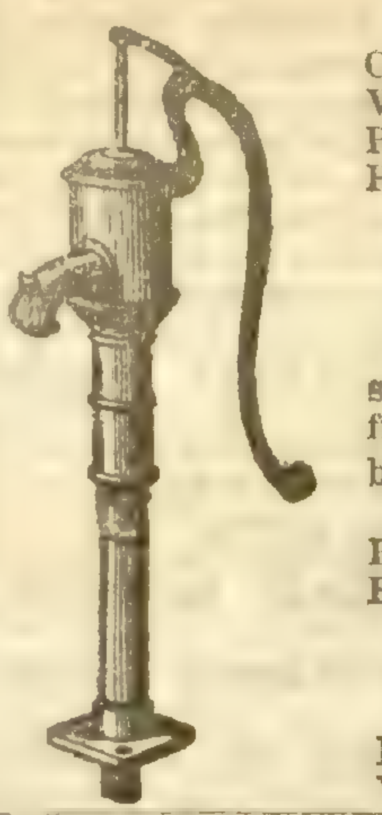
JAMES WATTS, Hothouse Builder, 8, Claremont Place, Old Kent Road, London.

Green and Hothouses, 9, 10, 11, 12, 13, and 14 feet wide, any length, from 16 to 100 feet. Frames and Lights for Pits, 6 ft. 6 in., 7 ft., 7 ft. 6 in., 8 ft., and 8 ft. 6 in. wide, any length, from 12 to 100 feet. Upwards of 200 Cucumber and Melon Boxes and Lights, from 4 ft. by 3 to 10 ft. 6 in. by 5 ft. 6 in., kept ready glazed with stout sheet glass, painted four times, complete, ready for immediate use, all made of best material, packed and sent to all parts of the kingdom.—Reference may be had to the Nobility, Gentry, and the Trade, in most of the counties in England.

THE CRYSTAL PALACE FLOWER BASKETS, as exhibited in Nave and Transepts of the Crystal Palace, Sydenham, made to the original and other new elegant designs, by W. RICHARDS, at the Wire Works, 370, Oxford Street, nearly opposite the Princess's Theatre. Conservatories and Aviaries fitted up. Wire work in all its varieties. Game and garden fence—parrot cages and all others. Choice birds kept on sale. Window blinds of every possible description, of the very best materials and workmanship.

N.B. An allowance to nurserymen and the trade.

WARNER'S PATENT FARM AND COTTAGE PUMPS.



Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

Patent Pump £1

Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing 1

Larger sizes if required.

The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water: Fire Engines, &c.

TO NOBLEMEN, STEWARDS, AND OTHERS.

J. WRIGHT, 36, Boar Lane, Leeds, begs to call the attention of parties about to improve their Farm Estates to his O.G. Rain Water Spouting, which, for lightness, durability and cheapness, cannot be equalled. 4 inch, at 1*s.* 1*d.* per yard; 4½ inch, 1*s.* 2½*d.* per yard; 5 inch, 1*s.* 5*d.* per yard.

Wire Working, Sheep Fencing and Hurdles, at reasonable prices. Garden Implements of every description.

N.B. To be Sold, a bargain, a Large Wire Aviary.

READ'S IMPROVED HOLLOW PROBANG, for relieving hoven or choked Bullocks, Calves, Sheep, &c. These Tubes, which have lately been much improved, are acknowledged by the profession to be the best and most effective instruments for the purpose ever invented.

Manufactured by Richard Read, 35, Regent Circus, Piccadilly, London.

WIRE FENCING, 6¾*d.* per square yard, in various widths, from 6 feet to 15 inches, mesh less than 2 inch. An effectual fence against Hares, Rabbits, Sheep, Deer, &c., for the enclosure of Poultry, Pheasants, &c. 4-inch mesh ... square yard.

R. Richardson, 21, Tonbridge Place, New Road, London.

SUBSTITUTE FOR GARDEN MATS.—Waterproof Sheeting nearly 2 yards wide, 1*s.* per yard run—admits light and excludes cold; thick Canvas Tarpauling, 1*s.* per square yard; thick Canvas Waxed Sheeting, 1*s.* per square yard; ... various widths. These Canvases are excellent for roofing sheds and Outhouses, as they are quite waterproof.—R. Richardson, 21, Tonbridge Place, Judd Street, New Road, London. N.B. Waterproof Capes, large size, 3*s.*; Police Capes, ... 24*s.* per dozen; Driving Aprons, Capes, and Coats of ... Rubber, Horse's Loin Cloths, Waggon and Cart Covers, Sacks, &c.

GARDEN NETS, FISHING NETS, SHEEP NETS, and RABBIT NETS, made by Machinery, ... supplied at very low terms. Samples sent free.—R. Richardson, 21, Tonbridge Place, New Road, near King's Cross, London.

THE ELASTIC HEXAGON GARDEN NETTING, 76 meshes to the square inch, effectually excludes birds, wasps, flies, &c., from fruit-trees, flower or seed-beds, 4½*d.* per square yard.—Mr. W. Cullingford's, 1, Edmund Terrace, Ball's Pond Road, Kingsland; and South-west Gallery, Crystal Palace, Sydenham.

FISHING NETS.—A 20 yard Drag Net, with Purse complete, 2*l.* 10*s.* A Single Walled Drag Net, any length and depth, 1*s.* per square yard. Casting Nets complete ... 1*s.* 6*d.* per yard, measured round the lead line. Flue Nets any size, 1*s.* per square yard complete. Minnow nets, Eel nets, Landing Nets, equally cheap, all warranted first-rate quality and Workmanship.—At W. Cullingford's, 1, Edmund Terrace, Ball's Pond Road, Islington, London.

ENCAUSTIC TILE PAVEMENTS.

MAW and CO., Benthall Works, Broseley, Salop, Manufacturers of the Cloister Pavement of Medieval Court, and "the successful Imitation of Opus Alexandrinum in the beautiful Encaustic Tile Pavement of ... Byzantine Court," Crystal Palace (M. D. Wyatt, Esq., Official Handbook), forward, without charge, Designs and Estimates, adapted to given dimensions, of Entrance Halls, Conservatories, Verandahs, &c., in every style.

Specimens at 11, Aldersgate Street, City.

PRIZE MEDAL—1851.

AT A VERY ECONOMICAL RATE.

SAMUEL CUNDY, Mason and Builder, Pimlico Marble and Stone Works, Belgrave Wharf, Lower Belgrave Place, Pimlico, London.

Marble Chimney-pieces manufactured by improved machinery. The public are invited to view the stock, unequalled for ... and price. A good Marble Chimney-piece for 40*s.* Marble Work in all its branches at a remarkably cheap rate for Halls, Dairies, Larders, &c. Circulars sent on application.

N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank.

TO FLORISTS AND OTHERS.

J. JONES, Iron Merchant, has always a great variety of CONICAL and SADDLE BOILERS in stock; also Fire and Furnace Bars, Ornamental and Plain ... Cisterns, Double Doors and Frames, Furnace Grates, Boiler Doors, Hot Water Pipes, Elbows, Tees, Syphons, Throttle Valves, Stop Cocks, Flange and Socket Elbows, &c.; also ... Drawings and prices of the above, on application ... Iron Bridge Wharf, No. 6, Bankside, London, near the Southwark Iron Bridge.

STEPHENSON and PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron Boilers, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

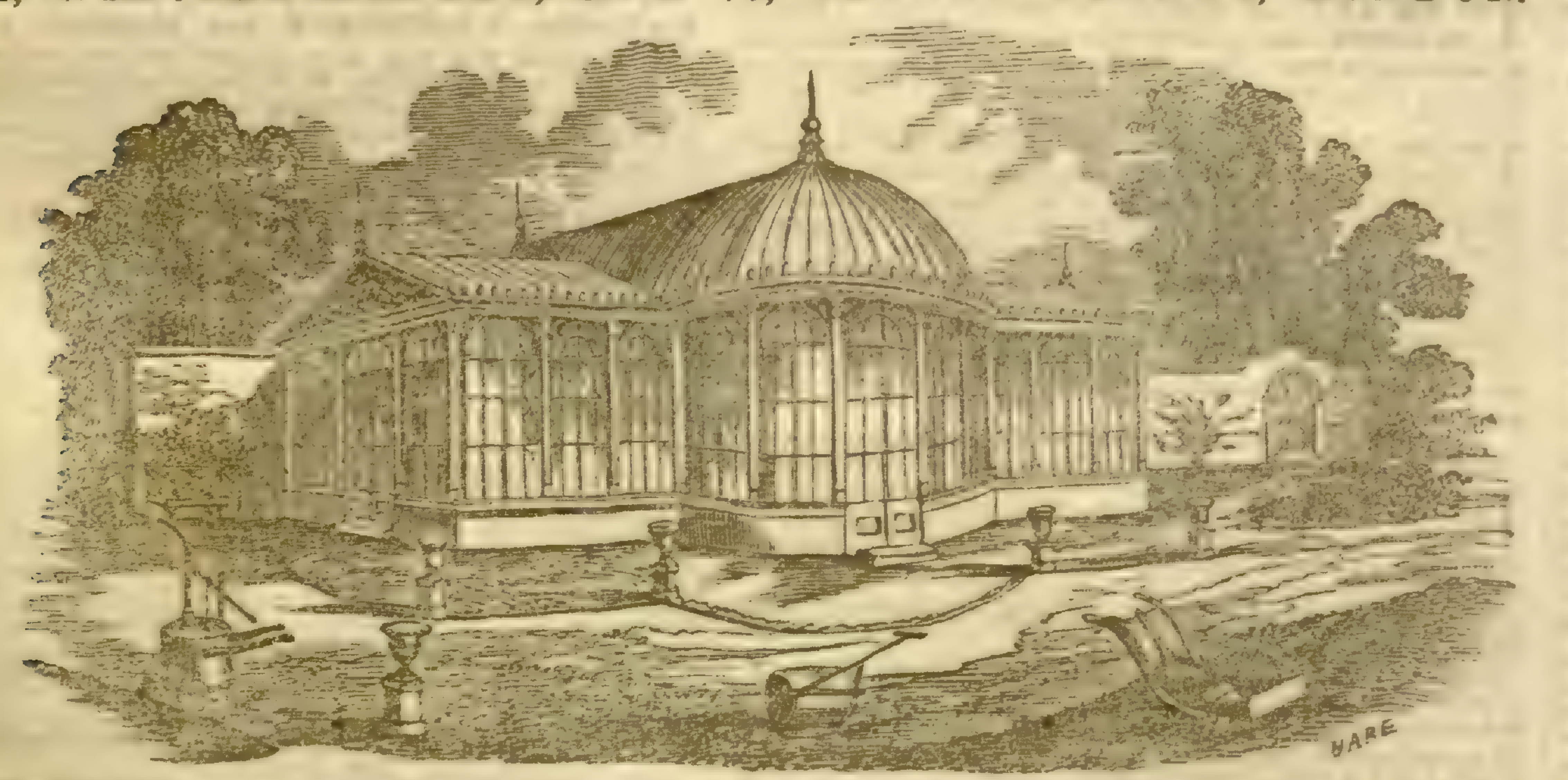
From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and ... Governments, the Hon. East India Company, the principal ... Companies, most public bodies, and by the nobility, gentry, clergy, for out-door work at their country seats. The ... Corrosion is particularly recommended as the most durable out-door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of ... years, ... the numerous (between 500 and 600) testimonials in its favour and which, from the rank and station in society of the parties who have given them, have never yet been equalled by any ... the kind hitherto brought before the public notice.

Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to Walter Carson ... 9, Great Winchester Street, Old Broad Street, Royal Exchange, London. No Agents. All orders are particularly requested to be sent direct.

COTTAM AND HALLEN,

2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.



APPLICATION is requested for their NEW HORTICULTURAL LIST, containing Illustrations Descriptions, and Prices of

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Syringes	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.

AGRICULTURAL LIST UPON APPLICATION.

EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

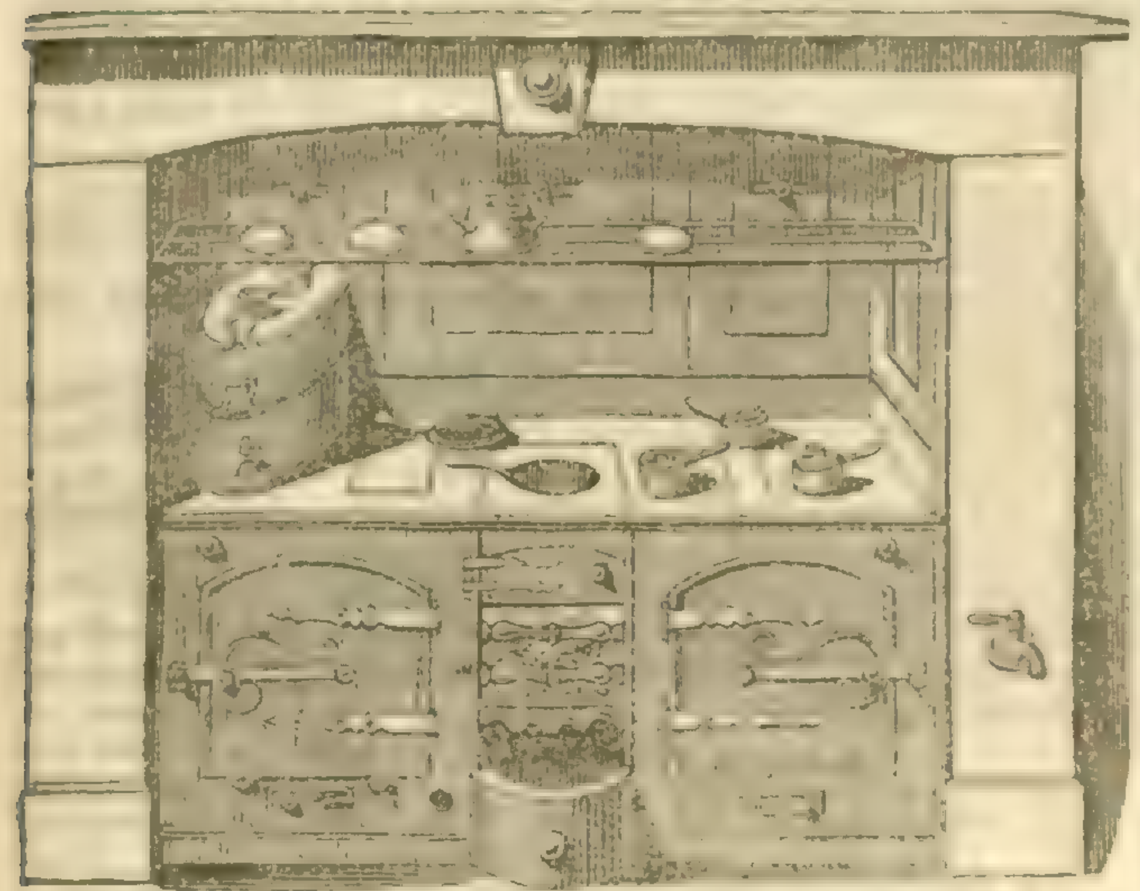
The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

LANDSCAPE GARDENING REVIVED AS AN ART.

MR. THOROLD, of Thorpe Bower, near Norwich, continues to offer his services to Ladies and Gentlemen in laying out or re-arranging their Gardens and Pleasure Grounds on correct principles of taste, in any style, or combination of styles, suitable to the requirements of all kinds of residences, upon any scale, and in most cases to produce immediate effect. Mr. T. can give ample references as to his success.

FLAVEL'S PRIZE KITCHENER.



THESE RANGES are strongly recommended for their simplicity of construction and their economy and cleanliness in use. The top forms a Hot-plate, and the open fire removes many of the objections which are felt to close Ranges. They are made in all sizes, from 3 feet to 18 feet in width, suitable for large or small establishments. They are admirably adapted for the Cure of Smoky Chimneys.

London agency removed to Wigmore Street, from 92, Jermyn Street, Piccadilly.

BENHAM & SONS, 19, Wigmore Street, London.

And in the Hardware Court of the Crystal Palace, Sydenham.

FENDERS, STOVES, AND FIRE-IRONS.—Buyers of the above are requested, before finally deciding, to visit WILLIAM S. BURTON'S SHOW ROOMS, 39, Oxford Street (corner of Newman Street), Nos. 1 and 2, Newman Street, and 4 and 5, Perry's Place. They are the largest in the world, and contain such an assortment of FENDERS, STOVES, RANGES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with bronzed ornaments and two sets of bars, 2l. 14s. to 5l. 10s.; ditto, with ormolu ornaments and two sets of bars, 5l. 10s. to 12l. 12s.; Bronzed Fenders complete, with standards, from 7s. to 3l.; Steel Fenders from 2l. 15s. to 6l.; ditto, with rich ormolu ornaments, from 2l. 15s. to 7l. 7s.; Fire-irons from 1s. 9d. the set to 4l. 4s. Sylvester and all other Patent Stoves, with radiating hearth plates. All which he is enabled to sell at these very reduced charges,

1st,—From the frequency and extent of his purchases; and,

2dly,—From those purchases being made exclusively for cash.

THE PERFECT SUBSTITUTE for SILVER.—The real NICKEL SILVER, introduced 20 years ago by WILLIAM S. BURTON, when Plated by the patent process of Messrs. Elkington & Co., is beyond all comparison the very best article next to sterling silver that can be employed as such, either usefully or ornamentally, as by no possible test can it be distinguished from real silver.

	Fiddle Pattern.	Thread or Brunswick Pattern.	King's Pattern.
Tea Spoons, per dozen	18s.	26s.	32s.
Dessert Forks „	30s.	40s.	46s.
Dessert Spoons „	30s.	42s.	48s.
Table Forks „	40s.	56s.	64s.
Table Spoons „	40s.	58s.	66s.

Tea and Coffee Sets, Waiters, Candlesticks, &c., at proportionate prices. All kinds of replating done by the patent process.

CHEMICALLY PURE NICKEL, NOT PLATED.

	Fiddle.	Thread.	King's
Table Spoons and Forks, full size, per doz.	12s.	28s.	30s.
Dessert ditto and ditto	10s.	21s.	25s.
Tea ditto	5s.	11s.	12s.

CUTLERY WARRANTED.—The most varied assortment of TABLE CUTLERY in the world, all warranted, is on Sale at WILLIAM S. BURTON'S, at prices that are remunerative only because of the largeness of the sales; 3½-inch ivory-handled table knives, with high shoulders, 11s. per dozen; desserts to match, 10s.; if to balance, 1s. per dozen extra; carvers, 4s. per pair; larger sizes, from 14s. 6d. to 26s. per dozen; extra fine, ivory, 32s.; if with silver ferrules, 37s. to 50s.; white bone table knives, 7s. 6d. per dozen; desserts, 5s. 6d.; carvers, 2s. 3d. per pair; black horn table knives, 7s. 4d. per dozen; desserts, 6s.; carvers, 2s. 6d.; black wood-handled table knives and forks, 6s. per dozen; table steels, from 1s. each. The largest stock in existence of plated dessert knives and forks, in cases and otherwise, and of the new plated fish carvers. Also a large assortment of Razors, Penknives, Scissors, &c., of the best quality.

DISH COVERS AND HOT-WATER DISHES in every material, in great variety, and of the newest and most recherché patterns. Tin Dish Covers, 6s. 6d. the set of six; Block Tin, 12s. 3d. to 28s. 9d. the set of six; elegant modern patterns, 34s. 0d. to 58s. 6d. the set; Britannia Metal, with or without silver-plated handles, 76s 6d. to 110s.6d. the set; Sheffield Plated, 10l. to 16l. 10s. the set; Block Tin Hot-water Dishes, with wells for gravy, 12s. to 30s.; Britannia Metal, 22s. to 77s.; Electro-plated, on Nickel, full size, 11l. 11s.

WILLIAM S. BURTON has TEN LARGE SHOW ROOMS (all communicating), exclusive of the shop, devoted solely to the show of GENERAL FURNISHING IRONMONGERY (including Cutlery, Nickel Silver, Plated, and Japanned Wares, Iron and Brass Bedsteads, so arranged and classified that purchasers may easily and at once make their selections.

Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of.

39, OXFORD STREET (corner of Newman Street); Nos. 1, 2, and 3, NEWMAN STREET; and 4 and 5, PERRY'S PLACE.

NOW IN SEASON.

REAL YARMOUTH BLOATERS: A Treat to Epicures.—One hundred Choice Bloaters in a case to be forwarded Carriage Free to any Railway Station in England. Remittances through Post-office Stamps, or to accompany orders.

Apply to HENRY H. [illegible], Fish Merchant, Great Yarmouth.

TO LOVERS OF FISH.—100 Genuine Yarmouth Bloaters for 6s., package included, forwarded to all parts on receipt of Penny Postage Stamps, or Post-office Order for the amount preferred.

Address, THOMAS LETTIS, Jun., Fish Curer, Great Yarmouth.

GLENFIELD PATENT STARCH, used in her Majesty's Laundry, and WOTHERSPOON'S machine-made CONFECTIONARY, MARMALADE, JAMS, JELLIES, &c., which gained the Prize Medal of 1851, may be had of all Grocers; Wholesale of WOTHERSPOON, MACKAY, & Co., 66, Queen Street, Cheapside, London; and ROBERT WOTHERSPOON & Co., Glasgow.

UMBRELLAS.

DAWSON'S PATENT.—If you require an Umbrella that is superior in every respect to any other made, being not only waterproof but at least five times more durable, and, according to its quality, equally low in price, ask for, and insist upon having, DAWSON'S PATENT WATERPROOF.

Wholesale Warehouse, 9, King's Arms Yard, Moorgate Street.

DEANE, DRAY, AND CO., have a very large and superior stock of FRENCH MODERATOR LAMPS now on sale.—(Opening to the Monument), London Bridge.

ESTABLISHED A.D. 1700.

DO YOU WANT LUXURIANT HAIR, WHISKERS, &c.?—No other compound for the Hair has maintained such an enduring celebrity as EMILY DEAN'S CRINILENE. It is guaranteed to produce Whiskers, Moustachios, Eyebrows, &c., in a few weeks, and restore the Hair in Baldness, from whatever cause, strengthen it when weak, prevent its falling off, and effectually check Greyness in all its stages. For the nursery, Dr. Wilson says it is unrivalled. Price 2s. per Package (elegantly perfumed); sent post free, on receipt of 24 penny postage stamps, by Miss DEAN, 37 A, Manchester Street, Gray's Inn Road, London. Sold by every Chemist in the Kingdom.—"In one fortnight it produced a beautiful set of Moustachios." H. ADAMS.—"It has prevented my Hair falling off." J. HICKSON.—"It has quite checked the greyness that was coming on." Mrs. ELDER.

DO YOU WANT BEAUTIFUL HAIR, WHISKERS, MOUSTACHES, &c.?—ALICE MELVILLE'S PALMAPILLA in all cases strengthens weak hair, prevents its falling off, checks greyness, produces a thick and luxuriant growth, dispels scurf and dandriff, and makes it clean, soft, curly, and brilliant in appearance. For baldness from any cause it is certain and effective; and for the production of Whiskers, Moustaches, Eyebrows, &c., in three or four weeks, it can be fully depended upon. Price 2s. 6d., sent post free (anywhere) on receipt of 30 penny postage stamps, by Miss MELVILLE, 25, Argyle Square, King's Cross, London. —"My whiskers are growing very thick." R. Mede, Esq. "It restored my hair, which I had lost in patches." W. Start.—"It has quite checked the greyness." Miss Ellis.—"My Moustache is greatly improved." Capt. Ross.

DEAFNESS, NOISES IN THE HEAD AND EARS, &c.

DR. BARKER'S remedy restores hearing in ALL cases, however it may have been lost—removes all those harassing noises in the head and ears, arising from cold, nervousness, &c.—checks discharges, and allays pain in a few days. Sent post free to any part of the kingdom, with full instructions for use, on receipt of 7s. 6d. in penny postage stamps, or by post-office order (payable at the General Post-office), by ALFRED BARKER, M.D., 25, Argyle Square, King's Cross, London. Consultation hours, 11 till 3 daily, except Sundays.

A TREATISE ON DEAFNESS, 68 pages, with a host of cases, testimonials, &c., sent post free for 8 penny stamps. Dr. B.'s treatment cured 2970 cases in 1853, many of which had been tampered with by the various quacks and impostors who profess to cure deafness.

RUPTURES EFFECTUALLY CURED WITHOUT A TRUSS.—All sufferers from this alarming complaint are earnestly invited to consult or write to Dr. LESLIE, as he guarantees them relief in every case. His remedy has been successful in curing thousands of persons during the last 11 years, and is applicable to every kind of single and double Rupture, however bad or long standing, in male or female of any age, causing no confinement or inconvenience in its use whatever. Sent post free to any part of the world, with full instructions for use, on receipt of 7s. 6d. in postage stamps, cash, or Post-office order, payable at the General Post-office, to Dr. HERBERT LESLIE, 37 A, Manchester Street, Gray's Inn Road, London. At home daily (except Sunday) from 11 till 3 o'clock. A Pamphlet of Testimonials sent post free on receipt of one postage stamp.

TO NURSERYMEN AND OTHERS.

TO BE LET, at Epsom, in Surrey, the EPSOM NURSERY, late in the occupation of Mr. Young, consisting of about 4½ Acres.—For further particulars apply to Mrs. WILKINS 60, Queen's Row, Walworth, London.

TO BE LET, with possession at Michaelmas next, WIDNEY GREEN FARM, situate in the parishes of Fyfield and Willingale Spain, near High Ongar, in the county of Essex. It consists of 292 acres of land, of which 61 are Meadow, and the rest Arable. The whole is in very good condition, and has on it a most excellent commodious house with all requisite, very useful, and well arranged farm premises in capital repair. The whole forms a most desirable occupation, and will be let by the year or on lease.—For particulars apply to Mr. OAKLEY, Land agent and Surveyor, 60, Doughty Street, Mecklenburgh Square, London.

KING'S COUNTY.—MOST DESIRABLE RESIDENCE.

TO BE LET, from the 1st of November next, for such term as may be agreed on, the DWELLING HOUSE, OFFICES, and DEMESNE LANDS of COROLANTY, containing 162 statute acres, together with 80 acres of valuable bog attached, situate within one mile of the town of Shinrone, in the Barony of Clonlisk, and King's County.

The Dwelling-house, upon which a large sum is now expending in permanent improvements to be completed before the 1st of November, is large and commodious, and in every way suited for a gentleman's residence. There are extensive out-offices attached, and a large walled-in garden, well stocked with choice fruit trees. The land is of a superior quality, well suited for either tillage or grazing. The Tenant can also have 65 acres of an adjoining Townland at present in the hands of yearly tenants. There is a large quantity of Manure, Turf, and a Threshing Machine on the premises, which the Tenant can have at a valuation. The Shinrone Station on the Roscrea and Parsonstown Railway, about to be made, will be within one mile of Corolanty. To a solvent Tenant a long Lease will be given; no other need apply.

Proposals in writing will be received by JOSEPH J. WALKER, Esq., Belfield, Shinrone; or WILLIAM PEEBLES, Esq., 9, North Frederick Street, Dublin.

TO BE LET, at Halam, two miles from Southwell, Notts, a desirable RESIDENCE and about five acres of Land. The house is well adapted for a private School, having been for some years past occupied for the reception of the pupils. The situation is very pleasant and healthy, with good roads. There are also stabling, gig-house, and other convenient outbuildings. The gardens are stocked with choice fruit trees, many of which are in full bearing. A Lease of seven years would be granted if desired. Rent 40l. per annum. Possession at Michaelmas next. To treat and for further particulars apply to W. [illegible], Esq., Solicitor, Southwell.

TO NURSERYMEN, GARDENERS, AND OTHERS.

TO BE SOLD, with immediate possession, a NURSERY business with a good Connection, and capable of enlargement, known as the [illegible] Nursery, Margate, Kent, with a good Family Residence, and about 2 acres of Land walled in and in good working order, with a good supply of water. Rent, 30l. per annum. The Greenhouses and all requisite buildings, with Stock, &c., all in good condition, for the sum of [illegible].—For further particulars apply to the Proprietor, Mr. HENRY STROUD on the premises. Satisfactory reasons given for leaving. No agents need apply.

TO BE SOLD, FANCY POULTRY, consisting of Imported Brahma Pootra, White-faced Spanish, and Pure Buff Cochin, many having taken 12 or 14 Prizes, the property of Mr. Fox, who, in consequence of removing from his present residence, will dispose of the whole of his valuable Collection of Poultry, which has been selected from most of the best stocks in this country.—For particulars, apply at the CITY OF LONDON WIRE WORKS and BLIND MANUFACTORY, 44, Skinner Street, Snow Hill, London.

Illustrated Catalogues of Wire Fencing, Garden Arches, Trainers, &c., forwarded per post on application.

Sales by Auction.

CAMELLIAS, ORANGE TREES, HEATHS, ORCHIDS, AND OTHER PLANTS.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King Street, Covent Garden, on FRIDAY, 6th October, at 12 for 1 o'clock, a COLLECTION of STOVE AND GREENHOUSE PLANTS, the property of a gentleman, containing many well grown specimens of Heaths, Camellias, Azaleas, Orange Trees, &c. Also an Importation of Orchids from La Guayra in capital condition, including varieties of Cattleya Mossiæ and other good sorts, and a small parcel of established plants. May be viewed on the morning of sale, and Catalogues had.

CAMELLIAS, RHODODENDRONS, AZALEAS, DEUTZIA GRACILIS.

A CONSIGNMENT FROM MR. JOSH. BAUMANN, OF GHENT—FOR ABSOLUTE SALE.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on SATURDAY, October 7th, at 12 for 1 o'clock, 800 Camellias, of good sorts, with flower buds, 100 yellow Rhododendrons, 100 Ghent Azaleas, 200 Deutzia gracilis, 500 Otaheite and other Orange trees, 1000 Gladioli, &c., &c.—May be viewed the morning of sale and catalogues had.

TO PLANT EXHIBITORS.

IMPORTANT SALE OF MAGNIFICENT SPECIMEN HEATHS.

MR. J. C. STEVENS begs to announce that he will Sell by Auction, on the premises, Crown Hill, Norwood, on TUESDAY, October 10, at 12 for 1 o'clock precisely, about 100 HEATHS, the finest specimen plants ever offered for public sale, and including all the best exhibition varieties grown by Mr. S. Smith, gardener to W. Quilter, Esq., of Norwood. May be viewed on the day prior and morning of sale, and Catalogues had of Mr. J. C. STEVENS, 38, King Street, Covent Garden, London.

ORCHIDS.

ESTABLISHED PLANTS OF THE BEST SORTS.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King Street, Covent Garden, on THURSDAY, 5th October, at Twelve for One o'clock, a COLLECTION of CHOICE ORCHIDS, including Vanda suavis (Veitch's true), V. tricolor, Aerides maculosum major, A. quinquevulnerum, A. crispum; Saccolabium guttatum, S. retusum, S. furcatum, Cypripedium Lowi, C. caudatum, Cattleya labiata, C. Quindios, C. maxima and elegans; Trichopilia suavis, Angræcum eburneum, A. virescens, &c. &c.—May be viewed on the morning of Sale, and Catalogues had of Mr. J. C. STEVENS, 38, King Street, Covent Garden.

TO GENTLEMEN, NURSERYMEN, AND OTHERS.

IMPORTANT SALE—1000 DOUBLE CAMELLIAS, &c.

MESSRS. PROTHEROE AND MORRIS are directed by Mr. A. Van Geert, of Ghent, to Sell by Auction, at the Mart, Bartholomew Lane, on THURSDAY, October 5, at 12 o'clock, 1000 Double Camellias, 1 to 4 feet, consisting of all the approved kinds beautifully set with bloom buds; 200 Indian Azaleas; 400 Lilium lancifolium rubrum and album; 500 Gladiolus Gandavensis; 12 magnificent Standard Sweet Bays.—On view the morning of Sale. Catalogues may be had of Mr. SILBERRAD, 5, Harp Lane; at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS beg to announce that they have received instructions from the administrators of the late Mr. W. Watts of Stoke Newington, to sell by Auction, early in OCTOBER next, the whole of his unrivalled NURSERY STOCK, Greenhouses, and sundry effects. Further particulars will appear in future advertisements.

N.B. The unexpired Lease of the BARRETT GROVE GROUND, of 4 acres, will be submitted to public competition at the same time, unless previously disposed of by private contract.—For particulars apply to Mr. MACKAY, Stoke Newington, or of the Auctioneers, American Nursery, Leytonstone, Essex.

FULHAM.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are directed by Mr. Lockhart to Sell by Auction, without reserve, on the premises, Parson's Green Lane, Fulham, on MONDAY, October 9th, at 11 o'clock, a costly and extensive collection of BULBS and FLOWER ROOTS, being about 50,000 in number; also choice Vegetable and Flower Seeds, Fruit Trees in good condition, Standard Roses, a collection of Herbaceous Plants, Two three-light Boxes, and sundries.—May be viewed three days prior to the Sale. Catalogues may be had (6d. each, returnable to purchasers) of Mr. Lockhart, on the Premises; of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

CLAPHAM.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, MARKET GARDENERS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by the administrators of the late Mr. Joseph Fairbairn to sell by Auction, on the premises, The Retreat, Larkhall Lane, Clapham, on MONDAY, October [illegible], and following days, at 11 o'clock each day, the whole of the valuable stock of FRUIT TREES, consisting of Standard, Dwarf, Trained and Untrained Peach, Nectarine, Apricot, Apple, Pear, Plum, Cherry, Gooseberries and Currants, &c.; also Ornamental Trees, Evergreens and Deciduous shrubs, &c.—May be viewed one week prior to the Sale; Catalogues to be had (6d. each, returnable to purchasers) on the premises; of the principal seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

RENDLE'S NEW AUTUMNAL CATALOGUE *of Geraniums, Camellias, Fuchsias, Azaleas, Chrysanthemums, Stove and Greenhouse Plants, &c., can now be had in exchange for two postage stamps.*
Apply to WILLIAM E. RENDLE & Co., Nurserymen and Seed Merchants, Plymouth.

RENDLE'S NEW DESCRIPTIVE CATALOGUE OF DUTCH ROOTS *is just published, containing lists and prices of the best Hyacinths, Tulips, Ranunculuses, Anemones, Crocus, Iris, Narcissus, Jonquils, Gladiolus, &c., to be had in exchange for two penny stamps, from*
WILLIAM E. RENDLE AND CO., SEED MERCHANTS, Plymouth.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER'S descriptive List of the above splendid flowers, containing hints on their culture, and observations on exhibiting, &c., is now ready, and may be had on application, by forwarding one postage stamp.—Saffron Walden Nursery, Sept. 30.

AMERICAN PLANTS.

JOHN WATERER begs to announce that he has published a new Catalogue of his Rhododendrons, &c., as exhibited by him in the Gardens of the Royal Botanic Society, Regent's Park, London. It describes the colours of all the Rhododendrons considered worthy of cultivation, with a Treatise on their successful management, and may be had by enclosing two postage stamps.
The American Nursery, Bagshot, Surrey, near Farnborough Station, South-Western Railway.

AMERICAN PLANTS.—A Descriptive Priced CATALOGUE of HARDY AMERICAN PLANTS for the coming season is just published, and may be had by enclosing two stamps for postage. As everything in the way of American Plants is grown to an unequalled extent at this Nursery, intending purchasers would do well to provide themselves with this Catalogue.
WATERER AND GODFREY, Nephews and Successors to the late Hosea Waterer, Knap Hill Nursery, Woking, Surrey.

ARTHUR HENDERSON AND CO. beg to inform their patrons and the public that their CATALOGUES OF BULBS are now ready, and they will have much pleasure in forwarding them on application.
They comprise lists of all the finest varieties of Hyacinths, and many other rare and valuable Bulbs.
Their collections of Hyacinths have yearly carried off the metropolitan prizes, not only for their unique growth, but also for their beauty of colouring and distinctness of sorts, either when exhibited in a collection of 36 plants or in pairs.
Pine-apple Place, Edgeware Road, London.

L. VAN HOUTTE'S NEW GENERAL CATALOGUE, No. 53, is just published, containing descriptive lists and prices of Azaleas, Camellias, and Rhododendrons; Stove, Greenhouse, and hardy plants of every description, including many fine and valuable novelties; tender and hardy flowering bulbs in great variety, and of superior quality, &c., &c. May be had on application to his agent, Mr. R. SILBERRAD, 5, Harp Lane, Great Tower Street, London. N.B. The CATALOGUE of Flower and Vegetable Seeds will be published early in the month of November next.—LOUIS VAN HOUTTE, Nurseryman and Seed Merchant, Ghent, Belgium.

THE PAST WINTER AND SPRING have induced YOUELL & Co. to publish a CATALOGUE of RARE and HARDY CONIFERS and HARDY ORNAMENTAL SHRUBS, that have proved with them perfectly hardy in this well-known bleak district, exposed to the cutting winds from the North Sea.
This Catalogue also contains an extensive selection of the most useful Greenhouse Plants, Camellias, Ericas, Epacris, Chrysanthemums, Hollyhocks, Tree Carnations, Carnations and Picotees, Fuchsias, Verbenas, Phloxes, &c., which will be forwarded (stamped) on receipt of two postage stamps.
YOUELL AND CO., Royal Nursery, Great Yarmouth.

NEW BULB CATALOGUE.

E. G. HENDERSON AND SON, of the Wellington Nursery, St. John's Wood, London, begs to inform the public that their Catalogue of Bulbs is now published, and will be forwarded post free on application.
The collection is selected with much care, and they would draw particular attention to the Hyacinths which have been proved in their nursery to possess those properties for which this tribe is celebrated, viz., brilliant colour, close, compact truss, and good habit. The Dutch collections have such a number of cheap varieties which are offered to the London market, that it is requisite for them to be proved before being offered to the public.
Among the other lists of Bulbs, they would call attention to the Gladiolus, particularly to Section III. (hybrids of Gandavensis), and can recommend such as Fanny Rouget, Monsieur Blouet, and Couranti fulgens, as possessing first-rate merits.

On the 25th October, for the EIGHTEENTH YEAR,
GLENNY'S GARDEN ALMANAC FOR 1855. Richly Illustrated, 1s.; or handsomely bound as a Pocket Book, 2s. 6d.; post free 6d. extra each—stamps equivalent.
Advertisements should be sent immediately. The edition for 1854 was sold out in May.
London: GEORGE COX, King Street, Covent Garden, London.

Price 5s. 6d. cloth,
SECOND EDITION, REVISED AND ENLARGED,
ORNAMENTAL AND DOMESTIC POULTRY; THEIR HISTORY AND MANAGEMENT.
BY THE REV. EDMUND SAUL DIXON, M.A.,
Rector of Intwood with Keswick.
J. MATTHEWS, 5, Upper Wellington Street, Covent Garden, London.

Third Edition, considerably enlarged, price 5s. 6d.
RURAL CHEMISTRY.
By EDWARD SOLLY, F.R.S., F.L.S., F.G.S.,
Honorary Member of the Royal Agricultural Society of England, Professor of Chemistry to the Horticultural Society of London, Lecturer on Chemistry in the Hon E. I. Co.'s Military Seminary at Addiscombe, &c., &c.
J. MATTHEWS, 5, Upper Wellington Street, Covent Garden.

Price 1s. 6d., free by post 1s. 10d.
LABELS FOR THE HERBARIUM, CONSISTING OF THE NAMES OF THE
CLASSES, ALLIANCES, ORDERS, AND SUB-ORDERS,
OF
PROFESSOR LINDLEY'S "VEGETABLE KINGDOM."
So printed in large type, that they can be cut out and pasted into THE HERBARIUM.
J. MATTHEWS, 5, Upper Wellington Street, Covent Garden.

Price 3s. 6d., free by post,
THE TREE ROSE.—Practical Instructions for its Formation and Culture. Illustrated by 24 Woodcuts.
Reprinted from the GARDENERS' CHRONICLE, with additions.
CONTENTS.

Annual pruning time, principle of execution, &c.
Binding up
Budding knife
Budding, time of year, day, time of day, state of the plant, care of buds
Budding upon body
Bud, insertion of, into stock
Bud, preparation of, for use
Buds, dormant and pushing
Buds, failing
Buds, securing a supply of
Caterpillars, slugs, and snails, to destroy
Causes of success
Dormant buds, theory of replanting with, explained
Guards against wind
Labelling
Loosing ligatures
March pruning
Mixture for healing wounds
Pruning for transplantation
Planting out, and arrangement of trees
Pushing eye, spring treatment of dwarf shoots from
Roses, different sorts on the same stock
Roses, short list of desirable sorts for budding with a pushing eye
Sap-bud, treatment of
Shape of trees
Shoots and buds, choice of
Shoots for budding upon, and their arrangement
Shoots, keeping even, and removing thorns
Shortening wild shoots
Stocks, planting out for budding upon; the means of procuring; colour, age, height; sorts for different species of Rose; taking up, trimming roots, sending a distance, shortening heads, &c.; saw proper for the purpose.

GRAFTING.
Aphides, to keep down
Free-growers, remarks on
Graft, binding up and finishing [of
Grafting, advantage
Grafting, disadvantage of
Operations in different months
Preliminary observations
Roses, catalogue and brief description of a few sorts
Scion, preparation and insertion of
Scion, choice and arrangement of
Stock, preparation of.

APPENDIX.
A selection of varieties
Comparison between budding and grafting.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden.

SCHOOL BOTANY; OR, THE RUDIMENTS OF BOTANICAL SCIENCE.
400 Illustrations. 8vo. Price 5s. 6d. half-bound.
BRADBURY & EVANS, 11, Bouverie Street.

Lately Published,
THE ELEMENTS OF BOTANY, STRUCTURAL AND PHYSIOLOGICAL. With a Glossary of Technical Terms, and numerous Illustrations. 12s. cloth.
This completes the series of Elementary Botanical Works by Professor LINDLEY, of which "School Botany," and "The Vegetable Kingdom," form the other parts.
The first two Parts of THE ELEMENTS OF BOTANY, comprising Structural and Physiological Botany, and a Glossary of Technical Terms, are published in one octavo volume, price 12s.
These three parts form a complete manual of Botany for Medical and other Students who have made themselves acquainted with the author's "School Botany."
N.B. The Glossary may be had separately, price 5s.
BRADBURY & EVANS, 11, Bouverie Street.

This day is published, price 1s., No. 18 of
"THE NEWCOMES." By W. M. THACKERAY. With ILLUSTRATIONS by RICHARD DOYLE.
*** The First Volume is ready, price 13s. in cloth.
BRADBURY & EVANS, 11, Bouverie Street.

This day is published, price 1s., the 17th Number of
HANDLEY CROSS; OR, MR. JORROCKS'S HUNT. By the Author of "MR. SPONGE'S TOUR." Illustrated with Coloured Plates and Numerous Woodcuts by JOHN LEECH, uniformly with "SPONGE'S TOUR."
*** The Complete Work will be published in a few days, handsomely bound in cloth, price 18s.
BRADBURY & EVANS, 11, Bouverie Street.

PEOPLE'S EDITIONS.
This day is published,
I.
ALISON'S HISTORY OF EUROPE. Vol. [illegible] price 4s., cloth, and Part XXV., price 1s. To be com[pleted] in 44 Parts, forming 12 Volumes.
ATLAS to this Edition of ALISON'S EUROPE. Part VI., price 2s. 6d. To be completed in 12 Parts.
II.
WORKS OF SAMUEL WARREN, D.C.L. Part XIV., price 1s.
III.
PROFESSOR JOHNSTON'S
CHEMISTRY OF COMMON LIFE. No. [illegible] price 6d., containing THE SMELLS WE DISLIKE [illegible] —Mineral Smells—Vegetable Smells—Smells from Decay[ing] Substances—Smells produced by Chemical Art (Kakody[le])—Smells produced by our Manufactories.
WILLIAM BLACKWOOD & SONS, Edinburgh and London.
Sold by all Booksellers.

BLACKWOOD'S MAGAZINE For OCTOBER, 1854. No. CCCCLXVII. Price 2s. 6d.
CONTENTS:—
SPECULATORS AMONG THE STARS. PART II.
KING OTHO AND HIS CLASSIC KINGDOM.
STUDENT LIFE IN SCOTLAND. PART II.
CIVILISATION: THE CENSUS.
A RUSSIAN REMINISCENCE.
RECORDS OF THE PAST: NINEVEH AND BABYLON.
THE OPENING OF THE GANGES CANAL, APRIL 8, 1854.
THE USES OF BEAUTY.
SPANISH POLITICS AND CUBAN PERILS.
WILLIAM BLACKWOOD & SONS, Edinburgh and London.

THE JOURNAL OF AGRICULTURE AND THE TRANSACTIONS OF THE HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND. No. XLVI. for October, 1854. Price 3s.
WILLIAM BLACKWOOD & SONS, Edinburgh and London.

TABLES ON CATTLE, HAY, AND DRAINING.
Ninth Edition, price 2s. 6d. cloth, of
A NEW SET OF TABLES for computing the Weight of Cattle by Measurement, the Quantity of Hay in Ricks of different Forms, the Value of Land, &c. &c. To which is now added, a Concise System of FARM BOOK-KEEPING. By JAMES STRACHAN, Fochabers. The Book-keeping is also sold separately, price 6d.

Second Edition, price 2s. 6d. cloth, of
STRACHAN'S TABLES ON DRAINING, with Practical Directions.
OLIVER & BOYD, Edinburgh; SIMPKIN, MARSHALL, & Co. London.

Price 2s. 6d., cloth; or in Two Parts, 1s. each,
RAMBLES IN ICELAND. By PLINY MILES. Forming Parts 68 and 69 of the "Traveller's Library."
London: LONGMAN, BROWN, GREEN, & LONGMANS.

Just published, New and Improved Edition, price 1s.,
THE CURABILITY OF CONSUMPTION. Being a Series of Papers, presenting the most prominent and important Practical Points in the Treatment of the Disease. By F. H. RAMADGE, M.D., Fellow of the College of Physicians, late Senior Physician to the Royal Infirmary for Diseases of the Chest, &c. Also, by the same Author, price 10s. 6d.,
A TREATISE ON ASTHMA AND DISEASES OF THE HEART.
London: LONGMAN, BROWN, GREEN, and LONGMANS.

Now ready, Part III. of
THE FERNS OF GREAT BRITAIN, illustrated by JOHN E. SOWERBY; descriptions by C. JOHNSON, Esq. To contain about 46 plates, and to be completed in Eight Monthly Parts, full coloured, at 3s., partly coloured at 1s. 6d. per part. To be had through all Booksellers; and of the Proprietor,
JOHN E. SOWERBY, 3, Mead Place, Lambeth.

This day, fourth and cheaper edition, revised, 3s. 6d.,
LECTURES ON ASTRONOMY, delivered at King's College, London, by HENRY MOSELEY, M.A., F.R.S., one of her Majesty's Inspectors of Schools.
By the same Author, third edition, 6s. 6d.,
MECHANICS APPLIED TO THE ARTS.
London: JOHN W. PARKER & SON, West Strand.

EDWARD MAYHEW ON THE DOG.
In One Volume, illustrated, price 5s., half bound,
DOGS: THEIR MANAGEMENT. Being a new Plan of Treating the Animal. By EDWARD MAYHEW, Author of "The Horse's Mouth, showing the Age by the Teeth," &c.
"All owners of dogs should purchase this admirable work."—*Observer.*
"Is founded on a close observation of the animal's living nature, as well as a knowledge of his anatomical structure."—*Spectator.*
"Contains the result of several years' experience."—*Leader.*
"A valuable contribution to the study of canine pathology."—*Press.*
London: GEORGE ROUTLEDGE & Co., 2, Farringdon Street.

TENNENT'S SELF-CLEANING TOOTHED CRUSHER.
SEE
THE PRACTICAL MECHANIC'S JOURNAL. PART XIX., October, price 1s.
ILLUSTRATIONS—Two large copper-plate Engravings of Wright and Brown's Self Air-heating Blast Furnace and M'Connell's Marine Steam-engines and Boilers, and 50 Wood Engravings.
CONTENTS.—Patent Law—Wright and Brown's Self Air-heating Blast Furnace—Decimal Coinage—Steam Engines and Boilers for Screw Propulsion—M'Connell's Engines and Boilers—Neilson and Co.'s Direct-acting Screw Engines—Main's Direct-acting Inclined Screw Engines—Galvanism as a Motive Power—American Notes by our own Correspondent—Illustrated Specifications of Recent Patents—Railway Brakes, Jennings—Match-making Machinery, Johnson—Scaffold Bracket, Dixon—Smoke-consuming Lamp, Johnson—Presser-Flyers for Cotton Spinning, Settle and Cooper—Paper-Cutting Machine, Cox—Portable Beds, Blair—Railway Axle-boxes and Bearing Springs, Dixon—Moulds for Casting Metal, Jobson—Reviews of New Books—Monthly Notes—Lists of all New Patents.
HEBERT, 88, Cheapside; Editor's Offices (Offices for Patents), 47, Lincoln's Inn Fields, London; and 166, Buchanan Street, Glasgow.

ON MARRIAGE.
Just published (to be had free, by enclosing 1s. or Twelve Postage Stamps, to Mr. WATSON, Clerical Agent, Robert Street, Adelphi, London).
MATRIMONY.—A Pamphlet on Matrimonial Alliances, which merits the attention of those who wish to settle honourably in life. By a Clergyman.

NEW EDITION OF THE CRYSTAL PALACE OFFICIAL GUIDE BOOK.
BY SAMUEL PHILLIPS.

A NEW EDITION, Corrected and Enlarged, with NEW PLANS of the BUILDING and GROUNDS, and many additional Plans of the various Courts, is published this day, price One Shilling.
☞ *The Official Guide Books to all the Courts are always on sale in the Building, and at all Railway Stations.*
BRADBURY AND EVANS, 11, BOUVERIE STREET.

PERMANENTLY ENLARGED TO TWENTY-FOUR PAGES.
Every Saturday, Foolscap Quarto, price 4d., or Stamped 5d.,
NOTES AND QUERIES:
A MEDIUM OF INTER-COMMUNICATION FOR LITERARY MEN, ARTISTS, ANTIQUARIES, GENEALOGISTS, PHOTOGRAPHERS, &c.
*** *For opinions of the Quarterly Review, Athenæum, Examiner, Literary Gazette, Spectator, Dublin Review, &c., as to the utility, &c., of* NOTES AND QUERIES, *see Prospectus.*
A Specimen Number sent on receipt of five postage stamps.
GEORGE BELL, No. 186, FLEET STREET; AND BY ORDER OF ALL BOOKSELLERS AND NEWSMEN.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. [illegible] Victoria Street, in the Parish of St. Margaret and St. John, Westminster, both in the County of Middlesex, Printers, at their Office in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul, Covent Garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, Sept. 30, 1854.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 40.—1854.] SATURDAY, OCTOBER 7. [PRICE 6d.

INDEX.

Aerophyllum venosum	645 a	Physiology, vegetable	645 b
Anbury	649 c	Pitchers, vegetable	646 b
Books noticed	646 b	Plants, new	647 a
Calendar, horticultural	648 a	— hardiness of	641 a
— agricultural	653 a	Potatoes	646 c
Cattle, Rape-cake for	651 c	Prince Hall estate	650 c
Cesspools, to disinfect	645 c	Rape-cake for feeding	651 c
Chemistry, Brande on, rev.	646 b	Roots, finger and toe in	649 c
Cows, profitable	652 b	Strawberry, Black Prince	646 a
Farming, Princetown	650 c	Trade Memoranda	645 c
Finger and toe	649 c	Training, horizontal	643 c
Food, Rape-cake as	651 c	Tulips, to plant	647 c
Fruit trees, horizontal training of	643 c	Vegetable pathology	644 c
Harvests, causes of good	652 c	— physiology	645 b
Horticultural Society's garden	647 b	— pitchers	646 b
Lettuce leaf, pitcher on	646 b	Vines, horizontal training of	643 c
Lilies, Japan	647 c	Walks, weeds on	646 a
Oats, Tartarian	652 b	Weeds on walks	646 a
Pathology, vegetable	644 c	Wheat, best sorts of....650 a—652 c	
Pear growing, profits of	646 a	— early sowing	652 b
Peas, winter	645 c	Wingate (Mr.), death of	653 a
		Winter, effects of	644 a

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Notice is hereby given that an ELECTION of TWO PENSIONERS on the Funds of this Charity will take place in January next. All persons desirous of becoming Candidates at such Election are requested to send in their petitions and testimonials to the Committee on or before the 1st November next, after which time they will not be received.

Printed forms of petition can be had upon application to the Secretary. By order of the Committee.

7th October, E. R. CUTLER, Secretary.
14, Tavistock Row, Covent Garden.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER'S descriptive List of the above splendid flowers, containing hints on their culture, and observations on exhibiting, &c., is now ready, and may be had on application, by forwarding one postage stamp.—Saffron Walden Nursery, Oct. 7.

PINE PLANTS.

WILLIAM OLIVER has a few strong, clean, and healthy PINE PLANTS of the famous winter sorts—the Montserrats, Black Jamaica, &c.—to dispose of. Price, &c., on application.—Combe Gardens, near Coventry, Oct. 7.

PRIMULA SINENSIS.

J. AND J. HAYES begs to offer their fine fringed varieties of Red and White PRIMULAS; fine strong plants, in 60-sized pots, ready for shifting, at 6s. per dozen, packing and carriage included, to any railway in London. All orders from unknown correspondents to be accompanied with a Post Office order, payable to J. & J. HAYES, Edmonton, Middlesex.

HOLLYHOCK SEED.

WILLIAM CHATER begs to offer packets of the above Seed, containing twenty sorts, selected from his best show varieties, at 5s.; 12 varieties, do., 2s. 6d.; and from good double border sorts, at 1s.—Also Pansy Seed, from the best flowers, 2s. 6d. per packet.—Strong Plants of the new Double Crimson Rocket, excellent bedding plants for spring flowering, 6s. per dozen, or 2l. per 100; Double French White, 4s. per doz., or 30s. per 100.—Saffron Walden, October 7.

THOMAS JACKSON AND SON, having a large healthy Stock of STOVE, ORCHIDACEOUS, and GREENHOUSE PLANTS, respectfully invite intending purchasers to an inspection; in addition to the established favourite kinds will be found many novelties now offered at very low prices.
Kingston, near London.

PERUVIAN BARLEY, FOR AUTUMN OR SPRING SOWING.—A packet of this prolific, skinless, hardy, heavy, and very early variety of Barley, sufficient to sow one rod of ground at six inches apart square, will be sent to any address, post free, on receipt of eight postage stamps, warranted genuine and selected grains, from ABRAHAM HARDY & SON, Seed Growers and Seedsmen, Maldon, Essex.

R. SMITH is now sending out his New Seedling Strawberry, SIR CHARLES NAPIER, the best forcing one of the day, admired by all who have seen its growth, and for colour not one to equal it.—Price, 3l. per 100; 50 for 30s.; 25 for 1l.
R. SMITH, Market Gardener, Richmond Road, Twickenham; or G. GLADMAN, Salesman, Covent Garden Market, London.

CHRYSANTHEMUMS.

R. PARKER begs to offer fine bushy plants of the above, well established in 6-inch pots, for flowering this autumn, consisting of all the newest and finest Pompon and large flowered varieties in cultivation. Purchaser's selection at 9s. per dozen.

CINERARIAS (Seedlings), from all the finest varieties, carefully selected, including the new varieties sent out last autumn. Strong established plants, in 4-inch pots, at 4s. per dozen. A choice collection of named Cinerarias in strong established plants, purchaser's selection, at 9s. per dozen

ROSES, consisting of the best varieties of Hybrid Perpetuals, Teas, Bourbons, &c., well established in pots. Purchaser's selection, at 12s. per dozen. List of names forwarded upon application.

A remittance or reference to accompany all orders from unknown correspondents.

Paradise Nursery, Hornsey Road, Islington.

THE LARGEST AND CHEAPEST ESTABLISHMENT IN ENGLAND for GERANIUMS (show and fancy), FRENCH GERANIUMS, FUCHSIAS, VERBENAS, FAIRY ROSES, CHRYSANTHEMUMS, HELIOTROPES, CINERARIAS, CALCEOLARIAS, PRIMULAS, and other soft-wooded plants, is the Floral Nursery, Acton Road, Turnham Green, near London. More than 250,000 plants are there cultivated annually.

For further particulars, see Advertisement in last week's *Chronicle*. Catalogues forwarded to all parts gratis.

Every possible exertion will be made to give the most perfect satisfaction to all who may favour this Establishment with their patronage. None but thoroughly established Plants will be sent out, and full reliance may be placed on prompt attention and fair dealing

The Trade will be liberally dealt with. Provincial Nurserymen and Florists will do well to try this Establishment.

Terms cash or a satisfactory reference.

JOHN WESTWOOD, PROPRIETOR.

THE BEST CUCUMBERS FOR FORCING.

SUTTON'S BERKSHIRE CHAMPION, per packet	2s. 6d.
HUNTER'S LONG PROLIFIC	1s.
LORD KENYON'S FAVOURITE	1s.
IMPROVED SION HOUSE	1s.

SUTTON & SONS, Seed Growers, Reading.

THE BEST TWELVE HYACINTHS.

SUTTON AND SONS *can supply the best twelve* HYACINTHS *imported by them this year, with names and colours marked. for 9s. the 12 sorts.*

Also all other kinds of BULBOUS FLOWER ROOTS of choicest kinds, at low prices, as per catalogue, which will be sent, post free, on receipt of one penny stamp.

SUTTON & SONS, Seed Growers, Reading.

TWELVE SUPERIOR HYACINTHS *for 6s.; mixed sorts, 4s. per dozen, as well as every kind of Bulbous Root, can be obtained carriage free from*
WILLIAM E. RENDLE AND CO., SEED MERCHANTS, Plymouth.

HYACINTHS	4s., 6s., and 9s. per doz.
ANEMONES, best double varieties ...	5s. per 100.
RANUNCULUS " ...	3s. to 5s. "
CROCUS ROOTS, very large ...	1s. 6d. to 2s. "

And all other kinds of Dutch Roots, imported direct from the first houses in Holland, at the lowest remunerative prices.

Apply to WILLIAM E. RENDLE AND CO., SEED MERCHANTS, Plymouth.

FINE BLOOMING BULBS, Carriage paid.

GUERNSEY and BELLADONNA LILIES	4s. per doz.
VALLOTA PURPUREA	21s. "
AMARYLLIS FORMOSISSIMA ...	6s. "

Hyacinths, Gladiolus, Narcissus, Anemones, Ranunculus, Crocus, &c., may be obtained of

B. PAGE & Co., SEED-MERCHANTS, Southampton.

Trifolium incarnatum, 5d. per lb.; Davis' Winter Vetches, 42s. per bushel, 11s. per peck. Trade price of Guernsey Lilies to be had on application.

CAREY TYSO, FLORIST, &c., Wallingford, Berks, begs to offer choice assortments of FLORISTS' FLOWERS as under:—

		£	s.	d.
ANEMONES, 100 superb double sorts ...	24s. to	1	10	0
RANUNCULUSES, 100 ditto	40s. to	4	0	0
IRISES, 25 fine English sorts ...	7s. 6d. to	0	12	0
CARNATIONS and PICOTEES, 25 fine pairs,	35s. to	3	0	0
PINKS and PANSIES, per dozen	5s. to	0	12	0

General Catalogue may be had by forwarding two postage labels. C. T. has a few Blooming Bulbs of choice TULIPS, and a quantity of Offsets, which may be had singly or in lots very cheap.

FRUIT.

WANTED IMMEDIATELY, a quantity of the undermentioned Goods—GRAPES, PINES, & PEACHES.
Forward, or apply to GEORGE TAYLOR, Jun.,
Fruit Salesman,
Liverpool.

TO BE SOLD CHEAP.

ABOUT 100 bushels, at per bushel, some fine large Flowering LILIES of the VALLEY ROOTS, and about 6 bushels of the Double Sweet-Scented NARCISSUS BULBS, at per peck.—Apply to MR. J. WAY, Market Gardener, &c, London Road, Brentford.

HYACINTHS AND DUTCH BULBS.

HENRY GROOM, Clapham Rise, near London, by appointment FLORIST TO HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to say that he has received his HYACINTHS AND DUTCH BULBS, in excellent condition, and that they are much finer than usual.—His CATALOGUE of BULBS, &c., will be forwarded on application.

TULIPS.

HENRY GROOM, Clapham Rise, near London, by appointment FLORIST TO HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to inform the AMATEURS OF TULIPS that his CATALOGUE is ready, and wil be forwarded by post on application. He is happy to say that from the superior growth of last spring, he has been enabled to make a considerable reduction in the prices.

BASS AND BROWN'S NEW AUTUMN CATALOGUE, containing the following, is now complete, and supplied free by post for three Penny Stamps.

Dutch and Cape Roots.	Hardy Herbaceous Plants.
Geraniums.	Potentillas.
Cinerarias.	Hollyhocks.
Azalea indica.	Antirrhinums.
Fuchsias }	Conifera, and other Select Trees
Verbenas } best new of 1854.	and Shrubs.
Petunias }	Hardy Climbers.
Stove and Greenhouse Plants.	Roses, Fruits, &c. &c.

Seed and Horticultural Establishment, Sudbury, Suffolk.

ARTHUR HENDERSON AND CO. beg to inform their patrons and the public that their CATALOGUES OF BULBS are now ready, and they will have much pleasure in forwarding them on application.

They comprise lists of all the finest varieties of Hyacinths, and many other rare and valuable Bulbs.

Their collections of Hyacinths have yearly carried off the metropolitan prizes, not only for their unique growth, but also for their beauty of colouring and distinctness of sorts, either when exhibited in a collection of 36 plants or in pairs.

Pine-apple Place, Edgeware Road, London.

L. VAN HOUTTE'S NEW GENERAL CATALOGUE, No. 52, is just published, containing descriptive lists and prices of Azaleas, Camellias, and Rhododendrons; Stove, Greenhouse, and Hardy Plants of every description, including many fine and valuable novelties; tender and hardy flowering bulbs in great variety, and of superior quality, &c., &c. May be had on application to his agent, MR. R. SILBERRAD, 5, Harp Lane, Great Tower Street, London. N.B. The CATALOGUE of Flower and Vegetable Seeds will be published early in the month of November next.—LOUIS VAN HOUTTE, Nurseryman and Seed Merchant Ghent Belgium.

RENDLE'S NEW AUTUMNAL CATALOGUE *of Geraniums, Camellias, Fuchsias, Azaleas, Chrysanthemums, Stove and Greenhouse Plants, &c., can now be had in exchange for two postage stamps.*

Apply to WILLIAM E. RENDLE & CO., Nurserymen and Seed Merchants, Plymouth.

RENDLE'S NEW DESCRIPTIVE CATALOGUE OF DUTCH ROOTS *is just published, containing lists and prices of the best Hyacinths, Tulips, Ranunculuses, Anemones, Crocus, Iris, Narcissus, Jonquils, Gladiolus, &c., to be had in exchange for two penny stamps, from*
WILLIAM E. RENDLE AND CO., SEED MERCHANTS, Plymouth.

SUTTON'S AUTUMN CATALOGUE is now published, and will be sent post-free on receipt of one penny stamp.—Address SUTTON and SONS, Reading, Berks.

RARE AND HARDY CONIFERS.—A detailed List, with prices of the most Hardy and Ornamental Conifers, suitable for planting on the sea coast and other exposed situations, will be found in YOUELL AND CO.'s Advertisement of Sept. 9.
Royal Nursery, Great Yarmouth.

THE PAST WINTER AND SPRING have induced YOUELL & Co. to publish a CATALOGUE of RARE and HARDY CONIFERS and HARDY ORNAMENTAL SHRUBS, that have proved with them perfectly hardy in this well-known bleak district, exposed to the cutting winds from the North Sea.

This Catalogue also contains an extensive selection of the most useful Greenhouse Plants, Camellias, Ericas, Epacris, Chrysanthemums, Hollyhocks, Tree Carnations, Carnations and Picotees, Fuchsias, Verbenas, Phloxes, &c., which will be forwarded (stamped) on receipt of two postage stamps.

YOUELL AND CO., Royal Nursery, Great Yarmouth.

ROSES.

THE DESCRIPTIVE CATALOGUE OF ROSES for the Season, by THOS. RIVERS, is now ready for delivery, and will be sent on application for two postage stamps. A choice selection of varieties only is inserted, so that it forms a useful guide to the Amateur.—Nurseries, Sawbridgeworth, Herts.

PRICED NURSERY CATALOGUES.

A. PAUL AND SON will be happy to forward the following priced Nursery CATALOGUES in return for one postage stamp each:—A, ROSES; B, ORNAMENTAL TREES AND CONIFERS; C, FRUIT TREES; D, HERBACEOUS PLANTS; F, GREENHOUSE PLANTS, &c.; G, SEEDS; H, HOLLYHOCKS; I, BULBS.—Nurseries, Cheshunt, Herts.

DUTCH BULBS.

THOMAS CRIPPS, NURSERYMAN, SEEDSMAN, and FLORIST, respectfully announces that his annual importation of the above has just arrived in excellent condition. Catalogues of which, comprising, amongst others, many new and choice varieties of Hyacinth, Crocus, Tulips, Anemones, &c., may be had on application.—Tunbridge Wells, Oct. 7.

GEORGE JACKMAN begs to announce that he has just published a new and complete CATALOGUE of his Ornamental Evergreens, Conifers, Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., and may be had on application by enclosing two postage stamps.

Woking Nursery, 1½ mile from Woking Station, South Western Railway, where all Trains stop, and where capital conveyances may be had.—Oct. 7.

JOHN SCHOFIELD AND SON beg respectfully to inform their Friends and the Public that their AUTUMN CATALOGUE of Carnations, Picotees, Pinks, Pansies, Hollyhocks, &c., is now ready, and may be had on application, free.

N.B. Pansy Seed, selected from the finest show flowers, 2s. 6d. per packet; also a few packets of extra fine Calceolaria Seed 2s. 6d. each.—Knowsthorpe, near Leeds, Yorkshire.

JOHN HOLLAND, Bradshaw Gardens, Middleton, near Manchester, respectfully informs his friends and the floricultural public that his priced and descriptive CATALOGUE of FLORISTS' FLOWERS, &c., is now ready, and will be forwarded on application, enclosing a postage stamp.

Selected Pansy Seed, 1s. and 2s. per packet.

J. H., having a large surplus stock of the older varieties of SHOW TULIPS, he will dispose of them at 20s. per 100, strong blooming bulbs.

The FLUKE POTATO for seed, 5s. per bushel.

AMERICAN NURSERY.

GEORGE BAKER'S Descriptive CATALOGUE of AMERICAN PLANTS, Coniferas, Ornamental Shrubs, Fruit and Forest Trees, &c., may be had by enclosing two postage stamps.

G. B. wishes to call particular attention to his fine Stock of Weeping Hollies, from 3 to 10 feet high.

American Nursery, Windlesham, near Bagshot, Surrey, near Staines Station, Windsor Branch, South Western Railway, where conveyances may be obtained.

AMERICAN PLANTS.

JOHN WATERER begs to announce that he has published a new Catalogue of his Rhododendrons, &c., as exhibited by him in the Gardens of the Royal Botanic Society, Regent's Park, London. It describes the colours of all the Rhododendrons considered worthy of cultivation with a Treatise on their successful management, and may be had by enclosing two postage stamps.

The American Nursery, Bagshot, Surrey, near Farnborough Station, South-Western Railway.

AMERICAN PLANTS.—A Descriptive Priced CATALOGUE of HARDY AMERICAN PLANTS for the coming season is just published, and may be had by enclosing two stamps for postage. As everything in the way of American Plants is grown to an unequalled extent at this Nursery, intending purchasers would do well to provide themselves with this Catalogue.

WATERER AND GODFREY, Nephews and Successors to the late Hosea Waterer, Knap Hill Nursery, Woking, Surrey.

DUTCH FLOWER ROOTS.

WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth, have just received, direct from one of the first establishments in Holland, a very large assortment of

DUTCH FLOWER ROOTS,

comprising all the best varieties of Hyacinths, Tulips, Ranunculuses, Anemones, Gladiolus, Iris, Liliums, Crocus, Ixias, and all other kinds of Flowering Bulbs.

They are all come to hand in most excellent condition, and will insure satisfaction to all purchasers.

COLLECTIONS OF FLOWERING BULBS.

No. 1. A Selection of all the most approved sorts for a large garden £3 0 0
No. 2. A Selection, in smaller quantities 2 0 0
No. 3. A Selection, for a small garden 1 0 0

These Collections have given the greatest satisfaction to all who have had them, and can be recommended with the greatest confidence.

All Orders for Roots above 2l. Carriage paid to any station on the South and Western Railways, and above 5l. to any station in England.

STRAWBERRIES.—*This is the best time for planting Strawberries, especially after the late rains we have had. The Subscribers have a very superior stock of the following choice varieties:—*

INGRAM'S PRINCE OF WALES.—The principal sort grown at Frogmore for the Royal table, 20s. per 100.
PINCE'S NIMROD—highly recommended by Lucombe, Pince, & Co., 40s. per 100.
NICHOLSON'S AJAX ... ... } Four excellent varieties,
" RUBY ... ... } fully described by Mr.
" CAPTAIN COOK } Nicholson. Price 7s.6d.
" FILLBASKET ... } per 100.
TROLLOPE'S VICTORIA—A very superior and most prolific variety, 5s. per 100.
CUTHILL'S BLACK PRINCE—5s. per 100.
KITLEY'S GOLIATH—5s. per 100.

All the other choice varieties in cultivation. For prices and further particulars, consult Rendle's New Autumnal Catalogue, *just out, to be had in exchange for two penny stamps.*—Apply to

William E. Rendle and Co., Seed Merchants, Plymouth.

DUTCH HYACINTHS, for Forcing, single and double, at 4s. per dozen. Also Narcissi, Crocuses, Tulips, Irises, Jonquils, Anemones, and Ranunculuses, priced Catalogues of which will be forwarded by post, from Arthur Cobbett's Italian and Foreign Warehouse, 18, Pall Mall.

Also Double Roman and Paper White Narcissus, the most beautiful and fragrant of all the Narcissi, 4s. per dozen.

TO THE AGRICULTURISTS OF ENGLAND.

HARRADINE'S "NE PLUS ULTRA" WHEAT.—A single ear of this wonderful Wheat, which was purchased, five years ago, of a soldier on tramp, who brought it from some distant country, was sown in 1849; the produce of this was again sown in 1850, and also in 1851, when it yielded at the rate of 19 coombs 1 bushel and 1 peck per acre. This induced me to continue its cultivation, and I have now in my possession one root, the produce of one kernel, having upon it 25 full grown ears, and numbering over 2000 kernels. This extraordinary root, together with a sheaf and a quantity of corn, will be shown at Mechi's Stand, in the Crystal Palace, by which its quality and general character may be seen.

The following gentlemen kindly lent me portions of their land last season to test the producing quality of the Wheat, and up to this year not one kernel has been sold for seed. The quantity sown on all the varieties of soil has in no instance exceeded 4 pecks per acre.

On land of Mr. Wasdale, in the parish of Woodhurst, this Wheat was sown after Tartarian Oats, Clover, Seeds, Peas, and Tares (some being sown in February, and equally productive).

On land in the occupation of Mr. Gadsby, in the parish of Godmanchester, 1 acre, the yield of which has been 39 per cent. over his own Wheat, grown in the same field, and has been tested by several agriculturists of the neighbourhood.

On land in my own possession, in Needingworth, and other places (both fen and highland), it has been sown after Wheat, Clover, Barley, Beans, Oats, and fallow, and in every instance has been most productive.

I am prepared to part with a limited quantity, which can be had on application to me, at 25s. a bushel. All orders to be accompanied by a remittance.

John Thang Harradine, Needingworth, St. Ives, Huntingdonshire.

THE PERPETUAL TREE VIOLET, or DOUBLE VIOLA ARBOREA.—The original grower of this, the true variety of the above beautiful Violet, now offers it to the public; it has surpassed all others, and now stands without an equal for its size of flowers, fragrance, and perpetual blooming; and as a plant for the Conservatory or Greenhouse, nothing can equal it. Large plants, 6s. per dozen; smaller ditto, 3s.

DOUBLE WHITE TREE VIOLET.—This is also a fine variety, and resembles the other in many respects, with the exception of its colour. The stock of this is small, in consequence of the great demand for it last season; parties requiring plants should not delay their orders. 6s. per dozen.

THE RUSSIAN SUPERB VIOLET.—One of the finest of single Violets, large blooms, with long stems, and most delightful fragrance; will bloom well through the season if sheltered from the heavy rains and severe frosts during the dead of winter. Plants 3s. per dozen.

A TREATISE on the best and most effectual mode of cultivating the VIOLET, post free for 12 stamps, or sent gratis with all orders above 5s.

GIANT SCARLET BROMPTON STOCK plants are now ready for planting out; the spikes of flower are very large, (measuring from 18 to 24 inches in length, and so fragrant that they are admired by all who have seen them. Fine strong plants, 6d. per dozen, or 4s. per 100.

STRAWBERRY PLANTS.—Good strong plants of the following superb varieties can be supplied:—Nimrod, 10s. per 100; Prince of Wales, 10s. do.; Ajax, 5s. do.; Ruby, 5s.; Myatt's Eleanor, 3s. do.; British Queen (true), 3s. do.; Black Prince, 3s. do.; Cremont's Perpetual, 3s. do.; Victoria, 5s. do.; Surprize, 3s. do.; and a great number of other good old varieties, at 3s. per 100.

POLYANTHUS SEED, saved from the best laced varieties, 1s. per packet.

ANTIRRHINUM SEED, all saved from the best named varieties, 1s. per packet.

EXTRA FINE SWEET WILLIAM SEED, saved from all the best and most beautiful varieties, 1s. per packet.

VERY SUPERIOR WELL RIPENED HOLLYHOCK SEED, 1s. per packet.

LORD KEYNON'S FAVOURITE CUCUMBER is the best and most productive for winter cultivation ever grown, requiring less heat than any other of the kind. It is a very handsome fruit and free setter. Good old seed of the above true variety may be had, price 2s. 6d. per packet.

The Violets and Seeds will be sent postage free, but the Strawberry Plants and Stocks will be sent by hamper, package free.

Any of the above will be forwarded on receipt of Post Office Order, or Penny Postage Stamps, for the amount by

Edward Tilley, Nurseryman, Seedsman, & Florist, 14, Abbey Churchyard, Bath, Somersetshire.

DUTCH FLOWER ROOTS.

PETER LAWSON and SON, of Edinburgh, Seedsmen and Nurserymen to the Queen, beg respectfully to acquaint their customers and the Public that they have now opened a place of business in London for the convenience of their English correspondents, and will be prepared to execute orders of every description there. They have just received a supply of DUTCH FLOWER ROOTS, consisting of all the esteemed varieties, of which Catalogues may be had on application, and for which they solicit early orders.

London, 27, Great George Street, Westminster, Oct 7.

VERY FINE ANEMONE ROOTS AND SEEDS.

To the Nobility, Gentry, and Clergy.

HENRY GIBSON, Floore, near Weedon, Northamptonshire, has now on Sale an unlimited Stock of the finest Striped and other ANEMONE ROOTS, at the following low prices, viz.:—

Selected, all Striped, 10s. per 100, or 4l. 10s. per 1000.

A splendid Collection of Mixed at 3s. 6d. p. 100, or 1l. 10s. p. 1000.

Packets of Seed, saved from all the choicest of the Flowers, containing 2000 seeds, 2s. each. Sent free of carriage to all parts of England on receipt of a post-office order, on the Weedon Post-office, payable to Henry Gibson.

Orders to the amount of 5s. can be forwarded in postage stamps.

N.B. Allowed by competent judges to be the best Collection in England.

TO GENTLEMEN ENGAGED IN PLANTING.

WATERER and GODFREY respectfully invite attention to their stock of the following very desirable HARDY PLANTS.

Araucaria imbricata, from 2 to 7 feet high; as handsome as plants can be.
Cedrus Deodara, in any quantity, from 1 to 3 feet high
Do. do., 4, 5, 6, 7, 8, and 10 feet high; splendid plants
Cedars of Lebanon, 3, 4, 6, and 10 feet high
Pinus Douglasi, 3 to 10 feet
" insignis, 2 to 7 feet
" Menziesi, 3 to 7 feet
" pinsapo, fine plants, 3 to 6 feet
" Nordmanniana, 1½ to 3 ft., all from seed and remarkably handsome
" nobilis, 1½ to 2 feet; a few larger, 5 and 6 feet high, on their own roots, and with perfect leaders
" Montezumæ, 2 to 4 feet
Pinus canadensis, 3 to 8 feet
Cupressus macrocarpa or Lambertiana, 4 to 7 feet
" thyoides variegata, 3 to 4 feet (the variegated white Cedar)
Juniperus, Upright Irish, perfect columns, 3 to 7 feet
" chinensis, 2 to 8 feet
Yew, common English, 3 to 8 feet
" Irish, 4 to 10 feet
" gold-striped, 1½ to 3 feet
" do., tall standards, 4 to 7 ft.
" Dovaston, or Weeping, worked on tall straight stems
Thuja aurea, the finest plants in the country
Libocedrus chilensis, the finest plants in the country
Large variegated Hollies
" Standard Bays

Also an immense stock of large Evergreens, Standard Ornamental Trees, &c.

All the plants here offered may be seen, growing in our nursery; they are removed every year, and will travel any distance with perfect safety. Of some, such as Araucarias, Deodaras, Golden Yews, Thuja aurea, Pinus nobilis, Nordmanniana, we have any quantity; and the plants, for root and branch, are not to be surpassed. Priced Catalogues will be forwarded on application, enclosing two postage stamps, to Waterer and Godfrey, nephews and successors of the late Hosea Waterer, Knap Hill Nursery, Woking, Surrey, near the Woking Station, South-Western Railway, where all trains stop, and where capital conveyances can be obtained.

The 2d. stamp will also include a descriptive Catalogue of their American Plants, Roses, and Nursery Stock in general.

NEW HARDY CONIFERS.

HUGH LOW and CO. announce to their friends and the public that they have been appointed by Messrs. Parsons & Co., of Flushing, New York, Sole Agents in this country for the sale of the undernamed CALIFORNIAN CONIFERS. The Plants are raised from seed, and will be delivered as soon as the growth of the present season is sufficiently matured. THUJA GIGANTEA (Nuttall); *synonyms* LIBOCEDRUS DECURRENS (Torrey); THUJA MENZIESI (Douglas); THUJA CRAIGIANA (Jeffreys).—A magnificent species, and the most desirable Tree known to exist in California. It was discovered by the botanists of the United States Exploring Expedition, and is described by Professor Torrey, in "Plantæ Fremontianæ," as growing near the upper waters of the Sacramento, from lat. 38° 40′ to 41° N. He also states it is a noble tree, attaining a height of 120 to 140 feet, with a trunk 7 feet in diameter, rising from 80 to 100 feet without a limb. This tree will be perfectly hardy, and will take the foremost rank amongst our ornamental trees, as the foliage is most beautiful, reminding an observer of some of the more graceful species of Lycopodium.

The Plants when delivered will average 1 foot to 1½ foot in height, and being of such unusual size for a new Conifer, will produce an immediate effect. Price 31s. 6d. each.

ABIES NOBILIS.—This well-known Fir requires no description. Plants from seed have long been desiderata, and those now offered are strong and well shaped, from 6 inches to 1 foot in height. Price 31s. 6d. each.

In addition to the above, H. L. & Co. have to offer from the same source strong Plants of several species of hardy CALIFORNIAN PINES, collected in districts little explored. Amongst them will be found Pinus Jeffreyana, Pinus Parryana, offered for the first time; and judging from the CONES of the different species, it may with certainty be inferred that several others will prove entirely new to this country. Price 84s. per doz.

Messrs. Parsons & Co. having been successful in raising these fine Conifers in considerable numbers, have determined on offering them at the low prices quoted above, with a view to insure their speedy introduction into every collection in Europe.

Discount allowed only when twelve plants of a sort are taken.

Clapton Nursery, London, Oct. 7.

NORTHGATE NURSERY, CHICHESTER.

JAMES GRAHAM, late Gardener and Steward to Mrs. Smith, Bersted Lodge, Bognor, begs most respectfully to announce to the Nobility, Clergy, and Gentry, and to the public generally, that he has succeeded to the long established NURSERY and GARDEN SEED BUSINESS of Messrs. [illegible] and Son. J. G. trusts that by constant personal attention, and from his experience in the practice of Horticulture, as well as from his being well known in the neighbourhood, he may venture to solicit a continuance of the patronage and support so long bestowed on his predecessors.—Oct. 7.

NURSERY STOCK TO BE DISPOSED OF.

PETER BOOTH, Nurseryman, Falkirk, wishes to retire from business, and would give a Lease of all his Nursery Grounds, which belong to himself, to a person wishing to pursue that line of business. These grounds are cropped with a most excellent, healthy, and general stock of Nursery Plants, of which a good bargain could be got, and the good-will of the business, which has been carried on in a very favourable locality, formerly by his relatives and latterly by himself, for more than 70 years past, and with great success.

TO NURSERYMEN AND GARDENERS.

REIGATE SILVER SAND, 11s. per ton; ditto, delivered 5 miles, 16s. per ton. Loam and Peat at moderate prices.—Kennard Brothers, Swan Place, Old Kent Road, London.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

HETLEY and CO. are supplying 16-oz. Sheet Glass of British Manufacture, packed in boxes, containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

Sizes.—Inches.	Inches.	Per foot.	Per 100 feet.
	Under 6 by 4	at 1½d.	is £0 12 6
From 6 by 4	" 7 " 5	" 2d.	" 0 16 9
7 " 5	" 8 " 6	" 2¼d.	" 0 18 9
8 " 6	" 10 " 8	" 2½d.	" 1 0 10
10 " 8	" 12 " 9	" 2¾d.	" 1 2 11

Larger sizes, not exceeding 40 inches long.

16 oz. from 3d. to 3½d. per square foot, according to size.
21 oz. " 3½d. to 5d. " " "
26 oz. " 3½d. to 7½d. " " "

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern, either in sheet or Rough Plate Glass.

Propagating Glasses, Beehive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in Glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the excise duty, reduced one-half. List of Prices and Estimates forwarded on application to

James Hetley & Co., 35, Soho Square, London.

BY ROYAL LETTERS PATENT.

THE COSMOPOLITAN GLASS COMPANY, 296, Oxford Street, London.—The Managers beg to inform the Nobility and Gentry, Farmers, Gardeners, &c., that their new List of Prices may be had free on application at the Company's Depôt.

HARTLEY'S PATENT ROUGH PLATE, for Roofing Conservatories, Halls, and Public Buildings.

PLATE, CROWN, and SHEET WINDOW GLASS.

Coloured and Ornamental Glass of every description.

Glass Milk Pans, Pails, Tests, and Measures; Cream Pots and Syphons; Churns, Butter Tests and Slabs; Tiles and Slates; Bee Hives, &c.

Moore's Patent Ventilator and Lockhead's Patent Perforated Glass, for Dairies and Greenhouses.

Aquavivariums, Fern Shades, Propagating Glasses, Flower Protectors, Preserve Jars, Cucumber Tubes, Hand Lights, Flower Vases, Labels, &c., and all kinds of Agricultural, Horticultural, Architectural, Domestic, Scientific, and Ornamental Glass, British and Foreign, at the lowest prices.

HARTLEY'S PATENT ROUGH PLATE GLASS, 1-8th thick, or 2 lbs. to the foot; 3-16ths, or 3 lbs. and 1-4th, or 4 lbs. to the foot, for Ridge and Furrow Roofs, Greenhouses, Railway Stations, Engine Sheds, Mills, Markets, Halls, and Public Buildings generally.

Packed in Boxes of 50 feet each.

	... ...	10s. 6d. per box.
6 by 4 and 6½ by 4½	... ...	12 0 "
7 " 5 " 7½ " 5½	... ...	13 6 "
8 " 6 " 8½ " 6½	... ...	15 0 "
9 " 7 " 9½ " 7½ and 10 by 8	...	

For larger sizes a full List of Prices will be sent on application. Boxes are charged 2s. each extra, full price allowed if returned free of expense.—For further information apply to

JAMES PHILLIPS & Co., 116, Bishopsgate Street Without.

"Rough Plate has never been, and never can be, prejudicial to the colouring of Grapes; though we can easily believe that it has been charged with such a fault by persons who have not skill enough to manage Grapes under glass."—*Gardeners' Chronicle.*

"There *can be no question now* that Rough Plate Glass is the most beautiful as well as the most useful kind of glass that can be employed in horticulture. It is free from all the faults of manufactured patent glass, and has many advantages peculiar to itself, without *a single disadvantage as a set off.*"—*Gardeners' Chronicle.*

GLASS.

THOMAS MILLINGTON, Importer of Foreign Sheet Glass, requests attention to the present Prices of Glass and Stock sizes, which are cheaper and better than those of English manufacture:—

PACKED IN ONE HUNDRED FEET BOXES, THIRDS QUALITY, BOXES INCLUDED.

Inches.	Per 100 ft.	Inches.	Per 100 ft.	Inches	Per 100 ft	Inches.	Per 100 ft.	Inches.	Per 100 ft.	Inches.	Per 100 ft.
6 by 4	12s.	12 by 10	20s.	14 by 11	20s.	16½ by 12½	20s.	18 by 13	20s.	18 by 14	[illegible]
6½ " 4½		12½ " 10½		14½ " 11½		17 " 12		18½ " 13½		18½ " 14½	
7 " 5	14s. 6d.	13 " 10		15 " 11		17½ " 12½		19 " 13		19 " 14	
7½ " 5½		13½ " 10½		15½ " 11½		18 " 12		19½ " 13½		19½ " 14½	
8 " 6		14 " 10		16 " 11		18½ " 12½		20 " 13		20 " 14	
8½ " 6½		14½ " 10½		16½ " 11½		19 " 12		20½ " 13½		20½ " 14½	
9 " 7	17s. 3d.	15 " 10		17 " 11		19½ " 12½		21 " 13		21 " 14	
9½ " 7½		15½ " 10½		17½ " 11½		20 " 12		21½ " 13½		21½ " 14½	
10 " 8		16 " 10		14 " 12		20½ " 12½		22 " 13		22 " 14	
10½ " 8½		16½ " 10½		14½ " 12½		16 " 13		16 " 14		22½ " 14½	
11 " 9		17 " 10		15 " 12		16½ " 13½		16½ " 14½		23 " 14	
11½ " 9½		17½ " 10½		15½ " 12½		17 " 13		17 " 14		23½ " 14½	
12 " 9		13 " 11		16 " 12		17½ " 13½		17½ " 14½		24 " 14	
12½ " 9½		13½ " 11½									

IMPROVED PATENT ROUGH PLATE, PLAIN, FLUTED, AND IN QUARRY PATTERNS. British Plate, Patent Plate, Sheet, Crown, and Coloured Window Glass. Pure White Shades for Ornaments, Pumps, Water Closets, and Plumbers' Brass Work. Genuine White Lead, Paint, Colours, Varnishes, Brushes, &c. Tariffs of the above on application to

T. MILLINGTON, 87, Bishopsgate Street Without, London.

DUTCH BULBS.

GARAWAY, MAYES, and CO. beg to announce that they are now prepared to execute orders for the above, consisting of Hyacinths, Tulips, Crocus, Narcissus, Anemones, Ranunculus, and all kinds of BULBS for early forcing, which they have carefully selected from the leading growers in Holland. The Roots are unusually fine this season, as well as moderate in price. All orders entrusted to them shall have strict attention, and they feel assured cannot fail to give satisfaction.

G. M. & Co. having for many years flowered annually several hundred Hyacinths, Tulips, &c., have had an opportunity of selecting those flowers only which are most constant and distinct for glass and pot culture.

Good Border Hyacinths, 4s. per dozen; fine named ditto, 6s., 9s., to 12s. per dozen.—Durdham Down Nurseries, Bristol.

WANTED, GRAPES, PINES, and PEACHES. Forward immediately to George Taylor, Jun., Fruit Salesman, St. John's Market, Liverpool.

SWEETWILLIAMS.

"THE most extraordinary movement that has ever taken place in the floral world." Such is Mr. Glenny's opinion of Mr. Hunt's SWEETWILLIAMS, in the "Horticultural Journal," for July 15, 1854.

The "Florist," for August, in its report of the National Floricultural Society, says, "Mr. Bragg exhibited a very fine collection of Mr. Hunt's Sweetwilliams, remarkable for form and texture, the petals being stiff, smooth, and well rounded, and varying in colour from white, with carmine centres, to brilliant crimson."

The editor of the "Midland Florist," in the number for August, describes them as "round, smooth on the edge, close in the truss, distinct in colour; in fact, beautiful in the extreme."

See also "Midland Florist," for September, 1853.

In the "Gardeners' Record," for September, 1853, Mr. Neville pronounces them as "large, perfectly smooth, and possessing properties worth the notice of amateur florists, and will, no doubt, if sent out, soon become general favourites."

W. BRAGG, of the Star Nursery, Slough, has much pleasure in informing the admirers of the above new and truly beautiful Flowers, that he is now prepared to send out strong healthy Plants, at 7s. 6d. per dozen.

The usual Allowance to the Trade. A list of those Nurserymen who ordered Plants will be published.

WILLIAMS' EVERGREEN CLIMBING ROSE.

To be sent out the end of October.

WM. WOOD and SON, of Woodlands Nursery, Maresfield, near Uckfield, Sussex, have been appointed agents for the sale of the above splendid ROSE. This highly interesting and valuable addition to the class of Evergreen Climbing Roses was raised by the late John Williams, Esq., of Pitmaston; it is a seedling from Ayrshire splendens fertilised with Yellow Tea; its rapid growth and elegant habit is precisely like the Ayrshire splendens, while its glossy foliage, and long lemon-coloured buds, partake of the character of the Yellow Tea; its flowers are creamy white, deliciously sweet-scented, and are borne in long racemes of 12 to 20 on a single shoot, being produced from every axil. It is highly desirable for covering Walls, Lattice Work, Verandahs or Buildings of any kind, and as a Pillar Rose is unequalled, being of an extremely elegant habit for forming festoons or arches, and is also very hardy. For Bouquets it is a most beautiful variety, producing an immense number of its finely-formed buds. It only requires to be grown to be pronounced the best Climbing Rose for all purposes in cultivation. Good established plants at 3s. 6d. each, with the usual allowance to the Trade.

WILLIAMS' EVERGREEN CLIMBING ROSE.—This highly interesting and valuable addition to the class of Evergreen Climbing Roses was raised by the late John Williams, Esq., of Pitmaston; it is a seedling from Ayrshire splendens, fertilised with Yellow Tea, its rapid growth and elegant habit is precisely like the Ayrshire Splendens, while its glossy foliage, and long lemon-coloured buds, partake of the character of the Yellow Tea; its flowers are creamy white, deliciously sweet scented, and are borne in long racemes of 12 to 20 on a single shoot, being produced from every axil. It is highly desirable for covering walls, lattice-work, verandahs, or buildings of any kind; and as a Pillar Rose is unequalled, being of an extremely elegant habit for forming festoons or arches, and is also very hardy. For bouquets it is a most beautiful variety, producing an immense number of its finely formed buds. It only requires to be grown to be pronounced the best Climbing Rose for all purposes in cultivation. Good established plants 3s. 6d. each. Usual discount to the Trade.

THOMAS DAVIS, Nurseryman, Malvern, Worcestershire.

GEORGE SMITH has to offer the following new and CHOICE GERANIUMS, in fine healthy plants, at 36s. per dozen, viz.:—Attraction (Foster's), Cloth of Gold, Lucy, Rosa, Carlos (Hoyle's), Regalia, Sanspareil, Virginia, Duchess of Wellington (Turner's), Picta (Beck's), Neatness, Leah, Empress, Rebecca.

Fine Plants at 20s. per dozen.—Ariadne, Astrea, Albina, Amazon, Basilisk, Butterfly, Bride of Abydos, Commissioner, Chieftain, Exhibitor, Eurydice, Enchantress, Eleanor, Gertrude, Ganymede, Harriet, Incomparable, Kulla, Leonora, Lagona, Magnet, Mochanna, Medora, National, Novelty, Optimum, Oscar, Pasha, Portia, Rubens, Rachael, Ringleader, Vulcan, and Zaria. Older Varieties, from 9s. to 12s. per dozen.

FANCY GERANIUMS at 30s. per dozen.—Beauty of Blackheath, Constance, Conqueror, Cassandra, Charles Dickens, Cleopatra, Conspicuum, Criterion, Delicate, Dandy, Duchess of Sutherland, Eminent, Fanny, Figaro, Illuminator, Lady Downes, Lady Hume Campbell, Lady Alice Peel, Madame Sontag, Marginata, Mary Howitt, the Ocean Queen, and Viola. Older Varieties from 9s. to 20s. per dozen.

Strong plants of FUCHSIA TELEGRAPH, at 2s. 6d. each. One of the very best dark Fuchsias ever offered. Also all the new Fuchsias and Verbenas of the season at moderate prices.

*** Post Office orders made payable at Islington.

Tollington Nursery, Hornsey Road, Islington, London.

TO THE PURCHASERS OF THE BEST VARIETIES OF GERANIUMS OF 1853 AND 1854.

MITCHELL and CO. having a large Stock of the above, consisting of the most select varieties of their different seasons, will be prepared, on and after the second week in October, with well established (in large 60-sized pots), good healthy bushy plants, consisting of the following varieties, our own selection of 1854, at 30s. per doz., purchasers at 36s. per doz. Foster's Attraction, Cloth of Gold, Rosa, Lucy, Rhoda, Purple Perfection, Sunrise, Ladybird, Duchess of Wellington, Pilot, Lord Hardinge, Mogul, Hoyle's Splendidum, Regalia, Carlos, Virginia, Governor-General, Zeno, Mary, Rival, Queen, Majestic, Indian Chief, Tamberlisk, Sanspareil, Eugenia.

The following varieties of 1853 in healthy bushy plants, our own selection, 12s. per doz.; purchasers, 15s. per doz. Optimum, Rachael, Heroine, Leonora, Lagoma, Cordelia, Galatea, Butterfly, Kulla, Ringleader, Eleanor, Challenger, Astrea, Zaria, Portia, Basilisk, Amazon, Medora, Alberia, Novelty, Spot, Vulcan, Gertrude, Pasha, Harriet, Jupiter, Rosa, Commander, First of May, Queen of May.

M. and Co. have also a large surplus stock of fine old varieties, at 6s. per dozen, strong bushy healthy plants. A remittance by post-office order is most respectfully requested from unknown correspondents, made payable to John Fairbrother.

Bristol Nurseries, Kemp Town, Brighton.

FRUIT TREES.

MESSRS. J. and H. BROWN offer the following:—

	s.	d.
Fine Dwarf and Standard Peaches, Nectarines, Apricots, Plums, Pears, and Cherries. The best and most approved sorts of these respective kinds, to name, each, 1s. 6d., or per dozen	3[illegible]	0
Untrained or maiden do., 1s. 6d. each, or, per dozen	12	0
Apples, dwarfs and standards of best sorts, per doz., 10s. to	15	0
Fine Gooseberries, Currants, and Raspberries, per dozen	3	0
Figs, Medlars, Walnuts, and Mulberries each	2	0
Filberts, new thin shelled and red skinned, per dozen	3	0
Strong Vines, from eyes and layers, in pots, per dozen	18	0

New Gardens and Greenhouses furnished on moderate terms.

Albion Nursery, Stoke Newington, London.—October 7.

CATTELL'S EARLY BARNES CABBAGE,
" " RELIANCE "
" GREEN COLEWORT "

Plants of the above are now ready, 5s. 6d. per 1000, stout bedded; 4s. 6d. per 1000 good seedlings. No charge for crates, baskets, or packing. Packages of 5000 or more, delivered to the Edinbridge Station, South-Eastern Railway, carriage free.

Orders from unknown correspondents to be accompanied with post-office orders made payable here.—Address,

John Cattell, Westerham, Kent.

JOSEPH WILSON begs to offer the following SEED POTATOES:—

EARLY SHORT-TOP ASH-LEAF,	30s. per sack of 16 stone.		
JACKSON'S IMPROVED DITTO,	35s.	"	"
MOSS KIDNEYS, ...	28s.	"	"
PROLIFIC DITTO, ...	28s.	"	"
BRITISH QUEENS, ...	30s.	"	"

The above prices include sacks and carriage paid to London. The advertiser has an abundant supply of the whole of the above varieties on hand, and orders from the trade to any extent can be executed. All letters on inquiry ought to contain a stamped envelope; sample sacks will be sent to any part of the country on receipt of a Post Office order for the amount.—Apply to Joseph Wilson, Seed Potato Merchant, Ipswich.

AUTUMNAL ROSES.

G. CLARKE respectfully invites the attention of the lovers of ROSES to his unrivalled Collection, extending over Ten Acres of ground, which may now be seen in full bloom. Orders taken now, and executed in November. Standards, fine heads and straight stems, 18s. per dozen. Dwarfs, in pots, of all the leading sorts of Hybrid Perpetuals, Bourbons, Teas, and Chinas, on their own roots and budded on the Manetti (suitable for Bedding or pot Culture), 12s. per dozen. The following new Roses are also in pots, fine strong Plants; those marked thus * are budded on the Manetti.

HYBRID PERPETUALS.

Gloire de France	*Souvenir de Madame Lille
General Jacqueminot	*General Castellane
Jules Margottin	*Eugene Sue
La Quintinie	*Queen Victoria (Paul's)
*Lady Shelley (Mitchell's)	*Joan of Arc
*Prince Kotcheuby	Alexandrine Bachmeteff
*Paul Dupuy	Bourbon
*Baronne de Heckeren	*Prince Albert (Paul's)—Tea
*Madame de Manoil	Gloire de Dijon
*Madame Rivers	

FRUIT TREES.

G. C. also begs to state that he has a large stock of Trained Trees, Apricots, Peaches, Nectarines, &c., which are very fine; they being planted on maiden soil, have remarkably fine wood and fibrous roots. Also a fine stock of every description of Evergreens, Conifers, &c. &c.

N.B. Catalogues may be had on application at the Nursery, Streatham Place, Brixton Hill, Surrey.—Oct. 7.

NOW SENDING OUT BECK'S NEW PELARGONIUMS.

J. DOBSON and SON are now sending out strong well established plants (in 4-inch pots) of the NEW GERANIUMS raised by E. Beck, Esq., of Worton Cottage, which they feel great confidence in recommending as first-rate in every respect. Catalogues, with full descriptions and prices, with the prizes they have gained, may be had on application.

A Coloured Plate of CONQUEROR, LAURA, and LYDIA will be forwarded, post free, for 14 stamps.

Good show varieties, from 12s. per dozen.

Woodlands Nursery, Isleworth.

STRAWBERRIES.

WILLIAM NICHOLSON is now sending out strong well-rooted Plants of his four new and distinct Strawberries, viz., AJAX, a very fine large dessert fruit, very beautiful, solid, and juicy; RUBY, ditto, a great bearer, and forces well; CAPTAIN COOK, market fruit, large, and a great bearer; FILLBASKET, ditto: 400 Plants of the above sorts for 2l.; 200 do., 1l. 4s.; 100 do., 15s.; 50 do., 10s.; box included. Most of the old and new sorts can be supplied.

*** See Mr. J. W. Kinmont's remarks on the above Strawberries, printed in No. 31, 1854, page 501, of this Paper.

Post-office Orders, payable at Yarm, Yorkshire, or a cash remittance required with the order.

Egglescliffe, near Yarm, Oct. 7, 1854.

STRAWBERRIES.

BARRATT'S MAGNUM BONUM.—In size, this splendid Strawberry very far surpasses the "British Queen," is an exceedingly heavy cropper, and continues in perfection later than almost any other variety. Its flavour is really delicious, most nearly approaching the true Pine Apple of any kind yet known. Price per 100, 2l. 2s.; per dozen, 6s. Good strong Plants of the above are now ready for sending out by

St. John's Nursery, Wakefield. Wm. Barratt.

N.B. W. B.'s List of 40 kinds of Strawberries may be had gratis. Also his Catalogue of Dutch Roots, Herbaceous Plants, Irises, and Chrysanthemums, may be had on application.

MYATT'S new Seedling Strawberry, "ADMIRAL DUNDAS."—This is the most extraordinary variety, for size and productiveness, that has yet been raised at Manor Farm; it is much larger and a better flavour than either the Surprise or Mammoth, and ripens off the late fruit to advantage.

J. M. & Sons can confidently recommend this, as being superior to any large variety that has come under their notice.

Strong, well-rooted runners are now ready, and will be carefully packed and delivered free to any part of London, at the following scale of charges:—100, 50s.; 50, 30s.; and 25, 16s. Also strong Plants of Myatt's British Queen, Cinquefolia, Eleanor, Surprise, Globe, Eliza, Hooper's Seedling, Keens' Seedling, Black Prince, and Barnes' Bicton Pine, 5s. per 100.

Manor Farm, Deptford, October 7.

GOLIATH STRAWBERRY.—This well tested and excellent variety has now outgrown all the prejudice that has been raised against it, and has fully borne out the high character which was at first given of it; and most, if not all the market gardeners in this neighbourhood, as well as gentlemen, are growing it very extensively. It has proved itself to be the very best in the absence of its parent, the British Queen, or where that variety does not succeed.

A Post-office order for 3s. 6d., or stamps to that amount, will secure 100 strong well-rooted plants, package included; or 1s. 6d. for six plants, by post, to any part of the kingdom. Also Trollope's Victoria, the very best for forcing, 3s. 6d. per 100.

Also the following varieties at 2s. 6d. per 100:—British Queen, Black Prince, Eleanor, Keens' Seedling, Elton Pine, Myatt's Surprise, Comte de Paris, and Hooper's Seedling.

JAMES KITLEY, Lyncombe Vale Nursery, Bath.

NEW CLIMBING HYBRID PERPETUAL ROSE, THE "DUCHESS OF NORFOLK."—Colour, Vivid Crimson.

To be sent out for the first time about the end of October.

WILLIAM WOOD and SON beg to refer to their advertisement in the Gardeners' Chronicle of September [illegible], page [illegible]. Standards, half standards, or Dwarfs will be supplied at 10s. 6d. each, with the usual allowance to the trade.

N.B. When six plants or more are ordered by the trade, a very considerable reduction will be made beyond the usual discount, particulars of which may be had on application.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

COLLECTIONS OF DUTCH FLOWER ROOTS.

LUCOMBE, PINCE, and CO. beg most respectfully to announce that they are now prepared to send out their superior selected collections of the above at the following prices:—No. 1 Collection, containing many very choice varieties of Hyacinths, Narcissus, Tulips, Jonquils, Iris, Crocus, Snowdrops, Anemone, Ranunculus, Ixias, [illegible], Tigridias, Liliums, Fritillarias, Scillas, Alstroemeria, and Tritoma, 5l. No. 2, containing the same varieties as the above in smaller quantities, [illegible] No. 3, for a small Garden, containing similar varieties to the above in smaller quantities, 1l. 10s.—Catalogues and particulars of collections to be had on application at the Exeter Nursery, Exeter.—N.B. No extra charge for package.

NEW GERANIUMS.

ISAAC DAVIES, Larkfield Nursery, Wavertree, near Liverpool, begs to announce that he has now ready for sending out strong healthy plants of the following six Geraniums, being the most distinct and beautiful that could be selected from all exhibited last year:—Regalia, 5s.; Virginia, 3s. 6d.; Pilot, 5s.; Lucy, 5s.; Ladybird, 5s.; Sanspareil, 5s. Also Ambrose's new Fancy varieties, Duchess of Sutherland, 3s. 6d.; Dandy, 3s. 6d.; Barbette, 2s. 6d., with a fine stock of older varieties. The usual discount to the Trade.

CHOICE NEW GERANIUMS, FUCHSIAS, ETC.

HENRY WALTON, Florist, &c., Edge End, Marsden, near Burnley, Lancashire, begs to state that he will be prepared to send out nice plants of Foster's, Hoyle's, Beck's, Dobson's, and Henderson's New Geraniums, sent out last autumn, early in October, well established in 4-inch pots, at 36s. to 40s. per dozen. All the Choice New Fuchsias, sent out last spring, 1s. 6d. to 2s. each, or 18s. per dozen. New Verbenas, sent out in spring, 1s. each, or 9s. per dozen. New Petunias, sent out in spring, 1s. 6d. each, or 15s. per dozen. Choice New Cinerarias, 2s. each, or 18s. per dozen, or 6 for 10s.; older ditto, 6s. to 9s. per dozen. Pansies, newest and best varieties, 18s. per dozen.—Carnations, Picotees, Pinks, &c. &c., equally cheap.

Descriptive Lists of the above may be had for one postage stamp.

NEW PROLIFIC POTATO.

WILLIAM B. JEFFRIES, Arboretum Nurseries, Ipswich, begs to inform his friends and patrons that, owing to the extensive demand for the above-named splendid Potato, he has but very few left; therefore all orders will be executed in strict rotation. Price as before, per peck 3s. 6d., or per bushel 12s. For description see advertisement in the *Gardeners' Chronicle*, Sept. 23d; also for opinion see ditto, August 26, page 552; and *Cottage Gardener*, Sept. 19, page 487.

MAY'S EARLY ASH-LEAVED KIDNEY POTATOES, free from disease, 10s. per bushel, 14s. per cwt., 12l. per ton, sacks included.

EARLY FORTYFOLD POTATOES.—The editor of the *Gardeners' Chronicle* says, "These are a well-known kind, of good quality; a good cropper, and is found by us to be quite as early as the Ash-leaved Kidney, if planted early, escaping all disease, yielding immense crops." They are of the red kind, and round. 8s. per bushel, 11s. per cwt., 9l. per ton, sacks included.

Address, Henry May, The Hope Nurseries, Bedale, Yorkshire.

MESSRS. J. and H. BROWN offer the following CHOICE PLANTS, which they will forward to any part of the kingdom:—

25 Azaleas, new hardy Belgian varieties on their own roots, with flower-buds, one of a sort by name, 50s.
25 American Azaleas, do. do., 15s.
25 Hardy American Plants, one of a sort by name, 10s. 6d.
12 Hardy Heaths and Kalmias, 6s.
12 Rhododendrons, including Scarlet, White, and Rose, hardy varieties, 12s.
Fine hardy Scarlet Rhododendrons, 2 feet, 12s. per dozen.
Cedar of Lebanon, 2 to 3 feet, well grown, 12s. to 18s. per dozen.
(Araucaria, Deodars, and Conifers of all kinds, *see List.*)
6 Fine hardy Magnolias, one of a sort, 10s. 6d.
Roses, standards and half standards, 12s. to 15s. per dozen.
Climbing Roses, of choice sorts, 6s. per dozen.
50 Dwarf Roses, two of a sort, on own roots, 15s.
12 Greenhouse Azaleas, one of a sort, fine plants, 18s.
12 Choice Camellias by name, with buds, 30s.
24 Choice Ericas, one of a sort by name, 16s.
50 Greenhouse Plants, hard-wooded, one of a sort, fine, 45s.
12 Orchidaceous Plants, choice species and good plants, 40s.
Hyacinths and Dutch Roots of all kinds.

Albion Nursery, Stoke Newington, London.—Oct. 7.

PERMANENT AND LAWN GRASS SEEDS.

WILLIAM E. RENDLE and CO., Seed Merchants, Plymouth, *have a fine stock of* NEW GRASS SEEDS, *and can supply any quantity for present sowing.*

Also new Winter Tares, White Mustard, Trifolium incarnatum, New Italian Rye-grass, &c.

William E. Rendle & Co., Seed Growers, Plymouth.

FINE NEW GERANIUMS, £1 1s. *per dozen.—For names of varieties, see* Rendle's *New Plant Catalogue, just published.*

Apply to WILLIAM E. RENDLE and CO., Nurserymen and Seed Merchants, Plymouth.

The Gardeners' Chronicle.

SATURDAY, OCTOBER 7, 1854.

A notice was published in our volume for 1853, p. 740, respecting M. Rodeam's report to the French Academy of the benefit of bringing Vine branches down to the ground, and we then called the attention of our correspondents to the fact, which appeared from evidence then adduced, not dependent on the contact with the soil but upon the horizontal position; at the same time requesting information, provided any similar experience existed in this country. We have accordingly been favoured with three letters on the subject by Mr. William Preston, all tending to show that much benefit is to be derived from horizontal training. He has never had a mildewed leaf or fruit on those Vines, some 20 in number, which he has trained horizontally, while the produce has been singularly good. In an adjoining house, however, in which the more ordinary mode of training was adopted,

the Vines have been severely attacked, and when the first evil had been subdued, the disease broke out a second time with equal virulence.

It is not difficult to explain the increased fruitfulness arising from this method of training, which delays the descent of returning sap, to the presence of which, in an unusually concentrated form, the production of fruit is principally due, as is proved by the process of ringing; while the liability of Plums and Apricots to gum, whose branches are trained in a perfectly horizontal direction, depends upon the same abnormal accumulation of sap. This, however, has no necessary connection with the production of the fungi, which, on the contrary, are generally the more prevalent in exact proportion to the luxuriant appearance of a crop. If, for instance, the leaves of a Potato crop present a peculiarly rich green tint, it is almost sure to suffer from mildew, and an attentive search will most probably detect unequivocal signs of the evil, while a crop with a yellowish and apparently sickly appearance will entirely escape. It does not, however, follow that the habits of every parasite should be the same; and inasmuch as it does really appear that Vines in which the branches are horizontal do not suffer, or at least do not suffer so much from mildew, the horizontal method, though it would be unwise to expect any complete exemption from the practice, is well worth the cultivator's consideration, especially when it is considered that on the continent the Vines, which are kept low, without any attempt at horizontal training, suffer far less than those which grow on trellises. *M. J. B.*

We resume our remarks upon the effect of the past winter on Non-Coniferous plants (see p. 595).

Much was hoped from Daphne *Fortuni*, a beautiful species from China, but it can only be now considered as a greenhouse plant; the whole of the Daphnes must, indeed, be regarded as unfit for the winters of this country, except *D. Cneorum*, *pontica*, and *Laureola*.

The Deutzias, with the exception of *crenata*, the young wood of which was cut back near London, seem as hardy as Syringas. There is, however, less evidence as to *D. staminea* than *scabra* and *gracilis*.

Dielytra *spectabilis* requires no further trial; it bears cold as well as a Pæony; but when in full growth and flower, its succulent tender shoots are apt to suffer from the frosts of spring.

Such experience as had been gained respecting the beautiful and graceful *Tikapu*, Dracæna (or Cordyline) *indivisa*, of New Zealand, seemed to justify the expectation that it would endure our winters—at least as far north as London; and this was rendered the more probable in consequence of its forming part of the natural vegetation of Dusky Bay: but the illusion is very effectually dispelled. It is indeed reported to have suffered no injury in Messrs. Veitch's nursery, Exeter; and we can add, from personal observation, that the four graceful specimens decorating the beautiful terrace-gardens at Osborne are also quite safe, although facing the north; but Chiswick, Shiffnal, and Congleton, to say nothing of Ashbourne in Derbyshire, bear witness to the hopelessness of growing it, except in some favoured southern locality.

Duvauas seem to be tolerably hardy; about as much so as a narrow-leaved Phillyrea.

The evidence as to Edwardsias remains unaltered by our present experience; they are hardy enough to be worth training on south walls for the sake of their handsome winter flowers, but their possessors must expect to find their beauty destroyed in every rigorous winter, although their general health may suffer no material injury.

Of the Mediterranean Heaths, belonging to the arborescent breed, we scarcely know what to say, except that they are not to be depended upon north of London. Even in the south they are injured here and there; and yet even *arborea*, the tenderest of all, experienced no inconvenience in such situations as the north of the Isle of Wight.

The glorious Escallonia *macrantha* must rank in hardiness with the Arbutus and Bay; and like those plants will doubtless be universally cultivated wherever they will stand, even at the risk of what may happen with the thermometer at 4°. After such a summer as this has been, we should expect the plant to be as hardy as a Laurel; because its wood will doubtless have ripened. But when it remains soft, as it is apt to do in consequence of the disposition of the species to grow late, it must necessarily lose the ends of its shoots. Where this occurred last winter, the wood that was ripe still survived and broke freely in the spring. We fear, however, that it cannot be called hardy in the northern counties. Of the other Escallonias, *pulverulenta* proved the tenderest, and *montevidensis* the hardiest; *rosea* and its varieties are about as hardy as a Gum Cistus.

From what we have now learned, it is certain that experiments with the New Holland Gum Trees (Eucalypti) should be multiplied in every direction. It is true that *E. robusta*, *globulus*, and others, have generally perished; but they are among the tenderer kinds, and even *globulus* is growing unharmed on the terrace at Osborne. On the other hand, *E. coccifera* can scarcely be said to have felt the cold against a south wall in the garden of the Horticultural Society, and there are many that exist in a wild state in still colder stations. Among these are some that the gold diggers of Mount Alexander might easily send home from the Australian Alps. We venture to prophecy that *E. alpina*, for instance, found by Sir T. Mitchell on the summit of Mount William, will be as hardy as a Holly.

Eugenia Ugni, of which we subjoin a sketch, is apparently as hardy as a Myrtle, and, considering its great value as a fruit-bearing bush, deserves special mention. What experience has been gained about it amounts to this, that it was unhurt against a north-west wall, at Exeter, by the winter frost, though injured by the sudden fall of temperature in April; we also know that it is nearly allied to the common Myrtle, and that it is found wild on the hills near Valparaiso, as well as in Chiloe. Were it merely as an ornamental bush we should have

passed it by without special notice, although its graceful habit, fine evergreen leaves, and numerous delicate blush flowers, render it no mean decoration of a garden. But it is the fruit of the species which gives it its true value; this consists of a jet black delicate juicy berry, as large as a black Currant, and produced in the utmost profusion; so that in the private gardens of Valparaiso the plant is grown as a common article of dessert, and is highly esteemed; as it well may be, for it is no exaggeration to say that it ranks in merit with the Peach and Greengage Plum. Upon this point, however, we shall have more to say hereafter. Mention is made of it now with reference merely to its power of resisting cold.

With the exception of Euonymus *japonicus*, all the recently introduced species of that genus prove too tender for general use, and must be regarded as suitable to the south and west alone.

As to Fabiana *imbricata*, what we have seen of it leads us to believe that it perishes from dryness of the air rather than from cold; for even in the most favourable stations, temperature alone being regarded, it dies, while in gardens near London a very little shelter suffices to preserve it. More experience is however wanted as to this.

That Fagus *Cunninghami*, the beautiful little Van Diemen's Land Evergreen Beech, is hardy up to the latitude of London we now hold to be perfectly well ascertained, for although it is returned from Kew as killed to the ground, we are inclined to suppose that the instance alluded to was owing to some local accident, or to its roots having been within reach of water. In the report upon which these notes are founded it is said that behind a heap of stones at Acton Green, a very low situation in heavy clay, but in a position a little raised above the ground, it was hurt to the level of the stones, though uninjured below. We are now in a position to say that the "hurt" alluded to proved to be confined to the leaves, and that the shoots themselves produced new branches as usual.

In another notice we trust to conclude these observations; and then we shall address ourselves to the remarks upon them with which our correspondents shall have kindly favoured us.

VEGETABLE PATHOLOGY.—No. XL.

176. A great deal has been said incidentally, in the course of these observations, on the chemical constitution of plants, and it would clearly be useless to go again over the same ground. It will be sufficient in this place, therefore, to make a few general remarks, such as are necessary to be borne in mind, in considerations respecting the diseases to which the vegetable world is subject. The products peculiar to different natural orders, and even particular species of plants, are almost infinite, new varieties being added to the list of recorded substances every day. Till a very recent period all that could be done, in the then state of organic chemistry, was to give such matters a distinctive name, without any attempt at elucidating their mutual relations, even if some approach were made to their composition. Within the last five years, however, owing to the discoveries of Wurtz (previously predicted by Liebig), Hoffman, and others, the subject has assumed the form of a science properly so called, consisting of a vast variety of details, and resting upon fixed principles. It is unnecessary to refer more particularly to this subject here, which is one of extreme difficulty, though it is very possible that morbid phenomena, at present inexplicable, may hereafter derive much light from an improved knowledge of the mode in which peculiar compounds are generated.*

177. Plants are mainly composed of matters belonging to two great series: the one being combinations of carbon, oxygen, and hydrogen; the other of the same elements, with the addition of nitrogen and sulphur. The walls of the cells in their various conditions are ternary modifications of a common substance, when free from nitrogenous matter, which may have been taken up by them, as water in a sponge; while their contents in a fluid state are nitrogenised, and either give birth to nitrogenous matters, or contain ternary substances like starch, inuline, &c., floating in the fluid, accompanied by various crystallisable salts, which sometimes persist up to the decay of the plant, as though they were not essential parts of it, but deposited from matter which might otherwise have been, if not injurious, at least in a condition unfit for the purposes of vegetation.

178. The members of the first series are specifically sugar, starch, gum, and cellular substance, each of which consists of several varieties, differing slightly in their chemical formulæ, or molecular arrangement, and easily passing into each other. Thus, for instance, cane sugar, starch, gum, and cellulose, are convertible into Grape sugar. If an infusion of malt be mixed with starch, the diastase of the malt—a principle still imperfectly known, but ascertained to be an albuminous or fibrinous body in a state of change—converts the starch into Grape sugar; and it is on this principle, that the starch is converted into sugar during the act of germination, on which the nutriment of the sprouting embryo in great measure depends, and which is again converted into cellulose. In such cases the starch $C_{12}H_{10}O_{10}$ takes up four equivalents of water, and becomes $C_{12}H_{14}O_{14}$, or Grape sugar; while $C_{12}H_{11}O_{11}$, or cane sugar, and $C_{12}H_8O_8$, or woody fibre,† similarly become Grape sugar by the assumption respectively of three or six equivalents. So long as the containing membrane is healthy, these matters do not undergo any fermentative process; but when life ceases or is impaired the Grape sugar easily ferments, and in many cases I have detected yeast globules in the fermenting matter, exactly similar to those which are found in artificially fermented liquids. Sugar boiled with sulphuric acid gives rise to dark products, and a dark tint is also given by other acids. In fact the substances so produced are at least analogous to the products of decomposed vegetable matter. Grape sugar is not charred by sulphuric acid, but alkalies and alkaline earths rapidly cause it to become brown; and it is probable that the brown tint acquired by the juices of many plants when diseased owes its origin to this cause. The effect of organic acids is first to convert cane sugar into Grape sugar, and then to form with the latter compounds which will not crystallise, a point of much consequence in an economical point of view, and possibly in a pathological.

179. The next substance named above is starch, the formula of which is $C_{12}H_{10}O_{10}$, which occurs

* A comparison of the third edition of Gregory's "Handbook of Organic Chemistry," published in 1852, and which gives an account of the state of the science up to the end of 1851, with that of 1847, which reached only to the end of 1846, will show the different state in which the science of organic chemistry is at present from what it was five years previously. The light recently thrown on endosmose and exosmose is a great step in advance since the date of that publication.

† It would be a great improvement to substitute some general name like celluline for this, but I am too little instructed in chemistry to presume to hazard such a change.

only in the seeds of a vast variety of plants but in their tissues, and in some places is represented by its ally inuline, which occurs in many Compositæ. Its great use in plants is the facility with which it is stored up without passing into decomposition, and at the same time the rapidity with which when requisite it is converted into sugar, so as to be capable of traversing in a soluble form the tissues which, by an increase of nutriment, are destined to produce new growths. Starch, moreover, is not only convertible into sugar, but into an intermediate substance called dextrine, from a peculiarity which it exhibits when examined by polarised light, in which state it is equally soluble and fit for nutrition. In diseased tissues the starch gradually but slowly disappears, and is often stained by the brown humates, &c., which arise from the neighbouring decomposed matter. *M. J. B.*

ACROPHYLLUM VENOSUM.

The finely serrated bronzy-coloured foliage of this plant renders it a pretty object at all seasons of the year, and when seen in the form of a well flowered specimen it has a very striking effect; unfortunately, however, it is very impatient of improper treatment, and must be allowed to be rather difficult to manage successfully; its culture, however, is not so much a matter requiring any particular skill as careful and constant attention, and with this, any grower of moderate experience may produce handsome specimens. Short-jointed, rather firm bits of the young wood, slipped off with a heel and carefully managed, are not very difficult to root, but beginners will save time, and probably disappointment, by procuring nice dwarf, bushy, healthy young plants from the nurseries. These, if procured at once, should be considered to have completed their growth for this season, and should be placed near the glass in the greenhouse, or a well-ventilated pit, taking care, however, not to expose them to cold drying winds. During winter, water must be very carefully administered to the soil, for if this ever gets sodden, the plant will be ruined; and although it may linger for a while, it will be only to excite hopes which will never be realised, therefore endeavour to keep the soil in a healthy state as to moisture, but let it be bordering upon dryness, for any little excess in this direction is not so likely to be injurious as the opposite extreme.

About the middle of March young plants may be induced to start into growth, by placing them where the night temperature is maintained at from 40° to 50°, allowing it to rise some 10° with sunheat and a circulation of air, but there must be no approach to forcing, and the heat should be maintained as much as possible by shutting up early in the afternoon, for it would be very unsafe for beginners to subject this plant to much artificial heat. Keep it near the glass, and maintain a nice moist atmosphere by sprinkling the passages, &c., as often as may be necessary, and lightly syringing the plants overhead on the afternoons of fine days. If the plant has several shoots these should be nicely spread out, and the points of the longer ones pinched out in order to secure compact growth, but do not stop too freely until growth has fairly commenced. As soon as the buds are perceived to be pushing, examine the state of the roots, and if the ball is well covered with healthy active roots, give a moderate shift, but avoid shifting unless more pot room is really wanted. Also be careful to have the ball moist, and the soil to be used in a healthy state, and water very carefully for a month or so after potting, keeping the atmosphere moist and syringing overhead every fine afternoon, or oftener, where fire-heat is used. When growth fairly commences be very careful not to expose the tender foliage to currents of cold drying air; but admit air freely on every favourable opportunity, and avoid keeping the atmosphere so warm as to induce weakly growth. From the middle of April to the beginning of May, according to the state of the weather, remove the plant to a cold frame, which, with a little attention, will be a much more suitable situation for them after this season than the ordinary greenhouse, or a house where fire-heat is used. If drying winds occur after removing the plants to a cold frame, give air very sparingly, raising the sash a little on the sheltered side, and use a slight shade to keep down the temperature: but during fine weather give air freely, and secure a thoroughly moist atmosphere by sprinkling the floor of the pit every morning and evening, and the plants overhead every fine afternoon, shutting up close for the evening, but give air for the night. As growth advances attend to keeping the shoots nicely tied out, and stop, as may be necessary to secure close growth. If a second shift is necessary this should be attended to as early in the season as it may be wanted, so as to allow of getting the plants well rooted into the fresh soil before winter.

As soon as cold damp weather occurs in autumn, remove the plants to a situation near the glass in the greenhouse, and treat them as directed for last winter. If it is intended to allow them to flower, they should remain in the greenhouse, and be slightly shaded while in bloom; but if it is intended to grow them another season before flowering, the shoots should be cut back, so as to remove the flower buds, placing them in a situation where they can be kept moist, in order to encourage growth. Attend to potting as may be required, and otherwise treat them during the growing season as directed above, only stopping should not be practised later than June, as stopping later in the season would tend to cause them to flower weakly and irregularly. The plants will require to be slightly cut back, and to have their shoots tied out and regulated every season after flowering. For soil, use good rich fibry peat, selecting the very best pieces, and be careful to have it in prime condition as to age, &c. This should be broken up rather small and intermixed with a liberal proportion of silver sand and a sprinkling of lumpy bits of charcoal, or clean potsherds broken small. In potting be sure to secure perfect drainage; and make the new soil rather firm about the ball, to prevent the water passing off through it too freely. *Alpha.*

SOME PRINCIPLES OF VEGETABLE PHYSIOLOGY, BEARING ON THE CULTURE OF PLANTS.

By Professor W. H. de Vriese, of the University of Leyden.

(*Translated from the Dutch.—Continued from p.* 613.)

All the solid parts, and also the leaves, have their origin from the fluids. If the fluid, which is the means of leading the dissolved substances, of which the tissues are formed, and whence arise the leaves, sprouts, and branches, which are produced during the growing season, the above mentioned amount would yet be increased with that of the water, which has been necessary to form the solid substances, of which consist the new solid parts. There are plants called pitchers, in which some leaves have a peculiar way of development. They are found in the East Indies (Nepenthes), in Australia (Cephalotus), in North America (Sarracenia), in Guiana (Heliamphora). We shall only speak about the first of these forms, which is best known to us, being found in the Dutch East Indies. One of the beautiful East Indian pitchers has been called after Sir Thomas Stamford Raffles, the English governor of our East Indian colonies, during the French dominion. This plant is a native of Sumatra. Some years ago it was introduced from that island into England, and in 1850 it was transported by myself from there into the botanical garden of Leyden, where two vigorous specimens of this plant are now in cultivation. In the last century a form of this genus was known by the name of Nepenthes distillatoria, because at that time it was thought that, by a sort of distillation, a fluid from the plant was collected in those pitchers, and by which, if they opened their lid, the plant would be moistened and refreshed.

These plants have been known to us for some years through the discoveries made by Dr. Korthals, who has visited Sumatra, Java, and Borneo. Before the lid opens itself, the pitchers are generally half filled with fluid, which arises from the inner surface, but is not derived from dew or rain. The secretion of moisture continues also after the opening of the pitchers. Fluid has been seen secreting anew in the empty pitchers, and the observation has been made that those plants which grow in the shade have less fluid in their pitchers than those which are exposed to the sun. When the pitchers were closed with thin membranes, fastened by means of silk threads round the margins, it was proved that the secretion of the day surpassed that of the night. Thus the fluid is derived from the inner surface of the pitcher itself, and has not its origin from the atmosphere, as has been pretended.

It has been an error to attribute to those pitchers, which must be considered as a particular expansion of the leaf, an alternate closing and opening. To see how impossible this reclosing is, we need but consider to what a change the mouth of the pitcher and the cover itself are subjected. The fluid itself is of an insipid sweet taste, and when out of the pitcher it soon spoils. When the stalks were cut off, and the plants placed in water, the secretion of fluid in the pitchers ceased. Thus it is through the stalks in their natural connections that the fluid secreted in those pitchers must be supplied. While in some sorts of plants the evaporated fluid is collected in parts destined to that purpose, in others it is gathered on the top of the leaves. Some Aroideous species furnish examples of it, and it appears that the form of the leaf veins (which some people call nerves), and which concentrate at the points of the leaves, are the cause of this phenomenon.

A similar phenomenon is seen among more plants of the group of the Arads, especially those with colossal acuminated leaves, in which the evaporated moisture is collected at the top of the leaf. It would be superfluous to show that the evaporation on the surface is considerable, and that these many functions of the plants are very closely connected. It has been remarked that in countries where the seasons regularly alternate, where warmth and cold succeed each other, the trunks and branches regularly increase in thickness. If they be cut through in a horizontal direction, then we remark circles which enclose each other. It has been with certainty shown that every year adds another circle to those already existing. This causes the increase of thickness in the trunk. The time at which the peculiar thickening of the trunk takes place in this country is in the months of June and July. By the number of those circles we determine the age of trees and of the different branches on the same trunk. To this end is the trunk prepared in the spring; at first when the ground is warmer than the air—later, when the atmosphere is warmer than the earth and the inside of the branches. Then especially the evaporation is suddenly increased, and the organs of the plants appear as if by some magic power. Evaporation, ascension of sap, and absorption must keep pace. The ascension of sap that nourishes the buds causes the development of the leaves, and contributes to their expansion, rises into the young wood, and in the outermost stratum (called cambium), which consists only of young cells, it is present in large quantities.

The young wood cells multiply very quickly, and thus a new circle of wood is formed. But let it be taken into consideration, by how great a mass of solid material a tree is increased yearly; let it be remembered as well, what we have advanced above, that only a very small quantity of other substances is taken up out of the ground with water into the tree; and then it will not be difficult to determine that the amount of water which in the spring and summer passes through a tree must immeasurably surpass all calculation or conception. A simple illustration of this appears if you cut away the slips from among the trunks of the trees. A stream of liquids, difficult to stop in its course, and having the appearance of the clearest water, escapes. In America holes are bored in the trunks of certain Ash trees, to collect a sugary sap, which being fermented, yields a spirituous drink. The buds, like so many pumps, draw the sap upwards, and they do this in proportion as they expand.

Absorption and evaporation must proceed in like proportion. As the warmth of the atmosphere diminishes in the evening, so the ascension of liquids also diminishes. When the degree of moisture in the air is so great that it, as if saturated with water, can take up no more moisture from the plants, it is immediately visible in the latter. If the evaporated water on the surface of the leaves is disturbed in its action, the plants become sick and die.

(*To be continued.*)

TRADE MEMORANDA.

Who is Mr. H. Minton, of 51, Commercial Road, Lambeth?

The gentleman called Seymour, Bradley, Blomfield, Stevens, &c., is, we believe, out of prison, and nurserymen will do well to be on their guard.

Home Correspondence.

Winter Peas.—Prepare for sowing Peas during winter, by collecting as much peat dross as can be got; the refuse of a peat or turf stack will answer well if it is broken small and put through a sieve or riddle—such soil as is used for potting Heaths will do. If it be procured from low marshy ground, and of a sulphury nature, so much the better; if not, a little flower of sulphur mixed amongst it will be an improvement, as it tends to some extent to counteract the ravages of mice and the effects of frost. Where the ground is wet, or the climate damp, I have found this simple and cheap preparation of the utmost importance. It must be sown thinly and regularly in the bottom of the open drills, immediately previous to sowing the Peas; also sow it thinly over the seed in the same manner, then cover slightly as usual, and there need be no fear of losing any of the seed by splitting or rotting, and I have found this preparation indispensable for all the wrinkled varieties, such as Hairs' Dwarf Mammoth. Unless the soil be very dry, the mould should be left loose until it becomes dry in the spring, and then it may be well pressed by the feet close to the plants before earthing them up for the poles or stakes. Young gardeners in general object to the sowing of the earliest varieties, such as Prince Albert, Warner's Early Emperor, &c.; but if they adopt my plan of digging and dunging for Cabbages, they need not fear having too light crops. Sometimes, when circumstances will not admit of preparing the ground for Peas in the usual way, I open trenches 12 or 15 inches wide, a spit or two deep at proper distances, laying the top spit on one side, and the other spit, with a shovelling out of the bottom, on the other, so that I may turn the top to the bottom, over a sufficient quantity of dung—the more littery the better, or leaves will answer as well; fill up the first trench, and sow the Peas, which cover from the bottom of the next trench, and so on until all the quantity required be sown. If wanted very early, hot dung should be used. *Robert M'Nab, gardener, Cannan Cottage, Morningside.*

Disinfecting Cesspools.—Perhaps some of your chemical correspondents will kindly answer the following question. Given a cesspool 10 feet square and 12 feet deep, how many quarts of Burnett's disinfecting fluid would be required to enable men to clean it out without suffering any inconvenience from the smell? *W. R., Oct.* 4.

Protecting Pits, Frames, &c.—Nothing is equal to or so effectual and inexpensive as a protection to pits, frames, &c., as glass crates stuffed with shavings, and placed all round these structures; they are dry nonconductors, and when packed together, have a neat tidy appearance. Trellis shutters, also, stuffed with shavings, when laid over the lights, are very efficient in keeping out frost. As mats are scarce and dear, and we are likely to have a sharp winter, the above method of protecting plants, &c., might become very general with great advantage, as it has three essential qualities—namely, durability, cheapness, and simplicity to recommend it. *An Observer.*

Potatoes.—Permit me to offer you a few remarks on the protection of Potatoes from disease; I had a south border planted with Ash-leaved and Lapstone Kidneys, Early Manleys and Early Snowball. I had them manured as follows, viz., part of them with soot and salt, and part with good stable-yard dung, leaf-mould, coal-ashes, and old decayed tan. I could not say that there was any difference in the growth of any of them,

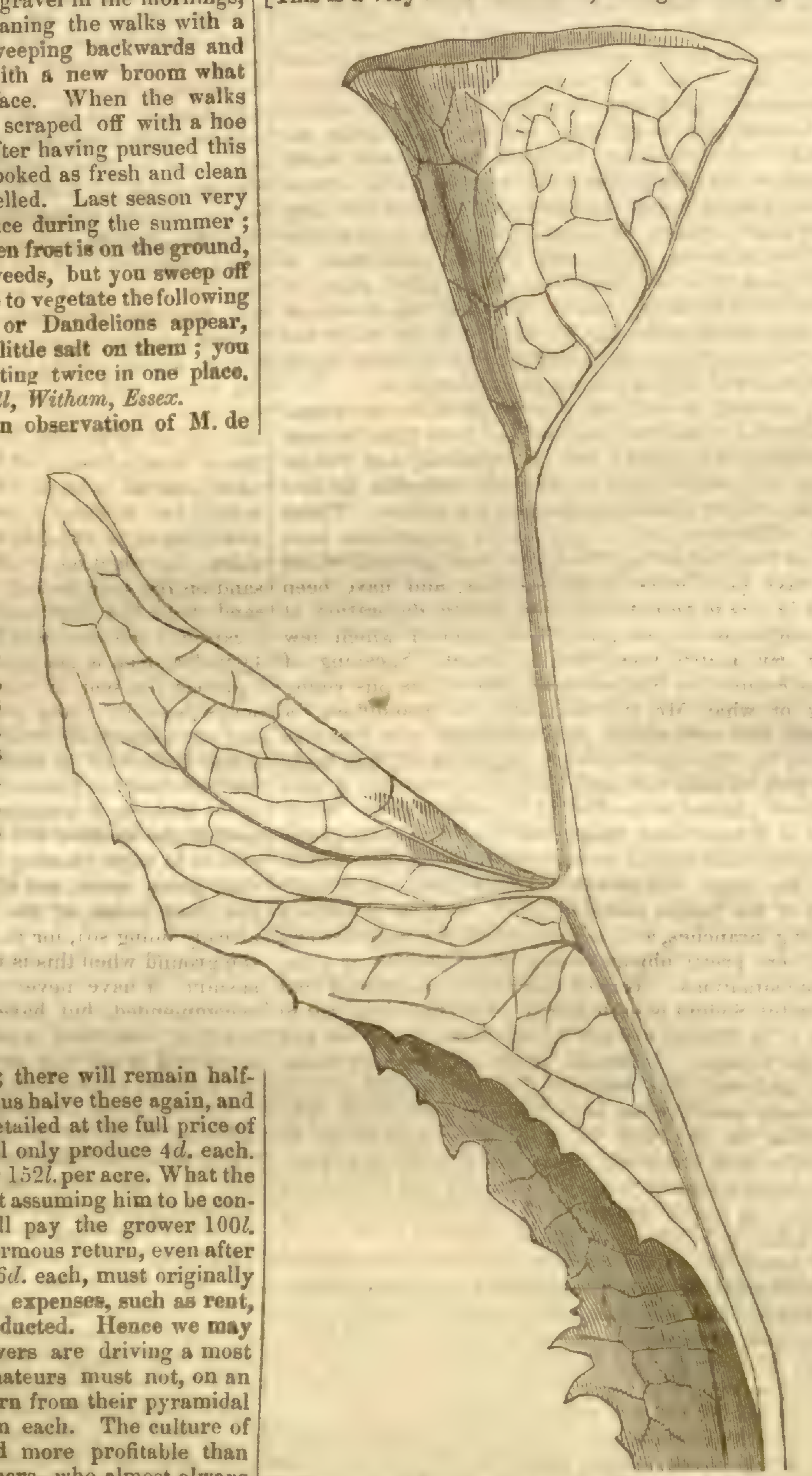
except those planted in soot and salt, which did not turn out so well as any of the others. About the latter end of July, a few days after a severe thunder-storm which we had here, the leaves and haulm became spotted, and began to smell very badly. I had all the haulm cut off within about 6 inches of the ground, and I lifted every other row for present use. I had the rows which were left all covered with soil to the depth of 18 inches, beating the soil firmly on the top of the ridge with the spade. I had them all lifted a few days ago, and to my great satisfaction they had all escaped the disease. I left a few rows uncovered, and I am sorry to say that I had not one sound Potato to any set planted. All the Rose leaves, Peaches, French and common Beans, Endive and Rhubarb leaves here, are spotted and burned, just as if vitriol had been sprinkled over them. *James Morgan, South Wales.*

Weeds on Walks.—In order to prevent weeds from growing on walks, put a layer of gas-lime under the last inch of gravel. This also helps to bind the gravel. *J. W. R., Bromley Hill.*——The following is the way in which I managed walks when I was a gentleman's gardener. In one situation I held I had three miles of gravel walks to keep in order. In winter, when there was sufficient frost to freeze the gravel in the mornings, I employed the labourers in cleaning the walks with a half worn out Birch broom, sweeping backwards and forwards, and then removing with a new broom what the old ones took off the surface. When the walks were covered with moss it was scraped off with a hoe before the broom was used. After having pursued this practice for 6 years, my walks looked as fresh and clean as if they had been newly gravelled. Last season very few weeds made their appearance during the summer; by performing the operation when frost is on the ground, you not only remove all small weeds, but you sweep off most of the seeds deposited there to vegetate the following summer. If Docks, Thistles, or Dandelions appear, cut out their crowns, and put a little salt on them; you will not have to repeat the salting twice in one place. *G. Taber, Rose Cottage, Rivenhall, Witham, Essex.*

Profits of Pear Growing.—An observation of M. de Jonghe, in one of your late Numbers, to the effect that England, from mismanagement, is tributary to Belgium for Pears, induces me to remark the high price at which this fruit is retailed in Covent Garden. I have seldom been able to purchase first-rate winter fruit, such as Winter Nelis, Beurré Rance, Easter Beurré, or Ne plus Meuris, under 6*d.* a piece, and never under 4*d.* Now let us suppose an acre stocked with pyramidal trees, at 6 feet apart, there is room for 1210. In good condition, they surely ought to produce two dozen Pears each; but let us suppose that every other tree is absolutely barren every alternate year; the average will then be a dozen fruit per tree. Let us now assume that even of this dozen one-half is cracked, pecked, rotten, or otherwise unsaleable; there will remain half-a-dozen in good condition. Let us halve these again, and suppose that only three can be retailed at the full price of 6*d.*, and that the other three will only produce 4*d.* each. We have thus 2*s.* 6*d.* per tree, or 152*l.* per acre. What the retailer's profit is I know not, but assuming him to be contented with 52 per cent., he will pay the grower 100*l.* Now 100*l.* an acre seems an enormous return, even after allowing that the trees, at 1*s.* 6*d.* each, must originally have cost 90*l.*, and that annual expenses, such as rent, taxes, and labour, have to be deducted. Hence we may conclude, either that Pear-growers are driving a most lucrative trade, or else that amateurs must not, on an average of years, expect a return from their pyramidal trees of even six good fruit from each. The culture of standards is usually considered more profitable than pyramids. If so, market gardeners, who almost always plant standards, will actually realise larger profits than those I have indicated above. *S. B., Bromley.*

Cuthill's Black Prince Strawberry.—I think it but just to Mr. Cuthill to add a few remarks to those made last week by Mr. Smith, respecting this Strawberry, which, I am of opinion, has no equal as regards productiveness; and with a little perseverance and accommodation, it may be had in fruit during the whole season. I find it most useful for early forcing, there being no difficulty in getting ripe fruit from it early in February, and in keeping up a constant succession until ripe fruit can be had out of doors. The earliest forced plants should have their blossoms and fruit stalks cut off and turned out into a sunny border about the middle of March. A succession crop should be turned out a month later, and other successions at intervals afterwards. These will keep up a good constant supply until November, or if slightly protected, and the frost not very severe, they will ripen fruit until the middle of December. For some time past I have been gathering excellent Strawberries, and I have no doubt that I shall continue to do so for weeks to come. For a winter supply, I reserve plants of those forced for the last spring crop, which if placed in a shady situation, and carefully watered during the summer months, will throw up strong trusses of bloom by the end of September, or if a few earlier runners are layered, they will also produce fine trusses late in autumn, and by introducing the plants into a slight bottom heat at intervals, a constant supply of fruit may be kept up until the early forced plants come into bearing. I find the two-year-old plants, or those which have been forced one season, the most productive, and they may safely be introduced into heat whenever required with more certainty that young plants. I understand that some of your correspondents have found this variety subject to mildew, and have consequently spoken against it; if sulphur, however, is applied to the pipes or flues occasionally, no mildew will make its appearance. *Edward Bennett Perdiswell, Worcester.*

Vegetable Pitchers.—I found the other day such an extraordinary sport of nature in a Lettuce leaf that I could not help cutting it and forwarding it to you. You may not receive it in good condition, but the leaf was perfect in itself, with a stem rising from the middle of the leaf quite round, and supporting a perfect green funnel; the curious thing is, that it shows no deformity, and might belong to a plant whose natural habit was to grow in that way—not a bad idea for a tropical climate. *John Birch Reynardson, Caseby Rectory, Stamford.* [This is a very curious monster, analogous to the pitcher



that occasionally appears on the leaves of Cabbages, an example of which was published years since by De Candolle in the Transactions of the Horticultural Society. In a scientific point of view the importance of such instances can scarcely be over-estimated; for they assist in demonstrating the fundamental fact that in vegetation there goes on a hollowing process wholly independent of the property of forming cavities by the lateral adhesion of verticillate leaves. We have in these accidents the true explanation of the pitchers of Nepenthes and Sarracennia, of the so-called, but erroneously-named, calyx-tube of Escholtzia, Rosa, Myrtus, and the like. This has been long ago pointed out, and we are surprised to find it wholly unnoticed in Dr. Balfour's "Outlines of Botany," a copy of which has just reached us.]

Notices of Books.

The Subject Matter of a Course of Ten Lectures on some of the Arts connected with Organic Chemistry. By Wm. Thomas Brande. Longmans. Fcp. 8vo, pp. 382.

This excellent little work contains the substance of the 10 farewell lectures delivered by Professor Brande at the Royal Institution. The subjects discussed are the most important applications of organic chemistry to the arts, viz., amongst others, dyeing, bleaching, calico printing, tanning, the manufactures of sugar, soap, and candles, and fermentation; and the text is edited by Mr. Scoffern from the notes of the lecturer himself. Both to the professor and to the editor the public are, we think, greatly indebted for so much information in so agreeable a form. The desire to become acquainted with the great principles of chemistry, and of natural philosophy in general, is no longer confined to a few, but is, to the great benefit of society, rapidly increasing and spreading amongst all its members; and whenever a person thoroughly capable takes the trouble to assist them in the attainment of their desire, by laying before them in a clear, methodical, and withal agreeable manner, the results of his own long study and experience, he is certainly entitled to their thanks, whatever anti-Gradgrinds may say or think to the contrary. Notwithstanding the many excellent treatises on chemistry which have appeared in the English language, there seems to be still wanting a work similar to the admirable Leçons of M. Girardin (being lectures publicly delivered by him to the working-classes of Rouen), a treatise, we mean, in which the great principles of chemistry, and they alone are brought prominently forward, are explained in as familiar language as possible, and illustrated by common examples, and the most important applications to the arts and sciences. Professor Solly's "Agricultural Chemistry," Professor Faraday's lectures on "The Non-Metallic Elements," and the present lectures of Professor Brande, supply the place of such a work, so far as each of them extends, and we yet hope to see others of a similar class, which will complete the series. The following extract will serve to show the manner in which important useful information is intermixed with the more technical portions of the lectures.

In the chapter on fermentation, after describing the mode in which wort is prepared for brewing, the Professor continues:—

"The wort is next boiled with hops, which were first introduced into this country from Flanders, in the reign of Henry VIII. Their active constituents are essential oil, bitter extractive, and a little gum and resin. A very important part of the management of hops consists in the manner of drying them, which is performed in a kind of kiln, called in Kent and Sussex, oast houses; they are, for the most part, very unscientifically constructed; and would apparently admit of easy and important improvements. To give them a proper marketable colour, and to prevent the communication of a disagreeable tint to the beer, the hops are subjected to a species of bleaching, or fumigation with sulphurous acid, and are finally packed in bags, or pockets, and subjected to considerable pressure, so as to exclude the access of air.

"The relative proportion of Hops used in beer varies according to the desired quality of the liquor; about one-twentieth of the weight of the malt is, I believe, the average proportion. Their influence is very important; they diminish the tendency of the liquor to secondary fermentation, and other mischievous changes; by their aromatic bitter they cover sweetness, and impart a new flavour and fragrancy. These qualities are partly referable to the volatile oil of the Hop, a part of which is dissipated in the steam escaping from the boiling coppers, which should be so constructed as to retain the largest possible quantity of aroma.

"No substitute can be found for the Hop as regards the agreeable qualities which it imparts to the finished beer, except, indeed, as respects mere bitterness; and the present rage for bitter small beer has led to the use of Quassia, Camomile, Gentian, and some other pharmaceutical bitters, which, when judiciously and homœopathically employed, are fit enough for the purpose, being harmless and inexpensive; but they are all open to the palpable objection of leaving more or less of a permanent, and not pleasing bitterness, on the palate. The totally different from that resulting from the Hop. The Nux vomica, which contains the highly poisonous, and at the same time intensely bitter alkaloid strychnia, is said to have been imported in such large and increasing quantities into this country, as has led to the suspicion of its employment for these purposes; so that some brewers have deemed it necessary to refute such notions by a reference to the analytical labours and testimonials of the highest chemical authorities. These and many other notions, regarding the similar application of Cocculus indicus, opium, tobacco, and other narcotic poisons, have their origin in the discoveries and exposures which the officers of the excise have occasionally divulged, and are, to a certain extent, sanctioned by the disclosures of treatises on brewing, by 'old practitioners,' and by the existence of brewers' druggists; and, no doubt, obscure and illegal brewers do resort to such and other adulterations; but it seems probable that the retail dealers are the greatest sinners, and that public-houses and beer-shops are the chief seats of sophistication. It is curious to observe the miscellaneous products of the row of pumps which adorn the taps of these establishments.

"You may consult Mr. Accum's book on 'Culinary Poisons,' if you desire further details upon these matters, and we will now resume the legitimate operations of the brewery."

We may also quote some very entertaining records of the history of sugar, and of the opinions entertained about it upon its first introduction to common use.

"Happily for the interests of sugar, physicians then, as now, were not unanimous. While some violently abused it, others became its powerful advocates; amongst

the latter figures prominently, and, it may be said, creditably, Dr. Slare. He went to work like a true enthusiast; not content with asserting the innocence of sugar, he elevated it almost into the rank of a panacea; not content with eating sugar abundantly, he smeared his skin with syrup, to the great comfort of the same, as he informs us; and he used powdered sugar for snuff, which, we are told, 'did comfort his fauces, a quality which tobacco-snuff did not possess.'

"This celebrated advocate for sugar deserves credit for the industrious collation of facts he has handed down to us in support of his position—facts not only drawn from the restricted circle of his own profession, but also from collateral sources. The following testimony, embodying an important statement in gastronomic zoology, is of this kind.

"'I have known,' says he, 'a farmer near London feed his roasting or his sucking pigs with white sugar in their milk, which made them sell for three half-crowns, and sometimes ten shillings a piece; and I was told by the farmer's landlady, who had tried them, that they did far exceed the flesh of the common sort.'

"But perhaps the most telling case in favour of the good qualities of sugar, was that furnished by Dr. Slare's own maternal grandfather, Mr. Malory, of Shelton, in Bedfordshire. Everybody is aware of the common prejudice, that sugar destroys the teeth. Now Mr. Malory, who remained a great sugar eater all his life, shed his teeth in favour of a new set when he was nearly a centenarian! 'He lived,' remarks the great advocate of sugar, in a letter written in the year 1714, 'an active, but sober and temperate life. He loved the diversions of hunting, a gun, and a hawk, which he kept himself; he was very regular in his method of eating and drinking; he made three meals a day, but did only eat flesh at dinner; he drank every morning near a pint of good soft ale; he then walked in his orchard so many turns as made a mile; he did the same in the even of his old age; he obliged me to walk 15 miles with him after he was fourscore, which he did without being weary. He seldom drank wine, but when he did, it was canary. He never drank between meals; his eyesight was so good, that he could take up a pin from the ground when he was between 80 and 90. I have seen him kill a single bird with his gun. His stomach never failed him to the last, nor did he remember that he was troubled with the headache. In his 82d year he was observed to be very strong and cheerful, his hair to change somewhat dark; in that year some of his old teeth came out, and were found to be pushed ont by young ones, which continued to do so until he had a new set of young teeth quite round.

"'He lived easy, and free from pains or any sickness, to his 100th year, and in that year died of an apoplexy. He delighted in all manner of divertments. He used in the morning to spread honey upon his bread and butter some part of the year—at other times to strew sugar over his bread and butter; he loved to have all his sauces made very sweet, especially with his mutton, hashed or boiled, or any other sort of meat that would bear sauces, he ordered them to be so sweet, that to others they tasted luscious.

"'The good effect it had upon this old gentleman, my grandfather, together with the pleasant relish I received early in my youth, by dieting with him, made me always a lover of sugar, which I have for some years past used very plentifully, especially in my wine, and also in my ale on various occasions. I have made use of dried sugar in powder to cleanse my teeth—and, by rubbing it into my gums, to cure them when sore and swelled; but this happened seldom, unless I had neglected the use of sugar for many months. My teeth are at present 28, the usual complement of most persons; are all of them sound and well fixed in their places; these never gave me the trouble of the toothache.'"

"'Out of respect to the fair sex,' our author goes on to say, "especially those that love their beauty, or fine proportions, as well, if not better, than their lives, I shall suggest one caveat, or caution, to those that are inclining to be too fat—namely, that sugar being so very high a nourisher, may dispose them to be fatter than they desire to be, who are afraid of their fine shapes; but then it makes them amends by supplying a very wholesome and goodly countenance, and sweetens peevish and cross humours, where they unhappily prevail."

If we must criticise anything it will be the figure of a Date Palm at p. 163, drawn by some clever artist no doubt, but to our eyes much more like a Sago Palm than what it professes to be.

New Plants.

91. Phrynium micans, *Klotzsch in Allgem. Gart. Zeit., Aug.* 12, 1854—*aliàs* Maranta micans, *Mathieu Cat.*, 1853.

This is represented to be a stemless plant with small undulating papery leaves, dark green, and shining on the upper side, with a middle longitudinal streak of a whitish red colour; dull brownish sanguine on the under side. The flower spike is stiff, slender, dull purple, about 4 inches long, with white flowers in heads, surrounded by rosy bracts. It is of Peruvian origin, and requires a stove; from the account given of it, it would seem to be a useful addition to the list of dwarf plants with variegated leaves.

92. Tovaria pendula. *Hooker.*

"This is an annual Capparid, with alternate triphyllous leaves, a straight branching stem, and terminal drooping many-flowered racemes. The flowers are yellowish white, and in form something like those of Pyrola uniflora. It was discovered in 1842 in the temperate regions of Venezuela, and is a remarkable plant." *Linden's Catalogue*, priced at 5 fr.

Garden Memoranda.

Horticultural Society's Garden, Turnham Green.—Such conservatory and greenhouse plants as have been in the open air during the summer months have now been brought indoors, and arranged in their winter quarters. Greenhouse climbers have also been pruned in and tied up, in order to give the plants under them as much light as possible. On one rafter the Tropæolum Triomphe de Gand has been placed by way of experiment; it has grown freely during the summer, and as its wood has become well ripened, it is expected that it will be quite a mass of brilliant deep orange, or rather scarlet, blossoms during the months of January and February. Cultivated in pots, we need not say that this is one of the gayest plants we possess; and as its flowers keep expanding in succession for many months together, its value for decorative purposes is great. The small greenhouse in front of the Rose house is at present, as indeed it always is, extremely gay. Among other things, we remarked in it plants of the new Orange Amaranth, whose Clover-like heads of flowers make an agreeable variety among greenhouse plants. It is a perennial, and when larger specimens of it shall have been obtained, and its colours fully brought out, it will doubtless, notwithstanding the naturally dull colour of its blossoms, be well worth attention. Associated with it were Justicia carnea superba, a most useful old fashioned plant, which may be had nearly always in bloom; the well known pale blue Plumbago capensis, and Funkia grandiflora, a hardy plant, but well worth a place under glass, on account of the large heads of white sweet-scented blossoms which it produces. Out of doors slugs are apt to eat its foliage and disfigure its appearance, an occurrence which does not happen under glass.

In pits, were several plants growing on for the winter decoration of the stoves, such as the blue Eranthemum pulchellum; the purple Justicia speciosa, and Pentas carnea, &c., which intermixed with Begonias make a fine display at a time when flowers are scarce. Plants of the brilliant scarlet-flowered Salvia gesneriflora have also just been potted up from the open ground, where they have been growing all summer, and have been placed in pits to be ready for the spring decoration of the greenhouse or conservatory, in either of which few plants can match them for showiness. Speaking of Salvias reminds us that we saw in one of the pits young plants of what Mr. Skinner calls S. grandiflora, a reported new sort, which that gentleman says grows as large as the Orange Cestrum, *i. e.*, 10 or 12 feet high, and which he adds will make a good companion to that fine shrub planted in the bed of a conservatory. Many plants of it have been raised, and therefore as it grows rapidly its value in this country will soon be ascertained.

In the large Conservatory were some admirable plants of the Sedum Sieboldi, which, with its gracefully drooping branches, and multitudes of gay rosy flowers, forms very pretty objects on corners of shelves or other suitable situations. It need scarcely be mentioned that this useful Sedum is quite hardy; but that when out of doors it is difficult to keep it from slugs, which eat and spoil the foliage. It should therefore be grown under glass; and who that has seen a good specimen of it in full beauty would refuse to give it that attention? The Camellias in the bed of this house appear to be unusually well furnished with flower buds this year. Hedychium Gardneri has also been and still is finely in blossom, its great heads of inflorescence measuring quite a foot in length and 10 inches through. This is a plant which no conservatory border should be without. A few Chrysanthemums have already been brought into this house, and some of the earlier Pompones, as Hendersoni, are even now bursting into bloom. Others are set along the gravel walk outside ready to be introduced whenever they may be required. All of them are good plants and well covered with bloom buds.

In a shallow frame in front of the Orchid house—without heat except what passes into it through the wall of the last named house, planted among pieces of rock, and dwarf Cacti—is a great patch of Oxalis Bowei, which is at present one mass of blossoms, rosy and cheerful in appearance, each flower being as large and round as a shilling. During the day the lights are kept constantly off; the effect, therefore, of such a display of floral beauty may be easily conceived. When once established, it is a plant which requires little further care, and few things in its season are more handsome.

In Mr. Ewing's glass wall, such plants as have survived the winter have made vigorous growth, and some of them, as the handsome porcelain blue flowered Iochroma tubulosum, Abelia triflora, and China and other Roses, are now in blossom. Bignonia grandiflora also promises to flower here, where it is screened from the early autumn frosts. Of fruit trees in it we hope to have a better account to give next year than we have this, the frost of the 24th of April having killed all the blossoms.

Among late annuals out of doors, Bahia latifolia deserves notice; plants of it sown in the open ground in May being now finely in bloom. It grows about 18 inches high, and bears starry yellow flowers about as large as a half-crown piece. Tagetes sinuata is also a good late annual, its orange blossoms, though much smaller than those of the Bahia just named, being produced in sufficient abundance to render a mass of it effective. Dianthus Gardneri, a fringed Pink, of a purple colour with a white eye, is likewise a useful flower at this season.

In the orchard department, Peaches and Nectarines have now, for the most part, been gathered, the only exception we noticed being a few Late Admirable Peaches, which are scarcely yet ripe. What Pears there are on walls are very fine this year. Some specimens of the Duchesse d'Angoulême measure as much as 12 inches round lengthwise, and 11 inches in circumference. There are also some good Beurré Rance and other sorts, of which we shall be able to report fully next month. Three of the small Pear trees in pots in the orchard house have also produced a few large and fine fruit. They are new sorts, of the quality of which there will soon be means of judging.

FLORICULTURE.

Tulips.—Examine the bulbs, and, if not previously done, let them now be arranged for planting, making the alterations and improvements noted down in your Tulip book during blooming time: this I do immediately the bulbs are taken up, while the changes intended to be made are fresh in the memory: I also procure at once any new varieties I may wish for, and then re-arrange them. The bed should now be got ready for planting. If the soil has only been in use one year, and the bulbs have done well in it, there is no advantage to be derived from changing it, for they will do well in the same soil (if it be good) for two or three successive years; all that is required is to remove about 3 inches from the surface, laying it in a ridge by the sides of the bed; then fork over the mould left in the bed, laying that also in a high ridge for a week or 10 days. If the soil requires changing, it need not be all removed. About a fortnight ago, I took nearly 10 inches off the top of my bed, then I put about 6 inches of two-year-old rotten turf and loam and road grit, well mixed together (three-fourths loam and one fourth grit), on the soil left in the bed, forked it well over two or three times, turning some of that left with the mould just added, so as to mix it well, and laid it up in a high ridge; two or three days before planting, this is raked down, laying it 2 inches higher in the middle than the sides. In planting, I place a small quantity of river-sand on the spot the bulb is to occupy, and put as much sand upon the bulb itself as will just cover it; then I carefully put the mould on the bed, covering the bulbs 4½ inches deep in the centre, and 3 inches the outsides; I protect the bed at once by placing small sized iron hoops over it, rising about 6 inches from the surface, and run some small string diagonally between the hoops. About the second or third week in the present month is the best time for planting in general, though, on account of the lateness of situation, I never plant later than the first, if the weather will allow it to be done. The best plan is to begin planting whenever the bulbs push forth their green spear, and the fibres swell at the bottom of the root (some of the early blooming varieties are already doing so), for the longer they are kept out of the ground when this is the case the greater injury they sustain. I have never used the nostrums some have recommended, but have strictly adhered to the simple practice described above; and perhaps I may be permitted to say that my blooms have always given me the greatest satisfaction. *H.*

Japan Lilies.—Few plants are more useful than the different varieties of Japan Lilies. They come into bloom at a time when our New Holland plants are over, and when an actual paucity of flowering plants exists, wherewith to decorate the conservatory and greenhouse; and what really can be more suitable? They produce a gorgeous display either in doors or out; and as they are quite hardy they may be liberally planted in the open borders; they thus constitute one of our best autumnal flower garden plants. Their propagation is simple and certain. The bulbs may be separated, and each scale will eventually form a new bulb. This separation should be effected when the flower stems are withered; the scales should be stuck into pans of silver sand, and placed in a cold frame or pit. After remaining one season in this position, they should be planted in a prepared bed of peat soil, and a little silver sand intermixed with it; thus treated the bulbs will soon grow large enough to flower. The cultivation of them in pots is by no means difficult. Immediately when the bulbs go to rest in the autumn is the proper time to repot them. By no means destroy the old roots, but carefully place them amongst the fresh soil. If large examples for particular display are required, large pots may be employed, and half a dozen large flowering bulbs placed in each pot. The soil I use is rough peat. The pots should be well drained, and the crowns of the bulb just covered with the soil; when potted they should be placed in a cold pit or frame, in order to prevent the soil from freezing, although frost will not injure the bulbs. Where room under glass is an object in winter, they may be plunged in the open air in coal ashes, in a manner similar to potted Hyacinths. I have at this time a large number in flower, which have never been under glass until within these few days; they have sustained no injury from exposure. There is scarcely any plant which is so much benefitted by liquid manure as the Lily, more especially before expanding its flowers. If used in a clear state, and considerably diluted, this water alone may be applied for at least a month before it comes into flower. If the

object should be out-door cultivation entirely, I should recommend them to be planted in beds; their effect is exceedingly grand. Excavate the soil 18 inches deep, and fill in the bottom a foot deep with very coarse peat, intermixed with one-fifth of decayed manure or leaf-mould. The remaining 6 inches may be entirely peat. If the bulbs are large enough to bloom, plant them 12 inches apart every way, and if beds of each kind are well contrasted one with the other the effect will be magnificent. *S.*

SEEDLINGS.

Pansies: *W J P.* Your seedling is either Duke of Norfolk or too much like that variety to be of any value.—*J G B.* Much too small.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Conservatory, &c.—The delightful weather which we have lately experienced is very favourable for those who cannot find accommodation under glass for all their plants, but it will be very unsafe to calculate upon its continuance, and everything should be placed at once where protection can be afforded in case of frost occurring somewhat unexpectedly. Where plant accommodation is scarce, and this is the case about the majority of private establishments, it is an excellent plan to have a part of the plant ground covered with some strong rather close canvas, fixed so as to be easily taken off or placed over the plants. This, if properly arranged, will prevent heavy falls of rain being injurious, and will protect the plants from autumn frosts; and a contrivance of this kind is exceedingly useful in spring for preparing bedding stock for planting out. It should, however, be constructed very much upon the principle of Mr. Rivers' hedge-backed orchard-houses, with a slight frame-work of rafters, and skeleton sashes on which to stretch the canvas, to make it partly waterproof. We have a structure of this kind, which in autumn and spring is just as useful to us as if it were an expensive glass erection, and its cost was very trifling. It is also useful in winter for protecting many plants used for forcing, both before they are introduced to the forcing house and after their removal from the conservatory, and renders it safe to place many plants in the open air for a time in summer, which otherwise must be kept under glass. Many of the stove plants which have lately been the principal ornaments of the conservatory will now be getting shabby, and foresight must be exercised, to be prepared with specimens in flower to supply their places. Some of the most forward Camellias should, if necessary, be placed in a rather close house, to induce them to open their buds, giving them a regular supply of manure-water; and the most forward Epacrises may be placed in a close part of the greenhouse, where they will soon open their blossoms; as also Daphnes and many other plants, provided their flower-buds are prominent. Aim at keeping the atmosphere of this house rather dry, using just sufficient fire heat on damp cold nights to allow of giving sufficient air to keep the atmosphere in motion, so as to prevent damp being injurious. Stove.—The twiners on the roof should now be strictly kept within bounds, cutting back all shoots that have done flowering, and tying the others so as to obstruct the light as little as possible. Place specimens ripening their wood in the coolest part of the house, and water sparingly at the root. Achimenes, Gloxinias, Gesneras, &c., that are properly ripened off may be stored away in any dry place where they will be safe from frost, but take care to place them where they will be secure from damp, and they should not be exposed to a lower temperature than about 45° or 50°, for many valuable plants of this kind were lost last winter through storing them in dry sheds, &c. Many hard-wooded plants, such as Ixoras, &c., that have not made their wood after flowering, should be encouraged with a warm moist temperature, syringing them lightly overhead, and shutting up the house early in the afternoon. Get any growing plants that require more pot-room shifted as soon as convenient, in order to get them well rooted into the fresh soil before winter. Keep a sharp look out for insects, especially black thrips, which are often very troublesome at this season on such plants as Ixoras, &c., growing in a close warm house, and either fumigate the house or remove the affected plants and thoroughly clean them immediately this pest is perceived, for if left to its own way with growing tender-foliaged plants, it soon disfigures the finest specimens.

FORCING DEPARTMENT.

Pineries.—Plants showing fruit at this season are so valuable as to be well worth any amount of necessary care, for they will afford ripe fruit at a season when the best-furnished gardens cannot supply much variety in the way of fresh fruit. While the present delightful weather continues, they will however require no particular attention; but in the event of cold damp weather setting in, the shows must be carefully protected from damp, and should be kept rather warm and dry until after blooming, when they will not be readily injured by a damp rather low temperature. Those who grow their Pines in pots should gather all those showing fruit together, so as to be able to treat them more judiciously than can be done when they are scattered throughout the whole stock. Plants that have been kept cool and dry for some time past, in order to prepare them for fruiting, should now be placed in a brisk heat, taking care to thoroughly moisten the soil about their roots, so as to get the fruit fairly set and safe before the sunless days of November. Continue to afford young growing stock a warm moist temperature, with plenty of manure water at the root; but use fire-heat sparingly, and avoid drawing the plants by a high night temperature. With proper management and convenience, 70° will be quite safe while the present favourable weather lasts. Successful growers, our forefathers, recommended a low temperature and dry atmosphere, in order to prevent growth after this season, and under their circumstances this was the most judicious practice, but tan beds and dung linings have given place to hot-water tanks and pipes, and the small squares of glass, with their wide black laps and heavy timbers, have been replaced by roofs which hardly intercept a ray of light, and to adopt the practice of former days would be an unpardonable waste of means. It is hardly too much to say that with modern facilities we ought to produce two crops of fruit in the time that was necessary to produce one under the old regime of houses and heating, but this cannot be done by those who are afraid to keep their plants growing after the decline of the season. Those, however, who have still to contend with the disadvantages of dung pits, will do well to regulate the temperature so as to avoid weakly growth, and this must also be attended to under any circumstances. Vineries.—Take advantage of fine weather while it lasts for getting the wood of young Vines well ripened: use moderate fires with a free circulation of air, and where the object is to ripen the wood keep the atmosphere as dry as possible. Late Grapes not yet ripe should also be assisted with plenty of fire heat, and a free circulation of air, in order to forward the ripening as much as possible while the weather is favourable. Look at last week's directions, and keep ripe fruit cool with plenty of air, to prevent any injury from damp, and cut out any decaying berries directly they are perceived. Houses in which the wood is thoroughly ripe can hardly be kept too cool, and the ventilators of these should be left open night and day in dry weather. This will prevent the continuance of growth, and is the best means of getting the Vines into a dormant state ready for pruning. The border of the early house should be covered with something to protect it from wet; for although there is no immediate necessity for this it will be better done while the border is in a dry, healthy state.

FLOWER GARDEN AND SHRUBBERIES.

Those who have many scarce plants in the borders, which they intend to pot, must be careful observers of the weather; and to ensure being safe, must cover when there is the slightest appearance of frost. Give careful attention to the young stock, and recollect that sturdy, well-rooted plants are much easier to carry over the winter than large plants with long-jointed soft wood, therefore keep the stock cool and exposed to sun and air as soon as it is well established after shifting into the pots in which it is to be wintered. With good convenience late rooted cuttings may still be potted off; but unless they are very thick in the cutting pots we would prefer wintering them in these to shifting at this season, for they occupy much less space in the cutting pots, and having more space for their roots, they are frequently more healthy and require less attention in winter than those that are potted singly. Square 12-inch wide and 5-inch deep pans are very suitable for wintering cuttings of Verbenas, Lobelias, and other plants which can be kept in a small state. One of these will hold some 20 good plants, and with care, to prevent their being injured by damp, they will winter quite as well treated in this way as if potted singly in 4-inch pots, and a vast quantity may be wintered in a small space. Where things of this kind have to be wintered in cold frames or pits, the plants should be potted singly, as they would be very subject to damp off, despite every care, if placed thickly together in pans, and placed where it may be impossible to give air for weeks together. Let us, however, protest against the barbarous system of wintering bedding stock in such unsuitable places. This practice is generally adopted from some mistaken notion of economy; but if a fair calculation of the time required to attend to plants wintered in this way could be made, and all the losses, &c., taken into account, it would be found to greatly over-balance the trifling cost of fixing a proper heating apparatus and a few bushels of coke or coal annually. To the majority of the parties concerned the outlay would be unworthy of consideration, and would be repaid in one season, such as last, by the saving of labour, &c., and the economising of space which would be effected. Where alterations are projected or in hand, these should be proceeded with in the most expeditious manner. Preparations should be made at once for planting things which it may be intended to procure from the nurseries, for besides that there will be a chance of picking the stock for those who plant early in autumn, there is less risk of failure in planting now than at any other season of the year.

HARDY FRUIT and KITCHEN GARDEN.

Continue to gather Pears and Apples as they become ready, and give careful attention to the store room, which should be kept as cool as possible at this season, with just sufficient top ventilation to carry off the exhalation from the fruit. Some varieties of Pears may be had considerably later in season than their ordinary period of ripening, by allowing them to hang on the trees after the usual time of gathering; but they should be covered with a net, to protect them from birds and to catch any fruit that may fall and prevent their being bruised. If there is not already a good breadth of Cabbage planted out this should be seen to at once, choosing a piece of deep heavily manured land. Also see to planting Cauliflowers where they can be protected from frost, and a bed might be tried under the shelter of a west or south-west wall. We hardly ever fail in wintering a good stock safely this way, but the plants are not allowed to grow too freely in autumn, and are [illegible] planted as often as may be necessary to keep them dwarf and hard, and we have occasionally pulled them up on a fine day in November, and exposed their roots to the sun and air for several hours before replanting them. This checks growth, and prevents the plants being so soft and sappy as if they were allowed to grow unmolested throughout a fine autumn, and with the protection of a mat or a waterproof cloth thrown over them in severe weather, we have found plants, treated in this way, to winter as safely as those under glass, and they often grow more freely after planting out in spring. Lettuce treated in the same way will withstand the severest winters.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending Oct. 4, 1854, as observed at the Horticultural Gardens.

Sept. and Oct.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth. 1 foot deep.	Of the Earth. 2 feet deep.	Wind.	Rain.
Friday 29	7	30.106	30.070	76	37	56.5	56	57	N.E.	[illegible]
Satur. 30	8	30.159	30.134	75	36	55.5	57	58	N.	[illegible]
Sunday 1	9	30.222	30.130	67	41	54.0	56	59	S.E.	[illegible]
Mon.. 2	10	30.073	29.851	74	36	55.0	56	59	S.E.	[illegible]
Tues. 3	11	29.798	29.736	65	31	48.0	56	58	W.	[illegible]
Wed. 4	12	29.856	29.694	62	52	57.0	54	58	S.W.	[illegible]
Thurs. 5	13	29.585	29.510	71	50	60.5	54	57	S.W.	[illegible]
Average.		29.971	29.875	55.2	40.4	55.2	55.6	57.8		[illegible]

Sept. 29—Foggy; very fine throughout.
— 30—Dense fog, with heavy dew; very fine; foggy at night.
Oct. 1—Foggy and drizzly; overcast and fine; foggy.
— 2—Dense fog; very fine; throughout.
— 3—Very fine; slight frost at night.
— 4—Partially overcast; very fine.
— 5—Fine; densely clouded; slight rain.

Mean temperature of the week, 1¾ deg. above the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending Oct. 14, 1854.

Oct.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.
Sunday 8	60.2	41.6	50.9	12	0.63 in	[illegible]
Mon. 9	59.4	43.1	51.2	16	0.52	[illegible]
Tues. 10	61.1	43.4	52.3	13	0.68	[illegible]
Wed. 11	62.0	43.3	52.6	13	0.34	[illegible]
Thurs. 12	59.8	42.5	51.2	15	1.00	[illegible]
Friday 13	59.6	42.6	51.1	14	0.33	[illegible]
Satur. 14	59.1	41.2	50.2	13	0.50	[illegible]

The highest temperature during the above period occurred on the 14th, 1835—therm. 76 deg.; and the lowest on the 11th, 1838—therm. 25 deg.

Notices to Correspondents.

Aspects for Fruit Trees: *Iscoed.* It is impossible to state what would be the proper aspect for Pears, Plums, Apricots, Peaches, Nectarines, and Cherries, for this varies in different parts of the country. A sort may succeed well on an east or west aspect in the south, but which in the north would require a south wall. In some gardens, fruits succeed best on the east aspect; in others adjoining, the same kinds do best on the west. As a general rule, the south aspect should be appropriated to Peaches, Nectarines, Apricots, one or two Cherries and Plums, and some keeping Pears in late situations. Pears and Plums should chiefly occupy the east and west aspects; also some Cherries, and an Apricot for succession. Morello Cherries and Currants are most suitable for a north aspect.

Books: *A Lady.* Dr. Lindley's "School Botany." We believe the fruit of Tacsonia to be uneatable; it is not, however, poisonous.

Diseases: *L R L.* You will find an answer to your question at p. 451, 1854, and also in answers to numerous correspondents in the course of the present summer. *M. J. B.*

Fruits: *J S.* On the south-east aspect you may plant Williams's Bon Chrétien, Marie Louise, Knight's Monarch, and Glout Morceau Pears; and the May Duke and Elton Cherries. On the north-west aspect the Ribston Pippin, Scarlet Nonpareil, two Morello Cherries, and two Orleans Plums.

Gesneras: *R W.* Your letter has been sent to "Alpha," who has instructions to furnish a paper on the subject next week.

Gnats: *R A H.* We will try to ascertain; but for the moment these insects have disappeared here.

McGlashen's Apparatus: *G P.* Apply to Messrs. Young & Co., 19, Great George Street, Westminster, who are Mr. McG.'s London agents.

Names of Fruits: *G W, Rochford.* Pear No. 1 is called Grey Beurré in some parts of the country; it is very different from the Beurré Gris, or Brown Beurré. No. 2, Hessel: 3, [illegible] Chissel, but little known. The Apple No. 1 is Pomme d'[illegible]; the other is not known.—*S M O J P.* 1, 3, Passe Colmar; 2, Knight's Monarch; 4, 9, Beurré Diel; 5, 7, Louise Bonne of Jersey; 8, 11, Winter Nelis; 10, Swan's Egg; 12, [illegible] montel.—*Shem.* The Apple which you have under the name of the Cider fruit is certainly not fit for any other purpose. It resembles a cider Apple called the Fox-whelp.

Names of Plants: We have been so often obliged to refuse [illegible] decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is requested that, in future, not more than four plants may be sent us at one time.—*A Z.* Impatiens glanduligera, a hardy Balsam from the Himalayas. The seeds have, no doubt, been sent from England to Sydney, and thence re-exported. You will find it sow itself in your garden if the situation is [illegible] enough, and it will soon become apparently wild.—*J W.* [illegible] A very large variety of Calystegia pubescens.—*F H S.* A very large Holland form, which is the New Holland form of sepium; we presume the [illegible] particularly handsome.

Pears: *P.* According to a "Tableau Alphabétique et Analytique des Variétés de Poires," by M. Tougard, the Van Marum [illegible] is synonymous with the Triomphe de Hasselt, Calebasse [illegible] strueuse, and Monstrueuse du Nord. It is probably the same as the Calebasse grosse, syn. Calebasse monstre, and Calebasse Caraton, judging from various descriptions; but we have not had an opportunity of comparing the fruit.

Plums: *A B C.* We are unable to give you the comparative merits of the Belgian Purple, De Montfort, and Goliath [illegible] Aunt Ann Plums. As you must remove one of the three [illegible] the wall, the De Montfort, being a very early prolific sort, [illegible] be very well grown as a standard.

The Carob or Caroubа Tree: *J Y.* We should think it would bear a Devonshire winter. It is tender about London. No doubt Olives will live out of doors in that county, against walls, if not in the open ground.

Ward's Cases: *W H Strange.* As you have not sent the insects, we do not know what they are. Tobacco smoke will probably put an end to them.

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures, Linseed Cakes, &c.
WM. INGLIS CARNE, 10, Mark Lane, London.

WHEAT SOWING.—The undersigned beg to call attention to their WHEAT MANURE, which has been successfully used during the last two seasons, and which they are prepared to deliver at 6*l.* per ton, free to Railway.

They are also Sole Agents for the sale of PEAT MOSS CHARCOAL, which is a valuable deodoriser and distributor of ammoniacal matter.—English and Foreign Linseed and Rape Cakes, Guano, Superphosphate of Lime, Salt, Bones, and all other Manures of known value on sale.

Apply to MARK FOTHERGILL & Co., 204, Upper Thames Street.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7*l.* per ton; Superphosphate of Lime, 7*l.*; Sulphuric Acid and Coprolites, 6*l.*

Office, 69, King William Street, City, London.

N B. Genuine Peruvian Guano, guaranteed to contain 16 per cent. of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

THE LONDON MANURE COMPANY beg to call the attention of Agriculturists to their WHEAT and CLOVER MANURES for present use. The London Manure Company also offer Genuine Peruvian Guano, Nitrate of Soda, Concentrated Urate, Superphosphate of Lime, Fishery and other Salts, and all Artificial Manures of value. The London Manure Company guarantee Peruvian Guano and every Manure they supply to be strictly genuine. EDWARD PURSER, Sec.
Bridge Street, Blackfriars.

SEWAGE CHARCOAL MANURE.—This highly fertilising Manure, which is Peat Charcoal completely saturated with London Sewage, will be found most efficient for every species of crop; more especially for Peas, Beans, Turnips, Mangold Wurzel, and other root crops. It will produce a greater return for the outlay than Guano or any other Manure at an equivalent value: it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained at the SEWAGE MANURE WORKS, Stanley Bridge, Fulham, at 4*l.* per ton, and in quantities less than half a ton, at 5*s.* per cwt., for ready money only: and in quantities not less than a ton, will be delivered at the London Termini of the Railroads free of charge for cartage. No charge for sacks.

It may also be had from Messrs. G. GIBBS & Co., 26, Down Street, Piccadilly, Agricultural Seedsmen, Agents for London; and from all the other Agents of the Company.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and dispatch.

Gentlemen desirous of receiving instructions in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

THE PATENT ALKALI COMPANY manufacture on a large scale, at their extensive works in Lancashire, Sulphate of Copper (Blue Vitriol), Soda Ash, and Crystal Soda of first-rate quality, which may be fully depended on for purity. The Company's Purple Brown Metallic Paint is also held in high repute as a pigment for Iron, Roman Cement, &c. &c. Orders, &c., to be addressed to Mr. JOHN A. WEST, Secretary of the Company, 1, New Broad Street, London.

JACKSON'S PATENT PREPARATION FOR THE PRESERVATION OF POTATOES, SEEDS, &c.—This valuable discovery, for which letters patent have been obtained, is the successful result of 14 years' study and experiments in the preservation of vegetable matter. It imparts health and vigour to the Plants and Seeds subjected to its action, and effectually prevents the Potato Disease, the Smut in Wheat, Mildew and Rot, all Fungal Diseases, and the attacks of Insects and Vermin, and further recommends itself to the Farmer, the Planter, and the Public generally, by the extreme simplicity of the mode of its application.

It is sold by all Seedsmen and Chemists, in packets of one, two, three, and four pounds each, with instructions for its use; and parties requiring larger quantities for their own use or for exportation can be supplied on advantageous terms, by addressing Mr. JACKSON, the Patentee, 18, Cannon Street, London Bridge; where the article is always on sale, and the fullest particulars and directions for its use can be obtained.

Extracts from numerous Testimonials in favour of
JACKSON'S PREPARATION.

"Belmont Farm, Eltham, Kent, August 28th, 1854.

"Sir,—I am now about to perform my promise, to let you know how your prepared Potatoes have turned out here. As a practical farmer of some experience I had despaired of finding any remedy for the disease; but I must confess that a stronger proof of the efficacy of your process in Preserving Potatoes, could not have presented itself than I have now to relate. One of the fields of this farm, the property of Mrs. Stanbury, was planted with Regents Potatoes in April last, some of which were prepared by you. The result now is, that the whole of the crop from the unprepared sets is thoroughly diseased and hardly worth the trouble of taking up; while those raised by the side of them from the prepared sets, are not only in a beautiful state of preservation from the disease, but the produce is much greater,—the Potatoes are more numerous than the others; indeed, if there were no such thing as the disease to be feared, it would be worth the trouble and expense of preparing the sets by your process, even for the sake of the improved crops. I shall certainly, for the future, prepare all my Potatoes for seed by your process; and I intend to adopt it for preserving my Wheat from the smut. Any person may see the difference of the prepared and unprepared Potatoes at a glance. You are at liberty to make any use you please of this letter, and I remain, Sir, your obedient Servant,

"G. B. BAXTER.

"To Mr. Jackson, "Late of Ruxley Farm, Kent.
"18, Cannon Street, London Bridge."

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

TO AMATEUR GARDENERS, LOCAL BOARDS OF HEALTH, & SANITARY WORKS

PATENT SLUICE COCKS, Gutta Percha, Combinated ditto, Patent Flexible India Rubber Tubing, and every other Hose for Watering Gardens. The Hydraulic Ram, Fire, Garden, and every other kind of Pump, Hydrants, High Pressure Cocks, and all other articles to be had, Wholesale and Retail, of
FREEMAN ROE, HYDRAULIC ENGINEER,
70, Strand, and Bridgefield, Wandsworth.

HOSE PIPING.—GREAT REDUCTION IN PRICE.

PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense pressure, and much more than leather, vulcanised rubber, or any other hose, and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented inventions, the cost of manufacturing it is now reduced at least 30 per cent. which advantage is offered to the public.

BURGESS AND KEY, 103, Newgate Street, and 52, Little Britain who on application will forward wholesale and retail prices.

CORN CRUSHERS AND CHAFF CUTTERS.—A large display of the best Farm Implements shown in operation. Price Lists sent free on application.
BURGESS AND KEY,
103, Newgate Street, and 52, Little Britain, London.

PUMPS AND HOSE PIPES FOR GARDENS AND LIQUID MANURE.—BURGESS & KEY'S Pumps were highly commended by the Royal Agricultural Society of England at Lincoln. Price Lists sent free.
103, Newgate Street, and 52, Little Britain, London.

CHURNS.—ANTHONY'S PATENT AMERICAN CHURN.—Since 1849 this Churn has obtained all the Prizes awarded by the Royal Agricultural Society of England. At the trial before the Judges it made in 10 minutes 4 lbs. 6 oz. of Butter from 4 quarts of Cream, being 8 oz. more than any of the other Churns from the same quantity and quality of Cream.
103, Newgate Street, London.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.

MESSRS. BURGESS AND KEY, as Mr. PARKES' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.
103, Newgate Street, and 52, Little Britain, London.

WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

	£	s.	d.
Patent Pump	1	15	0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing	2	0	0

Larger sizes if required.

The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,
8, CRESCENT, JEWIN STREET, LONDON.

Every description of Machinery for Raising Water: Fire Engines, &c.

LINSEED AND CORN CRUSHING MILLS.

E. R. AND F. TURNER, St. Peter's Iron Works, Ipswich, have, during the present season, obtained the Prizes of the Royal Agricultural Society at Lincoln, the Bath and West of England Society at Bath, and the Yorkshire Agricultural Society at Ripon, for their celebrated ROLLER MILLS for Crushing Corn, Seeds, &c. These are manufactured of various sizes, particulars of which, with Illustrated Catalogue of Steam Engines, new Prize Chaff Cutter, and a variety of other Implements, manufactured by E. R. & F. TURNER, may be had free on application at the Works, Ipswich, or by Post, inclosing two postage stamps.

M'GLASHEN'S PATENT TRANSPLANTING APPARATUS.

MR. M'GLASHEN, the Inventor of this Apparatus, has to express his regret that delay has hitherto occurred in the execution of orders, from causes over which he had no control. He begs to state that he has now taken entirely into his own hands the Manufacture and Sale of the Apparatus, and that orders will henceforth receive punctual attention.

The Apparatus is suited for Raising and Removing to any distance Trees, Shrubs, and Flowers, of all sizes, with attached Balls of Earth, so that the operation is not only perfectly safe, but does not affect the vigorous growth of the Plants. The use of this Apparatus greatly facilitates planting operations, and saves much labour and expense. The delay that occurred, while to the inventor a cause of regret, afforded him the opportunity of introducing several important improvements, which have served to cheapen the cost of the Apparatus, and increase the facility and security of its use.

Agents will ultimately be appointed throughout the kingdom. In the meantime all orders and other communications are respectfully requested to be addressed to Mr. STEWART M'GLASHEN, Canonmills Bridge, Edinburgh, who will be happy (either personally or by letter) to supply information to Landed Proprietors, Landscape Gardeners, Nurserymen, Foresters, and others.
Canonmills Bridge, Edinburgh, Sept. 1854.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.
PATRON—His Royal Highness PRINCE ALBERT.
PRESIDENT OF COUNCIL—Earl BATHURST.
PRINCIPAL—Rev. J. S. HAYGARTH, M.A.
PROFESSORS, &c.
Chemistry—J. A. C. Voelcker, Ph.D., F.C.S.
Zoology, Geology, and Botany—James Buckman, F.G.S., F.C.S.
Veterinary Medicine and Surgery—G. T. Brown, M.R.C.V.S.
Surveying, Civil Engineering, and Mathematics—F. Armstrong, C.E.
Manager of Farm—G. Austin.

Students are admitted after the summer and winter vacations, also in April and October. The Annual Fees for Boarders vary from 45 to 80 guineas, according to age and other circumstances. The Fee for Out-Students is 40*l.* per annum. The College Course of Lectures and Practical Instruction is complete in one twelvemonth—though a longer Course is recommended. There is a department for general as well as for agricultural purposes. Prospectuses and information can be had on application to the Principal.

COLLEGE OF AGRICULTURE AND CHEMISTRY AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.
Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts, for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

SMITHFIELD CLUB, 1854.

CHRISTMAS FAT CATTLE SHOW.—The Annual Show of Fat Cattle, Sheep, and Pigs, will take place on the 5th, 6th, 7th, and 8th of December 1854, at the Carriage Bazaar, King Street, Portman Square, London.

All Certificates must be returned to the Honorary Secretary on or before Saturday, the 4th NOVEMBER, 1854.

Prize Sheets, and the necessary Printed Forms of Certificates, are now ready, and can be obtained on application to
B. T. BRANDRETH GIBBS, Hon. Sec.
Corner of Half-Moon Street, Piccadilly, London.

READING CATTLE SHOW SOCIETY, 1854.
PATRON—His Royal Highness Prince Albert.
PRESIDENT—The Most Noble the Marquis of Downshire.

The ANNUAL SHOW will be held in the Reading Cattle Market (under cover) on Wednesday and Thursday the 29th and 30th of November. Stock will be conveyed to and from the Show by the Great Western Railway Company at half the usual charges. Members wishing to exhibit must send Certificates, properly filled up, on or before the 28th October, to
Reading, Oct. 7. RUPERT CLARKE, Hon. Sec.

READING POULTRY SHOW, 1854.
The First Exhibition will take place on Wednesday and Thursday, November 29 and 30. Fee, 3s and 1s 6d. per pen. Entries close on Saturday the 28th of October. Prize Lists and Certificates may be had on forwarding two postage stamps, of
Reading, Oct. 7. RUPERT CLARKE, Hon. Sec.

THE SALISBURY AND WESTERN COUNTIES EXHIBITION OF DOMESTIC POULTRY.—The Fourth ANNUAL EXHIBITION will be held on TUESDAY and WEDNESDAY, the 21st and 22d days of November, 1854. Prize Lists, with the Rules and Regulations, can be obtained of the Hon. Secretary, and Subscriptions will be received by Mr EWER, the Treasurer. T. PAIN, Hon. Sec.

THE BIRMINGHAM POULTRY SHOW, 1854.
The SIXTH GREAT ANNUAL EXHIBITION of DOMESTIC POULTRY will be held in BINGLEY HALL, on the 12th, 13th, 14th, and 15th of DECEMBER next. Copies of the Prize Lists and Certificates of entry may be had on application to the Secretary.

In addition to the prizes announced in the list dated the 23d of February last, the General Purposes Committee of the Council have resolved to offer First Prizes of 2*l.*, and second Prizes of 1*l.*, for Single Cock Birds of any age, of all the following varieties, viz.: Dorking, Spanish, Cochin China, Bramah Pootra, Pencilled Hamburgh, Spangled Hamburgh, Game, and Polish; and that the same shall be entered under Letters A to H on the ordinary certificates, and exhibited separately.

Seven Silver Vases, of the value of six guineas each, will also be awarded, instead of money prizes, for the best pen of Pencilled Hamburgh, Spangled Hamburgh, Polish, Spanish, Dorking, Cochin China, and Game Fowls.

First, Second, and Third Prizes of 3*l.*, 2*l.*, and 1*l.* respectively, are offered in all the Classes for Fowls, as well as for Turkeys, Ducks, and Geese. Liberal Prizes will also be awarded to good specimens shown by Cottagers, whose entries must be made on a form of certificate different from that used for the general classes.

The ENTRIES CLOSE on SATURDAY, the 11th of November.
JOHN MORGAN, Jun., Secretary.
Offices, 38, Bennett's Hill, Birmingham, Oct. 7, 1854.

THE BIRMINGHAM CATTLE AND POULTRY SHOW, 1854.—The Sixth Great Annual Exhibition of STOCK and DOMESTIC POULTRY will be held in BINGLEY HALL, on the 12th, 13th, 14th, and 15th of December next. The PRIZE LISTS and Certificates of Entry may be obtained on application to the Secretary. The Entries close on Saturday, November 11. JOHN MORGAN, Jun., Secretary.
Offices, 38, Bennett's Hill, Birmingham.

The Agricultural Gazette.

SATURDAY, OCTOBER 7, 1854.

MEETINGS FOR THE ENSUING WEEK.
THURSDAY, October 12—Agricultural Imp. Society of Ireland.

A GOOD deal has of late been published in our columns on the Finger and Toe disease. We have had letters describing the disappointment of farmers who have sown Swede seed, which has produced Rape above ground, and forked warty fibrous roots below; and others which have asserted that the same seed has in one place behaved itself according to its character given by the seedsman, and elsewhere has behaved itself according to the altogether different character which, in the experience of his customers, it has assumed; and lastly Prof. BUCKMAN has described his experiments on the tendency of certain cultivated plants to resume their natural deficiency of character when neglected by the cultivator.

Mr. BUCKMAN seems to think that his experiments on the assumption of the cultivated character by the wild plant, and *vice versâ*, throw light on the finger and toe disease. But this "anbury," or finger and toe development, is a *disease*, and not the mere modified character of a healthy

plant. None that have ever seen or *smelt* a sample of Turnips thus affected but must admit that there is some constitutional as well as local *attack* from which the roots are suffering: and a mere tendency towards the original character of the wild plant will not account for the appearances.

What is to account for them has not yet been very well made out. That the disease *may* assume a hereditary tendency we would not deny—though our own opinion is that it is a result of the condition of soil and perhaps of climate under which the plant is placed, rather than of the character of seed from which it has sprung.

It is well to avoid an indiscriminate style of blame or condemnation, and seedsmen will be much more likely to satisfy their customers when the real cases of dishonesty which happen in that trade, as in others, are separated and dealt with separately—not as characteristic of the whole body, but as characteristic only of those among them whom they as well as we would gladly have weeded out. That there is a possibility of erring on the side of too great severity is obvious from a case to which our attention has been called by a known correspondent, on whom we can place the fullest reliance—a case in which damages were given against one of the most respectable seedsmen in Dublin—for selling Rape instead of Swedes—who has been thus unfairly dealt with. We do not go into the particulars of the case, which, however, may hereafter perhaps be done. The subject is certainly one deserving of the attention of our readers, and if any one can explain the circumstances under which a Turnip shall be sure to run to stem and seed above ground, or to forked roots below, he will do good service both to seedsmen and their customers.

It is not of the smallest service to any one to say, as we did at page 553, that good samples of good sorts of seed Wheat should be selected—that the soil should be rightly prepared for its reception—that vigorous growth during the early stages of the crop should be ensured—that the right proportioning of the seed to the surface should be observed—and so on. What the cultivator desires to know is what *are* the right sorts to be selected—*where* good samples may be had—*how* the soil should be prepared—and in what quantity the seed should be sown. It is quantitative, not mere qualitative, information that is needed; and this, on one or two of the points here insisted on, we will endeavour to give.

And first as to the VARIETIES OF WHEAT best deserving cultivation. Information has to some extent been already given in our paper; and the Bristol Red of General ARBUTHNOT's extraordinary field, the Browick Red of Mr. PAWLETT's experiments, have been of course much inquired for. If any one asks where good samples are to be obtained we must, of course, refer him to our advertisement columns for information. All we can do is to name good sorts, leaving those who have them to find out their customers in the ordinary way. Perhaps the most likely way to serve our readers just at present will be to give them an extract from Mr. HAXTON's article on Wheat in the forthcoming number of BLACKIE's "Cyclopædia of Agriculture." We shall select his notices of the Chiddam, Fenton, HUNTER's, Talavera, and Red Straw White varieties of Wheat, and of the Spalding and PIPER's Thickset red varieties—the Bristol Red and Browick Red our readers are already well acquainted with. The bearded varieties we do not name—they are all, without exception, within our knowledge, coarse in quality, however productive they may be in quantity.

WHITE WHEATS: 1. *Chiddam Wheat.*—This is an old and highly esteemed English variety of white Wheat, and is very generally cultivated in the finer Wheat districts of that country. It is a free grower, tall strawed, fine square ear, singularly free from awns, grain round, fair but starchy, and flour a little soft. It is remarkably well adapted for soft easy soils in good condition, as it ripens early, and is not liable to lodge or to become mildewed. Weight per bushel seldom under 61 lbs. even in wet years, and as high as 66 and 67 lbs. in dry summers. When cultivated in Scotland the seed requires to be changed every two years from the south of England, otherwise deterioration rapidly ensues.

2. *Fenton Wheat.*—In the summer of 1835 the late Mr. HOPE, of Fenton Barns, East Lothian, noticed three ears of Wheat growing from one root in the centre of a quarry on his farm. This quarry is composed of columnar basalt, and at the time the three ears of Wheat were discovered there was a large quantity of debris in the centre, from which these had sprung. The present Mr. GEORGE HOPE was with his father when the plant of Wheat was first noticed, and he remarked that it could not well have long straw growing in such a place, and very likely was only HUNTER's Wheat accidentally dropped there. Under this impression he very reluctantly, but by his father's desire, pulled the three ears of Wheat when ripe, and dibbled out the produce year after year. When enabled to sow it in quantities, and to compare it with HUNTER's Wheat, it was found to be obviously distinct from it, and also from any other sort Mr. HOPE was acquainted with. He describes it as remarkably short and stiff in the straw, and from its unequal length a sheaf is generally a mass of ears from the band upwards. Although to appearance there is little straw, yet when weighed there is less difference betwixt it and longer strawed varieties than might be supposed, in consequence of its extreme density; and in comparative trials with HUNTER's Wheat, Mr. HOPE always found the new variety to yield as much weight of straw, though greatly less in bulk. For some years at first the quality was inferior to HUNTER's, but latterly it has become far superior to it, and frequently the best samples seen in Haddington market are of Fenton Wheats. The only variety of Wheat Mr. HOPE has ever had to surpass Fenton in point of yield of grain is the SPALDING Red, but the money-value of the former was at least equal to the latter. The farm of Fenton Barns is generally of excellent quality, composed of rich loamy clay derived from basaltic and porphyritic trap, and being in a high state of cultivation, the short, solid, firm straw of this new variety has given it a decided superiority over all other sorts. It is said that Fenton Wheat is apt to become mildewed on low-lying soft soils; but while this is true to a certain extent, it is an objection to which the long-strawed sorts are still more open. Fenton Wheat is, however, principally adapted for sowing on naturally rich or highly farmed land, and is not profitable when grown on soils where there is any difficulty in obtaining bulk of straw. The ear of this variety is of moderate length, but very square and evenly shaped; grain round, plump, and of a pale white colour. It weighs well in the bushel, and gives a great yield in proportion to the bulk of straw.

3. *Hunter's Wheat.*—This is one of the oldest and most esteemed varieties in Scotland. It was discovered about half a century ago by the late Mr. HUNTER, Tynefield, near Dunbar, East Lothian, by the roadside on Coldingham Muir, Berwickshire. It is still largely cultivated in most of the eastern counties of Scotland, especially East Lothian, Fife, and Forfar. It has stood its ground against many newer varieties, which, although more prolific on their first introduction, have been found to deteriorate so much that their cultivation gradually lessened, and that of HUNTER's Wheat increased. It is remarkably well suited to medium and inferior soils, being hardy and tillering very freely in spring, and continuing its growth steadily till autumn. In these respects it has been observed that while many of the newer and finer sorts of Wheat look better in winter and spring, HUNTER's will, year after year, bear comparison with them, either in the sheaf, stack, sack, flour-mill, or baker's shelf. It is a great favourite with flour-millers and bakers, and its name to them is a sufficient recommendation to purchase, even although the sample may want the fine colour of the white sorts. Its physiological characteristics are medium length of straw and ear, the latter thickish in the middle, tapering to the neck and point, a little awned, and slightly running to a point; grain of a brownish colour, a little elongated in shape, but of a fine, hard, close, flinty texture, and weighing well in the bushel—sometimes as high as 66 lbs. when grown on hard land. It is fully later in coming to maturity than most of the white Wheats, and it should never be sown on fields surrounded by woods, as in such circumstances it usually suffers much from the attacks of fly. Neither should it be sown on rich alluvial soils in high condition, as it will grow too bulky, and go down before the grain is perfected. It must be confessed that HUNTER's Wheat is neither so pure or of so good quality as it used to be, and considering the very long period it continued to maintain its high character unimpaired, this adulteration and deterioration are no doubt to be attributed to the introduction of so many new sorts, and consequent neglect of the older variety.

4. *Morton's Red Strawed White Wheat.*—This variety was introduced by Mr. JOHN MORTON, late of Whitfield Experimental Farm, Gloucestershire. Mr. MORTON originally got two ears of Wheat from the Rev. Mr. HEARN, Hatford, Berkshire, both of which were very splendid, and contained upwards of 80 grains each. These were dibbled separately, 3 inches apart, in 6-inch rows. The Red Straw White Wheat produced a fine crop, and the second year there was as much as planted half an acre. The produce of the other ear was blighted and worthless. The name of Red Straw White Wheat was given to it by Mr. MORTON, because the upper part of the stem assumes a purple or reddish colour before the grain becomes ripe. The characteristics of this variety are strong, tall, reedy straw, not apt to lodge; square, close ear of more than average length, and not liable to shed its seeds in high winds; white, round, plump grain when well grown, but open in the breast, and coarse in unfavourable seasons, or when cultivated on peaty soils. It is remarkably well adapted for all soils usually deficient in yield of straw. It naturally inclines to grow thin on the ground, and should therefore be sown a little thickly. When growing, this Wheat is easily distinguished from other sorts by its peculiarly dark green colour, and when nearly ripe by the reddish colour of the stem immediately below the ear. It is not so liable to mildew as most of the other white varieties of Wheat, but owing to its great length of straw it is not so well adapted for soft or peaty soils as the shorter-strawed kinds; not, however, so much on account of any deficiency of yield as from want of quality.

5. *Talavera (Bellevue) Wheat.*—Selected by Colonel LE COUTEUR, Bellevue Villa, Jersey, from a field of the common Talavera, and first offered to the public in the autumn of 1838. LAWSON describes it as a hardy sort; remarkably broad upright foliage, often yellowish in spring, but recovers rapidly afterwards; straw rather short and flexible, and brittle when overripe; ears loose, long, and tapering to a point; grain large, oblong, thin skinned, very white, and fine sample. Talavera Wheat is best adapted for sowing in spring, on black land or easy soils in good order; but is not a safe variety to sow on clay soils. When grown as a winter Wheat, it is rather short-strawed; but if sown in spring, the straw is generally sufficiently long to give a good bulk. Notwithstanding the beauty of the sample, it seldom weighs within 2 lbs. per bushel of what its appearance would indicate. It is probably the best spring Wheat in cultivation for that description of soils mentioned above.

RED WHEATS. 6. *Spalding Prolific Red Wheat.*—This variety is the newest and best of all the red Wheats. No authentic account of its origin has yet been made public. From its name and character there is reason to suppose that it is originally from Lincolnshire, upon the fenny land of which immense crops of it are grown. The straw is remarkably tall, strong and stiff and not easily laid; ear long, square and free from awn; grain round, plump, and of a yellowish colour; yields remarkably well, and weighs well in the bushel. It is, however, a soft Wheat, and can only be sparingly used as a mixture with more flinty Wheats, when the flour is intended for the finer purposes of the baker. SPALDING Wheat is well adapted for clay soils and for soft damp soils situated in a Wheat climate. It is a winter Wheat, but has been found to answer well on the eastern coast of Scotland when sown in spring. On the clay soils of the eastern district of Fifeshire it has been known repeatedly to produce eight quarters per acre. Sown, however, along with the old white Irish on a light trap soil, the latter invariably beat SPALDING by fully 4 bushels per acre, while both were always superior to HUNTER's variety.

7. *Piper's Thickset.*—Of this Mr. PIPER himself has given us the following account:—"I found a remarkable ear in my field 10 years ago, and I cultivated it till I got about 40 acres. I then offered it to the public, more on account of its great yield than of its quality; though I still think it is better for the miller than the average of red Wheat. It was then, and, perhaps, is now, the shortest and stiffest-strawed Wheat in England. It is very thin-skinned, the bran from it being very light. It is more particularly adapted for good land, and hollow-bottom or meadow soils, where the crop is likely to be lodged or laid. In several instances it has grown 60 bushels per statute acre; but the farmers do not now grow it generally, as it does not grow straw enough to please them; and (which is certainly a fault) the ears are apt to break off at harvest time, if it is not cut early, though I do not know why farmers should not attend to their business as well as other people, and cut and cart it in proper time."

It would be easy to extend this list to any length, but we do not add any other detailed descriptive notices. We may, however, mention as an addition to the white varieties, that Mr. HAXTON mentions a sort, which he calls the Old White Irish, as superior to many, both red and white varieties, in productiveness and in quality. We add of course that glad as we should be to assist our correspondents, we really cannot undertake the business of a seedsman, and that those having varieties of Wheat for sale must make it known by advertisement in the ordinary way.

THE PRINCE HALL ESTATE, DARTMOOR.

I HAD much pleasure in walking over Prince Hall Estate on the 8th inst. It is six years since I was there before. The change which it has undergone in this period is most wonderful. The whole surface was then covered with large blocks of granite, peat holes filled with water, and the only plants were Heaths and a few rough Grasses of the Carex family. All this has now disappeared, and in its place there is rich and luxuriant pasture in every inclosure, and the fields are covered with sheep and oxen grazing on them.

All the blocks of granite have been removed; those that were near the Dart have been hauled and placed along the side of the river, where they present rather a peculiar appearance; here they are placed close together, occupying a space of from 20 to 30 feet in width, closely covering the whole surface, and in some places they are piled on the top of each other; where it was too far to move these large stones to the river they were carried to build walls around the fields. These walls are of the most astonishing dimensions. some of them I found to be 6 feet wide at the bottom, 4½ feet wide at the top, and 6½ feet in height. The materials of which they are built are large blocks of granite; many of them are 4, 5, 6, and 7 feet long, 2½ and 4 feet wide, and 1 to 2 feet in thickness, forming a solid compact piece of excellent mason work; these walls were built of these dimensions merely to get rid of the blocks of granite which were so abundant on the ground. The cost of building these walls with such large stones was from 32*s.* to 48*s.* per chain in length; the labour of lifting these great blocks out of the ground and breaking them to such a size as to be rolled on a low four-wheeled truck was very great; in some instances where the blocks were very large and abundant the gunpowder used to blast them cost 10*l.* per acre.

All the holes in the surface have been filled up—the land levelled, drained, and trenched, or trench-ploughed to the depth of from 12 to 18 inches; and the soil,

instead of presenting the dead black appearance of the peat, has now a dark brownish grey colour; where it is under cultivation all the natural plants have disappeared and all the land is laid down to pasture, except three fields which were in Turnips and Rape.

Where the land was being trenched the black peaty soil on the surface was carefully intermixed with the decomposed granitic gravel. After this the land was well cultivated, manured with guano, and it has produced in most cases two crops of roots and one of Oats, with which Grass seeds were sown for permanent pasture, and the land has been pastured by sheep and beasts ever since it has been laid down. It is Mr. Fowler's intention to let it remain in pasture as long as it will produce good keep for sheep and stock, which I have no doubt will be the case for many years to come.

The Clover and Italian Rye-grass sown last spring is now being cut the third time; it is a very close thick crop; the red Clover is in blossom, about 18 inches high, the Italian Rye-grass about 2½ feet high, and the soil covered with white Clover. Mr. Fowler informed us that this crop has kept five cows for 20 weeks per acre. The one-year, two-year, and three-year old pasture presents a thick, close covering of fine Grass, and the quantity of white Clover amongst it shows the quality of the herbage at this season of the year, and the quantity over the whole field is most abundant, although the fields are covered with sheep and oxen; I have not seen such pasture in any part of the country.

The cause of this rich luxuriant pasture is to be sought for in the perfect drainage of the land, and the intimate mixture of the peaty surface with the subsoil. From the nature of the various mineral matters which we have seen the granitic gravel is composed of, we may infer it has been the means of hastening the decomposition of the peaty soil (the humus of the French), thus giving nourishment to the roots of the Grasses; and the heavy dews and the mildness of this climate (for its elevation) may be the cause of the rich luxuriant pasture on this estate, surrounded, as it is, on every side by the barrenness of Dartmoor.

The estate has been perfectly drained, all the blocks of granite have been removed out of the soil, and carried off the fields; the land has been either trenched or trench-ploughed, and well cultivated and manured, producing excellent crops of Turnips and Oats, and is now laid down in permanent Grasses. Roads have been made through the estate, the farm-buildings and six large commodious cottages have been erected, and a large addition to the Hall has been made; all this has been done by the energy and ability of Mr. Fowler, in the short space of between three and four years. The result of this is most satisfactory, as it shows what the whole of Dartmoor may be brought to produce.

From Mr. Fowler's we went to examine the spade-farming at Princetown by the convicts. The plan which was adopted by Mr. Fowler is being carried out here, and report says that the authorities are indebted to Mr. Fowler for directing the mode of proceeding in bringing the moor in their neighbourhood into cultivation. We saw 250 of the convicts at work, trenching over the land about 16 inches deep, and lifting up the stones and laying them on the surface of the trenched land; the stones were small in comparison with those lifted by Mr. Fowler, none of them requiring to be blasted by gunpowder, and two or three men could easily roll over the largest of them. There is a large piece of ground before the workmen, perhaps 50 or 60 acres, which has already been trenched this year.

The ground near the prison (which had been previously cleared of stones, drained, and trenched) is now chiefly in root crop; that is, about 2 acres of it in Flax (which is short and not a good crop), 27 acres of Swedes and Mangolds, 7 acres of yellow Turnips, and 6 acres of Altringham Carrots. The only manure which has been used in producing the crops on these 42 acres is that from the privies in the prison, which is carefully collected, mixed with peat earth, and properly applied in the drills of the crop. The roots are a most splendid crop, many of the Swedes I found to be 8 inches in diameter; they are regularly planted over the field, and seem to be all of the same size. The seeds were sowed by hand, and are all at equal distances in straight rows, 27 inches apart, and in the rows the plants are 14 inches apart; this crop will be considerably above 20 tons of bulbs per acre. The Turnips, Swedes, and Mangolds are for food for the cows; the Carrots to be used in the kitchen on certain days for the table of the convicts.

There are some fields of Oats and Barley as food for the pigs and fodder for the cows; a field of Oats, not nearly ripe, but which they were mowing by the advice of Mr. Fowler, to be made into fodder for their stock; there is a pack of 30 cows to supply milk for the establishment. There were a number of men hauling a cart loaded with Barley from the field, but the grain is very light, scarcely anything but husks; this climate is not fit to bring Barley to maturity. Princetown is 1750 feet above the level of the sea. The farm buildings are on a good plan, and convenient. They were all built by convicts, and they present a specimen of excellent workmanship. *J. M.*

[We add to the above the report of Prince Hall estate, drawn up for Mr. Fowler, when he purchased it in 1847.]

This property is bounded on the north by the road leading from the Two-bridges to Ashburton, on the west by the fields belonging to the proprietor of the Two-bridges, on the south by the western branch of the river Dart, and on the east by the Cherry brook—a tributary stream to the Dart. The geological formation of this property is granite, formed of large crystals of felspar, imbedded in a ground compound of quartz and felspar intimately blended, having a strong decomposing tendency; there is a very small portion of mica in it, which is generally white, and, being in minute particles, it is scarcely distinguishable. This granite may be called porphyritic, as the felspar crystals are large and well defined. The body in which they are imbedded is friable, and falls to pieces. This liability to decompose extends to a considerable depth in some places. When your buildings were erected, the whole mass was easily excavated; it had the appearance of decomposing granite before it was moved, but when excavated it formed a fine angular gravel, with large rocks of granite fit for building amongst it. The cause of this decomposition may be the influence of the atmosphere on the potash in the felspar, and on the iron interposed between the quartz and felspar. When the decomposition of the felspar is complete, china clay is formed, and the surface is a cold wet clayey soil, but on this part of Dartmoor the disintegration has only effected a separation of the materials which compose the granite, and a partial decomposition of the felspar and the iron. De la Beche calculates the granites of Devon, in which large crystals of felspar are disseminated, assuming the rock to be formed of 3-6ths of felspar, 2-6ths of quartz, and 1-6th of mica would be composed of

73.04 parts of silica	0.44 lime
18.83 of alumina	1.73 oxide of iron
8.51 of potash	[illegible] oxide of manganese
0.83 of magnesia	0.18 fluric acid.

The blocks of granite which are lying on the surface are formed from the decomposition of the softer parts, leaving the harder parts in immense irregular blocks, sometimes partly imbedded in the disintegrated mass, and sometimes these blocks rest on each other, forming tors, the softer parts having been washed away.

In most of the fields of Prince Hall estate, large blocks of granite appear partly above the surface, but particularly in two fields near the bridge they are lying on the surface in such abundance and so large, that it would be fruitless to attempt to clear them off the surface; there may be 50 or 60 acres so covered with these large granite blocks, so close together that it is frequently difficult to pass between them; but there is good sweet pasture for sheep between those that are further apart. Most of this estate is composed of this decomposing granite to a considerable depth, with hard blocks partly imbedded and partly above the surface. The whole of this friable mass is so porous as readily to let the rain water descend perpendicularly till it meets the solid granite, over which it runs to the lowest level. In this decomposed mass all the materials of the granite are in their natural position, but devoid of any adhesive property. When the rain water descends through this loose subsoil, and meets with solid granite, it is discharged on a level surface; peat is formed to a considerable depth over the level, and even when the declivity is not great, peat is formed over the whole of the elevated part of Dartmoor to a greater or less depth. On the lower parts of Dartmoor there is no peat over the decomposed ground, but as we ascend from Moreton Hampstead the peaty surface begins and increases as we ascend to the highest point. The growth of peat is owing to a cold, humid atmosphere, and stagnant water; and these elements increase as we ascend.

When the land is perfectly drained, and the peaty surface well incorporated with the upper part of the decomposed granite, it forms a good productive soil, and when the elevation is not above 500 or 600 feet it produces and ripens good crops of Wheat, Barley, Potatoes, and Turnips, as about Moreton Hampstead. The fertility of this soil is increased as the decomposition becomes more perfect, and its natural tendency is rapidly increased by the mineral means used in the cultivation of the arable land, incorporating the peat with the subsoil, so that a fresh surface of the mineral and vegetable matter is exposed to the oxygen of the atmosphere, which acts more readily on the potash and iron, and thus effects a more perfect decomposition.

The climate of Dartmoor is mild—very humid—strong heavy dews at night, and the number of rainy days averages 185. The mean temperature of Prince Hall may be about 48°, and the fall of rain averages 36 inches per annum. The elevation of Prince Hall is between 1100 and 1200 feet above the level of the sea.

The soil being friable and porous this want of adhesiveness (which cannot be supplied to it artificially, because there is no clay within reach) is made up by the humidity of the atmosphere, giving it a weekly supply of rain and a nightly supply of dew.

This soil is well fitted for the production of Turnips and Potatoes and other roots, as they require a friable soil well pulverised, and a large supply of moisture during the months of June, July, and August; there can, therefore, be no difficulty in getting large crops of these on any part of your estate, but although a mild, humid atmosphere, is well calculated for growth of plants, and that large crops of Oats, and even of Wheat, have been produced on some of the cultivated parts of the moor; yet, as it requires dry, warm weather, with much sun during the months of June, July, and August, to ripen the grain, and as this is seldom the case on any part of Dartmoor, hence the failure of those who have attempted to produce Wheat, Barley, or Oats, except in such dry seasons as the last.

These peculiar circumstances must guide you in the cultivation of your land. The production of Turnips, Swedes, Mangold, Cabbage, Carrots, and Potatoes, is the principal object you ought to aim at. These will prepare the land to be laid down to pasture, and as the granite soil of Dartmoor is said to produce rich pasture for feeding stock, it ought to be your first object to get the whole laid down in clean healthy state for pasture. With respect to the cultivation of grain crops, the only one which you can attempt, with any prospect of profit, is the Oat; but as the end of autumn is generally very wet on the moor, you should make it a point never to be deviated from, to get the whole of your Oat crop cut and carried by the middle of August, for although the crop may not be nearly ripe, it will make excellent fodder for your stock during winter, when cut into chaff and given to the beasts or sheep when consuming the roots.

Prince Hall estate consists of about 400 acres, it is partly enclosed by stone walls, about 30 acres have been partially cultivated, the remainder is in a state of nature. The whole of the land drains into the Dart on the south side of the estate; over the greater part of this land there is a thin surface of peat, from 3 to 6 or 8 inches deep, except where there are hollows; in these cases the water which runs out of the higher ground produces peat of greater thickness, and in one instance by the river, on the south-west side of the property, the peat is so deep as to be cut out and dried, and used as fuel. This part is the worst on the estate, as it is too deep to get through it to the decomposed granite below; for wherever you can plough or trench down through the peat, and mix it with the decomposed granite this mixture effects a rapid decomposition of the vegetable, of which the peat is composed, and it then produces the most luxuriant vegetation. The mode of cultivation best fitted to bring the soil of Dartmoor from its natural state to be productive and profitable, is first of all to perfectly drain the whole, then to clear the ground of the large granite blocks, and then to plough or trench the whole to the depth of 8 to 12 inches, so as to get as much in depth of the decomposing granite as you have of the depth of the peaty soil; this should be done during the summer; then, next spring, as early as the end of February or 1st of March, sow it with Oats, and apply say 4 cwt. of guano; this may produce a good crop of Oat straw, to be mown and made into fodder in August at the latest. After the Oats have been carried, then cross-plough the land as deep as you can, and by the spring the peaty matter will be much decomposed, and it will be easily cultivated for a Turnip crop, and there will be no difficulty in getting a good crop if you apply 20s. worth of guano. When the Turnips have either been eaten on the ground or carted off, the land should be limed, say 100 bushels per acre, and ploughed before winter, and in the spring you should put on all the dung you have for the next crop, which should be Mangold, Swedes, Carrots, or Potatoes; and by the cultivation of this crop the land will be in excellent order, and it should be sown in the spring of next year with Oats and those Grass seeds which will produce the most productive permanent pasture on such land (natural to dry friable siliceous soil in a moist climate). (Messrs. Drummonds of Stirling can furnish you with the necessary kind and quantity.) In this state the land should be pastured by sheep and by your whole stock, and it should remain in pasture, breaking up only the fields which produce little good Grass.

The expense of bringing this estate into cultivation, and of thus permanently improving it, will amount to a sum greater than the purchase money. It has been stated that there are 50 or 60 acres on which the blocks of granite are so numerous as to nearly cover the whole surface, which is to remain as it is, and there is about 60 acres of peat on the south-west side near the moor, which is also to remain; to these two lots may be added another more to the north-east side, over which the blocks of granite are so abundant that it would be advisable either to blast it or to let it remain as it is; this may be about 50 acres, so that there will be the remainder to act upon.

Of this, I believe there is about 200 acres that will require draining, which may cost 4*l*. per acre	£800
There may be 200 acres over which large blocks of granite are spread, which may cost 20*s*. per acre to break them ...	200
	£1000
Rolling and depositing stones on the river, or for building shelter walls around the fields, say 15*s*. per acre ...	150
Building division or shelter walls, say 6 feet wide at the bottom, 4 feet wide at the top, and 6 feet high, say 6*s*. for every 10 acres, for 200 acres	120
	£1270
The expense of building your barn, root house, boxes for your beasts, sheep, and pigs, dung house and cart sheds	1500
Thus the expenses of permanently improving the land and erecting the necessary buildings may cost ...	2770

But besides this there is the expense of your working horses and implements, and the labour of cultivating the land till you get the whole laid down to permanent pasture, which may take you two, four, or six years to complete this, according to the amount of labour you can bring to bear on this mode of cultivation.

The cost of the horses and implements may be equal to	£230
And the yearly labour and manure may cost you per year for four years	450
Thus a capital of	3450

will be required to do this. The increased produce of the land after it has been so improved will pay a good per centage on this expenditure over and above the original rent, which I believe was about 2*s*. 6*d*. per acre. *J. M.*

RAPE CAKE FOR FEEDING.

(Concluded from p. 635.)

I now proceed to notice the doings of my fattening cattle under similar treatment. These will appear poor in comparison with those of the milch cow, though in comparison with other feeders, I think I may not appear to disadvantage. I have at times, and for a lengthened period, succeeded in effecting an average increase of 16 to 18 lbs. per week, though I cannot pretend to an equal average gain on the whole of my feeding stock. From a computation which I submitted to your readers in the *Gazette* of June 3 (No. 22), it appears that the whole of the gain is to useful material, and that beyond this there is an additional gain of internal fat, of 3 to 3½ lbs. per week, which occurs to the displacement of material in the process of evacuation. I see no reason to alter my views, or to doubt the correctness of this estimate. Basing my calculations on these data, and taking a favourable view of the progress of fattening cattle, I assume a gain of useful vendible material of 3 lbs. per day, or 21 lbs. per week. From observation on the habits of milch cows (which, on their yield of milk being diminished, and with a continuance of the same food, begin to gain in weight and condition), I am disposed to apportion a gain in flesh and fat somewhat in like ratio with what is shown in the casein, butter, and sugar of milk. I give this as conjectural, and invite the attention of those who make physiology their study to the subject. The analysis of the chemist on the excrements, repeated under the varying circumstances of yield of milk, and a gain of weight, would tend much to clear up a question of importance, and to which little attention has hitherto been given.

The gain of weight may then be assumed to consist of fat, and fat mixed with flesh	.75
Fibrine, .52; water with fibrine, 1.73 lb.	2.25
Gain per animal per day	3.00 lbs.

The gain in the fibrine of the flesh will represent the albumen of 1.76 lb. or not quite 2 lbs. of Rape-cake. I have stated that a number of milch cows, under observation from 16 to 33 weeks, fully maintained their condition, besides giving 14 quarts of milk per day, the proportion of casein in this milk is 1.68, and will represent the albumen of 5.70 lbs. of Rape-cake. Whilst in the process of fattening, and on like treatment, only .52 lb., or little more than ½ lb. of fibrine per day, are shown as gain, and which will represent the albumen of 1.76 lb. of Rape-cake. It is clear that the excrement of the fattening cattle will be richer and more valuable than that of the milker, yet it should be borne in mind that the elements of food obtain their highest value when adapted for the use of man. A pound of beef, reckoned as dry material, will cost 9*d*., a pound of milk reckoned as dry will cost 1*s*., when new milk sells for 2*d*. per quart, at which price it enters largely into consumption for food, whilst as manure their value will be less than a halfpenny per pound. It is then obviously the interest of the farmer or feeder to convert as much of his material as possible into food for man, and to increase the quantity rather than enrich the quality of his manure.

In the extensive district of Craven, in Yorkshire, which is in permanent Grass, it is quite customary to supply cattle during winter with hay and water only. It is found that with 20 to 24 lbs. per day, according to their size, full grown cattle for store purposes will

fully maintain their condition. With a yield of milk, 14 quarts per day, it would require 20 lbs. of hay, in addition to supplying the due proportion of casein, making together upwards of 40 lbs. per day, a quantity you could not induce a cow to consume. I have seen it stated, as the result of experiment, that 120 lbs. of Swedish Turnips per day are required to maintain the condition of an animal. If we add to this 36 lbs. to furnish the supply of albumen for the gain of .52 fibrine in fattening, it will make 156 lbs. per day, which is about the quantity usually consumed by fattening cattle. This seems to corroborate my apportionment of fibrine to fat, &c., in feeding. To supply a full yield of milk with the due proportion of casein would require in addition 112 lbs., making 232 lbs. per day. Though a cow might probably be induced to consume this quantity of Turnips, yet from the excess of water (near 100 lbs. per day more than is required) the quantity of milk would be increased, while its quality would be proportionately reduced, and its flavour would be disagreeable. From what I have stated, it appears plain that food, rich in albumen, has a high value for the production of milk. I here give analyses of those materials most commonly in use, made by Professor Anderson, and published in the Journal of the Royal Highland Society :—

	Linseed Cake.	Rape Cake	Beans.	Bran.
Water	12.44	10.68	15.84	12.85
Oil	12.79	11.10	1.59	5.56
Albumen	27.69	29.58	24.70	13.80
Ash	6 13	7.79	3 36	6.11
Other constituents.	40.95	40.90	54.51	61.68
	100.00	100.00	100.00	100.00
Phosphate of lime	2.73	3.87	.49	...
Phosphoric acid ...	.55	.39	.46	3.00

Those who attend to the teaching of chemistry will give the first place to Rape-cake. It is the richest in albumen, and also in phosphate of lime—both essential components of milk. It will also appear plain that more of food rich in albumen is required for the production of milk than for fattening; the proportion for a full yield of milk being 1·68 lbs. per day casein, which requires 5·70 lbs. Rape-cake; whilst for fattening, only ·52 lbs. fibrine, which requires 1·76 lbs. Rape-cake: but this is not the only difference. In the process of milking there is a continual drain on the albumen of the food, whilst in that of fattening the tendency is to repletion of the fibrine or flesh; when this has acquired its full development, no portion of the albumen of the food will be retained by assimilation in increase of fibrine; the requirements of albuminous matter in food will then be limited to what is requisite for the maintenance of the flesh. A comparison of the two processes of producing milk, and of fattening, show the remarkable result that by the former, though at a somewhat greater expense of food, you may provide three times the amount of nutriment fitted for the use of man as by the latter. As flesh contains fully three-fourths of water in its composition, if you carry out the like proportion in the increase by each process, the result by fattening would show a gain of 9 lbs. per day, or 63 lbs. per week, an amount it seems impossible to attain.

Perhaps no agricultural subject has excited more attention and discussion than the qualities and value of materials for food. Boussingault and other celebrated writers have published tables of the theoretical values of different materials derived solely from their proportion of nitrogen, giving the highest value to such as contain the greatest per centage of this element. Consideration will, however, teach that highly nitrogenous food has a greater value for special or particular than for general purposes. If you examine the composition of milk, taken as dry material, it has the highest proportion, nearly 40 per cent., of nitrogenous compounds; yet as food for building up the frames of young animals, neither experience nor science has been able to devise any substitute of equal efficacy. I have shown, too, that food rich in albumen has a special value for the production of milk; it has likewise a special value in making good the deficiency of materials of food which do not contain a due proportion. We find that Swede Turnips which contain about 16 per cent. of albumen in their dry material fatten satisfactorily; that the rich pasture Grasses, which have a very similar proportion, have the like effect. We find that meadow hay, with its 6 or 8 per cent., maintains, but does not fatten, whilst on straw, with $1\frac{1}{2}$ per cent. of albuminous matter, cattle exist for a time but do not thrive. The deficiency in these can be supplied only by materials rich in albumen. In addition to my cattle, I maintain about 50 lambing ewes, which I purchase in October, and also shearlings. To the former, which drop their lambs in March, I likewise give Rape-cake. I commence this practice during the winter, and continue it throughout the season. At the commencement I supply it in small quantities, with a sprinkling of Oats; now and then an ewe is seen to nibble by degrees, and after a lapse of some weeks they also get accustomed to it, and eat to the extent of $\frac{1}{4}$ to $\frac{3}{4}$ of a lb. per day each. As the composition of sheep's milk resembles that of the cow, I need not remark on its adaptation to the purpose.

Being engaged in the business of keeping cows for dairy purposes, and likewise for fattening, of which latter I send out 50 to 60 per year, the comparative effect of the two processes on the fertility of the land in my occupation has engaged much of my attention. On the rich feeding pastures of this district cattle graze from year to year, and for a long series of years, without any perceptible diminution of their fertility. The cattle for this purpose being well-grown animals, their increase will be to flesh and fat; and, reckoning the same rate of increase as above noticed, each beast will carry off in flesh the nitrogen equal to what will be supplied by 3 cwt. of oil-cake or Beans. This appears to be fully restored through the agency of the atmosphere. The effect of dairy produce is known to be very different. In Cheshire and other cheese-making and dairy districts it is found necessary, with a view of maintaining the fertility of the pastures, to apply a top-dressing of bones, rich in gelatine and phosphate of lime, every 6 or 7 years. It has been shown that, in a full yield of milk, more than three times the quantity of nitrogenous matter is contained than can be assimilated in the increase of beef; besides which, milk carries off a considerable quantity of phosphate of lime and other mineral matters. The amount of nitrogen removed by a cow giving $3\frac{1}{2}$ gallons per day carries off the nitrogen of 5.70 lbs., or for the half year 9 cwt. Rape-cake; 2 gallons per day carries off the nitrogen of 3.25 lbs., or for the half-year $5\frac{1}{2}$ cwt. Rape-cake; whilst the nitrogen assimilated by a fattening beast requires only 1.76 lb. per day, or 3 cwt. per year to replace it. It is to be observed that a cow on rich pasture, giving only 4 quarts per day, will gain flesh likewise, and carry off nitrogen in addition. The analyses of Rape-cake show about 4 per cent. of phosphate of lime and phosphoric acid. A full yield of milk will require 2 lbs. per day, or 3 cwt. 36 lbs. for the season, to restore this element of fertility. It will be remarked that no part of this is supplied by the atmosphere.

I have shown by my treatment of milch cows that I am able with a full yield of milk to maintain their condition. I hold it equally desirable to keep up the fertility of my pastures. Since I began the use of Rape-cake I am effecting more than this—they are gaining from year to year in productiveness.

In the woollen manufacture, shoddy or refuse wool, which was formerly sent to Kent as manure, is now sorted over and a great proportion of it is retained for again working up into new materials. In the cotton trade, what was formerly looked upon, and termed waste, is now cleaned from its filth and manufactured into stout cloths for export, some of them probably to the very remote countries in which the cotton was produced. Agriculture is, in this respect, far in arrear; a great waste, not only of material of food but likewise of material to produce that food, is daily occurring. *Y.*

Home Correspondence.

Profitable Cows.—A cow kept here gave, just after calving, 30 quarts of milk per day, and 16 lbs. of butter per week; and at the end of 13 weeks after calving she gave $11\frac{1}{2}$ lbs. of butter per week (the milk was not measured). Although the weather was cold and wet in both cases the cow was at Grass. Do you know many instances where this has been exceeded? And is not such a cow more profitable than a high-bred shorthorn? *T. G.*

Tartarian Oats.—I have observed various paragraphs of late containing intimations of remarkable produce; the greatest of which, however, that has come under my notice scarcely exceeding 200-fold. I beg leave to send you a stalk of the black or Tartar Oat, on which younger eyes than mine have counted 265 pickles. It was plucked at random, amongst hundreds of others in the same field, bearing not less than 200 commonly; nor do I despair of finding a head with 300 yet. I may remark that it is the produce of rough ground newly drained in the higher parts of Linlithgowshire, at least 450 feet above the sea level. It would be curious if your readers would record or evidence their observations as to the highest bearing powers of the different kinds of grain. *Robert Stewarte, Westwood, West Calder.*

Wheat, early sowing.—"We also sowed a small plot last July, which proved productive in a superlative degree, with ears surpassing any we had ever seen before, but unhappily the birds devoured it all, notwithstanding it had been netted to protect it. It stood the winter well." *Hardy and Son, Maldon, Essex.* This I find in the *Agricultural Gazette* for Sept. 9, 1854. I had heard in the early part of the present century they used to sow Wheat in Hampshire in August, with old Wheat, before harvest. Having at that time a greater breadth of Wheat to sow than usual, I had a field of 24 acres, which was in summer fallow; it was a genial season, the land was clean, I think it had been three times ploughed, and it lay in such manner as I thought it was a pity something was not growing upon it; I had a stack of red Wheat, clean and sound (though not very heavy), out of which I sowed the 24 acres; so it was done in a moment (comparatively). I got a threshing machine, so we got enough to sow the field in a day, and began the next. I think we were 4 or 5 days drilling the Wheat at 6 inches. The first day was the last of July (there was Sunday between), and the weather got drier, and it did not do so well after; but it got to be so as to astonish every beholder (for there was a footpath through it), and it appeared at a distance like a rich eddish before harvest. I often had my fears lest it should prove a failure, but it was poor land (woodland clay); on that account it did not get winter proud, and when threshed I found it as good a sample as I ever grew. The spot where it grew was about five miles south of Huntingdon. The next, I sowed 5 acres in August, and that was a fine sample; this was in the year 1819-20, or thereabout. Remember, this was only a freak of mine, and I do not put any confidence in the plan, so as to recommend it generally; for I think October is the favourable month for Wheat-sowing in Huntingdonshire and its vicinity. *James Hall, 62, Rutland Street, Chorlton-upon-Medlock, Manchester.*

Bountiful Harvest, its causes.—Without using so many hard words, unintelligible to some readers, we will just advert to the causes which we pointed out in the spring as likely to be conducive to an universal and larger growth of corn than in ordinary seasons. Anomalous as it may appear, the very circumstance of a bad seed time and indifferent seed, consequently resulted in a thinner and somewhat more regular and promising plant than the many full plants from ordinary thick sowing. This, accompanied with a very dry and cold March (without which all hopes are lost for a full crop of Wheat) led us to infer that extraordinary and unusual crops might be expected. We also noticed, that unless more corn were grown in this country by "hook or by crook," to compete with the foreigner, the exigencies consequent on free-trade, and a dependance on foreign supplies, would be often severely felt; and we have reason to fear that, under present circumstances, such will be the case during the ensuing year, notwithstanding the late bountiful harvest bestowed upon us by the Disposer of All Good. What, then, must have resulted from so deficient a crop, and so small a breadth sown as in 1853? Waste in corn will form the substance of our future remarks, which we trust will be acceptable in these columns. *Hardy and Son, Seed Growers, Maldon, Essex.*

Miscellaneous.

Comparative Merits of different kinds of Wheat.—Having just concluded my annual experiments on the comparative merits of different varieties of Wheat, I must again beg your permission to insert the following statement in the next number of your paper, as I believe many of my friends are anxious to see it. If it should be thought that my produce in some respects is large, I beg to say that my experimental pieces of Wheat were grown on very good land, and in the middle of a field on small plots of about a rood each; that no hedges, banks, nor roads were measured in, neither was the Wheat in consequence injured by birds or vermin, so that when I give the result of a plot of land producing 50 bushels per acre, it must not be supposed that a whole furlong or field would produce anything like that quantity. I mention this, lest persons adverse to the farmer should think there is a larger yield of Wheat this season than there really is. I began my experiments last autumn on the 12th of October, by drilling at 8 inch intervals the following sorts of Wheat, on plots of land containing about 25 perches each, at the rate of about 7 pecks of seed per acre, after a White Clover ley, which had been summer eaten by sheep. I found the result to be as follows :—

Experiment No. 1.

	Quantity per acre.			Value per Qr.	Value per acre.		
	Bush.	pk.	gal.	s.	£	s.	d.
Improved Browick Red	52	1	0	52	16	19	7
Spalding Red	48	2	0	52	15	15	3
Overman's Red..................	49	2	1	52	16	2	6

On the same day, and in the same manner as the above experiment, and also on land which had borne a good crop of White Clover during the summer, were drilled at the rate also of about 7 pecks of seed per acre, the following varieties of Wheat—

Experiment No. 2.

	Quantity per acre.			Value per Qr.	Value per acre.		
	Bush.	pk.	gal.	s.	£	s.	d.
Albert Red	50	1	1	52	16	7	5
Improved Browick Red	53	0	0	52	17	4	6
Golden Drop Red..............	51	1	1	53	17	0	3
Lammas Red.....................	47	1	1	53	15	15	10
Prima Donna Red	43	3	1	53	14	0	8

As I generally sow a considerable portion of land with white Wheat, I made another trial to see whether any sort of white would beat in value per acre my old and favourite sort, the Imperial White. I therefore drilled, on a piece of land contiguous to Experiment No. 2 the following sorts of Wheat, at the rate also of about 7 pecks of seed per acre. The undermentioned statement was the result—

Experiment No. 3.

	Quantity per acre.			Value per Qr.	Value per acre.		
	Bush.	pk.	gal.	s.	£	s.	d.
Imperial White	47	3	0	59	17	12	2
Imperial White	45	3	0	59	16	17	5
American White..............	44	1	0	60	16	10	0
Brown Straw White	42	2	1	58	15	9	0
Prima Donna Red	43	3	1	53	14	0	8

These experiments were all made in a field where the land was very good, of a deep gravelly loam, and in a fair state of cultivation, which accounts for the great produce I have this year. The prices I have given as the value per quarter for the Wheat is what I consider it is now worth to the miller. The markets, however, are so fluctuating that I do not know that I have stated them correctly. It is of little consequence, provided that the relative value of each sort is properly given, which I have endeavoured to do. These trials show a great difference in value per acre, as much as 3*l.* 11*s.* in one experiment, and 2*l.* 6*s.* per acre in another, where all the Wheat was of the red kind. I have

grown the Browick red six seasons, and the imperial white 10 seasons, and they still seem to keep the pre-eminence. I scarcely, however, know which of the two sorts is the best, therefore I cultivate both. Without trespassing any further on your columns, I am, sir, your obedient servant, *T. E. Pawlett, Beeston, Biggleswade, Sept. 14; in Bell's Messenger.*

Death of Mr. Wingate, of Hareby, near Spilsby, Lincolnshire.—We are truly sorry to hear of this event, which took place suddenly, and partly as the result of accident at Hareby House, on the 29th ult. Mr. Wingate was well known in the agricultural world as an energetic member of the Agricultural Society of England. He was especially known in his own county as a skilful agriculturist, a man of thorough honesty, of clear-sightedness, and resolution in public life, and of fast and warm-hearted friendship in the large circle among all classes of society by whom he was known and valued as a personal acquaintance.

Calendar of Operations.

OCTOBER.

West Sussex, *October* 3.—We are still able to report such dry weather as no one ever remembers before. We had a little rain about two weeks ago, just enough to make the Trifolium come up well, which it has done everywhere, and thicker than I have seen it for a long time. I do not think its appearance differs much, if any, where it was ploughed for, and where not. I believe if the land is ploughed for it, and left lying light, it will not do so well as where not ploughed, as all Clovers like a firm soil, but when ploughed it should be well rolled down before the seeds are sown, and then, I think, it is better than sowing on the stubble, as all the rubbish is buried below, and nothing remains above to check the seeds; but though it has all come up, it is again at a stand-still with the dry weather. But the worst is the Turnip crop, which is going off fast, especially those sown earliest; they are rotting, and have an appearance as if they had had hot water poured upon them, whilst those that were sown later are not yet so bad, as the little rain that we had came in time to save them for the time, before they had got too ripe; but there are symptoms of their going too. Swedes do not go so rapidly, being of a slower growth, but they are all very much affected by mildew, and will be far from a good crop; and now that we have to provide our winter flock from the great Hampshire fair, we may expect to have them much cheaper than they were last season, for there cannot be so many kept as usual. Every one is providing as much artificial spring food as possible, so as in some measure to supply the place of Turnips; and the season has been well adapted for clearing the Wheat stubble for that purpose. Wheat sowing has not yet begun, but the preparation is going on rapidly, and in some instances is far advanced. Cattle and sheep still do well, though feed is so short, but the cattle have to be assisted in the straw yard, and sheep have a little corn or cake. Our market is not well supplied with Wheat, and were it not for the steam engines, for which the weather is so favourable, it would be much more. They have been very busy since the harvest was in, and though they have been but little in this locality before, they now seem to have got hold of the farmer's favour, and whether they will turn hands out of work, we cannot say but all work is in a forward state, and on that account fewer hands will be wanted; already there are numbers discharged. Our work now is to get all the land for Wheat ready, and we may expect that it will be all put in early. We can hardly speak of how the last crop is likely to yield, as we have not got out enough to be sure, but from what we hear, it seems to turn out well. *G. S.*

Notices to Correspondents.

Cumberland Agricultural Society: We regret being unable this week to give a report of the meeting of this Society; we hope to do so in our next Number.

Mangold Wurzel: *C.* We have often noticed a blighted black cankered sort of appearance in the heart of the leaves, which get yellow and black, and are eaten away down to the bulb; but this generally is unaccompanied by any softening of the bulb, which is unusually hard and woody under it. We therefore are uncertain of your case; the semi-transparency you name does look like the commencement of putrefaction.

Perry: *A Subscriber* asks for instructions for making perry in small quantities, which we do not find among our very limited reference to such subjects. Perhaps, therefore, some reader will kindly answer his inquiry.

Wheat: *Several Readers* have asked for Bristol red and Browick red Wheat. We are unable to assist them; and any inquiry which we now make for them must be answered in the advertisement columns.

(Advertisement.)

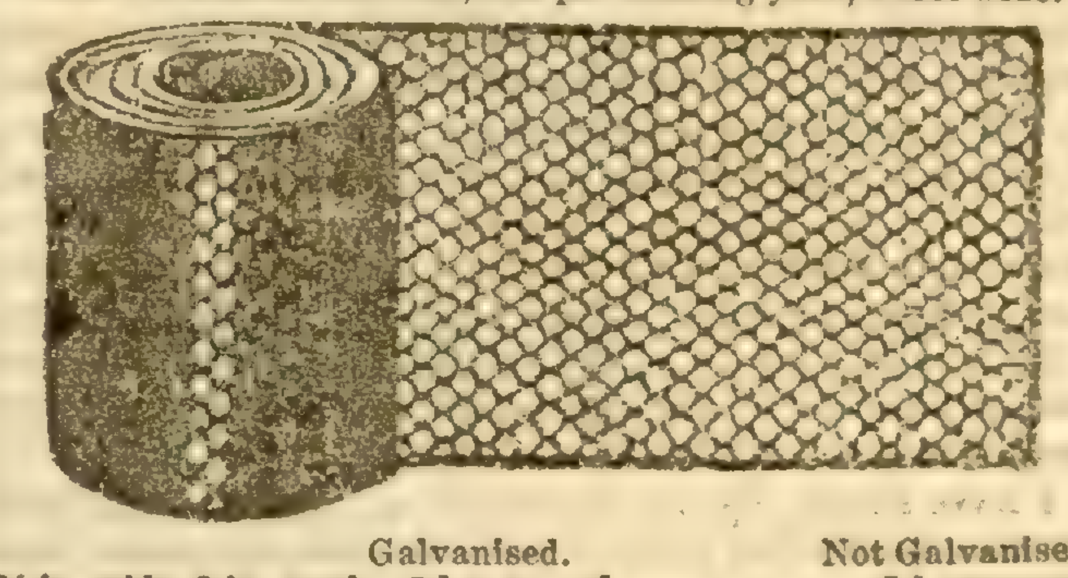
The "Ne plus Ultra" Wheat.—For several seasons past, much interest has been excited in this neighbourhood in the result of experiments made by Mr. Harradine, of Needingworth, near St. Ives, Huntingdonshire, in the growth of a new description of Wheat, and which if "it giveth forth its increase" at the rate of multiplication that has attended it hitherto, bids fair to create a revolution in the agricultural world. One ear of it was sown in 1849 on the land of Mr. Harradine, and the produce of this again in 1850 and 1851, when it yielded at the extraordinary rate (especially for those years) of 19 coombs 1 bushel and 1 peck per acre. It has been sown, on almost every available description of soil, and introduced in every imaginable change of crops. It was sown after Tartarian Oats, Clover, seeds, Peas, and Tares, on soil of various compositions, fen and Highland: in all cases the quantity of seed was restricted to 4 pecks per acre, but the result was the same, the yield reaching that previously realised by Mr. Harradine. It has been sown after Wheat, Clover, Barley, Beans, Oats, and fallow, and sustained its reputation through all these trials; it has been sown in winter and in spring, drilled, broadcast, and dibbled, with the same results, some put in in February showing no diminution in the yield. The preparation of the land may be the same as for ordinary Wheat, and the same rate of increase in the yield over ordinary sorts may be expected. With all these facts in view, and there are numbers of gentlemen ready to verify them, Mr Harradine is fully justified in naming this Wheat the "Ne plus ultra," worthy as it is of being the chief occupant of the cornucopia of Ceres. Specimens have been forwarded to us for inspection; and if we may judge by the number of standards and ears springing from one root, we cannot doubt that the yield is as described. One kernel set by Mr. Harradine produced 25 standards; and this root, with a similar number of ears and their multiplicity of kernels, may now be seen at the stand in the Crystal Palace of Mr. Mechi, the patron of all that is new, interesting, or beneficial in agriculture. It will be seen by advertisement that, with a most creditable single-mindedness, Mr. Harradine has resolved to throw open the benefits of his discovery to his brother agriculturists: and when the trouble and expence Mr. Harradine has been at in the propagation of such a quantity of seed as would warrant him in offering such a boon without a chance of disappointment to the applicant, coupled too, with the fact that up to the beginning of this harvest not a single kernel has been sown for seed, be considered, the price must be taken to be a very low one.—*Cambridge Chronicle.*

H. J. MORTON and Co., Galvanised Iron Roofing Works, 2, Basinghall Buildings, Leeds.
PATENT WIRE STRAND FENCING FOR PARKS, &c.

This Fencing is the most neat, strong, and durable for Parks and Agricultural purposes in use. It cannot be bent or put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply as above.

IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

CHEAP WIRE GAME & POULTRY NETTING, 5*d.* per running yard.
GALVANISED DITTO, 7*d.* per running yard, 2 feet wide.



	Galvanised.	Not Galvanised
24 in. wide, 2 in. mesh,	7*d.* per yard.	5*d.* per yard
30 in. „ 2 in. „	9*d.* „	6¼*d.* „
36 in. „ 2 in. „	10½*d.* „	7½*d.* „
48 in. „ 2 in. „	1*s.* 2*d.* „	10*d.* „

Sparrow Proof Netting, Galvanised, 3*d.* per square foot, made to any size for the same proportionate price. This article was shown at the Great Exhibition, where it was so much admired for its light and durable appearance, and acknowledged to be the cheapest and best article of the kind ever offered. Extra strong Wire Sheep Netting, 3 feet high, 1*s.* 6*d.* and 2*s.* 3*d.* per yard. Also every description of Flower Trainers, Dahlia Rods, Garden Arches, Bordering, Flower Stands, Tying Wire, Trellis Work, Invisible Wire Fencing, Hurdles, and every description of Wire Work for Horticultural purposes.—Illustrated Catalogues of Patterns forwarded, post free, on application to T. H. Fox, City of London Wire Work and Iron Fence Manufactory, 44, Skinner Street, and 6 and 8, Snow Hill, London.

ENCAUSTIC TILE PAVEMENTS.

MAW and CO., Benthall Works, Broseley, Salop, Manufacturers of the Cloister Pavement of Mediæval Court, and "the successful Imitation of Opy's Alexandrinum, in the beautiful Encaustic Tile Pavement of Cloisters of Byzantine Court," Crystal Palace (M. D. Wyatt, Esq., in Official Handbook), forward, without charge, Designs and Estimates, adapted to given dimensions, of Entrance Halls, Conservatories, Verandahs, &c., in every style.
Specimens at 11, Aldersgate Street, City.

HOT WATER APPARATUS, adapted for Horticultural and every other description of Buildings; improved Boilers, requiring no brickwork, Warm Air Apparatus, &c.—S. S. TAYLER, Engineer, Battersea.

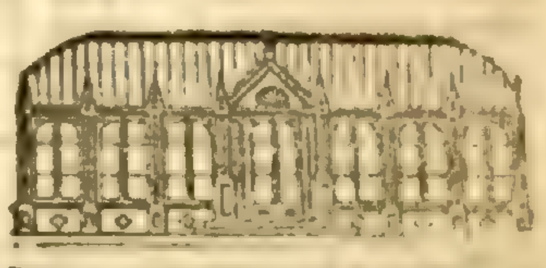
HORTICULTURE IN ALL ITS BRANCHES.

J. WEEKS & Co., King's Road, Chelsea,

HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Buildings or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.



The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.
J. Weeks & Co., King's Road, Chelsea, London.

CARSON'S ORIGINAL ANTI-CORROSION PAINT, specially patronised by the British and other Governments, the Hon. East India Company, the principal Dock Companies, most public bodies, and by the nobility, gentry, and clergy, for out-door work at their country seats. The Anti-Corrosion is particularly recommended as the most durable out-door Paint ever invented, for the preservation of every description of Iron, Wood, Stone, Brick, Compo, Cement, &c., work, as has been proved by the practical test of upwards of 60 years, and by the numerous (between 500 and 600) testimonials in its favour, and which, from the rank and station in society of those who have given them, have never yet been equalled by anything of the kind hitherto brought before the public notice.

Lists of Colours and Prices, together with a Copy of the Testimonials, will be sent on application to Walter Carson & Son, 9, Great Winchester Street, Old Broad Street, Royal Exchange, London. No Agents. All orders are particularly requested to be sent direct.

SAMUELSON'S PATENT PRIZE FORKING MACHINE

(Silver Medal from the Royal Agricultural Society of England, Prize from the Yorkshire Agricultural Society, Prize from the Cleveland Agricultural Society, do. from the Worcestershire Agricultural Society),

Is now proved by experience to be an invaluable implement for deep tillage, and equally effective as an extractor of Couch Grass, and other Weeds, in testimonial of which, numerous reports from farmers using it in every part of the kingdom may be had on application. Various imitations have failed, through the absence of its essential feature—the Patent Fork. The amount of horse power is less in proportion to the surface deeply pulverised than that required in the ordinary shallow ploughing. The application of steam power to tillage is still a problem to be solved, and it is not necessary to defer deep cultivation until its solution be accomplished.

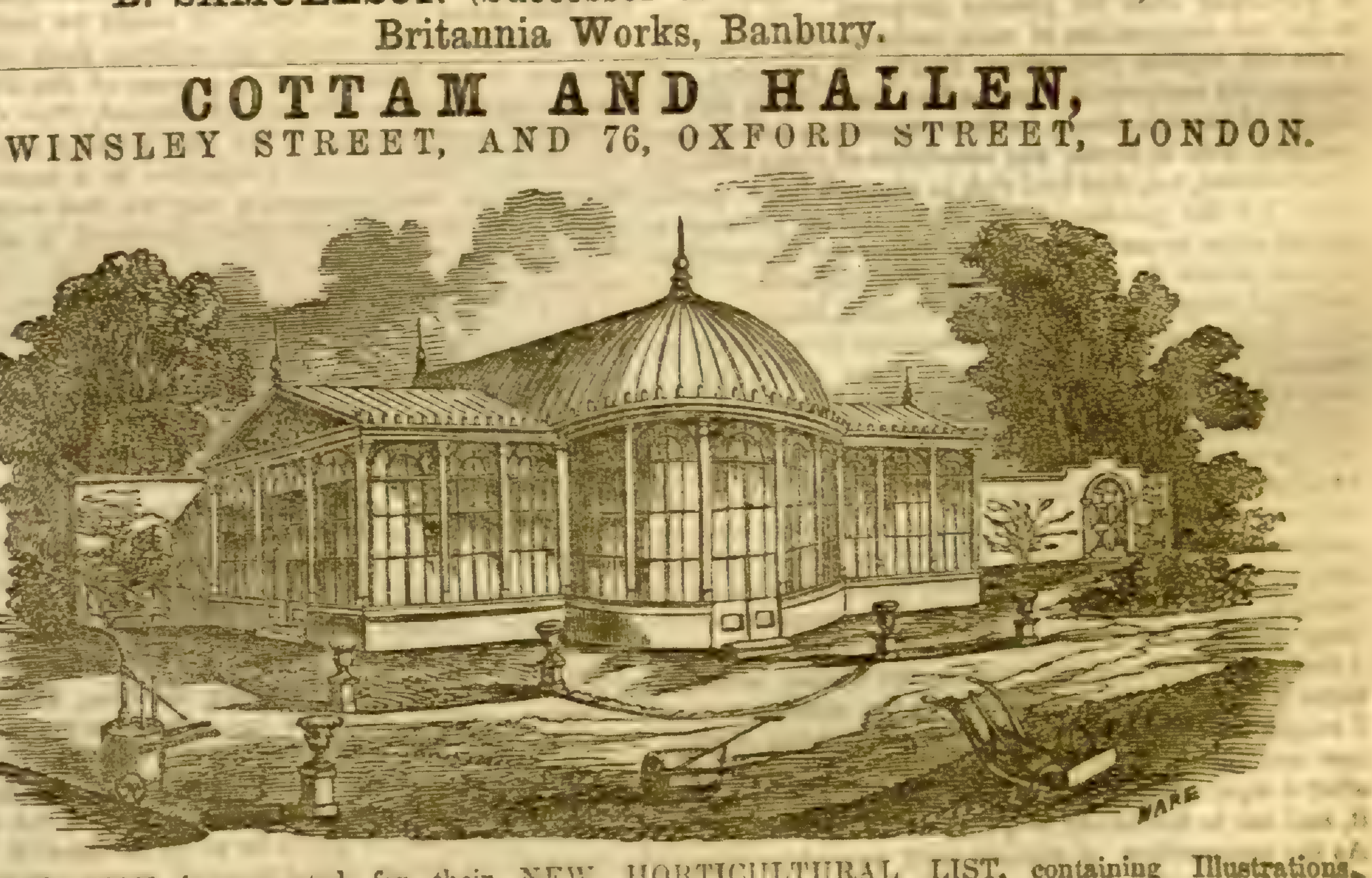
SAMUELSON'S
IMPROVED GARDNERS' TURNIP CUTTER.

Prize for the ninth time, at the Royal Agricultural Society's Meeting, Lincoln, 1854.

The improvement is a rasping plate for loosening and voiding dirt from the roots, whilst being cut, whereby the scouring tendency of root feeding is diminished.

B. SAMUELSON (Successor to the late Mr. Gardner),
Britannia Works, Banbury.

COTTAM AND HALLEN,
2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.



APPLICATION is requested for their NEW HORTICULTURAL LIST, containing Illustrations, Descriptions, and Prices of

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Syringes	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.
AGRICULTURAL LIST UPON APPLICATION.
EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.
EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

CENTRAL ASSOCIATION

IN AID OF THE

WIVES AND FAMILIES, WIDOWS AND ORPHANS, OF SOLDIERS

ORDERED ON ACTIVE SERVICE.

Under the Joint Patronage of HER MAJESTY THE QUEEN, FIELD-MARSHAL H.R.H. THE PRINCE ALBERT, K.G., AND HER ROYAL HIGHNESS THE DUCHESS OF KENT.

Vice Patrons—His Grace the Archbishop of Canterbury. Lieutenant-General His Royal Highness the Duke of Cambridge, K.G.
Chairman of General Committee—General the Earl of Beauchamp. *Vice Chairmen*—Viscount Ingestre, 1st Life Guards. Lord Lilford.
Trustees—Sir John Kirkland, Lord Henry Cholmondeley, M.P., and Major the Honourable H. L. Powys.

Committee.

The Lord Bishop of London
The Duke of Manchester
The Marquis of Blandford, M.P.
The Earl of Annesley, M.P.
The Earl of Cavan
The Earl of Effingham
The Earl of Shaftesbury
Viscount Hill
Viscount Mandeville, M.P.
Lord Sondes
Lord Edward Howard, M.P.
Lord Henry Cholmondeley, M.P.
Lord Charles Clinton, M.P.
Lord Feversham
Captain Archdall, M.P.
Colonel Baker
Colonel Boldero, M.P.
Lieut.-Col. Hunter Blair, M.P.
Major Cartan, Staff Officer of Pensioners
Lieut.-Col. Caulfield, M.P.
J. C. Colquhoun, Esq.
Capt. J. Douglas, 60th Royal Rifles
Colonel Dunne, M.P.
John Lettsom Elliot, Esq.
Sir Robert Gerard, Bart.
Hon. A. Kinnaird, M.P.
Lieut.-Col. Brownlow Knox, M.P.
Hon. Captain William Stuart Knox, M.P.
Captain Laffan, M.P.
Lieut.-Col. Lawrenson
Lieut.-Col. Hon. J. Lindsay, M.P.
Rt. Hon. Joseph Napier, M.P.
Colonel Sidney North, M.P.
Captain Henry Owen, R.E.
John Wilson Patten, Esq., M.P.
Melville Portal, Esq., M.P.
Major the Hon. H. L. Powys, 60th Royal Rifles.
Andrew Spottiswoode, Esq.
Augustus Stafford, Esq., M.P.
Rev. F. J. Stainforth
Lieut.-Col. Taylor, M.P.
Captain W. F. Vernon
Sir William Verner, M.P.
Shirley Woolmer, Esq.
General Wyndham, M.P.

Auditors—George William Bell, Esq., Law Fire Office. B. L. Sowell, Esq., Bank of England. *Treasurer*—Sir John Kirkland, No. 80, Pall Mall.
Honorary Secretary—Major the Hon. Henry Littleton Powys, 60th Royal Rifles. *Assistant Secretary*—Frederick Hayley Bell, Esq.

[The following Report was unanimously passed at a General Committee Meeting on the 3d of October, 1854, the Right Hon. the Earl of Effingham in the chair:—]

FIRST HALF YEARLY REPORT OF THE CENTRAL ASSOCIATION.

THIS ASSOCIATION originated at the National Club on the 24th February, 1854, and was joined on the 25th February by a Deputation from the Army and Navy Club. It was formally instituted at a public meeting held in Willis's Rooms on the 7th March, 1854, (the late deeply lamented General Sir Peregrine Maitland, G.C.B., in the chair,) and has now completed the first half-year of its operations.

The vast amount of undeserved misery that this Association has been the means of alleviating during the past six months, induces the Committee to make a half-yearly Report of their proceedings; and this, not only to show that the noble efforts made by the country on behalf of the silent sufferers has not been a fruitless one; but also to direct public attention to the urgent and absolute necessity for the establishment of some permanent National Provision for the Wives and Families, Widows, and Orphans, of our soldiers.

Notwithstanding all that has been said and written on the subject, the fact still remains in all its sadness, that for the wife and family, widow and orphan, of our best-behaved soldiers, whether non-commissioned officer or private, no provision whatever is made. Nothing but private charity keeps them from pauperism when their husbands and fathers are taken away.

The marriage of these good men is fully permitted by military authority; it is even granted as a reward for good conduct, and yet should they be ordered to the seat of war, or die in the service of their country, their families are cast aside in utter destitution and desolation. To prove that this is no over-statement, the Committee have selected a few cases out of hundreds, all of which are those of wives of non-commissioned officers and privates, who, having been married with military sanction and approval, had been placed on the strength of the regiment.

Case 490, *Mrs. E.*—Wife a serjeant of the 38th. Married with leave. Left destitute with six children, after she had spent the small sum her husband left for her. Five of her children provided for: the sixth being an infant, and the mother being weakly, she received a weekly allowance of 5*s*., until she obtained work as a washerwoman, for which the Association furnished the means, and she now earns her own livelihood, assisted by her two boys, aged 12 and 13, for whom situations as pages have been found.

Mrs. E. F., 8th Hussars.—A most respectable person, married with leave, in delicate health. Left destitute with six children. Earns a little by washing, for which a donation of 2*l*. was granted. A weekly allowance of 7*s*.

Case 439, *Mrs. W. H. R.*—Wife of a private, 13th Light Dragoons. Married with leave, left destitute with four children. A most respestable person. A situation as cook obtained for her, and all her children provided for.

Case 73, *Mrs. S. J. G.*—Wife of a serjeant in the 21st Regiment. Married with leave. Left destitute with four children, and expecting her confinement. A weekly allowance of 5*s*., in addition to the parish out-door relief of 3*s*. a-week and four loaves.

Case 460, *Mrs. W.*—Wife of a lance-serjeant in the 6th Dragoons. Married with leave. Left destitute with 3 children, and expecting her confinement. A weekly allowance till she became a widow, when she was granted 80*l*., and one of her three children provided for by the Birmingham Local Committee.

Case 193, *Mrs. E. H.*—Wife of a private in the 38th Regiment. Married with leave. Left destitute with 4 children. One child provided for, and a weekly allowance of 7*s*. a week.

Case 384, *Mrs. A. F.*—Wife of a private in the 77th Regiment. Married with leave. Left destitute with 5 children. A weekly allowance of 10*s*.

•*Case* 433, *38th Regiment.*—Mrs. A., the wife of a serjeant. Married with leave. Left destitute with 4 children. Has been provided with a situation at 14*l*. a year, and all her children taken care of by the Association.

Mrs. E. F., 63d Regiment.—Married with leave. Sixteen years wife of a private. Left destitute with 5 children. A weekly allowance of 7*s*.

Mrs. E. T., 46th Regiment.—Married with leave. Left destitute with 5 children, under 10 years of age, unable to leave her infant. A weekly allowance of 7*s*.

Mrs. T. L., 28th Regiment.—Married with leave. Wife of a serjeant. Left with 5 children. Her husband left her some little money and his watch, to part with in case of need. The watch had been parted with, when this Association helped her out of all her troubles, and she regularly receives money from her husband.

Mrs. E. B., case 321.—Wife of a private, 88th Regiment. Married with leave. Left perfectly destitute with 5 children. The two youngest, twins, born since her husband left. In very bad health since her confinement. A weekly allowance of 12*s*.

Cases Nos. 406, 407, 408.—The wives of privates of the 55th. All married with leave. Left destitute with 10 children. A weekly allowance to each.

Case No. 968, *Mrs. C. B.*—Wife of a private, Royal Artillery. Married with leave. Left destitute with 6 children in great distress. A weekly allowance granted.

Case 971, *Mrs. A. C.*—Wife of a serjeant of the 38th Regiment. Married with leave. Left destitute with 6 children. A weekly allowance of 12*s*.

Case 592, *Mrs. T.*—Wife of a serjeant of the 11th Hussars. Married with leave. Left with 6 children. Eldest daughter provided with a situation, and a weekly allowance of 10*s*. to her mother.

This dreary catalogue of destitution might be continued almost to an endless extent, and all the harrowing details accompanying each case might be given; but the Committee are satisfied that a simple statement of these facts is more than sufficient to prove the need for, and the reality of their work. It is true that the parish of the soldier may be compelled to support his wife and family; but the Committee would ask whether the workhouse is a fitting place for the families of men who can write such letters as the following:—

"Camp near Varna, August 30th, 1854.

"Sir,—I sincerely trust that I may not offend you by the liberty I take in addressing you; but having heard of your kindness to the wives and children of soldiers now serving in Turkey, I am induced to request your kind assistance on behalf of my little daughter. By the last mail from England I received the melancholy intelligence of my wife's death, which occurred on the 9th of August, leaving my little girl entirely unprovided for, &c. I therefore humbly hope that you will kindly cause inquiries to be made, so that my child may not be left entirely unprotected or uncared for. I will most gladly contribute, as far as my means will admit, to defray any expense which may arise in placing her in any establishment which you select. We expect to embark for Sebastopol to-morrow, consequently I feel very anxious that some steps may be immediately taken to provide for her.—I remain, sir, most respectfully, G. H., Sergeant."

"To Major the Hon. H. L. Powys, 60th Reg. Rifles, Hon. Sec."

The wife and child of this non-commissioned officer were entirely supported by the Association until his wife died of cholera in London. His daughter is now comfortably settled at the Industrial School at Birmingham, at the expense of the Association; and when thoroughly trained and educated, will be provided with a situation by the managers of the Industrial School.

"Devno, in Turkey; July, 1854.

"My Dearest Mary,—I know you will be glad to have this letter from your dear father. I hope and pray Almighty God that you and your dear little sisters are quite well and happy and comfortable. Give dear Fanny and dear little Margaret my very best and fondest love, with many kisses also to your little companions. I have not been yet where the 38th Regiment is. When I see the regiment, I will be sure to go and see their fathers. I hope you are well and happy altogether, and love each other, and be kind to one another. But, my dear child, you must look after and see to your youngest sister, for she is but a baby yet, and may God bless you all and keep you under His Almighty wings, always, is the daily prayer of your loving father. Be kind to your dear sister Fanny; kiss her for me, tell her I send my very best love to her, and she is to learn all she can till I come home, which I trust, please God, won't be long. I hope you are all good children, and do what you can to assist Mrs. B., who will, I know, be very kind and good to you. I hope she is quite well. Give her my best respects. I hope you love and obey your teachers. You must write to me, my dear Mary, &c. &c. We are all in a very large camp. I dare say 10,000 men. We all sleep on the ground. We have our cloaks and one blanket to cover us. There are no houses near us for miles. We all went to a little valley yesterday, and heard Divine Service, and very many of us received the Sacrament of our Lord Jesus Christ afterwards. Oh! my dear child, never forget your prayers, and be a good child, and you will have God for your father and friend for ever. Pray for your dear sister: pray for your father, and God will hear you. He will bless and keep us always, and bring us to heaven at last for Jesus Christ's sake. And now, my darlings, good bye, and may God bless and take care of you all is the prayer of your loving father, T. D."

Letter addressed to the Honorary Secretary of the Dublin Association:—

"September 2, 1854.

"Sir,—Only for the relief I received weekly from you, I would have been obliged to go into the workhouse, with my two children, which would have been worse than death to me; for if we were dead, our miserable existence would be ended here. I could not have maintained myself and children only for it, though I worked day and night to do so, and tried every means in my power, yet I found it was impossible. I was making shirts for Gilpins, in Molesworth Street, at 5*s*. per dozen, and I could not complete the dozen in a week: so if I had not had that relief, what should I have done? I never received any money from my husband since I left him, nor had no one to ask me or my children to have a meal of victuals since I lost my only friend—my dear husband. And now, through your kindness and interest, I have got a situation; and if you did not still allow me a little to pay for my children, I should not be able to remain in it, as I have not enough wages to pay for them and clothe myself and them. I hope God will reward every one who has so kindly helped the poor soldier's wife and child; for most of us have been thrown out of a comfortable home, to face a frowning world. I hope the Lord will reward you also, sir, for the kind interest you have taken in the soldiers' wives, &c. Mrs. J."

Many more letters might be quoted, showing how grateful these fine fellows are for the care that has been extended to their wives and children; but quite enough, it is hoped, has been stated to satisfy the Committee that they not only are doing what is right, but that it is the bounden duty of England to carry out the work that has been thus happily commenced. Nor are the poor women themselves ungrateful for all that has been, and is doing for them. With a few exceptions, all have evinced the greatest thankfulness, and readiness to find employment for themselves. Two wives of soldiers who had been temporarily relieved with weekly allowances, offered to repay the Association as soon as their husbands remitted money; and one of them, directly she received a remittance from her husband, insisted on repaying a sovereign to the Association, saying at the same time, "That there was many a poor soldier's wife who needed it more than she did." More than 200 have been placed in situations as housemaids, cooks, nurses, washerwomen, &c., and, generally, have given satisfaction; one of them writes thus to the inspecting officer:—

"Sir,—According to promise, I now let you know how I am getting on. I never was so happy in all my life. I have indeed a kind master and mistress: they look to my comfort in every way; I might well say, it is equal to my own home. I only wish to God that more of the women were so well provided for as I am, sir. Will you return the Association thanks in my name, for their kindness to me and my child; also for the 10*s*. I have received, with which I have bought some clothes. I hope that I will keep my situation a long time. The lady seems to like me very well, and she says that anything in her power she will do to promote my comfort. With my sincere thanks to you for your kindness, Your obedient servant, E. D."

Many women, natives of Nova Scotia and Canada, on being provided a passage by Government to their own country, have been granted a donation of 3*l*. each, to provide them with comforts for themselves and children during the voyage. To 17 women of different regiments, all married with leave, has the Association been thus beneficial. On the 26th June, information was received from the Portsmouth Local Committee, that 34 women and 72 children would be forwarded to London, on their way to their husband's parishes, from Malta, from whence they had been ordered home, their regiments having gone on to Turkey. The Inspecting Officer of the Association was immediately ordered to the Waterloo Station, where having with difficulty got them all together, took them to the Pay Office in Westminster, where they were to receive passage warrants for their different destinations. But they were unable to proceed till the next day; and thus would have been left utter strangers in the streets of Westminster, searching in vain for lodgings, which, with the small Government allowance granted for that purpose, they were unable to pay for. Respectable lodgings were found for them all, and their children; and the next day they were despatched to their destinations, with a small donation for travelling expenses. It is needless to add, that all these women were married with leave, and many of them most respectable wives of non-commissioned officers. Upwards of THREE THOUSAND FIVE HUNDRED WOMEN, and SEVEN THOUSAND CHILDREN, have been kept from actual want during the last six months, the greater part of whom still remain claimants on the Association, especially those who have become widows and orphans. This has been done by the outlay during the past six months of 9172*l*., chiefly in weekly payments, both by the Central Committee and the 78 Local Committees. Besides these 10,500 women and children, fresh applications are made almost daily to the office: thus showing that the number of women and children left behind is much greater than the public were led to suppose, by the Parliamentary Return called for in both Houses of Parliament. This, however, is accounted for, by showing the inaccuracy of the Parliamentary Return, as follows:—

63d Regiment. Parliamentary Return. No. of Women and Children,	63d Regiment, Association Return. No. of Women and Children.
170.	245.

The Association Return was received during the same month that the Parliamentary Return was given; and as it contained the name of every woman, and the number and ages of every child, and was signed by the Colonel commanding the regiment, it may very fairly be considered to have been the most accurate one. If there be such a discrepancy in the returns of one regiment, what must there be in 40?

MARRIAGE WITHOUT LEAVE.

It is a curious fact that has been brought to light by the practical experience of this Association, that, without exception, those soldiers who have married with leave, or whose wives were admitted into barracks and recognised by the regiment, have left the largest families, and, in consequence, are by far the most deserving of commiseration. To these persons the Association has been of the greatest benefit; while, at the same time, amongst those women married without leave, much misery has been found to exist, which the Association has not refrained from alleviating.

The Committee, however, regret to find, that notwithstanding all the positive and practical good that has been effected by the Association, there still remain in the minds of some military men strong objections to its operations: it is still urged that undue encouragement is given to marriage without leave, and that large numbers of soldiers have thus married since the institution of the Association. If the operation of the Association had afforded such encouragement, surely evidence of it would have appeared from a number of applications for relief on the part of women who had married in anticipation of it. ONLY ONE APPLICATION has been made at this office by the wife of a soldier whose marriage certificate was dated in 1854: so that the objection would appear to be entirely groundless: an it might be considered almost needless to say more in answer to it. But the Committee have it to show, that while they have only contemplated those cases as entitled to relief which they found already sanctioned by Government, or acknowledged by commanding officers, they have made a rule (No. 3), and have taken all the means in their power to give it publicity, which puts it out of their power to relieve any who may have married, calculating on assistance from them; thus taking into consideration and providing against a contingency which might have arisen, but which has not occurred.

(*For continuation of this advertisement see next page.*)

SOLDIERS' WIVES AND FAMILIES' ADVERTISEMENT—*Continued.*

The following are the rules with reference to this subject:—

1. No soldier's wife is entitled to relief whose name is not entered in the regimental return, which, though it contains the names of all women, whether married with or without leave, is yet signed by the Colonel commanding the regiment, and thus they are partially acknowledged.
2. The Government makes no difference between these women; and the passages of all are equally defrayed to the parishes of their husbands.
3. The rule for the relief of soldiers' wives married without leave is only retrospective; for no soldier who has married without leave, since July, 1854, will be entitled to relief for his wife.

On the 4th July, 1854, at the largest meeting ever held by the General Committee (General the Earl of Beauchamp in the chair), it was unanimously resolved,—

"That from and after the date of this resolution, the 4th July, 1854, no wife or widow be entitled to a donation or pension who shall have married a soldier without leave, whether they belong to regiments on active service, or to regiments now under orders of readiness for active service, provided that such orders of readiness were received subsequently to the formation of this Association, the 7th March, 1854."

As the Government, the Officers commanding Regiments,* and the Association have found it absolutely necessary to countenance, to a certain extent, marriage without leave, and as it appears from the returns of the married men of the 30 regiments of the line, and the 10 regiments of cavalry, that a large proportion of them in each regiment are married without leave, it becomes a serious question how far the treatment hitherto carried out towards wives of soldiers has been successful in the prevention of matrimony. It is evident that, in spite of all the certain misery entailed upon them, soldiers will marry, and can find respectable women to marry them; it is also evident from the universal sympathy shown to their wives and families on the present occasion, that the country would gladly befriend them effectually: the Committee would, therefore, direct particular attention to the concluding remarks at the end of this report, in hopes that some practical measure may be decided upon as speedily as possible, to prevent the recurrence of so much unmerited misery and destitution.

[* One commanding officer who could not find amongst his soldiers' wives married with leave a sufficient number willing to embark with their husbands, and leave their families behind, was permitted by authority to complete the number by selections from the childless women married without leave living out of barracks.]

COLLECTIONS ON THE DAY OF HUMILIATION.

Thousands upon thousands of her Majesty's loyal subjects joyfully followed her most gracious example on this day, and poured in of their abundance for the support of an Association which their beloved Queen and his Royal Highness Prince Albert had honoured with their joint patronage from its first commencement. Had it not been for the noble contributions made on the day of Humiliation, this Association would have been totally unable to grapple effectually with the dire distress and destitution brought to light by its operations. All the great religious communities in the kingdom, *except the Roman Catholic*, unanimously joined on that day to help the soldier's wife and child. To the Church of England especially, this Association is indebted for considerably more than two-thirds of the total amount collected. The Wesleyan Body also contributed largely and generously; the Jews too joined munificently in this national effort by having collections in their synagogues. The Committee remark with much pleasure that these astonishing collections were quite voluntary. No Queen's letter was issued, and never was any public subscription so heartily assisted by the poor man's penny. In numberless congregational collections more than one pound's worth of halfpence was given. Even the prisoners in a large Government prison put their names down for a subscription of more than 20*l*. The total amount collected on that day would have been even greater had not many of the collections been made for the sailor's as well as the soldier's wife. Of these collections the Committee had the pleasure of paying over one-third to the Association for the Widows of Sailors and Marines. The Committee would point out most emphatically that notwithstanding the *remarkable exception in the Fast Day Collections*, no religious distinction whatever is made in the distribution of this noble charity, the recipients are not even asked to what religion they belong.

OTHER COLLECTIONS.

At the head of these stands the county of York. The Yorkshire Association (with his Grace the Archbishop, and all the nobility and gentry of the county as patrons and liberal subscribers) has remitted to the Central Association the large sum of 5000*l*. The Press has very considerately and effectually aided the cause of the soldier's family; but no paper, either of daily or weekly circulation, has so practically assisted these poor people as THE LONDON JOURNAL. The Editor of that paper, by the weekly issue of 12 supplements, at one-halfpenny each, has realised the surprising sum of 1424*l*., which has been paid in weekly instalments of 120*l*. Nothing proves so unanswerably as this does the sympathy of the poor, as the purchase of the supplement was not compulsory on the subscribers to the paper.

Subscriptions have been received from all parts of the world; from Panama, Bahia, Bombay, Quebec, Novia Scotia, St. John's, New Brunswick, Brussels, Pau, Lausanne, Bonn, Paris, Calais, Calcutta, Ceylon, Montreal, Boulogne, the Black Sea Fleet, Bermuda, Fredericton, New Brunswick, &c. The generous sympathy of the Navy for the wives of the army has been very gratifying: indeed the first person who by an able letter in the *Times* roused the public to a sense of their neglect of the soldier's wife, was "A NAVAL OFFICER." But of all the subscriptions perhaps the most touching was that of the Chelsea Pensioners. One old veteran in paying his penny was heard to remark, "Had there been such an Association in my day, when I was away at the wars, my poor old woman would not have died in the workhouse." Several bodies of men of the working classes have agreed to send in weekly penny contributions; the men of Price's Patent Candle Factory, and the men of the Crewe Locomotive Department have already paid in considerable sums collected in this way. From several large towns considerable amounts have been remitted, from Walsall, Cheltenham, &c.; but the town of Bath has exceeded them all by several hundred pounds.

THE RAILWAY COMPANIES—LYING-IN HOSPITALS.

So universal has been the sympathy displayed towards the poor people whom this Association has taken by the hand, that all the great Lines of Railway have been made free to the soldier's child. Particularly the London and North-Western, and the Portsmouth Line, where not only have the children been carried free of expense, but the extra weight of baggage of their poor mothers has not been charged for, an example which the Committee earnestly trust all the Railway Companies will universally follow. Two Lying-In Hospitals in London,—the British Hospital, in Endell Street, and the Queen Charlotte's—most generously opened their doors to the soldier's wife. Many a poor woman has had deep cause for thankfulness for the care taken of her at the British Lying-In Hospital in Endell Street. Music, poetry, and the fine arts have all been enlisted in this good cause. One simple poem by a child realised nearly 20*l*. for the Association; and the admirable sketch by George Thomas, Esq., of the Soldier's "Separation from his Family," presented by that gentleman to the Committee of the Bath Fancy Fair, has done good service to the cause—representing so truthfully as it does the reality of the distress which this Association is so effectually mitigating.

LOCAL COMMITTEES.

The assistance and practical working of the 78 Local Committees all over the kingdom has been most invaluable. To the Clergy of the Church of England, the staff-officers of pensioners, the garrison chaplains, the local magistrates, and other benevolent persons, the committee desire most cordially to tender their hearty thanks. Had it not been for the indefatigable exertions of the senior garrison chaplain of Dublin, the Rev Charles Hort, upwards of 400 women and 800 children would now have been the inmates of the workhouse, for in Ireland no out-door relief is granted. The staff-sergeants in the several districts have proved themselves worthy of the profession to which they are an honour; one fine fellow on being offered remuneration for the great trouble he had taken in relieving the poor soldiers' wives in his district, exclaimed, "GOD FORBID THAT I SHOULD TAKE ANY PAYMENT FOR HELPING MY COMRADES' WIVES AND FAMILIES IN THEIR DISTRESS." A perfectly organised system is now established by means of the local committees throughout the kingdom, quarterly statements are regularly transmitted, showing the number of women and children, and the expenditure; and regiments that began regimentally to distribute their own funds have cordially handed over the balance of their funds to the Association, being satisfied with its working, and perfectly content to abide by its rules and regulations. It is necessary to state, however, that the Association has not been permitted to relieve any but the widows and orphans of the Foot Guards, the officers commanding those regiments having funds of their own for the relief of the wives and families of their men, and not wishing to burden the Association.

Extract from the Report of the Limerick Local Committee.

"Limerick, Aug. 28, 1854.

"We have 17 women married with leave on our list. It appears that the women married with leave have the heavier families. It is incontestible that the major part of the women relieved by this committee would, ere this, have been in the workhouse, if they had not been aided. We can safely declare our conscientious belief that the list of women, 83 in number, have shown themselves deserving of the relief administered to them. We have never received a single complaint against one of them. They have universally manifested a desire to obtain work. Several of them have obtained situations as wet nurses, a great fact in proof of the decent, healthy, and well-conditioned state of these individuals. Many are working at the shirt business for a mere trifle, to earn which they must labour all day; and several are learning the trade of shirtmaking without wages, in hopes of being able to assist themselves. Upon a fair review of their conduct and their general appearance, we can safely say that the women relieved by our committee are creditable to the army. Even with the relief they receive, their position is far too trying a one to be anything but a warning, instead of an attraction to other females to enter into the same state, and we advisedly give it as our opinion that the operations of this Committee are not calculated to create the mischief which some imagine is likely to result from the charity and sympathy which have been evinced by the British public for this most unhappy class of women, suddenly deprived of the help of their husbands.

"R. P. DOUGLAS,
"Colonel, Assist. Adjt. Gen., Chairman of Committee."

Extract from the Manchester and Salford Local Committee.

"Salford Barracks, August 29.

"I send you a statement of a few cases which strike me as being unusually distressing. There are many nearly as bad, 140 in number. Very few of the women who have *young children* (and the children are nearly all too young to work), can earn anything worth noticing, 2*s*. to 3*s*. a week at the most. Of course those who enjoyed the privileges of living in barracks, &c., as being married with leave, are in the worst circumstances, and they suffer severely. They lose the lodging and advantages of fuel, company's and officers' washing, say 5*s*. or 6*s*. a week, and the assistance of their husband's pay. Lodging here of a very indifferent sort costs them 2*s*. and 3*s*. a week, and they will be far worse lodged than when in barracks. I send you the cases of four women, all married with leave, one with six children, another five, another four, another three; there are many others married with leave, having two or three children, nearly as destitute. There is no employment that they are capable of, hampered as they are with young children, for whose care they *must pay* if they leave them at home and seek employment elsewhere.

"A. F. BOND, Major and Staff Officer."

Extract from the Report of the Woolwich Local Committee:—

"Woolwich Rectory, Sept. 4, 1854.

"The women were left in very many cases, I am sure I may say in almost all, without any means for themselves and their children. Many were on the eve of confinement. Their only resource would have been to become paupers on the parish, and their only asylum would have been the workhouse. A generous provision on the part of a grateful country for the wives and families of those on whom they depended, under God, for a successful issue of the war in which we have been compelled to engage, has prevented this. But suppose this had not been the case—How hardly would the maintenance of so many have pressed upon the poor-rate payers! and in many instances how unfairly! Take Woolwich, for instance, and the case would be similar with respect to all garrison towns. We have upwards of 200 women, besides their children, to be maintained somehow. I think it quite possible that the burden would have been felt so heavily, that a memorial might have been sent to the Government. But however this might be, the expense would have been unfairly thrown upon parishes such as our own; but this is a trifling matter when compared with *the pauperisation of respectable wives of soldiers of our army*.

"HENRY BROWN, Rector of Woolwich."

Extract from the Report of the Dublin Local Committee:—

"September 4, 1854.

"I find that since the 1st July to the 2d inst., I have made about 3400 payments (in small sums, varying from 1*s*. to 1*l*. 5*s*.) to about 400 women, soldiers' wives. We have granted several women free passages to their friends and relatives, released clothes from pawn-offices for women going into situations, set up numbers in a small way of business, defrayed the funeral expenses of a few children, and in numberless other ways have been the means of conferring substantial benefits upon these poor people, &c. Had it not been for the small weekly payments, the majority would have been in the poor-house. Many women, although they only received 3*s*. 6*d*. a-week, were thus kept going, and encouraged to work for themselves and children, &c.

"CHARLES HORT, Senior Garrison Chaplain, and Honorary Secretary to Committee."

Extract from the Report of another Local Committee:—"We have hardly relieved any that were not married with leave and on the strength. By the timely aid rendered by your Society much distress was of course prevented, as, as soon as they were left, your excellent Society took them by the hand. But timely as this aid was offered, it was not before, in many cases, the poor creatures had parted with nearly everything, EVEN IN TWO CASES TO THEIR WEDDING-RINGS. What would have been the condition of these poor creatures if no such society as yours had existed! many of them far too high-spirited to have become the inmates of a workhouse, would have been plunged into a state of misery fearful to contemplate. But even as it is, much misery is to be found. A poor delicate creature with two children, married with leave, to whom your Society grants a weekly allowance, has been compelled to part with her furniture. So distressing is this woman's case, and so respectable a character does she appear to be, that some of the other women have helped her out of their own small pittance, &c. Every day I feel more thankful for the good your Society is doing; upwards of 30 are receiving help from you at this place. I only wish those who have contributed large sums to your Society could witness the gratitude of these poor women for the help they receive; they would indeed feel more than repaid for all they have done."

SOLDIERS' WIVES AT VARNA.

Mr. Ray, formerly the active and intelligent Inspecting Officer of this Association, writes from Varna to the following effect:—

"Varna, August 4, 1854.

"Sir,—I beg to draw your attention to the condition of the poor women here. Many of them have died, and others are dying; others who are in a state of convalescence, are not able to proceed further with their regiments, and the men are expected to leave this in about 14 days; and these poor creatures, emaciated and dried with the sun, will be left in a foreign land without any protection or home whatever. What I thought of was to provide a house and food for such as have none; most of them have blankets, but to those who have not, I would propose lending them some, and to encourage those who are able to get about to wait on the sick, cook, and wash. If your Committee is pleased to approve of this plan, I shall be most happy to superintend the whole matter, and I am quite sure it would relieve many a poor man of intense anxiety. The cold weather will be soon setting in, then what will these poor women do? If the ladies in England would send us a little flannel, a few blankets, and left-off garments, they would be rendering us a great service, &c. The great work that is going on for the wives and families of the soldiers by means of the Association in which you take so prominent and energetic a part, causes abundant joy to the husbands and fathers here; and when I remind them of what is doing, they seem overjoyed, and many thanks are expressed both to yourself and the Committee, and benevolent friends, for the sympathy shown them. Numerous are the deaths from cholera and fevers, and doubtless many who are cared for by your Association are really widows, but news of the fact may not have reached them. They have not yet entered the field; but every day the order for embarkation for the Crimea is expected, where doubtless many will fall, and these poor fellows have their eyes upon your Association to protect their wives and children. I am happy to say I have been well received by the men generally: to point them to the 'Lamb of God that taketh away the sins of the world,' is my ostensible work, and to tell them of the great work going on in England for the good of those they have left behind, is in perfect keeping; it is indeed good news. The poor women who have followed their husbands to this place are in a most pitiable condition, and when the expedition sails for the Crimea, they will be left here. Would that we had an association here for these poor objects! Varna is in perfect confusion; how could it be otherwise with such a congregation of nations, fierce, wild, desperate-looking fellows, armed to the teeth, anxiously waiting for the signal to summon them to the fight. May you long be spared in your glorious work, of all works the most enviable, to care for the poor, &c. &c."

Immediately on the receipt of these letters the Committee met, and decided that a donation of blankets, shawls, &c. &c., should immediately be sent to Varna, and the sum of 100*l*. should be granted for the use of these women. On the 1st September goods to the amount of 34*l*. were sent by steam to Constantinople, addressed to the care of the Consul-General, who was requested to use his discretion in forwarding them to Varna. A bill of exchange for 100*l*. was also sent to the same authority, with instructions and authority to Mr. Ray to act as the almoner of the Association. Private letters received by the Committee fully corroborate the fact of the distress of these poor women; for though they receive what are called rations, no other female comforts can be provided for them.

"Camp near Varna, August 24, 1854.

"Dearest,—Yours dated August 3d came to hand on the 16th. I have received all your letters except one. You did tell me, my dear, that 7*s*. a week was what you received from the Association; and although that is a mere trifle in a place like London, yet we ought to be very thankful for it. You say you deeply regret you did not go with me; indeed, my dear wife, much as I desire to be with you, I think it one of the most providential things ever happened for you to be where you are, instead of being here: badly off as you are now, you would be utterly miserable here. We have lost already two married men of cholera. I sleep in the staff tent ever since I got better of the cholera. Everything is enormously high here; a mouthful of white bread and cheese for supper costs 5*d*. One thing lately we can always get, a pint of ale for 2*d*., or porter 1½*d*.—in fact, it is the only thing we relish; for the bread is very bad, and we get nothing but the nasty beef, which we cannot eat, but boil down and make soup of. I get, as I said before, 1*s*. 10*d*. a day pay. Out of this, 4½*d*. is stopped for rations, and 2*d*. a day for mess money; so that by the time I pay for something fit to eat, there is not much left; still I shall, please God, send you all I can, &c. The women here have no way of making money by washing, the water is too far off, &c. I am sorry to say I have been very ill, and as it is far the best for me to let you know the whole truth, I must inform you that I have had the cholera; I was very bad while it lasted, but thank the God of all goodness for His great mercy, He has restored me. The doctors have been very kind indeed to me; everything I could wish for was got for me; almost all the officers and the colonel came to me, and inquired about me constantly. Poor L. M., J. M., and E., and Mrs. L., have all died since my last; also J. R. and S. F. Indeed, my dearest wife, I rely in perfect confidence in my Redeemer, and feel myself quite unworthy of His mercy; and during the worst of my illness, I felt humbled before Him in whom alone my salvation is sure.—Your ever-loving husband,

"E. R."

The wife of the writer of this letter (a most excellent non-commissioned officer) was left nearly destitute with five young children. She bears a most irreproachable character, and is most anxious to exert herself to obtain her own livelihood; but what can she do with five young children? Her two eldest girls are entirely provided for by the Association, and she receives a weekly allowance of 7*s*. The Committee perceive with pleasure that the authorities are gradually sending them home from the East. Three arrivals of soldiers' families have already been brought before the Committee, for no sooner do they land than they apply to the Association, and it is needless to add how readily their application is always responded to.

WIDOWS AND ORPHANS.

The first efforts of this Association were limited to the immediate relief of the Wives of Soldiers ordered on active service, who, in consequence of their having families, were left behind, utterly destitute of all means of existence, save the temporary out-door parish relief. Since that time the sword and the pestilence have too fatally done their sad work, and many of these poor people have become more helplessly destitute by the death of their husbands.

The Committee, however, encouraged by the magnificent contributions received from all parts of the world, have found themselves in a position to make the following scale of donations for Widows, which is the same that was adopted by the administrators of the Waterloo Fund, in 1815:—

Unanimously resolved,—"That relief in the shape of a donation not exceeding the undermentioned sums, being the same as agreed to by the Waterloo Committee on the 28th of June, 1815, be adopted as a scale for the Widows of non-commissioned Officers and Soldiers now serving against Russia.

"A Pension may be granted, in the place of the whole or part of such Donation, should it appear expedient to the Committee."

(*For continuation of this advertisement see next page.*)

SOLDIERS' WIVES AND FAMILIES' ADVERTISEMENT—*Continued.*

Scale of Donation for Widows with Children dependent for Support :—

Rank.	Without Children.	One.	Two.	Three.	Four.	Five.	Six.	Seven.	Eight.
	£	£	£	£	£	£	£	£	£
Serjeant Major......	90	100	115	125	135	150	160	175	200
Serjeant	60	80	90	100	105	120	130	140	160
Corporal	45	60	70	75	80	90	100	110	120
Drummer	35	45	50	55	60	70	75	80	90
Private...............	30	40	45	50	55	60	65	70	80

Of Widows the Association has already 64 in their books, and of Orphans 108.

The following letter shows that for the Widows of those brave men who perished with their Colonel in the *Europa* transport, ample provision was made, and that the measures adopted for their relief have fully satisfied the Officer commanding the depôt of the Enniskillings :—

"Canterbury Barracks, July 13th, 1854.

"Sir,—I have the honour to acknowledge, with many thanks, the receipt of your memorandum, detailing the amount of the donations granted by the Association of which you are the Honorary Secretary, to the widows and orphans of the five non-commissioned officers and men of the Enniskilling Dragoons, who were lost in the *Europa* transport. The ready and liberal aid thus sent to their relief will, I trust, be effectual to alleviate in some degree their distress; and it marks, too, in a way for which I am most grateful, how deeply the Committee of your admirable Association appreciate the bravery and noble conduct of those who stood by their Colonel to the last. Sure I am, from private accounts which I have received, that had all on board done their duty as manfully as those who perished, there would not have been a life lost in the *Europa*. I have not failed to communicate to the officer commanding the regiment in Turkey the liberality with which the Association have met my application for assistance to the surviving families by a grant of 415*l.* I am glad, too, to express my sense of the admirable arrangements of the Society, by which the distribution of this sum has been entrusted to the persons best able to judge of the most judicious means of administering, in each individual case, to the permanent relief of the sufferers.—I have the honour to be, sir, your obedient servant, F. ——,

"Commanding Depôt Enniskilling Dragoons.

"Major Hon. H. L. Powys, Hon. Sec."

Case 1540, *W. T.*—A boy of the 33d Regiment, whose father and mother both died of cholera in Turkey; a most distressing case. A weekly allowance granted to the orphan's grandfather, with whom the boy was left.

For the five widows and children of the 6th Enniskillings, annuities have been purchased, large sums having been subscribed for them in addition to the grant from this Association; the amount will render them independent for their lives. For the other widows, donations, varying from 5*l.* to 10*l.*, have been granted immediately on the receipt of official notification of their husbands' death. Most of them were already on the books of the Association, and had been receiving relief for some time: it is proposed to grant them an annual pension as long as they remain Widows, and the resources of the Association continue available.

CONCLUDING REMARKS.

Effectually to prevent the recurrence of such distressing scenes as those which gave rise to the formation of this Association, the Committee have had in consideration a plan which it is hoped might tend materially to raise the condition of the soldier's wife, and secure a provision for the soldier's widow.

As there is no probability, under existing circumstances, of so raising the pay of the soldier as to enable him when married to apportion a sufficient share of it to his family while he is on active service, the Committee are of opinion, that a National Fund should be established, of which the invested capital of this Association shall be the foundation, and to which the public and the soldier shall be invited to subscribe annually.

This fund to provide pensions for widows and orphans, as well as temporary assistance to wife and family, who having become subscribers, may be ordered on active service.

The exact subscription which the soldier would be called upon to pay, must depend on the amount of public support the National Fund may receive,—it must always be a very small sum from the soldier; but the Committee are convinced that the country will approve of this proposed attempt to encourage habits of obedience and prudent foresight amongst the married soldiers of the British army. By order of the Committee.

Henry Littleton Powys,
September 7, 1854. Major 60th Royal Rifles, Hon. Sec.

The Central Association in Aid of the Wives and Families, Widows and Orphans of Soldiers ordered to the East.—BALANCE SHEET.

Dr.

1854.		£	s.	d.
Sept. 7.	To Amount of Subscriptions received in the Half-year, ending 7th Sept., 1854, from the formation of this Association on the 7th March	80,269	17	7
		£80,269	17	7

"Ingestre," Chairman.
John Lettsom Elliott,
Henry Littleton Powys, } Members of the Finance Committee.

Cr.

1854.					£	s.	d.
Sept. 7.	By Exchequer Bills deposited in the Bank of England in the names of the Trustees (viz.), Sir John Kirkland, Lord Henry Cholmondeley, M.P., and Major the Honourable H. L. Powys				65,565	9	4
	(Of which 50,000*l.* will be applied to relieve Widows and Orphans).						
	By Relief, distributed through Local Associations				5359	14	4
	By ditto, distributed at Head Office in London				1180	19	0
	By ditto, distributed through Clergymen, Magistrates, and others				2631	7	5
	By Advertisements				1792	12	2
	By Office Expenses, Printing, Stationery, Wages, Rent, &c.				718	19	3
	By Payments to the Sailors' Association				106	0	10
	By Balance (viz.) In the hands of the Honorary Secretary ...	£ 311	9	3			
	" At Bankers' 7th Sept., 1854	2603	6	0			
					2914	15	3
					£80,269	17	7

These Accounts Examined and Audited.
George Wm. Bell, Auditor to the Association.

Thus it will be seen that the Sum of Nine Thousand One Hundred and Seventy-two Pounds have already been spent in actual relief for Widows as well as Wives within the space of Six Months, and that at the trifling outlay of a little more than 3 per cent. the sum of £80,269 17*s.* 7*d.* has been raised.

ANNUAL SUBSCRIPTIONS are solicited towards the formation of a NATIONAL FUND for WIDOWS and ORPHANS.

H. L. POWYS, Major 60th Rifles, Honorary Secretary.

LANDSCAPE GARDENING REVIVED AS AN ART.

MR. THOROLD, of Thorpe Bower, near Norwich, continues to offer his services to Ladies and Gentlemen in laying out or re-arranging their Gardens and Pleasure Grounds on correct principles of taste, in any style, or combination of styles, suitable to the requirements of all kinds of residences, upon any scale, and in most cases to produce immediate effect. Mr. T. can give ample references as to his success.

TO LANDSCAPE GARDENERS AND OTHERS

NOTICE IS HEREBY GIVEN, that the COLCHESTER BURIAL BOARD are prepared to receive DESIGNS and ESTIMATES for Laying out, Embellishing and Planting their proposed Burial Ground, containing about 18 acres. The Board will not pledge themselves to employ the party whose design shall be approved, and in the event of his not being employed, he shall be paid the premium of 10 guineas for his design, which shall become the property of the Board. A plan of the ground may be seen, and further information obtained at my Office, as below. All parties intending to send Designs and Estimates are requested to forward the same to me, the undersigned, under sealed cover, indorsed "Colchester Burial Ground," on or before the 30th day of October instant.—By Order,

Philip Smith Sparling, Clerk to the Board.
5, Abbey Gate Street, Colchester, October 7.

BEDFORD BURIAL BOARD.—The Burial Board for the Parishes of St. Paul, St. Peter, St. Mary, and St. Cuthbert, in the Town of Bedford, in the County of Bedford, do hereby give notice that they intend to enter into a Contract or Contracts for Planting the Burial Ground, according to Plans and Specifications to be seen at the Office of Mr. Thomas Jobson Jackson, Architect, Bedford. All persons willing to undertake the execution of such work may make proposals for the purpose, such proposals to be marked "Bedford Burial Board, Tender for Planting," and delivered at the Office of Mr. Theed William Pearse, the Clerk to the Board, St. Paul's Square, Bedford, on or before the 24th day of October instant, and such proposals will be offered to the Board, at a Meeting to be held on the 25th of October instant, at the Shire Hall, in the said Town. It will not be incumbent on the said Board to accept any proposal.

Theed William Pearse, Clerk to the Board.
October 7, 1854.

PERNOLLET'S PATENT APPARATUS for Sorting Wheat, Rye, Barley, and other Grain, Removing Extraneous Matters, and thereby rendering it fitter for sowing. Price 8*l.*—T. Stassen and Pernollet, 51, Old Compton Street, Soho Square, London.

TO FLORISTS AND OTHERS.

J. JONES, Iron Merchant, has always a great variety of CONICAL and SADDLE BOILERS in STOCK; also Fire and Furnace Bars, Ornamental and Plain Supply Cisterns, Double Doors and Frames, Furnace Grates, Soot Doors, Hot Water Pipes, Elbows, Tees, Syphons, Throttle Valves, Stop Cocks, Flange and Socket Elbows, &c.; also Trough Pipes. Drawings and prices of the above, on application to J. Jones, Iron Bridge Wharf, No. 6, Bankside, London, near the Southwark Iron Bridge.

TO NOBLEMEN, STEWARDS, AND OTHERS.

J. WRIGHT, 36, Boar Lane, Leeds, begs to call the attention of parties about to improve their Farm Estates to his O.G. Rain Water Spouting, which, for lightness, durability, and cheapness, cannot be equalled. 4 inch, at 1*s.* 1*d.* per yard; 4½ inch, 1*s.* 2½*d.* per yard; 5 inch, 1*s.* 5*d.* per yard.

Wire Working, Sheep Fencing and Hurdles, at reasonable prices. Garden Implements of every description.

N.B. To be Sold, a bargain, a Large Wire Aviary.

THE CRYSTAL PALACE FLOWER BASKETS, as exhibited in Nave and Transepts of the Crystal Palace, Sydenham, made to the original and other new elegant designs, by W. RICHARDS, at the Wire Works, 370, Oxford Street, nearly opposite the Princess's Theatre. Conservatories and Aviaries fitted up. Wire work in all its varieties. Game and garden fence—parrot cages and all others. Choice birds kept on sale. Window blinds of every possible description, of the very best materials and workmanship.

N.B. An allowance to nurserymen and the trade.

NOTICE TO GARDENERS AND OTHERS.

TURF.—Her Majesty's Commissioners for the Exhibition of 1851 are prepared to sell several hundred loads of Turf, on a portion of their Estate, at Kensington Gore.—Particulars may be obtained on personal application to Mr. Wade, at the Office of the Commissioners, Grove House, Kensington Gore, between the hours of 10 and 4.

NURSERIES, CLAPHAM

To Noblemen, Gentlemen, Nurserymen, and all Persons engaged in Laying-out Gardens, Ornamental Grounds, and Plantations.

THE ADMINISTRATORS of the late JOSEPH FAIRBAIRN beg to call attention to their immense stock of Cratægus, Weeping Hollies, Ash, Willows, and every kind of Tree and Shrub for Garden or Plantation purposes. They have also a fine Collection of Trained and Untrained Fruit Trees, consisting of Standard and Dwarf Peach, Apricot, Nectarine, Apple, Pear, Plum, Cherry, Gooseberry, Currant, and Raspberry, of all the leading sorts. They have still some fine Azaleas, Ericas, Aphelexis, Epacrises, and general Stove and Greenhouse Plants, none of which have been submitted to sale.

Roses, Hollyhocks, and Dahlias, in every variety; all of which are in the best possible condition, and are now offered at a great reduction in price for ready money.

KING'S COUNTY.—MOST DESIRABLE RESIDENCE.

TO BE LET, from the 1st of November next, for such term as may be agreed on, the DWELLING-HOUSE, OFFICES, and DEMESNE LANDS of COROLANTY, containing 162 statute acres, together with 80 acres of valuable bog attached, situate within one mile of the town of Shinrone, in the Barony of Clonlisk, and King's County.

The Dwelling-house, upon which a large sum is now expending in permanent improvements to be completed before the 1st of November, is large and commodious, and in every way suited for a gentleman's residence. There are extensive out-offices attached, and a large walled-in garden, well stocked with choice fruit trees. The land is of a superior quality, well suited for either tillage or grazing. The Tenant can also have 65 acres of an adjoining Townland at present in the hands of yearly tenants. There is a large quantity of Manure, Turf, and a Threshing Machine on the premises, which the Tenant can have at a valuation. The Shinrone Station on the Roscrea and Parsonstown Railway, about to be made, will be within one mile of Corolanty. To a solvent Tenant a long Lease will be given; no other need apply.

Proposals in writing will be received by Joseph J. Walker, Esq., Belfield, Shinrone; or William Peebles, Esq., 9, North Frederick Street, Dublin.

BUCKS.

To Nurserymen and Others.

TO BE SOLD, a capital GREENHOUSE, nearly new, fitted with furnace and cast-iron hot-air flues. Length, 28 feet by 6; width, 14 feet; height, 15 feet by 6. Glazed roof, containing 12 sashes, 6 of which are sliding, with pulleys, complete; the front sashes are made to slide. The whole is in excellent order, fitted with an eleven-tier stand for flowers, with shelves and iron braces.—May be viewed in the grounds of Woburn House, and particulars obtained, on application to Mr. H. Simmonds, Upholsterer and Auctioneer, High Wycombe.

PURE WHITE DORKING FOWLS, Double Rose-combed and Five-clawed. A few very choice birds to be disposed of; prices, 22*s.* 6*d.* for a Cockerel and two Pullets, crate included.—Apply to H. Pickell, Police Station, Egham, Surrey.

TO BE SOLD, FANCY POULTRY, consisting of Imported Brahma Pootra, White-faced Spanish, and Pure Buff Cochin, many having taken 12 or 14 Prizes, the property of Mr. Fox, who, in consequence of removing from his present residence, will dispose of the whole of his valuable Collection of Poultry, which has been selected from most of the best stocks in this country.—For particulars, apply at the City of London Wire Works and Blind Manufactory, 44, Skinner Street, Snow Hill, London.

Illustrated Catalogues of Wire Fencing, Garden Arches, Trainers, &c., forwarded per post on application.

TO PLANT EXHIBITORS.

Important Sale of Magnificent Specimen Heaths.

MR. J. C. STEVENS begs to announce that he will Sell by Auction, on the premises, Crown Hill, Norwood, on TUESDAY, October 10, at 12 for 1 o'clock precisely, about 100 HEATHS, the finest specimen plants ever offered for public sale, and including all the best exhibition varieties grown by Mr. S. Smith, gardener to W. Quilter, Esq., of Norwood.—May be viewed on the day prior and morning of sale; and Catalogues had of Mr. J. C. Stevens, 38, King Street, Covent Garden, London.

FULHAM.

To Noblemen, Gentlemen, Nurserymen, and Others.

MESSRS. PROTHEROE and MORRIS are directed by Mr. Lockhart to Sell by Auction, without reserve, on the premises, Parson's Green Lane, Fulham, on MONDAY, October 9th, at 11 o'clock, a costly and extensive collection of BULBS and FLOWER ROOTS, being about 50,000 in number; also choice Vegetable and Flower Seeds, Fruit Trees in good condition, Standard Roses, a collection of Herbaceous Plants, Two three-light Boxes, and Sundries.—May be viewed three days prior to the Sale. Catalogues may be had (6*d.* each, returnable to purchasers) of Mr. Lockhart, on the Premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

CLAPHAM.

To Noblemen, Gentlemen, Nurserymen, Market Gardeners, and Others.

MESSRS. PROTHEROE and MORRIS are instructed by the administrators of the late Mr. Joseph Fairbairn to sell by Auction, on the premises, The Retreat, Larkhall Lane, Clapham, on MONDAY, October 23d, and following days, at 11 o'clock each day, the whole of the valuable stock of FRUIT TREES, consisting of Standard, Dwarf, Trained and Untrained Peach, Nectarine, Apricot, Apple, Pear, Plum, Cherry, Gooseberries, and Currants, &c.: also Ornamental Trees, Evergreens and Deciduous shrubs, &c.—May be viewed one week prior to the Sale; Catalogues to be had (6*d.* each, returnable to purchasers) on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

STOKE NEWINGTON.

To Gentlemen, Nurserymen, Builders, and Others.

MESSRS. PROTHEROE and MORRIS beg to announce that they have received instructions from the Administrators of the late Mr. W. Watts, of Stoke Newington, to Sell by Auction, without reserve, on the premises, on MONDAY, October 30, and three following days at 11 o'clock each day, the whole of his unrivalled Nursery Stock, consisting of an immense quantity of American Plants, Ornamental and Fruit Trees, Evergreens, and Deciduous Shrubs, fine Fruiting Mulberries; also the Greenhouse Plants, comprising 200 fine Double Camellias, 50 very fine specimen Indian Azaleas, Heaths, Epacris, &c., together with Greenhouses, 2 and 3-light Boxes, Gold and Silver Fish in Ponds, an excellent Horse, two capital Carts, Wheelbarrows, Garden Tools, and sundry effects. May be viewed one week prior to the Sale. Catalogues may be had (6*d.* each, returnable to purchasers) on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

MR. DOWSETT will Sell by Auction, without reserve, under a Power of Sale on a Mortgage, on TUESDAY, the 24th October next, at the Auction Mart, London, at 12 o'clock, BINFIELD NURSERY, Binfield Road, Stockwell, Surrey. The Nursery Ground consists of 1½ acre, walled around; a substantial brick-built Cottage containing five convenient rooms on the ground floor; and three newly-erected Greenhouses and two Sheds. Held on Lease for the unexpired Term of 80 years, wanting 28 days, from Midsummer last, at a low ground rent of 40 guineas.—Particulars of Mr. Thompson, 3, Finsbury Chambers, London; and of the Auctioneer, New Town, Homerton, and Chelmsford.

Printed by William Bradbury, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and Frederick Mullett Evans, of No. 2, Victoria Street, in the Parish of St. Margaret and St. John, Westminster, both in the County of Middlesex, Printers, at their Office in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's Covent Garden, in the said County, where all Advertisements and Communications are to be Addressed to the Editor.—Saturday, Oct. 7, 1854.

THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 41.—1854.] SATURDAY, OCTOBER 14. [PRICE 6*d*.

INDEX.

Abelia uniflora .... 662 *a*
Allotment competition, Tortworth .... 666 *a*
Asbury .... 665 *c*—667 *b*
Ansted's Notes on Geology, &c., rev. .... 662 *c*
Bark, management of .... 659 *c*
Basing Park .... 663 *b*
Books noticed .... 662 *c*
British Association .... 661 *c*
Calendar, horticultural .... 664 *b*
— agricultural .... 668 *c*
Civilisation, benefits of .... 668 *c*
Corn averages .... 667 *b*
Cumberland (East) Agricultural Society .... 668 *a*
Farm implements, Thomas on, rev. .... 668 *b*
Farming, Dartmoor .... 667 *c*
Finger and Toe disease .... 665 *c*—667 *b*
Forests, Royal .... 659 *c*
Foxglove, monstrous .... 660 *c*
Gesneras, treatment of .... 661 *b*
Hay crop, Ayrshire .... 666 *b*—667 *a*
Implements, Farm .... 668 *b*
Labour, rates of payment for .... 669 *a*
Lilies, Guernsey .... 664 *c*
M'Glashen's tree-lifter .... 662 *b*
Manure, liquid .... 667 *c*
Mildew, cure for .... 662 *a*
Pathology, vegetable .... 660 *c*
Pits, cold, to protect .... 664 *c*
Plants, new .... 663 *a*
— influence of solar radiations on vital powers of .... 661 *c*
— sea, coloured glass for .... 661 *c*
Primulas, double .... 664 *a*
Protective materials .... 664 *c*
Roots, fingers and toes in .... 665 *c*—667 *b*
Seed-growers' society .... 667 *c*
Thornham Village Horticultural Society .... 662 *a*
Tree lifter, M'Glashen's .... 662 *b*
Vegetable pathology .... 660 *c*
Village societies .... 662 *a*
Vivaria, marine, artificial sea-water for .... 661 *c*
Weeds, to eradicate .... 667 *c*
Woods and forests .... 659 *c*

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Notice is hereby given that an ELECTION of TWO PENSIONERS on the Funds of this Charity will take place in January next. All persons desirous of becoming Candidates at such Election are requested to send in their petitions and testimonials to the Committee on or before the 1st November next, after which time they will not be received.

Printed forms of petition can be had upon application to the Secretary. By order of the Committee.

7th October, E. R. CUTLER, Secretary.
14, Tavistock Row, Covent Garden.

WILLIAMS' EVERGREEN CLIMBING ROSE.

WILLIAM WOOD AND SON have been appointed Agents by Mr. Davis, of Malvern, for the sale of the above-named magnificent CLIMBING ROSE. Good established plants, 3*s*. 6*d*. each. Usual discount to the trade. For particulars purchasers are referred to their own and Mr. Davis' advertisements in *Gardeners' Chronicle* of October 7, page 643.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

THOMAS JACKSON AND SON, having a large healthy Stock of STOVE, ORCHIDACEOUS, and GREENHOUSE PLANTS, respectfully invite intending purchasers to an inspection; in addition to the established favourite kinds will be found many novelties now offered at very low prices.

Kingston, near London.

ROSE NURSERIES, HERTFORD.

E. P. FRANCIS' List of ROSES, containing all the new varieties worth cultivating, with a stock of 5000 dwarfs in 150 sorts, most successfully grown on the Manetti Stock, is now ready for delivery, and will be forwarded to any amateur, gratis, on application.

HOLLYHOCK SEED.

WILLIAM CHATER begs to offer packets of the above Seed, containing twenty sorts, selected from his best show varieties, at 5*s*.; 12 varieties, do., 2*s*. 6*d*.; and from good double border sorts, at 1*s*.—Also Pansy Seed, from the best flowers, 2*s*. 6*d*. per packet.—Strong Plants of the new Double Crimson Rocket, excellent bedding plants for spring flowering, 6*s*. per dozen, or 2*l*. per 100; Double French White, 4*s*. per doz., or 30*s*. per 100.—Saffron Walden, October 14.

PRIMULA SINENSIS.

J. AND J. HAYES begs to offer their fine fringed varieties of Red and White PRIMULAS; fine strong plants, in 60-sized pots, ready for shifting, at 6*s*. per dozen, packing and carriage included, to any railway in London. All orders from unknown correspondents to be accompanied with a Post Office order, payable to J. & J. HAYES, Edmonton, Middlesex.

R. SMITH is now sending out his New Seedling Strawberry, SIR CHARLES NAPIER, the best forcing one of the day, admired by all who have seen its growth, and for colour not one to equal it.—Price, 3*l*. per 100; 50 for 30*s*.; 25 for 1*l*.
R. SMITH, Market Gardener, Richmond Road, Twickenham; or G. GLADMAN, Salesman, Covent Garden Market, London.

DUTCH HYACINTHS, for Forcing, single and double, at 4*s*. per dozen. Also Narcissi, Crocuses, Tulips, Irises, Jonquils, Anemones, and Ranunculuses, priced Catalogues of which will be forwarded by post, from ARTHUR COBBETT'S Italian and Foreign Warehouse, 18, Pall Mall.

Also Double Roman and Paper White Narcissus, the most beautiful and fragrant of all the Narcissi, 4*s*. per dozen.

HART AND NICKLIN, FLORISTS, &c., Guild ford, offer the following Plants:—

GERANIUMS, 12*s*. per dozen, including Optimum (Foster).
Fancy ditto, 10*s*. per dozen.
PANSIES (choice show flowers), 10*s*. per dozen.

MAY'S EARLY ASH-LEAVED KIDNEY POTATOES, free from disease, 10*s*. per bushel, 14*s*. per cwt., 12*l*. per ton, sacks included.

EARLY FORTYFOLD POTATOES.—The editor of the *Gardeners' Chronicle* says, "These are a well-known kind, of good quality; a good cropper, and is found by us to be quite as early as the Ash-leaved Kidney, if planted early, escaping all disease, yielding immense crops." They are of the red kind, and round. 8*s*. per bushel, 11*s*. per cwt., 9*l*. per ton, sacks included.

Address, HENRY MAY, The Hope Nurseries, Bedale, Yorkshire.

BROWICK RED WHEAT.—Seed Wheat of the above description, and true may be obtained immediately by addressing Mr. EDWARD BALL, Bailiff, Hodgmoor, Beaconsfield. Price, by Quarter, Sack, or Bushel, 10*s*. per Bushel. All orders to be accompanied by Post-office order or remittance.

PERUVIAN BARLEY, FOR AUTUMN OR SPRING SOWING.—A packet of this prolific, skinless, hardy, heavy, and very early variety of Barley, sufficient to sow one rod of ground at six inches apart square, will be sent to any address, post free, on receipt of eight postage stamps, warranted genuine and selected grains, from ABRAHAM HARDY & SON, Seed Growers and Seedsmen, Maldon, Essex.

RENDLE'S NEW DESCRIPTIVE CATALOGUE OF DUTCH ROOTS *is just published, containing lists and prices of the best Hyacinths, Tulips, Ranunculuses, Anemones, Crocus, Iris, Narcissus, Jonquils, Gladiolus, &c., to be had in exchange for two penny stamps, from*

WILLIAM E. RENDLE AND CO., SEED MERCHANTS, Plymouth.

CARNATIONS, PICOTEES, AND PINKS.

JOHN KEYNE'S ANNUAL CATALOGUE, containing all the finest SHOW FLOWERS, is now ready, and will be sent, on application to the Castle Street Nursery, Salisbury.

SURREY GARDENS, GODALMING, SURREY.

THOMAS WELLAND offers strong and genuine Early Battersea, E. York, E. Imperial, and Drumhead Plants, packed and delivered at Godalming Station, at 3*s*. 4*d*. per 1,000.

ROSES.

THE DESCRIPTIVE CATALOGUE OF ROSES for the Season, by THOS. RIVERS, is now ready for delivery, and will be sent on application for two postage stamps. A choice selection of varieties only is inserted, so that it forms a useful guide to the Amateur.—Nurseries, Sawbridgeworth, Herts.

ROSE CATALOGUE FOR 1854-55.

WILLIAM WOOD AND SON are now prepared to issue COPIES of their New ROSE CATALOGUE for the present season on receipt of two postage stamps. General Catalogue of Nursery Stock may also be had on same terms.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

PRICED NURSERY CATALOGUES.

A. PAUL AND SON will be happy to forward the following priced Nursery CATALOGUES in return for one postage stamp each:—A, ROSES; B, ORNAMENTAL TREES AND CONIFERS; C, FRUIT TREES; D, HERBACEOUS PLANTS; F, GREENHOUSE PLANTS, &c.; G, SEEDS; H, HOLLYHOCKS; I, BULBS.—Nurseries, Cheshunt, Herts.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER'S descriptive List of the above splendid flowers, containing hints on their culture, and observations on exhibiting, &c., is now ready, and may be had on application, by forwarding one postage stamp.—Saffron Walden Nursery, Oct. 14.

BASS AND BROWN'S NEW AUTUMN CATALOGUE, containing the following, is now complete, and supplied free by post for three Penny Stamps.

Dutch and Cape Roots.	Hardy Herbaceous Plants.
Geraniums.	Potentillas.
Cinerarias.	Hollyhocks.
Azalea indica.	Antirrhinums.
Fuchsias } best new of 1854.	Conifera, and other Select Trees and Shrubs.
Verbenas } best new of 1854.	Hardy Climbers.
Petunias } best new of 1854.	Roses, Fruits, &c. &c.
Stove and Greenhouse Plants.	

Seed and Horticultural Establishment, Sudbury, Suffolk.

TULIPS.

HENRY GROOM, Clapham Rise, near London, by appointment FLORIST TO HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to inform the AMATEURS OF TULIPS that his CATALOGUE is ready, and will be forwarded by post on application. He is happy to say that from the superior growth of last spring, he has been enabled to make a considerable reduction in the prices.

HYACINTHS AND DUTCH BULBS.

HENRY GROOM, Clapham Rise, near London, by appointment FLORIST TO HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to say that he has received his HYACINTHS AND DUTCH BULBS, in excellent condition, and that they are much finer than usual.—His CATALOGUE of BULBS, &c., will be forwarded on application.

DUTCH BULBS.

THOMAS CRIPPS, NURSERYMAN, SEEDSMAN, and FLORIST, respectfully announces that his annual importation of the above has just arrived in excellent condition, Catalogues of which, comprising, amongst others, many new and choice varieties of Hyacinth, Crocus, Tulips, Anemones, &c., may be had on application.—Tunbridge Wells, Oct. 14.

AMERICAN PLANTS.

JOHN WATERER begs to announce that he has published a new Catalogue of his Rhododendrons, &c., as exhibited by him in the Gardens of the Royal Botanic Society, Regent's Park, London. It describes the colours of all the Rhododendrons considered worthy of cultivation, with a Treatise on their successful management, and may be had by enclosing two postage stamps.

The American Nursery, Bagshot, Surrey, near Farnborough Station, South-Western Railway.

AMERICAN PLANTS.—A Descriptive Priced CATALOGUE of HARDY AMERICAN PLANTS for the coming season is just published, and may be had by enclosing two stamps for postage. As everything in the way of American Plants is grown to an unequalled extent at this Nursery, intending purchasers would do well to provide themselves with this Catalogue.

WATERER AND GODFREY, Nephews and Successors to the late Hosea Waterer, Knap Hill Nursery, Woking, Surrey.

AMERICAN NURSERY.

GEORGE BAKER'S Descriptive CATALOGUE of AMERICAN PLANTS, Coniferas, Ornamental Shrubs, Fruit and Forest Trees, &c., may be had by enclosing two postage stamps.

G. B. wishes to call particular attention to his fine Stock of Weeping Hollies, from 3 to 10 feet high.

American Nursery, Windlesham, near Bagshot, Surrey, near Staines Station, Windsor Branch South Western Railway, where conveyances may be obtained.

NEW BEDDING GERANIUM,
GAINES' SCARLET UNIQUE.

N. GAINES begs to inform the nobility, gentry, and trade in general, that he intends sending out the above the first week in November. It was exhibited at the Chiswick and Royal Botanic Horticultural Shows, where it was considered a great novelty, and well adapted for Bedding purposes. Price 5*s*. per plant. Printed lists of his large collection of Pelargoniums, both Fancy and Show varieties; also lists of Greenhouse, Stove, and other Hard-wooded Plants, may be had by applying at the Nursery, Surrey Lane, Battersea.

TWELVE SUPERIOR HYACINTHS *for 6s.; mixed sorts, 4s. per dozen, as well as every kind of Bulbous Root, can be obtained carriage free from*
WILLIAM E. RENDLE AND CO., SEED MERCHANTS, Plymouth.

HYACINTHS	4*s*., 6*s*., and 9*s*. per doz.
ANEMONES, best double varieties	5*s*. per 100.
RANUNCULUS " ...	3*s*. to 5*s*. "
CROCUS ROOTS, very large ...	1*s*. 6*d*. to 2*s*. "

And all other kinds of Dutch Roots, imported direct from the first houses in Holland, at the lowest remunerative prices.

Apply to WILLIAM E. RENDLE AND CO., SEED MERCHANTS Plymouth.

GEORGE JACKMAN begs to announce that he has just published a new and complete CATALOGUE of his Ornamental Evergreens, Conifers, Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., and may be had on application by enclosing two postage stamps.

Woking Nursery, 1½ mile from Woking Station, South Western Railway, where all Trains stop, and where capital conveyances may be had.—Oct. 14.

ARTHUR HENDERSON AND CO. beg to inform their patrons and the public that their CATALOGUES OF BULBS are now ready, and they will have much pleasure in forwarding them on application.

They comprise lists of all the finest varieties of Hyacinths, and many other rare and valuable Bulbs.

Their collections of Hyacinths have yearly carried off the metropolitan prizes, not only for their unique growth, but also for their beauty of colouring and distinctness of sorts, either when exhibited in a collection of 36 plants or in pairs.

Pine-apple Place, Edgeware Road, London.

L. VAN HOUTTE'S NEW GENERAL CATALOGUE, No. 53, is just published, containing descriptive lists and prices of Azaleas, Camellias, and Rhododendrons; Stove, Greenhouse, and Hardy Plants of every description, including many fine and valuable novelties; tender and hardy flowering bulbs in great variety, and of superior quality, &c., &c. May be had on application to his agent, Mr. R. SILBERRAD, 5, Harp Lane, Great Tower Street, London. N.B. The CATALOGUE of Flower and Vegetable Seeds will be published early in the month of November next.—LOUIS VAN HOUTTE, Nurseryman and Seed Merchant, Ghent, Belgium.

JOHN HOLLAND, Bradshaw Gardens, Middleton, near Manchester, respectfully informs his friends and the floricultural public that his priced and descriptive CATALOGUE of FLORISTS' FLOWERS, &c., is now ready, and will be forwarded on application, enclosing a postage stamp.

Selected Pansy Seed, 1*s*. and 2*s*. per packet.

J. H., having a large surplus stock of the older varieties of SHOW TULIPS, he will dispose of them at 20*s*. per 100, strong blooming bulbs.

The FLUKE POTATO for seed, 5*s*. per bushel.

SEED POTATOES.—BRITISH QUEEN, as an abundant bearer, for early maturity, and excellence in eating, unsurpassed; price per bushel (bag included) 7*s*. EARLY ASH-LEAF (true) 8*s*. per bushel. FORTY FOLD, 6*s*. per bushel. HART and NICKLIN, High Street, Guildford.

VINES IN POTS,
GROWN UNDER GLASS FROM SINGLE EYES, 4 to 6 feet high.

ALEXANDER PONTEY, NURSERYMAN, Plymouth, begs to offer the following sorts of VINES, warranted true to name. If 12 or more are ordered, they will be delivered free in Bristol or London; price 2*s*. 6*d*. to 3*s*. 6*d*. each.

VINES.—Alicant, or Black Spanish; Barbarossa; Black Hamburgh; do. Hampton Court; do. Varners; Constantia, black; Eschalota superba; Frontignac, White; do. Grizzly; do. Red; Gromier de Cantab; Joslyn St. Aubyns; Muscat of Alexandria; do. Tottenham Court; do. Lunet; Lees (early); do. Canon Hall; St. Peter's (Oldacres), black; Wilmot's Royal Victoria; Tripoli (Wellbeck's); Sweet Water (White Dutch); do. Grove's End.

Plymouth Nursery.—Oct. 14, 1854.

NEW SEEDLING AURICULAS, ETC.

LIGHTBODY'S SIR JOHN MOORE.—Green edge. Figured in the "Florist" for June, 1852. Strong plants, 1*l*. 10*s*.

LIGHTBODY'S SIR CHARLES NAPIER.—Grey edge; per plant, 15*s*.

LIGHTBODY'S COUNTESS OF DUNMORE.—White edge per plant, 15*s*.

LIGHTBODY'S METEOR FLAG.—Blue self; per plant, 15*s*.

NEW PINK.—LIGHTBODY'S ELIZABETH GAIR.—Warranted one of the most perfect Pinks in cultivation. Per pair, 5*s*.

LIGHTBODY'S PRINCESS MAUDE ROSE BREEDER TULIP.—Extra fine, per Bulb, 20*s*.

LIGHTBODY'S LOCHINVAR SEEDLING RANUNCULUS.—Figured in the "Florist" for January, 1853. Per root, 5*s*.

GEORGE LIGHTBODY, Falkirk.

NORTHGATE NURSERY, CHICHESTER.

JAMES GRAHAM, late Gardener and Steward to Mrs. Smith, Bersted Lodge, Bognor, begs most respectfully to announce to the Nobility, Clergy, and Gentry, and to the public generally, that he has succeeded to the long established NURSERY and GARDEN SEED BUSINESS of Messrs. SILVERLOCK and SON. J. G. trusts that by constant personal attention, and from his experience in the practice of Horticulture, as well as from his being well known in the neighbourhood, he may venture to solicit a continuance of the patronage and support so long bestowed on his predecessors.—Oct. 14.

RARE AND HARDY CONIFERÆ.

THE following CONIFERS having proved perfectly hardy during the past winter and spring in this well-known bleak district, exposed to the cutting winds from the North Sea, induces YOUELL AND CO. to offer the same with every confidence, and beg to annex a scale of prices for good Plants.

	Each. s. d.	P. doz. s. d.	P. 100. s. d.
Abies morinda, 1 year ...	...	3 0	15 0
,, 2 years ...	...	4 0	25 0
,, 6 to 9 inches ...	...	6 0	
,, 9 to 12 inches ...	...	9 0	
,, 12 to 18 inches ...	...	12 0	
,, 2 to 3 feet ...	2 6	24 0	
,, 4 to 5 feet ...	3 6		
(This species is synonymous with A. Khutrow and A. Smithiana. Is very distinct and ornamental.)			
Abies Menziesi, 1 to 1½ foot ...	1 6	12 0	
,, ,, 1½ to 2 feet ...	2 0	24 0	
,, orientalis, strong ...	2 0	18 0	
,, pumila, very bushy ...	2 6	21 0	
,, pygmæa ...	3 6		
,, Whitmaniana, 3 to 4 inches ...	5 0	42 0	
Araucaria imbricata, 15 inches to 1½ foot ..	5 0	42 0	
,, ,, 1½ to 2 feet ...	7 6	72 0	
,, ,, 2 to 2½ feet ...	15 0	150 0	
,, A few fine specimens 3 to 5 gs. each.			
,, Cunninghami ...	25 0		
Biota glauca, 9 inches ...	12 6		
Cedrus atlantica, 9 to 12 inches ...	2 0	18 0	
,, ,, 12 to 15 inches ...	2 6	24 0	
,, ,, 1½ to 2 feet ...	3 6	36 0	
,, Deodara, 1 year ...	...	...	20 0
,, ,, 4 to 6 inches ...	0 9	6 0	40 0
,, ,, 6 to 9 inches ...	1 0	9 0	60 0
,, ,, 12 to 15 inches ...	1 6	15 0	100 0
,, ,, 1½ to 2 feet ...	2 6	24 0	150 0
,, ,, 2 to 2½ feet ...	3 6	36 0	
,, ,, 2½ to 3 feet ...	5 0	42 0	
,, ,, 3 to 4 feet ...	7 6	72 0	
,, ,, 4 to 5 feet ...	10 6		
,, ,, 5 to 6 feet ...	21 0		
,, ,, 6 to 7 feet ...	31 6		
,, Libani, 2 to 2½ feet ...	2 6	24 0	
,, ,, 2½ to 3 feet ...	3 6	36 0	
Cephalotaxus Fortuni, 1½ to 2 feet ...	25 0		
,, ,, 4 inches ...	7 6		
Cryptomeria japonica, 2 to 3 feet ...	2 6		
,, ,, 6 to 9 inches ...	...	18 0	
Cupressus elegans, 1½ to 2 feet ...	3 6	30 0	
,, excelsa, 9 inches to 1 foot ...	2 6		
,, Corneyana, 1½ foot...	7 6		
,, Knighti, 2 feet ...	10 6		
,, majestica, 1½ foot ...	7 6		
,, thuioides variegata, 6 to 9 inches	1 6		
,, funebris, 3 to 4 inches ...	0 9	6 0	
,, ,, 1 to 1½ foot ...	2 0	18 0	
,, ,, 1½ to 2 feet ...	2 6	24 0	
,, Goveniana, 9 to 12 inches ...	2 6	24 0	
,, ,, 2 to 3 feet ...	3 6	42 0	

	Each. s. d.	P. doz. s. d.	P. 100. s. d.
Cupressus Lambertiana, 12 to 15 inches ..	2 6	24 0	
,, ,, 1½ to 2 feet ...	3 6	42 0	
,, macrocarpa, 12 to 18 inches ...	2 6	24 0	
,, ,, 2 to 3 feet ...	5 0	42 0	
,, sempervirens of India, 1 year ...	...	12 0	
,, ,, 1 foot ..	...	30 0	
,, Tournefortii, 6 inches ...	...	9 0	50 0
,, Uhdeana, 1½ to 2 feet ...	2 6	24 0	
,, ,, 2½ to 3 feet ...	3 6	36 0	
,, Whitleeana, 1½ to 2 feet ...	5 0	42 0	
Dacrydium Franklini, small ...	1 6	12 0	
,, ,, 6 to 9 inches ...	2 6	24 0	
,, ,, 2 to 2½ feet ...	15 6		
Fitz-Roya Patagonica, nice plants, 3s. 6d. to	5 0		
Juniperus Bedfordiana, 9 to 12 inches ...	1 6	12 0	
,, ,, 1 to 1½ foot ...	2 0	21 0	
,, ,, 2 feet...	2 6	24 0	
,, daurica, 1 foot ...	3 6		
,, ericoides, 1 foot ...	5 0		
,, excelsa, 6 to 9 inches ...	2 0	21 0	
,, ,, 15 to 18 inches ...	3 6	36 0	
,, echiniformis ...	3 6		
,, hibernica or Irish ...	1 6	12 0	
,, recurva ...	2 6		
,, sinensis, 9 inches ...	1 6		
,, squamata, 6 to 9 inches ...	1 0	9 0	
,, ,, 9 to 15 inches ...	1 6	18 0	
,, Sabina ...	1 0	9 0	
,, ,, elegans ...	2 6		
,, ,, variegata ...	2 6		
,, Virginiana, 2 to 3 feet ...	1 6		
Libocedrus chilensis, 5s. to ...	7 6		
Picea amabilis, true, 1 foot ...	15 0		
,, cephalonica, 1 to 1½ foot ...	2 6		
,, ,, 1½ to 2 feet ...	3 6		
,, nobilis, 1 foot ...	10 6		
,, Nordmanniana, from cuttings 4 to 6 in.	5 0		
,, ,, 9-inch stout seedlings	21 0		
,, pinsapo, cuttings, 2 years ...	1 6	12 0	
,, ,, 6 to 9-inch seedlings ...	5 0	42 0	
,, ,, 2½ to 3 feet, fine, 31s. 6d. to ...	42 0		
,, Pindrow, 2 years ...	...	4 0	25 0
,, ,, 9 to 12 inches ...	1 0	9 0	
,, ,, 12 to 15 inches ...	1 6	12 0	
,, Webbiana, true, 1 year...	...	4 0	25 0
,, ,, 9 to 12 inches ...	2 6	24 0	
,, ,, strong ...	3 6		
Pinus Abschasica ...	7 6		
,, austriaca, 9 to 12 inches ...	...	6 0	
,, canariensis, 1½ foot ...	2 6		
,, cembra, 15 to 18 inches ...	...	12 0	
,, ,, 2 to 3 feet ...	...	24 0	
,, cembroides, 1½ foot ...	3 6		

	Each. s. d.	P. doz. s. d.	P. 100. s. d.
Pinus Edgariana, 2 feet ...	10 6		
,, excelsa, 2 years ...	...	...	12 6
,, ,, 12 to 15 inches, in pots ...	...	9 0	
,, ,, 18 inches to 2 feet, ditto ...	...	12 0	
,, ,, 18 inches to 2 feet, bedded ...	...	...	60 0
,, ,, 2 to 3 feet, ditto ...	...	...	75 0
,, ,, 3 to 4 feet, ditto ...	...	...	100 0
,, Fremontiana, 4 inches ...	21 0		
,, Gerardiana, 9 to 12 inches ...	1 0	9 0	
,, ,, 12 to 15 inches ...	1 6	15 0	
,, ,, 1½ to 2 feet...	3 6		
,, Hamiltoniana, 1 foot ...	2 6		
,, insignis, 1 year, in pots...	...	12 0	
,, ,, 12 to 18 inches ...	3 6		
,, ,, 1½ to 2 feet ...	5 0		
,, ,, 2 to 2½ feet ...	7 6		
,, ,, 6 to 7 feet ...	31 6		
,, Lambertiana, 15 inches ...	5 0		
,, Llaveana ...	2 6		
,, macrocarpa, 1 foot ...	10 6		
,, ,, 2½ feet ...	21 0		
,, maritima, in pots, 9 inches ...	...	6 0	
,, Massoniana, 1 year, in pots ...	5 0		
,, Montezumæ, 1 foot ...	15 0		
,, Monticota ...	5 0		
,, ponderosa, 2 years ...	5 0	42 0	
,, ,, 1 foot ...	15 0		
,, Sabiniana, 4 to 6 inches, very fine ...	5 0	60 0	
,, Teocote, 1½ foot ...	5 0		
Saxe-Gothæa conspicua ...	5 0		
Taxus adpressa, 1 to 1½ foot ...	1 6		
,, baccata, common Yew, 2 to 2½ feet ...	...	9 0	50 0
,, ,, elegantissima, 4 to 9 inches	2 0	24 0	
,, ,, Dovastoni or Weeping, 1½ to 2 ft.	2 0	21 0	
,, ,, gold striped, 4 to 9 inches ...	1 6	12 0	
,, ,, ,, 9 to 12 inches...	2 6	25 0	
,, ,, ,, 12 to 18 inches, ex.	5 0		
,, ,, fastigiata, the Irish Yew, 2 to 2½ ft.	...	6 0	30 0
,, ,, ,, 3 to 4 ft.	...	12 0	75 0
,, ,, variegata ...	3 6		
,, ,, pyramidalis, 9 to 12 inches ...	...	12 0	
,, ,, ,, 18 inches to 2 feet	...	18 0	
,, ,, Harringtoni, 3s. 6d. to ...	5 0		
,, ,, japonica, 3s. 6d. to ...	5 0		
Thuja aurea, 6 to 9 inches ...	2 6	24 0	
,, flagelliformis ...	5 0		
,, plicata, 18 inches ...	2 6		
,, sinensis, 2 to 3 feet ...	...	9 0	
,, ,, 4 to 5 feet ...	...	12 0	
,, Wareana, 2 to 2½ feet ...	3 6		
Taxodium sempervirens, 1½ to 2 feet ...	2 6		
,, ,, 2 to 3 feet ...	3 6		
Wellingtonia gigantea ...	31 6		

HARDY ORNAMENTAL SHRUBS AND CLIMBERS.

	Each. s. d.	P. doz. s. d.	P. 100. s. d.
Andromeda floribunda ...	2 6		
Aralia japonica ...	1 6		
Arbutus andrachne ...	3 6		
,, crispa ...	3 6		
,, futinifolia ...	3 6		
,, hybrida ...	2 6		
,, integrifolia ...	3 6		
,, Milleri ...	3 6		
,, unedo, 1½ to 2 feet ...	...	9 0	
,, ,, 2 to 3 feet ...	...	12 0	
Aucuba japonica ...	...	6 0	35 0
Bays, sweet ...	...	4 0	25 0
Bignonia radicans superba ...	1 6		
,, ,, major ...	1 6		
Berberis aquifolia ...	...	2 0	15 0
,, Darwini, extra size ...	5 0		
,, ,, good plants ...	2 0		
,, ,, small ditto ...	1 0		
,, dulcis, strong...	...	6 0	
,, Fortuni ...	1 6		
,, nepaulensis ...	7 6		
,, tenuifolia ...	3 6		
,, trifoliata ...	3 6		
Buxus balearicus, 9 to 12 inches ...	...	6 0	
,, the tree ...	...	4 0	25 0
Calycanthus macrophyllus ...	3 6		
Catalpa syringæfolia, 3 to 4 feet ...	...	6 0	
Ceanothus dentatus ...	1 6		
,, divaricatus ...	1 0		
,, integerrimus ...	3 6		
,, papillosus ...	1 6		
,, rigidus ...	1 6		
Cerasus ilicifolia ...	2 6		
Chimonanthus fragrans ...	1 6		
Clematis azurea grandiflora ...	1 6		
,, florida ...	1 0		
,, ,, pleno ...	1 6		
,, Hendersoni ...	1 6		
,, flammula, strong ...	1 0		
,, montana, strong ...	1 6		
,, Sieboldi ...	1 6		
,, tubulosa ...	0 9		
Clianthus puniceus ...	1 6		
Cotoneaster microphylla ...	1 0	9 0	
Daphne collina ...	1 6		
,, ,, latifolia ...	2 6		
,, Delahayana ...	2 6		
,, Fioniana ...	2 0		
,, pontica ...	...	6 0	
Deutzia crenata ...	1 6		
,, gracilis, nice plants ...	1 0	9 0	
,, scabra ...	0 9		
,, staminea ...	1 6		
Erica arborea ...	0 9		
,, codonoides ...	1 0		
,, ciliaris ...	0 9		
,, cinerea purpurea...	0 9	6 0	
,, herbacea ...	0 9		
,, mediterranea ...	0 9		
,, ,, nana ...	0 9	6 0	
,, ,, striata ...	0 9	6 0	

	Each. s. d.	P. doz. s. d.	P. 100. s. d.
Erica tetralix alba ...	0 9		
,, vagans ...	0 9		
,, ,, alba...	0 9	6 0	
,, ,, rubra ...	0 9		
,, vulgaris alba ...	0 9	6 0	
Escallonia macrantha ...	1 6		
,, monte-videnais ...	1 0		
Euonymus japonica variegata, 9 inches ...	...	6 0	
,, ,, 12 inches ...	...	9 0	
Eugenia Ugni, small ...	10 6		
Fagus fusca ...	15 0		
Fabina imbricata ...	1 0		
Forsythia viridissima, 2 to 3 feet ...	1 0		
,, ,, 3 to 4 feet ...	1 6		
Garrya elliptica ...	1 6		
Genista tinctoria plena ...	0 6		
Hedera (Ivy) regeneriana ...	1 0		
,, palmata...	0 9	6 0	
,, the Irish ...	0 9	6 0	
,, variegated silver ...	1 6		
Ilex (Holly) aquifolia, common Evergreen, 2 to 2½ feet ...	...	6 0	30 0
,, ,, standard, weeping ...	3 6		
,, ,, variegated, 1½ to 2 feet	...	9 0	
,, castaneæfolia ...	2 6		
,, cornuta ...	10 6		
,, diapyrena ...	3 6		
,, furcata ... 5s. to	10 6		
,, latifolia, 1 foot ...	1 6		
,, ,, 2 to 3 feet ...	3 6		
,, ,, 3 to 4 feet ...	5 6		
,, latispina ...	3 6		
,, maderiensis ...	1 6		
,, microcarpa ... 5s. to	10 6		
,, Sheppardi, very fine ...	1 6		
Jasminum nudiflorum ...	1 0		
,, ochroleucum ...	1 6		
,, officinale ...	...	9 0	
,, ,, grandiflor ...	1 6		
,, revolutum ...	1 6		
,, Wallichianum ...	1 6		
Lardizabala biternata ... 3s. 6d. to	5 0		
Laurus cerasus, common Evergreen, 2 to 2½ ft.	...	4 0	25 0
,, ,, 2½ to 3 feet ...	...	6 0	30 0
,, Portugal ditto, 2 to 2½ feet ...	...	6 0	40 0
,, ,, 2½ to 3 feet ...	...	9 0	60 0
,, regalis ...	3 6		
Laurestines, 1 to 1½ foot ...	...	4 0	30 0
,, 1½ to 2 feet ...	...	6 0	40 0
Ligustrum japonicum, true ...	1 6		
,, sinense ...	1 0	9 0	
,, ovalifolium...	1 6		
Lonicera (the Honeysuckle) brachypoda ...	2 6		
,, early red ...	0 9	6 0	
,, early white ...	0 9	6 0	
,, flexuosa ...	1 0		
,, floribunda ...	1 0		
,, late red ...	0 9	6 0	
Magnolia grandiflora ...	2 6		
,, purpurea ...	1 0	9 0	
Mitraria coccinea ...	1 6		
Neillia thyrsiflora ...	1 6		

	Each. s. d.	P. doz. s. d.	P. 100. s. d.
Pæonia Moutan (tree Pæony) ...	2 6		
Passiflora cærulea, strong ...	1 0		
Paulownia imperialis ...	1 0		
Pernettya ciliaris ...	2 6		
,, speciosa ...	1 6		
Peumus fragrans, small ...	3 6		
Philesia buxifolia ...	10 0		
Philadelphus Gordoniana ...	1 0		
,, mexicana ...	1 6		
,, sp. california ...	2 6		
Piptanthus nepalensis ...	1 6		
Pyracantha, red-berried ...	1 0		
Pyrus japonica ...	1 0		
Quercus agrifolia ... 5s. to	7 6		
,, ballota ...	3 6		
,, Fordi, 9 to 12 inches...	1 6		
,, ,, 1½ to 2 feet ...	2 0		
,, ,, 2 to 3 feet ...	3 6		
,, glabra ...	3 6		
,, ilex, common Evergreen, 1½ to 2 ft.	...	9 0	
,, ,, 2 to 3 feet ...	...	12 0	
,, ,, 3 to 4 feet ...	...	18 0	
,, ,, Humei ...	2 6		
,, inversa ...	10 6		
,, lanata ... 3s. 6d. to	5 0		
,, Lucombiana, or Evergreen Lucombe, 2 to 3 feet ...	...	18 0	
,, ,, ,, 3 to 4 feet	...	24 0	
,, ,, ,, 4 to 5 feet	...	30 0	
,, rotundifolia ...	2 6		
,, sclerophylla ...	10 6		
,, sempervirens grandiflora ...	3 6		
Rhododendron barbatum ...	5 0		
,, Falconeri ...	5 0		
,, lancifolium ...	5 0		
,, robustum ...	5 0		
,, Thompsoni ...	5 0		
,, other fine Sikkim varieties	...	60 0	
Ribes albidum ...	...	6 0	
,, aureum ...	...	6 0	
,, sanguineum ...	...	4 0	
,, ,, flore pleno...	...	9 0	
Roses, climbing ...	...	4 0	
Solanum crispum ...	1 6		
,, jasminoides ...	1 6		
Spiræa callosa ...	1 6		
,, Douglasi ...	1 0		
,, prunifolia flore pleno ...	1 0		
,, Reevesi ...	1 0		
,, ,, flore pleno ...	3 6		
Stauntonia latifolia ...	2 6		
Ulex (the Furze) double ...	...	6 0	
Viburnum dauricum ...			
,, suspensum ...	3 6		
,, grandiflorum ...	3 6		
Wistaria sinensis ... 1s. 6d. to	2 6		
,, ,, alba...	7 6		
Weigela amabilis ...	2 0		
,, rosea ...	1 0		
Yucca californica ...	10 6		
,, gloriosa superba ... 2s. 6d. to	5 0		
,, recurva ... 2s. 6d. to	5 0		

CARNATIONS AND PICOTEES.

The finest varieties, by name, in strong healthy Plants ... 18s. and 24s. per doz. pairs.
Fine mixed border ditto ditto ... 9s. ,,
True old Clove Carnation ditto ditto ... 12s. ,,
PINKS, finest varieties by name ... 9s. to 12s. per dozen.
CARNATIONS — Tree or Perpetual, flowering throughout the winter ... 18s. ,,

PHLOXES, PÆONIAS, ETC.

PHLOXES, finest new varieties ... 9s. per dozen.
PÆONIAS, in 20 choice kinds, for 1*l*.
ROCKETS, per doz.:—New double crimson, 12s.; double white, 8s.; double purple, 4s.
PRIMROSES, per doz.:—Double white, 4s.; crimson, 12s.; yellow, 5s.; purple, 4s.; lilac, 4s.

HYACINTHS, TULIPS, ETC.

BELGIAN DAISIES, in 50 new varieties, 4s. per dozen.
HERBACEOUS PLANTS, in very choice variety, 30s. per 100 or 6s. per dozen.
LILY OF THE VALLEY, strong for forcing, 5s. per 100.
HYACINTHS, the finest for glasses or forcing, 9s. per dozen.
TULIPS, extra fine, mixed, all from named flowers, 12s. per doz.

All orders of £2 and upwards are delivered carriage free to London, Hull, and Newcastle-on-Tyne, as well as to any Railway Station within 150 miles of the Nursery. Communications by Steamers and Railway to all parts of England, Ireland, and Scotland, as well as the Continent. Post-office Orders to be made payable to YOUELL & CO.

ROYAL NURSERY, GREAT YARMOUTH.

CHATERS' SEEDLING PANSY, PICOTEE.

J. CHATER AND SON beg to announce that they intend sending out after the 20th October, their SEEDLING PANSY named PICOTEE, in strong plants, 5*s.* each. Pure white ground, beautifully edged with azure blue; eye large, fine form and substance. The margin of this flower resembles a fine Picotee.

Also Hollyhock Seed, from the best sorts, in packets containing 200 Seeds, 1*s.* 6*d.*; 400 Seeds, 2*s.* 6*d.*

Fine Plants of splendid Sweetwilliam, 1*s.* 6*d.* per dozen; 10*s.* per 100.

Choice Pansy Seed, 1*s.* to 2*s.* 6*d.* per packet.

A catalogue of the best Hollyhocks, Pansies, Roses, and Pinks, can be had on application to J. CHATER & SON, Nurseries, Haverhill, Suffolk.

CATTELL'S EARLY BARNES CABBAGE,
" " RELIANCE "
" GREEN COLEWORT "

Plants of the above are now ready, 5*s.* 6*d.* per 1000, stout bedded; 4*s.* 6*d.* per 1000 good seedlings. No charge for crates, baskets, or packing. Packages of 5000 or more, delivered to the Edinbridge Station, South-Eastern Railway, carriage free.

Orders from unknown correspondents to be accompanied with post-office orders made payable here.—Address,

JOHN CATTELL, Westerham, Kent.

EARLY SEED POTATOES.

THE BRITISH QUEEN, ... 30*s.* per sack of 16 stone.
THE SHORT TOP ASH-LEAF, 30*s.* do. do.

The following letter has been received by the advertiser this week:—

(Copy)

Sir,—I was induced, last year, to try your Short Top Ash-Leaf, and I must, in justice to you, say that though I have been an Ash-Leaf grower for years, I never yet met with anything so good as your "Short Top;" my crop has been most abundant, and entirely free from disease. You are at liberty to make use of my name if you think it will be any service to you.—(Signed)

J. CALVESBERT, Cock Watch Farm, near Colchester.

For character of the British Queen refer to this paper of Saturday, Sept. 23.—Orders to any extent can be executed either for the "Queens" or "Short Tops."—Letters or inquiries must inclose a stamped envelope, and all orders made payable to JOSEPH WILSON, Seed Potato Merchant, Ipswich.

FRUIT TREES.

THOS. RIVERS begs to submit to the Public the following synopsis of his Fruit Tree Culture, which is this season more than usually complete and extensive.

APPLES, on Crab Stocks: standards for orchards, dwarfs, and dwarfs trained for espaliers.

APPLES, on Paradise Stocks, for gardens: pyramids, dwarf bushes, dwarfs trained for espaliers, and dwarf bushes in pots.

APRICOTS: standards, standards trained, half standards in pots, dwarfs, dwarf bushes for potting, dwarfs trained for walls, and dwarfs in a fruiting state in pots for orchard houses.

CHERRIES, on black Cherry Stocks: standards, standards trained, dwarfs, and dwarfs trained.

CHERRIES, on the Mahaleb Stock: dwarf bushes for potting and culture as bushes, dwarfs trained for walls, and dwarf bushes in pots.

CURRANTS: dwarf bushes, including some new and fine varieties.

FIGS, in pots: the same larger and in a bearing state.

GOOSEBERRIES: small, high-flavoured, old sorts, and all the large new Lancashire varieties.

GRAPES for Vineries, from eyes, in pots: strong plants, two and three years old; ditto, in pots, dwarf bushes for orchard houses; ditto, hardy sorts from the open ground for walls.

MEDLARS: standards and dwarfs.

MULBERRIES: standards and dwarfs trained for walls.

NECTARINES and PEACHES: standards, standards trained, half standards in pots, dwarfs, dwarfs trained, and dwarfs in a fruiting state in pots for orchard houses.

NUTS and FILBERTS: dwarf bushes, and standards 4 feet high, grafted on the Hazel Nut.

PEARS, on Pear Stocks: standards, standards trained, dwarfs, dwarfs trained for espaliers and walls; pyramids six years old, twice or thrice removed, in a bearing state; these are adapted for gravelly and chalky soils unfavourable to pyramids on the Quince Stock.

PEARS, on Quince Stocks: standards trained for walls, pyramids, pyramids root-pruned, in a bearing state; dwarf bushes in a bearing state, for potting, or for culture as bushes; dwarf bushes in pots, in a bearing state, for orchard houses.

PLUMS: standards, standards trained, dwarfs, dwarf bushes for potting or for garden culture, dwarfs trained for espaliers and walls, dwarf bushes in pots for orchard houses, and pyramidal trees in a bearing state.

QUINCES: standards of the common Quince, and pyramids of the large Portugal Quince.

RASPBERRIES: cases of the finest varieties.

STRAWBERRIES: runners of the finest varieties.

WALNUTS: standards and dwarfs for gardens of the Dwarf Prolific Walnut.

For descriptions and prices, see Descriptive Catalogue of Fruits published October, 1853, and sent post free for four stamps.

Nurseries, Sawbridgeworth, Herts.

NEW HARDY CONIFERS.

HUGH LOW AND CO. announce to their friends and the public that they have been appointed by Messrs. Parsons & Co., of Flushing, New York, Sole Agents in this country for the sale of the undernamed CALIFORNIAN CONIFERS. The Plants are raised from seed, and will be delivered as soon as the growth of the present season is sufficiently matured. THUJA GIGANTEA (Nuttall); *synonyms* LIBOCEDRUS DECURRENS (Torrey); THUJA MENZIESI (Douglas); THUJA CRAIGIANA (Jeffreys).—A magnificent species, and the most desirable Tree known to exist in California. It was discovered by the botanists of the United States Exploring Expedition, and is described by Professor Torrey, in "Plantæ Fremontianæ," as growing near the upper waters of the Sacramento, from lat. 38° 40′ to 41° N. He also states it is a noble tree, attaining a height of 120 to 140 feet, with a trunk 7 feet in diameter, rising from 80 to 100 feet without a limb. This tree will be perfectly hardy, and will take the foremost rank amongst our ornamental trees, as the foliage is most beautiful, reminding an observer of some of the more graceful species of Lycopodium.

The Plants when delivered will average 1 foot to 1½ foot in height, and being of such unusual size for a new Conifer, will produce an immediate effect. Price 31*s.* 6*d.* each.

ABIES NOBILIS.—This well-known Fir requires no description. Plants from seed have long been desiderata, and those now offered are strong and well shaped, from 6 inches to 1 foot in height. Price 31*s.* 6*d.* each.

In addition to the above, H. L. & Co. have to offer from the same source strong Plants of several species of hardy CALIFORNIAN PINES, collected in districts little explored. Amongst them will be found Pinus Jeffreyana, Pinus Parryana, offered for the first time; and judging from the CONES of the different species, it may with certainty be inferred that several others will prove entirely new to this country. Price 84*s.* per doz.

Messrs. Parsons & Co. having been successful in raising these fine Conifers in considerable numbers, have determined on offering them at the low prices quoted above, with a view to insure their speedy introduction into every collection in Europe.

Discount allowed only when twelve plants of a sort are taken.

Clapton Nursery, London, Oct. 7.

BASS AND BROWN *beg to offer the following from their New* CATALOGUE, *just published, which may be had on application for three postage stamps. They have this season a very fine and vigorous stock of Roses, which are offered at very reduced prices.*

100 Distinct and showy vars. Herbaceous Plants ...	£1	10*s.*	0*d.*
100 Superior and new " " ...	2	10	0
100 Delphinium elatum (or Bee Larkspur), great variety of fine mixed colours, fine for shrubberies ...	1	4	0
Delphinium maximum, per dozen ...	0	6	0
12 Pentstemons, in 12 fine varieties ...	0	7	6
50 Fine varieties of Phlox ...	0	18	0
50 Extra fine ditto ...	1	5	0
12 Fine varieties of Potentilla ...	0	9	0
12 Extra fine ditto ...	0	18	0
Splendid mixed ditto, Seedlings ...	0	9	0
12 Fine varieties of Hollyhocks ...	0	9	0
12 Extra fine ditto ... 18*s.* and	1	5	0
12 Fine Antirrhinum ...	0	6	0
12 Extra fine ditto ...	0	10	0
24 Fine vars. of Dwarf Rock Cistus very beautiful ...	0	15	0
12 Best new varieties of Pompone Chrysanthemum of last season, bushy, and in full bud for flowering ...	0	12	0
10 Best new large flowering ditto ...	0	10	0
60 Splendid varieties, including the 22 last named ...	2	0	0
20 Fine hardy Climbing Plants ...	0	15	0
100 Fine varieties of best Roses, Standards ...	7	10	0
100 " Dwarf and Half Standards ...	4	0	0
100 Fine mixed Dwarfs ...	1	10	0
50 Fine varieties of Standards, all selected from Perpetuals...	4	0	0
50 " " Dwarf, " " ...	2	10	0
100 Finest Prize Gooseberries, strong, two and three-year plants, in 25 varieties ...	1	15	0
25 " " " one of each ...	0	10	6
Strawberries, Myatt's Admiral Dundas, per dozen ...	0	7	6
" Patterson's Selected Nonpareil...	0	12	0
" Ward's Omer Pacha ...	0	10	0
" Barret's Magnum Bonum, very large ...	0	6	0
" Nicholson's Ajax and Ruby, per 100 ...	0	10	0
" Nicholson's Fillbasket and Captain Cook, per 100 ...	0	15	0
" Best other leading kinds, per 100 ...	0	3	0
Choice trained Peaches, Nectarines, and Apricots, strong, per dozen... 42*s.* to	3	0	0
Standard, Dwarf, and Trained Fruit Trees of other sorts, strong, and all of first quality			
Rhubarb, Salt's new Crimson Perfection, each ...	0	7	6
" Royal Albert, Linnæus, and Victoria per dozen ...	0	7	0

FLOWER ROOTS.

Choice Imported Dutch Hyacinths, per dozen, 6*s.* to	0	9	0
20 Choice varieties of Polyanthus, Narcissus...	0	8	0
100 Very fine named Ranunculuses ...	1	0	0
Ranunculuses, fine mixed, per 100 ...	0	5	0
" very fine, " ...	0	10	0
50 Superb named varieties of Anemones ...	0	12	6
Very fine mixed ditto, per 100 ... 6*s.* to	0	10	0
Mixed Semidouble Russian, very showy, per lb. ...	0	6	0
Mixed new Single, per lb....	0	4	0
50 Splendid Early and Late varieties of Gladiolus ...	2	10	0
12 Superb Late varieties, Ramosus habit ...	1	0	0
12 Splendid Early varieties, 10*s.* 6*d.* Fine ...	0	6	0
30 vars. of Early Tulips, very select and beautiful ...	0	7	6
11 vars. of Double ditto, 6 roots of each, very showy ...	0	10	0
40 varieties of Splendid and Distinct English Iris, flowering in June ...	1	5	0
Very choice Mixed, per 100 ...	0	15	0
Fine Mixed " ...	0	10	0
40 varieties of Splendid and Distinct Iris germanica, flowering in May ...	2	5	0
Best mixed ditto, per dozen ...	0	5	0
Fine mixed ditto, ditto ...	0	3	0
20 varieties of Splendid and very distinct named Crocus, 12 roots of each...	0	12	0
10 " " 100 roots of each ...	1	4	0
Fine Mixtures and separate colours, per 100 1*s.* 3*d.* to	0	2	0

Beautiful collection of Ixias, Sparaxis, Oxalis, Tritoma, Cyclamen, Lilium, and an extensive variety of other Roots.

Goods carriage free (not under 20s.) to all the London Termini, and all Stations on the London and Norwich Colchester Line, and Plants added gratis with orders of 40s. and upwards. Post Office orders payable to BASS & BROWN, *or to* STEPHEN BROWN, *Seed and Horticultural Establishment, Sudbury, Suffolk.*

THE PERPETUAL TREE VIOLET, or DOUBLE VIOLA ARBOREA.—The original grower of this, the true variety of the above beautiful Violet, now offers it to the public; it has surpassed all others, and now stands without an equal for its size of flowers, fragrance, and perpetual blooming; and as a plant for the Conservatory or Greenhouse, nothing can equal it. Large plants, 6*s.* per dozen; smaller ditto, 3*s.*

DOUBLE WHITE TREE VIOLET.—This is also a fine variety, and resembles the other in many respects, with the exception of its colour. The stock of this is small, in consequence of the great demand for it last season; parties requiring plants should not delay their orders. 6*s.* per dozen.

THE RUSSIAN SUPERB VIOLET.—One of the finest of single Violets, large blooms, with long stems, and most delightful fragrance; will bloom well through the season if sheltered from the heavy rains and severe frosts during the dead of winter. Plants 3*s.* per dozen.

A TREATISE on the best and most effectual mode of cultivating the VIOLET, post free for 12 stamps, or sent gratis with all orders above 5*s.*

GIANT SCARLET BROMPTON STOCK plants are now ready for planting out; the spikes of flower are very large, (measuring from 18 to 24 inches in length) and so fragrant that they are admired by all who have seen them. Fine strong plants, 6*d.* per dozen, or 4*s.* per 100.

STRAWBERRY PLANTS.—Good strong plants of the following superb varieties can be supplied:—Nimrod, 10*s.* per 100; Prince of Wales, 10*s.* do.; Ajax, 5*s.* do.; Ruby, 5*s.*; Myatt's Eleanor, 3*s.* do.; British Queen (true), 3*s.* do.; Black Prince, 3*s.* do.; Cremont's Perpetual, 3*s.* do.; Victoria, 5*s.* do.; Surprize, 3*s.* do.; and a great number of other good old varieties, at 3*s.* per 100.

POLYANTHUS SEED, saved from the best laced varieties, 1*s.* per packet.

ANTIRRHINUM SEED, all saved from the best named varieties, 1*s.* per packet.

EXTRA FINE SWEET WILLIAM SEED, saved from all the best and most beautiful varieties, 1*s.* per packet.

VERY SUPERIOR WELL RIPENED HOLLYHOCK SEED, 1*s.* per packet.

LORD KEYNON'S FAVOURITE CUCUMBER is the best and most productive for winter cultivation ever grown, requiring less heat than any other of the kind. It is a very handsome fruit and free setter. Good old seed of the above true variety may be had, price 2*s.* 6*d.* per packet.

The Violets and Seeds will be sent postage free, but the Strawberry Plants and Stocks will be sent by hamper, package free.

Any of the above will be forwarded on receipt of Post Office Order, or Penny Postage Stamps, for the amount by

EDWARD TILEY, Nurseryman, Seedsman, & Florist, 14, Abbey Churchyard, Bath, Somersetshire.

NEW VARIEGATED GERANIUMS.

JOHN AND CHARLES LEE beg to inform the admirers of Variegated GERANIUMS that they have purchased the Stock of two very promising Seedlings, which are decided improvements on those already introduced by them. The first they have named

MRS. LENNOX,

in compliment to the lady of the raiser, Thomas Lennox, Esq., of Stamford Brook Lodge, Hammersmith. The whole aspect of this plant is very striking, the habit being extremely vigorous, with leaves measuring from 4 inches to 6 inches across, and having a broad margin as white as the driven snow. The trusses are very large, of the most intense scarlet, and stand well above the foliage. The other we have named the

SCARLET FLOWER OF THE DAY,

giving an accurate idea of its character and properties. The foliage and habit are precisely the same as in "The Flower of the Day." The truss is larger and bolder, and the pips are well shaped and of great substance. The colour is all that can be wished for, being a fine scarlet, vieing with even the most favourite green-leaf varieties, and is not subject to burn under the hottest sun, either under glass or out of doors. Notice will be given next season, when they are ready to be sent out. This is inserted to prevent other parties from using the names surreptitiously.

Nursery, Hammersmith.

CHRYSANTHEMUMS.

R. PARKER begs to offer fine bushy plants of the above, well established in 6-inch pots, for flowering this autumn, consisting of all the newest and finest Pompon and large flowered varieties in cultivation. Purchaser's selection at 9*s.* per dozen.

CINERARIAS (Seedlings), from all the finest varieties, carefully selected, including the new varieties sent out last autumn. Strong established plants, in 4-inch pots, at 4*s.* per dozen. A choice collection of named Cinerarias in strong established plants, purchaser's selection, at 9*s.* per dozen

ROSES, consisting of the best varieties of Hybrid Perpetuals, Teas, Bourbons, &c., well established in pots. Purchaser's selection, at 12*s.* per dozen. List of names forwarded upon application.

A remittance or reference to accompany all orders from unknown correspondents.

Paradise Nursery, Hornsey Road, Islington.

NEW CLIMBING HYBRID PERPETUAL ROSE,

THE "DUCHESS OF NORFOLK."—Colour, Vivid Crimson

To be sent out for the first time about the end of October.

WILLIAM WOOD AND SON beg to refer to their advertisement in the *Gardeners' Chronicle* of September 30, page 627. Standards, half-standards, or dwarfs, will be supplied at 10*s.* 6*d.* each, with the usual allowance to the trade.

N.B. When six plants or more are ordered by the trade, a very considerable reduction will be made beyond the usual discount, particulars of which may be had on application.

A Drawing of the above may be had for 6 Postage Stamps.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

The Gardeners' Chronicle.

SATURDAY, OCTOBER 14, 1854.

AMONG the questions connected with the miserable history of the Royal Forests is one of very considerable importance in rural economy—namely, the manner of STRIPPING BARK and DRYING IT. We need not say that the sale of bark is perhaps the most unfailing source of revenue from woodland property, and that its market price depends, like everything else of the same nature, upon the fineness of the sample. It was, therefore, part of the late Commissioner's duties to take care that this subject should be thoroughly investigated. A very little inquiry led him to doubt whether the bark of the Crown forests could be as valuable in the market as that of private proprietors, especially when it was reported to him, upon the best authority, that in the Forest of Dean, in the west of England, the Crown surveyors were in the habit of curing it by placing one end on the wet ground and the other against a horizontal rod; an old and barbarous practice long ago condemned by skilful foresters, and, we believe, very little employed.

We scarcely need remind our readers that the modes of curing bark are three. One has been just described; a second is to rest it on a bank, technically called a horse, composed of faggot wood; and the other is to place it upon roughly constructed horizontal stages, or *ranges*, standing 2 or 3 feet above the ground. The last, which are commonly used in Scotland, and are fully described in BROWN'S "Forester," are undoubtedly the best. It is very true that in a good climate, or a very fine season, bark may be well enough cured by the two first methods; but as the object of the forester should be to place his bark beyond the risk of accident, we cannot but think that staging, which affords the best security attainable, would be universally employed if the method were understood.

What is the object sought in curing bark? except to deprive it quickly of all superfluous moisture, so that it may keep in stacks without risk of change; and to do this without permitting its quality to be injured by exposure to rain; or in other words to secure a clean bright sample, which shall have lost none of the *tannin* for which it is valued. If these ends are attained it is of no consequence how the operation is conducted, and the cheapest way will be the best. Now there is no natural agent so efficient in removing moisture as currents of dry air, and it should therefore be the business of the forester to secure by every contrivance within his reach the rapid circulation of draughts of air among his bark. The quicker it is dried naturally the better; change of colour in vegetable substances of this nature is caused by fermentation more or less prolonged; in the absence of moisture, fermentation

is impossible; in ill-ventilated places it takes place most rapidly. This is known to everybody who has dried a flower between the leaves of a book; if the flower is dried rapidly, in consequence of continual abstraction of its moisture, it retains its colour and becomes what a tanner might call a clean bright sample; if it can only part with its moisture slowly it becomes brown; and if the drying process is much delayed it will even change to black. These are, we apprehend, either self-evident propositions, or notorious facts.

It appears, however, from the evidence before us that in the Forest of Dean no ideas of the kind had taken root; in that forest it is not customary to reason; that a thing is usual is an answer to all enquiry. "There is a person there," says Mr. Kennedy in his examination before Mr. Drummond's Committee, "a Mr. Langham, who is governing man in one sense, under Mr. Machen; when I spoke to him about this thing, he said, 'Oh, sir, it was never done otherwise in the forest; it was the old practice, and therefore it was adhered to.' I never could get a reason, either verbally or in writing, from Mr. Langham." When, adds Mr. Kennedy, I went into Dean Forest in June, 1852, it was raining day after day, and it certainly appeared to me an odd system; the way of drying the bark was to put it up on end on the wet Grass. We have in this instance a standard by which to measure the forest officers' intelligence; in the Forest of Dean they are of opinion that the best way of drying bark is to keep it in the wet. The late Commissioner, who had been accustomed to deal with rational beings, thought he would put an end to Mr. Langham's system and have the bark staged, a method entailing very little additional expense, and offering the greatest certainty that is obtainable of the drying being well conducted. Need we add that the attempt failed? Four Scotch workmen were sent to the forest, and they carried out the plan as far as they could. But it was not to be endured that Scotch foresters should presume to instruct the Gurths and Wambas of the Royal Forest of Dean, and the attempt was necessarily abortive. The woodmen had no mind to it, the Scotchmen could exercise no control; the surveyor's deputy "would give no assistance whatever; he was perfectly passive and inefficient," and the result was that the bark was spoiled. Then, no security was taken from the purchasers that they should remove the bark at the proper time; they delayed removing it "in the most wilful and perverse way, left it till it got a month's rain," and the sample became worse; whereupon claims were impudently set up for an abatement in the price. Mr. Kennedy told the Committee that this led him to have some of the woodmen up and examine them, "and one of the facts which came out was, that the bark of one of the claimants for a diminished price had been sunk in a barge in the Wye, and then it was carried to Monmouth, and he made a claim for it on the ground of its being badly cured." Such are the doings in Her Majesty's Forest of Dean; and such the facts upon which some Honourable gentlemen have come to the conclusion that the best mode of drying bark is by keeping it in the wet. Upon this point the evidence itself is too good to be withheld; the member of the Committee examining the witness was Colonel Clifford, M.P. for Hereford.

"823. You mentioned that you disapproved of that method of stacking the bark on the ground?—I did.

"824. Are you aware that that is the system pursued through the whole of the adjacent counties by timber dealers?—I believe it is; but I do not approve of it.

"825. Are you not aware that they purchase wholly for profit?—A man farms for profit; he puts four horses right on end, and he ploughs in that way; but nothing would persuade me that that was the proper way of ploughing. I should endeavour to reform it."

Connected with this question of drying bark was another of peeling it. Some foresters think it right to cut the young Oaks called flitterns, first, and to peel them afterwards; others prefer to peel them standing. In the Forest of Dean the latter method was followed, the bark was taken off, and then people were sent clambering over them; the consequence was, a certain loss of bark, and a very considerable unnecessary expense. The trees were left standing for six months, for the avowed object of providing work for the workmen in the winter; whereas Mr. Kennedy tells us he would have had them down at once, had the bark taken off with the utmost celerity, and then the remaining trees would have had the benefit of that year's growth. This was resisted, and it was impossible to get it accomplished. In the words of the evidence "there was the utmost possible resistance to it; and 64 woodcutters struck work, and would not touch it. They sent a memorial to me. I may mention that out of the whole 64 woodcutters not one of them could write his name. When this was resisted to such an extent, I thought that I would make inquiry whether I was desiring to introduce a system which in itself was so unreasonably absurd, that it was not countenanced anywhere else. I knew I was quite right as to many of what I think the most enlightened estates of the kingdom, because I wrote to the Duke of Bedford's steward, I wrote to Lord Hatherton's steward, the Duke of Sutherland's steward, and Lord Carlisle's steward, and I got answers that were quite conclusive. They 'pooh-poohed' the system which was adopted in the forest to the greatest possible extent. But I thought, perhaps, in some of the other forests which were under my management I might find examples which would be unfavourable to my wishes. I therefore issued a circular letter to every deputy surveyor of those forests, to desire to know what was their system about felling a tree before or after it was barked; and if it was the pleasure of the Committee to call for their answers, they would find that their answers were uniformly against the practice in Dean Forest." We must not omit to observe that this resistance was not supported by Mr. Turnbull, the second deputy surveyor, although his superiors stood by with folded arms. On the contrary, being a man of intelligence and good sense, he did his best to support the introduction of a better system, for which we expect to hear that he is superseded.

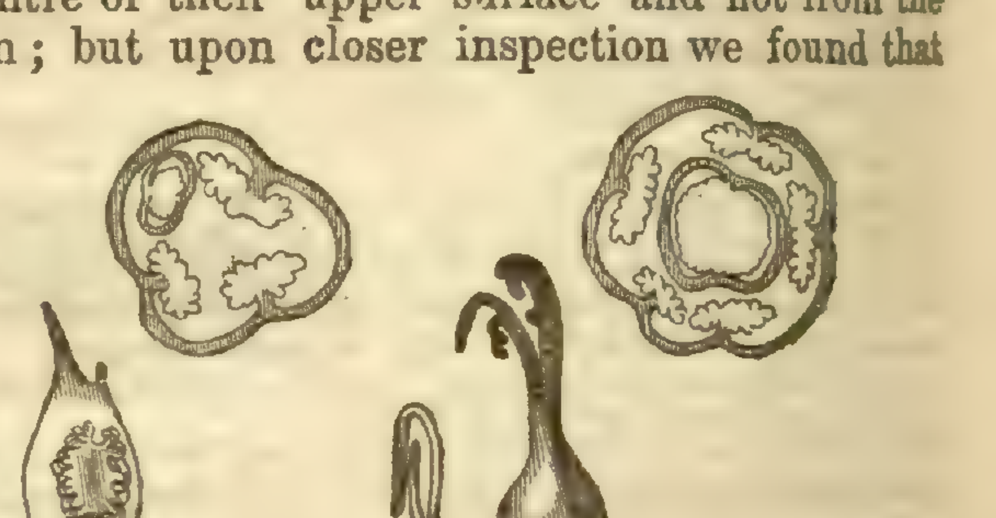
It is alleged by the forest officers that their system of stripping first and felling afterwards is necessary in order to give employment to the labouring population all the year round; but we think with Mr. Evelyn Denison, that there cannot be much difficulty in a forest of the extent of Dean, "where planting must be done, where draining must be done, and thinning must be done, to spread the labour over the year, without leaving trees standing upright through the summer to be cut in the winter," and Mr. Kennedy thought so too; but he also entertained the unpopular opinion that the measure of employment ought to be the interests of the place; and that there ought not to be expense incurred for the mere employment of the people, unless profitable to the forest.

We gather incidentally from other parts of the evidence before us that another reason for leaving barked trees standing, is that the quality of the timber is improved thereby. This is an old and common notion; founded upon the belief that sapwood is thus converted into heartwood. To what extent this preposterous opinion prevails among the pre-scientific race, we know not; but those who hold such views are of course prepared to admit that when a carcase is naturally dried up in the arid climate of Thibet, the skin and flesh are changed into bone. Others looking at the practice rationally suppose that to leave barked trees standing enables the timber to be more quickly dried or seasoned. Here we have a fair subject for discussion, and we hope our correspondents will communicate their views upon it. For ourselves we avow a doubt whether the rapid drying consequent upon leaving barked trees standing is really advantageous, considering the extent to which they are often rent and cracked by sudden exposure to air; and we also think with Mr. Brown, that it is also questionable whether any such drying as is supposed really occurs. In his report, dated Oct. 1, 1852 (31st report, p. 295), he observes:—"It is now a well-ascertained fact, that when a tree is to be cut down, and used as timber for any particular purpose, the quicker the natural sap can be extracted from it, the more likely is the wood to be durable. Now the system of stripping the bark from trees in their growing state, and allowing them to stand uncut for at least six months afterwards, instead of being a means of quickly expelling the natural sap of the tree, has quite the contrary effect. This is strongly exemplified in the case of the trees which have been this year stripped of their bark in Dean Forest while in their growing state; the operation does not entirely and at once deprive them of the principles of life, but that, as it were, lingers in the trees; their roots being in healthy action, continue to absorb moisture from the earth, and in consequence of the great evaporation that continues to take place on the whole stripped surface, the natural attraction between the boles and the roots of the trees goes on, and the sap continues to ascend even to the extremities of the smaller branches. This is evident from the fact that the trees continue to keep alive the greater portion of their leaves (this was the case when I inspected those thus treated in Dean Forest), for several months after they have been deprived of their bark. The natural consequence of this is, that these trees being kept continually in a half moist state by the ascent of the sap from their own roots, disease is more speedily brought on in their wood, than if that were cut and lying on the ground, subjected to the usual changes of the weather."

Can any of our practical correspondents show, from experience, what the real consequences are of the practice in question.

There is still another point relating to the bark question, namely, the mode of getting it off the trees: but we find so much difficulty in understanding the exact bearing of the evidence taken in this matter, that we must defer entering upon it for the present.

A very curious monstrosity of the common purple Foxglove has just been transmitted to us by Mr. J. Henderson, from Wentworth. It is of the same nature as the Wheat-ear Carnations, consisting of long spikes of bracts, the axillary buds of which are often again developed, and no part of the inflorescence makes any approach to its normal condition, except the carpels, which are more or less multiplied, while the styles alone present the usual tint of the corolla, and project from the ultimate bracts, their divisions being more or less incorporated below, but free above, and variously curled or curved. One striking peculiarity is that the placentæ are strictly parietal in the more perfect fruit, and therefore receding from the distinctive characters of the order, and approximating it to Gesneraceæ, while in the common cavity there is frequently a second bilocular capsule, the placentæ of which unite in the centre as in the ordinary capsules. On examining some of the upper bracts we were surprised to find the placenta arising apparently from the centre of their upper surface and not from the margin; but upon closer inspection we found that



two bracts were soldered together laterally, as was clear by the rudiments of two styles, the placenta being produced only at the two united edges, the outer margins remaining in the normal condition. This may possibly tend to the explanation of some cases of anomalous placentation, for the only indication of the true nature of the placentation is afforded by the two rudimentary styles, in the absence of which the spongy receptacle of the seeds must have been supposed to spring from the medial nerve. The compound carpel, too, is an instance similar to that of some monstrous Oranges, of the multiplication of the normal number of carpels by the production of carpel within carpel. As in the case just mentioned, the carpellary leaves of the inclosed capsules spring from the axis. It should be observed, too, that though the placentæ are parietal above, they are axillary at the base of the capsule, a striking instance of the facility with which axile placentation becomes parietal, the change being here effected by the prolongation of the axis, and the formation on it of a second whorl of carpellary leaves.

Our figure represents sections of a carpel formed of three and another of five leaves, the divided apex of the latter carpel and of the bilocular carpel which it inclosed, while on the left is a bract apparently bearing a placenta on its disc. All are more or less magnified. *M. J. B.*

VEGETABLE PATHOLOGY.—No. XLI.

180. The third substance is gum, which, according to its peculiar character, is sometimes soluble in water, but sometimes, like tragacanth or bassorine, cerasine and pectine, merely swells when moistened. The formula of gum arabic is the same as that of common sugar, and the substance differs, therefore, merely in the molecular arrangement. That the two should in consequence be easily convertible may readily be supposed. If Cherry and some others which are sold under the name of gum, gum arabic at a low price, be placed in water, only a small portion melts, and this is called cerasine, which is probably nearly the same as bassorine. It is asserted by Kützing (Grundzüge, vol. i., p. 211) that the walls of the cells of certain Algæ consist of bassorine, and that in some Algæ, as Vaucheria, the older parts, which formerly consisted of cellulose, are converted into bassorine. This is, however, merely a part of his theory that all woody matter ultimately is converted into that substance. Its different chemical reaction is in part due probably to the absorption of nitrogenous matter from the protoplasm, and partly to its altered chemical condition. Pectine occurs in many fruits, and is the substance which causes them to form a jelly when boiled. The curious hypogæous bodies known in America by the name of Tuckaho, consist almost entirely of

pectic acid, and may be used for culinary purposes like isinglass. Several formulæ are given for pectic acid and a great many forms* are distinguished, but in all these there is in every case an excess of oxygen over hydrogen.

181. The last of the ternary substances is woody fibre, which forms the foundation of all vegetable cells, and in its purest state is cellulose $C_{12}H_{10}O_{10}$. It is the external wall only which answers to this formula, and according to Payen is identical in all vegetables. The lining membrane or lignine presents different formulæ according to varying circumstances, and in varying species. Woody matter is subject to decomposition from various causes, and in consequence the cell-walls of diseased tissues often assume a dark tinge, being impregnated with geates, ulmates, and humates, compounds of water, with their respective acids, with which ammonia acid is sometimes combined.† Wood itself, independently of disease, or the presence of fungi, is liable to decompose in damp situations, the residue always being richer in carbon than before, and as this consists of carbon and water, for every equivalent of carbon two equivalents of oxygen and hydrogen are removed. It is clear, therefore, that the oxygen of the air, which combines with the hydrogen of the wood, is replaced by carbonic acid, formed by the oxygen and carbon of the wood. Wooden structures, therefore, in which this process is going on, must be unhealthy from the deterioration of the atmosphere. When the wood becomes white, instead of brown, the spawn of fungi is always present, which appropriates its carbon. The cell walls are in this case said to be converted into bassorine.‡

182. But besides these ternary compounds there are others which contain nitrogen and sulphur. These are vegetable albumen, fibrine, and caseine, on the presence of which the nutritive qualities of vegetables in great measure depend. They have hitherto been called proteinous bodies, but the doctrine of Mulder on the subject is now called in question, and they may as conveniently be called nitrogenous; they resemble each other very closely in chemical composition, and contain always a small portion of alkaline or earthy phosphates, so that they are, in fact, extremely complex. All these bodies, under certain circumstances, absorb oxygen, which causes a rapid decay, accompanied by an offensive smell, and it is certain, inasmuch as this altered matter acts as a putrefactive ferment, that they are a fertile source of disease. In consequence of the similarity of their composition they are easily convertible into each other; indeed any one of them is convertible into the other two, for milk, which consists principally of caseine, eggs of albumen, and flour of fibrine, as far as blood-making materials are concerned, are each of them, by itself, capable of sustaining animal life, and, therefore, of supplying the other two essentials. They are identical, or nearly so, with similar substances in animals, on which account their presence in vegetables, which are ultimately the source of all animal nutriment, is indispensable for perfect nutrition. As a proof of their identity, cheese is prepared by the Chinese from the meal of Peas and Beans, which notoriously abound in caseine, which is separated by rennet exactly as curd is from milk.

183. Albumen exists in vegetables either in a fluid or solid form. It is a constituent of many seeds, but must not be confounded with the general name given to the firm or mealy body which so frequently protects the embryo, and affords it its first nutriment. The best analysis leads to the formula $C_{216}N_{27}S_2H_{169}O_{68}$; but this is not complete, as it contains other matters as above mentioned. If an emulsion be made of Almonds or Mustard seed, we have a diffused form of albumen. It gives rise to a host of different bodies by entering into new chemical combinations.

184. Fibrine, again, is found in the juices of many plants and seeds. The fruit of the Papaw is peculiarly rich in it, and it is contained abundantly in the gluten of Wheat and other corn, the viscid portion of which is known by the name of gliadine. The formula, exclusive of phosphates, is the same with that of albumen, into which it is readily transformed. Diastase is supposed to arise from fibrine by the action of water. Its curious effect on starch has already been mentioned.

185. Caseine in the vegetable world is found most abundantly in leguminous seeds, as Peas and Beans, which are, therefore, highly nutritive. In the seeds of many leguminous plants it is accompanied by a virulent poison, as in the common Laburnum. It does not coagulate spontaneously, as fibrine, or by heat, as albumen. Its formula, independent of phosphates, is $C_{288}N_{36}S_2H_{228}O_{90}$. All of these bodies when present in expressed vegetable juices or decoctions, attract oxygen, and then act as ferments. The employment of yeast, or the vinegar fungus, is merely with the intention of expediting the process in fluids, which might otherwise be sluggish. It is rarely if ever used in the manufacture of wine immediately from Grape juice. *M. J. B.*

* Frémy, who has written elaborately on pectinous matters, calls the original substance pectose, which occurs in the parenchym of unripe fruits, and to which their hard texture is said to be due. This in the process of ripening or boiling is converted into pectine, which is soluble in water, and does not form a jelly. Its formula is $C_{64}H_{49}O_{56} + 8HO$. When it assumes a gelatinous form (retaining the same formula), it is called parapectine. In over-ripe fruit it acquires still other forms. He also finds with these a substance which he calls pectase, analogous to diastase, and like that producing chemical change. (I have only Græger's translation of the memoir.)

† Crenic and apocrenic acids arise equally from decayed vegetable matter, and contain nitrogen. The combination of these bodies with ammonia is of great consequence as regards the nutrition of plants.

‡ See Kützing Grundzüge der Philosophischen Botanik, v. 1. p. 207.

GESNERAS.

When well managed these are very handsome plants, which, owing to their accommodating habits, are particularly well suited for amateurs, or persons having but small house-room. G. zebrina, which I need not say is one of the best of them, may be had in bloom at almost any period of the year; but it is most useful for autumn and winter flowering, and for this purpose few plants are more useful.

Like Achimenes, Gesneras increase sufficiently fast, by means of their under-ground tubers, to render artificial propagation unnecessary, at least in the case of ordinary growers. If it is desired to have flowering specimens in autumn and early winter, the tubers should be carefully separated from the soil in which they have been wintered, about the beginning of March, and planted rather thickly on the surface of well drained pots or pans, filled to within about 3 inches of their surface with any light peaty soil, from which it will be easy to separate the roots without injury, and covered 2 inches deep. Give a gentle watering, to settle the soil about the tubers, and place them in a warm growing temperature of about 65° or 70°. Until the plants appear above the soil no more water should be given than may be necessary to preserve the soil in a moist healthy condition. As soon as the plants are from an inch to 2 inches high they should be separated and repotted. I use shallow 8-inch pots, and place five plants in each; but the number of plants in a pot should be regulated by the taste and convenience of the cultivator. With proper management one plant in a pot will form a very fine specimen; but, to effect this, more care and time are required than when five plants are put into a pot, and the latter form larger specimens than it is possible to obtain by having only one plant. After potting, keep the atmosphere close and moist, and give very little water at the root until they start into growth. When the pots are moderately well filled with roots, shift into the flowering size. For single specimens, 10-inch pots will be sufficiently large; when three plants are used, 12-inch pots will be necessary, and 13-inch pots in the case of five plants. Keep close and moist, and carefully avoid over-watering till the roots can penetrate the fresh soil. A high temperature during summer is rather injurious than beneficial in the culture of this plant; 50° or 60° at night, allowing it to range 10° or 15° higher with sun heat, will be most conducive to strong vigorous growth, and the production of handsome specimens. The plants should be placed near the glass, so that they may receive as much light as can be afforded them, but it will be found necessary to slightly shade them during bright sunshine, and the atmosphere should be maintained in a thoroughly moist state; but this must not be effected by excluding air and close shading, otherwise the plants will assume a sickly, drawn appearance, and the foliage will be thin and ill-coloured. The shoots may be neatly staked, as soon as they are high enough to be liable to be broken. The stakes used may be cut off at the height of about 15 inches, which will be sufficient for the support of most of the plants; the flower-spikes will require no support, and if the plants are kept near the glass, and frequently turned round, they, too, will probably need no staking, to cause them to assume the desired form. G. zebrina has a tendency, under high cultivation, to produce flower-spikes at the axils of the leaves, and it will generally form a more showy specimen in this way than if stopping is resorted to; but when only one plant is used as the foundation of the specimen, it may be advisable to stop once, when about 4 inches high. An occasional watering with clear manure-water will tend very much to promote vigorous growth; but this will be unnecessary till the plants have pretty well filled their pots with healthy roots.

When the blossoms begin to be developed, the plants may be removed to the conservatory or greenhouse; but they must be gradually prepared for the change. Great care should be used to prevent their sustaining any check, and they should be guarded from currents of cold air after their removal. A temperature of from 45° to 50° at night will be necessary during the whole of the blooming season, if the plants are expected to increase in size and beauty for some two months together.

When they show symptoms of decline, water should be gradually withheld; and when the foliage and stems die down, the pots should be placed in a situation where they will be free from damp and frost; unless the tubers are well ripened, they should not be placed in a lower temperature than 45°. A rich friable soil is essential to the production of fine specimens of Gesnera. I find light sandy turfy loam, rich fibry peat, and thoroughly decomposed cow-dung, in about equal proportions, adding a sufficient quantity of sharp silver sand, to insure the free percolation of water through the mass, to suit well. The loam and peat need not be broken up into very small pieces; but the dung should be passed through a fine sieve, to catch the worms, which it almost always contains. I ought to state that there are two varieties of Gesnera zebrina in cultivation, the one having thin ill-coloured leaves, and in every way much inferior to the other; therefore beginners should take care not to purchase the worthless variety, which, however, is fortunately not very common. *Alpha.*

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

(Meeting at Liverpool, Sept., 1854.)

Section B: Chemical Science.—*On the Influence of the Solar Radiations on the Vital Powers of Plants growing under different Atmospheric Conditions.* By Mr. J. H. Gladstone.—This was the second report given by the author under the same title, and commenced by describing accurately what portions of the prismatic spectrum were cut off by the various coloured glasses employed in his experiments. A series of observations followed on Hyacinths grown under very varied influences of light, solar heat, and chemical agency. Among the results may be mentioned the power of the yellow ray to diminish the growth of rootlets, and the absorption of water; the power of the red ray to hinder the proper development of the plant; and the effect of total darkness in causing a rapid and abundant growth of thin rootlets, in preventing the formation of the green colouring matter, but not of that of the blue flower, nor of the other constituents of a healthy plant. A series of experiments on germination was then detailed. Wheat and Peas had been grown without soil under large colourless, blue, red, yellow, obscured colourless, and obscured yellow glasses, and in perfect darkness. The effects resulting from these varied conditions were very marked; and the description of them occupies a considerable space in the report. The two plants experimented on—being chosen from the two great botanical divisions—exhibited a wide diversity, sometimes amounting to a direct opposition, in their manner of being affected by the same solar ray; but in the case of both the plants, under the circumstances of the experiment, the following effects were observed:—The cutting off of the chemical ray facilitates the process of germination, and that both in reference to the protrusion of the radicles, and the evolution of the plume; the stem grows unnaturally tall, and there is a poor development of leaves in darkness, becoming more manifest as the darkness is more complete; and the yellow ray exerts a repellant influence on the roots, giving the Wheat a downward and the Pea roots a lateral impulse. A few experiments on the germination of other seeds were then narrated; and the report concluded with an account of experiments on the germination of Wheat and Peas in oxygen, hydrogen, and carbonic acid gases, as well as in ordinary atmospheric air, and in air from which carbonic acid was at all times certain to be removed. The results confirmed former observations on the necessity of oxygen.—Professor Miller, in thanking the author for his valuable researches, made some remarks on the interesting results that the investigation had brought to light; and drew especial attention to the remarkable fact stated in the paper, that the blue rays retarded the action of germination at first, although they probably accelerated the growth of the plant afterwards—the act of germination being attended with the absorption of oxygen, but the process of development being, on the contrary, attended with the extrication of this gas.—Professor Anderson remarked that a similar difference in the rate of growth of the leguminous plants and Grasses to that described by Mr. Gladstone had been observed when they were manured with the same material. Nitrate of soda, which was found to be an excellent fertiliser for Grasses, had comparatively little influence upon leguminous plants.

On the Artificial Preparation of Sea Water for Marine Vivaria, by Dr. G. Wilson.—The paper was a criticism on a communication made by Mr. Gosse, and contained in "The Annals of Natural History." Guiding himself by Schneitzer's analysis, Gosse employed chloride of sodium, sulphate of magnesia, chloride of magnesium, and chloride of potassium. Into a mixed aqueous solution of these salts Gosse introduced various species of marine plants and animals; and for six weeks they throve and flourished. Dr. Wilson considers, however, that the less abundant, but still essential, constituents of sea water—such as carbonate of lime, sulphate of lime, phosphate of lime, fluoride of calcium, silica, iodine and bromine—should not be absent, as these latter substances are found in marine plants and animals; and it is therefore plainly evident that the medium in which they live ought to contain the same substances. It is, of course, quite possible that in a single aquarium the death of a certain portion of the animals might furnish calcareous salts, &c., for the growth and preservation of their survivors; and in like manner the death of a given number of plants might liberate iodides, bromides, &c., for the remainder. But this destruction of part of the occupants of the aquarium for the preservation of the other part might be easily avoided, as calcareous phosphates, carbonates, and fluorides occur together in shells, corals, and many limestones. The arrangement of fragments of such calcareous bodies at the bottom of the aquarium would supply some of the missing ingredients; whilst pieces of trap rock and a few grains of an iodide and bromide would afford the remainder.

Mr. Warrington gave an account of some experiments he had made on the influence of coloured glass on the growth of plants in sea-water. He found the red sea-plants grew best in glass cases coloured green, and that green Confervæ were thus destroyed.—Mr. Huxley made some remarks on the general theory of harmony and adaptation in nature. He thought naturalists were too much disposed to take it for granted that beauty was an end in creation. He believed, on the contrary, that grotesqueness was frequently an object, and that inharmonious and in-

apposite colours and forms were purposely brought together, and thus excited the feeling of the ridiculous.—Dr. Carpenter called attention to the fact, that different chemical conditions of the plant produced chemical colours; and the point to be ascertained was whether these were subservient to the laws of harmony sought to be established.

Home Correspondence.

Sulphur and Water, with a little Lime in it, v. Mildew.—In a small Vinery here, 34 feet long, two Vines were planted, one at each end; three shoots were trained horizontally from each other alternately. At the end of five years the shoots from each had nearly reached the opposite ends; they have been spurred and have borne abundant crops every year, a little fire heat has been used, and the fruit ripens generally about the middle of August. In June 1852, although it will be observed the Vines were trained horizontally, mildew made its appearance in spots all over the house; a little sulphur was used, but the disease incre sed over every shoot, leaf, and bunch, and the Grapes were nearly all useless. Again in June 1853, the mildew made its appearance, sulphur was more liberally used but the disease increased, although checked a little, and the bunches were all affected. This year, 1854, early in February, the house was washed with lime-water with a little sulphur in it, every available piece of plaster and brickwork, the flue included, being operated on; in June, the same suspicious spots of mildew made their appearance; in the evening, when the flue was just hot enough to bear the hand on it, it was done over with a mixture of sulphur and water, with a little lime in it, and again repeated at a week's end. The mildew entirely disappeared, and the Grapes ripened at the usual time, an excellent crop. The idea of washing the flue with sulphur was taken from an article in your volume for 1853, and I think it is an invaluable receipt. *D. S., Woodbridge, Suffolk.*

Abelia uniflora.—The management of this really pretty hard wooded greenhouse plant is very simple, and although it is considerably less vigorous in habit than A. floribunda, it flowers much more freely than that species, producing, when well grown, its delicate purplish-white Pentstemon-like flowers in profusion. Cuttings of this Abelia, selected from the half-ripened wood, root readily in the propagating house, if inserted under a bell-glass not later than the middle of October. The contents of the cutting-pot should be one-third crocks for drainage, one-third finely-sifted peat and sand, surmounted by an equal quantity of clean silver sand. By the second week in November the cuttings will be sufficiently rooted to dispense with the bell-glass; the young plants should then be gradually inured to light and air, preparatory to being removed to their winter quarters, on a shelf as near the glass as may be convenient in an airy part of the greenhouse, where, if proper care be taken not to over water them, by the first week in the following March the young stores will have acquired sufficient strength to be potted singly into 3-inch pots. For compost use two-thirds turfy peat and one-third sharp sand. After potting, and until the roots begin to penetrate the fresh mould, the plants should be kept close, after which they can be removed to the platform or stage of the greenhouse. They will now commence growing freely, the pots will become filled with roots, so as to require a second shift into 5-inch pots. The same compost as before should be again employed; pot firmly, and drain well. The plants should be neatly staked and tied out, and should be re-arranged in their former situation. They will now require plenty of water and a constant supply of air; and in order that the future specimens may exhibit a stocky and furnished appearance the laterals should not be permitted to grow (without being stopped) any length beyond what the intended shape of the plants require. Pursue this course until the middle of the following August, when the final shift for the season may be given with safety, using 6-inch pots for the purpose. They should be allowed to complete their growth, and be wintered in the greenhouse. Treated as above, this Abelia may be had in full bloom by the end of the following May, and it will continue to produce a good supply of flowers during the three succeeding months. *R. Miles.*

Thornham Village Horticultural Society.—I perceive that one of your correspondents has given you a description of the Hitcham Village Horticultural Society's second meeting; perhaps you will allow me to say a few words about another meeting of the same kind, at which, by the kind invitation of the noble lord by whom it is supported, I was a visitor. I will remark, by way of preface, that the few observations which I send you have not been written with any desire to communicate mere newspaper news or gossip; neither is my object that of bringing before the public eye the names of those who so kindly and well arrange, and take a prominent part in these meetings, for I feel conscious that while all our best and grateful thanks are due to them, this should rather be expressed by zealous co-operation than by laudatory comments in the public press. The autumnal meeting of the Thornham Village Horticultural Society was held in the grounds of Lord Henniker, on Wednesday the 4th inst., and was attended by a large party of the gentry and clergy of the neighbourhood, many of the tenantry, and nearly all the labourers and their wives and children, in the two parishes of Great and Little Thornham. The show of the villagers' productions was by far the best of any which has been held since the establishment of the society. The past season has certainly been a magnificent one for most of the productions of the garden. I heard a clergyman remark a few days ago, that during the last 14 years this (with one other exception) is the only year that his Peaches have ripened; and I can say, with equal truth, that this is the only year in the last 20, that I can remember eating a ripe Ribston Pippin in the beginning of October, and that was in the first prize of dessert Apples at this show. The exhibition of Potatoes was truly splendid, by far the best I ever saw at any Horticultural show; and in these useful productions a fair inference may be drawn of the excellent effect which competition has in the horticulture of the poor. They not only learn to grow well, but they are taught to grow the best kind of vegetable. They find that a Potato un qual on the surface is rejected by the judges for the smooth skinned sorts which do not lose in peeling. In Onions, again, the same thing was observable. Instead of the large, coarse, thick-necked things which were at first thought the perfection of skill, in the 20 or 30 plates exhibited here the specimens were remarkable for their quality, as the gardeners termed it—symmetrical forms, their clean skins, and thin necks were the order of the day. The Apples, too, were very fine, and I wished much that I were able to gather as good fruit in my own orchard as I saw exhibited here. Among other things there was a fair show of Carrots, Kidney Beans, and Pumpkins, but a falling off in Cabbages and Parsnips. I would suggest that in future prizes be offered for the best Cabbage instead of the best three. After all the judges only cut one. In Parsnips I have observed a general falling off this year. There was a good display of Wheat and Broad Beans from his lordship's allotment tenants. On the whole the exhibition was remarkably good. After inspecting the productions the visitors sat down to luncheon in the corridor, and then adjourned to the quadrangle, where the cottagers being collected together were addressed by Lord Henniker, and their prizes given with a kind word to each. This part of the proceedings being over the party adjourned to the front of the house, where our old and valued friend Professor Henslow was prepared in full force with one of his amusing and instructive lecturets. The day being fine the cover was thrown off the tent containing his treasures, and instead of being crowded by his hearers he had all the stage to himself. Lord and Lady Henniker, surrounded by their youthful family and a large party of visitors, occupied the left of the foreground, while the tenantry and labourers were grouped in front. The scene was eminently picturesque and suggestive. Mr. Henslow, surrounded by his numerous specimens and illustrations (among which I ought not to forget to mention the promised specimen from Africa by the Bishop of Natal), commenced his lecturet by giving a very clear and succinct account of the process of printing, then passed rapidly over a great number of illustrations, having something new and useful to say about each. Among them I may mention the manufacture of the Tunbridge Wells' inlaid wood-work — of different ornaments in shell work—how to make artificial Grasses with indigenous mollusca—and the process adopted by Messrs. Ransome & May in making the wooden pegs by which the iron chairs on our railroads are secured, the principle being great steam compression of the wood, which swelling when fixed, from the absorption of moisture, forms a secure and lasting means of attachment. Several illustrations from the insect and vegetable world were then shown. Among the latter, drawings of Palm trees, and the exhibition of their various fruits, gave Mr. H. an opportunity of describing the whole process of making Price's candles! illustrating his remarks by about 20 large glass jars filled with the various products of the manufacture. This was all most interesting and instructive. Some beautiful bird cases, exhibited by Lady Henniker, and a collection of Indian curiosities by his lordship, were then shown, and the whole was wound up by an explanation of a series of magnified drawings of the diseases of corn plants—bunt, bladders, smut, rust, ergot, mildew, &c., and were each shown and explained. Three-times-three cheers were then given for Mr. H. and Lord and Lady Henniker, and the meeting dispersed—I need not say much pleased and delighted. Youthful races, a greased pole, and various other gymnastic eccentricities, were then enacted by the rising generation; while those who had already risen we observed discussing good old English fare, roast beef and ale, on the tables which had just before groaned with the illustrations of science—not the worse, I ween, for knowing something about the enemies which might, if not checked, deprive them of this bread—or for having had brought before them so many instances of that beautiful design and unerring wisdom which is stamped on the works of creation. I may be permitted to hope that the excellent example of Lord and Lady Henniker and Professor Henslow may find many imitators. I am sure society is much indebted to them for extending the area of social enjoyment, and endeavouring to promote the happiness of their fellow-creatures. *B.*

McGlashen's Transplanting Machine.—On the 28th ult. Mr. McGlashen had the honour of exhibiting his apparatus in its most improved form, in full operation, in the palace grounds at Balmoral, in presence of H.R.H. Prince Albert, the Hon. Eleanor Stanley, Major-General Charles Grey, Colonel Phipps, the Baron Stockmar, and Dr. Robertson. Mr. McGlashen first showed the simplest form of the invention, viz., that adapted for transplanting herbaceous plants, with which he lifted a plant of common Heather, with an adherent ball of earth 9 ins. in diameter. He then applied a machine with four spades or cutters, with which he lifted a tall Poplar tree, with an adherent ball of earth 22 inches square. By adding four other spades to those used in this operation, the apparatus was in a few minutes converted into one suitable for lifting a ball of earth 4 feet 8 inches in length, by 3 feet 5 inches in breadth: and with it he proceeded to operate upon a fine Birch tree, about 20 feet in height. The cutters being driven in and the apparatus adjusted, the tree was speedily raised out of the ground, with a fine ball of earth around its roots, the operation being conducted by Mr. Paterson, her Majesty's gardener at Balmoral, with the assistance of two workmen.. The Prince was greatly interested in the invention, and with the satisfactory manner in which the work was performed. In the course of the different experiments his Royal Highness remarked to Mr. M'Glashen that he perceived several important improvements had been made in the apparatus since its exhibition in the London Horticultural Society's Garden, 18 months ago, when a Poplar, 55 feet in height, was successfully transplanted. While preparations were being made for lifting the Birch tree, his Royal Highness took up one of the small-sized transplanters (adapted for removing herbaceous plants) and, having lifted with it a young Poplar tree, remarked the great facility with which the operation was performed. The large Birch was afterwards conveyed by the improved transplanting carriage (drawn by a horse) to a distance of a quarter of a mile, where it was safely replanted. Notwithstanding the roughness of the road, the conveyance of the tree was effected with great ease, the construction of the carriage being such as to require comparatively less strength for propelling a given weight than an ordinary cart. The whole of the experiments were so highly satisfactory that his Royal Highness gave orders for the immediate purchase of the apparatus employed on the occasion, for use on the Balmoral estates. Dr. Robertson (her Majesty's Commissioner) was likewise highly pleased with the invention, and ordered a transplanter for use on his own property. From this account of the experiments, it will be seen that the machine used at Balmoral is applicable to various sizes of trees. When all the spades are used, it is adapted for lifting trees with a ball of earth 4 feet 8 inches long by 3 feet 5 inches broad; and, by using only four of the spades, a ball of 27 inches square may be raised with equal facility. It is not only to the transplanting of trees that this apparatus is applicable. The carriage (without the spades) can in a few minutes be converted into a machine for clearing ground of the stumps or roots of large trees, and it does equally well for raising stones or blocks of rock, without blasting or digging a trench around them, and they can be conveyed to any distance by the same machine as that with which they are lifted. The Balmoral machine is suited for raising tree-roots or blocks of rock from two to three tons in weight. But as trees of any size can be transplanted with perfect safety by machines of larger size, so in like manner stones or blocks of rock of any weight can be raised by having the carriage of corresponding size and strength. *G. L., Edinburgh, October 5.*

Notices of Books.

Scenery, Science, and Art; being Extracts from the Note Book of a Geologist and Mining Engineer, by Professor D. T. Ansted. London, Van Voorst; 8vo. pp. 323.

The present volume, from the pen of Professor Ansted, contains an interesting and agreeably written account of some important observations made by him when travelling in France, Switzerland, Germany, Spain, Sardinia, Algiers, and the United States. The geology of these countries, and particularly their mines, attracted the author's especial attention; but he by no means neglected other matters, whether relating to natural history or the social condition of the people amongst whom he moved. The notes are evidently those of an intelligent and well informed man—very different from those ordinary productions which so-called travellers think it necessary to lay before the public after every excursion across the water. The chapters on Spain, Algiers, and Sardinia, are amongst the most interesting to the general reader. The former of these countries is always allowed by those who have travelled in it to be far more worth visiting than many places, not more easy of access, to which our countrymen flock in the autumn. Intolerable heat and dust, bad roads, the monotony of a great portion of the country, and the wretched accommodation in out of the way places, not to mention a lurking dread of banditti, are however causes sufficient to keep those who travel for pleasure away from Spain. Several passages might be extracted from the pages before us which would be quite enough to determine the choice of a hesitating person in favour of some other country, even with fewer objects worthy of attention; our space, however, compels us to pass by such matters. The climate of a great part of Spain is remarkable for excessive heat and severe cold. As this subject is interesting in a horticultural point of view, we give the author's remarks in full:—

"It may be well to add one word with regard to the climate of Northern Spain and Madrid. It has often been described as affording every variety of temperature in the shortest possible time, and certainly has not been wronged. I left Bordeaux and reached Bayonne on one occasion during weather so intensely hot, that it

was scarcely endurable even by those most accustomed to heat. The inhabitants wisely kept in-doors, with closed windows and shutters, and slumbered through the noonday heat as well as possible. On entering the mountains there was rain, but the heat was still scarcely endurable. After travelling some distance, and as we emerged on the table-land on the other side of Pancorvo, the heat had changed to cold, which during the night was so great, that the conductor had to wrap himself up in his furs and warm cloak, and endeavour to forget it in sleep. Afterwards, in crossing the Somo-Sierra, we had a thunder-storm, accompanied with hail and torrents of rain, more violent than I have often seen, and on entering Madrid I found that the heat had been and was intense and suffocating. Four-and-twenty hours, however, produced there a change so great that it was disagreeable to walk in the streets without an overcoat, although still the sun when shining was too powerful to be at all pleasant. These violent alternations of heat and cold are quite characteristic of high table-lands, especially when, as in Spain, they are bounded by lofty mountain-chains, rising here and there above the line of perpetual snow, and not so distant as to allow of the winds blowing from them to become warmed. In the Peninsula, indeed, the central tract consisting of high and almost unbroken table-land and the coast being mountainous, there is constantly a current of hot air rising during the summer from the bare and heated earth, and this is replaced by cold air rushing down from the mountains. The almost total absence of trees and forest vegetation exaggerates to the highest extent the evils arising from excessive temperature and rapid changes in this respect, so that now it would be difficult, without much time and labour, to replace the trees that probably at one time abounded in certain districts. Something might be done in the vicinity of the capital; but the Spaniard hates trees, and seems nowhere at home but on a trackless plain or in a treeless desert."

Whilst in Algiers Professor Ansted visited a large nursery, established some years ago, under the superintendence of Mr. Hardy. "It is a most charming and interesting locality, and cannot fail to be of the greatest benefit to the colony. It is situated about three miles from the town, towards the south, and close to the sea, being well sheltered by the high ground rising on three sides, but having perfect ventilation. In this garden we find large groves of Plantains, the fruit of which is sold by public auction. There are also extensive groves of Orange, Lemon, &c., numerous Palms of different species, all fruiting and ripening their fruit in the open air, the Ficus elastica growing to a great height, the Dracæna, Yuccas, and numerous other South American, Indian, and other trees which we are accustomed to see only in hot-houses. Thus their appearance for the first time in the open air makes one fancy the climate far more tropical than it really is. I noticed numerous species or varieties of the common Cactus (Opuntia), so abundant in the south of Spain, and many other remarkable forms of plants not uncommon in the warmer portions of Europe. The important part of these gardens consists, however, strictly, in the nursery, as hence are obtained the Cotton-trees and many of the Mulberries, of which thousands are conveyed to favourable positions every year; here has been grown, so as to ripen perfectly, the Tea-plant, and here also are performed many important experiments calculated to throw a light upon various points on which the interests of the colony may depend. The general arrangement and condition of the garden are in the highest degree satisfactory."

On America the most interesting and important note is that on slavery. The author endeavours to show, by a "dollar and cent." calculation, that free labour is more advantageous to employers than slave labour; and his remarks upon this subject well deserve the perusal of those who, excited by the pathetic tale of "Uncle Tom," would by a stroke of the pen set free the black population of the southern States.

Four well executed lithotints by Messrs. Day and Son, and 21 woodcuts, many of them illustrating the geology of the places described, add much to the attractive appearance of the volume; whilst a good index renders it permanently useful as a work of reference.

New Plants.

93. Pinckneya ionantha, *Planch. and Linden.* "A magnificent Cinchonaceous plant allied to Mussænda and Calycophyllum, and like them remarkable for having a calyx divided so as to resemble a stalked petaloid leaf, and which might at first sight be taken for a bract. The calyx of the present plant is bright purple passing into violet. The corolla, which is about an inch and a half long, is dark violet. The flowers form large terminal corymbs. It is a native of New Grenada, where M. Schlim discovered it on the burning banks of the Rio Magdaleua, in the province of Mompox." *Linden's Catalogue*, in which it is priced at 25 frs.

94. Lycaste costata. *Lindl. in Bot. Reg.*, 1843. *Misc. p.* 16.

This fine species, originally described from a dried specimen found in Peru, by Mathews, has just flowered with Robert Hanbury, Esq., who received it from the Cordilleras. With the habit of *L. gigantea*, it unites pure green fleshy flowers of the following dimensions:—Sepals, 2¼ inches long by 1¼ broad; petals rather smaller; chin, ¾-inch, straight, almost cylindrical, and of the same length as the ovary, which is entirely concealed by an ovate hooded green bract, which reaches about one-third part up the dorsal sepal. The lip is yellowish white, with a roundish fringed middle lobe, half ovate acute lateral lobes, and a very conspicuous truncated ribbed white appendage. As usual in this genus, the lower face of the column is shaggy, with white hairs.

Garden Memoranda.

Basing Park, the Residence of Joseph Martineau, Esq.—During a short excursion through the eastern part of Hampshire, I availed myself of the opportunity, when in the neighbourhood of Basing Park, to visit my old friend and schoolfellow, Mr. Duncan, who has for many years resided there, and conducted the various alterations and improvements in the gardens and grounds, that have justly obtained for them a wide celebrity. To those who happen to be unacquainted with the locality of Basing Park it may be proper to mention that it is a little to the left of the road from London to Gosport, about 7 miles from the pretty rural town of Alton, so well known for its pure and delicious ale—and the same distance from Petersfield. The house is a modern structure of good elevation, and pleasantly situated, commanding some delightful views of the surrounding grounds, which are much undulated and well covered with wood. At the entrance to the park from the Gosport road a very handsome and commodious lodge has been lately erected, in which great attention has been paid to the comfort and requirements of those who may occupy it. The approach from this lodge to the house is nearly a mile and a half in length, and has been very skilfully executed; the line appearing to sweep through the park in the most natural, easy, and direct course that could possibly have been selected for showing to advantage the beautiful glades and rich woodland scenery with which it abounds. The soil appears to be a sort of clayey loam, or chalk, thickly interspersed with flint; so much do the latter predominate in some places that it becomes a matter of surprise how the vegetation that conceals them is supported. On either side of the road the masses of plantation have been arranged with much judgment and good taste. The situations they occupy have been happily chosen, both with reference to their general appearance in connection with the older wood in the background, and as forming distinct groups. From their boundaries having been made to follow the easy undulating form of the ground on which they are placed, they display an intricacy and variety of outline that is exceedingly pleasing, and which it is the great aim and ambition of the landscape gardener to produce. Indeed, I question whether the late celebrated Gilpin, who was acknowledged to be a master of his profession, and an accomplished artist, could have made a better use of the materials, or created a series of more beautiful landscapes, than has been done in this instance by Mr. Duncan.

The gardens and pleasure ground immediately adjoin the house. They are tastefully laid out, and kept in excellent order, which render them at all times enjoyable, and a never failing source of amusement and delight. The symmetrical garden to the east of the mansion, with the ornamental fountain in the centre, has a fine effect, the beds being well proportioned, and filled with a variety of gay flowering plants, among which I particularly noticed Ageratum cœlestinum, Calceolaria amplexicaulis, Tom Thumb and other showy Geraniums, Salvia patens, &c.; the latter, when planted thickly and pegged down, makes an excellent bedding plant. Some of the beds had an edging round them of the double white Achillea ptarmica, a plant which seems to be well adapted for this purpose, or even for making a bed of itself, the flowers being neat and showy, produced in abundance, and continuing a long time in perfection. There is one peculiarity in this garden I do not remember to have seen before, and, on account of its novelty, as well as the use that may be made of it by others, I think it is especially deserving of being noticed—it is that of employing a small narrow strip of fine old turf, by way of edging to the several flower beds, instead of Box. The kind of turf used is selected from some old sheep walk, where the herbage generally consists of Festuca ovina, and similar fine leaved Grasses. It had a neat appearance, and, I was told, completely answered the purpose for which it was intended, and was easily kept in order. Here, as well as in other parts of the pleasure ground, masses of Rhododendrons and other evergreens occupy those places where they are considered to be most requisite, not only for the sake of ornament during the early summer months when in flower, but to create variety and afford shelter during winter. Large vases, elevated on suitable pedestals, are dispersed through the grounds, and meet the eye in various directions. A number of these tasteful objects are ranged along the terrace in front of the principal apartments, and have a charming effect when filled with flowering plants as they are during summer. The conservatory is contiguous to the house, with which it has been made to harmonise and appear to form a part. It is about 60 feet long, very spacious and lofty in proportion, displaying to advantage the various large specimens it contains of New Holland plants, Camellias, Brugmansia, &c., that are so valuable for winter decoration. Immediately in front of the conservatory, but on a much lower level than that of the terrace on which it stands, is another fountain with numerous flower beds surrounding it, so arranged as to produce the most agreeable contrast and variety in the colour of the flowers with which the beds are filled. Standard Roses occupy the outer circle. Many of these appear to have suffered much from the frost of last winter, and some of the more tender kinds seem entirely destroyed.

The kitchen garden is on the west side of the house, close to the pleasure ground, to both of which it is very conveniently situated. The soil is a cold stiff clay, by no means favourable for the growth of vegetables or fruit trees. The latter, I was given to understand, were liable to canker, unless frequently removed, and their roots prevented from getting down into the subsoil. Wire trellises are used for the purpose of training the espalier Apple and Pear trees. Over the principal walk in the centre of the garden is an arched trellis, with the trees trained against it, which has a very pretty effect, and is worthy of being generally adopted. The forcing houses are placed against the north wall. They are 300 feet long, and well adapted for the purposes to which they are severally applied. As a Pine and Grape grower, Mr. Duncan has been long known to be eminently successful. Of this there could be but one opinion, after seeing the luxuriant state of the former, with their large and handsome fruit, and the magnificent Grapes with which the Vineries were loaded. Similar productions are not often met with, unless perhaps at the Chiswick exhibitions, where none but the most perfect specimens of good cultivation and horticultural skill are brought forward. Mr. Duncan pays great attention to his Vine borders, and is a strong advocate for liquid manure—for which he has made such arrangements as afford him an abundant supply. But the most remarkable feature at this place in the way of hothouses is the large glass structure erected some two or three years ago against the south wall, and which, for want of a better name to distinguish it, I think might be called the Fruitery. It is 300 feet long, 17 feet wide, and of proportionate height, with numerous openings at the back, both top and bottom, and moveable sashes in front for the purpose of ventilation. The latter are so constructed that, by means of a very simple piece of machinery attached to an iron rod carried along the front of the house, 100 feet in length, may be opened or shut by the mere turning of a handle. An arched iron trellis occupies the centre, and extends from one end of the house to the other; against this trellis, as well as the back wall, are trained the various trees whose fruit are most in request by the family. These comprise Vines, Figs, Peaches, Nectarines, Plums, Apricots, and some of the best sorts of winter Pears. No artificial heat is given, the object in view being to prevent the disappointment so frequently caused by the late spring frosts in this part of the country, where it is by no means unusual, after the trees have been covered with blossom, and given promise of an abundant crop, to have the whole destroyed in a single night, and that, too, at a period of the year when the fruit was supposed to be out of danger. Nothing of this kind is now to be apprehended, the glass covering having been found to answer its purpose most effectually, and the quantity of fruit that was in the house afforded a convincing proof that the idea was a good one admirably carried out, and attended with the most complete success. It is to be hoped that Mr. Duncan will one day favour the public with a plan and description of this fruitery, which is both ornamental and useful, far surpassing anything of the kind that has yet come under my notice. Another interesting feature here is the evergreen garden, which, in addition to a fine collection of Coniferous plants, contains a variety of other hardy trees and shrubs that are evergreen, such as Ilex, Buxus, Cotoneaster, Mahonia, &c. It is of considerable extent, and laid out in a style no less remarkable for its originality than for its beauty. Owing to the specimens being all labelled, and the walks so arranged and varied as to separate the different sections of Coniferæ from one another, an excellent opportunity is gained for examining and comparing the several species of which each section is composed. The Grass on both sides of the walks is kept neatly mown, while the rest of the ground is thickly planted all over with Laurels and Mahonia repens, to serve as a cover for game.

Such is a brief sketch of the principal objects at Basing Park that are likely to interest the gardener. Before concluding, however, I must not omit to notice the great improvement that has been recently made by the formation of an approach from the Petersfield road to the house—a distance of about two miles. Like the one from the Gosport road, it is both contrived and executed in a superior manner, and I think will be allowed by all who are acquainted with such matters to be a fine example of Mr. Duncan's taste and ability in this branch of his profession. Nor ought the lodges to be passed over without remark, as they are in my opinion perfect models of what such buildings ought to be—neat and expressive in design, substantially built, and well finished, altogether forming a very striking and agreeable contrast to the low and unhealthy dwellings denominated lodges, that are so frequently seen in other parts of the country. In this respect it is but right to state that great improvements have been made of late in this class of buildings, since the attention of our large landed proprietors has been directed to the subject; but very much still remains to be done, and it is to be hoped that many of them will be speedily induced to follow the excellent example which has been set them by Mr. Martineau. *W. B. B.*

FLORICULTURE.

Double Primulas.—These are amongst the most useful subjects for winter decoration which we possess, and should be extensively cultivated wherever winter plants are in request. With proper management they grow freely enough, and produce a profusion of their pretty blossoms from November till March, or even longer. Unfortunately, however, they are rather delicate subjects, and although they are found growing vigorously and flourishing about some places they are still comparatively scarce, and many amateurs complain that they can do no good with them. I will begin with their propagation, which, owing to the cuttings being very apt to damp off, is somewhat difficult; indeed I have known many parties lose their whole stock through inability to propagate them. Good strong robust plants should be selected to furnish cuttings, and these should not be allowed to flower too long, but the flower stalks should be cut off before the plants show any symptoms of exhaustion, removing them to a rather warm situation to encourage free growth. As a general rule the plants should be divested of their flowers from the middle of February to the middle of March, for if placed in heat earlier, unless a dry atmosphere can be commanded they will be liable to damp off, and without careful attention to shading they will not be found to grow so freely after the sun becomes powerful. The plants must be narrowly watched after placing them in heat, keeping them as moist as can safely be done, but they should not be syringed too freely over head, for if damp once makes its appearance it will be difficult to check it without removing the plants to a cool, dry atmosphere, which would check their growth, and cause a serious loss of time. If the pots are well filled with roots a small shift may be given with advantage, but if, as is more commonly the case, the plants are over-potted, they should be turned out of the pots carefully, clearing away all unkind soil, and repotting in pots just sufficient to admit the roots with a very small portion of fresh soil. Under any circumstances water must be very carefully supplied, giving just enough to keep the soil in a healthy state; and if any indications of damp are perceived on the foliage, or about their neck, then give water by means of a saucer, and allow the surface soil to get quite dry. With anything like proper management, however, the plants will grow very freely, and will soon furnish an abundance of cuttings. When the young shoots become moderately firm, which will be known by the stems changing colour, these should be cut off close to the main stem by means of a sharp knife, leaving a few shoots so as to make sure of saving the old plants, and after cutting off a pair or two of leaves, if necessary, and allowing the cuttings to lie for a night in a rather dry place, insert them in sharp clean sand in small well drained pots or in pans, as may be most convenient, and plunge in a dry bottom heat, covering with a hand-glass. Guard against condensed moisture by removing and wiping the glass dry as often as may be necessary, and give a little air occasionally. Water only when this is unavoidable, and leave the glass off afterwards to allow the superfluous moisture to escape. As soon as the cuttings are fairly rooted begin to inure them to free exposure to the atmosphere of the house, and move them near the glass to prevent weakly growth. The best situation in which to grow the plants after the weather becomes warm is a close pit or frame, which can be kept close and warm, and managed according to the wants of the plants, but they will do in a close part of the greenhouse, or in the cool end of the stove. Attend to shifting as the roots are found to require more space, but avoid large shifts, or repotting before it is wanted, for the plants will be found to do better under than over-potted. Also shade slightly on bright days, and maintain a moist atmosphere by sprinkling the floors, &c., morning and evening, and if the foliage shows no indications of damp the plants may be syringed lightly overhead every fine afternoon. All this, however, should be regulated according to the state of the plants, giving them as much warmth and moisture as they will bear without damping off or making weakly growth. The flowers must be removed as they make their appearance as long as the object is to increase the size of the plants; and when it is intended to allow them to bloom they should be gradually inured to the temperature of the ordinary flower-house, taking care not to place them in the way of currents of cold drying air, when they are removed there. Those who are anxious to produce large specimens should select some late propagated plants, and prevent their flowering the first winter, by pinching off the flowers as they make their appearance, keeping them, during the winter, in a close part of the greenhouse, or cool part of an intermediate house. They should not be placed in heat in spring, as recommended for plants intended to furnish cuttings, but should be kept in a nice equable growing temperature. The side branches must be carefully secured by means of stakes before they get so large as to endanger their being broken off, and great care must be observed with these to keep the soil in a proper state as to moisture. Plants that may not be wanted to afford cuttings after flowering, should be kept rather cool and dry for a time after blooming, and the flowers should be picked off immediately any indications of exhaustion are perceived; for unless this is attended to, they will flower themselves to death. After allowing them a month or so to recruit their energies, examine the state of the roots, and reduce the ball or shift into larger pots, as may be proper. A mixture of about equal parts good fibry peat, loam, leaf-soil, thoroughly decayed cow-dung, and sharp sand, will form a suitable compost. In potting, make the fresh soil rather firm about the ball, and secure perfect drainage by a liberal use of potsherds, and thoroughly intermixing the sand with the soil. *S.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Conservatory, &c.—The temperature here must now be regulated according to the requirements of the plants with which the house is furnished, but fire-heat should be used very sparingly until severe weather sets in, more with the view of drying than warming the atmosphere. Where many plants from the stove, however, are introduced, a little artificial warmth will be occasionally necessary to prolong their beauty; but the temperature need not exceed 45°, which, with husbanding the solar influences on bright days, will be sufficient for most things. In damp weather it will be necessary to use slight fires at night, giving just sufficient air to prevent damp. Thin and cut in the twiners on the roof, so as to admit every possible ray of light to the plants. The most forward Camellias, if not already in flower, should be placed in a rather close house, to induce them to open, giving them clear strong manure water; these are the most esteemed of all our winter-flowering plants, and should be plentifully in bloom now and until the house is gay with Azaleas and New Holland plants, and we have nothing that better repays the trouble necessary to grow them properly, for they are very easily managed plants. Tree Mignonette and Violets are general favourites for winter flowering, and should be carefully attended to. But Roses, if properly selected and managed, surpass everything in the way of sweet-scented plants for flowering at this season, for they combine beauty with fragrance, and require but little attention, and hardly any accommodation, to prepare them; for many of the autumn blooming kinds, if grown rather hard in pots in a sheltered corner out of doors, and prevented from flowering in the early part of the season, will now be finely covered with buds, and will bloom profusely for weeks in an airy house.

FORCING DEPARTMENT.

Pineries.—Plants swelling their fruit must be assisted with a brisk temperature, say 65° or 70° at night and 75° by day, by means of fire-heat; keeping the house rather close on sunny days and allowing the thermometer to range from 80° to 90° before giving air freely, for there is no possibility of getting Pines to swell in a low temperature. Endeavour to proportion the moisture to the temperature, for a high dry temperature is nearly as prejudicial to the swelling of the fruit as a low damp one. Also aim at maintaining a steady bottom-heat of about 85°, and at keeping the soil in a proper state as to moisture, giving clear manure water in sufficient quantities to moisten the whole of the soil as often as may be necessary. But use the syringe after this season merely to dew the plants over when the atmosphere feels uncomfortably dry, for a too free use of this and surface waterings render it difficult to judge of the state of the under soil, where the principal roots should be, and in the case of plants growing in pots this is often allowed to get into an unhealthy state, in consequence of keeping the surface excessively moist. Any young stock which may require repotting should be seen to at once, in order to allow of getting them rooted into the fresh soil before winter.

FLOWER GARDEN AND SHRUBBERIES.

Unless where alterations are in hand, the principal work in this department for the present will be mowing and clearing up leaves, &c., and if neatness is to be maintained this will require daily attention. Also thoroughly clean walks of weeds and moss, &c., and roll them frequently, to keep the surface hard and smooth. Some of the beds will now be getting shabby in even the most favoured localities, and if they are to be planted with spring-flowering things, they should be cleared and replanted at once, so as to give the plants a chance of getting established before winter. Continue to afford young stock in pits and frames the most careful attention, remembering that well prepared stock is easily carried over the winter compared with plants run up in heat late in autumn; therefore keep all established stock cool and airy. Cuttings recently potted off should be placed on a gentle bottom-heat, to encourage the formation of roots, but do not keep them close and moist, unless they can be kept in properly heated pits; otherwise, if damp cloudy weather sets in they will be excessively liable to damp off. Cuttings of Calceolarias may still be put in where the stock is deficient. These will root either in a cold frame or in a gentle bottom-heat, but cuttings grown in the open ground are very liable to damp off if put into heat. Secure as many cuttings as possible of scarce plants while there is a fair chance of rooting them, and also be prepared for taking up Scarlet Geraniums, Calceolarias, &c, where frost occurs. If a mild bottom-heat could be afforded on which to place these for a fortnight or so after potting, before storing them away for the winter, this would greatly assist in promoting the formation of fresh roots, and render the plants less liable to die back, &c., in winter.

HARDY FRUIT and KITCHEN GARDEN.

Look over the fruit remaining out of doors frequently, and gather any that may be liable to be blown down and bruised, for we may expect high winds and rough weather; also examine that stored in the house as often as convenient, as there will frequently be a few decaying fruit found for a few weeks after housing, and these, if not removed, impart the mischief to others. Any trees that require root-pruning or removing should be seen to as soon as possible after the crop is gathered; and where young trees are to be planted this season, preparations for doing so should be made without any unnecessary loss of time; for planting cannot be done too soon after this season. The principal crops of Celery should now be kept earthed up rather closely, using lime and soot freely to destroy slugs, and where these are troublesome, it will be found to be a very good practice to examine the ridges every morning, and apply lime, or pick up the slugs. Dress Strawberry plantations, if not yet done, clearingaway all runners, &c.; and give the ground a good dressing of manure- but avoid deep digging or injuring the roots.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending Oct. 12, 1854, as observed at the Horticultural Gardens.

Oct.	Moon's Age.	Barometer.		Temperature.					Wind.	Rain.
				Of the Air.			Of the Earth			
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Friday 6	○	29.571	29.491	58	47	52.5	55	57	N.E.	.52
Satur. 7	15	30.080	29.869	59	42	50.5	55	57	E.	.10
Sunday 8	16	29.960	29.847	60	52	56.0	55	56½	S.E.	.13
Mon.. 9	17	29.823	29.662	70	43	56.5	56	57	S.W.	.09
Tues. 10	18	30.014	29.992	65	54	59.5	56	57	S.W.	.13
Wed. 11	19	30.297	30.009	62	28	45.0	57	58	N.W.	.00
Thurs. 12	20	30.482	30.454	58	29	43.5	55	56½	E.	.10
Average.		30.032	29.903	61.7	42.1	51.9	55.6	57.0		

Oct. 6—Rain throughout.
— 7—Overcast and cold.
— 8—Fine; cloudy; fine at night; slight rain.
— 9—Cloudy and fine; overcast; fine at night.
— 10—Foggy; exceedingly fine; overcast; rain.
— 11—Fine throughout; frosty at night.
— 12—Clear; quite cloudless; frosty at night.

Mean temperature of the week, equal to the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending Oct. 21, 1854.

Oct.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 15	57.8	40.4	49.1	12	1.04 in	2	2	3	1	7	3	4	6
Mon. 16	58.1	40.6	49.4	12	0.52	—	3	5	1	3	5	8	3
Tues. 17	58.1	41.5	49.8	9	0.31	1	2	4	—	2	8	7	4
Wed. 18	58.1	42.2	50.1	13	0.85	1	3	1	1	4	5	11	2
Thurs. 19	59.4	39.8	49.6	12	0.60	1	2	3	3	3	5	7	4
Friday 20	59.2	40.3	49.8	13	0.34	1	3	—	3	5	6	7	3
Satur. 21	58.4	40.1	49.3	12	0.64	2	3	2	3	5	5	8	—

The highest temperature during the above period occurred on the 21st, 1830—therm. 73 deg.; and the lowest on the 21st, 1842—therm. 20 deg.

Notices to Correspondents.

Books: *W G.* The "Penny Cyclopædia," now republishing under the name of the "English Encyclopædia," is, in our opinion, the best adapted to all general readers.

Cold Pits: *Sub.* Frigi domo will afford you as good protection as mats; it may cost a little more at first, but it lasts longer than mats, and, therefore, in the long run will be found more economical. Can you not contrive some cheap straw protection which would answer your purpose? ‡

Emigration: *T D.* In our own case we should recommend the young man to seek his fortune in Canada; turning himself to any kind of work for which he may be suited. In colonies a man must not be fastidious.

Guernsey Lilies: *Oxon.* Plant them in 6-inch pots in light sandy soil, and place them on the front shelf of your greenhouse. The only attention they will then require will be watering, and tying their flower stems, as they grow, to neat supports. When they have done flowering, give them a shift, and still continue to treat them well until the foliage has died down, when the bulbs may be taken up and stored away in some dry place till the following September, when they should be repotted, and encouraged to grow again. Managed in this way they sometimes bloom equally well the second year as the first. For further particulars see our volume for 1852, p. 742. ‡

Insects: *H M.* Your Pine trees are attacked by the common Hylurgus piniperda. It is the perfect beetle which injures the young shoots; and the only remedy adopted in the great German Pine forests is to pick off and burn the young shoots as soon as they appear infested. As the eggs are laid under the bark of sickly and felled Pine trees, as well as on the Silver and Spruce Firs, it is necessary to look out for and destroy them in this state by barking the trees, as the grubs reside within the bark. *W.*

Names of Fruits: *W T S.* 1, Louise Bonne (of Jersey); 8, 84, Autumn Bergamot; 15, Seckel; 19, 37, Beurré Diel; 23, Winter Nelis; 26, Vicar of Winkfield; 28, 38, Beurré Bosc; 34, Flemish Beauty: 39, Easter Beurré; 44, Ne plus Meuris; 47, Bon Chrétien Fondant; 51, Winter Bon Chrétien; 53, King Edward's; 61, Duchesse d'Angoulême; 67, Beurré de Capiaumont; 71, Uvedale's St. Germain; 75, Figue de Naples.—*Ann Hughes.* 1, Beurré Diel; 2, March Bergamot.—*Alsned.* 1, London Pippin; 2, Hughes's Golden Pippin. ‖

Names of Plants: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*A Young Gardener.* Some Eupatorium, but we do not recollect the species.—*J C O.* We are sorry to say it is indeed the terrible Anacharis alsinastrum, the appearance of which we long ago announced.—*A Z.* 2, Chelone glabra; 1, Aralia pubescens, we believe, but we should like to see a much better specimen, pressed flat and not shrivelled.—*Devonian.* Boussingaultia baselloides. The White Iris you mention never reached us.—*H H, Cork.* Anacharis alsinastrum, the newly arrived enemy to canals.—*Constant Reader.* It is the Osage Orange.—*A Z.* Next week.—*T H F.* Clavaria grisea.—*S M.* Erysimum cheiranthoides.

Span-roofed House: *Ignoramus.* Two rows of 4-inch pipes are sufficient. Build a narrow hollow chamber next the walls, in which earth may be put for your climbers to grow in; the chamber need not be more than a foot wide. Carry a shelf all round the chamber, and have a stage in the middle of the house.

The Osage Orange: *A Sub.* As soon as your seedlings have lost their leaves, plant them out in rows 2 feet apart, and 1 foot asunder in the rows.

Wall Plant: *Woglog.* We should think Eugenia Ugni would do perfectly well, provided you do not require to cover more space than would be occupied by a common Myrtle.

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures, Linseed Cakes, &c.
WM. INGLIS CARNE, 10, Mark Lane, London.

WHEAT SOWING.—The undersigned beg to call attention to their WHEAT MANURE, which has been successfully used during the last two seasons, and which they are prepared to deliver at 6l. per ton, free to Railway.
They are also Sole Agents for the sale of PEAT MOSS CHARCOAL, which is a valuable deodoriser and distributor of ammoniacal matter.—English and Foreign Linseed and Rape Cakes, Guano, Superphosphate of Lime, Salt, Bones, and all other Manures of known value on sale.
Apply to MARK FOTHERGILL & Co., 204, Upper Thames Street.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7l. per ton; Superphosphate of Lime, 7l.; Sulphuric Acid and Coprolites, 6l.
Office, 69, King William Street, City, London.
N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent. of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

THE LONDON MANURE COMPANY beg to call the attention of Agriculturists to their WHEAT and CLOVER MANURES for present use. The London Manure Company also offer Genuine Peruvian Guano, Nitrate of Soda, Concentrated Urate, Superphosphate of Lime, Fishery and other Salts, and all Artificial Manures of value. The London Manure Company guarantee Peruvian Guano and every Manure they supply to be strictly genuine. EDWARD PURSER, Sec.
Bridge Street, Blackfriars.

ARTIFICIAL GUANO & GENERAL MANURE COMPANY.
THIS Company (as its name implies) has been formed for the purpose of providing at scarcely more than half its price, a Manure equal in fertilising power to, and possessing all the beneficial properties of Peruvian Guano. The directors are now prepared to receive orders for their Wheat Manure (to be used in the same proportions as best Guano); price 7l. 7s. per ton, or 8s. per cwt. Manures for other crops are in course of preparation, and when ready, will be duly advertised.
The directors beg to state that as their Manures are sold at the lowest possible remunerating price, a remittance must accompany the order; and they furthermore request that they may be made acquainted with the nature of the soil for which the Manure is required. A correct analysis, if required, will be forwarded on application.
Address to the Manager of the Artificial Guano Company, 3, Gloucester Terrace, Gloucester Road, Upper Grange Road, Bermondsey.

JACKSON'S PATENT PREPARATION FOR THE PRESERVATION OF POTATOES, SEEDS, &c.—This valuable discovery, for which letters patent have been obtained, is the successful result of 14 years' study and experiments in the preservation of vegetable matter. It imparts health and vigour to the Plants and Seeds subjected to its action, and effectually prevents the Potato Disease, the Smut in Wheat, Mildew and Rot, all Fungal Diseases, and the attacks of Insects and Vermin, and further recommends itself to the Farmer, the Planter, and the Public generally, by the extreme simplicity of the mode of its application.
It is sold by all Seedsmen and Chemists, in packets of one, two, three, and four pounds each, with instructions for its use; and parties requiring larger quantities for their own use or for exportation can be supplied on advantageous terms, by addressing Mr. JACKSON, the Patentee, 18, Cannon Street, London Bridge; where the article is always on sale, and the fullest particulars and directions for its use can be obtained.

Extracts from numerous Testimonials in favour of JACKSON'S PREPARATION.

"Belmont Farm, Eltham, Kent, August 28th, 1854.
"Sir,—I am now about to perform my promise, to let you know how your prepared Potatoes have turned out here. As a practical farmer of some experience I had despaired of finding any remedy for the disease; but I must confess that a stronger proof of the efficacy of your process in Preserving Potatoes, could not have presented itself than I have now to relate. One of the fields of this farm, the property of Mrs. Stanbury, was planted with Regents Potatoes in April last, some of which were prepared by you. The result now is, that the whole of the crop from the unprepared sets is thoroughly diseased and hardly worth the trouble of taking up; while those raised by the side of them from the prepared sets, are not only in a beautiful state of preservation from the disease, but the produce is much greater,—the Potatoes are more numerous than the others; indeed, if there were no such thing as the disease to be feared, it would be worth the trouble and expense of preparing the sets by your process, even for the sake of the improved crops. I shall certainly, for the future, prepare all my Potatoes for seed by your process; and I intend to adopt it for preserving my Wheat from the smut. Any person may see the difference of the prepared and unprepared Potatoes at a glance. You are at liberty to make any use you please of this letter, and I remain, Sir, your obedient Servant,
"G. B. BAXTER.
"To Mr. Jackson, "Late of Ruxley Farm, Kent.
"18, Cannon Street, London Bridge."

LAND DRAINAGE.
MR. JOHNSON begs to inform Landowners, Agents, &c., that he is prepared to undertake the Drainage of any description of Land, either by contract, or by a small charge per acre for planning and setting out the drains, taking levels, and superintending the work. Numerous satisfactory references can be given by Mr. J., who has been for several years in constant practice as a Draining Engineer.—Address 12, Abingdon Street, Westminster.

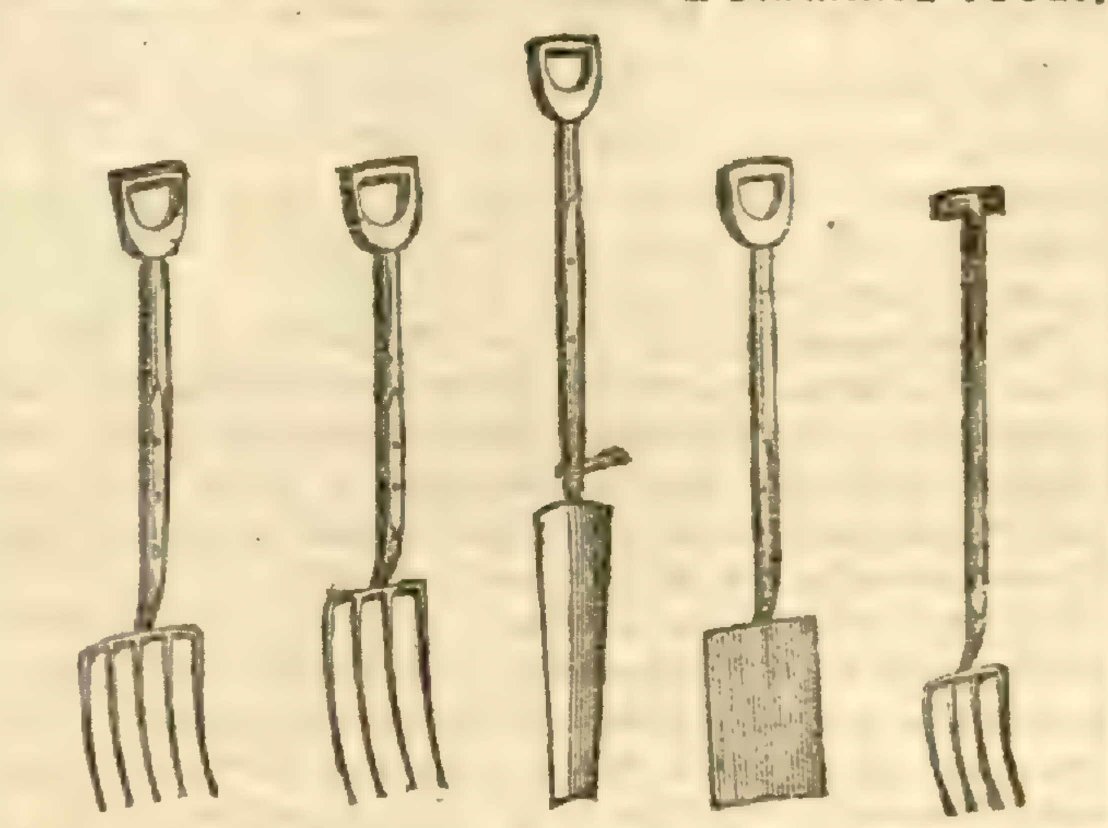
WIRE FENCING, 6¾d. per square yard, in various widths, from 6 feet to 15 inches, mesh less than 2 inches. An effectual fence against Hares, Rabbits, Sheep, Deer, &c., and for the enclosure of Poultry, Pheasants, &c. 4-inch mesh, 4d. per square yard.
R. RICHARDSON, 21, Tonbridge Place, New Road, London.

SAMUELSON'S PATENT PRIZE FORKING MACHINE (Silver Medal from the Royal Agricultural Society of England, Prize from the Yorkshire Agricultural Society, Prize from the Cleveland Agricultural Society, and Prize from the Worcestershire Agricultural Society) is now proved by experience to be an invaluable implement for deep tillage, and equally effective as an extractor of Couch Grass and other Weeds, in testimonial of which, numerous reports from farmers using it in every part of the kingdom may be had on application. Various imitations have failed, through the absence of its essential feature—the Patent Fork. The amount of horse power is less in proportion to the surface deeply pulverised than that required in the ordinary shallow ploughing. The application of steam power to tillage is still a problem to be solved, and it is not necessary to defer deep cultivation until its solution be accomplished.

SAMUELSON'S IMPROVED GARDNERS' TURNIP CUTTER (Prize for the ninth time, at the Royal Agricultural Society's Meeting, Lincoln, 1854). The improvement is a rasping plate for loosening and voiding dirt from the roots, whilst being cut, whereby the scouring tendency of root feeding is diminished.
B. SAMUELSON (Successor to the late Mr. Gardner), Britannia Works, Banbury.

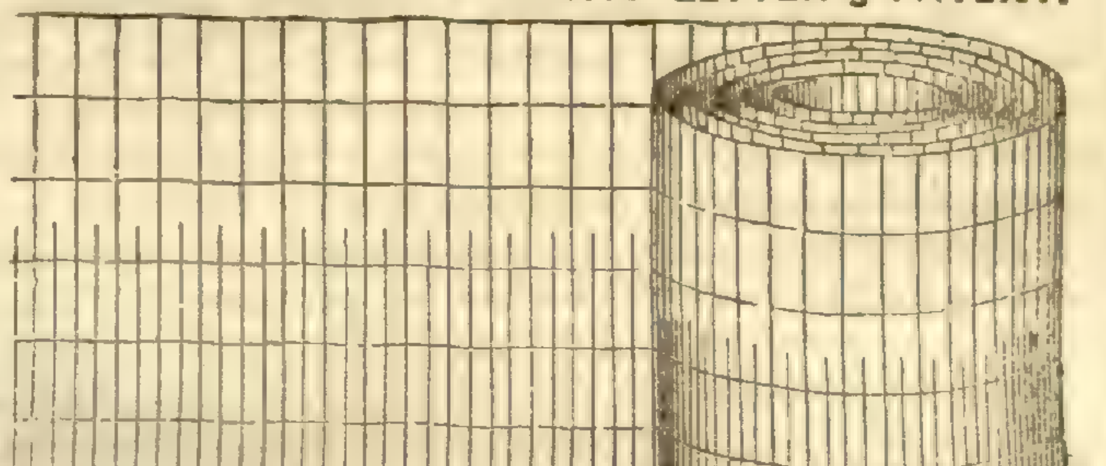
"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.
"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard run, of E. T. ARCHER, 7, Trinity Lane, Cannon Street, City, and the Royal Mills, Wandsworth, Surrey.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.



MESSRS. BURGESS AND KEY, as Mr. PARKES' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.
103, Newgate Street, and 52, Little Britain, London.

BY HER MAJESTY'S ROYAL LETTER S PATENT.

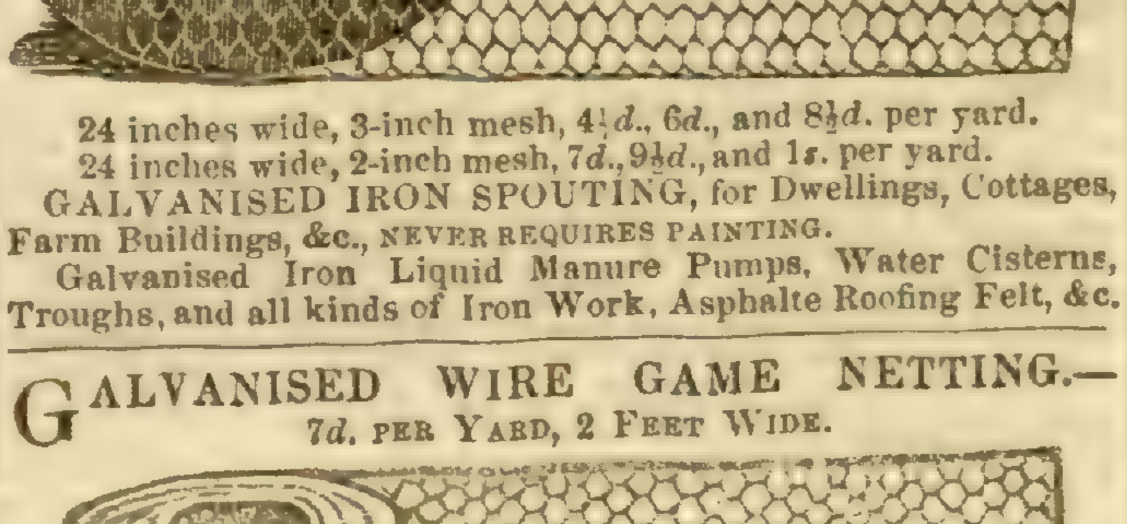


MESSRS. B. GREENING AND CO. beg respectfully to call attention to their superior WIRE FENCES, of which the following are the principal varieties:—Portable Horse and Cattle Fencing (Economical variety of ditto), Portable Sheep and Lamb, Proof Fencing, Poultry Fence, Portable Hare and Rabbit-proof Fencing, Ornamental Garden Fences, Export varieties, Poultry and Chicken-proof Fencing. Light and cheap kinds of most of the above. Trainers for Peas, &c., Garden Bordering, Tree Protectors, Hen Houses, Poultry and other Aviaries, &c.
Messrs. B. G. & Co. being the sole patentees for the machinery for manufacturing these Fences, will forward engraved sheets of Patterns, Prize Lists, Prospectuses, &c., gratis, on application to their establishments, 1 and 3, Church Gates, or 2 and 2 A, Cateaton Street, Manchester.

H. J. MORTON AND Co., 2, Basinghall Buildings, Leeds.—GALVANISED GAME AND POULTRY NETTING, very strong and neat, NEVER REQUIRES PAINTING.

24 inches wide, 3-inch mesh, 4½d., 6d., and 8½d. per yard.
24 inches wide, 2-inch mesh, 7d., 9½d., and 1s. per yard.
GALVANISED IRON SPOUTING, for Dwellings, Cottages, Farm Buildings, &c., NEVER REQUIRES PAINTING.
Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalte Roofing Felt, &c.

GALVANISED WIRE GAME NETTING.—
7d. PER YARD, 2 FEET WIDE.



		Galvanised.	Japanned iron.
2-inch mesh, light, 24 inches wide	...	7d. per yd.	5d. per yd.
2-inch „ strong „	...	9 „	6½ „
2-inch „ extra strong „	...	12 „	9 „
1⅝-inch „ light „	...	8 „	6 „
1⅝-inch „ strong „	...	10 „	8 „
1⅝-inch „ extra strong „	...	14 „	11 „

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasantries, 3d. per square foot. Patterns forwarded post free.
Manufactured by BARNARD & BISHOP, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

TO NOBLEMEN, STEWARDS, AND OTHERS.
J. WRIGHT, 36, Boar Lane, Leeds, begs to call the attention of parties about to improve their Farm Estates to his O.G. Rain Water Spouting, which, for lightness, durability, and cheapness, cannot be equalled. 4 inch, at 1s. 1d. per yard; 4½ inch, 1s. 2½d per yard; 5 inch, 1s. 5d. per yard.
Wire Working, Sheep Fencing and Hurdles, at reasonable prices. Garden Implements of every description.
N.B. To be Sold, a bargain, a Large Wire Aviary.

HOSE PIPING.—GREAT REDUCTION IN PRICE.
PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense pressure, and much more than leather, vulcanised rubber, or any other hose, and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented inventions, the cost of manufacturing it is now reduced at least 60 per cent., which advantage is offered to the public.
BURGESS AND KEY, 103, Newgate Street, and 52, Little Britain, who on application will forward wholesale and retail prices.

HIGHLAND AND AGRICULTURAL SOCIETY.
EDINBURGH VETERINARY COLLEGE.—The Committee of the HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND, appointed to superintend the VETERINARY COLLEGE, hereby intimate that the Session will commence, within the new Class Room, upon TUESDAY, the 7th of November.
The Course of Study will be conducted as follows:—
1. Zoiatrics, Veterinary Medicine and Surgery. Professor Dick.
2. The Principles of Chemistry and Pharmacy. Dr. George Wilson, F.R.S.E.
3. General Zootomy and Demonstrations. Mr. Barlow, V.S.
4. Zootherapeutics and Dietetics. Mr. Dun, V.S.
5. General Practice. Mr. Worthington, V.S.
The pupils have the advantage of seeing an extensive practice amongst all the domesticated animals, and may be examined for their Degree after studying for two sessions. The Diploma qualifies for appointments both in her Majesty's and the Hon. East India Company's Service. Perpetual Tickets for all the Classes, 16l. 16s. By order of the Committee,
JN. HALL MAXWELL, Secretary.
Highland and Agricultural Society, Edinburgh, Oct. 14.

SUSSEX, KENT, AND SURREY POULTRY EXHIBITION.—The ANNUAL SHOW of the REIGATE POULTRY SOCIETY, open to the above three Counties, will be held at the PAVILION, BRIGHTON, on the 21st, 22d, and 23d of November.—For particulars apply to Mr. JAMES FISHER, Reigate, Mr. GEORGE K. KING, 156, North Street, Brighton, E. N. HARPER, Esq., Reigate, and CHARLES HART, Esq., Dorking, Honorary Secretaries.

SOUTH DURHAM AND NORTH RIDING OF YORKSHIRE FAT STOCK & POULTRY SOCIETY.—The SECOND ANNUAL EXHIBITION of this Society will be held at DARLINGTON, in the County of Durham, on THURSDAY and FRIDAY, December 7 and 8, Prize Lists of which are now ready, and can be had on application to the Secretary. JOHN HODGSON, Hon. Sec.
Darlington, September 30.

THE BIRMINGHAM POULTRY SHOW, 1854.
The SIXTH GREAT ANNUAL EXHIBITION OF DOMESTIC POULTRY will be held in BINGLEY HALL, on the 12th, 13th, 14th, and 15th of December next. Copies of the Prize Lists and Certificates of entry may be had on application to the Secretary.
In addition to the prizes announced in the list dated the 23d of February last, the General Purposes Committee of the Council have resolved to offer First Prizes of 2l., and Second Prizes of 1l., for Single Cock Birds of any age, of all the following varieties, viz.: Dorking, Spanish, Cochin China, Bramah Poutra, Pencilled Hamburgh, Spangled Hamburgh, Game, and Polish; and that the same shall be entered under Letters A to H on the ordinary certificates, and exhibited separately.
Seven Silver Vases, of the value of six guineas each, will also be awarded, instead of money prizes, for the best pen of Pencilled Hamburgh, Spangled Hamburgh, Polish, Spanish, Dorking, Cochin China, and Game Fowls.
First, Second, and Third Prizes of 3l., 2l., and 1l. respectively, are offered in all the Classes for Fowls, as well as for Turkeys, Ducks, and Geese. Liberal Prizes will also be awarded to good specimens shown by Cottagers, whose entries must be made on a form of certificate different from that used for the general classes.
The ENTRIES CLOSE on SATURDAY, the 11th of November.
JOHN MORGAN, Jun., Secretary.
Offices, 38, Bennett's Hill, Birmingham, Oct. 7, 1854.

SMITHFIELD CLUB, 1854.
CHRISTMAS FAT CATTLE SHOW.—The Annual Show of Fat Cattle, Sheep, and Pigs, will take place on the 5th, 6th, 7th, and 8th of December, 1854, at the Carriage Bazaar, King Street, Portman Square, London.
All Certificates must be returned to the Honorary Secretary on or before SATURDAY, the 4th November, 1854.
Prize Sheets, and the necessary Printed Forms of Certificates, are now ready, and can be obtained on application to
B. T. BRANDRETH GIBBS, Hon. Sec.
Corner of Half-Moon Street, Piccadilly, London.

The Agricultural Gazette.

SATURDAY, OCTOBER 14, 1854.

MEETINGS FOR THE ENSUING WEEK.
THURSDAY, October 19—Agricultural Imp. Society of Ireland.

WE have received the following letter from Mr. PAINE, of Farnham, on the subject of our last week's remarks. The FINGER and TOE DISEASE is at any time so curious and mysterious a malady, and this year one of such serious importance, and Mr. PAINE'S statement of his experience is so explicit and satisfactory a contribution to the natural history of it, that we are glad to give it this prominent place in our columns:—

"Your leading article of last week induces me to send you a few lines detailing a fact illustrative of the 'Anbury' disease, as well as of its cure. I fully concur with you in considering the Finger and Toe development in the Turnip plant to be a *disease* which I attribute *entirely* to the condition of the soil; arising, probably, from its deficiency in certain inorganic particles, or from the improper chemical combination of those particles, which may be re-adjusted by agents within our own control. I have on two or three occasions stated this opinion at the Council Meetings of the Royal Agricultural Society, where I have described those remedial measures, which in my own practice I have hitherto invariably found effectual in the removal of this disease. That remedy is *lime*—probably lime of a peculiar

character. That which I use is *grey* lime, and it contains 'soluble silica.'

"I now happen to have before my eyes a capital exemplification, both of the unusual intensity of the disorder and of its cure, in two large fields of Swedes adjoining each other: one of them belonging to myself, the other to a neighbour and friend of mine. These fields are geologically situated upon the lower greensand, the surface soil being gravelly. The ordinary mode of cultivation is the four-field course. Four years ago these two fields were also in Swedes, when both utterly failed from the ravages of this disease. On my field last spring I put 160 bushels of this grey lime per acre; while my friend applied *none* to his field, but in all other respects it was well manured and well cultivated. There was a good plant alike in both fields, and the Swedes grew equally well until after the first hoeing, when the disease commenced its ravages on my friend's field, and continued its devastation until, in many parts of the field, for half an acre together, *scarcely a single plant is left alive.* Those worst spots were re-sown with white Turnips, and the seed hoed in, and now I perceive that the young Turnips also are all beginning to be infected. In a word, the crop of this field is again utterly destroyed.

"On the other hand, in my own field, although the disease is not completely extirpated, I do not think there is more than one Swede in ten, on the average, at all affected, while there is a prospect of growing nearly, or quite, 25 tons per acre.

"I may here state that in my general farming practice, whenever I see the slightest tendency to the development of Finger and Toe in my Turnips, I take this as an indication that the land requires lime, which I then apply, not only for their removal, but in the full expectation that it will be beneficial to my other crops; and I think that their usual excellence testifies to the soundness of the practice.

"As the above illustration of this destructive disease and its effectual cure are so palpable that it is manifest more than a mile from the spot, and as the disorder is so prevalent in many districts, I thought it a public duty to communicate the fact through your columns, that others may obtain a similar benefit. For the ensuing Turnip crop I would, in all cases, recommend the lime to be applied as early as possible, in order that it may become well commingled with the soil before the Turnips are sown.

"I am, of course, well aware that the application of lime, with the view of obviating the 'anbury' disease, is no novelty; but as I have often heard its remedial effects controverted, I think it extremely *probable* that this *difference* of opinion may be justified by facts, and these facts may be dependent upon the QUALITY of the lime employed; at any rate this branch of the subject is well worthy of further investigation."

A PRINTED sheet which is now lying before us is a most useful sequel to the allotment competition at Tortworth last month, to which we made reference at page 633. The various exhibitors, allotment holders and farm tenants, on Earl DUCIE's estate are thus informed of the results of the competition which occurred; and the honour of success is, of course, increased by publication.

That our readers may learn the extent an exhibition, which on a single estate, extending over five parishes, may at its very starting assume, we publish the table showing the number of articles exhibited, with the districts from which they were sent:—

ARTICLE.	Tortworth.	Falfield.	Charfield.	Whitfield.	Wickwar.	Cromhall.	Total.
Potatoes	47	37	27	45	130	44	330
Parsnips	1	1	4	5	19	3	33
Carrots	0	3	1	2	6	1	13
Onions	10	3	2	11	12	10	48
Wheat	11	14	8	14	4	18	69
Cabbage...	3	4	6	4	6	3	26
Turnips	4	2	0	6	5	3	20
Lettuce	1	0	0	2	0	0	3
Apples	10	10	0	18	24	21	83
Damsons	2	1	0	3	1	1	8
Pears	2	1	1	6	5	3	18
Plums	3	1	1	4	1	4	14
Mangold	4	2	1	7	9	1	24
Swedes	1	4	3	3	6	1	18
Peaches	1	0	0	2	0	1	4
Other Articles	...	...	...	...	...	...	9
							720
Nosegays	...	...	...	...	...	...	30
	100	83	54	132	228	114	750
Exhibitors	45	29	26	41	75	50	266
Prizes taken by each District	10	4	2	22	25	9	72

It will be understood that the "number" of Potatoes, Parsnips, &c., means the number of *lots* under each head—enough was exhibited of each to cover a space of some 15 inches square upon the table. The number and quality of lots thus congregated were a most valuable testimony to the skill and energy with which allotment cultivation is carried on in this neighbourhood; as well as to the respect and goodwill which have been called forth by this effort of the landlord to unite his tenantry with himself in a matter involving so much social as well as agricultural importance. It will be of general service, if the publication of this remarkable success of a first effort of the kind shall induce its imitation on other estates in other parts of the country.

WE have received the following letter from Mr. CAIRD, just as we are going to press; and it is but justice to that gentleman, who has, in our opinion, been unjustly attacked, to give it all the prominence in our power:—

"Somehow or other, though the political question is at an end, there are certain persons connected with the agricultural interest who seem resolved to make me stand ill with the English farmers. I have, however, such confidence in the English love of fair play, that I make an appeal to their sense of justice.

"I am charged in the most offensive terms with having knowingly made an untrue statement at Tiptree, in regard to Mr. TELFER's Italian Rye-grass. To those who know me, I trust it is unnecessary to offer an answer to such a charge. To the agricultural body at large it is right that I should offer an explanation.

"I was called upon quite unexpectedly to acknowledge the toast of 'British and Foreign Agriculture.' I had neither time nor opportunity for premeditation, and in running rapidly through my mind the topics most likely to interest the distinguished audience of political and scientific men, as well as agriculturists, whom Mr. MECHI had assembled around him, it seemed to me right to point out the natural distinction which the difference of climate in the east and west sides of Great Britain had produced in our agriculture. As an illustration of the effects of liquid manure in a favourable climate, I repeated a statement which very much corroborated one previously made by Mr. MECHI, to this effect, that a gentleman then present, Mr. TELFER, had told me that day that he had grown 25 tons of Italian Rye-grass hay on a Scotch acre (or 20 tons an English acre) in three cuttings. I appealed to Mr. TELFER, who was sitting near me, whether I had not rightly so understood him. This appeal was made in the hearing of the 300 gentlemen who were present; and no dissent being intimated from Mr. TELFER, I passed on to another subject.

"I am not a reader of the *Mark Lane Express*, but the two last numbers have been sent to me. The Editor and his correspondents seem disposed to fasten upon me as the originator of the statement of this extraordinary crop of hay. It is necessary, therefore, that I should make my own position in the matter perfectly clear.

"In walking through Mr. MECHI's farm previous to the dinner, Mr. TELFER said to Mr. MORTON and me, when we were speaking of the large number of live stock which Mr. KENNEDY, of Myremill, maintained on his Italian Rye-grass, that he himself had grown 25 tons of hay in three cuttings from a Scotch acre of this Grass. We both were surprised, and disposed to question the statement; but on further conversation we were astonished to find that Mr. TELFER's hay crop and Mr. KENNEDY's live stock remarkably corroborated and confirmed each other. I had several times visited the farms of both these gentlemen, and knew them to be accounted men of character and veracity. I felt myself justified therefore in repeating this statement, and if I had in any way misunderstood Mr. TELFER, I gave him a public opportunity of setting me right. I distinctly affirm, therefore, that the statement publicly made by me at Mr. MECHI's was an exact repetition of the statement made to Mr. MORTON and myself by Mr. TELFER. So much for the matter of fact in regard to me.

"But suppose, instead of saying 20 tons of hay per acre, I had said its equivalent—65 tons of Grass. The illustration would have been exactly the same; and Mr. TELFER, whether he converts it into hay or not, equally draws from the land many times its ordinary produce by the aid of liquid manure and moist climate together.

"The tone and terms which the editor of the *Mark Lane Express* uses towards me, and admits from his correspondents, are discreditable to the character of a respectable journal. I throw back his insinuation with disdain and contempt. I submitted to attacks the most false and libellous when directed against me for political objects, but I do not promise the same forbearance now. If the editor and his friends who were present at Mr. MECHI's really felt so indignant, why did they not speak out like men at the time?

"Oct. 11." "JAMES CAIRD, Baldon."

THE AYRSHIRE HAY CROP.

"I TOOK your paper to read in the train to Holyhead, and I am much hurt to see you adopt the wild statements of Mr. Caird. I had always looked up to you as an agricultural authority. I now cease to have any confidence in you. I should have stopped Mr. Caird in his impossible statements had it not been for the respect I have for our friend Mechi, not wishing to have an unpleasant discussion at his hospitable board. Afterwards I expressed indignation at such mis-statements being made, when a Scotchman defended Mr. Caird (I suppose Mr. Telfer), and said it was perfectly true 25 tons had been made and dried at three cuttings; when I showed that if such crops were grown they could never be dried in that climate. He said the hay-making machine was frequently moving it. I then exclaimed—'*This settles the matter, for no hay-making machine ever invented could move half such a crop.*' Now, sir, I should have liked you better if you had mentioned my name when you attacked me. I am prepared to stake my agricultural reputation of many years' standing as to the impossibility of Mr. Caird's assertions, and to appeal to the practical agricultural world whether it would be possible, three times before the end of July, to dry such crops if they were ever grown. I consider such statements as most wicked, and your adopting them as most damaging to an agricultural leader. *T. Beale Browne, of Hampen, Gloucestershire.*" [We take the above from the columns of the *Mark Lane Express* of last Monday, in which it appears as a letter addressed to ourselves, and preceded by the following note to the editor of the *Express*:—

SIR—I am unjustly attacked in the *Gardeners' Chronicle*, and I enclose you a copy of the letter I have sent them. In future, I shall order your paper instead of theirs. Will you kindly insert the letter in your paper, as a copy of the letter I sent to the editor of the *Gardeners' Chronicle*? I am, sir, yours, &c.

Dublin, Oct. 7. T. BEALE BROWNE.

The letter thus "sent to the editor of the *Gardeners' Chronicle*" has not reached us;* but as we are sorry to have lost the good opinion of one who is so well known in the agricultural world as Mr. Beale Browne, we take it from the columns of our contemporary, for the purpose of offering such explanatory remarks as may, perhaps, tend to our justification in his eyes. And as the *Mark Lane Express* is to be the only paper he is to read for the future, we venture to ask that this paragraph may be reprinted there, in order that it may meet his eye. (1) The *unjust attack* upon Mr. Browne in our columns we presume to consist in our assertion that his incredulity was expressed in an extravagant manner;† and that is an opinion in which we think most people will coincide. It is the only statement of opinion made in which he is *personally* interested. (2) We should have preferred with himself to have named him personally in connection with this statement, but we could not at the time recall to mind either his full name or his address, without which he would not have been identified. (3) As to the agricultural bearing of our remarks—the only really important aspect of the matter—which after all we presume to be the ground of Mr. Browne's displeasure—after reading what we said, it really does not appear necessary to alter it at all. It is, however, possible that the wording of the statement may have failed properly to convey our meaning, which related to two separate points:—First, the real origin and authority for the statement, both as regards the Grass crop and the crop of hay; and secondly, the credibility of the statement regarding the amount of Grass obtained at a single cutting—for that is the *only* part of the statement on which we have hitherto expressed our own opinion. As regards the first, the facts of the case make Mr. Caird to have been merely the voice by which *Mr. Telfer* uttered what was said, for the statement made was obtained in conversation from himself, and he sat close by the speaker all the time. And here we venture to add to what we previously said, that we perfectly remember asking Mr. Telfer, whether his statement, meaning of course that about the hay as well as that about the Grass, was not the result of estimate and calculation founded on the mere portion of a field; and the answer was that it was really an experience *per acre.* Mr. Telfer, we see, has this week said that the remark about the hay referred to the quantity which could *probably* be made out of the Grass which was *actually* cut; and we agree in the opinion on this point which he has expressed: nevertheless, we must abide by the testimony we have already given as to the remark that *was* made upon the ground, and as to the person on whom the responsibility of it really rests. On the second point, the credibility of the statement that 25 tons of Grass have been taken at a cutting from a Scotch acre, we do not think it is either "wicked" to say so, or "damaging" to an agricultural reputation to believe it. Does Mr. Browne remember that there are two witnesses on this subject? Mr. Kennedy, of Myre Mill, on 33 Scotch acres had kept 250 "large cattle," 465 sheep, 200 pigs, and 25 cart horses, "during the past month." Will any one tell us the produce per acre here? We imagine it will be found to bear out pretty fully Mr. Telfer's statement.]

One word of explanation to our friends of the *Mark Lane Express*. Their further quotations from the article which has occupied their own attention and that of their readers to so flattering a degree are *verbally* exact, which the first one was not. For our "indignant and curious denial" on this point, however, to which they refer, we fear our readers will have searched in vain, though *their* readers will, no doubt, believe us to have indeed been "splitting straws" in a very remarkable temper. Their reference to "travellers' tales," in connection with the name of the late Captain Basil Hall, one of whose adventures we related, is unfortunate. The travellers' tales of Captain Basil Hall were exact and truthful contributions to geography, natural history, and all the other sciences in which a sailor is professionally interested, and to that the leading men in each will readily bear witness. If we or the *Mark Lane Express* shall deserve a character for truthfulness such as Capt. Basil Hall's, we may very well be satisfied.

* Oct. 12.—The letter has now reached us, since the above was in the printers' hands. It has the following postscript:—"I shall expect you in common fairness to give this a place in your Paper." Mr. Browne need never doubt our desire to exhibit "common fairness."

† See foot note second column, p. 633.

TWENTY TONS OF HAY PER ACRE.

It is of the highest importance to the agricultural world to ascertain whether this statement, as made by Mr. Caird at Mr. Mechi's gathering, is true or false; it is thought by some untrue, by other agriculturists of high repute, as impossible,—so much so, that the ram breeder at Tiptree is reported to have said that the man who dared to have made such a statement at his ram show would not have gone away alive.

I have waited with some anxiety, that Mr. Telfer, who was at Mr. Mechi's, should have replied, or that Mr. Kennedy, of Myre Mill (also quoted), should have done so; neither of them have, so I venture myself again before the public the advocate of my own system of growing my own plant, and state, without hesitation or fear of proof to the contrary, that it is true; that as much of my Italian Rye-grass can be grown upon a Scotch acre of good land in one year, cultivated as by Mr. Kennedy or Mr. Telfer, as will keep 70 sheep or produce 20 tons of hay; I make this statement boldly, because it is the result of 10 years' practice upon a surface and subsoil of clay.

Some persons have thought the Grass for 20 tons of hay was grown in one crop, and have been asked that question. It is not so. The Grass may be cut from seven to ten times in 12 months; during the summer months, when the temperature of the atmosphere is high, a yard of Grass in height may be grown in 21 days. In 1844, my first crop was cut early in March; the second, April 13th; the third, May 4th; the fourth, May 24th; the fifth, June 14th; the sixth, July 22d, with a crop of seed; here the liquid was used up and discontinued; three slight crops were cut afterwards, but not dated. To this the public attention was called; the fact could not be denied, but every one accounted for it by some extraordinary advantage I had, they did not possess—to the vast quantity of liquid manure I had, they had not. No one said it was the fine land; all admitted the land to be very bad. Knowing that every one could do so who really tried, I foolishly appropriated a field of 20 acres to grow the Grass to make into hay without the liquid, to convince the public that they could do so. I made the year's Grass into hay upon the field before the public; 13 stacks, containing from 12 to 15 loads each, were erected. I was silly enough to make one crop in November (which was, of course, stacked at much cost),—a heap of manure; when the weather is not hot and fine, it takes longer to make the hay than to grow the Grass, so that one is done at the expense of the other. If I had removed the Grass from the field directly it was cut, and made it elsewhere, that year's growth would have been little less than Mr. Telfer's statement. This did not convince agriculturists at large; anger was the result in many cases; but there were some who took the hint, and adopted the system of Mr. Kennedy, Mr. Telfer, Mr. Harvey, and Mr. M'Culloch, all Scotchmen, 300 to 400 miles off, while only one of my neighbours did so. Mr. M'Culloch was brought from Scotland by Colonel M'Douall to see a wonderful crop of Grass grown upon a new system, therefore he was prepared to be surprised. Being taken into a field of Grass of 14 acres, early in April, he expressed his surprise most heartily, saying it was a great sight, worth coming from the furthest part of Scotland to see; he had never seen anything in agriculture so wonderful. I asked him what he would say, then, if he were told it was the second crop this year; he said he would not believe any man that swore it. Being taken down the field to the far end, he saw a wall of Grass that convinced him at once of the fact that it was the second crop; he then said he would never disbelieve anything again.

I am now stating things in the presence of men living, to be contradicted if untrue. I grew as an experiment in my garden a patch of Grass 5 feet 10 inches high, examined and measured by a committee of the House of Commons, with whom was Mr. Shaw Lefevre. I will not say what this crop weighed, although I know, lest I should damage the other facts I have stated; but I will state them when 7 to 10 crops are grown that weigh 8 to 18 tons per acre (English) according to the skill of the cultivator; that it shrinks only in the proportion from five to two in the open air in 12 days, it may be conceived how 20 tons of hay per acre (Scotch being 1¼ English) may be grown upon one acre of land; it may also be easily tried by any one very desirous to know, by getting from me, Mr. Kennedy, or Mr. Telfer, as much seed as will answer his experimental purpose for one acre, 4 bushels being the quantity.

Many other experiments have been made too numerous to require you to insert, but one bearing particularly ought to be mentioned—it was how much land could 4 horses clear in 24 hours; running loose in a yard, without any other food, and fed to the full. They cleared 7 yards by 5½; a piece of land just under 5 acres, kept from 70 to 100 horses in rack-meat during the spring and summer months, some of them eating four feeds of Oats per day, and some no Oats at all

I have now sat down 90 miles from all my advantages, upon the poor land of the New Forest, to use up the remnants of my mind and body in agricultural pursuits. I shall make many blunders, but shall relinquish and correct them when I find them,—shall, with the Divine blessing, endeavour to show that my Italian Rye-grass can be grown as successfully upon the light land here, as it was upon the stiff clay of the London basin. It will be a great pleasure to me to find, while a pilgrim in this world, that my plant is grown, and my system adopted over the whole of my country with satisfaction and profit. In order to assist it, I shall publish a pamphlet of instruction with as little delay as possible, with instructions to carry it out at the cost of as few pence as possible, and place it in the hands of a vendor, the profit of which, if any, will be applied to the soldiers' and sailors' orphan fund. *William Dickinson, New Park, Lymington, Hants, Oct. 12, 1854.*

MICHAELMAS RENTS ON CORN AVERAGES.

The adoption of corn rents based on the average prices of Wheat, or of Wheat, Barley, and Oats, for the farmer's year, ending on Michaelmas day, having been strongly advocated by many gentlemen as forming a more equitable bargain between the landlord and tenant, I was induced to make a communication to you in October, 1853, and as a continuation embracing the year ending Michaelmas day 1854, I have prepared the annexed statement. I also subjoin the weekly averages upon which the quarterly and annual average is founded, put into a shape more convenient for reference than the return published in the *London Gazette*.

It would tend very much to promote the extension of the system if a general plan of proceeding could be introduced; and with a view to this object it would be gratifying to me to be furnished with information as to the mode in which the adoption of corn rents has been introduced and carried out in different parts of England, particularly with reference to the basis prices of grain.

By way of example, we will suppose that a farm would be worth 300*l.* a year rent, if the average prices were as follows, viz.:

Wheat... 7*s.* 0¼*d.* per Imp. bush., or 56*s.* 2*d.* per Imp. qr.
Barley... 3 11¼ „ „ or 31 8 „
Oats ... 2 9 „ „ or 23 0 „

Now, at these prices, if we turn one-third of the rent into each of the above kinds of grain, the corn rent will be—284·866 bushels of Wheat; 505·263 Barley, and 727·272 Oats.

And these quantities valued into money at the annual average prices ascertained up to each Michaelmas day will give the rent from year to year during the continuance of the agreement.

Average Price per Imperial Quarter in England and Wales.

	Wheat.		Barley.		Oats.	
	s.	*d.*	*s.*	*d.*	*s.*	*d.*
For Quarter ending—						
Christmas 1853	69	10	40	0	24	9
Lady Day 1854	79	6	40	1	26	11
Midsummer „	78	4	37	0	29	1
Michaelmas „	63	10	33	5	28	2
For the Year ending—						
Michaelmas 1854	73	1	37	9	27	4

Weekly Average Price per Imperial Quarter.

Per London Gazette.	Wheat.		Barley.		Oats.	
	s.	*d.*	*s.*	*d.*	*s.*	*d.*
14th October, 1853	64	0.803	38	7.894	22	9.914
21st „ „	68	4.779	40	1.871	23	10.748
28th „ „	68	11.534	40	7.003	24	2.465
4th November „	69	1.719	40	9.486	24	8.810
11th „ „	71	9.247	41	3.011	25	5.833
18th „ „	73	7.718	42	2.986	25	5.340
25th „ „	72	7.154	42	3.194	26	0.870
2d December „	72	0.479	41	9.762	26	0.546
9th „ „	72	7.950	40	9.977	26	3.242
16th „ „	71	11.723	39	9.201	25	4.600
23d „ „	70	9.827	38	9.058	24	11.752
30th „ „	70	0.633	37	11.086	25	0.169
6th January, 1854	73	0.202	39	4.387	25	6.543
13th „ „	76	2.273	41	3.803	25	5.183
20th „ „	78	10.676	42	0.627	26	4.442
27th „ „	82	4.481	42	10.724	27	2.759
3d February „	83	3.040	43	0.819	27	1.650
10th „ „	82	8.527	41	8.961	27	0.479
17th „ „	82	4.010	41	3.205	27	4.916
24th „ „	80	1.990	39	11.765	27	5.631
3d March „	78	5.659	38	4.474	27	1.991
10th „ „	78	3.674	37	10.102	27	0.199
17th „ „	79	6.173	38	7.136	27	2.089
24th „ „	79	2.989	38	9.905	27	7.404
31st „ „	78	4.079	38	6.802	27	5.600
7th April „	75	0.181	37	8.588	26	10.847
14th „ „	73	5.758	36	2.864	26	11.914
21st „ „	78	3.350	36	10.791	27	6.519
28th „ „	79	11.991	37	5.008	27	6.148
5th May „	79	5.596	37	3.533	28	9.627
12th „ „	79	9.947	37	0.365	28	8.671
19th „ „	78	9.829	37	1.042	29	5.936
26th „ „	78	2.646	37	2.454	29	4.887
2d June „	78	9.683	37	1.229	29	11.404
9th „ „	79	11.886	36	9.510	29	10.301
16th „ „	78	9.390	37	1.692	30	8.757
23d „ „	78	3.049	37	3.318	29	5.140
30th „ „	77	11.508	37	1.563	30	6.391
7th July „	77	8.708	37	2.865	30	7.430
14th „ „	76	6.946	36	6.674	30	2.827
21st „ „	74	6.995	36	10.649	29	8.706
28th „ „	71	10.339	37	1.564	30	7.462
4th August „	69	8.211	36	3.790	29	10.600
11th „ „	64	8.418	35	9.941	29	11.069
18th „ „	62	3.219	34	8.239	28	11.140
25th „ „	64	0.742	34	6.821	27	9.098
1st September „	63	7.048	32	5.459	28	7.542
8th „ „	62	3.860	32	5.789	27	8.970
15th „ „	59	4.676	30	9.243	27	6.822
22d „ „	52	5.288	29	2.912	25	11.975
29th „ „	53	2.611	29	2.148	24	7.502
6th October „	55	9.154	29	2.859	25	3.664

Charles M. Willich, Actuary University Life Office, 25, Suffolk Street, Pall Mall, 6th Oct. 1854.

Home Correspondence.

Anbury.—I have read in your columns for several weeks past, articles on the disease in Turnips, called finger and toe, or anbury. Some years ago, my father took a farm which was completely run out by bad farming; the first crop of Turnips he grew were all diseased with anbury, also the tops very much diseased; he said the soil was sour, and wanted marling, which was done. The result was, he had no more finger and toe, or anbury. I consider the coarse roots shown by your drawings are from seed raised from a badly selected root, but the anbury is a decided disease or swelling of the roots. *John W. Drake, Chignal, near Chelmsford.*

Dartmoor Farming.—[We have received from a friend the following letter by Mr. Fowler, written without the idea of publication, which, however, has been since permitted.]:—I had hoped to have seen you at my sale, but concluded you could not conveniently arrange to do so. Considering the depression then setting in on cattle and sheep, the prices obtained were good—probably near 100*l.* more than now would be made; 40*s.* to 81*s.* my store ewes, 23*s.* 6*d.* average of ewe lambs, 22*s.* 3*d.* average of wether ditto, 14*l.* Cotswold ram, which I bought at seven guineas and used two seasons; bullocks, all ages and all prices, from 4*l.* to 17*l.*; it was only four store Cotswold ewes that made 81*s.* each; my own bred ewes made 40*s.* to 43*s.*, and some of these were getting old—part Cotswold and part Cheviot. I should like to know what my Scotch correspondent in the *Gardeners' Chronicle*, Major M'Iuroy, has now to say of this cross. I only reserved about 50 breeding ewes from the sale, but so unbounded has been the growth of my pastures since the auction, I have just bought 62 more breeding ewes, taken in 60 sheep to keep, and agreed with persons who have just inspected the keep to take 230 more; 24 bullocks also are now with me, and I am ready to find plenty of keep for 30 or 40 more. Poor old despised Dartmoor does now rather astonish the natives here. To-day my next neighbour has been over my grounds, and remarked that he had no idea that there were such pastures here. Seventy ewes he sends to-morrow for three weeks, at 5*s.* per score per week. My 10 acres of Rape have grown most rapidly of late, and by next April I quite hope the ewes and lambs will feel themselves most comfortable when penned upon it. Aug. 30 to Sept. 18 were the dates of the Rape sowing. This crop will be watched with much interest, as it is quite a new move here, and my neighbours know not what to think of it; but if I am not much mistaken, by next spring some light will dawn upon them as to the value of this crop, which will come to our aid in the most trying month in the whole year, viz., April; then in May or June down with the land, at a small amount of labour, to roots. My 20 acres of Grass seeds with one pint of Rape per acre, seeded August 3, 19, 21, are making great progress; the crop looks just like the end of May. Fortunately, I may say, for you, this long personal detail must end, as space now vanishes and I almost fear I shall have wearied you; but knowing the deep interest you take in these matters, I mean to post this dry document. *Geo. W. Fowler.*

Liquid Manure.—Surely a man must be mad to talk in this civilised age, of anyone endangering his life by any statement he can make, however extravagant. Let anyone who doubts the truth of Mr. Caird's assertion made at Mr. Mechi's late gathering, and authorised by Mr. Telfer, try the following simple experiment. Take a cubic foot of dung from the middle of a manure heap, that has been drawn out into the field for the future Wheat crop (any other may do, but the richer the heap the better). Wash it with water until it will not discolour the water it is washed in, and then dig it well into a square piece of ground in the field or garden, as may be most convenient, and sow a crop of any kind upon it. Take a second cubic foot of dung from the same heap, and as near the same place that the former was taken from as possible, and without washing dig it into a piece of ground the same size as the former, and, of course, the same quality. Then sow a crop of the same kind as the former, and afterwards wait for both crops to arrive at perfection; whenever this condition of the two crops is obtained, the difference between them will, I think, settle all dispute about liquid manure. *J. R. Markby, Duxford Rectory, Cambridgeshire.*

Seed Growers' Society.—At a meeting of the Seed Growers' Society, a few days since, attention was drawn to a letter which appeared in your columns some time since, in connection with an extract from the *Chelmsford Chronicle*, and the rules of this society. It was considered that letter was in opposition to the understanding upon which the society was established, and was not under the sanction of the committee nor written by the secretary, although his signature "A Friend of Freedom and Progress" was borrowed from the first article which appeared in your columns, that being also an extract from the Chelmsford papers. The intention of the members is not to set up a rival to the London merchants, but to secure a fair remunerative price for articles supplied them by the growers, by means of a deputation of members of the society, to meet with the members of the London trade, in order to secure a fair adjustment of prices. The chief object is to obtain the most correct information as to the supply likely to come into the market, in order to determine what is its relative value, at the same time leaving each member at perfect liberty to act for himself. The paragraph which has necessitated this explanation was under the heading "New principles.—The growers will hereafter sell to any party who pays them best for their goods, making it an open market for town and country." In other respects that letter fairly set forth the past position and present intentions of the society. *John Moss, jun., Secretary, Feering, near Kelvedon, Essex, October* 5.

Weeds: Couch Grass.—On reading a book on the "Weeds of Agriculture," in 1830, I have made this memorandum. Although the true secret of destroying weeds has been known and partially practised for ages,

yet we frequently have questions asked what is the best and surest way of getting rid of this or that weed which by long neglected or improper husbandry has got full and uncontested possession of the soil. The Couch or Twitch Grasses are plants of the Agrostis family; they are the most destructive of all root weeds. If any part of them is left in the ground they grow most vigorously, and appropriate to themselves everything that is within their reach, devouring the food applied by the farmer to the ground as food for the plants he cultivates, and if they are not restrained by his utmost vigilance and the most unremitting exertions, they soon become the supreme occupiers of the soil. The White Couch (the quickens of Scotland) pushes out its strong white roots under the surface in every direction in the deep soft black land of Norfolk, Cambridge, and Lincolnshire. In this peaty soil it riots in many instances in uncontrolled possession of the whole field, particularly where the land is over-ploughed; here the White Couch sends forth its strong, creeping roots, where it meets with little or no obstruction. It increases with astonishing rapidity, and almost defies the vigilance and industry of the best farmer to master it. In the soft, light, sandy soil of Norfolk, near Holkham, I once saw a rick of the roots of this White Couch Grass, which had during the dry, warm months of May and June been taken out of a light sandy field of about 4 acres, and dried and stacked at a public-house for litter; there were from 12 to 15 tons of it. The innkeeper said that it made excellent litter, and the horses liked it, for they ate some of it. The Black Twitch, Surface Twitch, or Black Grass, is the Agrostis stolonifera; this is a most destructive weed, it abounds on the light stone-brashy soil of the oolitic formation, particularly on the Cotswold Hills, where the soil has been reduced by over-cropping. The farmer must be on his guard, for this Twitch is not only propagated by its seed and roots, but as its stems are long and trailing, every joint or stolon sends out roots like the Strawberry, and it soon becomes a most numerous family of destructive weeds, spreading themselves far and wide over the field, covering the whole surface with its thick mantle, so that it is difficult for any plant to live where this weed abounds. If the smallest and most insignificant part of this plant is allowed to remain in the most remote corner of the field, it will soon by its rapid growth extend itself into the possession of the whole field again; and it is most difficult to plough the land when it is covered with this black Grass, nor can it be done properly till it has been breast-ploughed. We cannot get rid of these weeds in any other way than by taking them out root and branch, drying them and burning them; and this is done on the Cotswold Hills by what they call "smother-burning," and thus converting the ashes of an enemy into a valuable manure for their Wheat or Turnips. But "prevention is better than cure;" therefore high farming, as it is called, will best prevent the growth of these or any other weeds. First clear the land of all weeds, and always keep it clean; apply large quantities of manure, which, with good cultivation, will produce large crops of roots; and by consuming these on the ground, and adopting the alternate system of cropping, there will be no difficulty in keeping the land free from the white or black Twitch or any other weed. About the year 1805 the value of the Agrostis stolonifera, as a rich and most productive and nutritious food for stock of all kinds, as green food during the whole of the winter months, was sounded forth by a Dr. Richardson, and it got the name of Agrostis stolonifera Richardsoniensis; and as it was very easily propagated, the doctor sent it into Ireland as the most valuable of all the Grasses, all that was required being to mow the crop at any time of the year, then carry it from the field, and cut it in lengths of about 2 inches long with a chaff-cutter, then sow the cut Grass over the field (which had been previously ploughed), and then harrow and roll it, when each of the joints or stolons took root, and a large crop soon covered the ground of what the doctor called "the most nutritious food for stock." *J. M.*

Societies.

East Cumberland.—The anniversary exhibition of implements and stock connected with this society took place on the Castle Green last month. In no department, save that of horses, were the entries numerous; nevertheless, as a whole, the exhibition was perhaps the best that has yet been held under the auspices of the society. Farmers do not now drive whole herds of cattle and flocks of sheep to the show ground; they have learnt that it is useless to attempt to defeat an opponent by dint of superior numbers. On the other hand, they are equally conscious that *fat* arguments will no longer overbalance the judgment of men who know that other and more useful qualities than mere obesity are necessary to constitute a perfect specimen of a beast. These considerations seem to have led to a most salutary result, and by general consent Saturday's cattle show was allowed to be the best of the numerous similar exhibitions of the East Cumberland Society. The show of horses has never been equalled, either for numbers or quality; Mr. Ellison, it will be observed, went so far as to say that it surpassed anything he had ever seen at the Exhibitions of the Royal Agricultural Society; and, if so, we may hope to see some of our neighbours next year successfully measuring their agricultural skill against the agglomerated excellence of all England. The Galloway cattle were beyond all praise; the short horns, in quality, were of a very superior description (though we did hear a slight contrariety of opinion amongst persons capable of judging upon this point), but in neither of these classes was there anything like the number exhibited on former occasions. The sheep, likewise, were comparatively few in number. In almost every specimen exhibited there was no lack of those good qualities which find favour in the eyes of the judges. The same remark applies to the pigs. In this department the entries were so few, and at the same time so select, that it seemed as if the prizemen of all the previous exhibitions—and they alone—had entered the lists of competition. From the remarks made at the anniversary meeting, presided over by Lord Lonsdale, we select passages from speeches by his lordship and Mr. Howard, of Corby Castle:—

In giving the toast—"The East Cumberland Agricultural Society," Lord Lonsdale said—I will congratulate you upon the marked improvement in the agriculture of this part of the county. I dare say there are some in this room as well as myself who will recollect the road between Carlisle and Penrith when it was one extensive waste—little more, in fact, than a barren heath. But now, if one travels that road, whichever way we turn, we see around us a very fair agricultural country, with here and there some first-rate specimens of good farming. All I can say is, that if the county continues to improve for the next forty years in the same ratio as it has during the past—and there is every reason to expect that the progress will be much greater, for we have now much more capital embarked, more skill, and more knowledge than could have been brought to bear on the subject in times gone by—I say, if any one of us should have the good fortune to live for so long a period, he will find at the end of that time that the improvements in every department of agriculture will be greater far than we can have any conception of at the present moment. Sometimes I have been in the habit of reading the old books upon agriculture, and I find that many of them contain fully as much information and instruction as others of more recent publication. But they had not in those days the facility we possess of diffusing such knowledge; consequently those works were but little read; to us, however, these advantages are accessible, and knowledge comes more easily to every man's door. Still I believe even at that time there were bright examples of good farming, but the great majority were what was called "slovenly." Were I to venture an opinion it would be that this county, from climate and other circumstances peculiar to it, seems particularly adapted to the growth of green crops, and I approve of the way in which that branch of cultivation has been extended, for I believe it will have been found profitable to the farmer.

Mr. P. H. Howard gave the health of the judges, and referred to the introduction of Turnip husbandry into Cumberland:—

One branch of his toast was the "Inspectors of Turnips;" and he was glad to observe that one very useful premium had been given for "Turnips grown with guano." He trusted that the gentleman who responded to this toast would be able to say whether green crops grown by that fertiliser exceeded in quantity those grown by other means of invigorating cultivation. He hoped his remark would elicit some sentiment upon that point, as it was a very important question. The cultivation of Turnips in this county was of much more recent date than was generally supposed; it did not date very far back; and a gentleman from the neighbouring county of Westmoreland had been good enough the other day to recal to the recollection of the agricultural community that it was his (Mr. Howard's) grandfather who first introduced the cultivation of Turnips into this county. His example was followed by a very excellent farmer, Mr. Collins, whose sons and descendants, he was glad to say, still inherited the paternal acres. It was difficult to estimate the value of the cultivation of that green crop upon the general social community. Through that means alone we were enabled to have a greater quantity of fresh meat during the long winter months than was formerly the case. In earlier times all the different farming bodies entered largely into the question of parrying the effects of salt meat. At present, according to their means, they were enabled to feed themselves and families on fresh provisions, and that was not a circumstance in the social scale to be neglected. It was a subject which might be very appropriately considered at the present time, and it was now more particularly necessary that attention should be paid to it, for what would be the result, with cholera raging in the land, if we were obliged to feed the population upon salt meat which was so pernicious in its qualities, and so injurious to the constitution! He would conclude, as he had begun, by proposing, and with many thanks to them for their arduous services, the health of the "Judges of Stock and Inspectors of Turnips." He was sure it was quite necessary to cheer those gentlemen in their labours. They had sometimes, perhaps, heard a disappointed competitor exclaim, in the moment of defeat, "He is wrang—he is wrang!" but he was sure those gentlemen had always exhibited not only skill and judgment in their decisions, but also the most perfect impartiality. (Loud cheers).—*Abridged from the Carlisle Patriot.*

[The Turnip was common in the dairy husbandry of Holland in the latter part of the 17th century; and we learn from the article on the subject in Wilson's "Rural Cyclopædia" (tem., 1745) that Mr. Craik, of Arbigland, in Dumfriesshire, became the earliest cultivator of drilled Turnips on the Scottish border. About 10 years later, P. H. Howard, Esq., of Corby, became the earliest cultivator of them in Cumberland; Mr. Pringle and Mr. Dawson, in Berwickshire and Roxburghshire, soon followed.]

Reviews.

Farm Implements, and the Principles of their Construction and Use; an Elementary and Familiar Treatise on Mechanics and on Natural Philosophy generally, as applied to the ordinary practices of Agriculture. With 200 Engraved Illustrations. By John J. Thomas. London: Sampson Low, Son, and Co., 47, Ludgate Hill.

This is the republication of an American work—its contents include chapters on the general principles of mechanics which are pursued to their details in the several forms of machines or simple "mechanical power"—levers, pulleys, wedges, screws, &c.; and afterwards to their uses and exemplification in farm implements. The work professes therefore to be complete on the theory and practice of agricultural mechanics. That it is more so on the former than the latter division of the subject will be plain to English readers, for whom, however, it was not originally written, and whose judgment, therefore, does not affect the merit of the author. We select a paragraph on the endless-chain powers peculiar to America, about which a correspondent made inquiry last week:—

"*Endless Chain Powers.*—A convenient and compact machine for applying animal power is by means of the endless chain, working in the position of an inclined plane, where the weight of a large dog is used for driving a churn-dasher. The platform on which the animal stands is formed of strips of light wood riveted to two India-rubber straps, and their constant downward motion turns the fly-wheel, to which a rod is attached for working the dasher. The same principle has been lately adopted with great success in the application of horse-power to driving threshing-machines, sawing wood, and to various other purposes. Instead of India-rubber straps, strong cast-iron chains are used, which are made to run smoothly and with very little friction over a succession of small iron wheels, which support the weight of the horses on the moving platform. The power of these machines, and the amount of friction in running them, may be easily ascertained by the rule, already given in a former part of this work, for determining the power of the inclined plane; for the only difference between the endless chain and a common inclined plane is, that in one the plane is fixed, and the body moves up its surface, and in the other the plane itself moves downward, and the weight or animal upon it remains stationary. The same principle applies in both cases. First, to ascertain the friction, let the platform be placed on a level, with the horse upon it; then gradually raise the end until the weight of the horse will just give it motion. This will show the precise amount of the friction; for if the end be elevated one-twentieth of its length, then the friction is one-twentieth the weight of the horse and platform. Secondly, to determine the power when the end is still further raised, measure the difference between the height thus given and the length of the platform. If, for instance, the height of the inclination is one-eighth of its length, and the horse is found to weigh 800 lbs., then the power is 100 lbs. or one-eighth the weight of the horse. This rule will not, however, apply when the draught of the horse is added to its weight; for it usually happens that the weight alone is not sufficient, without placing the platform in too steep a position for a horse to work comfortably. He is therefore attached to a whipple-tree placed on the frame of the machine, so that in drawing he pushes the platform backward with his feet. In this case, the power can be only ascertained by the use of the dynamometer, already described."

Miscellaneous.

"*God Helps Those who Help Themselves.*"—It has pleased Providence to bless this country with an abundant harvest; but that favour is not confined to England alone—it extends also to lands in which the climate and the soil are infinitely more favoured by Nature than our own. But to make a diligent use of that harvest—to extend its produce through a thousand reproductive channels of national prosperity—to enrich the agriculturist, and, through the increase of his profits, to give a fresh stimulus to trade—to make new demands on manufactures—to pour new energies into the various investments of enterprise and capital—that is the merit of the English people, and that is the way in which the civilisation of man assists the bounty of the Creator. In other countries that I might name—such, for instance, as Spain or Sicily, once the granary of Europe—lands infinitely more favourable than our own—for want of roads, for want of markets, or facilities for interchange—in one word, for want of civilisation, the corn in many places will rot uncut where it stands, and the whole harvest pass away, enriching no trade, recruiting no manufactures, rewarding no industry, affording no surplus capital to energy or enterprise; and that is the way in which uncivilised nations frustrate the benevolence of Providence. *Sir E. B. Lytton, at Hertford, Sep. 26.*

Calendar of Operations.

OCTOBER.

Wester Ross, *October* 9.—In all, save the higher districts, the crop has been brought to the stackyard in the best possible condition. Although somewhat later in commencing this year than usual, with the fine weather with which we have been favoured, the end of the harvest has been reached earlier than we could reasonably have anticipated. From wet weather we scarcely had an interruption at all, and the little we had we gladly submitted to for the Turnips' sake. For the last ten days, however, a great deal of rain has fallen, and harvest operations in the higher districts have been greatly retarded. Although the quantity thus arrested in the fields is too small to have any effect on the market, the owners thereof will abundantly feel the bad effects. A few windy days would yet set all to rights. Having now a little spare time to count our stacks and compare them with former years' returns, although scarcely finding ourselves in Punch's supposed dilemma—at a loss to know where to put such a bulky crop—it is admitted on all hands that a better crop never grew in the north. Fortunately we are unable to speak, as many in other parts of the country can, of having well nigh double the number of stacks that they had last year; as we had a good crop last year, our Oats alone being somewhat deficient. Our Oats this year are particularly good; they thresh out largely and meal abundantly. As the failure of the Potatoes in this quarter is general, there is a large demand for Oatmeal, and new Oats are now selling at 28*s.* per quarter. The stacks being secured against wind and wet, attention is now turned to making preparations for a new crop. Potatoes are being lifted to make way for Wheat. Manure that is to be carted out to leas has to be turned in the dunghill, put out in small heaps at an equal and suitable distance from each other, equally spread over the ground, and ploughed down; and in ground thus prepared a large proportion of the Wheat in the north is sown. Grass is now getting very bare, and sheep and cattle are looking for a supply of Turnips. The weather for some time has been

particularly favourable for the growth of Turnips, and although a smaller breadth than usual has been sown, we expect from the heavier crop to have about an average quantity. At last Muir of Ord market there was an unusually large number of sheep exhibited, for which there was little demand, at a greatly reduced price; and the likelihood being that a larger number than usual will be wintered here, there is a keen competition for Turnips at an advanced price.

Notices to Correspondents.

PERRY MAKING: *F. D* says—The Pears are to be ground and pressed through a hair cloth; allowed to remain 24 hours in a vat to settle; the casks to be filled within four inches, and as soon as the "hissing" (*i. e.* fermentation) ceases, bung down, and in a month it will be fit for use.

RATES OF PAYMENT: *A F B.* The following rates are taken from a past volume of the *Agricultural Gazette*:—

	Piece Work.		
	£ s. d.	£ s. d.	
OCCASIONAL OPERATIONS.			
1. Earth-work in drainage from	0 0 2 to	0 0 2¾	per cubic yd
2. Grubbing up old fences, from	0 0 6 „	0 2 6	per perch
3. Paring and burning old ground, from	1 0 0 „	1 10 0	per acre
Clay-burning, 100 yds. p. acre		4 0 0	per acre
4. Quarry-work — road-stones, from	0 0 3 „	0 0 4	per yard
Building stones, from ...	0 0 5 „	0 0 6	„
Flag-stones, from ...	0 0 6 „	0 1 0	„
Breaking stones, from ...	0 0 5 „	0 0 10	„
5 & 6. Building and carpenter's work (see p. 379, vol. for 1846).			
7. Road-making, 4 yards wide, 9 inches deep	0 15 0 „	1 0 0	per perch
ANNUAL FARM OPERATIONS.			
(a) *Tillage Operations.*			
	Day Work.		
1. Subsoil ploughing—4 horses and men		0 19 3	per acre.
2. Ploughing—2 horses and man	0 5 0 „	0 15 0	„
3. Harrowing (each tine) ...	0 0 4 „	0 0 8	„
4. Scarifying—2 horses and man	0 2 6 „	0 3 6	„
5. Rolling	about	0 1 0	„
(b) *Management of Manure. Measure before each Operation.*			
1. Filling into carts in yard ...	about	0 0 0¾	per cubic yd
2. Hauling to heap			
3. First turning	about	0 0 1	„
4. Second turning	about	0 0 0½	„
5. Loading into carts	about	0 0 0¾	„
6. Carting 500 yards to field, and dividing into heaps ...			
7. Spreading in the field 30 cubic yards per acre			
	Piece Work.		
(c) *Seed Operations.*	about	0 0 0⅜	„
1. Broadcast sowing			
2. Drilling corn—3 horses and attendance	0 0 2½ to	0 0 3½	per acre
3. Setting Potatoes	0 1 0 „	0 1 3	„
4. Hoeing in Wheat, from ...	0 2 0 „	0 2 6	„
5. Dibbling ditto, from	0 6 0 „	0 8 0	„
6. Dibbling Beans	0 7 0 „	0 10 0	„
7. Planting Potatoes by spade, from	0 4 0 „	0 8 0	„
(d) *Cultivation of Crops.*	0 8 0 „	0 12 0	„
1. Hand-hoeing grain crop—9 ins. drills	0 3 0 to	0 5 0	„
2. Hand-hoeing green crops (singling)		0 3 6	„
3. Second hoeing		0 2 0	„
4. Hand-hoeing broadcast Turnips, &c., two or three times		0 10 0	„
Hoeing (deep) between Potatoes (by hand)		0 6 0	„
Paring stubbles (by hand) ...	0 5 0 to	0 9 0	„
Paring and burning old Sainfoin	0 15 0 „	1 0 0	„
Stifle burning	0 11 0 „	0 14 0	„
(e) *Harvest Operations.*			
1. Mowing Clover, from ...	0 2 0 „	0 3 0	„
2. Mowing meadow Grass, from	0 2 6 „	0 3 0	„
3. Mowing and haymaking ...		0 10 0	„
4. Mowing Barley and Oats, from	0 2 0 „	0 3 0	„
5. Reaping Barley and tying, from	0 7 0 „	0 9 0	„
6. Reaping Wheat and tying, from	0 8 0 „	0 14 0	„
7. Mowing or bagging Wheat, from	0 7 0 „	0 10 0	„
8. Pitching the crop to the cart, and building thereon, and pitching from cart to rick .	0 0 10 „	0 1 0	„
Stubble mowing, from ...	0 1 3 „	0 2 0	„
Stubble raking, from ...	0 0 6 „	0 0 9	„
Harvesting Beans, from ...	0 8 0 „	0 9 0	„
Mowing Peas, from		0 2 6	„
Harvesting roots, pulling, cutting off tops, and loading in carts:—			
Turnips and Swedes, from	0 7 0 „	0 9 0	„
Mangold Wurzel, from ...	0 9 0 „	0 10 0	„
Carrots, from	0 18 0 „	1 0 0	„
Potatoes dug and pitted in field, from	1 0 0 „	1 4 0	
(f) *Preparing Grain for Market.*			
Threshing and cleaning Wheat by hand, from ...	0 0 5 „	0 0 6	per bushel
Do. do. Barley by hand, from	0 0 2 „	0 0 3½	„
Do. do. Oats by hand, from	0 0 1½ „	0 0 2½	„
Do. do. Beans by hand, from	0 0 2¼ „	0 0 3½	„
Threshing Peas, from ...	0 0 2½ „	0 0 3½	„
Machine-threshing (by steam) Wheat, from	0 0 1½ „	0 0 3¼	„
Do. do. do. Barley, from ...	0 0 1¼ „	0 0 3¼	„
Do. do. do. Oats, from ...	0 0 1⅜ „	0 0 2¼	„
(g) *Management of Stock.*			
Blacksmith's bill per pair of horses, excepting new metal	3 0 0 per annum		
Saddler's bill per pair of horses	1 0 0		

SALT: *A H H.* We would sow 1 cwt. per acre broadcast in wet weather four times; once in autumn, and again in the end respectively of February, March, and April. You should sow your Wheat with tolerably wide intervals, say 10 or 12 inches, so as to let the sunshine have its full effect.

SALT AND LIME: *C S.* You had better just slake the hot lime with strong brine, and apply 30 or 40 bushels per acre now, either as powdered lime out of a cart, or in compost with earth broadcast over the Grass land.

TO CLEAR A POND AND USE THE MATERIAL REMOVED: *Northwood.* We would let the mud drain a bit, and then mix it in layers with unslaked lime, and in a few days turn it over. If your object is to keep the water clear for the future, burn some six inches of the clay on which it rests, and spread the burned material, as they are doing in the lakes at Sydenham. Water Lilies are easily cultivated.

ERRATUM.—In the article on Rape Cake for Feeding, page 651, 15 lines from the bottom, read, "a pound of beef, reckoned as dry material, will cost about 1*s.*, when beef is at 6*d.* per lb.; and a pound of milk, reckoned as dry material, will cost 6*d.* when milk sells at 2*d.* per quart, a price at which it enters largely into consumption," &c. &c.

CORN CRUSHERS AND CHAFF CUTTERS.—A large display of the best Farm Implements shown in operation. Price Lists sent free on application.
BURGESS AND KEY,
103, Newgate Street, and 52, Little Britain, London.

PUMPS AND HOSE PIPES FOR GARDENS AND LIQUID MANURE.—BURGESS & KEY'S Pumps were highly commended by the Royal Agricultural Society of England at Lincoln. Price Lists sent free.
103, Newgate Street, and 52, Little Britain, London.

CHURNS.—ANTHONY'S PATENT AMERICAN CHURN.—Since 1849 this Churn has obtained all the Prizes awarded by the Royal Agricultural Society of England. At the trial before the Judges it made in 10 minutes 4 lbs. 6 oz. of Butter from 4 quarts of Cream, being 8 oz. more than any of the other Churns from the same quantity and quality of Cream.
103, Newgate Street, London.

WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms, Cottages, Manure Tanks, and Shallow Wells.

	£ s. d.
Patent Pump	1 15 0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing	3 0 0

Larger sizes if required.

The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses, from underground Water Tanks, and can be readily fixed in any situation.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,

8, CRESCENT, JEWIN STREET, LONDON.

Every description of Machinery for Raising Water; Fire Engines, &c.

PRIZE MEDAL—1851.
AT A VERY ECONOMICAL RATE.
SAMUEL CUNDY, MASON and BUILDER, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Lower Belgrave Place, Pimlico, London.

Marble Chimney-pieces manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price. A good Marble Chimney-piece for 40*s.* Marble Work in all its branches at a remarkably cheap rate for Halls, Dairies, Larders, &c Circulars sent on application.

N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank.

HOT WATER APPARATUS, adapted for Horticultural and every other description of Buildings; improved Boilers, requiring no brickwork, Warm Air Apparatus, &c.—S. S. TAYLER, ENGINEER, Battersea.

HORTICULTURE IN ALL ITS BRANCHES.

J. WEEKS & Co., King's Road, Chelsea,

HOTHOUSE BUILDERS.

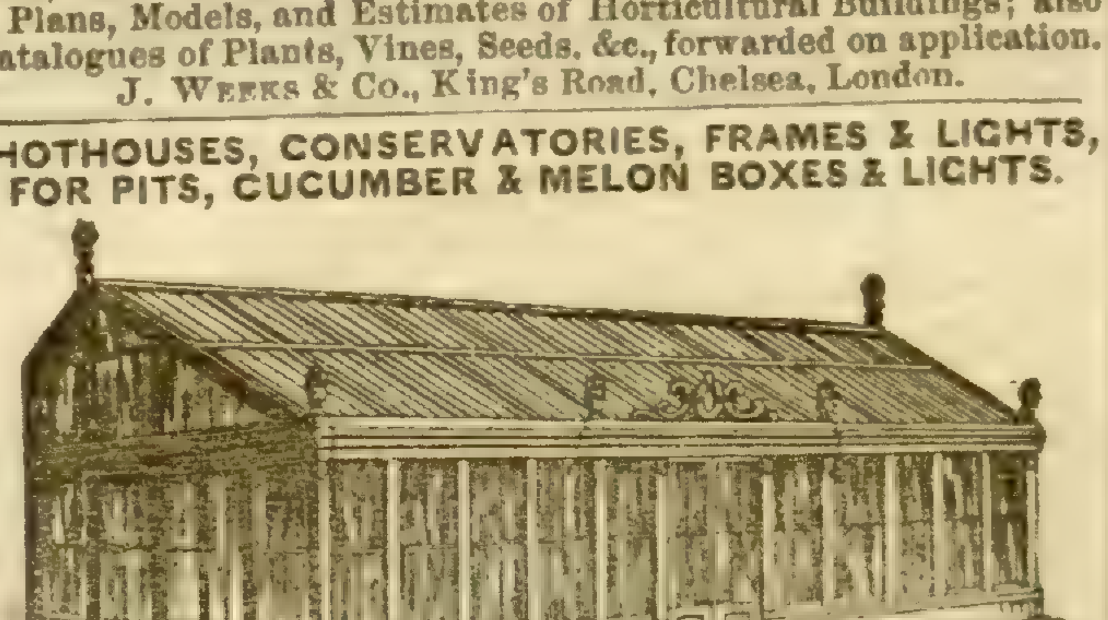
The Nobility and Gentry about to erect Horticultural Buildings or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.
J. WEEKS & Co., King's Road, Chelsea, London.

HOTHOUSES, CONSERVATORIES, FRAMES & LIGHTS, FOR PITS, CUCUMBER & MELON BOXES & LIGHTS.



JAMES WATTS, HOTHOUSE BUILDER, 8, Claremont Place, Old Kent Road, London.

Green and Hothouses, 9, 10, 11, 12, 13, and 14 feet wide, any length, from 16 to 100 feet. Frames and Lights for Pits, 6 ft. 6 in., 7 ft., 7 ft. 6 in., 8 ft., and 8 ft. 6 in. wide, any length, from 12 to 100 feet. Upwards of 200 Cucumber and Melon Boxes and Lights, from 4 ft. by 3 to 10 ft. 6 in. by 5 ft. 6 in., kept ready glazed with stout sheet glass, painted four times, complete, ready for immediate use, all made of best material, packed and sent to all parts of the kingdom.—Reference may be had to the Nobility, Gentry, and the Trade, in most of the counties in England.

GLASS FOR CONSERVATORIES, ETC.
HETLEY AND CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES, GREENHOUSES, DWELLINGS, ETC.
ESTABLISHED MORE THAN ONE HUNDRED YEARS.
THOMAS MILLINGTON requests attention to his present prices of SHEET GLASS in 100 feet boxes.

Squares	6 by 4 and 6½ by 4½ } 7 by 5 and 7½ by 5½ } 8 by 6 and 8½ by 6½ }	13 6
„	9 by 7 and 9½ by 7½ } 10 by 8 to 12½ by 9½ }	16 9
„	12 by 10 to 24 by 14	19 0

Orchard House Squares on Mr. Rivers's approved plan, to whom I have sold some thousands of feet:—20 inches by 12, 20 by 13, 20 by 14, 20 by 15, 20½ by 12½, 20½ by 13½, 20½ by 14½, at 19*s.* per 100 ft.

200 feet cases at 42*s.*, and 300 feet case 63*s.*, in large sheets.

Boxes charged 1*s.* extra per 100 feet, and the same allowed if returned free of all charge.

HARTLEY'S PATENT ROUGH PLATE GLASS, Fern Shades, Striking Glasses, Milk-pans, Bee Glasses, Cucumber Tubes, Sheet and Rough Plate Glass Tiles, Wasp Traps; Plate, Patent Plate, Crown and Sheet Window Glass, in every thickness and quality, and Ornamental Glass, plain and coloured; pure white Shades for Ornaments, Crystal Glass for Pictures.

Warehouse, 87, Bishopsgate Street Without—same side as Eastern Counties Railway.

BY ROYAL LETTERS PATENT.

THE COSMOPOLITAN GLASS COMPANY, 296, Oxford Street, London.—The Managers beg to inform the Nobility and Gentry, Farmers, Gardeners, &c., that their new List of Prices may be had free on application at the Company's Depôt.

HARTLEY'S PATENT ROUGH PLATE, for Roofing Conservatories, Halls, and Public Buildings.

PLATE, CROWN, and SHEET WINDOW GLASS.

Coloured and Ornamental Glass of every description.

Glass Milk Pans, Pails, Tests, and Measures; Cream Pots and Syphons; Churns, Butter Tests and Slabs; Tiles and Slates; Bee Hives, &c.

Moore's Patent Ventilator and Lockhead's Patent Perforated Glass, for Dairies and Greenhouses.

Aquavivariums, Fern Shades, Propagating Glasses, Fruit Protectors, Preserve Jars, Cucumber Tubes, Hand Lights, Flower Vases, Labels, &c., and all kinds of Agricultural, Horticultural, Architectural, Domestic, Scientific, and Ornamental Glass, British and Foreign, at the lowest prices.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.
JAMES PHILLIPS AND Co. have the pleasure to hand their present prices of Glass for Cash:—

	SHEET SQUARES. In Boxes of 100 feet.	CROWN SQUARES. In Boxes of 100 feet.
Under 6 by 4	£0 12*s.* 6*d.* ...	8*s* 6*d.*
6 by 4, and 6½ by 4½	0 13 0 ...	12 6
7 „ 5, — 7½ „ 5½ } 8 „ 6, — 8½ „ 6½ }	0 15 0 ...	14 0
9 „ 7, — 10 „ 8, 12 by 9, } 12 by 10, 14 by 10 }	1 0 0	

Larger Sizes, not exceeding 40 inches long.
16 oz. from 3*d.* to 3½*d.* per square foot, according to size.
21 oz. „ 4½*d.* to 5*d.* „ „ „
26 oz. „ 6*d.* to 7½*d.* „ „ „

SIXTEEN-OUNCE SHEET GLASS OF ENGLISH MANUFACTURE FOR ORCHARD HOUSES, THE SAME QUALITY AS WE SUPPLY TO Mr. RIVERS, and of various dimensions, always on hand,

at 20s per 100 feet.

Double-crown Glass of various dimensions in 100 feet boxes.

GLASS HYACINTH AND FLOWER DISHES.

12 inches diameter	2*s.* 6*d.*
9 „	1*s.* 6*d.*
6 „	1*s.* 0*d.*

Hyacinth Dishes are a new article, intended to contain a number of roots bedded in sand and covered with moss, instead of the common Hyacinth Glass.

HYACINTH GLASSES.

Common shape ...	4*d.* each ...	3*s.* 6*d.* per doz.
Improved	9*d.* „ ...	7*s.* 6*d.* „

CROCUS GLASSES.

Improved shape	2*s.* 6*d.* per doz.
Crocus Dishes	6*s.* „

London Agents for the Sale of HARTLEY'S PATENT ROUGH PLATE GLASS.

Glass Tiles, ¼ of an inch thick, packed in cases, containing 50, at 1*l.* 17*s.* 6*d.* per case. Packages 2*s.* each extra, but allowed for when returned.

Glass Milk Pans, 21*s.* per dozen; Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoys' Milk Syphons, Wasp Traps; Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the trade.

Horticultural Glass Warehouse, 116, Bishopsgate Street Without, London.

FOR FENCING AND ALL OUTSIDE WOOD OR IRON-WORK.
WILSHERE AND CO.'S WATERPROOF BLACK VARNISH is the best article that can be used. One coat will go as far as two of ordinary paint. It bears a rich gloss. 4*s.* per gallon. Discount on large orders.—2, Talbot Court, Gracechurch Street, London.
Agent—14, St. David Street, Edinburgh.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.
THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

TO FLORISTS AND OTHERS.

J. JONES, Iron Merchant, has always a great variety of CONICAL and SADDLE BOILERS in STOCK; also Fire and Furnace Bars, Ornamental and Plain Supply Cisterns, Double Doors and Frames, Furnace Grates, Soot Doors, Hot Water Pipes, Elbows, Tees, Syphons, Throttle Valves, Stop Cocks, Flange and Socket Elbows, &c.; also Trough Pipes. Drawings and prices of the above, on application to J. Jones, Iron Bridge Wharf, No. 6, Bankside, London, near the Southwark Iron Bridge.

STEPHENSON and PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

METCALFE and CO'S NEW PATTERN TOOTH BRUSH, PENETRATING HAIR BRUSHES, AND SMYRNA SPONGES.—The Tooth Brush performs the highly-important office of searching thoroughly into the divisions and cleansing in the most extraordinary manner—hairs never come loose. Peculiarly penetrating Hair Brushes, with durable unbleached Russian bristles, which will not soften like common hair, and immense stock of genuine unbleached Smyrna Sponge, with every description of British and Foreign Perfumery, at Metcalfe, Bingley, & Co.'s only Establishment, 130 B and 131, Oxford Street, second and third doors west from Holles Street.

Caution.—Beware of the word "from" Metcalfe's, adopted by some houses. Metcalfe's Alkaline Tooth Powder, 2*s*. per box.

The Successful Results of the last Half Century have proved beyond Question that

ROWLAND'S MACASSAR OIL possesses singularly nourishing powers in the growth, restoration, and improvement of the human Hair, and when every other specific has failed. This celebrated Oil is now universally acknowledged to be the cheapest, and superior to all other preparations for the hair. It prevents it from falling off or turning grey, strengthens weak hair, cleanses it from scurf and dandriff, and makes it beautifully soft, curly, and glossy. Its operation in cases of baldness is peculiarly active; and in the growth of the Beard, Whiskers, Eyebrows, and Moustachios, it is unfailing in its stimulating operation. For children it is especially recommended, as forming the basis of a beautiful head of hair. Price 3*s*. 6*d*. and 7*s*.; Family Bottles (equal to four small), 10*s*. 6*d*.; and double that size, 21*s*. Caution.—On the wrapper of each bottle are the words, Rowlands' Macassar Oil, in two lines. The same are engraven on the back of the wrapper nearly 1500 times, containing 29,028 letters.—Sold by A. Rowland & Sons, 20, Hatton Garden, London, and by Chemists and Perfumers.

DO YOU WANT LUXURIANT HAIR, WHISKERS, &c.?—No other compound for the Hair has maintained such an enduring celebrity as Emily Dean's CRINILENE. It is guaranteed to produce Whiskers, Moustachios, Eyebrows, &c., in a few weeks, and restore the Hair in Baldness, from whatever cause, strengthen it when weak, prevent its falling of, and effectually check Greyness in all its stages. For the nursery, Dr. Wilson says it is unrivalled.—Price 2*s*. per Package (elegantly perfumed); sent post free, on receipt of 24 penny postage stamps, by Miss Dean, 37 A, Manchester Street, Gray's Inn Road, London. Sold by every Chemist in the Kingdom.—"In one fortnight it produced a beautiful set of Moustachios." H. Adams.—"It has prevented my Hair falling off." J. Hickson.—"It has quite checked the greyness that was coming on." Mrs. Elder.

TO NERVOUS SUFFERERS.

A RETIRED CLERGYMAN having been restored to health in a few days, after many years of great nervous suffering, is anxious to make known to others the means of cure; he will therefore send (free), on receiving a stamped envelope, properly addressed, a copy of the prescription used.—Address the Rev. E. Douglass, 18, Holland Street, Brixton, London.

NERVOUSNESS.—A gentleman having come into possession of valuable receipes for the cure of Nervousness, Female Complants, and Consumption, will be happy to forward them gratis on receipt of a directed stamped envelope.—Address, Mr. D. Offord, 67 A, Great Russell Street, Russell Square, London.

FRAMPTON'S PILL OF HEALTH.—"For upwards of nine years (writes Mr. Thomas Province, of Winchmore Hall, Middlesex), I have experienced the efficacy of this excellent medicine, and I have the happiness of saying that I never had a better state of health. I beg further to add that this medicine is in general use by my family, and we know of nothing to equal it." For females these pills are truly excellent, removing all obstructions, the distressing headaches so very prevalent with the sex, depression of spirits, dulness of sight, nervous affections, blotches, pimples, and sallowness of the skin, and gives a healthy juvenile bloom to the complexion. Sold by all medicine vendors, price 1*s*. 1½*d*. per box.—Observe that "Thomas Prout" is on the Government stamp.

HOLLOWAY'S PILLS an INCOMPARABLE MEDICINE for the CURE of BILE and INDIGESTION.—Extract of a letter from Mr. James Henshall, of Ashton-under-Lyme, dated June 28, 1854:—"To Professor Holloway—Sir,—I was for a considerable period afflicted with indigestion, attended with frequent sickness and loss of appetite, giddiness, headache, drowsiness, and dimness of sight, together with a disorganised constitution, which defied the effects of a variety of reputed medicines; and deriving no benefit from them whatever, I commenced taking your Pills, and am bound, in gratitude, to confess that they have been the sole means of curing me, as I now enjoy perfect health."—Sold by all Vendors of Medicine, and at Professor Holloway's Establishments, 244, Strand, London, and 80, Maiden Lane, New York.

PARR'S LIFE PILLS.

THE English public have, by the test of experience, become satisfied that PARR'S LIFE PILLS are composed of simple but powerfully curative ingredients. They are so mild and excellent in their action that a child may take them. For Bilious Disorders, Liver Complaints, Indigestion, Costiveness, Sick Headache, Depression of Spirits, Pains in the Back, Gravel, and Lumbago, Parr's Life Pills will be found a safe and admirable remedy. Invalids should make an immediate trial of this excellent, long-tried, and successful medicine.

TO LADIES.

Parr's Life Pills are especially efficacious in all the variety of ailments incidental to the fair sex. Ladies, even of the most delicate constitutions, will find them particularly beneficial both before and after confinement; and, for general use in schools, they cannot be too strongly recommended. They mildly and speedily remove all skin eruptions, sallowness of complexion, nervous irritability, sick headache, depression of spirits, irregularity, or general derangement of the system.

Observe the signature of the proprietors, "T. Roberts & Co., Crane Court, Fleet Street, London," on the directions. Sold in boxes at 1*s*. 1½*d*., 2*s*. 9*d*., and family packets at 11*s*. each, by all respectable chemists and medicine vendors in town and country. Full directions are given with each box.

☞ Be sure to ask for Parr's Life Pills.

DEANE, DRAY, and CO., have a very large and superior stock of FRENCH MODERATOR LAMPS now on sale.—(Opening to the Monument), London Bridge.

Established A.D. 1700.

TEN THOUSAND STOVES.

THE TENTH THOUSAND of the PATENT PORTABLE SUSPENSION STOVE is now on sale. These Stoves, so justly celebrated for preserving a pure and healthy atmosphere, and for their extraordinary economy in the consumption of fuel, are sold, wholesale and retail, by DEANE, DRAY, and CO., 46, King William Street, London Bridge; and may be obtained of most Ironmongers.

The IMPROVED PATENT VENTILATING STOVE, which is strongly recommended, may also be seen at the above establishment. Prospectuses, &c., forwarded post free.

FLAVEL'S PRIZE KITCHENER.

THESE RANGES are strongly recommended for their simplicity of construction and their economy and cleanliness in use. The top forms a Hot-plate, and the open fire removes many of the objections which are felt to close Ranges. They are made in all sizes, from 3 feet to 18 feet in width, suitable for large or small establishments. They are admirably adapted for the Cure of Smoky Chimneys.

London agency removed to Wigmore Street, from 92, Jermyn Street, Piccadilly.

BENHAM & SONS, 19, Wigmore Street, London.

And in the Hardware Court of the Crystal Palace, Sydenham.

FENDERS, STOVES, AND FIRE-IRONS.—Buyers of the above are requested, before finally deciding, to visit William S. Burton's SHOW ROOMS, 39, Oxford Street (corner of Newman Street), Nos. 1 and 3, Newman Street, and 4 and 5, Perry's Place. They are the largest in the world, and contain such an assortment of FENDERS, STOVES, RANGES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with bronzed ornaments and two sets of bars, 2*l*. 14*s*. to 5*l*. 10*s*.; ditto, with ormolu ornaments and two sets of bars, 5*l*. 10*s*. to 12*l*. 12*s*.; Bronzed Fenders complete, with standards, from 7*s*. to 3*l*.; Steel Fenders from 2*l*. 15*s*. to 6*l*.; ditto, with rich ormolu ornaments, from 2*l*. 15*s*. to 7*l*. 7*s*.; Fire-irons from 1*s*. 9*d*. the set to 4*l*. 4*s*. Sylvester and all other Patent Stoves, with radiating hearth plates. All which he is enabled to sell at these very reduced charges,

1st,—From the frequency and extent of his purchases; and,

2dly,—From those purchases being made exclusively for cash.

PAPIER MACHE and IRON TEA-TRAYS.—An assortment of Tea Trays and Waiters wholly unprecedented, whether as to extent, variety, or novelty.

New oval Papier Maché Trays, per set of three	from 20*s*. to 10 guineas.
Ditto, Iron ditto	from 18*s*. to 4 guineas.
Convex shape, ditto	from 7*s*. 6*d*.

Round and Gothic Waiters, Cake and Bread Baskets equally low.

GAS CHANDELIERS AND BRACKETS.—The increased and increasing use of gas in private houses has induced William S. Burton to collect from the various manufacturers all that is new and choice in Brackets, Pendants, and Chandeliers, adapted to offices, passages, and dwelling-rooms, as well as to have some designed expressly for him; these are now ON SHOW in one of his TEN LARGE ROOMS, and present, for novelty, variety, and purity of taste, an unequalled assortment. They are marked in plain figures, at prices proportionate with those which have tended to make his Establishment the largest and most remarkable in the kingdom, viz. from 12*s*. 6*d*. (two lights) to 16*l*.

LAMPS OF ALL SORTS AND PATTERNS.—The largest, as well as the choicest, assortment in existence of FRENCH and ENGLISH MODERATEUR, PALMER'S, CAMPHINE, ARGAND, SOLAR, and other LAMPS, with all the latest improvements, and of the newest and most *recherché* patterns, in ormolu, Bohemian, and plain glass, or papier-mâché, is at William S. Burton's, and they are arranged in one large room, so that patterns, sizes, and sorts can be instantly selected.

Real French Colza Oil, 4s. 6d. per gallon.

Palmer's Candles, 9d., 9½d., and 10d. per lb.

DISH COVERS AND HOT-WATER DISHES in every material, in great variety, and of the newest and most *recherché* patterns. Tin Dish Covers, 6*s*. 6*d*. the set of six; Block Tin, 12*s*. 3*d*. to 28*s*. 9*d*. the set of six; elegant modern patterns, 34*s*. 0*d*. to 58*s*. 6*d*. the set; Britannia Metal, with or without silver-plated handles, 76*s*. 6*d*. to 110*s*. 6*d*. the set; Sheffield Plated, 10*l*. to 16*l*. 10*s*. the set; Block Tin Hot-water Dishes, with wells for gravy, 12*s*. to 30*s*.; Britannia Metal, 22*s*. to 77*s*.; Electro-plated, on Nickel, full size, 11*l*. 11*s*.

William S. Burton has TEN LARGE SHOW ROOMS (all communicating), exclusive of the shop, devoted solely to the show of GENERAL FURNISHING IRONMONGERY (including Cutlery, Nickel Silver, Plated, and Japanned Wares), Iron and Brass Bedsteads, so arranged and classified that purchasers may easily and at once make their selections.

Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of.

39, OXFORD STREET (corner of Newman Street); Nos. 1, 2, and 3, NEWMAN STREET; and 4 and 5, PERRY'S PLACE.

RUPTURES EFFECTUALLY CURED WITHOUT A TRUSS.—All sufferers from this alarming complaint are earnestly invited to consult or write to Dr. LESLIE, as he guarantees them relief in every case. His remedy has been successful in curing thousands of persons during the last 11 years, and is applicable to every kind of single and double Rupture, however bad or long standing, in male or female of any age, causing no confinement or inconvenience in its use whatever. Sent post free to any part of the world, with full instructions for use, on receipt of 7*s*. 6*d*. in postage stamps, cash, or Post-office order, payable at the General Post-office, to Dr. Herbert Leslie, 37 A, Manchester Street, Gray's Inn Road, London. At home daily (except Sunday) from 11 till 3 o'clock. A Pamphlet of Testimonials sent post free on receipt of one postage stamp.

NOW IN SEASON.

REAL YARMOUTH BLOATERS: A Treat to Epicures.—One hundred Choice Bloaters in a case for 6*s*., forwarded to any Railway Station. Carriage paid as far as possible: Extra quantity allowed where carriage cannot be paid through. Remittances are requested with orders.

Apply to Henry H. Baker, Fish Merchant, Great Yarmouth.

TO LOVERS OF FISH.—100 Genuine Yarmouth Bloaters for 6*s*., package included, forwarded to all parts on receipt of Penny Postage Stamps, or Post Office Order for the amount preferred.

Address, Thomas Lettis, Jun., Fish Curer, Great Yarmouth.

GLENFIELD PATENT STARCH, used in her Majesty's Laundry, and Wotherspoon's machine-made CONFECTIONARY, MARMALADE, JAMS, JELLIES, &c., which gained the Prize Medal of 1851, may be had of all Grocers; Wholesale of Wotherspoon, Mackay, & Co., 66, Queen Street, Cheapside, London; and Robert Wotherspoon & Co., Glasgow.

NOTICE.

OVER COATS, CAPES, &c.—One of the largest stocks in London of every description, first-class garments, at lowest charges; also of Youth's ditto, all made thoroughly impervious to rain, without extra charge, or made to order at a day's notice.—W. Berdoe, 96, New Bond Street, and 69, Cornhill (only).

BLAIR'S GOUT and RHEUMATIC PILLS Price 1*s*. 1½*d*. and 2*s*. 9*d*. per box.—Mr. William Courtney, of Barton Stacey, Hants, says:—"I had resort to your Pills, and within two hours I was quite easy. The use of these Pills ought really to be known all over the world." Among the many discoveries, none have conferred such a boon upon suffering humanity as that of Blair's Gout and Rheumatic Pills, they require neither attention nor confinement, and are certain to prevent the disease attacking any vital part. Sold by all medicine vendors. Observe that "Thomas Prout, 229, Strand, London," is impressed upon the Government stamp.

DR. DE JONGH'S

LIGHT BROWN COD-LIVER OIL, Prepared for Medicinal use in the Loffoden Isles, Norway, and put to the test of chemical analysis, the most effectual remedy for Consumption, Broncbitis, Asthma, Gout, Chronic Rheumatism, and all Scrofulous Diseases.

Approved of and recommended by Berzelius, Liebig, Wöhler, Jonathan Pereira, Fouquier, and numerous other distinguished Scientific Chemists, prescribed by the most eminent Medical Men, and supplied to the leading Hospitals of Europe—effecting a cure or alleviating symptoms much more rapidly than any other kind.

Extract from THE LANCET, *July* 29, 1854.

"After a careful examination of the different kinds of Cod Liver Oil, Dr. de Jongh gives the preference to the Light Brown Oil over the Pale Oil, which contains scarcely any volatile fatty acid, a smaller quantity of iodine, phosphoric acid, and the elements of bile, and upon which ingredients the efficacy of Cod Liver Oil no doubt partly depends. Some of the deficiencies of the Pale Oil are attributable to the method of its preparation, and especially to its filtration through charcoal. In the preference of the Light Brown over the Pale Oil we fully concur.

"We have carefully tested a specimen of the light brown Cod-liver Oil prepared for medical use under the direction of Dr. de Jongh, and obtained from the wholesale agents, Messrs. Ansar, Harford, & Co., 77, Strand. We find it to be genuine, and rich in iodine and the elements of bile."

Sold wholesale and retail, in bottles, labelled with Dr. de Jongh's stamp and signature, by

ANSAR, HARFORD, and CO., 77, STRAND, LONDON, Sole Consignees and Agents for the United Kingdom and the British Possessions, and may be obtained from respectable Chemists and Druggists in town and country, at the following prices: Imperial Measure, half pints, 2*s*. 6*d*.; pints, 4*s*. 9*d*.; quarts, 9*s*.

*** Four half-pint bottles forwarded, carriage paid, to any part of England on receipt of a remittance of Ten Shillings.

VALUABLE REMEDIES FOR THE AFFLICTED.

DR. ROBERTS'S Celebrated Ointment, called the POOR MAN'S FRIEND, is confidently recommended to the Public as an unfailing remedy for wounds of every description, a certain cure for Ulcerated Sore Legs, if of 20 years' standing; Cuts, Burns, Scalds, Bruises, Chilblains, Scorbutic Eruptions and Pimples on the Face, Sore and Inflamed Eyes, Sore Heads, Sore Breasts, Piles, Fistula, and Cancerous Humours, and is a specific for those afflicting eruptions that sometimes follow vaccination. Sold in pots, at 1*s*. 1½*d*. and 2*s*. 9*d*. each.

Also his PILULÆ ANTISCROPHULÆ, confirmed by more than 40 years' experience to be, without exception, one of the best alterative medicines ever compounded for purifying the blood, and assisting Nature in all her operations. Hence they are used in Scrofulas, Scorbutic Complaints, Glandular Swellings, particularly those of the neck, &c. They form a mild and superior Family Aperient, that may be taken at all times without confinement or change of diet. Sold in boxes, at 1*s*. 1½*d*., 2*s*. 9*d*., 4*s*. 6*d*., 11*s*., and 22*s*. Sold Wholesale by the Proprietors, Beach and Barnicott, at their dispensary, Bridport; by the London houses. Retail by all respectable Medicine Vendors in the United Kingdom.

Observe.—No Medicine sold under the above name can possibly be genuine, unless "Beach and Barnicott, late Dr. Roberts, Bridport," is engraved on the Government Stamp affixed to each package.

Price 3*s*. 6*d*., free by post,

THE TREE ROSE.—Practical Instructions for its Formation and Culture. Illustrated by 24 Woodcuts. Reprinted from the Gardeners' Chronicle, with additions.

CONTENTS.

Annual pruning time, principle of execution, &c.
Binding up
Budding knife
Budding, time of year, day, time of day, state of the plant, care of buds
Budding upon body
Bud, insertion of, into stock
Bud, preparation of, for use
Buds, dormant and pushing
Buds, failing
Buds, securing a supply of
Caterpillars, slugs, and snails, to destroy
Causes of success
Dormant buds, theory of replanting with, explained
Guards against wind
Labelling
Loosing ligatures
March pruning
Mixture for healing wounds
Pruning for transplantation
Planting out, and arrangement of trees
Pushing eye, spring treatment of dwarf shoots from
Roses, different sorts on the same stock
Roses, short list of desirable sorts for budding with a pushing eye
Sap-bud, treatment of
Shape of trees
Shoots and buds, choice of
Shoots for budding upon, and their arrangement
Shoots, keeping even, and removing thorns
Shortening wild shoots
Stocks, planting out for budding upon; the means of procuring; colour, age, height; sorts for different species of Rose; taking up, trimming roots, sending a distance, shortening heads, &c.; saw proper for the purpose.
GRAFTING.
Aphides, to keep down
Free-growers, remarks on
Graft, binding up and finishing of
Grafting, advantage
Grafting, disadvantage of
Operations in different months
Preliminary observations
Roses, catalogue and brief description of a few sorts
Scion, preparation and insertion of
Scion, choice and arrangement of
Stock, preparation of.
APPENDIX.
A selection of varieties
Comparison between budding and grafting.

J. Matthews, 5, Upper Wellington Street, Covent Garden.

PERMANENT AND LAWN GRASS SEEDS.

WILLIAM E. RENDLE AND CO., SEED MERCHANTS, Plymouth, *have a fine stock of* NEW GRASS SEEDS, *and can supply any quantity for present sowing.*

Also new Winter Tares, White Mustard, Trifolium incarnatum New Italian Rye-grass, &c.

WILLIAM E. RENDLE & Co., Seed Growers, Plymouth.

TO BE SOLD, a WARDIAN CASE of rare LIVE PLANTS, just imported in good order from Port Louis, Mauritius, where they were collected and classified by Professor BOJER, Curator to the Royal Botanical Gardens. These Plants, of which there are 36 varieties, were imported by a gentleman lately deceased. A List of the Plants and the Plants themselves may be seen between the hours of 10 and 4 o'clock, at Messrs. BELL, BULLEN, & Co.'s Offices, 2, Jeffrey's Square, St. Mary Axe, London.

CHOICE NEW GERANIUMS, &c., AT REDUCED PRICES.

HENRY WALTON, FLORIST, &c., Edge End, Marsden, near Burnley, Lancashire, having a large stock of the following NEW GERANIUMS in 4-inch pots, good, strong, healthy, well-established plants, begs to offer them, at purchaser's selection, 36*s.* per dozen, viz.—Empress, Leah, Neatness, Picta, Rebecca, Marginata, Eliza, Helen, Glow-worm, Virginia (Hoyles), Attraction, Purple Perfection, Indian Chief, Majestic, Regalia, Governor-General, Carlos, Zeno, Tamberlik, Rosa, Lucy, Duchess of Wellington, and Rhoda. Choice varieties of 1853, strong plants, 15*s.* per dozen. Fine old show varieties, 6*s.*, 9*s*, and 12*s.* per dozen. Fine spotted French varieties, which are very showy and attractive, 2*s.* 6*d.* each. Choice fancy varieties, 9*s.*, 12*s.*, and 18*s.* per dozen.

CINERARIAS, from a collection of more than 100 of the best varieties, new of last season, 18*s.* per dozen; choice older varieties, 6*s.*, 9*s.*, to 12*s.* per dozen.

PANSIES, of which H. W. has several thousands of plants of the best in cultivation, 4*s.* 6*d.*, 6*s.*, 9*s.*, 12*s.*, and 18*s.* per dozen.

CARNATIONS AND PICOTEES, fine show varieties, 9*s.*, 12*s.*, to 30*s.* per dozen pairs, or 25 pairs for 21*s.*

HOLLYHOCKS, including the best varieties out, 6*s.*, 9*s.*, 12*s.*, to 30*s.* per dozen.

All the newest and best FUCHSIAS of this season, 1*s.* 6*d.* and 2*s.* each, or 18*s.* per dozen.

VERBENAS: new varieties of this season, 1*s.* each, or 9*s.* per dozen.

PETUNIAS: new varieties of this season, 1*s.* 6*d.* each, or 15*s.* per dozen.

Also a large collection of FERNS AND LYCOPODS at very low prices. Parties intending to make a select collection would do well to inspect H. W.'s catalogue.

Collections of STOVE AND GREENHOUSE PLANTS at reduced prices.

CINERARIA SEED from the best varieties, 1*s.* 6*d.*, 2*s.*, and 2*s.* 6*d.* per packet, post free.

Descriptive Lists of the above now ready, and may be had for one postage stamp. A remittance is respectfully requested from unknown correspondents, made payable at Marsden, Lancashire.

TO GENTLEMEN ENGAGED IN PLANTING.

WATERER AND GODFREY respectfully invite attention to their stock of the following very desirable HARDY PLANTS.

Araucaria imbricata, from 2 to 7 feet high; as handsome as plants can be.	Pinus canadensis, 3 to 8 feet
Cedrus Deodara, in any quantity, from 1 to 3 feet high	Cupressus macrocarpa or Lambertiana, 4 to 7 feet
Do. do., 4, 5, 6, 7, 8, and 10 feet high; splendid plants	„ thyoides variegata, 3 to 4 feet (the variegated white Cedar)
Cedars of Lebanon, 3, 4, 6, and 10 feet high	Juniperus, Upright Irish, perfect columns, 3 to 7 feet
Pinus Douglasi, 3 to 10 feet	„ chinensis, 2 to 8 feet
„ insignis, 2 to 7 feet	Yew, common English, 3 to 8 feet
„ Menziesi, 3 to 7 feet	„ Irish, 4 to 10 feet
„ pinsapo, fine plants, 3 to 6 feet	„ gold-striped, 1½ to 3 feet
„ Nordmanniana, 1½ to 3 ft., all from seed and remarkably handsome	„ do., tall standards, 4 to 7 ft.
„ nobilis, 1½ to 2 feet; a few larger, 5 and 6 feet high, on their own roots, and with perfect leaders	„ Dovaston, or Weeping, worked on tall straight stems
„ Montezumæ, 2 to 4 feet	Thuja aurea, the finest plants in the country
	Libocedrus chilensis, the finest plants in the country
	Large variegated Hollies
	„ Standard Bays

Also an immense stock of large Evergreens, Standard Ornamental Trees, &c.

All the plants here offered may be seen, growing in our nursery; they are removed every year, and will travel any distance with perfect safety. Of some, such as Araucarias, Deodaras, Golden Yews, Thuja aurea, Pinus nobilis, Nordmanniana, we have any quantity; and the plants, for root and branch, are not to be surpassed. Priced Catalogues will be forwarded on application, enclosing two postage stamps, to WATERER and GODFREY, nephews and successors of the late Hosea Waterer, Knap Hill Nursery, Woking, Surrey, near the Woking Station, South-Western Railway, where all trains stop, and where capital conveyances can be obtained.

The 2d. stamp will also include a descriptive Catalogue of their American Plants, Roses, and Nursery Stock in general.

THE LARGEST AND CHEAPEST ESTABLISHMENT IN ENGLAND for GERANIUMS (show and fancy), FRENCH GERANIUMS, FUCHSIAS, VERBENAS, FAIRY ROSES, CHRYSANTHEMUMS, HELIOTROPES, CINERARIAS, CALCEOLARIAS, PRIMULAS, and other soft-wooded plants, is the Floral Nursery, Acton Road, Turnham Green, near London. More than 250,000 plants are there cultivated annually.

The stock of show Geraniums exceeds 50,000, and comprises upwards of 750 varieties, amongst which almost every known kind will be found. The newest sorts, such as Carlos, Virginia, Rosa (Foster's), Leah, Picta, Marginata, Empress, Neatness, &c., can be had at 3*s.* 6*d.* each, or 40*s.* per dozen. The older varieties from 9*s.* to 25*s.* per dozen.

The selection of FRENCH GERANIUMS consists of 40 distinct sorts (exclusive of those English Geraniums which some class with them), at 2*s.* 6*d.* each, or 25*s.* per dozen.

SEEDLING CINERARIAS (10,000), from seed of first-rate flowers, at 4*s.* per dozen, in 60-sized pots.

20,000 SEEDLING HERBACEOUS CALCEOLARIAS now on hand at 4*s.* per dozen in 60-sized pots. These flowers have been raised from the seed of the best of last year's stock, which received general praise.

An immense quantity of good fimbriated PRIMULAS at 4*s.* per dozen in 60-sized pots, and 6*s.* per dozen in 48's.

CHRYSANTHEMUMS (Lilliputian and large flowering) at 6*s.* and 9*s.* per dozen for plants which will flower this season. Large magnificent plants at 18*s.* and 15*s.* per dozen—all the best sorts.

The foregoing have been selected as examples only, it being impossible within the limits of an advertisement to afford particulars of a stock so extensive; Catalogues will, however, be forwarded to all parts gratis.

Every possible exertion will be made to give the most perfect satisfaction to all who may favour this Establishment with their patronage. None but thoroughly established Plants will be sent out, and full reliance may be placed on prompt attention and fair dealing.

The Trade will be liberally dealt with. Provincial Nurserymen and Florists will do well to try this Establishment.

Terms cash or a satisfactory reference.

JOHN WESTWOOD, PROPRIETOR.

NEW FANCY GERANIUMS.

JOHN HALLY, NURSERYMAN and FLORIST, Blackheath, begs to offer the following distinct and first rate Fancy Geraniums, which have been raised by a first-rate grower, and highly admired by all judges who have seen them. They will be ready the beginning of November.

1. ENCHANTRESS.—Upper petals deep rosy crimson, with white edge, lower petals having a crimson spot on French white ground; of superb form and a very free bloomer, with dwarf habit. Received a First Class Certificate at the Regent's Park Exhibition, June 21. 10*s.* 6*d.* each.

2. ECLIPSE.—Upper petals deep lilac crimson, with white margin, lower petals having a be t of rosy lilac, with large white eye, and ring of white round the outside. Flower good in shape, and above the average size. 10*s.* 6*d.* each.

3. COMPACTUM.—Upper petals dark velvety crimson, very smooth lower petals, having a crimson lilac spot, with white eye; a remarkably free bloomer, and of dwarf habit. 10*s.* 6*d.* each.

4. MARY JANE.—Upper petals silvery lilac, margined with white; lower petals white, spotted with lilac; new in colour, free bloomer, and of dwarf habit. 7*s.* 6*d.* each.

5. FORMOSISSIMA SUPERB.—A Cape cross, pure white, with large mulberry spot on the upper petals; flower of good form and substance. Exhibited June 21st, at Regent's Park. 7*s.* 6*d.* each.

The above set for 2*l.* 2*s.*, with the usual allowance to the trade. A remittance must be made by unknown correspondents. Post-office orders to be made payable at Blackheath.

WANTED, DUTCH BOX-EDGING, from 100 to 1000 yards. Any person having the above to dispose of, a Nurseryman will be glad to exchange either Evergreens, Greenhouse Plants, or anything in the nursery way for the same. State the number of years it has been planted, and where it can be seen, by post, to Y. Z., office of this Paper.

TO NURSERYMEN AND GARDENERS.

REIGATE SILVER SAND, 11*s.* per ton; ditto, delivered 5 miles, 16*s.* per ton. Loam and Peat at moderate prices.—KENNARD BROTHERS, Swan Place, Old Kent Road, London.

THE CRYSTAL PALACE FLOWER BASKETS, as exhibited in Nave and Transepts of the Crystal Palace, Sydenham, made to the original and other new elegant designs, by W. RICHARDS, at the Wire Works, 370, Oxford Street, nearly opposite the Princess's Theatre. Conservatories and Aviaries fitted up. Wire work in all its varieties. Game and garden fence—parrot cages and all others. Choice birds kept on sale. Window blinds of every possible description, of the very best materials and workmanship.

N.B. An allowance to nurserymen and the trade.

GARDEN NETS, FISHING NETS, SHEEP NETS, and RABBIT NETS, made by Machinery, and supplied at very low terms. Samples sent free.—R. RICHARDSON, 21, Tonbridge Place, New Road, near King's Cross, London.

SUBSTITUTE FOR GARDEN MATS.—Waxed Sheeting nearly 2 yards wide, 1*s.* per yard run—admits light and excludes cold; thick Canvas Tarpauling, 1*s.* per square yard; thick Canvas Waxed Sheeting, 1*s.* per square yard, may be had various widths. These Canvases are excellent for roofing Sheds and Outhouses, as they are quite waterproof.—R. RICHARDSON, 21, Tonbridge Place, Judd Street, New Road, London. N.B. Waterproof Capes, large size, 3*s.*; Police Capes, 18*s.* and 24*s.* per dozen; Driving Aprons, Capes, and Coats of India Rubber, Horse's Loin Cloths, Waggon and Cart Covers, Sacks, &c.

LANDSCAPE GARDENING REVIVED AS AN ART.

MR. THOROLD, of Thorpe Bower, near Norwich, continues to offer his services to Ladies and Gentlemen in laying out or re-arranging their Gardens and Pleasure Grounds on correct principles of taste, in any style, or combination of styles, suitable to the requirements of all kinds of residences, upon any scale, and in most cases to produce immediate effect. Mr. T. can give ample references as to his success.

TO BE LET, by tender, a FARM on HAFODUNOS ESTATE, North Wales, comprising 328 acres, great portion of which has been thoroughly drained, sub-soiled, and highly improved, and the remainder is now being similarly treated. The House will be altered and additional buildings erected to suit the tenant. Hafodunos is 9 miles from Abergele, 6 from Llanrwst, 10 from Conway, and 13 from Denbigh.—Application to inspect the farm to be made to Mr. SCOON, Bailiff, Hafodunos, by Llanrwst, and further particulars may be obtained from Mr. PALIN, Christleton, near Chester, to whom offers in writing are to be made.

MONMOUTHSHIRE.

TO BE LET, for a term of years, and entered upon at Lady-day next, the FARM of LLANVAIR GRANGE. It consists of 164 acres of rich productive Land, of which 4 acres are in Orchard, 76 in Meadow and Pasture, and 84 are Arable. There is a comfortable Farm-house and Garden, Dairy and Cheeseroom, and ample Farm Buildings on the Farm. It is within a short distance of the Pontypool Iron Works; there is a station on the Newport and Hereford Railway close by. At the Iron Works there is a constant demand for every kind of Farm produce. The proprietor at Llanvair Grange will direct some one to show the Farm; and for particulars apply to Mr. JOHN MORTON, Morningside, Nailsworth, Gloucestershire.

TO BE LET, a NURSERY, of six Acres, well adapted for the Growth of Shrubs and Nursery Plants, with good Dwelling-house and Outbuildings. Rent moderate.—Apply to R. BURROWS, Leighton Buzzard.

TO GENTLEMEN, HORTICULTURISTS, AND OTHERS.

TO BE SOLD, reasonable, a SPAN-ROOF GREENHOUSE, 16 feet long, 8 feet wide, thoroughly well seasoned, and fit for immediate use.—For particulars and to view apply to JAMES RHODES, 6, Macclesfield Street, City Road, London.

TO BE SOLD CHEAP, STRONG-BUILT GREENHOUSES, 12 feet long 8 feet wide, 15*l.*; 16 by 10, 20*l.*; 18 by 10, 25*l.*; 20 by 12, 35*l.*; 23 by 12 40*l.* Plans and particulars of Mr. SMITH, 1, Lower Road, near Islington Green. Window Blinds, Sashes, Doors, &c., from 6*d.* per foot. Stout Horticultural Glass at 2½*d.* per foot. Orders to all parts.

TO BE SOLD Cheap, the owner not having occasion to erect it, a new strong WOODEN GREENHOUSE, with span-roof to lean to a wall, about 29 feet by 14 feet; and seven Boxes of Glass.—Apply to A. B., Post-office, Sutton Coldfield, near Birmingham.

TO BE SOLD, BUFF COCHIN CHICKENS, from first class Prize Birds. Brahma Pootra Chickens, from imported American Prize Birds, and Spanish Chickens. Also some very good one-year-old Birds of the above descriptions. Wire, Game, and Poultry Netting. Poultry Hurdles, Hen-houses, Chicken Coops, Flower Stands, and Trainers, Garden Arches, and every kind of Wire Work, useful and ornamental.—T. H. FOX's, City of London Wire Works, 44, Skinner Street, and 6 & 8, Snow Hill.

Illustrated Catalogues forwarded post free.

OVER-STOCKED.

GOLD LACED BANTAMS OR SEBRIGHTS of the purest breed. Negro White Silky India Fowl, unknown in this country. White-faced Spanish Fowl of the best breed of this year.—For particulars apply to A. B. C., Northleigh, near Oxford.

Sales by Auction.

FANCY POULTRY.—PERIODICAL SALE.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, London, on TUESDAY, October 17, at 12 o'clock precisely, a CHOICE SELECTION OF POULTRY, including first class Spanish, from Mr. John Clark, of Hartley Row; Cochins of excellent quality (buff and white), from the Rev. J. Hutchinson, Messrs. Ely, Fisher, and Rawson; Dorkings, Polands, Turkeys, &c.—Catalogues had by enclosing a stamped directed envelope to Mr. J. C. STEVENS, 38, King Street, Covent Garden.

CAMELLIAS, RHODODENDRONS, AZALEAS, DEUTZIA GRACILIS.

A SECOND CONSIGNMENT FROM MR. J. BAUMAN, OF GHENT, FOR ABSOLUTE SALE.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on FRIDAY, 27th October, at 12 for 1 o'clock, 800 Camellias, of good sorts, with flower buds; 100 Yellow Rhododendrons; 100 Ghent Azaleas; 200 Deutzia gracilis; 3 Otaheite Oranges and other Orange Trees; and 1000 Gladioli.—May be viewed on the morning of sale, and catalogues had.

BLACKHEATH.

TO GENTLEMEN, NURSERYMEN, BUILDERS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, on the premises, Westpoint Nursery, Blackheath, on THURSDAY, October 26th, and following day, at 11 o'clock each day, without reserve (by order of Mr. Thompson), in consequence of the ground being taken for building purposes, the whole of the valuable Stock of Evergreens, fine Standard and Dwarf-trained Peaches, Nectarines, Apricots, Cherries, Standard Plums, Pears, Gooseberries, and Currants; about 2000 fine Standard and Dwarf Roses, a quantity of Box Edging, Clematis, Jasmine, &c.; also 200 fine Double Camellias, specimen Azalea indica, Epacris, Acacias, Aphelexis, Ericas, Eutaxia Correas, &c.; with two capital Iron Rollers, and sundry effects.—May be viewed one week prior to the Sale. Catalogues may be had on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

CLAPHAM.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, MARKET GARDENERS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by the administrators of the late Mr. Joseph Fairbairn to sell by Auction, on the premises, The Retreat, Larkhall Lane, Clapham, on MONDAY, October 23d, and following days, at 11 o'clock each day, the whole of the valuable stock of FRUIT TREES, consisting of Standard, Dwarf, Trained and Untrained Peach, Nectarine, Apricot, Apple, Pear, Plum, Cherry, Gooseberries, and Currants, &c.; also Ornamental Trees, Evergreens and Deciduous shrubs, &c.—May be viewed one week prior to the Sale. Catalogues to be had (6*d.* each, returnable to purchasers) on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

STOKE NEWINGTON.

TO GENTLEMEN, NURSERYMEN, BUILDERS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS beg to announce that they have received instructions from the Administrators of the late Mr. W. Watts, of Stoke Newington, to Sell by Auction, without reserve, on the premises, on MONDAY, October 30, and three following days at 11 o'clock each day, the whole of the valuable Nursery Stock, consisting of an immense quantity of American Plants, Ornamental and Fruit Trees, Evergreens, and Deciduous Shrubs, comprising 85,000 Rhododendrons, 5000 Ghent Azaleas, 2000 Limes, 1200 Thorns, 1000 Poplars, Planes, Elms, Laburnums, Chesnuts, &c., Standard and Dwarf Trained Peach, Nectarine, Apricot, Apple, Pear, Plum, Cherry, Gooseberries, and Currants; Standard Damsons; 1200 fine Mulberries, &c.; 5000 Arbor-vitæ, 6000 Hollies, 3 feet; 4000 Box, 7000 Aucubas, 3000 Euonymus, Perpetual and Common Laurels, Lilacs, Roses, Daphnes, Yucca Filamentosa, &c.; also Greenhouse Plants, including 200 fine Double Camellias, 50 very fine specimen Indian Azaleas, Heaths, Epacris, &c.: together with Greenhouses, 2 and 3-light Boxes, Gold and Silver Fish in Ponds, an excellent Horse, two capital Carts, Wheelbarrows, Garden Tools, a quantity of Box-edging, and sundry effects.—May be viewed one week prior to the Sale. Catalogues may be obtained (6*d.* each, returnable to purchasers) on the premises of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

CHOICE AND VALUABLE COLLECTION OF TULIPS.

THE PROPERTY OF THE LATE MR. J. J. JAQUES.

MR. ALEXANDER is instructed by the executors of the late Mr. Jaques, to offer for Sale by Auction at the Mart, Bartholomew Lane, near the Bank of England, on WEDNESDAY, October 25, at 12 o'clock, without the least reserve, the well-known collection of TULIPS, comprising all the leading varieties in cultivation, viz., Pandora, Salvator Rosa, Louis XVI., Thalia, Parmegiano, Democrat, Violet Alexander, Rose Lac, Camuse de Craix, Ponceau Brilliant, Arlette, Jeffrey's Elizabeth, Jenny Lind, Strong's King, Marcellus, Pompe Funèbre, Vivid, Duke of Sussex, &c.—May be viewed on the morning of Sale; Catalogues had at the Mart, of Dawe, Cottrell, and Benham, Seedsmen, Moorgate Street; White Swan, West Ham. Mr. Jaques, King Street, Cambridge Road; also of the Auctioneer, Shacklewell.

IMPORTANT & EXTENSIVE SALE OF NURSERY STOCK.

BROMLEY HILL NURSERY, KENT.

MR. T. BAXTER is directed to Sell by Auction on WEDNESDAY, October 25, and following days, on the premises, comprising several thousands of Laurels, Laurustinuses, common and variegated Hollies and Box, Larches and Firs of sorts, Oaks, Elms, Beech, Spanish and Horse Chesnuts, fine Cedars and Yews, Poplars, Weymouth Pines and Evergreens, and Shrubs of the various sorts. 6000 transplanted quick Fruit Trees of the best sorts, and fine Mulberries, &c. A splendid large, and very fine-grown Purple Beech, and less ditto; well-rooted, young and thriving plants. May be viewed 10 days prior to the Sale, and Catalogues had of Messrs. BECK and ALLEN, Seedsmen, Strand, London; Dover Castle, Deptford; and of the Auctioneer, Bromley, Kent.

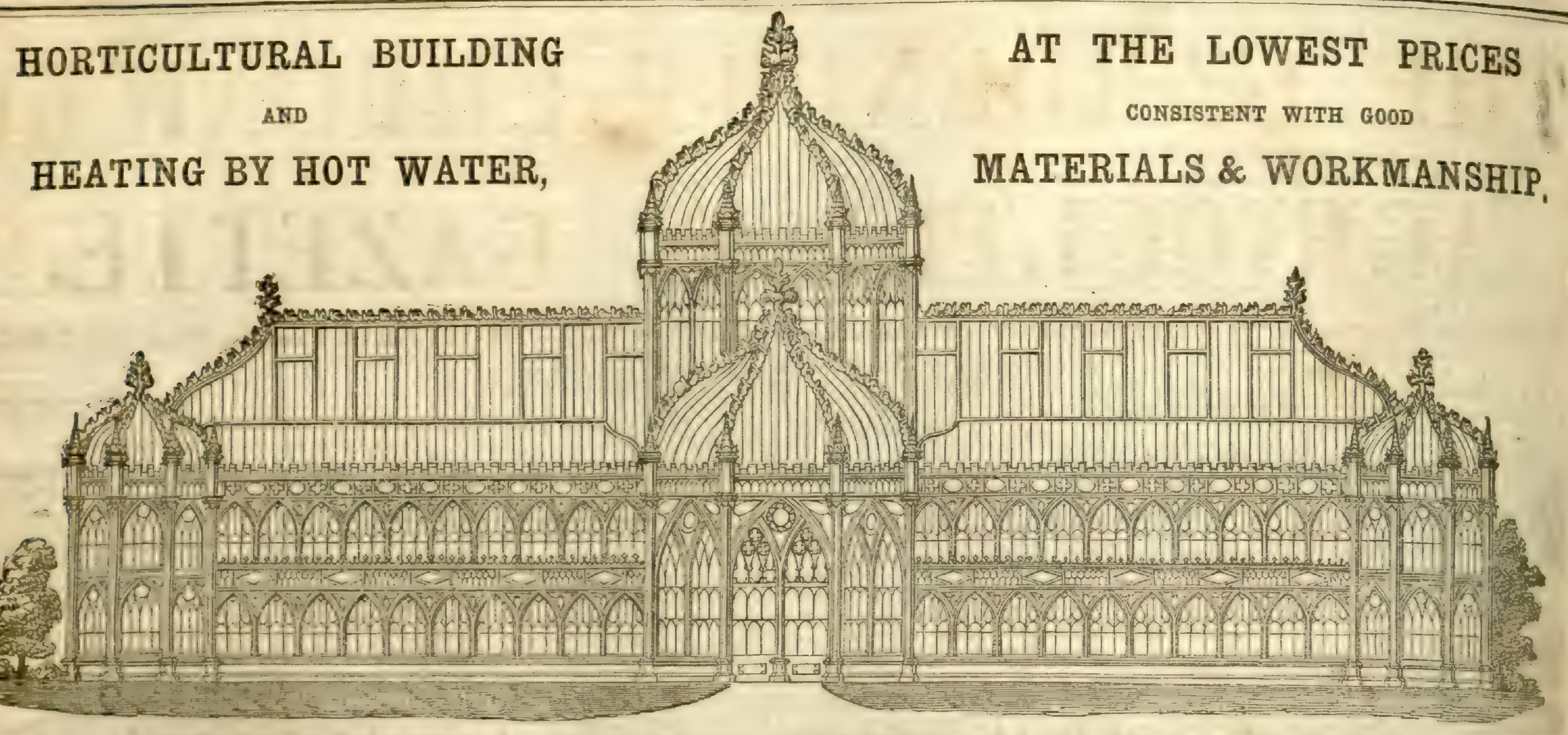
FIRST-CLASS ORCHIDACEOUS AND STOVE AND GREENHOUSE PLANTS, TULIPS, ETC.

MESSRS. HAMMOND AND OLDFIELD are instructed by that eminent Floricultural Amateur John Willmore, Esq., of Apsley House, Edgbaston, to offer for Unreserved Competition, on MONDAY, October 23, at the Nursery of Messrs. Cole and Sharp, Birchfields, near Birmingham, where they will be removed for convenience of sale—the whole of his choice and celebrated COLLECTION of ORCHIDS, STOVE and GREENHOUSE PLANTS, TULIPS, &c., the cultivation of which he is declining for exhibition purposes. It consists of Vandas, Ærides, Saccolabiums, Cattleyas, Dendrobiums, Azaleas, Ericas, Epacrises, Eriostemons, &c. &c.; about 50 rows of the leading varieties of Tulips in cultivation, all of which will be found true to name, and in fine condition.

The Auctioneers consider it would be altogether superfluous to expatiate upon the quality, variety, and value of the specimens comprised in this collection, in consequence of the high position which they have for a considerable number of years uniformly maintained at the principal exhibitions of the Midland Counties.

Catalogues, which will be ready in a few days, may be had of the Auctioneers, at their offices, Waterloo Street, Birmingham; or of Messrs. COLE and SHARP; and the whole may be viewed at the Nursery as above, on the Friday and Saturday previous to the day of sale.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER, AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS & WORKMANSHIP.



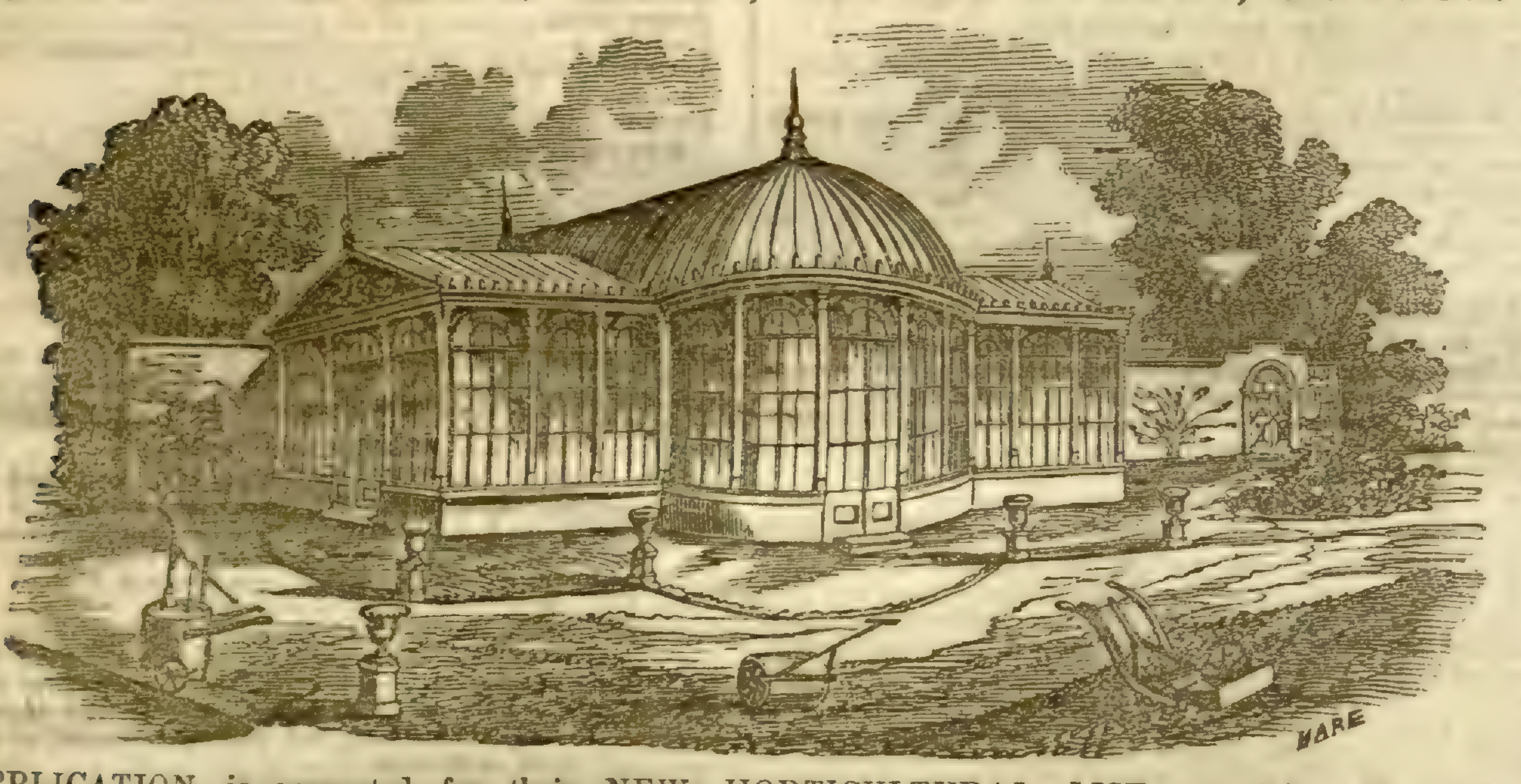
GRAY & ORMSON, DANVERS STREET, CHELSEA, LONDON.

GRAY AND ORMSON, Danvers Street, Chelsea, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and they can with the greatest confidence give the most satisfactory references to all by whom they have been favoured with orders. Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

COTTAM AND HALLEN,

2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.



APPLICATION is requested for their NEW HORTICULTURAL LIST, containing Illustrations Descriptions, and Prices of

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Syringes	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.

AGRICULTURAL LIST UPON APPLICATION.

EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

VERY FINE ANEMONE ROOTS AND SEEDS.

To the Nobility, Gentry, and Clergy.

HENRY GIBSON, Floore, near Weedon, Northamptonshire, has now on Sale an unlimited Stock of the finest Striped and other ANEMONE ROOTS, at the following low prices, viz.:—

Selected, all Striped, 10*s*. per 100, or 4*l*. 10*s*. per 1000.

A splendid Collection of Mixed at 3*s*. 6*d*. p. 100, or 1*l*. 10*s*. p. 1000.

Packets of Seed, saved from all the choicest of the Flowers, containing 2000 seeds, 2*s*. each. Sent free of carriage to all parts of England on receipt of a post-office order, on the Weedon Post-office, payable to Henry Gibson.

Orders to the amount of 5*s*. can be forwarded in postage stamps.

N.B. Allowed by competent judges to be the best Collection in England.

JOHN RAINS, Grand Row, Covent Garden Market, respectfully informs the public that they can obtain on application a PRINTED LIST of the present prices of WEDDING and other BOUQUETS forwarded post-free. Country and other orders strictly attended to.

PELARGONIUMS.

T. ANSELL has now ready for sending out, plants of most of the leading varieties of PELARGONIUMS, both show and fancy varieties, orders for which he will be happy to execute at from 25*s*. to 30*s*. per dozen.

Among the Show Geraniums will be found—Albica, Aphrodite, Basilisk, Bride of Abydos, Butterfly, Colonel of the Buffs, Elize, Gertrude, Ignea, Mrs. Mangles, Pacha, Shylock, Galatea, Vulcan, Queen of May, Eleanor, Kulla, Leonora, &c. The Fancies comprise, among numerous other varieties, Criterion, Darlings, Duchess d'Orleans, Lady Downes, Marginata, Miniature, Princess Alice Maud, Perpetual, Triumphant, &c.; also an extensive collection of older varieties—good, strong, healthy plants.

Parties desirous of furnishing new greenhouses, &c., and applying to T. A., can be supplied with 100 really good varieties (show, fancy, and new scarlet) for 5*l*.; 50 plants in 50 choice kinds for 3*l*.

*** No further orders can be taken for the Set of T. A.'s New Petunias; but he has a few plants left of Mrs. Beecher Stowe and Eva, price 2*s*. 6*d*. per plant.

Reference required from unknown correspondents, and Post-office Orders to be made payable at Camden Town Office.

Camden Nursery, Camden Town, London.—October 14.

NOTICE TO GARDENERS AND OTHERS.

TURF.—Her Majesty's Commissioners for the Exhibition of 1851 are prepared to sell several hundred loads of Turf, on a portion of their Estate, at Kensington Gore.—Particulars may be obtained on personal application to Mr. Wade, at the Office of the Commissioners, Grove House, Kensington Gore, between the hours of 10 and 4.

J. IVERY and SON, Nurserymen, &c., Dorking and Reigate, beg to announce that their two new AZALEAS and RHODODENDRON will be ready for delivery on the 25th inst. For description, see *Gardeners' Chronicle*, for Sept. 16th, 23d, or 30th.—Reigate, Oct. 14th.

CHOICE GERANIUMS.

WILLIAM HUSSEY begs to offer the undernamed GERANIUMS, fine strong plants, at 6*d*. each:—

Ajax	Emily	Old Story
Alonzo	Ganymede	Nectar Cup
Belle of the Village	Generalissimo	Pearl
Conspicua	Gulielma	Prince of Orange
Constance	Lavinia	Roweana
Cuyp	Lalla Rookh	Rosamond
Chloe	Magnificent	Silk Mercer
Christabel	May Queen	Symmetry
Cassandra	Mochanna	Virgin Queen
Enchantress	Major Douro	Victory
	Nonsuch	Rubens
	Ondine	Alderman.

Horticultural Gardens, Norwich.

CRIMSON PERFECTION RHUBARB.

ROBERT SALT, of Longton, Staffordshire, begs to inform the Gentry, Nurserymen, and Gardeners, that this splendid variety of Rhubarb is now ready for distribution, and shall feel happy to serve all parties who may favour him with their orders.

R. S. begs to state that it is the most splendid, early, and prolific variety ever offered to the public. Orders addressed to Robert Salt, Longton; Messrs. Hurst and M'Mullen, 6, Leadenhall Street, London; Messrs. Burgess and Kent, Pen Street, Hull; Messrs. Francs and Arthur Dickson, Eastgate Street, Chester, will have immediate attention. Price 7*s*. 6*d*. per root, three for one guinea, and six for 2*l*. A liberal discount allowed to the Trade.—Longton, Oct. 14.

STRAWBERRIES.

BARRATT'S MAGNUM BONUM.—In size, this splendid Strawberry very far surpasses the "British Queen," is an exceedingly heavy cropper, and continues in perfection later than almost any other variety. Its flavour is really delicious, most nearly approaching the true Pine Apple of any kind yet known. Price per 100, 2*l*. 2*s*.; per dozen, 6*s*. Good strong Plants of the above are now ready for sending out by

St. John's Nursery, Wakefield. Wm. Barratt.

N.B. W. B.'s List of 40 kinds of Strawberries may be had gratis. Also his Catalogue of Dutch Roots, Herbaceous Plants, Irises, and Chrysanthemums, may be had on application.

NICHOLSON STRAWBERRIES REDUCED IN PRICE.

WILLIAM NICHOLSON is now sending out strong well-rooted Plants of his four new and distinct Strawberries, viz., AJAX, a very fine large dessert fruit, very beautiful, solid, and juicy; RUBY, ditto, a great bearer, and forces well; CAPTAIN COOK, market fruit, large, and a great bearer; FILLBASKET, ditto, 6*s*. per 100, box included. Most of the old and new sorts can be supplied.

*** See Mr. J. W. Kinmont's remarks on the above Strawberries, printed in No. 31, 1854, page 501, of this Paper.

Post-office Orders, payable at Yarm, Yorkshire, or a cash remittance required with the order.

Egglescliffe, near Yarm, Oct. 14, 1854.

MYATT'S new Seedling Strawberry, "ADMIRAL DUNDAS."—This is the most extraordinary variety, for size and productiveness, that has yet been raised at Manor Farm; it is much larger and a better flavour than either the Surprise or Mammoth, and ripens off the late fruit to advantage.

J. M. & Sons can confidently recommend this, as being superior to any large variety that has come under their notice.

Strong, well-rooted runners are now ready, and will be carefully packed and delivered free to any part of London, at the following scale of charges:—100, 50*s*.; 50, 30*s*.; and 25, 16*s*. Also strong Plants of Myatt's British Queen, Cinquefolia, Eleanor, Surprise, Globe, Eliza, Hooper's Seedling, Keens' Seedling, Black Prince, and Barnes' Bicton Pine, 5*s*. per 100.

Manor Farm, Deptford, October 14.

GOLIATH STRAWBERRY.—This well tested and excellent variety has now outgrown all the prejudice that has been raised against it, and has fully borne out the high character which was at first given of it; and most, if not all the market gardeners in this neighbourhood, as well as gentlemen, are growing it very extensively. It has proved itself to be the very best in the absence of its parent, the British Queen, or where that variety does not succeed.

A Post-office order for 3*s*. 6*d*., or stamps to that amount, will secure 100 strong well-rooted plants, package included; or 1*s*. 6*d*. for six plants, by post, to any part of the kingdom. Also Trollope's Victoria, the very best for forcing, 3*s*. 6*d*. per 100.

Also the following varieties at 2*s*. 6*d*. per 100:—British Queen, Myatt's Black Prince, Eleanor, Keens' Seedling, Elton Pine, Surprise, Comte de Paris, and Hooper's Seedling.

JAMES KITLEY, Lyncombe Vale Nursery, Bath.

STRAWBERRIES.—*This is the best time for planting Strawberries, especially after the late rains we have had. The Subscribers have a very superior stock of the following choice varieties:—*

INGRAM'S PRINCE OF WALES.—The principal sort grown at Frogmore for the Royal table, 20*s*. per 100.

PINCE'S NIMROD—highly recommended by Lucombe, Pince, & Co., 40*s*. per 100.

NICHOLSON'S AJAX ... ... }
" RUBY ... ... }
" CAPTAIN COOK }
" FILLBASKET ... }
Four excellent varieties, fully described by Mr. Nicholson. Price 7*s*. 6*d*. per 100.

TROLLOPE'S VICTORIA—A very superior and most prolific variety, 5*s*. per 100.

CUTHILL'S BLACK PRINCE—5*s*. per 100.

KITLEY'S GOLIATH—5*s*. per 100.

All the other choice varieties in cultivation. For prices and further particulars, consult Rendle's New Autumnal Catalogue, *just out, to be had in exchange for two penny stamps.*—Apply to

WILLIAM E. RENDLE and CO., Seed Merchants, Plymouth.

Printed by William Bradbury, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and Frederick Mullett Evans, of No. 7, Victoria Street, in the Parish of St. Margaret and St. John, Westminster, both in the County of Middlesex, Printers, at their Office in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be Addressed to the Editor.—Saturday, Oct. 14, 1854.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 42.—1854.] SATURDAY, OCTOBER 21. [Price 6d.

INDEX.

Agricultural education	684	c	Manure, ochre as	676	b
Agri. statistics	681	b	Manure water, tank and hose	684	c
Ansbury	683	c	Meat, preserving fresh	685	a
Aquaria	677	b	Mildew, cure for	678	b
Arnott's stove, brick	680	c	Mirbelia, the	677	c
Bark, Oak	678	b	Mosquitoes	678	a
Books noticed	678	c	Nerine Fothergilli	679	b
British Association	677	b	Ochre as manure	676	b
Bugs, cure for	678	a	Orchids, Beer on	679	a
Calendar, horticultural	680	a	Osiers	684	b
— agricultural	685	b	Packing plants	680	c
Cinerarias	679	c	Pathology, vegetable	676	b
Dairy statistics	682	a	Pears, time for gathering	676	c
Education, evening	684	a	— profits from growing	678	a
Entomological Society	678	c	Plants, new	679	a
Eyebright	678	a	— to pack	680	c
Farmers and grain selling	682	b	Potatoes, longevity of	676	c
— premiums to	684	a	Potato disease	675	b
Fleas, cure for	678	c	Reaping machines	682	c
Fruit trees, to train	680	c	Rye-grass, Italian in Scotland	684	b
Grain, when to sell	682	b	Sheep stock	683	c
Grape disease	676	a	Smithfield club	681	b
Grass crops, Scotch	684	b	Spade husbandry	683	b
Heating	680	c	Statistics, agricultural	681	b
Henderson's (Messrs.) nursery	679	b	Stubbles, cleaning	684	b
Horticultural Society	678	c	Training fruit trees	680	c
Incubator, Minasi's	685	a	Turnips, Swedish	684	c
Italian Rye grass in Scotland	684	b	Vegetable pathology	676	b
Logan Agri. Soc.	684	c	Whitlavia grandiflora	679	a

BRITISH POMOLOGICAL SOCIETY. — The FIRST EXTRAORDINARY MEETING of the BRITISH POMOLOGICAL SOCIETY will be held on MONDAY, 6th November next, at the Rooms, 20, Bedford Street, Covent Garden, London. The objects of this Meeting are to receive and exhibit Collections of Fruits from different parts of the country, and to ascertain their adaptability to the various soils and climates of Great Britain; to report upon the merits of new varieties; and to furnish the correct names of any varieties which may be submitted for that purpose.

All who are concerned in the cultivation of Fruits are invited to send collections of as many varieties as can be obtained; and to accompany them with a statement as to the soil, exposure, and latitude in which they were grown. All Collections should be forwarded before the 4th of November, addressed to the Secretary, 20, Bedford Street, Covent Garden, London.

EARLY DANIEL O'ROURKE PEAS.

J. G. WAITE begs to inform the Trade that he is now ready to execute orders for this valuable early Pea. Price can be had on application.
Seed Establishment, 181, High Holborn, London.

LARGE EVERGREENS, ETC.

JOHN ADAMS, Nurseryman, Park Lane, Brompton, near the "Hoop and Toy," calls the attention of gentlemen and the trade engaged in autumn planting to his extensive stock of LARGE EVERGREENS, comprising Hollies, Yews, Red Cedars, Siberian, China, and American Arbor vitæ, Tree Box, Edging Box, Laurels, Bays, Cedrus deodara, Pinus excelsa, &c., &c., all of which are in a fine condition for moving.
A fine stock of large Fruit Trees for immediate bearing.

VARIEGATED HOLLIES.

THE SUBSCRIBERS having a large stock of Striped and other Worked HOLLIES, recommend this as a favourable time for removal; in considerable quantities they are sold cheap.—Wm. Urquhart & Sons, Dundee.

FINE SPECIMEN PLANTS.

J. and J. FRASER beg to invite attention to their magnificent Collection of large AZALEAS, HEATHS, and other Plants, which were never in such good condition as at the present time. This is an excellent opportunity for buyers as (on account of not having sufficient room) the plants will be offered at very low prices.
The Nursery, Lea Bridge Road, Essex.—Oct. 21.

CHARLES DALY and SON beg to offer the following:—One year Seedling Thorns, at 1s. 6d. per 1000; Two years Transplanted, 6s. do. Laurel, 10s. per 1000; Portugal do, 4s. per 100, good plants. Irish and Spread Yews. Bushes for hedges, Forest Trees, Seedlings do, and Grass Seeds cheap.
Prices sent free by Post.—Coleraine, Oct. 21.

J. SMITH and SONS, Tansley, near Matlock, begs to offer cheap, an over-stock of one or two years' Seeding OAK, one year's BEECH, and one year's SYCAMORE; also Transplanted Beech, in sizes from 1½ to 5 feet. Price, according to quantity required, on application.

PEACH TREES AND VINES.

TO BE SOLD, Forty PEACH and NECTARINE TREES, of best sorts, two and three years trained, without cutting back; have been grown under glass, and would bear a crop the same season of planting; price 5s. each. Also, One Hundred BLACK HAMBURGH, and One Hundred MUSCAT of ALEXANDRIA VINES, struck from eyes this year, from 3 to 4 feet high, well ripened, and warranted true; price 1s. each.
Apply to William Luckett, Rabbly Cottage, Shenley, Herts.

TO BE SOLD, VINES, from Eyes, the best out, some of which have been fruited in pots.—Apply to Mr. J. Jenner, Priory Nursery, Priory Grove, South Lambeth.

IMPORTANT TO POTATO GROWERS.

HAY, SANGSTER, and CO., are now ready to send out their celebrated Stock of SEED POTATOES from prepared cuttings, now completely free from disease, of the following sorts, viz.:—

Early Ebrington Kidneys, per bushel	12s.	Early American, per bushel	6s.
		York Regents „	6s.
Early Oxford „	10s.	Scotch Caps „	6s.

Package and delivery in London, 9d. per bushel, and 2s. per sack.
Newington Butts, London.

SEED POTATOES.—BRITISH QUEEN, as an abundant bearer, for early maturity, and excellence in eating, unsurpassed; price per bushel (bag included) 7s. EARLY ASH-LEAF (true) 8s. per bushel. FORTY FOLD, 6s. per bushel.
Hart and Nicklin, High Street, Guildford.

EARLY SEED POTATOES.—The SHORT TOP ASH-LEAF and BRITISH QUEEN for yield and quality cannot be excelled, price 30s. per sack of four bushels, free to London. No charge made for sacks. A quantity of Forty-folds will be ready to send out next month, price 18s. per sack of four bushels.—Apply to Joseph Wilson, Seed Merchant, Ipswich.

TO PLANTERS
of
ORNAMENTAL & HARDY CONIFERS & SHRUBS.

YOUELL and CO. beg respectfully to invite the attention of those Gentlemen who may be engaged in planting the above, to their Advertisement which appeared in last week's Paper.—Royal Nursery, Great Yarmouth.

JUST HARVESTED.

SUTTON and SONS, Seed Growers, Reading, have now harvested some fine seed of true Early Shorthorn Carrot, Mustard, Cress, Lettuce, Early Peas, and other Seeds for early sowing.

THE BEST CUCUMBERS FOR FORCING.

SUTTON'S BERKSHIRE CHAMPION, per packet ... ... 1s. 6d.
HUNTER'S LONG PROLIFIC ... 1s. 6d.
LORD KENYON'S FAVOURITE ... 1s. 6d.
IMPROVED SION HOUSE ... ... 1s. 6d.
Sutton & Sons, Seed Growers, Reading.

HART and NICKLIN, Florists, &c., Guildford, offer the following Plants:—
GERANIUMS, 12s. per dozen, including Optimum (Foster).
Fancy ditto, 10s. per dozen.
PANSIES (choice show flowers), 10s. per dozen.

RHUBARB ROOTS.

MYATT'S LINNÆUS ... ... 35s. per 100.
„ VICTORIA ... ... 28s. „
MITCHELL'S ALBERT ... ... 30s. „
Good strong Roots, and warranted true to kind.
J. G. Waite, Seed Merchant, 181, High Holborn, London.

STRAWBERRY PLANTS.

CUTHILL'S BLACK PRINCE ... 21s. per 1000.
„ PRINCE of WALES ... 40s. „
BRITISH QUEEN ... ... 21s. „
ELTON PINE ... ... 21s. „
PINCE'S NIMROD, New ... ... 20s. per 100.
J. G. Waite, Seed Merchant, 181, High Holborn, London.

OMER PACHA STRAWBERRY.

WILLIAM JAMES WARD has still to spare a few more well-rooted plants of the above excellent Strawberry. Testimonials of the highest order. See advertisement in the *Gardeners' Chronicle*, August 26; also in the Descriptive List of New Fruits in the "Florist and Fruitist," Sept. Number, accompanied with a woodcut.

100 Plants ...	£3 0 0	25 Plants ...	£1 0 0
50 „ ...	1 15 0	12 „ ...	0 12 0

Prospect Hill, Reading, Oct. 21, 1854.

CATTELL'S EARLY BARNES CABBAGE,
„ RELIANCE „
„ GREEN COLEWORT „
Plants of the above are now ready, 5s. 6d. per 1000, stout bedded; 4s. 6d. per 1000 good seedlings. No charge for crates, baskets, or packing. Packages of 5000 or more, delivered to the Edinbridge Station, South-Eastern Railway, carriage free.
Orders from unknown correspondents to be accompanied with post-office orders made payable here.—Address,
John Cattell, Westerham, Kent.

DELPHINIUM CONSPICUUM.

ARCHIBALD GODWIN begs to inform his numerous applicants that he is not able to supply any more of the above Delphinium before April, 1855.
N.B. Trade and retail Catalogues on application.—The Nurseries, Asbourne, Derbyshire.

WILLIAMS' EVERGREEN CLIMBING ROSE.

WILLIAM WOOD and SON have been appointed Agents by Mr. Davis, of Malvern, for the sale of the above-named magnificent CLIMBING ROSE. Good established plants, 3s. 6d. each. Usual discount to the trade. For particulars purchasers are referred to their own and Mr. Davis' advertisements in *Gardeners' Chronicle* of October 7, page 643.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

THOMAS JACKSON and SON, having a large healthy Stock of STOVE, ORCHIDACEOUS, and GREENHOUSE PLANTS, respectfully invite intending purchasers to an inspection; in addition to the established favourite kinds will be found many novelties now offered at very low prices.
Kingston, near London.

DUTCH HYACINTHS, for Forcing, single and double, at 4s. per dozen. Also Narcissi, Crocuses, Tulips, Irises, Jonquils, Anemones, and Ranunculuses, priced Catalogues of which will be forwarded by post, from Arthur Cobbett's Italian and Foreign Warehouse, 18, Pall Mall.
Also Double Roman and Paper White Narcissus, the most beautiful and fragrant of all the Narcissi, 4s. per dozen.

NOTICE TO GARDENERS.

WANTED, a Supply of PINES, &c., during the winter and spring; also other Choice Produce.—Apply or forward to George Taylor, jun., Fruit Salesman, St. John's Market, Liverpool.
Nett Cash Payment.

BROWICK RED WHEAT.—Seed Wheat of the above description, and true may be obtained immediately by addressing Mr. Edward Ball, Bailiff, Hodgmoor, Beaconsfield. Price, by Quarter, Sack, or Bushel, 10s. per Bushel. Al orders to be accompanied by Post-office order or remittance.

SEED WHEAT.—"Lay's Improved" RED WHEAT, very prolific, of excellent quality and stiff straw. Price 10s. per bushel, delivered at Witham Station. Sacks 2s. each. Orders with a remittance will have prompt attention.
Apply to RICHARD S. HEWS, Kelvedon, Essex.

GEORGE JACKMAN begs to announce that he has just published a new and complete CATALOGUE of his Ornamental Evergreens, Conifers, Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., and may be had on application by enclosing two postage stamps.
Woking Nursery, 1½ mile from Woking Station, South Western Railway, where all Trains stop, and where capital conveyances may be had.—Oct. 21.

HYACINTHS AND DUTCH BULBS.

HENRY GROOM, Clapham Rise, near London, by appointment Florist to her Majesty the Queen, and to his Majesty the King of Saxony, begs to say that he has received his HYACINTHS and DUTCH BULBS, in excellent condition, and that they are much finer than usual.—His CATALOGUE of BULBS, &c., will be forwarded on application.

TULIPS.

HENRY GROOM, Clapham Rise, near London, by appointment Florist to her Majesty the Queen, and to His Majesty the King of Saxony, begs to inform the AMATEURS of TULIPS that his CATALOGUE is ready, and will be forwarded by post on application. He is happy to say that from the superior growth of last spring, he has been enabled to make a considerable reduction in the prices.

DUTCH BULBS.

THOMAS CRIPPS, Nurseryman, Seedsman, and Florist, respectfully announces that his annual importation of the above has just arrived in excellent condition, Catalogues of which, comprising, amongst others, many new and choice varieties of Hyacinth, Crocus, Tulips, Anemones, &c., may be had on application.—Tunbridge Wells, Oct. 21.

BASS and BROWN'S NEW AUTUMN CATALOGUE, containing the following, is now complete, and supplied free by post for three Penny Stamps.

Dutch and Cape Roots.	Hardy Herbaceous Plants.
Geraniums.	Potentillas.
Cinerarias.	Hollyhocks.
Azalea indica.	Antirrhinums.
Fuchsias }	Coniferæ, and other Select Trees
Verbenas } best new of 1854.	and Shrubs.
Petunias }	Hardy Climbers.
Stove and Greenhouse Plants.	Roses, Fruits, &c. &c.

Seed and Horticultural Establishment, Sudbury, Suffolk.

THE PLANTING SEASON.

WM. URQUHART and SONS, Dundee, respectfully intimate that their PRICED LIST may now be had on application.

CARNATIONS, PICOTEES, AND PINKS.

JOHN KEYNE'S ANNUAL CATALOGUE, containing all the finest SHOW FLOWERS, is now ready, and will be sent, on application to the Castle Street Nursery, Salisbury.

ROSE CATALOGUE FOR 1854-55.

WILLIAM WOOD and SON are now prepared to issue COPIES of their New ROSE CATALOGUE for the present season on receipt of two postage stamps. General Catalogue of Nursery Stock may also be had on same terms.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

ROSE NURSERIES, HERTFORD.

E. P. FRANCIS' List of ROSES, containing all the new varieties worth cultivating, with a stock of 5000 dwarfs in 150 sorts, most successfully grown on the Manetti Stock, is now ready for delivery, and will be forwarded to any amateur, gratis, on application.

PRICED NURSERY CATALOGUES.

A. PAUL and SON will be happy to forward the following priced Nursery CATALOGUES in return for one postage stamp each:—A, Roses; B, Ornamental Trees and Conifers; C, Fruit Trees; D, Herbaceous Plants; F, Greenhouse Plants, &c.; G, Seeds; H, Hollyhocks; I, Bulbs.—Nurseries, Cheshunt, Herts.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER'S Descriptive List of the above splendid flowers, containing hints on their culture, and observations on exhibiting, &c., is now ready, and may be had on application, by forwarding one postage stamp.—Saffron Walden Nursery, Oct. 21.

AMERICAN NURSERY.

GEORGE BAKER'S DESCRIPTIVE CATALOGUE of AMERICAN PLANTS, &c., as exhibited by him in the Royal Botanic Gardens, Regent's Park, may be had by inclosing two postage stamps.
G. B. begs to call attention to his fine stock of Weeping Hollies, Coniferous Plants, Ornamental Shrubs, &c.—American Nursery, Windlesham, near Bagshot, Surrey, near Staines Station, South-Western Railway, where conveyances may be obtained.

AMERICAN PLANTS.

JOHN WATERER begs to announce that he has published a new Catalogue of his Rhododendrons, &c., as exhibited by him in the Gardens of the Royal Botanic Society, Regent's Park, London. It describes the colours of all the Rhododendrons considered worthy of cultivation, with a Treatise on their successful management, and may be had by enclosing two postage stamps.
The American Nursery, Bagshot, Surrey, near Farnborough Station, South-Western Railway.

AMERICAN PLANTS. — A Descriptive Priced CATALOGUE of HARDY AMERICAN PLANTS for the coming season is just published, and may be had by enclosing two stamps for postage. As everything in the way of American Plants is grown to an unequalled extent at this Nursery, intending purchasers would do well to provide themselves with this Catalogue.
WATERER and GODFREY, Nephews and Successors to the late Hosea Waterer, Knap Hill Nursery, Woking, Surrey.

ARTHUR HENDERSON and CO. beg to inform their patrons and the public that their CATALOGUES of BULBS are now ready, and they will have much pleasure in forwarding them on application.
They comprise lists of all the finest varieties of Hyacinths, and many other rare and valuable Bulbs.
Their collections of Hyacinths have yearly carried off the metropolitan prizes, not only for their unique growth, but also for their beauty of colouring and distinctness of sorts, either when exhibited in a collection of 36 plants or in pairs.
Pine-apple Place, Edgeware Road, London.

CARNATIONS, PICOTEES, PANSIES, ETC.

JOHN SCHOFIELD AND SON have now ready strong plants of all the approved CARNATIONS, PICOTEES, PINKS, and PANSIES, as follows:—25 pair of Carnations and Picotees, 1*l.* 1*s.*; 25 pair of Pinks, 15*s.*; 25 Pansies, 1*l.* 1*s.* A Descriptive Catalogue of the above, &c., is ready; also a few packets of Pansy and Hollyhock Seed carefully selected from the finest sorts, 2*s.* 6*d.* per packet.—Knowsthorpe, near Leeds, Yorkshire.

CRIMSON PERFECTION RHUBARB.

ROBERT SALT, of Longton, Staffordshire, begs to inform the Gentry and Nurserymen that this splendid variety of Rhubarb is now ready for distribution, and shall feel happy to serve parties who may favour him with their orders.

R. S. begs to state that it is the most splendid, early, and prolific variety ever offered to the public. Orders addressed to ROBERT SALT, Longton; Messrs. Hurst and M'Mullen, 6, Leadenhall Street, London; Messrs. Burgess and Kent, Parkhall; Messrs. Francis and Arthur Dickson, Eastgate Street, Chester; Mr. Wood, Nurseryman, Nottingham, will have immediate attention. Price 7*s.* 6*d.* per root, three for one guinea, and six for 2*l.* A liberal discount allowed to the Trade. A Post-office Order from unknown correspondents.

VERY FINE ANEMONE ROOTS AND SEEDS.

TO THE NOBILITY, GENTRY, AND CLERGY.

HENRY GIBSON, Floore, near Weedon, Northamptonshire, has now on Sale an unlimited Stock of the finest Striped and other ANEMONE ROOTS, at the following low prices, viz.:—

Selected, all Striped, 10*s.* per 100, or 4*l.* 10*s.* per 1000.

A splendid Collection of Mixed at 3*s.* 6*d.* p. 100, or 1*l.* 10*s.* p. 1000.

Packets of Seed, saved from all the choicest of the Flowers, containing 2000 seeds, 2*s.* each. Sent free of carriage to all parts of England on receipt of a post-office order, on the Weedon Post-office, payable to HENRY GIBSON.

Orders to the amount of 5*s.* can be forwarded in postage stamps.

N.B. Allowed by competent judges to be the best Collection in England.

CHOICE NEW GERANIUMS, FUCHSIAS, ETC.

HENRY WALTON, FLORIST, &c., Edge End, Marsden, near Burnley, Lancashire, begs to state that he will be prepared to send out nice plants of Foster's, Hoyle's, Beck's, Dobson's, and Henderson's New Geraniums, sent out last autumn, early in October, well established in 4-inch pots, at 36*s.* to 40*s.* per dozen. All the Choice New Fuchsias, sent out last spring, 1*s.* 6*d.* to 2*s.* each, or 18*s.* per dozen. New Verbenas, sent out in spring, 1*s.* each, or 9*s.* per dozen. New Petunias, sent out in spring, 1*s.* 6*d.* each, or 15*s.* per dozen. Choice New Cinerarias, 2*s.* each, or 18*s.* per dozen, or 6 for 10*s.*; older ditto, 6*s.* to 9*s.* per dozen. Pansies, newest and best varieties, 18*s.* per dozen.—Carnations, Picotees, Pinks, &c. &c., equally cheap.

Descriptive Lists of the above may be had for one postage stamp.

MYATT'S new Seedling Strawberry, "ADMIRAL DUNDAS."—This is the most extraordinary variety, for size and productiveness, that has yet been raised at Manor Farm; it is much larger and a better flavour than either the Surprise or Mammoth, and ripens off the late fruit to advantage.

J. M. & SONS can confidently recommend this, as being superior to any large variety that has come under their notice.

Strong, well-rooted runners are now ready, and will be carefully packed and delivered free to any part of London, at the following scale of charges:—100, 50*s.*; 50, 30*s.*; and 25, 16*s.* Also strong Plants of MYATT's British Queen, Cinquefolia, Eleanor, Surprise, Globe, Eliza, Hooper's Seedling, Keens' Seedling, Black Prince, and Barnes' Bicton Pine, 5*s.* per 100.

Manor Farm, Deptford, October 21.

THE LARGEST AND CHEAPEST ESTABLISHMENT IN ENGLAND for GERANIUMS (show and fancy), FRENCH GERANIUMS, FUCHSIAS, VERBENAS, FAIRY ROSES, CHRYSANTHEMUMS, HELIOTROPES, CINERARIAS, CALCEOLARIAS, PRIMULAS, and other soft-wooded plants, is the Floral Nursery, Acton Road, Turnham Green, near London. More than 250,000 plants are there cultivated annually.

For further particulars, see Advertisement in last week's *Chronicle*. Catalogues forwarded to all parts gratis.

Every possible exertion will be made to give the most perfect satisfaction to all who may favour this Establishment with their patronage. None but thoroughly established Plants will be sent out, and full reliance may be placed on prompt attention and fair dealing.

The Trade will be liberally dealt with. Provincial Nurserymen and Florists will do well to try this Establishment.

Terms cash or a satisfactory reference.

JOHN WESTWOOD, PROPRIETOR.

NEW VARIEGATED GERANIUMS.

JOHN AND CHARLES LEE beg to inform the admirers of Variegated GERANIUMS that they have purchased the Stock of two very promising Seedlings, which are decided improvements on those already introduced by them. The first they have named

MRS. LENNOX,

in compliment to the lady of the raiser, Thomas Lennox, Esq., of Stamford Brook Lodge, Hammersmith. The whole aspect of this plant is very striking, the habit being extremely vigorous, with leaves measuring from 4 inches to 6 inches across, and having a broad margin as white as the driven snow. The trusses are very large, of the most intense scarlet, and stand well above the foliage. The other they have named the

SCARLET FLOWER OF THE DAY,

giving an accurate idea of its character and properties. The foliage and habit are precisely the same as in "The Flower of the Day." The truss is larger and bolder, and the pips are well shaped and of great substance. The colour is all that can be wished for, being a fine scarlet, vieing with even the most favourite green-leaf varieties, and is not subject to burn under the hottest sun, either under glass or out of doors. Notice will be given next season, when they are ready to be sent out. This is inserted to prevent other parties from adopting the same names.

Nursery, Hammersmith.

BARCHARD'S SEEDLING APPLE.—This beautiful Apple was raised from seed by Mr. Higgs, upwards of 20 years gardener to Mrs. Barchard, by whose kind permission he now begs to offer it to the Nobility and Gentry. It has been twice shown to Mr. Thompson, and also cut up at the Horticultural Society's Rooms, Regent Street, where it was highly approved of, and considered to be of first-rate quality; in proof of which Mr Thompson's opinion of it is given:—

"BARCHARD'S SEEDLING.—Fruit received from Joseph Barchard, Esq., in whose garden it was raised, and fruited for the first time in the present season. Fruit middle size, roundish oblong, obtusely angular; eye rather deeply sunken, surrounded with projecting folds; stalk short, not deeply inserted; skin dark shining red next the sun, streaked towards the shaded side, which is of a pale orange tinge; flesh yellowish white, tender, with a rich brisk sugary flavour. This sort is worthy of cultivation.—ROBERT THOMPSON, Sept. 22, 1852."

It is also described as first-rate quality in the Catalogue of New Fruit in the Horticultural Journal of October 1, 1853, vol. viii., where a full description of it is given. The whole of the stock is in the hands of Mr. Dancer, of the Fulham Nursery. Strong one-year old plants, 5*s.* each; extra strong plants, two years old, 7*s.* 6*d.* each.

All Post Office Orders directed to Mr. MATHEW HIGGS, Putney Heath, payable on the Putney Post Office, will be promptly attended to, and good strong plants immediately forwarded.

HORTICULTURAL GARDENS, NORWICH.

WILLIAM HUSSEY begs to offer the undernamed fine healthy PLANTS, viz.:—

		Per doz.
Choice show Geraniums, from	6*s.* 0*d.*	to 12*s.* 0*d.*
Choice show fancy do., do.	6 0	„ 12 0
Pinks, fine show sorts, per dozen pairs ...	6 0	„ 9 0
Picotees, fine show sorts „	9 0	„ 12 0
Carnations, fine show sorts „	12 0	„ 18 0
Hardy Ferns, sorts, fine plants	6 0	„ 12 0
Hardy Herbaceous Plants	4 0	„ 6 0
Hardy Rock Plants	4 0	„ 6 0
Hollyhocks, fine named sorts	6 0	„ 12 0
Fine healthy Pear Trees, of all the best kinds	12 0	
Dwarf Plums, of sorts	9 0	„ 12 0
Grape Vines, from eyes, in sorts ... each	2 0	„ 5 0
Dwarf-trained Cherries ... ... „	2 6	„ 4 0
Dwarf-trained Apricots ... ... „	4 0	„ 6 0
Cedrus deodara, from bushy plants ... „	1 0	„ 1 6
Fastolff Raspberry Canes, per 100	10 0	

Remittance or references from unknown correspondents.

DUTCH BULBS OF SUPERIOR QUALITY AT LOW PRICES.

Anemones, early flowering, brilliant colours ...	5*s.* per 100.
Hyacinths, Dutch Mixed, all colours	21*s.* per 100.
„ „ named, separate colours ...	6*s.* per doz.
Narciss, mixed	1*s.* „
Tulips, Dutch, mixed, early sorts	6*s.* per 100.
Crocus, Dutch, mixed, all colours	10*s.* per 1000.
Iris, mixed, all colours	5*s.* per 100.

The above, with every other kind of Flower Roots, equally moderate in price, may be had of WILLIAM DENYER, Seedsman and Florist, 82, Gracechurch Street, London.

Descriptive and priced Catalogues forwarded on application.

SUPERB SHOW CARNATIONS, PICOTEES, PINKS, PANSIES; &c. &c. &c.

	£	s.	d.
25 pairs Show Carnations (named)	1	0	0
25 „ „ Picotees „	1	0	0
25 „ „ Pinks „	0	10	0
25 Plants Show Pansies „	0	12	0
100 Tulips	1	0	0
Fluke Potatoes, per bushel	0	5	0
Selected Pansy Seed, per packet	0	2	0
Heaviest Show Gooseberries, per dozen	0	6	0

Auriculas, Alpines, Polyanthuses, Primroses, Belgian Daisies, &c. &c.—Priced and descriptive Catalogues now ready for one stamp. Post Office orders payable at Middleton, Lancashire.

JOHN HOLLAND, Bradshaw Gardens, Middleton, near Manchester.

VINES IN POTS,

GROWN UNDER GLASS FROM SINGLE EYES, 4 to 6 feet high.

ALEXANDER PONTEY, NURSERYMAN, Plymouth, begs to offer the following sorts of VINES, warranted true to name. If 12 or more are ordered, they will be delivered free in Bristol or London; price 2*s.* 6*d.* to 3*s.* 6*d.* each.

VINES.—Alicant, or Black Spanish; Barbarossa; Black Hamburgh; do. Hampton Court; do. Warners; Constantia, black; Eschalota superba; Frontignac, White; do. Grizzly; do. Red; Gromier de Cantab; Joslyn St. Aubyns; Muscat of Alexandria; do. Tottenham Court; do. Lunel; Lees (early); do. Canon Hall; St. Peter's (Oldacres), black; Wilmot's Royal Victoria; Tripoli (Wellbeck's); Sweet Water (White Dutch); do. Grove's End.

Plymouth Nursery.—Oct. 21, 1854.

RARE CONIFERÆ.

ALEX. PONTEY, NURSERYMAN, Plymouth Nursery, Plymouth, begs to inform Gentlemen wishing to add to their Arboretums, that he can supply the following. Most of the kinds are planted in his Arboretum. He can warrant them hardy.

ALEX. PONTEY particularly calls attention to the THUJIOPSIS BOREALIS, which has proved quite hardy, and one of the grandest Coniferæ in cultivation. My specimen plants are now 3 feet high, and show their true character. Lists and prices will be forwarded on application.

N.B. A. P. can offer an extra-sized Libocedrus Chilensis about 6 feet high—splendid specimen.

Abies Whitmaniana	Libocedrus chilensis
Araucaria gracilis	Abies orientalis
Biola glauca	Pinus abselagica
„ striata	„ Nordmanniana
Cephalotaxus Fortuni (male)	„ ponderosa
„ „ (female)	„ atlantica
Cupressus Thujiformis	Podocarpus coriacea
„ excelsa	„ japonicus
„ species from the hills of India	„ longifolius
„ Whitleyana	„ nabigera
„ Knighti	Taxus elongatus
„ mexicana	„ nucifera
„ squarrosa	„ adpressa
Fitz-Roya patagonica	Torræ Humboldti
Juniperus argentea	Thuja filiformis
„ nepaulensis	„ nepaulensis
„ japonicus	„ intermedia
„ chinensis	„ flagelliformis
„ oblonga pendula	„ asplenifolia
„ sphærica	„ Doniana
	Thujiopsis Borealis
	Wellingtonia gigantea.

Plymouth Nursery, October 21.

TO GENTLEMEN ENGAGED IN PLANTING.

WATERER AND GODFREY respectfully invite attention to their stock of the following very desirable HARDY PLANTS.

Araucaria imbricata, from 2 to 7 feet high; as handsome as plants can be.	Pinus canadensis, 3 to 8 feet
Cedrus Deodara, in any quantity, from 1 to 3 feet high	Cupressus macrocarpa or Lambertiana, 4 to 7 feet
Do. do., 4, 5, 6, 7, 8, and 10 feet high; splendid plants	„ thyoides variegata, 3 to 4 feet (the variegated white Cedar)
Cedars of Lebanon, 3, 4, 6, and 10 feet high	Juniperus, Upright Irish, perfect columns, 3 to 7 feet
Pinus Douglasi, 3 to 10 feet	„ chinensis, 2 to 8 feet
„ insignis, 2 to 7 feet	Yew, common English, 3 to 8 feet
„ Menziesi, 3 to 7 feet	„ Irish, 4 to 10 feet
„ pinsapo, fine plants, 3 to 6 feet	„ gold-striped, 1½ to 3 feet
„ Nordmanniana, 1½ to 3 ft., all from seed and remarkably handsome	„ do., tall standards, 4 to 7 ft.
„ nobilis, 1½ to 2 feet; a few larger, 5 and 6 feet high, on their own roots, and with perfect leaders	„ Dovaston, or Weeping, worked on tall straight stems
„ Montezumæ, 2 to 4 feet	Thuja aurea, the finest plants in the country
	Libocedrus chilensis, the finest plants in the country
	Large variegated Hollies
	„ Standard Bays

Also an immense stock of large Evergreens, Standard Ornamental Trees, &c.

All the plants here offered may be seen, growing in our nursery; they are removed every year, and will travel any distance with perfect safety. Of some, such as Araucarias, Deodaras, Golden Yews, Thuja aurea, Pinus nobilis, Nordmanniana, we have any quantity; and the plants, for root and branch, are not to be surpassed. Priced Catalogues will be forwarded on application, enclosing two postage stamps, to WATERER and GODFREY, nephews and successors of the late Hosea Waterer, Knap Hill Nursery, Woking, Surrey, near the Woking Station, South-Western Railway, where all trains stop, and where capital conveyances can be obtained.

The 2*d.* stamp will also include a descriptive Catalogue of their American Plants, Roses, and Nursery Stock in general.

BATH NURSERY AND SEED ESTABLISHMENT.

JAMES GRIFFIN begs to announce that his annual importation of Hyacinths and other Dutch Bulbs have arrived in excellent condition, and comprise all the best and most useful varieties.

J. G. has an immense stock of all the choicest kinds of Pinks, at 6*s.*, 9*s.*, and 12*s.* per dozen pairs.

Antirrhinum Seed saved from a first-rate collection, 1*s.* per packet.

Weston Road, and 2, New Bond Street, Bath.

NEW PHLOX.

DREGHORN AND AITKIN, Nursery and Seedsmen, Kilmarnock, will send out immediately PHLOX BEAUTY of MILRIG, a pure white, with yellow eye, flowers extra large, smooth edge, fine, round, stiff petal, and a large trusser. It is considered by first-rate judges to be the best white out. Price 2*s.* 6*d.* each, with eight plants sent to the trade when six are ordered.

J. ANSELL begs to announce that his new and splendid Geranium "MARQUIS OF CAMDEN" will be ready to be sent out on the 1st of November next. It was exhibited at the Royal Botanic Gardens (at the June Show, 1854), where it was generally admired. Upper petals of a rich dark purple; lower petals, fine rosy purple, with a beautiful pure white centre. T. A. will be happy to receive orders for this most desirable variety, which will be executed according to priority of application. Price per Plant, 21*s.* Discount allowed where three Plants are taken.—Camden Nursery, Camden Town.—Oct. 21.

DUTCH FLOWER ROOTS.

JAMES CHARTRES AND Co., beg to inform their friends and purchasers generally, that they have imported a large and very choice stock of the above from the first houses in Holland, and the roots are remarkably fine this season, more especially Hyacinths. A Catalogue may be had on application.

J. C. and Co., beg further to state, that they can now offer the following:—

True Perpetual Violets, in small pots, per doz. ...	6*s.*	0*d.*
Neapolitan „ „ „ ...	6	0
Linum trigynum, each	1	0
Vallota purpurea „	1	6
Strawberry Plants, British Queen, per 100	3	0
„ „ Black Prince „	3	0
„ „ Keene's Seedling „	3	0
„ „ Elton Pine „	3	0
„ „ Kitley's Goliah „	3	0

N.B. No charge for packing.

Warehouse, 74, King William Street, City, and York Nursery, Hanger Lane, Stamford Hill, London.

CHATERS' SEEDLING PANSY, PICOTEE.

J. CHATER AND SON beg to announce that they intend sending out after the 20th October, their SEEDLING PANSY named PICOTEE, in strong plants, 5*s.* each. Pure white ground, beautifully edged with azure blue; eye large, fine form and substance. The margin of this flower resembles a fine Picotee.

Also Hollyhock Seed, from the best sorts, in packets containing 200 Seeds, 1*s.* 6*d.*; 400 Seeds, 2*s.* 6*d.*

Fine Plants of splendid Sweetwilliam, 1*s.* 6*d.* per dozen; 10*s.* per 100.

Choice Pansy Seed, 1*s.* to 2*s.* 6*d.* per packet.

A catalogue of the best Hollyhocks, Pansies, Roses, and Pinks, can be had on application to J. CHATER & SON, Nurseries, Haverhill, Suffolk.

BECK'S NEW PELARGONIUMS

NOW SENDING OUT BY

J. DOBSON AND SON, FLORISTS, SEEDSMEN, &c. Full Descriptions and Prices may be had on application.

PELARGONIUMS.—Beck's, Foster's, Hoyle's, and other raisers' varieties, may now be had, in extra strong plants, at reasonable prices. Catalogues on application.

PANSIES.—All the newest and best varieties from 9*s.* per dozen, well established in pots.

Woodlands Nursery, Isleworth.

A COLOURED PLATE of BECK'S NEW PELARGONIUMS—CONQUEROR, ex. fine, LYDIA, and LAURA—may be had, post free, for 14 postage stamps, on application to J. DOBSON and SON, Woodlands Nursery, Isleworth.

HOLLYHOCK SEED, from selected flowers of all the best collections in England and Scotland, 2*s.* 6*d.* per packet.

SPOTTED MIMULUS, from finely shaped flowers of every variety of colour and spot, at 1*s.* 6*d.* per packet.

CHOICE CALCEOLARIA, from the most superb collection in England, 2*s.* 6*d.* per packet.

JNO. AND CHS. LEE, NURSERY and SEEDSMEN, Hammersmith.

EARLY MONARCH RHUBARB.—The earliest and best variety ever offered to the public.

J. F. Wood, Esq., F.H.S., Editor of the Midland Florist and Suburban Horticulturist, says—"I am highly delighted with the Early Monarch, and can confidently recommend it as the very best early Rhubarb grown. . . The foliage also is peculiar and very beautiful. . . For colour, size, and precocity, it is most assuredly worthy of very extensive cultivation; it is a decided acquisition."—Roots, 2*s.* 6*d.* each, or 24*s.* per dozen.

Also CRIMSON KING, very early, good size, fine flavour, and crimson colour, 5*s.* per root, or six for 24*s.*

Apply to JOHN BAILEY, Longton, Staffordshire.

WANTED, 100,000 HAWTHORN transplanted plants, of short stout growth, with fibrous roots.—Address proposals, with lowest price, including carriage to the nearest seaport, H. WALKER, Londonderry.

NOTICE TO PINE GROWERS, GARDENERS, OR THEIR EMPLOYERS, having PINES, or other GARDEN PRODUCE to dispose of during the winter and spring, are requested to apply immediately, or forward to

GEORGE TAYLOR, JUN., FRUIT SALESMAN, St. John's Market, Liverpool.

Terms—Nett Cash Payments.

TO BOTANISTS AND THE LOVERS OF WILD FLOWERS

TO BE SOLD, the property of an eminent botanist, whose ground is taken for building purposes, a very choice Collection of Rare ALPINE and HERBACEOUS PLANTS, with a quantity of Rare and Interesting WILD FLOWERS, some FERNS and AQUATIC HARDY ORCHIDACEÆ, &c.—GEORGE TURNER, Botanist, East Barnet, Herts, 1½ mile from Colney Hatch Station, Great Northern Line.

DRIED PLANTS FOR SALE.

TO BE SOLD, a very valuable and extensive GENERAL HERBARIUM, partly arranged, and included in six neat, well made deal cabinets, adapted for the foundation or nucleus of a botanical collection, and suitable for any Public Museum or private collector who is beginning the pursuit. It is the property of a gentleman who had expended much money upon it, but who, having left England altogether, is willing to dispose of it at a small price. To save trouble, the lowest price that will be taken is 35*l.* The Plants are all in the best possible state, and include many of those sent home by recent travellers and botanical collectors.—Apply (in the first place) by letter only, to Mr. PAMPLIN, 45, Frith Street, Soho Square, London.

HOLLYHOCK SEED.

R. PARKER has now ready for sending out Seed of this year's saving from the finest named varieties in cultivation, in packets at 1s. and 2s. 6d. each. A remittance or reference to accompany all orders from unknown correspondents. —Paradise Nursery, Hornsey Road, London.

MESSRS. J. AND H. BROWN offer the following CHOICE PLANTS, which they will forward to any part of the kingdom:—
25 Azaleas, new hardy Belgian varieties on their own roots, with flower-buds, one of a sort by name, 20s.
25 American Azaleas, do. do., 15s.
25 Hardy American Plants, one of a sort by name, 10s. 6d.
12 Hardy Heaths and Kalmias, 6s. [varieties, 12s.
12 Rhododendrons, including Scarlet, White, and Rose, hardy
Fine hardy Scarlet Rhododendrons, 2 feet, 12s. per dozen.
New hardy Yellow Rhododendrons, each, 5s. 6d. to 7s. 6d.
Chrysanthemums, fine new varieties, per dozen, 8s.
Cedar of Lebanon, 2 to 3 feet, well grown, 12s. to 18s. per dozen.
(Araucaria, Deodara, and Conifers of all kinds, *see List.*)
6 Fine hardy Magnolias, one of a sort, 10s. 6d.
Roses, standards and half-standards, 12s. to 15s. per dozen.
Climbing Roses, of choice sorts, 6s. per dozen.
30 Dwarf Roses, two of a sort, on own roots, 15s.
12 Greenhouse Azaleas, one of a sort, fine plants, 18s.
12 Choice Camellias by name, with buds, 30s.
24 Choice Ericas, one of a sort by name, 16s.
30 Greenhouse Plants, hard-wooded, one of a sort, fine, 45s.
12 Orchidaceous Plants, choice species and good plants, 40s.
Hyacinths and Dutch Roots of all kinds.
Albion Nursery, Stoke Newington, London.—Oct. 21.

NEW BEDDING GERANIUM,
GAINES' SCARLET UNIQUE.

N. GAINES begs to inform the nobility, gentry, and trade in general, that he intends sending out the above the first week in November. It was exhibited at the Chiswick and Royal Botanic Horticultural Shows, where it was considered a great novelty, and well adapted for Bedding purposes. Price 5s. per plant. Printed lists of his large collection of Pelargoniums, both Fancy and Show varieties; also lists of Greenhouse, Stove, and other Hard-wooded Plants, may be had by applying at the Nursery, Surrey Lane, Battersea.

NEW AND RARE PLANTS.

Impatiens Jerdoniæ	5s. 0d	Veronica Liabandi	2s. 6d
„ Hookeriana	2 6	„ variegata	3 6
Begonia zanthina marmorea	5 0	Nerium splendens giganteum	5 0
„ „ umbilicus	3 6	Pentas rosea	2 6
Myrtus Ugni	3 6	Achimenes Chelsoni	2 6
Veronica Turneri	1 6	„ cherita	2 6
„ Hendersoni purpurea	1 6	„ gigantea	5 0

CHOICE GREENHOUSE PLANTS, &c.—We beg respectfully to offer the following, all of which are handsome well furnished plants, and such as cannot fail of giving satisfaction to those who may honour us with their commands.
EPACRIS, in 50 of the most choice varieties, fine bushy plants, 1½ to 2 feet in height, 12s. per dozen; smaller do., 9s.
ERICAS, fine bushy plants, in 48-sized pots, of all the best kinds in cultivation, 12s. per dozen; smaller do., 9s. (The above are well deserving the notice of the trade, prices of which may be had on application.)
CAMELLIAS, of the handsomest and most select varieties, well furnished with flower buds, 24s. and 30s. per dozen.
GREENHOUSE PLANTS, comprising an extensive collection of the choicest kinds, fine selections from which will be made at 12s. per dozen.
CINERARIAS, in 20 of the very best and newest kinds, for 25s. the set.
MIMULUS, in 6 new and splendid varieties, for 6s. the set.
TREE, or PERPETUAL FLOWERING CARNATIONS.—These new and beautiful introductions, so well adapted for affording a profusion of bloom throughout the winter months, 18s. per dozen.

CARNATIONS AND PICOTEES.
The finest varieties, by name, in strong healthy Plants ... ... 18s. and 24s. per doz. pairs.
Fine mixed border ditto ditto ... ... 9s. „
True old Clove Carnation ditto ditto ... 12s. „
PINKS, finest varieties by name ... 9s. to 12s. „
HOLLYHOCKS, comprising Yellow Model, Penelope, Spectabilis, Meteor, Lady Braybrooke, Swansdown, Walden Gem, Lilac Rival, Magnifica, Comet, Enchantress, Rubens, Pillar of Beauty, and many other fine show varieties, 18s. per dozen.
PHLOXES, finest new varieties ... ... 9s. per dozen.
PÆONIAS, in 20 choice kinds, for 1l.
ROCKETS, per doz.:—New double crimson, 12s.; double white, 3s.; double purple, 4s.
PRIMROSES, per doz.:—Double white, 4s.; crimson, 12s.; yellow, 5s.; purple, 4s.; lilac, 4s.
BELGIAN DAISIES, in 50 new varieties, 4s. per dozen.
HERBACEOUS PLANTS, in very choice variety, 30s. per 100, or 6s. per dozen.
LILY OF THE VALLEY, strong for forcing, 5s. per 100.
HYACINTHS, the finest for glasses or forcing, 9s. per dozen.
TULIPS, extra fine, mixed, all from named flowers, 12s. per doz.

CHOICE FRUITS (WARRANTED TRUE TO NAME.)

APPLES, Standard, in best selection, good heads,			9s. 0d.	per doz.
„ Dwarf	ditto	ditto	6 0	„
„ Trained	ditto	ditto	30 0	„
PEARS, Standard	ditto	ditto	12 0	„
„ Dwarf	ditto	ditto	8 0	„
„ Trained	ditto	ditto	30 0	„
PLUMS, Dwarf	ditto	ditto	9 0	„
„ Trained	ditto	ditto	36 0	„
PEACHES, Df. trained, in fine strong plants,			36s. to 60 0	„
NECTARINES, Dwarf trained	ditto		36s. to 60 0	„
APRICOTS	ditto	ditto	36s. to 60 0	„
CHERRIES, Standard, in fine variety,	ditto	...	12 0	„
„ Dwarf	ditto	ditto ...	9 0	„
„ Trained	ditto	ditto	36s. to 42 0	„

FASTOLFF RASPBERRY (true), as originally sent out by YOUELL & Co., strong, well-rooted canes, 15s. per 100; Large White Raspberry, 24s. per 100; New Monthly Fruiting, 24s. per 100; Belle de Fontenay, 9s. per dozen.
GOOSEBERRIES, 25 of the finest varieties (good bushes), selected for size and flavour, 30s. per 100, or 4s. per dozen.
CURRANTS.—Improved large White Dutch, Black Naples, Raby Castle (red), and large Red Grape, 4s. per dozen; Knight's Sweet Red, 6s. per dozen. These are the most desirable kinds in cultivation, and are highly recommended.

ASPARAGUS, Giant, 2 years	per 100	2s. 6d.
„ „ 3 years	„	3 6
RHUBARB, Myatt's Victoria	per doz.	8 0
„ „ Linnæus	„	8 0
„ Mitchell's Royal Albert	„	8 0
„ Hawke's Champagne, new ...	each	2 0
SEAKALE, strong, 1 year	per doz.	5 0
„ „ for forcing	„	10 0

All orders of 2l. and upwards are delivered carriage free to London, Hull, and Newcastle-on-Tyne, as well as to any Railway Station within 150 miles of the Nursery. Communications by Steamers and Railway to all parts of England, Ireland, and Scotland, as well as the Continent. Post-office orders to be made payable to YOUELL & Co.
YOUELL AND CO., Royal Nursery, Great Yarmouth.

NEW CLIMBING HYBRID PERPETUAL ROSE,
THE "DUCHESS OF NORFOLK."—Colour, Vivid Crimson.
To be sent out for the first time about the end of October.

WILLIAM WOOD AND SON beg to refer to their advertisement in the *Gardeners' Chronicle* of September 30, page 627. Standards, half-standards, or dwarfs, will be supplied at 10s. 6d. each, with the usual allowance to the trade.
N.B. When six plants or more are ordered by the trade, a very considerable reduction will be made beyond the usual discount, particulars of which may be had on application.
A Drawing of the above may be had for 6 Postage Stamps.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

HOLLYHOCK SEED.

WILLIAM CHATER begs to offer packets of the above Seed, containing twenty sorts, selected from his best show varieties, at 5s.; 12 varieties, do., 2s. 6d.; and from good double border sorts, at 1s.—Also Pansy Seed, from the best flowers, 2s. 6d. per packet.—Strong Plants of the new Double Crimson Rocket, excellent bedding plants for spring flowering, 6s. per dozen, or 2l. per 100; Double French White, 4s. per doz., or 30s. per 100.—Saffron Walden, October 14.

NICHOLSON STRAWBERRIES REDUCED IN PRICE.

WILLIAM NICHOLSON is now sending out strong well-rooted Plants of his four new and distinct Strawberries, viz., AJAX, a very fine large dessert fruit, very beautiful, solid, and juicy; RUBY, ditto, a great bearer, and forces well; CAPTAIN COOK, market fruit, large, and a great bearer; FILLBASKET, ditto, 6s. per 100, box included. Most of the old and new sorts can be supplied.
*** See Mr. J. W. KINMONT's remarks on the above Strawberries, printed in No. 31, 1854, page 501, of this Paper.
Post-office Orders, payable at Yarm, Yorkshire, or a cash remittance required with the order.
Egglescliffe, near Yarm, Oct. 21, 1854.

NEW GERANIUMS.

ISAAC DAVIES, Larkfield Nursery, Wavertree, near Liverpool, begs to announce that he has now ready for sending out strong healthy plants of the following six Geraniums, being the most distinct and beautiful that could be selected from all exhibited last year:—Regalia, 5s.; Virginia, 3s. 6d.; Pilot, 3s.; Lucy, 3s.; Lady-bird, 3s.; Sanspareil, 3s. Also Ambrose's new Fancy varieties, Duchess of Sutherland, 3s. 6d.; Dandy, 3s. 6d.; Barbette, 2s. 6d., with a fine stock of older varieties. The usual discount to the Trade.

J. IVERY AND SON, NURSERYMEN, &c., Dorking and Reigate, beg to announce that their two new AZALEAS and RHODODENDRON will be ready for delivery on the 25th inst. For description see *Gardeners' Chronicle*, for Sept. 16th, 23d, or 30th.—Reigate, Oct. 21st.

SECOND IMPORTATION.

FRESH IMPORTED BULBS *bloom much finer than those which have been long exposed to the air before planting.*
JOHN SUTTON AND SONS, Reading, Berks, can supply FINE BULBS, just imported, at low prices; see their Catalogue, which may be had, post free, in return for one penny stamp.

SUTTON'S COLLECTION OF BULBS.

SUTTON'S Collection of Bulbous Flower Roots consists of the most showy and distinct kinds of Hyacinths, Jonquils, Narcissus, Tulips, Crocuses, Gladioli, &c., judiciously selected, and marked for cultivation in the open ground, or the greenhouse or sitting room. Prices very moderate, as see Messrs. SUTTON's Catalogue, which may be had, post free, in exchange for one penny stamp.—Address, JOHN SUTTON and SONS, Seed Growers, Reading.

The Gardeners' Chronicle.

SATURDAY, OCTOBER 21, 1854.

Now that the POTATO DISEASE is naturally disappearing, it is somewhat late to revive the enquiry into its cause, for it has become impossible to say whether the successful result of an experiment is due to the process employed, or is merely coincident with the general mitigation of the affection. We have, however, just received a Scotch pamphlet,* by Mr. DANIEL MACTAGGART, to which it seems desirable to direct the attention of those who are interested in the enquiry. The author of the pamphlet has two theories upon the subject; one that the Potato disease arises from the wearing out of varieties, or in other words from exhausted vitality; the other that the Potato disease is the cause of cholera. We must deal with the latter notion first.

It would be unjust to Mr. MACTAGGART if we attempted to explain his views of the connection between cholera and rotten Potatoes in any other words than his own. We therefore quote verbatim:—

"Potatoes damaged by frost, the sun, water, or worms, may be food for cattle, but when they are in a *natural* state of decay, I believe they contain poison of some kind or other, which causes the death of both man and beast. Typhus fever or cholera, has always visited Campbeltown at the time of a Potato disease, but they never came together; I have heard no reason assigned for this; but it may be possible, when Potatoes are dropping naturally to decay, that the eating of them at one stage of the process of decomposition may cause one disease, and at another stage, another; or what is equally possible, each variety of the Potato when dropping to decay, may contain matter for causing a disease peculiar to itself."

The evidence on which this strange theory rests is what happened to three Campbeltown fishermen, ANGUS, NEIL, and JOHN, while at sea. It seems that these poor men cooked some diseased Potatoes for supper, that the water in which the latter were boiled had "a strong sickening smell," which destroyed the appetite of JOHN, who therefore ate none, but that ANGUS and NEIL made a meal of them, and died in a few hours of cholera. This we say is all the positive evidence which the author produces; beyond that we have mere recollections and supposed coincidences between Potato disease and epidemics; thus we are told that in 1817 a number of people in Kintyre died of typhus; that the first appearance of curl in Potatoes was in 1815, and that they began to decay in 1818; that cholera broke out in 1832 in Campbeltown; and that the Potatoes there having lived their allotted time "dropped to decay in 1832 and 1833, and the last of them in 1834." But we need not pursue the subject; if the world cannot see the nullity of such arguments we should scarcely convince them. It is, however, worth a passing remark that while Mr. MACTAGGART connects Potato disease and cholera in 1832, he adds that the cholera lasted at that time only four months (which, by the way, were summer months, when Potatoes are little consumed); and although the Potato disease became worse and worse till 1834, two years afterwards, when the last of them "dropped to decay," yet during all those two years, people eating such Potatoes all the while, there was no cholera in Campbeltown.

It will be seen from what precedes that reasoning is not Mr. MACTAGGART's forte; and our readers may wonder why we should thus notice a pamphlet containing such a crotchet. But we regard our author as a sensible man enough, except where he has a twist; and he has undoubtedly had experience in Potato growing. Let us therefore see what he says in support of his other theory, that Potatoes are diseased because they have lived their allotted time. This view is founded upon some curious statements. The author first relates how a Colonel PORTER of Knockbay, and a blacksmith at Drumalea, raised seedling Potatoes for many years. He then enters into computations of the time which the seedlings of these gentlemen remained healthy, or were supposed to be so; and finally states, in the following words, the conclusion at which he has arrived:—

"I cannot tell when the Irish Potatoes which Colonel Porter first planted at Knockbay came from the apple, nor do I know when the progeny of the seedlings reared by the Blacksmith dropped or will drop to decay, but I believe I have come very near the time when each of the Colonel's three different rearings was sown, and ceased to reproduce, and I shall therefore show how long I think they respectively lived. Each rearing took three years to drop *totally* to decay, but I shall take the year of the greatest blight; and thus it would appear the seed for each rearing was sown, and the progeny of the seedlings dropped to decay, and lived respectively as follows:—

According to the 7 years rotation,

1st Rearing sown 1801;	decayed 1832,	lived 31	yrs.
2nd Do. do. 1808;	do. 1838,	do. 30	„
3rd Do. do. 1815;	do. 1845,	do. 30	„

According to the 8 years rotation,

1st Rearing sown 1801;	decayed 1832,	lived 31	„
2nd Do. do. 1809;	do. 1838,	do. 29	„
3rd Do. do. 1817;	do. 1845,	do. 28	„
		179	

"By dividing this total of 179 years by six, which is the number of sowings in the two rotations, the result is that the average longevity of each rearing is twenty-nine years and ten months.

"The Pink eye is only one of the numerous varieties of the Potato, and in our present state of ignorance it is impossible to say whether it lives longer or shorter than any other variety, but taking it to be an average of the longevity of the Genus, I am inclined to think from the above calculation, that Potatoes after coming from the seed of the apple, will not continue annually to reproduce themselves in a sound and healthy state for thirty-one years. For a few years after they come from the apple they are unpalatable, but when they are made fit for eating by cultivation, I believe they will continue sound, healthy, and nutritious, until they are twenty-eight years of age. When they reach their twenty-fourth or twenty-fifth year, they become in some degree exhausted as if by reproduction, for they then begin to be less productive, but *after* they reach their twenty-eighth year, they appear to me to be in a state of decay, when the planting of them should be stopped altogether."

We thus learn that the life of a variety of the Potato is limited to an average of 28 years. What do English Potato-growers say to this? There is this merit in Mr. MACTAGGART's case, that he is the first writer who has attempted to determine the point with precision; hitherto we have had nothing better than loose assertions that the sorts of Potato

* The Cause and Cure of the Potato Disease, with the particulars of his own experience since 1845 in rearing new seed Potatoes from the Apple. By DANIEL MACTAGGART, Campbeltown; M'EWING, pp. 47. 18mo.

wear out. To us the evidence on which he relies seems loose enough, and we own carries no conviction with it; rather the contrary. We fear, indeed, that the author is not accustomed to consider the value of statements; for we find him announcing, on the authority of Bishop Heber, that the Rice-feeding Hindoos live upon Potatoes! nor does such a paragraph as the following increase our confidence in his judgment:—

"In those parts of America where the Potato is indigenous, it requires to be planted and re-planted, and sometimes changed from one soil to another, before it becomes an esculent fit for man; and in this country it requires to be treated in the same way. The Potato, when it comes from the seed of the apple, is the natural food of worms and other creeping things; but by cultivation it becomes, in the course of a few years, a palatable and nutritious article of human food."

We undertake to say there is no sufficient warrant for the first part of this statement, and as for the last, we leave it to the appreciation of English gardeners.

On another subject we read some statements of Mr. Mactaggart with much interest, because they are founded upon facts within his own knowledge, and do not depend for their value upon calculations. We allude to the period when the Potato disease first manifested itself. We have long seen cause to suspect that the malady is not so new as in 1845 it was supposed to be; it is, indeed, hardly to be doubted that it has always existed, although in an inconsiderable degree. It was its prodigious intensity in 1845 and the following years that prevented its being recognised as the affection that had formerly been known in a milder form. Mr. Mactaggart now assures us that before the year 1798 we had occasionally in Kintyre the rot and blight. When the mischief was great and the tubers rotten to a great extent it was called the Rot; "but when the whole or a great part of the crop failed, it was called the Blight." The rot occasionally made its appearance in every Potato field in the district.

It will be seen from what we have said of Mr. Mactaggart's pamphlet, that our opinion concerning the effect of raising Potatoes from the apple remains unchanged. We know, and this gentleman's own statements entirely confirm the fact, that seedling Potatoes are as much diseased as their parents; we therefore decline to recognise the raising Potatoes from seed as a remedy. But we are, as we always have been, very far from discouraging the attempt to improve the quality of this esculent by seed-sowing. There never was a doubt that *some varieties*, even in 1845, resisted the disease better than others, the Irish Cups for instance; and a very little reflection showed, that by raising from seed there was a great probability that varieties of a still more robust constitution would be obtained. But beyond this we cannot go. Even the fact, just ascertained in the garden of the Horticultural Society, that all the seedlings raised by Mr. Anderson, of Fermoy, are free from disease, fails to shake our conviction, for very little disease this year prevails in any part of the neighbourhood of London.

Though mildew has been far less prevalent amongst Vines during the present season in England, even in those districts where it was last year so general and destructive that thousands of plants were left unpruned from a conviction of the inutility of wasting time and trouble upon a matter which offered no prospect of remuneration, another malady has proved most fatal, especially in the northern counties; and queries almost without number have, in consequence, been forwarded to us by the sufferers, respecting which we have on more than one occasion given information. We have now before us, in addition to this subsequent malady, a very singular case, presenting apparently an entirely new form of disease, and arising evidently from a minute parasite, but of such a character, as, we fear, forbids all hope of any material remedy. It made its appearance for the first time last year at Harewood, on a peculiarly healthy Vine, celebrated, as we know from more than one source, for its excellent fruit, and it is now making rapid progress again, under an aggravated form, to the destruction of the ripened fruit.

The plant itself is described as perfectly healthy in appearance, and the house, which is 62 feet long by 16 broad, and filled with the Vine, perfectly dry. The first indication of disease is a little brown speck; this increases gradually, forming an orbicular spot of a sienna brown, and preserving constantly a definite outline. This spot separates readily from the subjacent pulp, in consequence of a copious crop of mycelium, the threads of which form the radii of a circle, and traverse the more superficial cells, causing their partial decay. The surface of the spots, which ultimately occupy nearly the whole berry, sometimes from the extension of one patch, but more frequently from the confluence of more than one, is rough, with little raised orbicular reddish bodies arranged in concentric circles, and easily separating from the matrix, which is perforated for their protrusion. The outer surface of these bodies consists of delicate cells with a distinct darker nucleus; and when this is removed a lobed hymenium is seen within, rough with distinct sporophores, each of which is surmounted by an oblong spore, sometimes constricted in the centre, and occasionally so much so as to become pyriform, and varying in size from $\frac{1}{1700}$ to $\frac{1}{150}$ of an inch. In age the perithecia fall away, leaving a little aperture, the border of which is often stained with black. The arrangement of the perithecia is exactly that of Oidium fructigenum, but the structure is altogether different.

The little parasite belongs to the genus Septoria, or at least to that division of it, when taken in a large sense, which bears unicellular spores. It may be characterised as

Septoria rufo-maculans, n. s., maculis orbicularibus rufis; peritheciis emergentibus liberatis concoloribus; sporis oblongis simplicibus centro constrictis.

Unfortunately we can suggest no remedy, nor can we give any opinion as to what particular circumstances may have favoured the growth of the parasite. Our figure represents a diseased Grape of the natural size, to the right of which is a single perithecium

slightly magnified. The left hand figure represents a portion of the cuticle as seen from beneath, traversed by strong mycelium. The central figure at the base illustrates the mode in which the cellulo-fibrous hymenium, with its spores and sporophores, springs from the walls of the perithecium; while the upper central figure gives the more usual forms of the spores. In one of these there is a distinct nucleus, while in another the endochrome is retracted at either extremity. The three last are more or less highly magnified. *M. J. B.*

We read in the *Times* that after the late lamentable fire at Gateshead, Mr. Sampson Langdale, of Newcastle, agent to Ashton and Co., manure merchants and manufacturers, of London, produced an account of goods belonging to that firm in the warehouse at the time of the explosion. "They had 56 tons of ammoniacal charcoal, 10 tons of peat ash, *seventy-one tons of ochre*, and 200 empty bags. The charcoal had been used in London by the gas companies to purify their gas, and, in consequence of the ammonia it contained, became valuable for agricultural purposes. The charcoal mixed with sulphur and nitrate of soda, in his opinion, by the heat of the fire, would form an inflammable compound." May we enquire what sort of compound yellow ochre is likely to form in the warehouse of a manure merchant and manufacturer. If yellow ochre has any value as a manure it is a new discovery, with the exact nature of which we should be thankful to be made acquainted. The presence of more than seventy tons in the warehouse of one manufacturer indicates a very large consumption.

VEGETABLE PATHOLOGY.—No. XLII.

186. The greater portion, then, of the substance of plants is composed of carbon, hydrogen, oxygen, and nitrogen, with small proportions of sulphates and phosphates, to which are added in particular instances or in still smaller proportions other elements. These therefore must be present in the soil, conveyed to it or at least to the absorbing organs of the plant, or the plant cannot flourish, and either death or disease must ensue. If, however, phosphates and sulphates be present, the air is capable of supplying carbonic acid and nitrogen, though it does not follow as a necessary consequence, that the whole of the carbon and nitrogen which are appropriated by plants during the process of growth are derived from the air.

187. The nutriment of plants is imbibed mainly and under normal conditions by the spongelets, which consist of delicate tissue, and must therefore be dissolved in water, in order to its transmission from cell to cell. Now, though it is true that the atmosphere is capable of supplying the necessary quantities of carbon, in the form of carbonic acid and nitrogen, it is certain also that large quantities of both are generated by the decaying vegetable matters contained in the soil and by the animal manure conveyed to it; besides which both are brought from a distance by water rising from beneath, either from the decomposition of primitive rocks, or from organic matter which it has percolated and dissolved in the course of its passage. It seems, then, far wiser to admit that vegetables derive their nutriment from either source, than to restrict it to one, denying that the principal office of manure is to supply a greater abundance of necessary elements; while it is asserted on the contrary that its object is rather to collect and store up, as in a sponge, elements brought by the rain, which would otherwise pass through the soil as through a sieve. The quantity of carbonic acid contained in the pores is in general in direct proportion to the time which has elapsed since the manure was applied, and an immense quantity of nitrogen in the shape of ammonia is introduced by the same means.

188. That the whole nutriment of plants is not derived from the air is evident from the great difference of fertility of Cocoa Nuts under apparently similar circumstances, the produce in the one case being fifty-fold or more than in the other. Both are nourished by water, the sandy soil itself containing nothing soluble. In the one case, however, the subjacent water contains evidently more nutritive matter than the other, whereas both would be equally rich, supposing the quantity of rain to be the same, were the necessary elements derived from the air only. In those cases where crops grow uninterruptedly without any fresh manure, the soil either abounds in phosphates, as in many of the Hop-grounds about Maidstone, where it is needless to add more to the soil than the old bines, or it abounds in ulmates and humates in such a condition that they are capable of affording, year after year, sometimes for more than a century, the necessary supplies. In some forms which are insoluble in water and alcalies, as in peat, the soil without some artificial addition is incapable of supplying the wants of vegetation, and therefore remains sterile.

189. Ordinary soil, besides ulmin and humin, yields several allied matters which are readily soluble, as cienic acid, apocienic acid, geic acid, humic acid, and ulmic acid, and the more these abound in general the soil is more fertile, provided it contain the necessary phosphates and sulphates. Ulmic acid $C_{40} H_{14} O_{12}$ arises from the decay of vegetable matter, and absorbs oxygen from the atmosphere and becomes (humic acid $C_{40} H_{12} O_{12}) + {}_{2}H O$, which by the addition of still more oxygen becomes geic acid $C_{40} H_{12} O_{14}$. All of these combine with water, or water and ammonia, and therefore by their gradual decomposition supply carbonic acid and nitrogen, which are the grand essential for vegetable nutriment. The ulmin and humin, in consequence of the fermentation which is always going on in the soil, are gradually changed into ulmic and humic acid, and so become available. If they were too rapidly soluble, the solution would be too strong for the purposes of vegetation; and partly from this cause, and partly from the presence of a ferment in the shape of decomposing albumen or fibrine, or at least in a condition ready to undergo further change, the decay of one cell is rapidly communicated to another, ending in general decay, provided the supply of moisture, as in succulent fruit, is sufficient to keep up a rapid chemical action. *M. J. B.*

THE TIME WHEN PEARS SHOULD BE GATHERED. By M. De Jonghe, of Brussels.

Formerly, when the varieties of Pears in cultivation were comparatively few, there was little difficulty in knowing the time when each sort ought to be gathered; but now, when the number of good varieties is so much increased, the proper time for gathering the respective sorts cannot be known without a certain experience acquired during a period of from three to five years, in order that a mean may be obtained. For the maturity of the fruit on the tree depends:—

1. On the individual constitution of the tree, and its liability to change.
2. On the soil in which the tree is planted.
3. On the influence of the stock.
4. On the temperature of the season, whether more or less favourable for accelerating the maturity of the fruit.

In order to know exactly the mean period of maturity on the tree of any particular variety of fruit, it is necessary to observe several trees of such variety, planted in different soils and situations. With regard to the varieties of Pears which ripen at the end of summer, or early in autumn, it is not difficult to fix the date when they should be gathered; for, in the same situation, this, in different years, does not vary more than 10 days.

The influence of soil, of stocks, and of a temperature more or less warm and dry, is not so great on early fruits as on the late autumn, winter, and spring varieties. With regard to the summer and early autumn kinds, they cannot always be left to ripen completely on the tree, grown as a pyramid or standard; and it is needless to add that these sorts of fruits do not, in our climate, merit a wall, where, in fact they are never so good as in the open ground. When a considerable number of fruits is observed to have reached the point of maturity, and when, with a slight pressure of the thumb, the stalk is readily detached, without twisting, at its junction with the spur, a portion of the fruit should then be gathered, and allowed to acquire their full maturity in the fruit-room. This first gathering will ease the tree, and the whole of the nutritive sap

will be directed towards the remaining fruits, which, in consequence, become much finer; and these are gathered in the same manner, and successionally. The operation of successional gathering, called, in French gardening terms, *l'entrecueillement*, may be very advantageously followed up, because all the fruits on a tree never ripen simultaneously; and that they may acquire full perfection, it is important that they should be left on the tree to attain the necessary degree of maturity, known to the practised eye by certain signs, which it would be difficult to point out without entering into tedious details.

With regard to the late autumn, winter, and spring Pears, the same proceeding is adopted; it is only by successional gathering, *l'entrecueillement*, that we can hit upon the proper time, and know the happy medium between gathering too early or too late. The gathering of these fruits, in season as above mentioned, commences about the middle of September, and continues till the end of October, or till just before the fall of the leaves.

When some fruits, neither bruised nor pierced by insects, of a late variety of Pear begin to drop, although not affected by strong winds, nor by the continued drought which we sometimes experience in our climate towards the end of September; and when the leaves begin to turn yellow and fall from the tree, an attentive and experienced person will perceive that the period of gathering is close at hand. Whatever may be the influence of the phases of the moon with regard to the period of gathering, I have observed, for more than 20 years, that a great number of varieties gathered two or three days before the full moon in September, kept exceedingly well, without specking, in the fruit-room, where they acquired the full degree of perfection which the sorts respectively possess; whereas by leaving all the fruit on the tree, without having recourse to successional gathering, I have seen a great portion of it drop successively during the last quarter of the moon; and moreover the fruits, whether fallen or gathered late, did not keep well in the fruit-room, nor did they acquire their full flavour. I ought here to remark that these observations have been made with regard to trees grafted on Pear stocks, and cultivated in the open ground, in a light deep soil, but very rich with vegetable humus down to the subsoil, in consequence of frequently turning down the surface.

As above stated, the period of the maturity of the fruit on the tree, and likewise in the fruit-room, depends in a great measure on the soil in which the tree is planted; and the most delicious qualities of certain varieties of Pears are owing to the peculiar nature of the soil. The lighter, warmer, and drier the soil, the sooner the flow of sap ends, and the earlier the fruit indicates the necessity of partial gathering. But in case of a stiff cold soil it is the reverse. The first variety of soil will be favourable to one kind of Pear, whilst the second would be unfavourable, and *vice versâ*. But these details belong to a monograph on the cultivation of the principal kinds of Pears; which, it is hoped, will be completed some of these days, and it will prove very useful to young and inexperienced cultivators. In proof of this, I may be permitted to give an example, and it is taken from amongst many others. The variety of Pear called Nouveau Poiteau of Van Mons, is unquestionably one of great vigour, very hardy, and productive. Worked on the Pear stock, and trained *en pyramide*, it bears fruit as large and as handsome as the Duchesse d'Angoulême, Beurré Clairgeau, and Marie Louise. Cultivated on the Pear stock, or on the Quince, in a free light soil, with a more substantial and somewhat gravelly subsoil, this variety bears fruit which is melting, sugary, vinous, and slightly aromatic; whereas, if the tree is cultivated in a stiff cold soil, the fruit possesses none of these qualities. It is to be observed that the mean period of the maturity of this fruit takes place between the 10th and 25th of November, but without any change of its colour (an opaque green), to announce that such is the case.

The soil, as previously stated, exercises a great influence on the quality of the fruit, but more decidedly on the long-keeping sorts than on the autumn kinds. When a tree has been planted under favourable circumstances, and has acquired sufficient strength—when it is not overloaded with too heavy a crop, and consequently the fruits are enabled to attain their natural size, and likewise the proper degree of maturity, on the tree—it will then only ripen in the fruit-room at the normal period assigned to the variety, whether it may have been gathered in the end of September or in October. In September, before the full moon in this month, if the tree is in a light, deep, warm soil; and in October if the soil is strong, compact, and cold. All these circumstances require to be taken into consideration in order to know when to gather the fruit, so that it may keep in the fruit-room till its usual proper time for use.

It cannot be denied, and all practical men agree, that the stock has great influence, not only as regards the period of gathering the fruit, but also with respect to that of its ripening in the fruit-room. I knew a cultivator who raised stocks for budding with summer and autumn fruits, others for winter and spring varieties. With regard to the summer and autumn kinds, the nature of the stock is of little importance; but when long-keeping sorts are worked on wild Pear stocks, which stocks, if allowed to fruit, would produce summer Pears, it is certain that the period of ripening of late Pears worked on these stocks would be affected. I have seen some seedlings, planted in proper soil, produce fruit of which the medium time of ripening on their own roots had been fixed between December and February; but when grafted on summer or early ripening wild Pears, the ripening of the above varieties, grown in similar soil, was accelerated more than a month. Such irregularities do not result from propagations on the Quince stocks, because these are identically reproduced from layers. The importance of avoiding the unsuitable union of winter and summer fruits will be readily admitted: that is, the grafting of late ripening varieties of Pear trees on early ripening wild Pear stocks.

I am aware it will be objected that the purchaser would not take precautions on this point into consideration; that he only sees to the young trees having been once or twice properly cut or pruned; and that a certain number of such and such varieties required for his plantation is obtained. I understand these objections, because they do in reality exist. However, there are some intelligent amateurs who wish to obtain good articles on which they can depend, and are willing to pay a good price for them as a just remuneration to the producer.

Warm and early seasons accelerate the maturity of the fruit on the tree, but not in the fruit-room. After a good summer and warm autumn, Pears keep better, are always longer in becoming fit for use than when the season is otherwise, especially as regards the late sorts. After the warm summers of 1834, 1838, 1841, 1844, 1848, and 1850, the Passe Colmar and Beurré d'Hardenpont [Glout Morceau], although gathered in the end of September, kept till the end of December and January; the Beurré Rance, from January till April and June.

In conclusion, from what has been stated, it results that the same kind of fruit cannot be gathered uniformly at the same date, owing to various circumstances which influence the ripening; that by successional gatherings, or at intervals, the proper time for different localities is best ascertained; and that, in general, all the varieties ought to be gathered before their perfect maturity, which should be attained in the fruit room.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

(*Continued from p. 662.*)

SECTION D: ZOOLOGY AND BOTANY.—Mr. WARINGTON read some further memoranda of observations made in small Aquaria, in which the balance between the animal and vegetable organisms was permanently maintained. The first series of memoranda related to experiments made in a fresh-water aquarium. As an evidence of the permanency of the balance capable of being established between the animal and vegetable organisms by the introduction of the water-snail or other phytophagous Mollusca, he stated that the same water in which his original experiments were made in March, 1849, has been in constant use up to the present time, several fish living constantly in it without disturbance, and that it is now as bright and in as healthy a state as at the first period of its being employed. Again, in a small jar of about a pint capacity, having a single plant of Vallisneria spiralis growing healthily in it, and with a few small water-snails as scavengers, he had succeeded in hatching and rearing a young trout. When the fish was able to swim strongly it was transferred to a small aquarium, containing several minnows, when, to his great annoyance, it was immediately seized and devoured. Care should be taken in the aquarium for fresh water to exclude the corum, or fresh water polype (Hydra fusca), particularly where certain species of fish are to be preserved, as the minnow (Leuciscus phoxinus); for these creatures, insignificant as they appear, after a short time cause their death, and that under most extraordinary circumstances. His own impression as to the mode in which this destruction of life was brought about was that the hydras, whenever their extended tentacula were touched by the swimming fish, seized on them, stinging them, and thus causing a great degree of irritation. The polypes also were torn from their position by the greater strength of the fish and carried to their places of retreat, where, in consequence, the mischief was continually accumulating. The next series of memoranda had reference to the author's observations made in sea water aquaria, and were in continuation of those read at the meeting of the Section on Thursday last. He had had progressing very successfully for some time past an experiment with a view to preserving sea water in a perfectly transparent and healthy state without the use of vegetation of any kind, or in some cases even without the use of a scavenging mollusc. The manner in which sea water under such circumstances might be kept in a healthy state was by exposing a very extended surface of it to the action of the air, and at the same time limiting its depth. He described the arrangement which he had adopted for upwards of twelve months. By that arrangement a very extensive surface of water was submitted to the oxydising influence of the air, and the fish and crabs, by their continual movements, cause sufficient motion in the fluid to expose a fresh surface to its action, and thus keep up its aeration. But it must be borne in mind that the oxygenation of the water thus effected was a very delicate equilibrium, and the maintaining a healthy aeration was liable to be disturbed by very slight interfering causes; nor did he conceive that this method would be applicable, except to such marine denizens as are either of such low organisation as to require but little aeration of the water, or to such as the crab tribe and those creatures which delight in being in shallow water, or have the power of climbing out of their liquid element. The form of the aquarium which he had now, after upwards of five years' experience and observation of the natural habits of the various animated tenants, adopted, consisted in a four-sided vessel, having the back gradually sloping upwards from the bottom, at an angle of 45° to 50°, and the consequently widened top sloping slightly downwards, and resting on the upper part of the back. The bottom therefore became necessarily narrow. The front, for the purpose of observation, and the top for the admission of light, were to be of glass, the back, ends, and bottom being constructed of slate; the whole fixed in a stout framework. The sloping back was covered with light rockwork, extending to a short distance above the water line.—Mr. Patterson described a plan of creating Aquavivaria adopted by Dr. Ball, of Dublin, which had been perfectly successful. It consisted of a blowing apparatus, by which air was introduced by gutta-percha tubes into the bottom of the tank, by means of a common pair of bellows.

THE MIRBELIA.

Most of the species of this genus are of a nice compact habit of growth, forming handsome specimens, and their pretty little flowers are produced very freely; hence they are well worthy of a place in the most select collections. Some of them are, however, rather difficult subjects to manage; but if proper care is exercised from the first, so as to avoid letting them get into a sickly state, they will be found to grow freely enough. Short jointed bits of the young wood selected in a rather firm state, and treated in the ordinary manner, root with tolerable certainty, and young plants are readily obtained from seeds. But well-propagated plants may be obtained for a trifle, and it is hardly worth while for beginners to attempt their propagation, which requires some time and careful attention if good young plants are to be produced. I will suppose that young plants are procured between now and March, and every care should be exercised to select healthy strong young samples with a bushy habit of growth, for future success will largely depend upon obtaining vigorous well-propagated plants.

About the beginning of March turn them carefully out of their pots, and if the balls are found to be well covered with healthy roots, shift into pots a convenient size larger, placing them after repotting near the glass in the warmest end of the greenhouse, or in a pit which can be kept rather close. Sprinkle the plants over head on the afternoons of bright days, shutting up with a temperature by sun heat of 55° or 60°, and endeavour to maintain a nice moist growing atmosphere, giving air freely on mild days, but guard against cold cutting winds. Also avoid as much as possible the use of fire heat, and endeavour to coax the plants into early growth by carefully husbanding the sun's influences; for unless the temperature is proportioned to the amount of light they will break thinly, and make weakly growth. Indeed, the temperature should never exceed 45° by means of fire heat, and this should be accompanied by plenty of moisture. The shoots, if there are several to a plant, should be nicely tied out after potting, in order to prevent the flow of the sap to the uppermost buds, and induce them to break close and regularly. Very little water will be needed at the root for some time after shifting, and this must be administered very carefully at all times, as the plants are very impatient of stagnant moisture at the root, and soon suffer from any neglect in this respect; but while in free growth they must not be allowed to suffer from the opposite extreme.

As soon as the weather becomes mild, remove the plants to a cold frame, which will form the best and most convenient situation for them in summer. Here they should be afforded a free circulation of air on favourable occasions, and a slight shade against bright sunshine, keeping the atmosphere as moist as can conveniently be done. Sprinkle the plants over head early on the afternoons of fine days, and shut the lights down for the evening, but give air before retiring for the night, and after about the middle of July the lights may be thrown off at night when there is no danger of rain. As they advance in growth attend carefully to regulating the shoots, pinching out the point of any one that may incline to take a decided lead of the others, and keeping them nicely tied out. If all goes on well a second shift will probably be necessary towards the middle of June, and this should be given as soon as it may be wanted, in order to get the plants pretty well rooted into the fresh soil before winter. When the weather becomes cloudy and damp in autumn discontinue the use of the syringe and shading, and keep the plants rather dry and airy, in order to get the wood well ripened, and remove them to their winter quarters, which should be a light airy part of the greenhouse, before there is any danger of their suffering from damp or cold. In winter, and while in a dormant state, keep them rather dry at root, and guard them from cold winds, but give plenty of air on mild days. To obtain specimens of any size it will be necessary to afford them another season's growth, and in this case the shoots should be cut back as much as may appear requisite to ensure a close bushy habit of growth, and the plants placed in growing circumstances early in spring, treating them during the season as already recommended. But if the plants are to be allowed to bloom, they should be left in the greenhouse until the flowers open, and may then be removed to a cool airy part of the conservatory, carefully shading them from bright sunshine, to prolong the beauty of the flowers. After flowering, cut the shoots back to keep the specimens compact and bushy, and place them where they can be afforded a cool moist atmosphere until the buds start into growth; then give a moderate shift if

necessary, and treat them during the growing season as nearly as possible as recommended for young plants; for free growth need hardly be expected without the assistance of a moist, rather close atmosphere.

For soil, use the very best fibry peat that can be obtained, breaking it up into small lumpy bits, and adding a liberal proportion of sharp silver sand, with a small quantity of lumpy bits of charcoal or clean potsherds. Well intermix the whole together, so as to provide for the free percolation of water through the ball after the decay of the fibre; and in potting care should be used to provide perfect drainage. *Alpha.*

Home Correspondence.

Profits of Pear growing.—If your correspondent, S. B., of Bromley, had taken the trouble to examine your weekly report of Covent Garden Market, he would not have fallen into the serious error he has, in estimating the profits of "Pear growing." He would then have seen that the growers, in a general way, sell their fruit by measure, and not by so much each, as he calculates on. Now, having supplied the metropolitan markets during the present season with something like a hundred sieves or more, I feel constrained to say, that as a remunerative crop Pears are much inferior to small fruits, and I would feel greatly obliged by any instructions that might be given by any one, which would be the means of making my trees more fruitful. Of the present season I cannot complain, neither was last year a bad one, but there have been seasons in which I have not had more than a tithe of the fruit I have this year, and from the same trees too. Observe, I ask for instructions of an economical kind, and not any expensive system of pruning, or covering up at nights while in blossom; I do not want to be put to an expense of 4*s.* for a sieve of fruit which I may be obliged to sell for 3*s.* 6*d.*, for I would rather endure the character of "a bad manager," which I see rather too freely applied to us fruit-growers, than incur an outlay beyond the worth of the article produced. At the same time, I am open to conviction on many points, but I really cannot see anything in your reports of M. de Jonghe's practice that is likely to be available to us. I have been a fruit-grower long, and have tried various experiments, but few of them have withstood the test of practice, although I confess now and then to have rode my hobby very hard, and done all that could be done to make it succeed. Some 30 years ago, or nearly, there was a proposal before the world for making Pears more prolific by grafting them in a reverse way, and some well shaped wall trees were rendered ludicrous objects by the system; afterwards we were told to try miniature orchards, *i.e.*, trees cut away into the most minute forms; subsequently we had all manner of fantastic training urged upon us, and some 10 years ago some one claimed credit for advising "root pruning" as an antidote to barrenness, until others attempted to show that the system was as old as the hills; while a few years ago, pruning in a conical form was recommended by one of our first authorities in fruit culture. Now having given all the plans a trial (and that not in a small way) and many others, I have come to the conclusion that the failures we have in Pears, arise in most cases from causes over which we have no control; and that although we may, by judicious management, now and then successfully oppose these causes, yet by far the greater part is insurmountable; and to be taunted with being unable to compete with our Belgian or Channel Island neighbours, in the quality of our fruit, is nearly as idle as to be upbraided by the Chinaman for not growing tea as well in England as is done in the Celestial empire. The two cases differ only in degree; but I have already said enough, and will be obliged by "S. B.," or any other person, pointing out a way whereby I may, with something like a certainty, look for 10 sieves of fruit next year from a tree which has produced me eight this, and that at a cost not to exceed the value of the two extra sieves. This is the way in which we fruit-growers, who pay heavy rents for our ground, &c., are compelled to look at these matters; and any other mode must be useless, at least as far as the million is concerned. *H. T. H., Staplehurst.* [There is no doubt about that.]

Eyebright.—Having a field overrun with red Eyebright (Odontites rubra), perhaps some of your correspondents will kindly inform me how to get rid of it. *Subscriber.*

Mosquitoes and worse Insects.—Still unable to find my authority for the "sawdust of Juniper wood," the Artemisia, recommended by Dr. Hooker, and the Rue, by another correspondent, have frequently occurred to me as remedies for another pest still more complained of by travellers. It is an old saying that neither fleas nor bugs will bite where there is a sprig of Wormwood or Rue in the bed: and, although these herbs may not be procurable when most wanted, they both furnish a powerful essential oil, of which a half pint (or smaller) bottle, wrapped round with a yard or so of folded muslin, and packed in a tin box, might form a part of the traveller's equipage. Opening this box, putting a few drops of the oil in the muslin, and squeezing it well to diffuse the oil all through it, and spreading this cloth between the sheets an hour before going into bed, the insects might be effectually quieted, if not expelled, so long as the odour remains, which would be the whole night. The same cloth would serve repeatedly, and form a safe package for the bottle. But another essential oil, having an odour like Juniper mixed with Wormwood, but more powerful—that of turpentine, may be obtained almost wherever paint is used, is very cheap, and known to be extremely repugnant to bugs, and therefore, probably, to fleas. This may be used in the same manner, and may procure the traveller a good night's rest, when he would otherwise be driven from his couch. *J. Prideaux.*

Sulphur evaporated from Hot Pipes, or Flues versus *Mildew.*—I am glad to find that your correspondent "D. S." of Woodbridge, has succeeded in securing an excellent crop of Grapes free from mildew by the above method, which was pointed out by me in your volume for 1853. Additional proof of the value of the plan has come under my notice during the present season, and I am happy to say that in no instance has it failed, although in some cases the Vines have been dreadfully affected, as, for example, in a Vinery belonging to J. Freeman, Esq., Gaines, near Worcester; this was certainly the worst affected house I have ever witnessed, and to all appearance impossible to cure. The foliage was entirely covered with mildew, and the young wood also, while the berries would fall off with the slightest shake of the bunch. A cure was, however, attempted by myself and the gardener, Mr. Hall, and in the course of four succeeding operations the mildew entirely disappeared; and on a recent visit to the place, I confess I was surprised to see the excellent condition into which the Vines had got; with the exception of a few marks left on berries of the Muscat and white Nice, no one could possibly detect the slightest trace of mildew; the luxuriance of the foliage and the weight of the bunches, which I was informed by Mr. Hall exceeded 6 lb., all indicated the Vines to be in first-rate health. A late Vinery at the same place was likewise very badly affected, but it was also entirely cured by the same process. I am now fully convinced that the best remedy for mildew is sulphur mixed with water applied to the flues or pipes by means of a brush, when they are sufficiently hot to vitalise it. This is not only a cure for but also a preventive both of mildew and red spider. The pipes or flues should be dressed over with the mixture every fortnight during the forcing season, and to late Vineries fires should occasionally also be lighted for the same purpose. *E. Bennett, Perdiswell Hall, Worcester.*

Barking Oak Trees.—I sell a few tons of bark generally every year, and it has been always my custom to fell the trees and then bark them. Last spring, however, I left one or two standing, as it appeared to me that there was good reason for trying the experiment. I apprehend that when we commence barking the trees are full of sap; whereas, if the trees are felled in the winter, they are free from sap, and therefore, I conceive, better able to resist moisture. No one thinks of felling Elm timber so late in the season as the time of barking. An Elm, if cut late in the spring, and after it has been lopped of its branches and hauled to the wood-yard, will, as summer advances, throw out buds and leaves all over its trunk. It must therefore be saturated with sappy juice, and, to say the least, would require much longer time to get dry and well seasoned than timber felled in a state of wintry lifelessness, drained of all its vegetable moisture. If it is right to fell Oaks at barking time, it would seem to follow that all other deciduous trees should be felled at the same time. Now as the Oak felled under the most disadvantageous circumstances will nevertheless last as timber longer than is convenient for making experiments, I would suggest that a tree more prone to decay should be selected—for instance the Elm—for instituting comparisons. Let two Elms of equal size and vigour be selected; fell one of them at Christmas and the other in June; cut them into planks or posts, and take note which timber lasts the longest—that thrown in winter or in summer. I would, however, ask you whether you think it possible the sap of the Oak contains some conservative ingredient antagonistic to decay? I should suppose not, but I am at a loss otherwise to conceive why the practice of felling Oaks in spring should be defended, and that of felling Elms in winter scrupulously adhered to. There is no doubt that it is an additional expense and trouble to bark trees whilst standing. *E.* [On former occasions we have pointed out the inferior quality imparted to Oak timber, in consequence of the practice of spring-felling. The latter has, no doubt, arisen in consequence of the value of Oak-bark; to save the bark the timber is injured.] ——At your request, I venture to give the plan we have adopted for upwards of forty years in the management of Oak timber and its bark. We cut down and peel all the smaller trees at once, leaving them on the spot until the winter following—this prevents cracking. The large timber we prefer working upon standing, allowing some branches to remain on for the leaves to push out again; this plan hardens the wood and gets rid of the sap, being convinced from long experience that it is of advantage to the timber to be winter cut, when deprived of its juices; using this caution, that, should the tree die in the summer from such treatment, it must not be neglected the following winter; for, if left standing dead, the capillary attraction is so strong from the wet ground underneath as to cause rapid decay and induce dry-rot hereafter. This I named in a former communication upon the treatment of Larch timber. The low price of bark has, of late years, made it necessary to economise to the utmost its preparation, more particularly in a part of the country where wages are comparatively high, and from the non-employment of women, who cannot be had, work averages still higher in competition with other localities. I have found great difficulty in confining the men to peel the boles alone; in small wood such branches, from the thinness of the bark, will not pay taking off. We always make parks, as we call them, constructed from the smaller straight poles, kept up from the ground by forked boughs, the bark first laid crossways thereon, and thatched over with the largest selected flakes taken off. *C. P., of York.*

Societies.

Horticultural, *Oct.* 17.—The following subjects of exhibition received prizes, although no meeting was held. A very beautiful set of Orchids from Mr. Carson, gr. to W. F. G. Farmer, Esq., had a Large Silver Medal awarded them. They consisted of Calanthe masuca, the Blue Vanda (V. cærulea) with a magnificent spike of lovely blossoms; an admirable specimen of the best variety of Odontoglossum grande; Miltonia candida, equally well grown and flowered; the purple M. Moreli; Cattleya bicolor, a beautiful species, more especially when its colours are well brought out, as in this instance; Rodriguezia coccinea, a rather better variety than secunda; and an example of the larger flowered variety of the charming Epidendrum vitellinum. Mr. Burn, gr. to the Marquis of Aylesbury, received a Banksian Medal for the following Pine Apples, viz., two Providence weighing respectively 9 lb. 10 oz. and 8 lb. 13 oz.; a Cayenne weighing 4 lb. 5 oz.; and a Montserrat weighing 4 lbs. 12 oz. A similar award was made to Mr. Black, market gardener, Turnmoss, Stretford, near Manchester, for six Montserrat Pines, all handsome specimens, and beautifully ripened. They weighed respectively 4 lb. 6 oz., 4 lb. 5 oz., 4 lb. 4 oz., 4 lb. 3 oz., 4 lb., and 3 lb. 15 oz. The same grower also furnished six very good bunches of Muscat Grapes, which, however, did not appear to be ripe.

Entomological, *October* 2.—The President in the chair. Donations were announced from the Royal Society, the Society of Arts, the Royal Society of Belgium, the Natural History Society of Lyons, Messrs. Guerin-Meneville, Perroud, Bach, Koch, Zuchhold, &c. Mr. F. Smith presented a series of specimens illustrating six different species of British ants. Mr. Walkeys sent a specimen of a Larch twig, showing the gnawings of wasps, which had evidently used the particles in the construction of their nests. Mr. Samuel Stevens exhibited specimens of the very rare Goniodoma auroguttella, one of the most beautiful species of Tineidæ, captured in the Isle of Wight; also a fine variety of Apatura Iris, taken near Rochester; an hermaphrodite Theela Quercus, captured by Mr. Weaver in Scotland; and specimens of a new species of Scolytus which attacks Birch trees in Scotland, larger and distinct from the Elm-destroying species. Specimens of various rare lepidoptera, captured by Mr. Foxcroft in Scotland, were also exhibited. Mr. Douglas exhibited a new British species of Crambus, hitherto known only as a native of Italy; also a new Nepticula, reared in Scotland, by Mr. Weaver, from the Vaccinium Vitis idea; and a specimen of the rare beetle, Dictyopterus minutus, taken at Haddington in the middle of September. Mr. Stainton exhibited a number of leaves of the Oak, Rose, Buckthorn, Whitethorn, &c., infested with the larvæ of various species of Nepticula, likewise leaves of Hawthorn, with the mining larvæ of a minute weevil, Ramphus pulicarius. Mr. Westwood gave a short notice of some jumping seeds forwarded to him by Sir W. J. Hooker, which had been received from Mexico, the motions of which were caused by larvæ inclosed within the seeds. The Secretary read a notice relative to the introduction and successful rearing of the Indian Eria silk-worm into Malta; and also a translation of a memoir by Professor Zeller, on the curious habits of the Grapholitha corollana, a small moth, which might be expected to be found in this country now that its habits were known. Mr. Stainton also read a memoir on the habits of the larvæ of the genus Elachista, belonging to the mining Tineidæ, including a notice of a memoir by Mons. Riville, on a singular species found upon the Vine, agreeing in its habits with one found by Mr. Stainton on the Dogwood.

Reviews.

Duncan's History of Russia (2 vols. 8vo. Ingram) is well timed, and deserves an extensive circulation. It consists in part of a translation from the Russian of Rabbe, and in part of original matter by the author. Just now, when all the world is wondering how the Russian empire ever arrived at its monstrous size without acquiring strength in any proportion to its vastness, the details in Mr. Duncan's work are peculiarly interesting; perhaps the thoughtful reader will arise from its perusal with a belief that the catastrophe which now seems impending is the judgment of God upon what was certainly the most atrocious of all governments, until the advent of the present sovereign and his predecessor introduced a better order of things. We cannot notice at greater length a work so foreign to our columns; except to extract the following account of the Russian circulating medium, which is, we dare say, as new to our readers as it was to us:—

"For want of gold and silver money, not yet known to the Russians, they employed other representative signs. The first was the skin of the marten (*kouna*), which was not the sable of Siberia, that country not being yet discovered. There were 20 kounas, or skins of martens, in the grifna. The vekokhe, another kind of money, was made out of the skin of squirrels; there were 20 of these to each kouna, or skin of a marten. It seems also that four rezans made one vekokhe. This word is derived from *rezat*, "to cut,"

and appears to be the fourth part of a skin. Ears and half-ears served for petty cash. The fourth part of a copeck, the Russian halfpenny, is still called polouchko, or half-ear. They also use the lobki, which was skin from the forehead of a squirrel ; and the mordki, which was taken from the nose of the marten. The inconveniences of this kind of money, which depreciated through wear and tear in circulation, so as in time to lose all its value, compelled the Russians to replace it, towards the end of the 14th century, by pieces of leather stamped with a certain sign. However, the most interesting remark to be made on this practice, apparently so singular, is, that it was derived from the nature of then existing property, which, among all peoples, has at their origin formed the principal and indeed sole source of wealth, that is to say, flocks and herds. Southern nations used domestic living animals as instruments of exchange ; the northern nations, skins and wild beasts."

If newspapers are to be believed, the age of symbolic money in Russia is about to return.

Praktische Studien, &c. [*Practical Studies of the Family of Orchids, &c.*] By J. G. Beer. Vienna, Gerold. 8vo., pp. 332.

Mr. Beer seems to be one of those lovers of orchids, or orchidophilists as some one calls them, who are now appearing among the wealthy Germans, and who bid fair to render the cultivation of those curious plants as universal on the continent as among ourselves. The object of the writer is to point out such circumstances in the habits of the race as his experience teaches him to be important, to explain their peculiarities genus by genus, and to offer a horticultural classification of the whole of them in gardens. The result is a very handsome volume, which we have no doubt will be found acceptable to the author's countrymen. The work does not pretend to be one of science, and we therefore do not feel called upon to criticise it in that point of view ; but we may say that even the systematical writer may gather information regarding foreign synonyms from the pages of Mr. Beer. At the end of the work is a catalogue of the species described in it, among which we find many that are not cultivated in this country, as far as we have seen.

New Plants.

95. Whitlavia grandiflora. *Harvey in the London Journal of Botany, vol. v. t.* 11. *Bot. Mag., t.* 4813.

A specimen of this fine plant was exhibited last summer at Chiswick by Messrs. Veitch, and it is certainly the gem of the season in the class of hardy annuals. It will no

doubt be as hardy as a Phacelia or Eutoca, the latter of which it resembles in its foliage, but then its brilliant blue flowers are as large as those of a Campanula, and much finer than anything else of the kind. Mr. W. Lobb found it in California on the mountains of S. Barnardino ; but it was originally discovered in that country by the late Dr. Coulter. Dr. Harvey, who first described the plant, naming it after Francis Whitla, Esq., distinguished two supposed species, *grandiflora* and *minor* ; but we entertain no doubt that they are, we do not say varieties, but states of the same plant. We had both of them in flower on our table from Messrs. Veitch, at the same time. The fact seems to be that the plant when in great health is *grandiflora*, and when weak, from a shady place, is *minor*. Dr. Harvey thought they might differ in the form of the scales which stand at the base of the stamens ; but we found those scales varying in form from being acutely bifid to being entire and wedge-shaped with the angles rounded off.

96. Diotostemon Hookeri, *Salm-Dyck in Allgem. Gart. Zeit. Aug.* 26, 1854.

A plant sent to the Prince of Salm-Dyck some years since, and said to constitute a new genus near Echeveria (and Pachyphytum, which is also an Echeveria). Its chief peculiarity seems to consist in the presence of a pair of ear-like appendages upon the filaments. It is described as a succulent shrub, from Mexico, with dense semi-cylindrical hoary or frosted leaves, and one-sided racemes of long-stalked, yellowish-red stalked flowers.

Garden Memoranda.

Messrs. Henderson's Nursery, Pine-apple Place, Edgeware Road.—The most conspicuous objects in the show-house at present are examples of Salvia splendens, which when well managed is nearly as brilliant and useful on the greenhouse stage in winter as Scarlet Geraniums are in the parterre in summer. They were intermixed with plants of Salvia cœrulea, whose bright blue blossoms form a good contrast with those of the scarlet kind. White and Blue Ageratums were also in flower here, as were likewise a few Heaths and Pelargoniums. These must, however, soon give place to Chrysanthemums, the smaller flowered kinds of which are now coming fast into blossom.

In what is called the span-roofed New Holland House was a very fine specimen of a Veronica named hybrida, a continental kind with handsome spikes of purple and white flowers, in the way of Andersoni, while the foliage is small, like that of Lindleyana. It is stated to be a rapid grower, and must certainly be acknowledged to be a fine variety. Of other plants we remarked here several little bushes of Beaufortia purpurea, each shoot of which terminated in a globular head of brilliant purplish red blossoms, which render this seldom-seen plant well deserving of far more attention than it has hitherto received. It lasts a very long time in flower, and is especially well suited for persons who have but limited house-room, as it blossoms freely in a very small state.

The heathery is at present filled with Chrysanthemums, which promise soon to be extremely gay. On the roof of this house Mandevillia suaveolens has grown and flowered beautifully this summer ; and a small plant of Lapageria rosea, against one of the end walls, is now producing two or three of its rich red bell-shaped blossoms. It appears to be a plant that will keep a long time in flower ; for no sooner do the first developed blooms begin to fade than others open, and supply the deficiency : as yet, however, enough of them has not been expanded at one time to render the plant very gay or striking at a distance.

In the specimen house, which contains many finely grown plants, the Java Rhododendron was in flower, as was also a standard Acacia called Oleafolia elegans. This naturally comes into blossom about this time, and, being of a drooping habit, looks well as a standard. It lasts long in flower. The most brilliant plant in this house, however, was Gardoquia Hookeri, in the form of a specimen measuring nearly 2 feet across and 18 inches in height, and literally studded with scarlet flowers. Indeed, we know of no greenhouse autumn-flowering plant more showy than this Gardoquia, which, under good management, may be had in blossom from July to Christmas. Croweas, in the shape of standards, were in flower here ; and, grown in this way, they form pretty objects placed on flat front shelves among smaller plants. The pale blue Pronaya salicifolia we also found in blossom ; it is a plant of neater growth than P. elegans, which was in flower in another house.

The plant, however, which will doubtless command most attention at the present time here is Nerine Fothergilli, several examples of which are now beautifully in blossom, its brilliant scarlet heads just appearing above the other plants with which they are associated. This is very much gayer than the Guernsey Lily, and, unlike that plant, it, *i.e.* the same bulbs, if well treated, will flower freely every year, and the older they are the finer they bloom ; so that the annual expense of purchasing bulbs, as in the case of the Guernsey Lily, is saved. As regards treatment, when they have done flowering, they should be encouraged to grow and perfect their foliage ; as the latter decays, water should be gradually withheld until the leaves have completely died down, when the bulbs should be rested in a dry state all the summer ; next autumn they should be repotted and encouraged to grow again, and in this way this truly beautiful winter flowering plant may be had in blossom year after year with little or no trouble or expense, and with no more heat than that supplied by a common greenhouse, or even a cold pit or frame.

A new stove and intermediate house have been lately erected here. The latter has been found to be the most suitable place for such plants as Babingtonias, Croweas, Boronias, especially serrulata ; Gnaphalium eximium, Gardoquias, Chironias, Luculias, and the Java Rhododendron, as well as for bringing plants gradually on for forcing. In the stove a beautiful specimen of Lantana alba grandiflora was just coming into bloom, as was also the pink Hibiscus pedunculatus, and the white-blossomed Rhodostoma gardenioides. Ixora crocata was in full blossom, and a most useful plant it is at this season, as are also Siphocampylus coccineus, and S. glandulosus magnificus, Statice Holfordi and the Showy Æschynanth (Æ. speciosus). The first lot of Amaryllises has just been placed in this house to start them into growth. These are intended to flower about Christmas. Others to blossom later, will be introduced at intervals, so as to maintain a succession of flowers all the winter.

Out of doors Japan Lilies have, until last week or so, been beautifully in flower, as have also been Tritoma uvaria ; both are, however, now very much past their best. The pretty little Sikkim Rhododendron ciliatum is also standing out of doors in pots, well set with buds, which, if the plants be put into heat, will open beautifully by about Christmas ; and what, at that season, could possibly be gayer ? Though quite hardy, it well deserves a place under glass.

It is but right to add, that the Messrs. Henderson have recently devoted an excellent library, consisting of some 700 volumes, to the use of the men in their employment ; the books are permitted to be taken to their respective homes to be read,—a plan, we understand, which has given general satisfaction.

FLORICULTURE.

Cinerarias.—Plants received from the nursery, either last month or this, will be in good condition in 3 and 5-inch pots. They are wintered here in pits or frames well secured, so as to exclude frost. The glass is well covered with mats and straw, but no artificial heat is applied. Thus treated they are always strong and robust ; but many grow them in houses, and I think that for a month or so, about January, it would be of service to them to be in a cold house, or a pit heated with pipes, so as to ward off damp, while a long continuance of frost prevails, otherwise a pit is the best place for them, and they can be brought into the house at various seasons, so as to prolong their period of flowering ; indeed, by judicious management, they may be had in blossom from November till June. When wintered in pits they will require to be well watched, so as to give air every day to dry up damp. If this is not attended to the leaves will "fog off." At the present time, when they are growing rapidly, they should not have the lights taken off, except when the air is mild and not drying ; but let them be tilted on the side contrary to the direction in which the wind is blowing. If the lights are altogether removed their growth is retarded, as they dislike dry easterly winds as much as we do ; but a moist air will not harm them. A slight warm shower is always beneficial to them when the weather is such as to permit them to receive it. Never let them become pot-bound ; directly this is the case, green fly attacks them, the leaves get pale, and the plant starts for bloom prematurely. If grown in a house, they should never be allowed to have a cold dry air playing amongst the leaves ; they delight in moisture while they are in a growing state. When they have finished blooming, about an inch of the surface soil should be removed, and fresh material placed all round the plant, which should be kept in a shady part of the garden. Where a quantity is wanted, plant out in light soil, in some situation shaded from the mid-day sun ; or, if you possess only one plant, perhaps a choice seedling, and you wish to be more particular over it than usual, keep it in a pot in a frame, so that you can protect it from wet, when required. Those in pots must not receive much water ; indeed, directly the flower is going off, watering should be carefully performed, or the plants may die ; or the roots, from which your young stock is to be produced, are injured. Permit the stem to gradually die away, and remove the leaves as they wither off, cutting the flower away only. This applies more particularly to some varieties than to others, as many grow freely and produce plenty of stock without this extra care. Never keep old plants to bloom the following season, they seldom produce such fine flowers, and they are more subject to insects and diseases. Let your slips be quite small and young, cutting down into the earth where the stem is blanched ; these will strike root quickly. Place them round a pot prepared in the usual way, *i.e.* half crocks ; on these some siftings, to prevent the soil from running through the drainage, then the soil as used for the plants, except that it should be finer sifted and should have more sand mixed with it, and the surface should be white sand, in order to prevent the cutting from damping off ; place the pots under a common handlight or in a close frame, airing a little now and then, to dry up over abundant moisture ; after the first watering, when the cuttings are put in, leave them an hour or two to dry, and then little or no water is required till they are rooted (of course shading, &c., when requisite). Where a few plants only are required the old plant may be taken out of the pot, say in August, and the soil shaken away, dividing and keeping only the young fresh growths. There will be plenty of roots to many of them, and therefore all old roots may be cut away, and any that have not got roots can be put in as cuttings. With the treatment just mentioned you may cut off three or four crops of cuttings in the course of the autumn, and then have the bottoms for dividing. In potting off cuttings they should be kept close for a day or two ; then air should be given gradually, and finally, the lights should be thrown off every night. At this stage they will require particular attention ; mildew is likely to attack them, *i.e.* the early crops in August. As soon as you perceive it, sulphur freely the

parts affected. The insects they are subject to are green-fly and thrips. The former may be destroyed by means of tobacco-smoke and tobacco-water, and the latter by tobacco-smoke; but it must be repeated for two or three consecutive days, as the insect will otherwise recover, and be as lively as ever. When the month of August has been got over there is little to fear, for they will grow away rapidly after that. The lights should then be taken off at night, to lower the temperature and allow the plants to receive the heavy dews. Shade a little, with side air, in August from sun-heat, and indeed keep them as cool as possible. In raising seedlings you must select three or four good shaped and dwarf habited varieties, from which you will have all colours. Some object to dwarf kinds; but if a tall variety appears amongst my seedlings, I consider it a fault, as they are more apt to run back to their original varieties (shrubby), with long, straggling, flower-stalks. Seed, sown in pots or pans, comes up very freely in a few days; let the surface soil be very sandy, and only cover the seed just sufficiently to keep it from being washed off while watering; prick off from the seed-pans into store-pots. The soil I recommend is, four parts rotten dung (*i.e.*, decayed into mould) and five parts of loam; or, instead of five, say four maiden loam and one rich yellow loam. *S.*

Balsams: *W D.* All handsome blooms. The mottled ones are perhaps the most valuable.

Calendar of Operations.
(*For the ensuing week.*)

PLANT DEPARTMENT.

Conservatory, &c.—Now that the out-door display is very much faded, every effort should be made to render this and all the other plant-houses as attractive as possible. And, perhaps, nothing tends more to this than orderly arrangement and keeping everything perfectly clean, and if cleanliness and order are attended to they will do much to compensate for any deficiency of fine specimens in flower, and will render the houses very agreeable. Greenhouse.—All hard-wooded plants, whether here or in cold pits, should be afforded plenty of room, and if this cannot be accomplished with the present stock, some of the least valuable should be dispensed with; for depend upon it, that plants to afford pleasure in the present day must be well-grown specimens of their size, and this cannot possibly be the case under the crowding system; therefore let the specimens stand sufficiently thin to prevent their branches touching, and to allow of exposing all their parts fully to light and air. With the exception of any late-flowering things that may be making their growth, and which should be kept rather close and warm, the hard-wooded stock should be kept cool and airy, giving air freely on every favourable opportunity. Watering must be done with great care and judgment, especially in the case of large specimens of delicate rooted things, giving just sufficient from now until after the turn of the day, to keep the soil from getting unhealthily dry, and, with the exception of anything near the heating apparatus, frequent applications will not be necessary.

FORCING DEPARTMENT.

Pineries.—Now that cloudy weather is likely to prevail, the temperature for young growing stock should, in a great measure, be regulated by the state of the plants and the amount of light. For while robust stocky plants with a vigorous root action will bear to be kept growing freely for some time longer, those of an opposite character will, if kept in a warm temperature, make miserably weak growth. Endeavour to secure a steady bottom-heat of from 85° to 90° and to have the soil about the roots in a free healthy state, and in the right condition as to moisture, and there will be no danger of the roots being long in an unhealthy or inactive state. And if all is right at the roots, and the plants kept near the glass they may be encouraged to grow freely for some time longer without the least danger of their being injured. Use sufficient fire-heat on cloudy days to allow of admitting a little fresh air, and maintain a moist state of the atmosphere, but avoid getting the hearts of the plants saturated with condensed moisture, which is sometimes done where tanks are used, and is very injurious to the plants. The stock expected to show fruit shortly after Christmas should be carefully examined, marking the most likely ones, which should be allowed to get rather dry at the root, in order to effectually check their growth; for unless means are used to effect this, it will probably be difficult to get the plants to show fruit at the proper time: but there is still plenty of time for getting the growth matured, and only a small portion of the stock to insure a few early shows should be subjected to this treatment at present. Vineries.—Attend to former directions, and keep houses in which the fruit is ripe and expected to hang for any length of time, cool and dry. Get the borders covered with something to exclude the autumn rains before they get saturated with wet, which injures the roots, lowers the temperature, and spoils the mechanical texture of the soil; also prune the Vines where the wood is sufficiently ripe, and thoroughly clean the house, &c., when it may be used for storing Geraniums and such like lifted from the flower-garden beds, or for protecting anything that merely requires to be guarded from frost. Vines in pots should be pruned and dressed, if not already done, and placed in a cool dry house until they are wanted for forcing. Peaches.—If the wood in the late house is not ripe by this time a little fire-heat with air should be used, keeping the inside borders and atmosphere as dry as can be conveniently done. Where the wood is ripe, however, and the leaves falling off, keep the house cool, giving abundance of air at all times, and in fine weather the sashes may be removed altogether with advantage to the trees. See to replacing any worn-out trees, or such as from any other cause may be deemed unfit for their present places, selecting prime young trees from the open wall, which, if carefully removed and replanted, will carry a moderate crop next season with impunity if not forced too early.

FLOWER GARDEN AND SHRUBBERIES.

What with falling leaves and the tiresome diligence of the worms, much labour is necessary to keep lawns, &c., clean and neat at this season. There is, however, no help for it but a diligent use of the broom and roller. Continue to mow as frequently as may be necessary to keep the Grass short, for much time is lost in clearing up leaves when the Grass is allowed to get long; also keep the surface hard and smooth by frequent rollings with a heavy roller. This is a capital season for laying down turf and where levelling may be necessary, or any other alterations involving taking up and relaying any breadth of turf, this should be attended to as soon as possible, for besides that there will be no trouble with turf laid now in the event of dry weather setting in early next spring, such work can be done more economically now and with much more comfort to the workmen than after cold winterly weather sets in. Nothing adds more to the comfort of a garden in winter than hard dry walks, and where these incline to be soft and greasy, a thin sprinkling of clean, rather rough gravel, put on when the walks are wet and well rolled in, will be found to greatly improve them, and this at a very trifling cost. Keep the surface hard by frequent rollings, which will cause the water to run off to the edges, instead of draining through the gravel, as is the case when the surface is allowed to become soft and spongey. Continue to clear the beds of their summer occupants, as these become shabby, and replant them with spring flowering things. But where the soil wants renewing this should be done before putting in the spring flowering things, for it is generally a busy season when these are removed, and nothing should be left to be done then which can be done now. Plants which it may be desirable to lift and winter for use next season again, cannot be safely left out any longer, except where they can be covered in the event of a sharp frost occurring suddenly. And specimen Fuchsias, Geraniums, &c., should be got into safe quarters immediately frost is apprehended.

HARDY FRUIT AND KITCHEN GARDEN.

Examine the stock of fruit in the fruit room as frequently as circumstances will allow, and remove any infected with decay at once, and keep the room cool and dry. Where it is intended to plant any quantity of fruit trees this season the preparation of the ground, &c., should be proceeded with as expeditiously as possible while it is in good working order. And too much attention can hardly be bestowed on the preparation of ground intended to be planted with fruit trees. Be particularly careful to secure perfect drainage, for a well drained soil is essential to fruitfulness in all kinds of fruit trees, and it is worth while to secure this even at a considerable expense. Where the natural soil is not of a good quality for the kind of trees to be planted, this should be partly removed, replacing it with some good fresh turfy loam. Avoid the use of rich stimulating manures, which do more harm than good. Carrots, Parsnips, Beet, &c., should be lifted when the ground is in good order, and stored for winter use in a dry cool place; stack them in sand to preserve them from shrivelling, &c. Spring Broccoli that may be growing very rank should be laid down with the heads to the north, which will check the over-luxuriant growth, and afford a better chance of its standing a severe winter. In the event of sharp weather being apprehended, a quantity of the most forward Lettuce should be placed under glass, and Cauliflowers that are heading should also be removed to where they can be protected from frost.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending Oct. 19, 1854, as observed at the Horticultural Gardens.

Oct.	Moon's Age.	Barometer.		Temperature.					Wind.	Rain.
				Of the Air.			Of the Earth			
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Friday 13	21	30.419	30.338	60	34	47.0	54	55	N.	.00
Satur. 14	☾	30.291	30.211	56	44	50.0	54	55	W.	.06
Sunday 15	23	30.135	30.058	54	37	45.5	53	54½	S.W.	.16
Mon.. 16	24	30.028	29.671	56	28	42.0	53	54	N.E.	.00
Tues. 17	25	29.396	29.258	49	41	45.0	53	54	E.	.04
Wed. 18	26	29.419	29.227	50	31	40.5	51	53	N.	.03
Thurs. 19	27	29.786	29.469	51	40	45.5	50	53	W.	.61
Average.		29.924	29.747	53.7	38.4	45.1	52.6	54.1		.90

Oct. 13—Foggy; very fine; clear.
— 14—Foggy; hazy, with slight drizzle; fine at night.
— 15—Foggy and drizzly; cloudy; rain at night.
— 16—Clear and fine; very fine; overcast; frosty.
— 17—Foggy; rain; overcast.
— 18—Slight rain with cold north wind; overcast; boisterous.
— 19—Fine; very heavy rain at night.

Mean temperature of the week, 4½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending Oct. 28, 1854.

Oct.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 22	58.3	44.7	51.5	18	0.66 in.	1	—	4	1	6	10	4	2
Mon. 23	57.7	41.2	49.5	17	0.56	3	1	—	3	4	9	7	1
Tues. 24	56.0	40.3	48.2	14	[illegible]	2	2	1	—	8	9	4	2
Wed. 25	55.4	38.4	46.9	13	0.7[illegible]	4	2	4	3	4	4	4	3
Thurs. 26	54.7	38.1	46.4	11	0.52	5	3	2	1	6	6	3	2
Friday 27	54.7	40.4	47.6	22	0.92	3	4	2	—	5	3	7	4
Satur. 28	54.0	37.5	45.7	15	1.06	—	5	2	—	5	8	3	5

The highest temperature during the above period occurred on the 22d, 1830—therm. 69 deg.; and the lowest on the 26th, 1850, and 28th, 1836—therm. 23 deg.

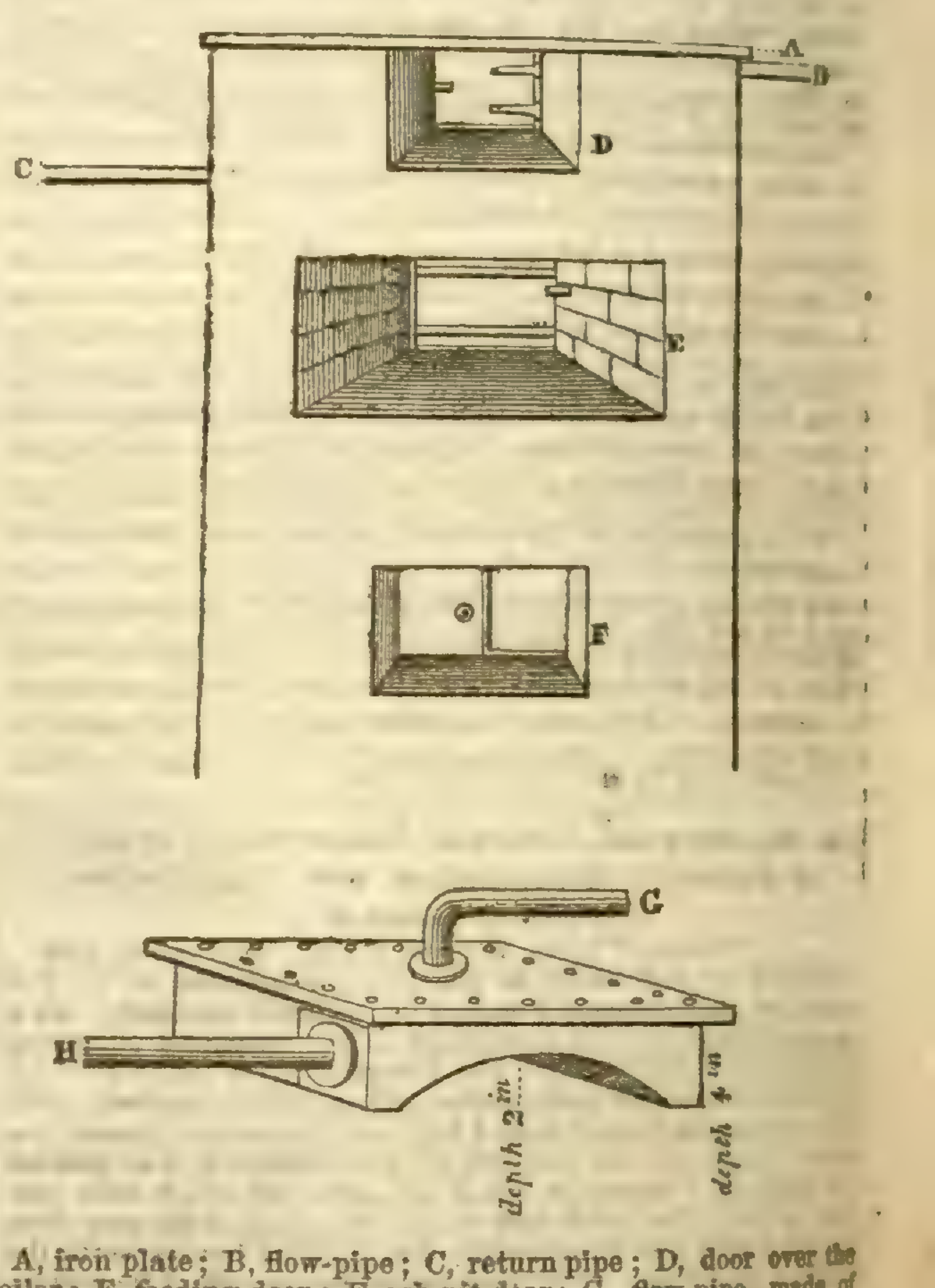
Notices to Correspondents.

Australia: *Banff.* Have a chest made with inch or inch-and-half boards. In it pack your Whitethorns now, pouring wet sand over them, shaking them down well, so that the sand may fill up every crevice; and when all is full, and the water drained off, nailing down the lid, and securing the whole, if large, with iron hooping. The Thorns should be at least four years old, with plenty of sound wood. You may as well trim off the spray before packing. In this way Whitethorn will live five or six months, which is long enough. If you have a difficulty in getting the water to drain away from the sand, bore a few holes in the bottom of the chest, and afterwards plug them again.

Books: *Reader.* M'Intosh's "Book of the Garden" may possibly answer your purpose.‡

Blackberries: *J L.* We do not know what is meant by the new Rochelle Blackberry. Many kinds of Rubus inhabit the United States, and are *said* to be good for table, but they have never yet found favour in Europe, where men's tastes are more refined than in the New World.

Heating: *I. of Wight.* Any contrivance of the nature of an Arnott's stove will do where so little is wanted and the climate is so good. The following plan of a stove used with advantage by Mr. Rivers would probably be the most economical you could have. We reproduce the cut from our volume for 1849, p. 292, where you will find further information.



A, iron plate; B, flow-pipe; C, return pipe; D, door over the boiler; E, feeding door; F, ash-pit door; G, flow-pipe, made of wrought iron, screwed in so that it can be turned in any direction; H, return-pipe.

Hybernation: *I W L W.* If you have a fair quantity of side light you need not have any glass at all in the roof. Such plants as Myrtles, Orange trees, Aloes, Tree Rhododendrons, &c., will keep during the winter, even if very much in the dark. But you must take care that the place is not damp enough to cause the leaves to rot and fall off.

Names of Fruits: *B D F.* Your labels 1, 2, 3, 4, 5, were found, but all astray. However, the large Pear is the Uvedale's St. Germain; all the others, the Chaumontel. The Apple, a greyish green, is the Orme; and the two smaller, wild or Cider Apples.||

Names of Plants: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*Rusticus.* Gymnogramma aurita Hook, native of India. *S.*—*A Z.* Parochetus communis.—*J B.* Tamarix gallica.—*Erzeroum.* 1053, Euphorbia Peplis; 851, E. dulcis; 1222, Andrachne telephioides; 1098, Buxus sempervirens; 1005, Euph. myrsinites; 990 and 111 are too young for determination; they want fruit. The former may be pithyusa, the latter is probably provincialis.—*W T.* Saccolabium umbellatum and Cœlogyne ovalis.—*A B C.* Zygopetalum Mackai, and Scolopendrium officinarum.—*J. Jeyes.* Lapageria rosea.—*Subscriber.* Oncidium excavatum and Kaulfussia amelloides.—*Gale.* Callistemon speciosum.

Pears: *J J.* Your Beurré Diel Pears which you left to hang on the tree till November, and were then taken in, packed in dry fern, placed in a dark rather damp cellar, where they kept till February but never ripened, should have been kept in a warm dry place, in a temperature of 60°, gradually increasing to 65°.‡

Russian Muskets: *Strawberry Leaf.* It is inconceivable that the stocks of these arms should be made of deal as you suppose. None of those captured at the Alma have yet reached England that we know of; but we entertain little doubt that they will prove to be manufactured from Maple wood (Acer campestre), a common tree in the Caucasus, and we believe a pretty good substitute for Walnut wood.

Stocks: *Alpha.* You will find the information you seek in Mr. Rivers' advertisement, p. 659 of our last week's number.‡

Training Fruit Trees: *J G P.* Taking all circumstances into consideration, we would advise you to train your Apple and Pear trees as espaliers; also the Bigarreau Cherry, in order that you may have it in your power to net it, and thereby prevent the birds from taking the largest and best share of its fruits. Recollect, however, that you must not train the branches of this, or of any other stone-fruit tree, horizontally direct from the stem; they must curve gradually from the latter in the first instance, otherwise they are apt to die off. The reasons for recommending espaliers rather than dwarf standards are—first, because the espaliers bear earlier, and the fruit from being well exposed to the air and light is better flavoured; secondly, the trees are much easier managed than dwarf standards. To manage the latter well requires a deal of summer work, which you could not well instruct a mere rustic to perform. You can scarcely prevent dwarf trees from growing to wood, and they occupy more ground than espaliers; you cannot crop between them so well as you can between espalier rows.||

Misc: *C M G.* Ackermann's, in the Strand.

THE LONDON MANURE COMPANY beg to call the attention of Agriculturists to their WHEAT and CLOVER MANURES for present use. The London Manure Company also offer Genuine Peruvian Guano, Nitrate of Soda, Concentrated Urate, Superphosphate of Lime, Fishery and other Salts, and all Artificial Manures of value. The London Manure Company guarantee Peruvian Guano and every Manure they supply to be strictly genuine. EDWARD PURSER, Sec.
Bridge Street, Blackfriars.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7l. per ton; Superphosphate of Lime, 7l.; Sulphuric Acid and Coprolites, 6l.
Office, 69, King William Street, City, London.
N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent. of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

SEWAGE CHARCOAL MANURE.—This highly fertilising Manure, which is Peat Charcoal completely saturated with London Sewage, will be found most efficient for every species of crop; more especially for Peas, Beans, Turnips, Mangold Wurzel, and other root crops. It will produce a greater return for the outlay than Guano or any other Manure at an equivalent value: it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained at the SEWAGE MANURE WORKS, Stanley Bridge, Fulham, at 4l. per ton, and in quantities less than half a ton, at 5s. per cwt., for ready money only; and in quantities not less than a ton, will be delivered at the London Termini of the Railroads free of charge for cartage. No charge for sacks.
It may also be had from Messrs. G. GIBBS & Co., 26, Down Street, Piccadilly, Agricultural Seedsmen, Agents for London; and from all the other Agents of the Company.

JACKSON'S PATENT PREPARATION FOR THE PRESERVATION OF POTATOES, SEEDS, &c.—This valuable discovery, for which letters patent have been obtained, is the successful result of 14 years' study and experiments in the preservation of vegetable matter. It imparts health and vigour to the Plants and Seeds subjected to its action, and effectually prevents the Potato Disease, the Smut in Wheat, Mildew and all Fungal Diseases, and the attacks of Insects and Vermin, and further recommends itself to the Farmer, the Planter, and the Public generally, by the extreme simplicity of the mode of its application.
It is sold by all Seedsmen and Chemists, in packets of one, two, three, and four pounds each, with instructions for its use; and parties requiring larger quantities for their own use or for exportation can be supplied on advantageous terms, by addressing Mr. JACKSON, the Patentee, 18, Cannon Street, London Bridge; where the article is always on sale, and the fullest particulars and directions for its use can be obtained.

THE FOLLOWING ARE COPIES OF TESTIMONIALS IN FAVOUR OF JACKSON'S PREPARATION FOR PRESERVING POTATOES, SEEDS, &c.

"Belmont Farm, Eltham, Kent, August 28th, 1854.
"Sir,—I am now about to perform my promise, to let you know how your prepared Potatoes have turned out here. As a practical farmer of some experience I had despaired of finding any remedy for the disease; but I must confess that a stronger proof of the efficacy of your process in Preserving Potatoes, could not have presented itself than I have now to relate. One of the fields of this farm, the property of Mrs. Stanbury, was planted with Regent's Potatoes in April last, some of which were prepared by you. The result now is, that the whole of the crop from the unprepared sets is thoroughly diseased and hardly worth the trouble of taking up; while those raised by the side of them from the prepared sets, are not only in a beautiful state of preservation from the disease, but the produce is much greater,—the Potatoes are more numerous than the others; indeed, if there were no such thing as the disease to be feared, it would be worth the trouble and expense of preparing the sets by your process, even for the sake of the improved crops. I shall certainly, for the future, prepare all my Potatoes for seed by your process; and I intend to adopt it for preserving my Wheat from the smut. Any person may see the difference of the prepared and unprepared Potatoes at a glance. You are at liberty to make any use you please of this letter, and I remain, Sir, your obedient Servant,
"G. B. BAXTER.
"To Mr. Jackson, 18, Cannon Street, London Bridge."

"Sir,—I am very much pleased with the result of the experiments I have made with your prepared Potatoes; for I planted them, without any manure, in ground where for several years I have hardly had a sound Potato, and I now find the crop perfectly free from disease and in a very fine condition; while those of the same sort unprepared, which were planted at the same time, and next to them, are diseased and eaten by worms. The Potatoes from the Prepared Seed were so remarkably good, that I was induced to weigh them, and I found, to my great astonishment, that they were as 200 to 150 of the others,—or about 25 per cent. in favour of your preparation. I need not say that this is quite satisfactory to me, and it is of so much importance to the public, that it ought to be generally known.—I am, Sir, your obedient Servant,
"T. AUSTIN, Nurseryman and Seedsman, Blackheath, Kent.
"To Mr. Jackson, 18, Cannon Street, London Bridge."

"Hythe End Farm, Wraysbury, Staines, Sept. 5, 1854.
"Sir,—I have very great pleasure in informing you of the result of the experiment made with your Patent Preparation, for preserving Potatoes from disease. I am not yet able to give you a report of the whole crop, as I planted very late in the season, and the Potatoes are still growing; but so far as I have ascertained the result fully bears out the statement made by you, as to the complete efficiency of your process in preventing disease. I had the prepared and unprepared planted in adjoining plots, among the unprepared I find the disease in the same form it has assumed during the past few years, while in the plot adjoining, and which were prepared by you, there is not to be found the slightest appearance of disease.—I am, &c., THOMAS BUCKLAND.
"To Mr. Jackson, 18, Cannon Street, London Bridge."

"Stone Grove, Edgeware, 15th Sept., 1854.
"Sir,—You will be glad to hear that your prepared sets of Potatoes have turned out very well here, both as to quantity and quality, while those in the adjoining ground, which were planted with unprepared sets, have the disease as badly as ever. The agriculturists are much indebted to you for discovering so valuable a remedy for the Potato blight, Mr. Wylde is as perfectly satisfied as I am with the success of your patent for preserving the Potatoes from the disease; and there is no doubt the same preparation would preserve Wheat from the Smut, and every description of corn and vegetable from the blight to which they are subject.—I am, THOMAS PRIEST, Bailiff to H. Wylde, Esq.
"To Mr. Jackson, 18, Cannon Street, London Bridge."

"To Admiral Sir JAMES A. GORDON, K.C.B., Marlee House, near Blairgowrie.
"Sir,—I have received your note of the 16th. The Potatoes that came here from England, prepared by Mr. Jackson, were planted in a piece of new ground; and according to the directions sent by him along with them as to distance between the plants, &c. They came up well; the tops showed some appearance of disease about the middle of August. I have dug up a few stems to see the state of the Potatoes, and there is not the slightest appearance of any disease; they are very large and very prolific; they are quite ripe, fit for taking up. There were long black Kidneys planted in the same patch, and a great deal of them are not fit for use, at least a third part are diseased.—I am, Sir, your most obedient Servant, (Signed) JOHN SHANKS.
"Kildrummy Castle, Aberdeenshire, 25th Sept., 1854."

WHEAT SOWING.—The undersigned beg to call attention to their WHEAT MANURE, which has been successfully used during the last two seasons, and which they are prepared to deliver at 6l. per ton, free to Railway.
They are also Sole Agents for the sale of PEAT MOSS CHARCOAL, which is a valuable deodoriser and distributor of ammoniacal matter.—English and Foreign Linseed and Rape Cakes, Guano, Superphosphate of Lime, Salt, Bones, and all other Manures of known value on sale.
Apply to MARK FOTHERGILL & Co., 204, Upper Thames Street.

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures, Linseed Cakes, &c.
WM. INGLIS CARNE, 10, Mark Lane, London.

LAND DRAINAGE.
MR. JOHNSON begs to inform Landowners, Agents, &c., that he is prepared to undertake the Drainage of any description of Land, either by contract, or by a small charge per acre for planning and setting out the drains, taking levels, and superintending the work. Numerous satisfactory references can be given by Mr. J., who has been for several years in constant practice as a Draining Engineer.—Address 12, Abingdon Street, Westminster.

LINSEED AND CORN CRUSHING MILLS.
E. R. AND F. TURNER, St. Peter's Iron Works, Ipswich, have, during the present season, obtained the Prizes of the Royal Agricultural Society at Lincoln, the Bath and West of England Society at Bath, and the Yorkshire Agricultural Society at Ripon, for their celebrated ROLLER MILLS for Crushing Corn, Seeds, &c. These are manufactured of various sizes, particulars of which, with Illustrated Catalogue of Steam Engines, new Prize Chaff Cutter, and a variety of other Implements, manufactured by E. R. & F. TURNER, may be had free on application at the Works, Ipswich, or by Post, inclosing two postage stamps.

CORN CRUSHERS AND CHAFF CUTTERS.—A large display of the best Farm Implements shown in operation. Price Lists sent free on application.
BURGESS AND KEY,
103, Newgate Street, and 52, Little Britain, London.

PUMPS AND HOSE PIPES FOR GARDENS AND LIQUID MANURE.—BURGESS & KEY'S Pumps were highly commended by the Royal Agricultural Society of England at Lincoln. Price Lists sent free.
103, Newgate Street, and 52, Little Britain, London.

CHURNS.—ANTHONY'S PATENT AMERICAN CHURN.—Since 1849 this Churn has obtained all the Prizes awarded by the Royal Agricultural Society of England. At the trial before the Judges it made in 10 minutes 4 lbs. 6 oz. of Butter from 4 quarts of Cream, being 8 oz. more than any of the other Churns from the same quantity and quality of Cream.
103, Newgate Street, London.

THE BIRMINGHAM POULTRY SHOW, 1854. The SIXTH GREAT ANNUAL EXHIBITION OF DOMESTIC POULTRY will be held in BINGLEY HALL, on the 12th, 13th, 14th, and 15th of December next. Copies of the Prize Lists and Certificates of entry may be had on application to the Secretary.
In addition to the prizes announced in the list dated the 23d of February last, the General Purposes Committee of the Council have resolved to offer First Prizes of 2l., and Second Prizes of 1l., for Single Cock Birds of any age, of all the following varieties, viz.: Dorking, Spanish, Cochin China, Bramah Pootra, Pencilled Hamburgh, Spangled Hamburgh, Game, and Polish; and that the same shall be entered under Letters A to H on the ordinary certificates, and exhibited separately.
Seven Silver Vases, of the value of six guineas each, will also be awarded, instead of money prizes, for the best pen of Pencilled Hamburgh, Spangled Hamburgh, Polish, Spanish, Dorking, Cochin China, and Game Fowls.
First, Second, and Third Prizes of 3l., 2l., and 1l. respectively, are offered in all the Classes for Fowls, as well as for Turkeys, Ducks, and Geese. Liberal Prizes will also be awarded to good specimens shown by Cottagers, whose entries must be made on a form of certificate different from that used for the general classes.
The ENTRIES CLOSE on SATURDAY, the 11th of November.
JOHN MORGAN, Jun., Secretary.
Offices, 38, Bennett's Hill, Birmingham. Oct. 7, 1854.

THE BIRMINGHAM CATTLE AND POULTRY SHOW, 1854.—The Sixth Great Annual Exhibition of STOCK and DOMESTIC POULTRY will be held in BINGLEY HALL, on the 12th, 13th, 14th, and 15th of December next. The PRIZE LISTS and Certificates of Entry may be obtained on application to the Secretary. The Entries close on Saturday, November 11. JOHN MORGAN, Jun., Secretary.
Offices, 38, Bennett's Hill, Birmingham.

SUSSEX, KENT, AND SURREY POULTRY EXHIBITION.—The ANNUAL SHOW of the REIGATE POULTRY SOCIETY, open to the above three Counties, will be held at the PAVILION, BRIGHTON, on the 21st, 22d, and 23d of November.—For particulars apply to Mr. JAMES FISHER, Reigate, Mr. GEORGE K. KING, 155, North Street, Brighton, E. N. HARPER, Esq., Reigate, and CHARLES HART, Esq., Dorking, Honorary Secretaries.

SMITHFIELD CLUB, 1854.
CHRISTMAS FAT CATTLE SHOW.—The Annual Show of Fat Cattle, Sheep, and Pigs, will take place on the 5th, 6th, 7th, and 8th of December, 1854, at the Carriage Bazaar, King Street, Portman Square, London.
All Certificates must be returned to the Honorary Secretary on or before SATURDAY, the 4th November, 1854.
Prize Sheets, and the necessary Printed Forms of Certificates, are now ready, and can be obtained on application to
B. T. BRANDRETH GIBBS, Hon. Sec.
Corner of Half-Moon Street, Piccadilly, London.

The Agricultural Gazette.

SATURDAY, OCTOBER 21, 1854.

MEETINGS FOR THE ENSUING WEEK.

THURSDAY, October 26—Agricultural Imp. Society of Ireland.

IT will be seen from the advertisement that this day fortnight is the last on which entries can be received by the Secretary of the Smithfield Club for the ensuing show in December. And we may also call attention to the fact that new classes for Welsh cattle have been this year established, so as to relieve them from having to compete with the Scotch breeds.

THE current number of the Edinburgh Quarterly Journal of Agriculture contains the address of Mr. HALL MAXWELL at Berwick, on the scheme which he had devised for the collection of the Scottish Agricultural Statistics; the current number of the Irish Agricultural Society's Journal contains one of the many provincial addresses by that gentleman, given in order to remove the prejudices, enlist the sympathies, and ensure the assistance of the agriculturists in the different counties of Scotland; and the last number of the *Edinburgh Evening Courant* contains an interesting and satisfactory account of the successful progress hitherto of the inquiry itself. The skill with which the plan had been devised, assisted as that was by the experience of last year's preliminary attempt—the tact with which it has been introduced and urged within the several localities—the energy and industry with which the whole business has been carried into effect, has been rewarded with a large measure of actual success, and a probability, almost as good as certainty, that the affair will result in actual and satisfactory accomplishment. It is simple history to say, that for the scheme itself, its prosecution, and its accomplishment, the country will have to thank the Secretary of the Highland and Agricultural Society of Scotland. And the success of such a work will be no small boon to the agricultural interest. It will be the earnest of its own extension to the whole of England another year, and of its own gradually more perfect development everywhere, as experience year by year gives skill on the one side, and confidence on the other, to those who guide the inquiry and those who answer it.

Mr. HALL MAXWELL has, we are sure, on this account done good service to the commonwealth, and especially to that one section of it in which we are more especially interested. And the long array of names which the papers give us as his staff of "enumerators," by whose local influence success is ensured, is at once the proof of his own well-earned agricultural status in the North—and of the debt which agriculture generally owes to Scottish enterprise and intelligence in connection with this subject.

We do not at present recur to the points on which the policy of this inquiry turns, they have already often been brought before our readers. The following, which describes the mode of operation which is being adopted in Scotland this year, is condensed from the article in the Edinburgh paper already alluded to.

The machinery of last year has been again employed. The country has been subdivided into about a hundred districts. In each district an enumerator, being a farmer, has been appointed; as also a committee of farmers, of which one member is chosen from every parish in the district. Schedules have been sent to every occupier of land with a rental above 10l. in the Lowlands, and 20l. in the Highlands. These schedules are not to be issued or collected through the enumerator, as in the experimental inquiry of last year, but transmitted and returned directly to the Secretary of the Highland Society. No farmer need, therefore, fear his neighbour gaining the particulars of his crops and stock. From these individual returns will be ascertained the arable acreage and cropping of the district, as well as the amount of stock. And as to the yield of the harvest, each enumerator is asked to call his committee together after harvest, and after a few experiments have been made in threshing, and from their experience and knowledge, an estimate is to be made of the yield per acre of each kind of crop in the district. The results of the whole harvest will, therefore, be readily determined on accurate *data*, by a simple arithmetical process.

In order to collect complete returns, lists of the occupiers of land have been supplied by the property and income tax assessors of the several districts. These lists, when received, showed an aggregate of 47,000 occupiers of land in Scotland, and to each of these occupiers schedules have been issued, with one blank table, requiring the acreage of his farm or farms stated in Scotch or imperial measure, distinguishing the extent under cultivation, and the acreage of the different cereal and green crops, as also Grass, under rotation, permanent pasture, &c., and another table for classifying the stock as at 21st August. These schedules were requested to be returned, if possible, before the end of September. A large proportion of them have accordingly, we understand, been returned, and are in course of being arranged and tabulated.

The paper goes on to describe the duties of the several officers concerned in the inquiry, but to these we need not now refer. Our object has been simply to state the fact that the inquiry is successfully progressing in the north, and to point out the causes to which that fact is due, in order that we in England may learn by the experience of Scottish agriculturists, and be stimulated by their example. As to the cost of the Scottish inquiry, we are told that the grant by Government for the collection of the statistics is 6000l. Fully one-third of the sum may be estimated for preliminary expenses (nearly 500l. having been already expended on postages).

Some payment, proportionate to their trouble, will, we understand, be made to the district enumerators; but, unless for special services, it is not contemplated to extend the remuneration to members of committees. The number of enumerators is above 100, and of members of committees about 900. About two per cent. of the occupiers in the kingdom will, therefore, be directly engaged in the preparation of these returns.

DAIRY STATISTICS.

In valuing an estate it is necessary to take an estimate of the probable expense of cultivation, as well as the probable return which the capital employed by the farmer during an average of years may produce. For the purpose of coming to a satisfactory conclusion on these two points, I have always, in valuing land, taken notes of all the live and dead stock as I went over the farm. The money value of these, together with the probable expense of the labour employed, will form the amount of the capital which the farmer employs under his peculiar mode of management. The following table gives these particulars as they were taken some years ago.

Statistics of 15 Dairy Farms, being part of two parishes in the Vale of Gloucester.

Farm.	Extent.		Live Stock.						Produce.					
	Arable.	Pasture.	Cows.	Calves.	1 year olds	2 years old	Horses.	Sheep.	Cwts. of Cheese.	Lbs. of milk Butter	lbs. of whey Butter	Cows sold.	Calves sold	Bacon, score lbs.
No 1	4	113	31	4	4	4	2	...	116	372	806	4	27	124
„ 2	...	73	20	3	3	3	1	...	80	240	526	3	17	80
„ 3	5	125	35	5	5	5	2	...	114	420	910	5	30	140
„ 4	6	154	40	6	6	6	3	...	140	480	1040	6	34	160
„ 5	3	150	45	7	7	7	2	...	180	540	1170	7	38	180
„ 6	2	143	40	6	6	6	2	...	150	480	1040	6	34	160
„ 7	5	150	40	6	6	6	3	...	140	480	1040	6	34	160
„ 8	8	76	20	5	5	5	2	...	80	240	520	5	15	80
„ 9	20	138	26	7	7	7	3	20	91	312	676	7	19	104
„ 10	53	52	13	4	4	4	4	...	45	156	338	4	9	52
„ 11	53	80	27	7	7	7	3	25	108	324	702	7	20	108
„ 12	10	67	19	4	4	4	2	6	66	228	494	4	15	76
„ 13	26	132	25	6	6	6	3	40	84	300	650	6	19	100
„ 14	31	122	38	6	6	6	3	16	140	456	988	6	32	152
„ 15	32	147	20	9	9	9	3	20	70	240	520	9	11	80
	258	1716	439	85	85	85	38	127	1604	5268	11420	85	354	1756

The account of the live stock was taken as I walked over the fields, while valuing each farm; the quantity of cheese, milk butter, whey butter, and bacon, I learned from the farmer and his wife in conversation with them.

The system universally adopted by the dairy farmer is to rear as many heifer calves as will keep up the quantity of cows as they become unprofitable milkers. The milk butter is made only in the spring, when a small number of cows have calved; and while they are fattening calves they reckon that half their number of cows during this period gave 6 lbs. of butter each weekly for four weeks, this is 24 lbs. of butter each for half of the cows, or at the rate of 12 lbs. of butter per annum for each cow, and each cow will give 1 lb. of whey butter weekly for 26 weeks; and they calculate on fattening a pig of about 12 score for every three cows, this is equal to 4 score of bacon per cow per annum.

From this account it appears that the pasture land has produced 105 lbs. of best Gloucester cheese, 3 lbs. of milk butter, 5 lbs. of whey butter, and 11½ lbs. of bacon per acre. The live stock and the implements and labour employed on the farm, were valued as under:

	£	s.	d.
439 Cows at 12*l*. each	5268	0	0
85 Calves at 2*l*. each	170	0	0
85 Year-old Heifers at 5*l*. each	425	0	0
85 Two-year old Heifers, at 8*l*. each ...	680	0	0
38 Horses, old and poor, at 10*l*. each ...	380	0	0
127 Sheep, at 30*s*. each	190	0	0
150 Pigs, at 30*s*. each	225	0	0
The Implements were valued at ...	1050	0	0
The Labour at 15*s*. per acre	1480	0	0
The amount of Capital is ...	£9868	0	0

Thus the capital employed in managing these 15 dairy farms is about 5*l*. per acre.

The economy and management of the dairy farms in Gloucestershire are the same as they have been from time immemorial; the same at present as they were 40 years ago to my knowledge. There is no art nor labour used to increase the productiveness of the land. The farmer just takes what Nature gives him as the food for his cows, and is therewith content. There is no system adopted to improve the herbage, nor any change in the economy of the farm. Those fields which have been pastured for ages are still the favourite fields for the cows to graze in, because they are said to be "the most cheesy ground;" they are therefore always pastured by the cows every year, while all the others are mown for hay. The fields therefore which are constantly pastured are yearly getting better, while those which are always mown are daily getting worse.

The Gloucester dairy farms are small, from 50 to 100 acres; nearly the whole of the land is in pasture. The fields are small, from 8 to 10 acres; the fences, being hedges, are principally composed of Hazel, Blackthorn, Elder, Maple, and Briars, and every shrub natural to the soil.

There is little labour required on the dairy farm; to fetch the cows home from the field—milk them morning and evening—turn them out to the field after milking—fodder the cows and young stock in winter and spring, morning and evening, by cutting the hay from the rick, and carrying it on the shoulder with the foddering pick to the stock in the field, and parting it out in small portions at a distance from each other, so as to prevent the stock disturbing each other as they are taking their breakfast or their supper, and in the spring attending to the cows as they drop their calves; taking care of the young calves and attending to the fences—is the amount of the out-of-door work performed on the dairy farm. To do all this a man and a boy and a maid are all the hands that are required on a farm of 90 acres, on which 25 or 30 cows are kept.

The dairyman's business begins early in the morning, between 4 and 5 o'clock in summer, and by twilight at all other times; and again about the same time in the afternoon. All hands are turned out a milking—men, women, and boys—the farmer making one of the number. Nine to ten cows are allotted to each pair of hands; the milk is then brought to the dairy, and handed over to the dairymaid at the door, as no dirty feet are admitted into the dairy.

The dairy farmers are universally married men—indeed this seems to be necessary, as the principal and most important part of the business is to convert the milk into cheese and butter, and as this is all performed in-doors, by female hands, the farmer's wife attends to these operations, and when the farm is small she performs the whole of this business; and as the quality of the goods depends entirely on her management, she is the most important and the most efficient member of the establishment, for by her skill and ingenuity the milk is converted into the richest and most nutritious of all food for every class of the community.

The single as well as the double Gloucester cheese, when made of the entire milk, as it comes from the cows morning and evening, is the richest and mildest of all cheese, as all the butter in the milk is thus in the cheese; it is called *coward* cheese, as it cannot "stand the fire," for it runs and drops all away when it is being toasted. The half coward is made in the morning from the morning's milk, as it comes from the cow, and the last evening's milk, from which the cream has been taken; thus the morning's milk and the skim milk are mixed together, and the cheese made from this is called half coward, because most of it burns before it will run; this is very inferior cheese. *J. M.* [We hope some of the dairy farmers of Gloucestershire will defend themselves, if their case admits of defence.]

WHEN FARMERS SHOULD DISPOSE OF THEIR GRAIN.

The following remarks are from the pen of the editor of the *Witness* (Edinburgh) newspaper:—

"On the subject of prices we have a speculation to lay before our agricultural friends, and they can resolve it at their leisure. It is only a speculation, but it has occasionally been broached by some of the highest practical authorities, who are both growers of corn and frequenters of markets. It relates to the question —'When should the farmer sell his corn?' Grain fluctuates in price, perhaps, more than any other article of staple consumption. We do not buy a coat for two pounds one year, and a similar coat for four pounds another year; yet we purchase a quarter of Wheat one year for 40*s*., and another year for 80*s*., or even 100*s*. These fluctuations are enormous, yet they occur within comparatively short periods. But the fluctuation in price from year to year is not the only species of change in the value of produce to which the attention of the farmer is called. Grain fluctuates from month to month—from season to season. A farmer who has 100 quarters of grain to sell may be a hundred pounds richer or poorer by keeping his grain for a month, and, consequently, his trade is to some extent precarious. It may be said that a sound judgment and sufficient experience will enable a long-headed and prudent man to anticipate the coming changes, and to regulate his sales accordingly; but, so far from this being the case, it is not unfrequently the longest heads that plunge deepest into the mire of unfortunate speculations, and the most knowing who are the most completely outwitted in their calculations. Who, for instance, could possibly have anticipated, that, in the midst of a war which has compelled us to arm the greatest naval force ever seen in the world—when no man can possibly predict how or when the war may end — that funds should rise, and that the price of grain should fall? This is an unprecedented anomaly. Had we borrowed an immense amount of money, which we were to expend ourselves, and bequeath the obligation of payment to our children, we might, perhaps, have expected that the distribution of the borrowed capital might have afforded us a temporary prosperity. But, not at all; we take the whole responsibility of the war; pay for it down on the nail, in market phrase; and yet the public securities, which, as we are at war, are rendered *so far* less secure, actually rise in value; and grain, the staff of life, largely derived from the very country with which we are at war, seeing that we grow scarcely sufficient for ourselves, falls in value. The longest head that ever saw further than its fellows could scarcely have dared to suggest a result like this; and yet it is a fact, palpably before the eyes of the world, and astonishing us, the home-born Britons, quite as much as it must astonish the observers in all other countries. Probably some farmers have held their grain, and probably some speculators have bought, in the anticipation that the fact would be otherwise; and those who have not sold their corn are eminently likely to obtain a less price than those who have. The price of grain is, perhaps, happily always beyond the range of human prediction. When we can predict wind, rain, storm, sunshine, and every other phase of the weather, we may, perhaps, predict the price of grain, but not till then. It is quite possible that a farmer may make what is termed a lucky hit; but we very much question whether a farmer, who either holds or sells on the speculation that prices will either rise or fall, ever permanently succeeds so well as those who act on another principle. The business of the farmer is to cultivate, not to speculate; and, when he quits his proper business for a crude estimate of what foreign politics or unknown weather may possibly bring, we apprehend that, in the long run, he will discover that he has made a bad investment of his time. But happily, there is another mode of determining the proper period at which the farmer may calculate that he sells with safety—a mode which we have heard wise men say is the best of all—namely, the period which is best for the farm, irrespective of all foreign politics, Czars, Turks, Tartars, Cossacks, allies, or anything whatever, save only the best way possible of managing the farm. It may appear that this is rather a summary proposition, and we only throw it out for the consideration of our friends the corn-growers; yet we cannot help thinking that it has an element of very sound sense at the bottom of it, and that the system which is best for the farm must, ultimately, be best for the farmer. With a steam-mill it is quite easy to thrash off a crop in a few weeks, and, occasionally, such a venture might produce most money—to be followed, however, by inconvenience in the farm-work and farm-feeding, all the rest of the season; and the question is, whether any amount of human foresight could—say on a period of 10 years—secure a greater advantage by a speculative attention to prices, than by ordering everything, sales included, exactly as was most conducive to the agricultural welfare of the farm itself, and by taking the market-price at the time, and in the quantity, which the farming operations required. The thrashing and the sales would thus come to be distributed, not by an attention to wars and rumours of war, but by an exclusive attention to the more and more perfect outline of the farm; and the farmer would thrash and sell exactly as his horses, cattle, labour, manuring, and other things required—going to market with his grain, not with regrets that prices had fallen, or fearing that they might rise, but with the honest consciousness that he was doing his best to be a good farmer, and to leave speculations to those whose especial trade it was to deal, and not to cultivate. Good farming will, in the long run, be incomparably more profitable to the farmer than speculating, however fortunate or however clever the latter may happen to be occasionally."

COMPETITION OF REAPING MACHINES AT STIRLING.

All the machines exhibited this year seemed to be less oppressive to men and horses than those of last year. The dynamometer was applied this year to all the competing machines in order to test their comparative draughts. The general result was, that the draught in the highest case did not exceed that of the common plough turning over a furrow of 7 or 8 inches in depth. It would thus appear that the oppression on men and horses exercised by the reaping machines in use arises more from the speed at which they are driven than from the resistance offered by the crops they have to cut down. It is quite evident that they are all driven at too high a speed, even as worked on a private farm. The excitement of a public exhibition has no doubt the effect of urging both men and horses to do more in a given time than when they work at home. The speed we should estimate at not less than three miles an hour, if not more. But, whatever be the rate of speed, the gatherers and binders have to follow at a racing pace, and the work in consequence is usually done in a slovenly manner, or partially left undone. Even on private farms, when the ground and crops were peculiarly favourable to the operation of the machine, we have seen part of the grain left in the swathe, or part of the sheaves left unstacked. It should be the endeavour of machinists to construct reaping machines to require a speed not exceeding two miles an hour. Five machines entered into competition, two of which were Bell's, two M'Cormick's, and one Hussey's. Both the Bell's were, we believe, of Crosskill's manufacture, though differing somewhat in their gearing. One belongs to Mr. M'Queen, of Arnchive, the other to Crosskill himself. One of M'Cormick's was his original reaper, with a man to sweep off the grain to one side in bundles with a rake; while the other was exhibited by Lord Kinnaird, with a revolving web, like Bell's, but which did its work badly compared with Bell's, and the addition of which increased the draught by 1 cwt. 60 lbs. Hussey's had a tilting-board upon which the cut grain fell, and which was tilted by the man's foot who shoved the grain off it behind the machine in bundles with a rake. The mode of comparing the work done by the machines was better adapted for that purpose than that of last year. Equal portions were measured off in different sorts of grain, and the portions were drawn for by the competitors to be cut down by their respective machines. The crops selected were Wheat, Barley, Oats, and Beans. The Wheat was thin on the ground—perhaps not more than half a crop; and, as a consequence, much undergrowth of weeds was amongst it. The Barley was a heavy crop, and sown down with Grass. The Oats were also heavy. The Beans were strong at some places, at others not. The straw of all the crops was long and strong. Not having had the

opportunity of witnessing the working of the machines on trial, the judges alone enjoying that privilege, we can give no satisfactory account of it. The judges awarded the premium to Crosskill's Bell, as the best machine above 25 guineas value, and to Hussey's as the best one below that value. To Crosskill's Bell was also awarded the Highland and Agricultural Society's premium offered for the best machine at the Berwick show, but, on account of the state of the crops, the award could not then be pronounced.

And in witnessing the action of the machines on the different crops after the competing trials, we should say that Crosskill's Bell did its work very satisfactorily, cutting the corn low and clean, and laying it over in swathe in a very regular manner; and where the crop was strongest, it seemed to lay the swathe with the greater regularity. The Bell's machine exhibited by Mr. M'Queen did not execute any of its work nearly so well as the one exhibited by Crosskill himself. We like the quiet calm manner in which M'Cormick's original machine works, and its dexterity in turning corners and passing deep furrows is admirable. The labour endured by the man who sweeps off the grain in bundles for sheaving is however too great, and we think he did not do his work so well this year as we have seen him do it in previous ones, most probably because the crops were too thick and bulky for him to handle with ease. His work, as well as the others, was best done among the Wheat, which was much the thinnest of the crops. The removal of a heavy bunch of grain from the board by one man with a rake seems too great a physical difficulty to encounter at the speed at which the machine goes, and the breadth of 6 feet which the machine cuts. Can the proportions of the work to be done not be made more consonant with the strength of a man? Lord Kinnaird has by no means improved M'Cormick's machine by the addition of the revolving web. Instead of simplifying, his addition only complicates the machine. We had imagined, on a former occasion, that Hussey's machine would never show face in Scotland again in the presence of Bell's and M'Cormick's, but here it carries off a prize in virtue of its low selling price alone, for no one will assert that it was the second-best machine in the field. Whatever may have been the cause of its meriting the first prize as the best reaping machine at the Lincoln meeting of the English Agricultural Society, its low selling price seemed its only merit at Stirling; and this is a merit certainly, and ought to demonstrate to machinists that any operation beyond cutting down the grain imposes, in a reaping machine, a most serious increase of cost in its construction. Can the decision of this premium not suggest a valuable hint to machinists? The delivery of the grain in the rear of Hussey's machine on the ground upon which the horses have to walk in the next round, is an insuperable objection, in our estimation, to its mode of operation. True, the grain can, and perhaps ought to be gathered up immediately after the machine, but the obligation to do so is a restraint which ought not to be imposed upon a farmer in the time of harvest. It may be of the greatest importance, in some particular season, to employ every means—machines and all hands—on a farm, to cut down as much as possible of the crop at a time: as, for example, when the state of the atmosphere prognosticates a gale of wind, in order to avoid a shake, while the crop would be in comparative safety lying on the ground in swathe or in bundles until it could be bound and stacked.

The comparative trials of 1853 seemed to have established the superiority of the cutting edge over the shears. At any rate, the shears have this year been removed from Bell's machine, and the cutting edge adopted. Hussey abandoned the shears at an earlier period, and assumed the cutting edge. The principle of cutting, first exhibited by M'Cormick in this country, has thus triumphed, for the benefit of our farmers, and of our horses; for no doubt the fine edges of shears, working closely on each other, occasioned much of the friction and the inconvenience experienced in the working of Bell's machines. By abandoning the shear principle of cutting in Bell's machine, it has doubtless thereby been simplified in construction, and eased in draught. We have admired M'Cormick's mode of cutting, from the first moment we saw his machine in the Crystal Palace in 1851 until now, and when its efficacy was confirmed at Tiptree farm in the same year. Now it is adopted by his rivals. No doubt Crosskill's serrated-edged cutter and Hussey's smooth-edged cutter are modifications, and not imitations of M'Cormick's cutter, but perhaps these modifications were adopted only to avoid the appearance of close imitation, and not because they were better. We still prefer M'Cormick's arrangement for its simplicity and lightness.

From the number of new machines entered for competition, it is evident that the desire to have a useful reaping machine is occupying the minds of farmers. The society will have to afford these new machines a comparative trial next year. One only, however, was exhibited this year—that invented by Mr. Simpson, of Westmains. Its object is not only to cut the corn, but to gather and bind it into sheaves ready for stooking. The gathering and binding into sheaves are effected by means of three men, who are carried upon the machine. One gathers the corn in his arms from the cutter, in bundles the size of sheaves, while the other two place the bands and bind the bundles alternately into sheaves, and throw them upon the ground. The bands are previously made and placed on the machine for use. It cuts the corn very well, but the form of the shears is no improvement on M'Cormick's cutter, nor was the form of the shears what one would altogether desire.

Mr. Simpson employs three men on the machine. Two are quite sufficient to gather corn into bundles and to bind it into sheaves; but if three are requisite for this breadth of his machine, reduce the breadth until two are sufficient. On a machine cutting 3 feet in width, one man could easily bunch the corn as it is cut, and a second lay down the bands and bind the bundles into sheaves. It is not necessary to use corn-bands for binding the sheaves; it would be better not, since the corn-knot is seldom loosened at the threshing-mill, and the most of dirty threshing arises from the corn-knots passing through the mill half threshed. Bands could be made of thick soft cord, and prepared with a loop at one end; the bandster could easily and quickly pass the other end through the loop, draw the cord tight, and push its end below the band. Such bands would be well preserved in the stacks, easily loosened at the feeding-in band, and could be carefully kept for years when not in use. No corn-knots would thus miss being threshed. Supposing such a reaping machine to cut three feet in width, and the horses to walk two miles an hour, it would cut, in the course of ten hours, rather more than seven acres of corn; but from the time lost in turnings and stoppages, the quantity cut would perhaps not exceed five acres in ten hours, but say four acres. One man would gather four acres of corn in ten hours, and a second bind four acres, especially when neither have to walk about, and a third stook four acres. One lad more is only required to drive the horses. Give the gatherer and bandster 3*s.* a-day each, the stooker 2*s.* 6*d.*, and the lad 1*s.* 6*d.*, and the expense of their joint labours would be just 2*s.* 6*d.* an acre. One farmer tells me that his Bell's machine requires 15 persons, men and women, to gather, bind, and stook 10 acres of corn, independent of the driver of the machine, and an attendant besides, to keep everything in working order; and another mentions 18 as the number of men and women required to follow his Bell's machine, beside the driver and attendant. I have seen as many as 15 persons, nine women and six men, following a Bell's machine, and they had enough to do to keep up with it. They could not, indeed keep pace with it, but got up to it by the time it had turned. We know not what such a small reaping machine as we have described would cost in making. It could not cost much money, and it would be light, and, besides, the cutting gear may yet be much simplified. It would be useful to small farms, and therefore would come into general use, and those who farm largely could employ a number of them. A machine thus manned and employed by itself would allow all the women and the elderly men of a farm to be formed into a band of reapers, to cut an entrance into, and clear the sides and ends of fields for the reaping machine; and they could also cut all the lying patches of corn that were unfit for the machine to reap. As it appears to us, any of the reaping machines in use at present that cut their 10 acres a-day are unfit for use on small farms, and these constitute the largest proportion of farms in this country. A good small cheap reaping machine is thus yet a desideratum among our implements. *Journal of Agriculture.*

Home Correspondence.

Spade Husbandry.—The following observations are made after the experience of a few years in spade husbandry, with a view of inducing discussion and obtaining information, not of laying down the law or pretending to any particular wisdom in agricultural matters. England possesses the great advantage of having many wealthy and energetic landlords and farmers, who are ever ready to carry out experiments at any cost; not only for their own benefit, but also for that of their neighbours. The difficulty is to decide upon the value of any scheme for the improvement of agriculture which is offered to public notice, and how far it is advisable to recommend it for general use. Draining, without which it is impossible to bring stiff clay land into profitable tilth, is still an open question. The success of the operation depends very much upon the manner in which the land is cultivated after the operation; the deeper it is trenched the greater may be the distance of the drains apart. On pasture they should be placed nearer each other and shallower, excepting in cases of tapping springs. The fault is as great in over, as under draining. What expense might be spared if the wants of the land and its capabilities were thought of before a tool entered the ground! The object is not to get rid of the rain in the shortest possible time, but how to render it most available for the purposes of vegetation, and at the same time prevent the water resting and becoming sour at the roots of plants. In the growing season moisture below the surface is most essential to the health of all crops; this may be obtained on judiciously drained land by frequently stirring the soil, thus admitting the warmth of the atmosphere, and causing the damp to rise by attraction. On the contrary, if the top is hard and impenetrable to the fork, it resists the rays of the sun, becomes both above and below as firm as a turnpike road, and without the requisite nourishment, which is soon visible in the unhealthy aspect of the crops, be they what they may. In hot, scorching weather it is astonishing to observe the effect of loosening the soil amongst Cabbages and Cauliflowers,—not deep enough to injure the roots, but sufficiently so to admit oxygen and heat to bring up the moisture from below. Draining-pipes should never be less than 2 inches in diameter. Another mistake is using artificial manures (artificial, indeed, if analysis can be depended upon), to the neglect of those within reach, the liquid running into the nearest ditch or brook, and the solid drying under a powerful sun, to the destruction of its most valuable properties, which in a great measure might be saved by covering the heap with anything in the shape of dirt; the expense of collecting materials for this purpose when the team was idle would be repaid with interest. Home guano may be made on every holding by saving all night-soil, the sweepings of pigeon and fowl-houses, together with the droppings of cows, now so disfiguring the fields, and spoiling the Grass for want of early spreading; the patches of herbage being so rank, animals will scarcely touch it whilst there is anything else to be eaten. The cows' manure might be collected every third day by a boy with a wheelbarrow, and still enough would be left to fertilise the pasture. These ingredients should be placed under cover as they accumulate, adding equal quantities, in layers, of either ashes, road-scrapings, fine soil, stifle-burnt clay, charred turf, &c. The compost to be turned occasionally and well mixed together till it is fit to drill in at seed-time. The outlay in trying this plan would be small; the labour being light, might be performed by women and boys. How true it is that small things are neglected for those of, apparently, more importance! Men will go into the market and purchase at an extravagant price what is called "a foreign manure," because it is a novelty, and recommended as a panacea for all the wants of agriculture. True guano is useful as a forcer if applied judiciously, that is, covered up in the soil in dry weather, or if sown broadcast, the operation should be performed in rainy weather. It must be generally known by this time that more than one half the guano sold in this country is nothing but a villanous compound manufactured at home, and worth about 30*s.* per ton, as far as the expense of making goes; but really of no value to the farmer, who fancies he is dressing his land with genuine stuff—finding out too late, by the slow progress of his crops, how shamefully he has been deceived. By a system of management (in having every description of refuse collected in the farm-yard, to be trodden down or introduced into the pigsty), it is astonishing how soon a rich heap of manure may be formed, a fair coating of which on tenacious land will last three years, and beat chemical mixtures out of the field. Muck should be ploughed or dug in as soon as possible after carting from the yard. *Falcon.*

Leicester v. *Cotswold, as a cross for the Cheviot. To Major Mc Inroy*:—In the pages of this paper you and I some little time since discussed the merits of our sheep stock—you preferring the Leicester ram and Cheviot ewe. My inclination was, and firmly remains, in favour of the Cotswold ram and Cheviot ewe; the occasion of my now reviving the subject is to afford not only you, but any other readers of the *Gardeners' Chronicle* something really tangible as regards the superiority I claim for my advocated cross. From arrangements lately made, it suited me to dispose of my store ewes and some other stock bred here; consequently I had an auction on the 12th of last month, and though some of the ewes are getting somewhat ancient, yet 40*s.* was the lowest, and 43*s.* 6*d.* the highest price I obtained; 23*s.* 6*d.* average of the ewe lambs; 22*s.* 3*d.* average of the wether lambs. My wool, this last clip, did not reach 9 lbs.; but it is all weighed, and exceeds 8½ lbs. each sheep. I am quite satisfied that if we cannot unite in opinion as to the sheep cross now alluded to, in this sentiment we shall cohere, that it is the duty of every one to endeavour, in passing through life, to do some little good to his fellow-creatures, especially to those engaged in similar pursuits; and under the influence of these feelings, allow me to add, that if you can remove me from the vantage ground I claim, I ask you, as one of the active members of the "Fettercairn Farmers' Club," to do so. P.S. You once alluded to my having climatic advantages over you; the reverse, I imagine, is the reality here—1100 feet above sea level is an awkward feature against me in this matter. *George William Fowler, Prince Hall, Dartmoor, October 6.*

Anbury, and Running to Seed.—I have noticed for several weeks past much correspondence and discussion in your Journal, respecting tap-rooted plants, such as Parsnips, Carrots, Turnips, &c., deviating from their usual styles of growth, and becoming deformed, or in other words forming toes and fingers. None of your correspondents seem to have arrived at any definite conclusion as to the cause and reason of it, nor do they seem to have adopted any likely means for its prevention. I have been a seed-grower on a small scale for the last 40 years, and have tried a variety of experiments on various crops, as a means of arriving at some definite and, if possible, satisfactory conclusions in reference to the present unsettled question. My conviction is that the fault lies in a great measure with the seed-grower, and not with the seedsman or the cultivator of the crop, however much the land may be prepared or adapted to the crop it is intended should grow upon it. My reasons for so thinking are, that I have found it to be highly essential in growing the seeds of umbelliferous and cruciferous plants, such as those above mentioned, as well as all others of the Brassica tribe, that to prevent the production of monstrous and deformed roots, it is necessary as soon as the umbels and heads of bloom are formed and the blossoms begin to expand, to go over them and cut out the central umbels and spikes, either with a pair of scissors or a sharp knife, allowing the remainder or lateral umbels or shoots to absorb the nourishment which would be otherwise consumed by

the leader, perfect their growth and produce their seed. The sap is thereby more equally divided, and instead of having seeds of various sizes, it becomes more equalised, and is invariably productive of a better and more regular crop, both as to shape, size, and quality. I am confident that if seed-growers in general were to pay more attention to this particular item, in their practice, there would be fewer causes of complaint, and consequent better feeling, with less discussion, existing amongst them respecting such matters. My attention was first called to this particular point by my foreman, some years since, who had conceived an idea that if he saved seed from the central umbels of a piece of Parsnips which had been planted for that purpose he would be enabled to grow and produce some Parsnips which "would astonish the natives," and, consequently, did so, from some of the finest of them, which was sown in a bed adjoining the general crop the ensuing season; when, to our mutual surprise, there was not a handsome, hollow-crowned, tapering root produced amongst them, although the land had received an equal amount of dressing and preparation with the rest; the roots were clumpy, forked, fingered and toed in every variety of deformity. The result of this experiment led me to try others, and I have invariably found the practice which I now advance to be correct, and without any desire but that of serving those who feel interested in the matter, have no hesitation in pronouncing the idea to be correct, both theoretically and practically. With Turnips I have been equally successful. I had a bed of the variety known as "Jersey Navets" last year, the produce of seed saved from plants, from which the central shoots had been removed at the time before specified, which were as true as it was possible for them to be throughout, not a deformed or a discoloured root appearing amongst them. If the practice stands good in reference to particular varieties, it is also so in reference to the genera. I have not known it to fail in any case where a fair trial has been given to it. *Bernard Saunders, Jersey, Oct.* 12.

Moral and Intellectual Improvement in Rural Districts.—An inhabitant of a country village in an agricultural neighbourhood is desirous of establishing a weekly evening meeting, for the advancement of the moral condition of the labouring classes, uniting, if possible, amusement with instruction; in fact, of such an enticing character as to wean them from their favourite resort—the ale-house. In towns there are societies of this nature for a better educated class, known as the "Mechanics' Institute," and your subscriber would feel much obliged to any of your readers who may have had experience in the management of such societies, and would kindly offer a few suggestions for the establishment of an institution adapted for the hard-working plodding peasant. The poor man, at times but ill supplied with the common necessaries of life, who toils from sunrise to sunset to support his family, and not unfrequently a sickly wife, requires some occasional recreation of an intellectual nature, calculated to humanise him, as it were, and to raise him above the mere animal, which, after working all day, comes home, eats and drinks, and then sleeps till the peep of morn awakes him, only to resume his wonted labours. While, by means of our schools, we inculcate moral and religious principles, and instil a desire for mental improvement into the infant mind, should we not also provide some means of nourishing the lambent flame thus kindled in the youthful breast—but which, alas! is too often extinguished in maturer years by rude hardship and the chilling breath of poverty? Much has been done of late to curb the prevailing sin of the poor—an inordinate indulgence in intoxicating drink; but let us not rest satisfied with skimming the surface, while we leave the root of the evil rankling at the core; can we not strike still deeper, and, by cultivating the crude soil of the human heart, diminish the taste for such low pursuits? The country gentleman may expostulate in bitter terms against the vices of his humbler brethren, and forbid his cottiers to pass the threshold of the public-house, but will all this suffice? *Constance.*

On Premiums to Farmers.—There must be something radically wrong when it is necessary to hold out premiums to induce a man, or a set of men, to adopt a better mode of management than that which they at present adopt. Do those who offer the premiums wish to participate in the advantages which they think will be the result of the change? And do those to whom the premiums are offered think this is the case? Or are those people, to whom the premiums are offered, so ignorant or so prejudiced to old customs that they are blinded to their own self-interest? It is evident that those who offer the premiums expect that they will have a considerable effect in directing the mind of the farmer to inquire into and probably to adopt such a line of practice for the future as may secure all the advantages which may naturally be calculated on. Self interest is the grand moving principle of every man's conduct, and this has a much greater influence on him than any premiums; he will only compete for them if he feels that it will be more to his advantage by doing so than by not doing it. There have been no premiums held out to manufacturers, and yet the wonderful results which have followed the improvement in all the manufactures that have been made during the last 50 years is the fruit of a conviction that each of the new inventions will pay all those liberally who use them; but it is otherwise with agriculture; a continual succession of premiums have been awarded to farmers during this century, and yet how very little advantage has the agriculture of the country been benefited by it. Does not this show that there is something wrong in this mode of trying to improve agriculture by awarding premiums, or that there is some other thing which prevents the farmer from adopting the improvements? It may be that there are circumstances under which the farmer is placed which require to be altered before he is placed in the same position as the manufacturer, so as to induce him to take advantage of, and adopt every new improvement in agriculture which the object of the premium is intended to produce. Should not the prizes be offered for the whole of the farmer's stock, or for the management of the whole of his farm, instead of only for the best beast, the best sheep, or for the best dozen of Turnips, &c.? so that no prize be awarded but to that which shows the greatest profit as the result. The landlords and their tenants are more borne down by custom and prejudice than any other class of men. If an intelligent and scientific man be a farmer, he is hampered in his mode of proceeding by his landlord preventing him from going out of the custom of the country. "The land must be farmed according to the custom of the country," is a clause in almost every agreement or lease between the landlord and his tenant; and the intelligent and scientific landlord has ignorant and prejudiced tenants to deal with, so that where the one is anxious to improve, the other prevents him from doing so, either by ignorance or by some of those circumstances which bear peculiarly on land, landlord, or tenant. The present mode of letting farms by the year certainly does not tend to promote the improvement of agriculture or the permanent improvement of the soil; indeed the want of security for the money expended in improvement, and the injury he sustains by game, prevent the farmer from entering on any expensive improvement. It cannot be expected that a man will lay out 6*l*. or 8*l*. per acre to improve the farm from which he may be expelled at half a year's notice, to the certain loss of every sixpence which he may have expended, nor will he be very anxious to adopt an improved mode of culture if it be more expensive than the one he at present adopts, as the improvement may be for the advantage of his successor, and not for himself! These are the great drags to agricultural improvement. The farmer, investing his capital in his farm, surely ought to reap the use of the farm for such a time as will enable him to recover the principal and interest of the money he has sunk in the improvement; the risk he runs is great, and he should have a certain time to recover the capital he has expended. Landlords may rest assured that if they will not grant a lease for terms of a proper length, with power over the game on it, they must either be at the expense of improving their land themselves, or let the land remain as it is, for farmers will not expend their capital on another's land without some security for it being a profit to them. *J. M.*

Italian Rye-grass in Scotland.—The *Agricultural Gazette* is very lively on the subject of Italian Rye-grass, and Mr. Caird has got into hot water. I wish you had been able to come to Scotland to see the crops of Italian Rye-grass both at Mr. Telfer's and Mr. Kennedy's; they are truly wonderful. Mr. Telfer's 50 cows could not consume his seven Scotch acres of Italian Rye-grass; that is a fact. His Mangolds and Cabbage are astonishing. Mr. Kennedy's 460 sheep in one house, divided into rows of six or eight, is a beautiful sight, and four months is the time, so that during the year three times 460 are fatted off. In five months the Italian Rye-grass of one acre feeds 70 sheep; that is, the circle of cuttings of a certain number of acres feeds these 460 sheep at the rate of 70 per acre; I believe it is the Scotch acre. The pig-headed incredulity of some persons is marvellous. It might have been well if the editor of the *Mark Lane Express* had gone to see Mr. Telfer's farm. *A well-known Correspondent in the County of Ayr.* [We guarantee the exactness of this statement.]

Osiers.—Having been for a number of years conversant with the cultivation of twigs (Osier), I have of late been much puzzled as well as incommoded by the failure of a plot of from 10 to 12 acres, most advantageously situated in a marsh, and which have for 30 years previously been most productive and lucrative. For the last two years I have had very fair growth on parts of the beds, other parts yielding but a sickly growth, not at all encouraging to the grower or buyer. May I therefore beg to inquire of your numerous correspondents and readers, whether a similar failure has come under their notice, and, under the circumstances, what course they would advise for the regeneration of the twig, which forms an humble but important item in our domestic and farming economy? *J. S. Perkins, Cahir.*

Autumn Cleaning of Stubbles.—The autumnal fallowing of lands that are intended to be planted with green crops during the following season, is a recent introduction into the practice of agriculture, and under favourable circumstances is attended with a very considerable advantage. The land being wholly or partly cleared of weeds in autumn, and the soil being completely or partly pulverised, a very large furtherance is given to the spring work of the next season. The north of England and the whole of Scotland do not generally allow the introduction of any autumn fallowing of the ground. September is the general harvest month, and after that time any entertainment of the process is absurd. The climate is so very uncertain, and in many places so severe, as to demand the whole attention in securing the crops, leaving to the next year the work that belongs to it. The best Turnip soils in Britain are thus excluded from being autumn fallowed; but the opposite advantage is enjoyed of a cooler nature in the land, and more frequent rains, with which to secure the crop of Turnips in the proper season. The exposure of the lands during the driest season of the year by the repeated ploughings and two drillings, dissipates the moisture, which is amply repaid by the dews and frequent rains of these climates, and by the humid constitution of the soil itself. In South Britain the moisture being once lost is never recovered during that year, as the rains are few and distant, and the dews none. Hence the different system that must be used in growing Turnips; the dung must be covered in broadcast, and the Turnips sown on the flat ground by means of machines with lengthened coulters to make ruts for the deposition of the seed. This method has arisen from the dryness of the climate, which evaporates the moisture during the frequent stirrings of the ground in the early season. When the soil is cloddy and crumbly the evaporation of moisture is complete, and the surface is dried into an arid dust in which no seeds will vegetate. The success of the Turnip crops almost wholly depends, in dry climates, on the husbanding of the moisture which the land has gathered during the winter. If this be lost without a source of recovery, the chance of a crop becomes a most precarious expectation. The retention of moisture is considerably increased by the autumn fallowing of the ground—the spring stirrings of the land are lessened, and the exposure is much decreased. This is a vast advantage, and forms a value not to be estimated in the case of South Britain, where the Turnip soils are shallow and hot, and the climate dry. Autumnal fallowing has been devised to yield this advantage, and it cannot fail to produce the results of its merit. *J. D.*

Swedish Turnips.—I send you, at the request of Messrs. Charlwood & Co., of Covent Garden, six bulbs of Swede Turnips, grown from seed bought of them, which are a fair specimen of about 5 acres of Turnips. The soil is partly clay and partly gravel, with a mixture of chalk in parts. The Turnips came up well, but fell off in August, after the second hoeing. They were drilled in about the 8th of June with 20 bushels of ashes and 2 cwt. of Lawes' superphosphate of lime; the land had been dunged partly in November and partly in February. The previous cultivation of the field was as follows:—1850, Turnips, a very good crop; 1851, Barley and Clover; 1852, Clover; and 1853, Wheat. In an adjoining field (the soil rather better), I have an excellent crop of Mangolds, and a few Turnips sown among them, from vigorous seed, are very good. *James Currie, Hillside, Watford.* [It is just an ordinary case of "anbury," or "finger-and-toe" disease.]

Tank and Hose.—I am a small man desirous of following in the wake of the great Mr. Mechi, and command showers of manure rain upon my farm whenever my wisdom suggests the probability of the agreeableness of an invigorating draught to my liquid-loving vegetables. My farm consists of one acre, cultivated by the spade, and devoted to the growth of Italian Rye-grass, &c., &c. On its confines are my stable and cowhouse, with paved floors, and capabilities for washing them frequently into a tank, into which also flows the sewerage from my house; I have also the command of water for dilution. The problem I require solving by some of your experienced readers is, to what height ought I to pump the liquid into a tank (railway station like) to permit the ready distribution by the hose and jet? *Small Scale.*

Societies.

Logan, Wigtonshire.—On Thursday week, the harvest having been most successfully completed over the home farm at Logan, consisting of 1600 acres, Colonel M'Douall invited his tenantry on the Logan estates to participate with him and his labourers in the festivities of this joyous occasion. Colonel M'Douall presided over the feast, and was ably supported by Major Maitland and Mr. M'Culloch, Auchness, as croupiers. After the usual loyal toasts, in proposing which Colonel M'Douall spoke from his own knowledge of the high proficiency of Prince Albert as an agriculturist, he, in returning thanks for his own health, proposed by Major Maitland, gave "The Tenantry of the Logan Estates." He stated that it was matter to him of great gratification that he could number among his tenantry some who had taken a lead in the agricultural improvements of the day, and whose practice had been deemed not unworthy of being held up as an example of high farming to the country. In his own case, on the home farm, he had found the carrying out of this principle eminently successful, the increase of his crops and the number of the stock now maintained, as compared with an earlier period of his experience, being prodigious. While his land was thus made the means of increasing by so much the annual supply of food, it afforded him also the very pleasing reflection that he was year after year providing an enlarging and remunerative source of employment to the intelligent and well-conducted labourers on his property. He took no credit to himself for this, for unless the labour was remunerative, he would have no satisfaction in the expenditure he was making, nor indeed could he or any landlord afford to continue it. But when well directed, he had found his labour-bill one of the best investments of his farming capital. He had great confidence, therefore, in the principle of agricultural improvement, and felt that in the hands of such a tenantry as he had the pleasure of seeing round him, he could safely commit the management of his estate, and, through them, the welfare of all those who were so much bound up in each other's prosperity. (Loud cheering.) In returning home from the

active duties of his profession as a soldier, to which he had been devoted for 35 years, it was his earnest hope that now, as a resident proprietor, he might have more frequent opportunities of personal intercourse with his tenantry, and of co-operating with the gentlemen of the county in the public business of the district. Col. M'Douall concluded by proposing the "Tenantry on his Estates."—Mr. M'Lean, tenant of the farm of Mull of Galloway, in acknowledging the toast, congratulated the gallant colonel on his return to reside among his tenantry, and on the vast improvements which had been made on the Logan estates, and especially on the enterprise and skill employed in the home farm, where the numberless stacks of grain attested the success of the system, and surprised and almost bewildered even extensive farmers. The tenantry were proud to be on an estate which had furnished examples of high farming that had given an impetus to agricultural improvement over the whole country. And if, as he trusted, this country should progress at the same rate for the next quarter of a century as it had done the last, then he would not hesitate to prophesy that Britain would be an exporting instead of an importing agricultural country. This great change had been chiefly, if not altogether, brought about by draining, improved cultivation, and the liberal application of manures. As a practical farmer, he would fearlessly assert that on the great majority of farms in this country no man should talk of impossibilities who did not expend an amount equal to his rent on genuine guano and other fertilising substances. To enable the British farmer to use this valuable manure in greater abundance, the exertions of Mr. James Caird to cheapen the price and procure an ample supply deserved the heartfelt thanks of the agriculturists of the country. With a plentiful supply of cheap manures, the example of the Laird of Logan, and the doings at Auchness before their eyes, the periodical cry of agricultural distress would be got rid of, and the vaunted liberality of some landlords in doling out a return of so much per cent. of rents to their tenantry would no longer be needed. That was necessary only where the tenants were over-rented. It was an indication that the last penny had been so completely screwed out of a tenantry, that they had no margin for casualties. On the Logan estates these paltry deductions, thanks to the enlightened policy of the respected landlord and his doers, were not wanted. Here, he was glad to say, the tenants did not live from hand to mouth. The system was live and let live. *Abridged from the Ayr Observer.*

Miscellaneous.

On the Results of Experiments on the Preservation of Fresh Meat. — This inquiry was undertaken with a view of discovering a method by which beef could be brought in a fresh state from South America. The experiments were made by inclosing pieces of beef in bottles containing one, or a mixture of two or more, of the following gases:—chlorine, hydrogen, nitrogen, ammonia, carbonic acid, carbonic oxide, and binoxide of nitrogen. Of these, the last two only possessed the power of retarding putrefaction. Beef that had been in contact with carbonic oxide for the space of three weeks was found to be perfectly fresh, and of a fine red colour. Binoxide of nitrogen is capable of preserving beef from putrefaction for at least five months, during which time the beef retains its natural colour and consistence. When meat that had been preserved by the last process was cooked by roasting, it was found to possess a disagreeable flavour. If cooked by boiling, the ebullition must be continued for a much greater length of time than is necessary for fresh meat. *Mr. G. Hamilton at the British Association.*

Minasi's Artificial Incubator.—Every one possessed of a knowledge of the circumstances under which the natural hatching of eggs is effected, will be aware that a steady heat of a suitable temperature, maintained for a certain number of days, and a sufficient quantity of fluid to supply the place of the aqueous exhalations which pass off from the egg during incubation, are necessary to the success of any attempt to produce the chick from the egg in a healthy and natural condition. In order to supply these, Mr. Minasi constructs a water-tight case or tray of zinc, of about 1 inch in depth, and fills it with water, which is maintained at such a temperature that a layer of fine sand placed on the upper surface of the case is constantly kept by it at about 107° Fahr. Upon this layer the eggs to be hatched are placed, and covered with a sheet of glass or other suitable substance. In order to furnish the vapour necessary to compensate for the aqueous evaporation from the egg, which, if allowed to proceed to a great extent without any counteracting action, would lead to the destruction of the chick *in ovo*, the inventor arranges in the incubator a number of short tubes, extending from the under side of it to the upper, and reaching above the layer before mentioned, so that atmospheric or other moisture may pass up from beneath and distribute itself over the whole of the surfaces of the eggs. The lamp employed is fitted with certain improvements, also effected by Mr. Minasi, by which naphtha is burned, without the use of a wick, so as to keep up a constant temperature for several weeks without any attention; and in order to economise the heat obtained from the lamp, the former is made to traverse a spiral flue, to the sides of which a portion of it is continually transferred, a minimum quantity passing off through a pipe opening into the atmosphere. The heat transferred to the flue, as just described, is communicated to the water; and by the simple expedient of raising one end of the incubator, a continual circulation of the heated water is kept up throughout it. The under side of the zinc case is corrugated, in order that the chicks which are reared in a chamber, of which it forms the upper part, may the better nestle against it. We have seen about 150 chicks, hatched and reared by this apparatus, from two hours to 10 weeks old, which were in an exceedingly good condition. *Mechanics' Magazine.*

Calendar of Operations.

OCTOBER.

Border of the Fens, *Oct.* 16.—We may give every three or four weeks an account of the more important events that occur on the farm as the "seasons" roll on, with such local variations as soil and climate call forth; but how many more incidents might be recorded subordinate to seed-time and harvest in the experience of every farmer, which, if duly noted, would form a series of interesting autobiographies that, truly narrated, would astonish the uninitiated, and surprise even a practical man who had bestowed consideration only on the little circle of his own affairs. How many circumstances, for instance, belonging to an unprecedented dry season, find agriculturists unprepared; their meadow or marsh land fenced by dikes or drains become like any common—open to the incursions of their neighbour's stock; with wells and ponds dry; tun-carts and water casks are barely sufficient to convey water from a distance for all ordinary uses; ploughs cannot penetrate the Clover leas even at the expenditure of a share a day to each plough, except on fen or light soils, where it is so dry and dusty that we must wait for more rain before we commit our Wheat to the earth. Live stock are foddered a month or two earlier than usual; Turnips are mildewed; Coleseed is short and "foxey;" pastures are bare; Linseed-cake, 12*l.* to 13*l.* a ton in October—what will it be at Christmas? These are peculiarities of the season; other cares may occur at any time. I hear of one neighbour losing a colt from cold or inflammation; another losing a valuable mare; here is one of the best cart horses put *hors de combat* from a neglected chafing in the shoulder or a puncture in the foot; one provident friend comes to borrow five or six dozen sheep-trays; another asks the loan of a capital grubber you have just purchased—"he has only got two horses to draw it, and they can't hurt anything;" one man takes a dozen "gates" of water daily from your pump, which you expect to be nearly dry, whilst, by going a couple of hundred yards further off, he might get any quantity from the river. One morning your shepherd finds a sheep too many among 50 lamb hogs; it turns out to be a scabbed ewe, of which you had no notice, other than discovering it had been "lined," and that there were three or four "knots" of the disease about its shoulders; it had crept through a hedge during the night, you can scarcely tell where or how, and you do not feel very charitably disposed towards the man who has done you this injury. A friend of mine has suffered severely this autumn on this very account; and the worst is that he may yet suffer more, by seeing a valuable stock spoiled, or being compelled to part with them on the worst terms. How many conditions require to be fulfilled in keeping your horses up to the mark; not only a fair allowance of corn, but sufficient Clover or hay, with no waste, even of chaff; litter also to be provided at proper intervals; young stock to have access to water; sheep require frequent change of pasture, and to be well looked after, lest some of them "scour," or get blown, or "flied," or lame, or otherwise disordered. No general rules will meet the thousand contingencies that may be best surmounted or turned to advantage, or brought to a healthy state and ordered aright only by the daily vigilant inspection of a master. Who else can, at a short notice, when one operation cannot be proceeded with, turn easily all the forces into another channel?—sending some to clear a yard of litter and pulse after threshing, or secure the straw stack, others to cart wood for fencing, fill up ruts or holes in the roadways, clean "Quicks," repair drains, draw Nettles or Thistles, burn rubbish, destroy rats or vermin, some to dress or dispose of "tail" corn, gather and place in order empty sacks and clothes, grease carts and waggons, look over the harness and small tools of all sorts; others to soak grains, or bran, or malt-comb for pigs, wash and boil roots, and sort out Potatoes—so multifarious are the calls upon the one or two men employed in these odd jobs, that in the most orderly homestead there is generally room enough for help when weather or unforeseen accidents throw the hands out of gear. We are now threshing a little corn every week, ploughing when we can, clearing land of weeds as fast as the stubble is cut and carried, and taking up Potatoes, the yield of which is generally about 80 sacks, of 16 stone per acre, nearly all good and serviceable, the diseased not 1 per cent., the small not above 8 per cent.; sold as they are raised, 5*s.* per sack, or picked, at 6*s.* to 7*s.* We are preparing to take up Carrots, which are a good crop, and Mangold Wurzel, which are rather small. Showers are becoming more frequent, so that we may soon expect to get the main part of Wheat seeding done; we do not intend putting so much seed in as heretofore. A sight of Mr. Mechi's crops will testify to what may be done with a less quantity of seed than is customarily used, the chief condition required being land in a good state for the seed, so that it may be sustained, without being stimulated, regularly during each period of growth; we shall, nevertheless, proceed with abundance of caution, diminishing the quantity of seed, but not to the minimum prescribed by amateurs and crack capitalists, whose success may in many things justify imitation or partial adoption of their plans, but be sure to keep on the safe side, and not have to lament at harvest time over the ravages of slugs, crows, or wireworms, which make such inordinate gaps in the expected profits of some of the very oldest-fashioned of farmers. One thing we do not mean to do this year, viz., till fen land for Wheat after seeds; we did it last year, thinking to destroy a few root weeds that bothered us, but the land was thereby rendered unusually light, and, we suppose, made it more accessible to the severe frosts which occurred last spring; at all events, great damage was done by the frost in April to that field, while other pieces of Wheat entirely escaped about which less care was taken. *J. W., Peterborough.*

Notices to Correspondents.

Horse Power: *Alpha.* More power is lost in the endless chain power than in the "sweep" or ordinary "power." As to your other question we simply print it:—"Will you ascertain whether Mr. Dickenson has other plans than those mentioned by you some years ago for obtaining his large crops of Italian Rye-grass?"

Iron Granaries: *C J P* asks whether iron granaries are to be procured in London, and if so whether they have ever been used, and the result, whether satisfactory or not. Also whether an iron granary could be put up, to hold, say 100 sacks, at a lower price than one of brick or wood. Any information on this subject will be thankfully received.

Malt: *J W R.* It is legal, we believe, to sprout Barley for feeding our own cattle. But you had better inform the exciseman in your neighbourhood of your intention.

Profitable Cows: *A Subscriber of many years.* Can the writer, who signs *T G.*, October 7, mention the kind of cow which has been thus unusually profitable?

Erratum: *F G.* Thanks. In p. 669, col. *a*, the £ *s.* *d.* column from the word Piece-work in the middle of the column down to 0 8 0 ,, 0 12 0 inclusive, has slipped one line downwards, which must be corrected in reading. In p. 667, col. *a*, in line 31 from the bottom read—"but I will state *them*:—When 7 to 10 crops," &c. ("and it shrinks," &c.) "it may be conceived," &c.

WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms Cottages, Manure Tanks, and Shallow Wells.

	£ s. d.
Patent Pump	1 15
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing	3 0 0

Larger sizes if required.

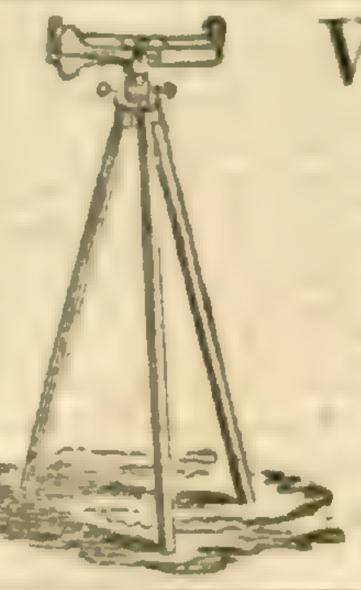
The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses from underground Water Tanks, and can be readily fixed in any situation.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,

8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water; Fire Engines, &c.

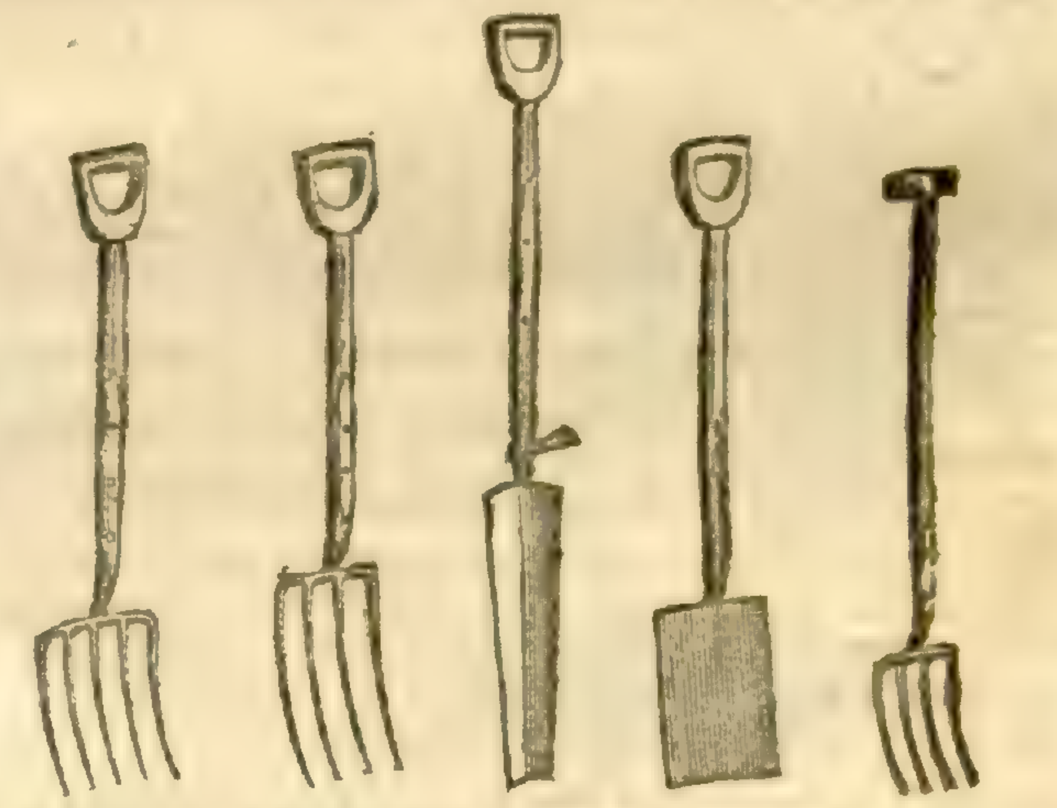


WEIR'S DRAINING LEVEL,
Price 30s.

These Draining Levels have lately been greatly improved; they have stood the test of five years' use, during which upwards of 1000 of them have been sold. They are so simple that any labourer who can read can use them. They require no graduated staff, the index telling at once the rise and fall in inches without any computation.

Edward Weir, Agricultural Engineer, 16, Bath Place, New Road, (6 Doors West of the Hampstead Road), Removed from Oxford Street.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.



MESSRS. BURGESS and KEY, as Mr. Parkes Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.
103, Newgate Street, and 52, Little Britain, London.

HOSE PIPING.—Great Reduction in Price.

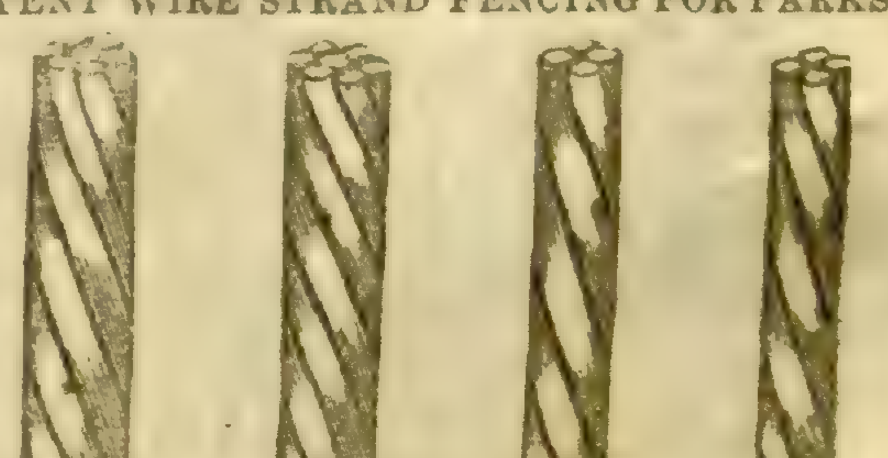
PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense pressure, and much more than leather, vulcanised rubber, or any other hose, and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented inventions, the cost of manufacturing it is now reduced at least 60 per cent., which advantage is offered to the public.

BURGESS and KEY, 103, Newgate Street, and 52, Little Britain, who on application will forward wholesale and retail prices.

TO AMATEUR GARDENERS, LOCAL BOARDS OF HEALTH, & SANITARY WORKS.

PATENT SLUICE COCKS, Gutta Percha, Combinated ditto, Patent Flexible India Rubber Tubing, and every other Hose for Watering Gardens. The Hydraulic Ram, Fire, Garden, and every other kind of Pump, Hydrants, High Pressure Cocks, and all other articles to be had, Wholesale and Retail, of FREEMAN ROE, Hydraulic Engineer, 70, Strand, and Bridgefield, Wandsworth.

H. J. MORTON and Co., Galvanised Iron Roofing Works, 2, Basinghall Buildings, Leeds.
PATENT WIRE STRAND FENCING FOR PARKS, &c.



This Fencing is the most neat, strong, and durable for Park and Agricultural purposes in use. It cannot be bent or put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply as above.

IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1*s.* 6*d.* per yard run, of E. T. Archer, 7, Trinity Lane, Cannon Street, City, and the Royal Mills, Wandsworth, Surrey.

GLASS FOR CONSERVATORIES, ETC.

HETLEY and CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES, GREENHOUSES, DWELLINGS, ETC.

Established more than One Hundred Years.

THOMAS MILLINGTON requests attention to his present prices of SHEET GLASS in 100 feet boxes.

Squares	6 by 4 and 6½ by 4½ / 7 by 5 and 7½ by 5½ / 8 by 6 and 8½ by 6½	... ... 13 6
"	9 by 7 and 9½ by 7½ / 10 by 8 to 12½ by 9½	... ... 16 3
"	12 by 10 to 24 by 14 ...	... ... 19 0

Orchard House Squares on Mr. Rivers's approved plan, to whom I have sold some thousands of feet:—20 inches by 12, 20 by 13, 20 by 14, 20 by 15, 20½ by 12½, 20½ by 13½, 20½ by 14½, at 19*s.* per 100 ft.

200 feet cases at 42*s.*, and 300 feet case 63*s.*, in large sheets.

Boxes charged 1*s.* extra per 100 feet, and the same allowed if returned free of all charge.

HARTLEY'S PATENT ROUGH PLATE GLASS, Fern Shades, Striking Glasses, Milk-pans, Bee Glasses, Cucumber Tubes, Sheet and Rough Plate Glass Tiles, Wasp Traps; Plate, Patent Plate, Crown and Sheet Window Glass, in every thickness and quality, and Ornamental Glass, plain and coloured; pure white Shades for Ornaments, Crystal Glass for Pictures.

Warehouse, 87, Bishopsgate Street Without—same side as Eastern Counties Railway.

BOYDELL'S PATENT HAND-GLASSES.

Size 15 by 12 by 18½ inches high.

With 16 oz. Glass	... ...	9*s.* 0*d.* each.
" 21 oz. "	... ...	10 0 "
" 26 oz. "	... ...	11 0 "

N.B.—The advantages of these Hand-Glasses are—

1st. *Saving in Packing and Carriage*, being so contrived as to be readily taken to pieces and packed in a small compass.

2d. *Glazing without Putty or Glazier*—the Glass being fixed in grooves in the iron frame.

3d. *Facility for Ventilation*—the two top panes being made to slide up and down at pleasure.

4th. *Durability and Solidity of the Frames*—which are made of wrought iron.

James Phillips and Co., Agents for above, 116, Bishopsgate Street Without.

BY ROYAL LETTERS PATENT.

THE COSMOPOLITAN GLASS COMPANY, 296, Oxford Street, London.—The Managers beg to inform the Nobility and Gentry, Farmers, Gardeners, &c., that their new List of Prices may be had free on application at the Company's Depôt.

HARTLEY'S PATENT ROUGH PLATE, for Roofing Conservatories, Halls, and Public Buildings.

PLATE, CROWN, and SHEET WINDOW GLASS.

Coloured and Ornamental Glass of every description.

Glass Milk Pans, Pails, Teats, and Measures; Cream Pots and Syphons; Churns, Butter Tests and Slabs; Tiles and Slates; Bee Hives, &c.

Moore's Patent Ventilator and Lockhead's Patent Perforated Glass, for Dairies and Greenhouses.

Aquavivariums, Fern Shades, Propagating Glasses, Fruit Protectors, Preserve Jars, Cucumber Tubes, Hand Lights, Flower Vases, Labels, &c., and all kinds of Agricultural, Horticultural, Architectural, Domestic, Scientific, and Ornamental Glass, British and Foreign, at the lowest prices.

STEPHENSON and PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

HOT WATER APPARATUS, adapted for Horticultural and every other description of Buildings; improved Boilers, requiring no brickwork, Warm Air Apparatus, &c.—S. S. TAYLER, Engineer, Battersea.

E. ELEY'S HOT WATER WORKS, and improved Hot Air Works, opposite the Eagle Tavern, City Road, London. Manufacturers of the various descriptions of HOT WATER APPARATUS for Heating Horticultural Works, Churches, and other Public Buildings, Mansions, Offices, Baths, &c., on the most scientific principles. Manufactories requiring artificial heat fitted up with effective and economical apparatus by contract or otherwise. Old work taken down and remodelled. Architects, Surveyors, and the Trade attended to in any part of town or country.

E. E. being a practical and scientific workman defies competition. Parties by sending a rough sketch of their building can be supplied with the most improved Pipe Boilers, or any other description, with connection and piping fitted and marked with a plan, cement, &c., for joints, so that a gentleman's own tradesman or gardener can fix them.

N.B. Please to observe the Address. No connection with any other House in the Trade.

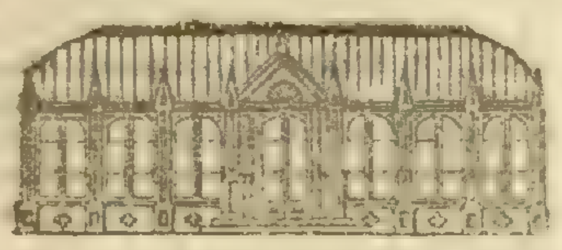
HORTICULTURE IN ALL ITS BRANCHES.

J. WEEKS & Co., King's Road, Chelsea,

HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Buildings or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.



The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. Weeks & Co., King's Road, Chelsea, London.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement, J. B. White & Brothers, Millbank Street, Westminster.

TO FLORISTS AND OTHERS.

J. JONES, Iron Merchant, has always a great variety of CONICAL and SADDLE BOILERS in STOCK; also Fire and Furnace Bars, Ornamental and Plain Supply Cisterns, Double Doors and Frames, Furnace Grates, Soot Doors, Hot Water Pipes, Elbows, Tees, Syphons, Throttle Valves, Stop Cocks, Flange and Socket Elbows, &c.; also Trough Pipes. Drawings and prices of the above, on application to J. Jones, Iron Bridge Wharf, No. 6, Bankside, London, near the Southwark Iron Bridge.

THE CRYSTAL PALACE FLOWER BASKETS, as exhibited in Nave and Transepts of the Crystal Palace, Sydenham, made to the original and other new elegant designs, by W. RICHARDS, at the Wire Works, 370, Oxford Street, nearly opposite the Princess's Theatre. Conservatories and Aviaries fitted up. Wire work in all its varieties. Game and garden fence—parrot cages and all others. Choice birds kept on sale. Window blinds of every possible description, of the very best materials and workmanship.

N.B. An allowance to nurserymen and the trade.

TEN THOUSAND STOVES.

THE TENTH THOUSAND of the PATENT PORTABLE SUSPENSION STOVE is now on sale. These Stoves, so justly celebrated for preserving a pure and healthy atmosphere, and for their extraordinary economy in the consumption of fuel, are sold, wholesale and retail, by DEANE, DRAY, and CO., 46, King William Street, London Bridge; and may be obtained of most Ironmongers.

The IMPROVED PATENT VENTILATING STOVE, which is strongly recommended, may also be seen at the above establishment. Prospectuses, &c., forwarded post free.

FLAVEL'S PRIZE KITCHENER.

THESE RANGES are strongly recommended for their simplicity of construction and their economy and cleanliness in use. The top forms a Hot-plate, and the open fire removes many of the objections which are felt to close Ranges. They are made in all sizes, from 3 feet to 18 feet in width, suitable for large or small establishments. They are admirably adapted for the Cure of Smoky Chimneys.

London agency removed to Wigmore Street, from 92, Jermyn Street, Piccadilly.

BENHAM & SONS, 19, Wigmore Street, London.
And in the Hardware Court of the Crystal Palace, Sydenham.

FENDERS, STOVES, AND FIRE-IRONS.—Buyers of the above are requested, before finally deciding, to visit William S. Burton's SHOW ROOMS, 39, Oxford Street (corner of Newman Street), Nos. 1 and 3, Newman Street, and 4 and 5, Perry's Place. They are the largest in the world, and contain such an assortment of FENDERS, STOVES, RANGES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with bronzed ornaments and two sets of bars, 2*l.* 14*s.* to 5*l.* 10*s.*; ditto, with ormolu ornaments and two sets of bars, 5*l.* 10*s.* to 12*l.* 12*s.*; Bronzed Fenders complete, with standards, from 7*s.* to 3*l.*; Steel Fenders from 2*l.* 15*s.* to 6*l.*; ditto, with rich ormolu ornaments, from 2*l.* 15*s.* to 7*l.* 7*s.*; Fire-irons from 1*s.* 9*d.* the set to 4*l.* 4*s.* Sylvester and all other Patent Stoves, with radiating hearth plates. All which he is enabled to sell at these very reduced charges,

1st,—From the frequency and extent of his purchases; and,
2dly,—From those purchases being made exclusively for cash.

PAPIER MACHE and IRON TEA-TRAYS.—An assortment of Tea Trays and Waiters wholly unprecedented, whether as to extent, variety, or novelty.

New oval Papier Maché Trays, per set of three	... ...	from 20*s.* to 10 guineas.
Ditto, Iron ditto	... ...	from 13*s.* to 4 guineas.
Convex shape, ditto.	... ...	from 7*s.* 6*d.*

Round and Gothic Waiters, Cake and Bread Baskets equally low.

GAS CHANDELIERS AND BRACKETS.—The increased and increasing use of gas in private houses has induced William S. Burton to collect from the various manufacturers all that is new and choice in Brackets, Pendants, and Chandeliers, adapted to offices, passages, and dwelling-rooms, as well as to have some designed expressly for him; these are now ON SHOW in one of his TEN LARGE ROOMS, and present, for novelty, variety, and purity of taste, an unequalled assortment. They are marked in plain figures, at prices proportionate with those which have tended to make his Establishment the largest and most remarkable in the kingdom, viz. from 12*s.* 6*d.* (two lights) to 16*l.*

LAMPS OF ALL SORTS AND PATTERNS.—The largest, as well as the choicest, assortment in existence of FRENCH and ENGLISH MODERATEUR, PALMER'S, CAMPHINE, ARGAND, SOLAR, and other LAMPS, with all the latest improvements, and of the newest and most *recherché* patterns, in ormolu, Bohemian, and plain glass, or papier-maché, is at William S. Burton's, and they are arranged in one large room, so that patterns, sizes, and sorts can be instantly selected.

Real French Colza Oil, 4*s.* 6*d.* per gallon.

Palmer's Candles, 9*d.*, 9½*d.*, and 10*d.* per lb.

DISH COVERS AND HOT-WATER DISHES in every material, in great variety, and of the newest and most *recherché* patterns. Tin Dish Covers, 6*s.* 6*d.* the set of six; Block Tin, 12*s.* 3*d.* to 28*s.* 9*d.* the set of six; elegant modern patterns, 34*s.* 0*d.* to 58*s.* 6*d.* the set; Britannia Metal, with or without silver-plated handles, 76*s.* 6*d.* to 110*s.* 6*d.* the set; Sheffield Plated, 10*l.* to 16*l.* 10*s.* the set; Block Tin Hot-water Dishes, with wells for gravy, 12*s.* to 30*s.*; Britannia Metal, 22*s.* to 77*s.*; Electro-plated, on Nickel, full size, 11*l.* 11*s.*

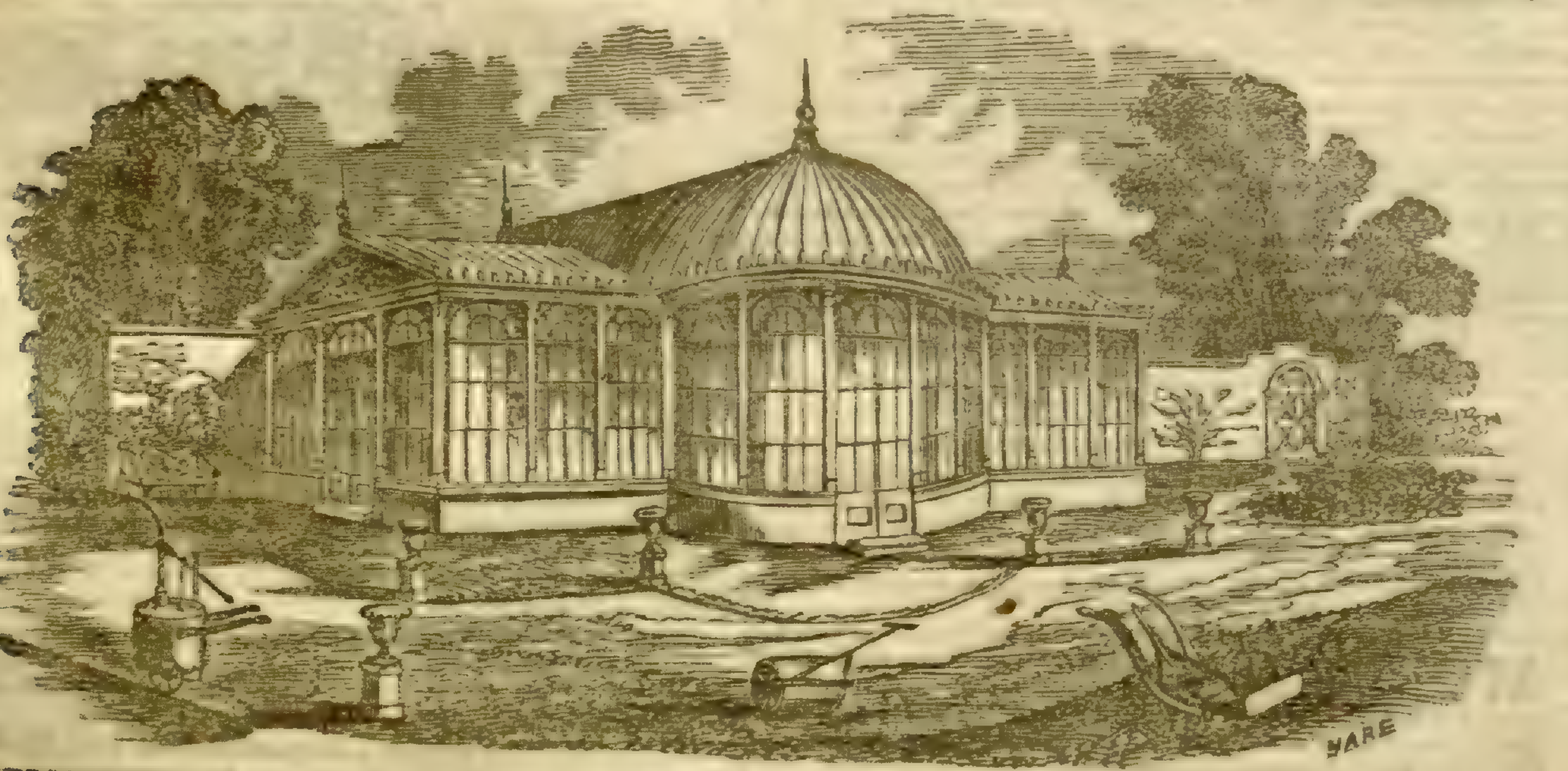
William S. Burton has TEN LARGE SHOW ROOMS (all communicating), exclusive of the shop, devoted solely to the show of GENERAL FURNISHING IRONMONGERY (including Cutlery, Nickel Silver, Plated, and Japanned Wares), Iron and Brass Bedsteads, so arranged and classified that purchasers may easily and at once make their selections.

Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of.

39, OXFORD STREET (corner of Newman Street); Nos. 1, 2, and 3, NEWMAN STREET; and 4 and 5, PERRY'S PLACE.

COTTAM AND HALLEN,

2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.



APPLICATION is requested for their NEW HORTICULTURAL LIST, containing Illustrations Descriptions, and Prices of

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Syringes	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.

AGRICULTURAL LIST UPON APPLICATION.

EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.

EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

METCALFE AND CO.'S PERFUMERY DEPARTMENT.—PROPRIETARY ARTICLES. — METCALFE'S celebrated ALKALINE TOOTH POWDER is acknowledged as the safest and most efficient now in use. Dupuytren's Medicated Pomade is the most certain remedy for preventing the hair prematurely falling off, and for restoring it when baldness has already commenced. Dupuytren's Medicated Balm strengthens, cleanses, and improves the growth, and is generally acknowledged as the best wash for the hair.—Manufacturers of British and Importers of Foreign Soaps, Perfumery, and J. M. Farina's genuine Eau de Cologne, at METCALFE, BINGLEY, & CO.'s only Establishment, 130B and 131, Oxford Street, second and third doors west from Holles Street.

SOUND AND WHITE TEETH are not only indispensably requisite to a pleasing exterior in both sexes, but they are peculiarly appreciated through life as highly conducive to health and longevity. Among the various preparations offered for the purpose, ROWLAND'S ODONTO, or PEARL DENTIFRICE, stands unrivalled in its capability of embellishing, purifying, and preserving the teeth to the latest period of life. Prepared from Oriental herbs with unusual care, transmitted to this country at great expense, it will be found to eradicate all tartar and concretions, and impart a pearl-like whiteness to the enamelled surface, remove spots of incipient decay, render the gums firm and red, and thus fix the teeth firmly in their sockets; and from its aromatic influence imparts sweetness and purity to the breath.—Price 2s. 9d. per box. Caution.—The words "Rowlands' Odonto" are on the label, and "A. ROWLAND & SONS, 20, Hatton Garden," engraved on the Government stamp affixed on each box. Sold by them, and by chemists and perfumers.

DINNEFORD'S PURE FLUID MAGNESIA has been for many years sanctioned by the most eminent of the Medical Profession, as an excellent remedy for Acidities, Heartburn, Headache, Gout, and Indigestion. As a mild aperient, it is admirably adapted for delicate females, particularly during pregnancy; and it prevents the food of infants from turning sour during digestion. Combined with the Acidulated Lemon Syrup, it forms an Effervescing Aperient Draught, which is highly agreeable and efficacious.—Prepared by DINNEFORD & CO., Dispensing Chemists (and General Agents for the Improved Horse-Hair Gloves and Belts), 172, New Bond Street, London, and Sold by all respectable Chemists throughout the Empire.

TO NERVOUS SUFFERERS.

A RETIRED CLERGYMAN having been restored to health in a few days, after many years of great nervous suffering, is anxious to make known to others the means of cure; he will therefore send (free), on receiving a stamped envelope, properly addressed, a copy of the prescription used.—Address the Rev. E. DOUGLASS, 18, Holland Street, Brixton, London.

NERVES.

DR. GRANDISON'S PILLS for strengthening the Nerves are sold in London by Mr. RICHARDS, 40, New Bridge Street; Mr. SANGER, 150, Oxford Street, and other respectable Chemists. Boxes can be sent by post.—Price 1s. 1½d., 2s. 9d., and 4s. 6d. each.

NERVOUSNESS.—A gentleman having come into possession of valuable receipes for the cure of Nervousness, Female Complants, and Consumption, will be happy to forward them gratis on receipt of a directed stamped envelope.—Address, Mr. D. OFFORD, 67A. Great Russell Street, Russell Square, London.

DR. DE JONGH'S LIGHT BROWN COD-LIVER OIL,

PREPARED FOR MEDICINAL USE IN THE LOFFODEN ISLES, NORWAY, AND PUT TO THE TEST OF CHEMICAL ANALYSIS, THE MOST EFFECTUAL REMEDY FOR CONSUMPTION, BRONCHITIS, ASTHMA, GOUT, CHRONIC RHEUMATISM, AND ALL SCROFULOUS DISEASES.

Approved of and recommended by BERZELIUS, LIEBIG, WÖHLER, JONATHAN PEREIRA, FOUQUIER, and numerous other distinguished Scientific Chemists, prescribed by the most eminent Medical Men, and supplied to the leading Hospitals of Europe—effecting a cure or alleviating symptoms much more rapidly than any other kind.

Extract from THE LANCET, *July* 29, 1854.

"After a careful examination of the different kinds of Cod Liver Oil, Dr. de Jongh gives the preference to the Light Brown Oil over the Pale Oil, which contains scarcely any volatile fatty acid, a smaller quantity of iodine, phosphoric acid, and the elements of bile, and upon which ingredients the efficacy of Cod Liver Oil no doubt partly depends. Some of the deficiencies of the Pale Oil are attributable to the method of its preparation, and especially to its filtration through charcoal. In the preference of the Light Brown over the Pale Oil we fully concur.

"We have carefully tested a specimen of the light brown Cod-liver Oil prepared for medical use under the direction of Dr. de Jongh, and obtained from the wholesale agents, Messrs. ANSAR, HARFORD, & CO., 77, Strand. We find it to be genuine, and rich in iodine and the elements of bile."

Sold wholesale and retail, in bottles, labelled with Dr. de Jongh's stamp and signature, by

ANSAR, HARFORD, AND CO., 77, STRAND, LONDON, Sole Consignees and Agents for the United Kingdom and the British Possessions, and may be obtained from respectable Chemists and Druggists in town and country, at the following prices: IMPERIAL MEASURE, half pints, 2s. 6d.; pints, 4s. 9d.; quarts, 9s.

*** Four half-pint bottles forwarded, CARRIAGE PAID, to any part of England on receipt of a remittance of Ten Shillings.

MONMOUTHSHIRE.

TO BE LET, for a term of years, and entered upon at Lady-day next, the FARM of LLANVAIR GRANGE. It consists of 164 acres of rich productive Land, of which 4 acres are in Orchard, 76 in Meadow and Pasture, and 84 are Arable. There is a comfortable Farm-house and Garden, Dairy and Cheeseroom, and ample Farm Buildings on the Farm. It is within a short distance of the Pontypool Iron Works; there is a station on the Newport and Hereford Railway close by. At the Iron Works there is a constant demand for every kind of Farm produce. The proprietor at Llanvair Grange will direct some one to show the Farm; and for particulars apply to Mr. JOHN MORTON, Morningside, Nailsworth, Gloucestershire.

WHITESTONE, DEVON.

VILLA RESIDENCE AND LAND, THREE MILES FROM EXETER, WITH EXCLUSIVE RIGHT OF SHOOTING OVER 500 ACRES.

TO BE LET, with immediate possession, HURSTON HOUSE, standing in an extensive and well-wooded Lawn, with two Entrance Lodges, large Walled Garden, Coach House, and Stabling for six horses. Also for a term of 10 or 14 years, the undermentioned farms, either together or separately:—

HURSTON FARM, containing 120 acres of most productive Orchard, Meadow, and Arable Land.

BARTONS, containing 45 acres of Pasture and Arable Land.

PITT FARM, containing 40 acres of Meadow, Orchard, and Arable Land, with a good Farm House.

KINGWELL, containing 57 acres of Meadow, Orchard, and Arable Land.

DYMONDS, containing 91 acres of Meadow, Orchard, and Arable Land.

The land-tax on all the land is redeemed except Dymonds. All the lands lie nearly within a ring fence, and are in a good state of cultivation, having been farmed by the owner for many years. Tenders in writing, stating a clear rent, to be sent to Mr. LAMBERT on or before Friday, the 27th of October, 1854. The Hind at Hurston will show the premises, and for further particulars apply to Mr. S. DAY, Auctioneer, Culver Farm, near Exeter; or to Mr. LAMBERT, Solicitor and Proctor, Exeter.

CHELMSFORD, ESSEX.

TO BE LET, on Lease, a highly-productive and well-stocked NURSERY GARDEN of about 2 acres, close to the town, with excellent Fruit Walls; Pump, and Reservoir of Water; the erection of a Forcing-house, Pit, and two Sheds. The Nursery Stock now on the ground to be taken by valuation. The rent will be unusually moderate.—Apply to VALPY & STOKES, Auctioneers, Chelmsford, Essex.

TO BE LET, by tender, a FARM on HAFODUNOS ESTATE, North Wales, comprising 328 acres, great portion of which has been thoroughly drained, sub-soiled, and highly improved, and the remainder is now being similarly treated. The House will be altered and additional buildings erected to suit the tenant. Hafodunos is 9 miles from Abergele, 6 from Llanrwst, 10 from Conway, and 13 from Denbigh.—Application to inspect the farm to be made to Mr. SCOON, Bailiff, Hafodunos, by Llanwrst, and further particulars may be obtained from Mr. PALIN, Christleton, near Chester, to whom offers in writing are to be made.

TWO FARMS,

A FEW MILES FROM THE CITY OF CHESTER.

TO BE LET, by Tender, an excellent DAIRY FARM, containing 150a. 2r. 14p., called Rushall Hall, situate in the parish of Tattenhall, in the county of Chester, two miles from Tattenhall Station on the Chester and Crewe Railway, in the occupation of Mr. George Robinson. A great portion of the Farm has been thoroughly drained, and a portion of the Grass Land boned; and it is contemplated to complete the draining and boning of the Farm the ensuing winter. The House is commodious and will be put into thorough repair. The present Farm Buildings will be taken down, and an entire new set of buildings suitable to the Farm erected. Possession of the House on the 12th of May, and of the Lands on the 2d of February next.

Also an excellent DAIRY FARM, containing 156a. 2r. 23p. At present a part of the above Farm is in the occupation of Mr. George Robinson, on which has this year been erected a commodious House, suitable for a highly-respectable family, and the Buildings and Premises arranged with every attention to comfort and convenience. A great portion of the Land has been drained and boned, and the whole that is required will be completed the ensuing winter. Immediate possession may be had of the House, Buildings, and Garden; and of the Land on the 2d of February next.

John Ennion, of Hatton Heath, near to the Turnpike-gate where the road branches to Tattenhall, will show the Farms; and particulars had of Mr. JOHN PALIN, Christleton, near Chester, or at the Office of JOHN PALIN & SON, Westminster Buildings, Newgate Street, Chester, where a Map of the Property may be seen, and offers in writing sent.

TO BE SOLD, BUFF COCHIN CHICKENS, from first class Prize Birds. Brahma Pootra Chickens, from imported American Prize Birds, and Spanish Chickens. Also some very good one-year-old Birds of the above descriptions. Wire, Game, and Poultry Netting, Poultry Hurdles, Hen-houses, Chicken Coops, Flower Stands, and Trainers, Garden Arches, and every kind of Wire Work, useful and ornamental.—T. H. FOX'S, City of London Wire Works, 44, Skinner Street, and 6 & 8, Snow Hill. Illustrated Catalogues forwarded post free.

TO BE SOLD CHEAP, STRONG-BUILT GREENHOUSES, 12 feet long 8 feet wide, 15*l.*; 16 by 10, 20*l.*; 18 by 10, 25*l.*; 20 by 12, 35*l.*; 23 by 12, 40*l.* Plans and particulars of Mr. SMITH, 1, Lower Road, near Islington Green. Window Blinds, Sashes, Doors, &c., from 6*d.* per foot. Stout Horticultural Glass at 2½*d.* per foot. Orders to all parts.

TO GARDENERS, FLORISTS, AND OTHERS.

TO BE SOLD, a NURSERY and FLORIST'S BUSINESS, with a good connection of Jobbing, &c. The Stock can be reduced to suit the purchaser.—Apply, by letter only, to J. H., 6, Ampthill Square, Hampstead Road.

VALUABLE FREEHOLD NURSERY GROUNDS, ETC.,

FULFORD ROAD, YORK.

TO BE SOLD, by private contract, the long-established and flourishing NURSERY PREMISES of the late Mr. George Clarkson, situate on the banks of the Ouse, York, comprising about 14 acres of first-rate Nursery Ground, well stocked with Forest and Fruit Trees, Shrubs, &c., and having a substantial DWELLING-HOUSE, SHOPS, and GREENHOUSE, and other requisite Out-buildings attached. The purchaser will have the option of taking the whole or part thereof, and the Stock on liberal terms. Immediate possession can be given, and plans and particulars may be had on application to Mr. LUKE THOMPSON, Solicitor, York.

Sales by Auction.

MR. DOWSETT will Sell by Auction, without reserve, under a Power of Sale on a Mortgage, on TUESDAY, the 24th October next, at the Auction Mart, London, at 12 o'clock, BINFIELD NURSERY, Binfield Road, Stockwell, Surrey. The Nursery Ground consists of 1¼ acre, walled around; a substantial brick-built Cottage containing five convenient rooms on the ground floor; and three newly-erected Greenhouses and two Sheds. Held on Lease for the unexpired Term of 80 years, wanting 28 days, from Midsummer last, at a low ground rent of 40 guineas.—Particulars of Mr. THOMPSON, 3, Finsbury Chambers, London; and of the Auctioneer, New Town, Homerton, and Chelmsford.

CHOICE AND VALUABLE COLLECTION OF TULIPS.

THE PROPERTY OF THE LATE MR. J. J. JAQUES.

MR. ALEXANDER is instructed by the executors of the late Mr. Jaques, to offer for Sale by Auction at the Mart, Bartholomew Lane, near the Bank of England, on WEDNESDAY, October 25, at 12 o'clock, without the least reserve, the well-known collection of TULIPS, comprising all the leading varieties in cultivation, viz., Pandora, Salvator Rosa, Louis XVI, Thalia, Parmegiano, Democrat, Violet Alexander, Rose Lac, Camuse de Craix, Ponceau Brilliant, Arlette, Jeffrey's Elizabeth, Jenny Lind, Strong's King, Marcellus, Pompe Funèbre, Vivid, Duke of Sussex, &c.—May be viewed on the morning of Sale; Catalogues had at the Mart, of Dawe, Cottrell, and Benham, Seedsmen, Moorgate Street; White Swan, West Ham; Mr. Jaques, King Street, Cambridge Road; also of the Auctioneer, Shacklewell.

NURSERIES, COVENTRY.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND OTHERS.

MESSRS. BROWN AND CLARKE will Sell by Auction, on TUESDAY, October 24, and following days, a Valuable NURSERY STOCK, the property of Mr. Ogden, who intends clearing a large portion of the Ground, consisting of about 200 fine specimens of Weeping Trees, large Common and Portugal Laurel, Laurustinus, Arbor vitæ, Box, Purple Beech Yew, Privet Phillyrea, Berberis, Cedars of Lebanon, &c. &c.; Rhododendron, Lilac, Guelder Rose, and other Flowering Shrubs and Trees. The Forest and Fruit Department consists of upwards of 4800 grafted English Elm, 1000 Oak, 220 Birch, 190 Beech, Ash, Chestnut, Poplar, &c.; Apple, Pear, and Cherry, in full and Dwarf Standards; a beautiful plant of Cycas Revoluta; about 100 very large Camellia, Scarlet Rhododendron, Azalea indica, Lilium lancifolium and other Greenhouse Plants, in pots. Sale to commence each day at 11 o'clock. A part of the Greenhouse Plants will be offered in the afternoon of each day's Sale.—Catalogues are now ready, and can be forwarded by Post to address.

ORCHIDS, STOVE, AND GREENHOUSE PLANTS.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, 31st October, at 12 for 1 o'clock, a Collection of Orchids, including good Plants of Aerides roseum superbum, A. crispum, A. Odoratum purpureum, Vanda tricolor, Saccolabium retusium, S. Blumei major, Paphinia cristata, Trichopilia suavis, a new Cattleya, &c. Also a parcel from India, including many plants of Vanda Roxburghi; some imported plants from La Guayra, and 50 lots of Stove and Greenhouse Plants, many of which are fine specimens.—May be viewed on the morning of sale, and catalogues had.

RARE AND NEW PLANTS.

MR. J. STEVENS will include in the Sale at his Great Room, 38, King Street, Covent Garden, on TUESDAY, the 31st October, a consignment recently received from Mr. R. W. Plant, including six specimens of the very rare LODOICEA SECHELLAREM, or double Cocoa Nut of the Sechelles, in good condition; 6 specimens of the curious and remarkable plant STANGERIA PARADOXA; 7 specimens of a new species of Ansellia, and some other rare Orchids from the Zulu country, South Africa.—May be viewed on the morning of sale, and Catalogues had.

CAMELLIAS, RHODODENDRONS, AZALEAS, DEUTZIA GRACILIS.

A SECOND CONSIGNMENT FROM MR. J. BAUMAN, OF GHENT, FOR ABSOLUTE SALE.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on FRIDAY, 27th October, at 12 for 1 o'clock, 800 Camellias, of good sorts, with flower buds; 100 Yellow Rhododendrons; 100 Ghent Azaleas; 200 Deutzia gracilis; 3 Otaheite Oranges and other Orange Trees; and 1000 Gladioli.—May be viewed on the morning of sale, and catalogues had.

PUTNEY, SURREY.

TO COWKEEPERS AND OTHERS.

MESSRS. PROTHEROE & MORRIS will sell by Auction on the Premises, near the Fox and Hounds, and close to the Railway Station, Putney, on SATURDAY, October 28th, 1854, at 1 o'clock, about 4 acres Yellow Globe Mangold Wurzel, and 10 acres White Round Turnip; also half an acre Mitchell's Albert Rhubarb, the best in cultivation. May be viewed 1 week prior to the Sale. Catalogues may be had on the Premises; at the Fox and Hounds, of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

BATTERSEA FIELDS.

TO GENTLEMEN, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are directed by Mr. Fisher, to submit to an unreserved Sale by Auction, on the premises, Claremont Nursery, near the Duchess of York, Battersea Fields (in consequence of the ground being required for the Battersea New Park), the whole of the valulable STOCK of EVERGREENS, comprising very fine Arbor vitæ, Laurustinus, Hollies, Box, Aucubas, Euonymus, Common Laurels, Fine Yews, Rhododendrons, Lilacs, Roses, Daphnes, &c. Also a quantity of Fruit and Forest Trees, with a quantity of Box edging, &c. May be viewed one week prior to the Sale.—Catalogues may be had on the premises, 21, New Street, Battersea Fields; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

BLACKHEATH.

TO GENTLEMEN, NURSERYMEN, BUILDERS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, on the premises, Westpoint Nursery, Blackheath, on THURSDAY, October 26th, and following day, at 11 o'clock each day, without reserve (by order of Mr. Thompson), in consequence of the ground being taken for building purposes, the whole of the valuable Stock of Evergreens, fine Standard and Dwarf-trained Peaches, Nectarines, Apricots, Cherries, Standard Plums, Pears, Gooseberries, and Currants; about 2000 fine Standard and Dwarf Roses, a quantity of Box Edging, Clematis, Jasmine, &c.; also 200 fine Double Camellias, specimen Azalea indica, Epacris, Acacias, Aphelexis, Ericas, Eutaxia Corræa, &c.; with two capital Iron Rollers, and sundry effects.—May be viewed one week prior to the Sale. Catalogues may be had on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

CLAPHAM.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, MARKET GARDENERS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by the administrators of the late Mr. Joseph Fairbairn to sell by Auction, on the premises, The Retreat, Larkhall Lane, Clapham, on MONDAY, October 23d, and following days, at 11 o'clock each day, the whole of the valuable stock of FRUIT TREES, consisting of Standard, Dwarf, Trained and Untrained Peach, Nectarine, Apricot, Apple, Pear, Plum, Cherry, Gooseberries, and Currants, &c.; also Ornamental Trees, Evergreens and Deciduous shrubs, &c.—May be viewed one week prior to the Sale. Catalogues to be had (6*d.* each, returnable to purchasers) on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

STOKE NEWINGTON.

TO GENTLEMEN, NURSERYMEN, BUILDERS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS beg to announce that they have received instructions from the Administrators of the late Mr. W. Watts, of Stoke Newington, to Sell by Auction, without reserve, on the premises, on MONDAY, October 30, and three following days at 11 o'clock each day, the whole of the valuable Nursery Stock, consisting of an immense quantity of American Plants, Ornamental and Fruit Trees, Evergreens, and Deciduous Shrubs, comprising 85,000 Rhododendrons, 5000 Ghent Azaleas, 2000 Limes, 1200 Thorns, 1000 Poplars, Planes, Elms, Laburnums, Chesnuts, &c., Standard and Dwarf Trained Peach, Nectarine, Apricot, Apple, Pear, Plum, Cherry, Gooseberries, and Currants; Standard Damsons; 1200 fine Mulberries, &c.; 5000 Arbor-vitæ, 6000 Hollies, 3 feet; 4000 Box, 7000 Aucubas, 3000 Euonymus, Perpetual and Common Laurels, Lilacs, Roses, Daphnes, Yucca Filamentosa, &c.; also Greenhouse Plants, including 200 fine Double Camellias, 50 very fine specimen Indian Azaleas, Heaths, Epacris, &c.; together with Greenhouses, 2 and 3-light Boxes, Gold and Silver Fish in Ponds, an excellent Horse, two capital Carts, Wheelbarrows, Garden Tools, a quantity of Box-edging, and sundry effects.—May be viewed one week prior to the Sale. Catalogues may be obtained (6*d.* each, returnable to purchasers) on the premises of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

IMPORTANT & EXTENSIVE SALE OF NURSERY STOCK.

BROMLEY HILL NURSERY, KENT.

MR. T. BAXTER is directed to Sell by Auction on WEDNESDAY, October 25, and following days, on the premises, comprising several thousands of Laurels, Laurustinuses, common and variegated Hollies and Box, Larches and Firs of sorts, Oaks, Elms, Beech, Spanish and Horse Chesnuts, fine Cedars and Yews, Poplars, Weymouth Pines and Evergreens, and Shrubs of the various sorts. 600 transplanted quick. Fruit Trees of the best sorts, and fine Mulberries, &c. A splendid large and very fine-grown Purple Beech, and less ditto; well-rooted, young and thriving plants. May be viewed 10 days prior to the Sale, and Catalogues had of Messrs. BECK and ALLEN, Seedsmen, Strand, London; Dover Castle, Deptford; and of the Auctioneer, Bromley, Kent.

On the 25th October, for the Eighteenth Year,

GLENNY'S GARDEN ALMANAC for 1855. Richly Illustrated, 1s.; or handsomely bound as a Pocket Book, 2s. 6d.; post free 6d. extra each—stamps equivalent. Advertisements should be sent immediately. The edition for 1854 was sold out in May.

London: George Cox, King Street, Covent Garden.

On the 23d of November will be published, price 1s.,

THE GARDENER'S ALMANACK for 1855.—By Geo. W. Johnson, Editor of the "Cottage Gardener," &c. This long-established Gardening Almanack will contain for 1855, Contributions from some of the best of our Country's Gardeners, on all subjects connected with Horticulture, but especially relative to the Flower, Fruit, and Greenhouse Departments. It will also contain a List of Nurserymen in England, Scotland, and Ireland, corrected to the present time, besides the usual contents of an Almanack.

Published by the Company of Stationers.

THE NATIONAL GARDEN ALMANAC AND HORTICULTURAL TRADE DIRECTORY for 1855. By John Edwards, F.H.S. The Third Annual Issue. No effort will be spared to retain the flattering encomiums universally bestowed on the previous issues of this work, which, for general accuracy, and sound practical utility, is acknowledged to be immeasurably in advance of all similar publications.

Advertisements, Communications, Books for Review, Information relative to Changes of Addresses, &c. &c., gladly received, if not later than the 20th November, by

John Edwards, Wace Cottage, Holloway, Middlesex.

Price 4d., or by post, 6d.,

THE NEW WATER WEED, ANACHARIS ALSINASTRUM (some Account of it). By William Marshall, Esq., of Ely, Cambridgeshire.

London: William Pamplin, 45, Frith Street, Soho Square.

Parts I., II., and III., price 10s. plain, 16s. coloured,

A CENTURY OF FERNS, being Figures, with brief Descriptions, of 100 new or rare Species of Ferns. By Sir Wm. Jackson Hooker, K.H., LL.D., F.R.A. and L.S., &c., and Director of the Royal Botanical Gardens at Kew. The work is handsomely printed on a super-royal paper, and a specimen can be sent to any address for four postage stamps.

London: William Pamplin, 45, Frith Street, Soho.

Fourth Edition, price Sixpence,

THE LONDON CATALOGUE OF BRITISH PLANTS. Published under the Direction of the Botanical Society of London.

London: William Pamplin, 45, Frith Street, Soho.

Volume X., Parts 1 and 2, price 14s. each, being the completion of Hooker's "Icones Plantarum," with complete Index to the entire works,

ICONES PLANTARUM, or Figures, with brief Descriptive Characters and Remarks, of New or Rare Plants, selected from the Author's Herbarium. By Sir Wm. Jackson Hooker, K.H., LL.D., F.R.A., and L.S., &c., Director of the Royal Botanical Gardens, Kew.

London: William Pamplin, 45, Frith Street, Soho.

BOTANICAL BOOKS.

LINNÆUS. A Collection, consisting of Forty separate Volumes of the various works of Linnæus, including several of the rarer editions. Price 2l., box and package included. No odd volumes, no imperfect copies, no duplicates.

London: William Pamplin, 45, Frith Street, Soho.

A CATALOGUE of some BOTANICAL BOOKS on sale, by William Pamplin, 45, Frith Street, Soho Square London, will be sent upon application, post free, to any address.

TABLES ON CATTLE, HAY, AND DRAINING.

Ninth Edition, price 2s. 6d. cloth, of

A NEW SET OF TABLES for computing the Weight *of Cattle by Measurement, the Quantity of Hay in Ricks of* different Forms, the Value of Land, &c. &c. To which is now added, a Concise System of FARM BOOK-KEEPING. By James Strachan, Fochabers. The Book-keeping is also sold separately, price 6d.

Second Edition, price 2s. 6d. cloth, of

STRACHAN'S TABLES ON DRAINING, with Practical Directions.

Oliver & Boyd, Edinburgh: Simpkin, Marshall, & Co., London.

A New Edition, in 2 vols. 8vo, with 6 Maps, price 63s.,

M'CULLOCH'S DICTIONARY, GEOGRAPHICAL, STATISTICAL, and HISTORICAL, of the WORLD.

London: Longman, Brown, Green, and Longmans.

Just published, New and Improved Edition, price 1s.,

THE CURABILITY OF CONSUMPTION. Being a Series of Papers, presenting the most prominent and important Practical Points in the Treatment of the Disease. By F. H. Ramadge, M.D., Fellow of the College of Physicians, late Senior Physician to the Royal Infirmary for Diseases of the Chest, &c. Also, by the same Author, price 10s. 6d.,

A TREATISE on ASTHMA and DISEASES of the HEART.

London: Longman, Brown, Green, and Longmans.

DR. MADDOCK ON DISEASES OF THE CHEST.

Now ready, 5th edition, price 5s. 6d., or an abridgment, 2s.,

ON CONSUMPTION, BRONCHITIS, ASTHMA, LOSS OF VOICE, &c. Illustrated by numerous interesting Cases of Recovery. By Alfred B. Maddock, M.D.

London: Simpkin, Marshall, & Co., Stationers' Hall Court; or through any bookseller in town or country.

Lately Published,

THE ELEMENTS OF BOTANY, Structural and Physiological. With a Glossary of Technical Terms, and numerous Illustrations. 12s. cloth.

This completes the series of Elementary Botanical Works by Professor Lindley, of which "School Botany," and "The Vegetable Kingdom," form the other parts.

The first two Parts of The Elements of Botany, comprising Structural and Physiological Botany, and a Glossary of Technical Terms, are published in one octavo volume, price 12s.

These three parts form a complete manual of Botany for Medical and other Students who have made themselves acquainted with the author's "School Botany."

N.B. The Glossary may be had separately, price 5s.

Bradbury & Evans, 11, Bouverie Street.

This day is published, price 18s., handsomely bound in cloth,

HANDLEY CROSS; or, MR. JORROCKS'S HUNT. By the Author of "MR. SPONGE'S TOUR." Illustrated with Coloured Plates and Numerous Woodcuts by JOHN LEECH, uniformly with "Sponge's Tour."

Bradbury & Evans, 11, Bouverie Street.

Price 5s. 6d. cloth,

SECOND EDITION, REVISED AND ENLARGED,

ORNAMENTAL AND DOMESTIC POULTRY; Their History and Management.

By the Rev. EDMUND SAUL DIXON, M.A., Rector of Intwood with Keswick.

J. Matthews, 5, Upper Wellington Street, Covent Garden, London.

Third Edition, considerably enlarged, price 5s. 6d.

RURAL CHEMISTRY, By Edward Solly, F.R.S., F.L.S., F.G.S., Honorary Member of the Royal Agricultural Society of England, Professor of Chemistry to the Horticultural Society of London, Lecturer on Chemistry in the Hon E. I. Co.'s Military Seminary at Addiscombe, &c., &c.

J. Matthews, 5, Upper Wellington Street, Covent Garden.

Price 2s. 6d.,

FOLIA ORCHIDACEA.—Part V. By Professor Lindley. Containing Miltonia, Brassia, Ada, Polychilos, Corymbis, Sobralia, Cœlogyne, Panisea.

J. Matthews, 5, Upper Wellington Street, Covent Garden.

Price 1s. 6d., free by post 1s. 10d.

LABELS FOR THE HERBARIUM, CONSISTING OF THE NAMES OF THE CLASSES, ALLIANCES, ORDERS, AND SUB-ORDERS, OF PROFESSOR LINDLEY'S "VEGETABLE KINGDOM."

So printed in large type, that they can be cut out and pasted into The Herbarium.

J. Matthews, 5, Upper Wellington Street, Covent Garden.

Price 3s. 6d., free by post,

THE TREE ROSE.—Practical Instructions for its Formation and Culture. Illustrated by 24 Woodcuts. Reprinted from the Gardeners' Chronicle, with additions

CONTENTS.

Annual pruning
time, principle of execution, &c.
Binding up
Budding knife
Budding, time of year, day, time of day, state of the plant, care of buds
Budding upon body
Bud, insertion of, into stock
Bud, preparation of, for use
Buds, dormant and pushing
Buds, failing
Buds, securing a supply of
Caterpillars, slugs, and snails, to destroy
Causes of success
Dormant buds, theory of replanting with, explained
Guards against wind
Labelling
Loosing ligatures
March pruning
Mixture for healing wounds
Pruning for transplantation
Planting out, and arrangement of trees
Pushing eye, spring treatment of dwarf shoots from
Roses, different sorts on the same stock
Roses, short list of desirable sorts for budding with a pushing eye
Sap-bud, treatment of
Shape of trees
Shoots and buds, choice of
Shoots for budding upon, and their arrangement
Shoots, keeping even, and removing thorns
Shortening wild shoots
Stocks, planting out for budding upon; the means of procuring; colour, age, height; sorts for different species of Rose; taking up,
trimming roots, sending a distance, shortening heads, &c.; saw proper for the purpose.
GRAFTING.
Aphides, to keep down
Free-growers, remarks on
Graft, binding up and finishing [of
Grafting, advantage
Grafting, disadvantage of
Operations in different months
Preliminary observations
Roses, catalogue and brief description of a few sorts
Scion, preparation and insertion of
Scion, choice and arrangement of
Stock, preparation of.
APPENDIX.
A selection of varieties
Comparison between budding and grafting.

J. Matthews, 5, Upper Wellington Street, Covent Garden.

PRICE FOURPENCE, OF ANY BOOKSELLER.

CONTENTS of the NUMBER for SATURDAY LAST, OCTOBER 14, OF THE ATHENÆUM.

JOURNAL OF ENGLISH AND FOREIGN LITERATURE SCIENCE, AND THE FINE ARTS.

Thirty-two large Quarto Pages.

Reviews of, with Extracts from—

History of my Life [Histoire de ma Vie]. By George Sand.
The Irish Industrial Exhibition of 1853: a Detailed Catalogue of its Contents. Edited by J. Sproule.
Christianity in Turkey: a Narrative of the Protestant Reformation in the Armenian Church. By the Rev. W. Dwight.
Revelations of a Slave Trader; or, Twenty Years' Adventures of Capt. Canot.
The Baltic: its Gates, Shores, and Cities; with a Notice of the White Sea. By the Rev. T. Milner.
Altars, Hearths, and Graves. By J. Moultrie.
The Fall of the Crimea. By Capt. Spencer.
A Selection from the Writings, Prose and Poetical, of the late H. W. Torrens. By J. Hume.
The History of Russia. By Alphonse Rabbe.

With Shorter Notices of

Millie Howard; or Trust in God. By Mrs. Henry Lynch.
Handerahan, the Irish Fairy-man; and Legends of Carrick. By J. O'Neill.
Countess of St. Albans; or, Lost and Found. From the German of Hackländer. By Franz Demmler.

Original.—Report of the Proceedings of the British Association.

Foreign Correspondence.—Dr. Livingston's Overland Journey from the Cape to Loanda.

Weekly Gossip. — Cowper Manuscript—Copyright Question—Educational Museum—Kugler's 'The History of Art'—Ray Society Anniversary—Apsley House—Discovery of MS. at Troyes—Philobiblon Society—Brothers Braquet—Free Libraries.

Fine Arts.—Bailord's Engraving of the Spanish Gipsey Mother—Dolby's Sketches in the Baltic.

Fine Art Gossip —Monument to Henry Clay—Rauch's Group for the King of Prussia—Works in Paris—Dunhauser's Picture 'Reading the Will'—Edgar A. Poe's Grave.

Music and the Drama.—Princess's ('Heart of Gold')—St. James's ('The King's Rival')—Marylebone ('As You Like It')—Olympic—Adelphi ('The Station House')—Operas in Paris.

Miscellanea.—Number of the Inmates of Lunatic Asylums.

The Athenæum may be ordered of any Bookseller.

LANDSCAPE GARDENING REVIVED AS AN ART.

MR. THOROLD, of Thorpe Bower, near Norwich, continues to offer his services to Ladies and Gentlemen in laying out or re-arranging their Gardens and Pleasure Grounds on correct principles of taste, in any style, or combination of styles, suitable to the requirements of all kinds of residences, upon any scale, and in most cases to produce immediate effect. Mr. T. can give ample references as to his success.

TO NURSERYMEN AND GARDENERS.

REIGATE SILVER SAND, 11s. per ton; ditto, delivered 5 miles, 16s. per ton. Loam and Peat at moderate prices.—Kennard Brothers, Swan Place, Old Kent Road, London.

TO SEEDSMEN AND FLORISTS.

CULTURAL and DESCRIPTIVE SEED LABELS, by Thos. Moore, F.B.S., and W. P. Ayres, C.M.H.S., are now ready for delivery. The utility to Amateurs, and convenience to Seedsmen and Florists, of these Labels for packing Seeds, have been spoken of in the highest terms by the leading Seedsmen and Florists of Great Britain. Size of paper 6 by 5 inches; price only 3s. 3d. per 1000. Sold in any quantities not less than 50 of each sort. A complete List of 307 sorts will be sent free on application.—Sold by Aird & Tunstall, 18, Exeter Street, Strand, London.

WEEDS ON WALKS.

MR. FLEMING'S WEEDING or SALTING MACHINE for GRAVEL WALKS, COURT YARDS, &c., manufactured and sold by Alexander Shanks & Son, Arbroath, Forfarshire, from whom particulars with prices may be had.

GARDEN NETS, FISHING NETS, SHEEP NETS, and RABBIT NETS, made by Machinery, and supplied at very low terms. Samples sent free.—R. Richardson, 21, Tonbridge Place, New Road, near King's Cross, London.

SUBSTITUTE FOR GARDEN MATS.—Waxed Sheeting nearly 2 yards wide, 1s. per yard run—admits light and excludes cold; thick Canvas Tarpauling, 1s. per square yard; thick Canvas Waxed Sheeting, 1s. per square yard, may be had various widths. These Canvases are excellent for roofing Sheds and Outhouses, as they are quite waterproof.—R. Richardson, 21, Tonbridge Place, Judd Street, New Road, London. N.B. Waterproof Capes, large size, 3s.; Police Capes, 18s. and 24s. per dozen; Driving Aprons, Capes, and Coats of India Rubber, Horse's Loin Cloths, Waggon and Cart Covers, Sacks, &c.

WIRE FENCING, 6¾d. per square yard, in various widths, from 6 feet to 15 inches, mesh less than 2 inches. An effectual fence against Hares, Rabbits, Sheep, Deer, &c., and for the enclosure of Poultry, Pheasants, &c. 4-inch mesh, 4d. per square yard.

R. Richardson, 21, Tonbridge Place, New Road, London.

POULTRY, RABBIT, SHEEP, AND CAT FENCING. Hare or Rabbit Nets, on Cords, for Covert Shooting, 12 mesh over, 4 feet wide, 1½d. per yard.; 18 mesh over, 6 feet wide, 2½d. per yard; 24 mesh over, 8 feet, 3d. per yard; each Edge Corded, ½d. per yard extra; extra Stout ditto, 18 mesh wide, 4d. per yard, suitable for Poultry Fencing. Square Mesh Cricketing Net, fix its full width and length, made of stout cord, 3d. to 4d. per square yard; this is the best article made for fencing against fowls, cats, &c., at W. Cullingford's, No. 1, Edmund Terrace, Ball's Pond Road, near Kingsland Gate, London.

NETTING FOR SHEEPFOLDS, made of Cocoanut Fibre; a material known to possess the most extraordinary durability when exposed to the alternations of weather. It will wear out several sets of tarred hemp netting, and is so light that a herdsman may with ease carry 200 yards of it. Sold in Nets of 50 and 100 yards long, 48 inches high, by the Manufacturer, W. Cullingford, 1, Edmund Terrace, Ball's Pond Road, near Kingsland Gate, London.

DEANE, DRAY, and CO., have a very large and superior stock of FRENCH MODERATOR LAMPS now on sale.—(Opening to the Monument), London Bridge. Established A.D. 1700.

NOTICE.

OVER COATS, CAPES, &c.—One of the largest stocks in London of every description, first-class garments, at lowest charges; also of Youth's ditto, all made thoroughly impervious to rain, without extra charge, or made to order at a day's notice.—W. Berdoe, 96, New Bond Street, and 69, Cornhill (only).

GLENFIELD PATENT STARCH, used in her Majesty's Laundry, and Wotherspoon's machine-made CONFECTIONARY, MARMALADE, JAMS, JELLIES, &c. which gained the Prize Medal of 1851, may be had of all Grocers; Wholesale of Wotherspoon, Mackay, & Co., 66, Queen Street, Cheapside, London; and Robert Wotherspoon & Co., Glasgow.

MECHI'S RAZORS, STROP, and PASTE for 11s., 4, Leadenhall Street, London.—Pair of Razors, 7s.; Strop, 3s. 6d.; Paste 6d. The Razors warranted or exchanged if not approved. Those who find shaving painful and difficult will do well to try the above, it being well known that Mechi has been eminently successful in rendering Shaving an easy operation. Superior Shaving Brushes, Naples Soap, and every article of first-rate quality for the Toilet. CAUTION.—Do not buy any Strop as genuine unless Mechi's name is on it, there being so many counterfeits. Elegant Case of Razors for Presents, from 25s. to 10 guineas. Ivory-handled and Scotch Strops.

NOW IN SEASON.

REAL YARMOUTH BLOATERS: A Treat to Epicures.—One hundred Choice Bloaters in a case for 6s., forwarded to any "Address." Carriage paid as far as possible: Extra quantity allowed where carriage cannot be paid through. Remittances are requested with orders.

Apply to Henry H. Baker, Fish Merchant, Great Yarmouth.

TO LOVERS OF FISH.—100 Genuine Yarmouth Bloaters for 6s., package included, forwarded to all parts on receipt of Penny Postage Stamps, or Post Office Order for the amount preferred.

Address, Thomas Lettis, Jun., Fish Curer, Great Yarmouth.

FRAMPTON'S PILL OF HEALTH.—"For upwards of nine years (writes Mr. Thomas Province, of Winchmore Hall, Middlesex), I have experienced the efficacy of this excellent medicine, and I have the happiness of saying that I never had a better state of health. I beg further to add that this medicine is in general use by my family, and we know of nothing to equal it." For females these pills are truly excellent, removing all obstructions, the distressing headaches so very prevalent with the sex, depression of spirits, dulness of sight, nervous affections, blotches, pimples, and sallowness of the skin, and gives a healthy juvenile bloom to the complexion. Sold by all medicine vendors, price 1s. 1½d. per box.—Observe that "Thomas Prout" is on the Government stamp.

On the First of November will be published, price 2s. 6d.,

PUNCH'S POCKET-BOOK FOR 1855.

With a Coloured Plate by JOHN LEECH, and numerous Wood Engravings By JOHN LEECH and JOHN TENNIEL.

PUNCH OFFICE, 85, FLEET STREET.

Printed by William Bradbury, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and Frederick Mullett Evans, of No. 27, Victoria Street, in the Parish of St. Margaret and St. John, Westminster, both in the County of Middlesex, Printers, at their Office in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be Addressed to the Editor.—Saturday, Oct. 21, 1854.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 43.—1854.] SATURDAY, OCTOBER 28. [PRICE 6*d*.

INDEX.

Agri. statistics ... 701 *b*
Amaryllis, treatment of ... 696 *c*
Anacharis alsinastrum ... 693 *c*
Anbury ... 700 *a*
Barking Oak ... 694 *a*
Benthamia fragifera ... 694 *b*
Brewing ... 701 *b*
Calendar, horticultural ... 695 *c*
Canada, resources of ... 692 *a*
Cheese-making, Gloucester ... 698 *c*
College, Agricultural ... 698 *b*
Combretum purpureum ... 693 *a*
Corn crops, productiveness of ... 698 *b*
Covering for frames ... 693 *c*
Cow, extraordinary ... 700 *b*
Education ... 699 *c*
— Irish ... 700 *c*
Farmers, premiums for ... 700 *a*
Frames, covering for ... 693 *c*
Fruit trees, protection for ... 696 *b*
Fuchsia, the ... 695 *b*
Grasses, agricultural ... 698 *b*
Grass crops, Ayrshire ... 697 *b*
Italian Rye grass, Ayrshire ... 697 *b*
Landlords, advice to ... 698 *a*
Manure, sewage ... 701 *b*
Nimrod Strawberry ... 693 *c*
Oak, to bark ... 694 *a*
Orchis variegata ... 694 *b*
Ovules, fertilising ... 693 *c*
Pathology, vegetable ... 692 *b*
Peas, chick ... 694 *a*
Physiology, vegetable ... 693 *b*
Pigs and box-feeding ... 700 *b*
Plants, new ... 694 *c*
— hardiness of ... 691 *b*—694 *b*
— sale of rare ... 692 *b*
Potatoes from cuttings ... 694 *b*
Potato crop, Irish ... 700 *a*
Probus Farmers' Club ... 701 *a*
Protection, frame ... 693 *c*
— fruit-tree ... 696 *b*
Rucker's (Mr.), garden ... 694 *c*
Seed Growers' Society ... 700 *a*
Sewage manure ... 701 *b*
Statistics, agricultural ... 701 *b*
Strawberry, Nimrod ... 693 *c*
Trees, protection for fruit ... 696 *b*
Vegetable pathology ... 692 *b*
— physiology ... 693 *b*
Walls, protection for trees on ... 696 *b*
Winter, effects of the ... 691 *b*—694 *b*

BRITISH POMOLOGICAL SOCIETY. — The FIRST EXTRAORDINARY MEETING of the BRITISH POMOLOGICAL SOCIETY will be held on MONDAY, 6th November next, at the Rooms, 20, Bedford Street, Covent Garden, London. The objects of this Meeting are to receive and exhibit Collections of Fruits from different parts of the country, and to ascertain their adaptability to the various soils and climates of Great Britain; to report upon the merits of new varieties; and to furnish the correct names of any varieties which may be submitted for that purpose.

All who are concerned in the cultivation of Fruits are invited to send collections of as many varieties as can be obtained; and to accompany them with a statement as to the soil, exposure, and latitude in which they were grown. All Collections should be forwarded before the 4th of November, addressed to the SECRETARY, 20, Bedford Street, Covent Garden, London.

SCOTTISH GARDENERS' AND LAND-STEWARDS' ASSOCIATION.

ELECTION OF PENSIONERS.—The Annual General Meeting for the Election of Pensioners, and on other business, will be held here on WEDNESDAY, Nov. 8, at Seven o'clock in the evening. By order of the Board, J. H. BALFOUR, Chairman. Chambers, 6, York Place, Edinburgh.

TO NURSERYMEN, MARKET GARDENERS, & OTHERS.

TO BE SOLD, at very reduced prices, 10,000 very strong 2, 3, and 4-year old GOOSEBERRIES and CURRANTS, of the best sorts.—For further particulars, apply to LANE & DYER, Nurserymen, Bridgewater.

LARGE CAMELLIAS, AZALEAS, ETC.

TO BE SOLD, Twenty CAMELLIAS, from 3 to 6 feet in height; several AZALEAS, and other GREENHOUSE PLANTS.—For particulars, apply by letter to C. W. M., Post Office, Bushy Heath, Herts.

FINE SPECIMEN PLANTS.

J. AND J. FRASER beg to invite attention to their magnificent Collection of large AZALEAS, HEATHS, and other Plants, which were never in such good condition as at the present time. This is an excellent opportunity for buyers as (on account of not having sufficient room) the plants will be offered at very low prices.

The Nursery, Lea Bridge Road, Essex.—Oct. 28.

VARIEGATED HOLLIES.

THE SUBSCRIBERS having a large stock of Striped and other Worked HOLLIES, recommend this as a favourable time for removal; in considerable quantities they are sold cheap.—WM. URQUHART & SONS, Dundee.

J. SMITH AND SONS, Tansley, near Matlock, begs to offer cheap, an over-stock of one or two years' Seeding OAK, one year's BEECH, and one year's SYCAMORE; also Transplanted Beech, in sizes from 1½ to 5 feet. Price, according to quantity required, on application.

CHARLES DALY AND SON beg to offer the following:—One year Seedling Thorns, at 1*s*. 6*d*. per 1000; Two years Transplanted, 6*s*. do. Laurel, 10*s*. per 1000; Portugal do, 4*s*. per 100, good plants. Irish and Spread Yews. Bushes for hedges, Forest Trees, Seedlings do, and Grass Seeds cheap.

Prices sent free by Post.—Coleraine, Oct. 28.

LARGE EVERGREENS, ETC.

JOHN ADAMS, NURSERYMAN, Park Lane, Brompton, near the "Hoop and Toy," calls the attention of gentlemen and the trade engaged in autumn planting to his extensive stock of LARGE EVERGREENS, comprising Hollies, Yews, Red Cedars, Siberian, China, and American Arbor vitæ, Tree Box, Edging Box, Laurels, Bays, Cedrus deodara, Pinus excelsa, &c., &c., all of which are in a fine condition for moving.

A fine stock of large Fruit Trees for immediate bearing.

FOREST TREES, ETC.

PETER LAWSON & SON, Edinburgh, the QUEEN'S SEEDSMEN, &c., respectfully acquaint their patrons in England and the public, that their PRICED LIST of PLANTS for the season is now ready, and may be had on application, at their Branch Establishment in London.

All orders sent to the London Branch will be immediately executed, and delivered in London free of expense.

27, Great George Street, Westminster, October 28.

TO GENTLEMEN ENGAGED IN PLANTING.

JAMES GRAHAM, Successor to Messrs. Silverlock & Son, respectfully invites attention to his Stock of Hardy Ornamental Trees and Shrubs, fine large Transplanted Forest Trees, Trained Peaches and Nectarines on walls, Apricots, Plums, Apples, Pears, Cherries, &c.; Figs, Gooseberries, Currants, Strawberries, &c.; Grape Vines from Eyes, Archangel Mats, Mushroom Spawn, Dutch Bulbs, &c. SEEDS.—Improved Sion House Cucumber Seed, 2*s*. per packet.

N.B. Gardens and Pleasure Grounds laid out and planted.

North Gate Nursery, Chichester.

TO PLANTERS OF ORNAMENTAL & HARDY CONIFERS & SHRUBS.

YOUELL AND CO. beg respectfully to invite the attention of those Gentlemen who may be engaged in planting the above, to their Advertisement which appeared in the *Gardeners' Chronicle* of October 14.—Royal Nursery, Great Yarmouth.

SECOND IMPORTATION.

FRESH IMPORTED BULBS *bloom much finer than those which have been long exposed to the air before planting.*

JOHN SUTTON AND SONS, Reading, Berks, can supply FINE BULBS, just imported, at low prices; see their Catalogue, which may be had, post free, in return for one penny stamp.

JUST HARVESTED.

SUTTON AND SONS, SEED GROWERS, Reading, have now harvested some fine seed of true Early Shorthorn Carrot, Mustard, Cress, Lettuce, Early Peas, and other Seeds for early sowing.

SPLENDID HOLLYHOCKS.

HOLLYHOCK SEED sown now under glass will produce plants sufficiently strong to bloom well next season. SUTTON AND SONS, SEED GROWERS, Reading, have saved some good ripe seed from the best Show Flowers only, which they are now sending out at 1*s*. per packet, post free.

HOLLYHOCK SEED, from selected flowers of all the best collections in England and Scotland, 2*s*. 6*d*. per packet.

SPOTTED MIMULUS, from finely shaped flowers of every variety of colour and spot, at 1*s*. 6*d*. per packet.

CHOICE CALCEOLARIA, from the most superb collection in England, 2*s*. 6*d*. per packet.

JNO. AND CHS. LEE, NURSERY AND SEEDSMEN, Hammersmith.

DUTCH HYACINTHS, for Forcing, single and double, at 4*s*. per dozen. Also Narcissi, Crocuses, Tulips, Irises, Jonquils, Anemones, and Ranunculuses, priced Catalogues of which will be forwarded by post, from ARTHUR CORBETT'S Italian and Foreign Warehouse, 18, Pall Mall.

Also Double Roman and Paper White Narcissus, the most beautiful and fragrant of all the Narcissi, 4*s*. per dozen.

NEW PHLOX.

DREGHORN AND AITKIN, Nursery and Seedsmen, Kilmarnock, will send out immediately PHLOX BEAUTY of MILRIG, a pure white, with yellow eye, flowers extra large, smooth edge, fine, round, stiff petal, and a large trusser. It is considered by first-rate judges to be the best white out. Price 2*s*. 6*d*. each, with eight plants sent to the trade when six are ordered.

BATH NURSERY AND SEED ESTABLISHMENT.

JAMES GRIFFIN begs to announce that his annual importation of Hyacinths and other Dutch Bulbs have arrived in excellent condition, and comprise all the best and most useful varieties.

J. G. has an immense stock of all the choicest kinds of Pinks, at 6*s*., 9*s*., and 12*s*. per dozen pairs.

Antirrhinum Seed saved from a first-rate collection, 1*s*. per packet.

Weston Road, and 2, New Bond Street, Bath.

RHUBARB ROOTS.

MYATT'S LINNÆUS	35*s*. per 100.
" VICTORIA	28*s*. "
MITCHELL'S ALBERT	30*s*. "

Good strong Roots, and warranted true to kind.

J. G. WAITE, Seed Merchant, 181, High Holborn, London.

STRAWBERRY PLANTS.

CUTHILL'S BLACK PRINCE ...	21*s*. per 1000.
" PRINCE OF WALES ...	10*s*. "
BRITISH QUEEN	21*s*. "
ELTON PINE	21*s*. "
PINCE'S NIMROD, New	20*s*. per 100.

J. G. WAITE, Seed Merchant, 181, High Holborn, London.

HART AND NICKLIN, FLORISTS, &c., Guildford, offer the following Plants:—

GERANIUMS, 12*s*. per dozen, including Optimum (Foster). Fancy ditto, 10*s*. per dozen.

PANSIES (choice show flowers), 10*s*. per dozen.

DUTCH BULBS OF SUPERIOR QUALITY AT LOW PRICES.

Anemones, early flowering, brilliant colours ...	5*s*. per 100.
Hyacinths, Dutch Mixed, all colours	21*s*. per 100.
" " named, separate colours ...	6*s*. per doz.
Narciss, mixed	1*s*. "
Tulips, Dutch, mixed, early sorts	6*s*. per 100.
Crocus, Dutch, mixed, all colours	10*s*. per 1000.
Iris, mixed, all colours	5*s*. per 100.

The above, with every other kind of Flower Roots, equally moderate in price, may be had of WILLIAM DENYER, Seedsman and Florist, 82, Gracechurch Street, London.

Descriptive and priced Catalogues forwarded on application.

IMPORTANT TO POTATO GROWERS.

HAY, SANGSTER, AND CO., are now ready to send out their celebrated Stock of SEED POTATOES from prepared cuttings, now completely free from disease, of the following sorts, viz.:—

Early Ebrington Kidneys, per bushel 12*s*.	Early American, per bushel, 8*s*.
	York Regents " 6*s*.
Early Oxford " 10*s*.	Scotch Cups " 6*s*.

Package and delivery in London, 9*d*. per bushel, and 2*s*. per sack.

Newington Butts, London.

SEED POTATOES. — EARLY ASH-LEAVED KIDNEY POTATOES ... ... 6*s*. 6*d*. per bushel.
EARLY FORTYFOLD POTATOES ... 4*s*. "
LAPSTONE KIDNEY POTATOES ... 6*s*. "

Address H. MAY, The Hope Nurseries, near Bedale, Yorkshire.

SEED POTATOES.—BRITISH QUEEN, as an abundant bearer, for early maturity, and excellence in eating, unsurpassed; price per bushel (bag included) 7*s*. EARLY ASH-LEAF (true) 8*s*. per bushel. FORTY FOLD, 6*s*. per bushel. HART and NICKLIN, High Street, Guildford.

HOLLYHOCK SEED.

R. PARKER has now ready for sending out Seed of this year's saving from the finest named varieties in cultivation, in packets at 1*s*. and 2*s*. 6*d*. each. A remittance or reference to accompany all orders from unknown correspondents. —Paradise Nursery, Hornsey Road, London.

DELPHINIUM CONSPICUUM.

ARCHIBALD GODWIN begs to inform his numerous applicants that he is not able to supply any more of the above Delphinium before April, 1855.

N.B. Trade and retail Catalogues on application.—The Nurseries, Ashbourne, Derbyshire.

TULIPS, ETC.

CAREY TYSO, FLORIST, &c., Wallingford, is prepared to sell a few remaining blooming TULIP BULBS of the best sorts, and a quantity of offsets, at very low rates.

C. T. will send his CATALOGUE of ANEMONES, RANUNCULUSES, CARNATIONS, PICOTEES, PINKS, &c., on receipt of a postage stamp.

ROSE CATALOGUE FOR 1854-55.

WILLIAM WOOD AND SON are now prepared to issue COPIES of their New ROSE CATALOGUE for the present season on receipt of two postage stamps. General Catalogue of Nursery Stock may also be had on same terms.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

ROSE NURSERIES, HERTFORD.

E. P. FRANCIS' List of ROSES, containing all the new varieties worth cultivating, with a stock of 5000 dwarfs in 150 sorts, most successfully grown on the Manetti Stock, is now ready for delivery, and will be forwarded to any amateur, gratis, on application.

TULIPS.

HENRY GROOM, Clapham Rise, near London, by appointment FLORIST TO HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to inform the AMATEURS OF TULIPS that his CATALOGUE is ready, and will be forwarded by post on application. He is happy to say that from the superior growth of last spring, he has been enabled to make a considerable reduction in the prices.

HYACINTHS AND DUTCH BULBS.

HENRY GROOM, Clapham Rise, near London, by appointment FLORIST TO HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to say that he has received his HYACINTHS AND DUTCH BULBS, in excellent condition, and that they are much finer than usual. He begs to say he has a few bulbs of Calochortus luteus, and Lilium Thompsonianum still for sale.—His CATALOGUE of BULBS, &c., will be forwarded on application.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER'S descriptive List of the above splendid flowers, containing hints on their culture, and observations on exhibiting, &c., is now ready, and may be had on application, by forwarding one postage stamp.—Saffron Walden Nursery, Oct. 28.

PRICED NURSERY CATALOGUES.

A. PAUL AND SON will be happy to forward the following priced Nursery CATALOGUES in return for one postage stamp each:—A, ROSES; B, ORNAMENTAL TREES AND CONIFERS; C, FRUIT TREES; D, HERBACEOUS PLANTS; F, GREENHOUSE PLANTS, &c.; G, SEEDS; H, HOLLYHOCKS; I, BULBS.—Nurseries, Cheshunt, Herts.

GEORGE JACKMAN begs to announce that he has just published a new and complete CATALOGUE of his Ornamental Evergreens, Conifers, Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., and may be had on application by enclosing two postage stamps.

Woking Nursery, 1½ mile from Woking Station, South Western Railway, where all Trains stop, and where capital conveyances may be had.—Oct. 28.

ARTHUR HENDERSON AND CO. beg to inform their patrons and the public that their CATALOGUES OF BULBS are now ready, and they will have much pleasure in forwarding them on application.

They comprise lists of all the finest varieties of Hyacinths, and many other rare and valuable Bulbs.

Their collections of Hyacinths have yearly carried off the metropolitan prizes, not only for their unique growth, but also for their beauty of colouring and distinctness of sorts, either when exhibited in a collection of 36 plants or in pairs.

Pine-apple Place, Edgeware Road, London.

AMERICAN NURSERY.

GEORGE BAKER'S DESCRIPTIVE CATALOGUE of AMERICAN PLANTS, &c., as exhibited by him in the Royal Botanic Gardens, Regent's Park, may be had by inclosing two postage stamps.

G. B. begs to call attention to his fine stock of Weeping Hollies, Coniferous Plants, Ornamental Shrubs, &c.—American Nursery, Windlesham, near Bagshot, Surrey, near Staines Station, South-Western Railway, where conveyances may be obtained.

AMERICAN PLANTS.

JOHN WATERER begs to announce that he has published a new Catalogue of his Rhododendrons, &c., as exhibited by him in the Gardens of the Royal Botanic Society, Regent's Park, London. It describes the colours of all the Rhododendrons considered worthy of cultivation, with a Treatise on their successful management, and may be had by enclosing two postage stamps.

The American Nursery, Bagshot, Surrey, near Farnborough Station, South-Western Railway.

AMERICAN PLANTS. — A Descriptive Priced CATALOGUE of HARDY AMERICAN PLANTS for the coming season is just published, and may be had by enclosing two stamps for postage. As everything in the way of American Plants is grown to an unequalled extent at this Nursery, intending purchasers would do well to provide themselves with this Catalogue.

WATERER AND GODFREY, Nephews and Successors to the late Hosea Waterer, Knap Hill Nursery, Woking, Surrey.

THE PERPETUAL TREE VIOLET, or DOUBLE VIOLA ARBOREA.—The original grower of this, the true variety of the above beautiful Violet, now offers it to the public; it has surpassed all others, and now stands without an equal for its size of flowers, fragrance, and perpetual blooming; and as a plant for the Conservatory or Greenhouse, nothing can equal it. Large plants, 6s. per dozen; smaller ditto, 3s.

DOUBLE WHITE TREE VIOLET.—This is also a fine variety, and resembles the other in many respects, with the exception of its colour. The stock of this is small, in consequence of the great demand for it last season; parties requiring plants should not delay their orders. 6s. per dozen.

THE RUSSIAN SUPERB VIOLET.—One of the finest of single Violets, large blooms, with long stems, and most delightful fragrance; will bloom well through the season if sheltered from the heavy rains and severe frosts during the dead of winter. Plants 3s. per dozen.

A TREATISE on the best and most effectual mode of cultivating the VIOLET, post free for 12 stamps, or sent gratis with all orders above 5s.

GIANT SCARLET BROMPTON STOCK plants are now ready for planting out; the spikes of flower are very large, (measuring from 18 to 24 inches in length) and so fragrant that they are admired by all who have seen them. Fine strong plants, 6d. per dozen, or 4s. per 100.

STRAWBERRY PLANTS.—Good strong plants of the following superb varieties can be supplied:—Nimrod, 10s. per 100; Prince of Wales, 10s. do.; Ajax, 5s. do.; Ruby, 5s.; Myatt's Eleanor, 3s. do.; British Queen (true), 3s. do.; Black Prince, 3s. do.; Cremont's Perpetual, 3s. do.; Victoria, 5s. do.; Surprize, 3s. do.; and a great number of other good old varieties, at 3s. per 100.

POLYANTHUS SEED, saved from the best laced varieties, 1s. per packet.

ANTIRRHINUM SEED, all saved from the best named varieties, 1s. per packet.

EXTRA FINE SWEET WILLIAM SEED, saved from all the best and most beautiful varieties, 1s. per packet.

VERY SUPERIOR WELL RIPENED HOLLYHOCK SEED, 1s per packet.

LORD KEYNON'S FAVOURITE CUCUMBER is the best and most productive for winter cultivation ever grown, requiring less heat than any other of the kind. It is a very handsome fruit and free setter. Good old seed of the above true variety may be had, price 2s. 6d. per packet.

The Violets and Seeds will be sent postage free, but the Strawberry Plants and Stocks will be sent by hamper, package free.

Any of the above will be forwarded on receipt of Post Office Order, or Penny Postage Stamps, for the amount by

EDWARD TILEY, Nurseryman, Seedsman, & Florist,
14, Abbey Churchyard, Bath, Somersetshire.

BASS AND BROWN *beg to offer the following from their New* CATALOGUE, *just published, which may be had on application for three postage stamps. They have this season a very fine and vigorous stock of Roses, which are offered at very reduced prices.*

	£	s.	d.
100 Distinct and showy vars. Herbaceous Plants ...	£1	10s.	0d.
100 Superior and new „ „ ...	2	10	0
100 Delphinium elatum (or Bee Larkspur), great variety of fine mixed colours, fine for shrubberies ...	1	4	0
Delphinium maximum, per dozen ...	0	6	0
12 Pentstemons, in 12 fine varieties ...	0	7	6
50 Fine varieties of Phlox ...	0	18	0
50 Extra fine ditto ...	1	5	0
12 Fine varieties of Potentilla ...	0	9	0
12 Extra fine ditto ...	0	18	0
Splendid mixed ditto, Seedlings ...	0	9	0
12 Fine varieties of Hollyhocks...	0	9	0
12 Extra fine ditto ... 18s. and	1	5	0
12 Fine Antirrhinum ...	0	6	0
12 Extra fine ditto ...	0	10	0
24 Fine vars of Dwarf Rock Cistus very beautiful ...	0	15	0
12 Best new varieties of Pompone Chrysanthemum of last season, bushy, and in full bud for flowering ...	0	12	0
10 Best new large flowering ditto ...	0	10	0
60 Splendid varieties, including the 22 last named ...	2	0	0
20 Fine hardy Climbing Plants ...	0	15	0
100 Fine varieties of best Roses, Standards ...	7	10	0
100 „ Dwarf and Half Standards ...	4	0	0
100 Fine mixed Dwarfs ...	1	10	0
50 Fine varieties of Standards, all selected from Perpetuals...	4	0	0
50 „ „ Dwarf, „ „ ...	2	10	0
100 Finest Prize Gooseberries, strong, two and three-year plants, in 25 varieties ...	1	15	0
25 „ „ „ one of each ...	0	10	6
Strawberries, Myatt's Admiral Dundas, per dozen ...	0	7	6
„ Patterson's Selected Nonpareil...	0	12	0
„ Ward's Omer Pacha ...	0	10	0
„ Barret's Magnum Bonum, very large ...	0	6	0
„ Nicholson's Ajax and Ruby, per 100 ...	0	10	0
„ Nicholson's Fillbasket and Captain Cook, per 100 ...	0	15	0
„ Best other leading kinds, per 100 ...	0	3	0
Choice trained Peaches, Nectarines, and Apricots, strong, per dozen ... 42s. to	3	0	0
Standard, Dwarf, and Trained Fruit Trees of other sorts, strong, and all of first quality			
Rhubarb, Salt's new Crimson Perfection, each ...	0	7	6
„ Royal Albert, Linnæus, and Victoria per dozen ...	0	7	6

FLOWER ROOTS.

	£	s.	d.
Choice Imported Dutch Hyacinths, per dozen, 6s. to	0	9	0
20 Choice varieties of Polyanthus, Narcissus...	0	8	0
100 Very fine named Ranunculuses ...	1	0	0
Ranunculuses, fine mixed, per 100 ...	0	5	0
„ very fine, „ ...	0	10	0
50 Superb named varieties of Anemones ...	0	12	6
Very fine mixed ditto, per 100 ... 6s. to	0	10	0
Mixed Semidouble Russian, very showy, per lb. ...	0	6	0
Mixed new Single, per lb...	0	4	0
50 Splendid Early and Late varieties of Gladiolus ...	2	10	0
12 Superb Late varieties, Ramosus habit ...	1	0	0
12 Splendid Early varieties, 10s. 6d. Fine ...	0	6	0
30 vars. of Early Tulips, very select and beautiful ...	0	7	6
11 vars. of Double ditto, 6 roots of each, very showy ...	0	10	0
40 varieties of Splendid and Distinct English Iris, flowering in June ...	1	5	0
Very choice Mixed, per 100 ...	0	15	0
Fine Mixed „ ...	0	10	0
40 varieties of Splendid and Distinct Iris germanica flowering in May ...	2	5	0
Best mixed ditto, per dozen ...	0	5	0
Fine mixed ditto, ditto ...	0	3	0
20 varieties of Splendid and very distinct named Crocus, 12 roots of each...	0	12	0
10 „ „ 100 roots of each ...	1	4	0
Fine Mixtures and separate colours, per 100 1s. 3d. to	0	2	0

Beautiful collection of Ixias, Sparaxis, Oxalis, Tritoma, Cyclamen, Lilium, and an extensive variety of other Roots.

Goods carriage free (not under 20s.) to all the London Termini, and all Stations on the London and Norwich Colchester Line, and Plants added gratis with orders of 40s. and upwards. Post Office orders payable to Bass & Brown, *or to* Stephen Brown, *Seed and Horticultural Establishment, Sudbury, Suffolk.*

RARE CONIFERÆ.

ALEX. PONTEY, Nurseryman, Plymouth Nursery, Plymouth, begs to inform Gentlemen wishing to add to their Arboretums, that he can supply the following. Most of the kinds are planted in his Arboretum. He can warrant them hardy.

Alex. Pontey particularly calls attention to the THUJIOPSIS BOREALIS, which has proved quite hardy, and one of the grandest Coniferæ in cultivation. My specimen plants are now 3 feet high, and show their true character. Lists and prices will be forwarded on application.

N.B. A. P. can offer an extra-sized Libocedrus Chilensis about 6 feet high—splendid specimen.

Abies Whitmaniana	Libocedrus chilensis
Araucaria gracilis	Abies orientalis
Biota glauca	Pinus abchasicus
„ stricta	„ Nordmanniana
Cephalotaxus Fortuni (male)	„ ponderosa
„ „ (female)	„ atlantica
Cupressus Thujiformis	Podocarpus coriacea
„ excelsa	„ japonicus
„ species from the hills of India	„ longifolius
„ Whitleyana	„ nubigera
„ Knighti	Taxus elongatus
„ mexicana	„ nucifera
„ squarrosa	„ adpressa
Fitz-Roya patagonica	Torreya Humboldti
Juniperus argentea	Thuja filiformis
„ nepaulensis	„ nepaulensis
„ japonicus	„ intermedia
„ chinensis	„ flagelliformis
„ oblonga pendula	„ asplenifolia
„ sphærica	„ Doniana
	Thujiopsis Borealis
	Wellingtonia gigantea.

Plymouth Nursery, October 28.

THE AMERICAN NURSERY, BAGSHOT, SURREY.

JOHN WATERER begs to recommend to the attention of Gentlemen and others engaged in Planting, the following plants from his general Stock, they are in fine healthy condition. The American Plants annually exhibited at the Royal Botanic Gardens, Regent's Park, are supplied from this establishment.

RHODODENDRONS.—The following is a selection of the most admired scarlet, rose, and high-coloured varieties in cultivation; are perfectly hardy, and bloom for the most part during the month of June.

Blandyanum, fine rosy crimson ...	5s. to 7s. 6d. each.
Lady Eleanor Cathcart, vermilion rose and dark crimson spots ...	21s. 0d. „
Lady Wenlock, bright crimson ...	21s. 0d. „
Atrosanguineum, dark scarlet...	10s. 6d. „
Alaric, dark purplish crimson ...	7s. 6d. „
Omer Pasha, dark crimson, new ...	10s. 6d. „
Juba, crimson, intensely marked ...	10s. 6d. „
Lefevreanum, crimson, tinged with purple ...	10s. 6d. „
Attila, dark crimson ...	7s. 6d. „
The Grand Arab, fine glowing crimson ...	7s. 6d. „
Brayanum, crimson ...	10s. 6d. „
Nobleanum bicolor, crimson, white eye ...	7s. 6d. „
Vandyke, light crimson...	10s. 6d. „
Blatteum, dark purplish red ...	7s. 6d. „
Rubens, light rose ...	10s. 6d. „
The Duke of Norfolk, clear rose, fine ...	10s. 6d. „
Celebrandum, dark crimson purple ...	10s. 6d. „
Rembrandt, fine crimson ...	10s. 6d. „
Congestum roseum, fine rose, well marked ...	21s. 0d. „
Roseum novum, clear rose ...	10s. 6d. „
Leopardi, rosy purple, and very much marked ...	5s. 0d. „
Floribundum coccineum, fine ...	10s. 6d. „
Erectum, good crimson ...	7s. 6d. „
Towardianum, large rose, fine...	10s. 6d. „

For planting extensively, no kinds of Rhododendrons are better calculated for a display than the varieties of the noble Catawbiense; they are all perfectly hardy, producing fine trusses of blooms of various hues—scarlet, rose, purple, white, and spotted white. The list below contains the leading kinds:—

Catawbiense, good bushy plants, 50s. to 63s. per 100.
„ larger, $1\frac{1}{2}$ to 2 feet, 12s. to 18s. per doz.
„ seedlings, fine bushy plants, 12s., 18s. to 24s. per doz.

Catawbiense bicolor	Gloriosum
„ splendens	Sherwoodianum
Album elegans	Bouquet de Flore
„ grandiflorum	Melanthauma
Cæleste	Pictum
Cyaneum	Roseum elegans
Candidum	Victoria
Delicatissimum	Maculatum nigrum
Egregium	„ purpureum
Everestianum	Macranthum
Finibriatum	Nivaticum
Mirandum	Perspicuum
Lindsayanum	

Good strong well established bushy plants, 30s. to 42s. per doz. Larger plants can be supplied at a corresponding advance of price.

STANDARD RHODODENDRONS.—Of these, without doubt, we possess the largest stock of really good kinds. Nothing can be more imposing when in bloom than a handsome standard. We have them 3 feet to 5 feet stems, and handsome symmetrical heads. The price of such would range from 42s. to 105s. each.

Rhododendron ponticum, good plants, 10s. 6d. per 100; larger, 1 to $1\frac{1}{2}$ to 2 feet, 12s. 6d., 15s. to 25s. per 100. This is especially worthy the attention of planters; it will thrive in any soil, and in the most severe weather; is never injured by hares or rabbits. Unquestionably it is by far the best shrub for under cover.

KALMIA LATIFOLIA, good bushy plants, 60s. per 100; larger, 12s., 18s. to 24s. per dozen.

HARDY HEATHS, in 20 fine, named, varieties, many of them well suited to form edgings for larger clumps, 35s. to 42s. per 100.

HARDY AZALEAS.—A good assortment, if left to our selection, suitable for extensive planting, 1 to $1\frac{1}{2}$ and 2 feet, 3l. 3s. per 100. The very best selected Ghent and other varieties, 18s. to 30s. per dozen. These produce flowers of all colours—scarlet, rich orange yellow, rose, and white.

STANDARD ROSES, of the most approved Perpetual and Bourbon varieties, 3 to $4\frac{1}{2}$ feet stems, 18s. per dozen.

PINUS Douglasi, handsome seedling plants, 3 to 4 and 6 feet.
„ insignis; we strongly recommend our stock of this justly admired Fir, all of which are from seed, 2 to 3, 4, & 5 ft.
„ cembra, 3 to 4 and 5 feet.—Pinus excelsa, 3 to 6 feet.
„ macrocarpa, 2 to 3 feet.
„ Lambertiana, very handsome, 3 to 4 feet.
Araucaria imbricata, splendid formed specimens, 2 to 4 feet.
Cedrus deodara, of all heights, from 1 to 8 feet. We have a large quantity about 4 to 6 feet.
„ Africana, 3 to 4 feet.
„ Lebanon, handsome grown specimens, 3 to 6 feet.
Cryptomeria japonica, 3 to 12 ft.—Libocedrus chiliensis, 2 to 3 ft.
Fitzroya Patagonica, 2 feet.
Cupressus Goveniana, 3 to 4 feet.
„ Lambertiana, 3 to 4 and 5 to 6 feet.
Irish Junipers, 4 to 5 feet.—Irish Yews, 4 to 8 feet.

The above-named Coniferous Plants have been frequently transplanted, are perfect specimens, and have never been grown in pots. Prices will be forwarded on application.

J. W. begs respectfully to solicit an inspection of his stock, from those who are engaged in planting. A Catalogue, containing full descriptions of his celebrated Collection of Rhododendrons, as exhibited by him at the Royal Botanic Gardens, Regents Park, can be obtained by inclosing two Postage Stamps.

WILLIAMS' EVERGREEN CLIMBING ROSE.

WILLIAM WOOD AND SON have been appointed Agents by Mr. Davis, of Malvern, for the sale of the above-named magnificent CLIMBING ROSE. Good established plants, 3s. 6d. each. Usual discount to the trade. For particulars purchasers are referred to their own and Mr. Davis' advertisements in *Gardeners' Chronicle* of October 7, page 643.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

NEW VARIEGATED GERANIUMS.

JOHN AND CHARLES LEE beg to inform the admirers of Variegated GERANIUMS that they have purchased the Stock of two very promising Seedlings, which are decided improvements on those already introduced by them. The first they have named

MRS. LENNOX,

in compliment to the lady of the raiser, Thomas Lennox, Esq., of Stamford Brook Lodge, Hammersmith. The whole aspect of this plant is very striking, the habit being extremely vigorous, with leaves measuring from 4 inches to 6 inches across, and having a broad margin as white as the driven snow. The trusses are very large, of the most intense scarlet, and stand well above the foliage. The other they have named the

SCARLET FLOWER OF THE DAY,

giving an accurate idea of its character and properties. The foliage and habit are precisely the same as in "The Flower of the Day." The truss is larger and bolder, and the pips are well shaped and of great substance. The colour is all that can be wished for, being a fine scarlet, vieing with even the most favourite green-leaf varieties, and is not subject to burn under the hottest sun, either under glass or out of doors. Notice will be given next season, when they are ready to be sent out. This is inserted to prevent other parties from adopting the same names.

Nursery, Hammersmith.

BARCHARD'S SEEDLING APPLE.—This beautiful Apple was raised from seed by Mr. Higgs, upwards of 20 years gardener to Mrs. Barchard, by whose kind permission he now begs to offer it to the Nobility and Gentry. It has been twice shown to Mr. Thompson, and also cut up at the Horticultural Society's Rooms, Regent Street, where it was highly approved of, and considered to be of first-rate quality: in proof of which Mr. Thompson's opinion of it is given:—

"Barchard's Seedling.—Fruit received from Joseph Barchard, Esq., in whose garden it was raised, and fruited for the first time in the present season. Fruit middle size, roundish oblong, obtusely angular; eye rather deeply sunken, surrounded with projecting folds; stalk short, not deeply inserted; skin dark shining red next the sun, streaked towards the shaded side, which is of a pale orange tinge; flesh yellowish white, tender, with a rich brisk sugary flavour. This sort is worthy of cultivation.—Robert Thompson, Sept. 22, 1852."

It is also described as first-rate quality in the Catalogue of New Fruit in the Horticultural Journal of October 1, 1853, vol. viii., where a full description of it is given. The whole of the stock is in the hands of Mr. Dancer, of the Fulham Nursery. Strong one-year old plants, 5s. each; extra strong plants, two years old, 7s. 6d. each.

All Post Office Orders directed to Mr. Mathew Higgs, Putney Heath, payable on the Putney Post Office, will be promptly attended to, and good strong plants immediately forwarded.

CHOICE NEW GERANIUMS, &c., AT REDUCED PRICES.

HENRY WALTON, Florist, &c., Edge End, Marsden, near Burnley, Lancashire, having a large stock of the following NEW GERANIUMS in 4-inch pots, good, strong, healthy, well-established plants, begs to offer them, at purchaser's selection, 36s. per dozen, viz.—Empress, Leah, Neatness, Picta, Rebecca, Marginata, Eliza, Helen, Glow-worm, Virginia (Hoyle's), Attraction, Purple Perfection, Indian Chief, Majestic, Regalia, Governor-General, Carlos, Zeno, Tamberlik, Rosa, Lucy, Duchess of Wellington, and Rhoda. Choice varieties of 1853, strong plants, 15s. per dozen. Fine old show varieties, 6s., 9s., and 12s. per dozen. Fine spotted French varieties, which are very showy and attractive, 2s. 6d. each. Choice fancy varieties, 9s., 12s., and 18s. per dozen.

CINERARIAS, from a collection of more than 100 of the best varieties, new of last season, 18s. per dozen; choice older varieties, 6s., 9s., to 12s. per dozen.

PANSIES, of which H. W. has several thousands of plants of the best in cultivation, 4s. 6d., 6s., 9s., 12s., and 18s. per dozen.

CARNATIONS AND PICOTEES, fine show varieties, 9s., 12s., to 30s. per dozen pairs, or 25 pairs for 21s.

HOLLYHOCKS, including the best varieties out, 6s., 9s., 12s. to 30s. per dozen.

All the newest and best FUCHSIAS of this season, 1s. 6d. and 2s. each, or 18s. per dozen.

VERBENAS: new varieties of this season, 1s. each, or 9s. per dozen.

PETUNIAS: new varieties of this season, 1s. 6d. each, or 15s. per dozen.

Also a large collection of FERNS AND LYCOPODS at very low prices. Parties intending to make a select collection would do well to inspect H. W.'s catalogue.

Collections of STOVE AND GREENHOUSE PLANTS at reduced prices.

CINERARIA SEED from the best varieties, 1s. 6d., 2s., and 2s. 6d. per packet, post free.

Descriptive Lists of the above now ready, and may be had for one postage stamp. A remittance is respectfully requested from unknown correspondents, made payable at Marsden, Lancashire.

THE LARGEST AND CHEAPEST ESTABLISHMENT IN ENGLAND for Geraniums (show and fancy), French Geraniums, Fuchsias, Verbenas, Fairy Roses, Chrysanthemums, Heliotropes, Cinerarias, Calceolarias, Primulas, and other soft-wooded plants, is the Floral Nursery, Acton Road, Turnham Green, near London. More than 250,000 plants are there cultivated annually.

The stock of show Geraniums exceeds 50,000, and comprises upwards of 750 varieties, amongst which almost every known kind will be found. The newest sorts, such as Carlos, Virginia, Rosa (Foster's), Leah, Picta, Marginata, Empress, Neatness, &c., can be had at 3s. 6d. each, or 40s. per dozen. The older varieties from 9s. to 25s. per dozen.

The selection of FRENCH GERANIUMS consists of 40 distinct sorts (exclusive of those English Geraniums which some class with them), at 2s. 6d. each, or 25s. per dozen.

SEEDLING CINERARIAS (10,000), from seed of first-rate flowers, at 4s. per dozen, in 60-sized pots.

20,000 SEEDLING HERBACEOUS CALCEOLARIAS now on hand at 4s. per dozen in 60-sized pots. These flowers have been raised from the seed of the best of last year's stock, which received general praise.

An immense quantity of good fimbriated PRIMULAS at 4s. per dozen in 60-sized pots, and 6s. per dozen in 48's.

CHRYSANTHEMUMS (Lilliputian and large flowering) at 6s. and 9s. per dozen for plants which will flower this season. Large magnificent plants at 18s. and 15s. per dozen—all the best sorts.

The foregoing have been selected as examples only, it being impossible within the limits of an advertisement to afford particulars of a stock so extensive; Catalogues will, however, be forwarded to all parts gratis.

Every possible exertion will be made to give the most perfect satisfaction to all who may favour this Establishment with their patronage. None but thoroughly established Plants will be sent out, and full reliance may be placed on prompt attention and fair dealing.

The Trade will be liberally dealt with. Provincial Nurserymen and Florists will do well to try this Establishment.

Terms cash or a satisfactory reference.

JOHN WESTWOOD, Proprietor.

CHRYSANTHEMUMS.

R. PARKER begs to offer fine bushy plants of the above, well established in 6-inch pots, for flowering this autumn, consisting of all the newest and finest Pompon and large flowered varieties in cultivation. Purchaser's selection at 9s. per dozen.

CINERARIAS (Seedlings), from all the finest varieties, carefully selected, including the new varieties sent out last autumn. Strong established plants, in 4-inch pots, at 4s. per dozen. A choice collection of named Cinerarias in strong established plants, purchaser's selection, at 9s. per dozen.

ROSES, consisting of the best varieties of Hybrid Perpetuals, Teas, Bourbons, &c., well established in pots. Purchaser's selection, at 12s. per dozen. List of names forwarded upon application.

A remittance or reference to accompany all orders from unknown correspondents.

Paradise Nursery, Hornsey Road, Islington.

SUPERB DOUBLE HOLLYHOCKS.

JOSEPH BAXTER, Gardener to R. Hills, Esq., Colne Park, near Halstead, Essex, begs to announce that he has now ready for sending out a large stock of extra strong plants of nearly all the varieties yet sent out; also some superb new varieties of J. B.'s own raising.—Descriptive Catalogues will be sent post free on the receipt of a postage stamp; also Seed saved from J. B.'s superb collection; 150 Seeds mixed for 12 postage stamps. Collections, consisting of well contrasting colours, at 6s., 10s., 15s., and 26s. per dozen; if good double contrasting colours for Borders, not named, 4s. per dozen, left to J. B.'s own selection. A remittance is solicited from unknown correspondents. Post Office orders, payable at Halstead, Essex.

NEW CLIMBING HYBRID PERPETUAL ROSE,

THE "DUCHESS OF NORFOLK."—Colour, Vivid Crimson. To be sent out for the first time about the end of October.

WILLIAM WOOD AND SON beg to refer to their advertisement in the *Gardeners' Chronicle* of September 30, page 627. Standards, half-standards, or dwarfs, will be supplied at 10s. 6d. each, with the usual allowance to the trade.

N.B. When six plants or more are ordered by the trade, a very considerable reduction will be made beyond the usual discount, particulars of which may be had on application.

A Drawing of the above may be had for 6 Postage Stamps.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

CHATERS' SEEDLING PANSY, PICOTEE.

J. CHATER AND SON beg to announce that they intend sending out after the 20th October, their SEEDLING PANSY named PICOTEE, in strong plants, 5s. each. Pure white ground, beautifully edged with azure blue; eye large, fine form and substance. The margin of this flower resembles a fine Picotee.

Also Hollyhock Seed, from the best sorts, in packets containing 200 Seeds, 1s. 6d.; 400 Seeds, 2s. 6d.

Fine Plants of splendid Sweetwilliam, 1s. 6d. per dozen; 10s. per 100.

Choice Pansy Seed, 1s. to 2s. 6d. per packet.

A catalogue of the best Hollyhocks, Pansies, Roses, and Pinks, can be had on application to J. CHATER & SON, Nurseries, Haverhill, Suffolk.

CRIMSON PERFECTION RHUBARB.

ROBERT SALT, of Longton, Staffordshire, begs to inform the Gentry and Nurserymen that this splendid variety of Rhubarb is now ready for distribution, and shall feel happy to serve parties who may favour him with their orders.

R. S. begs to state that it is the most splendid, early, and prolific variety ever offered to the public. Orders addressed to ROBERT SALT, Longton; Messrs. Hurst and M'Mullen, 6, Leadenhall Street, London; Messrs. Burgess and Kent, Penkhull; Messrs. Francis and Arthur Dickson, Eastgate Street, Chester; Mr. Wood, Nurseryman, Nottingham, will have immediate attention. Price 7s. 6d. per root, three for one guinea, and six for 2l. A liberal discount allowed to the Trade. A Post-office Order from unknown correspondents.

OMER PACHA STRAWBERRY.

WILLIAM JAMES WARD has still to spare a few more well-rooted plants of the above excellent Strawberry. Testimonials of the highest order. See advertisement in the *Gardeners' Chronicle*, August 26; also in the Descriptive List of New Fruits in the "Florist and Fruitist," Sept. Number, accompanied with a woodcut.

100 Plants	£3 0 0	25 Plants	£1 0 0
50 "	1 15 0	12 "	0 12 0

Prospect Hill, Reading, Oct. 28, 1854.

NICHOLSON STRAWBERRIES REDUCED IN PRICE.

WILLIAM NICHOLSON is now sending out strong well-rooted Plants of his four new and distinct Strawberries, viz., AJAX, a very fine large dessert fruit, very beautiful, solid, and juicy; RUBY, ditto, a great bearer, and forces well; CAPTAIN COOK, market fruit, large, and a great bearer; FILLBASKET, ditto, 6s. per 100, box included. Most of the old and new sorts can be supplied.

*** See Mr. J. W. KINMONT's remarks on the above Strawberries, printed in No. 31, 1854, page 501, of this Paper.

Post-office Orders, payable at Yarm, Yorkshire, or a cash remittance required with the order.

Egglescliffe, near Yarm, Oct. 28, 1854.

MYATT'S new Seedling Strawberry, "ADMIRAL DUNDAS."—This is the most extraordinary variety, for size and productiveness, that has yet been raised at Manor Farm; it is much larger and a better flavour than either the Surprise or Mammoth, and ripens off the late fruit to advantage.

J. M. & SONS can confidently recommend this, as being superior to any large variety that has come under their notice.

Strong, well-rooted runners are now ready, and will be carefully packed and delivered free to any part of London, at the following scale of charges:—100, 50s.; 50, 30s.; and 25, 16s. Also strong Plants of MYATT's British Queen, Cinquefolia, Eleanor, Surprise, Globe, Eliza, Hooper's Seedling, Keens' Seedling, Black Prince, and Barnes' Bicton Pine, 5s. per 100.

Manor Farm, Deptford, October 28.

CHARLES TURNER has much pleasure in introducing the NEW RHUBARB—"SCARLET NONPAREIL." This very superior variety was raised by J. Riley, Esq., of Birkbey, near Huddersfield, who has placed the stock in CHARLES TURNER's hands for sale. It is unquestionably the best and most distinct variety yet introduced, being of a deep rich colour; when cooked, tender, juicy, and remarkably free from acidity. This variety is very strongly recommended by several eminent judges.

Samples have been forwarded to the Editors of the various publications, who have most warmly recommended it above all the existing varieties.

In the May (1854) No. of the "Florist," the Editors remark:—

"RHUBARB – Mr. Riley, Your 'Scarlet Nonpareil' is in every respect a very desirable variety—tender, juicy, high coloured, and remarkably free from acidity. In tarts it has more the flavour of Apricots than Rhubarb."

In the "Gardeners' Record" of May, 1854, Mr. Neville remarks:—

"J. RILEY. SEEDLING RHUBARB 'SCARLET NONPAREIL.'—This is a superior variety, deep crimson; the juice, when cooked, approaches that of Damsons in colour, and is of a rich and delicious flavour. The stem should not be pared, as is usual with most kinds, as it needs only wiping clean. It is an early variety, and will prove an invaluable acquisition."

Plants now e y t 5s. each.—Royal Nursery, Slough.

EARLY DANIEL O'ROURKE PEAS.

J. G. WAITE begs to inform the Trade that he is now ready to execute orders for this valuable early Pea. Price can be had on application.

Seed Establishment, 181, High Holborn, London.

VINES IN POTS,

GROWN UNDER GLASS FROM SINGLE EYES, 4 to 6 feet high.

ALEXANDER PONTEY, NURSERYMAN, Plymouth, begs to offer the following sorts of VINES, warranted true to name. If 12 or more are ordered, they will be delivered free in Bristol or London: price 2s. 6d. to 3s. 6d. each.

VINES.—Alicant, or Black Spanish; Barbarossa; Black Hamburgh; do. Hampton Court; do. Warners; Constantia, black; Eschalota superba; Frontignac, White; do. Grizzly; do. Red; Gromier de Cantab; Joslyn St. Aubyns; Muscat of Alexandria; do. Tottenham Court; do. Lunel; Lees (early); do. Canon Hall; St. Peter's (Oldacres), black; Wilmot's Royal Victoria; Tripoli (Wellbeck's); Sweet Water (White Dutch); do. Grove's End.

Plymouth Nursery.—Oct. 28, 1854.

HOLLYHOCK SEED.

WILLIAM CHATER begs to offer packets of the above Seed, containing twenty sorts, selected from his best show varieties, at 5s.; 12 varieties, do., 2s. 6d.; and from good double border sorts, at 1s.—Also Pansy Seed, from the best flowers, 2s. 6d. per packet.—Strong Plants of the new Double Crimson Rocket, excellent bedding plants for spring flowering, 6s. per dozen, or 2l. per 100; Double French White, 4s. per doz., or 30s. per 100.—Saffron Walden, October 28.

CARNATIONS, PICOTEES, PANSIES, ETC.

JOHN SCHOFIELD AND SON have now ready strong plants of all the approved CARNATIONS, PICOTEES, PINKS, and PANSIES, as follows:—25 pair of Carnations and Picotees, 1l. 1s.; 25 pair of Pinks, 15s.; 25 Pansies, 1l. 1s. A Descriptive Catalogue of the above, &c., is ready: also a few packets of Pansy and Hollyhock Seed carefully selected from the finest sorts, 2s. 6d. per packet.—Knowsthorpe, near Leeds, Yorkshire.

SUPERB SHOW CARNATIONS, PICOTEES, PINKS, PANSIES; &c. &c. &c.

	£	s.	d.
25 pairs Show Carnations (named)	1	0	0
25 " " Picotees "	1	0	0
25 " " Pinks "	0	10	0
25 Plants Show Pansies "	0	12	0
100 Tulips...	1	0	0
Fluke Potatoes, per bushel	0	5	0
Selected Pansy Seed, per packet	0	2	0
Heaviest Show Gooseberries, per dozen	0	6	0

Auriculas, Alpines, Polyanthuses, Primroses, Belgian Daisies, &c. &c.—Priced and descriptive Catalogues now ready for one stamp. Post Office orders payable at Middleton, Lancashire.

JOHN HOLLAND, Bradshaw Gardens, Middleton, near Manchester.

TO SEEDSMEN AND POTATO GROWERS.

JOSEPH WILSON, Seedsman, Ipswich, begs most respectfully to inform the trade and others, that their orders to any extent can be executed for the following early varieties of Seed Potatoes, they are all well-known, and require but little to be said in their favour by way of recommendation; but it may be necessary to say, that they are quite free from disease, and that each variety will be guaranteed a "true stock," viz.:—

	s.	d.
Jackson's Improved Early Ashleaf, per bushel ...	9s.	0d.
The Short Top ditto	7	6
" Moss Kidney	7	0
" Cambridge	7	0
" Prolific	7	0
" Fisherene	7	0
" British Queen's	7	6

No charge for sacks, and free to London—trade price on application.

JOHN CATTELL, Westerham, Kent, begs to inform the public that his Descriptive Priced CATALOGUES of his extensive collection of NURSERY STOCK for the current season, are now ready, and may be had on application, enclosing a penny stamp for each, excepting Catalogue No. 10, which will require two penny stamps.

CATALOGUE No. 6.—GRAPE VINES, STRAWBERRIES, RASPBERRIES, &c.
" No. 8.—ROSES.
" No. 9.—FRUIT TREES.
" No. 10.—HARDY ORNAMENTAL TREES AND SHRUBS, CONIFERÆ, AMERICAN PLANTS, CLIMBERS, &c.
" No. 11.—FOREST TREES, &c.

BASS AND BROWN'S NEW AUTUMN CATALOGUE, containing the following, is now complete, and supplied free by post for three Penny Stamps.

Dutch and Cape Roots.	Hardy Herbaceous Plants.
Geraniums.	Potentillas.
Cinerarias.	Hollyhocks.
Azalea indica.	Antirrhinums.
Fuchsias, Verbenas, Petunias } best new of 1854.	Conifers, and other Select Trees and Shrubs.
	Hardy Climbers.
Stove and Greenhouse Plants.	Roses, Fruits, &c. &c.

Seed and Horticultural Establishment, Sudbury, Suffolk.

The Gardeners' Chronicle.

SATURDAY, OCTOBER 28, 1854.

WE continue to receive valuable information respecting the effects of last winter from various kind correspondents; with all which we shall endeavour to deal as soon as the examination of the Horticultural Society's report shall have been disposed of.

It is not a little remarkable that GARRYA *elliptica*, an Oregon plant, naturally associated with *Berberis Aquifolium*, *Ribes sanguineum*, *Spiræa ariæfolia*, and similar hardy plants should have suffered so generally; for although not killed altogether in any place from which reports were received, yet we know that it scarcely escaped with life in the immediate vicinity of London. Chiswick, Ware, Bromley, Shiffnal, Rolleston, and Nottingham, all speak of the injury it sustained; and it is only from Windermere, Bicton, and Southampton, that reports are uniformly favourable. This circumstance is the more remarkable seeing that *Garrya macrophylla*, a much more southern plant, can scarcely be said to have suffered more. To us the facts connected with *Garrya elliptica* are inexplicable; they, however, serve to swell the evidence that the hardiness of a plant is not to be judged of accurately by considerations derived merely from latitude and elevation above the sea; but that innate constitution must also be inquired into. They also suggest that a northern species of a southern genus is not to be relied upon; although the climate from which it comes would seem to justify the anticipation of its proving hardy.

The New Holland GREVILLEAS, *rosmarinifolia* and *sulphurea*, well as these pretty shrubs suit the south of England, are unmistakeably tender to the north, and away from the sea.

Seeing how much the common HOLLY suffered in many places, it is not a little interesting to observe that other species, natives of better climates than our own, were hardly more affected by the frost. Ilex *perado*, *latifolia*, *dipyrena*, and *opaca*, seem scarcely inferior in hardiness to the common Holly, which is itself a greenhouse plant in central Germany. As for the new Chinese species *furcata*, *cornuta*, and *microcarpa*, the accounts are conflicting, but rather favourable than otherwise.

The Chinese and Indian INDIGOFERAS, very pretty flowering shrubs, will hereafter rank in hardiness with the Fuchsia.

Of the newer JASMINES, *J. nudiflorum* has vindicated its claim to perfect hardiness, as has also FORSYTHIA viridissima, from the same country; they thus form the two brightest gems of our winter; even *J. revolutum*, *affine*, and *Wallichianum*, although killed to the ground, have perfectly recovered.

The Californian SWEET BAY, *Laurus regalis*, seems as hardy as the common species, if not more so. But it is as yet too rare to enable us to form a fixed opinion. The Californian GALE, *Myrica californica*, is, we hope, perfectly robust, and thus makes a really good addition to evergreen shrubs; a death is reported from Alton, but it may have been accidental. None of the Asiatic *Ligustrums* seem fit for the open ground north of London, unless it be *L. ovalifolium*.

The OLIVE TREE of Nikita, in the Crimea, a variety more hardy than the common kind, lost its young branches, but recovered. This gives us a measure of the hardiness of the Crimean shrubs from the warm sheltered nooks in the south of the peninsula. Nikita, the station of the rich Russian Botanic Garden, is near Yalta, and in the same latitude as Sebastopol. Its climate must be much finer than that of the high land at its back.

The Californian Horse Chesnut, *Pavia californica*, seems to be hardy; and even that from Nepal, *Pavia indica*, promises well. No doubt both will bear our cold whenever they can ripen their wood. PHOTINIAS must now be placed permanently among evergreens unsuitable for a vigorous climate, for even *P. arbutifolia*, once thought the hardiest of all, perished at Chiswick; there, however, *P. glabra*, a fine standard, sheltered by a wall, went through the winter pretty well. London seems to be the northern limit of this genus. PISTACIAS are spoken ill of, even at Bicton; yet we have this morning seen a good bush of *P. mutica*, the Crimean species, which has lived unsheltered for these 10 years past in a very cold garden, among rockwork, facing the south, and it has never suffered in the smallest degree. Certainly it is the hardiest of its race.

As to OAKS, there seems no hope of cultivating the Mexican species in the open ground. Some Himalayan kinds, such as Quercus *dealbata* and *glabra*, may prove as hardy as the Ilex. The Kurdistan forms, especially *Q. Branti*, disregard cold, but do not like such frosts as that of April 24, which are in fact too much for any trees whatever in young leaf.

RHODODENDRONS of very recent introduction have as yet had no sufficient trial. It is, however, certain that *R. ciliatum* is hardy, and it is probable that *Thomsoni*, *fulgens*, *niveum*, *glaucum*, *Falconeri*, *cinnabarinum*, *Campbelliæ*, *æruginosum* will also succeed without protection; but the woolly *Rh. Edgworthi* is undoubtedly tender. It also appears from the observations of Mr. MASTERS, of Canterbury, that they all resist the cold badly if planted in loam, while in peat those just enumerated survived well.

No SPIRÆAS seem to have sustained material injury. The new Evergreen shrub SWAMMERDAMIA *antennaria*, notwithstanding its Australian origin, proves as hardy as a common Laurel; nor is the *Pittosporum bicolor*, from the same country, much more tender. In speaking of *Eucalyptus*, we have already pointed out how much there is to hope from experiments with Van Diemen's Land shrubs, and these cases materially strengthen the probability. We may take this opportunity of adding that the Eucalyptus called *montana*, which has proved so hardy in the south of England, is not *coccifera*, as we suspected, but is the Van Diemen's Land *radiata*, as we have learned from specimens communicated by Mr. LUSCOMBE of Combe Royal.

Lastly we have to record the unexpected fact that

the Assam Tea plant is hardy. Several small plants in the garden of the Horticultural Society survived without the smallest protection; and, what is still more curious, a young plant in incipient leaf was very little damaged by the frost of April 24, which killed all the young wood of the Walnut trees. This may be taken as a further illustration of what we have said while speaking of *Garrya elliptica*, showing how impossible it sometimes is to judge *à priori* whether a new plant is hardy or not. It shows that the question is one that can only be answered by direct experiment.

If we turn to a map of the New World, and cast our eyes to the north of the United States, a vast tract of land will be seen stretching north to the regions of perpetual ice and snow, and east and west across the whole of the immense continent of America. This huge territory contains more than four millions of square miles, more than 2630 millions of acres, and is equal to about one-ninth of the whole terrestrial surface of the globe. Nay more, it owns the supremacy of our own Sovereign Lady Queen Victoria, and *the British possessions in North America* are open to the enterprise and energy of Englishmen. If we examine a little more closely the south-eastern portion of the district in question, we shall find in Upper and Lower Canada a country with a healthy climate and immense resources, highly prosperous and rapidly increasing in population and importance. *The census of the Canadas*, published last year in Quebec, furnishes the materials from which we select the following facts in support of this statement. We confine ourselves more particularly to such details as bear upon agriculture and gardening.

The two Canadas consist together of an area of 242,482 square miles and 155,188,425 acres; of these last 7,300,839 are occupied and cultivated. The population is 1,842,265; so that there are, or rather were in 1852, four cultivated acres to each inhabitant; 164,488 persons, or a little more than one-eleventh of the whole population, are returned as farmers, whilst only 141,949 are returned as labourers; so that, even supposing that by labourer is always meant an agricultural labourer, there are actually 22,539 farmers more than there are labourers. This is in striking contrast with the condition of our own country. England and Wales, as appears from the census of 1851,* contain an area of 58,320 square miles and 37,324,915 statute acres. The population is 17,927,609; so that upon the whole there were, in 1851, little more than 2 acres to a person, or half the quantity which exists in Canada; indeed, even less than that, *for the acreage of England and Wales*, as given above, includes the uncultivated as well as the cultivated land. With respect, again, to our agricultural population, it appears there are in England and Wales 225,318 farmers, who employ 665,651 labourers, so that, instead of there being, as in Canada, fewer agricultural labourers than farmers, there are nearly three times as many of the former as of the latter. But from the list of occupations in the English census, out of the entire population of Great Britain, amounting to nearly 21 millions of persons, one million are set down as agricultural out-door labourers; so that although as compared with the farmers the number of labourers in England and Wales is much greater than in Canada, still, as compared with the whole population, the reverse is the case, for here only one person in 21 is an agricultural labourer, whilst there one person in every 13 is so. We confess that we should have thought that there had been more than three agricultural labourers for every farmer in England and Wales; but from a table in the English census it appears that as many as 91,698 persons returned themselves as farmers employing no labourers, and more than 33,000 as employing only one; these large numbers of course materially affect the average.

Leaving agriculture for the present, and turning our attention to horticulture, we find that in Canada (Upper and Lower) there are only 421 gardeners and 42 horticulturists, florists, nursery and seedsmen taken altogether. In Lower Canada there are fewer persons of this description than in Upper Canada, and it seems somewhat surprising that except in Montreal and Quebec there should not be a single nursery or seedsman throughout the whole of the former province, and that for the same district only one person should be returned as a horticulturist, and absolutely none as a florist. When it is remembered that the area of Lower Canada is nearly 210,000 square miles, and that its population is 890,000 persons, it does seem strange that only 149, or 1 in a little less than 6000, should be found making gardening and horticulture the business of their lives. Compare this with great Britain. The population may be taken at 21 millions, and of this number 80,946 (we may say 81,000) are returned as gardeners, exclusive of 5000 who are also domestic servants, and exclusive of 2675 nurserymen and of 1156 seedsmen. In England, Wales, and Scotland, therefore, there is one non-domestic gardener to every 260 inhabitants; or, in proportion to the population, 23 times as many as in Lower Canada. In Upper Canada there are both absolutely and relatively more gardeners, &c., than in the lower province; in the former, with a population of 952,000, there are 314 gardeners, florists, &c.; that is to say, there is one to every 3000 inhabitants; or, in proportion to the population, twice as many as in Lower Canada. Canada is not the place for luxuries; in the upper province there are only 94 barbers and hair dressers, or one to every 10,000 persons; and in the lower province there are only 30, or one to every 26,000; on the other hand, if we turn to the useful and necessary branches of industry we find 10,268 carpenters, 7075 blacksmiths, and 8967 boot and shoe makers.

* The Census of Great Britain in 1851; Longman, 1854. By authority of the Registrar-General.

The Canada census contains some very interesting returns relative to the agricultural produce of the country. From them it appears that in both provinces together there are 1,136,311 acres of Wheat, yielding in Upper Canada 16, and in Lower Canada 9 bushels per acre, and 13 and 3 bushels per individual respectively. There are nearly 78,000 acres of Rye, yielding on an average 11 bushels per acre; 329,755 acres of Peas, yielding in Upper Canada 14, and in Lower Canada 9 bushels per acre; 913,356 acres of Oats, yielding as before 26 and 20 bushels per acre; and 65,650 acres of Barley yielding on an average 21 bushels per acre. Barley is the only crop which it appears from the returns is yielded in greater quantities per acre in Lower than in Upper Canada. Wheat is in the tables valued at 4*s.* the bushel; Rye at 2*s.* 6*d.*; Barley at 3*s.*; Oats at 1*s.*; and hay at 40*s.* per ton. Horses are estimated at 12*l.* 10*s.*; milch cows at 3*l.* 15*s.*; oxen at 6*l.*; sheep at 7*s.* 6*d.*; and swine at 1*l.*

A rapidly increasing population is always admitted to be a sure sign of prosperity, and we cannot conclude the present article better than by the following facts relating to this subject. In the 10 years ending in 1851 the population of Great Britain increased more than 13 per cent., that of the United States more than 35 per cent., and that of Upper Canada more than 104 per cent. In the far west of Canada, the counties of Huron, Perth, and Bruce increased from 5600 in 1841 to 37,580 in 1851, being upwards of 571 per cent. in 10 years — an increase almost beyond comprehension. England has in the average 332 persons to a square mile; Wales, 136; Scotland, only 92; whilst Upper Canada has 29; Lower Canada, 4; and the United States, 16; so that the land even now occupied in Upper Canada would hold more than 11 times its present population, say 11,000,000 inhabitants, to be as densely peopled as England. In fact, about two-thirds of the population of London alone may be taken to represent the number of persons in all Canada.

In a late Number of the *Gardeners' Chronicle* (June 3, 1854) we ventured to say "that no part of the world now presents such undoubted opportunities of acquiring rapid independence as the British possessions in North America, and more especially Canada;" that opinion was founded more particularly on a pamphlet* then referred to, and is amply warranted by the official returns contained in the report from which the above details have been taken.

We would draw attention to some objects of great interest announced for sale by Mr. Stevens, next Tuesday. They consist of six of the famous double Cocoa Nuts of the Seychelle Islands, in a state of germination; some specimens, with male and female fructification, of the singular and extremely rare Stangeria paradoxa, a Cycadaceous plant, at first supposed to be a Fern; and what is said to be a new Ansellia, from the Zulu country. It is very seldom that plants of such importance are brought to the hammer.

VEGETABLE PATHOLOGY.—No. XLIII.†

190. A sufficient supply of the necessary elements having been secured, the next step is the employment of these for the exigencies of the plant. And this is effected under the agency of light by the fixation of carbon and the elimination of oxygen. Plants, in consequence, when exposed to light give out oxygen, while the carbon which was combined with the oxygen is fixed in the cellular matter of which the plant is composed, in the amylaceous and other substances which are destined for its nutriment, or secretions whose use in vegetable economy is not yet ascertained. But this is not all; there is a further liberation of oxygen in the more complex processes of vegetation. "In every part of the vegetable process, in the formation of every form of vegetable products of acids, neutral bodies, fats, oils, resins, basic and sanguinigenous matters, one character universally prevails, that namely of deoxydation of the materials and liberation of the oxygen.

"When we deoxydate any substance in the laboratory, we do it by causing the oxygen to combine with another body; but vegetables, while they produce all matters essential to their own development, give out, in doing so, the oxygen which is removed, and thus plants cannot grow without, as a necessity of their life, restoring to the air the oxygen withdrawn from it by the life of animals."* A constant balance is thus kept up, the animal world living entirely on vegetable products, and the vegetable virtually on mineral.

It may be well to give a few examples in a tabular form of different non-nitrogenous substances, whether acids, indifferent neutral compounds, other neutral bodies, oxygenated volatile oils, volatile oily acids, resins and camphors, or carbohydrogens.

		Carb. Acid.	Water.	Oxygen set free.
Dry oxalic acid.	$C_2HO_4 =$	$(C_2O_4)-O$	$+HO$	O
Cellulose	$C_{12}H_{10}O_{10} =$	$(C_{12}O_{24})-O_{24}$	$+H_{10}O_{10}$	O_{24}
Mannite .	$C_6H_7O_6 =$	$(C_6O_{12})-O_{12}$	$+(H_7O_7)-O$	O_{12}
Oil of bitter Almonds	$C_{14}H_6O_2 =$	$(C_{14}O_{28})-O_{28}$	$+(H_6O_6)-O_4$	O_{32}
Formic Acid .	$C_2H_2O_4 =$	$(C_2O_4)-O_4$	$+(H_2O_2)+O_2$	O_2
Resin . .	$C_{10}H_7O =$	$(C_{10}O_{20})-O_{20}$	$+(H_7O_7)-O_6$	O_{26}
Oil of Lemons	$C_5H_4 =$	$(C_5O_{10})-O_{10}$	$+(H_4O_4)-O_4$	O_{14}

These examples are taken from Gregory, but given in a rather different form. Similar examples might be presented of more complicated substances, showing that oxygen is uniformly set free. One only shall be given, of a body which is copiously formed even in the absence of light in certain blanched stems.

Asparagine

$$C_8N_2H_{10}O_8 = \left((C_8O_{16}) + (H_4O_4) + (N_2H_6)\right) - O_{12}$$

That is 12 equivalents of oxygen are set free.

191. Even in germination which normally takes place in the absence of light, substances are formed in which deoxydation occurs. Oxygen acts upon the albuminous matter contained in the cells, setting up fermentation, which induces the dissolution of the starch and other matters, rendering them capable of nourishing the plant: and as no growth in phœnogams can take place without the formation of new cells, and the outer membrane of these consists of cellulose, in the formation of which from carbonic acid and water, 24 equivalents of water are separated, so far as it may be supposed to arise in that manner and not from a mere modification of starch, oxygen must be given out. The true vital power of the cell is, however, fully exercised so soon as the cotyledons or plumule extend beyond the surface, even supposing it unequal to effect this end in the absence of light, which is beyond the power of human art to imitate, and the carbon is then fixed, and oxygen given out, while the other elemental bodies, as hydrogen from the water, and nitrogen and hydrogen from ammonia, with sulphates, phosphates, and a variety of other matters, combine to form the various compounds which are due to vegetation.

192. Phosphates and sulphates exist in greater or less quantity in most soils naturally, and form an ingredient in the water of many streams. Where these do not exist, or in very minute quantities only, the soil is barren and incapable of maintaining anything like luxuriant vegetation. The addition, however, of bone manure, or gypsum, or animal excrement, whether in the form of farm-yard dung or guano, provided there be a sufficient quantity of moisture to render them soluble, will at once produce a strikingly beneficial influence, and a few years of culture and continued care, will ensure success, wherever the outlay of manure does not exceed the probable return. The water which percolates the soil, being charged with carbonic acid, will gradually dissolve many substances, which by itself it could not affect; and in every case a portion of the carbonic acid contained in the water, whether derived from above, from deep-seated springs, or from the decomposition of manure, will be employed in this necessary process. It is thus that bones and shells gradually part with all their animal matter, though even in a fossil state they retain a portion of their phosphates. Fluoride of calcium, being much less soluble, forms a large portion of the residuum; but the phosphates often remain in such quantities as to make fossil remains a useful manure. Coprolites, which contain much bony matter, are in consequence collected in those countries where they abound, and are duly appreciated by many agriculturists.

193. It is most important in all these cases that artificial manure be not supplied at hazard, for not only may the expense be useless, but a larger quantity of some particular matter may be stored up in the soil than is requisite; and if it is in a condition to be rapidly soluble, the plants may suffer from too large a supply, which is sure to induce diseased action. The contents of the cells, which in all probability are, in almost every case, the fruitful cause of disease, being in an abnormal state, and one tending to change, fermentation takes

* Canada; its present Condition, Prospects, and Resources. Stanford, Charing Cross.

† There are some typographical errors under paragraphs 180, 181, and 189, which require correction. In 180, line 11, for "this" read "the residuum;" in 181, the word "acid" should be erased; and in the appended note, "combine with" substituted for "contain." In 189, line three, read "crenic and apocrenic." There are other less important errors in XLII, in consequence of an accident happening to the proof.

* Gregory, p. 475, Ed. 3, 1852.

place, and the cell walls themselves suffer, vital action ceases, and decay and death rapidly follow.

194. Merely chemical action will not account for all that takes place in the vegetable world. There is some law, whatever it may be, which produces effects which we cannot imitate; and it matters little what this law depends on, provided it be allowed that it is distinct. Vital action may be a series of effects due to some unknown cause; and whether that be designated by the term life, or by any other term, is matter of indifference. Certain it is that when vital action ceases in a single cell, chemical effects ensue in the normal way, precisely as they would in non-organised bodies; and the causes which derange such vital action are those which produce disease terminating in death, or in more partial disorganisation, according to their intensity. Were it not for this marvellous and mysterious property, there is no reason why we should not be able to produce, artificially, organisms such as are presented by the lower tribes of the vegetable world; and if a single living cell were once produced, there is perhaps no sufficient reason why we should not advance to higher organisms, as the steps by which they rise in the scale are so gradual. The breath of life, however, whether in a lower or higher sense, is something which must be breathed into inorganic matter by an intelligence superior to that of man; and unless we choose to cast off faith altogether, and to reduce ourselves to the condition of mere heathen philosophers, we may be content to wonder reverently at what, with our present limited capacities, we shall never fully understand. *M. J. B.*

COMBRETUM PURPUREUM.

Where space in a warm house can be commanded, this forms a most useful subject, producing its large feathery like panicles of bright crimson flowers, which last long in beauty, very freely. It is useless, however, to hope to do any good with it except where room can be at command to grow large specimens; for the flowers are seldom borne freely only upon the lateral, or second growths, and to have these strong and short-jointed, which should be the case, it is necessary to train the principal shoots thinly, and the plant being a free grower, a large sized trellis is indispensable.

This Combretum is generally found by amateurs to be rather difficult to propagate, but this is, doubtless, the result of not selecting fit pieces for cuttings; for short-jointed firm bits of young wood treated in the ordinary manner, root very freely, and these are easily obtained from pot-bound specimens. The cuttings should be potted singly in small pots as soon as they are sufficiently rooted, plunging the pots in a brisk bottom-heat, in a warm moist situation. When well established shift into pots about two sizes larger, and during the growing season afford the young plants a bottom-heat of 85° or 90°, with a warm moist atmosphere and all the light possible, merely shading them from direct sunshine on the forenoons of bright warm days. Endeavour, however, to get the cuttings rooted early in the season so as to have them well established and some size before winter, for it is not desirable to keep them growing after the beginning of November, for after that they should be treated with a view to getting the wood well ripened, placing them in an airy part of the stove and keeping them rather dry at the root. And it may be observed, that in the case of either young or old plants, it is necessary, in order to secure strong growth the following season, to thoroughly ripen the wood and afford the plants a period of rest, placing them while in a dormant state where a temperature of about 55° may be maintained by means of fire heat. As early in spring as circumstances will permit, cut the back wood to prominent eyes, and train the shoots nicely, keeping the points rather low; and remove the plants to a warm growing temperature, placing them near the glass, and giving sufficient water to the soil to bring this into a healthy moist state. Syringe over head on the afternoons of bright days, and if convenient to plunge the pots in a mild bottom heat this will greatly assist in getting the buds to break thickly. In the case of young plants, a small shift should be given as soon as the roots become active, and old specimens, to which it may not be convenient to afford larger pots, may have the ball reduced sufficiently to allow of using a little fresh soil, repotting in the same sized pots. And with the assistance of a little manure water, and slightly reducing the ball every season, specimens will do very well for years in the same sized pots, and will flower more freely than if a luxuriant habit of growth were encouraged by giving large shifts annually. Young plants should, however, be shifted into the pots in which they are to be bloomed, as soon as this may be considered safe, in order to allow of training the shoots to the trellis on which they are to flower. Attend carefully to the wants of the plants during the growing season, keeping them near the glass, and properly supplied with water at the root; and when the weather becomes hot protect them from the mid-day sun by a thin shade. When large well-furnished specimens are obtained, if they do not seem inclined to bloom freely they should be kept rather dry at the root for a few weeks, using the syringe only to prevent red spider gaining a footing on the foliage. This will check over-luxuriant growth, and greatly assist in promoting a flowering habit; but it will hardly be necessary to resort to any particular treatment in order to get well-grown specimens to bloom freely. While in flower the specimens should occupy a cool airy part of the stove, where the flowers will be safe from damp, and not exposed to bright sunshine. Or if desirable to remove them to the conservatory, this may be done, provided they are gradually prepared for the change of temperature, and can be placed in a close warm part of the house. For soil use equal parts of good rich fibry peat and light turfy loam, adding plenty of silver sand to keep the compost porous after the decay of the fibre.

Fine as this Combretum is as a pot specimen when well done, it may be had in larger masses, forming more striking objects, where it can be planted out in the border of the stove and trained to the rafters, where it will bloom profusely for months in succession. It is, however, well known to be one of the very best of stove climbers. *Alpha.*

SOME

PRINCIPLES OF VEGETABLE PHYSIOLOGY,

BEARING ON THE CULTURE OF PLANTS.

By Professor W. H. de Vriese, of the University of Leyden.

(*Translated from the Dutch.—Concluded from p. 645.*)

The sleep of plants is that state of which we said a few words in the beginning, and in which we see the parts of flowers or leaves, which are at other times expanded, contract or fall together, because they lose their natural elasticity and turgescence, which is occasioned by the action of the sun's rays. The sleep of plants is in no respect to be compared with that of animals.

The barometer indicates the changes of weather, even before they are perceptible to our senses. We say that it forebodes them. In that respect also do certain plants. Not only do many flowers close up when it rains, but there are many plants which forebode rain, in the same sense as the barometer forebodes the changes of weather. Calendula pluvialis closes its flowers, and Porliera hygrometrica its leaves, when rain is about to fall. Warmth and dry air are necessary, which cause them to expand and evaporate strongly, to retain their natural size. Thed ampness of a cloudy or misty atmosphere, which precedes rain, causes the parts to fall together; this and the sleep of plants are, therefore, called hygrometric phenomena.

When the evaporation is disturbed, the plant becomes sick, notwithstanding the supply of nutritious particles by the root; this has appeared from observation and experiment. If the leaves are smeared with varnish, or any other glutinous matter which hinders the evaporation, then the plant dies, for the surface can no longer be active.

In July, 1845, there appeared, to an alarming degree, in one of the plants most generally used for food (the Potato) a disease probably not unknown formerly. Fields, which till lately had grown luxuriantly, showed only death and decomposition; the hope of the farmer on a large crop disappeared. Many people foreboded bad harvests for following years, and advised a change in the plan of agriculture. An extraordinarily hot summer weather preceded, followed by a sudden falling of the thermometer, heavy showers, and cold days. The plant, which had grown too luxuriantly, was at once disturbed in its growth and in its evaporation. The liquids were forced to remain in the plant; they had no means of escape, the tubercle was not ripe—the fæcula not yet formed, but, floating in an over-abundant water, stood still of necessity, and soon rotted; the leaves and stem withered and became rotten. That is, it appears to me, the simple, primary cause, and the course of a sickness which was a national calamity here and elsewhere, and the sad consequences of which we see more or less every year. The leaves are to be compared to the lungs and skins of animals; they remove from the body substances which could not, without damage to the organism, remain in the mass. But while they draw the saps upwards, they are nourished by them, and borrow from the fluids raised the substances necessary for their own development. At first white, thin, membranous, and tender in their construction, afterwards they become gradually thicker, more fibrous, sometimes hard as leather, dark green, and shining. Such is their state in the middle of summer; afterwards we see them lose their green colour, become yellow, and hang loosely down. Others become red; they acquire the particular colours that we call autumnal, and which impart to the woods and pleasure-grounds such a peculiar charm as to make us loath to exchange the woods and fields for the turmoil of the town. The Oak becomes brown, the black Beech whitens, the Ash loses its green colour, the Maple becomes yellow and black, the wild Vine of a purple colour, and the Cornel tree red and yellow; the whole presents a peculiar variegated mixture of the finest diversity of tints; but all this beauty is only the precursor—yea, it is even the beginning of an approaching dissolution and instant death. The leaves die—their whole relation to the atmosphere is changed, or even seems to cease. The upper layer, by the quantity of fluid which soaks through it, and of which some substances fasten on it, or affect the surface, changes, thickens—but in all is at last unfit for evaporation, and shut out from the air. Those regular successions in change of substances which we have noticed as the cause of growth, as such take place no more; another series of changes, in which the growth has no part, nor is even the consequence, takes place instead; external influences become, as it were, master of the body, which is now without the circle of life. The leaf, which is unable to discharge any more substances outwardly, can take up no more, becomes a useless appendage; it soon falls from the organ of which the life is not disturbed. The fall of the leaf, then, is not the consequence of the change of the seasons, for in tropical countries, also, this phenomenon takes place; it is the consequence of a changed state of life itself, of the disturbed connection between evaporation and absorption. In the month of August it was necessary, for local reasons, to strip two Linden trees of all their branches. They made new leaves, and they stand now (24th November) still green and fresh, although covered with snow, and lately there have been some severe night frosts. The cause of the fall of the leaves is not to be sought for originally in the atmosphere, but in the construction of those organs themselves. The increased action of life is the cause of death, on account of the change it brings upon the tissues, without which the leaves would not fall off, and the plants we call annual (that is, those which, within the circle of a year, develop themselves and bring forth seed) would not in so short a time die off, but, like shrubs and trees, would have an indefinite term of life.

Where should we end, if we wished to continue to enumerate examples of all that is to be ascribed to evaporation and its connection with absorption!—therefore we limit ourselves, and we repeat only this, that plants also take moisture from the air; that not only do the roots absorb fluids from the ground, but that the leaves inhale other substances which circulate in the air in the form of gas; that evaporation and absorption by green parts depend on the moisture of the atmosphere, on that of the plant, and on that of the ground; that the nature of plants is by these circumstances remarkably modified, and that on them depend the forms and properties which plants present to us in different latitudes, and in their various positions.

The knowledge of what we have now treated is not without practical utility. A good watering or draining of the ground is not of less importance for the cultivator than a good manuring. The water that a plant evaporates must also be brought into its roots. Where would be the limit of our treatise if we wished to try to make known all the great phenomena which vegetation by means of evaporation brings about in all Nature! Always, where there are woods, the state of the atmosphere is damp, and the ground for the most part fertile. The great streams of the earth have their origin generally in wooded mountains, and empty themselves at a great distance from them into the seas. Population settles on their fertile borders—culture, well-being, and civilisation keep pace. Where no vegetation is, there is the soil barren, the state of the atmosphere always dry; it seldom rains there. Men and animals flee from those withered and unfruitful regions. Wide districts of South America, where it never rains, and where there is no vegetation, may be cited as examples.

Home Correspondence.

Covering for Frames.—I notice that some of your correspondents are desirous of ascertaining what will make a good substitute for matting or other extensive materials for covering frames and pits. The general faults with all substitutes recommended are, weight, clumsiness, and their easy destruction. I beg to suggest the use of galvanised iron netting, and straw; the straw being placed between two pieces of netting, as thickly as desired, and the whole united at different points by wire, both to keep an uniform flat surface, and to prevent the straw escaping at the edges. A stout lath might be fastened at each end, whereby strength and a better holding upon removal would be gained. The iron wire is advertised at a low price, and most folks can find some spare straw. *C. F. Palmer, Southsea, Hants, Oct.* 21.

Anacharis alsinastrum.—I am sorry to inform you that we have found this plant here. I first noticed it last June, in a small stream, which runs past my nursery. It took possession of a small pool, formed by a bend in the stream, and though I was surprised at the sudden increase of weed, I did not pay it any particular notice when giving orders to have the place cleaned out. Being absent for six weeks, I was astonished, on my return, to find the entire surface of the place covered, a thing quite unusual; and, on examination, I saw plainly (from the description given in the *Chronicle*) that it was our new enemy. On looking up the stream, I find a small patch of it at a little distance, in a sheltered corner. This stream is a tributary to the river Lea, and the spot where the weed is growing is distant from it about 400 yards. From the place where the stream meets the Lea, to the timber-yards at Cork, is about one mile; and though there are many obstructions to the water, such as weirs, mills, &c., yet the tides out-top all. *H. Haycroft, Cork, October* 21.

Nimrod Strawberry.—About the end of last March I obtained six pots of this Strawberry from Mr. Pince, of the Exeter Nurseries. I planted them in a line, 3 feet, plant from plant. When the blooms had well appeared, I reduced them to three on each stem, and fearing the drought, I poured around each plant two quarts of pond water. The extremely dry weather still continuing, when the fruit began to colour, I repeated the water, and placed a narrow net over them to keep away the birds. When ripe and gathered, 15 of the fruit made a magnificent dishfull; 9 measured from 8¼ to 10 inches each in circumference; 4 from 7¼ to 8 inches, and 2 measured 7 inches each, in circumference. The fruit is large, of a glowing scarlet, and well flavoured, strongly resembling the Elton Pine when eaten with some sugar, and well deserving a place in every garden. *P. Exeter, Oct.* 24.

Fertilising Ovules.—I was not a little interested in the account given by Dr. Hooker in your columns of experiments made by him, to ascertain the possibility of

fertilising the ovules in the seed vessels of phænogamous plants, by allowing the direct contact of pollen, independently of the stigmas. Dr. Hooker's experiments are certainly very extraordinary, and his results appear so satisfactory as scarcely to require to be tested by further experiments, or the testimony of others on the same subject. As, however, he calls for any further evidence that others may have to offer on the same or similar attempts, I cannot resist the invitation to mention my own humble efforts to accomplish a similar result to that which he has achieved. Some years ago, in 1850 or 1851, I cultivated pretty extensively the Calceolaria tribe; I sowed no seed but such as I had produced by cross impregnation. As the rage was then, as it still is too much, to appreciate no flower unless it was large, my effort for years had been to secure size as much as form. After many years, I did succeed in working up a thing which, for size, would have certainly satisfied the most fastidious gardener; it was the size of an ordinary Pippin, but in form it was just what a Pippin would appear if cut through the middle—flat on one side and convex on the other. The colour pleased me well, and the size was monstrous. Well, I thought I will make something out of this. Having plenty of others of the approved form to cross it with, I fell to work—fertilised every blossom as they developed—but, by and bye, I was vexed and annoyed to find that though I had wrought with bloom taken off many separate plants, in no one instance had the cross taken. In a word, I had discovered that I had crossed and crossed till fertilisation could no longer be effected. Yet I was loath to be baffled. I examined the stigma; it seemed unnatural; and it occurred to me that it was in fault. The idea suggested itself that the tubes by which the pollen is supposed to be carried down to the ovary were closed up or too delicate to admit the passage of the pollen dust. It then struck me to remove the stigma, which I did with a sharp penknife at various distances from the ovary, and immediately applied the pollen, just as I would have done to the stigma. But the result was unfortunate; none took. I did not, so far as I can charge my memory, try as Dr. Hooker did, cutting over the pistil at the ovary, so as directly to apply the pollen to the ovules, or leaving that to be done as nature might direct—by winds or insects. You will at once see that my failure does not in the slightest affect the success of Dr. Hooker's experiments. I wrought with a stubborn mule (I speak literally), the result of many crossings in an in, a thing utterly barren in its natural unimpaired condition. Dr. Hooker, again, wrought with fertile plants, and his experiments were different. If I am spared to another year I may next summer profit by the hints which the Doctor's most interesting trials have suggested. If others should try such experiments they should perhaps follow nature, and apply the pollen with an insect's wing, the gossamer of a spider's web, or the most delicate tissue. Much depends on this. I will be glad to communicate through your columns the results of my own humble trials, as I trust others will, on this most interesting investigation, so successfully begun by Dr. Hooker, which I trust he will himself pursue still further. *Isaac Anderson, Maryfield, Edinburgh.*

Chick Peas.—I have sent you some portion of a quantity of Barbary Peas which I bought lately in Liverpool, I paid 38s. per quarter of 504 lbs. for them; and I find them excellent food for horses and pigs, and, indeed, they make excellent soup for the table; but I scarcely think they are Peas. I enclose you some of the pods I found amongst them. Would you kindly say what they are? I understand they can be shipped in large quantities if required. *Julius.* [They are Chick Peas, the produce of Cicer arietinum, and have a great reputation, when split, as the best kind of Pulse for making soup.]

Barking Oak Trees.—I am glad to see a discussion on this subject opened in your Paper of October 12; I hope it will continue, and be extended from barking to other branches of arboriculture. The system of felling Oak trees before they are peeled is bad, and attended with disadvantages, some of which I will endeavour to point out. In the first place, when a large tree is fallen without first being divested of its boughs, the timber is very often split and broken so as to deteriorate its value very much: arms suitable for boat-knees, and valuable for other purposes, are often rendered good for nothing but the cordwood rank; and the bole of the tree is not unfrequently shaken and split nearly to the centre by the strongest heavy-topped boughs separating themselves from the parent stem when the tree falls. Secondly, not only is the fallen tree injured, but its surrounding neighbours often feel the weight of its large head making its way to the ground. Many fine thriving trees, which were intended to grow for 20, 30, or 40 years longer, get so much mutilated as to render it necessary to have sentence of death passed against them in the prime of life and vigour. Even if they are left standing, if only injured by the falling tree to a small extent, of course their growth is more or less retarded for a number of years to come. Thirdly, the cost of peeling the trees after they are fallen is not less, but considerably more. The same rate per ton is paid in this neighbourhood for peeling either way; but about double the number of men must be employed to peel the same quantity of bark, when the timber has to be fallen at the same time, not only because the falling occupies as much time as the peeling, but when a large tree is fallen before it is peeled it requires turning over, an operation which must have the aid of the united strength of all the hands present. Again, when trees are down, carts cannot so conveniently get to the bark, so that extra men must be employed to carry it to the carts, independent of those who work by contract. In a general way, two men will peel the bole of a tree in as little time as six men will peel the branches. When the trees are left standing, the man who ascends to peel the bole begins his work by lopping off the branches, which are still peeled on the ground. He then begins to strip the bole, which an expert workman will accomplish in as short a time as three others will strip the branches below and set or bed the bark to dry. Woodmen who are accustomed to the work always prefer to peel standing when the bark runs well. It is a matter of importance to get as much bark off as possible in little time, the peeling season is always limited, and some years of very short duration, whilst falling may be proceeded with at convenience. *G. Buchan, Bakewell, Oct. 23.*

Orchis variegata.—I recently purchased some tubers under this name. They are entire heart-shaped roots, not palmate; and are not, or ought not to be, mascula—inasmuch as both that and O. morio were sold at the same place under their own names. It must, I think, be the synonym for some better known name; can you tell me for what? There was also something called Orchis pallens; can you tell me what that means? *A. H.* [Orchis variegata is a common species in the south and east of Europe; there is plenty of it in the Crimea. There is a bad figure in the "Botanical Register," t. 367; the tubers are oblong and undivided. Orchis pallens is a pale yellow species, figured in the "Botanical Magazine," t. 2569, under the name of O. sulphurea.]

Potatoes from Cuttings.—We have forwarded you a few samples of Potatoes, all grown on strongly manured land. We have dug all up except No. 8. None were planted until after the 20th of May last, and none of the sorts will be good for eating, as not less than 20 tons of manure were put to the acre. No. 8 is a fair sample as taken up with from 9 to 12 inches of the haulm nearest the roots, quite sound, although the tops appear blighted. We have found ever since we commenced growing Potatoes from cuttings that the haulm is more wiry and hard than in those grown from tubers. No. 1, Early American Potato, from tubers first year, from Drummond's stock; 20 in the bushel diseased; produce, 240 bushels per acre. 2. Cuttings from the above; 6 in the bushel diseased; produce, 320 bushels per acre. 3. Early Oxford Potato, from tubers, fourth year from cuttings; no disease; 160 bushels per acre. 4. Ditto, from Cuttings, fifth year; no disease; produce, 200 bushels per acre. 5. York Regent, from tubers first year; 25 in the bushel diseased; produce, 240 bushels per acre. 6. Ditto, from the above, first year; 12 in the bushel diseased; produce, 200 bushels per acre. 7. Ditto, from tubers, fourth year from cuttings; no disease; produce, 320 bushels per acre. 8. Ditto, from cuttings, fifth year; no disease; produce, 240 bushels per acre. *Hay, Sangster, and Co., 18 and 19, Cumberland Place, Newington Butts, Sept. 28.* [After a careful examination of these samples we are at a loss to know what they show, except it be that a great quantity of tubers may be had from cuttings. The specimens were generally small or coarse and bad; most of them merely "chats." Among Nos. 7 and 4 we found diseased Potatoes.]

Hardiness of Plants.—As you still invite contributions relative to the effects of the past winter on our Pinetums and gardens, I beg to furnish you with a few facts from this place; and, as we have planted our Pinuses "sectionally," or according to the number of leaves generally found in a sheath, I have made out my report in accordance with that arrangement. Those marked with an * had caps formed of Furze branches placed over them; this precaution we generally adopt with little known species whilst the plants are small, and also with such as we find rather tender, or apt to suffer from unusual severity of weather and late frosts. We entertain the idea that they are less liable to injury as they grow in height, the air being drier than upon the surface of the ground, consequently the wood gets better ripened. Commencing with the "*Binæ*," or two-leaved section, halepensis has been very slightly injured—Carica has been more hurt than halepensis; japonica,* muricata, and padufiana* are uninjured. In the "*Ternatæ*," or three-leaved section, Teocote, patula,* and palustris* have been slightly injured; Benthamiana (which promises soon to make a magnificent tree) insignis, tuberculata, Cembroides, Bungeana,* and Llaveana are not injured: the last-named will, I think, make a beautiful tree, although short-leaved, and of slow growth. "*Quinæ*," or five-leaved section:—Macrophylla, of this species we had two most beautiful specimens, one upon an eminence, where it caught the early morning sun whilst in a frozen state, during the severe late spring frosts, has been killed; the other specimen, not fifty yards distant, but sheltered from the early sun, is not injured; Hartwegi* has been killed; Russelliana, Montezumæ, occidentalis, apulcensis, Skinneri,* Ayacahuite, and Lindleyi, are uninjured. Of Devoniana* the foliage is much hurt. Of Abies and Piceas I would remark that the early spring growing kinds have suffered much the same here as at other places. A. Smithiana and Morinda have grown beautifully, but are much disfigured by the late frosts this spring. Brunoniana* is making a handsome plant, though injured severely. The early growth of Picea cephalonica, Pichta, and Webbiana was also injured by late frosts; religiosa* escaped injury; Cunninghamia lanceolata is hardy here; Cupressus sempervirens, lusitanica,* thurifera, and Mexicana have been slightly injured; macrocarpa, torulosa, majestica (a variety of torulosa), Goveniana, funebris,* diœcia, Corneyana, and Knightiana* are uninjured; australis, juniperoides, pendula, and Uhdeana have been killed; Knightiana was killed half-way down by the winter of 1852-53; it made a vigorous growth last summer, and has wholly escaped this winter. Sequoia sempervirens is perfectly hardy, and grows magnificently in a red marl. Taxodium Horsfalliæ is also hardy, in a sheltered situation. Juniperis bacciformis, dahurica, oblonga and oblonga pendula, hibernica, cracovia, Wittmaniana, Bedfordiana, Sabina and its varieties; Virginiana and its varieties (including Chamberlaini), phœnicea, Lycia, thurifera, excelsa, squamata, recurva, and recurva-densa (a charming, compact, bushy variety), canescens, serillocarpus, chinensis, and c. fœmina, Gossainthania,* flagelliformis, fragrans,* sphærica,* and alba; none of these were injured during the past winter, although a plant of Gossainthania was killed by that of 1849-50; drupacea,* flaccida, occidentalis, and canariensis,* have been severely injured; neoboriensis,* tetragona,* Bermudiana,* have been killed; Torreya nucifera was planted in 1849, and has never received any injury—it is perfectly hardy. Our reports of the Cephalotaxus agree with yours, viz., that it is hardy. Fitz-Roya* is not visibly injured, but it has not grown this season. Saxe-Gothæa is hardy. Of Dracæna indivisa, one plant is killed; another, in a higher and drier situation, has had its top killed, but has grown vigorously from the root. Berberis macrophylla is killed; B. nepalensis has had its top killed, but has grown vigorously from the roots; Fortuni is uninjured. Escallonia macrantha has been killed to the ground; the roots, however, have thrown up strong shoots. Arbutus Unedo, Andrachne, and procera, have all endured the winter with very trifling injury. Pistacia mutica,* Edwardsia microphylla,* Ligustrum japonicum, laurifolium, and Viburnum japonicum, against a south wall, have endured the frost with but little injury. Yucca aloefolia and aloefolia variegata are killed.—*C. E. Wells, gardener to T. Gambier Parry, Esq., Highnam Court, Gloucester.*

Benthamia fragifera.—This stood the winter well at this place, which is on the north side of the Southdown hills. It has blossomed, and I expect it to ripen fruit if the weather keeps favourable, as there are several dozens on the plant. *J. Gadd, Bignor Park.*

New Plants.

97. Salvia porphyrantha. *Decaisne in Revue Horticole, 4 ser., vol. iii., p. 301, fig. 16.*

Under this name has been published a very pretty plant, the origin of which is unknown, but which is kept in the greenhouse in winter and used for bedding out in summer, for which the facility with which it strikes from cuttings renders it particularly well suited. In appearance it is much like the beautiful *Scutellaria cordifolia*, alias *splendens*, each branch terminating in an erect raceme of brilliant scarlet flowers, not inferior in intensity to those of Lobelia fulgens. The leaves, which are small, roundish, heart-shaped, and very much wrinkled, stand upon a slender purple stem, and have nothing coarse or weedy in their nature. It is not stated whether or not this species casts its flowers as easily as is the case generally with Salvias; if not it will well deserve trial in this country; at present we only know it from the account published in Paris.

98. Pitcairnia echinata. *Hooker.*

"This species is figured and described in the 'Botanical Magazine' (t. 4709), from a specimen sent by us to Kew; it is also noticed in the 'Flore des Serres' (viii. 257): but in neither of these publications is any mention made of its general appearance, for which it is as remarkable as for its muricated flowers. The stem is erect, covered with black scales, 4 feet high, and is terminated by a crown of denticulated ensiform leaves 2 or 3 feet long, and at a distance giving to the plant the appearance of a Yucca or *Pincincctitia (sic.)* Two varieties were found in the forests of the province of Soto (New Grenada), between Matanzas and Bucaramanga; both are terrestrial, but the flowers of one are sulphur coloured and red at the base, whilst those of the other are of a beautiful red salmon colour. Both varieties are equally interesting, and may be recommended as well for their flowers as for their ornamental character." *Linden's Catalogue.*

Garden Memoranda.

S. Rucker's Esq., West Hill, Wandsworth.—The magnificent collection of Orchids, for which this place is so justly celebrated, is at present in as fine condition as ever we remember to have seen it; and the plants have this year made unusually strong growth, which owing to the bright weather we have lately experienced, has got well ripened. An extraordinary display of flower may therefore be expected. Most of the Dendrobes have finished growing, and have been put to rest for the winter, as are also the Cattleyas, among which are some remarkably fine specimens. The heat and moisture in the house in which they are now kept, and in which they delight so much while growing, have, as a matter of course, been greatly diminished, in order to harden the more tender shoots and fit them the better to withstand the dull weather of winter.

Among plants at present in bloom in the principal Orchid-house, we observed the singular-looking Catasetum saccatum; a purple variety of the bearded Lady's Slipper; a pendulous variety of Cycnoches barbatum; Angræcum bilobum; the ever flowering White Butterfly plant (Phalænopsis amabilis), Vanda tricolor and insignis, the somewhat scarce Chysis aurea,

with two long shoots, each terminating in clusters of orange and white blossoms; beautiful specimens of Dendrobium formosum, than which what plant can be handsomer, its clusters of numerous large white blossoms stained with yellow being extremely cheerful and showy at this season. Associated with the above were also the delicate little Burlingtonia decora, with purple-spotted flowers and white lip; the slender variety of Oncidium Papilio called pulchellum; and the charming little Sophronitis grandiflora. Among remarkable plants not in flower were some enormous Aerides, and a huge mass of the spotted Saccolabe in a wire basket upwards of 3 feet in diameter; also Vanda Batemanni, which had made very strong growth, and Cattleya superba, one of the very best of the Cattleyas; the latter promised soon to be a mass of blossoms. A specimen of Dendrobium densiflorum, which had had 70 noble racemes of yellow blossoms on it last year, looks as if it would be even finer next year. On the tops of many of the pots were Lettuce leaves, placed there for decoys for slugs, which, when they come out in the evening to feed are caught and destroyed.

In one of the stoves Calanthe vestita, the red-eyed variety, was just opening its blossoms. This, we need scarcely say, is greatly superior to the white kind, which is sometimes sold for it; but which is not half so handsome. Odontoglossum grande, Barkeria Skinneri, some Ixoras and Amaryllises were also in bloom here, as was also a plant of Stephanotis floribunda, trained along the roof. Pomegranates, in pots, had just been brought into this house for the purpose of gently forcing them into flower.

In a division of the Cattleya house, which is now comparatively cool and dry, was a charming boxful of the different kinds of Anæctochilus and Physurus, whose gold and silver veined foliage is so interesting at all seasons, but more especially now when there is little else to attract attention. The pots have been plunged in potsherds and charcoal (which act efficiently as drainage) and surfaced with sphagnum. This box has a glazed top to it, hinged at back, to allow it to be lifted up when wanted; and managed in this way the plants appear to thrive uncommonly well. Opposite them, on the other side of the pathway, was a very fine collection of Pitcher plants, which are grown on and prepared here for the larger houses. Though the plants were comparatively small, yet they were well furnished with pitchers, the handsomest of which were those of N. sanguinea, though a few very fine ones might be observed on N. Rafflesiana, Hookeri, and one or two smaller ones on N. lanata, a rare addition to this singular tribe of plants. In a cool corner were various Sarracenias, the handsomest of which was S. Drummondi, the top of whose long green tubes or trumpets assumes a delicate white colour embroidered all over with a beautiful red network. There was likewise here a fine plant of the dwarf S. purpurea splendens, and we observed a capital specimen of Cephalotus follicularis with not fewer than 40 pitchers on it, large and finely marked. The interest which belongs to so rich a collection of such plants may therefore be more easily conceived than described. Of Lycopods there were likewise some pretty kinds, one of the best of which was a circular mass of L. rigidum, which measured more than 18 inches in diameter, though in some places we have heard it cannot be made to grow. The pretty little Cœlogyne Wallichi was just opening its flowers, which will remain in beauty for many weeks to come; and along with it we observed the somewhat scarce C. laginaria. These are useful winter plants, which are not so much grown as they deserve to be.

The water-house or aquarium is now, as it always is, an extremely interesting place, on account of the variety of objects which it contains. In the water are various Nymphæas, among which dentata is now in bloom, as are also the two red kinds, Devoniana and Ortgiesi, a sort like Devoniana, but paler and perhaps a trifle larger. Over the tank are suspended Orchids in baskets, and some beautiful specimens of Ferns. Among the latter a fine plant of the oak-leaved Drynaria was especially remarkable, its handsome fronds measuring quite 3 feet in length, and nearly surrounding the earthenware basket in which it was growing. This is truly a fine species for this kind of decoration. Placed round the water were many other rare and handsome Ferns, among which were examples of Adiantum Foveanum, Asplenium Belangeri, a charming species; together with Nephrolepis davallioides, Davallia pulchella, Platycerium crinitum, and the more common Platycerium grande, &c. Pitcher plants in great variety also grow, and form pitchers here in the greatest possible perfection. Those on Rafflesiana were unusually large and fine; and it may be interesting to observe that those near the base of the plant were of the ordinary form, while those farther up the stems were so very much longer, and altogether so different in shape as to be easily mistaken for pitchers belonging to another species. Of plants remarkable for fine foliage in this house, there were some Palms, the orange-veined Cossignia borbonica, Cissus discolor scrambling along the roof, the silver-striped Maranta vittata, and M. Warszewiczi, a handsome new variety in the way of zebrina; but more beautifully marked, and the purple on the undersides of the leaves deeper coloured than in that kind.

The principal show house is divided into greenhouse and stove, or cool and warm compartments, by means of a corridor running through its centre. The stage of the cool side is now filled chiefly with Camellias, which are well furnished with bloom buds, and round the shelves were such winter flowering plants as Erica caffra nana, and hiemalis, Ageratums, Tree Carnations, Æschynanthus speciosus, Croweas, a noble specimen of Statice Holfordi, with three magnificent spikes of bloom, and little standard Laurustinus. The last are plants well worth growing for many kinds of indoor winter decoration. We also observed here a specimen of Lucuma deliciosum, which appeared to be doing well in the cool temperature of this house. In the warm compartment the plants were in the most luxuriant health, and although, as might be expected at this season, there was little in bloom beyond Epiphyllums, Gesneras, and Ixoras, there was enough to interest in the shape of plants with fine foliage. Among the latter we remarked Coleus Blumei, Croton pictum, Dracæna ferrea, a very fine specimen; Jacarandas, Marantas, Musas, and the large-leaved Coccoloba guatemalensis.

In the corridor just mentioned a specimen of Littæa geminiflora is about to blossom; it has thrown up a flower stem which is already some 7 or 8 feet in height; but it will doubtless be higher, as the flowers have not yet shown signs of opening.

In front of this range of houses were beautiful pyramidal and standard Bay trees in boxes. When set on the side of a broad gravel walk, near a building, as these were, such plants have a unique and imposing appearance.

In a span-roofed promenade some 80 feet in length, several fine plants of Witsenia corymbosa were in bloom, and Plumbago capensis was also one mass of blue flowers. In the borders of this house were many rare Conifers, among which we noticed fine specimens of Dacrydium Franklini, Thuja Doniana, and Biota glauca. There were also Chrysanthemums and other plants calculated to keep the place gay in winter. While speaking of Chrysanthemums, we should not forget to mention that one of the greenhouses is at present entirely filled with them, in the shape of beautiful plants that must, when fully in bloom, produce a most striking effect.

We need hardly add that out of doors as well as under glass everything was in the best of keeping, the majority of the scarlet Geraniums and other bedding plants still retaining much of their gaiety. Heliotropes, however, although covered at night, have suffered from the late frosts.

FLORICULTURE.

Fuchsias.—The time is approaching when these must be started into growth. By February the young plants should be well established in 3 or 5-inch pots, and the old ones ready to receive their second shift. At this time the plants should be stout, thrifty fellows, with clean bright transparent stems and foliage, and young lively roots protruding all over the surface of the soil; and if in this state, they may, by proper treatment, be grown to any size. A good single-stem specimen of Exoniensis, when well grown, should be six feet in height, with branches drooping in regular succession from the pot upwards, and it should be a perfect mass of foliage and flowers; and other kinds, according to their habits of growth, ought to be equally perfect. To return, however, to the plants, we must now prepare for the second shift, and for this purpose a compost consisting of two parts turfy loam, one part sandy peat, one part half-decomposed leaf-mould, with a handful of small charcoal, and a liberal supply of coarse sand, must be thrown together and thoroughly incorporated, taking care to break it as little as possible. At each subsequent shifting of the plants, excepting the last, the same compost must be used, but at the final potting it will be as well to substitute equal portions of strong loam, and three-years-old cow-dung, for the one part of peat before used; as this will make the compost of a more adhesive character, the plants will consequently not require so much water during the hot weather. In shifting the plants, take care to drain the pots properly, by using five or six oyster-shells, and some rough charcoal, placing some of the roughest of the compost over the drainage. Remove the plants at each shift into pots at least three sizes larger, for though it may not at all times be convenient to adopt the one-shift system, I believe there are now no good cultivators who think of practising the old small-shift system. It is impossible to say how frequently the plants will require shifting, but if they are growing vigorously, they will never go more than six weeks from the time they are first potted until they show bloom, without requiring a larger pot. The best situation for the plants during the first part of their growth will be a low hot-water pit, where they can be kept near the glass, giving them plenty of air both night and day, and abundance of atmospheric moisture, but taking care to shade them thinly during bright sunshine, as the foliage is very liable to burn. As the plants progress in growth and get too tall for the pit, remove them to a house kept at a temperature of from 55° to 65° or 70°; place them near the glass, give plenty of air and moisture, occasionally moistening the paths, walls, and stages with clean manure water, and dew the plants over both morning and evening with clean tepid water. If these directions are attended to and carried out, there need be no fear of the red spider attacking the plants; but should that pest make its appearance, lay the plant down on its side and syringe with clean soot-water until every insect is washed clean away. Throughout the whole season it will be advisable to water the plants twice or thrice a week with manure-water, formed by mixing one bushel of sheep's dung, one peck of soot, half a peck of guano, and half a peck of lime; put the soot and manures together and mix them into a puddle with boiling water, and then throw in 50 or 60 gallons of soft water and the lime; stir the water frequently, and after it is quite clear, add two gallons of clean water to every gallon of the manure used, and apply it in a tepid state. It is astonishing what vigour this water imparts to the plants; indeed, all other things being suitable, they seem to revel in it with that luxuriance that makes them really delightful to look upon. So far my directions have been addressed to the productions of fine exhibition specimens, but now we will consider the management of the tribe where there is only a greenhouse to grow them in. Here then, if very large plants are required, it will only be necessary to spur the young shoots in, retaining the old wood or stem; but if dwarf plants are preferred, cut the old plants down to the pot in autumn, reduce the roots, and repot in smaller sized pots, using the same compost as before. These plants may be placed under the greenhouse stage during the winter, and be kept tolerably dry, and by this time in the new year they will be pushing young shoots. Remove them to the warmest corner of the greenhouse, and expose them to light, and as they progress in growth repot them as frequently as they seem to require room. They will not be in bloom so early as better grown ones, but will make very nice plants for the autumn decoration of the greenhouse. Young plants struck in March and April, if properly encouraged by the necessary pot room and liquid manure, will also make very useful stuff; for the autumn plants, so managed, are generally the best for setting about in the flower garden or vases, as, being less brittle, they are not so liable to be broken by the wind as more luxuriantly grown specimens. In the flower garden, the management of Fuchsias consists in planting them in good, well trenched ground, of manuring them annually with a good dressing of leaf-mould, which also serves as a protection during winter, and also of soaking the ground occasionally, during their growing season, with liquid manure. It is not advisable to cut them down in the autumn, but to leave the old stems standing until the young shoots break up in the spring. Old plants which have been grown in pots are the best for planting out, but where it is necessary to plant young ones they should always be propagated the autumn prior to planting out. Some of the old species and varieties, such as F. coccinea, virgata, conica, Riccartoni, and formosa elegans are best for planting out, and F. fulgens also makes a fine bed. Single specimens of Fuchsias are also fine objects, on lawns especially; when they get large in such situations they should always be guarded by baskets to prevent them from being injured in mowing. *S.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Conservatory, &c.—Let whatever watering may be necesary here be done early in the day, in order to allow of getting the superfluous moisture dispelled before night; for there is more danger from damp among plants in flower at this season, than from a comparatively low temperature. Therefore, if necessary to secure a dry state of the atmosphere before night, use a little fire-heat with air during the day. Advantage should be taken of unfavourable weather for out-door operations, to get the foliage of such things as Camellias, Oranges, &c., well cleaned. This is a practice which is not nearly so general as it should be, for it is hardly less essential to the health of such plants that their foliage be kept clean and active, than it is that their roots should be in a healthy state. It is unfortunately a somewhat tedious operation to wash the leaves of a large specimen singly by hand; but this will seldom be necessary, as most plants may be cleaned effectually at this season by laying them on their side and well washing the foliage with water at 130° or 140°, and if it is used 10° or 15° warmer it will do no injury, applying it with the syringe or engine. But any specimen that may be very badly affected by scale, should be gone over with a dry brush first, as it is nearly impossible to clean such by means of hot water only, without injuring the foliage. Timely and frequent applications of hot water, will, nevertheless, do much towards preventing the necessity for resorting to the tedious operation of cleaning by means of a brush or sponge, and if this is used there will be comparatively little difficulty in keeping the foliage clean, and the plants will always have that healthy appearance which is so desirable. Cinerarias for early flowering should now have their final shift; and if the pots can be placed on a spent bed, where they will receive a little bottom heat, this will greatly assist in securing active growth. The atmosphere must, however, be kept cool and airy, to prevent mildew, and if this pest is perceived apply sulphur at once. Late Chrysanthemums should be placed under glass, or where they can be protected from frost, for they cannot be safely trusted to the mercies of the weather after this season. Give them plenty of manure water, and afford them all the light and air possible, in order to keep the foliage, &c., vigorous, and prevent mildew. Stove.—A separation of the usual inmates of this house is absolutely necessary at this season in order to do justice to all, for things being grown for blooming in winter will be benefited by a moist rather warm temperature, while others which are in a dormant state, or should be so, ought to be afforded a dry atmosphere, and be kept comparatively cool, and this is difficult to effect in one house. It is, therefore, advisable, where circumstances permit, to remove such

things as have made their season's growth, and require a period of rest, and such as are being rested after flowering, to a house where the night temperature can be kept at about 50° or 55°, with a dry atmosphere. If a gentle bottom-heat can be afforded to the Begonias and other winter-flowering stock without placing them at a distance from the glass, this will be of much service in promoting active vigorous growth, and manure water should also be used, especially for specimens that are rather underpotted, giving it in a clear weak state, and cautiously at first.

FORCING DEPARTMENT.

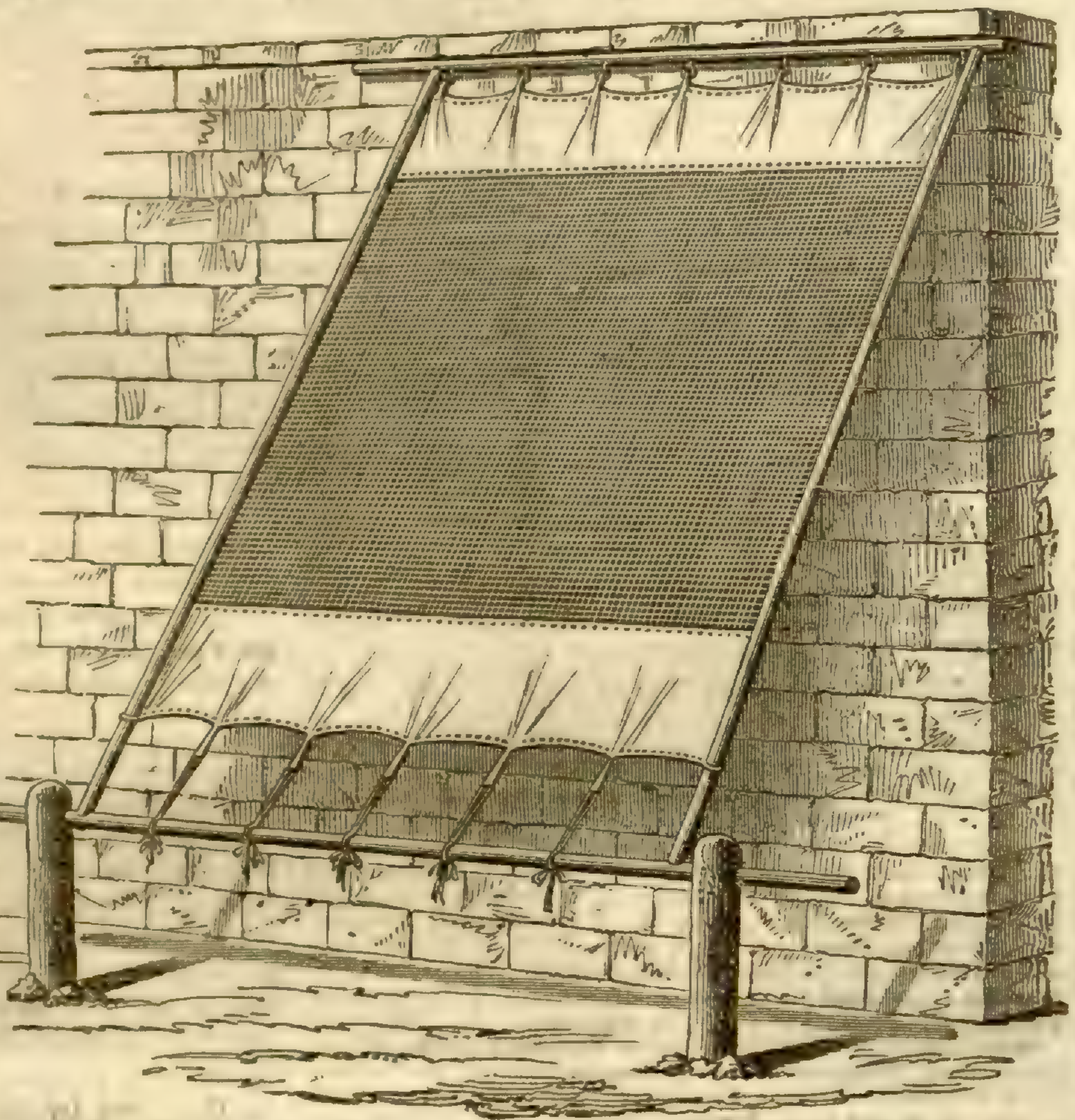
Pineries.—Fruit approaching maturity and expected to be of moderately good quality, must not be kept in a damp stagnant atmosphere, neither should it be rendered excessively dry by the moderate use of fire-heat. The fires should be kept going briskly during the day in cloudy weather, giving a little air; discontinuing, or nearly so, the use of the tanks or evaporating pans as may be necessary to preserve the atmosphere in a healthy state. Aim, however, at securing a rather high temperature, say 65° to 70° at night and 10° higher by day with the aid of the sun. If these conditions can be complied with, and if all is right at the roots, there will be no danger of the fruit being stringy or flavourless, which is often the case with Pines ripened in November and December. Plants showing fruit must be carefully guarded from damp until they are fairly out of bloom, otherwise the pips may set badly, which would cause the fruit to be ill-formed. Unfavourable as the present season is for ripening fruit we have nothing to expect for some months to come but a gradual decrease of light, &c., and where it is not of importance to have the fruit ripe at a particular time, every advantage should be taken of bright days to maintain a high temperature and get the fruit ripe as soon as possible. Pay attention to the state of the soil as to moisture, and give as much tepid manure-water as can be done without getting the soil too wet. Vineries.—Ripe fruit must be frequently looked over, cutting out any decaying berries, and if the bunches have not been well thinned, the inner berries must be carefully examined. Avoid, if possible, having any pot plants in houses where the fruit is intended to hang for any length of time, and keep the temperature as low as may consist with a dry state of the atmosphere. Wherever the fruit is cut and the wood ripe get the Vines pruned at once, in order to allow time for the wounds healing, and to avoid bleeding.

FLOWER GARDEN AND SHRUBBERIES.

Let us once more remind those whom it may concern of the advantage of using every possible expedition with new work or alterations, particularly in cases where large shrubs and trees are to be transplanted. This kind of work cannot be done too soon after this season, as, if delayed much longer, the plants will have but little chance of making fresh roots before winter, and will consequently be much more liable to suffer from the March winds, and will also require watering, &c., next spring; whereas, plants lifted last, or the beginning of this month, will require but little attention in spring. In our own opinion the best season for removing large plants is past; but the longer it is delayed after this the greater will be the risk of their not succeeding. And it is moreover advisable to get new work out of hand as soon as possible, as it can be done much more comfortably and cheaply now than after the days get short and the weather unfavourable. Late rooted cuttings not yet established after potting off should be kept rather warm and moist, to encourage a little growth, and if they can be placed where there is a gentle bottom-heat, this will greatly facilitate the succession of roots, and also allow of giving air to keep the plants from making weak growth, which they are very apt to do when placed in a warm close atmosphere after this season. Plants that are fairly established in their winter pots or pans should be freely exposed to the air on every favourable occasion.

HARDY FRUIT and KITCHEN GARDEN.

Any fruit remaining on the trees may now be gathered except Pears, being left to retard their season of ripening, for there will be little gained by allowing them to remain longer on the trees, and there will be much risk of their being blown down and bruised. Keep the fruit-room cool and airy; but Pears approaching maturity will be improved in flavour by removing them to a warm dry room a few days before they are wanted for use. Proceed with the transplanting or root-pruning of trees that are not of a fruitful habit of growth, as soon as they are cleared of the fruit; also see to getting ground prepared for fresh plantations, for the remarks above with regard to planting evergreens, &c., at once, are also applicable to fruit trees. Wall trees will soon begin to demand attention, and now is as good a time as any to discuss the subject of spring protection. We learn from the "Journal of the Horticultural Society," that the following method of protecting his wall fruit from spring frost has been practised for several years, with great success, by John Harrison, Esq., F.H.S., of Snelstone Hall, near Ashbourne, in Derbyshire. A rod is placed horizontally beneath the coping of the wall. Another horizontal rod is fixed upon posts 3 feet from the bottom of the wall, and 18 inches from the ground; the two horizontal rods are connected at intervals by slight braces or rods, as is shown in the annexed woodcut. A covering, prepared by sowing woollen netting, on its upper and lower edges, to coarse calico, is then attached to the upper rod by loops and to the lower by pieces of tape; when the protection is complete. Mr. Harrison states that the cost of the worsted net (which is 2 yards wide), is 1s. 8d. per yard running. The calico 1 yard wide is 2d. or 2½d. according to quality, and when used is slit down the middle, and one half being sewn to the top, and the other to the bottom of the net, the covering becomes 3 yards wide. The tape and making up he finds of small cost, while of poles he has abundance of no value. The whole together in London, where every article has to be purchased, ought to be under 2s. a yard running, including making and putting up. The



walls at Snelstone are brick, 11 feet high, with stone coping which projects about 2 inches on each side. The trees are unnailed before winter, and fastened loosely to the wall, to prevent their being broken by the wind. In this state they are kept until they are ready to burst into flower, the object being to retard vegetation at that season as much as possible. They are dressed with the following composition, namely:—Take equal quantities of sulphur vivum, scotch snuff, and unslaked lime, the lime to be sifted through a fine sieve. Then add half quantities of lamp-black, and mix the whole with urine and soft soap-suds to the consistency of thick paint. The old and young wood is dressed with this with a painter's brush, after the trees are pruned, after which they are nailed all from the upper side of the leading branches. Mr. Harrison's walls are flued, but the fire is used only to r pen the fruit in succession if required, and in a very wet season to ripen the wood after the fruit is gathered. The flues are never used in the spring. The advantages of this netting are very great. The walls at Snelston contain eight Peach and eight Nectarine trees. The netting is fixed up and taken down in two or three hours, is set up when the blossom cannot longer be kept back, and remains permanently fixed, until taken down about the latter end of May, when all danger from frost is over. The gardener can walk and work under it, to nail or disbud the trees; there are no blistered leaves, and the first shoots always ripen their wood, insuring fruit for the following year. Last year, upon these eight Peach and eight Nectarine trees, there were ripened upwards of a thousand dozen of fruit (at a small estimate), and there has not been less in any year since the present mode of netting was used. In the present year there is quite as good a crop, and the trees are perfectly clean and healthy. The fruit underwent its first thinning in the beginning of June, when, of full sized young fruit, besides many not so large, there were taken off 300 dozen Nectarines, and 954 dozen Peaches; and a further thinning will be requisite after stoning.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending Oct. 26, 1854, as observed at the Horticultural Gardens.

Oct.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind.	Rain.
Friday 20	28	29.433	29.356	57	39	48.0	50	53	W.	.04
Satur. 21	[illegible]	29.638	29.439	57	45	51.0	50	53	N.W.	.00
Sunday 22	1	29.550	29.304	60	31	45.5	50	53	W.	.00
Mon. 23	2	29.400	29.359	60	23	44.0	50	53	W.	.00
Tues. 24	3	29.441	29.093	56	33	44.5	50	52	S.W.	.52
Wed. 25	4	29.219	28.974	50	29	39.5	49	52	N.E.	.44
Thurs. 26	5	29.793	29.523	54	24	39.0	49	51	W.	.00
Average.		29.496	29.291	56.3	32.7	44.5	49.7	52.4		1.00

Oct. 20—Fine; showery; overcast.
— 21—Overcast; cloudy; overcast.
— 22—Densely clouded and windy; fine.
— 23—Fine; low white clouds, with clear intervals; clear; frosty.
— 24—Clear; very fine; heavy rain in the evening.
— 25—Hazy; constant rain; slight frost at night.
— 26—Clear; very fine; clear; frosty.
Mean temperature of the week, 4½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK.
During the last 28 years, for the ensuing week, ending Nov. 4, 1854.

Oct. and Nov.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 29	53.7	35.1	44.4	13	0.42 in.	3	3	3	1	6	9	[illegible]	[illegible]
Mon. 30	54.6	39.1	46.8	13	0.58	3	5	1	3	3	11	[illegible]	[illegible]
Tues. 31	53.5	39.0	46.2	15	0.88	2	1	4	1	4	[illegible]	[illegible]	[illegible]
Wed. 1	54.9	39.2	47.1	16	0.39	—	2	5	3	3	[illegible]	[illegible]	[illegible]
Thurs. 2	54.5	39.1	46.8	12	0.61	2	1	7	—	5	[illegible]	[illegible]	[illegible]
Friday 3	53.4	38.0	45.7	14	0.82	2	3	5	2	3	6	[illegible]	[illegible]
Satur. 4	50.9	36.6	43.8	15	0.44	4	2	7	4	6	9	[illegible]	[illegible]

The highest temperature during the above period occurred on the 29th and 30th, 1833—therm. 67 deg.; and the lowest on the 3d, 1845—therm. 20 deg.

Notices to Correspondents.

Amaryllis: *G B E.* If you do not wish to have your Amaryllises in flower early, you cannot do better than leave them undisturbed and dry till spring, when they should be "shaken out," repotted in fresh loamy soil, and placed in bottom-heat in a pit or bark bed. When their flowers are nearly expanded they may be removed to the greenhouse or conservatory.‡

Apples: *Tyro.* The Ingestrie Pippin does not deserve a wall, better substitute the Ribston Pippin, and, if you have space, the Scarlet Nonpareil and Boston Russet may be added to the others you propose. ‖

Books: *Donton.* M'Intosh's "Book of the Garden."—*G M. and Co.* Sowerby's "English Botany," in about 40 volumes 8vo.

Brussels Sprouts: *Sub.* Your mode of culture is correct. The small green heads like little Cabbages that are formed on the stem, are what are used. They are peculiarly rich and sweet, and are stripped off all through the winter as they are wanted. When they are done the plants are of no further use.‡

Gourds: *H L.* The sort to which you refer was, we presume, the Great Spanish Potiron, or some similar variety; it frequently weighs more than 100 lbs. No such sort is known as "the "Saccharine Pumpkin." The seed of the Spanish Potiron can be had of any of the great London seedsmen.

Greenhouse: *H T.* Your letter has been forwarded to Messrs. Gray and Ormson.‡

Hollies: *B B.* There is no Holly which bears a white berry; what is called the white-berried Holly has yellow fruit. We never recommend dealers.‡

Insects: *T P.* The fly which has attacked your Grapes is the common blue-bottle fly, which does so every year. You may prevent it by bagging the Grapes, or covering them with a sheet of gauze. *W.*

Materials for Paper: *J N.* We have nothing to do with the advertisement of 1000*l.* reward; but we believe it to proceed from persons of the highest respectability. One of your specimens of home-made paper is worthless, on account of its rottenness, as well as bad colour; the other is strong and good, but very coarse, and not white enough for printing purposes. The fibre itself, if it can be bleached easily, seems well suited for paper making, but it is too weak to be taken as a substitute for either Hemp or Flax. It is not so strong even as Jute.

Money Investment. If a *Young Gardener* goes to the nearest country banker, he will find no difficulty in having his 100*l.* invested in the funds, or placed at interest in some bank of deposit, the credit of which is unquestionable. This transaction may be effected any day, and at once.

Names of Fruits: *Const. Reader.* 1, Wormsley Pippin; 2, Norfolk Beefin; 3, Court of Wick; 4, Beurré Diel; 5, Passe Colmar; 6, Beauty of Kent; 7, 8, Brown Beurré; 9, Beurré Rance.—*P Y C.* 1, Bishop's Thumb; 2, Easter Beurré; 3, Swan's Egg; 4, 8, Passe Colmar; 5, Catillac; 6, Duchesse d'Angoulême; 10, Marie Louise; 11, Uvedale's St. Germain; 12, Napoleon; 13, 17, 20, 24, 26, Beurré Diel; 14, Beurré Rance; 16, Doyenné Gris; 18, Louise Bonne (of Jersey); 19, Chaumontel; 22, Beurré Rance; 23, Flemish Beauty; 27, Seckel.

Names of Plants: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*Erzeroum.* 1043, Ulmus montana; 1042, U. campestris, or some state of U. pumila.—*Topsy.* Ipomopsis elegans, a plant from the southern United States, and little better than an annual; it is a Polemoniaceous plant, very near Gilia.—*E D B.* We believe the fragment belongs to some Enhydra; but among 10,000 species, of which the very difficult order of Composites consists, it is no easy matter to determine a plant, even when complete in all its parts, in good condition and in fruit. We know of no such plant as Œnothera rigida.—*L W H.* 1, Orobus lathyroides; 2, Colutea arborescens; 3, Asclepias curassavica.—*Stephen Perry.* 1, Aster amellus; 2, A. pendulus; 3, A. parviflorus; 4, Galatella punctata.—*Erzeroum.* 1047. Rhamnus frangula.—*J A.* One is Cattleya luteola; the other, of which you send a single flower, is Cœlogyne fuscescens.—*J R M.*—If you will refer to our Number for October 14, p. 664, you will find your plant named under the signature "Devonian." If that was not the name assumed by you, then your enquiry never reached us.

Peach Trees: *P S.* They appear to be literally overrun with scale. You had better wait till the leaves begin to ripen, and then strip them off and *burn them*, which will prevent the insects dropping about the trees. When the leaves are off wash the trees well with water, heated to the temperature of between 150° and 160°. That will have the effect of destroying the scale without injuring the trees.‡

Pears: *R Smith.* Your seedling Pear—small, obovate, with a wide, open, shallow eye and small stalk; skin brownish, flesh yellowish, buttery, and melting, with a rich, honied, somewhat perfumed flavour, is worthy of cultivation.|

Rose Cuttings: *A Lady.* As they are hardy sorts, we would advise you to winter them where they are, and if you have a spare hand-glass to put over them all the better; you must, however, take care that they have plenty of air at all times when the weather is fine. They may be taken up and potted in spring, and placed in a cold frame for a time, in order to encourage them to make roots and get established in their pots.‡

Spring Protection: *Zeta.* Fine netting used in the way you mention will, we fear, be of little service. Had you not better try the plan adopted by Mr. Rivers, and described in our vol. for 1849, p. 133.‡

Wheat: *H R.* There is no question about the exactness of Fabre's statements. We do not believe the tales about Wheat, Barley, and Rye on the same stalk; they are most certainly either mere invention or cases of imposition insufficiently inquired into. Anacharis alsinastrum came to us from the River St. Lawrence; it is supposed with Canadian timber. It is very dangerous in tranquil streams. If the seeds you ask about are procurable at all, you can hear of them through any of the great English nurserymen.

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures, Linseed Cakes, &c.
Wm. Inglis Carne, 10, Mark Lane, London.

THE LONDON MANURE COMPANY beg to call the attention of Agriculturists to their WHEAT and CLOVER MANURES for present use. The London Manure Company also offer Genuine Peruvian Guano, Nitrate of Soda, Concentrated Urate, Superphosphate of Lime, Fishery and other Salts, and all Artificial Manures of value. The London Manure Company guarantee Peruvian Guano and every Manure they supply to be strictly genuine. Edward Purser, Sec.
Bridge Street, Blackfriars.

THE FOLLOWING MANURES are manufactured at Mr. Lawes' Factory, Deptford Creek:—Turnip Manure, 7l. per ton; Superphosphate of Lime, 7l.; Sulphuric Acid and Coprolites, 6l.
Office, 69, King William Street, City, London.
N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent. of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

WHEAT SOWING.—The undersigned beg to call attention to their WHEAT MANURE, which has been successfully used during the last two seasons, and which they are prepared to deliver at 6l. per ton, free to Railway.
They are also Sole Agents for the sale of PEAT MOSS CHARCOAL, which is a valuable deodoriser and distributor of ammoniacal matter.—English and Foreign Linseed and Rape Cakes, Guano, Superphosphate of Lime, Salt, Bones, and all other Manures of known value on sale.
Apply to Mark Fothergill & Co., 204, Upper Thames Street.

JACKSON'S PATENT PREPARATION FOR THE PRESERVATION OF POTATOES, SEEDS, &c.—This valuable discovery, for which letters patent have been obtained, is the successful result of 14 years' study and experiments in the preservation of vegetable matter. It imparts health and vigour to the Plants and Seeds subjected to its action, and effectually prevents the Potato Disease, the Smut in Wheat, Mildew and Rot, all Fungal Diseases, and the attacks of Insects and Vermin, and further recommends itself to the Farmer, the Planter, and the Public generally, by the extreme simplicity of the mode of its application.
It is sold by all Seedsmen and Chemists, in packets of one, two, three, and four pounds each, with instructions for its use; and parties requiring larger quantities for their own use or for exportation can be supplied on advantageous terms, by addressing Mr. Jackson, the Patentee, 18, Cannon Street, London Bridge; where the article is always on sale, and the fullest particulars and directions for its use can be obtained.

THE FOLLOWING ARE COPIES OF TESTIMONIALS IN FAVOUR OF JACKSON'S PREPARATION FOR PRESERVING POTATOES, SEEDS, &c.

"Belmont Farm, Eltham, Kent, August 28th, 1854.
"Sir,—I am now about to perform my promise, to let you know how your prepared Potatoes have turned out here. As a practical farmer of some experience I had despaired of finding any remedy for the disease; but I must confess that a stronger proof of the efficacy of your process in Preserving Potatoes, could not have presented itself than I have now to relate. One of the fields of this farm, the property of Mrs. Stanbury, was planted with Regent's Potatoes in April last, some of which were prepared by you. The result now is, that the whole of the crop from the unprepared sets is thoroughly diseased and hardly worth the trouble of taking up; while those raised by the side of them from the prepared sets, are not only in a beautiful state of preservation from the disease, but the produce is much greater,—the Potatoes are more numerous than the others; indeed, if there were no such thing as the disease to be feared, it would be worth the trouble and expense of preparing the sets by your process, even for the sake of the improved crops. I shall certainly, for the future, prepare all my Potatoes for seed by your process; and I intend to adopt it for preserving my Wheat from the smut. Any person may see the difference of the prepared and unprepared Potatoes at a glance. You are at liberty to make any use you please of this letter, and I remain, Sir, your obedient Servant,
"G. B. Baxter.
"To Mr. Jackson, 18, Cannon Street, London Bridge."

"Sir,—I am very much pleased with the result of the experiments I have made with your prepared Potatoes; for I planted them, without any manure, in ground where for several years I have hardly had a sound Potato, and I now find the crop perfectly free from disease and in a very fine condition; while those of the same sort unprepared, which were planted at the same time, and next to them, are diseased and eaten by worms. The Potatoes from the Prepared Seed were so remarkably good, that I was induced to weigh them, and I found, to my great astonishment, that they were as 200 to 150 of the others,—or about 25 per cent. in favour of your preparation. I need not say that this is quite satisfactory to me, and it is of so much importance to the public, that it ought to be generally known.—I am, Sir, your obedient Servant,
"T. Austin, Nurseryman and Seedsman, Blackheath, Kent.
"To Mr. Jackson, 18, Cannon Street, London Bridge."

"Hythe End Farm, Wraysbury, Staines, Sept. 5, 1854.
"Sir,—I have very great pleasure in informing you of the result of the experiment made with your Patent Preparation, for preserving Potatoes from disease. I am not yet able to give you a report of the whole crop, as I planted very late in the season, and the Potatoes are still growing; but so far as I have ascertained the result fully bears out the statement made by you, as to the complete efficiency of your process in preventing disease. I had the prepared and unprepared planted in adjoining plots, among the unprepared I find the disease in the same form it has assumed during the past few years, while in the plot adjoining, and which were prepared by you, there is not to be found the slightest appearance of disease.—I am, &c., Thomas Buckland.
"To Mr. Jackson, 18, Cannon Street, London Bridge."

"Stone Grove, Edgeware, 15th Sept., 1854.
"Sir,—You will be glad to hear that your prepared sets of Potatoes have turned out very well here, both as to quantity and quality, while those in the adjoining ground, which were planted with unprepared sets, have the disease as badly as ever. The agriculturists are much indebted to you for discovering so valuable a remedy for the Potato blight, Mr. Wylde is as perfectly satisfied as I am with the success of your patent for preserving the Potatoes from the disease; and there is no doubt the same preparation would preserve Wheat from the Smut, and every description of corn and vegetable from the blight to which they are subject.—I am, Thomas Priest, Bailiff to H. Wylde, Esq.
"To Mr. Jackson, 18, Cannon Street, London Bridge."

"To Admiral Sir James A. Gordon, K.C.B., Marlee House, near Blairgowrie.
"Sir,—I have received your note of the 16th. The Potatoes that came here from England, prepared by Mr Jackson, were planted in a piece of new ground; and according to the directions sent by him along with them as to distance between the plants, &c. They came up well: the tops showed some appearance of disease about the middle of August. I have dug up a few stems to see the state of the Potatoes, and there is not the slightest appearance of any disease; they are very large and very prolific; they are quite ripe, fit for taking up. There were long black Kidneys planted in the same patch, and a great deal of them are not fit for use, at least a third part are diseased.—I am, Sir, your most obedient Servant, (Signed) John Shanks.
"Kildrummy Castle, Aberdeenshire, 25th Sept., 1854."

CORN CRUSHERS AND CHAFF CUTTERS.—A large display of the best Farm Implements shown in operation. Price Lists sent free on application.
BURGESS and KEY,
103, Newgate Street, and 52, Little Britain, London.

PUMPS AND HOSE PIPES FOR GARDENS AND LIQUID MANURE.—Burgess & Key's Pumps were highly commended by the Royal Agricultural Society of England at Lincoln. Price Lists sent free.
103, Newgate Street, and 52, Little Britain, London.

CHURNS.—ANTHONY'S PATENT AMERICAN CHURN.—Since 1849 this Churn has obtained all the Prizes awarded by the Royal Agricultural Society of England. At the trial before the Judges it made in 10 minutes 4 lbs. 6 oz. of Butter from 4 quarts of Cream, being 8 oz. more than any of the other Churns from the same quantity and quality of Cream.
103, Newgate Street, London.

SAMUELSON'S PATENT PRIZE FORKING MACHINE (Silver Medal from the Royal Agricultural Society of England, Prize from the Yorkshire Agricultural Society, Prize from the Cleveland Agricultural Society, and Prize from the Worcestershire Agricultural Society) is now proved by experience to be an invaluable implement for deep tillage, and equally effective as an extractor of Couch Grass and other Weeds, in testimony of which, numerous reports from farmers using it in every part of the kingdom may be had on application. Various imitations have failed, through the absence of its essential feature—the Patent Fork. The amount of horse power is less in proportion to the surface deeply pulverised than that required in the ordinary shallow ploughing. The application of steam power to tillage is still a problem to be solved, and it is not necessary to defer deep cultivation until its solution be accomplished.

SAMUELSON'S IMPROVED GARDNERS' TURNIP CUTTER (Prize for the ninth time, at the Royal Agricultural Society's Meeting, Lincoln, 1854). The improvement is a rasping plate for loosening and voiding dirt from the roots, whilst being cut, whereby the scouring tendency of root feeding is diminished.
B. Samuelson (Successor to late Mr. Gardner), Britannia Works, Banbury.

LAND DRAINAGE.
MR. JOHNSON begs to inform Landowners, Agents, &c., that he is prepared to undertake the Drainage of any description of Land, either by contract, or by a small charge per acre for planning and setting out the drains, taking levels, and superintending the work. Numerous satisfactory references can be given by Mr. J., who has been for several years in constant practice as a Draining Engineer.—Address 12, Abingdon Street, Westminster.

THE BIRMINGHAM POULTRY SHOW, 1854.
The SIXTH GREAT ANNUAL EXHIBITION OF DOMESTIC POULTRY will be held in BINGLEY HALL, on the 12th, 13th, 14th, and 15th of December next. Copies of the Prize Lists and Certificates of entry may be had on application to the Secretary.
In addition to the prizes announced in the list dated the 23d of February last, the General Purposes Committee of the Council have resolved to offer First Prizes of 2l., and Second Prizes of 1l., for Single Cock Birds of any age, of all the following varieties, viz.: Dorking, Spanish, Cochin China, Bramah Pootra, Pencilled Hamburgh, Spangled Hamburgh, Game, and Polish; and that the same shall be entered under Letters A to H on the ordinary certificates, and exhibited separately.
Seven Silver Vases, of the value of six guineas each, will also be awarded, instead of money prizes, for the best pen of Pencilled Hamburgh, Spangled Hamburgh, Polish, Spanish, Dorking, Cochin China, and Game Fowls.
First, Second, and Third Prizes of 3l., 2l., and 1l. respectively, are offered in all the Classes for Fowls, as well as for Turkeys, Ducks, and Geese. Liberal Prizes will also be awarded to good specimens shown by Cottagers, whose entries must be made on a form of certificate different from that used for the general classes.
The Entries Close on SATURDAY, the 11th of November.
John Morgan, Jun., Secretary.
Offices, 38, Bennett's Hill, Birmingham, Oct. 28, 1854.

THE BIRMINGHAM CATTLE AND POULTRY SHOW, 1854.—The Sixth Great Annual Exhibition of STOCK and DOMESTIC POULTRY will be held in BINGLEY HALL, on the 12th, 13th, 14th, and 15th of December next. The PRIZE LISTS and Certificates of Entry may be obtained on application to the Secretary. The Entries close on Saturday, November 11. John Morgan, Jun., Secretary.
Offices, 38, Bennett's Hill, Birmingham.

SUSSEX, KENT, AND SURREY POULTRY EXHIBITION.—The ANNUAL SHOW of the REIGATE POULTRY SOCIETY, open to the above three Counties, will be held at the PAVILION, BRIGHTON, on the 21st, 22d, and 23d of November.—For particulars apply to Mr. James Fisher, Reigate, Mr. George K. King, 155, North Street, Brighton, E. N. Harper, Esq., Reigate, and Charles Hart, Esq., Dorking, Honorary Secretaries.

SMITHFIELD CLUB, 1854.
CHRISTMAS FAT CATTLE SHOW.—The Annual Show of Fat Cattle, Sheep, and Pigs, will take place on the 5th, 6th, 7th, and 8th of December, 1854, at the Carriage Bazaar, King Street, Portman Square, London.
All Certificates must be returned to the Honorary Secretary on or before SATURDAY, the 4th November, 1854.
Prize Sheets, and the necessary Printed Forms of Certificates, are now ready, and can be obtained on application to
B. T. Brandreth Gibbs, Hon. Sec.
Corner of Half-Moon Street, Piccadilly, London.

The Agricultural Gazette.

SATURDAY, OCTOBER 28, 1854.

MEETINGS FOR THE ENSUING WEEK.
Thursday, Nov. 2—Agricultural Imp. Society of Ireland.

We have no wish to continue a discussion which is made a personal rather than an agricultural affair. The professional interests of our readers are, if not more important in themselves, at least more interesting to us than either the truthfulness of individuals or the trustworthiness of *journals*—which appear to be all that the *Mark Lane Express* can see involved in the differences between us: and to the way in which the evidence given in our last two Numbers affects these we shall at once confine ourselves. Let us, however, add, in reference to the latest remarks of our contemporary on this subject—on which, according to their own confession, certainly no "over refinement" has been wasted,—that we are very willing to accept the division of agricultural intelligence which he proposes;* and while all the safe and stale, the well-known old-fashioned information goes to him, let all the *extra*-ordinary events of the day, the evidence of progress and "news" of real agricultural advancement come to the *Agricultural Gazette*. We have no wish for correspondents who are carried forward against their will and with their eyes and minds the other way. We can strike our agricultural averages without their assistance, and need no one to tell us how low they are, whatever be the department of farm practice to which they refer. It is the history of experiences, showing how these averages may be raised, that we desire; and we hope that all who have any such experience to relate will take the hint given in the foot-note below, and learn from it where they are most likely to meet with sympathy and thanks.

It is to the account of such an experience that we now beg the attention of our readers. We will avoid all reference to hearsay evidence and reports of unpremeditated speeches, and confine ourselves to the documents before us. We have first the letter of Mr. Kennedy, of Myremill, to Mr. Mechi, and read by that gentleman in the Clover field at Tiptree, saying that he had, during the last month, kept on 33 Scotch acres of Italian Rye-grass "250 large cattle, 465 sheep, 200 pigs, and 25 cart horses." Then there is the letter of Mr. Telfer, of Cumming Park, in which he states that his cuttings of Italian Rye-grass will this year "much exceed" 65 tons per acre. In the third place we have a letter from Mr. Dickenson giving his equally extraordinary experience on the subject, stating among other things that four horses, receiving nothing else, cleared only 38 square yards of this same crop per day. And lastly we have a letter from a known correspondent in the county of Ayr, saying that 50 cows could not consume 7 Scotch acres of Italian Rye-grass at Myremill, and that 70 sheep per acre are kept there on that crop.

The witnesses are men of character, and their evidence, though coming from so many quarters, is wonderfully consistent. Our Ayrshire correspondent, writing with the facts under his eye, speaks of the "pig-headed" incredulity with which the account is received. We have not the facts themselves before us, nor have we anything in our own experience at all to compare with them; but we must be entirely deaf to the force of testimony, and blind to the laws by which its value is determined, if, on receiving genuine documents, attested by four good witnesses in three different localities, and describing these facts—which, however different they may be from anything yet known, are at least consistent among themselves—we should join in the thoughtless laughter with which such testimony has been received. And we have no hesitation whatever in adding that the agricultural journalist who can receive such intelligence as this, and find nothing in it but an opportunity to pick holes in the public and professional character of a political opponent, either wonderfully degrades that position as an "agricultural leader," which Mr. Beale Browne accords him, or *does not hold it*.

It matters very little whether any of this Italian Rye-grass was made into hay, or how much hay it made. We know of but one instance where so much as 9 tons of Clover hay has been made off 3 acres of ground, and then it was not made *on* the extent from which it was cut. Whether either Mr. Telfer or Mr. Kennedy may have tested the hay-producing capabilities of their crops and of their climate, we cannot now declare, since the statement on that point which we heard at Tiptree has been denied. Those who are curious on the possibilities of this subject will find the fullest account of the relations between Grass and hay in Dr. Thomson's little book on the "Food of Animals" (Longman). The main point, as we have said, is the enormous yield of green food which, under proper culture, Italian Rye-grass will produce per acre—the enormous quantity of stock which it will maintain. Mr. Kennedy's statement, putting one horse as equal in its power of consumption to eight, and one of the "large cattle" to six sheep or pigs, amounts to this—that 72 sheep per acre had been kept during that month—that is, we suppose, on one cutting of Italian Rye-grass. A sheep of ordinary size will eat at least 7 cwt. of green food out of doors in a month; and here, then, is a produce of 25 tons of green food per acre at one cutting! Wonderfully consistent with the statement made by Mr. Telfer. In Mr. Dickenson's case, while the four

* "Whenever a sailor attempts to spin his messmates rather too tough a yarn, he is politely requested to 'tell that to the marines.' For the future, whenever we hear anything over-marvellous about agriculture, we may save ourselves a deal of trouble by requesting they will 'tell *that* to the *Gardeners' Chronicle*!'"—*Mark Lane Express, Oct. 23, p. 8.*

horses clearing only 38 square yards of Sainfoin in a day is even a more extraordinary statement, his further account of 5 acres keeping "70 to 100 horses in rackment during the spring and summer months—some of them eating four feeds of Oats per day, and some no Oats at all," will be found very fairly to corroborate the Scottish statement.

What, then, is the use to be made of the facts—for such we must believe them to be—which are thus alleged? Shall we urge every one at once to commence laying down subterranean systems of pipes in connection with tanks and force-pumps? This is neither possible nor desirable. The "agriculturist," on whose testimony our contemporary relies, is no sounder in his logic than he is in his geography, when he would insinuate Mr. Caird's untrustworthiness as an agricultural teacher, because, with all his commendations of his "*neighbour*," Mr. Telfer, he had himself done nothing in imitation of him. We do not know whether he has or not: it is not such details as this, nor is it to the pages of "High-farming Harrowed,"* that any reasonable person will look for the real agricultural status of a public man. We cannot all be mounted targets with feathers in our caps, but more than one well-contested field has proved the usefulness of such leaders. And all that we desire to do at present is to assert the real position of these men as our leaders, assured that if that be generally acknowledged, the ordinary rank and file of the agricultural array will gradually advance upon their steps, so that the strongest positions which prejudice at present holds, however recklessly defended, must yield at length.

There are contrasts in all ranks: among landlords or among farmers. And there is no wider interval in point of agricultural practice between Mr. Kennedy, of Myremill, with his 70 tons of Rye-grass per acre, and many a cultivator who is satisfied with seven—than there is in point of agricultural sentiment between Colonel McDougall, of Logan, whose address we gave last week, and Mr. Colvile, M.P., who lately spoke at a meeting of the Sparkenhoe Farmers' Club, in Derbyshire. The former congratulates his tenantry, and prides himself upon their success and their high standing in the agricultural world. He refers to his own farm practice, and the satisfaction with which he could so largely embark in it, seeing that his expenditure was not only beneficial to others, but justifiable, because profitable, in itself. He takes his position in the assemblage as one amongst friends with whom he could enjoy intercourse on equal terms. And his friends—his tenantry—were well represented in the reply to their landlord's speech. Mr. McLean congratulates the gallant Colonel on his return to his estates; acknowledges with pride and satisfaction the vast improvements which have been made upon the property; speaks fearlessly of the scanty use which alone is justifiable of the word "impossibility" in agriculture; refers gratefully to the exertions of Mr. Caird, of Baldoon, to procure the cheapening of guano; and concludes with a picture of the contrast between the prosperous condition of the Logan estates and that of others where the vaunted liberality of landlords in doling out a return of so much per cent. of rents to their tenantry was but an indication that the last penny had already been so completely screwed out of the farmer that he had no margin for casualties. "On the Logan estates these paltry deductions, thanks to the enlightened policy of the respected landlord, were not wanted. The system there was—live and let live."

Now for the contrast to all this:—At the meeting the other day at Ashby-de-la-Zouch, Mr. Colvile gets up and expresses the opinion that farmers' wives are too proud for their work—that if they would have good dairies they would have little time to play the piano—and so forth! Of course there was not a farm-tenant in the room who did not feel it all to be simply gratuitous impertinence, and "a perfect tornado of indignation, hisses, groans, and cries of down—down," very properly arose; until the speaker, having at length concluded his remarks, was answered by Mr. Campion, amid the overwhelming applause of the meeting. And we are sure that there is not a tenant farmer out of doors who has read the account of this meeting, who does not feel that with landowners so ill-advised as Mr. Colvile in this instance proved himself to be, the payment of rent might very well be considered, not merely as the entire cancelling of obligation, but as the only occasion for intercourse between landlord and tenant.

We commend the opinions of our friend and correspondent "J. W.," of Peterborough, given in another column, to all who think that, as landlords, they have any business to interfere in the family arrangements or recreations of a rent-paying tenant. And we imagine that the more intelligent among them will agree with us that, even in the case of tenantry whose means but reach from hand to mouth, improvement will more probably be derived from encouragement given in the field, than from prying into what goes on at the fireside.

* A sarcastic criticism of Mr. Caird's celebrated pamphlet, published in Blackwood's Magazine, 1850; of course, as clever and unfair as on such a subject in such a periodical it was likely to be.

NOTES ON EXPERIMENTS IN THE GARDEN OF THE ROYAL AGRICULTURAL COLLEGE.

By Professor James Buckman.—No. VII.

(*Continued from p. 620.*)

6. *Avena fatua* (Wild Oat).—This is a Grass belonging to the true Oats, and not to the Trisetum forms. It grows as tall, if not taller, than the cultivated varieties of Oat; but is readily distinguished from them by an abundance of stiff hairs attached to the base of the corolla glumes; however, in this respect, it is approached by occasional starved or seeded specimens of the field Oat, in which hairs are not unfrequent on the corolla—a circumstance which gives some countenance to the belief so general among the farmers of the heavy lias clays in the Vale of Gloucester, namely, that it is unsafe for them to cultivate Oats, because they leave behind a degenerate race of wild Oats. However, be this as it may, it will be found to be a most troublesome weed, especially on stiff sterile lands, where it most commonly makes head among the Wheat and Beans, when, from the similarity of its growth to Wheat, it cannot readily be distinguished, and, consequently, much is left behind after hoeing; it, however, mostly overtops the Wheat—thus, by its large flags, and more vigorous growth, keeping away light and air from the desired crop; and as its seeds ripen before the crop, their self-sowing ensures a continuance of the evil. The best method of getting rid of the pest would appear to be careful weeding with crops of Turnips and Beans; indeed so much of it would not be seen annually in the soil indicated, only that it is held as unfit for Turnip cultivation on the one hand, whilst on the other, the poor farmers on stiff intractable land seldom care enough for the weeding of Beans, which, without so doing, become a more prolific nursery for every species of weed than is presented in any other crop; this we hold, in any soil, to be a shortsighted policy, as nothing can be more prejudicial to a Bean crop than a rank undergrowth of weeds, many of which, as the Convolvulus arvensis, Polygonum Convolvulus, Ervum hirsutum, Galium aparine, and the like, so twist and entwine themselves with the stems and foliage of the crop, as totally to prevent its growing; besides such a host of company can only be maintained at the price of its well-being, and ultimately at the farmer's cost, so much so indeed that any farmer will find that it is much cheaper to be hospitable to friends than indulgent to weeds. With Beans, too, a rank growth of weeds would appear, if not to cause, at least to aid the extension of the Puccinia fabæ, a fungus disease, to which they are exceedingly liable, and which is highly prejudicial to the crop. In concluding my notes upon this Grass, it may be well to remark that my plot of this year is from seed that had been cultivated in the garden the previous year, and there is a perceptible difference in the size of the grain.

7, 8. *Arrhenatherum avenaceum* (Oat-like Grass).—Little need be noted upon this Grass, only that it grows a large quantity of herbage, equally on poor clays or light sands; for the latter position it seems to be fitted by a tendency to increase the size of the underground nodes, giving the lower part of the plant the appearance of strings of small Onions. This is the variety called A. bulbosum (Onion couch), which is such a pest on such lands as are frequently to be met with in some parts of Worcestershire, which is mostly made up of the disintegrated slabs of new red sandstone, or again at Cheltenham, where are thick beds of ancient marine sands filling up hollows in the lias. In the latter, which is much used as garden ground, for which it is peculiarly adapted, the Onion couch has to be picked out in digging, with great care, otherwise the evil is continued, as the smallest portions left behind will grow with great rapidity. As a pasture Grass, though the yield is great of both varieties, it must take but a low place, as cattle of all kinds seem to have a disrelish for it, which is perhaps accounted for by its exceedingly bitter and disagreeable flavour.

9. *Holcus lanatus* (Soft Grass).—Is a Grass of little consequence, as when abundant in a pasture it is an evidence of poverty of soil; it is universally refused by cattle, and hence, from the quantity of light-coloured flowers that may be seen of it in sterile pastures in the months of August, September, and October, it has received in some counties the name of "Fog." This species is usually mistaken for H. mollis, to which specific name its greater softness would seem to entitle it; the H. mollis, however, of Linnæus is much less hairy in all its parts.

10. *Dactylis glomerata* (Cocksfoot Grass).—My example of this Grass was planted in drills of about 6 inches apart, in which position it soon attained to a vigorous state of growth, each root however increasing greatly in size and the amount of its herbage year by year. It is a highly-valuable Grass, and may be cultivated in almost any soil; it bears cutting well, and rapidly shoots up a quantity of sweet herbage of nearly twice the height, in a given time, of the surrounding species; and its appreciation by cattle may at once be seen by whoever will observe what takes place when they are turned to depasture upon the lattermath, as the tufts of Cocksfoot will be the first to engage their attention. The culms, however, are large and coarse on which account it does not make the finest hay: at the same time the quantity of its yield, and its well-known nutritive properties (as shown not only by observation, but from chemical analysis), should give this Grass a high place in the esteem of the agriculturist. If we compare the result of the analysis of this Grass with those of two other species, well known for their value as pasture Grasses, we shall see not only that it does not suffer in the comparison, but it will afford us good evidence of the value of chemistry in inquiries connected with the value of Grasses:—

Analysis of three Good Grasses, by Professor T. Way.

In 100 parts of the Grass, dried at 212° Fahr.	Albuminous, or flesh-forming principles.	Fatty Matters.	Heat-producing principles, Starch, Gum, Sugar, &c.	Woody Fibre.	Mineral Matter, or Ash.
Alopecurus pratensis (Meadow Fox-tail)	12·32	2·92	43·12	33·83	7·81
Lolium perenne (Perennial Rye-grass)	11·85	3·17	42·24	35·20	7·54
Dactylis glomerata (Cock's-foot Grass)	13·53	3·14	44·32	33·70	5·31

That the Dactylis glomerata is capable of growing a large crop my experiments fully prove, not only of culms but of aftermath; the culms, however, are somewhat coarse, but with their nutritive qualities must be valuable, especially in chaff. I am not aware of its having been tried as a self-crop, but there can be but little doubt that if examples be so tried different from those generally employed, this Grass has much to recommend it.

11. *Poa pratensis* (Meadow Grass).—This Grass, though it by no means yields the crops of the preceding, is still one of great importance, especially in natural pastures, as by its slightly creeping habit it tends to the keeping up that matted form of growth, without which turf must always be inferior; this circumstance added also to the fineness of its leafage renders it one of the most valuable species for lawns, but though this latter property does not add to its value in aftermath, yet its fine culms and its property of well doing in almost any soil, must give smooth meadow Grass a high character as a valuable adjunct to the hay field.

12. *Poa trivialis* (Rough-stalked Meadow Grass), as a general rule may be considered as inferior to the P. pratensis, a fact which is also confirmed by analysis. 100 parts of each of these dried at 212° giving to Professor Way the following results:—

	Poa pratensis.	Poa trivialis.
Albuminous or flesh-forcing principles	10·35	9·80
Fatty matters	2·63	3·67
Heat-producing principles—Starch, Gum, and Sugar	43·06	40·17
Woody fibre	38·02	38·03
Mineral matter or ash	5·94	8·33

At the same time, we must bear in mind that the former is better adapted for uplands or dry soils, the latter for lowlands; indeed a large quantity of it in other than irrigated meadows will at all times be a good indication of want of drainage. In irrigated meadows, especially those that have not been a long time in operation, the P. trivialis forms a great part of the bulk of the pasture, in which it is said to yield far larger proportionals, especially of fat-forming principles, than is usually the case; but even here if the plans have been in complete operation for a few years, and the drainage tolerably perfect, it gives way before the Lolium perenne, Poa pratensis, and others usually of better quality.

13. *Poa nemoralis* (Wood Meadow Grass).—Of this species few trials have been made, probably from the fact that its wild habitat in woods, and on the glacis of limestone rocks, would promise but a poor result; but unpromising as it might appear, this Grass nevertheless grows well in open situations, yielding a quantity of delicate herbage; its culms, however, growing later than most other species, usually appearing in the lattermath, on which account this might possibly become a valuable Grass, where second crops are obtained (a vicious practice, by the way, by no means commendable), its tender culms in late depasturing are by no means objected to by cattle; but it may be much doubted whether the smallness of its yield does not render it of little value as a pasture species. *Cirencester, Oct. 3.*

(*To be continued.*)

GLOUCESTER CHEESE-MAKING.

[The following is taken from the published report in the North *British Agriculturist* of a deputation from Ayrshire, which lately visited the dairy districts of the south of England.]

Few if any of the Gloucester cheese are what we would call *full-milk* cheese. It is a common practice in the vale of Berkeley to take the cream from a considerable proportion of the milk. In the dairy at Water End very little cream is taken off; and this, together with the general carefulness of the management, accounts for the superiority of Mr. Leonard's cheese. He has 3[illegible] cows this summer; and previous to our visit 8 lbs. [illegible] 9 lbs. of milk butter, in addition to the cheese, were weekly made. As cheese is made twice a day, the hours for milking are early. In the morning it is commenced a little before 5 o'clock, and in the afternoon at 3. As the milk is brought in it is put into the cheese tub,

and great care is taken to free it from impurities. A cloth is thrown over the tub, and above it is placed the ladder with the hair sieve through which the milk is poured. A table-spoonful of nitre is put over the cloth, and is left to mix with the milk as it flows through into the tub. The colouring matter, composed of a solution of annatto, and the rennet are then added, and stirred carefully through the milk.

The thermometer is not used in Mr. Leonard's dairy, and on that account we cannot speak precisely as to temperature. During the time of milking there is, of course, a considerable loss of heat; and as the small quantity of skimmed milk is added in summer without being heated, the temperature of the whole, we would suppose, may be from 85 to 90 degrees when the rennet is added.

About an hour is allowed for coagulation. The time for breaking is judged by the touch of the finger. By allowing the curd to become pretty firm the whey comes off purer than it would do if the curd were earlier broken. Breaking the curd is an operation that must be carefully performed. The dairy superintendent, or in her absence a trustworthy person, must do this part of the work. The hands are put gradually down to the bottom of the tub, and are brought slowly to the surface with the palm upwards, and the fingers extended. This is done repeatedly; and care is taken to avoid pressing or squeezing the curd, as a very slight pressure would cause the whey to come off white. After the hands have been passed through the whole mass in this manner, a circular wooden breaker, formed like a net, is used to complete the operation of breaking. It is moved slowly and steadily until the whole of the curd is made very fine. The breaking usually occupies from 20 to 30 minutes. The curd is then left about 20 minutes, to allow it to settle to the bottom of the tub. It is next drawn gently by the hands to one side of the tub to admit of the whey being taken from the other side. The whey is lifted in a wooden bowl, and poured through a hair sieve into the leaden vessels, which are placed at the side of the dairy. The sieve retains any small portions of the curd that have been lifted in the bowl. When the greater part of the whey has been taken off, the curd is heaped on one side of the tub; it is cut in different directions, to allow the remaining whey to run out, and is gently pressed by the hands to accelerate the separation. The whey, as it flows from the curd, is lifted from time to time and put through the sieve into the whey leads. The curd is then put into vats with thin cheese-cloths, locally called whey-cloths, over them; and the vats are placed in the press, one above the other, for about 20 minutes.

When taken from the press, the curd is cut into squares, and broken by the hand somewhat finely into the tub. A little heated whey is poured over it; the whey and the curd are well stirred together; the curd is drawn slowly to one side of the tub, and the whey is taken out as before. After the whey has been taken off, the curd is again broken down by the hands into the vats. It is easily broken, as it has not attained a firm state of cohesion. As the vats are filled, the curd is pressed into them with the hand, and they are piled one above the other in the cheese-tub. At this stage the curd is in a pasty state, and the fragments combine very easily; the pressure from the weight of the vats brings the contents of each vat into a mass. When the vats are all filled, they are reversed, and the bottom ones placed uppermost. The top cheese is taken and a triangular paring, about an inch broad at the base, is cut off round the edge. It is then turned into a whey cloth, the vat is rinsed with a little whey, and the cheese is put into it with the cloth under. The edge that is now uppermost is pared round as the other had been, and a portion of curd, in the form of an inverted cone, is cut out of the centre of the cheese. This is called "cutting out the witch," and we have been informed that the practice is seldom omitted by a Berkeley dairymaid. Along with an old horse-shoe over the door it forms a perfectly sufficient safeguard against witchcraft. The "witch" is broken down by the hand, the paring from the edge is placed round the opening made by "cutting out the witch;" as much more curd is put in as suffices to make the vat full enough; the cheese is covered over with the cloth, and is put into the press. The other vats are treated in the same manner, and are then put into the press.

After being pressed an hour or an hour and a half, the cheeses are put into dry whey-cloths, and returned to the press till the evening. They are then rubbed over with refined salt, and put into thicker cloths, called "salting cloths." In the morning the cheese is again rubbed with salt, and returned to the press in the same cloth. Next morning it is rubbed a third time with salt, and the salting-cloth is put over it another day. On the fourth morning the cheese is put into the vat without a cloth, for the purpose of being made smooth. It is reversed in the vat on the fifth morning, and again on the sixth, and on the seventh morning it is laid on the shelf. The frequent rubbing of so many cheese with salt has a very severe effect upon the hands of the dairymaid.

It may be stated as a fair average of the amount of whey butter in Mr. Leonard's dairy, that one pound is made weekly from the produce of each cow during summer. The cheeses are turned daily in the cheese room until they become firm, and afterwards they are turned about twice a week. Before being sold they are painted with colouring matter composed of Venetian red and water. There is no particular age of the cheese at which the painting should take place. They are painted just long enough before being sold to allow the peculiar bluish colour, which indicates a true Gloucester cheese, to show itself. This may be at the age of three or four or six months. In painting, the dairymaid sits on a low stool, takes the cheese in her lap and scrapes it carefully. She then stains it over with a woollen cloth dipped in the paint. In some cheese-rooms, after the cheese is painted, a Cabbage-leaf is placed upon it, to assist in imparting the desired colour. The leaf is kept on a week, first on the one side and then on the other. A longer time of it would injure the colour.

The single Gloucester cheese, which is generally made in Berkeley, is $15\frac{1}{2}$ inches in diameter, and from $2\frac{1}{4}$ to $2\frac{1}{2}$ inches in depth. This gives about eight cheeses to the cwt. The quality of the double Gloucester is originally the same, but it is made of double thickness, and is usually kept to a greater age, which accounts for the higher price at which it is sold. The large leaden vessels and some of the other utensils in the Berkeley dairies are excellent. The cheese-tubs, like most of our own, are of wood; but the vats or chessels are much superior to ours. They are made of Elm, and are turned out of a single piece of wood. Their surface is remarkably smooth; and as they are hooped with wood there is nothing about them to corrode. With ordinary care, therefore, they last a long time. The wooden presses, though they have a clumsy and old-fashioned appearance, seem to work well. We counted 15 cheeses piled upon each other in one of them. They have no advantage over good lever presses, and in some respects are not so convenient.

THE PRODUCTIVENESS OF CORN CROPS.

The reply of a friend of Mr. Smith's to an exposition of his plan was, "I would rather have my 6 quarters than your 4 quarters and 2 bushels;" and he was right, if he could ensure, with equal certainty, his 6 quarters with intermediate crops as remunerative as Mr. Smith's 4 quarters and 2 bushels; 6 quarters, however, are rather the exception than the rule of our present systems, yet I see not, under Mr. Smith's indications, with some modification of his plan, but that 6 quarters may become the rule. To confirm this rule, it is true, we shall require something from science and more from experiment; and, when the bread of the people is the question, it is surely worth while to try what we can do. Mr. Smith himself, strenuously as he may enjoin a strict adherence to his directions, will, in the benevolent spirit which moves him, rejoice to find, in a departure from them, so beneficial a result.

Mr. Smith, in proper Wheat soils, depends solely on mechanical operations to give activity and efficiency to natural causes, and these are sufficient to produce, little more or less, 34 bushels to the acre. It remains to be proved, and he has not tried it, whether by using some artificial aids, these 34 bushels may not be brought up to 48 bushels. Even in the best constituted Wheat soils there exists a very great difference between their component parts and the composition of the Wheat plant at all periods of its growth; we cannot doubt that this must militate against the perfect development of the plant. It is impossible that it can make that full, perfect, and rapid development which it would do were its food directly proportioned to its requirements. It must lose time in getting rid of surplus elements, and must be retarded in waiting for a sufficient supply of the deficient ones. We are here supposing the roots to possess no elective power, but to take up everything which is offered to them in a soluble state, and that it is the property of the plant internally to divide, separate, and throw off such matters as it does not assimilate. Did the roots possess this elective power still the plant would suffer from the short-coming of some of its requisite elements, for it must wait till a due proportion of each were offered to the roots to enable the work of assimilation to go on. It is not that the composition of the soil be strictly homogeneous with the Wheat plant, but that the parts of it which can be acted on so as to become soluble should be in relative proportion to their solubility and the demands of the plant. Hence it were absurd to expect any immediate effect from the application of specific manures in such quantities as the crop is supposed to remove from the soil, for it can only take up so much of them as bear a proportion to other matters in the soil in a state of solution.

It may not be possible to render a soil on a general scale so strictly proportioned to the constitution of the Wheat plant, but something may be done towards it, and possibly a sufficient extent of land might be rendered so for the production of seed. But there may be plans of tillage more within the common reach, that will bring up the produce to the proposed amount; the stimulating, by specifics, of the first growth of the plant, as, in the application of bone-dust to Turnips, there can be no doubt that much of the future growth depends on the health, strength, and perfect and full development of the first leaves and rootlets; most certainly very much depends in the vegetable, as well as in the animal, on a full and proper supply of food at the weaning time, and this, I would say, in plants, is at the period when, having consumed all the food contained in the seed, they begin to draw their future nourishment from the earth and air.

Though from the rankness of Mr. Smith's Wheat any application of manure may seem superfluous, yet, as he has never reached the extreme of productiveness, there must be a something wanting to give us the 6 quarters. It is sheer nonsense to talk of its being only half a crop, it enjoys the natural appliances of the whole acre; it is, in effect, a full crop. The fallow intervals, I am satisfied, entail no shortcoming of crop, indeed, in small experiments, I have seen the largest products at wider distances.

It has been proved beyond question that the alternating in rows of different families of plants, give a greater acreable produce than do their separate production. Perhaps the growing of corn in strips of land alternating with manured green or root crops, each crop being continually cultivated in the same strips, the strips being of sufficient breadth to allow for carting on manure, say 6 feet wide,* will be found a most productive plan, and is, indeed, a mere modification of Mr. Smith's plan of cultivating grain and green crops in separate fields. The advantages of this mode, that I reckon on, are, that the strips are not so wide but that the different plants in them may take up by leaf and root the matters mutually refused or discharged; and, that while the green crops receive the full benefit of all the manure of the farm continually deposited on the same ground, the corn crops are nourished by the underground currents flowing from these manured strips in the ultimate stages of decomposition, in which state manure seems to act most favourably on our cereals. This plan may be tested by the corn and green crops changing ground every alternate year, the strips this year in corn being next year in green crop.

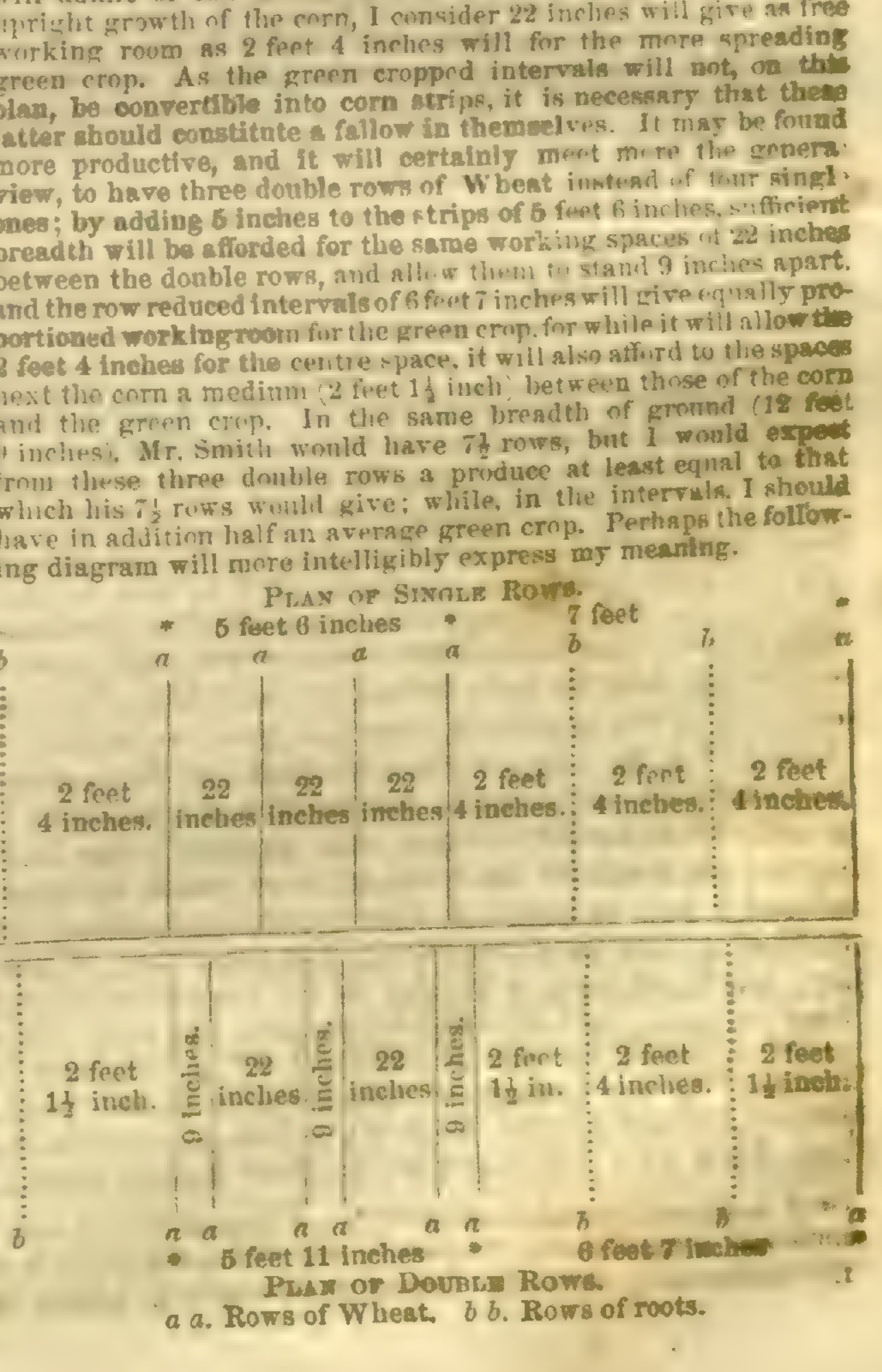
In sowings of single seeds at regular distances of 1 foot each way, the Hardys obtain far higher returns than Mr. Smith. The Rev. Mr. Wilkins considers 2 square feet requisite for the full produce of the Mummy Wheat, and I am not sure but he holds the same space in other Wheats. His returns are also superior to Mr. Smith's; as for the Hardys, they have challenged all England—no, the United Kingdom—to produce so good a crop as theirs. All these gentlemen ascribe the superiority of their crops to arise chiefly from the very thin sowing, the isolation of their seed at such wide distances. As far as my very humble experiments enable me to ascertain, the thick or thin sowing of seed (of course, not in excess), have little effect on the produce. I rather see in this a wise dispensation of Providence, that the bread of man may not depend on, in ordinary tillage, a casual effect; the tillering of plants seems a wise provision to supply the deficiencies in thin sown spots, which may, however, be wisely turned to account in saving seed. Were Mr. Smith's seed dropped $7\frac{1}{2}$ inches apart in the rows, there would be a plant for every square foot in the acre; surely $7\frac{1}{2}$ inches by 12 inches in the centre rows, and $7\frac{1}{2}$ inches by 2 feet in the outsides ought to give space enough for a full development. Will any one imagine this thinness of sowing will bring up his produce to 6 or 8 quarters? If so, let him try. I am an advocate for thin sowing, yet I verily believe it would not. *J. M. Goodiff, Granard.*

Home Correspondence.

Moral and Intellectual Improvement in Rural Districts.—Country villages should have each a resident clergyman, whose co-operation would be very desirable if he did not attempt to control too much the inclinations of the members of such associations as might be formed for the purpose of mutual improvement; one or more intelligent farmers might also be requested to give aid by their counsel as well as by their subscriptions; farmers' sons might be tempted to join as well as the village schoolmaster, land surveyor, parish clerk, baker, grocer, butcher, smith, shoemaker, or tailor. From such persons might be chosen a chairman and a secretary, with, perchance, a librarian or even a lecturer. The size of the village would in some measure determine the

* I look upon 12 feet 6 inches as being a convenient breadth for the double strips of corn and root crop: this will allow of four rows of corn at 22 inches apart, occupying a breadth of 5 feet 6 inches, leaving intervals for green cropping of 7 feet, which will admit of two drills at 2 feet 4 inches apart. From the upright growth of the corn, I consider 22 inches will give as free working room as 2 feet 4 inches will for the more spreading green crop. As the green cropped intervals will not, on this plan, be convertible into corn strips, it is necessary that these latter should constitute a fallow in themselves. It may be found more productive, and it will certainly meet more the general view, to have three double rows of Wheat instead of four single ones; by adding 5 inches to the strips of 5 feet 6 inches, sufficient breadth will be afforded for the same working spaces of 22 inches between the double rows, and allow them to stand 9 inches apart, and the row reduced intervals of 6 feet 7 inches will give equally proportioned working room for the green crop, for while it will allow the 2 feet 4 inches for the centre space, it will also afford to the spaces next the corn a medium (2 feet $1\frac{1}{2}$ inch) between those of the corn and the green crop. In the same breadth of ground (12 feet 9 inches), Mr. Smith would have $7\frac{1}{2}$ rows, but I would expect from these three double rows a produce at least equal to that which his $7\frac{1}{2}$ rows would give; while, in the intervals, I should have in addition half an average green crop. Perhaps the following diagram will more intelligibly express my meaning.

Plan of Single Rows.



Plan of Double Rows.

a a. Rows of Wheat. *b b.* Rows of roots.

character of the society. As nearly every village can now furnish a cricket club and the elements of a band of music, so night reading and drawing be added to the list of recreations, and a hundred books of an entertaining and instructive character may be readily procured at a small cost from the "Railway Library," "Traveller's Library," "Chambers' Course," and other series of educational and amusing works, with one or two periodicals. I should be disposed to recommend "Constance" to look to the young people of the village rather than the more advanced in life for supporters of her project; and probably every place containing 50 inhabitants and upwards would produce two or three persons having an aptitude for establishing a literary society; and if they could afford to "take in" a daily paper one or two days after publication, the older inhabitants might be won to contribute their mite, whether of money or mind. Whatever is done by "benevolent" people should be in unison with the wishes, and, as much as possible, introductory to the free and unbiassed exertions of the individuals themselves for whose benefit the undertaking is presumed to be planned and executed; and if the effort is made by one village, or by two or three conjointly under the patronage or cognisance of "Constance," I hope she will in return let us know the results of her kind disposition to promote the happiness of her neighbours, after having summoned a meeting of the friends of progress within her circle, to frame a few simple rules, hire a room, choose a few books, and organise a committee that will direct the young society to a prosperous and useful career. *J. W., Peterborough.*

Anbury.—The lower greensand in Oxfordshire is subject to anbury in the Turnip crop, with the exception of those spots covered by the calcareous gravel of that district. The mere application of this gravel in a raw state has been known to cure the disease; the application of the scrapings of roads made with this material is an unfailing remedy. It is impossible to doubt Mr. Paine's assertion when he attributes the disease entirely to the condition of the soil. Surely this question is settled. *J. C. C.*

Seed Growers' Society.—At page 667 of the *Gardeners' Chronicle* is to be found a brief notice of a society of seed growers, who wish to emancipate themselves from the shackles in which they have been held by a few persons in the London seed trade. In attempting to accomplish this object I wish them every success, and also every fair remuneration for their labour and capital expended; but the public have yet to learn, through the columns of the *Gardeners' Chronicle*, whether they are still further to be inundated with a spurious supply of garden seeds, or that an improved system is likely to be introduced and pursued by the Seed Growers' Society in producing quality in opposition to quantity. Of the quality hitherto produced the British public have already had *quantum suff.* In the same number of the *Chronicle* we are told "that the market price of *everything* depends on the fineness of the sample." *Now, it is* impossible for us to judge of the quality of garden seeds by the sample produced; *for it is* very well known that the finest sample of seed is frequently obtained from, and produces, the most worthless crop. What have we then to fall back on? Assuredly nothing but the character of the grower, concerning which the said society holds out no expectation or promise; and without this guarantee of attention to the production of quality, no such society, with the intentions of the above-mentioned, can expect to secure the reliance and confidence of the gardeners of the United Kingdom. *Robert Jones, Battersea, Oct.* 19.

Potato Crop in Ireland.—Our Potato crops in general are turning out much better than was expected. The farmers mostly are satisfied with them. Our grain crops good and beyond average. Very little Wheat here; but what there is, free from mildew (red). I have a small plot, one-tenth of an acre, under White Wheat (Red Chaff White), the leaves of which were so mildewed that I expected the grain would have been destroyed; it has not, however, suffered. I never saw leaves with more rust on them. In hoeing the rows shortly before blossoming I was covered with it. I was quite an Orangeman. In the same ground last year the same Wheat scarcely showed so much rust in the leaves, and yet I think I may say two-thirds of the grain were mildewed. In both cases the seed was sown in the latter part of the month of March. *J. M. Goodiff.*

On Premiums to Farmers.—In your Paper of Oct. 21, "J. M." assumes that farmers are merely the recipients of rewards provided by other people, whereas the greater part of such premiums are subscribed by the farmers themselves. "J. M." says there have been no premiums held out to manufacturers. Under what category, I would ask, does he rank industrial exhibitions, now so common in the provinces, after the great exhibition of 1851? "J. M." says "the agriculture of the country has benefited very little by the continued succession of premiums to farmers during this century." He is in error! Agriculture has made great advances, and those advances may be traced in a great measure to the operations of agricultural societies. The exhibition of good live stock tends to a rivalry in the possession of well bred animals; and the introduction of a fine bull into a neighbourhood by the inducement of a premium is followed by an immediate improvement in the young stock produced in that locality; prizes are not usually awarded for a dozen, but for a piece of Turnips not less than a certain number of acres. The relation of landlord and tenant is more open to objection, although it is not uncommon that the tenant is as much to blame as the landlord. There should undoubtedly be more certainty about occupation than can belong to a yearly tenancy; the system of leases, if simplified, would be eminently beneficial to the country, due care being exercised that at the close of a lease land is maintained in good heart, clean, and fertile. Some landlords are too willing to take advantage of a tenant; some tenants set law and custom at defiance in the management of their land. Now, in proportion as farmers' wives are at liberty to dress, and play the piano, and speak Italian (if they can afford it), and in proportion as farmers themselves are permitted to walk out of leading strings, and have opinions of their own on local and political questions, so in all probability by the elevation of the class will farmers select their stock, till their land, use good implements, and pay rent and wages at an exemplary rate and in first-rate style. Talk of no improvement in agriculture! Go to any well-frequented market, and look at the samples of corn; see the manner of doing business both by buyers and sellers; every transaction tells powerfully in favour of the "diffusion of knowledge," and increase of the independence as well as the integrity and intelligence of the farmers, who may have been a while ago the victims of prejudice, but I firmly believe that there is at the present time far more prejudice nurtured and retained against farmers than can be proved now to exist amongst them. *J. W.*

Pigs and Box Feeding.—I noticed, in No. 35, for September 2, page 570, it is said in a note "Pigs ought not to be bedded on the box-feeding principle at all." May I ask, is this a well-established fact? I have known instances in which they have been so kept, and have done extremely well. I remember one summer as soon as the cows were turned out to Grass from four boxes, the partition rails were removed, and about 30 pigs put in to fatten. I never saw pigs do better or fatten quicker; they had a small quantity of fresh litter added every day, and the quality of the manure by autumn was first-rate. Last autumn I kept one pig on the same system, bedding him with stable dung, and did not remove it until the pig was killed; the pig was perfectly healthy, and fatted well; the court of the sty is not under cover. In both these instances I believe the noses of the pigs were "rung" to prevent their turning the manure up after it had been levelled. I should much like to hear the other side of the question, as I can find no objection to the box for pigs. *F. G.* [The other side of the question is that from the rooting about of which a pig is always guilty, the litter under it is not trampled and hardened as it is under other animals, and fermentation sets in, so as to render its lair pestiferous, instead of sweet and cleanly as it is under the ox.]

Extraordinary Cow.—In your last Number, "A Subscriber of Many Years" asks if I can mention the breed of cow which gave 30 quarts of milk per day, and 16 lbs. of butter per week. I cannot, for she was bought from a small farmer in the neighbourhood, who had kept the sort for 30 years for their excellent milking qualities; she has, however, very much the appearance of a cross between the Ayrshire and the shorthorn. She is neither a large nor a handsome cow; the propensity to deep milking keeps her very lean, however good her pasture. She has had four calves; and now at the end of 20 weeks after calving is still milking very well; at the twentieth week from her calving her milk was again kept separate from the rest, and it was found that she gave 15 quarts of milk per day, and $11\frac{1}{2}$ lbs. of butter per week, or $1\frac{3}{4}$ oz. per quart; whereas, when she gave 30 quarts per day, the yield of butter was barely $1\frac{1}{4}$ oz. per quart of milk; but the weather was then cold and wet, whilst during the other experiment it was warm and dry, which I think was quite sufficient to account for the difference in the proportion of butter. It may be that in the milk of a newly-calved cow there is less butter and more casein, but there is no doubt that dry warm weather increases the quantity of cream. In all the three experiments the cow was kept in the field, and, in all, the milk was only allowed to stand 24 hours before skimming off the cream. Your correspondent "Y." tells me that his milk yields on the average $1\frac{1}{2}$ oz. of butter per quart; but his land is better than mine, and he is a very scientific manager—keeping his milk-bowls standing in water, which he keeps as nearly as possible at one temperature (I think 55° Fahr.), and this enables him to keep his milk longer before skimming, which of course increases his quantity of butter. I hope he will be induced to give us some papers in the *Agricultural Gazette* on the management of milch cows and the dairy; he is quite as competent to treat on this as on stall-feeding. I do not need to say more. I have procured Kiall's translation of Guenon's "Traité des Vaches Laitières," and, with it in my hand, have endeavoured to ascertain how far the known qualities of my own herd of milch cows (22) agree with his "signs," and I find that so far as I can make them out they correspond very closely. I must admit, however, that although in many instances these signs are very clearly defined, yet in others they are so vague and indistinct that I am in doubt about them. Has this treatise of Guenon's had much attention paid to it in England? and is it worthy of attention? If I recollect aright, Mr. Pusey spoke favourably of it, but elsewhere it has apparently attracted little attention, as I do not remember to have seen it alluded to in your columns more than once or twice. Yet if these signs are to be depended on, it is well deserving of notice. [The subject is fully discussed in the little book published by Messrs. Blackie, "How to choose a good Milch Cow."] I scarcely think dairy matters are sufficiently discussed in your paper; yet to me they seem very important. Your correspondent "Y." says (Oct. 7, p. 652), "A comparison of the two processes of producing milk and fattening shows the remarkable result that by the former, though at a somewhat greater expense of food, you may provide three times the amount of nutriment fitted for the use of man as by the latter, as flesh contains fully three-fourths of water in its composition; if you carry out the like proportion in the increase by each process, the result by fattening would show a gain of 9 lbs. per day or 63 lbs. per week, an amount it seems impossible to attain." If, as I believe, the keeping of dairy cows is much more profitable than feeding, when new milk is sold at 2*d.* per quart, skimmed milk at half that price, and butter at 1*s.* per lb., whilst beef sells at 6*d.*, it is surely desirable to cultivate those breeds of cattle which are suited to the dairy rather than those which give little milk,' whatever may be their tendency to fatten, and therefore I conclude by reiterating the advice of an acquaintance of mine, notwithstanding its apparently ludicrous absurdity—"put your cow to a bull that is a good milker." *T. G., Clitheroe.*

Agricultural Teaching in Ireland.—"We were ignorant because education was denied us," writes Sir Robert Kane, in his inimitable work, "Industrial Resources of Ireland;" and nothing could be more true as regards Ireland generally, but as regards agriculture more especially, till within a late period, when the Government, through the Board of National Education in Ireland, has to some considerable extent contrived to relieve themselves of so disgraceful a reproach in as far as the humbler and smaller classes of farmers are concerned. If any one doubts the truth of this he has but to visit the Albert Training Institution at Glasnevin, near Dublin, and if an unprejudiced observer he must return with his doubts fully removed. For a long time, and indeed until lately, I was one of the many who felt prejudiced against this institution whilst it was called "a model farm." The case is quite different, for although not such a model as all, perhaps very many Irish, or even Scotch or English farmers would call a model within their reach of imitation, it is truly a model to all her Majesty's dominions as an agricultural educational establishment. I have said, that until lately I had strong prejudices against this establishment, and I cannot say they are all removed yet, because I believe that all the wants of such an institution are not filled up; yet it would be an injustice, which I would be amongst the last to attempt to inflict on the institution, or on any one of those connected with its government or management, did I hesitate to express my belief in the anxious desire of those concerned in its management, to remove any objection that can be raised against it, by supplying everything in justice which the most fastidious could reasonably desire. On last Thursday there was a "gathering" there of some of those most competent to judge of the value of such an education, and the best modes of conveying it, and to hear the opening lecture of Dr. Hodges, of Belfast, on veterinary surgery, being a part of our agricultural education of which we stand in such need in Ireland. All were sadly disappointed at the learned gentleman's unavoidable absence, caused as it was by the sudden death of a near friend. But his absence was to some extent compensated for by the delivery of a lecture of another kind on a matter of not less importance, by no less a personage than Professor Playfair, of London. But more important still in my mind, as I have reason to believe in the minds of most, if not of all present, was the display made by the pupils in answering practically and scientifically in the different classes of the educational courses taught by the respective professors, showing thereby the great facility exercised in teaching by these professors, and the great aptitude of the pupils to imbibe and retain practically as well as theoretically the philosophic principles there enunciated. Where there appeared so much perfection it would be difficult to make special selections; one case out of the many which all observed may suffice for this purpose:—Mr. Baldwin, the mathematical professor, singled out one whom I believe to be among the youngest boys, as well as one of the latest who entered that establishment, and had him, I know from my own knowledge, without any formal or extraordinary preparation, to adjust and explain the construction and application of some of the most difficult as well as of the most valuable of the mathematical instruments used in agricultural and general engineering, and prove the practical application of them to the general purposes to which they are applicable, on purely mathematical and scientific principles. In doing so, Mr. Baldwin stated what I know to be a fact, that the boy, when he entered that institution, knew scarcely anything whatever of mathematics, his early education having been of a different character to what is required for agricultural pursuits. To some it may appear strange that these answerings should excite any, even the least surprise, on reflecting on the fact of this boy's having been fully six months in this institution. The case is differently felt by those who are acquainted with the very short time devoted there to literary and mathematical studies—a time hitherto far too short, but which is, I am proud to say, now more prolonged by some late salutary arrangements in the school hours. We have no manufactures in Ireland but those of food, a matter of no slight moment now-a-days; that being the case, too much cannot be said or done by and for us to enable us to do so with the greatest advantage to the consumer as well as to the producer, and this can now only be done through the agency of education,

longer denied those who can benefit by such an institution as that at Glasnevin. Still those classes are only a portion of the Irish people, and certainly not those now most in need of it compared to the classes above them, to whom my next letter will refer, if this be found worthy of a place in your agricultural pages. *Veritas, Dublin, Oct.* 9.

Farmers' Clubs.

Probus, *Sep.* 30 : *The Climate of the West of England.*—Mr. Whitley said :—The effect of climate on the corn crops of the west is most obvious, from the results produced in the past two years. In 1853 we had a remarkably dry spring, followed by a very wet summer, which continued up to the time of a deficient harvest ; the sickly and diseased Wheat plant yielded a very thin head and defective grain. The spring of 1854 was of a similarly dry character; the east wind blew continuously for more than a month, covering this land with the dry air of the continent ; the rain set in just at the same period as in the previous year, and continued through the summer with a remarkably low temperature, until the crops, abundant in straw, began to quail under its influence; but, when the prospects looked the most gloomy, in opposition to our fears—contrary to the course which nature had taken in the previous year, the sun dispelled the clouds, suddenly raised the summer temperature far above the average, and drew forth from the half fainting plant a healthy well-filled ear. It would be difficult to estimate the average loss in the Wheat crop from the defects of our climate, but it is not perhaps too strong a statement, that if the same skilful husbandry were bestowed on the same soil when the climate is all that can be desired to bring the Wheat to perfection, at least one-third more in produce would reward the cultivator. But if there are some defects in our climate injurious to cereal crops, it is on the whole highly favourable to the production of a large amount of human food. The seasons are free from great extremes of temperature. In central Europe the heat, radiated from a large continent, becomes extreme in summer, and the cold of winter is equally intense. In North America the winter snows cover the ground for months, till, on the return of spring, vegetation rushes into renewed life ; the sun, having obtained the mastery, appears to glory in his might, and a tropical temperature is felt, where shortly before an active winter reigned. But with us the summer's sun often leaves the unripe Grapes to perish on the vine, and the skater finds no field for his favourite sport. We have also a comparatively slight difference between the temperature of night and day. On the hills of Syria the prophet shepherd said, "the frost consumed me by night, and the drought by day ;" but on our coast lands, the air from the sea preserves a uniform temperature. The water of the sea seldom sinks in the depth of winter below 46°, so that frost can rarely touch the plants on the shore. From this cause the neighbourhood of Penzance, and more particularly the Scilly Isles, are well adapted to the growth of the early Potato ; and no doubt the same root might be grown at the south-western extremity of Ireland with equal success. Ours is a country diversified by hill and dale. Not like the marshes of the Danube, where the marsh poison lies on the swampy surface ; not like the plains of India, where you must sleep above the fever line or perish ; nor like the sandy plains of Africa—the ovens of Nature—or the parched lands of Arabia : these are countries where (in the language of the East) the earth is fire and the wind is flame ; where the sun is the monarch of the day, and vegetation droops and animated nature moans beneath his influence. The Affghans have a saying—"Great God, why hast thou made hell, since there is Ghizni ?" But from our green hills the minor impurities sink nightly into the valleys below, and leave on the grassy slopes a dry and healthy atmosphere. Gardens and orchards on low ground become filled with cold air, throwing out fog, and so producing Moss ; gendering hoar-frost, and so cutting off the blossoms. Fruit trees should be on a southern slope, with a hoe ditch on the lower side ; and cattle yards and our own dwellings should be placed above the cold night air of the valleys. Humidity is another characteristic of our climate, resulting from the great evaporation arising from the warm surrounding sea. At this time of the year the struggle between the sea-fog and the warm air on the land may often be observed ; the air absorbs the fog, until, in the cool of the evening, it obtains the mastery, and envelopes the land. On the return of day the rising temperature drives it again to sea, when it hangs about the horizon to return at night. The surfaces of trees also condense the vapour, producing Moss and Fern on the limbs ; and the leaves drop water into the cattle ponds, though no rain is falling. The rain-clouds often pass over the coast lands before they deposit their moisture, and the western inland slopes receive the largest quantity. In 1853 some good Wheat was grown on the north coast, whilst it struggled on to a half crop inland. The effects of climate are seen in the little Pimpernel, which closes its leaves and hangs its head to avoid the storm ; in the Sunflower, which lifts its petals to receive the rays of light and heat ; in the winter coats of the cat, the horse, and the sheep ; in the migration of animals and birds ; in the noble horse of Arabia, compared with the Shetland dwarf ; in the winter torpidity of some animals, and the summer activity of others ; and it becomes us to study the causes which produce such effects, and to adapt our culture, our plants, and our animals, to the climatic influences they must encounter.

Miscellaneous.

On the Sewerage of Manufacturing Towns.—The analysis, made by Dr. Wrightson, of a natural deposit from the sewerage of Birmingham, formed near the embouchure of several sewers opening into the Rea, showed the absence of all ammoniacal salts and the scarcity of phosphates, particularly alkaline phosphates, and, at the same time, the presence of a large quantity of protoxide of iron, also of zinc, copper, and other metals in the state of oxides and sulphurets. These metallic salts, in the sewers, absorb the sulphuretted hydrogen and ammonia generated by decaying vegetable and animal matter, and, doubtless, contribute to promote the health of the town. The deposit contained when dried only 1·4 per cent. of nitrogen (not as ammonia) and 3·5 of earthy phosphates ; but about 11·7 of protoxide of iron, besides zinc, copper, and other metals to the extent of two or three per cent. The author hoped these facts would not be lost sight of by corporations and other bodies interested in economising town sewerage. *Dr. Wrightson, at the British Association.*

Agricultural Statistics.—A circular has been addressed by the Poor Law Board to the officials of the Unions in the several counties where the collection of facts relating to agricultural statistics is proposed to be made for the present year, and we make the following extracts :

"The experiment for 1854 will embrace the whole of Scotland and the following counties of England and Wales—viz., Norfolk, Suffolk, Southampton, Wilts, Leicester, Berks, Worcester, Salop, West Riding of York, Brecon, and Denbigh. In Scotland the proceedings will be conducted, as in 1853, under the auspices of the Highland Society. In England and Wales it is intended to put in motion the machinery which worked, upon the whole, so satisfactorily in Norfolk and Hampshire. In Norfolk and Hampshire it was found that this object was best promoted by the formation and co-operation, in every union, of a joint committee of owners and occupiers, called 'the Statistical Committee,' with the chairman of the union for its chairman, and by employing, with the concurrence of the guardians, the clerk of the union as classifier, and the relieving officers as enumerators. The countenance and support which a committee so constituted affords, by the mere fact of its existence, as well as by the employment of the union officers under its directions, go far to insure success, and I trust you will find no difficulty in organising such a committee among the leading agriculturists of your union. The duties of the committee are not of a nature to subject its members to much personal trouble. All, or nearly all, they have to do may be summed up under the two following heads:—To induce, by their example and influence, their neighbours to fill up their schedules before September 30. To superintend the labours of the officers engaged in the inquiry, and to examine and verify the results. The results of the experimental proceedings in Norfolk and Hampshire, which were unavoidably prolonged through a severe winter, seem to prove that the relieving officers may, without detriment to the administration of relief, properly be intrusted with this employment. Still, the Poor Law Board are very far from wishing to restrict boards of guardians to the employment of their officers, whenever they see occasion to apprehend that it will be productive of inconvenience or mischief."

Notices to Correspondents.

Brewing : *S S.* As to porter the following quantities divided by seven will make the quantity you want :—"For making porter, three kinds of malt are necessary—the pale malt, the brown malt, and the patent black malt. For making a hogshead without table-beer, 4 bushels of pale, 2 bushels of brown, and 14 lbs. of patent black malt are employed. The malt having been crushed or ground 48 hours previously, 60 gallons of boiling water are run into the mash-tun, and when reduced with cold water to the temperature of 180° or 182°, the malt is put in, in a similar manner as for the ale. It is mashed for 20 minutes or more, until it is brought to an equal consistency. The cover is then put on, the malt sacks and the blanket placed on the top of it, to keep the wort as warm as possible. In the meantime the copper having been re-filled, the water is preparing for the second extraction. The mash stands thus covered for an hour and a half, the tap is partially turned, the first running received in a pail until it appears clear ; when the contents of the pail are returned into the mash-tun, and the extract allowed to run into the underback. When 35 gallons have been run off, the tap is turned, 35 gallons of water, at a temperature of 190°, are strewed over the bed of the grains, in like manner as described for the ale, and allowed to remain covered up for one quarter of an hour, then run off into the underback in the same way as the first extraction, leaving the grains perfectly dry. The copper being empty and the fire damped, the wort, which should measure 74 gallons, is put in as quickly as possible, with 4 lbs, of the best East Kent Hops, and boiled briskly for 30 or 40 minutes. The remaining 4 lbs. of Hops are then added, and the whole is boiled an additional 25 minutes. A portion may be taken from the copper and examined : and should the operator not find it so brown as he wishes, he may put in 10 oz., or 1 lb., of the best Italian juice, broken, that it may dissolve. In fact, this juice should be put into the copper with the first quantity of Hops. The wort is then run through a sieve into the cooler ; the farther process is the same as the ale." That is to say 4 lbs. or 5 lbs. of yeast are mixed with a gallon of the wort at the temperature of 85°. "When fermentation has commenced in this portion, another gallon of wort is added to it; and just before the worts are cooled down to the proper temperature, 67° in moderate weather, and 73° in winter, these 2 gallons containing the yeast, which will not be in a state of fermentation, are strewed or spread over the fermenting tun, and the worts let down upon them." In a couple of days the liquor may be casked. The above directions are taken from "Roberts' British Wine Maker."

Drains : *A B.* puts a question one part of which we do not understand and the other does not admit of an answer. How "far" will a 2½-inch pipe carry off the water, &c.? It would be possible to say how much water such a pipe under a given pressure would deliver, but as to the distance, whether from the field or from itself in the field, we cannot say. If the latter is meant, that depends not only on the depth (four feet) which is given, but on the texture of the soil and subsoil, which words cannot definitely describe. It is quite possible that 4 feet drains, 50 feet apart, may be an efficient drainage of the land ; and as to the number of acres from which a 6-inch pipe will carry off the water, that depends on the rain fall of the year—on the liability to great rain falls at particular times—on the slope of the drain—and on the existence or non-existence of springs within the area.

Microscopic Objects : *A Medical Subscriber.* We doubt if such "slides" are to be obtained. Apply to Carpenter and Westley, Regent Street. We cannot answer your question about Life Assurance ; but we imagine it needs a Royal charter to insure limited liability.

Small Farm : *Youngster.* Perhaps we may be able to draw up a complete scheme for you soon ; in the meantime it is plain your chief object should be to provide winter green food fit for dairy cows, such as Rape, Mangold Wurzel, Parsnips, and perhaps Cabbage.

WARNER'S PATENT FARM AND COTTAGE PUMPS.

Cast-iron Pumps for the use of Farms Cottages, Manure Tanks, and Shallow Wells.

	£	s.	d.
Patent Pump	1	15	0
Patent Pump, with 15 feet of lead pipe attached, and bolts and nuts ready for fixing	3	0	0

Larger sizes if required.

The smaller sizes are also much used for supplying Hot, Forcing, and Plant Houses from underground Water Tanks, and can be readily fixed in any situation.

May be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers,

JOHN WARNER & SONS,

8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water ; Fire Engines, &c.

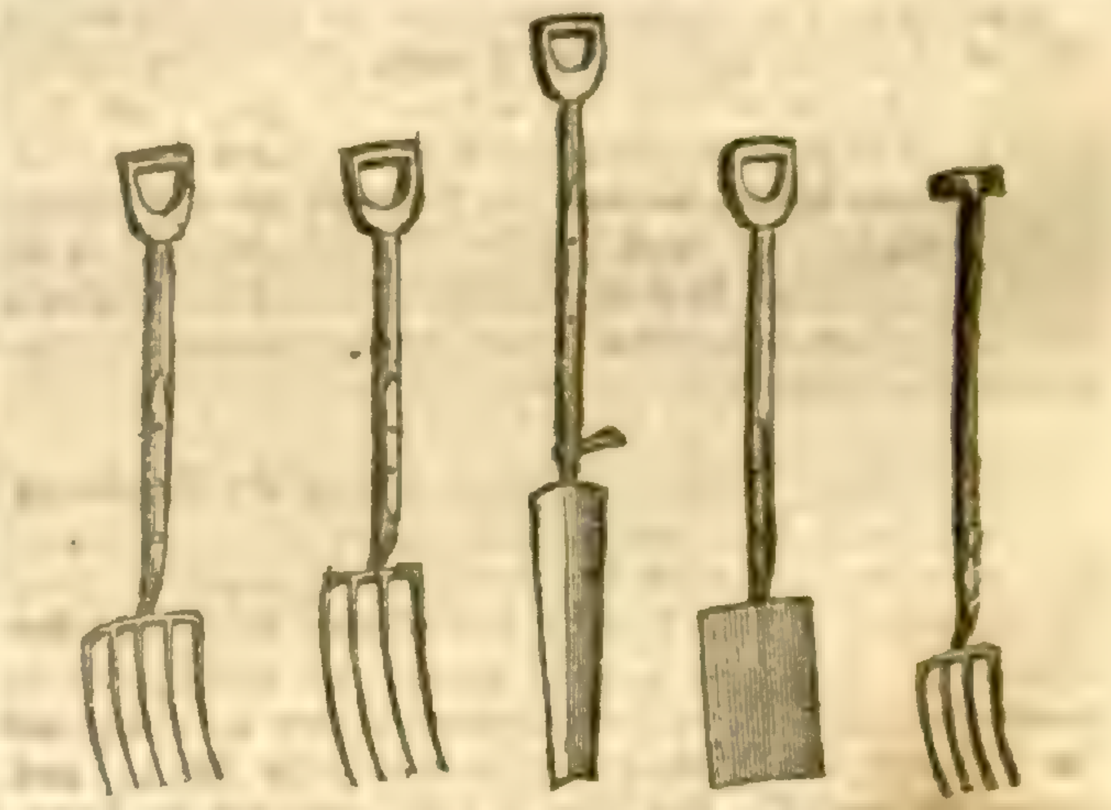
WEIR'S DRAINING LEVEL,

Price 30s.

Those Draining Levels have lately been greatly improved; they have stood the test of five years' use, during which upwards of 1000 of them have been sold. They are so simple that any labourer who can read can use them. They require no graduated staff, the index telling at once the rise and fall in inches without any computation.

Edward Weir, Agricultural Engineer, 16, Bath Place, New Road, (6 Doors West of the Hampstead Road), Removed from Oxford Street.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.



MESSRS. BURGESS and KEY, as Mr. Parkes' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.

103, Newgate Street, and 52, Little Britain, London.

HOSE PIPING.—Great Reduction in Price.

PATENT FLAX TUBING (1 inch to 8 inches diameter) is woven without seam, to stand immense pressure, and much more than leather, vulcanised rubber, or any other hose, and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback ; but, owing to recent important patented inventions, the cost of manufacturing it is now reduced at least 60 per cent., which advantage is offered to the public.

BURGESS and KEY, 103, Newgate Street, and 52, Little Britain, who on application will forward wholesale and retail prices.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard run, of E. T. Archer, 7, Trinity Lane, Cannon Street, City, and the Royal Mills, Wandsworth, Surrey.

WEEDS ON WALKS.

MR. FLEMING'S WEEDING or SALTING MACHINE for GRAVEL WALKS, COURT YARDS, &c., manufactured and sold by Alexander Shanks & Son, Arbroath, Forfarshire, from whom particulars with prices may be had.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement, J. B. White & Brothers, Millbank Street, Westminster.

PRIZE MEDAL—1851.

AT A VERY ECONOMICAL RATE.

SAMUEL CUNDY, Mason and Builder, Pimlico Marble and Stone Works, Belgrave Wharf, Lower Belgrave Place, Pimlico, London.

Marble Chimney-pieces manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price. A good Marble Chimney-piece for 40s. Marble Work in all its branches at a remarkably cheap rate for Halls, Dairies, Larders, &c Circulars sent on application.

N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank.

GLASS FOR CONSERVATORIES, ETC.

HETLEY and CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley & Co., 35, Soho Square, London.

See Gardeners' Chronicle first Saturday in each month.

GLASS FOR CONSERVATORIES, GREENHOUSES, DWELLINGS, ETC.

Established more than One Hundred Years.

THOMAS MILLINGTON requests attention to his present prices of SHEET GLASS in 100 feet boxes.

Squares	6 by 4 and 6½ by 4½ } 7 by 5 and 7½ by 5½ } 8 by 6 and 8½ by 6½ }	... ... 13 6
"	9 by 7 and 9½ by 7½ } 10 by 8 to 12½ by 9½ }	... ... 16 8
"	12 by 10 to 24 by 14 ...	... ... 19 0

Orchard House Squares on Mr. Rivers's approved plan, to whom I have sold some thousands of feet:—20 inches by 12, 20 by 13, 20 by 14, 20 by 15, 20½ by 12½, 20½ by 13½, 20½ by 14½, at 19s. per 100 ft. 200 feet cases at 42s., and 300 feet case 63s., in large sheets.

Boxes charged 1s. extra per 100 feet, and the same allowed if returned free of all charge.

HARTLEY'S PATENT ROUGH PLATE GLASS, Fern Shades, Striking Glasses, Milk-pans, Bee Glasses, Cucumber Tubes, Sheet and Rough Plate Glass Tiles, Wasp Traps; Plate, Patent Plate, Crown and Sheet Window Glass, in every thickness and quality, and Ornamental Glass, plain and coloured; pure white Shades for Ornaments, Crystal Glass for Pictures.

Warehouse, 87, Bishopsgate Street Without—same side as Eastern Counties Railway.

BY ROYAL LETTERS PATENT.

THE COSMOPOLITAN GLASS COMPANY, 296, Oxford Street, London.—The Managers beg to inform the Nobility and Gentry, Farmers, Gardeners, &c., that their new List of Prices may be had free on application at the Company's Depôt.

HARTLEY'S PATENT ROUGH PLATE, for Roofing Conservatories, Halls, and Public Buildings.

PLATE, CROWN, and SHEET WINDOW GLASS.

Coloured and Ornamental Glass of every description.

Glass Milk Pans, Pails, Tests, and Measures; Cream Pots and Syphons; Churns, Butter Tests and Slabs; Tiles and Slates; Bee Hives, &c.

Moore's Patent Ventilator and Lockhead's Patent Perforated Glass, for Dairies and Greenhouses.

Aquavivariums, Fern Shades, Propagating Glasses, Fruit Protectors, Preserve Jars, Cucumber Tubes, Hand Lights, Flower Vases, Labels, &c., and all kinds of Agricultural, Horticultural, Architectural, Domestic, Scientific, and Ornamental Glass, British and Foreign, at the lowest prices.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

JAMES PHILLIPS and Co. have the pleasure to hand their present prices of Glass for Cash:—

	SHEET SQUARES. In Boxes of 100 feet.	CROWN SQUARES. In Boxes of 100 feet.
Under 6 by 4	£0 12s. 6d.	... 8s 6d.
6 by 4, and 6½ by 4½	0 13 0	... 12 6
7 " 5, — 7½ " 5½ } 8 " 6, — 8½ " 6½ }	0 15 0	... 14 0
9 " 7, — 10 " 8, 12 by 9, } 12 by 10, 14 by 10 }	1 0 0	

Larger Sizes, not exceeding 40 inches long.

16 oz. from 3d. to 3½d. per square foot, according to size.
21 oz. " 4½d. to 5d. " " "
26 oz. " 6d. to 7½d. " " "

SHEET GLASS OF ENGLISH MANUFACTURE FOR ORCHARD HOUSES, the same quality as we supply to Mr. Rivers, and of various dimensions, always on hand.

London Agents for the Sale of HARTLEY'S PATENT ROUGH PLATE GLASS.

Glass Tiles, ¼ of an inch thick, packed in cases, containing 50, at 1l. 17s. 6d. per case. Packages 2s. each extra, but allowed for when returned.

Glass Milk Pans, 21s. per dozen; Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoys' Milk Syphons, Wasp Traps; Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the trade.

Horticultural Glass Warehouse, 116, Bishopsgate Street Without, London.

TO SEEDSMEN AND FLORISTS.

CULTURAL and DESCRIPTIVE SEED LABELS, by Thos. Moore, F.B.S., and W. P. Ayres, C.M.H.S., are now ready for delivery. The utility to Amateurs, and convenience to Seedsmen and Florists, of these Labels for packing Seeds, have been spoken of in the highest terms by the leading Seedsmen and Florists of Great Britain. Size of paper 6 by 5 inches; price only 3s. 3d. per 1000. Sold in any quantities not less than 50 of each sort. A complete List of 307 sorts will be sent free on application.—Sold by Aird & Tunstall, 18, Exeter Street, Strand, London.

FENCING & ALL OUTSIDE WOOD OR IRON-WORK.

WILSHERE and CO.'S WATERPROOF BLACK VARNISH is the best article that can be used. One coat will go as far as two of ordinary paint. It bears a rich gloss. 4s. per gallon. Discount on large orders.

2, Talbot Court, Gracechurch Street, London.

GREEN AND HOT-HOUSES made by machinery, at J. LEWIS'S Horticultural Works, Stamford Hill, Middlesex. Sent to all parts of the United Kingdom. These buildings are warranted of the best materials, and put together in a superior manner. Being manufactured by steam-power, they are considered the cheapest and best made in England. The Trade and Merchants supplied at wholesale prices. List of Prices by enclosing two postage stamps.

E. ELEY'S HOT WATER WORKS, and improved Hot Air Works, opposite the Eagle Tavern, City Road, London. Manufacturers of the various descriptions of HOT WATER APPARATUS for Heating Horticultural Works, Churches, and other Public Buildings, Mansions, Offices, Baths, &c., on the most scientific principles. Manufactories requiring artificial heat fitted up with effective and economical apparatus by contract or otherwise. Old work taken down and remodelled. Architects, Surveyors, and the Trade attended to in any part of town or country.

E. E. being a practical and scientific workman defies competition. Parties by sending a rough sketch of their building can be supplied with the most improved Pipe Boilers, or any other description, with connection and piping fitted and marked with a plan, cement, &c., for joints, so that a gentleman's own tradesman or gardener can fix them.

N.B. Please to observe the Address. No connection with any other House in the Trade.

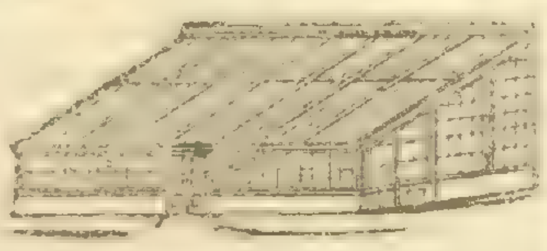
HOT WATER APPARATUS, adapted for Horticultural and every other description of Buildings; improved Boilers, requiring no brickwork, Warm Air Apparatus, &c.—S. S. Tayler, Engineer, Battersea.

HORTICULTURE IN ALL ITS BRANCHES.

J. WEEKS & Co., King's Road, Chelsea,

HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Buildings or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.



The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application. J. Weeks & Co., King's Road, Chelsea, London.

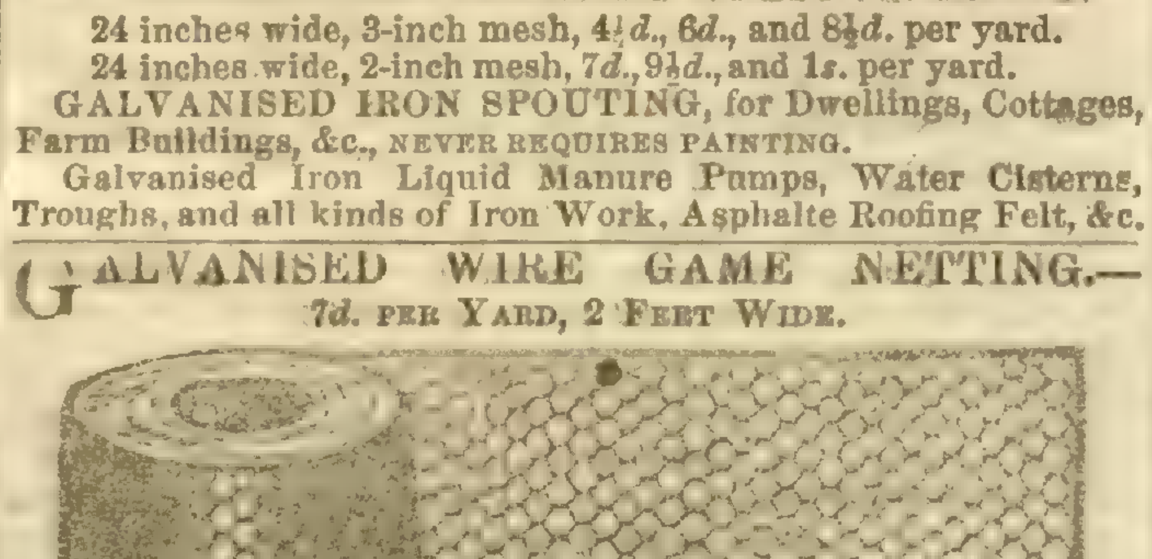
H. J. MORTON and Co., 2, Basinghall Buildings, Leeds.—GALVANISED GAME AND POULTRY NETTING, very strong and neat, never requires painting.

24 inches wide, 3-inch mesh, 4½d., 6d., and 8½d. per yard.
24 inches wide, 2-inch mesh, 7d., 9½d., and 1s. per yard.

GALVANISED IRON SPOUTING, for Dwellings, Cottages, Farm Buildings, &c., never requires painting.

Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work. Asphalte Roofing Felt, &c.

GALVANISED WIRE GAME NETTING.—7d. per Yard, 2 Feet Wide.

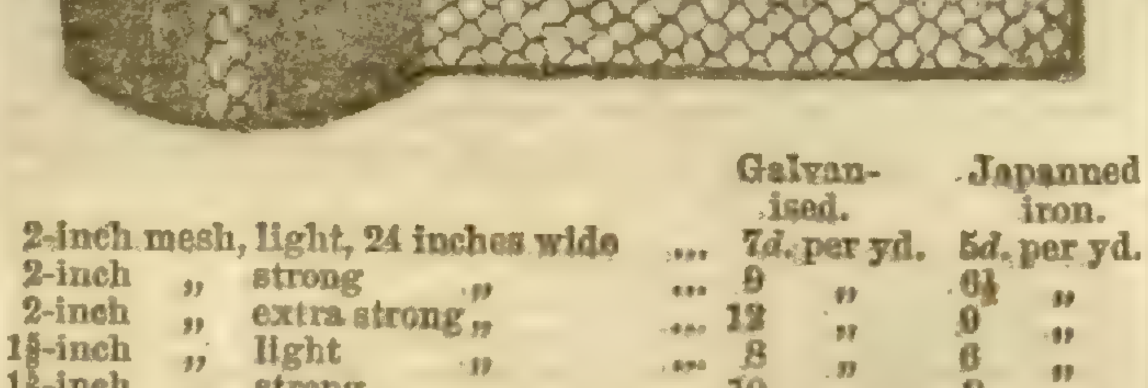


		Galvanised.	Japanned iron.
2-inch mesh, light, 24 inches wide	...	7d. per yd.	5d. per yd.
2-inch " strong "	...	9 "	6½ "
2-inch " extra strong "	...	12 "	9 "
1⅝-inch " light "	...	8 "	6 "
1⅝-inch " strong "	...	10 "	8 "
1⅝-inch " extra strong "	...	14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasantries, 3d. per square foot. Patterns forwarded post free.

Manufactured by Barnard & Bishop, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

BY HER MAJESTY'S ROYAL LETTERS PATENT.



MESSRS. B. GREENING and CO. beg respectfully to call attention to their superior WIRE FENCES, of which the following are the principal varieties:—Portable Horse and Cattle Fencing (Economical variety of ditto), Portable Sheep and Lamb, Proof Fencing, Poultry Fence, Portable Hare and Rabbit-proof Fencing, Ornamental Garden Fences, Export varieties, Poultry and Chicken-proof Fencing. Light and cheap kinds of most of the above. Trainers for Peas, &c., Garden Bordering, Tree Protectors, Hen Houses, Poultry and other Aviaries, &c.

Messrs. B. G. & Co. being the sole patentees for the machinery for manufacturing these Fences, will forward engraved sheets of Patterns, Prize Lists, Prospectuses, &c., gratis, on application to their establishments, 1 and 3, Church Gates or 2 and 2 a, Cateaton Street, Manchester.

TO FLORISTS AND OTHERS.

J. JONES, Iron Merchant, has always a great variety of CONICAL and SADDLE BOILERS in STOCK, also Fire and Furnace Bars, Ornamental and Plain Supply Cisterns, Double Doors and Frames, Furnace Grates, Soot Doors, Hot Water Pipes, Elbows, Tees, Syphons, Throttle Valves, Stop Cocks, Flange and Socket Elbows, &c.; also Trough Pipes. Drawings and prices of the above, on application to J. Jones, Iron Bridge Wharf, No. 6, Bankside, London, near the Southwark Iron Bridge.

STEPHENSON and PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

WIRE FENCING, 6¾d. per square yard, in various widths, from 6 feet to 15 inches, mesh less than 2 inches. An effectual fence against Hares, Rabbits, Sheep, Deer, &c., and for the enclosure of Poultry, Pheasants, &c. 4-inch mesh, 4d. per square yard.

R. Richardson, 21, Tonbridge Place, New Road, London.

GARDEN NETS, FISHING NETS, SHEEP NETS, and RABBIT NETS, made by Machinery, and supplied at very low terms. Samples sent free.—R. Richardson, 21, Tonbridge Place, New Road, near King's Cross, London.

SUBSTITUTE FOR GARDEN MATS.—Waxed Sheeting nearly 2 yards wide, 1s. per yard run—admits light and excludes cold; thick Canvas Tarpauling, 1s. per square yard; thick Canvas Waxed Sheeting, 1s. per square yard, may be had various widths. These Canvases are excellent for roofing Sheds and Outhouses, as they are quite waterproof.—R. Richardson, 21, Tonbridge Place, Judd Street, New Road, London. N.B. Waterproof Capes, large size, 3s.; Police Capes, 18s. and 24s. per dozen; Driving Aprons, Capes, and Coats of India Rubber, Horse's Loin Cloths, Waggon and Cart Covers, Sacks, &c.

TO NERVOUS SUFFERERS.

A RETIRED CLERGYMAN having been restored to health in a few days, after many years of great nervous suffering, is anxious to make known to others the means of cure; he will therefore send (free), on receiving a stamped envelope, properly addressed, a copy of the prescription used.—Address the Rev. E. Douglass, 18, Holland Street, Brixton, London.

FREE ADVICE TO THE NERVOUS and Novel Observations on Nervousness franked, if one stamp is sent. The same benevolence, and not love of gain, which for 20 years has induced the Rev. Dr. Willis Moseley to give advice FREE to the Nervous, brings him daily to London, 18, Bloomsbury Street, Bedford Square, from 11 to 3, when the Nervous may have his advice Free and be cured for the cost only of the means of cure. Of 30,000 applicants 50 are not known uncured who have followed his advice. Apply or write. Means of cure sent to all parts.

FREEDOM FROM COUGH IN TEN MINUTES is insured by DR. LOCOCK'S PULMONIC WAFERS. From Mr. J. W. Bowden, bookseller, Market Place, Gainsborough.—"Several persons in this neighbourhood, who have been afflicted with apparently incurable asthmas and coughs for a series of years, have found relief only in the use of Dr. Locock's Wafers." These wafers give instant relief and a rapid cure of asthma, coughs, and all disorders of the breath and lungs. To singers and public speakers they are invaluable for clearing and strengthening the voice. They have a pleasant taste. Price 1s. 1½d., 2s. 9d. and 11s. per box. Sold by all medicine vendors.

FRAMPTON'S PILL OF HEALTH.—"For upwards of nine years (writes Mr. Thomas Province, of Winchmore Hall, Middlesex), I have experienced the efficacy of this excellent medicine, and I have the happiness of saying that I never had a better state of health. I beg further to add that this medicine is in general use by my family, and we know of nothing to equal it." For females these pills are truly excellent, removing all obstructions, the distressing headaches so very prevalent with the sex, depression of spirits, dulness of sight, nervous affections, blotches, pimples, and sallowness of the skin, and gives a healthy juvenile bloom to the complexion. Sold by all medicine vendors, price 1s. 1½d. per box.—Observe that "Thomas Prout" is on the Government stamp.

BLAIR'S GOUT and RHEUMATIC PILLS Price 1s. 1½d. and 2s. 9d. per box.—Mr. William Courtney, of Barton Stacey, Hants, says:—"I had resort to your Pills, and within two hours I was quite easy. The use of these Pills ought really to be known all over the world." Among the many discoveries, none have conferred such a boon upon suffering humanity as that of Blair's Gout and Rheumatic Pills. they require neither attention nor confinement, and are certain to prevent the disease attacking any vital part. Sold by all medicine vendors. Observe that "Thomas Prout, 229, Strand, London," is impressed upon the Government stamp.

HOLLOWAY'S PILLS A PROMPT AND CERTAIN CURE for BILIOUS and LIVER COMPLAINTS.—Mrs. Mary Cook, of Mayling's Green, near Romford, had been suffering for some years from bile, sick headaches, and a severe liver complaint, for which she tried almost every medicine usually taken for such complaints, but could obtain no relief whatever, she then had recourse to Holloway's Pills, and so wonderful was the effect of this inestimable medicine, that in a very short time she has been completely cured by their use, and now enjoys better health than ever. Mr. Yull, Druggist, Romford, can testify to the truth of this statement.—Sold by all Vendors of Medicines, and at Professor Holloway's Establishments, 244, Strand, London, and 80, Maiden Lane, New York.

PARR'S LIFE PILLS.

THE English public have, by the test of experience, become satisfied that PARR'S LIFE PILLS are composed of simple but powerfully curative ingredients. They are so mild and excellent in their action that a child may take them. For Bilious Disorders, Liver Complaints, Indigestion, Costiveness, Sick Headache, Depression of Spirits, Pains in the Back, Gravel, and Lumbago, Parr's Life Pills will be found a safe and admirable remedy. Invalids should make an immediate trial of this excellent, long-tried, and successful medicine.

TO LADIES.

Parr's Life Pills are especially efficacious in all the variety of ailments incidental to the fair sex. Ladies, even of the most delicate constitutions, will find them particularly beneficial both before and after confinement; and, for general use in schools, they cannot be too strongly recommended. They mildly and speedily remove all skin eruptions, sallowness of complexion, nervous irritability, sick headache, depression of spirits, irregularity, or general derangement of the system.

Observe the signature of the proprietors, "T. Roberts & Co., Crane Court, Fleet Street, London," on the directions. Sold in boxes at 1s. 1½d., 2s. 9d., and family packets at 11s. each, by all respectable chemists and medicine vendors in town and country. Full directions are given with each box.

☞ Be sure to ask for Parr's Life Pills.

DEANE, DRAY, AND CO., have a very large and superior stock of FRENCH MODERATOR LAMPS now on sale.—(Opening to the Monument), London Bridge.

ESTABLISHED A.D. 1700.

TEN THOUSAND STOVES.

THE TENTH THOUSAND OF THE PATENT PORTABLE SUSPENSION STOVE is now on sale. These Stoves, so justly celebrated for preserving a pure and healthy atmosphere, and for their extraordinary economy in the consumption of fuel, are sold, wholesale and retail, by DEANE, DRAY, AND CO., 46, King William Street, London Bridge; and may be obtained of most Ironmongers.

The IMPROVED PATENT VENTILATING STOVE, which is strongly recommended, may also be seen at the above establishment. Prospectuses, &c., forwarded post free.

FLAVEL'S PRIZE KITCHENER.

THESE RANGES are strongly recommended for their simplicity of construction and their economy and cleanliness in use. The top forms a Hot-plate, and the open fire removes many of the objections which are felt to close Ranges. They are made in all sizes, from 3 feet to 18 feet in width, suitable for large or small establishments. They are admirably adapted for the Cure of Smoky Chimneys.

London agency removed to Wigmore Street, from 92, Jermyn Street, Piccadilly.

BENHAM & SONS, 19, Wigmore Street, London.

And in the Hardware Court of the Crystal Palace, Sydenham.

FENDERS, STOVES, AND FIRE-IRONS.—Buyers of the above are requested, before finally deciding, to visit WILLIAM S. BURTON'S SHOW ROOMS, 39, Oxford Street (corner of Newman Street), Nos. 1 and 3, Newman Street, and 4 and 5, Perry's Place. They are the largest in the world, and contain such an assortment of FENDERS, STOVES, RANGES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with bronzed ornaments and two sets of bars, 2l. 14s. to 5l. 10s.; ditto, with ormolu ornaments and two sets of bars, 5l. 10s. to 12l. 12s.; Bronzed Fenders complete, with standards, from 7s. to 3l.; Steel Fenders from 2l. 15s. to 6l.; ditto, with rich ormolu ornaments, from 2l. 15s. to 7l. 7s.; Fire-irons from 1s. 9d. the set to 4l. 4s. Sylvester and all other Patent Stoves, with radiating hearth plates. All which he is enabled to sell at these very reduced charges,

1st,—From the frequency and extent of his purchases; and,

2dly,—From these purchases being made exclusively for cash.

PAPIER MACHE AND IRON TEA-TRAYS.—An assortment of Tea Trays and Waiters wholly unprecedented, whether as to extent, variety, or novelty.

New oval Papier Maché Trays,

per set of three	from 20s. to 10 guineas.
Ditto, Iron ditto	from 13s. to 4 guineas.
Convex shape, ditto.	from 7s. 6d.

Round and Gothic Waiters, Cake and Bread Baskets equally low.

GAS CHANDELIERS AND BRACKETS.—The increased and increasing use of gas in private houses has induced WILLIAM S. BURTON to collect from the various manufacturers all that is new and choice in Brackets, Pendants, and Chandeliers, adapted to offices, passages, and dwelling-rooms, as well as to have some designed expressly for him; these are now ON SHOW in one of his TEN LARGE ROOMS, and present, for novelty, variety, and purity of taste, an unequalled assortment. They are marked in plain figures, at prices proportionate with those which have tended to make his Establishment the largest and most remarkable in the kingdom, viz. from 12s. 6d. (two lights) to 16l.

LAMPS OF ALL SORTS AND PATTERNS.—The largest, as well as the choicest, assortment in existence of FRENCH and ENGLISH MODERATEUR, PALMER'S, CAMPHINE, ARGAND, SOLAR, and other LAMPS, with all the latest improvements, and of the newest and most *recherché* patterns, in ormolu, Bohemian, and plain glass, or papier-mâché, is at WILLIAM S. BURTON'S, and they are arranged in one large room, so that patterns, sizes, and sorts can be instantly selected.

Real French Colza Oil, 4s. 6d. per gallon.

Palmer's Candles, 9d., 9½d., and 10d. per lb.

DISH COVERS AND HOT-WATER DISHES in every material, in great variety, and of the newest and most *recherché* patterns. Tin Dish Covers, 6s. 6d. the set of six; Block Tin, 12s. 3d. to 28s. 9d. the set of six; elegant modern patterns, 34s. 0d. to 58s. 6d. the set; Britannia Metal, with or without silver-plated handles, 76s. 6d. to 110s. 6d. the set; Sheffield Plated, 10l. to 16l. 10s. the set; Block Tin Hot-water Dishes, with wells for gravy, 12s. to 30s.; Britannia Metal, 22s. to 77s.; Electro-plated, on Nickel, full size, 11l. 11s.

WILLIAM S. BURTON has TEN LARGE SHOW ROOMS (all communicating), exclusive of the shop, devoted solely to the show of GENERAL FURNISHING IRONMONGERY (including Cutlery, Nickel Silver, Plated, and Japanned Wares), Iron and Brass Bedsteads, so arranged and classified that purchasers may easily and at once make their selections.

Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of.

39, OXFORD STREET (corner of Newman Street); Nos. 1, 2, and 3, NEWMAN STREET; and 4 and 5, PERRY'S PLACE.

METCALFE AND CO'S NEW PATTERN TOOTH BRUSH, PENETRATING HAIR BRUSHES, AND SMYRNA SPONGES.—The Tooth Brush performs the highly-important office of searching thoroughly into the divisions and cleansing in the most extraordinary manner—hairs never come loose. Peculiarly penetrating Hair Brushes, with durable unbleached Russian bristles, which will not soften like common hair, and immense stock of genuine unbleached Smyrna Sponge, with every description of British and Foreign Perfumery, at METCALFE, BINGLEY, & Co.'s only Establishment, 130 B and 131, Oxford Street, second and third doors west from Holles Street.

CAUTION.—Beware of the word "from" Metcalfe's, adopted by some houses. Metcalfe's Alkaline Tooth Powder, 2s. per box.

GRANITE.—ENTRANCE GATE PILLARS, COPINGS, and every kind of Yard and Stable Pitching; Field and Garden Rollers, Stack Pillars and Caps, Cattle Troughs, Window Sills, and at prices reduced by railway carriage.

Apply to H. SWIFT, Brent Moor, Ivy Bridge, South Devon.

Specimens to be seen at the Wharf, Globe Bridge, Globe Road, Mile End, London.

Monuments according to design and estimate.—Agents wanted.

TO ROADMAKERS, BRICKLAYERS, AND NURSERY GARDENERS.

THE BURIAL BOARD for the Parish of Boston, in the County of Lincoln, are prepared to receive Tenders:—

1st, For the construction of the several Roads, Walks, and Drains in the new Cemetery of the said parish of Boston.

2d, For constructing a Circular Tunnel, and building the Parapet Walls and Pillars, &c., in front of the Entrance Lodge of the proposed Cemetery.

3d, For the supply of Trees, Shrubs, and Plants for the said Cemetery.

Plans and Specifications, with a detailed Estimate of quantities for the several contracts, may be seen at the Office of Mr. SIMPSON, Solicitor, Boston, of whom further information may be obtained. Tenders, sealed and endorsed "Burial Board Tender," are to be sent to Mr. B. S. SIMPSON, on or before Monday, November 6. The Board do not bind themselves to accept the lowest or any Tender. (By Order of the Board.)

Boston, October 23. B. S. SIMPSON, Clerk.

TO NURSERYMEN AND GARDENERS.

REIGATE SILVER SAND, 11s. per ton; ditto, delivered 5 miles, 16s. per ton. Loam and Peat at moderate prices.—KENNARD BROTHERS, Swan Place, Old Kent Road, London.

VALUABLE FREEHOLD NURSERY GROUNDS, ETC., FULFORD ROAD, YORK.

TO BE SOLD, by private contract, the long-established and flourishing NURSERY PREMISES of the late Mr. George Clarkson, situate on the banks of the Ouse, York, comprising about 14 acres of first-rate Nursery Ground, well stocked with Forest and Fruit Trees, Shrubs, &c., and having a substantial DWELLING-HOUSE, SHOPS, and GREENHOUSE, and other requisite Out-buildings attached. The purchaser will have the option of taking the whole or part thereof, and the Stock on liberal terms. Immediate possession can be given, and plans and particulars may be had on application to Mr. LUKE THOMPSON, Solicitor, York.

TO BE SOLD CHEAP, STRONG-BUILT GREEN-HOUSES, 12 feet long 8 feet wide, 15l.; 16 by 10, 20l.; 18 by 10, 25l.; 20 by 12, 35l.; 23 by 12 40l. Plans and particulars of Mr. SMITH, 1. Lower Road, near Islington Green. Window Blinds, Sashes, Doors, &c., from 6d. per foot. Stout Horticultural Glass at 2½d. per foot. Orders to all parts.

CHELMSFORD, ESSEX.

TO BE LET, on Lease, a highly-productive and well-stocked NURSERY GARDEN of about 2 acres, close to the town, with excellent Fruit Walls; Pump, and Reservoir of Water; the erection of a Forcing-house, Pit, and two Sheds. The Nursery Stock now on the ground to be taken by valuation. The rent will be unusually moderate.—Apply to VALPY & STOKES, Auctioneers, Chelmsford, Essex.

TO BE LET, in Birkenhead, rent 20l. per annum, a SHOP, in which a Seedsman (lately deceased) has carried on a profitable business since 1847. Immediate possession can be given, and little more required from an incoming tenant than a fair price for fixtures and stock on hand.—For particulars apply to Mr. PATERSON, Solicitor, 30, Castle Street, Liverpool.

TO BE LET, by tender, a FARM on HAFODUNOS ESTATE, North Wales, comprising 328 acres, great portion of which has been thoroughly drained, sub-soiled, and highly improved, and the remainder is now being similarly treated. The House will be altered and additional buildings erected to suit the tenant. Hafodunos is 9 miles from Abergele, 6 from Llanrwst, 10 from Conway, and 13 from Denbigh.—Application to inspect the farm to be made to Mr. SCOON, Bailiff, Hafodunos, by Llanrwst, and further particulars may be obtained from Mr. PALIN, Christleton, near Chester, to whom offers in writing are to be made.

MONMOUTHSHIRE.

TO BE LET, for a term of years, and entered upon at Lady-day next, the FARM of LLANVAIR GRANGE. It consists of 164 acres of rich productive Land, of which 4 acres are in Orchard, 76 in Meadow and Pasture, and 84 are Arable. There is a comfortable Farm-house and Garden, Dairy and Cheeseroom, and ample Farm Buildings on the Farm. It is within a short distance of the Pontypool Iron Works; there is a station on the Newport and Hereford Railway close by. At the Iron Works there is a constant demand for every kind of Farm produce. The proprietor at Llanvair Grange will direct some one to show the Farm; and for particulars apply to Mr. JOHN MORTON, Morningside, Nailsworth, Gloucestershire.

TWO FARMS,

A FEW MILES FROM THE CITY OF CHESTER.

TO BE LET, by Tender, an excellent DAIRY FARM, containing 150 a. 2 r. 14 p., called Rushall Hall, situate in the parish of Tattenhall, in the county of Chester, two miles from Tattenhall Station on the Chester and Crewe Railway, in the occupation of Mr. George Robinson. A great portion of the Farm has been thoroughly drained, and a portion of the Grass Land boned; and it is contemplated to complete the draining and boning of the Farm the ensuing winter. The House is commodious and will be put into thorough repair. The present Farm Buildings will be taken down, and an entire new set o buildings suitable to the Farm erected. Possession of the House on the 12th of May, and of the Lands on the 2d of February next.

Also an excellent DAIRY FARM, containing 156 a. 2 r. 23 p. At present a part of the above Farm is in the occupation of Mr. George Robinson, on which has this year been erected a commodious House, suitable for a highly-respectable family, and the Buildings and Premises arranged with every attention to comfort and convenience. A great portion of the Land has been drained and boned, and the whole that is required will be completed the ensuing winter. Immediate possession may be had of the House, Buildings, and Garden; and of the Land on the 2d of February next.

John Ennion, of Hatton Heath, near to the Turnpike-gate where the road branches to Tattenhall, will show the Farms; and particulars had of Mr. JOHN PALIN, Christleton, near Chester, or at the Office of JOHN PALIN & SON, Westminster Buildings, Newgate Street, Chester, where a Map of the Property may be seen, and offers in writing sent.

TO BE SOLD, WHITE CHINESE, OR SWAN GEESE, very handsome for ponds, and prolific and very early breeders.—Mr. P. DUTTON, Delamere Rectory, Chester.

TO BE SOLD, BUFF COCHIN CHICKENS, from first class Prize Birds. Brahma Pootra Chickens, from imported American Prize Birds, and Spanish Chickens. Also some very good one-year-old Birds of the above descriptions. Wire, Game, and Poultry Netting, Poultry Hurdles, Hen-houses, Chicken Coops, Flower Stands, and Trainers, Garden Arches, and every kind of Wire Work, useful and ornamental.—T. H. Fox's, City of London Wire Works, 44, Skinner Street, and 6 & 8, Snow Hill. Illustrated Catalogues forwarded post free.

DRIED PLANTS FOR SALE.

TO BE SOLD, a very valuable and extensive GENERAL HERBARIUM, partly arranged, and included in six neat, well made deal cabinets, adapted for the foundation or nucleus of a botanical collection, and suitable for any Public Museum or private collector who is beginning the pursuit. It is the property of a gentleman who has expended much money upon it, but who, having left England altogether, is willing to dispose of it at a small price. To save trouble, the lowest price that will be taken is 35l. The Plants are all in the best possible state, and include many of those sent home by recent travellers and botanical collectors. Apply in the first place, by letter only, to Mr. PAMPLIN, 45, Frith Street, Soho Square, London.

Sales by Auction.

ORCHIDS, STOVE, AND GREENHOUSE PLANTS.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, 31st October, at 12 for 1 o'clock, a Collection of Orchids, including good Plants of Aerides roseum superbum, A. crispum, A. Odoratum purpureum, Vanda tricolor, Saccolabium retusium, S. Blumei major, Paphinia cristata, Trichopilia suavis, a new Cattleya, &c. Also a parcel from India, including many plants of Vanda Roxburghi; some imported plants from La Guayra, and 50 lots of Stove and Greenhouse Plants, many of which are fine specimens.—May be viewed on the morning of sale, and catalogues had.

RARE AND NEW PLANTS.

MR. J. STEVENS will include in the Sale at his Great Room, 38, King Street, Covent Garden, on TUESDAY, the 31st October, a consignment recently received from Mr. R. W. Plant, including six specimens of the very rare LODOICEA SECHELLAREM, or double Cocoa Nut of the Sechelles, in good condition; 6 specimens of the curious and remarkable plant STANGERIA PARADOXA; 7 specimens of a new species of Ansellia, and some other rare Orchids from the Zulu country, South Africa.—May be viewed on the morning of sale, and Catalogues had.

CAMELLIAS, RHODODENDRONS, AZALEAS, DEUTZIA GRACILIS, ETC.

A THIRD CONSIGNMENT FROM MR. JOS. BAUMAN, OF GHENT, FOR ABSOLUTE SALE.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on FRIDAY, Nov. 3, at 12 for 1 o'clock, 600 Camellias, 250 Deutzia Gracilis, 150 Kalmia Glauca, 250 new Hardy Ghent Rhododendrons, 200 Azalea Indica, 180 new ditto, 60 Yellow Rhododendrons, 25 Ghent Azaleas, 500 Gladiolus Gandavensis, and other Bulbs.—May be viewed the morning of Sale and Catalogues had.

TO GENTLEMEN, AMATEURS, FLORISTS, & OTHERS.

MR. J. WILLMER will submit by Auction, at the Mart, Bartholomew Lane, on WEDNESDAY, Nov. 8th, at 12 o'clock precisely, without reserve, a choice and valuable collection of TULIPS, comprising all the leading flowers of the day, the property of Mr. WILLMER, of Sunbury Nursery.—Catalogues at the Mart, and of the Auctioneer, Sunbury, Middlesex.

TO MARKET GARDENERS, NURSERYMEN, & OTHERS.

MR. W. T. ATWOOD will Sell by Auction, on the Ground, near the Church, Mortlake, Surrey, on TUESDAY, October 31, at 1 o'clock, about 4000 Roots of Linnæus and Mitchell's Royal Albert RHUBARB, four years of age, and in excellent condition for Forcing or Transplanting, and may be seen at any time till day of Sale at the enclosed site for the New Burial Ground, in the Wharple Way, near the Church, Mortlake.—Catalogues to be had at the office of the Auctioneer, Mortlake, Surrey.

BATTERSEA FIELDS.

TO GENTLEMEN, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are directed by Mr. Fisher, to submit to an unreserved Sale by Auction, on the premises, Claremont Nursery, near the Duchess of York, Battersea Fields (on TUESDAY, November 7th, 1854) at Eleven o'clock, in consequence of the ground being required for the Battersea New Park, the whole of the valuable STOCK of EVERGREENS, consisting of very fine Arbor-vitæ, Laurustinus, Hollies, Box Aucubas, Euonymus, Common Laurels, Fine Yews, Rhododendrons, Lilacs, Roses, Daphnes, &c. Also Fruit and Forest Trees, with a quantity of Box edging, &c.

May be viewed prior to the Sale.—Catalogues may be had on the premises, 21, New Street, Battersea Fields; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, NURSERYMEN, AND OTHERS.

CONSIGNMENT FROM GHENT FOR ABSOLUTE SALE.

MESSRS. PROTHEROE AND MORRIS are instructed by Mons. A. Van Geert, to Sell by Auction at the Mart, Bartholomew Lane, on FRIDAY, November 3, at 12 o'clock, 300 Double Camellias, 1 to 4 feet; and 200 Indian Azaleas, beautifully set with bloom buds; 250 Lilium Lancifolium Rubrum; 1000 Gladiolus Gandavensis; 50 Rhododendrom Arboreum; with 8 magnificent Sweet Bays, &c. On view the morning of Sale. Catalogues may be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO NOBLEMEN, GENTLEMEN, BUILDERS, & OTHERS.

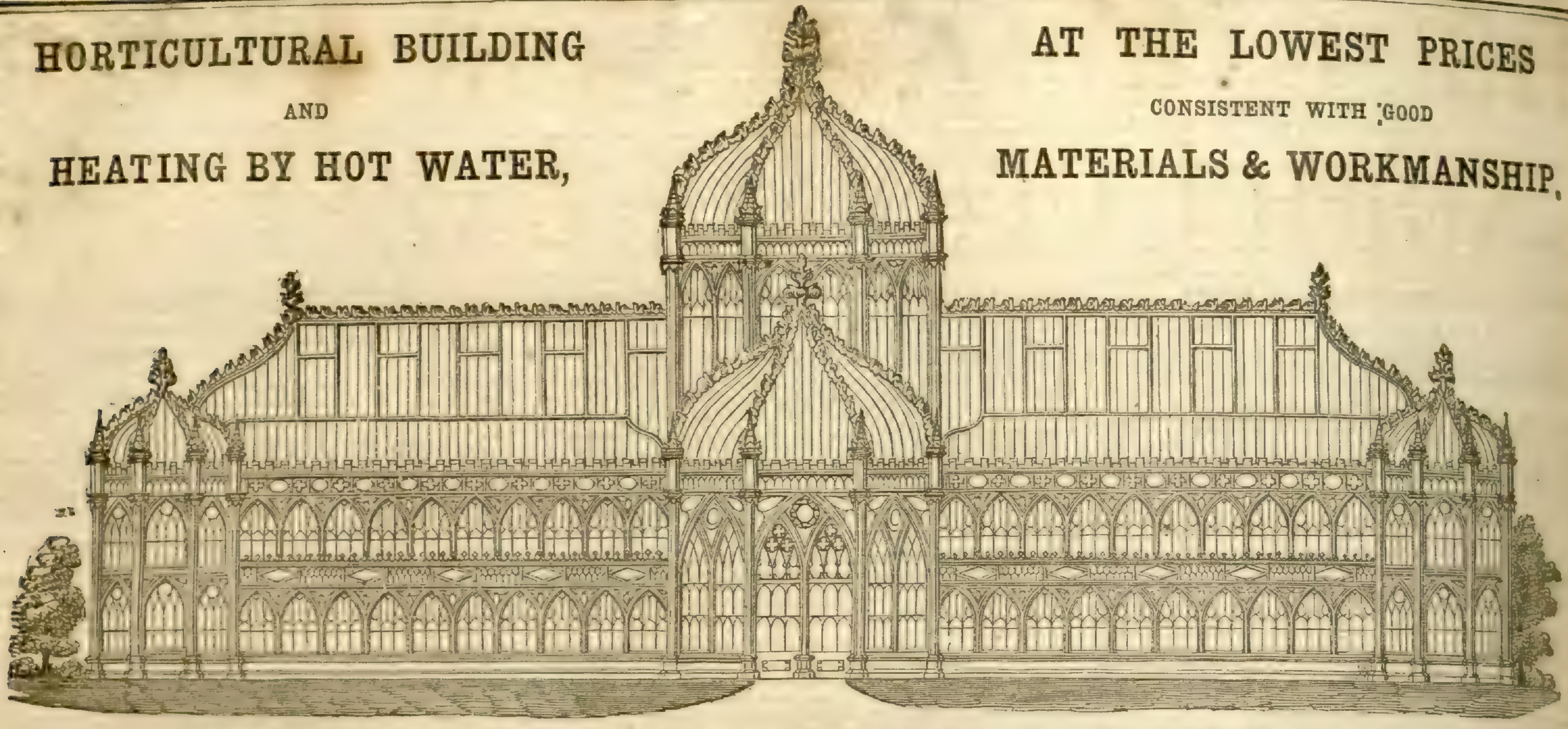
MESSRS. PROTHEROE AND MORRIS are instructed by the administrators of the late Mr. Joseph Fairbairn, to Sell by Auction, on the premises, the Clapham Nurseries, on TUESDAY, November 14, and following days, at 11 o'clock each day, the whole of the valuable NURSERY STOCK, consisting of fine Evergreens, Ornamental Trees, and Deciduous Shrubs, of which particulars will appear in future advertisements.—May be viewed one week prior to the sale; Catalogues may be had on the premises; of the principal Seedsmen in London; and of the Auctioners, American Nursery, Leytonstone, Essex.

STOKE NEWINGTON.

TO GENTLEMEN, NURSERYMEN, BUILDERS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS beg to announce that they have received instructions from the Administrators of the late Mr. W. Watts, of Stoke Newington, to Sell by Auction, without reserve, on the premises, on MONDAY, October 30, and three following days at 11 o'clock each day, the whole of the valuable Nursery Stock, consisting of an immense quantity of American Plants, Ornamental and Fruit Trees, Evergreens, and Deciduous Shrubs, comprising 85,000 Rhododendrons, 5000 Ghent Azaleas, 2000 Limes, 1200 Thorns, 1000 Poplars, Planes, Elms, Laburnums, Chesnuts, &c., Standard and Dwarf Trained Peach, Nectarine, Apricot, Apple, Pear, Plum, Cherry, Gooseberries, and Currants; Standard Damsons; 1200 fine Mulberries, &c.; 5000 Arbor-vitæ, 6000 Hollies, 3 feet; 4000 Box, 7000 Aucubas, 3000 Euonymus, Perpetual and Common Laurels, Lilacs, Roses, Daphnes, Yucca Filamentosa, &c.; also Greenhouse Plants, including 200 fine Double Camellias, 50 very fine specimen Indian Azaleas, Heaths, Epacris, &c.; together with Greenhouses, 2 and 3-light Boxes, Gold and Silver Fish in Ponds, an excellent Horse, two capital Carts, Wheelbarrows, Garden Tools, a quantity of Box-edging, and sundry effects.—May be viewed one week prior to the Sale. Catalogues may be obtained (6d. each, returnable to purchasers) on the premises of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER, AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS & WORKMANSHIP.

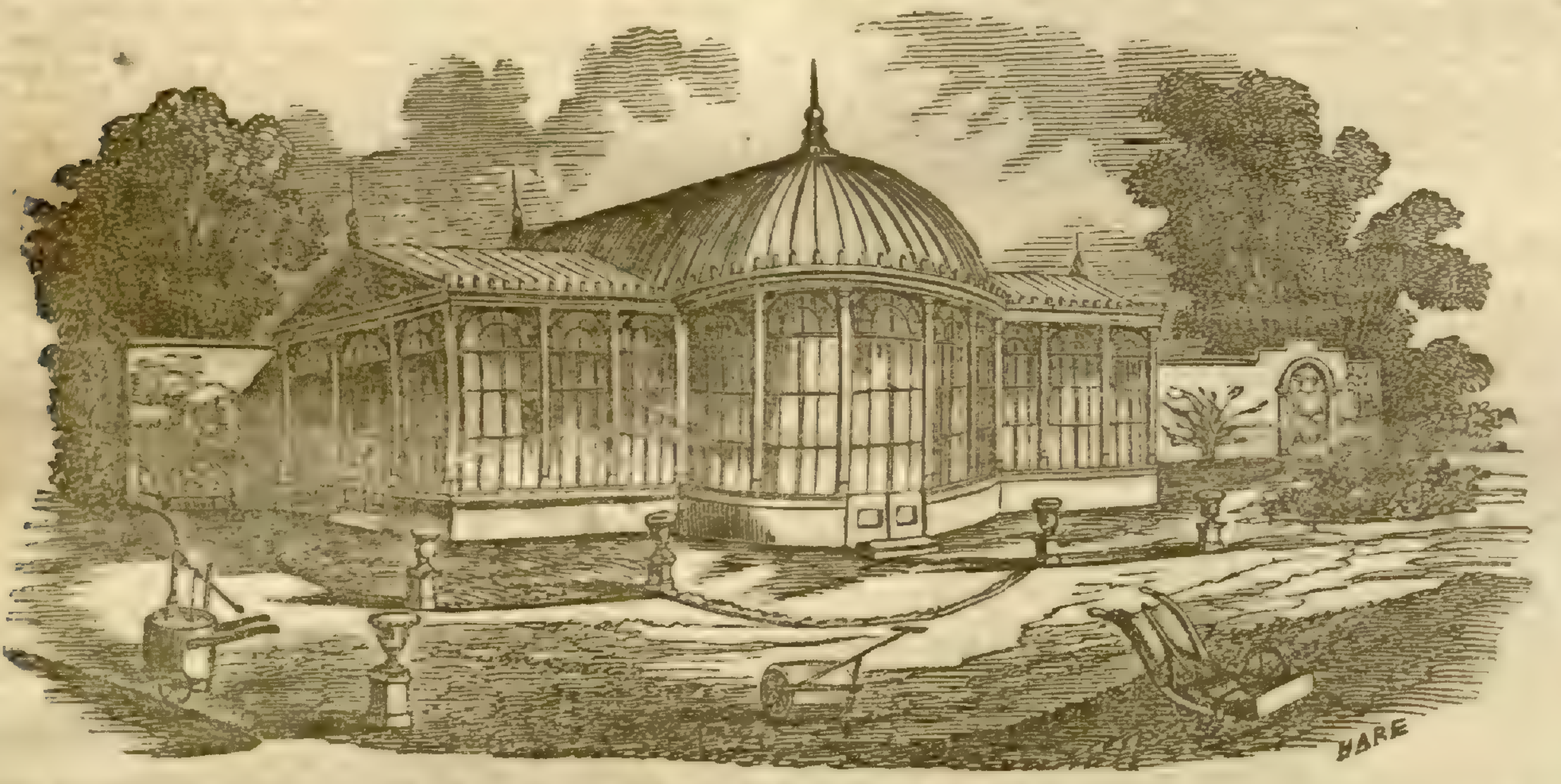


GRAY & ORMSON, DANVERS STREET, CHELSEA, LONDON.

GRAY AND ORMSON, Danvers Street, Chelsea, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and they can with the greatest confidence give the most satisfactory references to all by whom they have been favoured with orders. Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

COTTAM AND HALLEN,
2, WINSLEY STREET, AND 76, OXFORD STREET, LONDON.



APPLICATION is requested for their NEW HORTICULTURAL LIST, containing Illustrations, Descriptions, and Prices of

Conservatories	Mowing Machines	Hand-glass Frames	Garden Engines	Flower Sticks
Greenhouses	Fountains	Game Netting	Do. Syringes	Garden Bordering
Hot Water Apparatus	Ornamental Wire Work	Hurdles	Do. Rollers	Watering Pots
Garden Vases	Flower Stands	Garden Chairs	Flower Labels	Garden Arches, &c.

IRON HURDLES, STRAINED WIRE FENCING, GAME NETTING, &c.
AGRICULTURAL LIST UPON APPLICATION.
EVERY DESCRIPTION OF PLAIN, ORNAMENTAL, CAST AND WROUGHT IRON, AND WIRE WORK.
EXHIBITION PRIZE MEDAL GATES AND ENAMELLED MANGERS.

CARNATIONS, PICOTEES, AND PINKS.
JOHN KEYNE'S ANNUAL CATALOGUE, containing all the finest SHOW FLOWERS, is now ready, and will be sent, on application to the Castle Street Nursery, Salisbury.

TO GENTLEMEN ENGAGED IN PLANTING.
WATERER AND GODFREY respectfully invite attention to their stock of the following very desirable HARDY PLANTS.

Araucaria imbricata, from 2 to 7 feet high; as handsome as plants can be.
Cedrus Deodara, in any quantity, from 1 to 3 feet high
Do. do., 4, 5, 6, 7, 8, and 10 feet high; splendid plants
Cedars of Lebanon, 3, 4, 6, and 10 feet high
Pinus Douglasi, 3 to 10 feet
„ insignis, 2 to 7 feet
„ Menziesi, 3 to 7 feet
„ pinsapo, fine plants, 3 to 6 feet
„ Nordmanniana, 1½ to 3 ft., all from seed and remarkably handsome
„ nobilis, 1½ to 2 feet; a few larger, 5 and 6 feet high, on their own roots, and with perfect leaders
„ Montezumæ, 2 to 4 feet
Pinus canadensis, 3 to 8 feet
Cupressus macrocarpa or Lambertiana, 4 to 7 feet
„ thyoides variegata, 3 to 4 feet (the variegated white Cedar)
Juniperus, Upright Irish, perfect columns, 3 to 7 feet
„ chinensis, 2 to 8 feet
Yew, common English, 3 to 8 feet
„ Irish, 4 to 10 feet
„ gold-striped, 1½ to 3 feet
„ do., tall standards, 4 to 7 ft.
„ Dovaston, or Weeping, worked on tall straight stems
Thuja aurea, the finest plants in the country
Libocedrus chilensis, the finest plants in the country
Large variegated Hollies
„ Standard Bays

Also an immense stock of large Evergreens, Standard Ornamental Trees, &c.

All the plants here offered may be seen, growing in our nursery; they are removed every year, and will travel any distance with perfect safety. Of some, such as Araucarias, Deodaras, Golden Yews, Thuja aurea, Pinus nobilis, Nordmanniana, we have any quantity; and the plants, for root and branch, are not to be surpassed. Priced Catalogues will be forwarded on application, enclosing two postage stamps, to WATERER and GODFREY, nephews and successors of the late Hosea Waterer, Knap Hill Nursery, Woking, Surrey, near the Woking Station, South-Western Railway, where all trains stop, and where capital conveyances can be obtained.

The *2d.* stamp will also include a descriptive Catalogue of their American Plants, Roses, and Nursery Stock in general.

In Two Volumes, large 8vo, with upwards of 600 Engravings, price 3*l.*, half bound,
THE BOOK OF THE FARM. By HENRY STEPHENS, F.R.S.E. Seventh Thousand.
"The best practical book I have ever met with."—*Prof. Johnston.*
"One of the completest works on agriculture of which our literature can boast."—*Agricultural Gazette.*
WILLIAM BLACKWOOD & SONS, Edinburgh and London.

On the 25th October, for the EIGHTEENTH YEAR,
GLENNY'S GARDEN ALMANAC FOR 1855. Richly Illustrated, 1*s.*; or handsomely bound as a Pocket Book, 2*s.* 6*d.*; post free 6*d.* extra each—stamps equivalent.
Advertisements should be sent immediately. The edition for 1854 was sold out in May.
London: GEORGE COX, King Street, Covent Garden.

On the 23d of November will be published, price 1*s.*,
THE GARDENER'S ALMANACK FOR 1855.—By GEO. W. JOHNSON, Editor of the "Cottage Gardener," &c.
This long-established Gardening Almanack will contain for 1855, Contributions from some of the best of our Country's Gardeners, on all subjects connected with Horticulture, but especially relative to the Flower, Fruit, and Greenhouse Departments. It will also contain a List of Nurserymen in England, Scotland, and Ireland, corrected to the present time, besides the usual contents o an Almanack.
Published by the Company of Stationers.

THE NATIONAL GARDEN ALMANAC AND HORTICULTURAL TRADE DIRECTORY FOR 1855. By JOHN EDWARDS, F.H.S. The Third Annual Issue.
No effort will be spared to retain the flattering encomiums universally bestowed on the previous issues of this work, which, for general accuracy, and sound practical utility, is acknowledged be immeasurably in advance of all similar publications.
Advertisements, Communications, Books for Review, Information relative to Changes of Addresses, &c. &c., gladly received, not later than the 20th November, by
JOHN EDWARDS, Wace Cottage, Holloway, Middlesex.
CHAPMAN & HALL, 193, Piccadilly.

On the 1st of November will be published, price 2*s.* 6*d.*,
PUNCH'S POCKET-BOOK FOR 1855. With a Coloured Frontispiece on Steel, by JOHN LEECH, "A Prize Baby Show—Mater Familias rewarding a Successful Candidate," and numerous Wood Engravings, by JOHN LEECH and JOHN TENNIEL.
Punch Office, 85, Fleet Street.

HOUSEHOLD WORDS. Conducted by CHARLES DICKENS.
On the 31st inst. will be published, price Ninepence, Part LV. of HOUSEHOLD WORDS, containing Four Portions of a New Tale, by the Author of "MARY BARTON," entitled "NORTH AND SOUTH," &c. &c. &c.
Office, 16, Wellington Street North, Strand; and sold by all Booksellers and Newsvenders.

On the 31st will be published, price 1*s.*, No. XIV. of
"THE NEWCOMES." By W. M. THACKERAY. With ILLUSTRATIONS by RICHARD DOYLE.
☞ The First Volume is ready, price 13*s.*, in cloth.
BRADBURY & EVANS, 11, Bouverie Street.

This day is published, price 18*s.*, handsomely bound in cloth,
HANDLEY CROSS; OR, MR. JORROCKS'S HUNT. By the Author of "MR. SPONGE'S TOUR." Illustrated with 17 Coloured Plates and nearly 100 Woodcuts by JOHN LEECH, uniformly with "SPONGE'S TOUR."
"We hope we have now done enough to bring Jorrocks fairly before the non-sporting part of the public—the others will not need our recommendation."—*Quarterly Review.*
BRADBURY & EVANS, 11, Bouverie Street.

On October 31st will be published, price 2*s.*, Part XIX. of the
ENGLISH CYCLOPÆDIA, extending the NATURAL HISTORY DIVISION from INSECTA to LEMURIDÆ, and the GEOGRAPHICAL DIVISION from ILLIERS to KENTUCKY, including articles on Illinois, Illyria, Indian Territory, Indiana, Ionian Islands, Iowa, Ireland, Istria, Ismaïl, Italy, Jamaica, Janeiro (Rio de), Japan, Java, Jaxt, Jersey, Jerusalem, Jounnina, Kaffa, Kamtchatka, Kansas, Karia, &c. &c.
*** Vols. I. and II. of each Division are published, price 10*s.* each, in cloth.
BRADBURY & EVANS, 11, Bouverie Street.

J. IVERY AND SON, NURSERYMEN, &c., Dorking and Reigate, Surrey, feel much pleasure in saying that plants of their two beautiful AZALEAS, CRITERION and ADMIRATION, may now be had from the undermentioned Nurserymen, true to name.

J. I. and SON wish to call intended purchasers' particular attention to this list, as spurious varieties are offered:—

Baines, Wm., Camberwell
*Bass & Brown, Sudbury
*Cattell, John, Westerham
*Cunningham & Fraser, Edinburgh
Dicksons, Messrs., Edinburgh
Dixon, E. P., Hull
*Epps, Jas., Maidstone
*Fisher & Holmes, Sheffield
Henderson, Arthur & Co., Pine Apple Place
*Ivery, Wm., Peckham
*Jackman, George, Woking
Jackson & Son, Kingston
Lane & Son, Berkhampstead
*Lee, Chas. and Jas., Hammersmith
Low, Hugh & Co., Clapton
Meillez, M., Lille (France)
Parker, Robt., Hornsey Road
*Paul, A. & Son, Cheshunt
Perkins, E., Leamington
Rollisson, Wm. & Sons, Tooting
Turner, Chas., Slough
*Veitch, Jas., junr., Chelsea
Walton & Co., Edge End, Marsden
Wood & Ingram, Huntingdon
Wood, Wm. & Son, Maresfield

Additional names to this list will appear in rotation as orders are received.

J. I. & SON also beg to say that plants of their fine hardy CRIMSON RHODODENDRON may be had from the above-named Nurserymen, marked (*), and also from the under-mentioned:—

Bunyard, Jas. & Son, Maidstone
Cripps, Thos., Tonbridge Wells
Donald, Robt., Woking
Moor & Son, Birmingham

For particulars and description of this and the Azaleas, refer to *Gardeners' Chronicle* for September 16th, and two following weeks. A remittance or reference is respectfully requested from unknown correspondents.—Reigate, Oct. 28.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. [illegible], Victoria Street, in the Parish of St. Margaret and St. John, Westminster, both in the County of Middlesex, Printers, at their Office in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, Oct. 28, 1854.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 44.—1854.] SATURDAY, NOVEMBER 4. [Price 6*d*.

INDEX.

Agri. statistics	713 *b*	Mats, substitute for	710 *c*
Agri. Soc. of England	716 *a*	Mechi's (Mr.) address	716 *b*
Antirrhinums	710 *c*	Mildew, cure for	710 *b*
Bank, penny savings	715 *a*	Pampas Grass	708 *a*
Benefit clubs	715 *c*	Pathology, vegetable	708 *c*
Books noticed	711 *a*	Pear growing, profits of	709 *a*
Braintree Agri. Soc.	716 *b*	Pear house	710 *b*
Calendar, horticultural	712 *a*	Plants, hardiness of	710 *b*
— agricultural	718 *a*	— in Cornwall	710 *c*
Cattleya labiata, fine	711 *b*	— sale of rare	712 *a*
Cheese, Cheddar	714 *b*	Phœnocoma proliferum	710 *a*
Cnemsco Agri. Society, Ulster	717 *a*	Potato, fluke	710 *c*
Chestnut, the	712 *a*	Poultry, diseases of	716 *c*
College, Agricultural	714 *a*	Poultry Book, Moubray's by Meall	716 *b*
Conifers, hardiness of	719 *b*	Rain, to measure	712 *c*
Corn market	713 *b*	Ranunculuses, choice of	711 *c*
Delamere forest, &c.	709 *b*	Rheumatism, cure for	710 *b*
Diseases of Poultry	717 *a*	Seeding, thick and thin	715 *b*
Drainage, arterial	713 *c*	Sewage manure	707 *c*
Education	714 *c*	Statistics, agricultural	713 *b*
Farmers, premiums to	715 *c*	Stock, breeding	715 *a*
Forests, Royal	709 *b*	Tring Farmers' Club	717 *c*
Grasses, agricultural	714 *a*	Turnips, economy in	715 *c*
Grass land, top-dressing for	718 *a*	Vegetable pathology	708 *c*
Gynerium argenteum	708 *a*	Vine mildew	710 *b*
Harvest and its results	715 *b*	Wheat, price of	713 *b*
Horticultural Society's garden	711 *a*	— in 1844–54	718 *a*
Labourers' education	714 *c*	Winter in Cornwall	710 *c*
Manure, sewage	707 *c*	Woods and forests	709 *b*
— adulteration of	715 *b*		

SCOTTISH GARDENERS' AND LAND-STEWARDS' ASSOCIATION.
ELECTION OF PENSIONERS.—The Annual General Meeting for the Election of Pensioners, and on other business, will be held here on Wednesday, Nov, 8, at Seven o'clock in the evening. By order of the Board, J. H. Balfour, Chairman.
Chambers, 6, York Place, Edinburgh.

IMPORTANT TO POTATO GROWERS.
HAY, SANGSTER, and CO., are now ready to send out their celebrated Stock of SEED POTATOES from prepared cuttings, now completely free from disease, of the following sorts, viz.:—

Early Ebrington Kidneys, per bushel 12*s*.	Early American, per bushel, 8*s*.
Early Oxford „ 10*s*.	York Regents „ 6*s*.
	Scotch Cups „ 6*s*.

Package and delivery in London, 9*d*. per bushel, and 2*s*. per sack.
Newington Butts, London.

IMPORTANT TO GROWERS.
JOSEPH WILSON, Seedsman, Ipswich, begs to submit his present list of EARLY POTATOES, grown expressly for Seed purposes, and entirely free from disease:—Jackson's Improved Early Ash-Leaf Kidney, 9*s*. per bushel; the Short Top ditto, 7*s*. 6*d*.; Moss Kidney, 7*s*.; Prolific ditto, 7*s*.; Lapstone ditto, 6*s*.; Early Yorks ditto, 7*s*. 6*d*.; Cambridge ditto, 7*s*.; Pink ditto, 6*s*. 6*d*.; the Red Lion, 6*s*. 6*d*.; and B[illegible], 7*s*. 6*d*. The Early Ranger and Lackford Kidney (new varieties) will be sent out in the early part of January next, price 2*l*. 2*s*. per sack. Orders will now be received for them. No charge for packing or sacks, and free to London.

SEED POTATOES.
JOHN HAYES, Florist, Farnham, Surrey, begs to offer the very best POTATOES ever introduced into this part of the country, at 4*s*. per bushel. They were bought last year in Covent Garden Market under the name of SCOTCH REGENTS. Produce 160 bushels per acre; ripe the latter end of August—a ball of flower. A sample will be sent for 12 postage stamps. None diseased.

SEED POTATOES.—EARLY ASH-LEAVED KIDNEY POTATOES ... 6*s*. 6*d*. per bushel.
EARLY FORTYFOLD POTATOES ... 4*s*. „
LAPSTONE KIDNEY POTATOES ... 6*s*. „
Address H. May, The Hope Nurseries, near Bedale, Yorkshire.

TO BE SOLD, at very reduced prices, 10,000 very strong 2, 3, and 4-year old GOOSEBERRIES and CURRANTS, of the best sorts.—For further particulars, apply to Lake & Dyer, Nurserymen, Bridgewater.

FOREST TREES, ETC.
PETER LAWSON & SON, Edinburgh, the Queen's Seedsmen, &c., respectfully acquaint their patrons in England and the public, that their PRICED LIST of PLANTS for the season is now ready, and may be had on application, at their Branch Establishment in London.
All orders sent to the London Branch will be immediately executed, and delivered in London free of expense.
27, Great George Street, Westminster, November 4.

EVERGREEN OAKS IN POTS, ETC.
WILLIAM CUTBUSH and SON, beg to call attention to their general Nursery Stock, amongst which are some splendid Evergreen Oaks, 6 to 8 feet, in pots; also Sweet Bays, 4 to 5 feet, prices on application.
Chrysanthemums - a good assortment just coming into bloom, very fine, at 9*s*. per dozen.—Highgate Nurseries, near London.

JAMES MELDRUM, Nurseryman, Kendal, Westmoreland, begs to offer, upon the most reasonable terms, upwards of one million of fine stout two-year SEEDLING OAKS, and also two-year SEEDLING ASH.—Price on application.

SEED WHEAT.—Samples and Prices of BROWICK RED, NURSERY, RED HYBRID, and other kinds of Wheat from the Chalk, sent on application to Mr. H. Raynbird, Basingstoke. The Red Hybrid and Nursery are well suited for late sowing after Turnips.

J. SMITH and SONS, Tansley, near Matlock, begs to offer cheap, an over-stock of one or two years' Seeding OAK, one year's BEECH, and one year's SYCAMORE; also Transplanted Beech, in sizes from 1½ to 5 feet. Price, according to quantity required, on application.

SLEAFORD.
THE executors of the late Mr. John Sharpe beg to inform buyers of NURSERY STOCK that they have the following articles to dispose of:—170,000 two-year seedling Quick; 180,000 two-year transplanted Quick; 150,000 three-year transplanted Quick, extra strong; 32,000 Larch, 4 feet; 10,000 Larch, 3 feet; Spruce Fir, 2 feet; Limes, 3 to 4 feet; ditto, 6 to 8 feet; ditto, Weeping; Spanish Chestnuts, 2 to 3 feet; Oaks, 3 to 4 feet; Silver Fir, 1 to 2 feet; Common Laurels, large; Portugal Laurels, 3 to 7 feet, bushy, several times transplanted.
Nursery, Sleaford, Nov. 4.

TO PLANTERS OF ORNAMENTAL & HARDY CONIFERS & SHRUBS.
YOUELL and CO. beg respectfully to invite the attention of those Gentlemen who may be engaged in planting the above, to their Advertisement which appeared in the *Gardeners' Chronicle* of October 14.—Royal Nursery, Great Yarmouth.

JUST HARVESTED.
SUTTON and SONS, Seed Growers, Reading, have now harvested some fine seed of true Early Shorthorn Carrot, Mustard, Cress, Lettuce, Early Peas, and other Seeds for early sowing.

SPLENDID HOLLYHOCKS.
HOLLYHOCK SEED sown now under glass will produce plants sufficiently strong to bloom well next season.
SUTTON and SONS, Seed Growers, Reading, have saved some good ripe seed from the best Show Flowers only, which they are now sending out at 1*s*. per packet, post free.

HYACINTHS FOR BEDS.
FRESH IMPORTED HYACINTHS, all double, colours marked, at 30*s*. per 100, carriage free. Fine mixed CROCUSES, 12*s*. 6*d*. 1000; and other DUTCH ROOTS at equally low prices.—John Sutton & Sons, Reading, Berks.

SECOND IMPORTATION.
FRESH IMPORTED BULBS *bloom much finer than those which have been long exposed to the air before planting.*
JOHN SUTTON and SONS, Reading, Berks, can supply FINE BULBS, just imported, at low prices; see their Catalogue, which may be had, post free, in return for one penny stamp.

THE BEST CUCUMBERS FOR FORCING.

SUTTON'S BERKSHIRE CHAMPION, per packet ...	1*s*. 6*d*.
HUNTER'S LONG PROLIFIC ...	1*s*. 6*d*.
LORD KENYON'S FAVOURITE ...	1*s*. 6*d*.
IMPROVED SION HOUSE ...	1*s*. 6*d*.

Sutton & Sons, Seed Growers, Reading.

STRAWBERRY PLANTS.

CUTHILL'S BLACK PRINCE ...	21*s*. per 1000.
„ PRINCE of WALES ...	40*s*. „
BRITISH QUEEN ...	21*s*. „
ELTON PINE ...	21*s*. „
PINCE'S NIMROD, New ...	20*s*. per 100.

J. G. Waite, Seed Merchant, 181, High Holborn, London.

RHUBARB ROOTS.

MYATT'S LINNÆUS ...	35*s*. per 100.
„ VICTORIA ...	28*s*. „
MITCHELL'S ALBERT ...	30*s*. „

Good strong Roots, and warranted true to kind.
J. G. Waite, Seed Merchant, 181, High Holborn, London.

EARLY DANIEL O'ROURKE PEAS.
J. G. WAITE begs to inform the Trade that he is now ready to execute orders for this valuable early Pea. Price can be had on application.
Seed Establishment, 181, High Holborn, London.

FRESH ARRIVAL OF DUTCH BULBS.
CLARKE & CO., Seedsmen and Florists, beg to inform their patrons they have just imported a fresh supply of BULBS, ex Concordia from Rotterdam, and will be happy to forward Catalogues on application.
Seed Warhouse, 86, High Street, Borough, London; Nov. 4.

FRUIT TREES.
MESSRS. J. and H. BROWN offer the following:—

Fine Dwarf and Standard Peaches, Nectarines, Apricots, Plums, Pears, and Cherries. The best and most approved sorts of these respective kinds, to name, each, 3*s*. 6*d*., or, per dozen ...	30*s*. 0*d*.
Untrained or maiden do., 1*s*. 6*d*. each, or, per dozen ...	12 0
Apples, dwarfs and standards of best sorts, per doz., 10*s*. to	15 0
Fine Gooseberries, Currants, and Raspberries, per dozen	8 0
Figs, Medlars, Walnuts, and Mulberries, each ...	2 0
Filberts, new thin shelled and red skinned, per dozen ...	3 0
Strong Vines, from eyes and layers, in pots, per dozen...	18 0

New Gardens and Greenhouses furnished on moderate terms.
Albion Nursery, Stoke Newington, London.—Nov. 4.

BASS and BROWN'S NEW AUTUMN CATALOGUE, containing the following, is now complete, and supplied free by post for three Penny Stamps.

Dutch and Cape Roots.	Hardy Herbaceous Plants.
Geraniums.	Potentillas.
Cinerarias.	Hollyhocks.
Azalea indica.	Antirrhinums.
Fuchsias } best new of 1854.	Conifers, and other Select Trees and Shrubs.
Verbenas } best new of 1854.	Hardy Climbers.
Petunias } best new of 1854.	Roses, Fruits, &c. &c.
Stove and Greenhouse Plants.	

Seed and Horticultural Establishment, Sudbury, Suffolk.

HOLLYHOCK SEED.
R. PARKER has now ready for sending out Seed of this year's saving from the finest named varieties in cultivation, in packets at 1*s*. and 2*s*. 6*d*. each. A remittance or reference to accompany all orders from unknown correspondents.
—Paradise Nursery, Hornsey Road, London.

HOLLYHOCK SEED, from selected flowers of all the best collections in England and Scotland, 2*s*. 6*d*. per packet.
SPOTTED MIMULUS, from finely shaped flowers of every variety of colour and spot, at 1*s*. 6*d*. per packet.
CHOICE CALCEOLARIA, from the most superb collection in England, 2*s*. 6*d*. per packet.
Jno. and Chs. Lee, Nursery and Seedsmen, Hammersmith.

HOLLYHOCK SEED.
WILLIAM CHATER begs to offer packets of the above Seed, containing twenty sorts, selected from his best show varieties, at 5*s*.; 12 varieties, do., 2*s*. 6*d*.; and from good double border sorts, at 1*s*.—Also Pansy Seed, from the best flowers, 2*s*. 6*d*. per packet.—Strong Plants of the new Double Crimson Rocket, excellent bedding plants for spring flowering, 6*s*. per dozen, or 2*l*. per 100; Double French White, 4*s*. per doz., or 30*s*. per 100.—Saffron Walden, November 4.

FINE SPECIMEN PLANTS.
J. and J. FRASER beg to invite attention to their magnificent Collection of large AZALEAS, HEATHS, and other Plants, which were never in such good condition as at the present time. This is an excellent opportunity for buyers as (on account of not having sufficient room) the plants will be offered at very low prices.
The Nursery, Lea Bridge Road, Essex.—Nov. 4.

WILLIAMS' EVERGREEN CLIMBING ROSE.
WILLIAM WOOD and SON have been appointed Agents by Mr. Davis, of Malvern, for the sale of the above-named magnificent CLIMBING ROSE. Good established plants, 8*s*. 6*d*. each. Usual discount to the trade. For particulars purchasers are referred to their own and Mr. Davis' advertisements in *Gardeners' Chronicle* of October 7, page 643.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

CARNATIONS, PICOTEES, PANSIES, ETC.
JOHN SCHOFIELD and SON have now ready strong plants of all the approved CARNATIONS, PICOTEES, PINKS, and PANSIES, as follows:—25 pair of Carnations and Picotees, 1*l*. 1*s*.; 25 pair of Pinks, 15*s*.; 25 Pansies, 1*l*. 1*s*. A Descriptive Catalogue of the above, &c., is ready; also a few packets of Pansy and Hollyhock Seed carefully selected from the finest sorts, 2*s*. 6*d*. per packet.—Knowsthorpe, near Leeds, Yorkshire.

DUTCH HYACINTHS, for Forcing, single and double, at 4*s*. per dozen. Also Narcissi, Crocuses, Tulips, Irises, Jonquils, Anemones, and Ranunculuses, priced Catalogues of which will be forwarded by post, from Arthur Cobbett's Italian and Foreign Warehouse, 18, Pall Mall.
Also Double Roman and Paper White Narcissus, the most beautiful and fragrant of all the Narcissi, 4*s*. per dozen.

BATH NURSERY AND SEED ESTABLISHMENT.
JAMES GRIFFIN begs to announce that his annual importation of Hyacinths and other Dutch Bulbs have arrived in excellent condition, and comprise all the best and most useful varieties.
J. G. has an immense stock of all the choicest kinds of Pinks, at 6*s*., 9*s*., and 12*s*. per dozen pairs.
Antirrhinum Seed saved from a first-rate collection, 1*s*. per packet.
Weston Road, and 2, New Bond Street, Bath.

PRICED NURSERY CATALOGUES.
A. PAUL and SON will be happy to forward the following priced Nursery CATALOGUES in return for one postage stamp each:—A, Roses; B, Ornamental Trees and Conifers; C, Fruit Trees; D, Herbaceous Plants; F, Greenhouse Plants, &c.; G, Seeds; H, Hollyhocks; I, Bulbs.—Nurseries, Cheshunt, Herts.

ROSE NURSERIES, HERTFORD.
E. P. FRANCIS' List of ROSES, containing all the new varieties worth cultivating, with a stock of 5000 dwarfs in 150 sorts, most successfully grown on the Manetti Stock, is now ready for delivery, and will be forwarded to any amateur, gratis, on application.

THE PLANTING SEASON.
WM. URQUHART and SONS, Dundee, respectfully intimate that their PRICED LIST may now be had on application.

SUPERB DOUBLE HOLLYHOCKS.
WILLIAM CHATER'S descriptive List of the above splendid flowers, containing hints on their culture, and observations on exhibiting, &c., is now ready, and may be had on application, by forwarding one postage stamp.—Saffron Walden Nursery, November 4.

TULIPS.
HENRY GROOM, Clapham Rise, near London, by appointment Florist to her Majesty the Queen, and to His Majesty the King of Saxony, begs to inform the AMATEURS of TULIPS that his CATALOGUE is ready, and will be forwarded by post on application. He is happy to say that from the superior growth of last spring, he has been enabled to make a considerable reduction in the prices.

HYACINTHS AND DUTCH BULBS.
HENRY GROOM, Clapham Rise, near London, by appointment Florist to her Majesty the Queen, and to his Majesty the King of Saxony, begs to say that he has received his HYACINTHS and DUTCH BULBS, in excellent condition, and that they are much finer than usual. He begs to say he has a few bulbs of Calochortus luteus, and Lilium Thompsonianum still for sale.—his CATALOGUE of BULBS, &c., will be forwarded on application.

AMERICAN NURSERY.
GEORGE BAKER'S DESCRIPTIVE CATALOGUE of AMERICAN PLANTS, &c., as exhibited by him in the Royal Botanic Gardens, Regent's Park, may be had by inclosing two postage stamps.
G. B. begs to call attention to his fine stock of Weeping Hollies, Coniferous Plants, Ornamental Shrubs, &c.—American Nursery, Windlesham, near Baghshot, Surrey, near Staines Station, South-Western Railway, where conveyances may be obtained.

AMERICAN PLANTS.
JOHN WATERER begs to announce that he has published a new Catalogue of his Rhododendrons, &c., as exhibited by him in the Gardens of the Royal Botanic Society, Regent's Park, London. It describes the colours of all the Rhododendrons considered worthy of cultivation, with a Treatise on their successful management, and may be had by enclosing two postage stamps.
The American Nursery, Bagshot, Surrey, near Farnborough Station, South-Western Railway.

AMERICAN PLANTS.—A Descriptive Priced CATALOGUE of HARDY AMERICAN PLANTS for the coming season is just published, and may be had by enclosing two stamps for postage. As everything in the way of American Plants is grown to an unequalled extent at this Nursery, intending purchasers would do well to provide themselves with this Catalogue.
WATERER and GODFREY, Nephews and Successors to the late Hosea Waterer, Knap Hill Nursery, Woking, Surrey.

SAMUEL WALTERS, Helperton and Trowbridge Nurseries, Wilts, offers the following:—

ROSES, perpetual blooming, on 4 to 6-inch stems, clean, of unusual fine growth, well adapted for potting, to force, or to form beds at once. The following at 1*s*. each, or 9*s*. per dozen:— Baronne Hallez, Amandine, Jaune d'Arc, Madame Peppin, Madame Annie, Standard Marengo, La Reine, Reine des Fleurs, Robin Hood, Duchesse de Montpensier, Geant des Battailles Caroline de Sansal, Augustine Mouchelet, De Arnal, Baronne Privost, Lady Alice Peel, Duchess of Sutherland, Sedonie, Souvenir de la Malmaison, Mrs. Bosanquet, &c.

CHOICE CLIMBING ROSES 6*s*. per dozen.

HOLLYHOCKS at 1*s*. each, or 9*s*. per dozen:—Magnum Bonum, Mr. C. Baron, Spectabilis, Enchantress, Lady Braybrooke, Rosy Queen, Elegant, Comet, Ovid, Model of Perfection, Queen, Vivid, Conspicua, Rosa Alba, Bicolor, Obscura, Sulphurea, Perfecta, and Bella Donna.

Also New and Choice GERANIUMS 21*s*. per dozen.

FANCY GERANIUMS, 6*s*. to 9*s*. per dozen.

RARE CONIFERÆ.

ALEX. PONTEY, NURSERYMAN, Plymouth Nursery, Plymouth, begs to inform Gentlemen wishing to add to their Arboretums, that he can supply the following. Most of the kinds are planted in his Arboretum. He can warrant them hardy.

ALEX. PONTEY particularly calls attention to the THUJIOPSIS BOREALIS, which has proved quite hardy, and one of the grandest Coniferæ in cultivation. My specimen plants are now 3 feet high, and show their true character. Lists and prices will be forwarded on application.

N.B. A. P. can offer an extra-sized Libocedrus Chilensis about 6 feet high—splendid specimen.

Abies Whitmaniana	Libocedrus chilensis
Araucaria gracilis	Abies orientalis
Biota glauca	Pinus abchasicus
" stricta	" Nordmanniana
Cephalotaxus Fortuni (male)	" ponderosa
" " (female)	" atlantica
Cupressus Thujiformis	Podocarpus coriacea
" excelsa	" japonicus
" species from the hills of India	" longifolius
" Whitleyana	" nubigera
" Knighti	Taxus elongatus
" mexicana	" nucifera
" squarrosa	" adpressa
Fitz-Roya patagonica	Torreya Humboldti
Juniperus argentea	Thuja filiformis
" nepaulensis	" nepaulensis
" japonicus	" intermedia
" chinensis	" flagelliformis
" oblonga pendula	" asplenifolia
" spherica	" Doniana
	Thujiopsis Borealis
	Wellingtonia gigantea.

Plymouth Nursery, November 4.

CHOICE GREENHOUSE PLANTS, &c.—We beg respectfully to offer the following, all of which are handsome well-furnished plants, and such as cannot fail of giving satisfaction to those who may honour us with their commands.

EPACRIS, in 50 of the most choice varieties, fine bushy plants, 1½ to 2 feet in height, 12*s*. per dozen; smaller do., 9*s*.

ERICAS, fine bushy plants, in 48-sized pots, of all the best kinds in cultivation, 12*s*. per dozen; smaller do., 9*s*. (The above are well deserving the notice of the trade, prices of which may be had on application.)

CAMELLIAS, of the handsomest and most select varieties, well furnished with flower buds, 24*s*. and 30*s*. per dozen.

GREENHOUSE PLANTS, comprising an extensive collection of the choicest kinds, fine selections from which will be made at 12*s*. per dozen.

CINERARIAS, in 20 of the very best and newest kinds, for 25*s*. the set.

MIMULUS, in 6 new and splendid varieties, for 6*s*. the set.

TREE, or PERPETUAL FLOWERING CARNATIONS.—These new and beautiful introductions, so well adapted for *affording a profusion of bloom throughout the winter months*, 18*s*. per dozen.

CARNATIONS AND PICOTEES.

The finest varieties, by name, in strong healthy Plants ... ... 18*s*. and 24*s*. per doz. pairs.
Fine mixed border ditto ditto ... ... 9*s*. "
True old Clove Carnation ditto ditto ... 12*s*. "
PINKS, finest varieties by name ... 9*s*. to 12*s*. "

HOLLYHOCKS, comprising Yellow Model, Penelope, Spectabilis, Meteor, Lady Braybrooke, Swansdown, Walden Gem, Lilac Rival, Magnifica, Comet, Enchantress, Rubens, Pillar of Beauty, and many other fine show varieties, 18*s*. per dozen.

PHLOXES, finest new varieties ... ... 9*s*. per dozen.

PÆONIAS, in 20 choice kinds, for 1*l*.

ROCKETS, per doz.:—New double crimson, 12*s*.; double white, 3*s*.; double purple, 4*s*.

PRIMROSES, per doz.:—Double white, 4*s*.; crimson, 12*s*.; yellow, 5*s*.; purple, 4*s*.; lilac, 4*s*.

BELGIAN DAISIES, in 50 new varieties, 4*s*. per dozen.

HERBACEOUS PLANTS, in very choice variety, 30*s*. per 100, or 6*s*. per dozen.

LILY OF THE VALLEY, strong for forcing, 5*s*. per 100.

HYACINTHS, the finest for glasses or forcing, 9*s*. per dozen.

TULIPS, extra fine, mixed, all from named flowers, 12*s*. per doz.

CHOICE FRUITS (WARRANTED TRUE TO NAME.)

				s.	d.	
APPLES,	Standard, in best selection, good heads,			9*s*.	0*d*.	per doz.
"	Dwarf	ditto	ditto	6	0	"
"	Trained	ditto	ditto	30	0	"
PEARS,	Standard	ditto	ditto	12	0	"
"	Dwarf	ditto	ditto	8	0	"
"	Trained	ditto	ditto	30	0	"
PLUMS,	Dwarf	ditto	ditto	9	0	"
"	Trained	ditto	ditto	36	0	"
PEACHES,	Df. trained, in fine strong plants,			36*s*. to 60	0	"
NECTARINES,	Dwarf trained	ditto		36*s*. to 60	0	"
APRICOTS		ditto	ditto	36*s*. to 60	0	"
CHERRIES,	Standard, in fine variety,		ditto ...	12	0	"
"	Dwarf	ditto	ditto ...	9	0	"
"	Trained	ditto	ditto	36*s*. to 42	0	"

FASTOLFF RASPBERRY (true), as originally sent out by YOUELL & Co., strong, well-rooted canes, 15*s*. per 100; Large White Raspberry, 24*s*. per 100; New Monthly Fruiting, 24*s*. per 100; Belle de Fontenay, 9*s*. per dozen.

GOOSEBERRIES, 25 of the finest varieties (good bushes), selected for size and flavour, 30*s*. per 100, or 4*s*. per dozen.

CURRANTS.—Improved large White Dutch, Black Naples, Raby Castle (red), and large Red Grape, 4*s*. per dozen; Knight's Sweet Red, 6*s*. per dozen. These are the most desirable kinds in cultivation, and are highly recommended.

			s.	d.
ASPARAGUS, Giant, 2 years		per 100	2*s*.	6*d*.
" 3 years			3	6
RHUBARB, Myatt's Victoria		per doz.	8	0
" " Linnæus			8	0
" Mitchell's Royal Albert ...			8	0
" Hawke's Champagne, new		each	2	0
SEAKALE, strong, 1 year		per doz.	5	0
" " for forcing			10	0

All orders of 2*l*. and upwards are delivered carriage free to London, Hull, and Newcastle-on-Tyne, as well as to any Railway Station within 150 miles of the Nursery. Communications by Steamers and Railway to all parts of England, Ireland, and Scotland, as well as the Continent. Post-office orders to be made payable to YOUELL & Co.

YOUELL AND CO., Royal Nursery, Great Yarmouth.

J. IVERY AND SON, NURSERYMEN, &c., Dorking and Reigate, Surrey, feel much pleasure in saying that plants of their two beautiful AZALEAS, CRITERION and ADMIRATION, may now be had from the undermentioned Nurserymen, true to name.

J. I. and SON wish to call intended purchasers' particular attention to this list, as spurious varieties are offered:—

Barnes, Wm., Camberwell	Lane & Son, Berkhampstead
*Bass & Brown, Sudbury	*Lee, Chas. and Jas., Hammersmith
*Cattell, John, Westerham	Low, Hugh & Co., Clapton
*Cunningham & Fraser, Edinburgh	Meillez, M., Lille (France)
Dicksons, Messrs., Edinburgh	Parker, Robt., Hornsey Road
Dixon, E. P., Hull	*Paul, A. & Son, Cheshunt
*Epps, Jas., Maidstone	Perkins, E., Leamington
*Fisher & Holmes, Sheffield	Rollisson, Wm. & Sons, Tooting
Glendinning, R., Turnham Gn.	Turner, Chas., Slough
Henderson, Arthur & Co., Pine Apple Place	*Veitch, Jas., junr., Chelsea
*Ivery, Wm., Peckham	*Walton, H., Edge End, Marsden
*Jackman, George, Woking	Wood & Ingram, Huntingdon
Jackson & Son, Kingston	Wood, Wm. & Son, Maresfield

Additional names to this list will appear in rotation as orders are received.

J. I. & SON also beg to say that plants of their fine hardy CRIMSON RHODODENDRON may be had from the above-named Nurserymen, marked (*), and also from the undermentioned:—

Bunyard, Jas. & Son, Maidstone	Donald, Robt., Woking
Cripps, Thos., Tunbridge Wells	Moore & Son, Birmingham

For particulars and description of this and the Azaleas, refer to *Gardeners' Chronicle* for September 16th, and two following weeks. A remittance or reference is respectfully requested from unknown correspondents.—Reigate, Nov. 4.

THE AMERICAN NURSERY, BAGSHOT, SURREY.

JOHN WATERER begs to recommend to the attention of Gentlemen and others engaged in Planting, the following plants from his general Stock, they are in fine healthy condition. The American Plants annually exhibited at the Royal Botanic Gardens, Regent's Park, are supplied from this establishment.

RHODODENDRONS.—The following is a selection of the most admired scarlet, rose, and high-coloured varieties in cultivation; are perfectly hardy, and bloom for the most part during the month of June.

Blandyanum, fine rosy crimson	5*s*. to 7*s*. 6*d*.	each.
Lady Eleanor Cathcart, vermilion rose and dark crimson spots	21*s*. 0*d*.	"
Lady Wenlock, bright crimson	21*s*. 0*d*.	"
Atrosanguineum, dark scarlet...	10*s*. 6*d*.	"
Alaric, dark purplish crimson	7*s*. 6*d*.	"
Omer Pasha, dark crimson, new	10*s*. 6*d*.	"
Juba, crimson, intensely marked	10*s*. 6*d*.	"
Lefevreanum, crimson, tinged with purple	10*s*. 6*d*.	"
Attila, dark crimson	7*s*. 6*d*.	"
The Grand Arab, fine glowing crimson	7*s*. 6*d*.	"
Brayanum, crimson	10*s*. 6*d*.	"
Nobleanum bicolor, crimson, white eye	7*s*. 6*d*.	"
Vandyke, light crimson...	10*s*. 6*d*.	"
Blatteum, dark purplish red	7*s*. 6*d*.	"
Rubens, light rose	10*s*. 6*d*.	"
The Duke of Norfolk, clear rose, fine	10*s*. 6*d*.	"
Celebrandum, dark crimson purple	10*s*. 6*d*.	"
Rembrandt, fine crimson	10*s*. 6*d*.	"
Congestum roseum, fine rose, well marked	21*s*. 0*d*.	"
Roseum novum, clear rose	10*s*. 6*d*.	"
Leopardi, rosy purple, and very much marked ...	5*s*. 0*d*.	"
Floribundum coccineum, fine	10*s*. 6*d*.	"
Erectum, good crimson	7*s*. 6*d*.	"
Towardianum, large rose, fine...	10*s*. 6*d*.	"

For planting extensively, no kinds of Rhododendrons are better calculated for a display than the varieties of the noble Catawbiense; they are all perfectly hardy, producing fine trusses of blooms of various hues—scarlet, rose, purple, white, and spotted white. The list below contains the leading kinds:—

Catawbiense, good bushy plants, 50*s*. to 63*s*. per 100.
" larger, 1½ to 2 feet, 12*s*. to 18*s*. per doz.
" seedlings, fine bushy plants, 12*s*., 18*s*. to 24*s*. per doz.

Catawbiense bicolor	Gloriosum
" splendens	Sherwoodianum
Album elegans	Bouquet de Flore
" grandiflorum	Melanthauma
Celeste	Pictum
Cyaneum	Roseum elegans
Candidum	Victoria
Delicatissimum	Maculatum nigrum
Egregium	" purpureum
Everestianum	Macranthum
Finibriatum	Nivaticum
Mirandum	Perspicuum
Lindsayanum	

Good strong well established bushy plants, 30*s*. to 42*s*. per doz.
Larger plants can be supplied at a corresponding advance of price.

STANDARD RHODODENDRONS.—Of these, without doubt we possess the largest stock of really good kinds. Nothing can be more imposing when in bloom than a handsome standard. We have them 3 feet to 5 feet stems, and handsome symmetrical heads. The price of such would range from 42*s*. to 105*s*. each.

Rhododendron ponticum, good plants, 10*s*. 6*d*. per 100; larger, 1 to 1½ to 2 feet, 12*s*. 6*d*., 15*s*. to 25*s*. per 100. This is especially worthy the attention of planters; it will thrive in any soil, and in the most severe weather; is never injured by hares or rabbits. Unquestionably it is by far the best shrub for under cover.

KALMIA LATIFOLIA, good bushy plants, 60*s*. per 100; larger, 12*s*., 18*s*. to 24*s*. per dozen.

HARDY HEATHS, in 20 fine, named, varieties, many of them well suited to form edgings for larger clumps, 35*s*. to 42*s*. per 100.

HARDY AZALEAS.—A good assortment, if left to our selection, suitable for extensive planting, 1 to 1½ and 2 feet, 3*l*. 3*s*. per 100. The very best selected Ghent and other varieties, 18*s*. to 30*s*. per dozen. These produce flowers of all colours—scarlet, rich orange yellow, rose, and white.

STANDARD ROSES, of the most approved Perpetual and Bourbon varieties, 3 to 4½ feet stems, 18*s*. per dozen.

PINUS Douglasi, handsome seedling plants, 3 to 4 and 6 feet.
" insignis; we strongly recommend our stock of this justly admired Fir, all of which are from seed, 2 to 3, 4, & 5 ft.
" cembra, 3 to 4 and 5 feet.—Pinus excelsa, 3 to 6 feet.
" macrocarpa, 2 to 3 feet.
" Lambertiana, very handsome, 3 to 4 feet.
Araucaria imbricata, splendid formed specimens, 2 to 4 feet.
Cedrus deodara, of all heights, from 1 to 8 feet. We have a large quantity about 4 to 6 feet.
" Africana, 3 to 4 feet.
" Lebanon, handsome grown specimens, 3 to 6 feet.
Cryptomeria japonica, 3 to 12 ft.—Libocedrus chiliensis, 2 to 3 ft.
Fitzroya Patagonica, 2 feet.
Cupressus Goveniana, 3 to 4 feet.
" Lambertiana, 3 to 4 and 5 to 6 feet.
Irish Junipers, 4 to 5 feet.—Irish Yews, 4 to 8 feet.

The above-named Coniferous Plants have been frequently transplanted, are perfect specimens, and have never been grown in pots. Prices will be forwarded on application.

J. W. begs respectfully to solicit an inspection of his stock, from those who are engaged in planting. A Catalogue, containing full descriptions of his celebrated Collection of Rhododendrons, as exhibited by him at the Royal Botanic Gardens, Regent's Park, can be obtained by inclosing two Postage Stamps.

TO GENTLEMEN ENGAGED IN PLANTING.

JAMES GRAHAM, successor to Messrs. Silverlock and Son, respectfully invites attention to his stock of hardy Ornamental Trees and Shrubs, fine large transplanted Forest Trees, Trained Peaches, and Nectarines on walls, Apricots, Plums, Apples, Pears, Cherries, &c.; Figs, Gooseberries, Currants, Strawberries, &c.; Grape Vines from eyes, Archangel Mats, Mushroom Spawn, Dutch Bulbs and Seeds, improved Sion-house Cucumber Seed, 2*s*. per packet. N.B. Gardens and Pleasure Grounds laid out and planted.—Northgate Nursery, Chichester.

TO GENTLEMEN ENGAGED IN PLANTING.

WATERER AND GODFREY respectfully invite attention to their stock of the following very desirable HARDY PLANTS.

Araucaria imbricata, from 2 to 7 feet high; as handsome as plants can be.	Pinus canadensis, 3 to 8 feet
Cedrus Deodara, in any quantity, from 1 to 3 feet high	Cupressus macrocarpa or Lambertiana, 4 to 7 feet
Do. do., 4, 5, 6, 7, 8, and 10 feet high; splendid plants	" thyoides variegata, 3 to 4 feet (the variegated white Cedar)
Cedars of Lebanon, 3, 4, 6, and 10 feet high	Juniperus, Upright Irish, perfect columns, 3 to 7 feet
Pinus Douglasi, 3 to 10 feet	" chinensis, 2 to 8 feet
" insignis, 2 to 7 feet	Yew, common English, 3 to 8 feet
" Menziesi, 3 to 7 feet	" Irish, 4 to 10 feet
" pinsapo, fine plants, 3 to 6 feet	" gold-striped, 1½ to 3 feet
" Nordmanniana, 1½ to 3 ft., all from seed and remarkably handsome	" do., tall standards, 4 to 7 ft.
" nobilis, 1½ to 2 feet; a few larger, 5 and 6 feet high, on their own roots, and with perfect leaders	" Dovaston, or Weeping, worked on tall straight stems
" Montezumæ, 2 to 4 feet	Thuja aurea, the finest plants in the country
	Libocedrus chilensis, the finest plants in the country
	Large variegated Hollies
	" Standard Bays

Also an immense stock of large Evergreens, Standard Ornamental Trees, &c.

All the plants here offered may be seen, growing in our nursery; they are removed every year, and will travel any distance with perfect safety. Of some, such as Araucarias, Deodaras, Golden Yews, Thuja aurea, Pinus nobilis, Nordmanniana, we have any quantity; and the plants, for root and branch, are not to be surpassed. Priced Catalogues will be forwarded on application, enclosing two postage stamps, to WATERER and GODFREY, nephews and successors of the late Hosea Waterer, Knap Hill Nursery, Woking, Surrey, near the Woking Station, South-Western Railway, where all trains stop, and where capital conveyances can be obtained.

The 2*d*. stamp will also include a descriptive Catalogue of their American Plants, Roses, and Nursery Stock in general.

EARLY MONARCH RHUBARB.—The earliest and best variety ever offered to the public.

J. F. Wood, Esq., F.H.S., Editor of the "Midland Florist and Suburban Horticulturist," says—"I am highly delighted with the Early Monarch, and can confidently recommend it as the very best early Rhubarb grown. . . The foliage also is peculiar and very beautiful. . . For colour, size, and precocity, it is most assuredly worthy of very extensive cultivation; it is a decided acquisition."—Roots, 2*s*. 6*d*. each, or 24*s*. per dozen.

Also CRIMSON KING, very early, good size, fine flavour, and crimson colour, 5*s*. per root, or six for 24*s*.

Apply to Mr. JOHN BAILEY, Shooter's Hill, Longton, Staffordshire.

BARCHARD'S SEEDLING APPLE.—This beautiful Apple was raised from seed by Mr. Higgs, upwards of 20 years gardener to Mrs. Barchard, by whose kind permission he now begs to offer it to the Nobility and Gentry. It has been twice shown to Mr. Thompson, and also cut up at the Horticultural Society's Rooms, Regent Street, where it was highly approved of, and considered to be of first-rate quality; in proof of which Mr. Thompson's opinion of it is given:—

"BARCHARD'S SEEDLING.—Fruit received from Joseph Barchard, Esq., in whose garden it was raised, and fruited for the first time in the present season. Fruit middle size, roundish oblong, obtusely angular; eye rather deeply sunken, surrounded with projecting folds; stalk short, not deeply inserted; skin dark shining red next the sun, streaked towards the shaded side, which is of a pale orange tinge; flesh yellowish white, tender, with a rich brisk sugary flavour. This sort is worthy of cultivation.—ROBERT THOMPSON, Sept. 22, 1852."

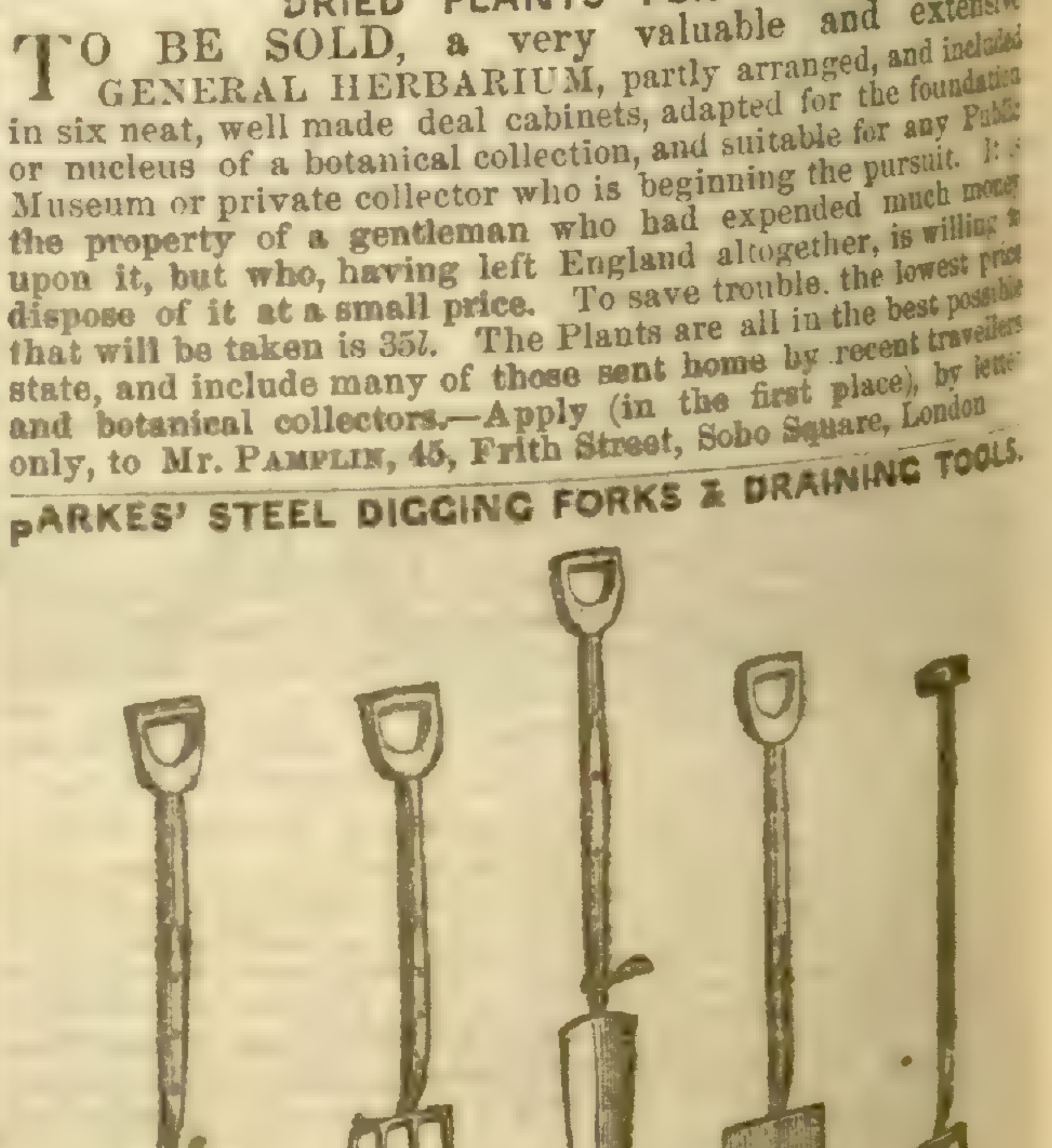
It is also described as first-rate quality in the Catalogue of New Fruit in the Horticultural Journal of October 1, 1853, vol. viii., where a full description of it is given. The whole of the stock is in the hands of Mr. Dancer, of the Fulham Nursery. Strong one-year old plants, 5*s*. each; extra strong plants, two years old, 7*s*. 6*d*. each.

All Post Office Orders directed to Mr. MATHEW HIGGS, Putney Heath, payable on the Putney Post Office, will be promptly attended to, and good strong plants immediately forwarded.

DRIED PLANTS FOR SALE.

TO BE SOLD, a very valuable and extensive GENERAL HERBARIUM, partly arranged, and included in six neat, well made deal cabinets, adapted for the foundation or nucleus of a botanical collection, and suitable for any Public Museum or private collector who is beginning the pursuit. It is the property of a gentleman who had expended much money upon it, but who, having left England altogether, is willing to dispose of it at a small price. To save trouble, the lowest price that will be taken is 35*l*. The Plants are all in the best possible state, and include many of those sent home by recent travellers and botanical collectors.—Apply (in the first place), by letter only, to Mr. PAMPLIN, 45, Frith Street, Soho Square, London.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.



MESSRS. BURGESS AND KEY, as Mr. PARKES' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps. 103, Newgate Street, and 52, Little Britain, London.

NEW CLIMBING HYBRID PERPETUAL ROSE,
THE "DUCHESS OF NORFOLK."—Colour, Vivid Crimson.
To be sent out for the first time about the end of October.

WILLIAM WOOD AND SON beg to refer to their advertisement in the *Gardeners' Chronicle* of September 30, page 627. Standards, half-standards, or dwarfs will be supplied at 10s. 6d. each, with the usual allowance to the trade.

N.B. When six plants or more are ordered by the trade, a very considerable reduction will be made beyond the usual discount, particulars of which may be had on application.

A Drawing of the above may be had for 6 Postage Stamps.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

GEORGE JACKMAN begs to announce that he has just published a new and complete CATALOGUE of his Ornamental Evergreens, Conifers, Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., and may be had on application by enclosing two postage stamps.

Woking Nursery, 1½ mile from Woking Station, South Western Railway, where all Trains stop, and where capital conveyances may be had.—November 4.

NICHOLSON STRAWBERRIES REDUCED IN PRICE.

WILLIAM NICHOLSON is now sending out strong well-rooted Plants of his four new and distinct Strawberries, viz., AJAX, a very fine large dessert fruit, very beautiful, solid, and juicy; RUBY, ditto, a great bearer, and forces well; CAPTAIN COOK, market fruit, large, and a great bearer; FILLBASKET, ditto, 6s. per 100, box included. Most of the old and new sorts can be supplied.

*** See Mr. J. W. Kinmont's remarks on the above Strawberries, printed in No. 31, 1854, page 501, of this Paper.

Post-office Orders, payable at Yarm, Yorkshire, or a cash remittance required with the order.

Egglescliffe, near Yarm, Oct. 28, 1854.

OMER PACHA STRAWBERRY.

WILLIAM JAMES WARD has still to spare a few more well-rooted plants of the above excellent Strawberry. Testimonials of the highest order. See advertisement in the *Gardeners' Chronicle*, August 26; also in the Descriptive List of New Fruits in the "Florist and Fruitist," Sept. Number, accompanied with a woodcut.

100 Plants	£3 0 0	25 Plants	£1 0 0
50 ,, ...	1 15 0	12 ,, ...	0 12 0

Prospect Hill, Reading, Nov 4, 1854.

MYATT'S new Seedling Strawberry, "ADMIRAL DUNDAS."—This is the most extraordinary variety, for size and productiveness, that has yet been raised at Manor Farm; it is much larger and a better flavour than either the Surprise or Mammoth, and ripens off the late fruit to advantage.

J. M. & Sons can confidently recommend this, as being superior to any large variety that has come under their notice.

Strong, well-rooted runners are now ready, and will be carefully packed and delivered free to any part of London, at the following scale of charges:—100, 50s.; 50, 30s.; and 25, 16s. Also strong Plants of Myatt's British Queen, Cinquefolia, Eleanor, Surprise, Globe, Eliza, Hooper's Seedling, Keens' Seedling, Black Prince, and Barnes' Bicton Pine, 5s. per 100.

Manor Farm, Deptford, November 4.

THE PERPETUAL TREE VIOLET, or DOUBLE VIOLA ARBOREA.—The original grower of this, the true variety of the above beautiful Violet, now offers it to the public; it has surpassed all others, and now stands without an equal for its size of flowers, fragrance, and perpetual blooming; and as a plant for the Conservatory or Greenhouse, nothing can equal it. Large plants, 6s. per dozen; smaller ditto, 3s.

DOUBLE WHITE TREE VIOLET.—This is also a fine variety, and resembles the other in many respects, with the exception of its colour. The stock of this is small, in consequence of the great demand for it last season; parties requiring plants should not delay their orders. 6s. per dozen.

THE RUSSIAN SUPERB VIOLET.—One of the finest of single Violets, large blooms, with long stems, and most delightful fragrance; will bloom well through the season if sheltered from the heavy rains and severe frosts during the dead of winter. Plants 3s. per dozen.

A TREATISE on the best and most effectual mode of cultivating the VIOLET, post free for 12 stamps, or sent gratis with all orders above 5s.

GIANT SCARLET BROMPTON STOCK plants are now ready for planting out; the spikes of flower are very large, (measuring from 18 to 24 inches in length) and so fragrant that they are admired by all who have seen them. Fine strong plants, 6d. per dozen, or 4s. per 100.

STRAWBERRY PLANTS.—Good strong plants of the following superb varieties can be supplied:—Nimrod, 10s. per 100; Prince of Wales, 10s. do.; Ajax, 5s. do.; Ruby, 5s.; Myatt's Eleanor, 3s. do.; British Queen (true), 3s. do.; Black Prince, 3s. do.; Cremont's Perpetual, 3s. do.; Victoria, 5s. do.; Surprize, 3s. do.; and a great number of other good old varieties, at 3s. per 100.

POLYANTHUS SEED, saved from the best laced varieties, 1s. per packet.

ANTIRRHINUM SEED, all saved from the best named varieties, 1s. per packet.

EXTRA FINE SWEET WILLIAM SEED, saved from all the best and most beautiful varieties, 1s. per packet.

VERY SUPERIOR WELL RIPENED HOLLYHOCK SEED, 1s. per packet.

LORD KEYNON'S FAVOURITE CUCUMBER is the best and most productive for winter cultivation ever grown, requiring less heat than any other of the kind. It is a very handsome fruit and free setter. Good old seed of the above true variety may be had, price 2s. 6d. per packet.

The Violets and Seeds will be sent postage free, but the Strawberry Plants and Stocks will be sent by hamper, package free.

Any of the above will be forwarded on receipt of Post Office Order, or Penny Postage Stamps, for the amount by

EDWARD TILEY, Nurseryman, Seedsman, & Florist,
14, Abbey Churchyard, Bath, Somersetshire.

TO THE AGRICULTURISTS OF ENGLAND.

HARRADINE'S "NE PLUS ULTRA" WHEAT.—A single ear of this wonderful Wheat, which was purchased five years ago of a soldier on tramp, who brought it from some distant country, was sown in 1849: the produce of this was again sown in 1850, and also in 1851, when it yielded at the rate of 19 coombs, 1 bushel, and 1 peck per acre. This induced me to continue its cultivation. A sheaf and a quantity of corn will be shown on Messrs. Garratts' Stand in the Agricultural Department of the Crystal Palace, by which its quality and general character may be seen.

The following Gentlemen kindly lent me portions of their land last season, to test the producing quality of the Wheat, and up to this year not one kernel has been sold for seed. The quantity sown on all the varieties of soil has in no instance exceeded 4 pecks per acre. On land of Mr. Wasdale, in the parish of Woodhurst, this Wheat was sown after Tartarian Oats, Clover, Seeds, Peas, and Tares (some being sown in February, and equally productive). On land in the occupation of Mr. Gadsby, in the parish of Godmanchester, 1 acre, the yield of which has been 30 per cent. over his own Wheat, grown in the same field, and has been tested by several Agriculturists in the neighbourhood. On land in my own possession, in Needingworth and other places (both Fen and Highland), it has been sown after Wheat, Clover, Barley, Beans, Oats, and Fallow, and in every instance has been most productive.

I am prepared to part with a limited quantity, which can be had on application to me, at 25s. a bushel. All orders to be accompanied by a remittance.

JOHN THANG HARRADINE, Needingworth, St. Ives,
Huntingdonshire.

CRIMSON PERFECTION RHUBARB.

ROBERT SALT, of Longton, Staffordshire, begs to inform the Gentry and Nurserymen that this splendid variety of Rhubarb is now ready for distribution, and shall feel happy to serve parties who may favour him with their orders.

R. S. begs to state that it is the most splendid, early, and prolific variety ever offered to the public. Orders addressed to Robert Salt, Longton; Messrs. Hurst and M'Mullen, 6, Leadenhall Street, London; Messrs. Burgess and Kent, Penkhull; Messrs. Francis and Arthur Dickson, Eastgate Street, Chester; Mr. Wood, Nurseryman, Nottingham, will have immediate attention. Price 7s. 6d. per root, three for one guinea, and six for 2l. A liberal discount allowed to the Trade. A Post-office Order from unknown correspondents.

THE LARGEST AND CHEAPEST ESTABLISHMENT IN ENGLAND for Geraniums (show and fancy), French Geraniums, Fuchsias, Verbenas, Fairy Roses, Chrysanthemums, Heliotropes, Cinerarias, Calceolarias, Primulas, and other soft-wooded plants, is the Floral Nursery, Acton Road, Turnham Green, near London. More than 250,000 plants are there cultivated annually.

For further particulars, see Advertisement in last week's *Chronicle*. Catalogues forwarded to all parts gratis.

Every possible exertion will be made to give the most perfect satisfaction to all who may favour this Establishment with their patronage. None but thoroughly established Plants will be sent out, and full reliance may be placed on prompt attention and fair dealing.

The Trade will be liberally dealt with. Provincial Nurserymen and Florists will do well to try this Establishment.

Terms cash or a satisfactory reference.

JOHN WESTWOOD, Proprietor.

SUPERB DOUBLE HOLLYHOCKS.

JOSEPH BUTLER, Gardener to R. Hills, Esq., Colne Park, near Halstead, Essex, begs to announce that he has now ready for sending out a large stock of extra strong plants of nearly all the varieties yet sent out; also some superb new varieties of J. B.'s own raising.—Descriptive Catalogues will be sent post free on the receipt of a postage stamp; also Seed saved from J. B.'s superb collection; 150 Seeds mixed for 12 postage stamps. Collections, consisting of well contrasting colours, at 6s., 10s., 15s., and 25s. per dozen; if left to J. B.'s own selection good double contrasting colours for Borders, not named, 4s. per dozen. A remittance is solicited from unknown correspondents. Post Office orders, payable at Halstead, Essex.

DOWLING'S NEW PLUMS.—These admirable varieties were raised by Mr. Henry Dowling, Woolston Laune, near Southampton, and are again offered for sale, viz.:—

ANGELINA BURDETT PLUM, each ... ... 5s.
BLACK GAGE ,, ... 5
STANDARD OF ENGLAND ,, ... 5

These varieties are particularly recommended for productiveness and excellent flavour, producing an abundance of fruit in a dwarf state in the open ground. Strong Dwarf and Standard Plants now ready at Woolston Laune, or Mr. Charles Turner's, Royal Nursery, Slough, near Windsor.

N.B. A very great reduction to the trade by taking 6 or 12 of each. Terms on application.

MESSRS. E. G. HENDERSON AND SON, of the Wellington Nursery, St. John's Wood, London, beg to announce that the following New Plants are now ready for sending out by them, viz.:—

HELIOTROPIUM "BEAUTY OF THE BOUDOIR."
CHRYSANTHEMUM "ANNIE HENDERSON."
GERANIUM "PRETTY POLLY," hybrid bedding variety.
ACHIMENES HENDERSONII.

FANCY GERANIUMS.

Cloth of Silver | Evening Star | Crystal Beauty

CINERARIAS.

Mrs. Rogers | Fascination
Mrs. Gerard Leigh | Prince of Prussia

And the New RHODODENDRONS of Assam and Bhootan.

Full particulars of the above will be seen on reference to their Autumn Catalogue, just published, which will be forwarded post free on application.—November 4.

ARTHUR HENDERSON AND CO. beg to inform their patrons and the public that their CATALOGUES OF BULBS are now ready, and they will have much pleasure in forwarding them on application.

They comprise lists of all the finest varieties of Hyacinths, and many other rare and valuable Bulbs.

Their collections of Hyacinths have yearly carried off the metropolitan prizes, not only for their unique growth, but also for their beauty of colouring and distinctness of sorts, either when exhibited in a collection of 36 plants or in pairs.

Their new descriptive Fruit Catalogues, Ornamental Trees and Shrubs, American Plants, choice Rhododendrons, Roses, &c., can be had on application.

Pine-apple Place, Edgeware Road, London.

TO THE SEED TRADE.

BEAUTIFUL NEW CALIFORNIAN ANNUALS.

MESSRS. VEITCH AND SON are now prepared to supply SEEDS of the following recent introductions which were sent them by Mr. Wm. Lobb, and are at present solely in their own possession. They are certainly three lovely additions to our hardy Annuals, and cannot fail to give general satisfaction.

ESCHOLTZIA TENUIFOLIA.

This lovely dwarf Annual is peculiarly adapted for forming masses, or for Edgings to beds. It is of a delicate clear straw colour, of neat compact habit, about 9 inches in height; its foliage being small and producing its flowers in abundance at the same time, renders it very attractive.

It was exhibited at the last July Chiswick Show, and had the First Class Certificate awarded it.

Dr. Lindley in the report of this show, in the *Gardeners' Chronicle*, of July 15th, describes it as—"The charming Esch. tenuifolia, quite different from the old species, dwarfer and neater."

It is figured in Curtis's "Botanical Magazine," Oct. 1854.

LEPTOSIPHON AUREUM.

This very pretty little plant is of a bright golden colour, dwarf compact habit, is very showy, and has a beautiful effect in small beds.

It is also well adapted for growing in pots or boxes for Greenhouse Decoration.

It is a Californian species, and is altogether distinct and very superior to Leptosiphon luteum.

WHITLAVIA GRANDIFLORA.

This very fine thing has large dark violet bell-shaped flowers, which are produced in abundance.

It is figured in the October number of Curtis's "Botanical Magazine," and the following is what Sir William Hooker says of it:—

"This beautiful annual has attracted the attention of all lovers of Horticulture at the Chiswick Exhibitions of the present summer (1854), having been sent by the Messrs. Veitch, from their Nurseries at Exeter, and King's Road, Chelsea. The seeds had been the year before sent home from California by Mr. William Lobb.

Dr. Lindley, in his notices of new plants in the *Gardeners' Chronicle*, of Oct. 21, describes it "as the gem of the season in the class of hardy annuals."

It was exhibited at Chiswick in July last, and had a first class Certificate awarded it.

Prices of the above will be forwarded to the trade on application.
Nurseries, Exeter and Chelsea, Nov. 4.

CHATERS' SEEDLING PANSY, PICOTEE.

J. CHATER AND SON beg to announce that they intend sending out after the 20th October, their SEEDLING PANSY named PICOTEE, in strong plants, 5s. each. Pure white ground, beautifully edged with azure blue; eye large, fine form and substance. The margin of this flower resembles a fine Picotee.

Also Hollyhock Seed, from the best sorts, in packets containing 200 Seeds, 1s. 6d.; 400 Seeds, 2s. 6d.

Fine Plants of splendid Sweetwilliam, 1s. 6d. per dozen; 10s. per 100.

Choice Pansy Seed, 1s. to 2s. 6d. per packet.

A catalogue of the best Hollyhocks, Pansies, Roses, and Pinks, can be had on application to J. Chater & Son, Nurseries, Haverhill, Suffolk.

JOHN CATTELL, Westerham, Kent, begs to inform the public that his Descriptive Priced CATALOGUES of his extensive collection of NURSERY STOCK for the current season, are now ready, and may be had on application, enclosing a penny stamp for each, excepting Catalogue No. 10, which will require two penny stamps.

Catalogue No. 6.—GRAPE VINES, STRAWBERRIES, RASPBERRIES, &c.
,, No. 8.—ROSES.
,, No. 9.—FRUIT TREES.
,, No. 10.—HARDY ORNAMENTAL TREES AND SHRUBS, CONIFERÆ, AMERICAN PLANTS, CLIMBERS, &c.
,, No. 11.—FOREST TREES, &c.

The Gardeners' Chronicle.

MONDAY, NOVEMBER 4, 1854.

MEETINGS FOR THE ENSUING WEEK.

Tuesday, Nov. 7—Horticultural .... 2 p.m.

It may be as well to remind our readers that the next meeting of the Horticultural Society will be held next Tuesday, in Regent Street, at 2 o'clock. Subjects of exhibition must be delivered not later than 11 A.M.

Mr. Thomas Wickstead, in his report to the Metropolitan Commissioners of Sewers, makes the following statement respecting one of the schemes for saving the sewage water of the metropolis for manure. "The main pipage required will be equal to 1236 miles, varying in diameter from 38 inches to 12 inches. The steam power required will be equal to 16,152 horses, working under a pressure equal to a column of water of 500 feet. The capital required will amount to nearly 12,000,000l. sterling. The quantity of coals required per annum will be about 170,000 tons. The annual cost for coals, labour, stores, and repairs for engines and buildings will amount to 240,000l. sterling." This he thinks enough to show that the liquid scheme, even if it could be carried out as proposed, is not feasible. Moreover, "when, in addition to what has been stated, it is borne in mind that the basis upon which the calculation rests is upon the assumption first that the whole of the sewage water could be collected into one central spot; secondly, that 12 38-inch radial pipes could be laid in straight lines from this central point; thirdly, that the circle of 66½ miles in diameter round the metropolis is a flat plain, and that the Surrey hills on the south, and the Middlesex and Hertfordshire Hills on the North, do not exist; fourthly, that a sufficient number of landed proprietors could be found within the proposed extent of district to use so large a quantity of one kind of manure; and as the supply must be constant, to construct covered reservoirs on their lands to hold the supply during such periods as it is not being actually poured upon the land; and unless these to me impossible conditions can be complied with, the estimate for 12,000,000l. will be found much too small;—I think the Commissioners will agree with me that such a scheme for the disposal of the sewage water of the metropolis should not be entertained." We venture to think that the projector who does not agree with Mr. Wickstead must be very mad indeed.

Mr. Wickstead is, however, one of those who think that sewage may be solidified by means of lime; the supernatant fluid, which would be pure, being run off. But when we find that the utmost value which he can himself place upon the solid residuum is 2l., or 2l. 2s. a ton, we should greatly doubt the wisdom of entering into such a speculation as he advocates.

For ourselves we entertain the conviction that London sewage can never be removed except through the Thames; that it is too worthless a material to afford any adequate return for the cost to be incurred either in purifying, or solidifying, or wasting it. The cost of removal must be defrayed out of rates; and if it is resolved that the Thames shall cease to be a common open sewer for the metropolis, then the sewage must be directed, when it reaches the river, into two main covered aqueducts or culverts, built close inshore along either bank, and carried as far towards the sea as may be expedient; if carried to the Nore, so much the better. People living on the banks of the river might intercept the sewage and apply it to their land if so disposed. Quays might be constructed over the huge culverts so as to conceal them, and

those quays might form admirable wharves where wanted. Blackwall exemplifies our meaning. Where the culverts passed the mouths of docks and similar inlets, some means must be taken to carry the sewage downwards; but difficulties of such a kind would scarcely impede the operations of our modern engineers. The cost of such a scheme would of course be considerable; but not greater than could be defrayed by a small rate levied upon the whole metropolitan district.

In another part of to-day's columns will be found an allusion to the wonderful beauty of a plant called Gynerium argenteum now growing in the garden of the Horticultural Society. This glorious plant is still so little known that it seems desirable to bring it more prominently into notice than has hitherto been done.

In the first volume of Paxton's "Flower Garden" it was spoken of in the following manner:—

"This noble plant, now called the Pampas Grass, in consequence of its inhabiting the vast plains of South America so named, has been introduced within a few years through Mr. Moore, of the Glasnevin Botanic Garden. Although but a Grass, it will probably form one of the most useful objects of garden decoration obtained for many years. In stature it rivals the Bamboo, being described as growing in its native plains several times as high as a man. The leaves are hard, wiry, very rough at the edge, not half an inch broad at the widest part, of a dull grey-green colour, much paler below. They are edged by sharp points or teeth, little less hard than the teeth of a file. The flowers appear in panicles from 1½ to 2½ ft. long, resembling those of the common reed, but of a silvery whiteness, owing to their being covered with long colourless hairs, and themselves consisting of colourless membranous glumes and pales."

To this we have little to add, but that little is important. It is now ascertained beyond all doubt that no amount of frost experienced near London, even although associated with incessant rain, in any degree affects the health of the plant. The specimen in the garden of the Horticultural Society has acquired the following dimensions:—

Height from ground to curve of leaves ...	7 ft.
" to summit of the plume of flowers ...	11 ft.
Diameter of the tussock	9 ft.
Length of one of the leaves	8 ft.
Number of flower plumes	17
Length of do.	2 ft.

Let the reader conceive such to be the magnitude of one single individual of a reedy grass, whose grey hard narrow leaves curve most gracefully from the centre to the circumference, forming a thin but huge tuft; add to this many slender flower-stems darting into the air, and gracefully poising on their summits a white airy mass of light scales, whose polished surface can only be rivalled by the delicate work of the silversmith; place this a little above the eye among rocky ground, let it be well backed up by some dark foliage, and a faint idea may be formed of the general appearance of the Pampas Grass. Or the annexed cut, representing a young plant, before the form of the tussock was established, may be used as an aid to the imagination.

We believe that the oldest specimen near London is that in the garden of Robert Hutton, Esq., of Putney Park; the next is what our reporter mentions in the collection of the Horticultural Society. At present the plant is very rare; all or nearly all those which we have heard of deriving their origin from a common source, the Glasnevin Botanic Garden, near Dublin, whence they have been liberally given away. No certain means of propagating it has yet been discovered, though we presume that might be effected by tearing to pieces a large tussock; a process to which the fortunate possessors of the plant not unnaturally demur. It is therefore clear that we must look to its seeds, if the plant is to become common, as it should be. But it flowers so late in England that we are not likely to save seeds ourselves, and must trust to its native stations and the activity of travellers.

But here is another difficulty. We are unable to say with certainty where the species grows wild. The Prussian botanist Sellow is reported by Nees v. Esenbeck to have found it at Monte Video, and we know that vast tracts (Pampas) near that city, and in all the adjoining country, are covered with what is familiarly called Pampas Grass. But we have no certainty that the name is applied to one large Grass only, and that our Gynerium is that one. It may be, and probably is, a collective term, including various species; at any rate, Sir Francis Head speaks of the "plain of brown Grass" on the Pampas, which is by no means applicable to a plain of Gynerium. In Miers' travels we have failed to trace it; but in truth writers of books of travel so invariably eschew an index that their works are useless to any except men of great leisure. Dr. Hooker's "Himalayan Journal" is the greatest exception we can call to mind; and a most honourable exception it is. That the Argentine provinces really produce the plant we do not doubt: but we have no means of indicating its whereabouts.

According to the same authority as that already quoted, Dr. Von Martius collected Gynerium argenteum near Rio Janeiro, and in the province of St. Paul. But we have no locality given; it is not a little remarkable that Gardner, who must have been struck by the beauty of so remarkable a plant, is silent as to its existence; the only expression that we can find having a possible allusion to its existence is a statement that "large Grasses" grow on the Corcovado, a well-known mountain at the back of Rio.

In this uncertainty we invite information from all who have any acquaintance with Monte Video or Brazil; for if a precise station can be given in either of these countries, we entertain no doubt that commercial enterprise will soon secure the seed in abundance.

We regret to announce the death, on the 27th inst., in Cornwall Street, Plymouth, of Mr. John Powney, nurseryman, aged 91 years. The Plymouth Nursery, in King Street, originated with him, and owes its reputation to his perseverance, skill, and enterprise. He leaves behind a feeling of universal regret for the departure of a sincere Christian and truly worthy man.

VEGETABLE PATHOLOGY.—No. XLIV.

195. What is Disease, within the Meaning of the term as used in general by Cultivators? Those readers who have carefully followed up the several particulars relative to the healthy condition of vegetables, which it has been considered necessary to bring forward with a view to show more clearly those changes of structure or condition which are to be included under the denomination of disease, will have already gathered many particulars by the way, both as regards facts and principles, and will in some measure perceive in what cases remedies are hopeless, and in what there may be some prospect of modifying disease where it cannot be wholly removed. It is, however, of great importance, before we consider the diseases themselves to which the vegetable world is subject, that we should first have a clear notion what is meant by disease, for the term is not altogether of precisely the same latitude as when used in the science of medicine. In both cases, indeed, some ideal standard is assumed of healthy condition, and every departure from that standard is regarded as morbid; but in either case the normal standard is not the same.

196. The objects of cultivation, except as regards mere botanical species, are seldom in precisely the same conditions as those under which they occur in free nature. The parts which render them worthy of attention, are sometimes the leaves, sometimes the seeds or fruit, sometimes the bulbs or tubers, and sometimes the young stems; and in almost every case, the tendency of cultivation and the main object which the cultivator has in view, is the abnormal increase of those parts, and at the same time a proportional diminution of others less useful, so far, at least, as such a decrease may be consistent with the main end. In many instances the point is to encourage the development of cellular tissue in some particular part; but in most, at the same time, there is a concurrent end, viz., the increase of the peculiar matters, whether starch, sugar, pectine, &c., which the cells are calculated to contain. Sometimes, as in the case of Lettuce, Celery, or Asparagus, and, indeed, wherever exclusion of light is the proper mean, the efforts of cultivation are in a precisely contrary direction; but more generally, as in culinary roots and tubers and the various kinds of fruit and grain, the point is to increase the nutritive matter as much as possible which the several organs naturally tend to produce, while any peculiar secretions are proportionally diminished. Now it is clear that though these productions of agricultural or horticultural skill are unnatural, they cannot be regarded in the light of disease by the cultivator. To produce these conditions and to improve and increase them as much as possible is the grand point to which his skill is directed, and therefore whatever has a tendency to keep them in check and to reduce them to their natural condition is looked upon as calamitous. A striking instance of what is meant may be derived from consideration of our great agricultural shows. The animals which are there exhibited, so fat that they can scarcely walk, and any moderate exertion would be dangerous if not fatal, are the great objects of admiration and of reward, the main point being to produce a breed which within the shortest time shall produce the greatest weight. Such a condition is in reality one of disease, and which in man would justly be so considered and deplored as highly

disastrous; and yet the farmer, so far from regarding it as calamitous, prides himself in any approach to such monstrous developments, because they are the source of profit.

197. While, however, cultivation has a marked tendency to increase nutritious matters, whether available for the general purposes of vegetation or applicable to the wants of man, in most cases it has a contrary effect as regards the peculiar secretion which particular plants produce, and whose utility to the plants themselves is either obscure or wholly unknown. It is, for instance, a matter well known to those who prepare extracts for the purposes of medicine, that a far larger proportion can be prepared from an equal weight of the wild plants than can from the same plant under cultivation. The cultivator may indeed, as in the case of the Hop, effect the production of more frequent catkins, and improve these by the multiplication of the bracts of which they are composed, and consequently of the quantity of lupuline; and in like manner he will obtain larger spikes, and in consequence an increased production of oil from cultivated Lavender; but where especial organs are not concerned, and the secretion is diffused through the plant, the quantity, and frequently the quality, derived from the cultivated plant will be impaired. In some cases, as in Rhubarb, let the root be increased in size as much as it may by artificial means, the produce will never be equal to that of the wild plant. In these instances, therefore, the tendency of cultivation is to produce an abnormal condition, equally with the former; but inasmuch as no great difference is apparent in the external organs, and vital action is not palpably impaired, though the purposes of cultivation are not completely fulfilled, in our ignorance of the part which these peculiar secretions perform in the general economy, such conditions, if indicative of disease at all, can scarcely be regarded as presenting more than a very feeble type. *M. J. B.*

PROFITS OF PEAR-GROWING.

In a letter inserted in the *Gardeners' Chronicle*, p. 678, your correspondent, "H. T. H., Staplehurst," states that the produce of the Pear tree is of less value than that of the small-fruit tree, and that he would feel obliged by receiving instructions which might be the means of increasing the produce of his Pear trees. Your correspondent cannot be serious in his request. He should have made known the condition of the soil in which the trees are planted, the names of the varieties which he cultivates, probably shy bearers, their age, and system by which they are managed. Without information on these points it is impossible to give him a satisfactory answer. Nevertheless, I may say that if his trees are reared according to the system adopted near London, it would be impossible to give him advice on the subject with any prospect of success. In fact, in our opinion, the fruit trees there are too far gone, and, as it appears to me, they can never afford a produce proportionate to the expense incurred in their cultivation. The grounds on which this opinion is based have been already detailed in a previous communication, and therefore it is not necessary to go over them again.

It is upon the choice of the soil, or, it may be, in plantations of this kind, upon that of a variety sufficiently hardy and vigorous to succeed as a standard; and also upon the choice of a healthy and vigorous stock, reared upon good principles, and subjected to a proper system of pruning, the essential points of which were laid down in a communication last month, that the future success of a plantation of dwarf or tall pyramid Pear trees depends.

In its youth, a Pear tree is subjected to a careful and scientific mode of pruning, the object of which is to preserve the stem straight and upright, the branches at proper distances, and to form a good skeleton. When the tree has arrived at the age of bearing fruit, less pruning is required; and is then confined to regulating the distances of the branches along the stem, and cutting back the shoots to a good eye. These operations are neither difficult nor expensive when the workman is once accustomed to them. In a working day he may easily go over fifty trees.

With regard to the value of produce of a pyramid, treated according to these principles, we shall give an example (taken from among several trees). The very vigorous and fruitful variety of Pear tree, called Triomphe de Jodoigne, raised by the late M. Bouvier, a pupil of Van Mons, occupies in my garden a space of 8 feet square. The tree is from eight to nine years old. For the first four years after planting, the pruning was conducted with the view of forming the branches of the pyramid; and after that period it was performed with the intention of bringing the young tree into a fruiting state.

The first fruits were produced to the number of 15, in 1853. This year the tree has borne 58 fruits, equal in size to the Catillac, but of a longer and more handsome form. In the beginning of May, I judged it advisable to remove from the tree upwards of 200 well-formed young fruits, in order that the remainder might attain their full degree of excellence.

After gathering them, in order to ascertain what this new fruit would fetch in the Brussels market, I gave 10 of the fruit, together with its name, to a fruiterer, who immediately found a purchaser for them at the rate of 50 centimes (about 4½*d.*) a piece. Hence it appears, that a pyramid planted 8 years, and occupying a space of not more than 8 feet square, yields a produce, the value of which is upwards of 1*l.* sterling. Let us suppose that four pyramids occupy a space of 20 feet square, the rent of which, at the utmost, would not exceed 2*s.* a year; and after having been planted and well cultivated for 8 or 10 years, produce altogether 200 fruits, and sell to the fruiterer for 10 centimes (about 1*d.* each), which is the lowest price for a good Pear in the most favourable years; then this produce, of 20 feet square, would be worth about 1*l.*, which would be equal to 400*l.* per hectare (about 161*l.* per acre). Truly, I know of no other product of the earth which will yield this sum.

It is, of course, understood that table fruits are not here sold by measure, or by the sack, like stewing or baking Pears. To obtain the above result, the most hardy and productive varieties must be chosen, and trained according to the best principles.

Now, that neither your correspondent nor the reader may have any doubt respecting the truth of these statements, I take the liberty of saying that I might adduce the testimony of several celebrated horticulturists in your country, Messrs. Veitch and Son, G. Henderson, Standish, Rivers, jun., my friends Booth, of Hamburgh, Hartweg of Weimar, and many other visitors, who may perhaps read these lines.

In conclusion, I invite all English amateurs who may come to Brussels to spend an hour in visiting my gardens, where they will find proof as regards the application of the principles which have formed the subject of our communications. Judging from appearances, which are very fine, the results will be every year more conclusive. Besides, as the system has produced such good results in a climate and soil which much resemble those of England, it appears to me that a trial of it might be made at Staplehurst. If, after experiments made with care and perseverance, *H. T. H.* find that my directions are bad, then he will have a right to say that they have been of no benefit to him.

Mr. *H. T. H.* cites 30 years' experience in the cultivation of fruit trees. In this respect I am his senior, for I planted my first trees more than 40 years ago. By the aid of the formulæ of science, which sum up the experience of ages past, and by reading constantly the phenomena of lovely and bounteous Nature, we get more and more enlightened as to the means of obtaining the greatest amount of her benefits. *De Jonghe, Rue des Visitandines, Brussels, October* 22.

DELAMERE FOREST AND THE CHOPWELL WOODS.

It appears from recent reports and from blue books, that several persons who are supposed to be competent to give the best information on the subject, have been called on to give their opinions on the present condition and future prospects of Delamere Forest, and that those gentlemen most recently appealed to in the matter assert that it is, or at least the far greater portion of it, totally unsuitable for the growth of Oak timber; and some of them affirm that 20 years hence the present crop of Oak will be either dead or in a very advanced stage of decay, an opinion in which they are confirmed by Mr. Lipscombe's statement that he cannot make Oaks grow higher than a table, for when they attain that height they obstinately refuse to get higher, but bend weepingly their umbrella-like heads to the ground.

Now, with all due deference to the experience of Mr. Lipscombe and that of the gentlemen who have been appealed to on the subject, I must be permitted to state that I disagree entirely with their conclusions. I know a good deal about Delamere Forest, having of late been frequently in most parts of it, and a witness of the extremely bad management carried on in it, and indeed so much have I seen that I disapproved of, that I have been unable to refrain (even at the risk of being considered very officious) from drawing the serious attention of many of the late commissioners to the deplorable state into which the forest had fallen from mismanagement, and to the large sums of money which have been wastefully and recklessly squandered in persisting to plant fresh plants under the drip and shade of other trees, where it was literally impossible they could make any progress.

It is not, however, altogether improbable that some of the gentlemen who assert that the forest is unfit for the production of Oak timber may have a longing desire to try their own "luck," or that of some of their friends in the art of growing timber for profitable purposes, provided the Government could only be induced (after having given it a bad character) to dispose of it at a cheap rate, in order to get readily quit of so bad a bargain. In fact, I have been credibly informed that 50*l.* an acre has been offered for it, which of course I suppose included the present crop of so-called stunted and worthless timber that is growing upon it; and at so trifling a sum, it certainly would be a good bargain to whomsoever might invest capital in its purchase.

Had the former and late Commissioners of Woods followed my recommendations and practice, so often tendered to them, they would have escaped the universal public reprobation they have so justly merited by the ruin of the Chopwell Woods and the Forest of Delamere in particular; the credit of their forest management would have been maintained, and a very large amount of the public monies would have been saved to the nation. But no!—my advice and examples of good management were despised; and, what was the "unkindest cut of all," one of the latest of the Commissioners, Lord Seymour even threatened to withraw my poor pension, so angry was he with me for my officiousness in having tendered, by his previous permission, honest advice and important information for the better future management of the department under his control.

But to come to the point, my present object in writing is publicly to deny that the greater part of the forest in question is unfit for the growth of Oak timber. It is said that nine-tenths are unsuitable for that purpose; consequently, according to that report, a very small portion of it should have been planted with Oaks. I have been employed this last summer by Randle Wilbraham, Esq., of Rode Heath, Lawton, Cheshire, to instruct some young woodmen in my system of training forest trees in young plantations and in hedgerows on his estate near Delamere Forest; and also at Lord Skelmersdale's, at Lathom, near Ormskirk, Lancashire, and therefore I know what can and cannot be effected in that forest. By my system of training I mean a preventive system of pruning, or no pruning at all, provided the training is commenced, as it always should be, at the earliest stages of growth; and I publicly challenge any person who has any just pretensions to a practical knowledge of arboriculture to deny or refute the good effects I have produced on stunted umbrella-headed trees, on land as unfit for the production of Oak as it is reported Delamere is. Upon what I have achieved by means of my system I am willing to stake my reputation as a forester. Its good effects may be seen and proved in a small plantation belonging to Mr. Wilbraham on Duddon Heath, within three miles of the forest, adjoining the road from Tarporley to Tarvin. My son, of the grammar school at Tarvin, could point them out. Stunted trees which have only been three years under my care, now (October), exhibit most luxuriant shoots, dark, glossy leaves, and healthy, shining bark, and are from twelve to eighteen feet in height, with proportionate strength of stem, on land equally poor and sandy as Delamere Forest. Such trees contrast strangely with the miserably unhealthy stunted growth of those of a great part of the forest plantations, which are at least double the age of my specimens. In an older plantation near this, on the other side of the road, there are fine Oaks of about 50 years' growth, which show no signs of decay or deterioration, on land as sandy, heathy, and poor as that just described. There are the trees and the land to vouch for the truth of what I have asserted.

I have several times solicited permission from the Commissioners to allow me an opportunity of exhibiting to them personally, in Delamere Forest or elsewhere, the good effects of my practice, for it is no theory; (and this I once more do), being convinced that I could have renovated nearly every unhealthy stunted tree in it, even those which refuse to grow higher than a table. I could also show an example of the excellent effects of my plan in a plantation on the Lathom Estate the trees on which, from various causes, were in a very stunted, unhealthy condition, in fact deemed past recovery, and they always would have remained so, had they not been scientifically operated upon before they were past recovery. The effects produced, although the means were only applied so late as July last, have been truly magical for so short a time; but what will these trees be? If the instructions I have given be fully understood and followed up for the next two years, they will then exhibit the appearance of those on Duddon Heath plantation, before described. I must beg leave to remark, however, that I ought to be in those plantations in Cheshire, at least to point out particular instances of what can be effected by science and art, as I do not think it fair or right that my practice and system should or could be correctly explained by a second or third person.

It is generally supposed that Oak timber from sandy soils is not so good for ship-building, and some other purposes, as that from stronger soils; neither is it supposed to arrive at so great a bulk. Be that as it may, is it not vastly superior to and more valuable than many other kinds of timber trees usually planted on such soils? If I recollect rightly, I am under the impression that the ancient Forest of merry Sherwood, and other places in Nottinghamshire, renowned for the production of fine Oak timber, consisted chiefly of sandy soils. However that may be, I have certainly seen in numerous instances fine Oaks growing on sandy soils, and even out of the horizontal fissures of sandstone rocks.

It appears from the reports in the Blue-books recently published that the Commissioners have asked the opinions of several persons who have scarcely had any practical experience in forest management; while my experience, which has extended over half a century and more, and which has been so often tendered, has been rejected as worthless, except when I was employed in Dean Forest, and for the first three or four years in the Chopwell Woods.

Irrespective, however, of mismanagement, might not the inferiority of some Oak timber be owing to Quercus pedunculata being solely employed, as I have not found any of the other species, Q. sessiliflora, in the parts of Cheshire and Lancashire, where I have been staying during the past summer: on the other hand, sessiliflora, or knot acorn, abounds in Wales, particularly in the neighbourhood of Powis Castle, and on the banks of the Derwent in Durham, whose timber is noted for its superiority over that from many other parts of England. This, I have observed, is the species generally found in the old indigenous woods; but in almost all planted woods the inferior sort (pedunculata) abounds—a circumstance which I attribute to the latter producing much larger and finer acorns, which naturally cause it to be sought for by collectors for nurserymen, and others who raise Oak plants for sale, &c. All wood-cutters, carpenters, and sawyers, with whom I have conversed on the subject, however, agree that Q. sessiliflora

produces much finer and firmer timber than Q. pedunculata; but, for the reason just stated, Q. pedunculata is preferred by nurserymen and others ignorant of the different qualities of the timbers of the two—hence the propagation of the inferior species is almost universal, and that of the "gnarled unwedgeable Oak" of former times is neglected.

I shall conclude with reiterating my proposition that the miserable Oak plantations in Delamere Forest are susceptible of renovation at a trifling expense by a proper method of treatment; and if no other person can be found capable of performing the operation, I am. *William Billington, Roy, Belmullet, Mayo, Ireland.*

PHŒNOCOMA PROLIFERUM.

This is, perhaps, the most useful of the Everlastings, and also one of the most attractive of hardy greenhouse plants. It is by no means a difficult plant to manage, but somehow the majority of cultivators do no good with it, for a fine specimen of it is rarely seen, except where growers are within the influence of the metropolitan exhibitions. The most probable cause of the many failures experienced with this plant is, that it will not submit to the starving system without losing its bottom leaves; and in order to counteract its naturally somewhat thin and erect habit of growth, it must be perseveringly stopped, or cut back, as may be requisite to secure a close bushy habit.

Beginners should procure well established strong bushy plants, in 5-inch pots, which will afford a fair opportunity of producing handsome specimens, and will be a considerable saving of time compared with obtaining young plants from cuttings. Every care should be exercised, however, to secure well propagated, vigorous, healthy plants, for there are many examples of this plant in nurseries which are only fit for the rubbish heap. In March, the plants should be examined at the root, and if the pot is tolerably well filled with healthy active roots, give a moderate shift, using prime rich fibry peat, broken up into small pieces, not larger than a garden Bean, carefully intermixed with about one-third its bulk of clear sharp silver sand, and some lumpy bits of charcoal. In potting, use plenty of drainage well arranged, and be sure to have the ball, &c., in a proper state as to moisture, and make the fresh soil rather firm in the pot to prevent the water from passing off too freely through it. After potting, place it in the closest part of the greenhouse, or in a pit which can be kept rather warmer than the ordinary greenhouse, and give a very careful supply of water until the roots lay hold of the fresh soil. When growth becomes apparent after potting, the shoots should be cut back as much as may appear necessary to secure a close bushy growth, and after cutting back they should be nicely tied out, keeping them as open as possible, in order to admit light and air to the foliage. Keep the plant near the glass and admit air freely on mild days, for there will be no gain in keeping it close and warm, as this would tend to induce thin weakly growth, but secure a moist growing atmosphere, and draw the syringe lightly over the plant on the afternoons of bright days. When the weather becomes mild and settled remove the plant to a cold frame, which will form the most convenient situation for it in summer, and regulate the admission of air, &c., according to the state of the growth. A thin shade should be thrown over the glass for a few hours on the forenoons of bright sunny days, and the atmosphere should be kept as moist as it conveniently can be. If all goes well, a second shift will be requisite in June, and the plant must not be allowed to suffer for the want of pot room. Observe the same conditions in shifting as recommended above.

When the roots are supposed to have got hold of the fresh soil, which will be easily known by the growth, the main shoots must be stopped or cut back in order to throw strength into the side branches; for if the main shoots are allowed to follow their own course the plant will soon become very thin and bare at the bottom, and this will not be remedied without a free use of the knife and a consequent loss of time. Discontinue shading as early in autumn as it can be safely dispensed with, and expose the plant more freely to air in order to get the wood firm before winter, for the foliage is apt to become foxey unless the wood is moderately well ripened. Towards the end of September, or as soon as damp cloudy weather begins to prevail, remove the plant to the greenhouse, placing it near the glass, and where it will receive a free supply of air on every favourable opportunity, and give water very carefully during the dull season. If the same treatment as recommended for the first season is practised for one or two more years, the plant should be a nice sized specimen for blooming; but if a large specimen is the object the plant should not be allowed to bloom too soon. And in the case of a plant intended for flowering the following season, stopping or cutting back must not be practised later than June, as the young wood must be well matured in order to secure a fine display of blossom. Large thick specimens must all be kept in a rather dry airy situation in winter, and frequently turned round so as to expose all their parts equally to the light and air, but avoid cold north or north-easterly winds. The plant generally opens its flowers about the beginning of June, and it will go on producing a succession of its pretty blossoms until December. But if the object be to keep the specimen in good condition as long as possible, which of course it should be, the plant must never be removed to a close place while in flower, but should be kept in a cool, airy part of the greenhouse, and near the glass, shading from bright sunshine. Also give attention to stopping any shoots which may incline to outgrow the others; and if necessary to keep the bottom well furnished with healthy young wood, the shoots must be cut back, even at the expense of losing a season's bloom. Attention must also be given to shifting as may be necessary to keep the roots properly supplied with pot room, and water must be carefully supplied, especially to large specimens when in a dormant state. *Alpha.*

Home Correspondence.

How to Grow Pears in Perfection.—To do this you must have a Pear tree house. I will describe mine; it is span-roofed, 20 feet wide, 40 feet long, 4 feet high at the sides, and about 10 feet high in the centre. The rafters (which are fixed, for I have no sliding lights), are 4½ inches by 1½, and 20 inches apart. It is glazed with 16-oz. sheet glass. The roof is supported by Oak posts 5 feet apart let into the ground. Between these I have made my walls with clipped Yews and Arbor-vitæ. I think, however, that the latter like the drip better than the former, as I have no troughs. The variety called in the nurseries the Siberian Arbor-vitæ (Thuja Wareana) is the more compact, and makes the prettiest hedge, but the common or American Arbor-vitæ does very well. The ends are boarded up with half-inch boards; glass would look better; and a door is at each end, over which is a shutter on hinges to let out the heated air in sunny weather. My beds are as follows: In the centre I have one 7 feet wide, and on each side one 4 feet wide, my two paths are each 2½ feet wide; the beds are raised 1 foot, or three courses of brickwork. The soil in the beds was manured and well stirred to about 2 feet in depth previous to planting the trees. In the central bed I planted three rows of pyramidal Pears, on Quince stocks, 3 feet apart, in this

```
       *     *
way *     *     *   and in the side border I planted
       *     *
```

dwarf Pears on Quince stocks as bushes, 3 feet apart,

```
                                *     *     *
two rows in each bed, thus                        I top
                                *     *     *
```

dress them with manure in spring, and water them frequently in spring and summer, and once a week with manure water. I thin out the blossom buds, thin out the fruit, and pinch off the shoots when required. The climate is always so delightful when these operations ought to be performed, never oppressive, that I spend much time in what I sometimes call my Pyretum, and I fimly believe that in spring, summer, and autumn, whenever we have a little sunshine the climate of these hedge-houses is the most perfect that can be imagined. The trees grow slowly but healthily, and bear in profusion. The fruit is most beautiful, the skin being fine and delicate, and, as the trees are never shaken by the wind, it hangs a long time, the very late sorts of Pears coming to great perfection. In short, these hedge-houses are the only places to grow Pears in perfection. I have only to add that this way of growing Pears is not my own invention. I learned my lesson from a gentleman whose name is often in your columns. *Hortulanus.*

Cure for Grape Mildew.—Take ½ lb. of black soft soap, from 3 to 4 ounces of black sulphur, the same quantity of soot and quick lime, and add water sufficient to enable them to be worked with a paint-brush. As soon as the Vines are pruned, paint the wood well over with this mixture, rubbing it well into the rough parts with the brush. I have not seen the least symptoms of mildew since I have used it, either in the houses or out of doors, although we had plenty of it before the application was tried. This, therefore, may be worth the notice of Vine growers in foreign countries, the ingredients employed being cheap. *John Hayes, Farnham, Surrey.*

Hardiness of Conifers and other Plants.—I send a list of Pines, whose hardiness appears to require confirmation. At Hafodunos, 800 feet above the sea, inland, the following are hardy:—Cedrus Deodara, Libani, and atlantica; Pinus Hartwegi, insignis, excelsa, cembroides, muricata, zubuculata, osteospermum, macrocarpus, pitchta, taurica? Ayacahuite, monticolus, Lambertiana, pinsapæ, and cephalonica; Abies Menziesi, Douglasi, Smithi, and Pindrow; Taxus japonica, adpressa, pyramidalis, elegantissima, and foliis aureis; Taxodium sempervirens, Araucaria imbricata, Cryptomeria japonica and Lobbi, Fagus antarctica, Deutzia coccinea, Philadelphus sp. californica from the Horticultural Society, and Sammerdamia. Of the Sikkim Rhododendrons, I only find completely hardy the following: Ciliatum, cinnabarinum, fine scarlet, 1400 feet; glaucum, æruginosum, campylocarpum, niveum; and the three last appear to me the same, probably all niveum; but I got them as named from Mr. Masters. Nothing can be hardier than Berberis Darwini and droserifolia, and they are beautiful. Platycodon sinensis dies down to the root, but comes up strong every spring. Aralia japonica flowered in the open air well with me this year; of course it is not left out in the winter. Fabiana also flowered freely, and it is left out. Cerasus ilicifolia will not stand a severe winter here; Arundinacea falcata is hardy. Can you tell whether it likes wet or dry soil? I have a pot of it growing half its depth in water, and it seems to like it, and grows more rapidly than any other plant I have. Many others that I hope will be hardy I have not yet proved, such as Pinus Jeffreyi, Wellingtonia, Fitz-Roya, Saxe-Gothæa, Skimmia japonica and laureola. Am I right in expecting these to be hardy? I must not forget Ilex dyperena, which is perfectly hardy; opaca and latifolia japonica only in sheltered situations. *Henry W. Sandbach.*

Rheumatism.—Gardeners being very subject to heats and colds often suffer much from rheumatism. Having been much afflicted with it myself I wish to give them the benefit of my experience. Take one raw egg well beaten, ½ a pint of vinegar, 1 ounce of spirits of turpentine, ¼ of an ounce of spirits of wine, and ¼ an ounce of camphor, put them into a wine-bottle and shake them well for 10 minutes. In half an hour the mixture will be fit for use, when it should be well rubbed on the parts affected three or four times a day. In several instances this has effected a cure in a few days; but essence of mustard is best for bad cases. This is good for all outward applications in man or beast, green wounds, sprains, bruises, broken-kneed horses, saddle galls, and bit galls. No farmer should be without it. *John Hayes, Farnham.*

The Fluke Potato.—Having seen a good deal in praise of this potato, I have been induced to order a quantity for seed next year, but I am surprised to find what have been sent to me to be white, and very many diseased. Now a short time ago a friend of mine showed me some Kidneys, which he called Flukes, and they were blue. Will you therefore say whether the true Fluke is blue or white, and whether it is early, second early, or late, because on boiling some of those I have got they are quite "livery," and unfit for food. *J. B.* [This variety is white, late, very mealy, and not at all likely to be diseased. We have seen no sign of the affection.]

Wintering Antirrhinums.—The most economical method of wintering named sorts of Antirrhinum is to strike the cuttings under hand-glasses, either on a cutting bed or shady border, as soon as possible after the stock plants have done flowering. When the young plants have got established, pot them singly into 3-inch pots, using for compost two-thirds turfy loam, one-third broken lime rubble, to which should be added a small portion of leaf-mould and a little sharp sand. The plants should then be placed on the dry level bottom of a cool frame, and until the roots have penetrated the fresh mould, the plants should be kept close, and shaded from the effects of the midday sun. After which, except in continued wet weather, the lights should be taken off altogether, and not be again replaced until the autumn rains render such a step desirable. Treated in this way the young plants make considerable growth, and fill the pots with roots before the winter sets in. The most effectual way of protecting the plants from the ravages of slugs and snails is to place them in the frame on inverted pots: this will have the effect of raising the plants nearer the light, and by thus increasing the facilities for drying the frame, the plants will be less liable to be injured by damp. By raising the frame an inch or so from the ground, a constant supply of air in the most unfavourable weather may be admitted. The state of the weather is the only criterion by which to regulate the application of water; in close damp weather, for instance, a fortnight, and sometimes three weeks, may be allowed to elapse with advantage between the waterings. Care should be taken not to scatter the water about or wet the foliage. Let the weather be ever so severe, air never comes amiss to Antirrhinums. The object in placing them in frames is to protect them from rain and snow, but not frost: when sheltered from the two former, any danger resulting from exposure to the latter need not be apprehended; for with plenty of air, and proper care with respect to water, the conditions necessary to the winter preservation of Antirrhinums are complied with. *R. Miles.*

The Late Winter.—The remarks which have been made from time to time in your columns, relative to the effects of the past winter on plants in the open air, in different parts of the kingdom, have led me to make the following, which will, in some measure, tend to show the extreme difference of temperature in Cornwall and other parts of England not far distant. Marica Sabini, from the island of St. Thomas, western Africa, has stood in the open air here for the last four or five years, without any protection whatever. Although it is killed close to the ground every winter, it always grows up again in summer. It is now 18 inches high, and will soon be in bloom. "This Marica," says Dr. Lindley, in "Transactions of the Horticultural Society," "is easily propagated, and will consequently soon become, on account of the beauty of its flowers, one of the finest ornaments of our stoves." Araucaria Braziliana has also stood unprotected without being injured in any way. Some of the plants of this noble Conifer are as much as 21 feet in height. Cantua bicolor, planted in a warm border in front of a greenhouse, merely lost its leaves. Plagianthus Lampeni, Dacrydium Franklini, Ceanothus rigidus, Pittosporum tenuifolium, and Berberis Darwini, were all unhurt. Gnidia simplex and Indigofera decora, though much cut, have since grown well, and both are now beautifully in flower. *Frs. Symons, Carclew, Cornwall, Nov. 1.*

Substitute for Mats.—Get coarse wrappers from the drapers, such as their goods are packed in, about 6d. per yard run, 5 feet wide. Paint them with the Bridgewater mineral paint, which may be bought of Mr. Levett Frank, oil and colourman, 44, Borough, London Bridge, at 24s. per cwt. Mix it with double boiled oil, at 4s. per gallon. Two gallons of boiled oil, and 3s. worth of the Bridgewater paint are sufficient for 16 yards run, at 5 feet wide; that is 19s. for 16 yards. This will last for many years. The paint must be mixed as thick as you can use it, in order to fill up the pores of the cloth, and when it is painted it is quite as pliable as it was before the paint was put on. The direction for use says two coats, but I only put on one. In the course of a few years' wear it may, perhaps, want a thin coat. Nei

the pieces as you buy them against a wall or paling to paint them on. Then paint will dry in 24 hours. Then sew the pieces together, the size of the space you want to cover, with pack-thread dipped in the paint. If to cover a house, work a strong hole with the pack-thread to hang the material by on a large-headed nail. Drive a piece of inch board about 2 inches wide and about 9 or 12 inches long under the plate, between the brick-work and the plate, about 4 or 5 feet apart, for the cloth to fall on when the roof is uncovered; it requires no drying; it is waterproof, and the direction says fireproof. The best thing for it to fall on would be some pieces of iron screwed on under the plate, with a joint to turn under when not wanted. This, when well prepared, is the cheapest and best covering that can be got. *John Hayes, Farnham.*

Notices of Books.

Catalog der Orchideen-sammlung, &c. (Catalogue of the collection of Orchids belonging to G. W. Schiller, of Ovelgönne, on the Elbe.) Hamburgh: Meissner. 12mo.

This is the best catalogue of garden Orchids which we have seen, and being remarkably well printed, would prove a useful manual for English collectors. The nomenclature adopted is that of Mr. Reichenbach, and we presume may be almost regarded as proceeding from his pen, which gives it a scientific value rarely possessed by garden catalogues. To nurserymen and others it is a good work of reference, enabling them to identify the new German names with the plants already known among us. Thus, upon looking to Warrea in the Catalogue, it will be seen that *W. candida* is now named *Warczewiczella candida* in Germany, and *Warrea graveolens, Köllensteinia Kellneriana.* Unluckily it is not stated under the new genera what the old plants are which they include, and so far the plan is incomplete. We dare say Mr. Schiller will remedy this in his next Catalogue. There is no descriptive matter whatever in the pamphlet; we can, therefore, only guess at the frontispiece representing this gentleman's Orchid-houses, and the tail-piece his own dwelling on the banks of the Elbe.

The Stepping Stone to Animal and Vegetable Physiology (Longmans) serves to show how much more eager than judicious some persons are to cram children with crude and erroneous notions. No class of books demands more skilful exactness than those intended to instruct the young; for false ideas gained in youth are rarely eradicated; we find no such skill in the trifle before us.

A Visit to the Seat of War in the North (Chapman and Hall's Reading for Travellers) is a short guide book to the coasts of the Baltic. It is written with care, and indicates some personal acquaintance with the places described; but it is too concise for a travelling companion, and will be hardly found satisfactory by those who are interested in naval possibilities. It is, however, well suited to the railway carriage, which, we presume, is all that it pretends to.

Frazer's Handbook for Travellers in Ireland, 4th edit. (Dublin, McGlashan) has long ago established itself in public estimation, and only required that the changes in it rendered necessary by the introduction of railways should be effected. This has now been done, with the addition of a good map of Ireland; we therefore anticipate no abatement in the popular favour with which it has been received. We would, however, suggest that it would be still more acceptable if natural history, especially botany, were treated in very much greater detail. Dr. Mackay's sketch is good as far as it goes, but the localities of rare Irish plants should also be given under the names of the places where they occur.

Garden Memoranda.

Horticultural Society's Garden, Turnham Green.—The little Oxalis Bowei, mentioned in our last report as being beautifully in flower in a low frame in front of the Orchid-house, is still in full blossom, and its round rosy flowers, which we need not state are extremely gay, look as if they would remain in perfection for a month yet to come. This must therefore be regarded as a very valuable plant for early winter flowering.

Among plants in the curvilinear stove was one named Pilea muscosa, which, although by no means striking in appearance, will be found, when closely examined, to be extremely interesting, on account of the symmetrical and beautiful arrangement of its leaves, or rather branches, and minute rosy flower-buds, with which they are thickly covered, and which, before they open, tinge the whole surface of the plant with red. When expanded, the blossoms are white; but, although plentiful, they are small and insignificant. It is in the handsome Lycopod-like branches in which the value of this Pilea consists; and we are sure that all lovers of plants remarkable for fine form or foliage will find this a useful addition to their collections.

In the propagating house a well-grown plant of Clerodendron splendens was just breaking into flower, and along with it were Gesneras zebrina and Hibberti coming on for the decoration of the stoves. Begonia Thwaitesi was also in bloom here; it is a dwarf-growing species, with prettily variegated foliage, which is thickly clothed with purplish red hairs. The yellow-flowered Begonia xanthina was likewise in flower in this house; but the general collection of Begonias kept here for the decoration of the stoves in winter has not yet been brought into blossom.

Of the Potato Yam (Dioscorea Batatas), of which an account appeared at p. 467 of our current year's volume, a few plants have been struck in the propagating house under a hand-glass, and here where they have a little heat all of them have formed young tubers at the axils of the leaves. This effort to produce fresh tubers has not yet been observed either in the plant which is growing out of doors, whose branches have lately been layered, or in that planted under glass in the orchard-house. The progress of the cuttings as well as of the old plants has therefore become a matter of interest, and will be reported on from time to time in our columns.

In the Rose house the plants have thriven uncommonly well during the past summer, and have produced a good crop of flowers, and even now they are well furnished with buds and blossoms. The sorts are chiefly Teas, Chinas, and Bourbons, some of which flower nearly the whole year round; the value of a house of this description may therefore be easily conceived. The colours of the yellow and salmon kinds such as Saffranot, Vicomtesse Decazes, &c., are better now than they were in summer; and what can be more charming in a bouquet than a bud or two of these (when caught in good condition) favourite varieties! The crimson and other Chinas are also most brilliant, and next year when the plants shall have got properly established they may be expected to be much finer than they have been this season. The fault of the place is the absence of sufficient variety in colour, the majority being pale sorts.

Of novelties we observed a good stock of Campanula primulæfolia, which is reported to be rather a pretty variety of Campanula, from the Caucasus, and also a somewhat straggling plant, called Monnina obtusifolia, in flower. The latter is half shrubby, and has blue and yellow blossoms, which if they can be induced to come in sufficient abundance will render the plant useful for greenhouse decoration.

Chrysanthemums have been placed along the sides of the paths of the great conservatory; but with the exception of Hendersoni, which is now in flower, they will not be in full blossom for at least three weeks to come. The plants are beautifully grown, and well furnished with flower buds, so that when they do open their blossoms a fine display may be expected. The large Brugmansias, in the bed, which have lately been pruned and cleaned, promise soon to be again in flower, as do also Cestrum aurantiacum, a valuable conservatory plant, Luculia gratissima; Hedychium Gardnerianum, whose flowering is just over, has been very fine.

In a cool pit were some nice plants of Mignonette coming forward for the shelves of the conservatory and greenhouses; the seeds of this had been sown last August in pans, the plants pricked out into 3-inch pots, and afterwards transferred to 5-inch ones, in which they are to bloom. Various annuals, as Nemophila, Schizanthus, &c., have also been potted off to be grown on for the decoration of these houses.

Out of doors, by far the most striking plant is the Pampas grass, which at present is the admiration of everybody; as well it may, for a more beautiful plant there could not be. It has 17 noble flower stems issuing from among its long drooping foliage, each surmounted with a panicle of silvery inflorescence not less than two feet in length. The effect of these when seen under bright sunlight is truly charming. The plant, which is perfectly hardy, will be found growing on the bank at the entrance to the American garden.

An alteration is being made in the walks which pass the two ends of the summer-house at the top of the broad walk leading from the Duke of Devonshire's gate to the council room. The entrance to the last-named walk next the school-gate has been shut up by planting it with shrubs, while that on the other side of the summer-house has been more opened up by removing a few of the shrubs from that part, and forming rockwork in their place, which will be faced with a narrow belt of grass. The rocks are made of burs joined together with Portland cement, and then washed over with the same and sprinkled with coke-dust. In this way fine lumps of grey rocks, where such are scarce, may be cheaply obtained.

In the fruit room are a few good Glout Morceau Pears, from a west wall, and Beurré Diel, both from a west and east aspect. Those from the east are the largest; but it was stated that this might possibly be owing to the tree there being more vigorous than the other, from not having borne well in former years. Of Hacon's Incomparable there were also fair specimens, as well as some of Van Mons Leon Le Clerc, measuring 10 inches in length and 5¼ inches in circumference. This is an excellent melting Pear, which is not even now known so well as it should be. Examples of Beurré Rance also measured 10¼ inches in length and 5 inches in circumference. Of Apples we have unfortunately nothing to report this year, the blossoms having been nearly all killed by the frost of the 24th of April; and what fruit has come to maturity is not good, being mostly the produce of a second crop of blossoms.

Poles, near Ware, the Seat of R. Hanbury, Esq.—There is now in flower in the fine collection of Orchids grown at this place a plant of Cattleya labiata, with 15 spikes, and 75 flowers expanded; it is really a wonderful specimen, and we believe unrivalled in the history of Orchid-growing.

FLORICULTURE.

Ranunculuses.—There is a marked difference between the old varieties of this flower and the seedlings which have been raised during the last few years. The tubers of the former are generally less robust and plump: the foliage is often weaker, and the flowers are almost always inferior in size and substance of petal to those of newly-raised seedlings. The art of hybridising has been wonderfully successful with the Ranunculus, and some new beauties are annually produced. Unless the old kinds are very striking and unlike the modern varieties, the amateur is recommended to make his bed of new sorts. His success will be more certain, and the healthy and vigorous growth of the roots more satisfactory. A packet of carefully selected seed, purchased of a well known cultivator, will repay all the attention bestowed in raising it; but this task should be undertaken by one who has had some general experience in the growth of the flower. Three seasons must pass before all the seedlings can be expected to exhibit their character, and even then the quality they will finally assume cannot always be ascertained. Some of the finest sorts will at first be semi-double, and time is consequently required to test their real excellence. Raising from seed, therefore, is not the course to be pursued by those who are growing Ranunculuses for the first time; and although I hope to be able to assist in this interesting pursuit on a future occasion, it will be more requisite now to point out the best mode of getting a collection of well-known and established flowers. Without wishing in the slightest degree to question the integrity of seedsmen and florists, I feel it necessary to caution amateurs on the subject of purchasing Ranunculuses, as good kinds are expensive, and a failure is therefore very provoking. A very fine show may, indeed, be secured by one or two hundred mixed roots, which may be purchased at very small cost; and where a cheap bed is an object, or where the amateur fears to run a greater risk until he has acquired experience, mixtures may be recommended. But if you intend to raise a bed which shall excite the rivalry of your neighbours, and enable you to compete at a floricultural exhibition, you must be content to pay for flowers of a higher character, which are warranted true to name, and which may therefore be expected to repay you for your expense and care. Get them from the grower, if you can, for in changing hands seeds and roots often change names, and discredit the seller and vex the buyer. There are some celebrated growers of Ranunculuses who have devoted their energies especially to this root, and without mentioning their names, I recommend you to apply to them. You may select from their catalogues, and may rely on their sending you sound tubers. Indeed, if you state the size of your bed, you may leave the selection to them, as they are acquainted with the varieties whose combination will produce the happiest results. Another plan should be mentioned as suitable for those who may not be able or willing to incur much expense: get a dozen first-rate roots, and placing them in different parts of the bed, fill up the spaces with common ones. If you are obliged yourself to select, you must bear in mind that roots may be true to name, and yet in themselves useless. The great difficulty to be overcome in growing the Ranunculus is encountered after the bloom is passed away, and the roots will be either good or bad the following year, as they are then treated. On this subject very much might be said. The criterion by which a healthy root is known, is the plumpness of the forked portions, and the fine velvety texture of the crown; especially the latter. The tuber itself may be small and shrivelled, and yet the crown will indicate a sound condition; while, on the other hand, a plumpness of the tuber is of no service if the crown is dull, and instead of becoming bright when rubbed by the hand or on the coat, crumbles away. Like the Dahlia, the tuber of the Ranunculus will be quite healthy in itself, even where all the young buds or eyes are destroyed; it may even live some time in the ground; but vain will be the expectation of seeing a green shoot! When the substance of the tuber is well filled, and the crown is glossy, success may be confidently expected, as far as the roots themselves are concerned. It should be remembered that the silkiness of the crown, although always present in some degree, increases as the growing season advances. The Turban Ranunculus makes a very splendid show, and I wonder it is not more grown in large gardens, as beds of it, each filled with flowers of one colour, would have a most imposing effect. The various kinds of Turbans may be purchased for 3s. or 4s. a hundred. As an early flower, it is worthy notice. I have had yellow Turbans off bloom and ready to be removed by the second week in June, in time for filling the beds with other plants. The Ranunculus may be taken up without injury as soon as the flower is withered, if the mould is allowed to adhere to it, and all the roots thus removed are put into the ground in a place secured from rain. They will then gradually become fully matured, and may be cleared away in July. This latter circumstance removes the objection of the beds being occupied too long to allow their being afterwards filled with flowering plants. Half-a-dozen beds on a Grass-plot would present a gorgeous sight in May and June. *S.*

Verbenas: *C. T.* Your new kind called "Wonderful" is a beautiful rich plum-coloured variety, with a bold white eye; pips and truss large, and well shaped. A very striking variety, which must necessarily be a favourite both for pot culture and for beds.

Miscellaneous.

The Chestnut (Castanea vesca), celebrated amongst European trees for the enormous size it will attain, is already mentioned in the Bible. Theophrastus and Athenæus give it the name of Eubœan nut, from the island of Eubœa, now Negroponte, where it was peculiarly abundant. Pliny says that Chestnuts first came from Sardi, the ancient capital of Lydia, and not far from the modern Smyrna. Gelenus, who was a Lydian, confirms that origin, and says that they were also called *balani leuceni*, from Leucene, situated on Mount Ida. Other writers, ancient and modern, give various Eastern countries as the native stations of the Chestnut, and even Giovanni Targioni-Tozzetti, our author's grandfather, believed them to be introduced only into Italy; but not only have the extensive Chestnut woods in the Apuan Alps and other parts of the Apennines, mentioned by Bertoloni, every appearance of being really indigenous; but further evidence that woods of this tree existed in Tuscany from very remote times, may be found in the number of places which have derived their names from them, such as Castagna, Castagnaia, Castagneta, &c. We may indeed safely give as the native country of the wild Chestnut, the south of Europe, from Spain to the Caucasus. It does not extend to East India. The larger fruited varieties which we import for eating, and which are generally distinguished in France and Italy under the name of marrons or marrone, were probably those which were first introduced from the East by the Romans. Pliny enumerates eight different varieties. Micheli has 49, most of which, however, from his own specimens, are, as in the case of the other fruits mentioned in his manuscript, founded upon distinctions too slight to be really available for their separation. *Journal of the Horticultural Society.*

Sale of Rare Plants.—The plants to which we drew attention last week, at p. 692, were sold by Mr. Stevens for the following prices:—Of the six double Cocoa Nuts of the Seychelle Islands, one fetched 10*l.*, another 5*l.*, and a third 3*l.*; the others, which were dead, brought from 10*s.* to 12*s.* each for their shells. The singular Stangeria paradoxa realised from 12*s.* to 2*l.* 4*s.* each. One plant of the reported new Ansellia from the Zulu country fetched 4*l.*, a second 3*l.*, and a third 2*l.* 10*s.*; the rest fetched from 1*l.* 3*s.* to 2*l.* per lot.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Conservatory, &c.—Flowers have now become scarce out of doors, and will be more valued here in consequence; and every exertion should be used to keep this house well furnished during the winter months. It is not so important, however, at this season that only handsome well-grown specimens should be introduced, as it is when flowers are more abundant elsewhere, and almost any gay-looking plant, however common, will be very acceptable in winter. But the use of such things is only tolerable where accommodation is insufficient to grow a proper quantity of our best winter flowering plants, and where there is a necessity for resorting to the use of common things, every exertion should be used to secure neat, trim, well-flowered specimens. For as this class of plants is generally looked upon as being only valuable while in flower, it is a very common practice to bestow but little attention upon them in the way of staking, &c., before placing them in the conservatory. Let Japan Lilies that have done flowering be removed to where they can be kept dry; a cool vinery, where they will have plenty of light and air, will be a suitable place for them until the foliage decays, &c.; for, although these fine plants are hardy, and submit to almost any treatment, those who grow them in perfection are very careful to well ripen the bulbs in autumn. Cold Pits.—Get straw shutters prepared for covering the frames containing the half hardy stock. These, if well made, are somewhat expensive in the first instance, but they are, perhaps, the cheapest in the end of anything that can be used for this purpose, and are also very efficient and certainly do not cause so much breakage of glass nor litter as mats. Expose the stock here freely to air on every favourable opportunity, in order to check growth and get the wood firm, in which state it will be much less liable to suffer from damp, &c., than if kept close and coddled with too much warmth and moisture. Except for plants in full growth, very little water will be wanted at the root; but look over the stock frequently, withholding water until it is absolutely wanted, and then give a moderate soaking, which is the safe way of avoiding either extreme. Heaths, &c., that are subject to the attacks of mildew must be carefully watched, and dusted with sulphur immediately the enemy is perceived; and if greenfly makes its appearance, apply tobacco smoke without loss of time; but these pests will not be much trouble except where the plants are kept too close or otherwise improperly treated. A few of the tree Violets and Carnations, if they are wanted in flower at once, may be removed to a pit or house where there is a gentle moist heat, supplying them with plenty of weak manure water at the roots. Orchids.—Many of these will have completed their season's growth by this time, and when this is the case they should be removed to the coolest and driest end of the house, in order to avoid further excitement, which would be most injurious at this stage. Also gradually lessen the supply of water at the root. Those in free growth will, however, require to be kept warm and moist, but the syringe must be used very sparingly, and a sufficiently high temperature maintained during the day, to allow of giving a little fresh air, for the young growths of most of them are soon injured by a damp stagnant atmosphere. Let those in flower be well cared for, placing them where they will neither be liable to suffer from damp nor the want of sufficient moisture in the atmosphere. If any of the specimens are infested with insects take the earliest opportunity of getting them thoroughly cleaned. Also tie up large specimens, and spare no pains to do this in the neatest and most effective manner.

FORCING DEPARTMENT.

Pineries.—Where the bottom-heat is obtained from fermenting materials, any addition of fresh tan, or whatever else is used, that may be deemed necessary to maintain the proper heat for the winter, should be made at once, so as to avoid having to disturb the plants after winterly weather sets in. In adding fresh fermenting matter, see to having this in a rather dry state and to having it well intermixed with the old, which will prevent excessive fermentation at the first, and cause the heat to be more regular and enduring. While the plants are being passed through hand, any of the young stock that may appear to want more pot-room should be examined and shifted, so as to avoid the necessity of having to disturb the bed again during the winter. Do not make the tan or plunging material too firm about the pots until it can be seen how the fermentation goes on; for it will be easier to firm the tan about the pots when it can safely be done than to raise the plants in the event of the heat becoming too strong. The aim should be to secure a steady bottom temperature of 80° or 85°, and the roots should not be subjected to a higher temperature than this during the winter season. Plants in pits, where the heat has to be maintained by dung linings, cannot be kept growing after this season without drawing and very much injuring them. The linings should be kept sufficiently strong, however, to allow of giving air pretty freely every fine day without lowering the temperature too much, and a little fresh air should be admitted constantly, except in case of frost. Stock that is considered to have completed its growth, and is in course of preparation for showing fruit directly after Christmas, should be kept dry, maintaining a sufficiently high temperature to allow of giving air freely on fine days. The bottom-heat for these need not exceed 80° while the object is merely to ripen the growth, and the soil about the roots can hardly be kept too dry. Vineries.—If not already done, get the outside borders of all the houses covered with something to throw off the wet and retain what of the summer heat remains in the ground; for it is very bad policy to defer this until it is hardly worth doing, which is the case when it is put off till after severe weather sets in. Look over former directions, and keep ripe fruit dry and airy. If the Vines have been infested with black thrips, look sharply after these pests, and give the house one or two good smokings, for it is of the utmost importance towards the fruit keeping well that the foliage should be preserved in health as long as possible, and if the thrips are destroyed now there will be no more trouble from them this season. Figs.—The second crop will now be over in most cases, but where the wood for bearing next year is not properly ripened the trees should be carefully attended to until the wood is in such a state as to offer a fair prospect of a crop next season. Keep the shoots thin, removing every bit which is not likely to be retained for bearing, and endeavour to maintain a rather warm airy atmosphere, and let the plants be rather dry at the root. Those in pots or tubs must not, however, be allowed to get too dry until the wood is well matured. Where the wood is ripe, &c., get the trees thoroughly cleaned, and keep them cool and airy, but do not expose them to frost.

FLOWER GARDEN AND SHRUBBERIES.

Those who purpose making additions to their collection of Roses should do so at once, as there will be a better chance of obtaining good plants now than after the nursery stock has been repeatedly picked. And the present season is also very favourable for planting all but tender sorts, which had better be kept under glass until next May, but these should be procured at once, and if they can be placed in a gentle heat through the winter, they will grow freely, and furnish cuttings which will root just as freely as a Verbena. In preparing ground for Roses let it be trenched at least 2 feet deep, and well incorporate a very heavy dressing of manure with the soil to the full depth. It is hardly possible to make the soil too rich for any kind of Rose, particularly the autumn-blooming kinds, and 4 or 6 inches of good rotten farm-yard dung will not be too much where the soil is naturally rather light and poor. Large headed standards that have done blooming for the season should be cut back pretty freely, to lessen the chance of their being injured by heavy gales of wind. Continue to clear the beds of their summer occupants as these become unsightly, and after trenching or doing whatever can be done to save time at next planting out season get them furnished for the spring. Also look over the herbaceous borders, and make any projected alterations there, taking up and dividing any of the coarse growing kinds that may be inclined to encroach too much upon their neighbours. The modern system of gardening is fast driving this class of plants out of cultivation; but many of them are really beautiful, and if they were more largely grown our gardens would not have that naked appearance in spring which is too often seen. Sweep and roll Grass frequently, and keep gravel walks hard and smooth by frequent rollings.

HARDY FRUIT AND KITCHEN GARDEN.

Beyond transplanting and root pruning, or planting fresh trees, there will be but little here requiring immediate attention, and advantage should be taken of any leisure time to get these operations forwarded as expeditiously as possible, while both the season and the weather are favourable for such work. Let there be no lack of attention in the fruit room at present, for fruit requires more care during the first few weeks after gathering than all the season afterwards. Keep the room cool, giving sufficient air to carry off damp, and remove tainted fruits directly they are perceived. We may now expect sharp frost at any time, and all necessary preparations should be made at once, such as having a good stock of the most forward Lettuce and Endive where they can be protected in case of need. Celery should now be earthed up pretty close, choosing the first dry day when the ground is in a rather dry state for the operation. If not already done, take up and store Carrots, Beet, &c. These are best stored in sand or soil in the root-house, or where they can be conveniently got at, and not exposed to the weather. Cauliflower in head, if not wanted for use, may be pulled and hung up, with the head downwards, in an open shed where it will keep good for weeks, and will be out of the way of injury from frost unless this should be very severe. Turn the refuse heap, and well soak it with manure-water to hasten decomposition, and get it ready for wheeling upon the ground when frosty mornings occur.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending Nov. 2, 1854, as observed at the Horticultural Gardens.

Oct. and Nov.	Moon's Age.	Barometer.		Temperature. Of the Air.			Of the Earth		Wind.	Rain.
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Friday 27	6	30.253	30.175	53	31	42.0	49	51	S.W.	.00
Satur. 28	7	30.287	30.175	58	26	42.0	49	50	S.	.00
Sunday 29	8	30.163	30.098	56	34	45.0	49	50	S.W.	.00
Mon. 30	9	30.172	30.061	65	36	50.5	51	51	S.W.	.00
Tues. 31	10	30.159	30.035	67	33	50.0	52	51½	S.W.	.00
Wed. 1	11	30.361	30.352	61	32	46.5	52	52	S.W.	.00
Thurs. 2	12	30.424	30.161	59	39	49.0	51	52	S.E.	.00
Average		30.259	30.151	59.8	33.0	46.4	50.4	51.1		[illegible]

Oct. 27—Frosty and foggy; very fine throughout.
— 28—Fine; very fine; frosty at night.
— 29—Fine throughout.
— 30—Foggy; exceedingly fine; cloudless; fine at night.
— 31—Very fine; bright sunshine; hot for the period of the season.
Nov. 1—Dense fog; exceedingly fine throughout.
— 2—Foggy; hazy; overcast at night.
Mean temperature of the week, equal to the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending Nov. 11, 1854.

Nov.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 5	52.7	39.2	45.9	14	0.23 in.	1	2	2	2	6	10	4	1
Mon. 6	53.2	39.2	46.2	13	0.76	—	1	2	4	4	10	3	4
Tues. 7	52.5	38.6	45.6	16	1.02	1	2	2	3	4	10	3	3
Wed. 8	51.2	35.9	43.5	13	0.58	1	3	1	2	2	10	5	4
Thurs. 9	51.0	36.3	43.6	10	0.28	1	1	3	2	4	9	3	6
Friday 10	51.2	36.3	43.7	16	0.67	2	3	1	4	5	8	1	4
Satur. 11	51.3	3[illegible].5	44.4	12	1.02	2	4	3	—	7	7	4	1

The highest temperature during the above period occurred on the 5th, 1852, and 6th, 1834—therm. 63 deg.; and the lowest on the 11th, 1823—therm. -1 deg.

Notices to Correspondents.

Araucaria and Deodar: *W H B.* We would recommend you to raise *low* mounds for them.‡

Aspects for Fruit-trees: *R G T.* To the answer given at p. 648 we can only add that we do not know what Mr. Rivers would consider the appropriate aspect for fruit trees.]

Brugmansia sanguinea: *J L.* It is a hardy greenhouse or rather conservatory plant; yours is doubtless kept too warm and moist, which is the cause of its not thriving.‡

Insects: *Cobham.* Your insect is the pupa of a beetle, which is frequently found in brown Sugar from the West Indies. *J. C.*—*G H.* The grub you mention has not reached us.

Jerusalem Artichokes: *Q Q.* The flowering of a bed of this plant with you is as you state, "a very unusual occurrence, and a mark of the peculiarity of the late season."

Names of Plants: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*Erzeroum.* 1136 and 1040, are indeterminable without full-grown leaves and acorns; 1011 and 1045, Carpinus Betulus; 1007, Carpinus orientalis.—*Milne Graden.* Your "Indian Potato" is the Apios tuberosa, or Saa-gaa-ban, of which you will find an account at p. 165 of our volume for 1849.‡—*Lightcliffe.* Pernettya mucronata.‡

Nymphæa Elegans: *A H.* says—"This pale blue Water Lily is figured in tab. 4604 of the *Botanical Magazine:*" with an intimation that, being a New Mexican plant, it was likely to prove hardy under our waters. He will, therefore, be obliged by some of our correspondents informing him "what experience there now exists upon that point."

Rain Gauge: *Rain.* To calculate inches of depth, in measuring rain-fall with a measuring glass, graduated to cubic inches, you must first ascertain the area which the mouth of the funnel, or other receiver presents. Then divide the number of cubic inches of rain by the area, in inches, of the mouth of the receiver; the quotient will be the depth of rain. For example, supposing that exactly within the edges of the receiver is a horizontal area of 100 square inches, and that you measured 110 cubic inches of rain-fall; then 110 divided by 100=1.1 inch, or a depth of rain on a horizontal surface equal to 1 1-10th inch. If you had only one cubic inch of rain; 1 divided by 100=.01, or 100th part of an inch of rain. ‖

Sour Milk: *R D.* We never heard that the smell of flowers would turn milk sour.

Strawberries: *A Lady* will be obliged by the gentleman who received six plants of the Nimrod Strawberry from Mr. Pince, of Exeter, in pots, informing her whether he removed them from the pots and planted them in the open ground, or inserted the pots in the ground without disturbing the roots?

Trade Memoranda: *J H.* We know nothing of the parties named by you: nor is there much in what you say. Never forget the maxim *Caveat emptor.*

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made. We must also beg the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures, Linseed Cakes, &c.
WM. INGLIS CARNE, 10, Mark Lane, London.

THE LONDON MANURE COMPANY beg to call the attention of Agriculturists to their WHEAT and CLOVER MANURES for present use. The London Manure Company also offer Genuine Peruvian Guano, Nitrate of Soda, Concentrated Urate, Superphosphate of Lime, Fishery and other Salts, and all Artificial Manures of value. The London Manure Company guarantee Peruvian Guano and every Manure they supply to be strictly genuine. EDWARD PURSER, Sec.
Bridge Street, Blackfriars.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7l. per ton; Superphosphate of Lime, 7l.; Sulphuric Acid and Coprolites, 6l.
Office, 69, King William Street, City, London.
N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent. of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

WHEAT SOWING.—The undersigned beg to call attention to their WHEAT MANURE, which has been successfully used during the last two seasons, and which they are prepared to deliver at 6l. per ton, free to Railway.
They are also Sole Agents for the sale of PEAT MOSS CHARCOAL, which is a valuable deodoriser and distributor of ammoniacal matter.—English and Foreign Linseed and Rape Cakes, Guano, Superphosphate of Lime, Salt, Bones, and all other Manures of known value on sale.
Apply to MARK FOTHERGILL & Co., 204, Upper Thames Street.

SEWAGE CHARCOAL MANURE.—This highly fertilising Manure, which is Peat Charcoal completely saturated with London Sewage, will be found most efficient for every species of crop; more especially for Peas, Beans, Turnips, Mangold Wurzel, and other root crops. It will produce a greater return for the outlay than Guano or any other Manure at an equivalent value: it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained at the SEWAGE MANURE WORKS, Stanley Bridge, Fulham, at 4l. per ton, and in quantities less than half a ton, at 5s. per cwt., for ready money only; and in quantities not less than a ton, will be delivered at the London Termini of the Railroads free of charge for cartage. No charge for sacks.
It may also be had from Messrs. G. GIBBS & Co., 26, Down Street, Piccadilly, Agricultural Seedsmen, Agents for London; and from all the other Agents of the Company.

LINSEED AND CORN CRUSHING MILLS.
E. R. AND F. TURNER, St. Peter's Iron Works, Ipswich, have, during the present season, obtained the Prizes of the Royal Agricultural Society at Lincoln, the Bath and West of England Society at Bath, and the Yorkshire Agricultural Society at Ripon, for their celebrated ROLLER MILLS for Crushing Corn, Seeds, &c. These are manufactured of various sizes, particulars of which, with Illustrated Catalogue of Steam Engines, new Prize Chaff Cutter, and a variety of other Implements, manufactured by E. R. & F. TURNER, may be had free on application at the Works, Ipswich, or by Post, inclosing two postage stamps.

CORN CRUSHERS AND CHAFF CUTTERS.—A large display of the best Farm Implements shown in operation. Price Lists sent free on application.
BURGESS AND KEY,
103, Newgate Street, and 52, Little Britain, London.

PUMPS AND HOSE PIPES FOR GARDENS AND LIQUID MANURE.—BURGESS & KEY's Pumps were highly commended by the Royal Agricultural Society of England at Lincoln. Price Lists sent free.
103, Newgate Street, and 52, Little Britain, London.

CHURNS.—ANTHONY'S PATENT AMERICAN CHURN.—Since 1849 this Churn has obtained all the Prizes awarded by the Royal Agricultural Society of England. At the trial before the Judges it made in 10 minutes 4 lbs. 6 oz. of Butter from 4 quarts of Cream, being 8 oz. more than any of the other Churns from the same quantity and quality of Cream.
103, Newgate Street, London.

TO FLORISTS AND OTHERS.
J. JONES, IRON MERCHANT, has always a great variety of CONICAL and SADDLE BOILERS in STOCK; also Fire and Furnace Bars, Ornamental and Plain Supply Cisterns, Double Doors and Frames, Furnace Grates, Soot Doors, Hot Water Pipes, Elbows, Tees, Syphons, Throttle Valves, Stop Cocks, Flange and Socket Elbows, &c.; also Trough Pipes. Drawings and prices of the above, on application to J. JONES, Iron Bridge Wharf, No. 6, Bankside, London, near the Southwark Iron Bridge.

STEPHENSON AND PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.
From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

GRANITE.—ENTRANCE GATE PILLARS, COPINGS, and every kind of Yard and Stable Pitching; Field and Garden Rollers, Stack Pillars and Caps, Cattle Troughs, Window Sills, and at prices reduced by railway carriage.
Apply to H. SWIFT, Brent Moor, Ivy Bridge, South Devon.
Specimens to be seen at the Wharf, Globe Bridge, Globe Road, Mile End, London.
Monuments according to design and estimate.—Agents wanted.

WEEDS ON WALKS.
MR. FLEMING'S WEEDING OR SALTING MACHINE FOR GRAVEL WALKS, COURT YARDS, &c., manufactured and sold by ALEXANDER SHANKS & SON, Arbroath, Forfarshire, from whom particulars with prices may be had.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.
THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.
The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.
Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

LAND DRAINAGE.
MR. JOHNSON begs to inform Landowners, Agents, &c., that he is prepared to undertake the Drainage of any description of Land, either by contract, or by a small charge per acre for planning and setting out the drains, taking levels, and superintending the work. Numerous satisfactory references can be given by Mr. J., who has been for several years in constant practice as a Draining Engineer.—Address 12, Abingdon Street, Westminster.

CHEMISTRY.—A Gentleman, who has had great experience in Practical Chemistry, is willing to give private instruction in Chemical Analysis, especially in its application to Agriculture and the Arts.—CHEMICUS, care of Mr. Stanford, 6, Charing Cross.

EDUCATION.
THE REV. C. A. JOHNS, B.A., F.L.S., Author of "Botanical Rambles," "The Forest Trees of Britain," &c., educates 12 young Gentlemen for the Public Schools, Sandhurst, &c. There will be TWO VACANCIES at Christmas.
Culliper's Hall, Watford, Herts.

AGRICULTURAL TUITION.—Sons of Gentlemen received as Agricultural Pupils into the family of a Clergyman occupying a Farm, cultivated under the Improved System, 25 miles from London.—Address Rev. C. C., *Agricultural Gazette* Office, Charles Street, Covent Garden, London.

THE BIRMINGHAM POULTRY SHOW, 1854. The SIXTH GREAT ANNUAL EXHIBITION OF DOMESTIC POULTRY will be held in BINGLEY HALL, on the 12th, 13th, 14th, and 15th of December next. Copies of the Prize Lists and Certificates of entry may be had on application to the Secretary.
In addition to the prizes announced in the list dated the 23d of February last, the General Purposes Committee of the Council have resolved to offer First Prizes of 2l., and Second Prizes of 1l., for Single Cock Birds of any age, of all the following varieties, viz.: Dorking, Spanish, Cochin China, Bramah Pootra, Pencilled Hamburgh, Spangled Hamburgh, Game, and Polish; and that the same shall be entered under Letters A to H on the ordinary certificates, and exhibited separately.
Seven Silver Vases, of the value of six guineas each, will also be awarded, instead of money prizes, for the best pen of Pencilled Hamburgh, Spangled Hamburgh, Polish, Spanish, Dorking, Cochin China, and Game Fowls.
First, Second, and Third Prizes of 3l., 2l., and 1l. respectively, are offered in all the Classes for Fowls, as well as for Turkeys, Ducks, and Geese. Liberal Prizes will also be awarded to good specimens shown by Cottagers, whose entries must be made on a form of certificate different from that used for the general classes.
The ENTRIES CLOSE on SATURDAY, the 11th of November.
JOHN MORGAN, Jun., Secretary.
Offices, 38, Bennett's Hill, Birmingham, November 4.

THE BIRMINGHAM CATTLE AND POULTRY SHOW, 1854.—The Sixth Great Annual Exhibition of STOCK and DOMESTIC POULTRY will be held in BINGLEY HALL, on the 12th, 13th, 14th, and 15th of December next. The PRIZE LISTS and Certificates of Entry may be obtained on application to the Secretary. The Entries close on Saturday, November 11. JOHN MORGAN, Jun., Secretary.
Offices, 38, Bennett's Hill, Birmingham.

THE SALISBURY AND WESTERN COUNTIES EXHIBITION OF DOMESTIC POULTRY.—The Fourth ANNUAL EXHIBITION will be held on TUESDAY and WEDNESDAY, the 21st and 22d days of November, 1854. Prize Lists, with the Rules and Regulations, can be obtained of the Hon. Secretary, and Subscriptions will be received by Mr. EWER, the Treasurer. T. PAIN, Hon. Sec.

SMITHFIELD CLUB, 1854.
CHRISTMAS FAT CATTLE SHOW.—The Annual Show of Fat Cattle, Sheep, and Pigs, will take place on the 5th, 6th, 7th, and 8th of December, 1854, at the Carriage Bazaar, King Street, Portman Square, London.
All Certificates must be returned to the Honorary Secretary on or before SATURDAY, the 4th November, 1854.
Prize Sheets, and the necessary Printed Forms of Certificates, are now ready, and can be obtained on application to
B. T. BRANDRETH GIBBS, Hon. Sec.
Corner of Half-Moon Street, Piccadilly, London.

The Agricultural Gazette.

MONDAY, NOVEMBER 4, 1854.

MEETINGS FOR THE ENSUING WEEK.
THURSDAY, Nov. 9—Agricultural Imp. Society of Ireland

THE remarkable rise in the price of Wheat during the past few weeks has received full attention and discussion in our Monday's edition. We refer to it here in a single paragraph, merely to notice the relation in which it stands to the policy of extending an acquaintance with the statistics of British agriculture. It has been urged that this unexpected change in the market value of agricultural produce would have occurred with all the suddenness which has characterised it, although we had known precisely what the produce of this country this season has been: that it has not been owing to any ignorance suddenly removed, or to any alarm, the result of ignorance still existing on this point: that, in fact, it is to the absence of information regarding the produce of other countries that we must attribute the singular history of the corn market during the past month—ignorance of *their* ability to supply the English market—a source of derangement and injury to which we shall continue to be exposed, whether Mr. HALL MAXWELL in Scotland, or the Government in England, shall succeed or not in telling us soon after harvest every year what the produce of that harvest has been within the limits of our own country.

Now, this may be correct or not. We cannot yet say whether the sudden rise in prices is or is not affected by ignorance of our English produce. Some months hence we may learn that, had we known better what that actually is, the rise need not have been so great; or we may learn that that produce is less than it is now supposed to be—and a further rise may take place later in the season, which, had it taken place earlier, would have both encouraged the importation and enforced the economy by which limited supplies are supplemented and extended.

To those, however, who would argue the uselessness of statistical information regarding British agriculture from the present experience of the corn market, we would reply that this experience has, at all events, arisen from the absence of correct information hitherto—that it proves, at all events, the general proposition in connection with which the case of English agriculture is a particular instance; so that, to sum the whole up in a single sentence, if information as to the whole food supply of a country is of the highest importance to the national interests, then correct intelligence of the abundance or deficiency by which any one source of that supply is characterised is also desirable—desirable just in proportion to the rank which that particular source bears amongst the others to which consumers are in this country indebted. How largely the home supply overtops every other in this respect everybody knows.

DURING a summer of drought which has drained wells and ponds, and almost emptied many rivers, our remarks on ARTERIAL DRAINAGE have also run dry. Not because we needed floods to alarm the public into a consideration of the subject: the scarcity of water, as well as its mischievous excess, makes us feel the want of a due control of our rivers. Whether a man be drowned in his own house in winter, or perish of thirst in summer, *irregularity of supply* is in each case the cause of the calamity.

Now there have been very general complaints throughout the kingdom of the evils following a long absence of heavy rains. Cattle pining without drink, or impoverished and diseased by foul water, have left us with a scarcity of fat meat; and from meadows bare of hay, and green winter-keeping short and scanty, there is but a poor prospect of provender to last until spring. Thousands of families in many towns and over large districts of country have been reduced to a stinted allowance of turbid unwholesome water; and while sickness falls among them with an increased fatality, they sometimes appeal against the helpless water-companies. Millers want a "head" to urge round their wheels; barges run aground in half-emptied canals; and some inland navigations have been compelled to cease their traffic. All this loss and suffering impels us to the work of "trunk drainage;" for this means not simply agricultural drainage, but a complete command and control of all our annual rain-fall and springs for drainage, irrigation, mill-power, navigation, supply of dwelling-houses, factories, &c., and in fact, a thorough utilising of our abundant streams for all purposes whatsoever. Providing for the speedy evacuation of flood waters is not everything: the experience of the past season has proved that water is indeed *worth something*; and should be made proper use of before being suffered to escape. No scheme of general drainage can be relied on as sufficient, or is worth the cost of the hard struggle necessary to obtain it, that does not embrace the management as well as the discharge of our waters to the best advantage; though, of course, there are low, wet districts to be found, where a perfect agricultural drainage alone would be a cheaply-won improvement: but even in such unfortunate cases, how much more satisfactory would be a work combining other important objects with this one.

Our fen-men, who have been bound in a long apprenticeship to the trade of river making, are apt to consider our proposal as introducing so much unnecessary complication into the business; and this, because they have no experience of mill-dams, or meadow irrigation; and have always had to battle against instead of partaking with an inland navigation. But it is out of these level lowlands, along sloping river valleys hitherto unattempted by drainers, that the *power* and *valuable properties* of flowing streams must be duly appreciated and thriftily employed. And instead of placing obstacles in the way of good drainage, this course will be found to avoid the main difficulty of all—namely, the impracticability of subordinating or altogether destroying many rights and interests for the sake of one.

Now, as to the simple supply of water to lands in dry weather: once obtain a good descent and efficient outfall for your stream, and you will be able with ease to supply carrier-drains, or artificial reservoirs from the stream itself; you may store up volumes of liquid ready against a dry time,—if not in sufficient quantity to fill the ditches of your valley with all the moisture the ground may require, at any rate affording a most valuable relief to parched fields and thirsty stock. Sometimes in flat districts, when a channel both drains in winter, and waters in summer, by allowing the river with which it communicates to revert up it in dry seasons—the

mere perfecting of a water-way along a single drain is all that is required. Thus we know of several marsh farms in Lincolnshire which might enjoy a more complete drainage if a single tunnel under a road (situated upon the course of their joint outfall drain) were enlarged in capacity, and the channel of the drain otherwise improved. In wet seasons the water in the open drains remains for weeks together above the level of the under-drains; so that the land is almost saturated, and the occupiers try with surface-grips to dry the sodden furrows of their Wheat fields, and draw off pools and plashes from their Grass and Turnips. But the contracted parts of the outlet measure its capability *both ways* —for indraught as well as delivery. Had it been of proper dimensions throughout, enough water could have been admitted from a large tidal river to fill the now empty division ditches (thus fencing in the live stock which have been most troublesomely wandering into growing green-crops) and to feed both ponds and wells by its filtration; whereas, the sheep and cattle, and indeed all living animals (human beings included), have been deteriorated and diseased by drinking the only water they could procure—namely, the foul and filthy residuum in the bottoms of the open pits.

In cases where the elevated position of an estate, or its distance from any adequate water-course, renders any method of sub-irrigation impossible, it is a matter for very serious consideration whether a reservoir ought not to be excavated or formed by damming a small brook, and the drain-water of that one estate or farm conducted into it—now that water-drills and liquid-manure distributors, and the system of permanent piping and steam-pumps are striving together to apply farm-manure in the most economical manner. *I. A. C.*

NOTES ON EXPERIMENTS IN THE GARDEN OF THE ROYAL AGRICULTURAL COLLEGE.

By Professor James Buckman.—No. VIII.

(*Continued from p. 698.*)

The species of Grasses next on my list belong to that useful but puzzling genus Festuca, of which the three first are the following:—

14. Festuca pratensis, Meadow Fescue.
15. „ elatior, Tall Fescue.
16. „ loliacea, Spiked Fescue.

Of these, three were planted five years since—a plot of the usual size for each example with seed from the Messrs. Gibbs. In each case the seed came up very well, and the result of the second year's growth was the softer herbage and smaller culms of the F. pratensis. The coarser herbage and tall strong culms of the F. elatior and the spicate F. loliacea. In the third year, however, a great change had taken place, inasmuch as the F. pratensis became coarser, thus simulating the F. elatior, whilst the F. loliacea became indistinguishable from the first form of F. pratensis; at the present date, 1854, the whole of the beds are studded with rough plants of the F. elatior, with an occasional admixture of the F. pratensis form. These experiments, therefore, tend to confirm the belief which I have for some time entertained, that the three forms adverted to are referable to one specific type, and the practical bearing of the matter is no less important, inasmuch as if a Grass like the F. pratensis as it occurs in rich lowland meadows is so capable of change to so coarse a variety when transported to sterile clays, we should be exceedingly cautious in using this Grass in laying down pastures. This has been practically brought before me the last three years in observing the behaviour of one of the glades near the entrance of the Earl Bathurst's Park, at Cirencester; this glade was laid down for permanent pasture some few years since, when its Grasses seem to have consisted for the most part of the following species, independent of Clovers:—

Lolium perenne; Perennial Rye.
Poa pratensis; Smooth-stalked Meadow Grass.
„ nemoralis; Wood Meadow Grass.
Festuca duriuscula; Hard Fescue.
„ pratensis; Meadow Fescue.
Dactylis glomerata; Cocksfoot.

Of these, in general, it is only necessary to remark that they are all doing tolerably well; however, as respects the F. pratensis, the few plants of the smaller type are still very coarse, but most of the plants have visibly become coarser and stronger every year, and have now fully taken on the F. elatior form, and more especially along a line where a bed of stiff oolitic clay crops out; here its tussacs are particularly unsightly, as it is designed for lawns, but even for pasture it is so coarse and rigid as to be in itself of little value, and is, indeed, mischievous in occupying so much space, which would be better employed in the growth of Grasses of a finer description.

The other forms of Fescue, namely—

17. Festuca duriuscula; Hard Fescue.
18. „ ovina; Sheep's Fescue.
19. „ rubra; Creeping Fescue.

These three forms, unlike the preceding, have each a tendency to the growth of fine herbage; the leaves of all are exceedingly narrow, and in self-culture it grows in separate tufts, presenting no inclination to form matted turf. I have little doubt as to their being but different forms of one species; at the same time my three plots have to a great extent maintained their specific identity, though the F. rubra does not manifest the slightest disposition to creep, so that if it be true, as stated in the "British Flora," that "its only (specific) character exists in the creeping root,"[*] our clays will not perfect this variety, the creeping root being its characteristic in sand deposits.

20. *Bromus erectus*, upright brome Grass, gets on very badly in my plot, as there is below it a considerable depth of clay; however it is the commonest Grass on the stone brashes, which produce remarkably fine specimens. In its wild state it may be described as the most common Grass of the Cotswolds, where it descends into the vale; it usually marks the site of *débris* of oolitic gravel, with which the lias clay of the vale is occasionally covered. The B. erectus is a perennial Grass, in which it differs from most, if not all, of our native species. Its agricultural value is practically demonstrated by the disinclination of cattle to eat it and the very poor hay it makes, and it is interesting to find that in the analyses of 20 species of our commoner meadow Grasses by Professor Way, this Grass in the dry state stands seventeenth in its amount of albuminous or flesh-forming principles, being nearly at the bottom of the list, or among the last in point of value.

21, 22. *Lolium perenne* (Perennial Rye-grass) and *Lolium italicum* (Italian Rye-grass), have both done tolerably well in my plots; the annual seeding, however, causes the old plants to periodically die out, but they are replaced by seedlings, by which means the first form is tolerably well maintained from year to year; not, however, the second—as, being a derivative or variety of L. perenne, it has the tendency under such circumstances of growth to revert to the original form, and hence my plot of L. perenne, var. italicum, is fast wearing out, and the bed becoming occupied by the L. perenne, which latter, too, is of the wild rather than the cultivated type.

23. *Triticum caninum* (Fibrous-rooted Couch).—This has been placed under cultivation to show its distinctive characters when compared with the T. repens. The herbage of the Triticums deserves chemical investigation, as they have so peculiar an odour when their leaves are crushed that they may be distinguished by the smell alone; this perhaps arises from the active principles which render it medicinal to dogs, and at the same time causes it to be refused by cattle. This peculiar flavour would appear to belong to the whole genus.

Conclusions.—I have now brought my notes on the experimental plots of the garden of the Royal Agricultural College to a conclusion, or, at least, in so far as they were carried out in the years 1853 and 1854, and I hope not without showing that simple experiments upon the growth of plants are capable, not only of instruction by an examination of the form and method of growth of different species—the original intention,—but that, from time to time, observations may be registered in a garden so simply conducted as our own which may have great influence, not only on theoretical views, but may greatly advance, as all sound theory must, the most approved methods of practice. *Cirencester, Oct.* 21.

[*] Hooker's "British Flora," 5th edition, p. 399.

CHEDDAR CHEESE MAKING.

(*Continued from p. 699.*)

There is an appearance of ease and simplicity about the method of making Cheddar cheese, as we saw it practised in Somersetshire. In the dairies of Mr. Harding and his aunt (at Compton Dando), a regular system is followed; and those undeviating guides, the thermometer and the clock, are frequently referred to in the different stages of the process. The more that a regular system is introduced into the manufacture of cheese—subject to such modifications as the superintendent may occasionally think necessary for varying circumstances—there is the greater probability of obtaining uniform results.

The points of excellence aimed at in these dairies are the manufacture of the best quality of cheese in the most cleanly manner, and with the smallest amount of labour. In their attempt to accomplish this Mr. and Mrs. Harding have been highly successful. In addition to the girls, who do the work of the dairy, several men and boys are employed to milk the 73 cows belonging to Mrs. Harding, at Marksbury. The men carry the milk, but they do not enter the dairy in doing so. It is poured through a sieve into a receiver outside, from which a pipe conveys it through the wall to the cheese tub or to the coolers. A canvass bag is also placed over the inside end of the pipe, so that a double precaution is used against impurities entering with the milk.

The rennet is prepared much in the way that it is done in many Ayrshire dairies. Mrs. Harding steeps five vells at once, and this usually suffices for two weeks, in which time about 21 cwt. of cheese may be made. The vells appear to have been carefully cleaned and preserved. Pure, well flavoured rennet is certainly indispensable to the manufacture of first-class cheese.

Immediately after the morning milking, the evening and morning milk are put together into the tub. The temperature of the whole is brought to 80° by heating a small quantity of the evening milk. Mrs. Harding, who has had long experience in cheese-making, can tell the precise temperature within two or three degrees by merely passing her hand through the milk. Her grandniece, who now relieves her of most of the duty of superintendence, can usually tell very nearly; but even with individuals whose senses are acute there is a liability to deception, from the varying heat of the hand when it is put into the milk, in different states of the weather. The thermometer, therefore, is found to be the surest guide, and it is regularly used.

In spring and towards winter a small quantity of annatto is used to improve the colour of the cheese. It is put into the milk along with the rennet at seven o'clock. After the rennet is added, an hour is requisite for coagulation. At eight o'clock the curd is partially broken, and allowed to subside a few minutes, in order that a small quantity of whey may be drawn off to be heated. This whey is put into a tin vessel and placed in a boiler in an adjoining apartment, to be heated in hot water. The curd is then most carefully and minutely broken—Mrs. Harding and her niece performing this part of the work with utensils called shovel breakers. The servants are never entrusted with this duty. When the curd is completely broken, as much of the heated whey is mixed with it as suffices to raise it to 80°, the temperature at which the rennet was added. Nothing more is done to it for another hour.

A little after nine o'clock the work is resumed. A few pailfuls of whey are drawn off and heated to a higher temperature than at eight o'clock. The curd is then broken as minutely as before, and after this is carefully done, an assistant pours several pailfuls of the heated whey into the mass. During the pouring in of the whey the stirring with the breakers is actively continued, in order to mix the whole regularly, and not to allow any portion of the curd to become overheated. The temperature at this time is raised to 100°, as ascertained by the thermometer, and the stirring is continued a considerable time, until the minutely broken pieces of curd acquire a certain degree of consistency. The curd is then left half an hour to subside.

At the expiry of the half hour the curd has settled to the bottom of the tub. Drawing off the whey is the next operation, and the ease with which it is performed would astonish an Ayrshire dairy manager. The greater proportion of the whey is lifted in a large tin bowl, and poured through a hair sieve into the adjoining coolers. As it runs into the leads it appears to be very pure. When the whey above the mass of curd is thus removed, a spigot is turned at the bottom of the tub, and the remainder is allowed to drain off, which it does very rapidly without any pressure being required. To facilitate this part of the work the tub is made with a convex bottom, and the curd is cut from the sides of the tub and placed on the elevated centre. It is carefully heaped up, and then left for an hour with no other pressure than its own weight. After this interval it is cut across in large slices, turned over once on the centre of the tub, and left in a heap as before for half an hour. The whey drips away towards the sides of the tub, and runs off at the spigot; and no pressure being applied, it continues to come away comparatively pure.

After undergoing these simple and easy manipulations, and lying untouched during the intervals that have been mentioned, the curd is ripe for the application of pressure. But great care is taken not to put it into the vat to be pressed at too high a temperature. If the heat be above 60°, and it usually is higher at this time, the curd is broken a little by the hand and thrown upon a lead cooler, until it is brought down to the desired temperature.

Home Correspondence.

"Education of the Poor."—Your correspondent "Constance" deserves the well wishes of all the friends of progress in her philanthropic endeavour to establish a labourers' improvement society. There is nothing in the present day so lamentable to behold as the benighted condition of the rustic population; they are literally passed over or left far behind in the rapid march of improvement which marks every other class of men. The mechanic of to-day is a different and improved man from his ancestor of 50 years ago; the miner, the collier, and the weaver are all improvements on their prototypes: but the agricultural labourer is the same mechanical being as of old; not all equally stupid, not all slaves to sensual indulgence, which so often lowers man below the beasts that perish; but still in general character little altered from the Saxon swineherd who roamed the forests of Old England in the 13th and 14th centuries. The grossest superstition still exists: in many districts are to be found devout believers in the powers of witchcraft; ghosts and apparitions are quite familiar things. I remember some few years since a blacksmith, not 30 miles from London, persecuted by his neighbours for having bewitched a woman to whom he had kindly carried a portion of his own dinner. The husband swore he would have his life, and his house was continually assailed until the police were called in; the poor fellow told me with tears in his eyes what a wretched life he and his family endured. The benefit would indeed be a great one to the working man if he could be raised above such miserable delusions and placed in the position of an intelligent being. What pleasure might thus be added to his life of toil; how superior such enjoyment to the evanescent delirium which leaves the body weakened, not refreshed; and suppose the mind could contemplate some agreeable recreation, would not the hours of labour be sweetened! A thought of the cheerful room with its blazing fire, its nice books, and amusing yet simple lecture, which were he not ignorant, as he would then know himself to be, he could understand, would surely have a good influence on the man; and if he felt that his employer had contributed to this increase of his happiness, would he not try and make some returns by increased industry in his labour? The opponents of education may sneer, but it

stands to reason, and will, I confidently believe, stand the test of experience, that whatever the occupation may be, the better the education is—and mark, by education I do not refer simply to the arts of reading and writing, but to the far more important training of the moral principles and enlightening of the mind—so much the more fit must the man or woman become to thoroughly carry out any duty that may devolve upon them. Your correspondent asks for information from those acquainted with mechanics' institutes. Because I know something of the latter, I have ventured to reply, not however to hold such institutions up as a guide, but rather to suggest that, as the cases appear to me perfectly different, the same treatment is hardly likely to prove successful. The mechanic, constantly surrounded by his companions (many of whom are far more clever than himself), is ever learning from them. He sees men, formerly as poor as himself, rising to wealth and honour; he thirsts to do likewise—the spirit of self-improvement seizes on him, he will take every opportunity and strain every nerve not to be left behind in the great race which he hourly sees around him. For him the lecture on science is adapted, because he has already, or will hereafter, familiarise himself with the details by reading. He can read a book out of the library with delight, because his mental faculties are quicker than those of the labouring man. The ordinary system in mechanics' institutes provides a good library and reading-room in which the daily papers and magazines can be seen; instruction is communicated principally by lectures and classes, the latter usually conducted by the members alone without extraneous assistance. Such classes commonly comprehend drawing, music (vocal and instrumental), the reading of original essays, and meetings for debate on given subjects of general interest. A writing class is often not required. Now it would of course be utterly absurd to attempt anything of this sort in a society where many of the members could neither read nor write. It is evident in such a case we must begin at the beginning and set them down to straight strokes and the alphabet, and indeed have all the drudgery of school days over again, with those whose minds are much more stupid and fingers much less pliable than when young. This will be indeed a work requiring great patience and untiring energy. Moreover, judgment must be exercised to guard against the pupils becoming weary and giving up after the first few meetings. Vary the occupation as much as possible, limit each lesson to a very short period, especially at first, until a love for the pursuit itself is engendered, when it does not matter how long a time is allowed. For instance, writing might be the first employment, say for a quarter of an hour; then should follow some simple discourse upon common things. The party who visits the room might have a rude map of the world on a large scale, which, hung up in a conspicuous position, would form the subject of numerous interesting lectures. The nature of the earth, the minerals it contains, mines, and anecdotes about mines, &c., would all form topics for discussion, which could not but interest and enlighten the members. This would occupy another quarter to half hour, when might follow the reading classes, and in this or a similar manner the evening would pass very pleasantly; music should not be omitted, as it has a softening influence upon even the coarsest material. All lectures should, where they will bear it, be copiously illustrated with large diagrams. If arithmetic is attempted, it should be taught orally; a teacher and class, with a black board, will get on far better than slates for each, as under the latter plan they would soon go off to sleep. Drowsiness will be a great enemy; that must be done battle with by awakening the interest so far as to overcome the fatigue of the body—the habit once acquired, attention becomes easy. The task which Constance so kindly proposes to herself is one of no ordinary magnitude, and before fairly embarking in it she will do well to count the cost and all the difficulties which will surround her. Much time must be devoted, many other things laid aside, if she would be successful. In order that the society may prosper there must be a leading mind directing everything. Having once decided to make the attempt, let the resolution be firm not to be easily discouraged—not to expect too much at first—to be satisfied with very small things, so long as there is evident progress; and, above all, let the mind be fully prepared to carry through thoroughly whatever it undertakes, otherwise I much fear that, like many similar societies, it will, after a flourishing commencing, rapidly decline, and finally disappear in the mists of ignorance which will ever assail it. *C.*

Breeding of Stock.—In reply to "J. L.'s" enquiry, I beg to state that I do not keep horned stock for breeding. I replenish my dairy stock by purchase, so as to keep up my quantity of milk at 110 to 120 quarts per day. I sell my calves when a few days old. My food is intended to induce the greatest yield of milk, and to maintain and improve the condition of the animals. I frequently purchase "strippers," cows which are sold by other dairy keepers on account of their giving too little milk. After these have been for a week or two under my treatment, their produce of milk increases I may say invariably to the extent of 1½ to 2 quarts per day. As my practice combines milking and feeding, I continue to milk to a much lower produce than those who keep for dairy purposes solely. From six weeks to two months suffice after the cows are quite dry to fit them for market. *Y.*

Reigate Penny Savings Bank.—The managers of the Penny Savings Bank at Reigate have the pleasure to present to their young friends, the depositors, a summary of receipts and payments for the first year—that is to say, from the 4th of September, 1852, to the 3d September, 1853, inclusive. The managers hope that the operation of this little institution will be considered to have been very satisfactory; and to afford every encouragement to their youthful depositors to persevere in their highly useful and meritorious habit of saving their small sums of money, and bringing them for safe keeping and for accumulation to the Penny Bank. The managers are clearly of opinion that all children and young people having pence to spare should become depositors; and that it may be considered to be an indispensable as well as a pleasing duty on the part of parents to encourage in their children the invaluable habit of saving. It is of the greatest importance to establish good habits while their children are young; one of the chief of which may be considered to be the habit of saving their money.

Statement of Receipts and Payments from the 4th September, 1852, to 3d September, 1853, inclusive.

	£.	s.	d.		£.	s.	d.
Number of Depositors, 206. — Amount received from the same	83	2	6	Invested by the Treasurer in the major Reigate Savings Bank	61	0	0
Interest on Deposits. to 20th November, 1852	„	„	3	Sums transferred from the minor Bank — By 10 Depositors for investment in the major Savings Bank	10	15	6
				Withdrawn by 17 Depositors from their current accounts ...	5	0	8
				Cash in the Treasurer's hands	6	6	7
	£83	2	9		£83	2	9

Examined and found correct, GEORGE BAKER, *Auditor*; THOMAS MARTIN, *Treasurer*; GEORGE GOODCHILD, Jun., *Secretary*.—5th September, 1853.

Thick and Thin Seeding.—With all due deference to our friend Mr. Goodiff, of Granard, allow us to notice that in his observations last week, in reference to our planting Wheat at 1 foot apart, or about 6 pints per acre, that we "challenge the United Kingdom to produce so good a crop as ours." He ought to have added the whole sentence, viz., "from their 192 pints or 3 bushels of seed per acre," or a wrong construction may be put upon it altogether. All we meant to convey from it was, that a greater crop has been grown by us, and can be by others, if they choose to take the same trouble, from 6 pints per acre, than it is possible can be by any body else at the opposite extreme, 32 times as much, 192 pints, or 3 bushels per acre, admitting all the seed to grow, as it too often does, in ordinary course. *Hardy and Son, Maldon, Essex.*

Adulteration of Manure.—Your exertions to bring to light the adulterations which are constantly taking place in manures, seem to have called forth your remarks upon the yellow ochre (or in other words common loam not worth 1*s.* per ton) deposited in the warehouse lately blown up by the explosion at Gateshead. You blame the manure-makers, but you must not except the buyers. The worst and best manure in the kingdom is manufactured in this neighbourhood, but the worst has had buyers when the best has had few; such expositions as you furnish tend to place things in a better position; but farmers are always beset with small-saving and penny-wise and pound-foolish ideas, and notwithstanding your exertions, along with those of many other enlightened men, to improve their condition, are still prone to buy any rubbish if the figure is only low. The Royal Agricultural Society is not free from this, when they offer a prize of 1000*l.* for a manure at 5*l.* equal to another at 10*l.* If the history of the loam above-named was gone into, I suspect it would tell a dismal tale. If there were no receivers of stolen goods there would be few thieves—if there were no buyers of spurious manures there would be no makers. As long as the agriculturists allow themselves to be cheated—and millions have been wasted on bad manures—so long will there be plenty ready to cheat them. I hope your frequent expositions and their increasing knowledge may at last be excited to a good purpose. *A Member of the Newcastle-on-Tyne Farmers' Club.*

The Harvest and its Results.—Every one had anticipated a cheap loaf—a great blessing in every respect; but the disappointment has been more than proportionate, especially as the prices of most articles in general consumption (coals among the rest) have been already advanced, just at a period when approaching winter tends much to aggravate the evil. Surprise is expressed by all; and even the writers of agricultural periodicals appear to be equally perplexed. In order to throw some light upon a subject so involved, I venture to extract the following passage from a letter just received from Scotland, written by a gentleman who may be justly esteemed one of the first authorities of the day:—"The present high prices of grain, after a bountiful harvest, arise from that harvest following a year of scarcity. The farmers having to secure their crop, to take up their Potatoes, and to plough their Bean and Potato land for Wheat, have no time to thresh out their stacks of grain; and the wants of the people depending upon the new crop (the old one having been entirely exhausted), there has not been time to supply their demands. Add to this, the demand of France for our grain at a time when there is no water or wind to assist the French to thresh out their own abundant crop; there being no steam-power used on farms in France, they are entirely dependent on wind and water. The prices must fall whenever rain falls, and the farmers have leisure; but they will not be low this season, because we have begun to consume our new crop at once; and should the next harvest be a late one, this crop, abundant as it is, may still be too short for our support. The rule of France being arbitrary, she comes into our market and buys up all the flour our steam machinery can make; and our millers do not care whether or not our people eat dear bread, provided they can dispose of their flour at a higher rate to a foreign country. We have had no rain here, to speak of, since the harvest, and the ground is so dry as to prevent the sowing of Wheat." More might be added, as the recent French enactments must tend to complicate the present difficulty. *J. T.*

On Premiums to Farmers.—I quite coincide with the opinion of your correspondent "J. M.," that self-interest is the inducement to contend for premiums; and, further, that the majority of competitors consist of landlords, stock-breeders, and agricultural implement-makers, These show the best of their race and kind, but often at an expense that does not suit an ordinary farmer—profit and not fame is what he requires. He no doubt often attends, and glances over those fashionable exhibitions, tries to guess at the value of the prize stock, and the cost of production; and this is the most benefit such a man derives, bound, as he too often is, by a short tenancy and the custom of the country. In a fair or market he could do this with more satisfaction. I would therefore suggest that premiums be awarded to landlords who have learned and can show the philosophy of growing, if not 25 tons of hay an acre, at least double the quantity usually produced in the neighbourhood. To the tenant whose landlord enabled him to do this with security, I would also give a premium. The kind and quality of stock, &c., best suited to each district and party would be got without the assistance of premiums. *W. H., Tyneside.*

Economy in the Consumption of the Turnip Crop, by Using the Turnip Cutter.—In a season like the present, when the yield of Turnips is deficient in many parts of Great Britain, the following extracts will be found more than ordinarily interesting:—From Mr. Pusey's Reports, in the Royal Agricultural Society's Journal. Article, by Mr. Pusey, on "English Agriculture," 1840.—"The advantage (of using the Turnip-cutter) is twofold; saving the teeth of old ewes, for which the Swedish Turnips especially are too hard; saving the waste of this valuable root, which, where partially scooped out by the sheep, is rolled and trampled about with great waste. The economy effected by this machine has been stated to be no less than one-third of the whole produce. If it be taken, however, at only a fourth or fifth, why, it may be asked, has not every farm in the country been long since furnished with this cheap apparatus?"—Mr. Pusey's Paper "On the Progress of Agricultural Knowledge during the last Eight Years." Royal Agricultural Society's Journal, 1850, page 430. "I have endeavoured to ascertain the profit of Turnip-cutting. If, of two lots of lambs, the one received, during winter, cut Turnips, the other uncut Turnips, the fold with cut Turnips would be worth 20 per cent. more than the other fold. The former would sell for 40*s.* a head if the latter fetched 32*s.*, and the cost of cutting would be 1*s.* per head, leaving 7*s.* clear profit upon one sheep. If this statement had been made by an amateur agriculturist, one would have been rather sceptical. It was given to me word for word by two experienced practical farmers; and I only write it down from their mouths for the consideration of their brethren in any benighted districts of England, or even Scotland, if such yet there be. Let them consider that 7*s.* per sheep upon Turnips comes to 70*s.* per acre upon the Turnip crop, nearly the average rent of land for the four years' course till the Turnip comes round again. And what is the investment of capital? 5*l.* for one best Banbury Turnip-cutter, which will last for five years. We ought to hear no more of the extravagance of high farming. Your real spendthrift farmer is the man—penny-wise and pound-foolish—who gives whole Turnips to his tegs."—Extract from W. Dickinson's Report "On the Farming of Cumberland." Prize Report, Royal Agricultural Society's Journal, 1852, page 229. "Large quantities of Turnips are now consumed on the ground by sheep and some by cattle; a few are at the pains of having Turnips cut for lambs and young sheep, given them in troughs, and find great benefit from it, as the sheep thrive better, and leave little or no waste of the roots. In consuming roots on the ground in the green state, or drawn and given loose on the greensward, the waste of Turnip shells and skins amounts to as much as the cost of cutting, and the sheep seldom do as well."—Extract from Morton's Cyclopædia of Agriculture. Article, "Turnip-cutters," page 1030. "For cattle, too," [as well as for sheep,] "the advantage and indeed the need of cutting roots, is obvious to any one who has seen an ox trying to master a whole Turnip in his mouth at once, with outstretched neck, and energetic tongue, and slavering mouth.—*From a Correspondent.*

A Well-managed Benefit Club.—An enumeration of some of the advantages attending membership in this newly established Friendly or Benefit Society. 1. The perfect safety of the capital stock of the club; from its being invested in the government securities, and the rules and tables having been approved and enrolled by the proper authorities according to Act of Parliament. 2. The entire amount of the monies subscribed by members will be devoted to their benefit in sickness and infirmity; and, in old age, when the weakness and inability to work attending an advanced period of life will render such a provision as this society will afford, so valuable. 3. This society affords also an opportunity of

providing an endowment for a child, to be available at 14 or 21 years of age, as an apprentice fee, or other beneficial application of the amount subscribed for. 4. The monthly contributions are regulated according to the weekly allowances in sickness subscribed for, at the discretion of the insurer, varying from 2*s.* to 10*s.* per week; and the weekly allowances in old age, whether sick or well, may be from 1*s.* to 5*s.* per week for the remaining duration of life. Or, members may subscribe for pay in sickness during life, without any superannuation allowance. The endowment for children may be from 10*l.* to 20*l.*, payable at 14 or 21. 5. All the expenses of management will be defrayed by the subscriptions of the honorary members—those who will receive no benefit from the funds; and the surplus of such subscriptions will be applied in aid of the benefit fund. 6. By membership in this society, habits of economy, forethought, sobriety, and industry, qualities so essential to the comfort and happiness of families, as well as of individuals, are essentially promoted. The friends and supporters of this club therefore look forward with an assured confidence to its stability and permanency. They know that it has in its composition all the elements of usefulness and of a beneficent career, so as to become a comfort and a blessing to those who, by their prudence, economy, and forethought, are induced to become members of it. The young people of both sexes of —— and its neighbourhood, from 15 years of age, upwards, are therefore strongly invited to join the society. [This is the prospectus of the Reigate Victoria Club.]

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

MONTHLY COUNCIL, *Nov.* 1.—Mr. Miles, M.P., president, in the chair. The names of 35 candidates for election at the next meeting were read.

FINANCES.—Mr. Raymond Barker, chairman of the Finance Committee, presented the report on the accounts, along with the usual quarterly balance-sheet under each head. The current cash-balance in the hands of the Society was 471*l.* Mr. Fisher Hobbs having called the attention of the Council to the amount of unpaid subscriptions, it was ordered, on the motion of Sir John Shelley, that lists of all the members in arrear should be prepared, and suspended in the Council-room.

LINCOLN MEETING.—On the recommendation of the Finance Committee, a vote of thanks was unanimously passed to Messrs. Smith, Ellison, and Co., of the Old Bank, Lincoln, for the accuracy and courtesy with which they had acted as the local bankers of the Society during the period of the Lincoln Meeting. Mr. Raymond Barker, as Steward of Admissions and Receipts at the Show-yard during the Lincoln Meeting, made a very satisfactory report of the operations of that department, in which occurs the following passage, bearing testimony to the admirable conduct of Inspector Teddy, of the A Division of Metropolitan Police and the men under his charge, sent to the Lincoln Meeting by the Commissioners of Police, by direction of Viscount Palmerston, on the representation of the Society:—

"To the unwearied attention and exertions of Inspector Teddy, the head of the Police establishment alone, was the steward indebted for the continuous and rapid interchange of cash which afforded all requisite accommodation to the public, while it successfully obviated all grounds for complaint or delay; when it is considered that during several portions of the principal day the influx through the barriers was at the rate of quite 30 per minute, much credit must be allowed to the police for the vigilance and good temper with which they discharged their arduous duties."

On the motion of Mr. Fisher Hobbs, it was ordered "That a complete balance-sheet of the Country Meeting of each year shall in future appear in the last Journal of the Society for the same year."—Mr. Barnett, as senior steward of cattle at the Lincoln meeting, made the first report of that department, which was adopted by the Council.

CARLISLE MEETING.—The agreement entered into by the Secretary with the authorities of Carlisle was laid before the Council, who ordered the great seal of the Society to be affixed to it.—Mr. Fisher Hobbs, as senior steward for the Carlisle meeting, reported that instructions had been duly given to the Local Committee in reference to the preparation of the land for the trial of implements next year. Suggestions from the local committee for special prizes to be offered for particular breeds of cattle at the Carlisle Meeting were referred to the special Council on the 7th of December, when the Stock Prize List for 1855 would be taken into consideration.

MEMBER OF COUNCIL.—On the motion of Mr. Raymond Barker, seconded by Mr. Fisher Hobbs, the Earl of Darnely, of Cobham Park, Kent, was unanimously elected a member of the Council, to supply the vacancy occasioned by the decease of Mr. French Burke.

The President reported to the Council the steps he had taken during the recess, in reference to important communications received by the Society from Viscount Palmerston, as well as to various letters addressed to him from abroad. He also called their attention to the great mass of evidence which the Earl of Clarendon had so kindly been the means of obtaining for the Society, in reference to the occurrence of guano and the nitrates in tropical regions, and which the President had no doubt would eventually lead to important results of a commercial, as well as of an agricultural character.—A splendid collection of agricultural works, published in France under the inspection of the minister of that department, was received by the Council as a present to the Society from the French Government, and an unanimous vote of the best thanks of the Council ordered to be returned in acknowledgment.—A present of agricultural works was also received through the Smithsonian Institute of the United States, from that body and individual authors, for which the best thanks of the Council were ordered.—Miss Banister, of Steyning, transmitted a large collection of specimens and models, with explanations, connected with Grass cultivation and products, cottages, &c., which were ordered to lie on the table for the inspection of the members.—Professor Solly had leave to exhibit at the Trade Museum, for a certain period, the Society's collection of German wools, presented to it by the Mecklenburg growers.—Mr. Farmer, of West Canada, applied for information on the question of standard "points" of excellence in prize cattle.—Mr. Ruck and Mr. Lawrence transmitted communications on the subject of selecting judges for Cotswold sheep, which were ordered to be reserved until the date when the Council would take the question of the selection of judges for the Carlisle meeting into consideration.—The Ledbury Society addressed the Council on disputed points in adjudicating prizes for live stock.—Various communications were received connected with the subject of offering foreign threshing-machines for trial in England without expense to the farmer, placing manure-steeps and syrups for seed-grain at the disposal of farmers for trial, and establishing in this country and in France large manufactories of fish-offal manure. — Colonel Warrington submitted a claim of reward for his new guano.—Col. Clinton suggested a prize for a machine for separating the ears of corn.—The Hull Chamber of Commerce requested information on the best means of "treating the refuse of the Hemp-plant, in order to fit it for the soil again, apart from the usual farm-yard process."—Mr. Roch presented, for adoption by the Society, a new form of journalising farm-accounts under required heads, in the most simple and intelligent manner.

Adjourned to Dec. 6.

BRAINTREE AND BOCKING.—The annual meeting of this society was held on Thursday, the 19th ult. The following is extracted from Mr. Mechi's address on the occasion:—Mr. Mechi said that somehow or other, however disagreeable his principles might be to some, he generally found that, personally, he was well received. It was so throughout the country; and where he had thought he should be torn to pieces in some of the most prejudiced districts of England, he had always received the greatest personal kindness. He agreed with Sir John Page Wood that these meetings were hardly practical enough. To bring forward the business of agriculture they should have a club-room in this town, in which the farmers might meet and discuss the great principles of agriculture. This was done in commerce and manufactures: they could not go into a large town but there was either a Chamber of Commerce or some other particular place where the interests of trade and manufactures were discussed. Such then ought to be the case with agriculture. Now, suppose this town were at this moment discussing how they were to proceed with their Board of Health—how to dispose of the good things they ate and drank, collected together as sewerage, so as to connect sanitary improvement with the good of agriculture. If the farmers after market would meet here the tradesmen and authorities of the town, it would very much facilitate the transmission of the good things of this town to the fructification of the soil. The great question of the day was the question of manure. There was not a farmer who did not tell them that he could not produce a great deal more beef and mutton, and a great deal more corn, if he could obtain more manure. Let them therefore look to the sources from which it could be obtained. This was not, mind, a theoretical question. He had a letter from his friend Mr. Walker, of Rugby, who had taken all the good things from the people of that town, and, by the process by which it was carried on to the land, the sewerage of the town was forming food for the people in the course of something like 24 hours. Now they had 8000 or 9000 people in these two towns; and he asked them, would not the manure of that number of sheep place any farmer in this neighbourhood in a much better position? He should like to ask Mr. Hobbs at what he valued the manure of one sheep per year? Mr. Hobbs said he did not know. Mr. Mechi: Is it 5*s.* a-year? Several gentlemen replied "Yes," and some said more. Mr. Mechi: Then, if they had 8000 people, it would be worth 400*l.* at 1*s.* per head; at 6*s.*, 2400*l.*; or at 5*s.*, 2000*l.* Now, he was told he was a visionary man; but what he complained of was, that the farmers did not keep proper accounts. Mr. Walker had bought the manure of these 8000 people of Rugby for 50*l.* a-year, under a lease of 21 years; and he (Mr. Mechi) hoped they had some calculating man amongst them here who would follow his example, and take the manure of Braintree, but not the manure only—the water also. At Rugby they had 150,000 gallons of water per day used, and Mr. Walker therefore not only got the sewage of Rugby, but 150,000 gallons of water a day to mix with it. Now, so important was this mixture, that Mr. Telfer, of Ayr, writing to him (Mr. Mechi) yesterday, said that he had put on guano in dry weather, and had watered one part and left the other unwatered; and the difference was 75 per cent. against that which had not been washed in. Now, if this could be brought home to the farmers, he knew there was no class of men so keen as to the pounds and shillings as the farmers of England. If they were all agreed that a sheep's manure was worth 5*s.* or 6*s.* a year, that of a man must be much more valuable. So much for this subject, and it was a great one. They should, he hoped, no longer permit that the good things of this world should flow down their rivers while they were crying out for guano from Peru. Then it was asked "where is the money to come from?" A man of his (Mr. Mechi's) acquaintance, who said so three years ago, had now found 300*l.* to buy a steam-engine. (Hear.) Landlords had said they could not put up covered buildings; but when they came to learn that they were for the benefit of both landlord and tenant, they would put them up. The most difficult lands in this country to manage were those on which they could not keep sheep in the winter; but if gentlemen occupying such land had a covered yard and boarded floor, to which their animals could be brought home in wet or severe weather for a few days, eating straw and so on, there would be no hindrance to their keeping stock, because they had the opportunity of turning them out in the day time and bringing them home at night to warmth and cover. He contended that it would pay both the landlord and tenant to make the necessary outlay for putting up covered buildings. In winter the days were short and the nights long, and the sheep could not feed after about four o'clock; and how could they be expected to thrive if left all night on the cold, wet clay. He said they were not calculating men as farmers. They did not calculate the fractional parts of the cost of the articles they had to produce—they did not know where the shoe pinched. The object was to correct these errors, and he believed the time was coming when, as the manufacturer calculated the disposition of his capital—how much went for the material, how much for labour, and how much for bad debts—so the farmer would calculate how much went for every pound of mutton he made. Though he was considered theoretical, he had gone into accounts sufficiently to know that farming was a very slow business—(hear and laughter)—and that it always would be, as compared with other pursuits. It was very fortunate it was so, because, if it were not, they would not have any towns; they would not find any population ready to forsake the beauties of nature, and the happiness of life, for constant attention to a town life, only that it was known the business of the town was more profitable. Then they must seek to make agriculture more profitable. When they found a man putting on 20*l.* worth of manure to an acre, and saw the effect of the rents, tithes, and other irremovable taxes upon the small producer, it was impossible the latter could compete with the man of capital who could do that. Agriculture could not remain as it was. They were now 23 millions in population, and their next "double" would make them 46 millions; consequently they would have to employ the additional number of people, and double the amount of their production. There was one other thing he should mention: it was exceedingly gratifying to him to see a large improvement in the housing of agricultural labourers. It was no use mincing the matter, but they were justified in getting out of their labourers all the work that they could in a proper manner; and if they had four miles to walk to and from their work every day, how materially must that lessen their capacity for work? Would any farmer think of sending his horses that distance, and was not the muscular power of the labourer of as much importance as that of the horse? He hoped that landlords, being no longer tempted by a particular law of settlement, would erect cottages on their estates, so that the men could have ready access to their work. Then their mechanics enjoyed the advantages of literary institutions, of reading rooms, and museums; and why had not the agricultural labourer the same advantage? He would suggest that they establish reading-rooms in their several parishes, supplied with papers which they themselves had done with the day before; so that the labourer might read the spirit-stirring articles on the battle of the Alma, instead of retiring to his home like his pigs, with his mind wholly unenlightened. These were things which he (Mr. Mechi) saw coming in the distance. He took for his guide a great principle. Let him have his basis in that great principle, and he threw his miscalculation to the winds. (Cheers.) Mr. Mechi having resumed his seat, Sir J. P. Wood said he should like to ask his friend what, in his opinion, was the relative advantage of agriculture and commerce?—Mr. Mechi: I suppose my friend Sir John means which do I get the most money by?—Sir J. P. Wood: No, not at all; your general opinion?—Mr. Mechi must tell them, individually, of course his town business paid him much better in proportion than his country one. And why? Because he could make more returns in the year. He could concentrate a larger capital in the year. He paid rent on one of his houses at the rate of 200,000*l.* an acre; and the farmers must do as they in towns did—cram the smallest piece of ground with all the capital they could. Now, the farmers had certain fixed charges—their horse and manual labour, &c., came to 4*l.* an acre, and that was a heavy charge upon a 4*l.* 10*s.* or 5*l.* return, which was the utmost realised. What they did in towns was to cram the capital in the smallest possible space, so that the fixed charge should become as small as possible. He was asked the question the other day "How many farmers failed out of 100—do not 50 go out without their money?" He (Mr. Mechi) said that it was more than 50; and, although it had been the fashion to laugh at those who came out of towns to farm, he would

say, "take care to get as many of them and with as much money as you can." How many people had felt the benefit of the thousands he (Mr. Mechi) had spent at Tiptree? Let them get all the men of money they could to farm, for the effect was to give the labourer more work, to lessen the rates, and generally to elevate the principles and views of those whom they came amongst. He concluded by drinking "Success to agriculture."—Mr. Raven, who observed that in reference to what Mr. Mechi had said about reading-rooms for the labourers, he (Mr. Raven) had himself opened one in his own parish; but he was sorry to say it was very little attended. The first question put to him was, "Have you got a pint of beer for me? then I'll come." Generally speaking, however, he found these men were not educated at all—(hear)—and they must look forward to the time when there would be a great spread of education amongst these classes. (Hear.)—Mr. Mechi said he had a curious fact to notice. After having exhausted the greater quantity of liquid manure from his tank, he thought they might clean out the solid matter and put it on to the Mangold Wurzel; and to show that the liquid manure was the more efficacious, there was no crop in comparison with other parts at which the liquid manure had been applied. He mentioned this in order that there should not be allowed so large an escape of manure from their yards as they sometimes saw.

Chemico-Agricultural of Ulster, *Oct.* 29.—Dr. Hodges exhibited an analysis of some soil from Lois-Weedon, where, he said, he had been informed, nine successive crops of Oats had been grown without manure, and the last was stated to be more abundant than the first. He regretted that neither Mr. Paul M'Henry, who was acquainted with the soil, nor Mr. Caldwell, who had visited Lois-Weedon, and had grown a crop according to Mr. Smith's instructions, were present. Dr. Hodges remarked, in reference to the composition of the Lois-Weedon subsoil, that it was rich in lime, and very different from the soils in Down and Antrim, upon which he considered that the plan of cultivation recommended by the modern disciples of Jethro Tull would, in a much shorter period, produce exhaustion. Some exceptional soils, even in the north of Ireland, were not easily wrought out; and, as an example of these naturally rich soils, he instanced the case of fields adjoining some old religious establishments which were so well stored, from various causes, with the elements of fertility that, year after year, they gave abundant crops without the application of manure. He trusted that Mr. Caldwell would give the Society an account of his experiments.

Reviews.

Moubray's Treatise on Domestic and Ornamental Poultry, &c. A new edition by L. A. Meall. Virtue. 12mo. pp. 504.

That Moubray's poultry book is that which best suits the wants and taste of poultry breeders seems sufficiently shown by its having passed through nine editions in its original form. It is, however, undeniable that Mr. Meall has much improved it without diminishing its utility. He appears to be familiar with his subject, and to possess the tact to know when he has said enough. The work is embellished with nine coloured plates, representing faithfully, not extravagantly, some 34 different races of poultry.

Having spoken thus favourably of the work before us, we must bring under the notice of our readers the following statement, which Mr. Meall makes for the purpose of indicating how large a part the breeding of poultry may form among the minor sources of a nation's wealth :—

"The poultry markets of London are Newgate and Leadenhall,—the latter being the largest in the world, and about two-thirds of the whole number of fowls sold in London are vended there. According to Mr. Mayhew, in his work already referred to, the total number of fowls sold annually in the above markets is estimated as follows :—

POULTRY SOLD AT NEWGATE AND LEADENHALL MARKETS.

	ALIVE.	DEAD.	TOTAL.
Game, &c.	...	910,000	910,000
Domestic Fowls	60,000	1,756,000	1,816,000
Geese	...	1,002,000	1,002,000
Ducks	40,000	383,000	423,000
Turkeys	...	124,000	124,000
Pigeons	...	383,000	383,000
Total	100,000	4,558,000	4,658,000

"To the above may be added about 350,000 heads sold by the poulterers and shopkeepers, making a total of about five millions of birds, wild and domestic.

"Eggs also constitute a by no means unimportant article of commerce. The largest supplies to the English markets are obtained from Ireland: from which country the annual exports of eggs, according to official returns, amounted in 1835 to seventy-two millions; but now it is estimated that we yearly receive one hundred and fifty millions. Of this number London and Liverpool respectively consume twenty-five millions each.

"The chief imports from the continent are from France, some from Holland and Belgium, and occasionally from Spain and Portugal. Half of this supply is taken off by the consumption of the metropolis. Besides being valuable as an article of food, eggs are largely employed in the manufacture or dressing of kid gloves, the yolks being used to soften the leather: in this way upwards of 80,000 eggs are annually consumed in one large glove factory at Bermondsey; the eggs when imported being placed in lime water, by which they are kept good for use a whole twelvemonths. From the returns of the Board of Trade, it appears that the *average* number of eggs *annually* imported and entered for home consumption in Great Britain, during the period ending 1828 to 1832, was 61,431,062; from 1833 to 1837, it was 68,493,516; and from 1838 to 1842, the average reached 91,393,732: since which the yearly imports have been as follow :—

1843	70,415,931	1848	88,091,277
1844	67,565,167	1849	97,884,557
1845	75,627,362	1850	105,780,540
1846	72,299,487	1851	115,524,243
1847	77,542,311	1852	108,320,490

Whilst in the five months ending May 1853, the number entered for consumption has amounted to 51,694,026, showing a diminution in comparison with former years. The weight of the annual imports is about 4500 tons; and the value of the same reckoned at only 4*d*. per dozen eggs will be 150,000*l*. which would be very considerably enhanced if we added the extra charges for freight, duty, &c.

"More insignificant, though scarcely less necessary, articles of commerce in connection with poultry are the feathers and down. From the earliest times they have been eagerly collected and sought after to furnish the luxury of soft couches and beds: and under the reign of Henry VI. their value caused them to become the subject of a statute or enactment. At the present day the down and feathers of ducks, pigeons, and partridges are used in France for pillows and mattresses. In the Lincolnshire fens, where goose-rearing is very extensively carried on, the feathers are considered most valuable; as for stuffing beds those of geese are esteemed more suitable than others. Whether from increasing desire for luxuries, or the diminution in supply, or from both causes co operating, the demand is obliged to be supplied by importation; and the value has consequently been maintained, and indeed increased. The down of the Eider duck is collected in very considerable quantities by the inhabitants on the coast of Sweden and Iceland, where the fowls locate themselves in great numbers. The Eider down (of which each duck yields about 1 lb.) is rendered so valuable by its lightness and elasticity, which is so superior, that 2 or 3 lbs., whilst capable of being compressed into a ball a man might hold in his hand, are sufficient to fill a foot mattress for a bed. The declared value of foreign feathers imported into this country

In 1846 was	£5279	In 1848 was	£4680
1847	4237	1849	5096

Messrs. Hering of London have recently introduced, and successfully, the purification of feathers, on an extensive scale, by steam machinery."

We must not omit to add that this edition contains a very valuable treatise on Poultry diseases by Dr. Horner, who has taken up the subject in the spirit of an enlightened and experienced practitioner, and has thus, we trust, put an end for ever to the absurdities of the quacks in whom our country friends have too often been obliged to place their trust. The views taken by Dr. Horner are thus explained by himself, and will, we trust, lead to a careful study of the copious practical instructions which he has given in addition.

"The treatment of the diseases of poultry has ever been chiefly empirical; and at the present day, nostrums and specifics to cure all their disorders are continually being set forth. Moubray has observed, with much severity and truth, that 'the far greater part of that grave and plausible account of diseases and remedies, which is to be found in our common cattle and poultry books, is a farrago of sheer absurdity; the chief ground of which, it is to be apprehended, is random and ignorant guess-work.' The attempt has, however, been made by some recent writers, to describe the diseases of fowls more scientifically: and doubtless they have rendered very great service; yet, it must be conceded, that sometimes, in their advocacy of new views and the application of some remedies, their efforts do but teach us how especially watchful we ought to be, that, in treating of the diseases of poultry scientifically, we do not, at the same time, do so irrationally.

"The great source of error arises from disregard of the important fact, that there is a vast and intrinsic difference between the constitution of fowls and that of man;—not only in the structural or anatomical, but also in the functional conditions of the great organs of their bodies, and especially in those of digestion and of respiration, as well as of the skin. Indeed, the function and condition of the skin of fowls bears no analogy to that of man. In him, it not only exercises most important influence in health, but in disease it oft is the great medium by which medicines effect relief. Hence it follows, that the action of a certain class of medicines on fowls must be negative. Yet we read, that certain drugs are recommended and administered to fowls, which, if there be any truth in the position just advanced, cannot exert upon them that action or effect which they do on man, when afflicted with similar disease of the same parts.

"It is not enough that we possess a knowledge of the medicinal powers of a drug, when applied to the diseases of man; nor even, that we are acquainted with the real nature of the disease with which a fowl is afflicted: the important consideration still remains, how far the anatomical and functional peculiarities of parts or organs will modify or change, will increase or (may be) wholly negative, the action of a medicine on their so differently constituted bodies.

"Let us take an example. The tartrate of antimony (tartar emetic) has, by recent writers, been much commended in some inflammatory diseases of fowls,—as in inflammation of the wind-pipe, and also of the lungs. It is well known, however, that much of this drug's beneficial effect in those diseases of man is attributable to its action on the skin—to its inducing perspiration, or promoting expectoration; and thereby affording relief to the oppressed internal parts. As the skin of fowls, however covered with feathers, does not perspire—as fowls do not expectorate, as man does—reason tells us, that there can be no identity or true relation in the curative action of the medicine. We do but witness the anomaly of a drug being administered, that cannot exert on fowls those very influences, on which, in man, its efficacy so greatly depends.

"Again, when we consider what may be termed the triple organs of digestion in fowls—the crop, the fore-stomach, and the gizzard; or, in plain explanatory language, the steeping vats and the mill; organs possessed of such power, that the most heterogeneous substances, as hard grain, seeds, Grass, and vegetables, worms, insects, &c., are readily reduced and converted thereby into one homogeneous mass of food; we may easily conceive that some drugs also may undergo in the stomachs of fowls such amalgamation, trituration, and essential change, as greatly to modify or obtund their medicinal effects. Repeated experiment has, indeed, shown to me that such is truly the case, the results being, in some instances, as extraordinary as they ought to be instructive. A few of the most remarkable only will in the briefest manner be alluded to; and those drugs selected, whose action on the human body is constant and well ascertained.

"Five-grain doses of Turkey opium (more than a quarter of an ounce of laudanum) had no effect whatever on Polish hens. Eight grains (half an ounce of laudanum) were then given to Cochin China hens, without any effect. Lastly, sixteen-grain doses (equal to one ounce of laudanum) were given to each of two Cochin China hens; the one which had a young brood of chickens, was observed to brood them for a longer interval than usual, and appeared somewhat dull for four hours, but she at once made off with her chickens upon being approached; the other was not perceptibly affected, and both took food as usual. The Cochin China with chickens was observed to be briskly purged by the dose; in the other, there was no difference in this respect; and in none of the cases were the bowels at all constipated. An ounce of laudanum would certainly be a poisonous dose for a man; in many instances, half an ounce would be the same. Hens are not the only creatures that are so insensible to the effects of opium; a rabbit, physiologists tell us, will take as much with impunity as would prove fatal to a dog.

"Twenty grains of ipecacuanha (an emetic dose for a man) were given to Polish hens; they ate as usual throughout the day, and were lively; the bowels were slightly purged—no other effect whatever was witnessed.

"Twenty grains of catechu, a powerful astringent, and the full usual dose, had no effect on the bowels of fowls.

"Tartar emetic in two-grain doses had no effect on Polish hens, the birds taking their food as usual. (One grain is the usual emetic dose for man.) In five-grain doses it affected the bowels, and food was refused. In ten-grain doses it acted as a brisk purgative, and all food was refused for a few hours. The same large doses of ten grains were then given to a Game and to a Cochin China hen, which had just been purposely fed with Barley; the digestion of the food was arrested, and both the fowls were seriously affected with spasm, the head in one case being drawn to one side: they were with difficulty recovered. These two examples are instructive: showing, that the crop, being full of grain, the irritant effects of the tartar emetic could not then be negatived by the secretions and actions of the digestive organs. Ten grains of tartar emetic would certainly produce inflammation, and probably death, in man, if it were not previously rejected by vomiting.

"Five grains of arsenic, and five grains of corrosive sublimate of mercury, were severally given to Polish hens without any effect; except that, like the tartar emetic, these most poisonous minerals passed off innocuously by the bowels. The sixteenth part of a grain is the usual dose for man. Calomel, even in doses of 20 grains, does not act severely on the bowels of poultry; but in doses of four or five grains its aperient action is discernible.

"These experiments are suggestive of many practical points; and show, 1st, that if such powerful drugs have so little or even no effect on poultry, even in doses which are poisonous to man, it is highly questionable whether they can be beneficially employed at all, in the cure of their diseases. 2d, that, in the comparatively minute doses, in which some of them have been frequently recommended by recent writers, they cannot, in reality, exert that curative agency which has, unwittingly, been attributed to them. 3d, that the mere size of the creature, as compared with man, is no guidance for proportioning the dose of a medicine which will affect it.

"Thus, it appears, that, not only is the digestive process of fowls so essentially different to that of man; and hence the effects and changes produced on matters introduced into their stomachs, whether food or medicine, also different; but, what is of the highest moment, other organs and structures of the body in fowls bear little analogy or resemblance in their functions to those of man. Hence, it is wholly irrational to conclude that, when poultry fall into disease, they can be cured by medicines which in man, produce their curative results, chiefly by their influence on associated and, may be, distant organs."

Farmers' Clubs.

Tring.—At the annual meeting of this Society a handsome testimonial of the esteem of that association was presented to their secretary Mr. Brown. In acknowledging it, he took occasion to refer to the advantages of such societies to local and general agriculture. He said: Meetings of this kind become of more and more importance every year; here we learn from each other and we get to know the latest improvement in agricultural mechanics. Many gentlemen present are not aware how much agricultural prosperity has recently been improved by Acts of Parliament—I refer particularly to the acts affecting entailed estates. Three-fourths of the land in this kingdom is under settlement, and an act has been recently passed enabling the proprietors of entails to borrow money on certain conditions, and thereby to effect great improvements in buildings and drainage. The expenses of Enclosure Acts are now paid for by the public, instead of as formerly by the proprietors, and several other acts have been passed all tending to further agricultural improvement; and these are necessarily of great benefit, because if a landlord is unable to do his share of improvement, it is not likely that his tenants will do theirs. In passing through the list of prizes, I see the rewards to labourers and ploughmen. I don't think it possible to effect greater good than by such rewards, because good ploughing is the foundation of good farming; and until you have a system to supersede ploughing (which you probably may have before long) you must encourage good ploughmen. Next, as to labourers who have been long in one service. We know that remarks have been made and circulated in newspapers that farmers have not the interest of their labourers at heart, because they do not offer higher prizes for long servitude; but the amount of the prizes depends on the state of our funds, and the prize is meant as an acknowledgment, and not as a reward. I should not like to see these prizes done away with, for the result this year is to bring before us five men, who have each been 30 years with their employers. The prize for rearing sheep is also necessary, for the calling of a shepherd requires incessant vigilance and care, and the men who receive prizes for the number of lambs named in our award to-day,

deserve our regard and esteem. The prizes offered by Mr. Williams and Mr. Dorren I regard as of the greatest importance, for I believe a good field of Turnips to be a proper criterion of the cultivation of the farm, because that is the principal crop on which we start. In reference to the labourers, I would remark that I was at the agricultural meeting at Lincoln, and paid a visit to a large farmer living near the city. I was speaking to him of the cost of labour, and found that he paid 15s. a week for wages. I told him our average, which is considerably lower, and said that gentlemen hereabout could not pay more. I asked him what was the cost of labour per acre, because, after all, that is the real test; and I found that his labour did not average above 20s. per acre, on a farm of 700 acres—(Voices, "It can't be done—it must be nearly all Grass.")—and yet he paid 15s. a week. How it is done is a problem yet to be solved; but there is one thing, that labour is always better done by the piece than by the day, when you can manage it. I regret there were not more competitors for the cottage garden produce; it is a class of prizes I wish to see extended, and I would just remark it is a pity there is not more attention paid to labourers between 18 and 21 years old, because in those years the man is formed, and we see whether he will go to the right hand or to the left; and I am sure that every member of this society wishes to see the labourers do well.—Thos. Butcher, Esq., in proposing "Prosperity to the Tring Agricultural Society," referred to the statistics of agriculture, and stated that round Aylesbury the annual return for ducks is 40,000*l*. He knew one man alone who had 1000 to 2000 ducks, and who paid 50*l*. at a time for Barley meal.

Miscellaneous.

On the Cost and Current Prices of Wheat in England in 1844—54.—Mr. Danson argued that the farmer himself was the greatest sufferer from the want of some system which would enable him to prevent the fluctuations in the price of corn, and better to adjust the supply to the demand. At present the English farmer was best acquainted with the "literature" of the Government through the tax-paper; and it was natural, therefore, that attempts to obtain agricultural statistics should at the present time meet with his strenuous opposition. One way of meeting this difficulty was to appeal directly to his interests, and to show him—and the Statistical Society, above all others, was called upon to perform this task—how great a sufferer he was for want not only of the Government, but himself, and the whole community, knowing what are the actual fluctuations in the price of corn, and how they were brought about, in order to know how they might be prevented.—Sir John Boileau, as a resident of an agricultural county, felt much interested in obtaining some satisfactory statistical returns. He believed that the mode of collection which, under the auspices of the Government, was practised in Norfolk and Hampshire last year, and which during the present year was to be extended to two other counties, would be one of the greatest boons to agriculturists. *Meeting of the British Association.*

Calendar of Operations.

NOVEMBER.

West Sussex, *Oct.* 24.—Wheat sowing is now the principal work upon the farm, and will soon be over. The weather suits well, and the land works well; altogether the season could not be more favourable. The most common method here is to use the presser behind the plough, and then sow broadcast, when as a matter of course it comes up pretty regularly in drills, and has the appearance of a drilled crop. But the presser has got into so general use, chiefly for putting the grassy edge of the furrow down, which is done more efficiently by the skim coulters; but they have but lately come into use, and are not yet to be seen but in few places. It would be well if they were more common, as they answer so well, not only in ploughing Clover lea, but also stubbles, as they effectually bury the rubbish below, and yet leave the land open to be operated upon by the frost, which pressing does not. All work is well advanced, and it seems likely that there will be many hands out of work, which will be hard with the labouring classes when everything in the way of living appears to be getting so high. Fat cattle are selling well, and so are sheep, and the latter are likely to become scarce. The Turnips are but an indifferent crop, and will have to be preserved as long as possible. At the end of harvest we thought we were to have cheap Barley, and that pig fatting was to be a grand thing, but the Barley as well as other Corn has got up, and little can be expected in this way. But still meat of all kinds is high, and fatting ought to pay as well as it usually does. Grass, which all the summer was scarce, has lately come up well; but we must not trust much to it at this time of the year, as it does not possess the same power for keeping up the condition of the stock, and we must help them a little in the yards. The young Clovers have got up a little better than they promised when the Barley was cut off, but we fear in many patches they will fail. The Tares, Rye, and Trifolium that we sowed in September, are well up, and we shall depend upon them to make up our deficient Turnip feed. Ewes have been bought in lower by 4s. to 6s. a head than last year, and have come to market in good order generally; but they lately rose 2s. to 3s. *G. S.*

Notices to Correspondents.

Conversion of Oak: *A Constant Reader.* [Pray excuse the delay of this.] I would advise "A Constant Reader" to dispose of the Oak trees and buy yellow Balk, as it will not only be cheaper but will last longer than green Oak: the expense of cutting down and converting the Oak will be greater than paying for the Balk and converting it. *J. M.*

Top Dressing: *J W K.* says when farm yard dung is applied as a top dressing to Grass lands, a great loss of ammonia is generally sustained. The dung is first put on the land in heaps, and remains so perhaps for some time, and should dry weather prevail now, and after it has been distributed over the surface, a great loss of volatile ammonia must take place. Would not this great waste be in a measure prevented by mixing with the manure heap before applying it, sulphuric acid diluted with water, and so fix the ammonia in the form of sulphate? [No doubt it would; but we should recommend, in preference, its mixture with earthy matter, so as to form a bulky compost.]

BY HER MAJESTY'S ROYAL LETTERS PATENT.

ALFRED KENT'S PATENT WEATHER-PROOF GLAZING WITHOUT PUTTY.—For Horticultural Buildings in Wood or Metal,
Horticultural Building Works, Chichester.

Illustrated Books describing inventions, containing prices and particulars relating to the different designs, sent on receipt of four postage stamps. Nurserymen and others appointed agents on application.

Horticultural Buildings upon this plan having been erected in many different parts of the country, and having stood the trial of all weathers, and more especially the severest of all, viz., frost, A. Kent, with full confidence, strengthened by the many flattering testimonials he has received, can safely guarantee the proper working of his Patent System of Glazing. Estimates and Plans sent, including Heating by Hot Water.

☞ WANTED, a FOREMAN, well acquainted with all the details of Horticultural Building, capable of making a plain line elevation and giving general instruction. Must be a good bench hand.—Address as above, giving references, wages required, age, &c.

BY ROYAL LETTERS PATENT.

THE COSMOPOLITAN GLASS COMPANY, 296, Oxford Street, London.—The Managers beg to inform the Nobility and Gentry, Farmers, Gardeners, &c., that their new List of Prices may be had free on application at the Company's Depôt.

HARTLEY'S PATENT ROUGH PLATE, for Roofing Conservatories, Halls, and Public Buildings.

PLATE, CROWN, and SHEET WINDOW GLASS.

Coloured and Ornamental Glass of every description.

Glass Milk Pans, Pails, Tests, and Measures; Cream Pots and Syphons; Churns, Butter Tests and Slabs; Tiles and Slates; Bee Hives, &c.

Moore's Patent Ventilator and Lockhead's Patent Perforated Glass, for Dairies and Greenhouses.

Aquavivariums, Fern Shades, Propagating Glasses, Fruit Protectors, Preserve Jars, Cucumber Tubes, Hand Lights, Flower Vases, Labels, &c., and all kinds of Agricultural, Horticultural, Architectural, Domestic, Scientific, and Ornamental Glass, British and Foreign, at the lowest prices.

HARTLEY'S PATENT ROUGH PLATE GLASS, 1-8th thick, or 2 lbs. to the foot; 3-16ths, or 3 lbs.; and 1-4th, or 4 lbs. to the foot, for Ridge and Furrow Roofs, Greenhouses, Railway Stations, Engine Sheds, Mills, Market Halls, and Public Buildings generally.

Packed in Boxes of 50 feet each.

6 by 4 and 6½ by 4½	10s. 6d. per box.
7 „ 5 „ 7½ „ 5½	12 0 „
8 „ 6 „ 8½ „ 6½	13 6 „
9 „ 7 „ 9½ „ 7½ and 10 by 8 ...	15 0 „

For larger sizes a full List of Prices will be sent on application. Boxes are charged 2s. each extra, full price allowed if returned free of expense.—For further information apply to

JAMES PHILLIPS & Co.,
116, Bishopsgate Street Without.

"Rough Plate has never been, and never can be, prejudicial to the colouring of Grapes; though we can easily believe that it has been charged with such a fault by persons who have not skill enough to manage Grapes under glass."—*Gardeners' Chronicle.*

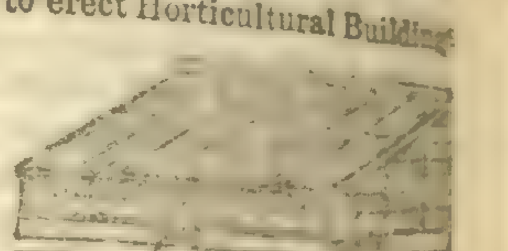
"There *can be no question now* that Rough Plate Glass is the most beautiful as well as the most useful kind of glass that can be employed in horticulture. It is free from all the faults of transparent glass, and has many advantages peculiar to itself, *without a single disadvantage as a set off.*"—*Gardeners' Chronicle.*

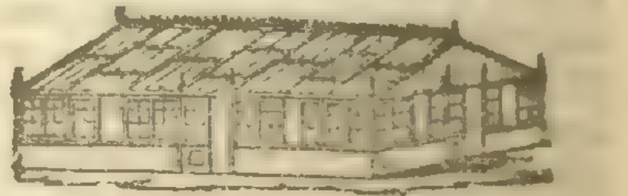
HORTICULTURE IN ALL ITS BRANCHES.

J. WEEKS & Co., King's Road, Chelsea,

HOTHOUSE BUILDERS

The Nobility and Gentry about to erect Horticultural Buildings or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.





The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. Weeks & Co., King's Road, Chelsea, London.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

HETLEY and CO. are supplying 16-oz. Sheet Glass of British Manufacture, packed in boxes, containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

Sizes.—Inches.	Inches.		Per foot.		Per 100 feet.
	Under 6 by 4	at	1½d.	is	£0 12 6
From 6 by 4	„ 7 „ 5	„	2d.	„	0 16 8
7 „ 5	„ 8 „ 6	„	2¼d.	„	0 18 9
8 „ 6	„ 10 „ 8	„	2½d.	„	1 0 10
10 „ 8	„ 12 „ 9	„	2¾d.	„	1 2 11

Larger sizes, not exceeding 40 inches long.
16 oz. from 3d. to 3½d. per square foot, according to size.
21 oz. „ 3½d. to 5d. „ „ „
26 oz. „ 8½d. to 7½d. „ „ „

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern, either in sheet or Rough Plate Glass.

Propagating Glasses, Beehive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in Glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the excise duty, reduced one-half. List of Prices and Estimates forwarded on application to

James Hetley & Co., 35, Soho Square, London.

GLASS FOR HORTICULTURAL PURPOSES.

THOMAS MILLINGTON'S

Present Prices for good 16 oz. SHEET GLASS per 100 feet, boxes included:—

Size	Per 100 feet.	Size	Per 100 feet.	Size	Per 100 feet.	Size	Per 100 feet
6 ins. by 4 ins.		8½ „ 6½		12½ ins. by 9½ ins.		15 „ 10	
6 „ 4½		9 „ 7		12 „ 10		15½ „ 10½	
6½ „ 4½	... 13s. 3d.	9½ „ 7½	... 14s. 0d.	12½ „ 10¼		16 „ 10	
6 „ 5½		10 „ 8		13 „ 10	... 16s. 0d.	16½ „ 10½	... 18s. 0d.
		10½ „ 8½				17 „ 10	
7 „ 5		11 „ 9		13½ „ 10½		17½ „ 10½	
7½ „ 5½	... 13s. 6d.	11½ „ 9½	... 16s. 0d.	14 „ 10		13 „ 11	
8 „ 6		12 „ 9		14½ „ 10½		13½ „ 11½	

And many other sizes not exceeding 1 foot 6 inches superficial.

Orchard House Squares on Mr. Rivers's plan, to whom I have sold some thousands of feet, in 20 inches by 12, 20 by 13, 20 by 14, 20 by 15, 20 by 16, 20 by 18, at 1*l*. per 100 feet.

Large sizes cut, not exceeding 40 inches long, 16 oz. from 3d. to 3½d.; 21 oz., from 3½d. to 5d.; 26 oz., from 4½d. to 7½d.; 26 oz., from 5d. to 9d., according to size.

Large Sheets in 200 feet cases, from 40s. to 46s. per case.

Genuine White Lead, Black, Green, Yellow Red, and Anti-corrosion Paint; Oils, Varnishes, Brushes, and any article in this branch.

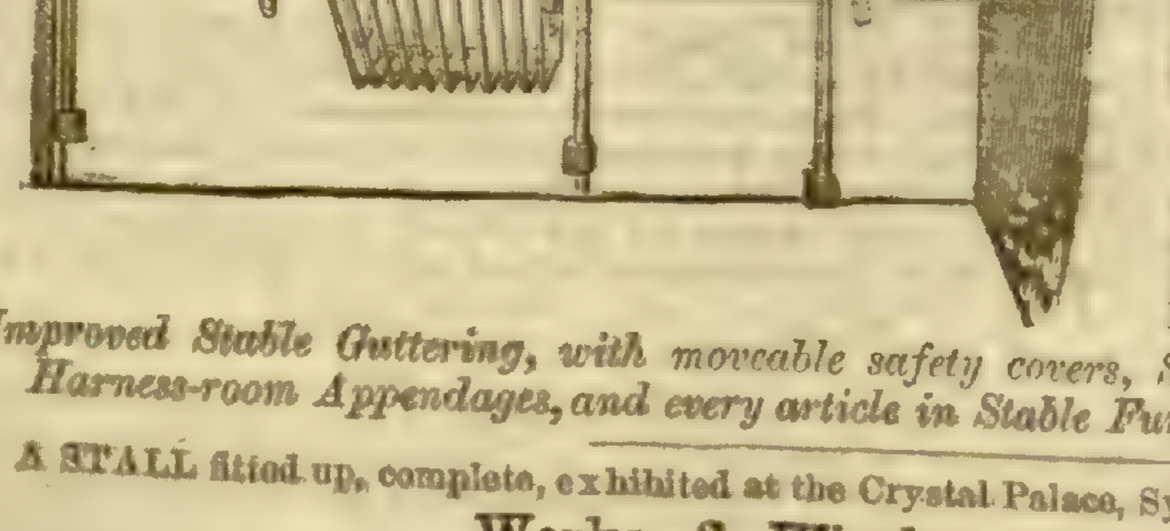
HARTLEY'S IMPROVED ROUGH PLATE GLASS, Sheet and Rough Plate Tiles, Milk-pans, Bee and Propagating Glasses, Wasp Traps, Cucumber Tubes, Preserve Jars, with and without covers, and Fern Shades. Plate, Sheet, Crown, and Ornamental Window Glass; Crystal Glass Shades for Ornaments.

Greenhouses erected in either Wood or Iron, Garden Lights and Frames.

A full List furnished on application at the Warehouse.

ESTABLISHED MORE THAN ONE HUNDRED YEARS.
87, Bishopsgate Street Without, London (same side as Eastern Counties Railway.)

COTTAM'S NEW PATENT FOR STABLE REQUISITES.



COTTAM and HALLEN, the original projectors of the above arrangement of MANGER, RACK, and WATER-TROUGH, which obtained the Great Exhibition Prize Medal, and universally approved of, have added all the latest improvements to their invention (secured by patent), which includes an entirely new method of attaching the halter, ball, and rein, giving to the horse greater freedom, and being noiseless in their operation, add much to its comfort whilst feeding and convenience when at rest. The

ENAMELLED MANGERS

are constructed in the best possible manner, both as to form and utility, are cleanly in appearance, durable and impervious to infection; manufactured PLAIN, GALVANIZED, or ENAMELLED.

Improved Stable Guttering, with moveable safety covers, Sanitary Traps, Stable Pumps, Double Corner Mangers, Harness-room Appendages, and every article in Stable Furniture. Chaff Cutters and Oat Bruisers, kept on show.

A STALL fitted up, complete, exhibited at the Crystal Palace, Sydenham, Stand No. 19, Agricultural Department; and at their

Works, 2, Winsley Street, Oxford Street, London.

WARMING and VENTILATING.—Descriptive Catalogues and Estimates on application.

HOT WATER APPARATUS, adapted for Horticultural and every other description of Buildings; improved Boilers, requiring no brickwork, Warm Air Apparatus, &c.—S. S. TAYLER, ENGINEER, Battersea.

GREEN AND HOT-HOUSES made by machinery, at J. LEWIS'S HORTICULTURAL WORKS, Stamford Hill, Middlesex. Sent to all parts of the United Kingdom. These buildings are warranted of the best materials, and put together in a superior manner. Being manufactured by steam-power, they are considered the cheapest and best made in England. The Trade and Merchants supplied at wholesale prices. List of Prices by enclosing two postage stamps.

NETTING FOR SHEEPFOLDS, made of Cocoa-nut Fibre; a material known to possess the most extraordinary durability when exposed to the alternations of weather. It will wear out several sets of tarred hemp netting, and is so light that a herdsman may with ease carry 200 yards of it. Sold in Nets of 50 and 100 yards long, 48 inches high, by the Manufacturer, W. CULLINGFORD, 1, Edmund Terrace, Ball's Pond Road, near Kingsland Gate, London.

BIRD NETS, BAT-FOLDING NETS, for Bird Catching, 5s. each; with Bamboo Poles complete, 10s.; extra large, 1[illegible]s. complete. Clap Nets for Bird Catching, 12 yards long, 5 feet deep, 15s.; with staffs, pull-line, and stop-cord, 1l. Lark Nets, made square mesh, any size required, 3d. per square yard. A Partridge Trammel, 30 yards long, 5 yards wide, made square mesh, 1l. 11s.; or any less size, 2d. per square yard.

W. CULLINGFORD, 1, Edmund Terrace, Ball's Pond Road, near Kingsland Gate, London.

POULTRY, RABBIT, SHEEP, AND CAT FENCING. Hare or Rabbit Nets, on Cords, for Covert Shooting, 12 mesh over, 4 feet wide, 1½d. per yard.; 18 mesh over, 6 feet wide, 2½d. per yard; 24 mesh over, 8 feet, 3d. per yard; each Edge Corded, ¼d. per yard extra; extra Stout ditto, 18 mesh wide, 4d. per yard, suitable for Poultry Fencing. Square Mesh Cricketing Net, fix its full width and length, made of stout cord, 3d. to 4d. per square yard; this is the best article made for fencing against fowls, cats, &c., at W. CULLINGFORD'S, No. 1, Edmund Terrace, Ball's Pond Road, near Kingsland Gate, London.

CHEAP WIRE GAME AND POULTRY NETTING.

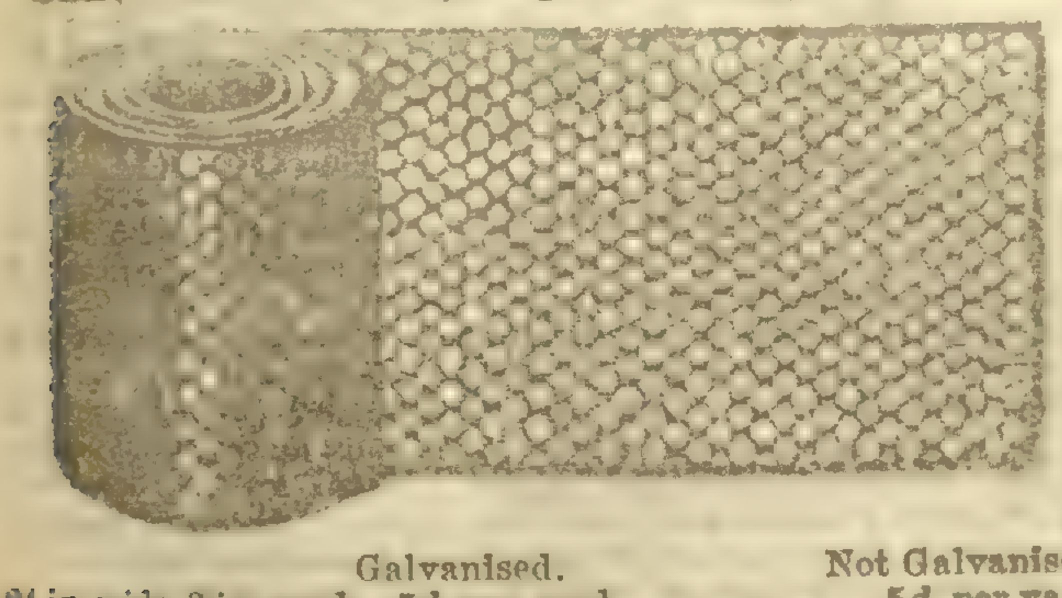
	Plain.	Galvanised.
24 inches wide, 2-inch mesh,	3d. to 4d. per yard.	6d. per yard.
30 inches wide, 2-inch mesh,	6d. per yard.	9d. „
48 inches wide, 2-inch mesh,	9d. „	1s. 0d. „

Sparrow Proof Netting, galvanised, 3d. per square foot, made of any size. This article is shown at the Sydenham Exhibition, where it is much admired.

W. CULLINGFORD, 1, Edmund Terrace, Ball's Pond Road, near the Gate, Kingsland, London.

CHEAP WIRE GAME & POULTRY NETTING 5d. per running yard.

GALVANISED DITTO, 7d. per running yard, 2 feet wide.

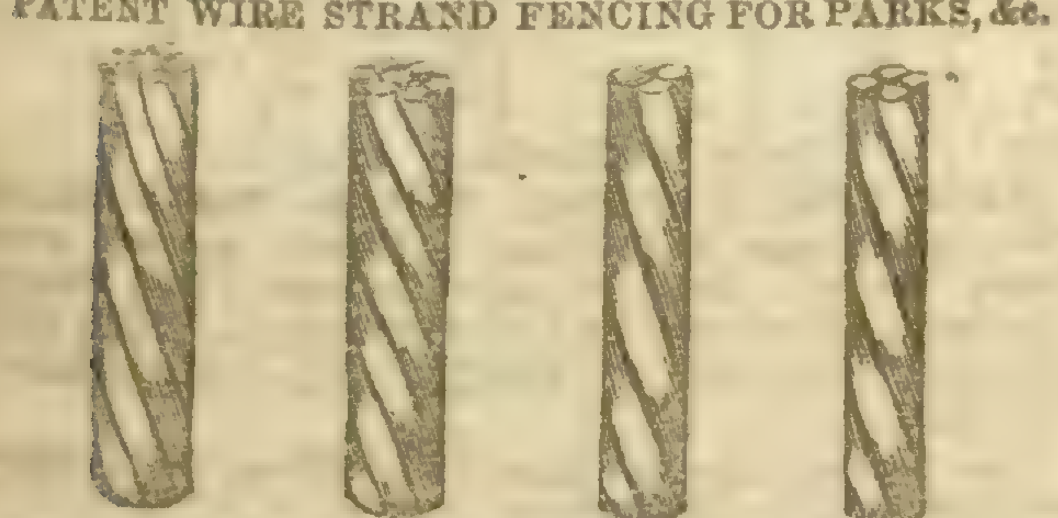


			Galvanised.	Not Galvanised
24 in. wide,	2 in. mesh,		7d. per yard.	5d. per yard
30 in. „	2 in.	„	9d. „	6½d. „
36 in. „	2 in.	„	10½d. „	7½d. „
48 in. „	2 in.	„	1s. 2d. „	10d. „

Sparrow Proof Netting, Galvanised, 3d. per square foot, made to any size for the same proportionate price. This article was shown at the Great Exhibition, where it was so much admired for its light and durable appearance, and acknowledged to be the cheapest and best article of the kind ever offered. Extra strong Wire Sheep Netting, 3 feet high, 1s. 6d. and 2s. 3d. per yard. Also every description of Flower Trainers, Dahlia Rods, Garden Arches, Bordering, Flower Stands, Tying Wire, Trellis Work, Invisible Wire Fencing, Hurdles, and every description of Wire Work for Horticultural purposes.—Illustrated Catalogues of Patterns forwarded, post free, on application to T. H. FOX, City of London Wire Work and Iron Fence Manufactory, 44, Skinner Street, and 6 and 8, Snow Hill, London.

H. J. MORTON AND Co., Galvanised Iron Roofing Works, 2, Basinghall Buildings, Leeds.

PATENT WIRE STRAND FENCING FOR PARKS, &c.



This Fencing is the most neat, strong, and durable for Parks and Agricultural purposes in use. It cannot be bent or put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply as above.

IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

TO AMATEUR GARDENERS, LOCAL BOARDS OF HEALTH, & SANITARY WORKS.

PATENT SLUICE COCKS, Gutta Percha, Combinated ditto, Patent Flexible India Rubber Tubing, and every other Hose for Watering Gardens. The Hydraulic Ram, Fire, Garden, and every other kind of Pump, Hydrants, High Pressure Cocks, and all other articles to be had, Wholesale and Retail, of FREEMAN ROE, HYDRAULIC ENGINEER, 70, Strand, and Bridgefield, Wandsworth.

HOSE PIPING.—GREAT REDUCTION IN PRICE.

PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense pressure, and much more than leather, vulcanised rubber, or any other hose, and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented inventions, the cost of manufacturing it is now reduced at least 60 per cent., which advantage is offered to the public.

BURGESS AND KEY, 103, Newgate Street, and 52, Little Britain, who on application will forward wholesale and retail prices.

REDUCTION IN PRICE.

WEIR'S IMPROVED GALVANISED WROUGHT IRON LIQUID MANURE PUMP.

The Fittings of these Pumps are wholly of Brass, and there is no leather or other matter which can be affected by the manure.

Price, complete, with 10 feet of Flexible Suction Pipe, 4l. 15s. Terms, cash on delivery.

EDWARD WEIR, Agricultural Engineer, 16, Bath Place, New Road, London. Removed from Oxford Street.

Catalogues, with Illustrations, sent free by post.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS, for the use of Farms, Cottages, Manure Tanks, and Wells of a depth not exceeding 30 feet.

Diameter of Barrel	Length of Barrel, under nose.		£ s. d.
2½ in.-short	1 ft. 7 in.	Fitted for lead, gutta percha, or cast iron flanged pipe, as required.	1 12 0
2½ „ long	3 „ 3 „		1 15 0
3 „ ditto	3 „ 6 „		2 12 0
3½ „ ditto	3 „ 6 „		2 18 0
4 „ ditto	3 „ 6 „		3 5 0
2½ „ short, with 15 feet of Lead Pipe attached, and Bolts and Nuts ready for fixing			2 12 0
2½ in. long	ditto	ditto ditto	2 15 0

The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or Country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER AND SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water, by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

DEANE, DRAY, AND CO., have a very large and superior stock of FRENCH MODERATOR LAMPS now on sale.—(Opening to the Monument), London Bridge. ESTABLISHED A.D. 1700.

TWO FARMS,

A FEW MILES FROM THE CITY OF CHESTER.

TO BE LET, by Tender, an excellent DAIRY FARM, containing 150a. 2r. 14p., called Rushall Hall, situate in the parish of Tattenhall, in the county of Chester, two miles from Tattenhall Station on the Chester and Crewe Railway, in the occupation of Mr. George Robinson. A great portion of the Farm has been thoroughly drained, and a portion of the Grass Land boned; and it is contemplated to complete the draining and boning of the Farm the ensuing winter. The House is commodious and will be put into thorough repair. The present Farm Buildings will be taken down, and an entire new set of buildings suitable to the Farm erected. Possession of the House on the 12th of May, and of the Lands on the 2d of February next.

Also an excellent DAIRY FARM, containing 156a. 2r. 23p. At present a part of the above Farm is in the occupation of Mr. George Robinson, on which has this year been erected a commodious House, suitable for a highly-respectable family, and the Buildings and Premises arranged with every attention to comfort and convenience. A great portion of the Land has been drained and boned, and the whole that is required will be completed the ensuing winter. Immediate possession may be had of the House, Buildings, and Garden; and of the Land on the 2d of February next.

John Eanion, of Hatton Heath, near to the Turnpike-gate where the road branches to Tattenhall, will show the Farms; and particulars had of Mr. JOHN PALIN, Christleton, near Chester, or at the Office of JOHN PALIN & SON, Westminster Buildings, Newgate Street, Chester, where a Map of the Property may be seen, and offers in writing sent.

MONMOUTHSHIRE.

TO BE LET, for a term of years, and entered upon at Lady-day next, the FARM of LLANVAIR GRANGE. It consists of 164 acres of rich productive Land, of which 4 acres are in Orchard, 76 in Meadow and Pasture, and 84 are Arable. There is a comfortable Farm-house and Garden, Dairy and Cheeseroom, and ample Farm Buildings on the Farm. It is within a short distance of the Pontypool Iron Works; there is a station on the Newport and Hereford Railway close by. At the Iron Works there is a constant demand for every kind of Farm produce. The proprietor at Llanvair Grange will direct some one to show the Farm; and for particulars apply to Mr. JOHN MORTON, Morningside, Nailsworth, Gloucestershire.

VALUABLE FREEHOLD NURSERY GROUNDS, ETC.,

FULFORD ROAD, YORK.

TO BE SOLD, by private contract, the long-established and flourishing NURSERY PREMISES of the late Mr. George Clarkson, situate on the banks of the Ouse, York, comprising about 14 acres of first-rate Nursery Ground, well stocked with Forest and Fruit Trees, Shrubs, &c., and having a substantial DWELLING-HOUSE, SHOPS, and GREENHOUSE, and other requisite Out-buildings attached. The purchaser will have the option of taking the whole or part thereof, and the Stock on liberal terms. Immediate possession can be given, and plans and particulars may be had on application to Mr. LUKE THOMPSON, Solicitor, York.

TO BE SOLD, BUFF COCHIN CHICKENS, from first class Prize Birds. Brahma Pootra Chickens, from imported American Prize Birds, and Spanish Chickens. Also some very good one-year-old Birds of the above descriptions. Wire, Game, and Poultry Netting, Poultry Hurdles, Hen-houses, Chicken Coops, Flower Stands, and Trainers, Garden Arches, and every kind of Wire Work, useful and ornamental.—T. H. FOX'S, City of London Wire Works, 44, Skinner Street, and 6 & 8, Snow Hill. Illustrated Catalogues forwarded post free.

TO BE DISPOSED OF, a few first-rate GREY DORKING CHICKENS, very large, and bred from first prize birds. Price from 10s. to 1 guinea each, according to age, weight, &c.—Apply, inclosing stamped envelope, to R. ATKINSON, Singleton Park, Kendal.

TO POULTRY FANCIERS.

TO BE DISPOSED OF, above 150 head of the purest and best specimens of the following descriptions of Poultry, for 100l.:—Brahma Pootras, Silver Cinnamon, Buff, Cinnamon, Lemon, Grouse, Black and White Cochins, Japan Silk Fowls, Guinea Fowls, Dorkings and Aylesbury Ducks, Cambridge, Norfolk, White, and Lemon Turkeys. Most of these have been selected from the yards of first-rate amateurs, and are of great value.—Apply immediately to L. M., Post Office, Cromer, Norfolk.

TO CAPITALISTS DESIRING A LUCRATIVE OCCUPATION.

TO BE DISPOSED OF immediately, the Patent right of a novel, useful, and portable Invention for increasing Food and Employment or Amusement for rich or poor in the United Kingdom. Also, a simple and efficient apparatus for the Preservation of Life in Town or Country, not yet patented. Full particulars, with reference, will be given on immediate application to A. Z. A., Post-office, Cromer, Norfolk.

FANCY POULTRY.—PERIODICAL SALE.

MR. J. C. STEVENS will Sell by Auction at his Great Room, 38, King Street, Covent Garden, on TUESDAY, November 7th, at 12 o'clock precisely, Choice Cochins, from Mr. Stainton's renowned yard, 1st Class Coloured and White Dorkings, from a celebrated breeder in Sussex; some good Brahmas, Spanish, Bantams, Pigeons, &c.—May be viewed on the morning of sale and catalogues had.

TO GENTLEMEN, AMATEURS, FLORISTS, & OTHERS.

MR. J. WILLMER will submit by Auction, at the Mart, Bartholomew Lane, on WEDNESDAY, Nov. 8th, at 12 o'clock precisely, without reserve, a choice and valuable collection of TULIPS, comprising all the leading flowers of the day, the property of Mr. Willmer, of Sunbury Nursery.—Catalogues at the Mart, and of the Auctioneer, Sunbury, Middlesex.

BATTERSEA FIELDS.

TO GENTLEMEN, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are directed by Mr. Fisher, to submit to an unreserved Sale by Auction, on the premises, Claremont Nursery, near the Duke of York, Battersea Fields (on TUESDAY, November 7th, 1854) at Eleven o'clock, in consequence of the ground being required for the Battersea New Park, the whole of the valuable STOCK of EVERGREENS, consisting of very fine Arbor vitæ, Laurustinus, Hollies, Box, Aucubas, Euonymus, Common Laurels, Fine Yews, Rhododendrons, Lilacs, Roses, Daphnes, &c. Also Fruit and Forest Trees, with a quantity of Box edging, &c.

May be viewed prior to the Sale.—Catalogues may be had on the premises, 24, New Street, Battersea Fields; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

EPSOM, SURREY.

TO GENTLEMEN, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction, on the premises, the Epsom Nursery, late in the occupation of Mr. Young, on MONDAY, November 6th, at 11 o'clock, without reserve, the NURSERY STOCK, consisting of Fruit and Forest Trees, comprising Standard and Dwarf Peach, Nectarine, Apricot, Cherries, Pears, Plums, Apples, Mulberries, Worked Thorns, Filberts, Elms, Mountain Ash, Chestnuts, Poplars, Weeping Willows, Laburnums, Tulip Trees, Larch: also Evergreens, including Green Hollies, Box, Irish Yews, Arborvitæ, Junipers, Privets, Cedar of Lebanon, Port Laurels, Cryptomaria japonica, Fan Yews, &c.—May be viewed prior to the sale. Catalogues may be had on the premises; of Mr. Langland, Builder, High Street, Epsom; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are directed by the proprietor (in consequence of the ground being let for building) to sell by Auction, without reserve, on the premises, London Fields, Hackney, on MONDAY, November 13, at 11 o'clock, the entire NURSERY STOCK, consisting of Elms, Chestnuts, Limes, and Poplars; also about 600 Variegated and Green Hollies, Irish Ivy, Aucubas, Box, fine Moss and other Roses, &c. On view prior to the sale; Catalogues may be had on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, at the Mart, Bartholomew Lane, on TUESDAY, November 14, and THURSDAY, the 16th, at 12 o'clock, a first-class Collection of DUTCH BULBS, consisting of the finest Double and Single Hyacinths, Narcissus, Jonquils, Anemones, Crocus, Snowdrops, Tulips, &c.; also a selected assortment of Standard and Dwarf ROSES, Ornamental Trees, and American Plants, well set with bloom, buds, &c. On view the mornings of sale.—Catalogues to be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

CLAPHAM, SURREY.—FINAL SALE.

TO NOBLEMEN, GENTLEMEN, EXHIBITORS, NURSERYMEN, BUILDERS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by the administrators of the late Mr. Joseph Fairbairn to sell by Auction, without reserve, on the premises, the Clapham Nursery, Clapham, near London, on MONDAY, November 20, 1854, and following days, at 11 o'clock each day, the whole of the valuable and extensive stock of CHOICE GREENHOUSE and STOVE PLANTS, which is particularly worthy the attention of Noblemen and Gentlemen enriching their collections, as well as the Trade, from its excellence; comprising 50,000 choice Ericas; 10,000 Epacris; 4000 Indian Azaleas; 2000 Aphelexes; 1000 Double Camellias; 5000 Camellia Stocks; two Allamanda purpurea; New Double White and Purple Primula fimbriata, Cyclamen persicum, Daphne indica, rubra, and every variety of Stove and Greenhouse Plants in cultivation; magnificent young specimen Heaths, &c. Also the entire stock of fine Evergreens, Ornamental Trees, and Deciduous Shrubs, including large Green and Variegated Hollies, Box, Yews, Aucuba, Laurels, fine Araucaria imbricata, Cryptomaria japonica, Cedar Lebanon, Cedrus Deodara, &c.; together with several 3 and 4 Light Boxes; Pits; 300 Bell Glasses; 3 Capital Tumbril Carts; 1 Spring Cart; 2 Useful Horses; 2 sets Harness; Iron Rollers; Garden Tools; Wheelbarrows, and sundry effects.—May be viewed one week prior to the Sale. Catalogues may be obtained (6d. each, returnable to purchasers) on the premises; at the Seed Shop, High Street, Clapham; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO NURSERYMEN, SEEDSMEN, FORESTERS, ETC.

ROUP OF NURSERYMAN'S AND SEEDSMAN'S STOCK.

TO BE SOLD, by Public Roup, in Lots, on THURSDAY, November 16, the whole of the large and well-assorted STOCK of FOREST, FRUIT, and ORNAMENTAL TREES, EVERGREEN and DECIDUOUS SHRUBS, &c. in the Nursery, at Bankfoot, Cupar Fife, belonging to the Sequestrated Estate of Hamilton Laird, including about 150,000 1 and 2 years' Transplanted Larch, 300,000 do. do. Scotch Fir, 400,000 do. do. Spruce, 14,000 do. do. Silver Firs, 60,000 do. do. Beech, 50,000 do. do. Oaks, 45,000 do. do. Thorns, and large quantities of Elm, Plane, Ash, Poplar, Lime, Mountain Ash, Chestnut, Portugal Laurel, Bay, Irish Juniper, Irish and Common Yew, Holly, Cherry, Pear and Apple Stocks, Peach, Gooseberry, Currant, Dwarf and Standard Roses (named), &c. The above are all healthy and well-rooted plants, and well worthy the attention of parties who intend planting this season. Also a quantity of Greenhouse Plants, and the Greenhouse, with building connected therewith: and a Brood Sow, with 12 Pigs, 7 weeks old: and immediately after the above, there will be sold in the Loft, near the Railway Station, Cupar, a quantity of Seed, consisting of 30 bolls Ryegrass; 6 cwt. Cabbage, Linseed, Onion, Carrot, Peas, Beans, and other Garden, Flower, and Agricultural Seeds; two pairs Seed Fanners; Wire Riddles, Sieves, Sacks of various sizes, and a large quantity of Flower-pots. The sale to commence at 10 o'clock A.M. precisely.—The above may be seen at any time before the sale, on application to Mr. ANDREW TAYLOR, Banker; or W. A. TAYLOR, Writer, Cupar.—Cupar Fife, November 4.

THE NATIONAL GARDEN ALMANAC AND HORTICULTURAL TRADE DIRECTORY FOR 1855.
By JOHN EDWARDS, F.H.S. The Third Annual Issue.

No effort will be spared to retain the flattering encomiums universally bestowed on the previous issues of this work, which, for general accuracy, and sound practical utility, is acknowledged to be immeasurably in advance of all similar publications.

Advertisements, Communications, Books for Review, Information relative to Changes of Addresses, &c. &c., gladly received, if not later than the 20th November, by

JOHN EDWARDS, Wace Cottage, Holloway, Middlesex.
CHAPMAN & HALL, 193, Piccadilly.

Just published for the EIGHTEENTH YEAR,

GLENNY'S GARDEN ALMANAC FOR 1855. Richly Illustrated, 1s.; or handsomely bound as a Pocket Book, 2s. 6d.; post free 6d. extra each—stamps equivalent.

The edition for 1854 was sold out in May.

London: GEORGE COX, King Street, Covent Garden.

Now ready, bound in cloth and interleaved, price 1s.

THE SCOTTISH AGRICULTURIST'S ALMANAC AND YEAR-BOOK OF PROGRESS, FOR 1855. By J. LOCKHART MORTON, Civil and Agricultural Engineer, Edinburgh.

Supplied to the Trade at 9, Pitt Street, Edinburgh. Sold by all Booksellers.

Just published, price 1s., 2s. bound and interleaved, 200 pp.,

JOHNSON AND SHAW'S FARMER'S ALMANAC FOR 1855.

This work, in addition to the ordinary contents of an Almanac, is annually supplied with all the chief useful Agricultural Information published during the year; contains also a well-corrected list of Fairs and Cattle Markets throughout the Kingdom, with other useful information serviceable alike to the agriculturist and others interested. It is also illustrated with numerous Engravings of new and improved Agricultural Implements by the best makers, their price lists, &c., &c.

Published by JAMES RIDGWAY, Piccadilly, and to be had of all Booksellers.

A BOOK FOR EVERY FARMER.

Just published, price One Shilling and Sixpence.

PEAT'S FARMER'S DIARY AND ACCOUNT BOOK FOR 1855; so simplified as will enable every Farmer to keep and balance his own accounts with ease and accuracy. Second annual impression, much enlarged.

"We cordially recommend every agriculturist to procure a copy, as it will save him no inconsiderable amount of trouble during the year."—*Agricultural Magazine.*

London: Sold by SIMPKIN, MARSHALL & Co.; R. PEAT, Thirsk; and may be had per order of any Bookseller.

Also "THE SPIRIT DEALER'S STOCK BOOK;" for Retailers. 1s.; Wholesale Dealers, 2s. 6d. and 5s.

THE POULTRY BREEDER'S DIARY FOR 1855.

On Saturday, December 9, will be published, price 4s., or free by post for 54 Stamps,

A DIARY FOR THE DAIRY, THE PIGGERY, AND THE POULTRY YARD, FOR 1855.

CONTENTS:—Hatching and Breeding Tables—Diary for Milk, Butter, Cheese, Eggs, Calves, Pigs and Poultry, Stock and Sales—Food and Labour Accounts—Summary.

Colchester: Published at the Office of the *Essex and West Suffolk Gazette*, 19, High Street.

Now ready, Part IV. of

THE FERNS OF GREAT BRITAIN, illustrated by JOHN E. SOWERBY; descriptions by C. JOHNSON, Esq. To contain about 46 plates, and to be completed in Eight Monthly Parts, full coloured, at 3s., partly coloured at 1s. 6d. per part. To be had through all Booksellers; and of the Proprietor,

JOHN E. SOWERBY, 3, Mead Place, Lambeth, London.

Price 4d., or by post, 6d.,

THE NEW WATER WEED, ANACHARIS ALSINASTRUM (some Account of it). By WILLIAM MARSHALL, Esq., of Ely, Cambridgeshire.

London: WILLIAM PAMPLIN, 45, Frith Street, Soho Square.

Parts I., II., and III., price 10s. plain, 16s. coloured,

A CENTURY OF FERNS, being Figures, with brief Descriptions, of 100 new or rare Species of Ferns. By Sir WM. JACKSON HOOKER, K.H., LL.D., F.R.A. and L.S., &c., and Director of the Royal Botanical Gardens at Kew. The work is handsomely printed on a super-royal paper, and a specimen can be sent to any address for four postage stamps.

London: WILLIAM PAMPLIN, 45, Frith Street, Soho.

Fourth Edition, price Sixpence,

THE LONDON CATALOGUE OF BRITISH PLANTS. Published under the Direction of the Botanical Society of London.

London: WILLIAM PAMPLIN, 45, Frith Street, Soho.

Volume X., Parts 1 and 2, price 14s. each, being the completion of HOOKER'S "ICONES PLANTARUM," with complete Index to the entire works,

ICONES PLANTARUM, or Figures, with brief Descriptive Characters and Remarks, of New or Rare Plants, selected from the Author's Herbarium. By Sir WM. JACKSON HOOKER, K.H., LL.D., F.R.A., and L.S., &c., Director of the Royal Botanical Gardens, Kew.

London: WILLIAM PAMPLIN, 45, Frith Street, Soho.

BOTANICAL BOOKS.

LINNÆUS. A Collection, consisting of Forty separate Volumes of the various works of Linnæus, including several of the rarer editions. Price 2l., box and package included. No odd volumes, no imperfect copies, no duplicates.

London: WILLIAM PAMPLIN, 45, Frith Street, Soho.

A CATALOGUE of some BOTANICAL BOOKS on sale, by WILLIAM PAMPLIN, 45, Frith Street, Soho Square London, will be sent upon application, post free, to any address.

PRACTICAL MECHANICS' JOURNAL

PART 80, NOVEMBER, Price 1s.

ILLUSTRATIONS.—Double page Copper-plate Engravings of Hoby's Twin Dredger, and 35 Wood Engravings.

CONTENTS.—Railways—Dredger for Leith Harbour—Educational Exhibition—Howden's Rivet Machine—American Patent Office Report—Tea and Coffee—Robertson's Hydrostatic Cranes—American Notes by our own Correspondent—Illustrated Specifications of recent Patents—Lappet Loom, Smith—Maize and Rice Starch, Polson—Mining Engines and Machinery, Barclay—Steam-boiler Apparatus, Houston—Revolver Fire-arms, Johnson—Gluten Bread, Johnson—Pocket Book, Smith—Caoutchouc, Johnson—Journal Bearings, Barclay—Sizeing and Finishing, Greenwood and Smith—Reviews of New Books—Monthly Notes—Lists of all New Patents.

HEBERT, 88, Cheapside: Editors' Offices (Offices for Patents), 47, Lincoln's Inn Fields, London.

ON MARRIAGE.

Just published (to be had free, by enclosing 1s. or Twelve Postage Stamps, to Mr. WATSON, Clerical Agent, Robert Street, Adelphi, London).

MATRIMONY.—A Pamphlet on Matrimonial Alliances, which merits the attention of those who wish to settle honourably in life. By a Clergyman.

Third Edition, considerably enlarged, price 5s. 6d.

RURAL CHEMISTRY,

By EDWARD SOLLY, F.R.S., F.L.S., F.G.S.,

Honorary Member of the Royal Agricultural Society of England, Professor of Chemistry to the Horticultural Society of London, Lecturer on Chemistry in the Hon E. I. Co.'s Military Seminary at Addiscombe, &c., &c.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden.

Price 1s. 6d., free by post 1s. 10d.

LABELS FOR THE HERBARIUM,

CONSISTING OF THE NAMES OF THE

CLASSES, ALLIANCES, ORDERS, AND SUB-ORDERS,

OF

PROFESSOR LINDLEY'S "VEGETABLE KINGDOM."

So printed in large type, that they can be cut out and pasted into THE HERBARIUM.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden.

Price 5s. 6d. cloth,

SECOND EDITION, REVISED AND ENLARGED,

ORNAMENTAL AND DOMESTIC POULTRY;

THEIR HISTORY AND MANAGEMENT.

BY THE REV. EDMUND SAUL DIXON, M.A.,

Rector of Intwood with Keswick.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden, London.

Price 3d. each, or 5s. for 25 copies for distribution among Cottage Tenantry, delivered anywhere in London, on a Post-office order being sent to the Publisher, JAMES MATTHEWS, at the office of the *Gardeners' Chronicle*.

In consequence of the new postal arrangements, parties in the country who desire it can have copies sent by post; six stamps, in addition to the cost of the numbers, will pass 10 copies free by post.

The cost of a single copy, free by post, is therefore 7d.; and of ten, free by post, is 3s.

THE COTTAGER'S CALENDAR OF GARDEN OPERATIONS.

By Sir JOSEPH PAXTON.

Reprinted from the GARDENERS' CHRONICLE; above 91,000 have already been sold.

CONTENTS.

African Lilies	Gilias	Plums
Agapanthus	Gooseberries	Polyanthus
Anemones	Grafting	Potatoes
Annuals	Green-fly	Pruning
Apples	Heartsease	Privet
Apricot	Herbs	Propagation by cuttings
Auriculas	Herbaceous Perennials	Pyracantha
Beans	Heliotrope	Radishes
Beet	Hollyhocks	Ranunculus
Biennials	Honeysuckle	Raspberries
Black Fly	Horse-radish	Rhubarb
Books for Cottagers	Hyacinths	Rockets
Borage	Hydrangeas	Roses
Borecole	Hyssop	Rue
Box Edgings	Indian Cress	Rustic Vases
Broccoli	Iris	Sage
Brussels Sprouts	Kidney Beans	Salvias
Budding	Lavender	Savoys
Bulbs	Layering	Saxifrage
Cabbage	Leeks	Scarlet Runner Beans
Cactus	Leptosiphons	Seeds
Calceolarias	Lettuce	Sea Daisy or Thrift
Californian Annuals	Lobelias	Seakale
Campanulas	London Pride	Select Flowers
Carnations	Lychnis, double	Select Vegetables and Fruit
Carrots	Marigold	Snails and Slugs
Cauliflowers	Marjoram	Snowdrops
Celery	Manures	Spinach
Cherries	Marvel of Peru	Spruce Fir
China Asters	Mesembryanthemums	Spur Pruning
China Roses	Mignonette	Stocks
Chrysanthemums, Chinese	Mint	Strawberries
Chives	Mustard	Summer Savory
Clarkias	Narcissus	Sweet William
Clematis	Nemophilas	Thorn Hedges
Collinsias	Œnothera bifrons	Thyme
Colewort	Onions	Tigridia Pavonia
Cress	Pæonies	Transplanting
Creepers	Parsnip	Tree Lifting
Crocus	Parsley	Tulips
Crown Imperials	Peaches	Turnips
Cucumbers	Pea-haulm	Vegetable Cookery
Cultivation of flowers in windows	Pears	Venus's Looking-Glass
Dahlias	Peas	Verbenas
Daisies	Pelargoniums	Vines
Dog's-tooth Violets	Perennials	Virginian Stocks
Exhibitions, preparing articles for	Persian Iris	Wallflowers
Ferns, as protection	Petunias	Willows
Fruit	Phlox	Zinnias
Fuchsias	Pigs	
Gentianella	Pinks	
	Planting	

Post-office orders to be made payable to JAMES MATTHEWS, 5, Upper Wellington Street, Covent Garden, London.

This Day, Sixth and Cheaper Edition, 6s.

STUDENT'S MANUAL OF ANCIENT HISTORY.

By W. COOKE TAYLOR, LL.D.

London: JOHN W. PARKER and SON, West Strand.

This day is published, 4to, with 13 coloured plates of Beetles, price 2l. 2s.,

INSECTA MADERENSIA; Being an Account of the Insects of the Islands of the Madeiran Group. By T. VERNON WOLLASTON, M.A., F.L.S.

London: JOHN VAN VOORST, 1, Paternoster Row.

Just published, New and Improved Edition, price 1s.,

THE CURABILITY OF CONSUMPTION. Being a Series of Papers, presenting the most prominent and important Practical Points in the Treatment of the Disease. By F. H. RAMADGE, M.D., Fellow of the College of Physicians, late Senior Physician to the Royal Infirmary for Diseases of the Chest, &c. Also, by the same Author, price 10s. 6d.,

A TREATISE ON ASTHMA AND DISEASES OF THE HEART.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

Second Edition, with a Key annexed, price 2s.,

SMITH'S LESSONS ON ARITHMETIC, in Principle and in Practice, for the Instruction of Youth of both sexes, and more especially for that of Young Merchants, Tradesmen, Mechanics, and Farmers.

"He who takes up this arithmetical work, with the expectation of seeing only what he has seen before, will be surprised and gratified at the novelty it contains. The learner is here led step by step, sees principle following principle, and has laid before him, in simple language, clear views on a subject heretofore treated of in a conventional and unintelligible jargon."—*Athenæum.*

By the same Author, in 8vo, price 2s.,

EVOLUTION; or, the Power and Operation of Numbers in the Statement, Calculation, Distribution, and Arrangement of Quantities.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

PEOPLE'S EDITIONS FOR NOVEMBER.

I.

ALISON'S HISTORY OF EUROPE. Part XXVI. To be completed in 44 Parts, at 1s.

II.

WORKS OF SAMUEL WARREN, D.C.L., F.R.S. Part XV., price One Shilling,

III.

THE FOURTH VOLUME OF WORKS OF SAMUEL WARREN, D.C.L., &c., price 4s. 6d., bound in cloth, containing—

1. NOW AND THEN.
2. THE LILY AND THE BEE. A New Edition, carefully revised, with Notes, and a PRELIMINARY EXPOSITION.
3. THE INTELLECTUAL AND MORAL DEVELOPMENT OF THE PRESENT AGE.

IV.

PROFESSOR JOHNSTON'S CHEMISTRY OF COMMON LIFE. No. XII., price 8d., containing THE SMELLS WE DISLIKE—their Prevention and Removal; and WHAT WE BREATHE AND BREATHE FOR.

WILLIAM BLACKWOOD & SONS, Edinburgh and London.

Just published,

SIEGE OF SEBASTOPOL.—AUTHENTIC MAP AND VIEW OF SEBASTOPOL AND ITS ENVIRONS, including Balaklava, coloured to show the position of the Investing Corps of the Allied Armies, October, 1854; from Sketches made on the spot by CAPT. M. A. BIDDULPH, R.A. Price 2s. 6d.; per post, 3s. Case, 4s. 6d; per post, 5s.

BATTLE OF ALMA.—CAPT. M. A. BIDDULPH'S SKETCH OF THE BATTLE OF ALMA is now ready. Price 1s.; per post, 1s. 2d.

London: EDWARD STANFORD, Wholesale and Retail Mapseller, 6, Charing Cross.

THE CONSERVATIVE LAND SOCIETY.

SUCCESS OF THE SOCIETY.

Total number of Shares issued up to 29th Sept. 1854 ...	10,312
Total Cash Receipts up to the same date	...£139,303
Amount of Land sold to the same period	... £98,515
Amount of Reserve Fund to the same date	£8095
Shares on the Order of Rights by completion, by public drawings and by seniority to the same date	3529
Last Share Number on the Order of Rights by Seniority	1228
Bonus realised on Shares during the first year ...	6 per cent.
Interest now allowed on Completed Shares, and on payments of a year's subscription in advance and upwards, such interest being payable half yearly, one month after Ladyday and Michaelmas ...	5 per cent.
Estates purchased in various Counties	Nineteen.
Allotted or partly distributed amongst the Members	Twelve.
To be allotted	Seven.

CHARLES LEWIS GRUNEISEN, *Secretary.*

The TWENTY-THIRD PUBLIC DRAWING will take place on Saturday, the 11th inst., at Noon, at the Offices, 33, Norfolk Street, Strand, London.

LONDON NECROPOLIS COMPANY.—It is intended to OPEN the CEMETERY on the 13th November, and this Company will undertake Funerals on and after that date.

A train, conveying Funerals and mourners only, will start from the Westminster Road Station daily at 11·20 A.M.

Forty-eight hours' notice of any intended Funeral must be given at the office of the Company, 2, Lancaster Place, Waterloo Bridge, where full particulars of the general arrangements may be obtained. The Charges are:—

First-class Single Grave in perpetuity, including conveyance of Coffin to Woking, Funeral Service, and Interment	£2 10 0
Second-class, ditto ditto	1 0 0

This Company has also contracted with eminent and responsible Undertakers and Statuaries, so that the public may either employ their own Undertaker or Statuary, or, by one payment, obtain all the requirements of a Funeral.

A detailed Tariff may be obtained on application, either in person or by letter. By order,

RICHARD CHURCHILL, Secretary.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard run, of E. T. ARCHER, 7, Trinity Lane, Cannon Street, City, and the Royal Mills, Wandsworth, Surrey.

TEN THOUSAND STOVES.

THE TENTH THOUSAND OF THE PATENT PORTABLE SUSPENSION STOVE is now on sale. These Stoves, so justly celebrated for preserving a pure and healthy atmosphere, and for their extraordinary economy in the consumption of fuel, are sold, wholesale and retail, by DEANE, DRAY, AND CO., 46, King William Street, London Bridge: and may be obtained of most Ironmongers.

The IMPROVED PATENT VENTILATING STOVE, which is strongly recommended, may also be seen at the above establishment. Prospectuses, &c., forwarded post free.

EVERYTHING FOR THE TOILET AT MECHI'S MANUFACTORY, 4, Leadenhall Street.—Superior Hair, Nail, Tooth, Shaving, and Flesh Brushes, Clothes and Hat Brushes, Combs, Washing and Shaving Soaps, various Nail and Corn Instruments, Razors, Razor Strops and Paste, and Shaving Powder; ladies' and gentlemen's Dressing Cases, with or without fittings, in Russia leather; Mahogany, Rosewood, and Japan Ware; ladies' Companions and Pocket Books elegantly fitted: also Knitting Boxes, Envelope Cases, Card Cases, Note and Cake Baskets, beautiful Inkstands, and an infinity of *recherché* articles not to be equalled.

NOW IN SEASON.

REAL YARMOUTH BLOATERS: A Treat to Epicures.—One hundred Choice Bloaters in a case for 6s. forwarded to any "Address." Carriage paid as far as possible: Extra quantity allowed where carriage cannot be paid through. Remittances are requested with orders.

Apply to HENRY H. BAKER, Fish Merchant, Great Yarmouth.

TO LOVERS OF FISH.—100 Genuine Yarmouth Bloaters for 6s., package included, forwarded to all parts on receipt of Penny Postage Stamps, or Post Office Order for the amount preferred.

Address, THOMAS LETTIS, Jun., Fish Curer, Great Yarmouth.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 27, Victoria Street, in the Parish of St. Margaret and St. John, Westminster, both in the County of Middlesex, Printers, at their Office in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, NOV. 4, 1854.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 45.—1854.] SATURDAY, NOVEMBER 11. [Price 6*d*.

INDEX.

Agriculture, professorship of, in Edinburgh ... 729 c
Agri. produce, increase of ... 730 a
— possibilities ... 730 a
— labour, economy in ... 731 a
— statistics ... 732 a
Anacharis alsinastrum ... 724 a
Araucaria excelsa ... 725 c
Botrytis fruit ... 724 a
Bugs, house ... 728 c
Calendar, horticultural ... 728 a
— agricultural ... 733 a
Carrots, crop of ... 733 a
Chrysanthemums, lists of ... 726 b
Crops, to increase ... 730 a
Edinburgh, chair of agriculture in ... 729 c
Estates, improvement of ... 730 a
Farms, cropping small ... 733 a
Fig, the ... 727 c
Food, cows ... 732 a
— sheep's ... 732 a
Grapes, varieties of ... 728 c
Guano ... 730 c
Horticultural Society ... 726 a
Justicia speciosa ... 725 a
Labour, economy in agri. ... 731 a
Lands, waste ... 731 c
Lapageria rosea ... 725 c
Moulds, fructification of ... 724 a
Newcastle Farmers' Club ... 732 a
Pathology, vegetable ... 724 b
Pear, Van Mons-Léon le Clerc ... 723 a
Pear growing ... 725 c
— profits of ... 723 c
Plants, new ... 727 b
— hardiness of ... 725 b—726 a
Pomological Soc. ... 727 a
Potatoes, sorts in Sussex ... 726 c
Radiation ... 724 c
Ranunculuses, to plant ... 727 b
Rhododendrons, hybrid ... 725 b
Sheep, cross-bred ... 732 a
Statistics, agricultural ... 732 a
Steam engine by Burn, rev. ... 732 c
Strawberries, late ... 726 a
Udder, inflammation of ... 733 a
Vegetable pathology ... 724 b
Vine borders ... 725 b
Water weed ... 724 a
Wheat produce, average ... 732 a
Winter, effects of the ... 725 b—726 a

HORTICULTURAL SOCIETY OF LONDON.—Notice is hereby given that THE GARDEN EXHIBITIONS of this Society will be held on the following Wednesdays in 1855; viz., MAY 16, JUNE 20, and JULY 11.

STOKE NEWINGTON CHRYSANTHEMUM SOCIETY.—The Eighth ANNUAL EXHIBITION of this Society will be held at the Manor Rooms, Church Street, Stoke Newington, on TUESDAY, November 21, when Prizes, including Three Silver Cups, will be awarded.—Doors open at 12. Admission from 12 to 4, 1*s*.;—after 4 o'clock, 6*d*.

SOUTH LONDON SOCIETY OF AMATEUR FLORISTS.—The CHRYSANTHEMUM EXHIBITION of the above Society will be held at the HORNS TAVERN, KENNINGTON, on WEDNESDAY, the 22d November, when Prizes will be offered for Chrysanthemums in Pots and cut blooms, in addition to the Society's Prizes. J. W. Jewitt, Esq., offers the Gold Albert Medal for 12 plants in pots of Chrysanthemums. Small Silver Albert Medal for 6 plants in pots of Pompones, and the Small Silver Albert Medal for the best specimen pot of Pompone varieties. Admission to Non-Members, from 2 to 8 o'clock, at 1*s*. each. Mr. Walker's Band will be in attendance. List of Prizes and Rules of the Society may be obtained from
John Bushell, Esq., Hon. Sec., pro tem.,
Lower Kennington Lane, Lambeth.

EXHIBITION OF CHRYSANTHEMUMS.—A large Collection of the above is now coming into flower at CHANDLER & SONS' Nursery, Wandsworth Road.
Good flowering Plants, 6*s*. to 12*s*. per dozen.

LARGE EVERGREENS.—Gentlemen planting may procure at CHANDLER and SONS' Nursery, Wandsworth Road, fine large bushy EVERGREENS, viz., China Arbor-vitæ, Hollies, Box, Laurels, &c., at very moderate prices.

CAMELLIAS.

CHANDLER and SONS beg to inform their friends and customers that they have a large stock of young Camellias this season, beautifully set with flower buds, and now in a fit state to travel without injury. Fine bushy plants, 30*s*. and upwards per dozen.—Wandsworth Road, Vauxhall.

ONE-YEAR SEEDLING QUICK.

CHARLES SHARPE & Co. have a quantity of the above to offer at 2*s*. per 1000. Their wholesale List of Nursery Stock is now ready, and may be had upon application.
Nurseries, Sleaford, Nov. 11.

ROSES, HOLLYHOCKS, ETC.

ROSES to force, or to form beds at once. See S. WALTERS'S ADVERTISEMENT, page 706.

PRICED NURSERY CATALOGUES.

A. PAUL and SON will be happy to forward the following priced Nursery CATALOGUES in return for one postage stamp each:—A, Roses; B, Ornamental Trees and Conifers; C, Fruit Trees; D, Herbaceous Plants; F, Greenhouse Plants, &c.; G, Seeds; H, Hollyhocks; I, Bulbs.—Nurseries, Cheshunt, Herts.

SUTTON'S AUTUMN CATALOGUE is now published, and will be sent post-free on receipt of one penny stamp.—Address Sutton and Sons, Reading, Berks.

AMERICAN NURSERY.

GEORGE BAKER'S DESCRIPTIVE CATALOGUE of AMERICAN PLANTS, &c., as exhibited by him in the Royal Botanic Gardens, Regent's Park, may be had by inclosing two postage stamps.

G. B. begs to call attention to his fine stock of Weeping Hollies, Coniferous Plants, Ornamental Shrubs, &c.—American Nursery, Windlesham, near Baghshot, Surrey, near Staines Station, South-Western Railway, where conveyances may be obtained.

AMERICAN PLANTS.

JOHN WATERER begs to announce that he has published a new Catalogue of his Rhododendrons, &c., as exhibited by him in the Gardens of the Royal Botanic Society, Regent's Park, London. It describes the colours of all the Rhododendrons considered worthy of cultivation, with a Treatise on their successful management, and may be had by enclosing two postage stamps.

The American Nursery, Bagshot, Surrey, near Farnborough Station, South-Western Railway.

AMERICAN PLANTS.—A Descriptive Priced CATALOGUE of HARDY AMERICAN PLANTS for the coming season is just published, and may be had by enclosing two stamps for postage. As everything in the way of American Plants is grown to an unequalled extent at this Nursery, intending purchasers would do well to provide themselves with this Catalogue.

WATERER and GODFREY, Nephews and Successors to the late Hosea Waterer, Knap Hill Nursery, Woking, Surrey.

HYACINTHS FOR BEDS.

FRESH IMPORTED HYACINTHS, all double, colours marked, at 30*s*. per 100, carriage free. Fine mixed CROCUSES, 12*s*. 6*d*. 1000; and other DUTCH ROOTS at equally low prices.—John Sutton & Sons, Reading, Berks.

SECOND IMPORTATION.

FRESH IMPORTED BULBS *bloom much finer than those which have been long exposed to the air before planting.*

JOHN SUTTON and SONS, Reading, Berks, can supply FINE BULBS, just imported, at low prices; see their Catalogue, which may be had, post free, in return for one penny stamp.

SPLENDID HOLLYHOCKS.

HOLLYHOCK SEED sown now under glass will produce plants sufficiently strong to bloom well next season.

SUTTON and SONS, Seed Growers, Reading, have saved some good ripe seed from the best Show Flowers only, which they are now sending out at 1*s*. per packet, post free.

HOLLYHOCK SEED.

R. PARKER has now ready for sending out Seed of this year's saving from the finest named varieties in cultivation, in packets at 1*s*. and 2*s*. 6*d*. each. A remittance or reference to accompany all orders from unknown correspondents. —Paradise Nursery, Hornsey Road, London.

HOLLYHOCK SEED.

WILLIAM CHATER begs to offer packets of the above Seed, containing twenty sorts, selected from his best show varieties, at 5*s*.; 12 varieties, do., 2*s*. 6*d*.; and from good double border sorts, at 1*s*.—Also Pansy Seed, from the best flowers, 2*s*. 6*d*. per packet.—Strong Plants of the new Double Crimson Rocket, excellent bedding plants for spring flowering, 6*s*. per dozen, or 2*l*. per 100; Double French White, 4*s*. per doz., or 30*s*. per 100.—Saffron Walden, November 11.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER'S descriptive List of the above splendid flowers, containing hints on their culture, and observations on exhibiting, &c., is now ready, and may be had on application, by forwarding one postage stamp.—Saffron Walden Nursery, November 11.

HOLLYHOCK SEED, from selected flowers of all the best collections in England and Scotland, 2*s*. 6*d*. per packet.

SPOTTED MIMULUS, from finely shaped flowers of every variety of colour and spot, at 1*s*. 6*d*. per packet.

CHOICE CALCEOLARIA, from the most superb collection in England, 2*s*. 6*d*. per packet.

JNO. and CHS. LEE, Nursery and Seedsmen, Hammersmith.

EARLY DANIEL O'ROURKE PEAS.

J. G. WAITE begs to inform the Trade that he is now ready to execute orders for this valuable early Pea. Price can be had on application.
Seed Establishment, 181, High Holborn, London.

RHUBARB ROOTS.

MYATT'S LINNÆUS	35*s*.	per 100.
" VICTORIA	28*s*.	"
MITCHELL'S ALBERT	30*s*.	"

Good strong Roots, and warranted true to kind.
J. G. Waite, Seed Merchant, 181, High Holborn, London.

GEORGE TAYLOR, Junr., Fruit Salesman, St. John's Market, Liverpool,
Will purchase a quantity of undermentioned goods during the season.

PINE APPLES, at per lb.	CHOICE PEARS, at per doz.
GRAPES " "	CUCUMBERS " "
MUSHROOMS " "	CAMELLIAS, &c. " "

&c., &c., &c.
Terms Cash Nett.
Apply or forward as above.

BASS and BROWN'S NEW AUTUMN CATALOGUE, containing the following, is now complete, and supplied free by post for three Penny Stamps.

Dutch and Cape Roots.	Hardy Herbaceous Plants.
Geraniums.	Potentillas.
Cinerarias.	Hollyhocks.
Azalea indica.	Antirrhinums.
Fuchsias, Verbenas, Petunias } best new of 1854.	Conifers, and other Select Trees and Shrubs.
	Hardy Climbers.
Stove and Greenhouse Plants.	Roses, Fruits, &c. &c.

Seed and Horticultural Establishment, Sudbury, Suffolk.

WILLIAMS' EVERGREEN CLIMBING ROSE.

WILLIAM WOOD and SON have been appointed Agents by Mr. Davis, of Malvern, for the sale of the above-named magnificent CLIMBING ROSE. Good established plants, 3*s*. 6*d*. each. Usual discount to the trade. For particulars purchasers are referred to their own and Mr. Davis' advertisements in *Gardeners' Chronicle* of October 7, page 643.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

ROBERT KENNEDY, Agent for Messrs. Platz and Son, Seed Growers, Erfurt, has much pleasure in announcing he has received their Catalogue of Flower and Vegetable Seeds for the trade for 1855, which abounds with new articles of great interest, and will be forwarded, per post, on application.—R. Kennedy, Bedford Conservatory, Covent Garden, London.

P.S. Also, R. Kennedy's General Catalogue of British and Foreign Ferns forwarded on receipt of six postage stamps.

GLENNY'S SUPERB BALSAM SEED, the finest in the world; saved from flowers 3 inches across. Six classes in sealed packets, with directions for culture, 37 stamps; mixed packet, 13 stamps.—Address G. Glenny, Dungannon House, Fulham.

GEORGE JACKMAN begs to announce that he has just published a new and complete CATALOGUE of his Ornamental Evergreens, Conifers, Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., and may be had on application by enclosing two postage stamps.

Woking Nursery, 1½ mile from Woking Station, South Western Railway, where all Trains stop, and where capital conveyances may be had.—November 11.

HYACINTHS AND DUTCH BULBS.

HENRY GROOM, Clapham Rise, near London, by appointment Florist to her Majesty the Queen, and to his Majesty the King of Saxony, begs to say that he has received his HYACINTHS and DUTCH BULBS, in excellent condition, and that they are much finer than usual. He begs to say he has a few bulbs of Calochortus luteus, and Lilium Thompsonianum still for sale.—His CATALOGUE of BULBS, &c., will be forwarded on application.

LILIUM LANCIFOLIUM.

HENRY GROOM, Clapham Rise, near London, by appointment, Florist to her Majesty the Queen, and to his Majesty the King of Saxony, begs to say that this is the best time to have Bulbs of the different varieties of this most BEAUTIFUL LILY. They are well adapted for the Flower Garden, American Borders, and Drives in Parks, being quite hardy. His Catalogue may be had on application.

NEW CHRYSANTHEMUMS.

JOHN SALTER'S collection, containing all the established favourites, and upwards of 60 new varieties of this season is now in bloom, and may be seen every day except Sunday.—Versailles Nursery, William Street, near Hammersmith Turnpike.

FINE SPECIMEN PLANTS.

J. and J. FRASER beg to invite attention to their magnificent Collection of large AZALEAS, HEATHS, and other Plants, which were never in such good condition as at the present time. This is an excellent opportunity for buyers as (on account of not having sufficient room) the plants will be offered at very low prices.
The Nursery, Lea Bridge Road, Essex.—Nov. 11.

STRAWBERRY PLANTS.

CUTHILL'S BLACK PRINCE ...	21*s*.	per 1000.
" PRINCE of WALES ...	40*s*.	"
BRITISH QUEEN	21*s*.	"
ELTON PINE	21*s*.	"
PINCE'S NIMROD, New	20*s*.	per 100.

J. G. Waite, Seed Merchant, 181, High Holborn, London.

OMER PACHA STRAWBERRY.

WILLIAM JAMES WARD has still to spare a few more well-rooted plants of the above excellent Strawberry Testimonials of the highest order. See advertisement in the *Gardeners' Chronicle*, August 26; also in the Descriptive List of New Fruits in the "Florist and Fruitist," Sept. Number, accompanied with a woodcut.

100 Plants	£3 0 0	25 Plants	£1 0 0
50 "	1 15 0	12 "	0 12 0

Prospect Hill, Reading, Nov 11, 1854.

TO BE SOLD, at very reduced prices, 10,000 very strong 2, 3, and 4-year old GOOSEBERRIES and CURRANTS, of the best sorts.—For further particulars, apply to Lake & Dyer, Nurserymen, Bridgewater.

SEED WHEAT.—Samples and Prices of BROWICK RED, NURSERY, RED HYBRID, and other kinds of Wheat from the Chalk, sent on application to Mr. H. Raynbird, Basingstoke. The Red Hybrid and Nursery are well suited for late sowing after Turnips.

IMPORTANT TO POTATO GROWERS.

HAY, SANGSTER, and CO., are now ready to send out their celebrated Stock of SEED POTATOES from prepared cuttings, now completely free from disease, of the following sorts, viz.:—

Early Ebrington Kidneys, per bushel 12*s*.	Early American, per bushel, 8*s*.
Early Oxford " 10*s*.	York Regents " 6*s*.
	Scotch Cups " 6*s*.

Package and delivery in London, 9*d*. per bushel, and 2*s*. per sack.
Newington Butts, London.

SEED POTATOES.—EARLY ASH-LEAVED

KIDNEY POTATOES	6*s*. 6*d*.	per bushel.
EARLY FORTYFOLD POTATOES ...	4*s*.	"
LAPSTONE KIDNEY POTATOES ...	6*s*.	"

Address H. May, The Hope Nurseries, near Bedale, Yorkshire.

QUINCE STOCK PEARS.

H. WALKER, Londonderry, offers the following:—

5000 1 year PEARS, on Quince Stocks, 2 to 5 feet, in 50 best sorts ... ... per 100	50*s*.	0*d*.
Single Specimens in collections, 50 to 100 varieties, each	0	9
2,000 APPLES, on the Paradise and Deucin Stock, 1 year, 3 to 4 feet ... ... per 100	40	0
100 SUSETTE OF BAVAY; Pyramids, 6 feet on Pear Stock ... ... each	0	9
200 MAIDEN PEACH TREES	1	0
3,000 MANETTI ROSE STOCKS, 1 to 3 feet, per 1000	40	0
3,000 BERBERIS, holly-leaved, 1 foot ... "	20	0
500,000 1 Year HAWTHORN SEEDLINGS .. "	2	0

Carriage free to London.

FOREST TREES, ETC.

PETER LAWSON & SON, Edinburgh, the Queen's Seedsmen, &c., respectfully acquaint their patrons in England and the public, that their PRICED LIST of PLANTS for the season is now ready, and may be had on application, at their Branch Establishment in London.

All orders sent to the London Branch will be immediately executed, and delivered in London free of expense.
27, Great George Street, Westminster, November 11.

JAMES MELDRUM, Nurseryman, Kendal, Westmoreland, begs to offer, upon the most reasonable terms, upwards of one million of fine stout two-year SEEDLING OAKS, and also two-year SEEDLING ASH.—Price on application.

FORRES NURSERIES.

JOHN GRIGOR and CO., Nurseries, Forres, have for sale a large stock of true native SCOTCH HIGHLAND PINE PLANTS, LARCH DEODARA, and FOREST TREES in general. The numerous premiums awarded by the Highland and Agricultural Society of Scotland for raising true native Highland Pine Plants, have all been awarded to J. G. & Co.

Priced Lists forwarded on application, and the trade supplied at the wholesale rate.

THREE NEW ROSES.

DUCHER, Rose Florist, Rue du Vivier (Guillotière, Lyons, (France).

THÉ LOUISE DE SAVOIE.—Growth vigorous, foliage dark green, buds large and very long, flower very large and full, colour sulphur to light yellow, blossoms very freely; resembles Chromatela, but superior. Strong plants, 15f.

CICERO, HYBRID PERPETUAL.—Growth very vigorous, foliage light green, buds large and long, flowers very large and almost flat, in two distinct colours, the centre variegated, and the edges of the petals dark crimson; blossoms very freely; curious perfume. This is a very remarkable Rose. Strong plants, 12f.

DEUIL DE F. WILLERMOS. Growth moderate, flower medium full, colour dark purple shaded to black, the darkest of this class; blossoms very freely. Strong plants, 15f.

THE LARGEST AND CHEAPEST ESTABLISHMENT IN ENGLAND for GERANIUMS (show and fancy), FRENCH GERANIUMS, FUCHSIAS, VERBENAS, FAIRY ROSES, CHRYSANTHEMUMS, HELIOTROPES, CINERARIAS, CALCEOLARIAS, PRIMULAS, and other soft-wooded plants, is the Floral Nursery, Acton Road, Turnham Green, near London. More than 250,000 plants are there cultivated annually.

The stock of show Geraniums exceeds 50,000, and comprises upwards of 750 varieties, amongst which almost every known kind will be found. The newest sorts, such as Carlos, Virginia, Rosa (Foster's), Leah, Picta, Marginata, Empress, Neatness, &c., can be had at 3s. 6d. each, or 40s. per dozen. The older varieties from 9s. to 25s. per dozen.

The selection of FRENCH GERANIUMS consists of 40 distinct sorts (exclusive of those English Geraniums which some class with them), at 2s. 6d. each, or 25s. per dozen.

SEEDLING CINERARIAS (10,000), from seed of first-rate flowers, at 4s. per dozen, in 60-sized pots.

20,000 SEEDLING HERBACEOUS CALCEOLARIAS now on hand at 4s. per dozen in 60-sized pots. These flowers have been raised from the seed of the best of last year's stock, which received general praise.

An immense quantity of good fimbriated PRIMULAS at 4s. per dozen in 60-sized pots, and 6s. per dozen in 48's.

CHRYSANTHEMUMS (Lilliputian and large flowering) at 6s. and 9s. per dozen for plants which will flower this season. Large magnificent plants at 18s. and 15s. per dozen—all the best sorts.

The foregoing have been selected as examples only, it being impossible within the limits of an advertisement to afford particulars of a stock so extensive; Catalogues will, however, be forwarded to all parts gratis.

Every possible exertion will be made to give the most perfect satisfaction to all who may favour this Establishment with their patronage. None but thoroughly established Plants will be sent out, and full reliance may be placed on prompt attention and fair dealing.

The Trade will be liberally dealt with. Provincial Nurserymen and Florists will do well to try this Establishment.

Terms cash or a satisfactory reference.

JOHN WESTWOOD, Proprietor.

THE PERPETUAL TREE VIOLET, or DOUBLE VIOLA ARBOREA.—The original grower of this, the true variety of the above beautiful Violet, now offers it to the public; it has surpassed all others, and now stands without an equal for its size of flowers, fragrance, and perpetual blooming; and as a plant for the Conservatory or Greenhouse, nothing can equal it. Large plants, 6s. per dozen; smaller ditto, 3s.

DOUBLE WHITE TREE VIOLET.—This is also a fine variety, and resembles the other in many respects, with the exception of its colour. The stock of this is small, in consequence of the great demand for it last season; parties requiring plants should not delay their orders. 6s. per dozen.

THE RUSSIAN SUPERB VIOLET.—One of the finest of single Violets, large blooms, with long stems, and most delightful fragrance; will bloom well through the season if sheltered from the heavy rains and severe frosts during the dead of winter. Plants 3s. per dozen.

A TREATISE on the best and most effectual mode of cultivating the VIOLET, post free for 12 stamps, or sent gratis with all orders above 5s.

GIANT SCARLET BROMPTON STOCK plants are now ready for planting out; the spikes of flower are very large, (measuring from 18 to 24 inches in length) and so fragrant that they are admired by all who have seen them. Fine strong plants, 6d. per dozen, or 4s. per 100.

STRAWBERRY PLANTS.—Good strong plants of the following superb varieties can be supplied:—Nimrod, 10s. per 100; Prince of Wales, 10s. do.; Ajax, 5s. do.; Ruby, 5s.; Myatt's Eleanor, 3s. do.: British Queen (true), 3s. do.; Black Prince, 3s. do.; Cremont's Perpetual, 3s. do.; Victoria, 5s. do.; Surprize, 3s. do.; and a great number of other good old varieties, at 3s. per 100.

POLYANTHUS SEED, saved from the best laced varieties, 1s. per packet.

ANTIRRHINUM SEED, all saved from the best named varieties, 1s. per packet.

EXTRA FINE SWEET WILLIAM SEED, saved from all the best and most beautiful varieties, 1s. per packet.

VERY SUPERIOR WELL RIPENED HOLLYHOCK SEED, 1s. per packet.

LORD KEYNON'S FAVOURITE CUCUMBER is the best and most productive for winter cultivation ever grown, requiring less heat than any other of the kind. It is a very handsome fruit and free setter. Good old seed of the above true variety may be had, price 2s. 6d. per packet.

The Violets and Seeds will be sent postage free, but the Strawberry Plants and Stocks will be sent by hamper, package free.

Any of the above will be forwarded on receipt of Post Office Order, or Penny Postage Stamps, for the amount by

EDWARD TILEY, Nurseryman, Seedsman, & Florist,
14, Abbey Churchyard, Bath, Somersetshire.

TO THE AGRICULTURISTS OF ENGLAND.

HARRADINE'S "NE PLUS ULTRA" WHEAT.—A single ear of this wonderful Wheat, which was purchased five years ago of a soldier on tramp, who brought it from some distant country, was sown in 1849; the produce of this was again sown in 1850, and also in 1851, when it yielded at the rate of 19 coombs, 1 bushel, and 1 peck per acre. This induced me to continue its cultivation. A sheaf and a quantity of corn will be shown on Messrs. Garratts' Stand in the Agricultural Department of the Crystal Palace, by which its quality and general character may be seen.

The following Gentlemen kindly lent me portions of their land last season, to test the producing quality of the Wheat, and up to this year not one kernel has been sold for seed. The quantity sown on all the varieties of soil has in no instance exceeded 4 pecks per acre. On land of Mr. Wasdale, in the parish of Woodhurst, this Wheat was sown after Tartarian Oats, Clover, Seeds, Peas, and Tares (some being sown in February, and equally productive). On land in the occupation of Mr. Gadsby, in the parish of Godmanchester, 1 acre, the yield of which has been 30 per cent. over his own Wheat, grown in the same field, and has been tested by several Agriculturists in the neighbourhood. On land in my own possession, in Needingworth and other places (both Fen and Highland), it has been sown after Wheat, Clover, Barley, Beans, Oats, and Fallow, and in every instance has been most productive.

I am prepared to part with a limited quantity, which can be had on application to me, at 25s. a bushel. All orders to be accompanied by a remittance.

John Thang Harradine, Needingworth, St. Ives,
Huntingdonshire.

RARE CONIFERÆ.

ALEX. PONTEY, Nurseryman, Plymouth Nursery, Plymouth, begs to inform Gentlemen wishing to add to their Arboretums, that he can supply the following. Most of the kinds are planted in his Arboretum. He can warrant them hardy.

Alex. Pontey particularly calls attention to the THUJIOPSIS BOREALIS, which has proved quite hardy, and one of the grandest Coniferæ in cultivation. My specimen plants are now 3 feet high, and show their true character. Lists and prices will be forwarded on application.

N.B.—A. P. can offer an extra-sized Libocedrus Chilensis about 6 feet high—splendid specimen.

Abies Whitmaniana	Libocedrus chilensis
Araucaria gracili	Abies orientalis
Biota glauca	Pinus abchasicus
„ strieta	„ Nordmanniana
Cephalotaxus Fortuni (male	„ ponderosa
„ „ (female)	„ atlantica
Cupressus Thujiformis	Podocarpus coriacea
„ excelsa	„ japonicus
„ species from the hills of India	„ longifolius
„ Whitleyana	„ nubigera
„ Knighti	Taxus elongatus
„ mexicana	„ nucifera
„ squarrosa	„ adpressa
Fitz-Roya patagonica	Torreya Humboldti
Juniperus argentea	Thuja filiformis
„ nepaulensi	„ nepaulensis
„ japonicus	„ intermedia
„ chinensis	„ flagelliformis
„ oblonga pendula	„ asplenifolia
„ sphærica	„ Doniana
	Thujiopsis Borealis
	Wellingtonia gigantea.

Plymouth Nursery, November 11.

THE AMERICAN NURSERY, BAGSHOT, SURREY.

JOHN WATERER begs to recommend to the attention of Gentlemen and others engaged in Planting, the following plants from his general Stock, they are in fine healthy condition. The American Plants annually exhibited at the Royal Botanic Gardens, Regent's Park, are supplied from this establishment.

RHODODENDRONS.—The following is a selection of the most admired scarlet, rose, and high-coloured varieties in cultivation; are perfectly hardy, and bloom for the most part during the month of June.

Blandyanum, fine rosy crimson	5s. to 7s. 6d.	each.
Lady Eleanor Cathcart, vermilion rose and dark crimson spots	21s. 0d.	„
Lady Wenlock, bright crimson	21s. 0d.	„
Atrosanguineum, dark scarlet...	10s. 6d.	„
Alaric, dark purplish crimson	7s. 6d.	„
Omer Pasha, dark crimson, new	10s. 6d.	„
Juba, crimson, intensely marked	10s. 6d.	„
Lefevreanum, crimson, tinged with purple	10s. 6d.	„
Attila, dark crimson	7s. 6d.	„
The Grand Arab, fine glowing crimson	7s. 6d.	„
Brayanum, crimson	10s. 6d.	„
Nobleanum bicolor, crimson, white eye	7s. 6d.	„
Vandyke, light crimson...	10s. 6d.	„
Blatteum, dark purplish red	7s. 6d.	„
Rubens, light rose	10s. 6d.	„
The Duke of Norfolk, clear rose, fine	10s. 6d.	„
Celebrandum, dark crimson purple	10s. 6d.	„
Rembrandt, fine crimson	10s. 6d.	„
Congestum roseum, fine rose, well marked	21s. 0d.	„
Roseum novum, clear rose	10s. 6d.	„
Leopardi, rosy purple, and very much marked ...	5s. 0d.	„
Floribundum coccineum, fine	10s. 6d.	„
Erectum, good crimson	7s. 6d.	„
Towardianum, large rose, fine...	10s. 6d.	„

For planting extensively, no kinds of Rhododendrons are better calculated for a display than the varieties of the noble Catawbiense; they are all perfectly hardy, producing fine trusses of blooms of various hues—scarlet, rose, purple, white, and spotted white. The list below contains the leading kinds:—

Catawbiense, good bushy plants, 50s. to 63s. per 100.
„ larger, 1½ to 2 feet, 12s. to 18s. per doz.
„ seedlings, fine bushy plants, 12s., 18s. to 24s. per doz

Catawbiense bicolor	Gloriosum
„ splendens	Sherwoodianum
Album elegans	Bouquet de Flore
„ grandiflorum	Melanthauma
Cæleste	Pictum
Cyaneum	Roseum elegans
Candidum	Victoria
Delicatissimum	Maculatum nigrum
Egregium	„ purpureum
Everestianum	Macranthum
Finibriatum	Nivaticum
Mirandum	Perspicuum
Lindsayanum	

Good strong well established bushy plants, 30s. to 42s. per doz. Larger plants can be supplied at a corresponding advance of price.

STANDARD RHODODENDRONS.—Of these, without doubt, we possess the largest stock of really good kinds. Nothing can be more imposing when in bloom than a handsome standard. We have them 3 feet to 5 feet stems, and handsome symmetrical heads. The price of such would range from 42s. to 105s. each.

Rhododendron ponticum, good plants, 10s. 6d. per 100; larger, 1 to 1½ to 2 feet, 12s. 6d., 15s. to 25s. per 100. This is especially worthy the attention of planters; it will thrive in any soil, and in the most severe weather; is never injured by hares or rabbits. Unquestionably it is by far the best shrub for under cover.

KALMIA LATIFOLIA, good bushy plants, 60s. per 100; larger, 12s., 18s. to 24s. per dozen.

HARDY HEATHS, in 20 fine, named, varieties, many of them well suited to form edgings for larger clumps, 35s. to 42s. per 100.

HARDY AZALEAS.—A good assortment, if left to our selection, suitable for extensive planting, 1 to 1½ and 2 feet, 3l. 3s. per 100. The very best selected Ghent and other varieties, 18s. to 30s. per dozen. These produce flowers of all colours—scarlet, rich orange yellow, rose, and white.

STANDARD ROSES, of the most approved Perpetual and Bourbon varieties, 3 to 4½ feet stems, 18s. per dozen.

PINUS Douglasi, handsome seedling plants, 3 to 4 and 6 feet.
„ insignis; we strongly recommend our stock of this justly admired Fir, all of which are from seed, 2 to 3, 4, & 5 ft.
„ cembra, 3 to 4 and 5 feet.—Pinus excelsa, 3 to 6 feet.
„ macrocarpa, 2 to 3 feet.
„ Lambertiana, very handsome, 3 to 4 feet.
Araucaria imbricata, splendid formed specimens, 2 to 4 feet.
Cedrus deodara, of all heights, from 1 to 8 feet. We have a large quantity about 4 to 6 feet.
„ Africana, 3 to 4 feet.
„ Lebanon, handsome grown specimens, 3 to 6 feet.
Cryptomeria japonica, 3 to 12 ft.—Libocedrus chiliensis, 2 to 3 ft.
Fitzroya Patagonica, 2 feet.
Cupressus Goveniana, 3 to 4 feet.
„ Lambertiana, 3 to 4 and 5 to 6 feet.
Irish Junipers, 4 to 5 feet.—Irish Yews, 4 to 8 feet.

The above-named Coniferous Plants have been frequently transplanted, are perfect specimens, and have never been grown in pots. Prices will be forwarded on application.

J. W. begs respectfully to solicit an inspection of his stock, from those who are engaged in planting. A Catalogue, containing full descriptions of his celebrated Collection of Rhododendrons, as exhibited by him at the Royal Botanic Gardens, Regent's Park, can be obtained by inclosing two Postage Stamps.

TO GENTLEMEN ENGAGED IN PLANTING.

JAMES GRAHAM, successor to Messrs. Silverlock and Son, respectfully invites attention to his stock of hardy Ornamental Trees and Shrubs, fine large transplanted Forest Trees, Trained Peaches, and Nectarines on walls. Apricots, Plums, Apples, Pears, Cherries, &c.; Figs, Gooseberries, Currants, Strawberries, &c.; Grape Vines from eyes, Archangel Mats, Mushroom Spawn, Dutch Bulbs and Seeds, improved Sion-house Cucumber Seed, 2s. per packet. N.B. Gardens and Pleasure Grounds laid out and planted.—Northgate Nursery, Chichester.

ARTHUR HENDERSON AND CO. beg to inform their patrons and the public that their CATALOGUES of BULBS are now ready, and they will have much pleasure in forwarding them on application.

They comprise lists of all the finest varieties of Hyacinths, and many other rare and valuable Bulbs.

Their collections of Hyacinths have yearly carried off the metropolitan prizes, not only for their unique growth, but also for their beauty of colouring and distinctness of sorts, either when exhibited in a collection of 36 plants or in pairs.

Their new descriptive Fruit Catalogues, Ornamental Trees and Shrubs, American Plants, choice Rhododendrons, Roses, &c., can be had on application.

Pine-apple Place, Edgeware Road, London.

GARDEN NETS, FISHING NETS, SHEEP NETS, AND RABBIT NETS (made by hand, as machine made knots slip), supplied at very low terms. Samples sent free.
W. Cullingford, 1, Edmund Terrace, Ball's Pond Road, Kingsland, near the Gate, London.

Six Tents to sell cheap.

HOSE PIPING.—Great Reduction in Price.

PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense pressure, and much more than leather, vulcanised rubber, or any other hose, and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented inventions, the cost of manufacturing it is now reduced at least 60 per cent., which advantage is offered to the public.

BURGESS AND KEY, 103, Newgate Street, and 52, Little Britain, who on application will forward wholesale and retail prices.

PRIZE MEDAL—1851.
AT A VERY ECONOMICAL RATE.

SAMUEL CUNDY, Mason and Builder, Pimlico Marble and Stone Works, Belgrave Wharf, Lower Belgrave Place, Pimlico, London.

Marble Chimney-pieces manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price. A good Marble Chimney-piece for 40s. Marble Work in all its branches at a remarkably cheap rate for Halls, Dairies, Larders, &c. Circulars sent on application.

N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank.

TO FLORISTS AND OTHERS.

J. JONES, Iron Merchant, has always a great variety of CONICAL and SADDLE BOILERS in STOCK: also Fire and Furnace Bars, Ornamental and Plain Supply Cisterns, Double Doors and Frames, Furnace Grates, Soot Doors, Hot Water Pipes, Elbows, Tees, Syphons, Throttle Valves, Stop Cocks, Flange and Socket Elbows, &c.; also Trough Pipes. Drawings and prices of the above, on application to J. Jones, Iron Bridge Wharf, No. 6, Bankside, London, near the Southwark Iron Bridge.

STEPHENSON AND PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

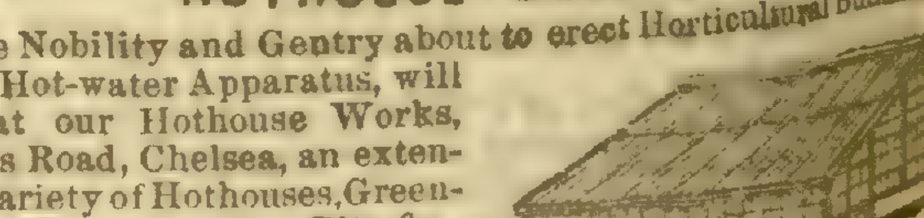
From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

HOT WATER APPARATUS, adapted for Horticultural and every other description of Buildings; improved Boilers, requiring no brickwork, Warm Air Apparatus, &c.—S. S. TAYLER, Engineer, Battersea.

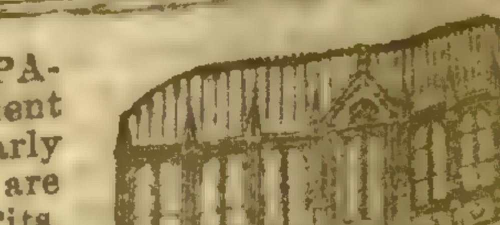
GREEN AND HOT-HOUSES made by machinery, at J. LEWIS'S Horticultural Works, Stamford Hill, Middlesex. Sent to all parts of the United Kingdom. These buildings are warranted of the best materials, and put together in a superior manner. Being manufactured by steam-power, they are considered the cheapest and best made in England. The Trade and Merchants supplied at wholesale prices. List of Prices by enclosing two postage stamps.

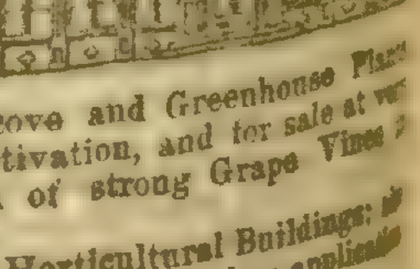
HORTICULTURE IN ALL ITS BRANCHES.

J. WEEKS & Co., King's Road, Chelsea.



HOTHOUSE BUILDERS.





The Nobility and Gentry about to erect Horticultural Buildings or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. Weeks & Co., King's Road, Chelsea, London.

SPLENDID CONSERVATORY PLANT.

FUCHSIA DOMINIANA.—A beautiful example of this truly gorgeous plant was exhibited at 21, Regent Street, on Tuesday last, and without any exaggeration it may be said to have been the admiration of every one. There is now no doubt that it is one of the finest autumn and winter flowering conservatory plants we have. The merit of raising this beautiful plant is due to Mr. Dominy, the Foreman of the Plant Department at the Exeter Nursery; it consequently bears his name as a memento of his zeal and ability in the performance of his duties. It is a seedling between Serratifolia multiflora and spectabilis, having the fine free growth of the former and the splendid flowers of the latter.

A few extra strong specimen plants, 2 to 3 feet ...	21s. 0d.
Fine large plants	10 6
Small Plants	7 6

Exeter and Chelsea Nurseries, Nov. 11.

N.B. The specimen exhibited on Tuesday can be seen at Chelsea.

SONERILA MARGARITACEA.—This lovely Plant was exhibited at the Horticultural Society Rooms, 21, Regent Street, on Tuesday last, and was the gem of the exhibition. (See report in *Gardeners' Chronicle*). It is perhaps the most chaste of all variegated plants, producing, with its dark glossy green leaves, dotted all over with silvery white spots, a profusion of beautiful crimson flowers, with yellow stamens. It is a dwarf compact plant, of particularly neat habit. It requires the temperature of a cool Stove or a warm Greenhouse.

Messrs. VEITCH & SON are now prepared to supply plants of the above, and have no hesitation in saying that this is one of the most lovely and delightful little plants it has ever been their good fortune to introduce.

Plants at 21s. each, with one over on three to the Trade.

Nurseries, Exeter and Chelsea, Nov. 11, 1854.

N.B. The Plant exhibited on Tuesday is now at the Exotic Nursery, Chelsea, and can be seen by the public.

TO THE SEED TRADE.

BEAUTIFUL NEW CALIFORNIAN ANNUALS.

MESSRS. VEITCH AND SON are now prepared to supply SEEDS of the following recent introductions which were sent them by Mr. Wm. Lobb, and are at present solely in their own possession. They are certainly three lovely additions to our hardy Annuals, and cannot fail to give general satisfaction.

ESCHOLTZIA TENUIFOLIA.

This lovely dwarf Annual is peculiarly adapted for forming masses, or for Edgings to beds. It is of a delicate clear straw colour, of neat compact habit, about 9 inches in height; its foliage being small and producing its flowers in abundance at the same time, renders it very attractive.

It was exhibited at the last July Chiswick Show, and had the FIRST CLASS CERTIFICATE awarded it.

Dr. Lindley in the report of this show, in the *Gardeners' Chronicle*, of July 15, describes it as—"The charming Esch. tenuifolia, quite different from the old species, dwarfer and neater."

It is figured in Curtis's "Botanical Magazine," Oct. 1854.

LEPTOSIPHON AUREUM.

This very pretty little plant is of a BRIGHT GOLDEN COLOUR, dwarf compact habit, is VERY SHOWY, and has a BEAUTIFUL EFFECT in small beds.

It is also well adapted for growing in pots or boxes for GREENHOUSE DECORATION. It was exhibited at Chiswick on the 3d of June last, and had the Silver Knightian Medal awarded it.

It is a Californian species, and is altogether distinct and VERY SUPERIOR to Leptosiphon luteum.

WHITLAVIA GRANDIFLORA.

This very fine thing has LARGE DARK VIOLET bell-shaped flowers, which are produced in abundance.

It is figured in the October number of Curtis's "Botanical Magazine," and the following is what Sir William Hooker says of it:—

"This BEAUTIFUL ANNUAL has ATTRACTED the ATTENTION of ALL LOVERS of Horticulture at the Chiswick Exhibitions of the present summer (1854), having been sent by the Messrs. Veitch, from their Nurseries at Exeter, and King's Road, Chelsea. The seeds had been the year before sent home from California by Mr. William Lobb.

Dr. Lindley, in his notices of new plants in the *Gardeners' Chronicle*, of Oct. 21, describes it "AS THE GEM OF THE SEASON IN THE CLASS OF HARDY ANNUALS."

It was exhibited at Chiswick in July last, and had a First Class Certificate awarded it.

Prices of the above will be forwarded to the trade on application.

Nurseries, Exeter and Chelsea, Nov. 11.

CHOICE NEW GERANIUMS, &c., AT REDUCED PRICES.

HENRY WALTON, FLORIST, &c., Edge End, Marsden, near Burnley, Lancashire, having a large stock of the following NEW GERANIUMS in 4-inch pots, good, strong, healthy, well-established plants, begs to offer them, at purchaser's selection, 36s. per dozen, viz.—Empress, Leah, Neatness, Picta, Rebecca, Marginata, Eliza, Helen, Glow-worm, Virginia (Hoyles), Attraction, Purple Perfection, Indian Chief, Majestic, Regalia, Governor-General, Carlos, Zeno, Tamberlik, Rosa, Lucy, Duchess of Wellington, and Rhoda. Choice varieties of 1853, strong plants, 15s. per dozen. Fine old show varieties, 6s., 9s., and 12s. per dozen. Fine spotted French varieties, which are very showy and attractive, 2s. 6d. each. Choice fancy varieties, 9s., 12s., and 18s. per dozen.

CINERARIAS, from a collection of more than 100 of the best varieties, new of last season, 18s. per dozen; choice older varieties, 6s., 9s., to 12s. per dozen.

PANSIES, of which H. W. has several thousands of plants of the best in cultivation, 4s. 6d., 6s., 9s., 12s., and 18s. per dozen.

CARNATIONS AND PICOTEES, fine show varieties, 9s., 12s., to 30s. per dozen pairs, or 25 pairs for 21s.

HOLLYHOCKS, including the best varieties out, 6s., 9s., 12s., to 30s. per dozen.

All the newest and best FUCHSIAS of this season, 1s. 6d. and 2s. each, or 18s. per dozen.

VERBENAS: new varieties of this season, 1s. each, or 9s. per dozen.

PETUNIAS: new varieties of this season, 1s. 6d. each, or 15s. per dozen.

Also a large collection of FERNS AND LYCOPODS at very low prices. Parties intending to make a select collection would do well to inspect H. W.'s catalogue.

Collections of STOVE AND GREENHOUSE PLANTS at reduced prices.

CINERARIA SEED from the best varieties, 1s. 6d., 2s., and 2s. 6d. per packet, post free.

Descriptive Lists of the above now ready, and may be had for one postage stamp. A remittance is respectfully requested from unknown correspondents, made payable at Marsden, Lancashire.

EXTRAORDINARY POTATOES.—"A variety of Potatoes, singled out from some grown three or four years ago, has this year produced on the land of the Thingoe Union-house about 31 sacks, of which only three pecks are bad or small, and 60 Potatoes measure a bushel, weighing 60 lbs. Two have been brought to us weighing together 3 lbs. 2 oz. It is an excellent mealy Potato, and an abundant bearer."—*Bury Post, October* 11, 1854.

This really extraordinary new variety has been christened the "Lord Raglan," and they are now ready to send out, price 2l. 2s. per sack of 2 cwt. An early application will be necessary.

Also "Jackson's Improved Early Ashleaf," and the celebrated "Short-top," price 9s. and 7s. 6d. per bushel; and the British Queen, price 7s. 6d. per bushel; the earliest round variety known, ready to take up in May and ripe in June. Free to London, and no charge for sacks.—Apply to JOSEPH WILSON, Seed Merchant, Ipswich.

DUTCH HYACINTHS, for Forcing, single and double, at 4s. per dozen. Also Narcissi, Crocuses, Tulips, Irises, Jonquils, Anemones, and Ranunculuses, priced Catalogues of which will be forwarded by post, from ARTHUR COBBETT'S Italian and Foreign Warehouse, 18, Pall Mall.

Also Double Roman and Paper White Narcissus, the most beautiful and fragrant of all the Narcissi, 4s. per dozen.

MYATT'S new Seedling Strawberry, "ADMIRAL DUNDAS."—This is the most extraordinary variety, for size and productiveness, that has yet been raised at Manor Farm; it is much larger and a better flavour than either the Surprise or Mammoth, and ripens off the late fruit to advantage.

J. M. & SONS can confidently recommend this, as being superior to any large variety that has come under their notice.

Strong, well-rooted runners are now ready, and will be carefully packed and delivered free to any part of London, at the following scale of charges:—100, 50s.; 50, 30s.; and 25, 16s. Also strong Plants of MYATT'S British Queen, Cinquefolia, Eleanor, Surprise, Globe, Eliza, Hooper's Seedling, Keens' Seedling, Black Prince, and Barnes' Bicton Pine, 5s. per 100.

Manor Farm, Deptford, November 11.

JOHN CATTELL, NURSERYMAN, Westerham, Kent, begs to inform the Trade that he has a large stock of the following articles to offer, worth their attention; prices of which may be had on prepaid application enclosing a penny stamp.

Delphinium Barlowi	Œnothera macrocarpa
Gladiolus brenchliensis	Wahlenbergia grandiflora
Anemone pavonia	Spiræa callosa

Late and Early Dutch Honeysuckle
Hardy Azaleas, of the finest sorts.
Red Raspberries do. do.
Gooseberries and Currants, do.

JOHN CATTELL, Westerham, Kent, begs to inform the public that his Descriptive Priced CATALOGUES of his extensive collection of NURSERY STOCK for the current season, are now ready, and may be had on application, enclosing a penny stamp for each, excepting Catalogue No. 10, which will require two penny stamps.

CATALOGUE No. 6.—GRAPE VINES, STRAWBERRIES, RASPBERRIES, &c.
" No. 8.—ROSES.
" No. 9.—FRUIT TREES.
" No. 10.—HARDY ORNAMENTAL TREES AND SHRUBS, CONIFERÆ, AMERICAN PLANTS, CLIMBERS, &c.
" No. 11.—FOREST TREES, &c.

MESSRS. E. G. HENDERSON AND SON, of the Wellington Nursery, St. John's Wood, London, beg to announce that the following New Plants are now ready for sending out by them, viz.:—

HELIOTROPIUM "BEAUTY OF THE BOUDOIR."
CHRYSANTHEMUM "ANNIE HENDERSON."
GERANIUM "PRETTY POLLY," hybrid bedding variety.
ACHIMENES HENDERSONI.

FANCY GERANIUMS.

Cloth of Silver | Evening Star | Crystal Beauty

CINERARIAS.

Mrs. Rogers	Fascination
Mrs. Gerard Leigh	Prince of Prussia

And the New RHODODENDRONS of Assam and Bhootan.

Full particulars of the above will be seen on reference to their Autumn Catalogue, just published, which will be forwarded post free on application.—November 11.

CHEAP AND SELECT NURSERY STOCK.

WILLIAM JACKSON AND CO., Bedale, Yorkshire, beg to offer the following choice STOCK of first-rate quality at the annexed low prices:—

12 Abies Morinda, 4 feet, fine specimens	20s. 0d.
12 Pinus Cembra, 4 feet, do. do.	30 0
12 Pinus excelsa, 3 feet, do. do.	20 0
12 Hardy Handsome Rhododendrons, 2 to 3 ft., in varieties	20 0
100 Evergreen Flowering Shrubs, two of a sort	30 0
100 good showy Herbaceous Plants, do. do.	20 0
100 do. do. Hollyhocks	15 0
100 Rhododendrons in great variety, 1½ to 3 feet, strong bushy plants ... ... 30s. to	40 0
100 Rhododendron campanulatum, 1½ to 3 feet, strong bushy plants ... ... 30s. to	40 0
100 Green Hollies, 1 to 2 feet, 7s. 6d. per 1000	60 0
Camellias, fine plants, of the best varieties, set 24s. to 84s. p. doz.	

FRUIT TREES, PER DOZEN.

Apples and Pears of the most approved kinds, good strong standards	8s. 0d.
Ditto, ditto, dwarfs, 6s. trained ... ... 18s. to	24 0
Cherries and Plums, good strong standards	12 0
Ditto, ditto, dwarfs, 9s., trained ... ... 30s. to	36 0
Apricots, Peaches, and Nectarines, trained, of the most approved kinds	48 0

Splendid specimens, 3 to 6 feet in height, at moderate prices, of Deodaras, Araucarias, Cedars of Lebanon, Abies Pinsapo, Menziesi, Douglasi, Pinus Pallasiana, and excelsi. Hardy Scarlet and other Azaleas for forcing, well set. Also Scarlet, Purple, Crimson, and White Rhododendrons. A reference is respectfully solicited from unknown correspondents.

TO GENTLEMEN ENGAGED IN PLANTING.

WATERER AND GODFREY respectfully invite attention to their stock of the following very desirable HARDY PLANTS.

Araucaria imbricata, from 2 to 7 feet high; as handsome as plants can be.	Pinus canadensis, 3 to 8 feet
Cedrus Deodara, in any quantity, from 1 to 3 feet high	Cupressus macrocarpa or Lambertiana, 4 to 7 feet
Do. do., 4, 5, 6, 7, 8, and 10 feet high; splendid plants	" thyoides variegata, 3 to 4 feet (the variegated white Cedar)
Cedars of Lebanon, 3, 4, 6, and 10 feet high	Juniperus, Upright Irish, perfect columns, 3 to 7 feet
Pinus Douglasi, 3 to 10 feet	" chinensis, 2 to 8 feet
" insignis, 2 to 7 feet	Yew, common English, 3 to 8 feet
" Menziesi, 3 to 7 feet	" Irish, 4 to 10 feet
" pinsapo, fine plants, 3 to 6 feet	" gold-striped, 1½ to 3 feet
" Nordmanniana, 1½ to 3 ft., all from seed and remarkably handsome	" do., tall standards, 4 to 7 ft.
" nobilis, 1½ to 2 feet; a few larger, 5 and 6 feet high, on their own roots, and with perfect leaders	" Dovaston, or Weeping, worked on tall straight stems
" Montezumæ, 2 to 4 feet	Thuja aurea, the finest plants in the country
	Libocedrus chilensis, the finest plants in the country
	Large variegated Hollies
	" Standard Bays

Also an immense stock of large Evergreens, Standard Ornamental Trees, &c.

All the plants here offered may be seen, growing in our Nursery; they are removed every year, and will travel any distance with perfect safety. Of some, such as Araucarias, Deodaras, Golden Yews, Thuja aurea, Pinus nobilis, Nordmanniana, we have any quantity; and the plants, for root and branch, are not to be surpassed. Priced Catalogues will be forwarded on application, enclosing two postage stamps, to WATERER and GODFREY, nephews and successors of the late Hosea Waterer, Knap Hill Nursery, Woking, Surrey, near the Woking Station, South-Western Railway, where all trains stop, and where capital conveyances can be obtained.

The 2d. stamp will also include a descriptive Catalogue of their American Plants, Roses, and Nursery Stock in general.

NEW FANCY GERANIUMS.

JOHN HALLY, NURSERYMAN and FLORIST, Blackheath, begs to offer the following distinct and first-rate Fancy Geraniums, which have been raised by a first-rate grower and highly admired by all judges who have seen them. They are now ready.

1. ENCHANTRESS.—Upper petals deep rosy crimson, with white edge, lower petals having a crimson spot on French white ground; of superb form and a very free bloomer, with dwarf habit. Received a First Class Certificate at the Regent's Park Exhibition, June 21. 10s. 6d. each.

2. ECLIPSE.—Upper petals deep lilac crimson, with white margin, lower petals having a belt of rosy lilac, with large white eye, and ring of white round the outside. Flower good in shape, and above the average size. 10s. 6d. each.

3. COMPACTUM.—Upper petals dark velvety crimson, very smooth lower petals, having a crimson lilac spot, with white eye; a remarkably free bloomer, and of dwarf habit. 10s. 6d. each.

4. MARY JANE.—Upper petals silvery lilac, margined with white, lower petals white, spotted with lilac; new in colour, free bloomer, and of dwarf habit. 7s. 6d. each.

5. FORMOSISSIMUM SUPERBUM. A Cape cross, pure white, with large mulberry spot on the upper petals; flower of good form and substance. Exhibited June 21st, at Regent's Park. 7s. 6d. each.

The above set for 2l. 2s., with the usual allowance to the trade. A remittance must be made by unknown correspondents. Post-office orders to be made payable at Blackheath.

SUPERB DOUBLE HOLLYHOCKS.

JOSEPH BUTLER, Gardener to R. Hills, Esq., Colne Park, near Halstead, Essex, begs to announce that he has now ready for sending out a large stock of extra strong plants of nearly all the varieties yet sent out; also some superb new varieties of J. B.'s own raising.—Descriptive Catalogues will be sent post free on the receipt of a postage stamp; also Seed saved from J. B.'s superb collection; 150 Seeds mixed for 12 postage stamps. Collections, consisting of well contrasting colours, at 6s., 10s., 15s., and 25s. per dozen; if left to J. B.'s own selection good double contrasting colours for Borders, not named, 4s. per dozen. A remittance is solicited from unknown correspondents. Post Office orders, payable at Halstead, Essex.

CHRYSANTHEMUMS.

R. PARKER begs to offer fine bushy plants of the above, well established in 6-inch pots, for flowering this autumn, consisting of all the newest and finest Pompon and large flowered varieties in cultivation. Purchaser's selection at 9s. per dozen.

CINERARIAS (Seedlings), from all the finest varieties, carefully selected, including the new varieties sent out last autumn. Strong established plants, in 4-inch pots, at 4s. per dozen. A choice collection of named Cinerarias in strong established plants, purchaser's selection, at 9s. per dozen.

ROSES, consisting of the best varieties of Hybrid Perpetuals, Teas, Bourbons, &c., well established in pots. Purchaser's selection, at 12s. per dozen. List of names forwarded upon application.

A remittance or reference to accompany all orders from unknown correspondents.

Paradise Nursery, Hornsey Road, Islington.

NEW CLIMBING HYBRID PERPETUAL ROSE,

THE "DUCHESS OF NORFOLK."—Colour, Vivid Crimson.

To be sent out for the first time about the end of October.

WILLIAM WOOD AND SON beg to refer to their advertisement in the *Gardeners' Chronicle* of September 30, page 627. Standards, half-standards, or dwarfs will be supplied at 10s. 6d. each, with the usual allowance to the trade.

N.B. When six plants or more are ordered by the trade, a very considerable reduction will be made beyond the usual discount, particulars of which may be had on application.

A Drawing of the above may be had for 6 Postage Stamps.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

The Gardeners' Chronicle.

SATURDAY, NOVEMBER 11, 1854.

We have seen with satisfaction that the PROFITS OF PEAR GROWING have occupied the attention of some of our correspondents. They could not have selected a better topic; for although some may be in a degree extravagant in their expectations, while others are inclined to doubt the possibility of any pecuniary advantage whatever being derivable from this fruit tree, it will probably turn out that truth lies nearer the statements of the enthusiastic than of the fainthearted. By way of adding our mite to the information procurable on the subject, we venture to introduce a case brought before the meeting of the Horticultural Society on Tuesday last.

The vice-secretary announced that he had received through our office the following memorandum from a resident at Nantwich:—"I send a specimen of Van Mons-Léon le Clerc Pear, of which I have two small trees growing against a south wall (the front of my cottage), one on each side of the door. These trees have produced *half a bushel of fruit*, all of them nearly as large as the specimen sent, which weighs 15 ounces. I have several weighing 14, 13, and 12 ounces."

The specimen received was, he added, quite as fine as the beautiful sample produced by Mr. INGRAM from her MAJESTY's garden, at Frogmore. So that we have in this instance a proof that in such a season as this, and in such a climate as Cheshire, one of the finest of our autumn Pears is produced abundantly and of the first quality, as regards both size and flavour.

In this case it is clear that the Pear in question must have been grown with such considerable pecuniary advantage that the owner of the trees might have very well afforded them a screen like that employed by Mr. HARRISON, published lately in the "Journal of the Horticultural Society," and reproduced the other day at p. 696 of the *Gardeners' Chronicle*. By such means a crop of fruit may certainly be secured in even our worst seasons. We leave pomological arithmeticians to form their own calculations upon the datum now supplied, and conclude these remarks with the following account of

the Pear in question, for which we are indebted to Mr. Robert Thompson:—

"*The Van Mons-Léon le Clerc Pear* was raised by M. Leon le Clerc, of Laval; and he wished to have the name of Van Mons united with his own in the designation of the fruit. Specimens of it were first sent to the Society by Mr. Langelier, of St. Hélier's. The fruit having been approved of, a number of trees were introduced to this country from Jersey; and it has proved highly deserving of cultivation. It is necessary to observe that it is one of those sorts which do not succeed well on the Quince stock. The tree is a good bearer, but not such a strong grower as the Beurré Diel, for example, and others that bear large fruit. Therefore care should be taken that the tree do not overbear itself. The weight of the fruit individually should be taken into consideration, and the number of fruits that may set in a good season should be reduced accordingly. If the weight of each fruit may be estimated at four times that of a moderate-sized Pear of another sort, then, to give each tree an equal load, the Van Mons-Léon le Clerc should be allowed to bear only one-fourth the number. This is evident enough when the fruit is full grown, but is apt to be forgotten at the time of thinning the young fruit, when that of large and small varieties differs but little in size."

It has been shown on more than one occasion that the white dust which is so abundant in Vineyards affected with mildew, is not the only form of fructification, nor that which is most indicative of the real affinities of the fungus; and the same may be said with equal probability of the mould which at the present moment is powdering every crop of Swede Turnips, though perhaps no one has as yet discovered more than the ordinary Oidioid fruit. A much more surprising fact has, however, of late been made known by M. Tulasne, namely, that the well-known fruit of Botrytis infestans, of which so much has been said in the numerous discussions on the Potato murrain, is not more truly the real fruit of the Botrytis, than are the necklaces of vesicles in the Vine mildew; and the observation may be extended to many allied species, as Botrytis effusa, Grev.;* on Spinach, B. parasitica, which is often a pest on White Turnips; B. ganglioniformis, Berk.; and several others forms.

These moulds, like the various species of Uredo and Puccinia, are essentially parasitic in their habits; not merely developed on unhealthy or dead organisms, but, like true parasites, produced amongst the healthy tissue at whose expense they live. The mycelium traverses in every direction the large intercellular passages on the under side of the leaves, though not confined to these, and fertile threads burst through the stomates, or where these are not present through the cuticle itself. But the vesicles which are borne on the tops of these threads, though germinating readily, are not the only nor the most highly-organised fruit. The proper fructification is contained in large asci, or sporangia, which are attached by a short stem to the threads of the mycelium, and resemble greatly the spores of a Truffle. In all probability the production from the intercellular tissue of the Potato, which is figured in Mr. Berkeley's "Memoir on the Potato Murrain," from drawings by Dr. Montagne, under the name of Artotrogus, in the first number of the "Journal of the Horticultural Society of London," belongs to the same category; also a second species of the genus found by Mr. Broome on Turnips, which may possibly be the asciform fruit of Botrytis parasitica.

The spores are spherical, far larger than the conidia, brownish, with a cellular, warty, or smooth episporium, which separates very readily from the inner membrane.

If the Artotrogus of Montagne be really the perfect fruit of B. infestans, which Tulasne has not yet detected, the episporium is strongly echinulate, as are the sporidia of so many Truffles. Dr. Montagne has long since shown that the sporangia of Eurotium are really ascigerous; and now it is equally certain, from the observations of Corda and De Bary, that from the same threads is produced the ordinary fruit of *Aspergillus glaucus*, the common blue mould. If these observations are multiplied, mycologists will be obliged to modify greatly their present systematic views. *M. J. B.*

The new water weed, *Anacharis alsinastrum*, of which we gave a full account, derived from Mr. Marshall, in our volume for 1852, p. 662, after invading tranquil streams in England, Scotland, and Ireland, has threatened to close altogether the navigation of our canals. No one can wonder that such an enemy should have excited very great alarm, especially since there was no apparent means of destroying it. Even the costly process of removing it by manual labour, was evidently but an unsatisfactory mitigation of the evil. We therefore received with no little pleasure as well as surprise, the following very important communication from a Devonshire correspondent, which points out a certain and costless remedy. We give his statement verbatim:—

"It has at various times been stated that this plant first appeared in the loch of Dunse Castle, Berwickshire, and was detected by Dr. Johnstone of Berwick, in 1842. It has now entirely disappeared; and believing that other lakes may be cleared by the same agents as in this case, I venture to offer you an account of its sudden disappearance. The progress of its growth was not watched particularly at the time; but in 1847, the loch was so completely filled with this plant, that it became impossible to pull a boat through the water without the greatest exertion.

"At this time there were a few swans upon the loch. Indeed, these birds were accused of having first introduced it. The swans lived entirely upon this plant, and began to increase in the most unusually rapid manner. In 1848, as well as I can recollect, one pair of birds raised a brood of seven young. Three pair raised broods of *five* each, besides *several* pair which reared respectively three and two young.

"By the year 1851 or 1850, I forget which, the lake was entirely, or at least nearly so, cleared of every appearance of the Anacharis alsinastrum, and then the swans began to die. Mr. Hay had them fed with corn and vegetables, but nothing seemed to save them; they gradually began to pine, and are now reduced to the original number of a few pair. But for the last three years there has not been one single leaf of the weed seen in the loch, so completely have the swans eradicated it from the water. They follow the small burns down to the Whittadder in search of it, and appear to be its most relentless persecutors.

"This is so curious a fact, that I imagine some of your correspondents may like to try the same cure for this troublesome pest; for no other means I ever saw tried exercised even the least influence towards eradicating it. I think last season the swans did not hatch one, or certainly not more than one young bird; as well as I remember there was not a single nest, or as I say, not more than one." *J. B. G., Devonshire, Nov. 1, 1854.*

VEGETABLE PATHOLOGY.—No. XLV.

198. Though the abnormal states noticed above may answer the end of the cultivator, and therefore cannot enter into his notion of diseases, they are, nevertheless, occasionally, either in themselves or in their consequences, most decided diseased conditions. Present purposes may, for instance, be answered by the use of high manures in the production of large weights; but either inferior quality, or a tendency to decay, will be increased in a still higher ratio, as in the enormous increase sometimes effected by large doses of guano: and, on the other hand, it appears evident that the disease called curl arises from the over-production of fecula in the tubers of Potatoes, to the exclusion of such a portion of albuminous or fibrinous matter as may be necessary to convert the starch into sugar or other soluble matters, for the proper germination of the tubers. Such a state is clearly in itself a diseased state, though it cannot be so considered, as regards the purposes of cultivation, provided such tubers are employed simply for nutriment, and not for reproduction.

199. The same principle applies equally to fruits. The ultimate end for which abstractedly the whole organisation of plants is contrived, is the reproduction of the species. Doubtless their several intermediate products were prepared for the nourishment of other members of the natural world; but such ends could only be secured by the repeated reproduction of the species by seed, and improvements of any particular quality can be attained in any general way by no other mode of propagation. Anything, therefore, which tends to repress such reproduction altogether, is essentially of the nature of disease. Such, however, to a great extent, are the improvements which have been effected in the Mulberry and wild Fig tree by cultivation, insomuch that millions of fruits are ripened every day, not one of which contains a perfect embryo. And yet, in treating on vegetable pathology, we must restrict our language so as to exclude such cases.

200. Certain fruits, such as the Medlar, Service, &c., are too harsh to afford palatable or wholesome food till they have undergone a peculiar process, to which has been given the name of bletting. Varieties or states which do not blet are absolutely worthless, and therefore the gardener looks forward to this change with just the same interest with which he expects in due season the perfect ripening of his Pears and Apples, which is essentially a chemical process, which may be promoted by a proper temperature, or wholly prevented by undue cold. Now it sometimes happens that his Apples will blet by precisely the same process as that which has taken place in the Medlars; and some kinds of Pears are so subject to undergo this change, that they retain their proper flavour a few days only after they are gathered. In all these cases the process is actually a kind of decomposition, partaking of the nature of disease; but in the first the gardener never would allow the existence of a diseased condition, because the promotion of such a tendency is the very point at which his skill is directed.

201. Still more must we restrict our definition when we take into consideration the numerous objects which occupy the time and anxiety of the florist. In the field we do not hesitate a moment to consider what are commonly called monstrosities as so many cases of vegetable pathology. If, for instance, we meet with Clover in which sepals, petals, carpels, and ovules are represented by leaves of the normal form and nature, though differing in size, disease is recognised without hesitation; and so in numerous other cases. But the very object of the florist is to produce flowers differing from the normal form, and multiplying the sepals or petals at the expense both of the male and female organs. If the flowers revert at all to their normal state, or if the multiplied organs, instead of assuming the nature of the especial floral envelope on which their beauty may depend, lose their bright colours and return to the natural green of the parts of which they are mere modifications—or if, instead of forming a compact whorl, they are scattered here and there in a spiral direction round the stem, as is the case not unfrequently when the Tulip is planted in over-manured soil, they are at once pronounced diseased; and so they are for the purposes of the cultivator.

202. We must not therefore regard every deviation from the normal condition of species as disease; but, for the purposes of vegetable pathology, the peculiar attributes of each individual variety or variation, and the ends which they are intended to answer, must be taken into consideration: and so long as their distinguishing characteristics are maintained, they are to be considered as healthy; while deviations from these conditions will rightly be considered, as far as they are concerned, of the nature of disease. In all cases where the necessary functions of the species, or other vegetable form, are impeded, and vital action is impaired, whether tending to actual decay or to the obstruction of the main ends of cultivation, we must assume that diseased action is going on, and, if possible, we must suggest the proper remedy. *M. J. B.*

RADIATION.

The production of frost may be traced to the radiation of heat from the earth.

By radiation is meant the power possessed by bodies on the surface of the earth of sending forth their heat into space.

It appears to be the means provided by nature for parting with the superfluous portion of the sun's heat, which would otherwise accumulate in the air and soil of our planet.

It is not only the surface of the ground which has the power of radiation;—the leaf which flutters in the breeze, and the particle which floats in the air, shoot forth their heat into space; and probably the air itself, in proportion to its density, radiates its heat.

The process goes on equally by night and by day, in the breeze and in calm; but it is rendered sensible chiefly on the clear calm night. It does not appear that the range of temperature to which our planet is subject has much influence over this power, which proceeds in much the same rate, whether the thermometer be at 80° or 32°. These cold-producing rays (if the term be allowable) are obstructed in their course by the intervention of opaque bodies; so that, when the sky is densely covered with clouds, radiation ceases.

But such is the power of unobstructed radiation that, were it not for the sun's heat being accumulated during the day in the soil, and given out to moderate the temperature by night, our thermometer would probably sink to zero every clear calm night.

This natural reservoir of heat is therefore the great moderator of frost. Very severe frosts occur when the ground is deeply covered with snow, and the heat of the soil is thereby kept in, and prevented from communicating its salutary warmth to the air. In proof of this I refer to letters 60, 61, 62, in White's "History of Selborne," and to Howard's Meteorological Tables and Remarks.

A thermometer placed on the snow in my garden, on the night of January 2d, 1854, sunk 2° below zero; when another placed on a small patch of ground, which had been kept clear from snow, only 2 or 3 feet distant, did not sink below 16°.

I think it is clear from this experiment that, had the whole of the snow from my garden been removed, the temperature would have been raised 10° or 15° above that which existed, and which proved very destructive to my shrubs; or had the snow been gathered into stacks like hay, and each stack placed on a part of the garden where roots required protection, the double advantage would have been gained of protecting them, and releasing the heat of the soil.

It should be borne in mind that frost is most severe on clear calm nights, and that the degree of cold depends much on local circumstances. As a general rule, it may be stated to be the effect of radiation minus the previous heat of the air and surrounding objects,

* This is very recently noticed in "Botanische Zeitung," Aug. 11, 1854, as a new species discovered by Dr. Caspary, under the name of Peronospora Chenopodii, though described years ago by Dr. Greville, and figured by Desmazieres in the second series of "Annales des Sciences Naturelles." The commonest species are too often in this way brought forth as novelties in Germany, to the great detriment of science.

and also the heat of the soil if not covered by a non-conducting body. Indeed, a practical observer may calculate pretty accurately from these elements the temperature of any clear calm night before examining his thermometer in the morning.

But it should also be remembered that cold is chiefly generated on the surface of the ground, the air near the surface being colder than at 3 feet above it; and the cold air being heavier sinks down slopes into valleys, obeying slowly the same laws which regulate the motion of the heavier fluid water.

A thermometer placed in the bottom of an artificial valley or basin of 9 inches deep, and 3 or 4 feet wide, well protected by cotton, wool, or some non-conducting substance, from the heat of the earth or soil will sink 25° to 50° below the temperature of the air around from simple exposure to the clear blue sky on a calm night. *S.*

JUSTICIA SPECIOSA.

NOTWITHSTANDING that this plant is hardly surpassed for easy culture, and that it produces a long succession of showy flowers in the dead of winter, it is scarcely ever met with save in a neglected state—the result, no doubt, of its having been long common in collections. Its management is so thoroughly easy that it is hardly necessary to make it the subject of an article; and it is chiefly with the view of directing the attention of those to it who are fond of winter-blooming plants that it has been selected; and there can be no doubt that amateurs will find it well worth its room, and the little attention necessary to grow it well. As usually met with this Justicia presents a leggy, naked appearance; and it is frequently seen in this state where better things might be expected; but this is entirely the result of bad treatment, for the habit of the plant is good, although like other free growing subjects it is apt to lose its bottom leaves and become leggy under bad management. Cuttings root in a few weeks, inserted in sandy soil, and placed in a gentle bottom-heat; but in order to secure large specimens for blooming after a season's growth, the cuttings should be put in about August, so as to allow of having them rooted and well established in small pots before winter. They should be potted off singly in small pots as soon as they are fairly rooted, and placed near the glass in a moist, rather shady part of the stove, or a warm pit, pinching out the points of the shoots as soon as the roots get hold of the soil, and stopping must be attended to during the growing season.

In winter, place the young plants in any roomy situation near the glass where the temperature may range towards 50°, and keep them properly supplied with water at the root. About the beginning of March, or as soon after this time as convenient, remove them to where a growing temperature of about 60° is maintained by artificial means, allowing it to rise 10° or 15° with sun, heat, and air. Shortly after placing the plants in heat give them a moderate shift, using about equal portions of good rich turfy loam, peat, thoroughly decomposed cow dung, or leaf soil, and sharp sand, well intermixed together. As soon after potting as the roots appear to have started into the fresh soil, stop the shoots and tie them nicely out, keeping them well down, which will have the effect of causing the bottom buds to start into growth, and inducing a bushy habit of growth to begin with. As the season advances, and the plants get into free growth, give air freely on mild days, and keep them near the glass. Towards May they will probably have filled their pots with roots, and may then be afforded a liberal shift, and this should not be neglected until the plants suffer for the want of pot room and lose their foliage. The same attention to tying out the shoots will be necessary, as recommended after the previous shift, and the plants should be well supplied with water at the root, and also moistened overhead with the syringe on the afternoons of fine days. When summer weather occurs, the plants may be removed to a cold frame or pit, which can be kept rather close and moist, which, with a little management, will form an excellent situation for them during the summer. A thin shade will be useful for a few hours on the forenoons of very hot days, but this should be used sparingly, and air should be given freely, shutting up early in the afternoon after syringing. Attend to stopping and training, &c., as the specimens advance in growth, and as soon as they appear to require more pot room shift into the flowering pots.

If large and fine specimens are desired, they may now be afforded 15-inch pots, which will be sufficient for very large bushes; or 12-inch pots if only moderate-sized specimens are wanted, with the assistance of manure water, will be sufficiently large. Keep the shoots regularly stopped and tied out, as may be necessary to secure close bushy growth, till about the middle of September, after which they should not be stopped; and if the weather begins to prove unsettled, remove them to a light airy part of the stove, or where they can have the assistance of a little fire heat. Give them a liberal supply of manure water after the pots are supposed to be full of roots, and turn them partly round every week, to prevent their growing one-sided. The specimens will commence flowering from the beginning to the middle of December, and will continue to produce an abundant succession of their bright-coloured flowers throughout the winter and great part of the spring, but they must be afforded a temperature of from 50° to 60°, keeping them near the glass, and out of the way of cold draughts, for although the plant will exist and bloom in the ordinary temperature of the conservatory, its foliage gets discoloured, and it is never seen in perfection save in a somewhat warmer temperature. When the specimens become shabby in spring, they may be severely cut back and stored away in any spare corner of the greenhouse, keeping them rather dry at the root for a month or six weeks, removing them to a warmer situation by the beginning of June, to induce growth. Turn them out of the pots as soon as they start into growth, and reduce the balls sufficiently to allow of repotting in the same sized pot, and keep close and moist until they get over the operation, treating them during the remainder of the season as directed above, and they will form specimens of any desired size before winter, and will bloom even more freely than young plants. *Alpha.*

Home Correspondence.

Hybrid Rhododendrons.—Possessing a tolerable collection of these most magnificent evergreens, I have been anxious to add to my stock some of the most approved novelties. On enquiry, however, I find that almost all the plants now offered for sale by those who profess to cultivate them are grafted, and, consequently, for most purposes useless. The Indian hybrid Rhododendrons are plants of large and luxuriant growth, in fact tree-like shrubs, but when grafted on any of the shrubby Rhododendrons they are necessarily stinted, and cannot fail to be short-lived. Grafting is a very legitimate mode of inducing a newly raised species to flower early to test its quality, but a grafted plant is valueless in a shrubbery, and can never exhibit its true character. I would therefore caution all cultivators of American plants to reject these grafted absurdities. Very little longer time is requisite to produce layer plants than is expended in grafting, but grafting admits rather more abundant propagation, and is therefore adopted. Grafted plants, however, cannot ever become ornamental bushes. Some patience is required with the hybrids, which possess more or less the tree-like character of their Indian parent, but when once they come into flower nothing can surpass their beauty, and they equal the growth and stature of the Portugal Laurel. I trust all your readers who possess gardens, in which they can give reasonable room to hybrid Rhododendrons will steadfastly reject grafted plants, which are fit only for pots, or for gardens where a specimen must be bred on the smallest possible scale. As far as my experience goes, there is great variety in the hybrids; those which most resemble the true arboreum in foliage being generally the finest in flower. I have some which equal arboreum in colour, while they equal, if they do not surpass R. Catawbiense in size. These, however, had not begun to flower till they were 12 or 14 years old. The smaller hybrids allied to R. Ponticum flower when much younger. *J. R.*

Vine Borders.—I have just made a new Vine border, 25 feet long and 8 feet 6 inches wide; at proper distances apart, brick on edge walls run across it from the house to a pigeon-holed wall which has been built along the front of the border, and outside of which is a trench 18 inches wide and 16 inches deeper than the border, for hot dung. The roots of each Vine have thus a box for themselves, concreted at bottom, and in winter covered over with wooden shutters. My plan is—1st, to prevent the roots from entering into the cold wet subsoil; 2d, to prevent a strong growing variety from encroaching upon its weaker neighbour; 3d, in case of accident, disease, mistake in name, or any other cause, to enable me to plant a young Vine without injury to the roots of the other plants; and, 4th, to keep up, with comparatively little trouble, an even congenial temperature of the roots, which cannot be so easily done by means of tarpauling and other materials used for the same purpose. I do not know whether my plan is new or old, but, be that as it may, I see no reason why it should not be universally adopted, except for the extra expense which it involves. This, however, need scarcely amount to an objection, as the following items will show :—

6 hundred bricks	£0	18	0
95 feet deal, 3½ by two inches	0	13	6
Lime, sand, and nails	0	7	6
430 feet 1-inch deal, for frame and shutters ...	4	18	6
2 dozen small cast-iron rollers	0	3	0
	£7	0	6

The shutters might be made by gardeners in wet weather. The rollers mentioned in the above items are intended to be fixed on the undersides of the shutters, so as to facilitate their being moved backwards and forwards. The joints or seams of the shutters should be filled with tow, and the whole well tarred, and made as air-tight as possible. The frame for the shutters should be at least 1 foot deep, and should have a fall of 12 inches towards the front completely and closely covering the fermenting material in the trench. The bottom of my border has an inclination of a foot towards the front. After it has been smoothed, gas tar is spread over it, and coal ashes finely sifted are laid on, and well trodden and rammed before the soil is put in. *Anxious.*

Effects of the past Winter in the neighbourhood of Clonmel.—In the following list those plants marked thus * have been killed, those marked thus † have had their young growth destroyed by the frost of April 24, and the rest were untouched :—*Abies Brunoniana, the only plant killed; †A. cephalonica, A. Menziesii, A. orientalis, A. Douglasii (one plant 40 feet high), and A. Smithiana or Morinda (three plants in our horticultural garden untouched, but two in the neighbourhood very much injured on 24th April); Picea amabilis, P. nobilis, †P. Webbiana, and †P. Pichta; Pinus insignis, halepensis, and Laricio; Cupressus funebris, excelsa, lusitanica, and Whitleyana; Juniperus excelsa, chinensis, glauca, and lycia; Thuja filiformis, flabelliformis, and aurea; Taxus elegantissima, and adpressa: Libocedrus chilensis, †Araucaria braziliensis, Cedrus Deodara, †Salisburia adiantifolia (17 feet high), †Pawlonia imperialis (14 feet high), †Ailantus glandulosa, †Robinia Pseud-acacia, †Sweet Chestnut, †Walnut, †Fig; Escallonia macrantha, a very high-coloured variety, perfectly hardy. The following were untouched by a smart frost last week :—Garrya macrophylla (perfectly hardy), Forsythia viridissima, Photinia serrulata, Pittosporum Mayi; Berberis Darwini, dulcis, empetrifolia, macrophylla, and ilicifolia; Magnolia macrophylla; Ilex dipyrena, rotundifolia, and †perado (this was a very large plant which suffered from recent transplanting, the growth was very young); Ilex dahoon, nobilis, and all the common kinds and varieties. Sweet Bays, Laurels, Portugal Laurels, Laurestines, and Myrtles, all untouched; and large beds of Rhododendrons, containing mundulum, campanulatum, and many of the early-flowering scarlet hybrids, with Ghent and other Azaleas, suffered very little on the 24th April. *W. D. H.*

Araucaria excelsa.—I have a fine plant of this Araucaria, which I planted out in the open border in the first week of last April, without any protection whatever. It withstood the severe frost of the night of the 24th of that month perfectly uninjured (except that it browned a few of the leaves), although immediately adjoining it the shoots of the Ash and Walnut were quite destroyed. It is now in very fine health, and has made good growth. The April frost alluded to was the most severe ever remembered at the time of year in this locality, and did a vast amount of damage. I have a nice collection of Conifers, specimen plants, all of which stood the last very severe winter perfectly uninjured, except Abies Brunoniana and Daurica, which were quite burned, but not otherwise hurt. In an establishment which is not quite half a mile from mine, the Pinus, Abies, and Deodars, although planted in a damp situation, were hardly injured, the foliage being only burned. *Thos. Jones*, 83, *Grand Parade, Cork.*

Lapageria rosea.—Although I am aware that the flowering of this beautiful plant is no novelty, I cannot resist sending you a description of one which is now in bloom in one of the greenhouses of Robert Hanbury, Esq., of the Poles, near Ware. It is a beautiful specimen, and unquestionably one of the finest greenhouse climbers in cultivation. The plant in question has at the present time 19 of its exquisite blossoms fully expanded, and six more to open. It has been in flower for these six weeks past, and is likely to continue for a month to come. Its profuse blooming, contrary to what was anticipated, and its delicately mottled carmine blossoms, admirably relieved by its fine glossy foliage, render it a most attractive object, and well deserving a place in every collection where suitable accommodation can be found for it. The soil I use for it is leaf-mould, turfy loam, and peat in equal parts, with a few potsherds, and a little sand. The plant here is in an 11-inch pot, standing on a platform, and trained along a wire across the house about 9 inches from the glass. *L. Hume, Poles, near Ware, Nov. 2.*

Pear Culture.—Having read the valuable remarks on Pear-growing by M. De Jonghe in your late numbers, and also those of "H. S. H.," I have come to the conclusion that they have neither of them got to the root of the evil; but if Mr. De Jonghe's instructions are properly followed, there can be no doubt that Pear trees may be made to bear as well in England as in Belgium. Many Pear trees bear well one season and not at all the next, which is in a great measure owing to the careless gathering of the crop; instead of waiting until the fruit has arrived at maturity, and parts freely from the spur, without damaging it, they are in a great many instances taken before they are fully ripe, and the stalks not parting freely take with them the next year's crop, in the shape of blossom-buds, or in some cases the fruit is shaken off, and the fruiting buds either knocked off or damaged; and still the parties unreasonably expect a crop. Of course experienced fruit-growers would not act as I have stated. The failure of Pear trees must, however, be attributed to a greater evil, which is the root of the tree and the soil in which it is planted; we see the trees planted in strong and light land, wet and dry, and the evil is much the same; no fruit is produced except under peculiar circumstances. To be sure the trees grow well enough, rather too well, in the shape of useless breast-wood on wall trees, and vigorous shoots on standards, and the more vigorously they grow the sooner they commence to decay, the end shoots cankering and dying off. In some instances they flower abundantly, but the blossom falls without setting, which is by some attributed to our climate, or spring frosts; but a greater evil, as I have said, is the soil, and the manner in which they are planted. When a Pear tree is planted in the ordinary soil and manured, as is usual, you find it to commence growing rapidly and its roots to speedily descend into the subsoil; then commences the mischief; they have got into a cold element out of the influence of sun and air; as the soil is, so is the tree, either producing a rapid growth and not ripening its wood, or forming fruiting buds or cankering gradually until it dies off entirely. This evil is to be guarded against by following my instructions when planting young trees in either strong or light land. As for old trees which do not bear, the sooner they are burned the better. In planting either wall trees or open standards, the soil should be taken out two feet deep, and a layer one foot thick of brickbats and lime rubbish should be placed in the bottom, then add one foot of fresh turf, which will bring the soil up to the common level; on the top of this must be placed 2 feet

thick of one-third whinstones, or any common open stone, and the remainder well decayed manure and turf, the three mixed together; this will raise the border 2 feet above the level. If for standards, mounds should be formed, 6 or eight feet in diameter, in which the trees must be planted (not deep) and pruned as Mr. De Jonghe has directed. Every autumn the border must have a top-dressing of well decayed manure, forked lightly in, not dug, or the fibres will be injured. The great object is to attract the fibres to the surface, and prevent them descending into the subsoil, which is the ruin of them. The wood produced will not be so strong and rampant, but it will get thoroughly ripened, and very soon form fruit buds, which will not fall; the fruit will be better flavoured, and, in the case of many kinds, will be produced the second year plentifully, but the tree must not be allowed to bear too many at first. The trees, in a dry summer, will require watering two or three times during the season, as the stones will have a tendency to drain them. Always remember, when you water, to do it effectually. By attending to these instructions, and Mr. De Jonghe's pruning, success will be secured in any part of England, and that even in the case of the finer sorts of Pears. *Henry May, the Hope Nurseries, near Bedale, Yorkshire.*

Late Strawberries.—On the 31st October I gathered from a plant of the Roseberry kind, in my garden, a Strawberry of fair average size, well flavoured, and of fine crimson colour throughout its entire substance, but not so sweet as it would have been earlier in the season. At the date I write this there is another plant of the same kind, with a fruit stem having on it three Strawberries approaching maturity, or beginning to colour, and 10 more in different stages of growth, besides flower-buds. As might be expected at this advanced period of the year, the Strawberries are not of the full size they would have been in summer. My object in stating these particulars is to contrast this Strawberry with the Alpine, several plants of which are growing within a few yards of the same spot. On the latter the Strawberries have ceased for three weeks past to make any growth: they are small, stunted, half-coloured, and quite hard, and have only a sourish taste without the slightest flavour. Now, the chief property of the Alpine is, that it continues to flower and bear fruit through the entire season till stopped by the frost, for the fruit itself is quite inferior to any of the garden kinds. But from what I have said above, it is evidently incapable of perfecting its fruit under the same conditions of temperature that the Roseberry is capable of doing. The latter, it is true, is properly one of the early kinds, and its general crop is over in July and August in the neighbourhood of Edinburgh; but many plants, and even many rooted runners of the same season, throw up flower stems to a very late period. Would it be possible to take advantage of this peculiar property to obtain a late general crop, long after all other kinds have disappeared? *J. H. H., 7th November.*

The Winter in the far North.—There was an influence at work last autumn and winter of a very mysterious character, which I cannot explain, and I don't know who can. It was not frost, but its effects were generally attributed to frost. I observed it first in December, immediately after a shower of sleet and snow, on the Scotch Pines. While the snow was still white on the trees, a great many of the lateral twigs hung down apparently broken; some appeared twisted, others did not, but all appeared very feeble, yet they were green though somewhat faded. About a fortnight previously to that time a violent hurricane had visited the country, and at the time I set the casualty down to the rough weather that had dashed and bruised the twigs. In course of a month or two the twigs became paler in colour, and ultimately assumed the brown colour of dead Scotch Fir branches. Hollies suffered in the same way, and throughout the North on all trees much exposed to the north and north-west the effects of the visitation were, and still are, very perceptible. In no case did I see a top Scotch Fir shoot affected, though in some cases half the twigs and foliage of the tree were destroyed. I examined many cases—several instances 100 miles apart—and the uniformity was very remarkable. The most severe cases I saw were those of a few Scotch Firs, standing on the verge of a fresh water lake, situated almost 700 feet above the sea, and I question whether those trees will live another year. I do not think it was the snow that had any unusual effect on the Pines that led me to notice the circumstance, further than that it weighed down the feeble twigs, rendered feeble by something that had passed over them previously. The Garrya elliptica luxuriates to my knowledge 1200 feet above the sea, and last spring I saw some plants injured by the influence to which I refer (not frost), and alongside of these Garryas some plants of Laurustinus were scatheless. *G. Forres.*

Societies.

Horticultural, *Nov.* 7.—E. Brande, Esq., in the chair.—N. Malcolm, Esq., was elected a Fellow. A large number of very beautiful objects of exhibition was produced on this occasion. Messrs. Veitch contributed a charming collection of Orchids, consisting of Aerides suavissimum, Angræcum bilobum, four nice plants of Barkeria Skinneri, the graceful Calanthe vestita, together with its more handsome rosy-eyed variety, and an example of the Blue Vanda (V. cærulea), which is one of the most useful early winter flowering Orchids we possess. A Silver Knightian Medal was awarded. The same firm also sent two magnificent plants of Fuchsia Dominiana, a hybrid raised between F. serratifolia and spectabilis, and, whether for pot culture or for planting out in the border of a conservatory, nothing could possibly be handsomer at this season than this fine variety really is; for, while it has all the brilliancy and size of flower and grandeur of foliage of F. spectabilis, it is far more cultivable, and blooms as freely as any of the common sorts, which F. spectabilis does not. It must therefore be considered a great improvement on that Peruvian species. Along with the above was another hybrid Fuchsia raised between F. simplicicaulis and serratifolia and named pendulina. It resembles most the last named parent; but appears to be a freer bloomer. A certificate of merit was awarded for these Fuchsias; a similar award was also made to Sonerila margaritacea, a new species, fully described in another page. From the same eminent firm also came a potful of cut specimens of a variety of Pernettya mucronata called speciosa. They were thickly covered with multitudes of purplish violet-coloured berries, about the size of Black Currants, and were sent to show how beautiful the appearance of bushes of this plant so ornamented is at this season of the year. From Messrs. Wood and Ingram, of Huntingdon, came an extremely well-grown and beautifully flowered specimen of Cypripedium insigne, for which a Certificate of Merit was awarded, and Mr. Woolley, gr. to H. Bellenden Ker, Esq., had a Banksian Medal for plants of Pleione maculata and Wallichi, two charming little Orchids which decorate the hills of the north of India, something in the way in which Crocuses do our borders here in spring. Both species are extremely beautiful, and they are so easily managed that any person having a greenhouse, or even a pit to rest them in after they have made their growth, and a small stove to start them into flower and perfect their leaves, might grow them in perfection.

Of Chrysanthemums there were several beautiful exhibitions. The best was that from Mr. Robinson, gr. to J. Simpson, Esq., of Thames Bank, Pimlico. It consisted of the Pompones, Drine Drine, Model, Poudilette, Autumnum, Rose Pompone, Surprise, Solfaterre, Delicatum, and a beautiful large flowered yellow kind called Chevalier. These were dwarf, medium-sized, beautifully flowered plants, and were awarded, as they well deserved, a Silver Knightian Medal. The next group in point of merit was furnished by Mr. Mockett, gr. to J. Allnutt, Esq., of Clapham. This consisted of Sacramento, Adonis, Surprise, Fenella, and Solfaterre. A Banksian Medal was awarded.—Messrs. Veitch also had a nice set of Pompone varieties, among which were large and beautifully flowered plants of Surprise, delicatum, Le Naine Bebe, Sacramento, and Model. Finally, Messrs. Chandler, of Vauxhall, furnished plants of the following: Model, Sacramento, Adonis, Argenteum, Ninon, Solfaterre, Surprise, Hendersoni, Dupont de l'Eure, a brown sort tipped with yellow, Gerelda, white with a brownish centre and very pretty, Ranuncule, and Bixio. The above were all finely in flower, and made, as might be expected, a grand display.

Of other kinds of plants Messrs. Henderson, of Pine-apple Place, contributed a small collection, in which were the large-flowered variety of Lantana alba, Ixora crocata, a very good Statice Holfordi, a flowering plant of Acacia oleæfolia elegans, Leschenaultia formosa, and the seldom-seen Polyspora axillaris, a plant with long shining deep green leaves and large white flowers filled in the centre with yellow stamens. A Silver Knightian Medal was awarded for this and the other plants. The same firm also sent a perennial Sunflower called Helianthus mollis, which had been raised from Texan seeds. With reference to this it was remarked that little of importance need be expected from seeds from Texas, whose plants are to a great extent mere Composites, perfectly unworthy of the trouble of raising. Mr. Rosher, of Hamilton Terrace, St. John's Wood, sent a small Barkeria spectabilis, and a very nicely-flowered Rhododendron javanicum, for which a Certificate of Merit was awarded. Mr. Rivers showed an Atlas Cedar in a pot with perforated sides, which when sunk in the earth permit the roots to pass into the surrounding soil. This has the effect of keeping the roots from wandering too far "from home," and altogether prevents them from taking that corkscrew shape which is one objection to growing such plants long in a common garden pot. It was stated, however, that the contrivance is not new, and that for private purposes at least it is inferior to planting the young trees in old worn-out baskets, and sinking the latter in the soil till such time as it is convenient to plant the trees where they are to stand. Mr. Ingram exhibited, from the Royal Gardens, Frogmore, a stalk of Holcus saccharatus, a supposed substitute for sugar cane, and also grown in India for its grain. It was evident that it would certainly not pay to cultivate it here for what sugar it might yield. Attention was then directed to fine specimens of the Bamboo grown in Devonshire, by John Luscombe, Esq., of Combe Royal; where the climate will produce specimens like those, as is the case in Mr. Smith Barry's ground, near Cork, the Bamboo becomes invaluable, as giving a varied and tropical appearance to our northern landscape.

Of Fruit there was a considerable quantity. Mr. Fleming gr. to the Duke of Sutherland, at Trentham, received a silver Knightian medal for two handsome Pine Apples of the Montserrat kind. One weighed 5 lbs. 1 oz., the other 4 lbs. 1 oz. Mr. James, gr. at Ponty Pool Park, had three Pines, for which a Banksian Medal was awarded. One was a smooth-leaved Cayenne weighing 4 lbs. 12 oz., the others were Queens, the heaviest 4 lbs., and the lightest 3 lbs. 11 oz. Mr. Ogle, gr. to the Earl of Abergavenny sent an Enville weighing 6 lbs. 1 oz., for which a certificate was awarded, and another Pine of the same variety weighing 5 lbs., came from Mr. Elms, gr., Winsdale House, Exeter. Mr. Forbes, of Woburn, contributed beautiful bunches of Black Hamburgh Grapes, finely coloured, and covered with bloom, which had not been rubbed in the least by travelling. A Banksian Medal was awarded them. From Mr. Webb, gr. to Sir Jasper Atkinson, came a bunch of Black Barbarossa Grapes weighing 2 lbs. 8 oz. This, as we have often remarked, is one of the very latest keeping Grapes we have, West's St. Peter's not excepted. A Certificate of Merit was awarded it. Mr. Muirhead, gr. to Lord Charles Wellesley, received a similar award for two well-coloured bunches of Black Hamburgh, weighing respectively 1 lb. 13 ozs., and 1 lb. 14 ozs. These were stated to have been cut from Vines that had suffered from mildew which had been kept down by continual perseverance in the use of remedial measures, among the most effective of which, was named M'Adam's anti-blight composition. The bunches shown certainly had no traces of the disease about them, and though rubbed were altogether good specimens of careful Grape growing.

Of Pears Mr. Ingram furnished some magnificent fruit from the Royal Gardens at Frogmore. They were equally large and handsome as the best specimens imported from France. The sorts consisted of Van Mons Léon le Clerc, Vicar of Winkfield, Beurré Diel, Beurré Bosc, Napoleon, Passe Colmar, Colmar d'Aremberg, Eyewood, Winter Nelis, Fondante d'Automne, and a new kind called Ananas. These received, as they well deserved, a silver Knightian Medal. The next best collection came from Mr. Tillyard, gr. to the Rt. Honble. the Speaker, at Heckfield. It contained Seckel, Grosse Calebasse (not a first-rate pear), Duchesse d'Angoulême, Brown Beurré, Marie Louise, and the Forelle or Trout Pear. A Banksian Medal was awarded. A third set, to which a Certificate of Merit was awarded, came from Vincent Fenn, Esq., of Canterbury, and consisted of Passe Colmar, Marie Louise, Duchesse d'Angoulême, Winter Nelis, Hacon's Incomparable, Beurré Diel, Glout Morceau, Beurré de Capiaumont, Crassane, and Beurré Rance. Mr. Chapman, gr. to the Earl of Gainsborough, also had a collection of Pears—good fruit, but too much out of condition, from having been kept in London some time. They consisted of Marie Louise, Hacon's Incomparable, Louise Bonne (of Jersey), Brown Beurré, and Autumn Colmar.

From Mr. Rivers came a dish of the Louise Bonne (of Jersey) Pear, remarkable for fine flavour and high colour, qualities considered by Mr. Rivers to have been given them by the Quince stocks on which they had been grown.

Mr. Hill, gr. to R. Sneyd, Esq., received a Certificate of Merit for a dish of beautiful fruit of Coe's Golden Drop Plum, still in a state of excellent preservation. Mr. Ingram showed a punnet of well-coloured Prince of Wales Strawberries, from plants which had been forced in spring, and which are now bearing a good second crop. It was stated that ripe Strawberries have been gathered from these plants for nine weeks past, and that they will continue to yield fruit yet for some time to come.

Of Vegetables, Mr. Ingram sent a dish of Mohawk Kidney Beans, which had been grown in a pit without fire-heat. Mr. Lidgard, of Hammersmith, had three good dwarf compact heads of Céleri Turc, for which a Certificate of Merit was awarded. From H. Hollist, Esq., of Lodsworth, near Petworth, came very fine specimens of Potatoes, which seemed to be perfectly free from disease. They were sent to show what sorts are chiefly cultivated in Sussex, and with what success. The following is Mr. Hollist's list of them:—

No.	Name.	
1	Jersey Blue..........	Well-known.
2	Pink Kidney..........	I have more than doubled the size of this tuber within the last few years—it is a valuable variety.
3	London Kidney ...	Very good; originally sent to me by the Horticultural Society.
4	Fox's Seedling......	Very good.
5	Early Champion ...	A fine Potato in a dry soil.
6	Cups....................	Second year of cultivation; a promising variety.
7	Julys....................	One of the best stock Potatoes grown, and a most abundant bearer.
8	Never-blight.........	This variety has withstood the blight better than any grown in this neighbourhood; it is an universal favourite, particularly with the poor.
9	Farmer's Glory.....	A highly prized variety.
10	York Regent.........	Well-known.
11	Winchester Pink...	An abundant bearer; better suited to the farm-yard than the table.
12	Forty-fold	An excellent and prolific variety.
13	Downton Yam......	From tubers sent me by the Horticultural Society, 20 years ago.
14	Canada Pine.........	A useful variety, little affected by the blight: I introduced it into this neighbourhood nearly 30 years ago.
15	Guildford yellow...	A good variety, but apparently fond of chalk soils.
16	Ash-Leaf Kidney...	Well-known, but seldom grown pure; excellent when it does not sport.
17	Goldfinder	Brought from South America, and worth the voyage.
18	Early Manly.........	Very good.
19	An Early Seedling of great promise; farina very pure; a good keeping variety.	
20	A Seedling from Belgium; also of good promise.	

As a preventive of disease, Mr. Hollist stated that he had found wood ashes, charcoal, or any dry material of that sort, more effectual than any other substance.

Finally, Heckfield furnished examples of the half

transparent fleshy carrot-shaped roots of Oxalis Deppei, of which an account was published in the Society's Transactions many years ago. Such roots have hitherto been used only as an esculent; but Mr. Tillyard suggests, that as they take sugar well, they might be found to make a good preserve.

Of miscellaneous articles Mr. Dodds, gr. to Col. Baker of Salisbury, sent a model straw-sash, which he uses as protection in winter for Pine pits and other purposes. It consisted of a skeleton wooden frame thatched over with straw, tied firmly down on the bars of the frame by tarred twine. It was stated that protections of this kind were speedily made, cheap, effective, and durable, and that they could easily be converted into capital coverings for bedding-out and other plants requiring shelter from night frost.

From the Society's Garden came a collection of Pompone Chrysanthemums, and the following plants—Begonia Thwaitesi, and the Pilea, described in our report on the Garden at p. 711, Linum trigynum, Epiphyllum truncatum, Echeveria retusa, and the brilliant ever-flowering Tropæolum Triomphe de Gand.

Pomological, *Nov.* 6.—This new Society had an exhibition of fruit on this occasion, consisting chiefly of Pears and Apples, of which there were said to be about 2000 specimens. There were also a dish of Grapes and some Peaches. Specimens of a yellow Peach called the Apricot Peach, raised from a stone brought from Italy, in 1844, by Colonel Salway, attracted much attention. The sort from which it was raised is said to ripen in Italy the middle of October. The specimens exhibited were gathered from the seedling tree on a wall in Col. Salway's garden on the 3d inst.; the flesh parted freely from the stone, and is of a deep orange colour, juicy, and of an agreeable sweetness, with scarcely any of the prussic acid flavour so often prevalent in late Peaches. Their smell was like that of a ripe Apricot, and very powerful. This Peach will doubtless prove a valuable acquisition if its flavour is always equal to that of the specimens exhibited. It was stated by Mr. Powell, of the Frogmore Gardens, that it was equally good last autumn, although the season was, as is well known, very cool and moist. Some specimens of a new late yellow Pavie or Clingstone Peach from Bordeaux, called Pavie Genisaut, exhibited by Mr. Rivers, ripened in a house with gentle heat, were found to be dry and worthless. "Mountain" Peaches from Holland, exhibited by Messrs. Webber, of Covent Garden, and said by them to have been sent to them *viâ* Hamburgh nearly a month ago, were too far gone to judge of their quality; they were freestones, and Mr. Webber said that both last year and this they had found them of great excellence, far exceeding the Catharine Peach in goodness, and coming in about the same time. Messrs. Webber likewise exhibited some fine Chaumontel and other Pears from Jersey. Among the Pears by far too numerous to particularise in this report, were some from G. Unthank, Esq., of Limerick; these seemed to show that the soft, humid climate of Ireland, more particularly that of the south, is as favourable as that of Jersey for the cultivation of Pears. In Mr. Unthank's collection were a Beurré Rance, weighing 18 oz., Duchesse d'Angoulême, 17 oz., Old Colmar, 10 oz., Beurré Diel, 14 oz., Josephine de Malines, 7 oz., Susette de Bavay, 8 oz., and Easter Beurré, 13 oz. Fine specimens of Beurré Clairgeau were exhibited from the garden of W. Wells, Esq., of Redleaf. As this new Pear is quite a "lion" in Belgium and France, and has been much talked off in this country, considerable interest was created in testing and tasting their quality—they were quite fit for the table, large and very beautiful, no Pear, perhaps, equal to them in that respect, being on the sunny side of a fine clear pink, tinted with russet near the stalk, and in shape something like a large Beurré Bosc; their flesh was found to be tender and juicy, not buttery, and their flavour flat and watery, entitling it to be classed only as a second-rate variety; these specimens were gathered from a tree on a south-east wall; one specimen from a pyramid on a Quince, from M. Langelier, of Jersey, was a shade better, but far, very far inferior to the Marie Louise. Some fine specimens of the new Pear Beurré Nantais, not ripe, were sent with the Beurré Clairgeau from the garden of Mr. Wells; these were large, of a deep russet, and looked as if they would turn out well. A beautiful sort of Quince from Syria was exhibited by Messrs. Veitch; the specimens were as large as the Portugal Quince, not long, but more of the shape of the Crassane Pear, and very smooth and regular, without any of the rugosities peculiar to the Quince. Their flavour was found to be but middling—the Quince flavour scarcely apparent. A very interesting collection of Pears was sent from Yorkshire, from — Fox, Esq.; the specimens were fine, and the nomenclature very correct. A seedling Pear from the old autumn Bergamot was shown by Mr. Rivers; the specimens were larger than the parent variety, of the same shape, colour, and flavour, but too deficient in juice; this sort was brought principally with a view to show the hardiness of Pears raised from seed in England. The frost of last April was reported to have destroyed all the blossom of the Pears growing near this seedling, even such hardy sorts as the Hessel, Williams' Bon Chrétien, and Beurré Capiaumont, and yet every blossom of this seedling Bergamot set its fruit. M. Langelier had a large collection of Pears from Jersey. The finest flavoured Pears tasted in the course of the day, out of some hundreds, were Beurré Superfin (this generally ripens in September), Fondante d'Automne, Thompson's, and Eyewood; the latter had a most perceptible touch of the Pine-apple flavour. Of Apples, there were some beautiful specimens of Ribstons, King of the Pippins, and other well-known kinds.

New Plants.

99. Sonerila margaritacea.

S. margaritacea; caule ramoso petiolisque glanduloso-tomentosis, foliis oppositis æqualibus obovato-lanceolatis subserratis penniveniis basi obtusis æqualibus subtus glabris supra pilo brevi e medio omnis maculæ albæ ascendente, floribus triandris, antheris subulatis monoporis, calyce elongato lævi, coronulâ cyathiformi denticulatâ, stigmate punctiformi.

For this most beautiful novelty we are indebted to Messrs. Veitch, who obtained it from some part of India, through Mr. Thomas Lobb. It forms a compact branching brittle tuft from 9 to 12 inches high, conspicuous for its polished crimson stems, deep rich green leaves closely marked with white oval spots, and a profusion of bright rose-coloured flowers resting upon crimson stalks. A specimen was exhibited on the 7th inst., at the Horticultural Society's meeting, and excited the admiration of everybody present. No doubt it will be a stove plant of the easiest cultivation; and among the variegated races, now becoming so much the fashion, it stands without a superior. The little oval white spots upon the leaves suggest the idea of the foliage being sown with pearls.

We can find no trace of the species in books. It seems to approach *S. secunda*, of Wallich, but is very different in the form of its leaves, which in outline and veining resemble those of *S. picta*; and in outline, but not in veining, may be compared to *S. grandiflora*, the structure of whose coronet is quite dissimilar, a part of the organisation of these plants which has not received the attention it seems to deserve.

100. Thujopsis borealis.

"Can you give me any information respecting Thujopsis borealis advertised in your columns as a beautiful new hardy Conifer? I have received from Mr. Pontey a specimen (which I enclose) and which is certainly different from anything I have yet seen among Conifers. Mr. Pontey does not say what is its native habitat, nor what is his authority for the name." *J. B., Biddulph Grange.*

A plant under this name was exhibited in 1852, by Messrs. Thibaut and Kételeer at one of the horticultural meetings in Paris; and it was then reported to come from the mountains in the north of India, a strange statement coupled with the word *borealis*. In 1853 it was again shown in Paris, by a M. Rémont, and it occurs in the list of Conifers cultivated in the "Jardin des Plantes." Beyond this we have not traced it. The specimen sent belongs to some plant unknown to us, unless it is the young state of some Coniferous plant hitherto seen by botanists only in the adult condition.

FLORICULTURE.

Planting the Ranunculus.—I plant my Turbans during the present month; but in general I keep the other sorts out of the ground till the beginning of February. This allows me to expose the soil of my bed as much as possible to the action of frost, and a few fine dry days in spring enable me to commit my tubers to the earth in safety. As to time a few days earlier or later in planting will not be of much importance, provided the soil is sufficiently dry to allow of its filling up the interstices of the tubers, and securing that firm yet porous state so necessary for a healthy vegetation. The day being dry and fine, you may at once commence your operations by nicely levelling the bed, which should be perfectly flat, and not raised in the centre, a practice of which inexperienced persons are so fond, and which is so often injurious. As the Ranunculus naturally requires a low marshy soil, it will demand, in its cultivated state, a great deal of moisture, and therefore the bed should be below the level of the garden rather than above it, that drought may be repelled as long as possible, and that artificial watering, when necessary, may be most effective. In levelling, let the surface only be stirred, as some degree of firmness in the subsoil is advantageous to the plant. Have ready the roots in the papers with the names, some neat wooden labels, and a quantity of clean white sand; then, determining to brave the cold wind which may be blowing, and not to be discouraged by the back-ache, proceed to commit to the earth the humble looking tubers, which in four months are to develop so many beauties. About 4 inches apart every way is probably the best distance at which the Ranunculus should be planted, and the amateur should therefore regulate the size of his bed by the number of roots in his collection, and dispose them equally all over it. With a cord and a small trowel draw a straight furrow across the bed, beginning in the centre and advancing to the edge with successive furrows, that the planted roots may not be interfered with. Place the roots so that the crowns shall be one inch and a half beneath the surface when the bed is completed, and having thus filled the furrow with tubers four inches apart, drop a little sand on each, sufficient to cover it, and draw the excavated soil over the whole. Make another furrow four inches distant from the first, and proceed as before until that side of the bed is finished. Then operate in the same way with the other side, and the work is done. A slight pressure with the hand should be given to every row as the work proceeds. With regard to the labelling, I have found the following plan the best:—As each root is taken out of the paper, write its name on the painted stick with a strong lead pencil, and place root and label in the furrow together. The stick should be about one inch distant from the root, and must be fixed in rather firmly, as I have found the nocturnal perambulations or gambols of a cat sufficient to throw them into confusion. If the writing is always turned the same way, either towards or from the root, all ambiguity or mistake will be avoided. Although the genial days we sometimes have in February allow the operations of sowing and planting to be carried on with advantage, it often happens that severe and continued frosts set in after the Ranunculus bed is completed, and the hopes of the florist are committed to it. This probable evil must be guarded against; for although the root will sustain a hard frost when it is really rooted, it is very sensitive when that is not the case. If a frost should come, a mat laid upon the bed will avert injurious consequences, or two may be used if the weather is severe. If, in the day time, the sun has power to unbind the soil, the mats may be taken off, and the warm rays admitted; but be sure the mats are replaced at night. If the weather is auspicious, about three weeks will be sufficient for bringing the young shoots to the surface, when further care as to cold will be unnecessary. An operation must then be attended to of the utmost importance both to the future bloom and the increase of the tuber. When the leaves are about half an inch above the ground, the soil must be firmly pressed round them, so as to fix the tuber firm in the ground. This may be done twice with advantage as the growth proceeds. Lightness of the soil has been very often fatal to the Ranunculus, and must therefore be guarded against in the manner just described. The operations which have been mentioned in this paper are rather laborious, from the long continuance of the stooping posture, and they will probably discourage those who are not thoroughly imbued with a love of flowers. But the resolute amateur will remember that no good results are ever secured without toil, and he will be cheered in his labours by the brilliant prospect before him. *S.*

Carnations: *D.* Examine these and Picotees in pots. Should any plants unfortunately suffer from mildew, remove them instantly from the collection to a frame by themselves; cut away the affected part, and dust the plants with sulphur.

Hollyhocks: *P.* These should now be cleared of all decayed and superfluous foliage, and the soil round each plant forked, and a coating of burnt clay ashes put round and between the shoots; this is a great preventive of the attacks of slugs, which, during mild autumnal weather, feed greedily on them. Examine all rooted cuttings, for these are very apt to rot off during winter; keep them rather dry than otherwise, and give abundance of air to the frames.

Polyanthus: *E S.* You should enquire for Addis's Kingfisher, a bold, finely formed, and rich red kind. We should be glad to see flowers of this style more patronised, as they contrast so well with the darker varieties.

Tulips: *Jane.* These should be planted immedately should the weather continue dry: by all means avoid wet; it will be better to defer the operation a few days in such a case.

Miscellaneous.

The Fig (Ficus carica), is a native of the south of Europe, including Greece and Italy, of Northern Africa, and of Western Asia. The wild type known in Italy by the name of Caprifico, has indeed been distinguished by Gasparini not only as a species but as a separate genus, yet we cannot but concur with Professor Targioni in the opinion, confirmed by positive assertion on the part of practical pomologists both ancient and modern, that our garden Figs are of the same species, and have repeatedly been raised from seeds of the wild Caprifico. We find mention of the cultivation of Figs, and of the high estimation in which these fruits were held, in the very earliest writings, in the Holy Scriptures as in Homer's Iliad. Those of Athens were celebrated for their exquisite flavour. Xerxes was tempted by them to undertake the conquest of Attica, in the same way that Cato urged the Romans to that of Carthage, a Fig in his hand. The number of varieties, however, produced in ancient Italy were not numerous. Six only were known in the time of Cato. Others were afterwards introduced from Negroponte and Scio, according to Pliny, who gives a catalogue of 30 sorts. Their names are mostly taken from the countries whence they had been brought, such as the African, the Rhodiote, the Alexandrine, the Saguntine, &c., or from some great personage who had introduced or patronised them, such as the Pompeian from the great Pompey, the Livian from Livia, the wife of Augustus, &c. Macrobius, two centuries after Pliny, enumerates 25, but generally under names different from those of Pliny. Gallesio, in his Pomona Italiana, has referred a few of those ancient names to modern Italian varieties as for instance:—The Albicerata to the white Fig of the Italians. The Tiburtina to the gentile. The Africana to the Brogiotto nero, which some believe to be also the Emonio of Athenæus. The Liviana to the pissalutto. The Lydia to the fico trojano, very abundant at Naples. The Carica to the dottato, common in the Levant, and originally from Cauni in Caria, from whence so many were sent to Greece and called on that account Cauni Figs and Carica. In Tuscany, the varieties of Figs cultivated are numerous, many of them due to the days of the Republic. Fra Agostino del Riccio, in his already-quoted manuscripts, gives a selection of 31 sorts cultivated in Tuscany in the middle of the 16th century, adding that there were many others which he had not included, not having seen them himself. Those of the Medici gardens represented in the drawings of Castello comprise 18 early

and 32 late sorts, in all 50; and Micheli in his manuscripts carries the number up to 95. Notwithstanding the softness of the wood, and the readiness with which the branches are killed down, the trunk of the Fig tree is remarkable for its longevity. Pliny tells us of an aged wild Fig in the forum, which was in a dying state in his days, but which they dared not cut down on account of the tradition that under its shade the wolf had suckled Romulus and Remus; that another wild Fig in the forum had arisen over the chasm into which Curtius had precipitated himself, and was preserved in memory of that feat: and that a third similar tree, which dated from before the time of Saturn, was cut down in the year of Rome 260 to erect the building where the vestals were placed. These tales may indeed not be true in their details, but the trees they relate to must have been known to have been several centuries old. *Journal of the Horticultural Society.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Use no more fire heat here at present than may be indispensable for securing a gentle circulation in the atmosphere, and avoiding damp, and very little will suffice for this, and also for maintaining a sufficient degree of warmth for most plants that may be in bloom. Give air moderately on every favourable opportunity, avoiding cold currents, especially against plants that may have been brought from the stove, or such as have been in heat to forward their blooming. Aim at securing a regular display of flower throughout the winter, by bringing on the stock of plants at command so that there may be about an equal quantity for service at all times. It requires some experience to manage this nicely, and young gardeners should carefully observe the length of time that the various plants remain in beauty, and also how long it requires in a given temperature to bring them into flower. It is true that there are various circumstances, such as the state of the plant when placed in heat, and the season of the year at which it is attempted to force it, to be taken into account in forming such an estimate; but careful observation, extended over a few seasons, will enable one to form a very correct opinion, both as to when plants will be wanted in bloom to maintain a regular display, and also how to treat them so as to have them exactly when wanted. But this must be learnt by experience and careful observation, for it cannot be communicated by any directions, however minute. We would, however, advise that the largest stock of which the convenience will allow should be prepared; for a small surplus in the way of bloom is no fault at any time, and a proportionately large stock for the demand is the best safeguard against a scarcity. Give the most diligent attention to maintaining order and neatness, and to keeping the plants and everything about the house perfectly clean.

FORCING DEPARTMENT.

PINERIES.—Plants swelling their fruit, and those in bloom should be assisted by a rather warm temperature, but excess of moisture in the atmosphere must be avoided at this dull season, particularly where the plants are in bloom, or the fruit approaching maturity. Use strong clear manure-water in a tepid state for plants swelling fruit, but do not get the soil too wet. The temperature for the growing stock should now be regulated very much by circumstances; keeping them growing gently where it can be done without drawing or weakening the foliage. Keep the soil about the roots in as equable a state as to moisture as possible, for letting the soil get too dry at this season often results in the plants showing fruit prematurely in spring, and the same is true with regard to the bottom-heat, which must also be carefully attended to, keeping it moderate but as regular as can possibly be done. VINERIES.—Where forcing is commenced about this time a rather higher and moister temperature will be necessary to induce the buds to start than would be the case at a more natural season. There is no better means of securing abundance of moisture and a gentle warmth than by placing a moderate quantity of stable manure on the inside border, and turning this, &c., as may be required; but where the forcing houses are visited by the family, and expected to be neat and orderly, this method is out of the question, and the syringe and whatever other means of a less objectionable character may be at command, must be used instead. The night temperature, to begin with, should range about 50° by fire heat, raising it to 60° by day, or to 70° with the assistance of the sun. Also endeavour to secure a little warmth for the roots in the outside border, and if fermenting materials are used, watch these narrowly, and endeavour by timely additions and frequent turnings, to secure a regular gentle warmth of 60° or 65°, at a foot below the surface of the soil. And if fermenting materials are used, there will be a great saving of labour, &c., by thatching these with a good coat of something to throw off wet, and preserve them from the weather. If plants in pots or boxes are used for forcing at this season, they should be placed in a mild bottom-heat, so as to excite a healthy root action, which will cause them to break more freely and in less time than can be done without bottom-heat. Ripe fruit will require the most careful attention during this dull damp weather, and the bunches should be frequently examined, removing every decaying berry, so as to prevent the mischief spreading to the others. PEACHES.—If forcing has to be commenced early, no time should be lost in getting the house thoroughly cleaned, the trees dressed and tied, &c., so as to have everything in readiness for starting; also lighten up the surface of the inside border, and apply whatever manure or top-dressing may be deemed necessary, and cover the outside border so as to keep out the wet, and preserve it from the weather.

FLOWER GARDEN AND SHRUBBERIES.

The few flowers that may remain on the bedding out plants in even the most favoured localities are not worth preserving any longer, and the beds should be cleared at once so as to allow of getting them nicely trimmed up for the winter. Where the extent of ground occupied by "bedding out plants" in summer is considerable, it is not always convenient to find spring-flowering bulbs to plant the whole of it with, and where this is the case, very much may be done towards producing a cheerful effect by a judicious use of small evergreens of a formal or neat habit of growth. These can be prepared in the reserve garden, to which they must of course be removed every summer, and as they have to be shifted twice every season they require no particular trouble to remove them with perfect safety; and beyond the labour of moving them to and from the flower-garden, and a few waterings after their spring shift, they involve but little labour or expense. For this purpose we prefer those that are perfectly hardy, and of a formal habit of growth, or can be readily cut into any desired form, such for instance as Arbor-vitæ, Cypresses, Junipers, Yews, Tree Box, &c, and Laurustinus and the old Mezereon, and some other Daphnes for their flowers. The winter-flowering Heaths are also very suitable, as are many other plants which might be mentioned; but we have indicated the kind of selection which we think the best adapted for the purpose. We do not, however, mean to recommend planting the beds closely in winter with such things, for this would require a very heavy stock, and involve a serious amount of labour, and all would produce no very striking result. These should be planted so as to mark in the most distinct manner the outline of the garden and principal figures. The beds can be much more cheaply planted, and to better purpose, with such things as the early-blooming Phloxes, Anemones, Tulips, Crocuses, Snowdrops, Scillas, Gentians, and many other spring-blooming plants, which are familiar enough to every gardener. These involve no expense, after a sufficient stock of them has been obtained, beyond the labour necessary to remove them to and from the flower-garden, and to keep the ground clean in summer about such of them as require a place in the reserve garden; and with a good stock of these, and a judicious use of a moderate quantity of small formal evergreens, very much might be done to improve the ordinary winter and spring appearance of the flower-garden.

HARDY FRUIT AND KITCHEN GARDEN.

The Strawberries in pots should now be placed in their winter quarters. The common practice of stacking up the pots on their sides in sloping ridges is somewhat troublesome, and quite unnecessary for the protection of the plants. If the pots are placed in lines, at a proper distance apart to allow sufficient space for the foliage, and the spaces between the pots filled with coal ashes or dry fern, placing a slight covering of the latter, or clean straw, upon the surface of the pots under the leaves, the plants will winter equally well or better than in ridges, and will present a neater appearance without involving half the labour. Care should be observed, however, to place the pots upon a thoroughly drained surface, for frost is comparatively harmless in the absence of moisture; therefore a few inches of coal ashes or lime rubbish should be placed under the pots. The best situation, however, for the portion of the plants intended for forcing first, is a spare cold frame, or near the glass in a cool Peach-house, as they will be safer here than under any system of protection out of doors, and as their roots will be preserved in an active state, very little forcing will be necessary to excite them at the proper time. The fruit stores will still require careful attention, and the fruit must be frequently looked over, removing any that are found to be tainted with decay. Many of the best autumn Pears will now be getting ripe, and it will add greatly to the interest of the fruit room if a portion of each of the sorts fit for use can be placed in a conspicuous situation, and correctly named. The late keeping kinds of Pears and Apples should be stored in a place by themselves, where they can be kept cool, and excluded as much as possible from the light and air, for these are apt to lose their briskness, and become very much shrivelled when kept in the ordinary fruit room. Let Cauliflower or Broccoli coming into use be removed to where it can be protected from frost; also attend to protecting Lettuce and Endive, and guard against slugs among the young Lettuce and Cauliflower plants. Get manure wheeled upon vacant ground on dry days or frosty mornings, and proceed with trenching, so as to expose the soil to the influence of the weather.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending Nov. 9, 1854, as observed at the Horticultural Gardens.

Nov.	Moon's Age.	Barometer.		Temperature.					Wind.	Rain.
				Of the Air.			Of the Earth			
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Friday 3	13	30.3?6	30.215	52	25	34.5	50	51	N.	.00
Satur. 4	○	30.197	29.992	58	49	53.5	50	51	W.	.00
Sunday 5	15	30.144	29.982	57	29	43.0	50	51	N.W.	.00
Mon. 6	16	30.359	30.301	53	25	39.0	50	51	N.	00
Tues. 7	17	30.501	30.421	51	26	38.5	50	51	W.	.00
Wed. 8	18	30.378	30.161	51	31	41.0	50	50	W.	.01
Thurs. 9	19	30.246	30.156	44	18	31.0	50	50	N.	.00
Average.		30.284	30.167	52.3	29.0	40.6	50.0	50.7		.01

Nov. 3—Fine; clear; frosty at night.
— 4—Overcast; fine; mild at night.
— 5—Densely clouded; very clear.
— 6—Clear and very fine throughout; frosty.
— 7—Foggy; cloudy; overcast; frosty.
— 8—Uniformly overcast; fine.
— 9—Clear and cold; fine; clear and frosty.

Mean temperature of the week, 4½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending Nov. 18, 1854.

Nov.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 12	51.5	35.7	43.6	14	0.30 in.	2	[illegible]	4	1	3	6	6	[illegible]
Mon. 13	50.7	36.3	43.5	16	0.56	—	2	3	3	4	9	3	4
Tues. 14	49.1	35.1	42.1	15	1.24	5	3	3	4	2	5	3	3
Wed. 15	48.7	36.2	42.5	14	0.34	2	4	3	2	5	8	3	1
Thurs. 16	49.2	34.2	41.7	11	0.41	5	3	1	3	5	5	4	[illegible]
Friday 17	48.4	35.2	41.8	14	0.40	5	4	1	1	6	[illegible]	[illegible]	[illegible]
Satur. 18	48.4	34.2	41.3	17	0.56	2	4	1	2	3	10	3	[illegible]

The highest temperature during the above period occurred on the 12th, 1841—therm. 63 deg.; and the lowest on the 15th, 1841—therm. 15 deg.

Notices to Correspondents.

APRICOTS: *Halesleigh.* For a north-west aspect you may try the Breda Apricot; it may ripen sufficiently well for preserving. On the same aspect you may plant the Jefferson Plum, or the Louise Bonne (of Jersey) Pear. ‖

BATTERSEA PARK: *X.* We do not know who will have the trees and shrubs to purchase for this park, or to what address offers of them should be sent; but we imagine the proper officer to be Sir Wm. Molesworth.

ESPALIERS: *Old Sub.* We regret to say there are so many words in your note which we are unable to decipher, that we have failed in determining the exact meaning of your enquiry.

GRAPES: *Tyro.* The Cannon Hall Muscat is a strong enough grower on its own root. As the locality is wet, you ought to manage so that no water can reach the soil except that which falls on the top of the border, the admission of which you can regulate. With regard to your second question, you may as well make the border the full width at once; afterwards you can turn it over in advance of the extending roots.—*A Subscriber.* The White Muscat of Lunel is the same as the White Muscat of Alexandria.—*M R.* The Raisin de Calabre Grape has a large bunch, with round, white, transparent berries, and will hang on the Vine nearly as long as Oldaker's St. Peter's. On this account a plant of it may be introduced in a late house, although its flavour is not so rich as that of the Muscat Grapes. ‖

GYNERIUM: *A H.* We are unable to answer the question; but we should not anticipate any success in such an experiment, even if anybody possessed both sexes. The plant in the Garden of the Horticultural Society is a female.

HOUSE BUGS: *A Sub.* Nothing is easier than to destroy them if you follow these directions. Empty the place of everything moveable. Scrape off all paper or other loose material, and throw it as the work proceeds into a brazier of live charcoal. Then fill in all the cracks in plaster with a mixture of corrosive sublimate and plaster of Paris. Also prepare a sufficient quantity of soft soap well mixed with corrosive sublimate, and with it fill, with a putty knife, all cracks in woodwork, and every crevice in the floor. Burn old carpets, &c. As to the furniture, fill every joint, or crack, in which it is possible for bugs to harbour, with the same mixture of corrosive sublimate and soft soap. By this means, if the work is thoroughly well done, and by no other means, you may clear any house of these vermin.

INSECTS: *H Le K.* The insects enclosed with your note are the perfect beetles and larvæ of the common weevil, Otiorhynchus sulcatus, described and figured in *Gard. Chron.*, 1841, p. 292. The most advisable plan for arresting the ravages of the larvæ is to repot the plants, employing earth which has been carefully sifted, as well as sifting that removed from the pots, so as to collect the larvæ, which must be destroyed. The roots of the Auriculas must also be carefully shaken. The perfect insects, from their dark colour and nocturnal habits are very difficult to be captured. *J O W.*

NAMES OF FRUITS: *B. Heathfield.* The Gilogil, a baking Pear.—*Alsned.* The French Russet.—*J. Clarges.* Beurré de Capiaumont.—*Thirsk.* 3, Beurré d'Angleterre; 7, Princesse d'Orange; 12, Marie Louise; 14, Glout Morceau; 25, Messire Jean; 26, Louise Bonne (of Jersey); 31, Catillac.—*Oakham.* 1, Hollandbury; 2, Lamb Abbey Pearmain; 3, Cockle Pippin? 5, King of the Pippins; 6, Downton Nonpareil; 1, a bad Pear, unknown; 3, Glout Morceau; 4, Forelle; 5, Knight's Monarch.—*E J K.* The Black Morocco.—*E B.* 1, Ormskirk Bergamot; 2, Swan's Egg; 3, Ambrosia; 4, Brown Beurré.—*E F.* 1, Uvedale's St. Germain, weight 1 lb. 15 oz.; 2, Duchesse d'Angoulême; 3, Chaumontel; 4, Catillac; 5, Glout Morceau; 6, Black Worcester; 7, Beurré Diel; 8, Swan's Egg.—*H G.* 1, Crimson Queening; 2, Rymer; 3, Kirke's Lord Nelson; 4, King of the Pippins; 5, Franc Real d'Hiver; 6, La Fortunée de Parmentier; 7, Seckel; 8, Rousselet de Rheims.—*F.* 1, 2, Beurré de Capiaumont; 4, Aston Town; 5, Althorp Crassane.—*A C.* 1, Northern Greening; 3, Court-penda Plat; 4, Gloria Mundi; 5, 8, King of the Pippins; 6, Reinette du Canada; 7, Court-penda Plat; 9, Early Nonpareil; 10, Beachamwell; 11, King of the Pippins; 12, Hacon's Incomparable. Two Pears with the numbers detached; one is decayed, the other obovate, with an open eye, short stalk, colour reddish russet, is the Beurré de Capiaumont.—*J S Essex.* 6, Duchesse d'Angoulême; 7, Bon Chrétien Fondante; 8, Beurré Diel; 10, Beurré Bosc; 16, Urbaniste; 18, Passe Colmar; 24, Easter Beurré.

NAMES OF PLANTS: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*Mr. Woolley.* Cattleya maxima.—*M. Oxford.* The parasite on Limnocharis Humboldti is Oidium leuconium, the conidiiferous state of some Erysiphe, of what species it is impossible to say, till the sporangia are detected, and these probably will not be perfected in such a situation. *M J B.*—*A M.* The tree which you say is grown in Italy for feeding horses is Ceratonia siliqua, the Carob tree, or St. John's Bread.

NATIVE OAKS: *B W.* We believe Mr. Billington to be perfectly right, and will repeat our reasons for the opinion at an early opportunity. In this matter prejudice has fairly beaten experience.

PEACH TREES: *J M'M.* They are badly affected with Soot Fungus, for which we know of no certain cure. We would advise you to remove the leaves, which can now be of no further use, and try the effect of washing the trees well with lime water. ‡

PLUM: *A H.* The Reine Claude Violette is a good bearer; and its quality is excellent. ‖

TULIP TREES: *Diss.* It is not usual to prune these trees. When old they flower abundantly without care. Pruning is more likely to retard than accelerate their blossoming. If for any reason unexplained you must prune, then do so in mid-winter.

WELLS: *A Correspondent* would be much obliged to any reader of the *Gardeners' Chronicle* who would favour us with a drawing, for publication, "of the simple and cheaply constructed wells, which are seen by the side of railways through France, in the least possible farms, as well as in Italy."

MISC.: *W E B.* Your question is not horticultural.

THE
PATENT LIQUID MANURE EXPERIMENT AT READING.

MESSRS. SUTTON AND SONS would advise their Agricultural and Horticultural Friends to inspect Mr. WILKINS' experimental Garden in the Caversham Road, Reading, *before the roots are taken up*, and will be happy to give cards of admission on application at their Seed Shop, Market Place, Reading, Berks.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7l. per ton; Superphosphate of Lime, 7l.; Sulphuric Acid and Coprolites, 6l.

Office, 69, King William Street, City, London.

N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent. of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

WHEAT SOWING.—The undersigned beg to call attention to their WHEAT MANURE, which has been successfully used during the last two seasons, and which they are prepared to deliver at 6l. per ton, free to Railway.

They are also Sole Agents for the sale of PEAT MOSS CHARCOAL, which is a valuable deodoriser and distributor of ammoniacal matter.—English and Foreign Linseed and Rape Cakes, Guano, Superphosphate of Lime, Salt, Bones, and all other Manures of known value on sale.

Apply to MARK FOTHERGILL & Co., 204, Upper Thames Street.

THE LONDON MANURE COMPANY beg to call the attention of Agriculturists to their WHEAT and CLOVER MANURES for present use. The London Manure Company also offer Genuine Peruvian Guano, Nitrate of Soda, Concentrated Urate, Superphosphate of Lime, Fishery and other Salts, and all Artificial Manures of value. The London Manure Company guarantee Peruvian Guano and every Manure they supply to be strictly genuine. EDWARD PURSER, Sec.
Bridge Street, Blackfriars.

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures, Linseed Cakes, &c.

WM. INGLIS CARNE, 10, Mark Lane, London.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and dispatch.

Gentlemen desirous of receiving instructions in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

CORN CRUSHERS AND CHAFF CUTTERS.—A large display of the best Farm Implements shown in operation. Price Lists sent free on application.

BURGESS AND KEY,
103, Newgate Street, and 52, Little Britain, London.

PUMPS AND HOSE PIPES FOR GARDENS AND LIQUID MANURE.—BURGESS & KEY's Pumps were highly commended by the Royal Agricultural Society of England at Lincoln. Price Lists sent free.

103, Newgate Street, and 52, Little Britain, London.

CHURNS.—ANTHONY'S PATENT AMERICAN CHURN.—Since 1849 this Churn has obtained all the Prizes awarded by the Royal Agricultural Society of England. At the trial before the Judges it made in 10 minutes 4 lbs. 6 oz. of Butter from 4 quarts of Cream, being 8 oz. more than any of the other Churns from the same quantity and quality of Cream.

103, Newgate Street, London.

SAMUELSON'S PATENT PRIZE FORKING MACHINE (Silver Medal from the Royal Agricultural Society of England; Prize from the Yorkshire Agricultural Society, Prize from the Cleveland Agricultural Society, and Prize from the Worcestershire Agricultural Society) is now proved by experience to be an invaluable implement for deep tillage, and equally effective as an extractor of Couch Grass and other Weeds, in testimony of which, numerous reports from farmers using it in every part of the kingdom may be had on application. Various imitations have failed, through the absence of its essential feature—the Patent Fork. The amount of horse power is less in proportion to the surface deeply pulverised than that required in the ordinary shallow ploughing. The application of steam power to tillage is still a problem to be solved, and it is not necessary to defer deep cultivation until its solution be accomplished.

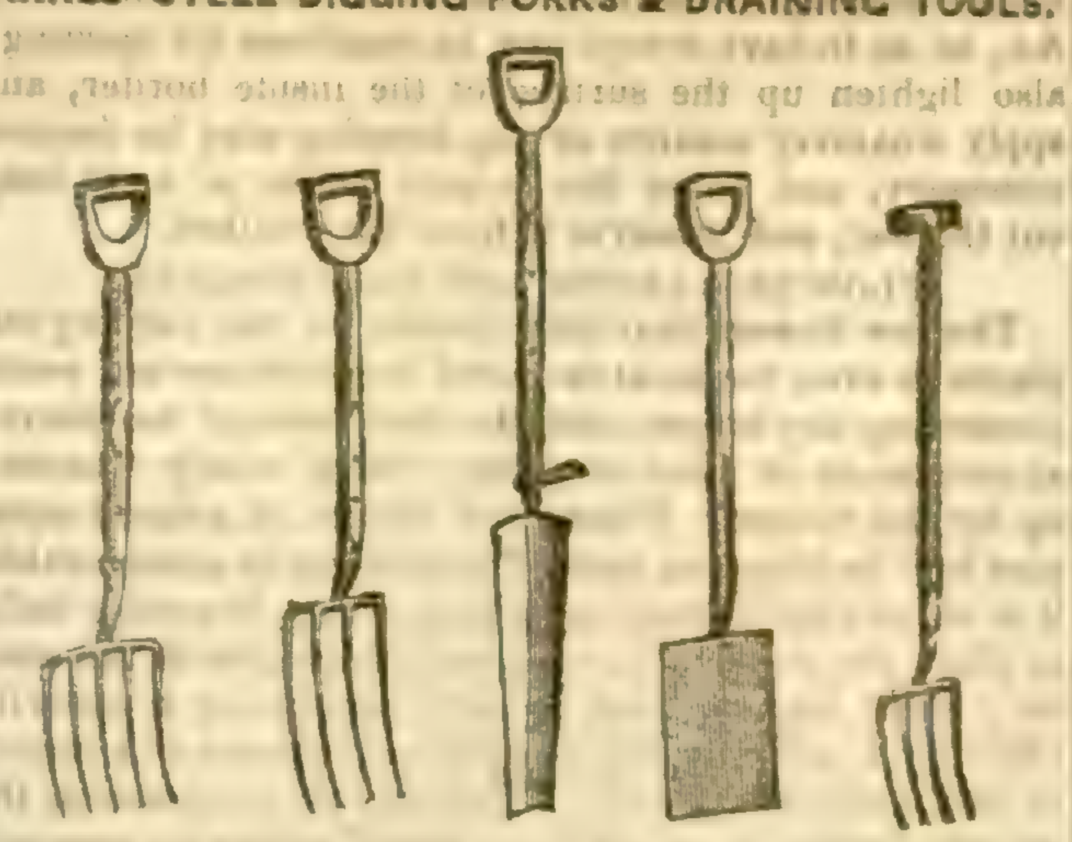
SAMUELSON'S IMPROVED GARDNERS' TURNIP CUTTER (Prize for the ninth time, at the Royal Agricultural Society's Meeting, Lincoln, 1854). The improvement is a rasping plate for loosening and voiding dirt from the roots, whilst being cut, whereby the scouring tendency of root feeding is diminished.

B. SAMUELSON (Successor to late Mr. Gardner), Britannia Works, Banbury.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard run, of E. T. ARCHER, 7, Trinity Lane, Cannon Street, City, and the Royal Mills, Wandsworth, Surrey.

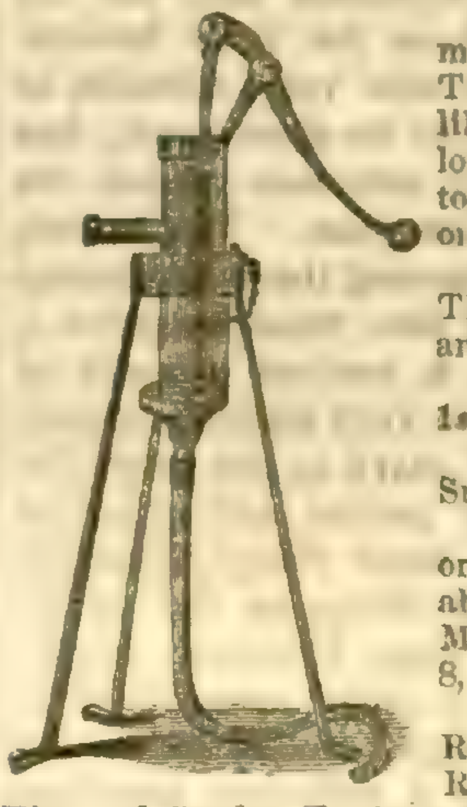
PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.



MESSRS. BURGESS AND KEY, as Mr. PARKES' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.

103, Newgate Street, and 52, Little Britain, London.

WARNER'S IMPROVED LIQUID MANURE, OR GENERAL PORTABLE PUMP.



The valve is a ball of imperishable material, and cannot clog in action. The barrel is of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure. The legs will fold together, and the whole may be carried on shoulder to any pond or tank required.

Price of 4½ in. Pump, with legs, 3l. 3s. The barrel is 27½ in. long, and the legs are 5 ft. high.

1½ inch Gutta Percha Suction Pipe, 1s. 6d. per foot.

1½ inch Flexible Rubber and Canvas Suction Pipe, 3s. 6d. per foot.

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water, by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c.—Engravings sent on application.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS, for the use of Farms, Cottages, Manure Tanks, and Wells of a depth not exceeding 30 feet.

Diameter of Barrel	Length of Barrel, under nose.		£	s.	d.
2½ in. short	1 ft. 7 in.	Fitted for lead, gutta percha, or cast iron flanged pipe, as required.	1	12	0
2½ „ long	3 „ 3 „		1	15	0
3 „ ditto	3 „ 6 „		2	12	0
3½ „ ditto	3 „ 6 „		2	18	0
4 „ ditto	3 „ 6 „		3	5	0
2½ „ short, with 15 feet of Lead Pipe attached, and Bolts and Nuts ready for fixing			2	12	0
2½ in. long	ditto	ditto ditto	2	15	0

The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses: they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or Country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER AND SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water, by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

WEEDS ON WALKS.

MR. FLEMING'S WEEDING OR SALTING MACHINE FOR GRAVEL WALKS, COURT YARDS, &c., manufactured and sold by ALEXANDER SHANKS & SON, Arbroath, Forfarshire, from whom particulars with prices may be had.

GRANITE.—ENTRANCE GATE PILLARS, COPINGS, and every kind of Yard and Stable Pitching; Field and Garden Rollers, Stack Pillars and Caps, Cattle Troughs, Window Sills, and at prices reduced by railway carriage.

Apply to H. SWIFT, Brent Moor, Ivy Bridge, South Devon.

Specimens to be seen at the Wharf, Globe Bridge, Globe Road, Mile End, London.

Monuments according to design and estimate.—Agents wanted.

AGRICULTURAL TUITION.—Sons of Gentlemen received as Agricultural Pupils into the family of a Clergyman occupying a Farm, cultivated under the Improved System, 25 miles from London.—Address Rev. C. C., Office of this Paper.

CHEMISTRY.—A Gentleman, who has had great experience in Practical Chemistry, will give private instruction in Chemical Analysis, especially in its application to Agriculture and the Arts.—CHEMICUS, care of Mr. Stanford, 6, Charing Cross.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.

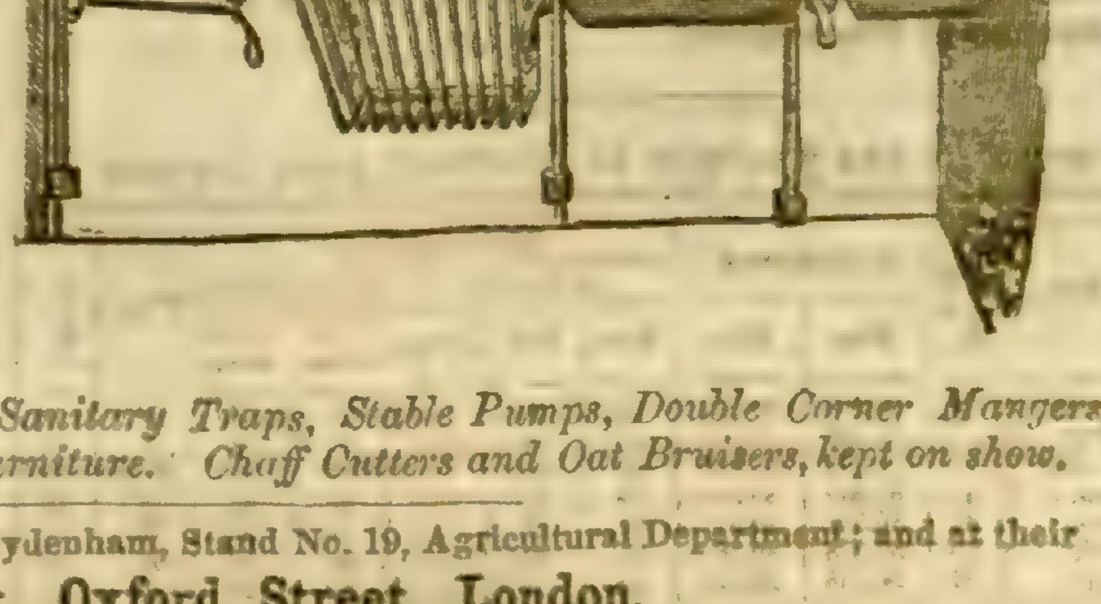
Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

THE SALISBURY AND WESTERN COUNTIES EXHIBITION OF DOMESTIC POULTRY.—The Fourth ANNUAL EXHIBITION will be held on TUESDAY and WEDNESDAY, the 21st and 22d days of November, 1854. Prize Lists, with the Rules and Regulations, can be obtained of the Hon. Secretary, and Subscriptions will be received by Mr EWER, the Treasurer. T. PAIN, Hon. Sec.

COTTAM'S NEW PATENT FOR STABLE REQUISITES.



COTTAM AND HALLEN, the original projectors of the above arrangement of MANGER, RACK, and WATER-TROUGH, which obtained the Great Exhibition Prize Medal, and universally approved of, have added all the latest improvements to their invention (secured by patent), which includes an entirely new method of attaching the halter, ball, and rein, giving to the horse greater freedom, and being noiseless in their operation, add much to its comfort whilst feeding and convenience when at rest. The

ENAMELLED MANGERS

are constructed in the best possible manner, both as to form and utility, are cleanly in appearance, durable and impervious to infection; manufactured PLAIN, GALVANISED, or ENAMELLED.

Improved Stable Guttering, with moveable safety covers, Sanitary Traps, Stable Pumps, Double Corner Mangers, Harness-room Appendages, and every article in Stable Furniture. Chaff Cutters and Oat Bruisers, kept on show.

A STALL fitted up, complete, exhibited at the Crystal Palace, Sydenham, Stand No. 19, Agricultural Department; and at their

Works, 2, Winsley Street, Oxford Street, London.

WARMING AND VENTILATING.—Descriptive Catalogues and Estimates on application.

The Agricultural Gazette.

SATURDAY, NOVEMBER 11, 1854.

MEETINGS FOR THE ENSUING WEEK.

THURSDAY, Nov. 16—Agricultural Imp. Society of Ireland.

THE chair of Agriculture in the University of Edinburgh has been recently vacated by the resignation of Professor Low, and filled by the subsequent appointment of Professor WILSON. It has been occupied by the former gentleman for a period of nearly a quarter of a century, during which time, by his lectures and his published works, he has done all that a man of large information and sound judgment could to teach correct agricultural principles, and to describe skilful farm practice. The editor of an agricultural periodical has opportunities possessed by no other person, of acquiring a knowledge of the real as well as the reputed status of the leading men in the agricultural world; the ability of a teacher is determined, not only by the accuracy of his knowledge, but by its fitness to the ignorance of others; and there is nothing like the extensive agricultural correspondence involved in the management of an agricultural journal either for learning or for indicating—whether the wants of the agricultural student or the sources whence they can best be supplied. An experience of this kind for several years enables us therefore to speak with some confidence of the services which Professor Low has rendered to the cause of agricultural progress. It may be that he has indicated what has been sound in the sanguine but uncertain writings and doings of the pioneers of that progress, rather than led the march himself—but his position was that of a guide and not that of a pioneer; and in thus reading the duties of his office, he has but given another proof of that safe and trustworthy judgment which has been the characteristic feature of all his labours. His volumes on "Practical Agriculture"—on "the Management of Landed Property," and on "the Economy and Natural History of our Domesticated Animals," will remain the substantial and well-filled store-rooms of the truth on their several topics for many years to come—the conclusive and most satisfactory testimony to his own useful labours as an agricultural teacher. In our own case, the gratitude due from a pupil, as well as the experience of many years, both in the field and at the desk, dictates this expression, both of the sincere esteem in which we are sure Professor Low has been held in the agricultural world, and of the regret with which the cause of his present retirement will be understood.

And we may congratulate the University of Edinburgh on the appointment of his successor. Professor WILSON, we understand, acquired his first knowledge of farm practice in one of the best cultivated districts of Scotland; and he has since then become well known in the scientific world as a chemist and geologist,—in the agricultural world as Principal for several years of the college at Cirencester—and generally as having had charge of the agricultural department of the Great Exhibition, as having been the commissioner appointed to report on the agricultural department of the New York Exhibition, and now as directing the agricultural department of the Crystal Palace at Sydenham

and as the commissioner appointed to take charge of British agricultural interests in connection with the great exhibition next year at Paris. It would be impossible to name any one whose appointment as successor to Professor Low could confer greater *éclat* upon the chair and the University, and difficult to name any one equally fitted for the discharge of the duties connected with the position to which he has been appointed.

For these duties are not confined to the detailed description of the field and home operations of practical agriculture. It may be that a discussion of all the items coming under the eye of the farmer between the 1st of Jan. and the 31st of Dec., is proper employment for the agricultural professor and his class—but both will be greatly mistaken if this is held to be the chief or the most useful employment to which their attention can be directed.

It is but a part of agricultural truth that can be got in at the ear; and we should consider students better taught from a chair, who should carry away from the lectures a glowing impression of the really intellectual character of the art, and a perception of its relations to those great bodies of truths which obtain under all circumstances of soil and climate, though they had learned in addition but a mere skeleton of agricultural truth, which however they could then readily clothe with flesh themselves in the field, than if they left with their memories crammed with data and details, without their judgments being improved or themselves enlightened. Better employ the 60 or 70 interviews between the professor and his students in equipping the latter *as* students, and so enabling them to learn their business in the field, where alone it *can* be learned, than in the vain attempt to teach an art by talking, which never yet was done, and which no one, we dare say it, will ever succeed in doing.

It is because Professor Wilson is so admirably qualified for thus discharging the duties of the office to which he is called, that the University and the agricultural world generally may be cordially congratulated on his appointment.

The permanent improvement of the soil is the same in effect as increasing its area. If, for example, we increase the annual produce of the United Kingdoms one-fourth, it is equivalent to increasing their area upwards of 19,000,000 acres, an increase only one-twentieth less than the extent of Ireland, and so on for any other proportional increase obtained.

But an increase of produce to the extent of one-fourth would be of greater value than an increase of acres equivalent to the area of all Ireland, for when we increase the fertility of the soil less seed and labour are required, whereas an increase of acres would give rise to the contrary.

Of the practicability of increasing the annual produce of the country to this degree there need hardly be two opinions, for every province bears evidence of it. Take an acre of Wheat land for an example, now yielding say 32 bushels per acre, and who will deny that by means of draining, trenching, claying, apparatus for liquid manuring, or some such permanent improvement or combination of them, its fertility may be raised to 40 bushels? and if this is possible on lands of this quality, what may be expected of those subject to greater improvement which now will not average even 15 or 20 bushels per acre, if so much, while we have 27,000,000 acres and upwards, of "meadow, pasture, and marsh land," still more susceptible of increase, and 15,000,000 acres of "improvable waste," now yielding a coarse and scanty herbage of only nominal value?

But the improvement of the soil involves more than agricultural possibilities—the work is not only practicable but profitable. The difficulties in the way, taking the one aspect of it, and the returns to be looked for in the other, may be illustrated by a case:—

A landlord has an estate of 7700 acres, of which 1900 are arable and gardens; 2700 meadow, pasture, and marsh land; 1500 improvable waste, and the balance, 1600, incapable of improvement for agricultural purposes, but in many cases possessing inexhaustible resources of minerals, which may directly or indirectly be brought to bear upon the improvement of the other divisions. On the arable land with draining, subsoiling, application of clay, sand, chalk, peat earth, when required, and the use of liquid-manure apparatus, &c., an investment of 10*l.* per acre on an average (some requiring more and some less) may be profitably made, and this we shall suppose will increase the produce 25 per cent. This is no doubt a very high average increase over a whole estate, but as we have never had less from a variety of experiments where the work was properly performed, in the vast majority of cases greatly more, we shall leave our readers to adapt their own experience to the example, as we are only contending for the principle. The average investment, it will be seen, is also large, and it is only where this is economically and judiciously invested that large returns can reasonably be expected. One of the greatest barriers to improvement of this kind with corresponding profits is "half done work." The thing may be illustrated by an instance within our own experience:—We had a field of wet clay land, drained 24 feet between the drains, at an expense of about 5*l.* per acre, and the increase was not more than 5 per cent. This was unsatisfactory, but on putting an additional drain between every two, and subsoiling the field, the increase was upwards of 30 per cent. in cereals, and more than 100 in Turnips and Grass. The total investment in the arable lands of our supposed estate will be 19,000*l.* Of the 2700 in Grass possibly two-thirds or 1800 should be broken up at an expense of from 12*l.* to 15*l.* per acre, and the remaining one-third or 900 acres drained, irrigated, and otherwise improved at an expense of 8*l.* Or judging from experiments made on soils of this class by ourselves, the highest and most profitable results could not be obtained under an average of 10*l.* The total investment under this head will be 27,000*l.* The 1500 improvable waste by draining, trenching, removing stones, trees, roots, levelling, &c., from an average of successful examples of this kind, also cannot be reclaimed and put in a profitable crop-bearing state under 20*l.* per acre. It is frequently done by degrees at less money out of pocket in the outset, but counting all costs and balances before the land is put in a proper state of fertility this is the most expensive mode of reclaiming land. Total investment on this division 30,000*l.*, grand total 76,000*l.*, tabularly stated thus:

Arable lands ...	1900 acres, at 10*l.* per acre	...	£19,000
Pasture, &c. ...	2700 „ „ „		27,000
Improvable waste	1500 „ 20*l.* „		30,000
Total ...	6100 „	...	£76,000

This investment may realise from 10 to 12 per cent., or say 8000*l.*, of which sum the landlord would get about the half from the tenants, or 4000*l.*, annually as interest, which would not redeem the principal in less than from 30 to 40 years; and as the work is a large one, it could not be finished likely in less time than this, so that 80 years would expire before the whole was redeemed and the estate freed of debt.

In the above example it is taken for granted that the tenants upon the estate are both willing and able to comply with the payment of interest and other obligations which would devolve on them, but how often is the contrary the case? for large investments of the kind in question require an increase of tenants' capital, and not unfrequently skill, to turn them to the best advantage, without which the investments themselves are not safe; and not only so, but the old system of the tenant is also liable to be overturned. Hence his objections. Next to "half-done work" in the drainage and other improvements of land, already noticed, the want of skill and capital on the part of the tenant to turn such improvements to a satisfactory advantage is, perhaps, the greatest barrier to their execution. And a third class of examples might be found in incumbered estates. Lands, whether freehold or not, are often so rackrented, mortgaged, or otherwise burdened, as to prevent the necessary security being given. On this head more need not be said.

Such are a few of those cases where landed interests are so problematically circumstanced as to check the progress of permanent improvements; and they are sufficient to show that some organised system of experiments is wanting, in order to test the increase of produce arising from certain physical changes in the circumstances of the soil produced by draining and other improvements, so as to afford a better guarantee to capital; for this will be found in almost every case to be at the root of those misapprehensions which prevent capital being invested in one of the most productive enterprises in the kingdom. It will be perceived that the hypothetical example which we have quoted is just a ten-thousandth part of the whole kingdom, so that four ciphers added to the right-hand figure will show national results. Readers may make their own estimate as to the amount of expenditure and increase of produce; but whatever those may be, one conclusion is obvious, that the permanent improvement of land holds out a larger and more profitable field for the investment of capital than is to be met with anywhere else,—a consideration, however, which often cannot be taken advantage of, owing to the anomalous construction and circumstances of landed interests. This is the more to be regretted from the fact that this country may be called a nation of capitalists, from its commercial character; the immense capital and credit at its disposal affording facilities for the execution of the works at issue which no other nation has.

GUANO.

[We have received the following in the form of a printed slip, addressed to the farmers of Nottinghamshire.]

Before entering upon the subject of guano as a manure, I will relate to you a few interesting facts respecting it communicated to me by a friend (Captain Fyfe, brother to the editor of the *Nottinghamshire Guardian*), both as regards the extent of its supply and the sources of its production. Last year Captain Fyfe visited Peru and brought over from the Chincha Islands a cargo of guano. His account of these islands is totally different from any I have yet seen published, for instead of the guano being exhausted in 8 or 10 years, which most writers assert, he says, that the supply, comparatively speaking, is inexhaustible—the beds of guano being in many places more than 100 feet thick, and two of the three principal islands being yet untouched.

On climbing the cliffs an innumerable quantity of skeletons of large marine animals were presented to his view, such as those of the seal and walrus, or sea-horse, sticking up out of the surface, in such quantities that the place appeared to be completely white all over; and these account in some measure for the white lumps frequently met with in Peruvian Guano, which are no doubt the decomposed vertebræ of these animals.

Passing along over the island he could scarcely take a step without his foot breaking through into a hole in which the guano bird makes its nest.

These holes extend 5 or 6 yards into the bed of guano, and the birds are continually occupied in fetching fish from the sea to feed their young ones. The number is so immense that the air seems completely alive with them. By this account, on which the most implicit reliance can be placed, you will perceive that guano is not all excrementitious matter, as we have hitherto been led to suppose, but consists of a considerable amount of decomposed animal matter in addition to the excrement of birds. It is evident from this brief sketch that the supply of guano will be at present by no means limited, and therefore it rests with yourselves to petition Government, through your respective members of Parliament, to endeavour to devise means to get it imported into this country at a cheaper rate. I have no doubt that this could be done, if it were set about in good earnest, by some of the more influential of your body; not perhaps so quickly as our gallant fellows crowned the heights of Alma in the late terrible conflict in the East, but nevertheless I think it might be accomplished ere long. Of course the distance of the period will be in proportion to the extent to which you exert yourselves in the matter.

From a very remote period (about 2000 years) guano has been the chief manure applied to the land on the arid soils of Peru. As the quantity generally used does not exceed 4 cwt. per acre, you will perceive from the analysis below that this could not possibly supply all the alkaline salts which are required by plants. Professor Liebig says "we can only attribute the different quantities of guano necessary for producing the same results on different soils to the unequal quantities of ingredients necessary to vegetation contained in the soils, and not to those contained in guano. On a soil rich in alkali only a moderate quantity of guano is requisite; but on soils poor in alkalis it would take a large amount of guano to compensate for the want of potash or soda in the soil." The reason why the effects of guano are more uniform than perhaps any other artificial manure, with the exception of bones, is, that it contains a greater variety of the constituents of plants, that portion of it which is excrementitious matter partaking more of the nature and properties of farm-yard manure. Each of these bears a pretty equal resemblance to farm-yard manure, inasmuch as both of them supply phosphoric acid and ammonia, and both are derived, like it, from the vegetable food of animals.

Undoubtedly guano is the most useful manure that has ever yet been imported into this country, and the reason why guano which is found in our own climate is of far less value than the Peruvian, is that the greater part of the soluble portion of that which is produced in this country (in the islands of Scotland, for instance) is washed out by the rain. The following is one of the most recent analyses of Peruvian guano:—

Water	14.31
Salts of Ammonia	17.00
Organic Matter	33.23
Alkaline Salts	5.449
Phosphates	25.543
Salts of Lime	2.968
Sand, &c.	1.50
	100.000

The percentage of water in this sample, however, is rather high, I rarely find it to exceed 10 per cent—that of silica 1 per cent.

It would be almost unnecessary to remind you of the immense extent of adulteration which is practised by some of the unprincipled dealers in this article, and therefore it is a matter of importance that you should be put in possession of an easy method of detecting these frauds. When guano is light (as regards the weight) and pretty uniform in colour, generally speaking, you may consider it good, but when you have any suspicion as to its genuineness the following mode of testing it is not only easy of performance but will yield you sufficiently accurate results:—Take 100 grains of the suspected sample, spread it carefully on a piece of writing paper, and lay it on the hob, which must not be so hot as to char the paper. When perfectly dry weigh it again, the loss of weight is the amount of moisture it contained with a very small quantity of ammonia, which would be driven off by the heat along with the

water. Then take the same dried and weighed sample, place it upon a piece of sheet-iron, and heat it over a bright fire until nothing but a white or grey ash remains —take it off the fire, allow it to cool, sweep it carefully into the scale and weigh it again; the loss indicates the amount of ammoniacal salts and organic matter. The ash must now be transferred into a teacup and well mixed with half an ounce of spirit of salt (muriatic acid). If chalk has been mixed with the guano violent effervescence will take place, if not the effervescence will be very slight indeed. After this has been allowed to stand on the warm hob for five or ten minutes the undissolved portion must be well washed with clean water,—the eye will then easily be able to detect sand or brick-dust if there be any, which will remain at the bottom of the cup, the acid not being able to dissolve either of these. This residue must be carefully collected, dried, and weighed, which of course will give you the percentage of sand and rubbish, and the difference in weight will give the amount of the soluble salts (phosphate of lime, magnesia, &c.), minus the ammonia which was driven off by the burning on the iron plate.

To give you some idea of the proportions, 100 grains of good Peruvian guano ought to weigh 90 grains after being dried on the paper, 34 grains after being burnt on the iron plate, and about 1 grain when perfectly dried after being treated with spirit of salt.

It is always well to mix the guano, before being applied to the soil, with common salt or charcoal on account of the power which they possess of attracting moisture in dry seasons from the atmosphere. I have seen a mixture of the two of about three times the quantity of these to one part of guano attended with the most important results as regards increase of crop.

As it must ever be an object to economise the use of this valuable and expensive manure, the admixture of it with superphosphate and salt cannot be too strongly recommended; not only does the former of these make the guano go much further, but on account of it fixing the ammonia, both are improved in value. The better plan is to mix them together a few days before they are applied to the soil. *Samuel Parr.*

THE ECONOMY OF AGRICULTURAL LABOUR.

It is from labour that all our riches have been derived; from it we get our food, the necessaries, the conveniences, the comforts, and the luxuries of life. Without labour we must live, like the beasts of the field, on the natural produce of the earth; and even then the natural produce of the earth cannot be converted into use without labour. Labour, therefore, when properly applied gives to the soil its actual value.

The proper application of labour in cultivating the earth produces a greater and more beneficial result than the same amount of it applied on other matters; and as the value of everything is regulated by demand and supply, so is labour and the produce of labour. The price of labour properly employed in raising farm produce marks the natural price or value of it. By "the economy of farm labour" we wish to represent the arrangement, distribution, management, and employment of our forces in the production of our crops, and in converting them into food for man, and manure for our future crops.

We shall give the policy of a particular farm, and state the number of labourers we employ, the food which they and their families consume, the implements we use, the horse power required on our farm (consisting of 300 acres, 60 of which are in permanent pasture) for its proper management, the cost of the horses and of the food they consume, and the quantity of land required to produce their food, the expense of keeping them, and the implements which are used by them in proper working trim, and at the same value.

As labour is so essential an element in every well conducted farm, it is of the utmost importance to be able to direct the application of the labour of man and horse power so as to produce the greatest result; to accomplish this, a proper system is absolutely necessary in the application of it to make it profitable.

It is of the greatest importance for the employer of labourers to know the amount of work which an able-bodied man can perform properly in a day of 10 hours; this can only be acquired from experience. To acquire this knowledge, he must either put his hand to the work, or attend to the men when they are at piece work; and from this knowledge of the mode of working, and the quantity they perform, he may be able to fix the fair price of any work which must be done. There is, however, great variety in the easiness or difficulty of performing these, and he must be a good judge of the various kinds of work, and be able to fix a fair price for every description of work that is required.

In every department of labour there is a headsman, to whom orders are given for all those under him; and he must have experience in his particular department, to be able to execute the orders of his master, and have complete control over all those who work with him; and he must also have such an interest in his business, so as at all times and under all circumstances to have his orders executed in the best and most perfect way, according to the spirit and intention of his master.

Our farm is so small that the occupier acts as director and manager; he is the mainspring—directs, controls, and sees all his orders executed; but we find it best to have a foreman in each department of the labourers, who is accountable for the proper performance of the work they are about, and for the conduct of those who work with him. The first ploughman has the direction of, and is accountable for the work done by the other ploughmen, and sees that the horses are properly fed and cared for, and attends to all the implements which are placed under his care.

The shepherd, who is also cow man, has the care of the sheep, beasts, and pigs, and has boys under him during the summer, with the addition of a man during winter; the labourers have also a headsman, who receives orders from the master, and is accountable for the men who work with him, and for the proper performance of the work he is ordered to perform; and so have the women when they are weeding or hoeing, &c.

Our stated yearly labourers are four ploughmen, who work the horses; the shepherd and cow man. The shepherd and cow man is required to move the fold and attend to the sheep in the field morning and evening, and to those in the boxes to give them their food at the proper time; and he, as cow man, has to attend to all the beasts under his care; he mows clover in the field for the horses and for his beasts in the boxes, and pigs; he has a man to boil and mix the linseed and meal, and chaff, for the horses, beasts and sheep during winter.

The constant day labourers are five men; they are employed in performing every kind of work required on the farm which the yearly servants cannot perform. There are generally five women constantly; but during the hoeing of Wheat, planting Mangold, hoeing Beans, Carrots, Potatoes, Mangold, and Turnips, we have frequently from 15 to 20 women and boys, and we add to the number of hands just as many as are required to perform the work when it is required, whether in hoeing the land, in the corn harvest, or during the root harvest, so as to get the work done in proper time and with the greatest despatch.

All the hands we employ are paid in money on Thursday (once a fortnight); their wages are from 10*s.* to 14*s.* per week, the boys from 3*s.* to 7*s.*, and the women 5*s.* per week, or 1*d.* per hour—during harvest they earn much more than this, as they have task work.

We select the best able-bodied and most active, industrious hands, and as we give higher wages than any within many miles of us, we have no difficulty in securing the best workmen; and by doing everything we can by piece work, the men make much larger wages than when working by the day. We have no difficulty in getting any number of hands whenever we require them for work which, from circumstances of season or weather, requires to be performed immediately.

The following is a table of all the labourers employed for every week during the year, from the 26th day of March, 1846, to the 26th day of March, 1847, being 52 weeks:—

Date.	Money paid for piece work.	Regular work of a man.	Occasional Work.		
			Days of a man.	Days of a woman.	Days of a boy.
April 4	£1 8 0	30	36	47	48
„ 11	......	30	37	42	48
„ 18	......	30	48	89	78
„ 25	......	30	44	148	72
May 2	......	30	23	150	54
„ 9	......	30	22	144	43
„ 16	......	30	13	146	48
„ 23	......	30	12	122	46
„ 30	......	30	20	90	48
June 6	......	30	12	69	48
„ 13	3 5 6	30	50	88	47
„ 20	......	30	21	72	48
„ 27	2 19 0	30	35	76	42
July 4	......	30	37	88	44
„ 11	1 0 6	30	24	48	48
„ 15	......	30	47	119	48
„ 25	2 10 0	30	31	76	47
Aug. 1 wheat	......	30			
8 harvest	68 18 6	30	27	140	22
15 vest	......	30		180	48
22 work	12 0 0	30	11	61	60
Aug. 29	......	30	33	98	40
Sept. 5	0 7 6	30	49	100	42
„ 12	......	30	30	83	46
„ 19	1 18 6	30	66	46	48
„ 26	......	30	38	43	42
Oct. 5	6 0 0	30	48	36	46
„ 11	......	30	46	19	42
„ 18	1 17 6	30	44	37	48
„ 24	......	30	42	36	48
„ 31	......	30	45	35	48
Nov. 7	16 8 6	30	31	44	48
„ 14	8 0 0	30	30	42	42
„ 21	......	30	31	34	42
„ 28	8 3 0	30	22	35	42
Dec. 5	......	30	29	36	59
„ 12	8 4 0	30	36	42	42
„ 19	......	30	24	36	42
„ 26	0 15 0	30	26	26	33
1847.					
Jan. 2	......	30	37	32	33
„ 9	0 17 0	30	23	27	42
„ 16	2 15 0	30	24	18	42
„ 23	......	30	30	21	37
„ 30	......	30	30	21	30
Feb. 6	......	30	37	24	30
„ 13	......	30	36	10	30
„ 20	......	30	48	4	36
„ 27	......	30	40	11	36
March 6	......	30	36	10	36
„ 13	......	30	44	17	36
„ 20	15 10 5½	30	36	30	36
„ 27	10 0 0	30	33	30	42
	£173 8 11½	Days, 1560	1797	3005	2268

From the above table of the labourers employed on our farm for one year, if we take the 173*l.* 8*s.* 11½*d.* paid for piece work as affording employment to 1734 men at 2*s.* per day, then it will appear that there were 847 weeks of one man, or 16 men throughout the year constantly employed. The lowest wage was 10*s.*, and the highest 15*s.*, to the foreman.

	£	s.	d.
The average is about 12*s.* per week for 15 men the year round	£507	3	5½
There were 3005 days of a woman, at 10*d.* per day ...	125	4	2
And 2268 days of a boy, averaging 7*d.* per day ...	66	3	0
This was the amount paid to the labourers for 1 year	£698	10	7½

This is equal to 16 men, 10 women, and 7 boys the year round on the farm, being the employment of 6½ men, 4 women, and 2⅓ boys, per 100 acres of arable land; or in money 2*l.* 18*s.*, per acre for the manual labour.

The number of individuals depending for support on the money we pay for the manual labour of our farm is—

10 married men, having 10 wives and 30 children	50	individuals
6 men are unmarried	6	„
Of the 10 women employed, two are the wives of two of the men. One of the women is a widow and has three children	4	„
One unmarried woman	1	„
The six remaining women have six children to support	12	„
Seven boys	7	„
	80	„

These 80 individuals depend entirely on the earnings of the labourers employed on the farm, for food and every necessary of life. Since the failure of the Potato crop, the food of the labourers in our neighbourhood has almost entirely consisted of bread of best seconds flour. Most of the families buy flour and bake their own bread; and we find from the information received from them that some of the families consume 3 pecks of 14 lbs. of flour per week, others 3½ pecks, and others 4 pecks; the average may be about 48 lbs. of flour. A bushel of Wheat of 60 lbs. weight will just produce 48 lbs. of seconds flour; we may therefore reckon that each of these 16 families of five individuals require and consume a bushel of Wheat weekly; the other food which they consume, from the account they have given us, averages 2 lbs. of cheese, 2 lbs. of bacon, 2 lbs. of butter, 1 lb. of sugar, and 2 oz. of tea weekly for each family, besides about 14 lbs. of Potatoes, the produce of their gardens; all of them have allotment gardens. The food consumed annually by the labourers employed on our farm may stand thus—16 families of five individuals each, in all 80 individuals.

1 bushel of Wheat weekly for 16 families × 52 weeks = 832 bushels, at 6*s.* 3*d.*...				£200	6	3
2 lbs. of cheese weekly for 16 families × 52 weeks = 1664 lbs., at 8*d.*				55	9	4
2 lbs. of bacon weekly for 16 families × 52 weeks = 1664 lbs, at 8*d.*...				55	9	4
2 lbs. of butter weekly for 16 families × 52 weeks = 1664 lbs., at 11*d.*				75	5	4
14 lbs. of Potatoes weekly for 16 families × 52 weeks = 42 sacks, at 8*s.*...				16	16	0
4 quarts of beer weekly for 16 families × 52 weeks = 3328 quarts, at 2½*d.*				34	18	4
The amount of food consumed, which may be of the farm produce				498	4	7
Rent of 16 cottages, at 1*s.* per week, with a small garden	£41	12	0			
Say for coals, candles, and soap, 30*s.* for each family	24	0	0			
For clothes, &c., for each family, about 5*l.* 17*s.*	93	2	0			
				158	14	
Colonial Produce:—						
1 lb. of sugar weekly for 16 families, for 52 weeks, 832 lbs., at 6*d.* per lb.	20	16	0			
2 oz. of tea weekly for 16 families, for 52 weeks, 1664 oz., at 3*d.* per oz.	20	16	0			
				41	12	0
				£698	10	7

To produce the flour consumed by these 16 families it will require 26 acres, at 32 bushels per acre.

We do not enter into our own family expenses, as these form no part of the expenses of cultivation; they must come out of our income, and if the income is derived solely from the profits of the farm and interest of the capital employed on it, this will of course be the measure of our expenditure. *J. M.*

(*To be continued.*)

Home Correspondence.

Waste Lands.—This term comprehends all grounds that are unfit to bring crops to maturity by reason of the natural constitution of the soil, or by the adversity of the climate. Little control can be exercised over the latter element. In some few cases only has any alteration been effected on the climate of any country where an obvious influence has arisen from terrestrial conditions, as with stagnant waters and dense overgrown forests. Some benefit has been derived by draining and clearing; but in general, the effects of climate are beyond control. On the other hand, the most valuable and lasting alterations are possible with the soil. Good lands are rendered profitable by means of cultivation; indifferent soils are raised into value by application of energy and durable aid, while very poor lands are usable in a way that yields some degree of remuneration for the expenditure of time and capital. Experience very soon determines the altitude or elevation of position above the sea at which grain crops can be matured into ripeness. Green crops will grow at a much higher elevation; but as the two kinds of crops must be combined, the cultivation ceases with the ripening of grain crops.(!) Below that mark of elevation, no lands may remain uncultivated, except where the formation of the surface prohibits all convenience of operation. Wherever a railway-station is located, dwellings are placed and gardens are formed, by which it is shown that deep digging of the soil, whatever it may be, and constant manuring, produce a fruitful ground, which soon becomes a source of easy profit. The most obdurate clay, the most arid chalk, the most hungry sand, and

the most barren heath, are seen to be converted by these simple means into fruitful soils. *J. D.*

Average Wheat Produce.—Two correspondents of the *Times* calculate this year's produce — the one at 4 quarters, the other at 9 sacks. Without discrediting Mr. Mechi's returns, or those of any other high farmer, I would remark that if Mr. Caird, the *Times* Commissioner, is any way right, this year is supposed to be the most bountiful of many past. It undoubtedly is so; but to raise the following averages, as given by Mr. Caird (*vide* "English Agriculture," Longman, 1852), to 4 quarters, requires an excess of produce from other and better land scarcely credible. Not a single entire county is credited with a 40-bushel average, and only part of one that I could find (Lincolnshire fens) with 44; while, *e. g.*, Weald of Surrey is put at 12 to 20; Sussex do., 12 to 20; Essex, 28 to 32; Suffolk, 32; South Devon, 16 to 24; Norfolk, 36; Dorset, 20 to 22. As I know of much hill country (and a great portion of Wheat land must be on the hills) where 24 bushels are at least four more than usual, is it safe to rely on a general produce of 40 from Land's End to John o'Groats? *Simplex.*

Food of Cows and Sheep.—I shall feel greatly obliged by information on the following point. I keep 19 Ayrshire Cows and a short-horn bull, and they give me in

Butter and cheese, say	£190	0	0
Aid to pigs	10	0	0
Milk to calves	57	0	0
Manure at 2*l*.	38	0	0
Yearly	£295	0	0

How many Cheviot ewes and lambs will consume the quantity of Grass and Turnips required for the above cattle yearly? How many year-old cattle? How many two-year old cattle? I may thus be able to reply to friends who tell me sheep, &c., pay better than milch cows. *J. Mackenzie, M.D.*

Cross-bred Sheep.—Connected with the subject of crossing the smaller breeds of sheep with rams of a larger kind, as mentioned several times in your pages by Mr. Fowler, of Dartmoor, it may not be out of place to register a fact which has come under my notice since my residence in South Wales. A friend of mine purchased 12 months back a number of Welsh mountain ewes, the average price being about 13*s.* each. They were immediately put to a strong Southdown ram, and produced in due season some very strong and fine lambs. These being kept well, were soon fit for the market, and when slaughtered weighed from 7 to 10 lbs. a quarter, and sold at an average price of 20*s.* each. Some of the ewes have been killed off this autumn, and realised about the same amount. This I think is not a bad speculation, and one which may be copied with advantage, especially by those who have hilly poor land to manage. To see the lambs, especially the single ones, after they were six weeks or two months old, was quite laughable, for some of them were larger than the dam, and as is too frequently the case with overgrown children of the genus homo, looked like sucking the parent in good earnest. That the breed of small sheep should be much improved in size by crossing with larger rams is quite in the nature of things, for we see the same effect from similar causes throughout the animal kingdom. An increase of size is certain, and I should imagine a cross of the Southdown and Welsh mountain breeds could not be bad in quality—at least of the lamb I can speak from a "knife and fork" experiment, and it was excellent; and perhaps in the spring of next year I may be able to give a similar opinion upon the mutton. *W. P. Ayres, South Wales, Oct. 30.*

Farmers' Clubs.

Newcastle Farmers' Club, *Oct. 21.*—*Agricultural Statistics:* Mr. Burnett, of Black Hedley, read a paper on this subject. He said:—"There is an old and hackneyed saying, 'that facts are stubborn things,' and, if so, no one will attempt to dispute that facts alone form the soundest and most satisfactory basis of every improvement affecting any given branch of the nation's economy. Statistical facts, therefore, have ever been considered the safest and surest standards to form a correct judgment of the precise condition of any branch of trade. If that be so, how important must be the statistics in connection with a branch of the nation's resources, which has justly been termed the head of every other trade, viz.—Agriculture; a subject which, it is to be regretted, the legislature of this country has too long neglected, although it should have been their great business to compile as perfect and as complete returns of its exact condition as it was in their power to obtain. The want of such data accounts in a measure for the sudden and too often unexplained changes that have taken place in the minds and in the conduct of some great men, who, after spending a lifetime in advocating a given principle, have all of a sudden turned and supported another diametrically opposite to it; besides, this in a measure reaches those who have taken the trouble to search into the history of the legislation of the country, the secret of the many inconsistencies and incongruities which have characterised the proceedings of different governments in reference to agriculture generally. How do you account for these and similar other extreme changes, except from the absence of correct statistics, for without them every effort of the legislature bearing upon this branch of the nation's industry has been, and will ever be, but little better than like men groping in the dark. This is natural, as they never had a single fact to guide them. I know that the country possessed certain books professing to be the statistics of everything; but, after all, these were little better than guess-work—therefore, in regard to the real amount of produce of the land, it was entirely ignorant, as the Government never possessed a correct account of the quantity of surface land, with the grain produced upon it, or the expenses incurred in the producing of it. Thus, we neither have the number of acres used in growing corn, or as to whether the acres are increasing or diminishing; or whether or not the same amount of land was producing more or less corn than formerly. Yet, on the other hand, almost every other branch of trade lacked nothing calculated to further and promote it. It is true that we have statistics with reference to births, deaths, and marriages; also of corn imported and exported; and of coffee, tea, tobacco, &c.; nay, in short, everything but the staple product of the country. The first attempt to legislate in statistical matters connected with agriculture began, I believe, in a grant of 600*l.* being offered by the Commissioners of Woods and Forests to the Highland and Agricultural Society of Scotland—a society to which England owes much. This society, in carrying out the object of the Government, selected three counties for their experiments, viz., Roxburghshire, Haddington, and Sutherland; the two former being arable, and the latter Grass land—in order to test the result of the produce of corn and the rearing and feeding of cattle. The society accordingly had schedules printed containing the number of acres under different kinds of crops, the number not in crop, and the amount of stock. A copy of these schedules was sent to every occupier to fill up in these three counties. Now, to these schedules I wish to call attention, as they first asked for the contents of the farms in acres; secondly, the quantity of land in Grass; and, thirdly, the quantity of Wheat, Barley, Oats, and other grain grown upon them. It, however, struck my mind that these schedules were deficient in many respects. Now, it is well known that a correct account of acres cannot give a correct account of the corn produced in any country, as it is well known that in this county (Northumberland) the produce of farms varies from between 10 to 50 imperial bushels per acre. Therefore, it is plain that, to obtain a correct average of any country is rather a difficult and arduous task, and must be attended with great care and caution, as it will require a series of returns for many years before it can be satisfactorily accomplished—at least 15 or 20 years will be required for such a purpose. I cannot leave this part of my subject without thinking that the Highland Society, in selecting two corn-producing counties, viz., Roxburghshire and Haddington, might have the tendency to mislead as to the general and *bonâ fide* produce of the whole of Scotland. I would here suggest that, instead of each farmer filling up the returns asked for by these schedules (which would cost a deal of time and trouble), the best method would be for them to say how much stock and corn they took to the market every year; because, in obtaining an account of the produce of any country, it must be remembered that there is a great quantity of it consumed by the farmer in the keeping of his cattle: in the maintenance of his household, and in using for seed. Again, these schedules were imperfect in these returns, and, of course, defective, as they ought to contain a column for the farmer to return his annual loss of stock, viz., by death and other casualties. Now it may appear surprising to some people to state that the farmers lost more stock by death and other casualties than has ever yet been imported into this country; and this in itself was an important, but startling fact. If, therefore, these returns omitted to notice these things, how was it possible to know the precise amount of available stock each farmer had in his possession? But there was another omission, and that was the want of a column for the quantity of artificial food and manure used upon each farm. We know very well that inferior soils may for a time be made very productive through the application of such manures, but, he asked, would they in the end be profitable? The legislature should divide the country into districts, appoint to each a competent person to travel over them once every month, and report on the condition and progress of agricultural pursuits within them, and also speak to the appearance of the different crops as they were approaching maturity, and as to the aspect of the coming harvest. If such reports be transmitted to some Government office, where they could at any time be examined, all interested in agricultural pursuits might at once possess themselves of the exact condition of the country, and gain an idea what the result of the harvest might be. I know that some may say that we have plenty of agricultural reports—but what of that? I ask by whom are they written, and for what purpose? Are they written for the good of agriculture generally, or for some particular purpose? No, no; let me know who are the authors of such productions, and I then will tell you their value, and what amount of reliance can be placed upon them. On the other hand, if official persons were appointed by the Government, they would be compelled to give accurate and honest returns from every district in which they were placed. We know how precarious is the toil of the husbandman. For instance, on October 11, 1838, in a single night, when the thermometer fell 6° below freezing point, the whole of the Wheat that was not ripe was destroyed, and some which previously would have borne 20 bushels to the acre yielded no more than four, while it was not worth the seed for sowing. Then, again, in 1847, the frost, though not so severe, did great damage in one night; and then you must all remember the sudden destruction of the Potato crops in 1846. But we need not go further back than last year, when a heavy rain began on October 8, and continued for eight days, by which the standing corn was reduced to one-half of its value. Did not these and other facts show how precarious was the process of securing the crops, and how needful every possible care should be taken to watch and gather what remained sometimes late in the season, and was so speedily destroyed! The great importance attached to the appointment of Government officers will be easily perceived by all men of experience, but more especially by enterprising merchants and keen speculators, some of whom have already adopted plans similar to those I have suggested, and that, too, on an extensive scale, and, according to report, with great gain to themselves. One plan, I am told, was this:—A large house in Liverpool sent different agents into the corn-growing districts of the country, just about the time the crops were beginning to mature for the harvest. These agents purchased a square yard of corn as it grew in each field, which they immediately cut and sent off to Liverpool, where each sample was carefully proved; and the result of this scheme enabled the parties to form such a judgment as to the harvest as to guide them in all their operations in the trade for months to come. In conclusion, perhaps many of you will recollect that last year some Frenchmen came into the English markets and purchased largely, from the fact that their statistical information which they had previously obtained, showed them that there would be a deficient crop in France; and I will just submit the method they adopt in that country in regard to obtaining the statistics, and for which I am much indebted to a gentleman who furnished it for me:—'The machinery employed by the French Government to convey orders, or to procure statistical or other returns, is extremely simple, and works with great rapidity; thanks to the system of centralisation, by means of which remarkable results are obtained. Thus, to obtain any return—for example, information on the stock of grain, or the number of horses in France—the ministry of the interior, or of commerce, causes to be lithographed a circular, which is forwarded at the same time to the prefects of the 86 departments. By means of the railways now in existence, they are able, in less than two days, to send a despatch to the chief towns furthest from Paris, excepting Corsica and Algeria. The prefects immediately address this circular to the three or four sub-prefects of their departments, and the latter forward them to the mayors of the different towns or communes of their districts. Thus, in a few days, an order or a requisition, forwarded by the central Government, is distributed through the thousands of communes of the French territory, and the reply returns with the same celerity.' This is not the moment to discuss the advantages and disadvantages of the system of centralisation; but it is impossible to forbear observing the immense service which this organisation can render in certain circumstances, for example, when it is necessary to be assured of the subsistence of the people, or in time of war, &c. I think it is generally admitted that the success of the husbandman depends much on the seasons, and if ever proper statistical returns are made it will be found that the great proportion of Wheat is grown upon land, which does not yield more than 16 or 18 imperial bushels to the acre." Mr. Burnett then finished his paper by a quotation from M'Culloch's account of the British Empire, in which that author says, with regard to the quantity and value of agricultural produce, that "neither the Government nor the people of England has ever given any considerable encouragement to statistical inquiries; and, notwithstanding the heavy expense that is annually incurred in preparing parliamentary reports and accounts connected with statistics, it is still true that the elements of the science are as little understood here as in almost any other country. No effectual means have ever been set on foot for getting accounts of the extent of land in tillage and pasture, and of the proportion which one sort of crop bears to another, or of the numbers and value of the different breeds of cattle, horses, &c. In reasoning on these subjects, we have, therefore, nothing but the researches of a few meritorious individuals and analogies to trust to. Under such circumstances, precision is not to be expected; a rough average is all that can be looked for."

Notices of Books.

The Steam Engine, its History and Mechanism. By Robert Scott Burn. Ingram & Co. pp. 189.

In this profusely and well-illustrated volume, we have a concise and yet clear outline of the history of the steam engine, and of the successive changes which its more important parts have undergone since its first construction by Savary and Newcomen. Some of the descriptions are a little short, the author presupposing the reader to be acquainted with his "Mechanics and Mechanism," and this lessens the utility of the present volume, which, being evidently intended for those who know nothing of complicated machinery, should have been complete in itself. A more serious fault, however, is the introduction of cuts without sufficient matter explanatory of them. Fig. 57, for example, represents, we are told, Usher's steam plough, but we have not been able to discover any statement of its *modus operandi.* So, again, fig. 171 is a very complicated cut of "a double-geared engine adapted for screw propulsion," and although in this case we are told of what the apparatus consists, the absence of letters of reference to its various parts renders it impossible properly to apply the description to the drawing. Such omissions, and the

non-existence of an index, detract greatly from the value of a work which is in many respects useful and well adapted for the purposes of instruction or private study.

Miscellaneous.

Crop of Carrots.—Prize of 2*l.* awarded by the Manchester Agricultural Society to Mr. J. Balshaw, Hill house, Altcar, near Ormskirk. Claimant's farm contains 350 acres, and he had 26 acres in Carrots, grown on a good deep boggy soil, which was well drained, and had been many years in cultivation. The previous crop was Oats. Four lbs. of Carrot seed, of the Altrincham variety, was sown per acre, in the middle of March, and in drills 16 inches apart. The roots were too thick in the row, or, no doubt, the crop would have been heavier, but the claimant said they would not have sold so well if they had been larger. The land was fallowed and trench-ploughed in preparing it for the seed, but no manure was applied. The roots were very clean and sound, but not large. Crop very uniform, except on one side, near a game cover. Land rather deficient in cleanliness. Average weight, 29 tons, 17 cwt. 1 qr. 16 lbs. per acre. Weighed November 16, 1853. *Journal of Manchester and Liverpool Agricultural Society.*

Calendar of Operations.

NOVEMBER.

Forfarshire Glens, *Oct.* 31.—We have now reached the termination of a splendid season, and have safely harvested a most abundant crop; the only exception being the Potatoes; these too have been safely gathered, and are not very much diseased; the crop is light, and the tubers generally small, but the quality is excellent. The whole grain crops are unusually abundant and of superior quality, and if in any case there is either deficiency or bad harvesting, the husbandman alone is to blame; all the elements of production beyond his control have conspired to produce and afford facilities for securing abundance. A finer crop of Turnips has seldom been produced; some of the earlier sown had begun to languish for want of moisture, but within these few days copious rains have fallen, the soil is well saturated, and if hard frosts keep off, the bulbs will still swell out considerably. The disposable stock has been sold at prices highly remunerative; cattle have rarely been known to represent so great an amount of the circulating medium as at present, and all descriptions, fat or lean, have been completely cleared out. Sheep are not so extravagant in price as cattle, but are quite up to the mark; for high-conditioned animals the figure is a little above that of last year, and for inferior sorts rather below it. A long time of fine weather since the conclusion of harvest has afforded opportunity for carrying on improvements, besides keeping up the current operations of the farm, and preparations for next crop are in advance. Complaints have been long and loud of scarcity of water to drive mills; corn cannot be brought to market, nor fodder provided for stall beasts, but relief has now arrived; streams and rivulets that for months past have been almost dry, have again reached flood mark, and mountain springs begin to flow. It is by no means agreeable to turn at once from the fair to the dark side of the picture, but in reporting on rural affairs, it is necessary to speak of clouds as well as of sunshine. The contrast is great between the open-handed bounty of the omnipotent Creator and the oppressive selfishness of creature man. Game laws and game lairds are the curse of our Highland glens, and so will it be while the former are unrepealed and the latter have no higher aim than sport. A deadly contest is going on between the smaller tenantry and the wild animals, the issue of which, if circumstances change not, it is not difficult to foresee. Many a blue bonnet and gray plaid have yet to cross the broad Atlantic or the broader Pacific; some turned out at the expiry of a lease, others starved out during its currency. To the young, perhaps removal is no great hardship; wherever they go hope goes with them, and soon they may find themselves more comfortably settled in a more genial clime; but to the patriarch "whose few remaining hairs are silver gray," and whose life has been spent in his native glen where his fathers lived and died, removal is banishment; he may find another place of abode, but never another home. *S.*

West Somerset.—The autumn Wheat sowing is now nearly completed; we have experienced a most favourable season, and the young Wheat is remarkably promising. Our Mangold Wurzel is harvested, and although the roots are not so large as we have known them, still, as there were but few deficiencies, it must be considered a good crop. Swedes, from the long drought, became mildewed, and are small; those sown late are the largest. Vetches are strong. We are now threshing Wheat and Barley; there is a good yield, and a great burden of straw. The samples of Barley are scarcely as bright as usual, but weigh well. *W. P.*

Notices to Correspondents.

Decayed Leaves: *D H.* If made into a compost with vegetable earth and lime they are a good manure for Grass land.

Inflammation of the Udder: *Fanton.* Produced probably by a cold. Foment twice or thrice a day with hot water applied by means of flannel cloths, and afterwards rub in the following ointment—Hog's lard, 2 oz.; powdered camphor 1 drachm, mixed. *W. C. S.*

Lime: *C F P.* You may very well apply lime now for land to be next year in Potatoes. It will not interfere with the bone dust at all.—*J C W* We should doubt the policy of putting on lime now—before sowing Wheat. You had better put it on the stubble next year. It takes some time to operate, and will be all the more efficient on the succeeding grain crop, for the intervention of the year of the green crop. Get some nitrate of soda or guano for your Wheat in spring.

Poultry: *A B.* The Bramah Pootra is as large a fowl as the Cochin, not so useful for hatching and rearing chickens, but a very good layer. It is now generally allowed to be a distinct variety, although still considered by many to be merely a half-bred Cochin.

Rape: *J. Byrne.* You may, and we daresay do, grow Rape for green food; or even, though that is not consistent with your plan of husbandry, for the seed which may be a profitable crop, but your cheapest way of procuring Rape-cake is to purchase it; and in your use of it you will, of course, be cautious, as, indeed, our correspondent "Y" advises.

Small Farms: *Youngster.* If you want a continuous supply of green food throughout the year, then, after having put half an acre in Lucerne, of your remaining five acres let one-sixth be in Vetches, sown in May; one-sixth in Rape, sown in May; one-fourth in Turnips, sown in June; one-sixth in Swedes, sown in June; one-fourth in Mangold Wurzel, transplanted in June after; one-fourth Rye, sown in September; one-fourth in Vetches, sown in September before the Turnips; one-sixth Italian Rye-grass, sown in September, before Swedes; besides this, you will have half an acre, which may be in early Cabbage, transplanted in September, and late Cabbage to follow. If you need straw, you must either purchase it, or you must diminish the extent of your green crop by the quantity of land put to Wheat. You will probably make 14 tons of green food per month by the above plan. This omits reference to the Grass land, however, and we will write another notice for next week.

FENCING & ALL OUTSIDE WOOD OR IRON-WORK.

WILSHERE AND CO.'S WATERPROOF BLACK VARNISH is the best article that can be used. One coat will go as far as two of ordinary paint. It bears a rich gloss. 4*s.* per gallon. Discount on large orders.

2, Talbot Court, Gracechurch Street, London.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES.

THOMAS MILLINGTON'S present prices for good 16 oz. sheet glass, boxes included.

6 in. by 4 in. to 6 in. by 5½ in.	13*s.* 3*d.*	per 100 feet.
7 by 5 to 8 by 6	13 6	
8½ by 6½ to 10 by 8	14 0	
10½ by 8½ to 14½ by 10½	16 0	
17 by 10 to 18 by 12	18 0	

A great variety of sizes. Particulars had on application.

ORCHARD HOUSE SQUARES on Mr. Rivers's plan, to whom I have sold some thousands of feet.

Large Sheets for cutting up, in cases, at 2½*d.* and 3*d.* per foot.

HARTLEY'S IMPROVED ROUGH PLATE GLASS, Sheet, and Rough Plate, Tiles, Milk Pans, Bee and Propagating Glasses, Wasp Traps, Cucumber Tubes, Preserve Jars, with and without covers; Fern Glasses.

Plate, Sheet, Crown, and Ornamental Window Glass. Crystal Glass Shades for ornaments.

Greenhouses, erected in either wood or iron. Garden Lights and Frames.

87, Bishopsgate Street Without, London—same side as Eastern Counties Railway.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

JAMES PHILLIPS AND Co. have the pleasure to hand their present prices of Glass for Cash:—

	SHEET SQUARES. In Boxes of 100 feet.	CROWN SQUARES. In Boxes of 100 feet.
Under 6 by 4	£0 12*s.* 6*d.*	8*s.* 6*d.*
6 by 4, and 6½ by 4½	0 13 0	12 6
7 „ 5, — 7½ „ 5½; 8 „ 6, — 8½ „ 6½	0 15 0	14 0
9 „ 7, — 10 „ 8, 12 by 9, 12 by 10, 14 by 10	1 0 0	

Larger Sizes, not exceeding 40 inches long.

16 oz. from 3*d.* to 3½*d.* per square foot, according to size.
21 oz. „ 4½*d.* to 5*d.* „ „ „
26 oz. „ 6*d.* to 7½*d.* „ „ „

SIXTEEN-OUNCE SHEET GLASS OF ENGLISH MANUFACTURE FOR ORCHARD HOUSES, THE SAME QUALITY AS WE SUPPLY TO Mr. RIVERS, and of various dimensions, always on hand.

at 20s. per 100 feet.

Double-crown Glass of various dimensions in 100 feet boxes.

GLASS HYACINTH AND FLOWER DISHES.

12 inches diameter	2*s.* 6*d.*
9 „	1*s.* 6*d.*
6 „	1*s.* 0*d.*

Hyacinth Dishes are a new article, intended to contain a number of roots bedded in sand and covered with moss, instead of the common Hyacinth Glass.

HYACINTH GLASSES.

Common shape	4*d.* each	3*s.* 6*d.* per doz.
Improved	9*d.* „	7*s.* 6*d.* „

CROCUS GLASSES.

Improved shape	2*s.* 6*d.* per doz.
Crocus Dishes	6*s.* „

London Agents for the Sale of HARTLEY'S PATENT ROUGH PLATE GLASS.

Glass Tiles, ¼ of an inch thick, packed in cases, containing 50, at 1*l.* 17*s.* 6*d.* per case. Packages 2*s.* each extra, but allowed for when returned.

Glass Milk Pans, 21*s.* per dozen; Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoys' Milk Syphons, Wasp Traps; Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the trade.

Horticultural Glass Warehouse, 116, Bishopsgate Street Without, London.

BY ROYAL LETTERS PATENT.

THE COSMOPOLITAN GLASS COMPANY, 296, Oxford Street, London.—The Managers beg to inform the Nobility and Gentry, Farmers, Gardeners, &c., that their new List of Prices may be had free on application at the Company's Depôt.

HARTLEY'S PATENT ROUGH PLATE, for Roofing Conservatories, Halls, and Public Buildings.

PLATE, CROWN, and SHEET WINDOW GLASS.

Coloured and Ornamental Glass of every description.

Glass Milk Pans, Pails, Tests, and Measures; Cream Pots and Syphons; Churns, Butter Tests and Slabs; Tiles and Slates; Bee Hives, &c.

Moore's Patent Ventilator and Lockhead's Patent Perforated Glass, for Dairies and Greenhouses.

Aquavivariums, Fern Shades, Propagating Glasses, Fruit Protectors, Preserve Jars, Cucumber Tubes, Hand Lights, Flower Vases, Labels, &c., and all kinds of Agricultural, Horticultural, Architectural, Domestic, Scientific, and Ornamental Glass, British and Foreign, at the lowest prices.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

ALFRED KENT'S PATENT WEATHER-PROOF GLAZING WITHOUT PUTTY.—For Horticultural Buildings in Wood or Metal.

Horticultural Building Works, Chichester.

Illustrated Books describing inventions, containing prices and particulars relating to the different designs, sent on receipt of four postage stamps. Nurserymen and others appointed agents on application.

Horticultural Buildings upon this plan having been erected in many different parts of the country, and having stood the trial of all weathers, and more especially the severest of all, viz., frost, A. Kent, with full confidence, strengthened by the many flattering testimonials he has received, can safely guarantee the proper working of his Patent System of Glazing. Estimates and Plans sent, including Heating by Hot Water.

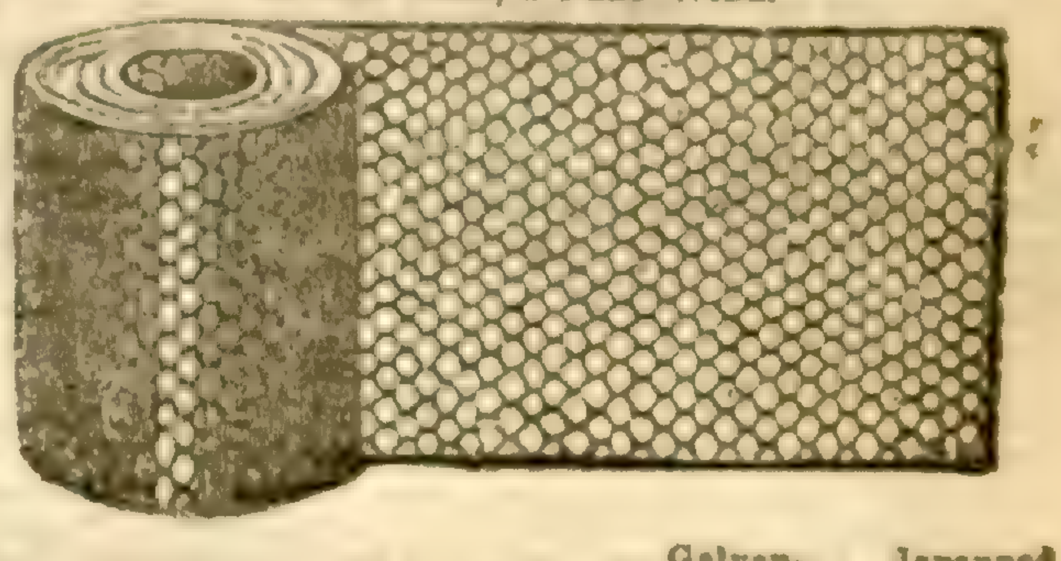
H. J. MORTON AND Co., 2, Basinghall Buildings, Leeds.—GALVANISED GAME AND POULTRY NETTING, very strong and neat, NEVER REQUIRES PAINTING.

24 inches wide, 3-inch mesh, 4½*d.*, 6*d.*, and 8½*d.* per yard.
24 inches wide, 2-inch mesh, 7*d.*, 9½*d.*, and 1*s.* per yard.

GALVANISED IRON SPOUTING, for Dwellings, Cottages, Farm Buildings, &c., NEVER REQUIRES PAINTING.

Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalte Roofing Felt, &c.

GALVANISED WIRE GAME NETTING.—7*d.* per Yard, 2 Feet Wide.



	Galvanised.	Japanned Iron.
2-inch mesh, light, 24 inches wide	7*d.* per yd.	5*d.* per yd.
2-inch „ strong „	9 „	6½ „
2-inch „ extra strong „	12 „	9 „
1⅝-inch „ light „	8 „	6 „
1⅝-inch „ strong „	10 „	8 „
1⅝-inch „ extra strong „	14 „	11 „

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasantries, 3*d.* per square foot. Patterns forwarded post free.

Manufactured by Barnard & Bishop, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

DEANE, DRAY, AND CO., have a very large and superior stock of FRENCH MODERATOR LAMPS now on sale.—(Opening to the Monument), London Bridge.

Established A.D. 1700.

TEN THOUSAND STOVES.

THE TENTH THOUSAND OF THE PATENT PORTABLE SUSPENSION STOVE is now on sale. These Stoves, so justly celebrated for preserving a pure and healthy atmosphere, and for their extraordinary economy in the consumption of fuel, are sold, wholesale and retail, by DEANE, DRAY, AND CO., 46, King William Street, London Bridge; and may be obtained of most Ironmongers.

The IMPROVED PATENT VENTILATING STOVE, which is strongly recommended, may also be seen at the above establishment. Prospectuses, &c., forwarded post free.

FENDERS, STOVES, AND FIRE-IRONS.—Buyers of the above are requested, before finally deciding, to visit William S. Burton's SHOW ROOMS, 39, Oxford Street (corner of Newman Street), Nos. 1 and 3, Newman Street, and 4 and 5, Perry's Place. They are the largest in the world, and contain such an assortment of FENDERS, STOVES, RANGES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with bronzed ornaments and two sets of bars, 2*l.* 14*s.* to 5*l.* 10*s.*: ditto, with ormolu ornaments and two sets of bars, 5*l.* 10*s.* to 12*l.* 12*s.*; Bronzed Fenders complete, with standards, from 7*s.* to 3*l.*; Steel Fenders from 2*l.* 15*s.* to 6*l.*; ditto, with rich ormolu ornaments, from 2*l.* 15*s.* to 7*l.* 7*s.*; Fire-irons from 1*s.* 9*d.* the set to 4*l.* 4*s.* Sylvester and all other Patent Stoves, with radiating hearth plates. All which he is enabled to sell at these very reduced charges,

1st,—From the frequency and extent of his purchases; and,
2dly,—From those purchases being made exclusively for cash.

THE PERFECT SUBSTITUTE for SILVER.—The real NICKEL SILVER, introduced 20 years ago by William S. Burton, when Plated by the patent process of Messrs. Elkington & Co., is beyond all comparison the very best article next to sterling silver that can be employed as such, either usefully or ornamentally, as by no possible test can it be distinguished from real silver.

	Fiddle Pattern.	Thread or Brunswick Pattern.	King's Pattern.
Tea Spoons, per dozen	18*s.*	26*s.*	32*s.*
Dessert Forks „	30*s.*	40*s.*	46*s.*
Dessert Spoons „	30*s.*	42*s.*	48*s.*
Table Forks „	40*s.*	56*s.*	64*s.*
Table Spoons „	40*s.*	58*s.*	66*s.*

Tea and Coffee Sets, Waiters, Candlesticks, &c., at proportionate prices. All kinds of replating done by the patent process.

CHEMICALLY PURE NICKEL, NOT PLATED.

	Fiddle.	Thread.	King's.
Table Spoons and Forks, full size, per doz.	12*s.*	28*s.*	30*s.*
Dessert ditto and ditto	10*s.*	21*s.*	25*s.*
Tea ditto	5*s.*	11*s.*	12*s.*

CUTLERY WARRANTED.—The most varied assortment of TABLE CUTLERY in the world, all warranted, is on Sale at William S. Burton's, at prices that are remunerative only because of the largeness of the sales; 3½-inch ivory-handled table knives, with high shoulders, 11*s.* per dozen; desserts to match, 10*s.*; if to balance, 1*s.* per dozen extra; carvers, 4*s.* per pair; larger sizes, from 14*s.* 6*d.* to 26*s.* per dozen; extra fine, ivory, 32*s.*; if with silver ferrules, 37*s.* to 50*s.*; white bone table knives, 7*s.* 6*d.* per dozen; desserts, 5*s.* 6*d.*; carvers, 2*s.* 3*d.* per pair; black horn table knives, 7*s.* 4*d.* per dozen; desserts, 6*s.*; carvers, 2*s.* 6*d.*; black wood-handled table knives and forks, 6*s.* per dozen; table steels, from 1*s.* each. The largest stock in existence of plated dessert knives and forks, in cases and otherwise, and of the new plated fish carvers. Also a large assortment of Razors, Penknives, Scissors, &c., of the best quality.

William S. Burton has TEN LARGE SHOW ROOMS (all communicating), exclusive of the shop, devoted solely to the show of GENERAL FURNISHING IRONMONGERY (including Cutlery, Nickel Silver, Plated, and Japanned Wares), Iron and Brass Bedsteads, so arranged and classified that purchasers may easily and at once make their selections.

Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of.

39, OXFORD STREET (corner of Newman Street); Nos. 1, 2, and 3 NEWMAN STREET; and 4 and 5, PERRY'S PLACE.

NOW IN SEASON.

REAL YARMOUTH BLOATERS: A Treat to Epicures.—One hundred Choice Bloaters in a case for 6s., forwarded to any "Address." Carriage paid as far as possible: Extra quantity allowed where carriage cannot be paid through. Remittances are requested with orders.

Apply to HENRY H. BAKER, Fish Merchant, Great Yarmouth.

TO LOVERS OF FISH.—100 Genuine Yarmouth Bloaters for 6s., package included, forwarded to all parts on receipt of Penny Postage Stamps, or Post Office Order for the amount preferred.

Address, THOMAS LETTIS, Jun., Fish Curer, Great Yarmouth.

NOTICE.

OVER-COATS, CAPES, &c.—One of the largest stocks in London of every description, first-class garments, at lowest charges; also of Youth's ditto, all made thoroughly impervious to rain, without extra charge, or made to order at a day's notice.—W. BERDOE, 96, New Bond Street, and 69, Cornhill (only).

FORD'S EUREKA COLOURED SHIRTING is now ready, in 200 different patterns. Specimens in varied colours sent post free on receipt of six stamps.

FORD'S COLOURED EUREKA SHIRTS, Six for 27s.

FORD'S WHITE EUREKA, best quality, Six for 40s.; second quality, Six for 31s.; if washed ready for use, 2s. extra.

CAUTION.—Ford's Eureka Shirts are stamped, "38, POULTRY, LONDON," without which none are genuine.

*** Catalogues with particulars post free.

RICHARD FORD, 38, Poultry, London.

KNOW THYSELF.—Persons desirous of knowing the gifts, defects, talents, tastes, affections, and other characteristics of themselves or any friends in whom they are interested, must send a specimen of the WRITING, stating sex and age (including 13 penny postage stamps) to Miss GRAHAM, 3, New Road, Hornsey, Middlesex, and they will receive a minute graphiological delineation, written in a style peculiarly her own. —Testimonial from W. R. "Having seen several of your pourtrayals of character, and being much struck with the forcible truths contained in them, I should like your opinion of mine."—Miss H. S. "Your delineations are most faithful."—Miss Grove. "Your letter gave great satisfaction."—Miss Rosa C. "Accept my sincere thanks for your advice. I was exceedingly doubtful of him."

METCALFE AND CO'S NEW PATTERN TOOTH BRUSH, PENETRATING HAIR BRUSHES, AND SMYRNA SPONGES.—The Tooth Brush performs the highly-important office of searching thoroughly into the divisions and cleansing in the most extraordinary manner—hairs never come loose. Peculiarly penetrating Hair Brushes, with durable unbleached Russian bristles, which will not soften like common hair, and immense stock of genuine unbleached Smyrna Sponge, with every description of British and Foreign Perfumery, at METCALFE, BINGLEY, & Co.'s only Establishment, 130 B and 131, Oxford Street, second and third doors west from Holles Street.

CAUTION.—Beware of the word "from" Metcalfe's, adopted by some houses. Metcalfe's Alkaline Tooth Powder, 2s. per box.

THE SUCCESSFUL RESULTS OF THE LAST HALF CENTURY HAVE PROVED BEYOND QUESTION THAT

ROWLAND'S MACASSAR OIL possesses singularly nourishing powers in the growth, restoration, and improvement of the human Hair, and when every other specific has failed. This celebrated Oil is now universally acknowledged to be the cheapest, and superior to all other preparations for the hair. It prevents it from falling off or turning grey, strengthens weak hair, cleanses it from scurf and dandriff, and makes it beautifully soft, curly, and glossy. Its operation in cases of baldness is peculiarly active; and in the growth of the Beard, Whiskers, Eyebrows, and Moustachios, it is unfailing in its stimulating operation. For children it is especially recommended, as forming the basis of a beautiful head of hair. Price 3s. 6d. and 7s.; Family Bottles (equal to four small), 10s. 6d.; and double that size, 21s. CAUTION.—On the wrapper of each bottle are the words, Rowlands' Macassar Oil, in two lines. The same are engraven on the back of the wrapper nearly 1500 times, containing 29,028 letters.—Sold by A. ROWLAND & SONS, 20, Hatton Garden, London, and by Chemists and Perfumers.

DO YOU WANT BEAUTIFUL HAIR, WHISKERS, MOUSTACHES, &c.?—ALICE MELVILLE'S PALMAPILLA in all cases strengthens weak hair, prevents its falling off, checks greyness, produces a thick and luxuriant growth, dispels scurf and dandriff, and makes it clean, soft, curly, and brilliant in appearance. For baldness from any cause it is certain and effective; and for the production of Whiskers, Moustaches, Eyebrows, &c., in three or four weeks, it can be fully depended upon. Price 2s., sent post free (anywhere) on receipt of 24 penny postage stamps, by Miss MELVILLE, 25, Argyle Square, King's Cross, London. —"My whiskers are growing very thick." R. Mede, Esq.—"It restored my hair, which I had lost in patches." W. Sturt.—"It has quite checked the greyness." Miss Ellis.—"My Moustache is greatly improved." Capt. Ross.

TO NERVOUS SUFFERERS.

A RETIRED CLERGYMAN having been restored to health in a few days, after many years of great nervous suffering, is anxious to make known to others the means of cure; he will therefore send (free), on receiving a stamped envelope, properly addressed, a copy of the prescription used.—Address the Rev. E. DOUGLASS, 18, Holland Street, Brixton, London.

HOLLOWAY'S PILLS FOR THE CURE OF ASTHMA ARE UNPRECEDENTED.—Extract from a letter from Mr. Wild, of Hyde, Cheshire, dated August 5, 1854. "To Professor Holloway,—Sir, Mrs. Newton, residing in Hanover Street, in this town, was afflicted with Asthma for many years, a difficulty of breathing, and a violent cough, causing acute pains in her side, more particularly so when she took cold; she tried many remedies, and consulted different individuals without obtaining any favourable result. I then advised her to take your Pills, and after a few weeks she was considerably better, and by persevering with them she is now perfectly cured."—Sold by all Vendors of Medicine, and at Professor HOLLOWAY'S Establishments, 244, Strand, London, and 80, Maiden Lane, New York.

VALUABLE REMEDIES FOR THE AFFLICTED.

DR. ROBERTS'S Celebrated Ointment, called the POOR MAN'S FRIEND, is confidently recommended to the Public as an unfailing remedy for wounds of every description, a certain cure for Ulcerated Sore Legs, if of 20 years' standing; Cuts, Burns, Scalds, Bruises, Chilblains, Scorbutic Eruptions and Pimples on the Face, Sore and Inflamed Eyes, Sore Heads, Sore Breasts, Piles, Fistula, and Cancerous Humours, and is a specific for those afflicting eruptions that sometimes follow vaccination. Sold in pots, at 1s. 1½d. and 2s. 9d. each.

Also his PILULÆ ANTISCROPHULÆ, confirmed by more than 40 years' experience to be, without exception, one of the best alterative medicines ever compounded for purifying the blood, and assisting Nature in all her operations. Hence they are used in Scrofulas, Scorbutic Complaints, Glandular Swellings, particularly those of the neck, &c. They form a mild and superior Family Aperient, that may be taken at all times without confinement or change of diet. Sold in boxes, at 1s. 1½d., 2s. 9d., 4s. 6d., 11s., and 22s. Sold Wholesale by the Proprietors, Beach and Barnicott, at their dispensary, Bridport; by the London houses. Retail by all respectable Medicine Vendors in the United Kingdom.

Observe.—No Medicine sold under the above name can possibly be genuine, unless "Beach and Barnicott, late Dr. ROBERTS, Bridport," is engraved on the Government Stamp affixed to each package.

PETER LAWSON AND SON'S LIST OF FOREST AND ORNAMENTAL TREES, *concluded* from p. 736.

ROSES.—SELECTIONS.

		s.	d.
200 Dwarfs, sorts, named, 1 of each	... ...	80	0
200 " " " 4 "	... ...	60	0
50 " " " 1 "	... ...	25	0
100 " fine sorts in mixture	... ...	30	0
100 Standards, finest named	... ...	200	0
100 " " " 4 of each	...	140	0

NEW ROSES.

CHARLES LAWSON (Hybrid Bourbon), is now ready to be sent out at 10s. 6d. to 15s. each. Colour, brilliant red, outer petals shaded with very pale lilac; size large; form perfect; much superior to Coupe d'Hebe, as a stand or competition flower.

DUCHESS OF NORFOLK, Wood's (Hybrid Perpetual), very fine, dark, climber, 10s. 6d. each.

NEW AND RARE PLANTS. Each—s. d.

		s.	d.
Azalea vittata alba (China)...	1s. 6d. to	3	6
" rosea (China) ...	1s. 6d. to	3	0
" punctata (China) ...	1s. 6d. to	3	6
" Fortuni (China) ...	1s. 6d. to	3	0
" amœna (China) ...	1s. 6d. to	2	0
Berberis nepalensis	...	15	0
" japonica ...	...	84	0
" Beali ...	...	84	0
Cedrus Deodara robusta ...	...	7	6
" crassifolia ...	...	42	0
Cerasus ilicifolia ...	...	3	6
Escallonia macrantha	...	2	6
Fitzroya patagonica	...	5	6
Larix Griffithiana	...	5	6
Lilium giganteum...	...	7	6
Oxalis rosea	...	3	6
Pinus Jeffreyi	...	21	0
" Jezoensis	... 15s. to	42	0
" Pattoianan ...	...	30	0
" flexilis	...	42	0
" bracteata	...	65	0
Saxe-Gothea conspicua	...	5	0
Skimmia japonica ...	...	5	0
Wellingtonia gigantea	... 21s. to	42	0

NEW FRUITS.

		s.	d.
Black Barbarossa Vine ...	7s. 6d. to	15	0
Champion Hamburgh Vine ...	7s. 6d. to	10	6
Variegated-leaved Vine	...	5	0

DR. DE JONGH'S

LIGHT BROWN COD-LIVER OIL, PREPARED FOR MEDICINAL USE IN THE LOFFODEN ISLES, NORWAY, AND PUT TO THE TEST OF CHEMICAL ANALYSIS. PRESCRIBED BY EMINENT MEDICAL MEN AS THE MOST EFFECTUAL REMEDY FOR CONSUMPTION, BRONCHITIS, ASTHMA, GOUT, RHEUMATISM, SOME DISEASES OF THE SKIN, RICKETS, INFANTINE WASTING, GENERAL DEBILITY, AND ALL SCROFULOUS AFFECTIONS —EFFECTING A CURE OR ALLEVIATING SUFFERING MUCH MORE RAPIDLY THAN ANY OTHER KIND.

Testimonial from the late DR. JONATHAN PEREIRA, *Professor at the University of London, Author of "The Elements of Materia Medica and Therapeutics, &c.*

"MY DEAR SIR,—I was very glad to find from you, when I had the pleasure of seeing you in London, that you were interested commercially in Cod Liver Oil. It was fitting that the Author of the best analysis and investigations into the properties of this Oil should himself be the Purveyor of this important medicine.

"I feel, however, some diffidence in venturing to fulfil your request by giving you my opinion of the quality of the oil of which you gave me a sample; because I know that no one can be better, and few so well, acquainted with the physical and chemical properties of this medicine as yourself, whom I regard as the highest authority on the subject.

"I can, however, have no hesitation about the propriety of responding to your application. The oil which you gave me was of the very finest quality, whether considered with reference to its colour, flavour, or chemical properties; and I am satisfied that for medicinal purposes no finer oil can be procured.

"With my best wishes for your success, believe me, my dear Sir, to be very faithfully yours, (Signed) "JONATHAN PEREIRA,

"To Dr. de Jongh." "Finsbury Sq., London, Ap. 16, 1851.

Sold wholesale and retail, in bottles, labelled with Dr. de Jongh's stamp and signature, by

ANSAR, HARFORD, AND CO., 77, STRAND, LONDON, Sole Consignees and Agents for the United Kingdom and the British Possessions, and may be obtained from respectable Chemists and Druggists in town and country, at the following prices: IMPERIAL MEASURE, half pints, 2s. 6d.; pints, 4s. 9d.; quarts, 9s.

*** Four half-pint bottles forwarded, CARRIAGE PAID, to any part of England on receipt of a remittance of Ten Shillings.

BLAIR'S GOUT AND RHEUMATIC PILLS Price 1s. 1½d. and 2s. 9d. per box.—Mr. William Courtney, of Barton Stacey, Hants, says:—"I had resort to your Pills, and within two hours I was quite easy. The use of these Pills ought really to be known all over the world." Among the many discoveries, none have conferred such a boon upon suffering humanity as that of Blair's Gout and Rheumatic Pills; they require neither attention nor confinement, and are certain to prevent the disease attacking any vital part. Sold by all medicine vendors. Observe that "THOMAS PROUT, 229, Strand, London," is impressed upon the Government stamp.

FRAMPTON'S PILL OF HEALTH.—"For upwards of nine years (writes Mr. Thomas Province, of Winchmore Hall, Middlesex), I have experienced the efficacy of this excellent medicine, and I have the happiness of saying that I never had a better state of health. I beg further to add that this medicine is in general use by my family, and we know of nothing to equal it." For females these pills are truly excellent, removing all obstructions, the distressing headaches so very prevalent with the sex, depression of spirits, dulness of sight, nervous affections, blotches, pimples, and sallowness of the skin, and give a healthy juvenile bloom to the complexion. Sold by all medicine vendors, price 1s. 1½d. per box.—Observe that "THOMAS PROUT" is on the Government stamp.

MONMOUTHSHIRE.

TO BE LET, for a term of years, and entered upon at Lady-day next, the FARM of LLANVAIR GRANGE. It consists of 164 acres of rich productive Land, of which 4 acres are in Orchard, 76 in Meadow and Pasture, and 84 are Arable. There is a comfortable Farm-house and Garden, Dairy and Cheeseroom, and ample Farm Buildings on the Farm. It is within a short distance of the Pontypool Iron Works; there is a station on the Newport and Hereford Railway close by. At the Iron Works there is a constant demand for every kind of Farm produce. The proprietor at Llanvair Grange will direct some one to show the Farm; and for particulars apply to Mr. JOHN MORTON, Morningside, Nailsworth, Gloucestershire.

TO GARDENERS, SEEDSMEN, AND OTHERS.

TO BE LET, at a long lease and very low rent, a Large HOUSE and SHOP by the road-side, being a good chance.—Direct L. Y., 4, Royal Hill Row, Greenwich.

TO BE SOLD, by Private Contract, a Span-roof HOTHOUSE, measuring 22 feet long by 17 feet wide in the clear; also a Span-roof GREENHOUSE, measuring 39 feet long by 17 feet wide in the clear; was built about three years since. Has just been painted twice inside and out; is in thorough good condition, with two boilers, pipes, &c., all complete.—For further particulars apply to C. W. M., Post Office, Bushey Heath, Herts.

WILLEN HALL, EAST BARNET, HERTS.

TO BE SOLD, in large or small lots, a very valuable and extensive General Collection of GREENHOUSE and STOVE PLANTS, the Orange trees varying in height from 4 to 9 feet, beautifully covered with fruit in various stages; the Camellias, Azaleas, Gardenias, Epacris, and Rhododendron arborea, together with many other valuable Plants, are exceedingly clean and healthy. Any person wishing to form a collection, or improve their present one, will do well to avail themselves of this opportunity, as the whole will be sold a bargain on account of the family leaving.—Apply to JAMES HALLEY, Gardener, as above.

TO PIGEON FANCIERS.

TO BE SOLD, by a Gentleman who is about to leave his present residence, his entire STOCK OF PIGEONS, which have been selected from pure birds and at considerable expense. They consist of Archangels, Barbs, Jackobines, Almond Tumblers, Fantails (white and black), Nuns, and Carriers, as well as others. Also some very fine Cochin China Fowls. Price for the Pigeons, 8*l.*; (they have cost the advertiser about 30*l.*) Price for a Cochin Cock with two Pullets, 1*l.* 5s. 6d.—Address, prepaid, R. M. T., Post-office, Atherstone, Warwickshire.

TO BE SOLD, BUFF COCHIN CHICKENS, from first class Prize Birds, Brahma Pootra Chickens, from imported American Prize Birds, and Spanish Chickens. Also some very good one-year-old Birds of the above descriptions. Wire, Game, and Poultry Netting, Poultry Hurdles, Hen-houses, Chicken Coops, Flower Stands, and Trainers, Garden Arches, and every kind of Wire Work, useful and ornamental.—T. H. FOX'S, City of London Wire Works, 44, Skinner Street, and 6 & 8, Snow Hill.

Illustrated Catalogues forwarded post free.

TO BE SOLD, a few first-rate GREY DORKING CHICKENS, very large, and bred from first prize birds. Price 10s. to 1 guinea each, according to age, weight, &c.—Apply inclosing stamped envelope, to R. ATKINSON, Singleton Park, Kendal.

TO BE SOLD, WHITE CHINESE, OR SWAN GEESE, very handsome for ponds, and prolific and very early breeders.—Mr. DUTTON, Delamere Rectory, Chester.

MR. ALEXANDER will Sell by Auction, at the Auction Mart, Bartholomew Lane, near the Bank of England, on THURSDAY and FRIDAY, November 16th and 17th, DUTCH BULBS, Standard and Climbing Roses, including most of the varieties of Perpetual and Bourbons recently introduced.

CHELTENHAM.

MR. J. C. STEVENS will Sell by Auction at Vittoria House, Cheltenham, on THURSDAY and FRIDAY, November 16th and 17th, at 12 o'clock precisely, the Valuable Collection of PLANTS, the property of the late Courtland Shaw, Esq., M.D., deceased, consisting of Specimen Orchids, Stove, Heath, and Greenhouse Plants; Cucumber and Melon Frames, Garden Tools, &c. May be viewed two days previous to the sale.—Catalogues on application at the *Journal* Office, Cheltenham; or at the Auctioneer's Office, 38, King Street, Covent Garden, London.

CAMELLIAS, RHODODENDRONS, AZALEAS, DEUTZIA GRACILIS, ETC.

THE FOURTH AND LAST CONSIGNMENT FROM MR. JOS. BAUMANN, OF GHENT, FOR ABSOLUTE SALE.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on MONDAY, Nov. 20, at 12 for 1 o'clock, 1000 Camellias, 250 Deutzia Gracilis, 150 Seedling Amarylis, 250 New Hardy Ghent Rhododendrons, 60 Yellow Rhododendrons, 25 Ghent Azaleas, 500 Gladiolus gandavensis, Lilium lancifolium, &c. May be viewed on the morning of Sale, and Catalogues had.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MR. KIRKE will Sell by Auction, on the Premises, opposite Chelsea Park, Fulham Road, on WEDNESDAY, Nov. 15th, at 1 o'clock, by order of Mr. Shearman, a fine collection of BULBS, EVERGREENS, SHRUBS, &c., comprising about 15,000 Narcissus, Hyacinths, Tulips, Crocuses, &c., Camellias in full bud, Hoya carnosa, Passiflora Bonapartia, fine large Aucuba japonica; Laurels, Chinese Privets, variegated Hollies, Yews, Sweet Bays, Lilacs, Yuccas, Rhododendrons, Arbor-vitæ, Evergreens, Privets; Standard and Dwarf Roses, Peaches, Nectarines, Apricots, and Mulberry Trees, Seeds, Asparagus Plants, &c.; Light Spring Cart, &c.—May be viewed the day prior to the Sale. Catalogues had on the premises; and of Mr. KIRKE, 19, Brompton Row.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will sell by Auction, at the Mart, Bartholomew Lane, on TUESDAY, November 14, and THURSDAY, the 16th, at 12 o'clock, a first-class Collection of DUTCH BULBS, consisting of the finest Double and Single Hyacinths, Narcissus, Jonquils, Anemones, Crocus, Snowdrops, Tulips, &c.; also a selected assortment of Standard and Dwarf ROSES, Ornamental Trees, and American Plants, well set with bloom, buds, &c. On view the mornings of sale.—Catalogues to be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are directed by the proprietor (in consequence of the ground being let for building) to Sell by Auction, without reserve, on the premises, London Fields, Hackney, on MONDAY, November 13, at 11 o'clock, the entire NURSERY STOCK, consisting of Elms, Chestnuts, Limes, and Poplars; also about 600 Variegated and Green Hollies, Irish Ivy, Aucubas, Box, fine Moss and other Roses, &c. On view prior to the sale; Catalogues may be had on the premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

CLAPHAM, SURREY.—FINAL SALE.

TO NOBLEMEN, GENTLEMEN, EXHIBITORS, NURSERYMEN, BUILDERS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by the administrators of the late Mr. Joseph Fairbairn to sell by Auction, without reserve, on the premises, the Clapham Nursery, Clapham, near London, on MONDAY, November 20, 1854, and following days, at 11 o'clock each day, the whole of the valuable and extensive stock of CHOICE GREENHOUSE and STOVE PLANTS, which is particularly worthy the attention of Noblemen and Gentlemen enriching their collections, as well as the Trade, from its excellence; comprising 50,000 choice Ericas; 10,000 Epacris; 4000 Indian Azaleas; 20.. Aphelexes; 1000 Double Camellias; 5000 Camellia Stocks; two Allamanda purpurea; New Double White and Purple Primula fimbriata, Cyclamen persicum, Daphne indica, rubra, and every variety of Stove and Greenhouse Plants in cultivation; magnificent young specimen Heaths, &c. Also the entire stock of fine Evergreens, Ornamental Trees, and Deciduous Shrubs, including large Green and Variegated Hollies, Box, Yews, Aucuba, Laurels, fine Araucaria imbricata, Cryptomaria japonica, Cedar Lebanon, Cedrus Deodara, &c.; together with several 3 and 4 Light Boxes, Pits; 300 Bell Glasses; 3 Capital Tumbril Carts; 1 Spring Cart; 2 Useful Horses; 2 sets Harness; Iron Rollers; Garden Tools; Wheelbarrows, and sundry effects.—May be viewed a week prior to the Sale. Catalogues may be obtained (6d. each, returnable to purchasers) on the premises; at the Seed Shop, High Street, Clapham; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

PETER LAWSON AND SON,

SEEDSMEN, NURSERYMEN, AND WOOD FORESTERS, IN SCOTLAND,

TO THE QUEEN'S MOST EXCELLENT MAJESTY, AND TO THE HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND, &c.

LONDON BRANCH: 27, GREAT GEORGE STREET, WESTMINSTER.

PETER LAWSON AND SON, in submitting the following List of FOREST and ORNAMENTAL TREES, beg to state that their stock is in very fine condition this year, and the LARCH and other trees quite free from the prevailing disease. Their Nurseries extend to upwards of 100 acres, and from being well exposed, and the soil light, the Plants are very hardy and well ripened, and calculated to give satisfaction when planted in unsheltered situations.

SEEDLING AND TRANSPLANTED FOREST TREES.

Prices of Forest Trees to vary with the Market. *These marked * are Evergreens.*

Per 1000.—s. d.

Acacia, Thorn, 1 year seedling 5 0
„ 2 years do. 10 6
„ 12 to 18 inches transplanted ... 20 0
„ 3 to 4 feet do. 50 0
„ 5 to 6 feet do. 90 0
Alder, Common, 1 year seedling... 4 0
„ 2 years do. 6 0
„ 2 to 3 feet transplanted ... 25 0
„ 3½ to 6½ feet do. ... 30 0
Ash, Common, 1 year seedling ... 3 6
„ 2 years do. ... 5 0
„ 12 to 15 inches transplanted ... 14 0
„ 2 to 2½ feet do. ... 20 0
„ 4 to 5 feet do. ... 30 0
„ Mountain, 1 year seedling ... 5 0
„ 2 years do. ... 8 0
„ 2 to 3 feet transplanted ... 30 0
„ 4 to 5 feet do. ... 35 0
Beech, Common, 1 year seedling... 5 6
„ 2 years do. ... 8 0
„ 6 to 12 inches transplanted... 20 0
„ 2 to 2½ feet do. ... 25 0
Birch, Common, 1 year seedling... 5 0
„ 2 years do. ... 6 0
„ 9 to 12 inches transplanted... 20 0
„ 2½ feet do. ... 30 0
„ Weeping, 1 year seedling ... 5 0
„ 2 years do. ... 8 0
„ 9 to 12 inches transplanted... 22 0
„ 2½ feet do. ... 30 0
Chesnut, Horse, 1 year seedling ... 8 0
„ 2 years do. ... 10 6
„ 1½ to 2 feet transplanted ... 20 0
„ 3 to 4 feet do. ... 30 0
„ 6 to 8 feet do., per 100, 10s.
„ Spanish, 1 year seedling ... 10 0
„ 2 years do (fine) ... 12 0
„ 12 to 15 inches transplanted ... 25 0
„ 18 to 24 inches do. ... 30 0
Elder, Common, 12 to 18 in. transplanted 40 0
„ White, 2 to 3 feet do. ... 60 0
Elm, Wych, 1 year seedling ... 4 0
„ 2 years do. ... 5 0
„ 12 to 18 inches transplanted ... 12 6
„ 2 to 3 feet do. ... 17 6
„ 3½ to 4½ feet do. ... 20 0
„ English, true Exeter, 18 inches do. 20 0
„ 2 to 4 feet ... 30 0
Hazel, 1 year seedling ... 12 0
„ 2 years do. ... 14 0
„ Common, 18 to 24 in. transplanted... 25 0
„ 3 to 4 feet ... 30 0
*Holly, Common, 1 year seedling... 10 0
„ 2 years do. ... 17 6
„ 4 to 6 inches once transplanted ... 30 0
„ 8 to 9 inches do. ... 40 0
„ 12 inches do. ... 60 0
„ 15 in. twice trans., per 100, 10s. 0d.
„ 18 inches do. ... 15s. 0d.
„ 24 inches do. ... 20s. 0d.
„ 2½ to 3 feet do. ... 50s. 0d.
„ 4 to 5 ft. do., each 3s. 6d. to 10s. 6d.
Hornbeam, 1 year seedling ... 7 6
„ 2 years do. ... 10 0
„ 12 to 15 inches transplanted... 25 0
Laburnum, 1 year seedling ... 4 0
„ 2 years do. ... 8 0
„ 12 to 15 inches transplanted 25 0
„ 2½ to 3½ feet do. ... 35 0
„ 4 to 6 feet do. ... 50 0
Lime, Common, 1 year seedling ... 30 0
„ 2 to 3½ feet transplanted ... 50 0
„ 6 to 8 feet do.... ... 90 0
Maple, English, 1 year seedling ... 12 6
„ Norway, 1 year do. ... 7 6
„ 2 years do. ... 10 0
„ 12 to 18 inches transplanted ... 25 0
„ 2 to 3 feet do. ... 30 0
„ English, 9 to 12 inches do. ... 20 0
„ 1½ to 2 feet do. ... 30 0
Oak, English, 1 year seedling ... 5 0
„ 2 years do. ... 9 0
„ 12 to 15 inches transplanted ... 20 0
„ 2 to 3 feet (fine) do. ... 40 0
„ 3½ to 4½ feet do. ... 50 0
„ Turkey, 1 year seedling ... 6 0
„ 2 years do ... 9 0
„ 9 to 12 inches transplanted ... 20 0
„ 3 to 4 feet do.... ... 30 0

PINES FOR TIMBER TREES.

*Black Austrian, 1 year seedling ... 8 0
„ 2 years seedling ... 10 6
„ 2 years seedling, 1 year transpl. ... 20 0
„ 1 year seedling, 2 years transpl. ... 25 0
„ 12 to 18 in., twice transplanted ... 40 0
„ 3 to 4 feet, transpl. per doz., 12s.
*Corsican (true sort), 1 year seedling ... 40 0
„ 2 years seedling ... 50 0
„ 1 year seedling, 1 year transpl. 55 0
„ 2 years seedling, 2 years transpl. 60 0
„ twice transpl., 3½ feet, each 1s. 6d.
*Mountain, 1 year seedling ... 10 0
„ 2 years do. ... 15 0
„ 9 to 12 inches transplanted ... 35 0
„ twice transpl., 18 to 24 inches 50 0
*Maritime, 1 year seedling ... 8 0
„ 2 years do. ... 10 0
„ 1 year seedling, 1 year transpl. 15 0
„ twice transpl., 12 to 18 inches 25 0
*Mugho, 1 year seedling ... 10 0
„ 2 years seedling ... 12 0
*Pinaster, 1 year do. ... 7 6
„ 1 year seedling, 1 year transpl. 15 0
„ 1 year seedling, 2 years transpl. 25 0

PINES FOR TIMBER TREES.

Per 1000.—s. d.

*Scots, native, 1 year seedling ... 1s. 6d. to 3 0
„ 2 years do. ... 3s. 6d. to 4 0
„ 1 yr. seedl., 1 yr. transpl. 5s. 0d. to 6 0
„ 1 yr. seedl., 2 yrs. transpl. 10s. 0d. to 12 0
„ 2 yrs. seedl., 1 yr. transpl. 6s. 0d. to 7 6
„ twice transplanted, 2 feet ... 25 0
„ *Common, 1 year seedling ... 1 6
„ 2 years do. ... 2 6
„ 2 yrs. seedl., 1 yr. transpl. ... 7s. to 7 6
„ *Haganoe, 2 years seedling ... 3 6
„ 2 yrs. seedl., 1 yr. transpl.... 7s. to 8 0
„ *Uncinata, 2 years seedling ... 12 0
„ true, 9 to 12 inches transplanted ... 35 0
„ 2 yrs. seedl., 2 yrs. transplanted ... 40 0
*Cembra, 3 years seedling ... 20 0
„ 1 yr. seedl., 1 yr. transplanted... 20 0
„ 1 year seedling, 2 years transpl. 30 0
„ twice transpl., 6 to 9 in., p. 100 8 0
„ do. 12 to 15 inches ... „ 12 0
„ do. 1½ to 2 feet ... „ 25 0
„ 3 to 4 feet, transpl., per dozen 18 0
*Weymouth, 1 year seedling ... 10 0
„ 2 years do. ... 12 6
„ 2 yrs. seedling, 1 yr. transpl., 6 to 9 in. 20 0
*Cedrus Deodara, 1 year seedling, per 100 20 0
„ 6 to 9 inches ... „ 35 0
*Pinea (Italian Stone) 1 yr. seedling „ 40 0
*halepensis, 1 year do. ... „ 40 0
*monspeliensis, 1 year do. ... „ 20 0
„ 2 years do... „ 25 0
*Calabrian, 2 years do. ... „ 15 0
*Llaveana, 3 years do. ... „ 15 0
*Spruce, Norway, 1 year do. ... 4 0
„ 2 years do. ... 6 0
„ 6 to 9 inches transplanted ... 10 0
„ 12 to 24 inches do. ... 12s. to 14 0
„ twice transplanted, 18 to 24 in... 17 6
„ 3 to 4 feet do., each 1s. 6d. to 3 6
„ *Black American, 1 year seedling 10 0
„ 2 years do.... ... 15 0
„ 9 to 12 inches, transpl., per 100 10 0
„ 2 to 3 feet do., each ... 2 6
„ *White American, 1 year seedling 4 0
„ 2 years do. ... 8 0
„ 2 years seedling, 1 year transpl. 20 0
„ 2 years seedling, 3 years transpl. 30 0
„ 3 to 4 feet, transpl., each, 1s. to 2 6
„ *Red American, 2 years seedling 10 6
„ 1 year seedling, 2 years transpl. 40 0
„ *Balm of Gilead, 1 year seedling 4 0
„ 2 years do. ... 6 0
„ 1 year seedling, 1 year transpl. 15 0
„ 1½ to 2 feet do., per 100 ... 4 0
„ 3 to 4 feet do., each ... 1 6
*Silver Fir, 1 year seedling ... 7 6
„ 2 years do. ... 10 0
„ 2 yrs. seedling, 1 yr. transpl. 15 0
„ 2 yrs. seedling, 2 yrs. transpl. 25 0
„ 18 inches, transplanted, 20s. to 30 0
„ 2 feet do. ... 40 0
Larch, Common, 1 year seedling, 2s. 6d. to 3 6
„ 2 years do. ... 4s. 6d. to 5 6
„ 1 yr. seedling, 1 yr. transpl., 5s. to 9 0
„ 1 yr. seedl., 2 yrs. transpl., 2 to 3 ft. 16 0
„ Tyrolese, 1 year seedling, 2s. 6d. to 3 6
„ 2 years do. ... 5 6
„ 12 to 15 inches, transplanted ... 9 6
„ 18 to 24 inches do. ... 12 6
„ 2½ to 3 feet do. ... 15 0
„ 3½ to 4 feet do. ... 20 0
See the finer sorts, Section CONIFERÆ.

Poplar (Abele), 2½ to 4 ft., transpl., per 100 12 6
„ Balsam, 4 to 5 feet do. ... „ 8 0
„ Black Italian, 1 to 2 feet do. ... 25 0
„ 3½ to 5 feet do. ... 30 0
„ Lombardy, 1 to 2 feet do. ... 50 0
„ 4 to 5 feet do. ... 80 0
„ Ontario, 1 to 2 feet do. ... 30 0
„ 4 to 6 feet do. ... 60 0
Sycamore, or Plane, 1 year seedling ... 4 0
„ 2 years do. ... 8 0
„ 15 to 18 inches, transplanted 15 0
„ 3 to 4 feet do.... ... 30 0
Service Tree, 3 years seedling ... 20 0
„ 1½ to 2 feet, transplanted, per 100 8 0
Thorns.—*See Plants for Hedges.*
Walnut, 1 year seedling ... 25 0
„ 2 years do. ... 40 0
„ 3 to 4 feet, per 100 ... 8 0
„ 5 to 6 feet ... 10 0
Willow, Bedford, 2 to 3 feet, transplanted 20 0
„ 3 to 4 feet do. ... 30 0
„ Huntingdon, 2 to 3 feet do. ... 20 0
„ 3 to 4 feet do. ... 30 0
„ Norfolk, 2 to 3 feet do. ... 20 0
„ 3 to 4 feet do. ... 40 0
„ Other tree sorts, per 100 ... 75 0
„ Basket, Cuttings ... 20 0
Yew.—*See Plants for Hedges.*

RHODODENDRONS.

P. L. & SON's collection of Rhododendrons comprises all the kinds introduced by Dr. Joseph Hooker, from the Himalayahs. Size and price of any special variety will be given by return of post.

A general collection, 9 to 12 in., p. doz., 18s. to 24s.
Ditto ditto, 18 to 24 inches, each, 3s. 6d. to 5s.
Extra strong, fine bushy small plants, each, 21s. to 42s.
Rhododendron ponticum, hybrids, for game cover, 9 to 12 in., transpl., 20s. per 100
„ 18 to 24 inches, transpl., 35s. to 40s. „
„ 3 feet, very fine ... 50s. to 75s. „
Plants selected with flower buds of the above, one-fourth higher.

AZALEAS (HARDY AND GHENT SORTS).

Selections of all the most choice and rare kinds, a complete List of which will be forwarded on application.
Fine healthy Plants, 9 to 12 in., 18s. to 24s. p. doz.
Strong Plants, 18 to 24 inches, 36s. to 48s. „

TRANSPLANTED FRUIT TREES.

Specially prepared for Grafting.

Almond ... per 100 20s. 0d.
Apple, 2 to 3 feet ... do. 15 0
Cherry, 2 feet ... do. 12 6
Pear, 2 to 3 feet ... do. 20 0
Quince, 2 to 3 feet ... do. 25 0
Prunus Mahaleb, for Cherries do. 25 0

PLANTS FOR SHRUBBERIES AND UNDERWOOD.

Per 100.—s. d.

Andromeda, of sorts, 9 to 18 in., p. doz., 9s. to 18 0
Arbutus.—*See page* 736, *col.* 2.
*Arbor-vitæ, American, 4 to 6 inches ... 12 0
„ 9 to 12 inches ... 17 6
„ 1½ to 2 feet ... 25 0
„ 2½ to 4 ft., per dozen, 6s. to 12 0
„ 4 to 6 ft., do. 18s. to 24 0
„ *Chinese, 4 to 6 inches ... 12 0
„ 9 to 12 inches ... 17 0
„ 15 to 18 inches ... 30 0
„ 2 to 3 feet, per dozen, 9s. to 12 0
„ 4 to 5 feet, each ... 5s. to 10 6
„ *Tartarian, 9 to 12 inches ... 48 0
„ 15 to 18 inches ... 20 0
„ 2 to 3 feet, per doz., 12s. to 30 0
*Aucuba japonica, 4 to 6 inches ... 15 0
„ 9 to 12 inches ... 20 0
„ 15 to 18 in., p. doz., 6s. to 9 0
„ 2 to 3 ft., do. 24s. to 30 0
Azalea, Common, 9 to 12 inches ... 40 0
„ 15 to 18 inches ... 50 0
„ named sorts, p. doz., 18s. to 30 0
„ See also *Ornamental Tree List.*
Barberry, Common, 15 to 18 inches ... 5 0
„ Canadian, 12 to 18 inches ... 8 0
„ *Evergreen (Mahonia), 6 to 9 in. 4 0
„ 12 to 15 inches ... 10 0
„ 2 feet ... 20 0
*Box, Tree, of sorts, 4 to 6 inches... 8 0
„ 9 to 12 inches ... 12 6
„ 1½ to 2 feet ... 25 0
„ 3 to 4 feet, per dozen ... 18s. to 30 0
„ *variegated sorts, 9 to 12 inches ... 15 0
„ 1½ to 2 feet ... 25 0
„ 3 to 4 feet, per dozen ... 18s. to 30 0
*Broom, Common, 9 to 12 inches ... 3 0
„ *Spanish, 12 to 18 inches ... 5 6
„ Portugal, 18 inches ... 6 0
Buckthorn, Sea, 9 to 12 inches ... 25 0
„ 15 to 18 inches ... 35 0
Bramble, of sorts ... 30 0
Cotoneaster sorts, 1 to 2 feet ... 30 0
Cratægus (Thorn). See *page* 736, *col.* 2.
Currant, scarlet flowering, 9 to 12 inches 20 0
„ 15 to 24 inches ... 30 0
„ of sorts, showy flowering, 12 to 18 in. 20 0
Dogwood, sorts, 9 to 18 inches ... 25 0
Guelder Rose, sorts, 12 to 18 inches ... 30 0
Heather, hardy sorts, each ... 6d. to 1 0
*Holly (Ilex), Com., 1 yr. seedling, per 1000 10 0
„ 2 years seedling ... do. 17 6
„ 4 to 6 inches, transplanted do. 30 0
„ 8 to 9 inches do. ... 4 0
„ 12 inches do. ... 6 0
„ twice transplanted, 12 to 15 inches 10 0
„ 18 inches do. ... 15 0
„ 2½ to 3 feet ... 15 0
„ 4 feet, from lines ... 60s. to 75 0
„ 4 to 5 ft., bushy, each, 3s. 6d. to 10 6

*Ilex, angustifolia, *Aquifolium, *atrovirens, *white edged, *white blotched, *altaclarense, *golden edged, *blotched, *ciliatum, *majus, *crassifolium, *crispum, *hedgehog, *silver, *golden, *white fruited, *yellow fruited, *black fruited, *heterophyllum, *Hodgkins, *latispinum, *latifolium, *laurifolium, *marginatum — Good bushy plants of these sorts:— 1 foot ... 1s. each; 18 in., 2s. 6d. „; 2 feet, 3s. 6d. „; 3 to 4 ft., 5s. „
„ *pendulum, 4 to 6 ft. each, 7s. 6d. to 10 6
„ *recurvum, *senescens, *serratifolium ... each, 1s. to 3 6
„ *balearica
„ *caroliniana
„ *cornuta... ... each 7 6
„ *furcata ... do. 7 6
„ *Cassine (Wall) ... do. 2 0
„ *Cunninghami do. ... do. 2 6
„ *Dahoon do. ... do. 2 6
„ *excelsa do. ... do. 2 6
„ *castaneæfolia do. ... do. 2 0
„ *opaca ... do. 1 6
„ *magellanica ... do. 1 6
„ *ovata ... do. 2 6
„ *Parado (Wall)... ... do. 2 6
„ *vomitoria do. ... do. 2 0
Honeysuckle, Common ... 15 0
„ sorts, hardy... ... 20 0

PLANTS FOR SHRUBBERIES AND UNDERWOOD.

Per 100.—s. d.

*Juniper, Common, 9 to 12 inches ... 9 0
„ 15 to 18 inches ... 12 0
„ *Virginian, 4 to 6 inches ... 12 0
„ 9 to 12 inches ... 17 6
„ 15 to 18 inches ... 30 0
„ 2 to 2½ feet ... per doz. 4 0
„ 3 to 4 feet ... do. 12 0
„ *Swedish, 12 to 15 inches do. 9 0
„ 2 to 3 feet ... do. 24 0
„ *Irish, 12 to 15 inches ... do. 9 0
„ 2 to 3 feet ... do. 24 0
*Laurel, Bay, 9 to 12 inches ... 6 0
„ 15 to 18 inches transplanted ... 8 0
„ 2 to 3 feet... ... 15 0
„ 3 to 4 feet... ... 20 0
„ twice transplanted, 2 to 3 feet 25 0
„ 4 to 5 feet... ... each, 2s. to 5 0
„ *Portugal, 1 year seedling ... 8 0
„ 2 years do. ... 10 0
„ 3 to 4 inches transplanted ... 12 0
„ 6 to 9 inches ... 14 0
„ 12 to 18 inches ... 16 0
„ 2 to 2½ feet ... 30 0
„ twice transplanted, 18 to 24 inches, per dozen ... 6s. to 18 0
„ 2½ to 4½ feet, per dozen, 36s. to 48 0
*Laurustine, 6 to 9 inches ... 15 0
„ 12 to 15 inches transplanted ... 25 0
„ 18 to 24 inches ... 35 0
„ twice transpl., 2 ft., p. doz. 9s. to 24 0
„ 3 to 4 feet, per dozen ... 36s. to 48 0
„ *upright, 9 to 12 inches ... 21 0
„ 15 to 18 inches ... 35 0
„ 3 to 4 feet ... per dozen 48 0
*Leycesteria formosa, 12 inches ... 17 6
„ 18 to 24 inches ... 20 0
„ in pots, 18 inches, per dozen 4 0
Lilac, sorts, 18 to 36 inches ... 15s. to 30 0
*Periwinkle, Common, of sorts ... 6 0
„ *variegated ... 8 0
„ *major ... 8 0
„ variegated ... 10 0
*Privet, bushes, 2 to 3 feet ... 20 0
„ Hedge sorts. See *Plants for Hedges.*
*Rhododendrons. See *col.* 2; and *page* 736, *col.* 3.
Rubus, sorts, 18 to 24 inches ... 20 0
Snowberry, sorts, 2 to 3 feet ... 15 0
Spiræa, sorts, 2 to 3 feet ... 15 0
Syringa, sorts, 2 to 3 feet ... 20 0
Sweet Briar, 9 to 18 inches ... 4 0
„ 2 to 3 feet, bushy, per 1000 35 0
Yellow Root, 1 to 1½ foot ... 15 0
*Yew, Irish, 3 to 4 inches ... 25 0
„ 9 to 12 inches ... per doz. 6 0
„ 12 to 15 inches ... do. 9 0
„ 18 to 24 inches ... do. 18 0
„ 2½ to 3½ feet ... do. 30 0
„ 4 to 5 feet, each ... 5s. to 15 0
„ extra large, each ... 30 0
„ *Common, 1 year seedling, p. 1000 15 0
„ 2 years seedling ... „ 20 0
„ transplanted, 9 to 12 inches „ 30 0
„ twice transpl., 15 to 18 inches „ 60 0
„ ditto, 2 to 3 feet, per 100 ... 12 0
„ fine plants, 2 to 3 ft., each, 1s. 6d. to 2 6

EXTRA STRONG BUSHY TREES,

For producing immediate effect in Ornamental Pleasure Grounds. Per doz.—s. d.

Acacia, Thorn, 6 to 8 feet ... 9 0
„ named sorts, hardy, 6 to 8 feet ... 12 0
Alder, Common, 6 to 9 feet ... 6 0
Almond, sorts, 6 feet ... 12 0
Ash, Common, 6 to 9 feet ... 4 0
„ named sorts, 6 to 9 feet ... 9 0
„ Mountain, 6 to 9 feet ... 4 0
Beech, 6 to 8 feet ... 6 0
Beech, Purple, 6 to 8 feet ... 18s. to 36 0
Birch, Weeping, 9 to 12 feet ... 24 0
Chesnut, Horse, 6 to 9 feet ... 4 0
„ named sorts, 6 feet ... 12 0
„ Spanish, 5 to 8 feet ... 12 0
„ named sorts, 6 feet ... 18 0
Cherry, showy flowering sorts, 6 to 8 feet 12 0
Cotoneaster, Standards ... 18s. to 30 0
Elm, Common, 6 to 9 feet ... 4 0
„ English, 6 to 9 feet ... 4 0
„ named sorts, 8 feet ... 9 0
Laburnum, Common and Scotch, named sorts, 5 to 6 feet ... 12 0
Lime, Common, 6 feet ... 8 0
„ named sorts, 6 to 8 feet ... 9 0
Maple, Norway, 6 to 8 feet ... 9 0
„ named sorts, 5 feet ... 12 0
Oak, English, 4 to 6 feet ... 9 0
„ Turkey, 4 to 6 feet ... 9 0
„ named sorts, 4 feet ... 18s. to 60 0
Larch, 4 to 6 feet ... 6 0
Poplar, Lombardy, 6 to 9 feet ... 18 0
„ sorts, 6 to 8 feet ... 12 0
Plane or Sycamore, 6 to 8 feet ... 12 0
Thorns, named sorts, 4 to 6 ft. ... 9s. to 12 6
Willows, Tree sorts, 6 feet ... 6 0
Walnuts, sorts, 6 feet ... 18 0

Acer macrophyllum, a fine new hardy fast growing Maple, with large foliage, each 2 0
Acer circinatum, a very ornamental new hardy Maple, large bright green foliage, and silvery white underneath, each ... 4 0

CONIFERS.

Each. £ s. d.

Pinus Brunoniana, remarkably fine specimens, in tubs, 9 to 12 ft. high, well furnished ... 20 0 0
„ 3 to 4 feet high ... 2 2 0
„ Douglasi, the best broad-leaved variety, strong dark green foliage, and healthy, 6 feet ... 5 5 0

PETER LAWSON AND SON'S ADVERTISEMENT CONTINUED ON NEXT PAGE.

PETER LAWSON AND SON'S ADVERTISEMENT—Continued.

CONIFERS. Each.—£ s. d.

Pinus Douglasi, 4 feet 1 10 0
„ 3 feet 0 12 6
„ cephalonica, finely-shaped healthy plants from seed, with good leading shoots, 2½ to 3 feet ... 2 2 0
„ 2 feet 0 15 0
„ 1½ foot 0 7 6
„ nobilis, very strong well-shaped plants, with leaders, 5 to 6 feet 25 0 0
„ 1½ to 2 ft., forming good leaders 0 7 6
„ Nordmanniana, from seed, fine leaders and well-shaped plants, 4 feet high 12 12 0
„ 2 feet 5 5 0
„ Pindrow, from seed, with good leaders, 2½ feet 0 15 0
„ Pinsapo, from seed, remarkably well-shaped, bushy all round, and fine leaders, 4 to 5 feet ... 12 12 0
„ 3 feet 3 3 0
„ 2 feet 1 1 0
„ Webbiana, grafted, but well-shaped, 6 feet 4 4 0
„ alba, fine, well-shaped, from seed, 9 feet 3 3 0
„ 6 feet 1 5 0
„ 4 feet 0 7 6
„ Khutrow, particularly fine plants bushy to the ground, and fine leaders, straight, 6 feet ... 8 8 0
„ 5 feet 4 4 0
„ 4 feet 1 1 0
„ Menziesi, very healthy plants, with fine glaucous green robust foliage, fine leaders, 9 to 10 feet 15 0 0
„ 4 to 5 feet 2 2 0
„ nigra, pretty, bushy specimens, 6 feet 1 1 0
„ 4 feet 0 5 0
„ orientalis, from seed, finely-shaped, 3 feet 2 2 0
„ Abies, Common Spruce, well-shaped bushy specimens, 6 feet 0 15 0
„ 4 to 5 feet ... ... 8s. to 0 10 6
„ Larix microcarpa, from seed, of vigorous growth, 6 feet... ... 0 15 0
„ 4 to 5 feet ... ... 8s. to 0 10 6
„ Larix pendula, grft., 6 ft. 7s. 6d. to 0 10 6
„ Cedrus argentea, from seed, very pretty specimens, 4½ feet ... 3 3 0
„ 3 feet ... ...15s. to 1 5 0
„ Libani, fine plants, furnished to the ground, and free growths, 9 to 12 feet 10 10 0
„ 4 to 6 feet ... ... 2l. 2s. to 3 3 0
„ 3½ feet 0 10 6
„ Deodara, splendid specimen plants, perfect in shape, with leaders, 9 to 12 ft. ... 10l. 10s. to 15 15 0
„ 6 feet 2 2 0
„ 5 feet 1 16 0
„ 3 to 4 feet ... ... 5s. to 0 10 6
„ Cembra, fine plants, grown singly and bushy, with good leaders, 4½ feet 0 7 6
„ 3 feet 0 3 6
„ Ayacahuite, 3 to 4 ft., bushy, fine 4 4 0
„ excelsa, the dark green variety, very pretty tree, bushy to the ground, 8 to 9 feet 7 7 0
„ Light green variety, perfect shape, 6 to 7 ft. ... 4l. 4s. to 5 5 0
„ 4 to 5 feet ... ... 1l. 1s. to 3 3 0
„ monticola, very fine plants, 4 to 5 ft., true, bushy, and good leaders 10 10 0
„ Strobus, 6 to 7 feet, bushy and healthy ... ... 7s. 6d. to 0 15 0
„ Hartwegi, extra fine plants, 3 to 4 feet high, and about the same in diameter 15 15 0
„ Montezumæ, very fine plants, grown singly, 3 to 4 feet high, 2½ to 3½ across, healthy ... 6 6 0
„ occidentalis, good healthy plants, 2½ to 4½ feet 1 10 0
„ Benthamiana, from seed, true, 2 to 3 feet 6 6 0
„ californica, fine plants, from seed, 3½ to 4 feet 5 5 0
„ Coulteri, grafted bushy plants, 4 to 6 feet 3 3 0
„ insignis, fine plants, from seed, well grown, with leaders, 4½ to 5 feet ... ... 3l. 3s. to 4 4 0
„ muricata, from seed, very good plants, becoming bushy, good leaders, 2 to 3 feet ... 3l. 3s. to 4 4 0
„ Sabiniana, grafted plants, healthy and good, with fine leaders, 5 to 7 feet ... 2l. 2s., 3l. 3s., to 4 4 0
„ sinensis, grafted plants, very bushy and well branched, 5 to 6 feet, ... 4l. 4s. to 5 5 0
„ Laricio, remarkably fine, well-furnished trees, 6, 8, and 10 feet, ... 1l. 1s. to 3 3 0
„ Pyrenaica, from seed, fine bushy plants, true, 2½, 3, and 4 feet ... 10s. 6d., 15s., to 2 2 0
Araucaria imbricata, extra fine selected plants, dark green foliage, regular and fine shape, robust, 5 to 6½ feet ... 6l. to 12 0 0
„ 4½ feet ... ... 4l. 4s. to 5 5 0
„ 3½ to 4 feet ... 2l. 2s. to 3 3 0
„ 2½ feet ... ... 1l. 5s. to 1 15 0
„ excelsa, remarkably fine plants, in tubs, 6 to 9 feet ... 8l. 8s. to 12 12 0
„ brasiliensis, 4 to 5 feet ... 10s. to 0 15 0
Thuja orientalis, very beautiful, bushy, well-shaped plants, 4½, 5, and 6 feet ... 10s. 6d., 15s. to 2 2 0
„ occidentalis, fine well-shaped plants, from 4½ to 7 ft., 10s. 6d. to 1 10 0
„ cuneata, 4 ft., fine seedling plants 3 3 0
Cupressus Lambertiana, splendid plants, 10 to 12 feet... ... ... 20 0 0
„ 4 to 5 feet 2 2 0
„ 3½ to 4 feet ... 10s. 6d. to 0 15 0
„ horizontalis, 6, 8, and 12 feet, fine bushy plants, 1l. 1s., 1l. 15s. to 3 3 0
Taxodium sempervirens, 4, 5, 6, 9, to 12 feet, fine plants, healthy, from seed ... ... 10s. 6d., 15s. to 3 3 0

CONIFERS. Each.—£ s. d.

Cryptomeria japonica, 4 to 5 ft., 10s. 6d. to 0 15 0
„ 3½ feet ... 7s. 6d. to 0 10 6
Taxus baccata (Common Yew), 4 to 6 feet, fine plants ... 15s. to 2 2 0
„ 2 to 3½ feet, grown singly and pruned ... ... 5s. to 0 10 6
„ baccata fastigiata (Irish Yew), magnificent specimens, of great beauty, 9 to 12 ft. high, and 10 ft. in diameter, 30l. to 40 0 0
„ 8 to 10 feet high, not so bushy 10 10 0
„ 6 to 7 feet ... ... 1l. 10s. to 4 4 0

Smaller sizes of the above, and all the other hardy sorts, at moderate prices, which will be supplied on application.

PLANTS FOR HEDGES AND EDGES OF WALKS. Per 1000.—s. d.

Apple, Wilding or Crab, 18 to 24 in. ... 50 0
Beech, Common, 9 to 12 inches ... 20 0
„ 2 to 3 feet 25 0
Barberry, Common, 15 to 18 inches ... 50 0
„ 2 to 3 feet 60 0
*Box, Dwarf, for edging 7 6
Broom, Common, 12 to 18 inches ... 30 0
Buckthorn, Sea, 9 to 12 inches 200 0
„ 18 to 24 inches 300 0
Elder, Common, 12 to 18 inches ... 40 0
*Gentianella (Gentiana acaulis) 10 0
*Holly, Common, 4 to 6 inches 20 0
„ 9 to 12 inches 35 0
„ 18 to 24 inches 50 0
Hornbeam, 12 to 15 inches 21 0
„ 18 to 24 inches 30 0
*Juniper, Common, 9 to 12 inches ... 100 0
*Laurel, Bay, 15 to 18 inches 80 0
„ *Portugal, 12 to 18 inches ... 160 0
*Laurestine, 12 to 15 inches 200 0
Maple, English, 2 to 3 feet 20 0
*Mahonia, 12 to 15 inches 60 0
*Privet, 9 to 12 inches 20 0
„ 18 to 24 inches 30 0
Sweet Briar, 9 to 12 inches 25 0
„ 18 to 24 inches 30 0
*Sea Pink (Statice armeria) 10 0
Thorns, or Quicks, 1 year seedling ... 3 6
„ 2 years' do. 5 6
„ 12 inches transplanted 10 0
„ 18 inches 12 0
„ 2 to 3 feet... ... ... 16 0
*Yew, Common, 1 year seedling 15 0
„ 2 years' do. 20 0
„ 9 to 12 inches 30 0
„ 18 to 24 inches 60 0

PENDULOUS, OR WEEPING TREES. Each—s. d.

Alnus oxyacanthifolia, 4 to 6 ft. 1s. to 1 6
Amelanchier florida, 4 feet 2 6
Betula alba pendula (Birch) 8 ft. 2s. 6d. to 6 0
„ incisa pendula, 4 feet 2 6
Cerasus depressa, 6 feet 2 6
„ Juliana pendula, 6 feet 2 6
„ Padus pendula, 6 feet 3 6
„ Mahaleb, 6 to 9 feet 2 6
Cratægus (Thorn), Weeping, sorts, 6 to 8 ft 2 0
„ New, Weeping, 8 feet, 3s. 6d. to 7 6
„ Purple, 6 feet 2 6
Fagus sylvatica pendula, 6 feet 3 6
„ purpurea, 4 feet 3 6
Fraxinus lentiscifolia pendula, 8 feet ... 2 6
„ excelsior pendula, 5 to 9 ft. 3s. 6d. to 21 0
„ aurea, 6 feet 3 6
*Ilex Aquifolium pendulum, 5 feet ... 7 6
Juglans regia pendula, 4 feet 15 0
Laburnum, Weeping, sorts, 5 to 8 ft. 1s. 6d. to 3 6
Larix pendula, 8 feet... ... ... 5 0
„ americana pendula, 4 feet 5 0
Persica pendula (Peach) 10 6
Populus trepida pendula, 6 feet 3 0
„ tremula pendula, 6 feet 3 0
Pyrus aucuparia pendula, 9 feet 3 0
„ heterophylla, 8 feet 3 0
„ pinnatifida pendula, 6 feet ... 2 6
„ salicifolia, 5 feet 2 6
„ elæagnifolia, 5 feet 2 6
Quercus Ægilops pendula, 3 feet ... 5 0
„ *Cerris pendula, 4 feet 5 0
„ Fenessi, 4 feet 5 0
Robinia, Weeping, sorts, 6 to 9 ft., 2s. 6d. to 3 6
Salix americana pendula, 5 to 8 ft. 2s. to 5 0
„ babylonica, 4 to 6 feet ... 9d. to 1 6
Sophora japonica pendula, 4 feet 5 0
Tilia (Lime), Weeping, sorts, 5 to 9 ft., 1s. 6d. to 10 6
*Taxus (Yew), Weeping, sorts, 1 to 4 feet ... ... 3s. 6d. to 10 6
Thuja (Arbor-vitæ), Weeping, sorts, 1 to 4 feet ... ... 3s. 6d. to 10 6
Ulmus (Elm), Weeping, sorts, 5 to 9 feet ... ... 1s. 6d. to 10 6

SELECT TREES, SHRUBS, & CLIMBERS.
SUITABLE FOR WALLS AND TRELLISES.
(Chiefly in pots.) Each.—s. d.

Acacia affinis, 9 to 12 inches ... 1s. to 1 6
„ dealbata ... ... 1s. to 1 6
„ Julibrissin 1 6
„ lophantha 2 0
Amorpha fruticosa, 1 to 2 feet ... 6d. 1 0
„ Lewisii, 12 to 18 inches... ... 0 9
Ampelopsis cordata 0 9
Amygdalus glandulosa, in pots, 12 to 18 in. 2 0
„ incana (Hoary), 12 to 18 in. 3 6
Anagyrus fœtida, 1 to 2 feet ... 1s. to 2 0
Araiia japonica (Japan) ... ... 1s. to 2 6
„ spinosa (Spiny) ... ... 6d. to 1 6
Arbutus Andrachne, in pots ... 5s. to 7 6
„ Clethroides, in pots, 2 to 3½ feet 7 6
„ myrtifolia, in pots, 6 to 9 inches 5 0
Arbutus procera, in pots, 2 to 2½ feet ... 5 6
„ tomentosa 7 6
„ Unedo, in pots, 6 to 12 in. 9d. to 2 6
„ flore rubra, in pots, 2 to 3 ft. ... 3 6
„ flore pleno, in pots, 1 to 1½ ft. 2 6
Aristolochia altissima, in pots 1 0
Aristotelia Macqui, 1 to 2 ft. ... 9d. to 1 0
„ fol. var., 1 foot 1 0
Azara dentata, 1 to 2 feet ... ... 9d. to 1 0
„ integrifolia 1 0
Benthamia fragifera, 9 to 18 inches ... 1 0
„ sp. nova, 12 inches 1 0
Berberis Fortuni, 2 to 3 feet 3 0
„ Darwini 3 6
„ Leschenaulti ... ... 5s. to 10 6
„ nepalensis ... ... 5s. to 15 0
Billardiera longiflora 0 9

SELECT TREES, ETC. Each.—s. d.

Buxus balearica (Minorca), 9 to 12 inches 1 6
Calampelis scabra, in pots 0 9
Caragana jubata 2 6
Casuarina equisetifolia ... 1s. 6d. to 2 6
Ceanothus dentatus 1 0
„ divaricatus 1 0
„ Fontanesianus 0 6
„ papillosus 1 6
„ azureus (true) ... 1s. 6d. to 3 6
„ rigidus 2 0
„ thyrsiflorus 1 0
Ceratonia Siliqua, in pots 2 6
Cercis canadensis, 18 inches 0 6
„ siliquastrum, 18 inches 4 6
„ alba 1 0
„ roseum 1 6
Clematis azurea ... ... 1s. 6d. to 3 6
„ florida flore-pleno 1s. 6d. to 3 6
„ montana 1 0
„ Sieboldi (bicolor), in pots, 1s. 6d. to 3 6
Cleyera japonica 3 6
Clianthus puniceus, in pots 2 6
Cneorum tricoccum, in pots ... 9d. to 1 6
Colutea spinosa, in pots 1 6
Convolvulus argenteus, in pots 1 0
Coronilla coronata, 1 foot 0 9
„ Emerus, 2 feet 0 9
Cotoneaster denticulata, 9 inches 2 6
„ frigida, 4 feet 2 6
„ microphylla, 1 foot 1 6
„ thymalis, 1 foot 0 9
„ rotundifolia, 1 foot 0 9
„ rupestris, 1 foot 2 0
Cratægus crenata (Evergreen) 2 6
„ stipulacea, or mexicana ... 3 0
„ Pyracantha (Evergreeen Thorn), 12 to 24 inches ... 9d. to 2 0
Cytisus capitatus, 2 feet 0 6
Daphne collina, in pots 2 0
„ neapolitana 2 0
„ Dauphini, in pots 2 0
„ Gnidium 1 6
„ hybrida 2 6
Dorycnium sericeum, in pots 2 6
Edwardsia grandiflora, in pots 2 0
„ microphylla 3 0
Elæagnus hortensis, 1 to 2 feet ... 4d. to 1 6
„ reflexa 3 6
Escallonia montevidensis, 1 foot 1 6
„ floribunda, 1 foot 0 6
„ rubra, 1 to 2 feet 0 6
„ albiflora 0 6
Escallonia rubra rosea 0 6
„ macrantha (new) 1s. 6d. to 5 0
Euonymus fimbriatus, 2 to 3 feet ... 2 0
„ japonicus, 2 feet 1 0
„ angustifolius 1 6
„ argenteus ... ... 1s. to 2 0
„ aureus ... ... 1s. to 2 6
Fabiana imbricata ... ... 1s. to 2 6
Fagus betuloides 3 6
„ Fosteri 10 6
Ficus Carica (Common) 12 to 18 in. ... 2 0
Garrya elliptica, 1 to 2 feet... ... 9d. to 2 6
„ macrophylla 2 0
Genista purgans 0 9
„ radiata 0 9
„ umbellata 0 9
Glycine sinensis ... ... 1s. 6d. to 3 6
Hedera Helix fol. argenteis ... / „ „ aureis ... / „ palmata, nova ... / „ Rœgneriana ... } .. 9d. to 2 6
„ Donerail variety 2 6
Ilex balearica (Minorca) 3 0
„ Cunninghami, or dipyrena 2 6
„ castaneæfolia 2 0
„ Cassine 2 0
„ excelsa, or speciosa 2 6
„ latifolia ... ... 1s. 6d. to 7 6
„ Perado, or maderensis 2 6
„ vomitoria, or ligustrifolia (South Sea Tea) 3 0
Indigofera australis 1 0
Jasminum nudiflorum 1 6
„ revolutum 1 0
„ Wallichianum 1 0
Lavandula spica 0 9
„ latifolia 0 9
Laurus nobilis (Sweet Bay), 1 to 3 ft. 1s. to 2 6
„ angustifolia 1 6
„ latifolia 7 6
„ regalis ... ... 5s. to 21 0
Ligustrum japonicum 1 6
„ nepalense, in pots 2 6
„ lucidum 1 6
Lonicera Browni 2 6
„ sempervirens ... ... 9d. to 2 6
„ coccinea ... ... 9d. to 2 6
„ floribunda ... ... 9d. to 2 6
„ flava... ... ... 9d. to 1 6
Maclura aurantiaca ... ... 1s. to 2 6
Magnolia conspicua 2 6
„ glauca 2 6
Magnolia grandiflora 3 6
„ macrophylla 5 0
„ purpurea 3 6
„ obovata 3 0
Olea europæa ... ... 1s. to 2 6
Passiflora cærulea ... ... 1s. to 2 0
Photinia glabra 2 6
„ arbutifolia 2 6
„ serrulata 2 6
Planera Richardi, 3 to 4 feet 2 6
Pittosporum Tobira ... ... 1s. to 2 0
„ variegatum 2 6
„ undulatum 1 0
Purshia tridentata 2 6
Rhamnus Alaternus / fol. argenteis / fol. aureis / fol. maculatis } 1 to 2 feet ... 3s. to 3 6
Rhododendron arboreum, 6 to 12 in. 3s. 6d. to 5 0
„ barbatum (true) 2s. 6d. to 30 0
„ Gibsoni, 9 to 12 in., 1s. to 5 0
Ribes aureum / „ fragrans / „ Gordonianum / „ Menziesi } 1 to 2 feet, 6d. to 1 6
Robinia hispida (Rose Acacia) 3 feet ... 2 6
„ macrophylla, 2 feet 2 6
„ grandiflora, 2 feet 3 0
„ rosea alba, 18 inches 1s. 6d. to 2 6
Sida malvæfolia 2 6

SELECT TREES, ETC. Each.—s. d.

Solanum crispum ... ... 1s. to 1 6
Vella Pseudo-Cytisus ... ... 9d. to 1 0
Weigela amabilis ... ... 2s. 6d. to 5 0
„ Middendorfii 3 6
„ rosea 0 9

FRUIT TREES.

APPLES.

Dwarf, 6 to 9 inch stem ... ... 9d. to 1 0
„ trained, 6 to 9 inch stem 2s. 6d. to 3 0
Standard, 2 to 4 feet ... ... 1s. to 2 6
Rider, 4½ to 6 feet ... ... 1s. 6d. to 2 6
„ trained, 4½ to 6 feet ... 3s. 6d. to 5 0
Dwarf on Paradise Stocks, 9 in. ... 1s. to 1 6
Standard on ditto, 1 to 1½ foot 1 6
„ on Paradise Stocks, with fruit buds, 2½ to 3 feet 1s. 6d. to 3 0

APRICOTS.

Dwarf, 6 to 9 inch stem ... 1s. 6d. to 2 6
„ trained, 9 to 12 inch... ... 5s. to 7 6
Rider, 4½ to 6 feet ... ... 2s. 6d. to 3 6
„ trained, 4½ to 6 feet ... 7s. 6d. to 10 6

PEACHES.

Dwarf, 6 to 9 inch stem ... 1s. 6d. to 2 6
„ trained, 9 to 12 inch... ... 5s. to 7 6
Rider, 4½ to 6 feet ... ... 2s. 6d. to 3 6
„ trained, 4½ to 6 feet ... 6s. 6d. to 10 6
In pots, 2½ to 4 feet ... ... 3s. 6d. to 5 0

NECTARINES.

Dwarf, 6 to 9 inch stem ... 1s. 6d. to 2 6
„ trained, 9 to 12 inch ... ... 5s. to 6 6
Rider, 4½ to 6 feet ... ... 2s. 6d. to 3 6
„ trained 4½ to 6 feet ... 6s. 6d. to 10 6

PLUMS.

Dwarf, 9 to 12 inch stem ... — ... 1 0
„ trained ... ... 3s. 6d. to 5 0
Standard, 3 to 5 feet stem ... 1s. 6d. to 2 0
Rider, 4½ to 6 feet ... ... 2s. to 3 0
„ trained, 4½ to 6 feet ... ... 5s. to 7 6

CHERRIES.

Dwarf, 9 to 12 inch stem ... ... 1s. to 1 6
„ trained... ... ... 2s. 6d. to 3 6
Standard, on Cherry stocks... ... 1s. to 1 6
„ on Cerasus Mahaleb 2 6
Rider on Cherry stocks ... ... 2s. to 2 6
„ trained on do. ... ... 4s. to 7 6

PEARS.

Dwarf, 6 to 9 inch stem ... ... 1s. to 1 6
„ trained, 6 to 9 inch ... 2s. 6d. to 3 6
„ on Quince stocks, 6 to 9 inch ... 1 6
Pyramids, on Quince, 4 to 6 feet, with fruit buds, 3 to 4 ft. } 3s. to 7 6
Standard, on Quince, 1 to 2 feet, 1s. 6d. to 3 6
„ on free stocks, 3 to 4 feet ... 1s. to 2 6
„ on ditto, with fruit buds, 3 to 4 feet ... ... 3s. to 5 0
Rider, 4½ to 6 feet 2 0
„ trained, 4½ to 6 feet ... 3s. 6d., 5s. to 7 6

MISCELLANEOUS.

Figs, in pots ... ... 3s. 6d. to 5 0
Spanish Chesnut ... ... 1s. to 2 0
Walnuts ... ... 1s. 6d. to 3 6
Nuts ... ... 6d. to 1 6
Filberts ... ... 6d. to 1 0
Black Currants ... per doz. 3s. to 5 0
Red Currants ... ... do. 3s. to 6 0
White Currants ... do. 3s. to 6 0
Gooseberries ... ... do. 3s. to 9 0
Raspberries ... .. do. 3s. to 9 0
Strawberries ... ... per 100 3s. 6d. to 10 0
Quinces ... ... 1s. 6d. to 3 0
Medlars ... ... 1s. 6d. to 3 0
Mulberries ... ... 6d. to 3 6
Cranberries 2 0
Barberries ... ... per doz. 4s. to 9s.
Service ... ... 1s. 6d. to 2 6
Grapes, or Vines, in pots ... 3s. 6d. to 7 6
Guava, in pots, ... 3s. 6d. to 7 6
Oranges and Citrons, in pots ... 4s. to 21 0
Pine Apples ... ...

Names in Detail, see Fruit Catalogue.

ROSES. Each—s. d.

Moss, dwarfs ... ... 1s. to 3 6
„ standards ... ... 2s. 6d to 3 6
Provence, or Cabbage, dwarfs ... 1s. to 2 0
„ „ standards 2s. to 3 0
Hybrid Provence, dwarfs ... ... 1s. to 2 6
„ standards 1s. 6d. to 2 6
French, dwarfs ... ... 6d. to 1 6
„ standards ... ... 1s. 6d. to 2 6
Hybrid Chinese, dwarfs ... ... 1s. to 2 0
„ „ standards... 1s. 6d. to 2 6
Hybrid Bourbon, dwarfs ... ... 1s. to 2 6
„ „ standards 1s. 6d. to 3 0
White, dwarfs ... ... 1s. to 1 6
„ standards ... ... 1s. 6d. to 2 6
Damask, dwarfs ... ... 9d. to 1 6
„ standards ... ... 1s. 6d. to 2 6
Sweet Briars, and its hybrids, dwarfs ... ... 1s. to 2 6
„ „ standards ... 2s. 6d. to 3 6
Austrian Briars and Double Yellow, dwarfs ... ... 9d. to 1 0
„ „ standards ... ... 2s. to 3 0
Sanguisorbifolia, or Burnet ... 1s. to 1 6
Ayrshire, dwarfs, 8s. p. doz., or 40s. p. 100. 1 0
Scottish ... ... 8s. per doz., or 9d. to 1 0
Boursault (Rosa alpina), dwarfs ... 1s. 6d. to 2 0
Banksian, Dwarfs ... ... 9d. to 1 6
Hybrid Climbing, Dwarfs ... 6d. to 1 6
Multiflora, Dwarfs ... ... 9d. to 1 6
Evergreen (Rosa sempervirens), dwarfs ... ... 1s. to 1 6
Prairie (Rosa rubifolia), dwarfs ... 1s. to 2 6
Bourbon, dwarfs ... ... 1s. 6d. to 3 6
„ standards ... ... 1s. to 2 0
Chinese, or Monthly, dwarfs ... 1s. 6d. to 2 6
„ standards ... ... 1s. to 1 6
Tea-scented Chinese, dwarfs ... 2s. to 3 6
„ standards ... ... 1s. to 1 6
Miniature Chinese, or Fairy, dwfs. 1s. 6d. to 3 6
Noisette, dwarfs ... ... 2s. to 3 0
„ standards ... ... 1s. to 1 6
Macartney, dwarfs ... ... 1s. to 1 6
Musk, dwarfs ... ... 1s. to 2 6
Microphylla, or Small-leaved, dwarfs 2s. 6d. to 5 6
Perpetual Moss, dwarfs ... ... 1s. to 3 [illegible]
„ standards ... ... 1s. to 2 [illegible]
Damask Perpetual, dwarfs... ... 2s. to 3 [illegible]
„ standards ... ... 1s. to 5 [illegible]
Hybrid Perpetual, dwarfs ... 2s. 6d. to 7 [illegible]
„ standards ... ...

Names in detail, see Rose Catalogue.

PETER LAWSON AND SON'S ADVERTISEMENT CONCLUDED AT PAGE 734.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 27, Victoria Street, in the Parish of St. Margaret and St. John, Westminster, both in the County of Middlesex, Printers, at their Office in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, November 11, 1854.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 46.—1854.] SATURDAY, NOVEMBER 18. [PRICE 6*d*.

INDEX.

Almanac, Farm, rev. .... 749 *c*
Æchmea fulgens .... 741 *a*
Anacharis alsinastrum .... 742 *a*
Anbury .... 747 *c*
Apples, second crop of .... 742 *b*
Banks, penny .... 747 *b*
Butter, rancid .... 750 *a*
Calendar, horticultural .... 743 *c*
— agricultural .... 750 *a*
Chrysanthemums, Pompone .. 743 *a*
Conifers, hardiness of .... 741 *c*
Corn prospects .... 748 *c*
Covering material .... 744 *c*
Dahlia roots, to winter .... 743 *b*
Entomological Society .... 742 *b*
Farm buildings .... 748 *c*
— Almanac, rev. .... 749 *c*
Figs, out-door .... 741 *c*
Fir beetle .... 742 *a*
Food, Rape-cake as .... 747 *c*
Gynerium argenteum .... 741 *c*
Ice, curious formation of, on plants .... 739 *c*
Insecta Maderensia, rev. .... 742 *c*
Labour, economy in .... 746 *c*
Landlord and tenant .... 747 *b*
London Farmers' Club .... 748 *c*
Manure, sewage ....746 *b*—748 *b*
Manure, liquid .... 748 *a*
Mildewed Turnips .... 739 *b*
Neriandra suberecta .... 741 *b*
Orchard, to form .... 741 *c*
Pathology, vegetable .... 740 *b*
Pears, to plant .... 740 *c*
— profits of growing .... 741 *c*
Plants, new .... 741 *b*
— curious formation of ice on .... 739 *c*
Primrose, Chinese .... 743 *b*
Protection, spring .... 742 *a*
Radiation .... 742 *b*
Rape cake as food .... 747 *c*
Rye-grass, Italian .... 748 *a*
Sarracenias .... 742 *a*
Seeding, thin .... 748 *b*
Sewage, town .... 746 *b*—748 *b*
Simpson's (Mr.), garden .... 743 *a*
Strawberry, new Belgian .... 739 *c*
— Nimrod .... 742 *b*
Swans and water weeds .... 742 *a*
Tenant and landlord .... 747 *b*
Town sewage .... 746 *b*
Trees, protection for fruit .... 742 *a*
Turnip rot .... 739 *b*
Vegetable pathology .... 740 *b*
Weeds, eradication of .... 745 *c*

ROYAL BOTANIC SOCIETY, REGENT'S PARK.—The Days appointed for the EXHIBITIONS OF PLANTS, FLOWERS, AND FRUIT, in the Gardens of this Society, next season, are WEDNESDAYS, May 9, June 13, and July 4; and of AMERICAN PLANTS, MONDAY, June 18.

STOKE NEWINGTON CHRYSANTHEMUM SOCIETY.—The Eighth ANNUAL EXHIBITION of this Society will be held at the Manor Rooms, Church Street, Stoke Newington, on TUESDAY, November 21, when Prizes, including Three Silver Cups, will be awarded.—Doors open at 12. Admission from 12 to 4, 1*s*.;—after 4 o'clock, 6*d*.

NORTH LONDON CHRYSANTHEMUM EXHIBITION.—The Exhibition of the above Society will take place at HIGHBURY BARN GARDENS, on THURSDAY, November 23. Doors open to the public from 1 till 4 o'clock at 1*s*. admission; from 4 to 7 o'clock at 6*d*. List of Prizes, &c., may be obtained of GEO. SMITH, Hon. Sec., Hornsey Road, Islington.

THE SCOTTISH GARDENERS' AND LAND-STEWARDS' ASSOCIATION.

At a General Meeting for the Election of a Pensioner on the Funds of the Association, held at 6, York Place, Edinburgh, on November 8, 1854, Professor BALFOUR in the Chair, the following was the state of the Poll at the close of the Ballot.

ISABELLA STEWART 375 Votes | MALCOLM M'GREGOR 117 Votes.

ISABELLA STEWART, having the greatest number of Votes, was thereupon declared duly elected.
JAMES M'NAB, } Scrutineers.
P. S. ROBERTSON, }
Edinburgh, Nov. 9, 1854. J. H. BALFOUR, *Chairman*.

THE WEST OF ENGLAND HORTICULTURAL BUILDING SOCIETY beg to announce to Amateurs of the ennobling Science of Horticulture that they have made arrangements for the Erection of superior Buildings, of a lighter and neater appearance then have hitherto been designed, at the same time paying due regard to strength and durability. The Ventilation and Construction being of the newest and most approved principles, and at prices as low as possible.

Orders received by the Acting Agent, W. J. DRAKE, 4, Alma Place, Summerland Street, Exeter, who has been practically engaged in the management of a similar department for the last ten years with Messrs. Veitch & Son, of the Topsham Road Nurseries, Exeter.—Nov. 18, 1854.

EARLY DANIEL O'ROURKE PEAS.

J. G. WAITE begs to inform the Trade that he is now ready to execute orders for this valuable early Pea. Price can be had on application.
Seed Establishment, 181, High Holborn, London.

ROSES, HOLLYHOCKS, ETC.

ROSES to force, or to form beds at once. See S. WALTERS'S ADVERTISEMENT, page 706.

THE PLANTING SEASON.

WM. URQUHART AND SONS, Dundee, respectfully intimate that their PRICED LIST may now be had on application.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER'S descriptive List of the above splendid flowers, containing hints on their culture, and observations on exhibiting, &c., is now ready, and may be had on application, by forwarding one postage stamp.—Saffron Walden Nursery, November 18.

SUTTON'S AUTUMN CATALOGUE is now published, and will be sent post-free on receipt of one penny stamp.—Address SUTTON and SONS, Reading, Berks.

HYACINTHS FOR BEDS.

FRESH IMPORTED HYACINTHS, all double, colours marked, at 30*s*. per 100, carriage free. Fine mixed CROCUSES, 12*s*. 6*d*. 1000; and other DUTCH ROOTS at equally low prices.—JOHN SUTTON & SONS, Reading, Berks.

HYACINTHS, TULIPS, ETC.

WILLIAM E. RENDLE AND Co., SEED MERCHANTS, Plymouth, *have still on hand a fine assortment of all the best Hyacinths, Tulips, Anemones, Ranunculus, Gladiolus, Sparaxis, Lilium, Crocus, Iris, Jonquille, Snowdrops, Amaryllis, and other kinds of Bulbous Roots.*

The present is an excellent time for planting them either in pots or in the ground; but the sooner the better. All orders will be properly attended to.

RENDLE'S *Catalogue of Bulbous Roots can be had in exchange for two penny stamps, on application to*
WILLIAM E. RENDLE, and Co., Seed Merchants, Plymouth.

SEED WHEAT.—Samples and Prices of BROWICK RED, NURSERY, RED HYBRID, and other kinds of Wheat from the CHALK, sent on application to Mr. H. RAYNBIRD, Basingstoke. The Red Hybrid and Nursery are well suited for late sowing after Turnips.

LILIUM LANCIFOLIUM.

HENRY GROOM, Clapham Rise, near London, by appointment, FLORIST TO HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to say that this is the best time to have Bulbs of the different varieties of this most BEAUTIFUL LILY. They are well adapted for the Flower Garden, American Borders, and Drives in Parks, being quite hardy. His Catalogue may be had on application.

WILLIAMS' EVERGREEN CLIMBING ROSE.

WILLIAM WOOD AND SON have been appointed Agents by Mr. Davis, of Malvern, for the sale of the above-named magnificent CLIMBING ROSE. Good established plants, 3*s*. 6*d*. each. Usual discount to the trade. For particulars purchasers are referred to their own and Mr. Davis' advertisements in *Gardeners' Chronicle* of October 7, page 643.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

NEW CHRYSANTHEMUMS.

JOHN SALTER'S collection, containing all the established favourites, and upwards of 60 new varieties of this season is now in bloom, and may be seen every day except Sunday.—Versailles Nursery, William Street, near Hammersmith Turnpike.

NEW CHRYSANTHEMUMS OF 1854.

Aurore boreale	Louis Delaborde	Dr. Bois
Auguste Mie	Bob	Eclipse
Comte Achille Vigier	Indiana	Marguerite de Valois
"	"	" de Wildemar
Zebra	Hermine	Juanita
Pluie d'Or	Turris Eburnea	Duval

MESSRS. E. G. HENDERSON & SON beg to announce that the above choice varieties, flowered for the first time in this country, can now be seen in their winter garden, at the Wellington Nursery, St. John's Wood, London.

STRAWBERRY PLANTS.

CUTHILL'S BLACK PRINCE ...	21*s*. per 1000.
" PRINCE OF WALES ...	40*s*. "
BRITISH QUEEN	21*s*. "
ELTON PINE	21*s*. "
PINCE'S NIMROD, New	20*s*. per 100.

J. G. WAITE, Seed Merchant, 181, High Holborn, London.

RHUBARB ROOTS.

MYATT'S LINNÆUS	35*s*. per 100.
" VICTORIA	28*s*. "
MITCHELL'S ALBERT	30*s*. "

Good strong Roots, and warranted true to kind.
J. G. WAITE, Seed Merchant, 181, High Holborn, London.

GEORGE TAYLOR, JUNR., FRUIT SALESMAN, St. John's Market, Liverpool,
Will purchase a quantity of undermentioned goods during the season.

PINE APPLES, at per lb.	CHOICE PEARS, at per doz.
GRAPES " "	CUCUMBERS " "
MUSHROOMS " "	CAMELLIAS, &c. " "

&c., &c., &c.
TERMS CASH NETT.
Apply or forward as above.

DUTCH HYACINTHS, for Forcing, single and double, at 4*s*. per dozen. Also Narcissi, Crocuses, Tulips, Irises, Jonquils, Anemones, and Ranunculuses, priced Catalogues of which will be forwarded by post, from ARTHUR COBBETT'S Italian and Foreign Warehouse, 18, Pall Mall.

Also Double Roman and Paper White Narcissus, the most beautiful and fragrant of all the Narcissi, 4*s*. per dozen.

RHUBARB ROOTS for FORCING or PLANTING.—Strong one-year planted roots of MYATT'S VICTORIA and LINNÆUS, MITCHELL'S ROYAL ALBERT, at 6*s*. per doz.; HOWARD'S PRINCE ALBERT, 12*s*. per dozen. This is a larger variety than the Victoria, and is extensively cultivated about Manchester. Price to the trade of the above, per 100 or 1000, on application to MESSRS. J. MYATT AND SONS.
Manor Farm, Deptford, Nov. 18.

CHRYSANTHEMUMS.

J. AND J. FRASER have now in bloom a very fine collection of the above, comprising the best of Pompone and large flowering varieties. Fine strong plants in bloom, from 9*s*. to 12*s*. per dozen. Several new varieties of the present season, 1*s*. 6*d*. each.—Lea Bridge Road, Essex. Nov. 18.

FINE SPECIMEN PLANTS.

J. AND J. FRASER beg to invite attention to their magnificent Collection of large AZALEAS, HEATHS, and other Plants, which were never in such good condition as at the present time. This is an excellent opportunity for buyers as (on account of not having sufficient room) the plants will be offered at very low prices.
The Nursery, Lea Bridge Road, Essex.—Nov. 18.

HOLLYHOCK SEED.

WILLIAM CHATER begs to offer packets of the above Seed, containing twenty sorts, selected from his best show varieties, at 5*s*.; 12 varieties, do., 2*s*. 6*d*.; and from good double border sorts, at 1*s*.—Also Pansy Seed, from the best flowers, 2*s*. 6*d*. per packet.—Strong Plants of the new Double Crimson Rocket, excellent bedding plants for spring flowering, 6*s*. per dozen, or 2*l*. per 100: Double French White, 4*s*. per doz., or 30*s*. per 100.—Saffron Walden, November 18.

HOLLYHOCK SEED.

R. PARKER has now ready for sending out Seed of this year's saving from the finest named varieties in cultivation, in packets at 1*s*. and 2*s*. 6*d*. each. A remittance or reference to accompany all orders from unknown correspondents.—Paradise Nursery, Hornsey Road, London.

HOLLYHOCK SEED, from selected flowers of all the best collections in England and Scotland, 2*s*. 6*d*. per packet.

SPOTTED MIMULUS, from finely shaped flowers of every variety of colour and spot, at 1*s*. 6*d*. per packet.

CHOICE CALCEOLARIA, from the most superb collection in England, 2*s*. 6*d*. per packet.
JNO. AND CHS. LEE, NURSERY and SEEDSMEN, Hammersmith.

SEED POTATOES.

IN J. HAYES'S ADVERTISEMENT, inserted Nov. 4, for 160 Bushels per Acre, read 360. Those not in possession of this fine root should order it immediately. 1*s*. charged for new sack; 6*s*. for 1½ bushel, 60 lbs. to the bushel.
JOHN HAYES, Florist, Farnham, Surrey.

EARLY SEED POTATOES.

JACKSON'S IMPROVED EARLY ASH-LEAF, 9*s* per bushel. The celebrated Short-top Ashleaf, 7*s*. 6*d*.; British Queens, 7*s*. 6*d*.; the earliest round variety known, free to London; no charge for sacks.—JOSEPH WILSON, Seedsman, Ipswich; Agent for Wild's celebrated Cucumber, the Ipswich Standard, and beautiful semi-double Primulas. In sealed packets free by post, 2*s*. 6*d*., in stamps, or order.

SEED POTATOES. — EARLY ASH-LEAVED KIDNEY POTATOES	6*s*. 6*d*. per bushel.
EARLY FORTYFOLD POTATOES ...	4*s*. "
LAPSTONE KIDNEY POTATOES ...	6*s*. "

Address H. MAY, The Hope Nurseries, near Bedale, Yorkshire

IMPORTANT TO POTATO GROWERS.

HAY, SANGSTER, AND CO., are now ready to send out their celebrated Stock of SEED POTATOES from prepared cuttings, now completely free from disease, of the following sorts, viz.:—

Early Ebrington Kidneys, per bushel 12*s*.	Early American, per bushel, 8*s*.
Early Oxford " 10*s*.	York Regents " 6*s*.
	Scotch Cups " 6*s*.

Package and delivery in London, 9*d*. per bushel, and 2*s*. per sack.
Newington Butts, London.

CUTHILL'S POTATO PAMPHLET, &c.—J. C. has received many more letters this autumn from Potato growers, telling of their great success by having followed up J. C.'s plan. It contains 20 more Articles on the Strawberry Cucumber, &c. Price 2*s*. 4*d*. by post.
CUCUMBER (BLACK SPINE), 1*s*. per packet.
JAMES CUTHILL, Camberwell, London.

E. SPARY begs to announce that his collection of CHRYSANTHEMUMS are now in flower at his establishments, consisting of first-rate sorts and strong dwarf-grown plants. First-rate collection of Dahlias in ground and pot roots. Greenhouse Plants, Cut Flowers, and Bouquets to order. Seeds, &c.—Queen's Graperies, and 176, Western Road, Brighton.

WANTED, 30,000 or more QUICK WOOD, not less than two years transplanted.—Apply to F. HUTCHINSON, Gardener, Sowerby, Thirsk.

WANTED, PEACH TREES.—A few well-trained healthy Peach Trees for Walls, consisting of Bellegarde and Royal George, also a few GREEN GAGE TREES for Walls; a few dozen well-rooted WALNUT TREES; and a few MORELLO CHERRY TREES. All of them will require to be delivered at a Station on the South Western Railway.—Address, stating price (which must be moderate) E., Office of this Paper.

TO BE SOLD, at very reduced prices, 10,000 very strong 2, 3, and 4-year old GOOSEBERRIES and CURRANTS, of the best sorts.—For further particulars, apply to LAKE & DYER, Nurserymen, Bridgewater.

IMPORTANT TO NURSERYMEN.

TO BE SOLD, from 600,000 to 700,000 Forest Seedlings, LARCH, SCOTCH FIR, SPRUCE FIR, BIRCH, BEECH, ELM, ALDER, THORN QUICKS, &c., one and two years old, all in the finest possible health, and prices moderate.—Apply to P. EDWARDS, Old Merrion, Black Rock, near Dublin.

TO BE SOLD CHEAP, a large quantity of SILVER BIRCH TREES, 10 to 15 feet, fine for immediate effect. Also, Planes, Limes, and Evergreen Shrubs.—Messrs. BROWNS' Nursery, Albion Road, Stoke Newington, London.—Nov. 18.

PYRAMIDAL PEAR TREES ON QUINCE STOCKS.

J. AND J. FRASER have to offer a very fine collection of the best varieties of PEARS grafted on the Quince; descriptive Catalogues of which may be had on application. Strong Trees, showing Fruit Buds, 2*s*. 6*d*. to 3*s*. 6*d*. each.
Lea Bridge Road, Essex, Nov. 18.

JAMES MELDRUM, NURSERYMAN, Kendal, Westmoreland, begs to offer, upon the most reasonable terms, upwards of one million of fine stout two-year SEEDLING OAKS and also two-year SEEDLING ASH.—Price on application.

PINE PLANTS.

J. A. WATSON has for sale a splendid stock of clean robust plants, both Fruiters and Succession, at from 2*s*. to 15*s*. each, according to size.

Fine RASPBERRY CANES, of all the best vars., at 10*s*. per 100.
Vine Gardens, Ealing Lane, Ealing, Middlesex.

FOREST TREES, ETC.

PETER LAWSON & SON, Edinburgh, the QUEEN'S SEEDSMEN, &c., respectfully acquaint their patrons in England and the public, that their PRICED LIST of PLANTS for the season is now ready, and may be had on application, at their Branch Establishment in London.

All orders sent to the London Branch will be immediately executed, and delivered in London free of expense.
27, Great George Street, Westminster, November 18.

LARGE FIRS AND FOREST TREES.

MESSRS. WILLMOTT AND CHAUNDY, of Lewisham, have to dispose of, at low prices, in consequence of the ground (12 acres) having to be cleared for building on, a quantity of large FOREST TREES and FIRS of various kinds they will come up with good roots.

They have also an extensive stock of large well-grown Evergreens of various sizes, that will come up with good balls.

FORRES NURSERIES.

JOHN GRIGOR AND CO., Nurseries, Forres, have for sale a large stock of true native SCOTCH HIGHLAND PINE PLANTS, LARCH, DEODARA, and FOREST TREES in general. The numerous premiums awarded by the Highland and Agricultural Society of Scotland for raising true native Highland Pine Plants, have all been awarded to J. G. & Co.

Priced Lists forwarded on application, and the trade supplied at the wholesale rate.

SPLENDID CONSERVATORY PLANT.

FUCHSIA DOMINIANA.—A beautiful example of this truly gorgeous plant was exhibited at 21, Regent Street, on the 7th inst., and without any exaggeration it may be said to have been the admiration of every one. There is now no doubt that it is one of the finest autumn and winter flowering conservatory plants we have. The merit of raising this beautiful plant is due to Mr. Dominy, the Foreman of the Plant Department at the Exeter Nursery; it consequently bears his name as a memento of his zeal and ability in the performance of his duties. It is a seedling between Serratifolia multiflora and spectabilis, having the fine free growth of the former and the splendid flowers of the latter.

A few extra strong specimen plants, 2 to 3 feet ...	21s. 0d.
Fine large plants	10 6
Small Plants	7 6

Exeter and Chelsea Nurseries, Nov. 18.

N.B. The specimen exhibited on Tuesday can be seen at Chelsea.

SONERILA MARGARITACEA.—This lovely Plant was exhibited at the Horticultural Society Rooms, 21, Regent Street, on the 7th inst., and was the gem of the exhibition. (See report in *Gardeners' Chronicle*). It is perhaps the most chaste of all variegated plants, producing, with its dark glossy green leaves, dotted all over with silvery white spots, a profusion of beautiful crimson flowers, with yellow stamens. It is a dwarf compact plant, of particularly neat habit. It requires the temperature of a cool Stove or a warm Greenhouse.

Messrs. VEITCH & SON are now prepared to supply plants of the above, and have no hesitation in saying that this is one of the most lovely and delightful little plants it has ever been their good fortune to introduce.

Plants at 21s. each, with one over on three to the Trade.

Nurseries, Exeter and Chelsea, Nov. 18, 1854.

N.B. The Plant exhibited on Tuesday is now at the Exotic Nursery, Chelsea, and can be seen by the public.

ROSES.

WILLIAM WOOD AND SON, having a large stock this season, beg to offer fine strong Plants of the following kinds of HYBRID PERPETUAL ROSES, budded on fine selected stocks, from 4 to 6 inches, well suited either for potting or for planting in masses in the Rose Garden.

AT 15s. PER DOZEN (when one dozen of a kind is ordered):—Auguste Mie, Baronne Hallez, Baronne Prevost, Charles Boissière, Duchess of Sutherland, Duplessis Mornay, Egérie, Géant des Batailles, Jaques Lafitte, La Reine, Le Lion des Combats, Louise Odier, Madame Trudeaux, Pius the Ninth, Reine des Fleurs, Robin Hood, &c. &c. &c. Pius the Ninth is particularly recommended as a pillar Rose of extraordinary growth, budded plants of this kind in the Woodlands Nursery having made shoots from 5 to 6 feet in length this season, and flowers until very late in the year.

AT 10s. PER DOZEN (Hybrid Perpetual Roses):—Augustine Mouchelet, Duc d'Aumâle, Lady Fordwich, Madame Laffay, Marquise Boccella, Marquis of Ailsa, Mrs. Elliot, Prudence Rœser, William Jesse, &c.

N.B. The Trade supplied on liberal terms. Catalogues may be had in exchange for two postage stamps.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

THREE NEW ROSES.

DUCHER, ROSE FLORIST, Rue du Vivier (Guillotière, Lyons, (France).

THE LOUISE DE SAVOIE.—Growth vigorous, foliage dark green, buds large and very long, flower very large and full, colour sulphur to light yellow; blossoms very freely; resembles Chromatela, but superior. Strong plants, 15f.

CICERO, HYBRID PERPETUAL.—Growth very vigorous, foliage light green, buds large and long, flowers very large and almost flat, in two distinct colours, the centre variegated, and the edges of the petals dark crimson; blossoms very freely; curious perfume. This is a very remarkable Rose. Strong plants, 12f.

DEUIL DE F. WILLERMOS.—Growth moderate, flower medium full, colour dark purple shaded to black, the darkest of this class; blossoms very freely. Strong plants, 15f.

NEW CLIMBING HYBRID PERPETUAL ROSE,
THE "DUCHESS OF NORFOLK."—Colour, Vivid Crimson.
To be sent out for the first time about the end of October.

WILLIAM WOOD AND SON beg to refer to their advertisement in the *Gardeners' Chronicle* of September 30, page 627. Standards, half-standards, or dwarfs will be supplied at 10s. 6d. each, with the usual allowance to the trade.

N.B. When six plants or more are ordered by the trade, a very considerable reduction will be made beyond the usual discount, particulars of which may be had on application.

A Drawing of the above may be had for 6 Postage Stamps.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

AMERICAN NURSERY.

GEORGE BAKER'S DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS, &c., as exhibited by him in the Royal Botanic Gardens, Regent's Park, may be had by inclosing two postage stamps.

G. B. begs to call attention to his fine stock of Weeping Hollies, Coniferous Plants, Ornamental Shrubs, &c.—American Nursery, Windlesham, near Baghshot, Surrey, near Staines Station, South-Western Railway, where conveyances may be tained.

AMERICAN PLANTS.

JOHN WATERER begs to announce that he has published a new Catalogue of his Rhododendrons, &c., as exhibited by him in the Gardens of the Royal Botanic Society, Regent's Park, London. It describes the colours of all the Rhododendrons considered worthy of cultivation, with a Treatise on their successful management, and may be had by enclosing two postage stamps.

The American Nursery, Bagshot, Surrey, near Farnborough Station, South-Western Railway.

AMERICAN PLANTS.—A Descriptive Priced CATALOGUE of HARDY AMERICAN PLANTS for the coming season is just published, and may be had by enclosing two stamps for postage. As everything in the way of American Plants is grown to an unequalled extent at this Nursery, intending purchasers would do well to provide themselves with this Catalogue.

WATERER AND GODFREY, Nephews and Successors to the late Hosea Waterer, Knap Hill Nursery, Woking, Surrey.

GEORGE JACKMAN begs to announce that he has just published a new and complete CATALOGUE of his Ornamental Evergreens, Conifers, Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., and may be had on application by enclosing two postage stamps.

Woking Nursery, 1½ mile from Woking Station, South Western Railway, where all Trains stop, and where capital conveyances may be had.—November 18

ARTHUR HENDERSON AND CO. beg to inform their patrons and the public that their CATALOGUES OF BULBS are now ready, and they will have much pleasure in forwarding them on application.

They comprise lists of all the finest varieties of Hyacinths, and many other rare and valuable Bulbs.

Their collections of Hyacinths have yearly carried off the metropolitan prizes, not only for their unique growth, but also for their beauty of colouring and distinctness of sorts, either when exhibited in a collection of 36 plants or in pairs.

Their new descriptive Fruit Catalogues, Ornamental Trees and Shrubs, American Plants, choice Rhododendrons, Roses, &c., can be had on application.

Pine-apple Place, Edgware Road, London.

MESSRS. J. AND H. BROWN offer to the nobility and gentry the following, which they will forward to any part of the kingdom:—

Andromeda floribunda, fine ... ... per dozen 12s. to	18s. 0d.
25 Azaleas, new hardy Belgian varieties, one of a sort on their own roots	20 0
25 Azaleas, American varieties, do. do.	16 0
Hardy Heaths, Ledums, and Kalmias ... per dozen	6 0
25 Hardy American Plants, one of a sort	10 6
12 Rhododendrons, including Scarlet, White and Rose hardy varieties	12 0
Fine hardy Scarlet Rhododendrons ... ... per dozen	12 0
New hardy Yellow Rhododendrons ... each 3s. 6d. to	5 6
6 Fine hardy Magnolias, one of a sort	10 6
50 Dwarf Roses, two of a sort, on their own roots ...	16 0
Standard and half standard Roses ... per dozen 12s. to	15 0
Fine climbing Roses, of sorts ... ... per dozen	6 0
Greenhouse Azaleas, choice varieties ... per dozen	18 0
12 Camellias, well set with buds, fine sorts	30 0
Orchidea Plants, fine species ... ... per dozen	40 0
24 Choice Ericas, one of a sort	16 0
Chrysanthemums, new, show, and Pompone varieties per dozen	8 0

FRUIT TREES.

Fine standard and dwarf-trained Peaches, Nectarines, Apricots, Plums, Pears, and Cherries. The best and most approved sorts of these respective kinds, to name, each, 3s. 6d., or, per dozen	30s. 0d.
Untrained or maiden do., 1s. 6d. each, or, per dozen ...	12 0
Apples, dwarfs and standards of best sorts, per doz., 10s. to	15 0
Fine Gooseberries, Currants, and Raspberries, per dozen	3 0
Figs, Medlars, Quinces, Walnuts, and Mulberries, each	2 0
Filberts, new thin shelled and red skinned, per dozen ...	3 0
Strong Vines, from eyes and layers, in pots, per dozen ...	18 0

New Gardens and Greenhouses furnished on moderate terms.

Albion Nursery, Stoke Newington, London.—Nov. 18.

THE AMERICAN NURSERY, BAGSHOT, SURREY.

JOHN WATERER begs to recommend to the attention of Gentlemen and others engaged in Planting, the following plants from his general Stock, they are in fine healthy condition. The American Plants annually exhibited at the Royal Botanic Gardens, Regent's Park, are supplied from this establishment.

RHODODENDRONS.—The following is a selection of the most admired scarlet, rose, and high-coloured varieties in cultivation; are perfectly hardy, and bloom for the most part during the month of June.

Blandyanum, fine rosy crimson	5s. to 7s. 6d.	each.
Lady Eleanor Cathcart, vermilion rose and dark crimson spots	21s. 0d.	„
Lady Wenlock, bright crimson	21s. 0d.	„
Atrosanguineum, dark scarlet	10s. 6d.	„
Alarie, dark purplish crimson	7s. 6d.	„
Omer Pasha, dark crimson, new	10s. 6d.	„
Juba, crimson, intensely marked	10s. 6d.	„
Lefevreanum, crimson, tinged with purple	10s. 6d.	„
Attila, dark crimson	7s. 6d.	„
The Grand Arab, fine glowing crimson	7s. 6d.	„
Brayanum, crimson	10s. 6d.	„
Nobleanum bicolor, crimson, white eye	7s. 6d.	„
Vandyke, light crimson	10s. 6d.	„
Blatteum, dark purplish red	7s. 6d.	„
Rubens, light rose	10s. 6d.	„
The Duke of Norfolk, clear rose, fine	10s. 6d.	„
Celebrandum, dark crimson purple	10s. 6d.	„
Rembrandt, fine crimson	10s. 6d.	„
Congestum roseum, fine rose, well marked	21s. 0d.	„
Roseum novum, clear rose	10s. 6d.	„
Leopardi, rosy purple, and very much marked ...	5s. 0d.	„
Floribundum coccineum, fine	10s. 6d.	„
Erectum, good crimson	7s. 6d.	„
Towardianum, large rose, fine	10s. 6d.	„

For planting extensively, no kinds of Rhododendrons are better calculated for a display than the varieties of the noble Catawbiense; they are all perfectly hardy, producing fine trusses of blooms of various hues—scarlet, rose, purple, white, and spotted white. The list below contains the leading kinds:—

Catawbiense, good bushy plants, 50s. to 63s. per 100.
„ larger, 1½ to 2 feet, 12s. to 18s. per doz.
„ seedlings, fine bushy plants, 12s., 18s. to 24s. per doz.

Catawbiense bicolor	Gloriosum
„ splendens	Sherwoodianum
Album elegans	Bouquet de Flore
„ grandiflorum	Melanthauma
Cœleste	Pictum
Cyaneum	Roseum elegans
Candidum	Victoria
Delicatissimum	Maculatum nigrum
Egregium	„ purpureum
Everestianum	Macranthum
Finibriatum	Nivaticum
Mirandum	Perspicuum
Lindsayanum	

Good strong well established bushy plants, 30s. to 42s. per doz. Larger plants can be supplied at a corresponding advance of price.

STANDARD RHODODENDRONS.—Of these, without doubt, we possess the largest stock of really good kinds. Nothing can be more imposing when in bloom than a handsome standard. We have them 3 feet to 5 feet stems, and handsome symmetrical heads. The price of such would range from 42s. to 105s. each.

Rhododendron ponticum, good plants, 10s. 6d. per 100; larger, 1 to 1½ to 2 feet, 12s. 6d., 15s. to 25s. per 100. This is especially worthy the attention of planters; it will thrive in any soil, and in the most severe weather; is never injured by hares or rabbits. Unquestionably it is by far the best shrub for under cover.

KALMIA LATIFOLIA, good bushy plants, 60s. per 100; larger, 12s., 18s. to 24s. per dozen.

HARDY HEATHS, in 20 fine, named, varieties, many of them well suited to form edgings for larger clumps, 35s. to 42s. per 100.

HARDY AZALEAS.—A good assortment, if left to our selection, suitable for extensive planting, 1 to 1½ and 2 feet, 3l. 3s. per 100. The very best selected Ghent and other varieties, 18s. to 30s. per dozen. These produce flowers of all colours—scarlet, rich orange yellow, rose, and white.

STANDARD ROSES, of the most approved Perpetual and Bourbon varieties, 3 to 4½ feet stems, 18s. per dozen.

PINUS Douglasi, handsome seedling plants, 3 to 4 and 6 feet.
„ insignis; we strongly recommend our stock of this justly admired Fir, all of which are from seed, 2 to 3, 4, & 5 ft.
„ cembra, 3 to 4 and 5 feet.—Pinus excelsa, 3 to 6 feet.
„ macrocarpa, 2 to 3 feet.
„ Lambertiana, very handsome, 3 to 4 feet.
Araucaria imbricata, splendid formed specimens, 2 to 4 feet.
Cedrus deodara, of all heights, from 1 to 8 feet. We have a large quantity about 4 to 6 feet.
„ Africana, 3 to 4 feet.
„ Lebanon, handsome grown specimens, 3 to 6 feet.
Cryptomeria japonica, 3 to 12 ft.—Libocedrus chiliensis, 2 to 3 ft.
Fitzroya Patagonica, 2 feet.
Cupressus Goveniana, 3 to 4 feet.
„ Lambertiana, 3 to 4 and 5 to 6 feet.
Irish Junipers, 4 to 5 feet.—Irish Yews, 4 to 8 feet.

The above-named Coniferous Plants have been frequently transplanted, are perfect specimens, and have never been grown in pots. Prices will be forwarded on application.

J. W. begs respectfully to solicit an inspection of his stock, from those who are engaged in planting. A Catalogue, containing full descriptions of his celebrated Collection of Rhododendrons, as exhibited by him at the Royal Botanic Gardens, Regent's Park, can be obtained by inclosing two Postage Stamps.

MESSRS. E. G. HENDERSON AND SON, of the Wellington Nursery, St. John's Wood, London, beg to announce that they are now sending out the following new Plants:

HELIOTROPIUM, BEAUTY OF THE BOUDOIR; the best for Garden and Pot Culture.

CHRYSANTHEMUM, ANNIE HENDERSON; the summer flowering variety; colour yellow, and form of Annie Salter; very dwarf.

GERANIUM, PRETTY POLLY; the loveliest hybrid bedding Geranium; colour, orange salmon.

ACHIMENES HENDERSONI; the newest and prettiest hybrid variety out.

FANCY GERANIUMS: CLOTH OF SILVER, EVENING STAR, and CRYSTAL BEAUTY; for form, colours, and general good qualities unequalled.

CINERARIAS. MRS. ROGERS, MRS. GERARD LEIGH, FASCINATION, and PRINCE OF PRUSSIA. (No further orders can be executed for Mrs. Rogers and Mrs. Gerard Leigh until next spring.)

See Autumn Catalogue for full descriptions, price, &c. &c.

The NEW RHODODENDRONS discovered on the Bhootan Alps, by THOMAS J. BOOTH, Esq., surpassing in magnificence of flower the Sikkim species. Full particulars of them will be seen on reference to their Spring Catalogue.

THE LARGEST AND CHEAPEST ESTABLISHMENT IN ENGLAND for GERANIUMS (show and fancy), FRENCH GERANIUMS, FUCHSIAS, VERBENAS, FAIRY ROSES, CHRYSANTHEMUMS, HELIOTROPES, CINERARIAS, CALCEOLARIAS, PRIMULAS, and other soft-wooded plants, is the Floral Nursery, Acton Road, Turnham Green, near London. More than 250,000 plants are there cultivated annually.

The stock of show Geraniums exceeds 50,000, and comprises upwards of 750 varieties, amongst which almost every known kind will be found. The newest sorts, such as Carlos, Virginia, Rosa (Foster's), Leah, Picta, Marginata, Empress, Neatness, &c., can be had at 3s. 6d. each, or 40s. per dozen. The older varieties from 9s. to 25s. per dozen.

The selection of FRENCH GERANIUMS consists of 40 distinct sorts (exclusive of those English Geraniums which some class with them), at 2s. 6d. each, or 25s. per dozen.

SEEDLING CINERARIAS (10,000), from seed of first-rate flowers, at 4s. per dozen, in 60-sized pots.

20,000 SEEDLING HERBACEOUS CALCEOLARIAS now on hand at 4s. per dozen in 60-sized pots. These flowers have been raised from the seed of the best of last year's stock, which received general praise.

An immense quantity of good fimbriated PRIMULAS at 4s. per dozen in 60-sized pots, and 6s. per dozen in 48's.

CHRYSANTHEMUMS (Lilliputian and large flowering) at 6s. and 9s. per dozen for plants which will flower this season. Large magnificent plants at 18s. and 15s. per dozen—all the best sorts.

The foregoing have been selected as examples only, it being impossible within the limits of an advertisement to afford particulars of a stock so extensive; Catalogues will, however, be forwarded to all parts gratis.

Every possible exertion will be made to give the most perfect satisfaction to all who may favour this Establishment with their patronage. None but thoroughly established Plants will be sent out, and full reliance may be placed on prompt attention and fair dealing.

The Trade will be liberally dealt with. Provincial Nurserymen and Florists will do well to try this Establishment.

Terms cash or a satisfactory reference.

JOHN WESTWOOD, PROPRIETOR.

TO GENTLEMEN ENGAGED IN PLANTING.

WATERER AND GODFREY respectfully invite attention to their stock of the following very desirable HARDY PLANTS:

Araucaria imbricata, from 2 to 7 feet high; as handsome as plants can be.	Pinus canadensis, 3 to 8 feet
Cedrus Deodara, in any quantity, from 1 to 3 feet high	Cupressus macrocarpa or Lambertiana, 4 to 7 feet
Do. do., 4, 5, 6, 7, 8, and 10 feet high; splendid plants	„ thyoides variegata, 3 to 4 feet (the variegated white Cedar)
Cedars of Lebanon, 3, 4, 6, and 10 feet high	Juniperus, Upright Irish, perfect columns, 3 to 7 feet
Pinus Douglasi, 3 to 10 feet	„ chinensis, 2 to 8 feet
„ insignis, 2 to 7 feet	Yew, common English, 3 to 8 feet
„ Menziesi, 3 to 7 feet	„ Irish, 4 to 10 feet
„ pinsapo, fine plants, 3 to 6 feet	„ gold-striped, 1½ to 3 feet
„ Nordmanniana, 1½ to 3 ft., all from seed and remarkably handsome	„ do., tall standards, 4 to 7 ft
„ nobilis, 1½ to 2 feet; a few larger, 5 and 6 feet high, on their own roots, and with perfect leaders	„ Dovaston, or Weeping worked on tall straight stems
„ Montezumæ, 2 to 4 feet	Thuja aurea, the finest plants in the country
	Libocedrus chilensis, the finest plants in the country
	Large variegated Hollies
	„ Standard Bays

Also an immense stock of large Evergreens, Standard Ornamental Trees, &c.

All the plants here offered may be seen, growing in the Nursery; they are removed every year, and will travel any distance with perfect safety. Of some, such as Araucarias, Deodaras, Golden Yews, Thuja aurea, Pinus nobilis, Nordmanniana, we have any quantity; and the plants, for root and branch, are not to be surpassed. Priced Catalogues will be forwarded on application, enclosing two postage stamps, to WATERER and GODFREY, nephews and successors of the late Hosea Waterer, Knap Hill Nursery, Woking, Surrey, near the Woking Station, South-Western Railway, where all trains stop, and where capital conveyances can be obtained.

The 2d. stamp will also include a descriptive Catalogue of their American Plants, Roses, and Nursery Stock in general.

TO THE AGRICULTURISTS OF ENGLAND.

HARRADINE'S "NE PLUS ULTRA" WHEAT.—A single ear of this wonderful Wheat, which was purchased five years ago of a soldier on tramp, who brought it from some distant country, was sown in 1849; the produce of this was again sown in 1850, and also in 1851, when it yielded at the rate of 19 coombs, 1 bushel, and 1 peck per acre. This induced me to continue its cultivation. A sheaf and a quantity of corn will be shown on Messrs. Garratts' Stand in the Agricultural Department of the Crystal Palace, by which its quality and general character may be seen.

The following Gentlemen kindly lent me portions of their land last season, to test the producing quality of the Wheat, and up to this year not one kernel has been sold for seed. The quantity sown on all the varieties of soil has in no instance exceeded 4 pecks per acre. On land of Mr. Wasdale, in the parish of Woodhurst, this Wheat was sown after Tartarian Oats, Clover Seeds, Peas, and Tares (some being sown in February, and equally productive). On land in the occupation of Mr. Gadsby, in the parish of Godmanchester, 1 acre, the yield of which has been 30 per cent. over his own Wheat, grown in the same field, and has been tested by several Agriculturists in the neighbourhood. On land in my own possession, in Needingworth and other places (both Fen and Highland), it has been sown after Wheat, Clover, Barley, Beans, Oats, and Fallow, and in every instance has been most productive.

I am prepared to part with a limited quantity, which can be had on application to me, at 25s. a bushel. All orders to be accompanied by a remittance.

JOHN THANG HARRADINE, Needingworth, St. Ives, Huntingdonshire.

PRICED NURSERY CATALOGUES.

A. PAUL AND SON will be happy to forward the following priced Nursery CATALOGUES in return for one postage stamp each:—A, ROSES; B, ORNAMENTAL TREES AND CONIFERS; C, FRUIT TREES; D, HERBACEOUS PLANTS; F, GREENHOUSE PLANTS, &c.; G, SEEDS; H, HOLLYHOCKS; I, BULBS.—Nurseries, Cheshunt, Herts.

PELARGONIUMS.

J. DOBSON AND SON beg to announce that their New DESCRIPTIVE CATALOGUE of the above, containing full descriptions of Beck's new and beautiful Seedlings, and the best of other raisers, may be had on application.

J. D. & SON beg to state that their stock of Pelargoniums are particularly strong this season. First-rate selections from 12*s.* per dozen.—Woodlands Nursery, Isleworth.

SUPERB DOUBLE HOLLYHOCKS.

JOSEPH BUTLER, Gardener to R. Hills, Esq., Colne Park, near Halstead, Essex, begs to announce that he has now ready for sending out a large stock of extra strong plants of nearly all the varieties yet sent out; also some superb new varieties of J. B.'s own raising.—Descriptive Catalogues will be sent post free on the receipt of a postage stamp; also Seed saved from J. B.'s superb collection; 150 Seeds mixed for 12 postage stamps. Collections, consisting of well contrasting colours, at 6*s.*, 10*s.*, 15*s.*, and 25*s.* per dozen; if left to J. B.'s own selection good double contrasting colours for Borders, not named, 4*s.* per dozen. A remittance is solicited from unknown correspondents. Post Office orders, payable at Halstead, Essex.

QUINCE STOCK PEARS.

H. WALKER, Londonderry, offers the following:—

5000 1 year PEARS, on Quince Stocks, 2 to 5 feet, in 50 best sorts	per 100	50*s.* 0*d.*
Single Specimens in collections, 50 to 100 varieties,	each	0 9
2,000 APPLES, on the Paradise and Deucin Stock, 1 year, 3 to 4 feet...	per 100	40 0
100 SUSETTE OF BAVAY; Pyramids, 6 feet on Pear Stock...	each	0 9
200 MAIDEN PEACH TREES	„	1 0
3,000 MANETTI ROSE STOCKS, 1 to 3 feet,	per 1000	40 0
3,000 BERBERIS, holly-leaved, 1 foot ...	„	20 0
500,000 1 Year HAWTHORN SEEDLINGS...	„	2 0

Carriage free to London.

NEW CRIMSON DAHLIA "INCOMPARABLE."

MR. E. ABLITT begs most respectfully to announce to the Dahlia Trade that he purposes disposing of the above named splendid Seedling Dahlia in ground roots. Colour rich ruby crimson, fine shape, with great depth of well arranged petals and good centre; it has been shown at most of the exhibitions in the neighbourhood, and greatly admired. Mr. Glenny also speaks of it in very high terms as one of the best in the crimson class.

☞ See Glenny's Almanack for this year, and Lloyd's Weekly Newspaper for October 29th, initials E. A., and Nov. 11th.

Terms, Five Guineas each root.

Onehouse, Stowmarket, Suffolk.

NEW GERANIUMS, ETC.

ISAAC DAVIS, Larkfield Nursery, Wavertree, near Liverpool, begs to offer the following, being the best and most distinct of last year. Regalia, 5*s.*; Virginia, 3*s.* 6*d.*; Lucy, 3*s.*; Pilot, 3*s.*; Ladybird, 3*s.*; Sanspareil, 3*s.* Very bushy strong healthy plants. The favour of early orders will oblige, as repotting will be required shortly. The usual discount to the Trade.

Also an unrivalled stock of the following RHODODENDRONS, an acre from 1 to 5 feet; Green Hollies, half an acre 1 to 5 feet; many thousands of all the other kinds of Evergreens. Pinuses, Fruit, and Ornamental Trees, Shrubs, Roses, &c.; and a good collection of Greenhouse Plants in flower. An inspection of the above will convince any person desirous of purchasing, that they cannot be surpassed in quality or cheapness. Trees are not cheap at any price unless well grown.

T. PERKINS, Atherstone, Warwickshire, begs to offer to the Trade, strong GRAPE VINES from single eyes, of the following kinds, at 12*s.* per dozen. Samples sent on receipt of 24 postage stamps.

Chassel's Musque	Pitmaston White Cluster
Black Hamburg	Dutch Sweet Water
Groves End Sweet Water	Black Frontignac
Grizzle Frontignac	White do.
White Muscat	Black Prince
Muscat of Alexandria	Black St. Peter

Post Office Orders payable at Atherstone.

CORN MARKET, WISBEACH, CAMBRIDGESHIRE.

CHARLES SHARPE begs to call the attention of the nobility, gentry, and trade to the undermentioned choice collection of SEED POTATOES. The undermentioned prices include hampers and package. Smaller quantities can be had if required. The Trade Price can be had on application.

POTATOES FOR FORCING AND EARLY PLANTING.

Per bushel of 4 stones.		Per bushel of 4 stones.	
Ash-leaf Kidney (Jackson's)	12*s.*	Early Fox's Seedlings ...	10*s.*
„ Walnut Leaf ...	12*s.*	„ Flourballs (by lots)...	10*s.*
„ Early Shillings ...	12*s.*	„ Round Frame ...	10*s.*
„ „ Martin's Globe ...	12*s.*	„ Cockney	10*s.*
„ „ Emperor	12*s.*	„ Oxford (very true)...	10*s.*

POTATOES FOR SECOND PLANTING AND LATE CROP.

Per bushel of 4 stones.		Per bushel of 4 stones.	
American Native ...	10*s.* 0*d.*	Kentish Kidney ...	8*s.* 0*d.*
Forty Fold	10 0	Yorkshire Regent ...	8 0
White Rough	8 0	Fluke Kidney, the only Potato yet proved itself free from the disease, and a prodigious yielder ...	12 0
British Queen — the largest producer in cultivation, and of the finest quality ...	10 0		
Lapstone Kidney (true)	12 0		

THE FLUKE POTATO.—A new second early variety, surpassing every other in its capability of resisting the Potato disease, and without exception the finest and most prolific Potato in cultivation. To be had genuine of THORNHILL and DICKSON, Lawrence Hill Nurseries; and No. 1, Wine Street, Bristol. Price per cwt., 15*s.*, bags included.

Also genuine Early ASH-LEAVED KIDNEYS, per bush. ... 8*s.*
PRINCE REGENTS (Scotch seed), per bush.... ... ... 6*s.*

Prepayment required from unknown correspondents. A Descriptive Circular of the above will be forwarded on application, for one stamp.

FIVE HUNDRED BUSHELS OF POTATOES TO THE ACRE.—This enormous crop was grown this year by a gentleman in Surrey, and out of which there were only 5 bushels diseased; nearly all the quantity were large sized, some weighing 2 lbs. and 1 oz., and not above 30 bushels of Chats out of the whole. This Potato was originally reared in Scotland, and is called by its grower the Scottish Champion. It is a good baker and boiler. Price 2*l.* 2*s.*, inclusive of the sack of 3 bushels, delivered free at the South Western Railway station in London. Early application is necessary, as only a few sacks are for sale, the party growing intending to plant largely next season. A reference as to the quantity and quality can be given in the neighbourhood.—Apply by letter, post-paid, to B. S., 4, Crooked Lane, London Bridge.

All orders must be accompanied by a remittance.

LARGE SURPLUS STOCK OF TREES SHRUBS, ETC., NOW ON SALE AT MESSRS. WM. E. RENDLE AND CO'S NURSERY, Plymouth.

THE PROPRIETORS, *having a large surplus Stock of the following, can offer them at greatly reduced prices; and all Orders above £10 will be delivered free of carriage to any Station on the* BROAD GAUGE RAILWAYS, *and to Cork, Dublin, and Liverpool by Steamers.*

400,000	Seedling	Scotch Fir.
500,000	„	Larch Fir.
200,000	„	Pinus austriaca.
200,000	„	Turkish and English Oaks.
10,000	„	Cedrus Deodara, from 6 ins. to 3 ft. in height.
10,000	fine Laurels of various sizes.	
20,000	all the best varieties of Strawberries.	
10,000	of the best Rhubarb Roots in cultivation.	

With a large and general Assortment of Nursery Stock, including Forest Trees, Shrubs, and Fruit Trees, such as is generally found in a large Provincial Nursery.

All who intend to plant, either in the Forest, the Shrubbery, or the Garden, during the present Autumn, should procure their NEW AUTUMN DESCRIPTIVE CATALOGUE, *which can be had in exchange for one penny stamp on application to*

WILLIAM E. RENDLE AND CO., NURSERYMEN and SEED MERCHANTS, Plymouth.—Established 1786.

THE FOREST, THE PARK, THE SHRUBBERY, AND THE GARDEN.—*Noblemen and Gentlemen requiring Trees, Shrubs, or Fruit Trees during the present Autumn should obtain* RENDLE'S *New Autumnal Descriptive Catalogue, which can be had on application from*

WILLIAM E. RENDLE & Co., Nurserymen and Forresters, Plymouth. Established 1786. New Seeds, growth of 1854. Arrangements are now being made at this establishment for a large supply of genuine and good Seeds for the coming season.

JOHN CATTELL, NURSERYMAN, Westerham, Kent, begs to inform the Trade that he has a large stock of the following articles to offer, worth their attention; prices of which may be had on prepaid application enclosing a penny stamp.

Delphinium Barlowi	Œnothera macrocarpa
Gladiolus brenchliensis	Wahlenbergia grandiflora
Anemone pavonia	Spiræa callosa

Late and Early Dutch Honeysuckle
Hardy Azaleas, of the finest sorts.
Red Raspberries do. do.
Gooseberries and Currants, do.

BASS AND BROWN'S NEW AUTUMN CATALOGUE, containing the following, is now complete, and supplied free by post for three Penny Stamps.

Dutch and Cape Roots.	Hardy Herbaceous Plants.
Geraniums.	Potentillas.
Cinerarias.	Hollyhocks.
Azalea indica.	Antirrhinums.
Fuchsias }	Conifers, and other Select Trees and Shrubs.
Verbenas } best new of 1854.	Hardy Climbers.
Petunias }	
Stove and Greenhouse Plants.	Roses, Fruits, &c. &c.

Seed and Horticultural Establishment, Sudbury, Suffolk.

NOW READY.

SUTTON'S COMPLETE COLLECTIONS OF KITCHEN GARDEN SEEDS *are now ready, and should be ordered forthwith, by which a full supply of every kind of Vegetable Seed required during the whole year will be secured (including the best sorts yet introduced), and at a very small cost, viz.:—*

No. 1 Collection ...	£3 0 0	No. 3 Collection ...	£1 5 0
No. 2 do. ...	2 0 0	No. 4 do. ...	0 15 0

The quantities in each collection being apportioned to the size of the garden, INSTRUCTIONS ON CULTIVATION will be enclosed with Nos. 1, 2, and 3. To secure the best sorts, orders should be given immediately, addressed

JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

The Gardeners' Chronicle.

SATURDAY, NOVEMBER 18, 1854.

THE late continued dry weather and its attendant mildew have notoriously affected the Turnip crop to a very serious degree. But it is not only in the mildewed crops that unsound Turnips abound; perhaps even to a greater extent the white Turnips of our fields and gardens, which are often quite free from mildew, exhibit undoubted signs of speedy decay. The first indication is, we believe, always in the vascular bundles, the walls of the reticulated vessels, which are sometimes of great beauty, exhibiting traces of that peculiar brown tint, which is the certain sign of the commencement, of those chemical changes by which living tissues and their contents pass into ulmin and allied combinations which end in their reduction into mould similar to that from whence they originated. From these vessels the incipient decomposition radiates in various directions, sometimes confined to the cell walls themselves, but often affecting their protoplasm, insomuch that a section viewed with the naked eye exhibits a dark central speck with a pale and often neatly defined border. The surrounding tissue in different cases assumes a variety of appearances. Sometimes the cells are excited into repeated multiplication, insomuch that they present on their walls numerous closely set parallel lines; sometimes a few only of the cells are divided, while others have the walls repeatedly plicate, so as to make it a very difficult task to ascertain the real nature of the phenomenon. It is apparently in very early stages only of the disease that the reproductive powers of the cells are preternaturally excited, possibly from the action of some incipient change in the nitrogenous matters which they contain; and as the decomposition is clearly traceable downwards, it is highly probable that the disease is caused by noxious matter contained in the air and passing downwards through the vessels.

If the evil arose from the absorption of juices arising from the decomposition of the cellular tissue of the leaves, whether induced by external or internal causes, it is scarcely probable that it would travel downwards by one set of tubes. It is not, however, denied that noxious gases may be produced by decay in the subcutaneous tissues of the leaves, and from thence penetrate into the vessels; but fading and decaying leaves which have performed their assigned functions, and only perish from mere natural exhaustion, are so universal on plants which in every other part exhibit the most perfect health, that we must look to some less general circumstance, and this may very possibly exist in some condition of the air, injurious to some particular vegetable production, analogous to that by which epidemic disorders are produced from time to time in man, without our being able to assign the peculiar qualities which produce any particular infection. The case before us is not a solitary instance of diseased matter travelling down the vascular bundles, and the fact is well worth more extended study than it has at present received. *M. J. B.*

WE have just received through Messrs. Low and Co., from M. JACOB MAKOY, of Liége, some trusses of fruit of a NEW STRAWBERRY, called the *Delices d'Automne*, produced in the open ground, and we think so highly of the variety as to judge it worthy very special notice.

It is said to have been raised from a kind of Alpine without runners, known among the French by the name of the *Perpetuelle rouge, sans coulans*, crossed with the *British Queen*. Its scapes are tall, somewhat hairy, but much less so than those of the British Queen. Its fruit is most abundant, middle-sized, ovate, red, with the grains prominent, or but slightly embedded; the calyx is rather small. The flesh is solid throughout, juicy, and as rich as that of the male parent, but more acid. The truss has more of the habit of growth of the Alpine varieties of Strawberry than of the British Queen.

M. MAKOY states that he saw, on the 6th of November, old plants of the above, in the open ground, as much covered with flowers and fruit as if it had been the month of June, although the weather had been previously very cold. In September and October the fruit was much better, larger, and more coloured. The plants, though very productive in fruit, are said to make but few runners, as might have been anticipated from the nature of the mother of the Strawberry.

There is no doubt that we have in this case an entirely new variety, with new habits, and of sterling merit. The fruit which reached us wanted colour, and was scarcely ripe; nevertheless, it contained abundant evidence that it possesses quality of the highest order. That it should have been acid was inevitable in the case of fruit ripened in the open air in the month of November.

A very fine dish of *Prince of Wales* Strawberries was exhibited to the Horticultural Society a fortnight ago, beautifully coloured; but we apprehend they would have had no chance with this new Belgian variety, had Mr. INGRAM had it under his care.

We believe there is no record of the Alpine having been previously employed as a breeder. Now, that M. MAKOY has shown the way, we dare say many other growers will endeavour to imitate his example: and it would not at all surprise us to see that fruit like the British Queen and Keens' Seedling were as common in October as in July.

IT is now some years since ELLIOT described, in his "Sketch of the Botany of South Carolina and Georgia," certain icy fibres which appeared day by day on the stems of Pluchea bifrons, D. C. About nine years later, Sir JOHN HERSCHEL published a notice of a remarkable disposition of ice round the decaying stems of vegetables; and more recently DANA and LE CONTE have described a remarkable exudation of ice from the stems of vegetables, which the latter has illustrated by the occasional protrusion of icy columns from certain kinds of earth during frost. Dr. CASPARY had an opportunity of studying a similar phenomenon in the botanic garden at Schöneberg, in the course of last November; and, after a careful study of all the attendant circumstances, he has lately given the result of his observations at considerable length in the "Botanische Zeitung," Sept. 22, 1854. Notwithstanding some little discrepancies, there is no doubt that the several cases are substantially the same, though modified by particular circumstances. The matter is so interesting that a brief notice cannot fail to be acceptable to many of our readers; first of the phenomenon itself, and then of the causes from which it seems to be derived.

On the morning of the 14th of November several

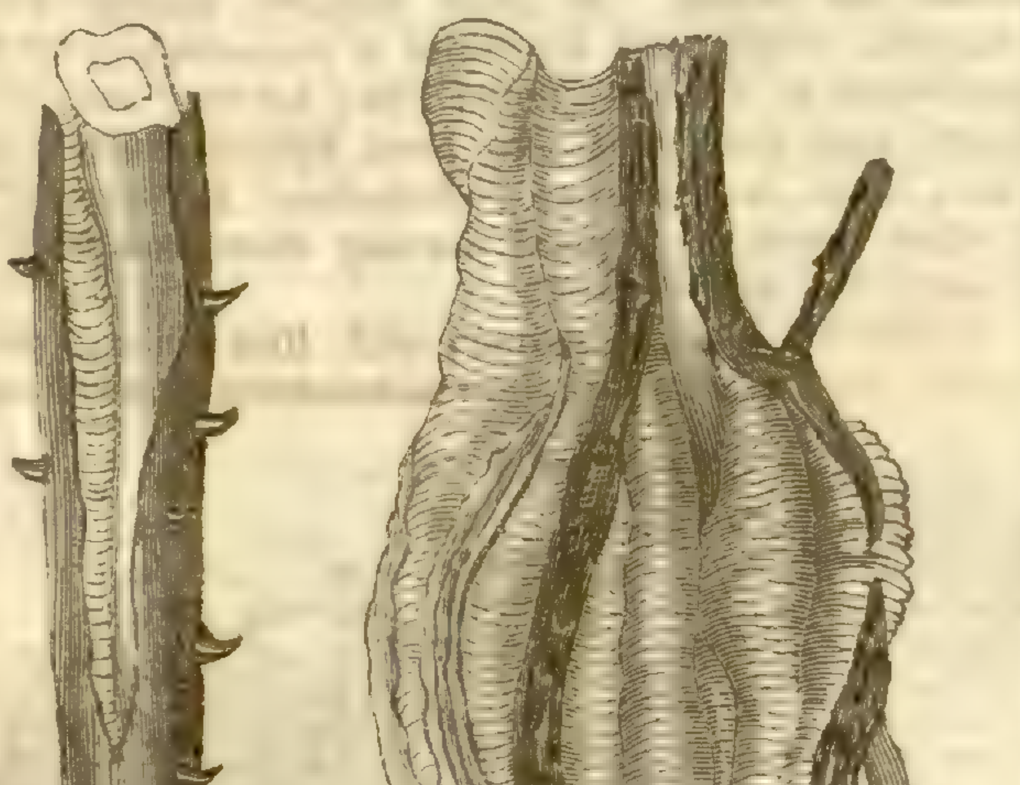
plants,* both annual and perennial, all of them cultivated in the open ground, and in full health and vigour the previous day, presented a very extraordinary appearance. The bark was variously split and separated from the wood, from which two kinds of icy formations of considerable size projected, the one consisting of fibrous strata, the other of thin vertical sheets. These were not confined to the base of the stems but extended even to the highest and thinnest branches, some of which were 3 feet or more above the surface of the soil. The first species consists of small thin horizontal threads, perpendicular to the stem, closely pressed to each other but not separable, so as to form a continuous layer 1½—4 m m. (,059—, 157 inch) thick, and from 30—90 m m. (1,18—3,54 inch) long, occupying from ⅓ to ⅝ of the whole woody cylinder. The second, which was extremely beautiful, and far more common, exhibited vertical sheets from 10—160 m m. (,39—6,29 inch) long by 10—30 (,39—1,18 inch) broad, and as thick as strong paper, springing in a radiating direction from the whole or part of the stem, sometimes to the number of 30, more or less irregularly curled and undulated, with the margin entire or minutely crenate, of a pure snow-white, or clear as crystal, and resembling some richly lamellated coral.

The plates themselves were marked with horizontal lines, as though the whole were formed of laterally confluent fibres, which sometimes projected, especially in the smaller upper twigs, in the form of a beautiful fringe. The wood itself was often split, but the plates never projected from the fissures, but originated on the exposed surface of the wood itself. The phenomenon was strictly confined to exotic species cultivated in the open ground, and consequently with their roots well developed and capable of imbibing large quantities of fluid without intermission. It occurred, moreover, on the first night that the temperature of the air and surface of the ground descended, except as a transient minimum, in a marked degree below the freezing point, and that accompanied by a strong dry wind, which must have been very favourable to evaporation. The accompanying illustration represents a small portion of a branch with either kind of formation, the prickly twig of Lantana aculeata exhibiting the first species, while the second is a Cuphea cordata.

This curious formation admits of more than one explanation. Le Conte regards it as a purely physical phenomenon, while Dr. Caspary, neglecting Herschel's view, leaves it uncertain whether the ice arises from the plant itself, or from the comparatively warm earth beneath, the evaporation from which is conveyed upwards by the plant, as by a kind of chimney. Le Conte considers the lamellar formation on the plants of the same nature with the pillars of ice, consisting of innumerable thread-like spun glass, which sometimes spring from the surface of the soil, arising from the innumerable capillary tubes which are contained in its substance. These masses occur only on the surface of the soil, which itself remains unfrozen. Supposing, then, a loose and warm soil to be saturated with moisture and exposed to moderate frost, since the soil is a bad conductor of heat, the uppermost stratum alone would be cooled down to the freezing point: and since the resistance to lateral expansion is less on the surface than it is lower down, the first effect of cold will be to make the ends of the capillary tubes or pores conical or pyramidal. The sudden chilling of the surface-water produces a rapid and forcible expansion, which, in consequence of the resistance offered by the sides of the cones, not merely pushes the thready pillar of ice forwards, but also causes it to protrude in the direction of least resistance, namely, perpendicular to the surface. The conical extremities thus become free, fresh fluid follows by capillary attraction from behind, the formation and protrusion of ice is again effected, and the same process is repeated by paroxysms till a mass is formed 3 inches or more in length. "Now if this be compared," says Le Conte, "with what takes place in the Pluchea, similar conditions will be found to exist. The porous pith supplies a constant flow of warm fluid from the soil, while the cuneiform medullary rays present the mechanical conditions necessary for the exercise of a protrusive power in the required direction."

It is not true that the moisture does ascend by the pith; but making the necessary corrections, it is easy to understand that masses of ice might be formed in this way on the plant by causes similar to those which exist in the soil. Our limits prevent our examining other parts of Le Conte's explanation, or pointing out the errors which seem to be involved in it. But allowing that this is sufficient to account for the formation of the compact fibrous masses of Lantana, it does not apply to the lamellar sheets which surround the stems of other plants. Dr. Caspary therefore inquires what organs there are in plants disposed with sufficient regularity and of proper length to give rise to plates extending sometimes several inches down the stem, and thrusting off the bark in every direction.

The only organs answerable to this character are the vascular bundles, and to these therefore his attention has been turned. In all the instances which came under his observation he found the walls of the vessels pitted, and the only difficulty of great consequence which met him was the uncertainty that exists as to the functions of the vessels. That they contain fluid at an early stage is certain, because they are but modifications of cells; but whether they carry fluid when arrived at maturity, except with rare exceptions, is far from certain. Allowing that they were gorged with fluid, in the plants in question, the lateral pores might readily convey it to the neighbouring elongated tissue, and so be subjected to the freezing temperature which had penetrated through the bark. It seems, however, to us quite as probable that the fluid might be more energetically carried through the cells with which the vascular bundles are surrounded than through the neighbouring tissue; and if so we have a series of lines corresponding with the vessels, where the icy plates might be formed,



without assuming the doubtful position that water is carried through vessels which seem more peculiarly destined to convey air, with rapidity and abundance sufficient to produce the enormous masses of ice which appear upon the stems—masses which have a very high ratio to the quantity of water which could pass through the plant within the time of the formation of the ice, under any ordinary circumstances. *M. J. B.*

* Perilla arguta, Benth.; Tagetes bonariensis, P.; Alonsoa incisifolia, R. and P.; Cuphea pubiflora, Benth.; cordata, R. and P.; platycentra, Benth.; Heliotropium peruvianum, L.; Manulea oppositifolia, Vent.; Lantana abyssinica, Otto and Dietr.; aculeata, L.; Calceolaria perfoliata, L.

VEGETABLE PATHOLOGY.—No. XLVI.

203. The Causes of Disease; *a. Internal or Constitutional.* — The objects of cultivation consist of numerous vegetable species, more or less permanent varieties of these, temporary variations and intermediate hybrids, of which the parents are distinct species or other modifications of the vegetable kingdom; all these, again, are made up of innumerable individuals, each possessed of its own peculiar qualities, whether good or bad. Now, assuming species, as such, to have been created without any especial tendency to disease, which we may fairly do, as any universal evil tendency would be sure to end in the total destruction or disappearance of any given species, the same cannot be said of the individuals of which that species is composed, much less of the various modifications which arise from cultivation, accidental conditions of climate, or hybridisation. It is notorious that many hybrids are so delicate in point of constitution that they can scarcely be kept alive for a few months, much less arrive at maturity, and individuals from the moment of germination are so utterly devoid of strength that the tenderest and most judicious nursing will not avail to raise them. The same reasoning holds good in the vegetable as in the animal world, that all defects of constitution will sooner or later appear in the offspring, and that injudicious crossing leads, of necessity, to a weakly and bad progeny.

204. Whatever evil qualities may exist in any particular individual, those qualities are handed down to the remotest descendant, so long as propagation takes place by division of one original stock; the ultimate divisions, unless new influences are called into exercise, will neither be more nor less diseased than the first; and it is obviously mere theory or blind conjecture which asserts that plants are impaired by constant reproduction from division. The case, however, is as clearly different where any particular individual has acquired constitutional disease from whatsoever cause, because in that case, if propagation be made from it, the divisions will partake of its own peculiarities, which may either be amended by cultivation, or further aggravated. The notion of wearing out, which prevailed a few years back, is now pretty well exploded, since it has been clearly ascertained that seedling Potatoes are often quite as strongly diseased as those raised immediately from sets. New races, both amongst animals and vegetables, often expel, and sometimes entirely destroy the old, though not from any weakness of constitution, but from the pressure of external natural laws which they are unable to resist; and the same applies still more strongly to new physical conditions altogether inconsistent with the maintenance of species, as where land is drained to such an extent as in a year or two to destroy every trace of the former vegetation, which required constant moisture.

205. The case is not precisely the same where plants are propagated by grafting or inoculation on a strange stock. It is well known that particular varieties require particular stocks, and though they are luxuriant, or even rampant, on a favourable matrix, they cannot be preserved except for a short time on any other. Sometimes, in order to insure success, even double grafting is needful. If, then, those varieties of fruits which years ago formed the staple of our markets, either do not exist in the present day, or only in such an unhealthy state as to render them unprofitable objects of cultivation, it does not follow that this arises from any natural wearing out of the variety, but far more probably from some difference of treatment or unsuitable stocks. The Golden Pippin is often cited as an instance; but like other productions of superior quality, it appears to be in itself delicate and nice as to the soil it affects, even if it be worked upon a congenial stock. In some gardens it is still produced in great perfection, and succeeds very well from grafts if they be judiciously selected. Larger though closely allied varieties have, however, in great measure superseded the old Golden Pippin, insomuch that the old trees were long neglected and suffered to run into decay. Practical considerations combined with love of novelty have concurred to displace many old favourites; the great reason, for instance, why the Nonpareil is not so largely cultivated as formerly is the absolute necessity of leaving the fruit upon the tree to November,* if it is to arrive at perfection. Something of the same kind may be said in all probability some years hence of the finest variety of Apricot now in cultivation. The Moor Park in many situations will scarcely live a dozen years; and were it not for the superior size and flavour, few in those localities would continue to cultivate so precarious a variety. A hundred years hence the same complaints of wearing out will probably be made of it as of the Golden Pippin, whereas the truth would be, that from its first origination, the good and evil qualities of the variety were combined.

206. Where propagation takes place by grafting, not only may the stock be unsuitable, but the scions existing in some particular district may all come from some cankered tree, which from the very nature of the case can scarcely be expected to produce healthy shoots, and a diseased condition may thus prevail in that variety through a whole district. We have seen no evidence which has at all satisfied us as to the wearing out of species. Unfavourable circumstances may have induced disease; and if the variety has accidentally been reduced by neglect or other cause, to a small number of individuals, the peculiar good qualities may never be completely restored. *M. J. B.*

PLANTING THE PEAR TREE.

Choice of Soil, Season, and Precautions necessary to ensure Success.—In a deep light soil, composed of alluvial layers, or in soils that are stony, schistose, calcareous mixed with humus, marly, or marly clay, and where the subsoil does not retain stagnant water during a great part of the winter, the Pear tree on the Pear stock may be successfully planted. If the plantation can be made in such kinds of soil, and in situations inclined to the east, south, or west, on the side of a hill or slope, so much the better. The more light, stony, or calcareous the soil, the less a sloping situation is necessary; but the more compact, strong, or schistose the soil on the sides of hills, the better the Pear tree grows and bears. It is only necessary for an attentive observer to travel in the months of August and September, through a country where the Pear is generally cultivated, and he will find the above remarks strictly correct.

If perfect success is aimed at, we ought never to plant Pear trees in ground previously occupied by fruit trees, and which have perished from old age or decrepitude.

When an old plantation of fruit trees is to be renewed, it is necessary to remove all the old roots, trench the ground, and crop it with vegetables for at least ten years. When a regular plantation of fruit trees is to be made, it is far preferable to choose a virgin soil, where, in the memory of man, no fruit trees of any kind have been grown or planted. In support of this opinion, we could state many facts which have come under our observation; but the details would prove tedious to the reader.

With regard to the season for planting the Pear tree worked on the Pear stock, and under the conditions of soil and situation above indicated, it coincides with the fall of the leaves, or a little after, say from the 15th of November to the 15th of December. In a strong and rather moist soil the planting may be performed after winter, and as late as the middle of March, but we prefer planting before winter.

In light soils, plantations made immediately after the

* As healthy trees are still to be found in some districts of this superior variety as ever, and bearing as clear, large, and ruddy fruit, but it is not a kind which will repay the cultivator, except he has a ready means of disposing of the finer kinds of fruit at a proportionate increase of price, and so it is but little cultivated by small gardeners.

fall of the leaves, in the month of November, before hard frost sets in, are always the best. In order that the trees may suffer as little as possible from removal, their roots should not be allowed to dry by exposure to the air. After being taken up they should be immediately packed in damp moss. When the trees arrive at the place where they are to be planted, all bruised fibres should be cut off, and the larger roots that may have been broken in taking up should be cut with a sharp knife, commencing a little from the ends on the under side, and sloping upwards. For a tree two or three years budded the holes should be made 3 feet wide, and 2½ feet deep. If the soil be strong and compact, the holes may be proportionally wider and deeper. It is always advisable to put in the bottom of the hole a layer of good light rich earth taken from the surface of a kitchen garden; and the roots should be covered with some of the same sort of soil. If the trees have been out of the ground for a week or two, owing to some accident, and if the roots are consequently in a dry state, they should be steeped for two hours at least in rain or pond water. In light soil, and in dry weather in spring, it is usual to water the soil well about the roots before these are finally covered. This is done in order to close in the dry light soil about the roots. This watering below the surface layer of soil facilitates the emission of roots, and thereby insures the starting of the tree.

When a tree is planted in a hole, dug at least five or six days previously, it ought to be so placed as to have its upper roots about 2 inches above the level of the ground. The newly stirred soil in the bottom of the hole will gradually settle, so that the upper roots will ultimately be as low as the surface of the soil. In planting the tree, it is improper to shake or lift it up, for thereby the roots may be imperceptibly broken or twisted. After planting it is advisable to lay a good thickness of light soil over the roots, in order to support the tree against the strong winter winds, and to protect the roots from severe frosts which may occur. After the tree has taken root, this extra layer of soil should be levelled off, in order that the solar rays may exert their beneficial influence on the soil in contact with the upper roots. Trees planted with these precautions succeed the best. Any one may observe that fruit trees which emit roots from the neck of the stem, immediately below the surface of the soil, are more vigorous and bear fruit in greater abundance and of better quality than those that are planted too deep, which on the contrary languish and continue unproductive, although planted under the same circumstances of soil and situation as the preceding.

There is another important point which we cannot pass over in silence. It is the bad practice of pruning or mutilating the tree before planting. This practice is not in any respect a rational one. How, indeed, can it be expected, that a young tree can take well after suffering from transplanting and a change of soil; whilst at the same time it is subjected to amputations which, under the circumstances, it is impossible to heal? Strictly speaking, the branches of a transplanted tree ought not to be pruned till it has taken root, till the buds have pushed by the first flow of sap, or rather after the second, in August or September; as we have already pointed out, on principles which we believe to have established in the article relating to the pruning of Pear trees on Pear stocks, and cultivated as dwarfs and as pyramids. *J. De Jonghe, Brussels, Nov. 10.*

ÆCHMEA FULGENS.

The unusual length of time during which this Æchmea lasts in beauty renders it one of the most useful plants at present in cultivation. It is extremely suitable for flowering in small pots for furnishing vases in rooms; and being a somewhat striking plant, and capable of bearing the confinement of a close apartment for a considerable time without much injury, it is an excellent subject for house decoration.

Plants intended to form large specimens should be grown on freely the first season, getting the suckers potted early in spring, putting three in a 7-inch pot, and keeping them growing as late in autumn as can be done without drawing or weakening the foliage, and affording them sufficient pot room, with plenty of heat and moisture. In winter give no more water to the soil than will suffice to prevent it from getting unhealthily dry, and let the plants occupy a cool light part of the stove, in order to check and mature their growth, and ensure their blooming. After allowing them six weeks' or two months' rest, they may be placed in bottom-heat, giving the soil sufficient water to properly moisten it, and they will soon be in full beauty. But it will not be advisable to remove them to a cool house while in flower, as this would prevent their making any growth while in that state, and the inflorescence lasts so long in beauty, that this would be a considerable hindrance, where large specimens are wanted without loss of time. In this case, therefore, it will be better to let the plants remain in the stove, placing them where they can be spared from the syringe, and as much out of the way of damp as possible. When the flowering of the plant is over, cut out the spikes, and remove any of the leaves that may be interfering with the young suckers, but do not cut down the shoots that have flowered until this becomes necessary to prevent crowding the suckers. The plants should now be repotted, placing them in a warm part of the stove, and in bottom-heat if convenient, and encouraged by plenty of heat and moisture to make vigorous growth. Thin out the young suckers to the proper number for forming a specimen of the desired size, and let this be done before those to be left are injured by crowding, and the old pieces should also be removed in time to prevent injury from them. As to the number of suckers proper to be left, this will depend upon the size of pot, &c., but it is better not to leave too many, as fine strong flower-spikes will not be produced unless the plants are kept moderately thin, and grown strong. If all the shoots on a large plant are expected to bloom at once, the specimen must be subjected to a short period of dry cool treatment, to check and mature the growth; but if a succession of bloom is wanted this will be best secured by keeping the plants in growing circumstances to secure a succession of suckers. Treated in this way they will grow and bloom, and furnish a succession of flower-spikes the year round, and will be attractive objects. I am not partial, however, to the system of growing this plant in large masses, for well-grown single plants are, in my estimation, by far the most attractive. Any light rich soil, through which water will pass freely, will be quite suitable for potting, but care should be used to secure perfect drainage, for the roots are impatient of stagnant moisture, which also injures the foliage. *Alpha.*

New Plants.

101. Neriandra suberecta *Alph. Decand. Prodr.*, viii., 422; *aliàs* Echites suberecta, *Bot. Rep.*, *t.* 187; *aliàs* Echites Pellieri, *French Gardens.*

This was sold to Mr. Glendinning, of the Nursery, Turnham Green, by M. Miellez, of Esquermes, near Lille, as a *new* Echites called Pellieri, after the Messrs. Pellier of Mans. A little inquiry among French botanists would have rendered it unnecessary for these gentlemen to deceive themselves; for they would have learnt that the plant had been figured more than 50 years since in Andrews' "Botanists' Repository," an English work, the plant having then flowered with Messrs. Lee and Kennedy.

It forms a graceful twiner, with firm oblong shining leaves, and clusters of lemon-coloured flowers at the

extremity of long axillary naked peduncles. The limb of the corolla is rounded, and not furnished with pointed lobes as in Andrews' figure; there are a few glandular teeth at the base of the sepals, but no calycine scales, and therefore it cannot be Echites suberecta, as it has been supposed to be. The anthers have long feathery tails, as in the Oleander (*Nerium*), whence the generic name. We do not know whether or not this will prove a free flowerer; but if it should, it will rank horticulturally with Dipladenias. Mr. Glendinning informs us that he finds it difficult to propagate. The plant seems to have been originally obtained from St. Vincent's.

Home Correspondence.

The Pampas Grass.—While stationed in the year 1846 off the the Island of Vizcaino, in the river Uruguay, our attention was drawn to a weed which seems to answer the description of the Gynerium argenteum, in your paper of the 4th inst. I regret that I can give no particulars as to its leaves; the height of the flower-stem was about 10 feet, and to the best of my recollection the plume of flowers was more feathery than your figure represents them to be. These islands are situated at the junction of the Uruguay and the Rio Negro; their character is generally swampy, and along the water's edge is invariably a thick fringe of bush, at the back of which I saw specimens of the feather reed growing. The numerous small craft trading to the Rio Negro are in the habit of cutting quantities of Orchidaceous plants for sale at Monte Video, and I have seen them ornamented with the feathery plume in question. There would therefore be no difficulty to a resident at the latter place in procuring as much as he pleased of it. *H.K.*

Forming an Orchard on thin Soil on Gravel.—I shall be much obliged to you if you will give me the benefit of your advice on the following point. I am going to plant an orchard for Apples, Pears, Plums, Cherries, &c. The soil consists of a very few inches (about 5) of good earth, the subsoil being gravel (round pebbles and sand) to an immense depth. My gardener says that if the whole were taken out to the depth of 3 feet, and refilled with 1 foot of stiff clay, of which there is abundance not far off, and the remaining 2 feet with loam, leaf mould, manure, &c., he has no doubt the result would be satisfactory. The expense is immaterial, provided the object be gained. Be so kind as to inform me whether you approve of his suggestion; if it would be likely to remain a permanent improvement, or whether, as has been mentioned to me, the clay would no longer remain clay, but become so assimilated to the gravel in ten or a dozen years as to let the moisture through as quickly as the gravel does now. What fruit trees do well on gravelly subsoil, and what on clayey? And finally, what would be the best thing to do to ensure a productive orchard under the circumstances (as far as preparing the land goes) expense being, as I have stated, no object? I have read with much pleasure your articles and correspondents' communications on Pears; but I do not see how I could carry out the advice of your correspondent, Mr. May, (pp. 725 c, and 726 a), in planting an orchard of 2 acres, from the impossibility of procuring the enormous quantity of brickbats, &c., which he requires. You will observe that my gardeners' object is to retain the moisture and prevent it from going through too quickly, which it now does, carrying all manure with it. Mr. May's object is to give the utmost possible amount of drainage. *Beta, Leeds.* [We have no doubt that some *experienced* correspondent will readily furnish the information here asked for.]

Hardiness of Conifers, &c.—Here is a list of Pinus &c., and how they were treated by the sharp frost this spring on my land, which generally, you must know is a light sandy loam well qualified for most of the tribe:—P. insignis, nowhere affected in the least; excelsa, one very thriving one was quite killed in a low situation, but on dry ground, scorched up suddenly as if struck by lightning; Webbiana, in an exposed place, untouched on a dry south bank, cut down; Lambertiana, in a damp sheltered corner, untouched; Khutrow, in an exposed (moderately) situation, killed, in a warm south-looking bank not materially hurt; Deodar, everywhere cut down very badly, but one small tree on a wet north bank is unharmed; Taxodium sempervirens, untouched; distichum, cut down slightly; Cupressus macrocarpa, unharmed; torulosa, cut down about 1 foot; thyoides, unharmed; both thyoides and macrocarpa are on a warm south bank; the common Cypress terribly cut down everywhere, but on exposed ground; Platanus orientalis and occidentalis are neither of them hurt anywhere, which I am much surprised at. Walnuts, and Spanish Chestnuts, planted with them, sadly mutilated. There is a number of trees, both Coniferæ and others, generally unharmed; but my attention was specially directed to those I have named above. Several Silver Firs were topped, and a Cork tree, which was cut down last year by a slight frost, is this year quite unharmed, having had a slight shelter put round it to the north and east during the spring. Pinsapo, Stone Pines, &c., unharmed; all these trees are under 10 years old. The Deodaras and common upright Cypress have suffered most of any. *R. H. Valpy, Enborne Lodge, Newbury.*

Profits of Pear Growing.—I admire the amiable enthusiasm of M. de Jonghe; he must be pre-eminently a happy man, for he imagines that he can by his

"scientific mode of pruning" defy nature and all the frosts and storms of our northern climate; a man with such an opinion of his own powers must be very happy. I now write to put in a word in defence of the poor abused Pear trees in the neighbourhood of London. According to M. de J. they are effete and exhausted, owing to bad management. Now, that he is entirely wrong I can testify, and when he pays his annual visit to England next summer, I hope he will allow me to be his guide to the Pear gardens in the neighbourhood of Rotherhithe and New Cross; he will there see finer and more fruitful Pear trees than can be found in any part of Belgium, and large standards, healthy, free from canker, and full of fruit-bearing spurs, of such sorts as are rarely seen bearing well as standards—I mean Brown Beurré (Beurré Gris of Belgium), Crassane, and Jargonelle. These trees bear annually, with the exception of such extreme frosty springs as those of 1853 and 1854, immense crops of fine fruit; and I firmly believe that more Pears are grown in this district than in all Belgium. Some years ago, when the Greenwich railway was carried through the Pear gardens of Rotherhithe, one of the growers was found to have made 20,000*l.* by Pear growing; and this was done without the aid of M. de Jonghe's system of pruning, but simply by a good climate, good soil, and the usual thinning out of the branches when crowded. I do not state this to disparage pinching and pruning, which is so necessary with pyramidal and espalier Pear trees, but merely to point out to M. de Jonghe that it is necessary to look well into a country before an opinion is formed of its resources. I hope our Pear trees will be stirred up by the reproaches cast upon them, and that next year their smiling abundant crops will enable us to laugh at the evil prognostications of our happy friend. *Thomas Rivers.*

The New Water Weed.—I am sorry to destroy the expectations of your correspondent "J. B. G.," and sincerely wish he were correct. The Anacharis alsinastrum is fearfully increasing in the Trent; and on the canals at Burton-upon-Trent. The swans have been encouraged and driven to its locality, but they seem to avoid, and have lately deserted it. I do not think they eat it when under their feet. *J. L., Burton.*——With reference to the destructive propensities of swans, as directed against the Anacharis alsinastrum, if you will refer to the *Gardeners' Chronicle* of 10 or 11 years back, you will find a similar fact registered by myself, which though it brought me into some little ridicule at the time was still a fact for all that. I believe, however, that these birds destroy as many weeds in swimming about and pulling them up as they do in eating them, and it is quite certain that almost everything less strong than Iris Pseud acorus must soon perish under their incessant cropping. About four years back we tried to keep the swans from the water immediately contiguous to the lawn, but the weeds spread rapidly, and we were glad to avail ourselves again of their assistance. Another season, weeds being scarce, the swans attacked a remarkably strong plant, a dense mass several yards through, of Nymphæa alba, and in one night they destroyed almost every leaf, leaving merely the stems and midrib. Such small weeds as the Anacharis will stand no chance with a few swans, and are sure to be exterminated, and a few geese and ducks will not be found unworthy assistants in the work of destruction. *Wm. P. Ayres.*

Protecting Wall Trees in Spring.—The question of protection to wall trees is now more than ever important to gardeners. Allow me, therefore, to ask, with reference to the woodcut in your paper of the 28th October last, of what sized mesh is the woollen net? Unless very large indeed, it certainly does appear, that what with the net and the calico, the trees can scarcely get any light. How, then, is a healthy vegetation to be carried on for two months and a half at the very least? However, as it seems to have been tried and succeeded in one place, it may probably do so in others. *J. B.* [We do not recollect the width of the meshes; but we *know* that your apprehension is groundless.]

The Fir Beetle.—The Scotch Fir of this place (a tree of remarkably fine growth, and of so peculiar a habit as to be noted as distinct from those of its own species in the neighbouring districts) has suffered in several seasons in a curious manner. About the middle of autumn I have found the ground beneath these trees strewn with the young shoots of the spring, so fresh in appearance as at first to suggest the idea that they were nipped off wholesale by the squirrels. But on examining these shoots, splitting them as you will perceive in the specimen I enclose, I discover the whole of the wood to be eaten out by the little insect I have detected at the end of the bore, and which I endeavour also to transmit to you. I hope that you or some of your correspondents will have the kindness to let me know what is to be done with this enemy. *F. G. M.* [Your tree is attacked by Hylurgus piniperda, the great enemy of Fir trees. We believe the best way of dealing with the insect is to break the young shoots off the tree as soon as they begin to droop, in consequence of his attack, and to burn them. The beetle lives on the pith, but places her eggs under the ragged bark of any neighbouring Fir tree.]

Sarracenias.—The culture of the Sarracenia, or American Pitcher-plant, is by some considered difficult, but the principal if not the only reason why these plants are not more frequently to be met with, is more to be attributed to the small share of practical attention they have hitherto received than to the uncultivable nature of the plants themselves. It is a mistake to imagine that any temperature, however genial, will induce the roots of Sarracenias to penetrate, like those of Heaths, such a solid compost as peat and sand, or that the plants will grow or even live treated like aquatics, and submerged in a hothouse tank. Early in March they should be potted into 5-inch pots, using for composts turfy lumps of peat, sphagnum, and potsherds in equal parts. Care must be taken to keep the crowns well up from the soil. The pots should be placed on the platform in a shady part of the stove. As soon as the plants begin to start each pot should be surmounted with a bell-glass; glasses with an aperture in the top would free the plants from the presence of too much moisture, otherwise the plants will suffer from damp; and as in nine cases out of ten Sarracenias are destroyed through damp, it will be above all things necessary that especial attention be paid to this direction. Do not place the pots in those miniature cesspools called saucers, but water the plants while growing, daily, on the surface. The object in using bell-glasses is to induce the plants to break freely, and when they are all fairly started the glasses may be gradually dispensed with. Both the foliage and the pitchers will be produced in much better colour, and grow considerably stronger without the glasses than with them. Do not darken the glass immediately over the plants; for although Sarracenias while growing delight in a humid atmosphere, they do not like it darkened. The plants should therefore have all the light possible, but no sun. Sarracenias may also be grown in the most shady part of the greenhouse or conservatory; but, in this case, the bell-glasses should not be removed until after the plants have done growing—in other respects the treatment will be the same. The situation best suited for preserving Sarracenias during winter is on a shelf, well up in the light, in the least airy part of the greenhouse; while there the plants should be sparingly watered. *R. Miles.*

Effects of Spring Frost on Apple Trees.—As an instance of the peculiarity of the past season, there are two Apple trees in my plantation with a crop of small Apples, about the size of marbles on each of them, in all about 50; also several bunches of bloom. This morning I cut off a small branch with 12 such Apples, and a bunch of bloom on it. The sorts are, I believe, the Hawthornden and Oslin Pippin. The first bloom, which was plentiful, was all cut off by spring frosts, but towards the end of summer the trees again formed flowers, many of which have set, and have produced fruit about the size above described. *H. H., Sutton at Hone, near Dartford, Kent, Nov.* 14.

Radiation.—If "S." will refer to that text-book of radiation, Dr. Wells's "Essay on Dew," he will find something of what he seems partly to know, and more ground for profitable speculation. *T. L., Burton.*

Nimrod Strawberries.—Permit me to inform your correspondent "A Lady" that the plants which produced the large fruit mentioned at p. 693 were shaken out of the pots and planted in the open ground. *J. L., Exeter.*

Societies.

Entomological, *Nov.* 4.—The President in the Chair. Amongst the donations received since the last meeting was a series of choice Scotch insects, collected by Mr. Foxcroft in his recent excursion, by whom they were presented to the Society; also various publications from the Royal Society, Society of Arts, the Boston Society of Natural History, the Smithsonian Institute, the Entomological Society of Stettin, &c. Mr. Curtis, alluding to the jumping seeds received by Sir W. Hooker, exhibited the cocoon of a species of Ichneumonidæ, which he had observed to be capable of leaping about like an India-rubber ball. It was of an oval form and banded with white round the middle, and agreed with the cocoon described by Reaumur and Kirby and Spence as possessing the same power. The ichneumon reared from the cocoon was a species of Campoplex. He also exhibited a large species of Cynips, which he believed to be new to this country, and to be identical with the C. Quercus Petioli of Linnæus, received from Mr. Wallcott, who had reared it from the gall of an Oak found at Clifton hot wells. Mr. Rich exhibited several twigs of Oak infested with these galls, which closely resemble the galls of commerce, and were found near Bristol on the Oaks in great numbers, although they had never been noticed before. They were capable of producing a strong black dye; and it was remarkable that the trees on which they were found, produced no Acorns, the galls being developed on the twigs at the expense of the latter. Mr. F. Smith and Mr. Stainton stated that they had observed them in previous years; and Mr. Westwood stated that he had recorded the occurrence of this species in the *Gardeners' Chronicle* some time since. Mr. S. Stevens exhibited Otiorhynchus septentrionis, of Herbst, a new British species of Curculionidæ, taken by Mr. Foxcroft, in Scotland. Likewise a number of very rare coleoptera from Natal collected by Mr. Plant, including Goliathus Derbyanus, a new species of Tefflus, &c. Also a species of a minute dipterous insect, Phora urbana, which was stated to have been discharged from the nostrils of a person who had been long suffering from a disease of the nostrils. Mr. Logan exhibited a new British species of Elachista named biseriatella; and Mr. Harding a new Simæthis found on the Parietaria. Mr. Westwood mentioned that Mr. Gould had communicated to him a specimen of the common Helobia brevicollis, which he had observed to be luminous in the dark, the luminosity being probably owing to its having fed upon the Geophilus electricus, which is luminous at this season of the year. Mr. Baly read a paper containing descriptions of a number of new species of Chrysomelidæ from New Holland. A new part of the Transactions (containing four plates) was announced as ready for distribution.

Notices of Books.

Insecta Maderensia; being an Account of the Insects of the Islands of the Madeiran Group. By T. Vernon Wollaston, M.A., F.L.S. London, Van Voorst, 1854; 4to, pp. 634, with 13 coloured plates.

This is a volume of which the cultivators of natural science in this country may well be proud, and by which the famous name of Wollaston has received an increase of well-earned fame in the third generation. Other countries, it is true, have produced as elaborate and even more extensively illustrated works upon particular countries, as the results of especial voyages—such as those of D'Orbigny, and of the Astrolabe and Coquille, or the great French works on Greece, Algiers, &c.—but these have all been published under the auspices and at the expense of the government of the countries in which they have appeared; whereas we have here a private individual devoting not only several years to the investigation of the objects described in its pages, but also giving the result of his labours to the world in a style almost unequalled in entomological works.

Having been advised from the state of his health to pass two winters in Madeira, he employed his time whilst there in collecting the insects of the island with the intention of publishing lists and descriptions of the species in some of the natural history journals; but the matter grew on his hands to an unlooked-for extent, acquiring thereby fresh interest sufficient to lead him a third time to the island, in order to complete his knowledge of its Insect Fauna during the summer months, when he was enabled to ascend the higher regions of the island, living for several weeks in a tent, and thus becoming acquainted with districts previously but imperfectly explored, as well as allowing him to pay visits to the small islands of the Deserta group in the neighbourhood.

The volume before us contains the descriptions of the Coleoptera, or beetles, collected during these several sojourns in Madeira; and from the very careful manner of collecting adopted by Mr. Wollaston, we may well believe that we have here a tolerably correct and entire view of the Coleopterous Fauna of the group of islands in question. In this point of view the volume merits especial attention, containing many important results in reference to the geographical distribution of insects, whilst the minutely careful manner in which the descriptions of the genera and species are drawn up leaves nothing to be desired.

Our author had still another object in view in the publication of this work; and we sincerely trust, and indeed cannot doubt, that his benevolent ideas will have the result which he anticipated when he states, "One of my principal designs has been, not only to afford a complete catalogue to the general naturalist of Madeiran Coleoptera, but also to put into the hands of the sojourner there for a short period (of which there are several hundreds every winter from England alone, independently of those from other countries) a full and intelligible account of the actual stations in which he will probably be able to procure the several insects acquired by this means. Indeed I am emboldened to hope that my researches may be turned to some practical account for the amusement of that unfortunate class of wanderers whose lot it is to submit year after year to an eight months' exile in Funchal; for plainly to point out one way (be it but one) in which even a few stray minds may find an ample field to sport in during a banishment, under emergencies not the most enviable, is a boon which ought not to be overlooked in dealing with a subject thus voluntarily undertaken (however small it be, and imperfectly performed) for the *general* good."

The geographical position of these islands renders their natural productions very interesting in reference to the geographical distribution of animal and vegetable life; and it is perhaps amongst the Insecta that we may expect to obtain the most important results, since whilst the species of the higher animals are too few in number to allow general results to be drawn, the insects are sufficiently numerous to enable us to derive several important facts. On this head the author observes "The intermediate situation of Madeira, which, whilst pertaining artificially to Europe, has nevertheless much in common with the north of Africa (from which in distance it is the less remote), imparts to it an interest, the importance of which the student of zoological geography cannot fail at once to recognise; and if we scan the results arrived at in the following pages, that there is positive ground for the belief that *its Coleopterous Fauna is*, in a large measure, *of a very isolated type*, although partaking, in the main, of that particular stamp which is usually acknowledged as Mediterranean, yet the number of endemic species (and even of genera) would seem to be so great, whilst the new modifications which have been brought to light are so extremely characteristic and adjusted to the nature of the country in which they are placed, that we cannot resist the conclusion, that whatever may have been the extent or condition of that ancient continent of which these several Atlantic clusters are the sure witnesses, that portion of it, at any rate, which the Madeiran may be supposed to represent, was not only singularly rich in creations adapted specially to itself, but also that the

various forms must have migrated but very slightly ere the land of passage was destroyed—seeing that many of them had apparently not even reached those points of its area which are now the detached portions of the actual group. That this is really a fact, we may appeal, *inter alia*, to such insects as the Tarphii, only a single one of which, out of 15, occurs beyond Madeira proper [we possess this genus from Sicily]; to Argutor and Trechus (of the same island); to Acalles (of which 12 members out of 13 belong to the central mass); to the aberrant Atlantides and the Anemophili (almost exclusively Porto Santan); or to Deucalion (which reigns supreme on the nearly inaccessible heights of the two southern Desertas)."

The entire number of species of Coleoptera obtained by Mr. Wollaston amounts to 483; of this, not fewer that 270 (including 41 genera) are regarded as absolute novelties, the correctness of which, the majority of the species being apparently of an endemic nature, appears reasonable. The genera in which these 483 species are arranged are 213 in number, and out of the 41 genera now first described, there is reason to believe that nine are not exclusively Madeiran, thus reducing the endemic genera to 32, not 34, as the writer states.

Some peculiarities, both in respect to the entomological wants of the island, as well as to the nature of its possessions, are pointed out by Mr. Wollaston. It is remarkable that numerous genera and even families, which are looked upon as almost universal, do not occur in these islands. There is not so much as a single species of the Cicindelideous, Buprestideous, or Pselaphideous families; whilst Carabus, Cetonia, Telephorus, Tentyria, Pimelia, and other genera are also entirely wanting. Respecting the families of which representations occur, the Curculionidæ, Staphylinidæ, and Carabidæ take the lead. Mr. Wollaston says this is as might be expected, ; but we do not agree in the existence of such a necessity, the first of these families being herbivorous and the two others carnivorous. Of the Curculionidæ there are 80 species, of Staphylinidæ 73, and of Carabidæ 63. If the general character of the Fauna of the island indicated a pre-eminently herbivorous type, we might then, indeed, reasonably have expected the Curculionidæ to have been a predominant group; but, as we have seen, not only are the Buprestidæ entirely wanting, but of Chrysomelidæ there are only 4 species, of Cerambycidæ 6, and Galerucidæ 13. There must then be some strange peculiarity in the constitution of these islands to allow the Curculionidæ to take the foremost range in point of number of species. Mr. Wollaston has partially touched this question in his observation that two of the principal features observable throughout the Coleoptera of these islands are the *general obscureness of colouring* (gay tints being exceedingly rare), and the *apterous tendency*. Now, these two characteristics appear to us to indicate that there is a great want of connection between the insects and plants of these islands. Out of the 482 species of beetles, not fewer than 178 are unable to fly; but insects which feed on the leaves of trees and shrubs are almost invariably necessarily furnished with wings; and hence it is that in the great American forests we have such an infinite majority of Chrysomelidæ and Cerambycidæ, and also why in the latter country especially nature has expended her richest stores of colours. This, and other questions of similar character are discussed by Mr. Wollaston at considerable length, whilst the very careful descriptions both of the new and old genera and species will render this volume a most valuable aid to future entomologists. We have only to add a remark that the price at which the volume is published is so small as to insure a very extensive pecuniary loss to the author. *J. O. W.*

Garden Memoranda.

J. Simpson's, Esq., the Water-Works, Thames Bank, Pimlico.—The beautiful collection of Pompone Chrysanthemums which this place contains is now in full bloom, and a magnificent display it makes. A whole greenhouse, as well as portions of other houses, is filled almost entirely with well grown plants of these small flowered kinds, intermixed here and there with a few specimens of the earlier flowering of the large varieties. In addition to their fine heads of bloom, the distinguishing characteristic of Mr. Robinson's plants is their dwarfness, many of them being not more than a foot high, but considerably more than that in diameter. We have seen plants exhibited from this establishment 15 inches in height and 20 inches in width, beautifully in bloom in 8-inch pots. Indeed it would appear to be scarcely possible to carry good cultivation farther than is done here, not only in the case of Chrysanthemums, but also in that of Pelargoniums and other plants which Mr. Robinson is in the habit of growing.

The soil which Mr. Robinson thinks most suitable for the Pompone Chrysanthemum is one half rich turfy loam, one fourth horse and cow manure in equal parts well decomposed, and a small portion of silver sand. The plants are easily propagated; the second week in April is chosen for the operation. Having obtained as many thumb pots as are likely to be required, they are filled with rich light soil. The work is commenced by taking off strong healthy cuttings, placing each cutting singly in the pot. The pots are then plunged in a brisk bottom-heat, either in the propagating house or in a frame, keeping them close and frequently sprinkling them overhead with a fine-rosed watering pot; every means are employed to prevent their drooping. As soon as they are rooted air is admitted on all occasions when the weather is favourable, increasing it as the plants become established. When sufficiently rooted they are shifted into 4-inch pots and replaced in a slight bottom-heat, keeping them rather close for a week or 10 days, which promotes growth very materially. After that air is freely admitted in order to strengthen the plants which when well rooted are shifted into 5-inch pots. They are now permitted to have the full benefit of both sun and air. When well rooted round the balls they are stopped close down, *i.e.*, to within 3 inches of the soil; by this plan, short, bushy plants are secured. After they have broken afresh, they are shifted into 6-inch pots, in which they make fair-sized specimens; but if larger plants are desired, they may be obtained by shifting them into 8-inch pots, or they may be placed in that sized pot at once without being moved into 6-inch ones. After they have received their final shift, and are well established, a little weak manure water is given them twice a week, and they are plunged about half way up the pots in the ground in the open air, where they are allowed to remain until the buds are well set, and, indeed, have begun to show colour; they are then moved under glass. At this stage of their growth they are fumigated at least twice with Tobacco in order to keep green-fly off them. When these instructions are fully carried out, they open their blooms clean, vigorously, and in first-rate character. Plants well grown like the above make fine objects during the latter end of October, and all through November, and some varieties will even continue in bloom until the end of December.

Of the sorts, *i. e.* the Pompones, grown here, the most beautiful are perhaps the following:—Autumnum, brown, showy, and early; Ninon, white, tipped with blush, dwarf, and a free bloomer; Cedo Nulli, beautiful blush white, large and showy, the best of its class; Solfaterre, pale clear yellow, a free bloomer, and early; President Decaisne, purple, distinct and good; Mignonette, brown and yellow, small, but very pretty; Surprise, white, tipped with blush, nearly as early as Hendersoni, which is well known to be one of the very earliest; Argenteum, white, also an early bloomer, and good; La Vogue, yellow, with a large bronze eye, comparatively new, and very beautiful; La Gitana, delicate blush white, with a yellow centre, fine in form, and a free bloomer; Model, white, finely shaped; Asmodée, reddish brown, distinct and good; Reine d'Anemone, one of the best of its class, the petals in the centre being compact and beautifully arranged; Louise Miellez, white, with a yellow centre; Criterion, orange buff, changing to yellow in the centre, distinct and good; Rose Pompone, slightly quilled, fine in shape; Poulidetto, rosy lilac; Daphne, crimson, partly an Anemone flower, free bloomer and showy; and Jonas, yellow, with a large dark centre, distinct and pretty.

A bed of many of the above sorts has been made in the open ground, where they bloom beautifully, and are extremely gay for a long time late in autumn. They consist, in this instance, of old stools put out after the cuttings were taken off them; but cuttings planted out are stated to bloom equally well.

FLORICULTURE.

Preservation of Dahlia Roots.—Being fond of good Dahlias, and grieved at the frequent losses that come under my notice, I beg to commend to the attention of those who too often have to lament the loss of their favourites, the following effective method of preserving their roots. The tops being killed by the autumn frosts, and thus become unsightly, must be cut away, leaving the roots undisturbed for several weeks in order to feed the unascent buds destined to break the following spring. For, if at the time of removing the plants from the ground these buds are immature, there is great probability that the tubers will perish before the spring; or should their vitality remain, there will be found a difficulty, if not an impossibility of getting them to "break." The next business is to lift the plants from the ground; and in doing this the greatest care should be taken to preserve their fibrous roots, for the plants require constant nourishment. A number of these rootlets will, however, under the most careful handling be broken off, and the supply of sap interrupted until new roots are made; but with those plants that have well-swollen buds their reproduction is soon effected. When the tubers are raised from the ground they should immediately be transferred to their winter quarters, where their fibrous roots must be carefully spread upon a thin layer of sand or earth, and at once covered with about an inch of the same, leaving the greater portion of the tuber bare. During winter they should be kept slightly moistened. For wintering these tubers there is perhaps (unless an especial place is provided for them), no better place than under the stage of a cool greenhouse; but, whatever place may be assigned them it is indispensable that it admits a moderate amount of light; is kept cool, but above the freezing point, and that the atmosphere is such as suits growing plants generally; alike free from both saturation and dryness, which will with equal certainty engender putrefaction. *W.*

Chinese Primroses.—I have a fine collection of these now beautifully in bloom, and nothing could possibly be more cheerful or delightful than their appearance is at this season of the year and during winter. This common, but really pretty plant does not appear to be half so much grown as it deserves to be; the following account of my method of cultivating it may therefore be found useful to amateurs or others who have not hitherto paid much attention to it. Seeds may be sown in succession in May, June, and July, to furnish a supply throughout the winter and spring. Let them be sown in light sandy soil, and placed in a moderate hot-bed frame, or an ordinary greenhouse would do; as soon as the plants are large enough, prick off into either pots or pans as many as are required, and place them near the glass, to prevent them from becoming drawn, which at any stage of their progress would greatly injure them. As soon as they are fit, pot them singly into thumb-pots, giving increased air; when established, they may be placed in a cold frame, kept at first rather close, afterwards give more air, and shift progressively until they are in pots of the required size; 6-inch pots will generally be found large enough, except for specimen plants, which may be put into an 8 or 10-inch size. The soil must be gradually increased in strength, until it is composed of equal parts loam, peat, and leaf-mould, mixed with a little sand and fine charcoal. The pots must be carefully drained, as the plants require liberal supplies of water. They may remain in the frame until the approach of frost, and may then be removed to the greenhouse. Those of the first sowing will be in flower by the beginning of October, the second by Christmas; those of the third or July sowing should be wintered in 5-inch pots; any premature flower-stems they may show pinched out, and be finally shifted in the beginning of February. As there may be danger of the collars of the plants being affected by damp during dull weather in winter, they may occasionally be supplied with water from below. In this way, and by giving abundance of light, air, and water, handsome plants, with richly-coloured flowers, may be produced; which, mixed with a few common things, such as Cyclamen persicum, Tree Violets, Lily of the Valley, Crocuses, Snowdrops, and Winter Aconites, all of easy cultivation, would make a basket at any season fit for a drawing-room. *W. E.*

Carnations: *Woodhouse.* Owing to the fine autumn we have had these plants will be very easily wintered, compared with the trouble they have been during the last two seasons; all should be established in the small pots by this time. This being the case, and the plants healthy, their management consists in the merest routine for the next three months. Plenty of air but not much water; the hardier they are kept the better; damp must be avoided, and the plants must be kept perfectly clean.

Cinerarias: *A D.* These plants should now be growing very fast; fumigate if aphides are detected: this should be done with care, the foliage being very tender; burning a little tobacco two successive nights will be most effectual. Those for winter flowering will now be throwing up their blooming spikes, and may be selected from the general stock in the pit, and placed in front of the greenhouse. Shift any portion of young stock that is filling the pots with roots.

Hollyhocks: *J D.* Now is the best time for procuring cutttings of these from the crown of the root, for the reason that they strike more readily and make the best plants. The summer struck cuttings will be filling their pots with roots by this time, and should be repotted. Strong early plants will winter in almost any situation, if the season is not too wet.

Pinks: *A Lady.* Examine your beds occasionally for grubs, which are often very destructive at this season. If a few plants of each variety have been potted as they should have been last month, they will come in very useful for filling up any vacancies made by these insects or other causes. Loosen the surface of the beds when dry, to prevent the soil from becoming green or sour.

SEEDLINGS.

Chinese Primrose: *Rainhill.* Large in size; but not nearly so high coloured as many of the fine kinds now in cultivation.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Conservatory, &c.—The summer flowering twiners on the roof of this house, such as Passion-flowers, Ipomœas, Mandevillas, &c., which become unsightly by this season, should now have their final pruning, and everything that will bear it should be severely cut back, in order that the plants underneath may receive all the light possible. The Bignonias do not, however, bear cutting in too freely, as when subjected to this treatment they seldom flower freely; therefore the stronger shoots of these only should be cut back. But although some of these are first-class subjects for a lofty close-roofed conservatory, they are useless in a house that is well ventilated, and kept as cool as possible in summer, and some of them are often grown where they are quite unsuitable. Acacias and other winter flowering plants having been subjected to a period of comparatively dry treatment, should now be liberally supplied with water at the root, in order to get them into flower during the dull season when their blossoms will be doubly valuable. Where these are trained to the principals of the roof, they should be kept within reasonable limits, especially those on the south side of the roof, for the sake of the plants beneath; but this must be done by tieing in the shoots slightly, and not by cutting. These are, however, better adapted for covering pillars than training under the roof—for it is impossible to preserve them in health for many years except in a cool airy situation; and where this and plenty of room can be afforded, many of them are magnificent subjects for winter flowering and furnishing cut flowers. Manure water, where it can be used without annoyance to the family, will be of service to Chrysanthemums, and may be given frequently in a rather strong state. Let the flowering plants be frequently re-arranged so as to produce as much variety as possible, for the finest specimen when allowed to remain long in one place becomes too familiar to be interesting. Stove.—Very little water should now be given to the plants here, which are ripening their wood, and anything like excess must be avoided, even in the case of things in free growth; but these should be frequently looked over, especially such as may be near the heat-giving surfaces, supplying as much as maybe necessary to preserve the soil in a healthy state. Look

sharply after insects, especially black thrips, and endeavour to get these pests completely eradicated, for they are most injurious to the young tender foliage of growing Ixoras and many other things at this season. Tobacco smoke is perhaps the most certain and easily applied remedy for thrips, but where only a few plants are affected, the following mixture may be used for syringing them with, which will be less expensive and troublesome than filling a large house with tobacco smoke. Dissolve half a pound of soft soap in 1½ gallon of soft water, and add three tablespoonfuls of turpentine, and 1 quart of tobacco water, strained through a fine cloth. This should be applied with the syringe, the plants being held over a wide tub so as to collect the mixture and save it for further use; or plants with well matured firm foliage may be dipped into it, but it must be used very cautiously upon things with young tender foliage. This mixture has the recommendation of being used by experienced growers, and if applied in proper time it is a very economical remedy, but where the pest is spread over the house tobacco smoke will be a cheaper and more expeditiously applied remedy.

FLOWER GARDEN AND SHRUBBERIES.

Choice plants in the borders that require a little protection should be seen to at once. Where it can be obtained, Moss forms an excellent article for placing over the roots and about the stems of such things as require a little protection in winter, but unless it can be procured in pieces of some thickness it is not worth using; but old tan, decayed leaves, or anything not liable to retain moisture will answer. Also see to getting the branches of such things as are usually protected in winter covered at once. Dry Fern is an excellent material for this purpose, but it cannot be obtained everywhere, and straw or mats may be used instead. Where alterations are in hand, or intended to be done this season, endeavour to concentrate all the available force upon them, and get them forwarded as expeditiously as circumstances will admit. Be very careful to well secure transplanted things against the wind, and do not let the plants be left until this is done, for it is a very common practice to put this off until the roots are injured through the plants being blown about. Where the leaves are mostly down, get shrubbery borders lightly dug over to give them a fresh clean appearance for the winter. Before turning over the borders, however, any intended alterations in the way of transplanting, &c., should be done, in order to avoid having to tread upon the ground after digging. Where Hollyhocks, Dahlias, &c., are grown in the foreground, the situations for these should also be prepared before digging, by loosening the soil where they are to stand about 2 feet square, and to the depth of 18 inches or 2 feet, well mixing with it a liberal allowance of good rotten manure. Except by way of preparation for these and other herbaceous flowering things, the ground amongst established shrubs should be dug very lightly, and left altogether undisturbed wherever it is not in sight.

FORCING DEPARTMENT.

PINERIES.—The trying period for those who have to winter their young stock in pits heated by fermenting materials has now arrived, for with damp sunless weather, such as has prevailed of late, it is a difficult matter to preserve Pines from injury where warmth must be accompanied by excessive moisture. Keep the linings sufficiently strong to maintain the temperature at about 60° or 65°; this will allow of giving air freely on fine days, and a little at all times when doing so does not cause the glass to sink under 55°. There should be no attempt made to induce growth with the present amount of light, but it is necessary, in order to be prepared for severe weather, to keep the linings rather strong. See that efficient coverings are prepared previous to the occurrence of sharp frost, and endeavour to keep the bottom-heat steady at about 75°, and the soil in a rather dry state, for the preservation of the roots in a healthy condition, and preventing their sustaining any check during winter is of the utmost importance. This system of Pine growing is now, however, but little practised, and it would be economy on the part of those who still adopt it to supersede it at once by means of a hot-water apparatus. The saving of labour, to say nothing of the other advantages which the substitution of this would effect, would more than counterbalance the expense of fuel, and this being the case it is strange that Pines should still have to be wintered in "dung pits," particularly as the outlay which would be necessary to effect the change could hardly be worth the consideration of the majority of the parties concerned. With plenty of labour, &c., at command, we have no objections to dung pits for summer use, nor to a well-arranged combination of the two systems of heating, but the command of a dry heat is indispensable in winter. VINERIES.—Houses in which forcing is to be commenced about the end of the present month, should now be cleared and in fit order for working. Let particular attention be given to the state of the heating apparatus, and if any repairs are necessary here, get these executed at once. Where a portion of the roots is inside the house, and the border in a dry state, which it will most probably be in consequence of the treatment adopted to ripen the wood, a good soaking of manure-water, at a temperature of about 80°, should be given a fortnight or so before shutting up the house. This will assist to excite the roots before forcing is commenced, and it is most desirable to have the roots in action previous to this. Do not expose houses intended to be forced early to severe weather, except where the Vines have been infested with black thrips, and in this case exposure to a moderate frost, although it might render the Vines somewhat more tardy in starting, would, nevertheless, be advisable, as it would thoroughly eradicate this pest. Look over ripe Grapes every other day, and examine the bunches carefully for tainted berries; also use fire-heat as sparing as may be consistent with securing a moderately dry state of the atmosphere. CUCUMBERS.—If these are to do any good in the way of fruiting during the winter, they must be kept near the glass, affording them all the light possible with a brisk warm temperature, and a regular bottom-heat; aim at 75° by day, and 65° by night, and admit a little fresh air whenever the weather will admit, but this should pass over the pipes before it is allowed to come in contact with the foliage of the plants.

FLORISTS' FLOWERS.

Autumnal rains and damp are now the great enemies of the AURICULA; great care must be taken that they have abundant ventilation. The best plan to secure this is to have small sliding shutters in the back and front of the brick frames. POLYANTHUSES in beds should be carefully examined, and should any of the roots be bare, some maiden loam or compost of decayed leaves should be put round them. In mild autumns like the present, trusses of blooms will sometimes appear where the plants are not grown for exhibition; this is, perhaps, not of much consequence, but where plants are required to bloom strong at the proper season, these precocious blooms should be removed.

HARDY FRUIT AND KITCHEN GARDEN.

A sowing of Peas and Beans for the chance of a very early crop should be made in the course of the week. In favoured localities it is usual to sow somewhat earlier in the month, but we have seldom seen much advantage result from sowing before the 20th, and we have frequently had the earliest sowing cut up, while those planted towards the end of the month have weathered the storm uninjured. The Daniel O'Rourke Pea is very considerably the earliest in cultivation, and appears to be equally as hardy as the Prince Albert. It is, therefore, a great acquisition where an early dish is the principal consideration, but it is not nearly equal in quality to Early Emperor or Fairbeard's Conqueror. The Early Mazagan is the best variety of Bean for an early crop. Select a dry sheltered border for these, and guard the seed from the depredations of mice. The forcing of Seakale and Rhubarb must now be attended to; and, provided there is a good stock of strong roots, a supply of these will be easily kept up. Where there is room to spare in the Mushroom-house, this forms a very suitable and convenient place for forcing these. The roots should be placed on a slight bed of warm dung, filling up the spaces between them with old tan, or the soil and manure mixed from an old Mushroom bed, giving a good watering to wash it in amongst the roots. The bottom heat should not be allowed to exceed 70°, as too much heat is not favourable to securing strong growth, and, except for the first crop, it may be dispensed with altogether. Take advantage of wet days for making fresh Mushroom beds, and clearing out those that are spent; also collect and prepare droppings for forming fresh beds, by spreading them in any shed, and turning them every day until they are sufficiently dried to prevent excessive fermentation after putting up. Clear up all decaying leaves, &c., and stir the surface of the soil on dry days among growing crops, as Cabbage, Spinach, &c.; also get all vacant ground manured and ridged up as quickly as possible, in order that it may be exposed to the influence of the winter. Get the late crops of Celery closely earthed up first dry day, and attend to securing a late supply of Lettuce and Endive by storing away as many as possible of these in frames, or wherever they can be protected from frost.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending Nov. 16, 1854, as observed at the Horticultural Gardens.

Nov.	Moon's Age.	Barometer.		Temperature.					Wind.	Rain.
				Of the Air.			Of the Earth			
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Friday 10	20	30.209	30.002	50	41	45.5	47	47	W.	.01
Satur. 11	21	30.126	29.994	49	28	38.5	48	48	N.E.	.03
Sunday 12	[illegible]	30.228	30.219	47	21	34.0	48	49	W.	.00
Mon.. 13	23	30.098	29.828	51	36	43.5	47	48	S.	.00
Tues. 14	24	29.698	29.471	45	29	37.0	47	48	S.E.	.09
Wed. 15	25	29.116	29.056	53	30	41.5	47	48	S.W.	.34
Thurs. 16	26	29.207	28.965	49	29	39.0	47	48	S.W.	.02
Average		29.796	29.648	49.1	30.5	39.8	47.3	48.0		.49

Nov. 10—Frosty; fine but cold; rain.
— 11—Slight rain; cloudy; fine.
— 12—Fine throughout; frosty at night.
— 13—Foggy; fine; overcast.
— 14—Densely clouded; heavy rain; overcast.
— 15—Heavy rain; fine; partially overcast; rain.
— 16—Partially overcast; rain; foggy at night.

Mean temperature of the week, 3½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending Nov. 25, 1854.

Nov.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 19	49.2	35.3	42.2	14	0.87 in.	1	4	2	4	3	9	3	2
Mon. 20	49.3	36.1	42.7	11	0.56	1	5	2	—	6	4	6	4
Tues. 21	49.7	38.3	44.0	18	0.37	5	3	4	3	1	5	5	2
Wed. 22	45.6	35.7	40.6	18	0.62	3	2	5	2	4	6	5	1
Thurs. 23	47.8	35.4	41.6	13	0.36	—	4	3	1	4	9	4	3
Friday 24	47.7	32.7	40.2	9	0.50	4	4	2	2	3	7	3	3
Satur. 25	46.5	33.7	40.1	15	0.34	3	3	3	3	4	7	2	3

The highest temperature during the above period occurred on the 20th, 1844, and 21st, 1828, 1833—therm. 59 deg.; and the lowest on the 21st, 1853—therm. 21 deg.

Notices to Correspondents.

BOOKS: *J W.* "School Botany," and Hooker's "British Flora."—*E W B.* Our weekly Calendar of Operations will furnish you with excellent advice on the general routine of gardening. ‡

CLIVIA NOBILIS: *J S.* Keep it cool and dry in winter, so as to give it a season of rest. It will succeed perfectly well in a greenhouse. ‡

COVERING MATERIAL: *J F.* If your object is merely shelter, and you do not require light, then it is doubtful whether you will find any better or cheaper material than wooden shutters, made of rough weather boards. The objection to them is that they are too heavy. There was a very nice light pattern at the last meeting of the Horticultural Society, exhibited by Mr. Dodds, gardener to Colonel Baker, of Salisbury, which was at once light and secure. It was formed of a skeleton frame upon which straw was firmly sown down with tarred twine, and further secured by copper wire here and there. It is to be feared that near London, where everything has to be paid for highly, this contrivance will be too expensive, although it is not so at Salisbury where a good part of the labour is done at odd times and costs nothing. It has been also recommended to sew straw between two layers of galvanised iron netting; and it is not improbable that this is the cheapest and simplest plan yet suggested, but we have not at present seen it at work.

CUPRESSUS FUNEBRIS: *N W S.* The nurseryman of considerable experience who informed you that seedlings from the Red Cedar are identical with the Cupressus funebris does not know what he is talking about.

DISEASES: *R T P.* We have examined very carefully the leaves of your Araucaria. There is no brown scale upon them, nor any appearance of insects. The brown spots consist of denser tissue than that which surrounds them, and have been formed at the expense of the superficial cells. The cell walls are densely coloured, and so disorganised as to suffer the turpentine to escape. The neighbouring cells are gradually involved, and ultimately the whole or the greater part of the leaf perishes. A minute Phoma is then formed in the diseased tissue, but has evidently had no share in producing the malady, which arises, in all probability, from local circumstances which may not admit of remedy. If you have not observed it before the present year, the extreme and long-continued drought may have had something to do with it, and your trees will ultimately recover under more favourable circumstances. Unhappily, in any case, their beauty must be impaired for some time to come. *M. J. B.*

FIGS: *W W.* The Brown Turkey is most to be depended on for bearing in this climate out of doors; but for the sake of variety, you may also plant the Brown Ischia, White Marseilles, Pregussata and Angelique. ‖

FRUIT TREES: *H H.* Five feet, the distance of your gravel walk from the wall, is too narrow for a fruit-tree border. This should be at least 15 feet wide. You can take up the gravel walk, trench and otherwise prepare the soil, and relay the gravel, beneath which the roots of your trees will then thrive very well. If, however, you could make the walk at the above-proposed distance, you would have a wider border for crops. The aspect being N.N.W., you may try against it the following sorts of Pears:—Marie Louise, Louise Bonne of Jersey, Flemish Beauty, Beurré d'Amanlis; and, for stewing, the Catillac and Vicar of Winkfield. Cherries:—The May Duke Elton, Kentish, and Morello. The Cherries should be planted where the soil is peaty, about 18 feet apart, to be fan trained; the Pears, 20 feet apart. ‖

FRUIT TREES IN POTS: *W W.* Last winter was very severe; yet fruit trees exposed to its rigour were not free from the attacks of the green and the black fly in the summer. On the contrary, both these and the mealy bug were unusually numerous. You therefore cannot depend on the turning your fruit trees out of doors from your orchard-house as an effectual means of destroying the above pests. The trees will not suffer from exposure if you protect the pots as you propose, and take care that the shoots are protected from frost exceeding 10° or 12° below freezing. ‖

NAMES OF PLANTS: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*J S.* Gonolobus hispidus.—*W F.* 1, The Pomegranate; 2, Gomphocarpus fruticosus; 3, Tamarix gallica; 4, Euphorbia Lathyris.—*Constant Reader.* Oncidium curtum.—*Erzeroum.* 221, Tamarix germanica; 1455, Tamarix gallica; 1027, Tamarix Hampeana; 628, 645, Viola Pallasi; 2?, V. Kitaibeliana; 677, V. odorata hirta; 1102, V. sylvestris; 1034, Cistus salvifolius; 631, C. villosus.—*A S.* Scutellaria coccinea and a morsel of some Salvia, perhaps splendens.—*J T.* Verbena bonariensis, and a decayed fragment of some Labiate plant quite indeterminable.—*J R M.* When more correspondents than one employ the same name, confusion becomes inevitable. The plant now sent is the very young, or very monstrous state of some Liliaceous (?) genus; but of what it is impossible to say. If it should produce its flowers, and you will then forward a specimen, there will be no difficulty in naming it.

NITRATE OF SODA: *Sleaford.* If this salt is employed in Cucumber growing, it should be used in *minute* quantities daily dissolved in the water with which the plants are treated. A little too much is dangerous. You ought not to taste it in the water which dissolves it. The golden rule for all such matters is "little and often."

PEARS: *M. de Jonghe.* All received; very interesting. You will hear from us soon.

PLANTING CURRANT TREES: *H. H.* Certainly it is preferable to omit the manure at the bottom of the hole in which the trees are planted, and to put some well mixed with the soil around the roots. The latter mode of applying it will have a tendency to induce the roots to keep nearer the surface, and thereby make the tree last longer in a healthy state ‡

POTATOES: *J C N.* The first, or one of the first autumn-planters of Potatoes was Mr. Shepherd, your neighbour in the Calf of Man. You cannot do better than follow his example with the sorts you have, only take care to bury them deep enough to be safe from frost. When spring comes you can draw some of the earth off; or if you have litter to put over the sets when planted, only the usual quantity of earth will be wanted, and there will be nothing to do in the spring.

REMOVAL OF TREES: *Cavanensis.* A M'Glashen's apparatus would probably move such trees at once and safely. You would, however, secure the operation by digging a very narrow trench, say 6 inches wide all round the trees, about 3 feet from their stem and 2 feet deep. A draining spade is a proper tool. The operation should be performed in the beginning of August. Having made the trench, the earth may be filled in again, or which is much better the trench may be filled with leaf mould. In November you may take the trees up without danger, when you will find that the main roots have thrown out beautiful fibres into the leaf-mould. Grow the following Strawberries—Keens Seedling, Cuthill's Black Prince, Roseberry, Old Pine, Alpine, and Elton, British Queen, Downton, Prolific Hautbois.

TRAINING ON WALLS: *D C.* For training Peach trees, the iron studs or nails should be driven as recommended by Mr. Fleming, at 8 or 9 inches apart in the joints between every course of bricks. See volume for 1849, p. 436. ‖

WATERING PLANTS: *Old Sub.* By no means allow your plants to stand in pans of water;—saucers or pans are only useful in preventing the water running from the pots, from making a mess. Always apply what water is necessary to the surface of the soil in which your plants are growing, and that only when it really wants it; then give a thorough soaking. Plants are ruined by "a little now, and a little then." ‡

MISC: *A Constant Subscriber.* The work, we believe, can be procured through any bookseller.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7*l.* per ton; Superphosphate of Lime, 7*l.*; Sulphuric Acid and Coprolites, 6*l.*

Office, 69, King William Street, City, London.

N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent. of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures, Linseed Cakes, &c.

WM. INGLIS CARNE, 10, Mark Lane, London.

SEWAGE CHARCOAL MANURE.—This highly fertilising Manure, which is Peat Charcoal completely saturated with London Sewage, will be found most efficient for every species of crop; more especially for Peas, Beans, Turnips, Mangold Wurzel, and other root crops. It will produce a greater return for the outlay than Guano or any other Manure at an equivalent value: it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained at the SEWAGE MANURE WORKS, Stanley Bridge, Fulham, at 4*l.* per ton, and in quantities less than half a ton, at 5*s.* per cwt., for ready money only: and in quantities not less than a ton, will be delivered at the London Termini of the Railroads free of charge for cartage. No charge for sacks.

It may also be had from Messrs. G. GIBBS & Co., 26, Down Street, Piccadilly, Agricultural Seedsmen, Agents for London; and from all the other Agents of the Company.

WHEAT SOWING.—The undersigned beg to call attention to their WHEAT MANURE, which has been successfully used during the last two seasons, and which they are prepared to deliver at 6*l.* per ton, free to Railway.

They are also Sole Agents for the sale of PEAT MOSS CHARCOAL, which is a valuable deodoriser and distributor of ammoniacal matter.—English and Foreign Linseed and Rape Cakes, Guano, Superphosphate of Lime, Salt, Bones, and all other Manures of known value on sale.

Apply to MARK FOTHERGILL & Co., 204, Upper Thames Street.

THE LONDON MANURE COMPANY beg to call the attention of Agriculturists to their WHEAT and CLOVER MANURES for present use. The London Manure Company also offer Genuine Peruvian Guano, Nitrate of Soda, Concentrated Urate, Superphosphate of Lime, Fishery and other Salts, and all Artificial Manures of value. The London Manure Company guarantee Peruvian Guano and every Manure they supply to be strictly genuine. EDWARD PURSER, Sec.

Bridge Street, Blackfriars.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and dispatch.

Gentlemen desirous of receiving instructions in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1*s.* 6*d.* per yard run, of ELISHA THOMAS ARCHER, 7, Trinity Lane, Cannon Street, City, and the Royal Mills, Wandsworth, Surrey.

HOSE PIPING.—GREAT REDUCTION IN PRICE.

PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense pressure, and much more than leather, vulcanised rubber, or any other hose, and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented inventions, the cost of manufacturing it is now reduced at least 50 per cent., which advantage is offered to the public.

BURGESS AND KEY, 103, Newgate Street, and 52, Little Britain, who on application will forward wholesale and retail prices.

STEPHENSON AND PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

TO FLORISTS AND OTHERS.

J. JONES, IRON MERCHANT, has always a great variety of CONICAL and SADDLE BOILERS in STOCK: also Fire and Furnace Bars, Ornamental and Plain Supply Cisterns, Double Doors and Frames, Furnace Grates, Soot Doors, Hot Water Pipes, Elbows, Tees, Syphons, Throttle Valves, Stop Cocks, Flange and Socket Elbows, &c.; also Trough Pipes. Drawings and prices of the above, on application to J. JONES, Iron Bridge Wharf, No. 6, Bankside, London, near the Southwark Iron Bridge.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

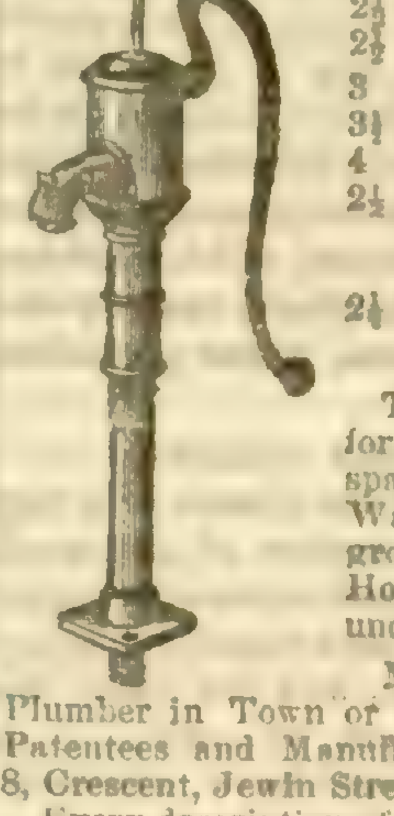
THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS, for the use of Farms, Cottages, Manure Tanks, and Wells of a depth not exceeding 30 feet.



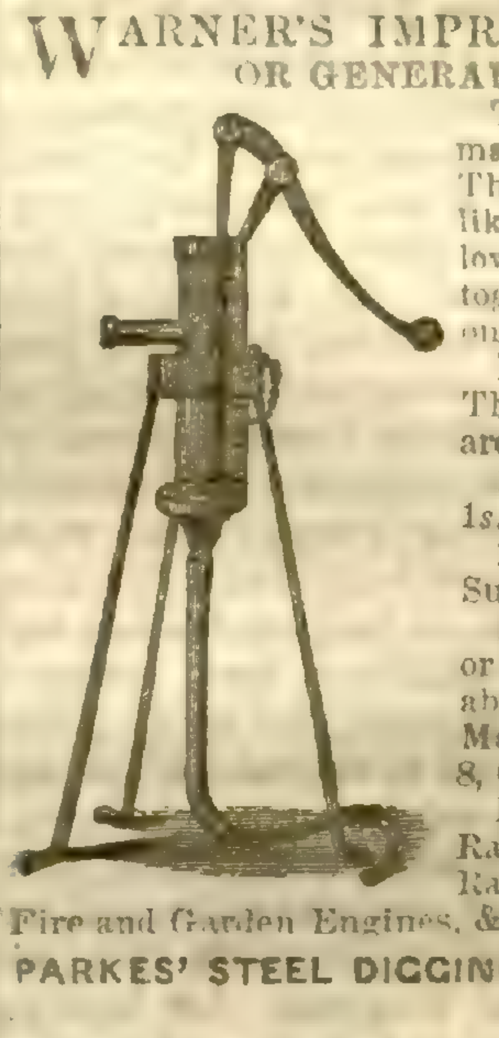
Diameter of Barrel	Length of Barrel, under nose.		£ s. d.
2½ in. short	1 ft. 7 in.	Fitted for lead, gutta percha, or cast iron flanged pipe, as required.	1 12 0
2½ „ long	3 „ 3 „		1 15 0
3 „ ditto	3 „ 6 „		2 12 0
3½ „ ditto	3 „ 6 „		2 18 0
4 „ ditto	3 „ 6 „		3 5 0
2½ „ short, with 15 feet of Lead Pipe attached, and Bolts and Nuts ready for fixing			2 12 0
2½ in. long	ditto	ditto ditto	2 15 0

The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or Country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER AND SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water, by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

WARNER'S IMPROVED LIQUID MANURE, OR GENERAL PORTABLE PUMP.



The valve is a ball of imperishable material, and cannot clog in action. The barrel is of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure. The legs will fold together, and the whole may be carried on shoulder to any pond or tank required.

Price of 4½ in. Pump, with legs, 3*l.* 3*s.* The barrel is 27½ in. long, and the legs are 5 ft. high.

1½ inch Gutta Percha Suction Pipe, 1*s.* 6*d.* per foot.

1½ inch Flexible Rubber and Canvas Suction Pipe, 3*s.* 6*d.* per foot.

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water, by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c.—Engravings sent on application.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.

MESSRS. BURGESS AND KEY, as Mr. PARKES' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.

103, Newgate Street, and 52, Little Britain, London.

COTTAM'S NEW PATENT FOR STABLE REQUISITES.

COTTAM AND HALLEN, the original projectors of the above arrangement of MANGER, RACK, and WATER-TROUGH, which obtained the Great Exhibition Prize Medal, and universally approved of, have added all the latest improvements to their invention (secured by patent), which includes an entirely new method of attaching the halter, ball, and rein, giving to the horse greater freedom, and being noiseless in their operation, add much to its comfort whilst feeding and convenience when at rest. The

ENAMELLED MANGERS

are constructed in the best possible manner, both as to form and utility, are cleanly in appearance, durable and impervious to infection: manufactured PLAIN, GALVANISED, or ENAMELLED.

Improved Stable Guttering, with moveable safety covers, Sanitary Traps, Stable Pumps, Double Corner Mangers, Harness-room Appendages, and every article in Stable Furniture. Chaff Cutters and Oat Bruisers, kept on show.

A STALL fitted up, complete, exhibited at the Crystal Palace, Sydenham, Stand No. 19, Agricultural Department; and at their

Works, 2, Winsley Street, Oxford Street, London.

WARMING AND VENTILATING.—Descriptive Catalogues and Estimates on application.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

PATRON—His Royal Highness PRINCE ALBERT.
PRESIDENT OF COUNCIL—Earl BATHURST.
PRINCIPAL—Rev. J. S. HAYGARTH, M.A.

PROFESSORS, &c.

Chemistry—J. A. C. Voelcker, Ph.D., F.C.S.
Zoology, Geology, and Botany—James Buckman, F.G.S., F.C.S.
Veterinary Medicine and Surgery—G. T. Brown, M.R.C.V.S.
Surveying, Civil Engineering, and Mathematics—T. Armstrong, C.E.
Manager of Farm—G. Austin.

The first Session of 1855 will begin in February. The Annual Fees for Boarders vary from 45 to 80 guineas according to age and other circumstances. The Fee for Out Students is [illegible] per annum. The College Course of Lectures and Practical Instruction is complete in one twelvemonth—though a longer course is recommended. There is a department for general as well as for agricultural purposes. Prospectuses and information can be had on application to the Principal.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL AND GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.

Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

THE SALISBURY AND WESTERN COUNTIES EXHIBITION OF DOMESTIC POULTRY.—The Fourth ANNUAL EXHIBITION will be held on TUESDAY and WEDNESDAY, the 21st and 22d days of November, 1854. Prize Lists, with the Rules and Regulations, can be obtained of the Hon. Secretary, and Subscriptions will be received by Mr. EWER, the Treasurer. T. PAIN, Hon. Sec.

THE BIRMINGHAM CATTLE AND POULTRY SHOW, 1854.—The Sixth Great Annual Exhibition of STOCK and DOMESTIC POULTRY will be held in BINGLEY HALL, on TUESDAY, WEDNESDAY, THURSDAY, and FRIDAY, the 12th, 13th, 14th, and 15th of December next.

The PRIVATE VIEW and ANNUAL DINNER on TUESDAY, December 12.

The Agricultural Gazette.

SATURDAY, NOVEMBER 18, 1854.

MEETINGS FOR THE ENSUING WEEK.

THURSDAY, Nov. 23—Agricultural Imp. Society of Ireland.

THE eradication of weeds is a matter that is always going on and yet never completing, or rather weeds are ever being destroyed but never eradicated. Farmers and gardeners expend much of their strength and energy in getting rid of weeds as they grow, by which means, though the pest is kept considerably in check, so that even a farm may possibly become "clean as a flower garden," to use a favourite expression, yet each year much the same routine of operations as respects weeds has to be gone through, or a little neglect causes the once clean farm to assume as dirty a state as ever.

Now if we revert to the causes of this requirement for constant weeding, we shall find that to a considerable extent as fast as we eradicate with one hand we sow with the other, and we must therefore be constantly pulling weeds, because we are, after all, indefatigably propagating them; an examination therefore of some of the methods by which weed growth is ordinarily continued may not only be a matter of scientific interest but of practical utility.

If we examine the sources of our more general manures, we shall find in these a prolific cause of weed-propagation. For example, the different weeds which affect our cereals, though in a state of seeding they are threshed with the corn, yet the refuse is from time to time scattered over the yard as food for fowls, or, it may be, given in an unground state to pigs; in both these cases, though it is true that much of the seed of weeds thus employed is destroyed in the process of digestion, yet it cannot be denied that this is at best only partial, and many of the harder seeds pass through the systems of animals unchanged. Here, then, the sweepings of the yards which are added to the dung mixings must act as a prolific source of weed growth.

Again, in the neighbourhood of towns, the farmer largely employs as manure the house refuse in the shape of mixings of coal-ashes, refuse vegetable matter, and the whole of the weeds of the garden; the effect of which any observer may see for himself by noticing the great increase of the true agrarian or garden forms of weeds in the crop manured from this source. Dirty samples of seeds may, however, be mentioned as one of the most fertile sources of weed growth; it happens, in the case of some of the smaller seeds, that seeds of weeds are very difficult of separation, and as a consequence a large growth of weeds is insured in the desired crop. But here it would surely be worth while to adopt greater care in the separation of the plant destined for seed from those with which it is intermixed; and yet it is much to be regretted that farmers too often seed dirty crops as the most profitable manner of disposing of them, forgetting that, however they may be deriving present advantage, they are continuing the spread of a pest which, after all, may one day prove troublesome to themselves. As a proof of how weeds are intermixed in seed, it is only necessary to observe what takes place in any crop of Flax grown from foreign seed, as here we introduce species of weeds differing from our own

wild natives, such, for example, as Sinapis, Mustard, various species ;* Camelina sativa, gold of pleasure ; Galium tricorne, rough-fruited bedstraw ; Cuscuta epilinum, Flax dodder ; Lolium temulentum, Darnel.

Now, if Flax thus grown be used again on the same farm, it is astonishing, however few the weeds might have been in the first instance, how greatly they become augmented in the second sowing. In 1853 we examined a crop of Flax grown from foreign seed, which had in it a few of the weeds above tabulated ; seed from this crop was again sown in another field on the same farm in 1854, the present season, but with a fourfold increase of all the above-named forms of weeds, together with the more usual British examples ; the Dodder, indeed, which presented but a few isolated patches in 1853, in the following year became spread throughout the crop to its irreparable injury.

But after all it is to seeding on the ground, either directly in our own or adjacent fields, that we must attribute the greater amount of mischief from weeds. It is true farmers are ever weeding, but this is often done so imperfectly that enough of a species is left behind not only to ensure its continuance, but often as abundantly as though we had not weeded at all ; for after all, however much of weed seed is left behind, only a portion will usually grow,—thick sowing with weeds, as with a crop, does not always ensure the greatest result, whereas a single plant is often sufficient to cover a whole field, and in such a manner that the germination of most of its seed is insured.

This latter point is one of no small importance for our consideration, as it depends upon the great fecundity of most of our commoner weeds. It was from repeated observations of this subject that induced me to examine into the reproductive powers of weeds during the past summer ; and the following table, it is presumed, will give some interesting matter upon this head. In offering it, however, it should be premised that from the nature of the investigation, rigid exactitude could not be attained ; it is therefore offered with a view to show rather what may be than what is the actual reproductive power of weeds in all cases.

The following table then contains an account of the number of seeds which have been counted in a single individual of each of the undermentioned species ; and in examining, it should be borne in mind that, though all the seeds of plants are not usually fertile, nor do they always arrive at perfection, yet most of them do so, and all of them may.

Table of the Number of Seeds in a Single Weed Plant.

	No. of seed vessels or flowers to each plant.	No. of seeds to each vessel or flower.	No. of seeds to each plant.	When gathered in 1854.
Sinapis nigra, black Mustard ...	800 ×	10 =	8,000	Aug. 17
„ arvensis, Chariock ...	400 ×	10 =	4,000	Sept. 18
Capsella bursa-pastoris, shepherd's purse	150 ×	30 =	4,500	Sept. 9
Sisymbrium officinale, common hedge Mustard	450 ×	12 =	5,400	Oct. 13
Heracleum sphondylium, cow Parsnip	2,500 ×	2 =	5,000	Aug. 17
Æthusa Cynapium, Fool's-parsley	3,000 ×	2 =	6,000	„
Convolvulus arvensis, corn bindweed...	200 ×	3 =	600	Sept. 26
Galeopsis Ladanum, henbit Nettle	500 ×	4 =	2,000	„
Bartsia odontites, red Bartsia ...	400 ×	12 =	4,800	Oct. 1
Leontodon taraxacum, Dandelion*	12 ×	170 =	2,040	„
Centaurea jacobea, hard-head Scabious	50 ×	80 =	4,000	Sept. 10
Do. nigra, blackhead	50 ×	60 =	3,000	„
Lapsana communis, Nipple-wort...	560 ×	15 =	8,400	Sept. 23
Anthemis cotula, stinking Chamomile	271 ×	150 =	40,650	„
Matricaria Chamomilla, Mayweed	150 ×	300 =	45,000	Oct. 14
Chrysanthemum leucanthemum,† ox-eye Daisy	45 ×	300 =	15,000	Sept. 18
Arctium Lappa, Burdock	613 ×	40 =	24,520	Oct. 1
Sonchus oleraceus, sow Thistle ...	100 ×	250 =	25,000	Sept. 6
„ arvensis, corn sow Thistle	100 ×	190 =	19,000	„
Senecio vulgaris, Groundsel‡ ...	130 ×	50 =	6,500	Sept. 10
Carduus acaulis, stemless Thistle	6 ×	100 =	600	Sept. 8
„ nutans, musk Thistle ...	25 ×	150 =	3,750	Oct. 13
Agrostemma Githago, Corn-cockle	7 ×	370 =	2,940	Sept. 8
Lychnis dioica, common Campion	25 ×	137 =	3,425	Oct. 1
Papaver Rhœas, red Poppy ...	100 ×	500 =	50,000	Oct. 19
„ dubium	100 ×	600 =	60,000	Oct. 14
Galium aparine, Cleavers	550 ×	2 =	1,100	Sept. 11
Rumex obtusifolius, common Dock	13,000		13,000	Sept. 15
Euphorbia exigua, dwarf-spurge ...	500 ×	3 =	1,500	Sept. 19
„ Peplus, Tetty-spurge ...	400 ×	3 =	1,200	Sept. 11
„ helioscopia, Sun-spurge	324 ×	3 =	1,072	Oct. 14

Now, on examining this list, we find the following six plants may perfect in round numbers

Sonchus arvensis	19,000	seeds to each plant.
„ oleraceus ...	25,000	„
Anthemis cotula	40,000	„
Matricaria Chamomilla ...	45,000	„
Papaver Rhœas	50,000	„
„ dubium	60,000	„

Here, then, we can have no difficulty in accounting for their occasional spread over whole fields—inasmuch as two or three plants, for example, may flower on the manure heap, and thus be spread over the surface in the manure ; or, as in the case of the Sonchus, and all those with winged seeds, our own grounds may be planted from no carelessness of ours, but from the inattention of a slovenly neighbour. In my own immediate district there is at this present moment a field of Turnips of about 14 acres so perfectly white from Anthemis cotula that it would be difficult to plant even a crop more regular and uniform ; and in no way can its presence be accounted for, unless upon the supposition of its having been planted.

Again, take the common Charlock : 4000 seeds may be perfected by a single plant ; and, if we trace their history, we shall find that some will be, in ploughing, too deeply covered for germination —say in the Turnip crop. Of those that grow with this crop, Turnip culture, if carefully conducted, may destroy the whole. The Turnips, however, may be followed by Barley, the tillage for which has exposed a fresh lot of the Charlock to the proper influences for growth, and a plant here and there ripens its complement of seeds, many of which are sown before the crop is removed, and many taken away with the crop itself, so that for the want of a little attention before the grain got to any height (for it is seldom this plant is observed until it is in flower), we not only cause in one year sufficient seed to be sown to last for a generation, but we take off a supply to be planted on the farm by means of manure refuse, and scattering in the exuviæ of wandering animals, among which may be reckoned every species of seed-eating bird.

From these remarks it follows that in dealing with weeds we should not only content ourselves with destroying them when they appear, but we should study their natural history, by which means we shall be the better able to prevent their constant and regular re-appearance in our crops ; as by proper and well-regulated attention to the subject in all its bearings, we can see no reason why each crop should in its rotation, time after time, present us with exactly the same weeds to deal with, and the same weeding work to be done.

* Foreign Flax often introduces to a district a Mustard-Charlock not before observed there, in which case it may become a permanent addition to the weed list of a parish.

* This keeps flowering the greater part of the year, so that four times the number of heads set down are frequently produced.

† In one head I counted as many as 400 seeds.

‡ On one root was counted 970 flowers.

TOWN SEWAGE.

"We venture to think that the projector who does not agree with Mr. Wicksteed must be very mad indeed."

It is said to be a dangerous thing to venture to express one's disagreement with the strong conviction of high editorial authority, but at all risks I protest against the conclusion so decidedly expressed in your last leader. I hope to be able to show that Mr. Wickstead's is the "mad" view of the case, and that "common sense and common calculation," which teach us that our manure is our food, imperatively resolve that the application of the sewage of London to agricultural fructification is a necessity of our times.

Although I am not unfrequently denounced by my agricultural opponents as "visionary" and enthusiastic (I plead guilty to the latter), I have all my life been guided in matters of business by the simple rules of arithmetic, preferring addition and multiplication to subtraction and division — and by these rules and common illustration I propose to disabuse your mind of its erroneous impressions.

In order to arrive at just conclusions, we must compare men with animals. A man of 14 stone would weigh 196 lbs., and a sheep of $12\frac{1}{2}$ stone net dead weight would weigh the same, alive, as the man ; both weights are above the average, therefore we may safely assume that the manure from both would be of nearly equal value.

Taking the 2,500,000 men, women, and children of the metropolis as equal to 1,500,000 adults, or sheep, we have a basis for our calculation. I know farmers who place 1500 sheep 24 hours on 1 acre of land, and consider it sufficiently manured for the year ; but, of course, for green and root crops they would be too happy to quintuple that number : 1,500,000 men or sheep would, at 7500 per acre, manure 200 acres for one day, or 73,000 acres for one year ; which, taking 640 acres as a square mile, would be 114 square miles, or a square area of about $10\frac{1}{2}$ miles, or five to six miles around the metropolis.

I do not recommend so small an area, but quote this to show how absurdly exaggerated have been the statements you quote.

	Gallons.
The daily supply of water to the metropolis is about	50,000,000
Add the liquid and solid manure	500,000
	50,500,000

We have no difficulty in estimating the cost of elevating this to a given height, or forcing it to a given distance. Take Croydon as an illustration. There 650,000 gallons of water are daily pumped to a mile distant, and elevated 150 feet, at a cost of $13\frac{1}{2}$ cwt. of dust-coal per 24 hours, or 13s. 6d. worth of fuel, which including two engineers at 42s. per week, two stokers at 25s. per week, interest on several thousand pounds, for Cornish 25-horse power engine, buildings, &c., does not amount to one farthing per ton. Now as the daily water supply and sewage of London is only 200,000 tons, at one farthing per ton, it would be only 200*l.* per day, or 73,000*l.* per annum.

Every farmer knows that a sheep's manure for one year is worth at least 6*s.* It follows, then, that the manure of the 1,500,000 adult sheep of London would, at that low estimate, be worth 450,000*l.* Prof. Way, however, estimates the London sewage at 2,000,000*l.* —seeing how many other good things it contains. Of course a thousand considerations enter into the general question, the rain-fall being an important one ; but I maintain that on all the worn-out, milk-exhausted pastures for miles round London, the *water alone*, as irrigation, would pay during summer, and that is precisely the time when it is desirable that the sewage of London should not pollute the Thames. In winter, or during heavy rains, we could do as we liked about using it.

The whole question is, so far as the mechanical part goes, perfectly insignificant. The difficulty is in people's minds and brains. Ascend the Thames at low water, watch the puny dribblings that flow from our "great" sewers, and compare them with the gigantic masses of water upheaved in locomotion by the half-a-dozen revolutions of the paddles of the penny boat that conveys you, whose engines of 20 horse-power consume one ton of coals a day. You will then conclude, as I have long since done, that the time will soon come when that public opinion and common sense which interlaced the kingdom with iron railways, at an expense of hundreds of millions, to economise *time*, will equally establish a subterranean circulation for the economy or production of our *food* ; and we shall no longer run whining to Peru for cheap birds' dung, whilst we throw our own down our rivers to pollute our drink.

The miserable, though well bred, cows of our suburban dairies—the knock-kneed, pale, and puny children of our courts and alleys—appeal to us in unmistakeable language to restore to mother earth those phosphates and that nitrogen of which we have so long robbed her, and without any grateful return, and which are so necessary for juvenile development at early ages.

The quantity of manure and of water that may be profitably applied to certain soils is evidenced by the fact that Mr. Telfer, of Canning Park, Ayr, puts on for his Italian Rye-grass per Scotch acre, at four or five dressings, 25 cwt. of guano, the urine of 10 cows, and 500 tons of water—and this in a moist climate. The Edinburgh meadows are supposed to receive 6000 tons of town sewage per Scotch acre. The hot gravels, dry chalks, and thirsty sands around London will absorb, with thankfulness and profit, all the good things that now run down our sewers. The Earl of Essex is laying down pipes to take the sewage of Watford at 10*l.* per annum ; Mr. Walker takes Rugby at 50*l.* ; Colchester, Chelmsford, Braintree, and many other towns are entertaining the same question. Of course your readers know that from 15*l* to 30*l.* rent per Scotch acre is paid annually by the Edinburgh cowkeepers for the Scotch irrigated meadows. *J. Mechi, Tiptree Hall, Nov. 8.*

Nov. 14.—I have just received a letter from my friend Mr. Samuel Brooks, of Manchester, who says :— "I have sent you a Manchester newspaper, in which you will see I have offered a premium of 1000*l.* for the best mode of using the nightsoil and sewerage of this city for agricultural purposes ;" and he also says, "I hope it will be an example for other towns to move in the same direction." We must all admire this noble act, pregnant with useful results to sanitary reform and agricultural amendment. *J. M.*

THE ECONOMY OF AGRICULTURAL LABOUR.

(*Continued from p. 731.*)

Horse Labour.—It is of the greatest importance to economise our horse labour, and to have the work performed when the land is in a proper state for it ; for then the labour is most efficient and much easier performed. In laying out our fields we have made them from 10 to 16 chains long, so that 16 chains long and $6\frac{1}{4}$ in width make 10 acres. Now I find, from watching the horses at work at various times, the average time required for the horses to travel 14 chains when ploughing is about five minutes—this is about two miles per hour ; and that the average time taken in turning at the land's end is half a minute, thus one-tenth of his time is employed in turning, and nine-tenths efficiently employed ; now, as we reckon a day's work of a horse to be 10 hours, and deducting therefrom the time employed in turning, and half an hour employed in going to and from his work, we have $8\frac{1}{2}$ hours of efficient labour, and the horse may have travelled from 18 to 20 miles daily in his work, when in the plough or other implement.

The succession of our crops is so arranged as to give constant employment to our horses throughout the year ; and as we endeavour to perform every application of labour when the land is in the best state for the work to be done, we have horse-strength sufficient to accomplish this when the season and the weather permits it ; and no work requiring to be performed has to wait till we have time or strength sufficient to perform it ; and in all our work we have sufficient manual strength at command to keep our horses fully employed.

A day's work of two horses in ploughing, harrowing, &c., we reckon to be 10 hours out of the stable, walking at the rate of two and a quarter miles per hour, or from 18 to 20 miles, with a draught of from 3 to 6 cwt., and ploughing from $1\frac{1}{4}$ to $1\frac{1}{3}$ acre per day.

There is a much greater amount of work done, in a better state, and at a cheaper rate, by good, active, powerful horses—well-fed, and men well paid—than by weak, slow, inactive, ill-fed horses, and weak men and boys at low wages.

We have eight powerful horses employed on the

farm, one of them, however, is also the gig-horse; and we find this animal power is equal to the cultivation of 240 acres of arable land, 120 of which are in Wheat and Oats, 10 acres are in Beans, 10 acres in Potatoes, 10 acres in Carrots, 30 acres in Swedes, 30 acres in Mangold, and 30 acres in Clover. This gives 60 acres of land cultivated by a pair of horses.

In estimating the yearly expense of our horse power it will be necessary to show the first cost of the horses, the expenses of maintaining them, the cost of the implements and keeping them in repair, and the per centage necessary to form a sinking fund to replace them after they are worn out. The horses cost us 250*l*.

The Implements used by the horses:—

	£	s.	d.
Harness for 8 horses at 5*l*. each...	£40	0	0
6 carts, 10*l*. each	60	0	0
6 harvest frames to ditto, 4*l*. each	24	0	0
4 ploughs, 3*l*. 10*s*. each	14	0	0
3 pairs of heavy iron harrows, 3*l*. each	9	0	0
1 pair of light seed iron harrows	2	10	0
4 sets draught-trees	1	10	0
2 cultivators, 9*l*. 10*s*. each	19	0	0
2 rollers	10	10	0
4-horse horse-grubber	10	0	0
1 Turnip-sowing machine	6	0	0
1 Clover seed sowing machine ...	2	0	0
Prongs, grapes, shovels, muck-hauk	1	10	0
Corn-chest ...	2	0	0
Wheelbarrow	0	15	0
Corn-measures and water-pails...	1	5	0
Cart-ropes, scythe, and rake	1	15	0
Cost of Implements ...	205	15	0
Cost of the horses ...	250	0	0
The first cost of horses and the implements used by them is	£455	15	0

The Food which the Horses Consume.—The daily quantity of corn which the horses consume varies according to the quantity of labour they are performing; the hardest work they have to do is after the corn harvest is over, as they have to prepare the land for the winter Beans and drill them, harvest 80 acres of roots, carting them from the field to the store, and then prepare the land and sow the Wheat after the land has been cleared of the roots. During this process from the 1st September to the 1st January, say 120 days, each horse has 20 lbs. of Oats and Beans daily, and as many Carrots as they can eat, which is about 50 lbs. (after the Clover is all consumed). They have as much Oat or Wheat straw as they like. From the 1st January to the 1st March their work is not nearly so hard, and during this period of 61 days they with their Carrots only get 10 lbs. of corn each per day. From the 1st March to the 15th May, they require to perform much hard work and make longer days; they have for these 75 days 20 lbs. of corn. About this time we begin to cut Clover, and from the 15th May to the 15th June, 31 days, they have 15 lbs. of corn and as much Clover as they can eat, and as their work is now much lighter they have only 5 lbs. of corn, with as much Clover as they can eat for the remaining 87 days.

The Calculation of Corn as Food for the Horses.	Lbs. of corn.
From the 1st of Sept. to 1st Jan., 121 days, at 20 lbs. per day	2420
From 1st of January to 1st March, 61 days, at 10 lbs. per day	610
From 1st March to 15th May, 75 days, 20 lbs. per day ...	1500
From 15th May to 15th June, 31 days, 15 lbs. per day ...	465
From 15th June to 1st of Sept., 75 days, 5 lbs. per day ...	390
Say 40 lbs. to a bushel ...	40)5385
Bushels ...	134.6

This is 134½ bushels of corn of 40 lbs. per bushel for each horse per annum, so that the eight horses consume 1076 bushels per annum, besides the Clover during the summer and Carrots during the winter and spring. The extent of land required to produce these 1076 bushels, or 43,040 lbs. of corn, Oats, and Beans, we take the following, say:—

Acres		£	s.	d.
10 acres	of Oats, of 80 bsh. per acre = 800 bsh., of 40 lbs. per bsh. = 32,000 lbs., at 2*s*. 6*d*. per bsh.	£ 99	0	0
5 „	of Beans, of 40 bsh. per acre = 200 bsh., of 60 lbs. per bsh. = 12,000 lbs., at 4*s*. per bushel	40	0	0
	Total ... 1000 bsh. = 44,000 lbs. ...	£139	0	0
	The Carrots which the horses consume in 242 days weigh about 60 tons, at 10*s*. per ton	30	0	0
3 „	of 20 tons per acre, will give this quantity.			
3 „	of Clover will be capable of supplying the eight horses with all that they require or can consume in 123 days, at say 7*l*. per acre	21	0	0
	Say Oat or Wheat straw, cut into chaff, 10 tons for 240 days, at 25*s*. per ton	12	10	0
	Say Wheat straw for litter, 20 tons, at 20*s*. per ton	20	0	0
21 acres.	Expense of horse food per annum ...	222	10	0

Thus the produce of 21 acres of Oats, Beans, Carrots, and Clover supplies the food which the eight horses consume per annum while they are employed in cultivating our farm of 240 acres of arable land; that is, the horse-power derived from the consumption of the produce of 21 acres is equal to the horse-power required to cultivate 240 acres, being all under the system of alternate husbandry. But in estimating the money expense of our horse-power, there are other elements than the food which the horses consume; there are the tradesmen's bills, the legal interest of 5 per cent. on the cost of horses and implements, and also 10 per cent. to form a sinking fund out of which to pay for the replacing of the implements and the horses as they are worn out, so as to leave the whole at the same value at the end of our term as they cost at the beginning.

	£	s.	d.	£	s.	d.
The expense of the horses' food for one year see above	£222	10	0			
Deduct from this 17 loads or tons of manure for each horse—136 loads from the 8 horses, at 4*s*. per ton ...	27	4	0			
Carry forward ...	£195	6	0			
Brought forward ...				£195	6	0
Saddler's bill, 10*s*. per horse	£4	0	0			
Farrier's bill, 5*s*. per horse	2	0	0			
Blacksmith for sharpening ploughs and harrows—3*l*. per plough	12	0	0			
Carpenter's bill, carts and implements, 10*s*. per horse	4	0	0	22	0	0
To insurance of 8 horses, value 250*l*., against death, at 5 per cent.				12	10	0
Legal interest on the cost of horses and implements—250*l*. × 205*l*. 15*s*. = 455*l*. 15*s*., at 5 per cent.				22	15	9
To interest on 455*l*. 15*s*., to replace the implements and horses when worn out, and of loss on sale; this we have found to be equal to 10 per cent.				45	10	9
The 8 horses must do work equal in money value to to cover the expense they have cost us.				£298	2	6

To ascertain the money value of a day's work of a horse we must divide his yearly cost by the number of days during which he can work out of doors during the year; as the carting of manure or goods on the roads can be done in wet weather, although we cannot cultivate the land, we may reckon on 260 days which our horses have worked per annum. Divide the cost (298*l*. 2*s*. 6*d*.) by 260 days, and this gives 23*s*. for the work of eight horses, or 2*s*. 10½*d*. for the work of one horse per day; but this is the money cost of one horse without the man. We must in the same way get at the cost of the ploughman who works a pair of horses.

We have three men and a stout boy; their wages are 13*s*., 12*s*., 12*s*., 8*s*. or 5*s*.,—in all 117*l*., which, being divided by the 260 days that the horses work yearly, gives 9*s*. for the four men, or 2*s*. 3*d*. per man per day's work with the horses.

	£	s.	d.
The total cost of the horses, as above, is or 2*s*. 10½*d* each horse per day.	£ 298	2	6
The total cost of the four men is or 2*s*. 3*d*. per day per man.	117	0	0
	£415	2	6

Then if we take the cost of two horses at ...	5*s*. 9*d*. a day.
and the work of the man at ...	2 3 „
We have the cost of the work of a man and 2 horses,	8*s*. 0*d*. a day.

Home Correspondence.

Tarvin "Penny Bank," or Saving Fund, opened on Monday evening, the 9th of February, 1852, for the purpose of offering to the industrious classes of the parish an opportunity of banking their smallest savings, without trouble, expense, or loss of time. Any sum, however small, will be received and entered in a check-book, to be retained by the depositor. The aggregate sum will be banked weekly in the name of the Trustee; but, so soon as any depositor shall have saved 17*s*. (that being the lowest amount on which the Savings Bank allows interest), an account will be opened at the Chester Savings Bank, in his or her name, and that amount deposited therein. Subsequent small savings will, however, be received from the same parties, and added to the Chester account, at such stated periods as may be found advisable. *W. Milburn, Trustee and Secretary, Duddon Lodge, 29th Jan.* 1852.—We append the statements up to Feb. 1853, and Sep. 1854, respectively:—

Statement of the Tarvin Penny Bank, from February, 1852, *to February* 1853, *being the first year of its existence:—*

		£	s.	d.
Total number of depositors	56			
Total amount deposited		£80	10	10
Number of depositors for whom accounts have been opened, in their own names, in the Chester Savings Bank ...	20			
Amount lodged at Chester to the credit of these twenty accounts		£66	5	2
Amount in the Tarvin Penny Bank, being accounts yet under 17*s*. each, and balances towards further deposits at Chester		14	5	8
		£80	10	10

Opened February, 1852. Attendance at the National School-room, Tarvin, every Monday evening, from eight to half-past eight; at the school-room, Kelsall, every Saturday evening, from eight to half-past eight; and at the school-room, Clotton, every Monday evening, from eight to half-past eight.

Total number of accounts opened		74
Accounts withdrawn	20	
Accounts on books at present	54—74	
Accounts opened at Chester ...	32	
Accounts not yet amounting to 17*s*. each	22—54	

	£	s.	d.
Amount deposited in Chester Savings Bank to credit of the above 32 accounts	£225	8	0
Balances yet under 17*s*. each, belonging to the above 32 accounts	3	13	0
Amounts received from 22 depositors, none of whom have yet saved 17*s*. each	4	14	11
Total amount deposited ...	£233	15	11
Analysis of the accounts of the 32 depositors who have had accounts opened at Chester ...	£225	8	0

	£	s.	d.		£	s.	d.
6 have saved	£0	17	0	each ...	£5	2	0
4 „	1	14	0	„ ...	6	16	0
3 „	2	11	0	„ ...	7	13	0
3 „	3	8	0	„ ...	10	4	0
1 „	5	2	0	„ ...	5	2	0
1 „	8	0	0	„ ...	8	0	0
1 „	9	5	0	„ ...	9	5	0
2 „	10	0	0	„ ...	20	0	0
5 „	10	4	0	„ ...	51	0	0
1 „	10	10	0	„ ...	10	10	0
1 „	13	12	0	„ ...	13	12	0
1 „	15	0	0	„ ...	15	0	0
1 „	16	3	0	„ ...	16	3	0
1 „	22	1	0	„ ...	22	1	0
1 „	25	0	0	„ ...	25	0	0
32					£225	8	0

W. Milburn, Treasurer.

Duddon Lodge, September, 1854.

Landlord and Tenant.—In common with yourself, and no doubt many of your readers, I noticed with surprise, not, I confess, unmingled with indignation, the very unguarded and illiberal attack of Mr. Colvile, M.P., on the amusements of the tenant farmers; a proceeding the more to be regretted from its standing out in such unfortunate contrast with the growing liberality and rapid advance of intelligence amongst almost all classes of the community. Mr. Colvile, I admit, may adduce precedents for his anathema against the pianoforte in farm-houses; amongst others, that most excellent writer, but most execrable farmer, Arthur Young, who never saw one in a farm-house but he wished it burnt!—a remark which, from such a quarter, produced more amusement than indignation at the time, but which, echoed by a man of Mr. Colvile's standing and influence, "though it may make the unskilful laugh, cannot but make the judicious grieve." So far from joining in this senseless outcry against music, or any other equally rational and agreeable recreation to the farmer and his household, I confess I regard the subject in a very different light, and am always disposed to consider it as a favourable omen of the intelligence of the possessor, and eminently conducive to the rational enjoyment of any family in the seclusion of the country, and who from the peculiarity of their position must necessarily be debarred from the general amusements of a town. It is for this reason I always feel a strong desire to promote to the utmost of my humble means the development of such a faculty; not more from a love for the science in itself than from what I consider a sense of duty to my neighbour; for surely any amusement which, like this of music, tends to soothe the sorrows and anxieties of life, to elevate the mind, and to impart a taste for a higher order of pleasures than usually falls to the lot of but too many farmers' families, cannot fail of being included among our most neighbourly acts. Nor do I speak without book on this, to me, interesting topic. I am now descending the hill of life; but the memory of "Auld lang syne" is still vivid within me; and, in imagination, I yet join in the family evening concert, which was sure to succeed the labours of the day; and which if not of the highest order of art, never failed to produce effects at once pleasing and permanent. I may be reminded that, like but too many other advocates, I have exaggerated my case and misstated the facts, and that Mr. Colvile's invective against pianofortes in farm-houses was directed, not so much against the rational use of them in the manner I have described, as their abuse for the mere purpose of display, and an absurd attempt to ape the manners of the wealthier classes. In a few instances this may be true; but where are we to draw the line between mere display and real rational enjoyment? Certainly not by the suppression of music altogether, as a science beyond the attainment of all but the privileged orders. I have shown its value in cases that have come within my own knowledge. Many similar testimonials might be adduced in its favour, amply confirmatory of the importance of cultivating a sound practical knowledge of the science of social harmony. Away, then, with the foolish prejudice against it on the part of a certain clique, because, forsooth, it is in their estimation beyond the reach of a mere tenant-farmer—"lifting him out of his proper sphere," that is the cant phrase with but too many such—instead of keeping his neck to the yoke, as a mere hewer of wood and a drawer of water. Happily for us is it that the days of feudal tyranny are past, and still more happily that our lot is not cast in Russia, where the tenant is but the vassal or serf of the lord; and though neither I nor any English yeoman would accuse Mr. Colvile of the absurdity of wishing to restore this state of things amongst us, we cannot help viewing his sentiments with suspicion, as tending not to our advancement in civilisation and the arts, but, on the contrary, to our positive degradation as a class. Against any such opinions I beg, for one, to enter my humble protest, being firmly convinced that it is the policy, not less than the duty, of every landlord to do all that in him lies to exalt, rather than to lower, the standard of intellectual enjoyment among those whom he may consider his dependents, but who are, in reality, the main props of his house, and ought to be esteemed as his best friends. *T., Gloucester, Nov.* 10.

Finger and Toe in Roots.—I had this year Sutton's Elvethan Long Red and Orange Globe Mangold growing alongside each other; the Long Red is considerably affected with finger and toe, whilst the Orange Globe is remarkably clear, and free from disease. Messrs. Sutton supplied the seed of each, and in point of weight the difference is not so great—six roots of Orange Globe clean dressed weighed 61 lbs.; six roots of Elvethan Long Red, 55 lbs. But how does it happen that one sort should be diseased and the other entirely free? Can any of your readers explain the reason? No doubt this has been a very bad season for green crops, no rain having fallen in this neighbourhood (with the exception of light showers) since February till the end of October. The want of water has been most severely felt: Turnips are not half an average; the hay crop was very light; and keeping of every sort commands an extravagant price. *J. B. Maunsell, Thorpe Malsor, Northampton.*

Rape-cake as Food.—Your correspondent "Y.'s" statement of the results he obtains in beef and milk, from a described mode of feeding his fattening cattle and milch cows, is very valuable from its precision, no less than from its exhibiting the practical realisation of the demonstration of science of the worth of an article (Rape-cake) hitherto lightly esteemed by feeders and dairymen. He has already replied to several queries, will he kindly reply to the following:—At what hours are your cattle fed? Is the cooked food given at one meal?—alone, or with a proportion of Turnips? *S.*——[In answer to the enquiry of "S.," I supply my fattening and milch cows early in the morning—at half-past 5 to

6 o'clock, with first a portion of steamed food, then with one of Turnips or other roots; on these being eaten, chopped straw is given to the fattening, and meadow hay to the dairy cows. The same three courses—steamed food, roots, and chopped straw or hay—are repeated at noon, and again in the evening, being three meals similar in quantity and quality per day. My consumption of Rape-cake at present is about 200 lbs., and of Bran 100 lbs. each day, the whole of which are eaten up clean by nearly 50 cattle. *Y.*]

Liquid Manure.—Although I am no farmer, I have watched with considerable interest the discussion which has been carried on in the pages of the *Agricultural Gazette*, relative to the merits of liquid manure as a fertiliser, and am somewhat surprised at the amount of ignorance and obstinacy evinced by those who refuse to believe that liquid manure possesses such wonderful powers as their more scientific friends have proved it to possess. Now I have seen several experiments tried with liquid manure, and although I cannot furnish you with any minute particulars, I can with safety say that every experiment has proved more or less its value and importance. I have seen it used to Asparagus, Celery, Gooseberries, Currants, and the whole of the Cabbage tribe, with astonishing success; and, in one instance, where a portion of a meadow was measured out and watered with the drainings from a cow-shed, the piece of ground so manured showed it not only in the five or six cuttings obtained that season, but also in the hay crop of the succeeding year, the Grass being of a darker colour, and standing much thicker on the ground. If those gentlemen who have no belief in 65 tons of Grass to the acre will just pay a visit to any nursery where florist flowers are grown, they will there see that the liquid manure pot is considered quite indispensable, and they will need to keep their eyes open lest they should fall into one of the numerous tanks for the manufacture of that useful article. *A Gardener.*

Italian Rye-grass.—It grieves me to find myself in a pitched battle with Mr. Beale Browne; I wrote my few lines in the *Gardeners' Chronicle* without knowing he was taking any part in the dispute about the Italian Rye-grass. We are now before the public in the same service—the cause of truth; he is as fully convinced of the impossibility of growing the equivalent in Grass of 20 loads of hay per acre (Scotch) as I am that it can be done with my plant by any man (who has good land, well drained, and ordinarily retentive) that will inform himself of the mode, and diligently pursue the practice. He I know is a Christian man; I hope I am so too, so I will talk to him as though we were walking and talking as we did when we last met, and will ask him why he disbelieves this great fact. Have not great facts been constant occurrences in our own days? and are not impossibilities proved possible almost every day? I will pass by all the discoveries made up to a recent period, and simply ask what was said to Dr. Jenner when he introduced vaccination to relieve the sufferings of almost every individual born into the world, was he not hunted down almost like a wild beast? What of gas, so beneficial to us?—was not gas to have blown up the world ere this? At all events London was to have been consumed long ago. What of the discovery of the precious metal in such vast quantities to enable increased population to carry on their transactions? What of chloroform, by which the most agonising sufferings of human nature are relieved, and the whole nervous system brought into subjection—was not that one of the agents of the evil one? What of the electric telegraph, by which immediate communication is kept up from one end of the globe to the other? who could believe it? who even now can understand it?—still it is true; they were all impossibilities, they are now all admitted truths. Is it too marvellous to believe that the sufferings of humanity should be diminished in so wonderful a manner, step by step, that the population should have increased so extensively, and that there should not be an equally wonderful mode illustrated of increasing the quantity of food to supply their wants? Think of this. If we can increase the quantity of Grass four times, we shall have four times the beef, mutton, every kind of flesh, wool, and leather for clothing, and of everything that can be mentioned. It is the grand starting point of successful agriculture—the quantity of Wheat, Barley, Oats, &c., is dependent upon it. This now so strongly disputed statement was given by me in various ways at different places, ten years since, to the Royal Agricultural Society, and published in their journal, vol. vi., part 2, page 575; to the Yorkshire Agricultural, and in their Journal in 1845, page 44; to a Committee of the House of Commons on Metropolitan Sewage Manure, in 1846, look at page 46, question and answer 653: 100 tons of the Grass to the acre was the possibility upon which I doubted, and only doubted. These statements were copied into most of the provincial farmers' journals. My farm was kept open by public notice to all comers for seven years, for the express purpose of illustrating beyond doubt this very fact; now, it must not be mentioned in a society of the most enlightened agriculturists, except at the risk of a man's life. Although I quote this I do not believe it; I have a better opinion of my countrymen. Hundreds came to look, confident of the fallacy; no one went away, that I heard of, without being convinced of the truth; the stoutest unbelievers became the most fully convinced, they took the most trouble and could not help believing. Capt. Buller (now no more) would not be content till he saw a crop mown, grown again, and a yard cut in his presence and weighed (Sept. 9) after a crop of seed; it weighed 5¾ lbs.—12 tons 8 cwt. to the acre. This was dried 12 days in the atmosphere, it then weighed 2⅜ lbs. drawing the scale; put in a room for three days, at 59° Fahr., still 2⅜ lbs.; three days further, at 70°, 2 lbs. 10 oz.; roasted in a sack before the fire for two hours, 2 lbs. 6½ oz.—this is 5 tons 3 cwt. to the acre of hay. Capt. Buller saw the two crops cut, and the last weighed; I dried and weighed it myself. He went away, practised it successfully, and has left his testimony in print (Royal Agricultural Society's Journal, vol. viii., Part 2), that 40 or 50 tons of this Grass might be grown per acre per annum; the profit of his per acre was 7*l.* 9*s.* 8*d.* The late Earl Wharncliffe sent his friend Mr. Stansfield to see the plant and examine it as to the truth of the statement; he saw, believed, and vouched for the truth in public before 300 persons at the council dinner at Beverley in 1845. Earl Lonsdale took great care to examine as to its truth; I believe, was convinced. One of my own agricultural friends, to whom I made a similar statement, thought me mad and unfit to be left at liberty with my large concern; he saw and acknowledged that if either of us was mad, he was the man. I will undertake to convince Mr. Beale Browne also, and enlist him an advocate on my side, very much to his profit now that he is so large a landowner and farmer too; this will not convince the agricultural world; every man beside is interested:—the eater and the grower in the first degree,—the landlord most particularly so: it ought, therefore, now to be established upon a solid basis if true—if false, to be rejected. We began in the cause of Truth; let us call in her sister Charity to assist us to finish, by showing beyond doubt what can be done even in this poor half-starved country. Let him find 50 persons to produce 100*l.* each, the half of which to be applied at once to charitable institutions to be agreed upon; and I will find 100*l.* to be added to the other half. I will try my skill to cut from a plant of my Italian Rye-grass 40 tons, or the proportion of it, in one year from a Scotch acre of this poor land in the New Forest either the ensuing or following year. If I fail I will forfeit my 100*l.* to Sister Charity; if I succeed I will take up my own money only, and give to the agricultural world an invaluable testimony of what may be done upon land, acknowledged by everybody bad in quality and desperately poor. I have no steam-engine, no liquid manure pipes, no experience in managing the land, having only taken the farm at Michaelmas 1853, and came here in April last. I may fail from many causes—bad health, bad seasons, ignorance of the mode of managing the land; I can use the means but cannot command success, that is with Him whose I am and whom I hope I serve. I have farmed hitherto the clay surface and clay subsoil of the London basin. I now begin with gravel, and am eaten up with rabbits, against which I must fence for my experiment, so shall undertake but a small slice. Fifty tons of Grass are the equivalent of 20 tons of hay, but I must be content to start with 40 tons. I will take this opportunity of stating that I have nothing at present to show, lest persons should come a distance and be disappointed. The pamphlet promised I will endeavour to get ready early in the spring, when notice of its appearing, and address of the vender shall be given in the *Agricultural Gazette. William Dickenson, New Park, Lymington, Hants.*

Sewage Manure.—I had occasion, during the progress of the Croydon system of town drainage, to communicate the results of many chemical experiments made by me, with a view of ascertaining the agency of certain substances recommended or employed as deodorisers of the fluid matters conveyed from every house through glazed stone pipes of various calibres, and finally conducted to one common receptacle, called a filter, situated in a place to the west of the town, near to, but below the level of the Epsom line of railway. Frequent allusions had been made to the great value of the solid matters as a manure, and many schemes suggested for their separation from the great volume of water which held them partially suspended. Every attempt proved vain—even when recourse was had to the famed peat charcoal, which, though it deodorised the sewage, and permitted the water to pass through it in a pellucid state, yet entirely failed to attract and fix the ammonia and other valuable saline matters. Dr. Anderson, of Glasgow, and Mr. Way, chemist of the Royal Agricultural Society, established these leading facts, which were confirmed here by the experiments with peat that I undertook for the Local Board of Health in 1853. Professor Way has recently announced that—"a gallon of sewage taken at mid-day did not contain enough solid to admit of examination;" and again—"a quantity of the solid matter was collected at the mouth of the Croydon sewer by a flannel bag, then drained as much as possible, and afterwards dried sufficiently for analysis: it only yielded nitrogen 3·27 per cent.—equal to 3·94 of ammonia. Such was a type of the best result which can be obtained by mere filtration of the solids." We assert nothing concerning what has been, or is attempted, in order to produce a solid and pulverised manure in any degree approaching to sound guano; but we have no hesitation in saying that if nitre, or lime, or carbonate of ammonia, or any other chemical, be combined artificially with solid sewage, or with the shale, peat, charcoal, &c., employed as a deodoriser, the produce so obtained is no longer sewage manure, but a mixed hotch-potch of greater or less value, as the case may be; but certainly artificial, and little likely to remunerate either the manufacturer, or the farmer who may be tempted to plough it into his land. *J. T., Croydon, Nov. 10.*

Seeding Thin and Thick.—In a former paragraph we noticed an extraordinary production of Wheat, grown by us from 18 grains on 1 square yard of land, or about 6 pints of seed per acre, viz., 466 ears, containing 1 quart, equal to 18 quarters 7 bushels and 1 peck per statute acre; and now proceed to describe the exact produce we grew on another square yard, with similar treatment, at the opposite extreme, from 317 grains, or about 2 to 3 bushels, or 192 pints per acre. On account of its extreme thickness, though every grain was planted with strict precision, and all came up with the greatest regularity, not more than 80 stools or stubs were observed to produce corn, numbering only 94 ears, most of which were small, and the straw very weak, and a striking contrast to those grown on the thin principle. The rest of the plants totally failed, and drooped under the influence of the summer's sun. The exact produce was a quarter of a pint, equal to only 2 quarters 2 bushels 3 pecks and 5 quarts per acre, and that of very inferior quality, and which chiefly grew on the outsides of the square. We have both specimens of stubble for inspection at our establishment if requested. *Hardy & Son, Seed-growers, Maldon, Essex.*

Corn Prospects of the Coming Year.—As some alarm has been caused by the large rise in the price of Wheat in the last month, it may be satisfactory to show that this rise may be accounted for by the extra demand for seed in the market at this season of the year coming suddenly, and in addition to the usual consumption for food; the latter having wholly to be taken out of the produce of this year—unaided, as it has usually been, by a large stock of old Wheat remaining in the country; and that as this extra demand on the new stock subsides, we are likely to have the markets fully supplied, and to feel the benefit of the late abundant harvest. In addition to the ordinary consumption of Wheat for food in the months of October and November, and which is supposed in Britain to amount to a million-and-a-half quarters a month, there are required in these two months about a million and a half quarters for seed—so that the consumption for this period is increased about 50 per cent. But the extra demand at this season has hitherto had little or no effect on the markets, because we have always had large stocks of old Wheat in the country, in addition to the growth of the last year—and the consumption for food between Michaelmas and Christmas has principally been taken out of the old stock; but this year, owing to the close working up of all old stocks by both millers and bakers, and the absence of any foreign supplies coming in or remaining over in granary, the whole consumption has fallen on the new growth, and the farmers having had little inducement in the price immediately after harvest to thrash out their new growth faster than usual, the markets have been without the additional supply which the deficiency of old stocks has called for. But as soon as this extra demand has been supplied, I feel confident, from the very large crop grown this year of all grain, that the markets will be abundantly supplied, and we shall have less occasion for a foreign supply than we have felt for some years past. From a very careful observation of the crops of corn, both in England and the North of France, I am convinced the growth this year is the largest and finest I have known in the last twenty years, and is at least a fifth more than an average, and probably nearly double the growth of 1853; and if this be so, notwithstanding the absence of old stock to lessen the consumption of new at this season, we shall find the country at Christmas with as much, if not more than our usual stock of home-grown corn, and the present high prices will be but temporary—and I am aided in coming to this conclusion by my knowledge that whilst the produce of Potatoes is considerably greater this year than it has been of late years, at the same time there has been far less of disease in them; and whilst the consumption of Wheat, of late years, has been largely increased by the failure of this root, this year the reverse is likely to be the case. *Hewitt Davis, Oct. 28, 1854.*

Farmers' Clubs.

London, *Nov. 6.—Farm Buildings.*—Mr. Bullock Webster, of Malvern, introduced the subject. He said—After having visited nearly all the best farm buildings in England, Ireland, and Scotland, and noted the requirements of farmers in different localities, I have come to the conclusion that partially closed sheds, 18 feet wide in the clear, and not less than 8 feet in height of walls, are capable of being made available for all the purposes, except that of the barn, for which farm buildings are required under the various systems of farming now pursued. Take, for instance, model No. 1, and suppose it required for milch cows, fatting stock, or young cattle. You have a space of 3 feet for the feeding passage, 2 feet for the feeding trough, 6 feet for the animal, 1 foot for the drain, and a 6-foot passage behind, with say 4 feet in width for each animal, as the case may be. Again, should Mr. Warne's system of box-feeding be pursued, this arrangement is equally well adapted to it, the only difference being in the interior fittings. The same holds good if Mr. Mechi's system of gratings for sheep be pursued; and in this case the interior fittings might be moveable, to allow of the conversion of this room for other purposes when not wanted for sheep. In fact, in most cases the interior fittings should be moveable, for the sake of convenience. For stabling, you have but to partition off 6 feet for each horse, or, what might be better, to take in 24 feet of shed; and making your stables crossways, get 6 feet for each of four horses, and a good harness room across the end. For pigsties the plan is equally applicable, through a different arrangement of the fittings. And it will be

easily understood that portions of these sheds partitioned off, or erections of the same dimensions, will answer well for carpenters' and blacksmiths' shops, straw and root houses, gig-house for bailiff, &c.; whilst for shelter for young cattle in the straw-yard the interior wall would be done away with, and posts substituted; and for carts and implements posts substituted in the same manner for the outward wall. I will not attempt to lay down any general rule as to the mode of arranging these 18-feet sheds, as it ought to depend in a great measure upon situation, kind of stock kept, and various local circumstances; but where these make it desirable, I think it will be found practically that three or four 18-feet sheds placed together will form as convenient and economical a covered home-stall as any other kind of erection. One or two remarks, however, I may be allowed to make which, though trite here, may not be inopportune elsewhere. The square or oblong farm is nearly always advantageous. Straw, hay, and roots should be near the cattle, the cart and implement shed near the stable, the piggery near the dairy and boiling-house, the cow-house near the dairy; and there should be but one entrance, which should be near the bailiff's cottage, or the farm-house, so that persons going to and fro may be seen. But, though the exact form of the homestead may be a matter of indifference, or may depend on circumstances, the question as to covered or open homesteads cannot, I take it, be looked upon in that light; for whether we consider the comfort of the animals, and therein their condition for fatting faster and cheaper, or the greater value of unwashed manure, we must, I think, discard in a great measure the idea of the open homestead. (Hear, hear.) For my own part, I decidedly object to covered homesteads opened at the sides, as precluding the proper regulation of the temperature. Any one who has stood under open railway stations on a cold day may have experienced some of the sensations to which cattle are subject under these intended to be comfortable homestalls. (Hear, hear). As the arrangement of the homestead may vary according to circumstances, so also may the materials of which it is composed. Brick or stone will do equally well for the walls, and may be used according to the custom of the neighbourhood. In Norfolk, clay lumps might be substituted; and in districts where there are copper or iron works we shall soon have a valuable building material made from the slagg, which, it is expected, will be brought to such perfection that, in addition to its substitution for brick or stone, it will probably be worked thin enough to supersede slate for roofing. In other districts the roofing may be of slates, or the improved kind of tiles, which latter are warmer in winter and cooler in summer; but I would not recommend the plan of a hollow brick roof, in consequence of the difficulty which there is at present in making it waterproof: though no doubt we shall see improvements in this also. In some districts the iron roofing may be more desirable. Again, the timber may be either of foreign or of home growth; but, I wish it to be particularly noticed, that one of the greatest advantages to the landlord of establishing this 18 feet system of building would be this, that in felling and sawing his timber directions might be given that anything which would cut into rafters, wall-plates, &c., say for 18-feet sheds, should be put on one side and always be ready for the use of the farms on the estate. The saving here effected will be obvious to every one. For floorings for the sheds, I doubt if anything can be found to answer better than hard bricks; I am now using some, which are as hard as stone, perfectly impervious to moisture, and so moulded as to prevent the animals from slipping upon them. There are many other matters of detail, which I do not think it necessary to enter into on this occasion, the main point now, as I conceive, being to decide on some mode of building to be recommended to landlords and tenants generally. The details can be easily filled up. I have, however, thought it might be desirable to give a rough estimate of the cost of 18 feet sheds, as far as the shell, *i. e.*, the walls and roofing, and I caused one to be prepared, showing what would be the cost for 100 feet of shed at the present price of timber, slates, and bricks in the London market. Upon going fully into the matter and getting estimates for tiles, slates, and iron-roofs, in various localities, I find that with walls of bricks and stone, if you take any agricultural district, the expenses per foot in length of these sheds, and including windows and doors, will not exceed 25*s.* per foot. In most places it will not be more than 20*s.*, and where stone or bricks are found for the walls and rough timber for other purposes, it will be only from 12*s.* to 14*s.* In addition, I have only to notice the barn, and as far as my experience goes, I would never build one more than sufficiently large to hold one rick of the size usually made in the locality, with space for the barn machinery and straw. This may be placed at the end or centre of the sheds, as seems best. Thus it would appear, that we have in these 18 feet sheds, a plan of farm buildings adapted for the improved systems of farming of the present day; equally good for any other that may be adopted, whether on a large or small scale; capable of expansion to any extent, easily constructed from the materials to be found in different localities, as inexpensive as possible, in a plain form, and yet capable of great ornament and finish; above all, a plan which if approved by this club and adopted would do more to facilitate the erection of proper homesteads than anything which has yet occurred, by reducing the hitherto uncertain cost to a certainty, and establishing approved ground, on which both landlord and tenant might meet. It will be understood that if 25 more beasts can be kept, 100 feet more shedding will be required, costing 100*l.*; if four more horses, then 24 feet more shedding, and so on; thus leaving no doubt on the score of requirement and expense, the uncertainty of which has, I believe, hitherto deterred hundreds of well-meaning and liberal minded landlords from building and rebuilding on their estates. With these observations, I will now leave the subject in the hands of the club, believing that most of the members will agree with me that it is high time that something should be done by way of advice and encouragement, to get rid of those straggling, unthrifty, and unsightly farm buildings which are a disgrace to the age in which we live. (Cheers).

Mr. Mechi agreed with Mr. Webster that it must be laid down as a rule that the cattle on the farm should be sheltered, and that open yards like those which had hitherto prevailed could no longer be tolerated, as they were evidently unprofitable. One suggestion which he would venture to make was, that all farm buildings should have a steam-engine, fixed or moveable, in connection with them. The present tendency was, he thought, rather to give up portable engines, and to substitute for them fixed ones, as being the most economical. Then came the question whether the manure was to be removed daily, or to remain under the animals in covered yards, straw being added. He believed the latter practice to be sound, provided there was sufficient ventilation. It was the mischief which arose from bad ventilation that caused farmers in Essex to keep their horses in open yards; and it was well known that where sheds and open yards were combined, there was scarcely any doctor's bill. Ventilation was a point in which he felt very great interest, as he sold, off his farm annually, meat to the value of 2500*l.* His losses of late had been little more than nominal, and this he attributed to the circumstance that there was ample ventilation. As regarded the best method of securing ventilation he thought it ought to be obtained from the bottom rather than the top of a building. He would tell them why he was of that opinion: in his sheds, the floors of which were boarded, he had on a level with the ground a number of 6-inch pipes, placed within 9 inches or a foot from the floor; and it was a singular fact that, while there were large openings above, the smell issued from the lower far more than the upper part of the building. The inference was unmistakeable; and he considered it, therefore, highly important that in stables and cattle sheds, especially such as were made of brick, and therefore impervious to the air, an opening should be made below as well as above, in order that the circulating air might be complete. Another point for consideration was the question of the construction of boarded floors as part of an improved system of farm buildings. He had always entertained a great dislike to boarded floors, as far as comfort and appearance were concerned: but after eight years' experience, he thought the balance was decidedly in favour of boarded floors. (Hear.) He could assure them from that experience that, if they divided a lot of bullocks, keeping one-half on boards and the other half on straw, the butcher, when he came to make his selection, would go first to the bullocks on the boards. It was only that day his butcher had remarked to him that he should always give the preference to sheep fed on boards, as the mutton was of a superior quality; whilst a friend of his, who had been obliged to keep some animals on straw instead of boarded floors, said that his butcher had complained that the meat was not as good as under the latter system. As regarded both sheep and pigs, he (Mr. Mechi) was convinced that boarded floors were best. When he put down his boarded floors, he certainly did not do so with reference to irrigation; but having commenced irrigating, he found he would have been obliged to adopt boarded floors if he had not done so previously, because the manure which fell to-day was, under the boarded system, washed out to-morrow and distributed over the land, so as to enter deeply into the growth of plants. If they kept a large quantity of stock upon heavy clay land it was absolutely necessary that there should be a good covering for the animals during the long winter nights; and the providing of adequate shelter would repay both landlord and tenant. They all knew that, in unfavourable weather, sheep exposed to its influence made no mutton, however much they might consume (Hear, hear) When they were out, with nothing but wet clay to lie upon, all the carbon of the food went to replace the heat which had been lost through the state of the weather. He agreed with Mr. Webster, that barns should not be used for the future as they had been. In his opinion they should be used chiefly to keep a certain quantity of straw in a dry state, to be cut up as food for animals. He was glad to perceive that they were rapidly approaching a period when the system of cutting up food for animals was likely to be almost universally adopted; and if the great bulk of the straw were consumed together with cake and roots, it would, he thought, be found a most valuable addition to the feeding powers of the farm. (Hear, hear). With regard to the amount per acre which it was necessary to invest in farm buildings, the evidence on the subject was to the effect that for the general purposes of farming, about 5*l.* per acre would suffice. There might, indeed, be some advance on that now that the cost of labour and materials was so greatly increased; but a great deal would of course depend on the circumstances of different localities. If they were to be told that many farmers must keep three times as many cattle and sheep per acre as they did at present, the question arose whether that would not require a larger capital, or the farming of a less quantity of land; and if a larger accommodation was to be afforded than had been provided under the old system, the further question arose, would it pay? In conclusion he would observe that the entire question of farm buildings was a very serious one, dependent in a great degree on the order and character of the farming of different districts. If they were to carry out the great principles which were now forcing themselves on public attention, such as irrigation and large applications of artificial manure for root and green crops, they must have facilities for all this, including, of course, a proportionate amount of capital; but he thought no general rule could be laid down, except that of keeping on the alert and seeking to progress with the progressive character of the times. (Hear, hear.)—Mr. Wood did not entirely concur in Mr. Webster's theory as to an 18-feet building comprising all that was necessary for the accommodation and welfare of cattle, but agreed with Mr. Mechi, that ventilation had a great deal to do with the matter. After a good deal of experience and observation he was of opinion that Mr. Warne's plan of feeding cattle was the best that had been devised. For his own part, however, he did not see the advantage of putting up smart buildings. He had himself begun by making an excavation of about 2 feet, and then sticking posts in the ground. He afterwards employed a carpenter at 2*s.* a day (Oh, oh!), after which he got a few rails, and put on the plates and the roof; and when he had tied the whole strongly together, he found that it answered his purpose just as well as though he had gone more expensively to work. He could build boxes to any extent for about 6*l.* or 7*l.* each. They would last for a 14-years' lease, and the total cost was not more than the interest of the money laid out in constructing expensive buildings; while at the end of 14 years he would be in a position to set fire to the buildings and erect others, without being more out of pocket than those who built a box at a cost of 15*l.*, which according to them was to last for ever. (Laughter.) He had, too, the advantage of good ventilation, through not putting up brick walls. On one occasion, indeed, he did erect a 4-inch brick wall, but he found that the animals kept inside were not so healthy as they otherwise would have been. There was not that escape of effluvia which he considered necessary to keep them in good condition. His plan was to put up bushes, and there could be no more complete ventilation than those afforded. (Hear, hear.) It was a well-known axiom in Sussex that, if a gust of wind once got into a bush-faggot, it never came out again. (Laughter.) This was, in fact, a most wholesome system of ventilation, and, leaving expense out of the question, he considered the kind of building which he had just described preferable to the most substantial one that could be erected. He had 20 bullocks in boxes of that description during the whole of last summer. If the box system was to be carried out they must have ventilation, and in no other way could they get such perfect ventilation as was secured by putting up bushes. As regarded expense, they were aware that though surveyors and clever men might make what appeared reasonable estimates for buildings, there were often many things left out of their calculations, as those who had to pay discovered to their cost. There were, for instance, the charges for making shoots and roads, and for providing sheds for horses, carriages, and so on; with reference to which there was perhaps no more convenient plan than that of having a shed, or a number of sheds, 11 feet in the clear. He did not approve of putting sheep in sheds; he had tried it, and found that it did not answer. The great advantage of feeding sheep on the land, instead of under cover, was that the manure was left where it was required, and the expense of carrying it was avoided. As to the flock farmers of Hampshire and Wiltshire housing all their sheep, it would be useless to attempt it. He thought it desirable that the buildings which already existed on farms should as far as possible be turned to account. (Hear, hear.) He had endeavoured to turn his own to account by putting shoots round them; while by means of boxes he had in some cases been enabled to dispense with the use of shoots. It was doubtful whether in many cases in which large buildings were erected the tenants would be able to pay the interest of the money expended. (Hear, hear.) As to barns, it was to be remembered that farmers were now nearly all threshing with steam engines, and he believed that practice would become still more extensive, and that barns would therefore be less needed for threshing purposes. The system of carrying to barns would, he thought, soon be almost discontinued.—Mr. Trethewy perceived that Mr. Webster's model allowed only one barn. He was no advocate for having a great deal of barn space, but he thought that one single barn in the case of a farm of two or three hundred acres would not be sufficient. Again, as regarded height, he thought the model building was of too low an elevation. He agreed with Mr. Wood as to the adaptation or renovation, as it were, of old buildings, and thought that in many cases it would be much more desirable and easy to take advantage of existing buildings, and to turn them to account in the best manner practicable, than to erect new homesteads. In conclusion, he could not help reiterating his doubts that the accommodation spoken of by Mr. Webster could be provided for the sum stated by him.—Mr. Oakley said that agriculturists ought to feel much obliged to Mr. Webster or any one else who brought forward a question of this nature; for there was nothing so costly to the landlord as the reparation or renovation of old buildings and the erection of new ones, and at the same time nothing so beneficial to the tenant as the having suitable places to shelter and feed his animals. He had had a great deal to do with the alteration of old buildings, so far as they were available, and the erection of new ones where that was necessary, and for that purpose had been entrusted with the spending of a great deal of other people's money. The plan he had adopted for the erection of covered homesteads was that of Mr. Beadel's, and the idea of doing so first came into his mind through his intercourse with friends in the Weald of Sussex, who discovered in their box-feeding, that the manure thus obtained, which they applied in their Hop cultivation, was much more beneficial than manure which the water of heaven had been falling upon. His object had been to keep all the animals covered under one roof, while at the same time he made due provision for ventilation. As the discussion of that evening turned upon the question of economy in relation to farm buildings, he wished to remark that his experience led him to this conclusion—that, taking the price of timber at what it was in 1851 and 1852, in the case of a farm of 300 acres of mixed land, such land as abounded in Herefordshire and Worcestershire, farm buildings might be erected suitable to the accommodation of 40 beasts, 40 pigs, 12 horses, a gig-house, poultry-house, &c., at a cost of 1000 guineas, which was as nearly as possible 3*l.* 10*s.* per acre. His views on the subject were published in the Journal of the Royal Agricultural Society of last Christmas. There was an advantage as regarded expense in having one roof instead of five or six roofs. On this point, however, he must remark that it would make a material difference if they had leaden gutters. In that case, to talk of 25*s.* a foot would be idle.—The chairman said, Mr. Cook, of Semer, had some very excellent covered farm buildings. He proceeded in the most economical manner, and his buildings were better adapted to the purpose than any others which he had seen. It happened that in all the buildings of this description which he had visited there was some defect. Some were built too high; and he had himself observed a driving wind and rain beating across half the building; others were too low, and there was not that amount of ventilation which was requisite for the health of the animals. The grand point was so to shelter animals at particular seasons as to secure the best quality of food. Mr. Cook, of Semer, had made nearly all the buildings already erected serve for sides to his covered yards, and he would recommend those persons who wished to improve their farm buildings to go and inspect those of Mr. Cook. On a considerable farm in Essex—a farm of 400 or 500 acres—of which he was entrusted with the management, the buildings were not long since all burnt down. They were insured for 1000*l.*; and the owner of the farm having placed that amount in his hands, requested him to erect with it such farm-buildings as were required, telling him at the same time that he should not pay any more. With that sum he (Mr Baker) erected an excellent homestead. The sheds were 160 feet in length and 40 feet in width, and included two large barns, a large building for a steam-engine, and ample accommodation for cattle and horses; while the height in front was 9 feet clear. What he would recommend to landed proprietors desirous of improving their farm-buildings was, that they should take the advice of some person who was competent to give advice, and to point out to them the best method, whether of converting buildings which already existed, or of setting about the erection of new buildings, and not to proceed without knowing what was required, or within a thousand pounds what expense was likely to be incurred.—Mr. Webster having briefly replied, on the motion of Mr. Mechi, seconded by Mr. Trethewy, the following resolution was adopted unanimously:—"That this club is of opinion that covered homestalls are strongly to be recommended, whenever they can be introduced with advantage; but it is further of opinion that no settled plan of farm-buildings can be laid down, as different circumstances of obtaining materials, adaptation of present buildings, and the actual requirement of the farm, must at all times call for a different application."

Notices of Books.

The Farm Almanac for 1855. By C. W. Johnson, Esq, F.R.S., and W. Shaw, Esq. J. Ridgway, 169, Piccadilly.

THE same quiet useful substantial little volume as it has always been. This is what it is intended to be, a word of praise—one, too, which has annually been fully earned; but it is what it is also intended to be, a bit of criticism; too—for we think the numerous readers of this work would be gratified and *benefitted* by a little variation, from the sober and somewhat monotonous character, which it has acquired—by a little more vigorous assertion of the forward movement which agriculture certainly

is making, and a rather less constant reference to what everybody knows or ought to know, for the volume is purchased rather by farmers than by farm pupils. At the same time we are sure that we express the general feeling of the agricultural community, in thanking Mr. Johnson for his useful persevering labour in this and in the many other channels through which he has benefitted English agriculture.

Miscellaneous.

Means of Removing the Rancidity of Butter.—Wild recommends that the butter should be kneaded with fresh milk, and then with pure water. He states, that by this treatment, the butter is rendered as fresh and pure in flavour as when recently made. He ascribes this result to the fact, that butyric acid, to which the rancid odour and taste are owing, is readily soluble in fresh milk, and is then removed.—*Quoted in the Pharmaceutical Journal.*

Calendar of Operations.

NOVEMBER.

CHESHIRE, *Nov.* 7.—For the last month the farmers generally have been busily engaged in preparing for and sowing their Wheat, the greater portion of which has been put into the ground in the best possible condition: there is, however upon the dry soils, and more especially upon the Turnip land, a considerable quantity yet to sow, but should the weather continue tolerably fine for a fortnight longer, in that also we may expect great progress to be made, and we think a full average quantity will be sown during the season. The yield of the last crop of Wheat appears to be satisfactory, and the price, although rather lower within the last week, is also considered remunerative. Very little Barley has been threshed, or indeed of Oats; therefore much cannot be said of those crops, but it is feared that Barley will not prove an even sample, or very productive. Winter Vetches have engaged the attention of the farmers in an unusual degree, in consequence of the deficiency of the hay crop and expected scarcity of spring food for cattle, and the demand for seed has greatly exceeded the supply, which has caused the price to be very high. It is much to be regretted that the opinion formed a few weeks ago with regard to the productiveness of the Potato crop, has undergone a great change; many crops which at the time of being raised had comparatively a healthy appearance, are, on their final removal to the "hay" for the winter, found to contain at least 20 per cent., and in some instances as much as 30 to 40 per cent. of diseased Potatoes; consequently the price has risen materially in the market, and is likely to be much higher before the spring months. The season has been very fine for pulling, and storing Mangold Wurzel and the crops generally are found to be much superior to the Turnip crop, which is almost invariably the case in dry hot seasons like the last. Turnips are still growing, but they never can recover from the effects of the mildew, which has been so prevalent, especially amongst early sown ones. Fat cattle and sheep are very scarce, and the price of beef and mutton is likely to advance considerably before Christmas. Pigs are also in good demand. *W. P.*

WESTER ROSS, 14*th Nov.*—The weather having continued favourable since our harvest was concluded, Wheat sowing is now well advanced, farther, perhaps, than it has been at this season for years; and a more suitable bed it could scarcely have been cast into. The first sown is already making its appearance regular and vigorous. All just now bids well for next year; a large breadth sown, and that in the best condition. Although at the risk of being smiled at by not a few of your readers and correspondents, we readily acknowledge that we have not yet arrived at the conclusion that 2 or 3 pecks, or even a bushel, is seed enough for an acre, in the far north of Scotland. Sometimes we have had hardihood enough to try a smaller quantity than usual, led astray by general, and consequently reckless assertions, because only applicable to exceptional cases; but our experience has invariably been, that we had a lightness of labour in harvest in beautiful keeping with the diminution of seed. Let those who are fortunate enough to dwell in a climate so genial, and to cultivate soil so rich as to require only a few pecks of seed, be thankful; and surely, better far that these same fortunate ones, instead of talking as if every farmer were equally fortunate with themselves, should commiserate the condition of those who find it necessary to sow some 3 or 3½ bushels per acre, and who, besides, are under the necessity of carefully watching that from the devastation of crows and all such pests. With a return of 10 bushels of Wheat for each one sown, as many of us have this year, and receiving for each bushel well nigh 9*s.*, we fall little short of the contentment necessary to keep us from envying the man who can do with 2 pecks of seed. Essex seems still the favourite Wheat for good soil. Red-strawed was pretty largely sown last year, but our bakers raised such a shout of condemnation (many suppose a mere whim) that less of it will be sown this year. On lighter soils red Wheat is now more generally sown, and this year large returns are spoken of, so much as 7 and 8 quarters an acre. A good deal of the new crop has been already threshed, and gives general satisfaction, both as to quantity and weight, although there is a larger quantity of dressings than usual, the result of little sunshine, damp, and rust. The weight ranges from 61 to 66 lbs. per bushel. The price being high, all that is threshed seems to go direct to market. Our Muir of Ord markets are over for a season. Demand continued brisk, and prices exorbitant to the end. The weather is particularly suitable for sheep on Turnips, and they thrive apace. The continued agricultural prosperity has caused to settle on the farmer's countenance a grateful smile; and I have no doubt but that it will take many days of sad adversity again to dislodge it.

Notices to Correspondents.

BONES IN CHESHIRE: *Enquirer.* The "boning" in Cheshire is generally done by scattering 3 or 4 quarters of coarse bone-dust broadcast per acre over the Grass lands. It is a rough and wasteful process.

BOOKS: *H M W.* Andrews' "Modern Husbandry" is published by N. Cooke, Milford House, Strand. For our opinion of it see p. 189 of this year's volume.—*H L.* Professor Lowe's works, Blackie's "Cyclopædia of Agriculture," Stephens' "Book of the Farm," "Spooner on the Sheep," U. K. Society's books on Horse, Ox, and Sheep.

FRESH MEAT: *A Subscriber* writes:—It is said that beef can be preserved fresh for some weeks by being in contact with carbonic oxide, and it would be a favour if directions were given for applying it; the quantity to be used for a given quantity, say a stone of beef.

POULTRY: *Anon.* By all means select the cock which you describe as having the tail feathers of a "greenish black" colour slightly edged with white; what you consider a defect we are inclined to pronounce quite the reverse. The comb of the other bird is as you suppose too "wide;" it should not be *more* than an inch.

SEEDS FOR CANADA: *H L.* Apply to Messrs. Gibbs, or to any of the great seedsmen. See our advertising columns. For mildew on Turnips—sow late, and aim, by cultivation, to maintain uniform and continuous growth.

SPANISH POTIRON: *H L.* We do not know it.

H. J. MORTON AND Co., Galvanised Iron Roofing Works, 2, Basinghall Buildings, Leeds.
PATENT WIRE STRAND FENCING FOR PARKS, &c.

This Fencing is the most neat, strong, and durable for Parks and Agricultural purposes in use. It cannot be bent or put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply as above.

IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

POULTRY, RABBIT, SHEEP, AND CAT FENCING. Hare or Rabbit Nets, on Cords, for Covert Shooting, 12 mesh over, 4 feet wide, 1½*d.* per yard.; 18 mesh over, 6 feet wide, 2½*d.* per yard; 24 mesh over, 8 feet, 3*d.* per yard; each Edge Corded, ½*d.* per yard extra; extra Stout ditto, 18 mesh wide, 4*d.* per yard, suitable for Poultry Fencing. Square Mesh Cricketing Net, fix its full width and length, made of stout cord, 3*d.* to 4*d.* per square yard; this is the best article made for fencing against fowls, cats, &c., at W. CULLINGFORD'S, No. 1, Edmund Terrace, Ball's Pond Road, near Kingsland Gate, London.

CHEAP WIRE GAME AND POULTRY NETTING.

	PLAIN.	GALVANISED.
24 inches wide, 2-inch mesh,	3*d.* to 4*d.* per yard.	6*d.* per yard.
36 inches wide, 2-inch mesh,	6*d.* per yard.	9*d.* „
48 inches wide, 2-inch mesh,	9*d.* „	1*s.* 0*d.* „

Sparrow Proof Netting, galvanised, 3*d.* per square foot, made to any size. This article is shown at the Sydenham Exhibition, where it is much admired.

W. CULLINGFORD, 1, Edmund Terrace, Ball's Pond Road, near the Gate, Kingsland, London.

NETTING FOR SHEEPFOLDS, made of Cocoa-nut Fibre; a material known to possess the most extraordinary durability when exposed to the alternations of weather. It will wear out several sets of tarred hemp netting, and is so light that a herdsman may with ease carry 200 yards of it. Price 4*d.* and 6*d.* per yard. Sold in Nets of 50 and 100 yards long, 48 inches high, by the Manufacturer, W. CULLINGFORD, 1, Edmund Terrace, Ball's Pond Road, near Kingsland Gate, London.

WIRE FENCING, 6¾*d.* per square yard, in various widths, from 6 feet to 15 inches, mesh less than 2 inches. An effectual fence against Hares, Rabbits, Sheep, Deer, &c., and for the enclosure of Poultry, Pheasants, &c. 4-inch mesh, 4*d.* per square yard.

R. RICHARDSON, 21, Tonbridge Place, New Road, London.

GARDEN NETS, FISHING NETS, SHEEP NETS, AND RABBIT NETS, made by Machinery, and supplied at very low terms. Samples sent free.—R. RICHARDSON, 21, Tonbridge Place, New Road, near King's Cross, London.

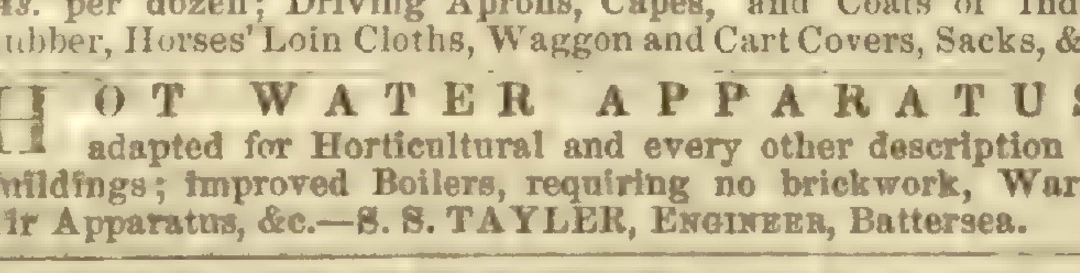
SUBSTITUTE FOR GARDEN MATS.—Waxed Sheeting nearly 2 yards wide, 1*s.* per yard run—admits light and excludes cold; thick Canvas Tarpauling, 1*s.* per square yard; thick Canvas Waxed Sheeting, 1*s.* per square yard, may be had various widths. These Canvases are excellent for roofing Sheds and Outhouses, as they are quite waterproof.—R. RICHARDSON, 21, Tonbridge Place, Judd Street, New Road, London. N.B. Waterproof Capes, large size, 3*s.*; Police Capes, 18*s.* and 24*s.* per dozen; Driving Aprons, Capes, and Coats of India Rubber, Horses' Loin Cloths, Waggon and Cart Covers, Sacks, &c.

HOT WATER APPARATUS, adapted for Horticultural and every other description of Buildings; improved Boilers, requiring no brickwork, Warm Air Apparatus, &c.—S. S. TAYLER, ENGINEER, Battersea.

GREEN AND HOT-HOUSES made by machinery, at J. LEWIS'S HORTICULTURAL WORKS, Stamford Hill, Middlesex. Sent to all parts of the United Kingdom. These buildings are warranted of the best materials, and put together in a superior manner. Being manufactured by steam-power, they are considered the cheapest and best made in England. The Trade and Merchants supplied at wholesale prices. List of Prices by enclosing two postage stamps.

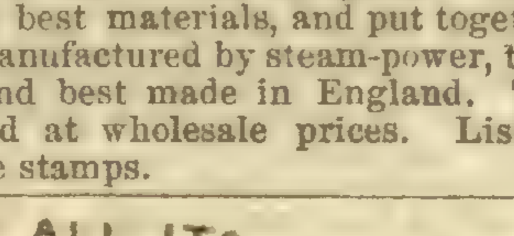
HORTICULTURE IN ALL ITS BRANCHES.

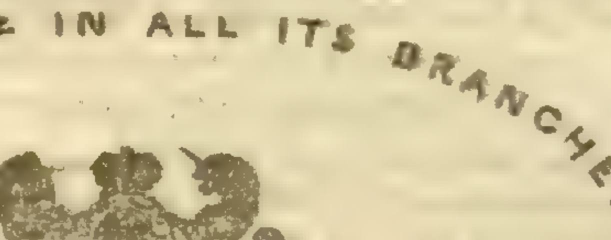
J. WEEKS & Co., King's Road, Chelsea,



HOTHOUSE BUILDERS.

The Nobility and Gentry about to erect Horticultural Buildings or fix Hot-water Apparatus, will find at our Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.





The HOT-WATER APPARATUSES (which are efficient and economical) are particularly worthy of attention, and are erected in all the Houses, Pits, &c., for both Top and Bottom Heat, and in constant operation.

The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application.

J. WEEKS & Co., King's Road, Chelsea, London.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES.

THOMAS MILLINGTON'S present prices for good 16 oz. sheet glass, boxes included.

6 in. by 4 in. to 6 in. by 5½ in. ...	13*s.* 3*d.*	per 100 feet.
7 by 5 to 8 by 6	13 6	
8½ by 6½ to 10 by 8 ...	14 0	
10½ by 8½ to 14½ by 10½ ...	16 0	
17 by 10 to 18 by 12 ...	18 0	

A great variety of sizes. Particulars had on application.

ORCHARD HOUSE SQUARES on Mr. RIVERS'S plan, to whom I have sold some thousands of feet.

Large Sheets for cutting up, in cases, at 2½*d.* and 3*d.* per foot.

HARTLEY'S IMPROVED ROUGH PLATE GLASS, Sheet, and Rough Plate, Tiles, Milk Pans, Bee and Propagating Glasses, Wasp Traps, Cucumber Tubes, Preserve Jars, with and without covers; Fern Glasses.

Plate, Sheet, Crown, and Ornamental Window Glass. Crystal Glass Shades for ornaments.

Greenhouses, erected in either wood or iron. Garden Lights and Frames.

87, Bishopsgate Street Without, London—same side as Eastern Counties Railway.

HARTLEY'S PATENT ROUGH PLATE GLASS, 1-8th thick, or 2 lbs. to the foot; 3-16ths, or 3 lbs.; and 1-4th, or 4 lbs. to the foot, for Ridge and Furrow Roofs, Greenhouses, Railway Stations, Engine Sheds, Mills, Market Halls, and Public Buildings generally.

Packed in Boxes of 50 feet each.

6 by 4 and 6½ by 4½	10*s.* 6*d.*	per box.
7 „ 5 „ 7½ „ 5½	12 0	„
8 „ 6 „ 8½ „ 6½	13 6	„
9 „ 7 „ 9½ „ 7½ and 10 by 8 ...	15 0	„

For larger sizes a full List of Prices will be sent on application. Boxes are charged 2*s.* each extra, full price allowed if returned free of expense.—For further information apply to

JAMES PHILLIPS & Co.,
116, BISHOPSGATE STREET WITHOUT.

"Rough Plate has never been, and never can be, prejudicial to the colouring of Grapes; though we can easily believe that it has been charged with such a fault by persons who have not skill enough to manage Grapes under glass."—*Gardeners' Chronicle.*

"There *can be no question now* that Rough Plate Glass is the most beautiful as well as the most useful kind of glass that can be employed in horticulture. It is free from all the faults of transparent glass, and has many advantages peculiar to itself, without *a single disadvantage as a set off.*"—*Gardeners' Chronicle.*

BY ROYAL LETTERS PATENT.

THE COSMOPOLITAN GLASS COMPANY, 296, Oxford Street, London.—The Managers beg to inform the Nobility and Gentry, Farmers, Gardeners, &c., that their new List of Prices may be had free on application at the Company's Depôt.

HARTLEY'S PATENT ROUGH PLATE, for Roofing Conservatories, Halls, and Public Buildings.

PLATE, CROWN, and SHEET WINDOW GLASS.

Coloured and Ornamental Glass of every description.

Glass Milk Pans, Pails, Tests, and Measures; Cream Pots and Syphons; Churns, Butter Tests and Slabs; Tiles and Slates; Bee Hives, &c.

Moore's Patent Ventilator and Lockhead's Patent Perforated Glass, for Dairies and Greenhouses.

Aquavivariums, Fern Shades, Propagating Glasses, Fruit Protectors, Preserve Jars, Cucumber Tubes, Hand Lights, Flower Vases, Labels, &c., and all kinds of Agricultural, Horticultural, Architectural, Domestic, Scientific, and Ornamental Glass, British and Foreign, at the lowest prices.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

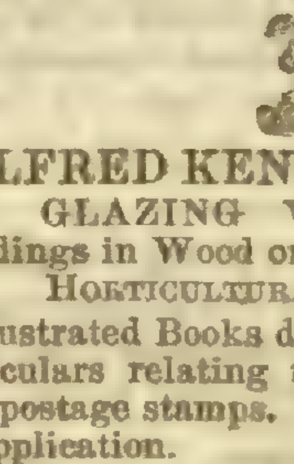
ALFRED KENT'S PATENT WEATHER-PROOF GLAZING WITHOUT PUTTY.—For Horticultural Buildings in Wood or Metal.

HORTICULTURAL BUILDING WORKS, CHICHESTER.

Illustrated Books describing inventions, containing prices and particulars relating to the different designs, sent on receipt of four postage stamps. Nurserymen and others appointed agents on application.

Horticultural Buildings upon this plan having been erected in many different parts of the country, and having stood the trial of all weathers, and more especially the severest of all, viz. frost, A. KENT, with full confidence, strengthened by the many flattering testimonials he has received, can safely guarantee the proper working of his Patent System of Glazing. Estimates and Plans sent, including Heating by Hot Water.

TO AMATEUR GARDENERS, LOCAL BOARDS OF HEALTH, & SANITARY WORKS.



PATENT SLUICE COCKS, Gutta Percha, Combinated ditto, Patent Flexible India Rubber Tubing, and every other Hose for Watering Gardens. The Hydraulic Ram. Fire, Garden, and every other kind of Pump. Hydrants, High Pressure Cocks, and all other articles to be had, Wholesale and Retail, of FREEMAN ROE, HYDRAULIC ENGINEER,
70, Strand, and Bridgefield, Wandsworth.

CORN CRUSHERS AND CHAFF CUTTERS.—A large display of the best Farm Implements shown in operation. Price Lists sent free on application.

BURGESS AND KEY,
103, Newgate Street, and 52, Little Britain, London.

PUMPS AND HOSE PIPES FOR GARDENS AND LIQUID MANURE.—BURGESS & KEY'S Pumps were highly commended by the Royal Agricultural Society of England at Lincoln. Price Lists sent free.

103, Newgate Street, and 52, Little Britain, London.

CHURNS.—ANTHONY'S PATENT AMERICAN CHURN.—Since 1849 this Churn has obtained all the Prizes awarded by the Royal Agricultural Society of England. At the trial before the Judges it made in 10 minutes 4 lbs. 6 oz. of Butter from 4 quarts of Cream, being 8 oz. more than any of the other Churns from the same quantity and quality of Cream.

103, Newgate Street, London.

WEEDS ON WALKS.

MR. FLEMING'S WEEDING OR SALTING MACHINE FOR GRAVEL WALKS, COURT YARDS, &c., manufactured and sold by ALEXANDER SHANKS & SON, Arbroath, Forfarshire, from whom particulars with prices may be had.

THE PATENT SPRING SHAFT CART AND SAFETY CAR.—This vehicle is admirably adapted for the use of country gentlemen, farmers, emigrants, and sportsmen, for whose purposes it will be found superior to any yet introduced, being simple in structure, easy of draught, roomy, light, and safe.

As a family car or chaise cart to convey persons, luggage, &c., or as a sporting or dog cart, its advantages consist in the great number and weight it will carry, its safety in a hilly country, its ease of draught, and the facility it affords, to ladies especially, for getting in and out.

As a Tradesman's, Colonial, Emigrant's, or Farmer's Cart, it is well adapted for the carriage of Implements, Stock (such as calves or lambs), and goods of all kinds.

The peculiarity of the Spring enables it to be applied, without expense, to any ordinary Farm-cart. Specimens of each description may be seen at the Maker's, T. B. AYSHFORD, 56, Drury Lane, London; and will be exhibited at the Smithfield Club Agricultural Show in Baker Street, by Mr. WILLIAM PIERCE, Agricultural Engineer, 78, Mark Lane, City, from whom all information and full particulars may be obtained.

THE COMFORT OF A FIXED WATER-CLOSET FOR 1l.—Places in gardens converted into comfortable water-closets by the PATENT HERMETICALLY SEALED PAN, with its self-acting valve, entirely preventing the return of cold air or effluvia. Any carpenter can fix it in two hours. Price 1l. Hermetically-sealed Inodorous Chamber Commodes, 1l., 2l. 4s., and 3l.; also Improved Portable Water-closets, with pump, cistern, and self-acting valve. A prospectus, with engravings, forwarded by enclosing two postage stamps.—At FYFE & Co.'s Sanatorium, 46, Leicester Square.

DR. DE JONGH'S

LIGHT BROWN COD-LIVER OIL, PREPARED FOR MEDICINAL USE IN THE LOFFODEN ISLES, NORWAY, AND PUT TO THE TEST OF CHEMICAL ANALYSIS. PRESCRIBED BY EMINENT MEDICAL MEN AS THE MOST EFFECTUAL REMEDY FOR CONSUMPTION, BRONCHITIS, ASTHMA, GOUT, RHEUMATISM, SOME DISEASES OF THE SKIN, RICKETS, INFANTINE WASTING, GENERAL DEBILITY, AND ALL SCROFULOUS AFFECTIONS—EFFECTING A CURE OR ALLEVIATING SUFFERING MUCH MORE RAPIDLY THAN ANY OTHER KIND.

Testimonial from the late DR. JONATHAN PEREIRA, *Professor at the University of London, Author of "The Elements of Materia Medica and Therapeutics, &c.*

"MY DEAR SIR,—I was very glad to find from you, when I had the pleasure of seeing you in London, that you were interested commercially in Cod Liver Oil. It was fitting that the Author of the best analysis and investigations into the properties of this Oil should himself be the Purveyor of this important medicine.

"I feel, however, some diffidence in venturing to fulfil your request by giving you my opinion of the quality of the oil of which you gave me a sample; because I know that no one can be better, and few so well, acquainted with the physical and chemical properties of this medicine as yourself, whom I regard as the highest authority on the subject.

"I can, however, have no hesitation about the propriety of responding to your application. The oil which you gave me was of the very finest quality, whether considered with reference to its colour, flavour, or chemical properties; and I am satisfied that for medicinal purposes no finer oil can be procured.

"With my best wishes for your success, believe me, my dear Sir, to be very faithfully yours, (Signed) "JONATHAN PEREIRA.

"To Dr. de Jongh." "Finsbury Sq., London, Ap. 16, 1851.

Sold wholesale and retail, in bottles, labelled with Dr. de Jongh's stamp and signature, by

ANSAR, HARFORD, AND CO., 77, STRAND, LONDON, Sole Consignees and Agents for the United Kingdom and the British Possessions, and may be obtained from respectable Chemists and Druggists in town and country, at the following prices: IMPERIAL MEASURE, half pints, 2s. 6d.; pints, 4s. 9d.; quarts, 9s.

. Four half-pint bottles forwarded, CARRIAGE PAID, to any part of England on receipt of a remittance of Ten Shillings.

DO YOU WANT LUXURIANT HAIR, WHISKERS, &c.? If so, use Miss GRAHAM'S NIOUKRENE, the most efficacious Hair generant ever introduced. It reproduces the Hair when lost either by disease or decay, prevents its falling off, effectually checks greyness, strengthens weak hair, and is guaranteed to produce those attractive ornaments, Whiskers, Moustachios, Eyebrows, &c., in three or four weeks. For nourishing and beautifying the hair, and sustaining its curling powers it has no equal. Price 2s., sent post free on receipt of 24 penny postage stamps, by ELLEN GRAHAM, 3, New Road, Hornsey, Middlesex.—"My hair is quite restored." Miss ORME.—"I have a full pair of Whiskers, thanks to Nioukrene." H. ROBB, Esq.—"It has checked the greyness." Mrs. JONES.—Beware of imitations: it can only be procured from the above address.

DO YOU WANT BEAUTIFUL HAIR, WHISKERS, MOUSTACHES, &c.?—ALICE MELVILLE'S PALMAPILLA in all cases strengthens weak hair, prevents its falling off, checks greyness, produces a thick and luxuriant growth, dispels scurf and dandriff, and makes it clean, soft, curly, and brilliant in appearance. For baldness from any cause it is certain and effective; and for the production of Whiskers, Moustaches, Eyebrows, &c., in three or four weeks, it can be fully depended upon. Price 2s., sent post free (anywhere) on receipt of 24 penny postage stamps, by Miss MELVILLE, 25, Argyle Square, King's Cross, London.—"My whiskers are growing very thick." R. Mede, Esq.—"It restored my hair, which I had lost in patches." W. Sturt.—"It has quite checked the greyness." Miss Ellis.—"My Moustache is greatly improved." Capt. Ross.

SOUND AND WHITE TEETH are not only indispensably requisite to a pleasing exterior in both sexes, but they are peculiarly appreciated through life as highly conducive to health and longevity. Among the various preparations offered for the purpose, ROWLAND'S ODONTO, or PEARL DENTIFRICE, stands unrivalled in its capability of embellishing, purifying, and preserving the teeth to the latest period of life. Prepared from Oriental herbs with unusual care, transmitted to this country at great expense, it will be found to eradicate all tartar and concretions, and impart a pearl-like whiteness to the enamelled surface, remove spots of incipient decay, render the gums firm and red, and thus fix the teeth firmly in their sockets; and from its aromatic influence imparts sweetness and purity to the breath.—Price 2s. 9d. per box. Caution.—The words "Rowlands' Odonto" are on the label, and "A. ROWLAND & SONS, 20, Hatton Garden," engraved on the Government stamp affixed on each box. Sold by them, and by chemists and perfumers.

DINNEFORD'S PURE FLUID MAGNESIA has been for many years sanctioned by the most eminent of the Medical Profession, as an excellent remedy for Acidities, Heartburn, Headache, Gout, and Indigestion. As a mild aperient, it is admirably adapted for delicate females, particularly during pregnancy; and it prevents the food of infants from turning sour during digestion. Combined with the Acidulated Lemon Syrup, it forms an Effervescing Aperient Draught, which is highly agreeable and efficacious.—Prepared by DINNEFORD & Co., Dispensing Chemists (and General Agents for the Improved Horse-Hair Gloves and Belts), 172, New Bond Street, London, and Sold by all respectable Chemists throughout the Empire.

NOW IN SEASON.

REAL YARMOUTH BLOATERS: A Treat to Epicures.—One hundred Choice Bloaters in a case for 6s., forwarded to any "Address." Carriage paid as far as possible: Extra quantity allowed where carriage cannot be paid through. Remittances are requested with orders.

Apply to HENRY H. BAKER, Fish Merchant, Great Yarmouth.

TO LOVERS OF FISH.—100 Genuine Yarmouth Bloaters for 6s., package included, forwarded to all parts on receipt of Penny Postage Stamps, or Post Office Order, for the amount preferred.

Address, THOMAS LETTIS, Jun., Fish Curer, Great Yarmouth.

LONG EVENINGS MADE SHORT.

MECHI'S FAMOUS BAGATELLE TABLES, manufactured upon the premises, 4, Leadenhall Street, London, make long evenings appear short, and combine calculation with amusement. Prices, 3l. 15s., 4l. 15s., 5l. 15s., up to 12l. None genuine without MECHI'S name.

NOTICE.

OVER-COATS, CAPES, &c.—One of the largest stocks in London of every description, first-class garments, at lowest charges; also of Youth's ditto, all made thoroughly impervious to rain, without extra charge, or made to order at a day's notice.—W. BERDOE, 96, New Bond Street, and 69, Cornhill (only).

FORD'S EUREKA COLOURED SHIRTING is now ready, in 200 different patterns. Specimens in varied colours sent post free on receipt of six stamps.

FORD'S COLOURED EUREKA SHIRTS, Six for 27s.

FORD'S WHITE EUREKAS, best quality, Six for 40s.; second quality, Six for 31s.; if washed ready for use, 2s. extra.

CAUTION.—Ford's Eureka Shirts are stamped, "38, POULTRY, LONDON," without which none are genuine.

. Catalogues with particulars post free.

RICHARD FORD, 38, Poultry, London.

KNOW THYSELF.—Persons desirous of knowing the gifts, defects, talents, tastes, affections, and other characteristics of themselves or any friends in whom they are interested, must send a specimen of the WRITING, stating sex and age (including 13 penny postage stamps) to Miss GRAHAM, 3, New Road, Hornsey, Middlesex, and they will receive a minute graphiological delineation, written in a style peculiarly her own.—Testimonial from W. R. "Having seen several of your portrayals of character, and being much struck with the forcible truths contained in them, I should like your opinion of mine."—Miss H. S. "Your delineations are most faithful."—Miss Grove. "Your letter gave great satisfaction."—Miss Rose C. "Accept my sincere thanks for your advice. I was exceedingly doubtful of him."

BLAIR'S GOUT AND RHEUMATIC PILLS. Price 1s. 1½d. and 2s. 9d. per box.—Mr. William Courtney, of Barton Stacey, Hants, says:—"I had resort to your Pills, and within two hours I was quite easy. The use of these Pills ought really to be known all over the world." Among the many discoveries, none have conferred such a boon upon suffering humanity as that of Blair's Gout and Rheumatic Pills; they require neither attention nor confinement, and are certain to prevent the disease attacking any vital part. Sold by all medicine vendors. Observe that "THOMAS PROUT, 229, Strand, London," is impressed upon the Government stamp.

FRAMPTON'S PILL OF HEALTH.—"For upwards of nine years (writes Mr. Thomas Province, of Winchmore Hall, Middlesex), I have experienced the efficacy of this excellent medicine, and I have the happiness of saying that I never had a better state of health. I beg further to add that this medicine is in general use by my family, and we know of nothing to equal it." For females these pills are truly excellent, removing all obstructions, the distressing headaches so very prevalent with the sex, depression of spirits, dulness of sight, nervous affections, blotches, pimples, and sallowness of the skin, and give a healthy juvenile bloom to the complexion. Sold by all medicine vendors, price 1s. 1½d. per box.—Observe that "THOMAS PROUT" is on the Government stamp.

HOLLOWAY'S OINTMENT AND PILLS EFFECTUALLY CURED A DREADFULLY SORE HAND.—Mrs. Lyon, of 35, Whitecross Place, Wilson Street, Finsbury Square, suffered fearfully from an abscess in the hand, which for some months was rendered perfectly useless, she had the best advice of medical men in the neighbourhood and underwent various operations of the lancet without obtaining relief. After this she tried Holloway's Pills and Ointment, which in a brief space of time effected an excellent cure, and she has now the free use of her hand, showing in this case, as well as in many thousand others, these invaluable remedies are pre-eminent.—Sold by all Vendors of Medicine, and at Professor HOLLOWAY'S Establishments, 244, Strand, London, and 80, Maiden Lane, New York.

ASTHMA, COUGHS, COLDS, and INFLUENZA speedily cured, and instantly relieved, by the use of SPENCER'S PULMONIC ELIXIR.

This fine medicine will be found admirably adapted to promote expectoration, ease the breathing, loosen the phlegm, abate fever, and allay the tickling sensation which occasions the cough, without tightening the chest; and for all temporary and local affections, such as wheezing, irritation of the throat, palpitation of the heart, hoarseness of the voice, influenza, &c., it affords immediate relief; while in more chronic disorders, as periodical coughs or inveterate asthma, it is equally valuable in its effects, although of course a little longer perseverance in the use of the article is required.—Prepared only by T. Roberts and Co., Crane Court, Fleet Street; and sold by E. Edwards, 67, St. Paul's Churchyard; Barclay and Sons, Farringdon-street; Sutton and Co., Bow Churchyard; Sanger, and Hannay and Co., Oxford Street; and by all respectable medicine-vendors and chemists in the kingdom. In bottles at 1s. 1½d. and 2s. 9d. each; the bottles at 2s. 9d. contain nearly as much as three small ones.

. Ask for SPENCER'S Pulmonic Elixir.

VALUABLE REMEDIES FOR THE AFFLICTED.

DR. ROBERTS'S Celebrated Ointment, called the POOR MAN'S FRIEND, is confidently recommended to the Public as an unfailing remedy for wounds of every description, a certain cure for Ulcerated Sore Legs, if of 20 years' standing; Cuts, Burns, Scalds, Bruises, Chilblains, Scorbutic Eruptions and Pimples on the Face, Sore and Inflamed Eyes, Sore Heads, Sore Breasts, Piles, Fistula, and Cancerous Humours, and is a specific for those afflicting eruptions that sometimes follow vaccination. Sold in pots, at 1s. 1½d. and 2s. 9d. each.

Also his PILULÆ ANTISCROPHULÆ, confirmed by more than 40 years' experience to be, without exception, one of the best alterative medicines ever compounded for purifying the blood, and assisting Nature in all her operations. Hence they are used in Scrofulas, Scorbutic Complaints, Glandular Swellings, particularly those of the neck, &c. They form a mild and superior Family Aperient, that may be taken at all times without confinement or change of diet. Sold in boxes, at 1s. 1½d., 2s. 9d., 4s. 6d., 11s., and 22s. Sold Wholesale by the Proprietors, Beach and Barnicott, at their dispensary, Bridport; by the London houses. Retail by all respectable Medicine Vendors in the United Kingdom.

Observe.—No Medicine sold under the above name can possibly be genuine, unless "Beach and Barnicott, late Dr. ROBERTS, Bridport," is engraved on the Government Stamp affixed to each package.

AGRICULTURAL TUITION.—Sons of Gentlemen received as Agricultural Pupils into the family of a Clergyman occupying a Farm, cultivated under the Improved System, 25 miles from London.—Address Rev. C. C., Office of this Paper.

A LAND AGENT, in Suffolk, has a VACANCY for a young GENTLEMAN desirous of learning AGRICULTURE. He would have the opportunity of seeing practical farming at home, the advantage of taking the tillage account, and seeing everything connected with the general management of an estate 11,000 acres in extent. May be instructed in land surveying, mapping, and leveling. Terms 100 guineas per annum.—Apply to Mr. HUNT, 12, Tavern Street, Ipswich.

NERVES.

DR. GRANDISON'S PILLS for strengthening the Nerves are sold in London by Mr. RICHARDS, 40, New Bridge Street; Mr. SANGER, 150, Oxford Street, and other respectable Chemists. Boxes can be sent by post.—Price 1s. 1½d., 2s. 9d., and 4s. 6d. each.

TO NERVOUS SUFFERERS.

A RETIRED CLERGYMAN having been restored to health in a few days, after many years of great nervous suffering, is anxious to communicate to others the means of cure; he will therefore send (free), on receiving a stamped envelope, properly addressed, a copy of the prescription used.—Direct Rev. E. DOUGLASS, 18, Holland Street, Brixton, London.

TO FLORISTS, FRUITERERS, & GREENGROCERS.

TO BE LET, a BUSINESS in the above line, within 4 miles of town; capital Shop, Conservatory, and Greenhouse, all in excellent working order. The situation is highly respectable, and for a clever man it is a most desirable opportunity. Coming-in moderate.—For particulars apply to Mr C. BROWN, House and Estate Agent, Westcroft Place, Hammersmith.

TO GARDENERS.—A very favourable opening presents itself to any nobleman's or gentleman's Gardener wishing to enter into business as a GARDENER and FLORIST. The situation is in one of the very best neighbourhoods round London, and the in-coming would be easy.—Address X. Y., Office of the *Gardeners' Chronicle*.

MONMOUTHSHIRE.

TO BE LET, for a term of years, and entered upon at Lady-day next, the FARM of LLANVAIR GRANGE. It consists of 164 acres of rich productive Land, of which 4 acres are in Orchard, 76 in Meadow and Pasture, and 84 are Arable. There is a comfortable Farm-house and Garden, Dairy and Cheeseroom, and ample Farm Buildings on the Farm. It is within a short distance of the Pontypool Iron Works; there is a station on the Newport and Hereford Railway close by. At the Iron Works there is a constant demand for every kind of Farm produce. The proprietor at Llanvair Grange will direct some one to show the Farm; and for particulars apply to Mr. JOHN MORTON, Morningside, Nailsworth, Gloucestershire.

TO BE SOLD, upwards of 50 CLOCHES (used in France for raising early Salads).—Enquiries may be addressed post-paid to A. B. C., Ashley, near Stockbridge, Hants.

TO BE SOLD, BUFF COCHIN CHICKENS, from first class Prize Birds, Brahma Pootra Chickens, from imported American Prize Birds, and Spanish Chickens. Also some very good one-year-old Birds of the above descriptions. Wire, Game, and Poultry Netting, Poultry Hurdles, Hen-houses, Chicken Coops, Flower Stands, and Trainers, Garden Arches, and every kind of Wire Work, useful and ornamental.—T. H. Fox's, City of London Wire Works, 44, Skinner Street, and 6 & 8, Snow Hill. Illustrated Catalogues forwarded post free.

Sales by Auction.

FANCY POULTRY.—PERIODICAL SALE.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, November 21st, at 12 o'clock precisely, a CHOICE SELECTION OF POULTRY, from the yards of F. Steggall, Esq., Weymouth; Capt. Squire, Mildenhall; Mr. Jos. Goodenough, Dorchester, and other breeders of choice stock, including Cochins, Brahmas, Spanish, Dorkings, Sebright Bantams, &c.—May be viewed on the morning of sale, and Catalogues had by enclosing a stamped directed envelope to Mr. J. C. STEVENS, 38, King Street, Covent Garden, London.

CAMELLIAS, RHODODENDRONS, AZALEAS, DEUTZIA GRACILIS, ETC.

THE FOURTH AND LAST CONSIGNMENT FROM MR. JOS. BAUMANN OF GHENT, FOR ABSOLUTE SALE.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on MONDAY, Nov. 20, at 12 for 1 o'clock, 1000 Camellias, 250 Deutzia gracilis, 150 Seedling Amaryllis, 250 New Hardy Ghent Rhododendrons, 60 Yellow Rhododendrons, 25 Ghent Azaleas, 500 Gladiolus gandavensis, Lilium lancifolium, &c. May be viewed on the morning of Sale, and Catalogues had.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS PROTHEROE AND MORRIS will Sell by Auction, at the Mart, Bartholomew Lane, on THURSDAY, November 23d, at 12 o'clock, a first class collection of DUTCH BULBS, consisting of the finest Double and Single Hyacinths, Narcissus, Jonquils, Anemones, Crocus, Snowdrops, Tulips, &c.: also a selected assortment of Standard and Dwarf Roses, Ornamental Trees, and American Plants well set with bloom buds, &c.—On view the morning of sale. Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

CLAPHAM, SURREY.—FINAL SALE.

TO NOBLEMEN, GENTLEMEN, EXHIBITORS, NURSERYMEN, BUILDERS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by the administrators of the late Mr. Joseph Fairbairn to sell by Auction, without reserve, on the premises, the Clapham Nursery, Clapham, near London, on MONDAY, November 20, and five following days, at 11 o'clock each day, the whole of the valuable and extensive stock of CHOICE GREENHOUSE and STOVE PLANTS, which is particularly worthy the attention of Noblemen and Gentlemen enriching their collections, as well as the Trade, from its excellence; comprising 50,000 choice Ericas; 10,000 Epacris; 4000 Indian Azaleas; 2000 Aphelexes; 1000 Double Camellias; 5000 Camellia Stocks; two Allamanda purpurea; New Double White and Purple Primula fimbriata, Cyclamen persicum, Daphne indica, rubra, and every variety of Stove and Greenhouse Plants in cultivation; magnificent young specimen Heaths, &c. Also the entire stock of fine Evergreens, Ornamental Trees, and Deciduous Shrubs, including large Green and Variegated Hollies, Box, Yews, Aucuba, Laurels, fine Araucaria imbricata, Cryptomeria japonica, Cedar Lebanon, Cedrus Deodara, &c.; together with several 3 and 4 Light Boxes; Pits; 300 Bell Glasses; 3 Capital Tumbril Carts; 1 Spring Cart; 2 Useful Horses; 2 sets Harness; Iron Rollers; Garden Tools; Wheelbarrows, and sundry effects.—May be viewed one week prior to the Sale. Catalogues may be obtained (6d. each, returnable to purchasers) on the premises; at the Seed Shop, High Street, Clapham; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

GLEIG'S SCHOOL SERIES.

In 18mo, with Woodcuts, price 1s.

LIGHT AND HEAT: In which the Principles of Science are familiarly explained for the Instruction of Beginners,and illustrated by numerous Experiments and Diagrams. By T. TATE, F.R.A.S., of Kneller Training College.

Also by Mr. Tate, in Gleig's School Series.

MAGNETISM, VOLTAIC ELECTRICITY, and ELECTRO-DYNAMICS, price 1s.
ELECTRICITY for BEGINNERS, price 1s.
ASTRONOMY for BEGINNERS, price 1s.
HYDROSTATICS, HYDRAULICS, and PNEUMATICS, 1s.
FIRST THREE BOOKS of EUCLID, price 1s.
EXPERIMENTAL CHEMISTRY, price 1s.

London: LONGMAN, BROWN, GREEN, & LONGMANS.

BRITISH GUIANA.

Just published, in two vols. 8vo, with Plates, Maps, &c., 36s., royal 8vo, 2l. 12s. 6d.,

THE HISTORY OF BRITISH GUIANA; comprising a General Description of the Colony, a Narrative of some of the Principal Events from the earliest period of its Discovery to the present time; together with an Account of the Climate, Geology, Staple Products, and NATURAL HISTORY. By HENRY G. DALTON, M.D.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

PRESENT FOR A WIFE.

In crown 8vo, printed and ornamented in the style of "Queen Elizabeth's Prayer Book," price 10s. 6d.

THE WIFE'S MANUAL; or, Prayers, Thoughts, and Songs, on several Occasions of a Matron's Life. By the Rev. WILLIAM CALVERT, Rector of St. Antholin, and one of the Minor Canons of St. Paul's.

"This elegant volume is admirably adapted for a wedding gift, and will, no doubt, in that character alone, obtain a great run of popularity. It is all that a book of this kind ought to be."—*John Bull.*

London: LONGMAN, BROWN, GREEN, and LONGMANS.

In the course of publication, in 12mo, price 2s. each,

A SERIES OF SCIENTIFIC MANUALS. By the Rev. JOSEPH A. GALBRAITH, M.A., Fellow of Trinity College, and Erasmus Smith's, Professor of Natural and Experimental Philosophy in the University of Dublin; and the Rev. SAMUEL HAUGHTON, M.A., Fellow of Trinity College, and Professor of Geology in the University of Dublin.

Already published.

	s.	d.
MANUAL OF MECHANICS (New and Improved Edition)	2	0
MANUAL OF OPTICS	2	0
MANUAL OF HYDROSTATICS	2	0
MANUAL OF PLANE TRIGONOMETRY (New Edition)	2	0
In preparation.		
MANUAL OF ARITHMETIC	2	0
MANUAL OF ASTRONOMY	2	0
MANUAL OF HEAT	2	0
MANUAL OF ALGEBRA	2	0
MANUAL OF ARITHMETIC (New and Improved Edition)	2	0
EUCLID'S ELEMENTS, first six Books	2	0

₊ The Prospectus may be had of Messrs. Longman & Co., and gratis of all Booksellers.

London: LONGMAN, BROWN, GREEN, & LONGMANS.

Just published, New and Improved Edition, price 1s.,

THE CURABILITY OF CONSUMPTION. Being a Series of Papers, presenting the most prominent and important Practical Points in the Treatment of the Disease. By F. H. RAMADGE, M.D., Fellow of the College of Physicians, late Senior Physician to the Royal Infirmary for Diseases of the Chest, &c. Also, by the same Author, price 10s. 6d.,

A TREATISE ON ASTHMA AND DISEASES OF THE HEART.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

PROFESSOR LINDLEY'S INTRODUCTION TO BOTANY, 4th Edition, with Corrections and Additions, now ready, in 2 vols. 8vo, with Six Copper Plates and numerous Wood Engravings. Price 24s. cloth.

London: LONGMAN, BROWN, GREEN, & LONGMANS.

THE NATIONAL GARDEN ALMANAC AND HORTICULTURAL TRADE DIRECTORY FOR 1855. By JOHN EDWARDS, F.H.S. The Third Annual Issue.

No effort will be spared to retain the flattering encomiums universally bestowed on the previous issues of this work, which, for general accuracy, and sound practical utility, is acknowledged to be immeasurably in advance of all similar publications.

Advertisements, Communications, Books for Review, Information relative to Changes of Addresses, &c. &c., gladly received, if not later than the 20th November, by

JOHN EDWARDS, Wace Cottage, Holloway, Middlesex.
CHAPMAN & HALL, 193, Piccadilly.

Now ready, bound in cloth and interleaved, price 1s.

THE SCOTTISH AGRICULTURIST'S ALMANAC AND YEAR-BOOK OF PROGRESS, FOR 1855. By J. LOCKHART MORTON, Civil and Agricultural Engineer, Edinburgh. Supplied to the Trade at 9, Pitt Street, Edinburgh. Sold by all Booksellers.

This day is published, in 8vo, price 12s.,

THE RURAL ECONOMY OF ENGLAND, SCOTLAND, AND IRELAND. By LEONCE DE LAVERGNE. Translated from the French. With Notes by a Scottish Farmer.

WILLIAM BLACKWOOD & SONS, Edinburgh and London.

Price Threepence, or Fivepence post free,

FANCY GERANIUMS: a Practical Treatise on their Propagation and Culture, showing how they may be had in Bloom all the Year; their Management for Conservatory Decoration, and the Formation of Specimens.

Bristol: Published and Sold by THORNHILL & DICKSON, Lawrence Hill Nurseries, and 1, Wine Street.

Just published, revised and enlarged, with Figures,

THE SIXTH EDITION OF THE

MINIATURE FRUIT GARDEN; or, the Culture of Fruit Trees as Pyramids and Bushes for Small Gardens, with directions for Root Pruning; and Select Lists of Apples, Pears, Plums, and Cherries, adapted for the above purposes. By THOMAS RIVERS.

London: LONGMAN & Co., price 2s., or per post from the Author for 24 stamps.

By the same Author, the Third Edition of the

ORCHARD HOUSE; or the Culture of Fruit Trees in pots under glass.

London: LONGMAN & Co., price 2s., or per post from the Author for 24 stamps.

By the same Author, the Fifth Edition of the

ROSE AMATEUR'S GUIDE; containing full instructions for the Culture of Roses in the open air and in pots, with Select Lists of the finest varieties.

London: LONGMAN & Co., price 3s. 6d., or per post from the Author for 42 stamps.

A DESCRIPTIVE CATALOGUE OF FRUITS, published October 1853, for four stamps.

A DESCRIPTIVE CATALOGUE OF ROSES FOR 1854 for two stamps.

THOMAS RIVERS, The Nurseries, Sawbridgeworth, Herts.

SCHOOL BOTANY; OR, THE RUDIMENTS OF BOTANICAL SCIENCE.

400 Illustrations. 8vo. Price 5s. 6d. half-bound.

BRADBURY & EVANS, 11, Bouverie Street.

Lately Published,

THE ELEMENTS OF BOTANY, STRUCTURAL AND PHYSIOLOGICAL. With a Glossary of Technical Terms, and numerous Illustrations. 12s. cloth.

This completes the series of Elementary Botanical Works by Professor LINDLEY, of which "School Botany," and "The Vegetable Kingdom," form the other parts.

The first two Parts of THE ELEMENTS OF BOTANY, comprising Structural and Physiological Botany, and a Glossary of Technical Terms, are published in one octavo volume, price 12s.

These three parts form a complete manual of Botany for Medical and other Students who have made themselves acquainted with the author's "School Botany."

N.B. The Glossary may be had separately, price 5s.

BRADBURY & EVANS, 11, Bouverie Street.

SIEGE OF SEBASTOPOL.

On Monday, November 20th, will be published,

STANFORD'S NEW AND AUTHENTIC MAP of the Country round Sebastopol; including Balaklava, Kamara, Kadikoi, the Belbek and Chernaya Rivers; showing also the Positions of the Allied Camps, the Allied and Russian Batteries, Forts, &c., with number of guns; the Position of the Turkish and other Redoubts; the Head Quarters of Lord Raglan and General Canrobert, &c. Price, in 1 large sheet coloured, 2s.; per post, 2s. 6d. Case, 4s. 6d.; per post, 5s.

London: EDWARD STANFORD, Wholesale and Retail Mapseller, 6, Charing Cross.

This day, cheaper Edition, with Illustrations, 2s. 6d.,

WILD ANIMALS.

By MARY ROBERTS.

By the same Author, cheaper Edition, 2s. 6d.,

DOMESTICATED ANIMALS.

London: JOHN W. PARKER & SON, West Strand.

Price 4d., free by post for Five Stamps,

COMMON BLUNDERS MADE IN SPEAKING AND WRITING. By CHARLES W. SMITH, author of "Hints on Elocution," &c. "Every one who wishes to speak good English should buy this little book."

London: W. H. COLLINGRIDGE, City Press, 1, Long Lane.

GLUTEN BREAD.—SEE THE

PRACTICAL MECHANIC'S JOURNAL, PART 80, NOVEMBER, Price 1s.

ILLUSTRATIONS.—Double page Copper-plate Engraving of Hoby's Twin Dredger, and 35 Wood Engravings.

CONTENTS.—Railways—Dredger for Leith Harbour—Educational Exhibition—Howden's Rivet Machine—American Patent Office Report—Tea and Coffee—Robertson's Hydrostatic Cranes—American Notes by our own Correspondent—Illustrated Specifications of recent Patents: Lappet Loom, Smith—Maize and Rice Starch, Polson—Mining Engines and Machinery, Barclay—Steam-boiler Apparatus, Houston—Revolver Fire-arms, Johnson—Gluten Bread, Johnson—Pocket Book, Smith—Caoutchouc, Johnson—Journal Bearings, Barclay—Sizing and Finishing, Greenwood and Smith—Reviews of New Books—Monthly Notes—Lists of all New Patents.

HEBERT, 88, Cheapside; Editors' Offices (Offices for Patents), 47, Lincoln's Inn Fields, London.

PRICE FOURPENCE, OF ANY BOOKSELLER,

CONTENTS OF THE NUMBER FOR SATURDAY LAST, NOVEMBER 11, OF

THE ATHENÆUM.

JOURNAL OF ENGLISH AND FOREIGN LITERATURE, SCIENCE, AND THE FINE ARTS.

Thirty-two large Quarto Pages.

Reviews OF, WITH EXTRACTS FROM—

History of the Irish Brigades in the Service of France. By J. C. O'Callaghan.
Habits and Men, with Remnants of Record touching the Makers of both. By Dr. Doran.
Hellas: a course of Lectures on the Home, History, Letters, and Arts of the Hellenes. By F. Jacobs.
Documents relating to the Priory of Penwortheim, and other Possessions in Lancashire, of the Abbey of Evesham. Edited by W. A. Hulton.
The young Husband. By Mrs. Gray.
Recollections of Literary Characters and Celebrated Places. By Mrs. Thomson.
A Visit to the Seat of War in the North. By L. Wrazall.
A Complete Treatise on Artificial Fish Breeding. By W. H. Fry.
Na Motu; or Reef Rovings in the South Seas. By E. T. Perkins.
A Roll of Household Expenses of Richard de Swinfield, Bishop of Hereford, during part of the years 1289 and 1290. Edited by the Rev. J. Webb.
Book of the War. By Percy B. St. John.
My Comrades and my Colours. By the Rev. E. Neale.
Illustrations and Maps of the War.

WITH SHORTER NOTICES OF

The Native Races of the Russian Empire. By Dr. Latham.
The Triad. By the Rev. W. Wickenden.
Outlines of Botany. By Dr. Balfour.
The Virginia Comedians; or, the Old Days in the Old Dominion. Edited from the MSS. of C. Effingham.
Prodromus Faunæ Zeylanicæ. By Dr. Kelaart.
Nordufari; or, Rambles in Iceland. By P. Miles.
The Bride of the Wilderness. By E. Bennett.
Popular Conchology. By Agnes Catlow.
The School for Politics: a Dramatic Novel. By C. Gayarré.
Sound and its Phenomena. By the Rev. Dr. Brewer.
Pamphlets, &c., &c.

Original.—Correction of the Compass in Iron Ships. By R. Fitz Roy and W. Scoresby—British Museum and the Publishers. By Sutherland and Knox—New Museum at Oxford.

Foreign Correspondence.—China—Province of Che-kiang—A Chinese Fair, by R. Fortune.

Weekly Gossip.—Oxford New Museum—State Papers—Franklin and his Companions—Copyright Question—Mr. Oliveira's Donation to the Royal Society—Award of the Royal Society's Medals—Frankish Cemeteries at Envermeu—Archæology in France—The Letters of our Soldiers—Obituary in the Medical Profession—Safety of Captain Collinson.

Societies.—Reports of the Proceedings of the Geological—Horticultural.

Fine Arts.—Lady Jervis's Painting and celebrated Painters—Patterson's Memoir of Fellans the Sculptor.

Fine Art Gossip.—New Paddington Station—Ruskin Lectures—Llandaff Cathedral.

Music and the Drama.—Princess's ("Schamyl").

Musical and Dramatic Gossip.—Her Majesty's Theatre—Paris and German Operatics—Second Concert at the Crystal Palace—Madame Dudevant's Flaminio.

Miscellanea.—Colonial Postage—The Electric Telegraph in Italy.

The Athenæum may be ordered of any Bookseller.

ON MARRIAGE.

Just published (to be had free, by enclosing 1s. or Twelve Postage Stamps, to Mr. WATSON, Clerical Agent, Robert Street, Adelphi, London).

MATRIMONY.—A Pamphlet on Matrimonial Alliances, which merits the attention of those who wish to settle honourably in life. By a Clergyman.

On the 22d inst. will be published, in a handsome folio volume, price 12s., containing upwards of Six Hundred Wood Engravings,

PICTURES OF LIFE AND CHARACTER,

FROM THE COLLECTION OF MR. PUNCH.

BY JOHN LEECH.

BRADBURY AND EVANS, 11, BOUVERIE STREET.

PERMANENTLY ENLARGED TO TWENTY-FOUR PAGES.

Every Saturday, Foolscap Quarto, price 4d., or Stamped, 5d.,

NOTES AND QUERIES:

A MEDIUM OF INTER-COMMUNICATION FOR LITERARY MEN, ARTISTS, ANTIQUARIES, GENEALOGISTS, PHOTOGRAPHERS, &c.

₊ *For opinions of the Quarterly Review, Athenæum, Examiner, Literary Gazette, Spectator, Dublin Review, &c., as to the utility, &c., of* NOTES AND QUERIES, *see Prospectus.*

A Specimen Number sent on receipt of five postage stamps.

GEORGE BELL, No. 186, FLEET STREET; AND BY ORDER OF ALL BOOKSELLERS AND NEWSMEN.

Just published, the Second Edition, with Additions, price 5s. 6d. cloth,

ORNAMENTAL AND DOMESTIC POULTRY:

THEIR HISTORY AND MANAGEMENT.

BY THE REV. EDMUND SAUL DIXON, M.A., RECTOR OF INTWOOD WITH KESWICK.

THE BIRDS TREATED OF ARE—

Domestic Fowl in general	The Mute Swan	The White China Goose	The Cuckoo Fowl
The Guinea Fowl	The Canada Goose	The Tame Duck	The Blue Dun Fowl
The Spanish Fowl	The Egyptian or Cape Goose	The Domestic Goose	The Lark-crested Fowl
The Speckled Dorkings	The Musk Duck	The Bernicle Goose	The Poland Fowl
The Cochin China Fowl	The Grey China Goose	The Brent Goose	Bantam Fowls
The Malay Fowl	The White Fronted or Laughing Goose	The Turkey	The Rumpless Fowl
The Pheasant Malay Fowl	The Wigeon	The Pea Fowl	The Silk and Negro Fowls
The Game Fowl	The Teal, and its congeners	The Golden and Silver Hamburgh Fowls	The Frizzled or Friesland Fowls

"It will be found a useful and intelligent guide to the poultry-keeper; while the lively and often amusing manner in which it is written, gives it a claim upon the attention of the general reader."—*Midland Counties Herald.*

"This book is the best and most modern authority that can be consulted on the general management of poultry."—*Stirling Observer.*

Published by JAMES MATTHEWS, at the Office of the GARDENERS' CHRONICLE and AGRICULTURAL GAZETTE, 5, Upper Wellington Street, Covent Garden; and may be ordered of any Bookseller.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 27, Victoria Street, in the Parish of St. Margaret and St. John, Westminster, both in the County of Middlesex, Printers, at their Office in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, November 18, 1854.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 47.—1854.] SATURDAY, NOVEMBER 25. [Price 6d.

INDEX.

Agri Imp. Society, Irish	763 a	Linnean Society	759 a
Agri. statistics	763 a	M'Glashen's tree-lifter	758 c
Apiary	762 a	Manure, liquid	763 a
Auricula insect	760 a	Note-book, Chinese	758 c
Brassavola cucullata	758 b	Oak gall, American	757 b
Calendar, horticultural	760 c	Orchard, to form	758 a
— agricultural	765 a	Pampas Grass	759 c
Carnation, to winter	760 a	Pathology, vegetable	756 b
Ceratochloa unioloides	758 b	Pear, origin, &c., of the	756 c
Cheese-making, Wiltshire	761 c	Plants, new	756 b
Chrysanthemums, new	759 c	Rhododendrons, grafted	758 b
Cineraria, culture of	760 a	Salter's (Mr.), Chrysanthemums	759 c
Corn, waste in	762 b	Sewage, Manchester	764 c
Crimea, winter of the South	755 b	Sphinx, American Oak-gall	757 b
Drainage, arterial	761 c	Statistics, agricultural	763 a
Entomologists, Chinese	758 c	Sunflower, the	758 c
Espaliers, double	760 c	Timber, tests of	763 a
Farming, high, Ayrshire	761 a	Tragopogon porrifolius	758 a
Foxglove	758 a	Tree lifter, M'Glashen's	758 c
Fruit Book, Elliot's, rev.	759 a	Vegetable pathology	756 b
Glyceria renata	758 b	Vines in brick boxes	757 c
Grasses, new pasture	758 b	Vineyards, Australian	756 c
Guano, nitrate	765 a	Wines, Australian	755 c
Heracleum giganteum	758 a	Winter of the South Crimea	755 b
Horse-power machine	765 b	York, East, notes from	763 a
Italian Rye-grass	764 b		

ROSES, HOLLYHOCKS, ETC.

ROSES to force, or to form beds at once. See S. WALTERS'S ADVERTISEMENT, page 766.

EXHIBITION OF CHRYSANTHEMUMS.—A large Collection of the above is now in flower at CHANDLER & SONS' Nursery, Wandsworth Road. Good flowering Plants, 6s. to 12s. per dozen.

LARGE EVERGREENS.—Gentlemen planting may procure at CHANDLER AND SONS' Nursery, Wandsworth Road, fine large bushy EVERGREENS, viz., China Arbor-vitæ, Hollies, Box, Laurels, &c., at very moderate prices.

CAMELLIAS.

CHANDLER AND SONS beg to inform their friends and customers that they have a large stock of young Camellias this season, beautifully set with flower buds, and now in a fit state to travel without injury. Fine bushy plants, 30s. and upwards per dozen.—Wandsworth Road, Vauxhall.

NEW CHRYSANTHEMUMS.

JOHN SALTER'S collection, containing all the established favourites, and upwards of 60 new varieties of this season, is now in bloom, and may be seen every day except Sunday.—Versailles Nursery, William Street, near Hammersmith Turnpike.

TO BE SOLD, at very reduced prices, 10,000 very strong 2, 3, and 4-year old GOOSEBERRIES and CURRANTS, of the best sorts.—For further particulars, apply to LANE & DYER, Nurserymen, Bridgewater.

TO MARKET GARDENERS AND OTHERS.

TO BE SOLD IMMEDIATELY, 1500 GOOSEBERRY and CURRANT TREES, 16 PEACH and NECTARINE, 15 MORELLO CHERRY (trained), 6 PLUM, 1000 RASPBERRY CANES, large quantity of STRAWBERRY RUNNERS, all in bearing condition, for 10l., owing to the proprietor going abroad.—Enquire of W. BECKETT, Wanstead, Essex.

TO BE SOLD, a quantity of STANDARD PEARS and PLUMS, of the best kinds, and fine trees, at 20s. per dozen, or 7l. 10s. per hundred.—J. SMEETON, Nurseryman, &c., Earl's Court, Brompton, London. N.B. Country orders attended to on a remittance by post.

SEED WHEAT.—Samples and Prices of RED HYBRID, NURSERY, and other kinds of Wheat from the CHALK, sent on application to Mr. H. RAYNBIRD, Basingstoke. The Red Hybrid and Nursery are well suited for late sowing after Turnips.

WANTED, One Thousand Strong YEWS (English), not less than 4 feet in height.—Address, with lowest price, JOHN WIGHTMAN, Gardener to Sir R. Peel, Bart., Drayton Manor, near Tamworth.

SPECIMEN IRISH YEWS.

THOMAS JACKSON AND SON having a large Stock of fine specimens of this very ornamental tree, beg to offer them at the undernamed low prices.

8 to 9 feet high,	and 8 feet in circumference	...	63s. 0d.	each.
8 „	and 4 to 5 feet	„ ...	21 0	„
7 to 8 „	and 4 feet	„ ...	15 0	„
6 to 7 „	and 3 to 4 feet	„ ...	10 6	„
6 „	and 3 feet	„ ...	7 6	„

Handsome smaller specimens at proportionately lower prices. Kingston, Surrey.

JAMES MELDRUM, NURSERYMAN, Kendal, Westmoreland, begs to offer, upon the most reasonable terms, upwards of one million of fine stout two-year SEEDLING OAKS, and also two-year SEEDLING ASH.—Price on application.

DWARF PYRAMIDAL PEAR TREES ON QUINCE, STOCKS.

EDWARD PARKE FRANCIS offers a very fine collection of the best varieties of PEARS grafted on the Quince; descriptive Catalogues of which may be had on application. Strong Trees, showing Fruit Buds, 2s. 6d. to 3s. 6d. each. Rose Nurseries, Hertford.

FOREST TREES.

J. DICKSON AND SONS, NURSERYMEN, Edinburgh, beg respectfully to call the attention of their Patrons and the Public to their extensive and fine stock of FOREST TREES, &c., Priced Lists of which may be had on application.

All Orders promptly executed, and delivered in London free of expense.—32, South Hanover Street, Nov. 25.

LARGE FIRS AND FOREST TREES.

MESSRS. WILLMOTT AND CHAUNDY, of Lewisham, have to dispose of, at low prices, in consequence of the ground (12 acres) having to be cleared for building on, a quantity of large FOREST TREES and FIRS of various kinds; they will come up with good roots.

They have also an extensive stock of large well-grown Evergreens of various sizes, that will come up with good balls.

HYACINTHS FOR BEDS.

FRESH IMPORTED HYACINTHS, all double, colours marked, at 30s. per 100, carriage free. Fine mixed CROCUSES, 12s. 6d. 1000; and other DUTCH ROOTS at equally low prices.—JOHN SUTTON & SONS, Reading, Berks.

SUTTON'S EARLY CHAMPION PEA, WAITE'S DANIEL O'ROURKE, SANGSTER'S No. 1, FAIRBEARD'S NONPAREIL, *and all other new sorts of Seeds, may be obtained genuine, by retail, at the Grower's retail prices, from*

SUTTON & SONS, Seed Growers, Reading, Berks.

EARLY DANIEL O'ROURKE PEAS.

J. G. WAITE begs to inform the Trade that he is now ready to execute orders for this valuable early Pea. Price can be had on application.

Seed Establishment, 181, High Holborn, London.

NONPAREIL PEAS.

WILLIAM FAIRBEARD begs to inform the trade that he is now ready to execute any orders he may be favoured with. This Pea W. F. is confident will become a general favourite both for Garden and Field culture. Price can be had on application.—Mount Pleasant Nursery, Queen Street, Sittingbourne, Kent.

OMER PACHA PEA.

W. NICOL, GARDENER, Roslyn House, Hampstead, begs to announce that he has put his incomparable Pea "OMER PACHA" into the hands of Mr. SOMMERVILLE, Landscape Gardener, Nurseryman, &c., Garden Road, St. John's Wood, London, for Sale in sealed quarts at 10s. 6d.; and pints, 7s. 6d. The above Pea is not only the earliest, but the most prolific and best-flavoured hardy variety in cultivation. As the Stock is small, W. NICOL would recommend immediate application to Mr. Sommerville, as above.

NEW CAULIFLOWER.

WAITE'S "ALMA," far superior to Walcheren, very large and firm heads. Price to the trade 24s. per lb., smaller quantities 2s. 6d. per oz. No orders attended to for less quantities than one ounce.—Seed Establishment, 181, High Holborn, London.

HOLLYHOCK SEED.

R. PARKER has now ready for sending out Seed of this year's saving from the finest named varieties in cultivation, in packets at 1s. and 2s. 6d. each. A remittance or reference to accompany all orders from unknown correspondents.—Paradise Nursery, Hornsey Road, London.

CUCUMBER SEEDS.—The finest sorts in cultivation—Bozzam's MODEL of PERFECTION and CALIFORNIA (warranted true), at 8s. per 100 Seeds.—Apply to GEORGE OCKLESTON, Blackburn, Lancashire.

CHRYSANTHEMUMS.

J. AND J. FRASER have now in bloom a very fine collection of the above, comprising the best of Pompone and large flowering varieties. Fine strong plants in bloom, from 9s. to 12s. per dozen. Several new varieties of the present season, 1s. 6d. each.—Lea Bridge Road, Essex. Nov. 25.

FINE SPECIMEN PLANTS.

J. AND J. FRASER beg to invite attention to their magnificent Collection of large AZALEAS, HEATHS, and other Plants, which were never in such good condition as at the present time. This is an excellent opportunity for buyers, as (on account of not having sufficient room) the plants will be offered at very low prices.

The Nursery, Lea Bridge Road, Essex.—Nov. 25.

PYRAMIDAL PEAR TREES ON QUINCE STOCKS.

J. AND J. FRASER have to offer a very fine collection of the best varieties of PEARS grafted on the Quince; descriptive Catalogues of which may be had on application. Strong Trees, showing Fruit Buds, 2s. 6d. to 3s. 6d. each.

Lea Bridge Road, Essex, Nov. 25.

PYRAMIDAL PEARS.—In addition to the large stock of this description of Pears on Quince stocks, a large collection of fine trees, five and six years' old, 5 to 6 feet high, on Pear stocks, twice and thrice removed, at 3s. 6d. each, can be furnished. A list of sorts, with descriptions, is given in the Supplement to Catalogue of Fruits, just published.

THOMAS RIVERS, Nurseries, Sawbridgeworth, Herts.

IMPORTANT TO POTATO GROWERS.

HAY, SANGSTER, AND CO., are now ready to send out their celebrated Stock of SEED POTATOES from prepared cuttings, now completely free from disease, of the following sorts, viz.:—

Early Ebrington Kidneys, per bushel	12s.	Early American, per bushel,	8s.
Early Oxford „	10s.	York Regents „	6s.
		Scotch Cups „	6s.

Package and delivery in London, 9d. per bushel, and 2s. per sack.

Newington Butts, London.

EARLY SEED POTATOES.

JACKSON'S IMPROVED EARLY ASH-LEAF, 9s. per bushel. The celebrated Short-top Ashleaf, 7s. 6d.; British Queens, 7s. 6d.; the earliest round variety known, free to London; no charge for sacks.—JOSEPH WILSON, Seedsman, Ipswich; Agent for Wild's celebrated Cucumber, the Ipswich Standard, and beautiful semi-double Primulas. In sealed packets free by post, 2s. 6d., in stamps, or order.

THE FLUKE KIDNEY POTATO.—This excellent variety is now planted here as the principal crop, being more free from disease and more prolific than any other in cultivation. It was raised in Middleton, and may be had genuine in any quantity at 5s. per bushel.—Apply to JOHN HOLLAND, Bradshaw Gardens, Middleton, near Manchester.

THE FLUKE POTATO.—A new second early variety, surpassing every other in its capability of resisting the Potato disease, and without exception the finest and most prolific Potato in cultivation. Price per cwt., 15s., bags included.

To be had genuine of THORNHILL & DICKSON, Lawrence Hill Nurseries; and No. 1, Wine Street, Bristol.

PRICED NURSERY CATALOGUES.

A. PAUL AND SON will be happy to forward the following priced Nursery CATALOGUES in return for one postage stamp each:—A, ROSES; B, ORNAMENTAL TREES AND CONIFERS; C, FRUIT TREES; D, HERBACEOUS PLANTS; F, GREENHOUSE PLANTS, &c.; G, SEEDS; H, HOLLYHOCKS; I, BULBS.—Nurseries, Cheshunt, Herts.

CATALOGUE.

MESSRS. LANE AND SON, Great Berkhampstead, Herts, beg to inform their patrons that the under-mentioned descriptive Catalogues may now be had. General and Supplementary Rose Catalogues for two Postage Stamps.

Tree, Shrub, and Fruit Catalogues, for two ditto.

Azalea indica, Camellias, Hollyhocks, &c., &c., for one ditto.

Fruit trees established in pots are well set with bloom buds, many of them having had a good crop this season.

GEORGE JACKMAN begs to announce that he has just published a new and complete CATALOGUE of his Ornamental Evergreens, Conifers, Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., and may be had on application by enclosing two postage stamps.

Woking Nursery, 1½ mile from Woking Station, South Western Railway, where all Trains stop, and where capital conveyances may be had.—November 25.

ROBERT KENNEDY, Agent for Messrs. Platz and Son, Seed Growers, Erfurt, has much pleasure in announcing he has received their Catalogue of Flower and Vegetable Seeds for the trade for 1855, which abounds with new articles of great interest, and will be forwarded, per post, on application to R. KENNEDY, Bedford Conservatory, Covent Garden, London.

P.S. Also, R. Kennedy's General Catalogue of British and Foreign Ferns forwarded on receipt of six postage stamps.

AMERICAN PLANTS.—A Descriptive Priced CATALOGUE of HARDY AMERICAN PLANTS for the coming season is just published, and may be had by enclosing two stamps for postage. As everything in the way of American Plants is grown to an unequalled extent at this Nursery, intending purchasers would do well to provide themselves with this Catalogue.

WATERER AND GODFREY, Nephews and Successors to the late Hosea Waterer, Knap Hill Nursery, Woking, Surrey.

TRANSON FORTEAU, NURSERYMAN, Orleans, France, begs to invite attention to the following list of FRUIT PLANTS for GRAFTING:—

APPLE, a year seedling, 1 to 2 feet	...	per 1000	8s.	6d.
PEAR „ „	...	„	10	0
QUINCE „ 1½ to 2 feet	...	„	21	0
PRUNUS MAHALEB, do., 2 to 3 feet	...	„	7	0
PRUNUS ST. JULIEN, do., 1½ to 2 feet		„	17	0

THOMAL ANSELL begs respectfully to inform the trade that he intends sending out his new and splendid DAHLIA, "Pilot," in roots; it is of a beautiful, bright, intense, red colour; form exquisite, centre well up; fine cupped petals, and good habit. Ground roots may now be had, price 42s. each, and fine strong pot-roots at 21s. each.

N.B. No objection to take the amount in new Dahlias, new Geraniums, or any other description of stock of which T. A. may be in want.—Camden Nursery, Camden Town, Nov. 25.

CHRYSANTHEMUMS.

HUGH LOW AND CO., have to offer extra fine well-shaped blooming Chrysanthemums, both Pompone and large flowering, at 9s. per dozen. The plants are large, well-grown, and unusually well furnished with flower buds.

Clapton Nursery, London.

HOLLYHOCK SEED.

WILLIAM CHATER begs to offer packets of the above Seed, containing twenty sorts, selected from his best show varieties, at 5s.; 12 varieties, do., 2s. 6d.; and from good double border sorts, at 1s.—Also Pansy Seed, from the best flowers, 2s. 6d. per packet.—Strong Plants of the new Double Crimson Rocket, excellent bedding plants for spring flowering, 6s. per dozen, or 2l. per 100; Double French White, 4s. per doz., or 30s. per 100.—Saffron Walden, November 25.

DUTCH HYACINTHS, for Forcing, single and double, at 4s. per dozen. Also Narcissi, Crocuses, Tulips, Irises, Jonquils, Anemones, and Ranunculuses, priced Catalogues of which will be forwarded by post, from ARTHUR CORBETT'S Italian and Foreign Warehouse, 18, Pall Mall.

Also Double Roman and Paper White Narcissus, the most beautiful and fragrant of all the Narcissi, 4s. per dozen.

ONE YEAR'S SEEDLING QUICK.

CHARLES SHARPE AND CO. have a large quantity of the above to offer, at 2s. per 1000.—A Trade Catalogue of NURSERY STOCK is now ready, and may be had on application.—Nursery and Seed Establishment, Sleaford.

THE PAMPAS GRASS, GYNERIUM ARGENTEUM.

LUCOMBE, PINCE, & CO. have a fine healthy stock of this highly ornamental plant, well established in pots, and fit to send out immediately.

Specimens of it are now and have long been flowering in their nursery, and it is universally admitted that few plants produce a more beautiful effect than this gigantic Grass. See woodcut and description of it in *Gardeners' Chronicle* of the 4th inst.

Sizes, prices, and all particulars may be had on application to LUCOMBE, PINCE, & CO., Exeter Nursery, Exeter.

SPLENDID CONSERVATORY PLANT.

FUCHSIA DOMINIANA.—A beautiful example of this truly gorgeous plant was exhibited at 21, Regent Street, on the 7th inst., and without any exaggeration it may be said to have been the admiration of every one. There is now no doubt that it is one of the finest autumn and winter flowering conservatory plants we have. The merit of raising this beautiful plant is due to Mr. Dominy, the Foreman of the Plant Department at the Exeter Nursery; it consequently bears his name as a memento of his zeal and ability in the performance of his duties. It is a seedling between Serratifolia multiflora and spectabilis, having the fine free growth of the former and the splendid flowers of the latter.

A few extra strong specimen plants, 2 to 3 feet	...	21s.	0d.
Fine large plants	...	10	6
Small Plants	...	7	6

Exeter and Chelsea Nurseries, Nov. 25.

N.B. The specimen exhibited on Tuesday can be seen at Chelsea

THE LARGEST AND CHEAPEST ESTABLISHMENT IN ENGLAND for GERANIUMS (show and fancy), FRENCH GERANIUMS, FUCHSIAS, VERBENAS, FAIRY ROSES, CHRYSANTHEMUMS, HELIOTROPES, CINERARIAS, CALCEOLARIAS, PRIMULAS, and other soft-wooded plants, is the Floral Nursery, Acton Road, Turnham Green, near London. More than 250,000 plants are there cultivated annually.

For further particulars, see Advertisement in last week's *Chronicle*. Catalogues forwarded to all parts gratis.

Every possible exertion will be made to give the most perfect satisfaction to all who may favour this Establishment with their patronage. None but thoroughly established Plants will be sent out, and full reliance may be placed on prompt attention and fair dealing.

The Trade will be liberally dealt with. Provincial Nurserymen and Florists will do well to try this Establishment.

Terms cash or a satisfactory reference.

JOHN WESTWOOD, PROPRIETOR.

THE BEST CUCUMBER AND PRIMULA SINENSIS in the Kingdom, and BEAUTIFUL SEMI-DOUBLE PRIMULAS in five colours, pronounced by Beaton, Neville, Ayres, the Floricultural publications, and the Metropolitan Judges to be the best ever seen. IPSWICH STANDARD CUCUMBER, the only one ever known to embrace all the properties of "Wild's Standard." Mr. Glenny describes it as magnificent. Seeds warranted saved only from perfect Specimens, in sealed packets, free by post on receipt of 2s. 6d. in Stamps or Post Office Orders addressed to THOMAS WILD, Ipswich. A handsome Plant (3 ft. by 2½) of MEDINILLA EXIMEA, 8-size pot to dispose of. True ASH-LEAF KIDNEY and other POTATOES for Seed at reasonable prices. Seedsmen supplied with plain and printed paper bags in every size and quality.—A first-rate Gardener, with a 12 years' unexceptionable character, is disengaged.

THE AMERICAN NURSERY, BAGSHOT, SURREY.

JOHN WATERER begs to recommend to the attention of Gentlemen and others engaged in Planting, the following plants from his general Stock, they are in fine healthy condition. The American Plants annually exhibited at the Royal Botanic Gardens, Regent's Park, are supplied from this establishment.

RHODODENDRONS.—The following is a selection of the most ardent scarlet, rose, and high-coloured varieties in cultivation; are perfectly hardy, and bloom for the most part during the month of June.

Blandyanum, fine rosy crimson	5s. to 7s. 6d. each.
Lady Eleanor Cathcart, vermilion rose and dark crimson spots	21s. 0d. „
Lady Wenlock, bright crimson	21s. 0d. „
Atrosanguineum, dark scarlet...	10s. 6d. „
Alaric, dark purplish crimson	7s. 6d. „
Omer Pasha, dark crimson, new	10s. 6d. „
Juba, crimson, intensely marked	10s. 6d. „
Lefevreanum, crimson, tinged with purple ...	10s. 6d. „
Attila, dark crimson	7s. 6d. „
The Grand Arab, fine glowing crimson ...	7s. 6d. „
Brayanum, crimson	10s. 6d. „
Nobleanum bicolor, crimson, white eye ...	7s. 6d. „
Vandyke, light crimson...	10s. 6d. „
Blatteum, dark purplish red	7s. 6d. „
Rubens, light rose	10s. 6d. „
The Duke of Norfolk, clear rose, fine ...	10s. 6d. „
Celebrandum, dark crimson purple	10s. 6d. „
Rembrandt, fine crimson	10s. 6d. „
Congestum roseum, fine rose, well marked ...	21s. 0d. „
Roseum novum, clear rose	10s. 6d. „
Leopardi, rosy purple, and very much marked ...	5s. 0d. „
Floribundum coccineum, fine	10s. 6d. „
Erectum, good crimson	7s. 6d. „
Towardianum, large rose, fine...	10s. 6d. „

For planting extensively, no kinds of Rhododendrons are better calculated for a display than the varieties of the noble Catawbiense; they are all perfectly hardy, producing fine trusses of blooms of various hues—scarlet, rose, purple, white, and spotted white. The list below contains the leading kinds:—

Catawbiense, good bushy plants, 50s. to 63s. per 100.
„ larger, 1½ to 2 feet, 12s. to 18s. per doz.
„ seedlings, fine bushy plants, 12s., 18s. to 24s. per doz.

Catawbiense bicolor	Gloriosum
„ splendens	Sherwoodianum
Album elegans	Bouquet de Flore
„ grandiflorum	Melanthauma
Cæleste	Pictum
Cyaneum	Roseum elegans
Candidum	Victoria
Delicatissimum	Maculatum nigrum
Egregium	„ purpureum
Everestianum	Macranthum
Finibriatum	Nivaticum
Mirandum	Perspicuum
Lindsayanum	

Good strong well established bushy plants, 30s. to 42s. per doz. Larger plants can be supplied at a corresponding advance of price.

STANDARD RHODODENDRONS.—Of these, without doubt, we possess the largest stock of really good kinds. Nothing can be more imposing when in bloom than a handsome standard. We have them 3 feet to 5 feet stems, and handsome symmetrical heads. The price of such would range from 42s. to 105s. each.

Rhododendron ponticum, good plants, 10s. 6d. per 100; larger, 1 to 1½ to 2 feet, 12s. 6d., 15s. to 25s. per 100. This is especially worthy the attention of planters; it will thrive in any soil, and in the most severe weather; is never injured by hares or rabbits. Unquestionably it is by far the best shrub for under cover.

KALMIA LATIFOLIA, good bushy plants, 60s. per 100; larger, 12s., 18s. to 24s. per dozen.

HARDY HEATHS, in 20 fine, named, varieties, many of them well suited to form edgings for larger clumps, 35s. to 42s. per 100.

HARDY AZALEAS.—A good assortment, if left to our selection, suitable for extensive planting, 1 to 1½ and 2 feet, 3l. 3s. per 100. The very best selected Ghent and other varieties, 18s. to 30s. per dozen. These produce flowers of all colours—scarlet, rich orange yellow, rose, and white.

STANDARD ROSES, of the most approved Perpetual and Bourbon varieties, 3 to 4½ feet stems, 18s. per dozen.

PINUS Douglasi, handsome seedling plants, 3 to 4 and 6 feet.
„ insignis; we strongly recommend our stock of this justly admired Fir, all of which are from seed, 2 to 3, 4, & 5 ft.
„ cembra, 3 to 4 and 5 feet.—Pinus excelsa, 3 to 6 feet.
„ macrocarpa, 2 to 3 feet.
„ Lambertiana, very handsome, 3 to 4 feet.
Araucaria imbricata, splendid formed specimens, 2 to 4 feet.
Cedrus deodara, of all heights, from 1 to 8 feet. We have a large quantity about 4 to 6 feet.
„ Africana, 3 to 4 feet.
„ Lebanon, handsome grown specimens, 3 to 6 feet.
Cryptomeria japonica, 3 to 12 ft.—Libocedrus chiliensis, 2 to 3 ft.
Fitzroya Patagonica, 2 feet.
Cupressus Goveniana, 3 to 4 feet.
„ Lambertiana, 3 to 4 and 5 to 6 feet.
Irish Junipers, 4 to 5 feet.—Irish Yews, 4 to 8 feet.

The above-named Coniferous Plants have been frequently transplanted, are perfect specimens, and have never been grown in pots. Prices will be forwarded on application.

J. W. begs respectfully to solicit an inspection of his stock, from those who are engaged in planting. A Catalogue, containing full descriptions of his celebrated Collection of Rhododendrons, as exhibited by him at the Royal Botanic Gardens, Regent's Park, can be obtained by inclosing two Postage Stamps.

MESSRS. E. G. HENDERSON AND SON, of the Wellington Nursery, St. John's Wood, London, beg to announce that they are now sending out the following new Plants:

HELIOTROPIUM, BEAUTY OF THE BOUDOIR; the best for Garden and Pot Culture.

CHRYSANTHEMUM, ANNIE HENDERSON; the summer flowering variety; colour yellow, and form of Annie Salter; very dwarf.

GERANIUM, PRETTY POLLY; the loveliest hybrid bedding Geranium; colour, orange salmon.

ACHIMENES HENDERSONI; the newest and prettiest hybrid variety out.

FANCY GERANIUMS: CLOTH OF SILVER, EVENING STAR, and CRYSTAL BEAUTY; for form, colours, and general good qualities unequalled.

CINERARIAS: MRS. ROGERS, MRS. GERARD LEIGH, FASCINATION, and PRINCE OF PRUSSIA. (No further orders can be executed for Mrs. Rogers and Mrs. Gerard Leigh until next spring.)

See Autumn Catalogue for full descriptions, price, &c. &c.

The NEW RHODODENDRONS discovered on the Bhootan Alps, by THOMAS J. BOOTH, Esq., surpassing in magnificence of flower the Sikkim species. Full particulars of them will be seen on reference to their Spring Catalogue.

T. PERKINS, Atherstone, Warwickshire, begs to offer to the Trade, strong GRAPE VINES from single eyes, of the following kinds, at 12s. per dozen. Samples sent on receipt of 24 postage stamps.

Chassel's Musque	Pitmaston White Cluster
Black Hamburg	Dutch Sweet Water
Groves End Sweet Water	Black Frontignac
Grizzle Frontignac	White do.
White Muscat	Black Prince
Muscat of Alexandria	Black St. Peter

Post Office Orders payable at Atherstone.

NEW CHRYSANTHEMUMS OF 1854.

Aurore boreale	Louis Delaborde	Dr. Bois
Auguste Mie	Bob	Eclipse
Comte Achille Vigier	Indiana	Marguerite de Valois
		„ de Wildemar
Zebra	Hermine	Juanita
Pluie d'Or	Turris Eburnea	Duval

MESSRS. E. G. HENDERSON & SON beg to announce that the above choice varieties, flowered for the first time in this country, can now be seen in their winter garden, at the Wellington Nursery, St. John's Wood, London.

BASS AND BROWN'S NEW AUTUMN CATALOGUE, supplied free for three Penny Stamps. They have this season a very fine and vigorous stock of the finest Roses, among which are a number of very superb new Continental varieties, consisting chiefly of the perpetual class. The following selections will be highly approved,

ROSES.

	£	s.	d.
100 Standards in 100 very superior varieties	£7	10	0
100 „ 50 „ „	6	10	0
50 „ 50 varieties ditto, all selected from perpetuals	4	0	0
100 dwarfs and half standards, or all dwarfs, in 100 very superior varieties	4	0	0
100 ditto in 50 varieties, ditto	3	0	0
50 ditto in 50 varieties, ditto, all from perpetuals ...	2	10	0
Fine mixed dwarfs, per 100...	1	10	0

Hardy Herbaceous Plants, Hollyhocks, prize-named Gooseberries, Strawberries, Standard Dwarf and Trained Fruit Trees, Flower Roots, and a variety of desirable articles offered in selection for present planting, for which see *Gardeners' Chronicle*, Oct. 14, page 659, and Oct. 28th, page 690.—Goods, carriage free (not under 20s.), to all the London termini, and all Stations on the London and Norwich Colchester Line. Plants added gratis with orders of 40s. and upwards.

Seed and Horticultural Establishment, Sudbury, Suffolk.

THE TRUE LANCASHIRE PRIZE GOOSEBERRIES.

JOHN HOLLAND, Bradshaw Gardens, Middleton, near Manchester, will supply 24 strong Plants for 12s., or 12 Plants for 7s., package, &c., included, of the below named Gooseberries. Weights taken from the Gooseberry Register of 1854:—

	dwts.	grs.		dwts.	grs.
London	31	16	Banksman	24	19
Drill	29	12	Tally Ho	24	12
Thumper	28	0	Briton	24	10
Conquering Hero ...	27	11	Peacock	24	1
Companion	27	0	Weathercock	24	0
Overall	26	22	Lancashire Lad ...	23	15
Napoleon	26	10	Birdlime	23	14
Wonderful	26	9	Broomgirl	23	8
Lion's Provider ...	26	6	Railway	23	5
Pilot	25	13	Guido	23	4
Slaughterman ...	25	10	Two-to-One	22	19
Roaring Lion... ...	25	6	Marigold	22	7
Goldfinder	25	5	Gunner	20	12

Post Office Orders to be made payable at Middleton, Lancashire. Priced and Descriptive Lists are now ready of AURICULAS, ALPINES, POLYANTHUSES, DOUBLE PRIMROSES, CARNATIONS, PICOTEES, PINKS, PANSIES, &c. &c. &c., and may be had on application, inclosing a Postage Stamp.

TO GENTLEMEN ENGAGED IN PLANTING.

WATERER AND GODFREY respectfully invite attention to their stock of the following very desirable HARDY PLANTS.

Araucaria imbricata, from 2 to 7 feet high; as handsome as plants can be.
Cedrus Deodara, in any quantity, from 1 to 3 feet high
Do. do., 4, 5, 6, 7, 8, and 10 feet high; splendid plants
Cedars of Lebanon, 3, 4, 6, and 10 feet high
Pinus Douglasi, 3 to 10 feet
„ insignis, 2 to 7 feet
„ Menziesi, 3 to 7 feet
„ pinsapo, fine plants, 3 to 6 feet
„ Nordmanniana, 1½ to 3 ft., all from seed and remarkably handsome
„ nobilis, 1½ to 2 feet; a few larger, 5 and 6 feet high, on their own roots, and with perfect leaders
„ Montezumæ, 2 to 4 feet
Pinus canadensis, 3 to 8 feet
Cupressus macrocarpa or Lambertiana, 4 to 7 feet
„ thyoides variegata, 3 to 4 feet (the variegated white Cedar)
Juniperus, Upright Irish, perfect columns, 3 to 7 feet
„ chinensis, 2 to 8 feet
Yew, common English, 3 to 8 feet
„ Irish, 4 to 10 feet
„ gold-striped, 1½ to 3 feet
„ do., tall standards, 4 to 7 ft.
„ Dovaston, or Weeping, worked on tall straight stems
Thuja aurea, the finest plants in the country
Libocedrus chilensis, the finest plants in the country
Large variegated Hollies
„ Standard Bays

Also an immense stock of large Evergreens, Standard Ornamental Trees, &c.

All the plants here offered may be seen, growing in our Nursery; they are removed every year, and will travel any distance with perfect safety. Of some, such as Araucarias, Deodaras, Golden Yews, Thuja aurea, Pinus nobilis, Nordmanniana, we have any quantity; and the plants, for root and branch, are not to be surpassed. Priced Catalogues will be forwarded on application, enclosing two postage stamps, to WATERER and GODFREY, nephews and successors of the late Hosea Waterer, Knap Hill Nursery, Woking, Surrey, near the Woking Station, South-Western Railway, where all trains stop, and where capital conveyances can be obtained.

The 2d. stamp will also include a descriptive Catalogue of their American Plants, Roses, and Nursery Stock in general.

LILIUM LANCIFOLIUM.

HENRY GROOM, Clapham Rise, near London, by appointment, FLORIST TO HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to say that this is the best time to have Bulbs of the different varieties of this most BEAUTIFUL LILY. They are well adapted for the Flower Garden, American Borders, and Drives in Parks, being quite hardy. His Catalogue may be had on application.

SUPERB DOUBLE HOLLYHOCKS.

WILLIAM CHATER'S descriptive List of the above splendid flowers, containing hints on their culture, and observations on exhibiting, &c., is now ready, and may be had on application, by forwarding one postage stamp.—Saffron Walden Nursery, November 18.

HOLLYHOCK SEED, from selected flowers of all the best collections in England and Scotland, 2s. 6d. per packet.

SPOTTED MIMULUS, from finely shaped flowers of every variety of colour and spot, at 1s. 6d. per packet.

CHOICE CALCEOLARIA, from the most superb collection in England, 2s. 6d. per packet.

JNO. AND CHS. LEE, NURSERY and SEEDSMAN, Hammersmith.

NEW CRIMSON DAHLIA "INCOMPARABLE."

MR. E. ABLITT begs most respectfully to announce to the Dahlia Trade that he purposes disposing of the above named splendid Seedling Dahlia in ground roots. Colour rich ruby crimson, fine shape, with great depth of well arranged petals, and good centre; it has been shown at most of the exhibitions in the neighbourhood, and greatly admired. Mr. Glenny also speaks of it in very high terms as one of the best in the crimson class.

☞ See Glenny's Almanack for this year, and Lloyd's Weekly Newspaper for October 29th, initials E. A., and Nov. 11th.

Terms, Five Guineas each root.

Onehouse, Stowmarket, Suffolk.

AMERICAN PLANTS.

JOHN WATERER begs to announce that he has published a new Catalogue of his Rhododendrons, &c., as exhibited by him in the Gardens of the Royal Botanic Society, Regent's Park, London. It describes the colours of all the Rhododendrons considered worthy of cultivation, with a Treatise on their successful management, and may be had by enclosing two postage stamps.

The American Nursery, Bagshot, Surrey, near Farnborough Station, South-Western Railway.

AMERICAN NURSERY.

GEORGE BAKER'S DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS, &c., as exhibited by him in the Royal Botanic Gardens, Regent's Park, may be had by inclosing two postage stamps.

G. B. begs to call attention to his fine stock of Weeping Hollies, Coniferous Plants, Ornamental Shrubs, &c.—American Nursery, Windlesham, near Baghshot, Surrey, near Staines Station, South-Western Railway, where conveyances may be obtained.

ARTHUR HENDERSON AND CO. beg to inform their patrons and the public that their CATALOGUES OF BULBS are now ready, and they will have much pleasure in forwarding them on application.

They comprise lists of all the finest varieties of Hyacinths, and many other rare and valuable Bulbs.

Their collections of Hyacinths have yearly carried off the metropolitan prizes, not only for their unique growth, but also for their beauty of colouring and distinctness of sorts, either when exhibited in a collection of 36 plants or in pairs.

Their new descriptive Fruit Catalogues, Ornamental Trees and Shrubs, American Plants, choice Rhododendrons, Roses, &c., can be had on application.

Pine-apple Place, Edgeware Road, London.

R. PARKER begs to offer the following:—

CINERARIAS (Seedlings), from all the finest varieties carefully selected, including the new varieties sent out last autumn. Strong established plants, in 4-inch pots, at 4s. per dozen. A choice collection of named Cinerarias in strong established plants, purchaser's selection, at 9s. per dozen.

ROSES, consisting of the best varieties of Hybrid Perpetuals, Teas, Bourbons, &c., well established in pots. Purchaser's selection, at 12s. per dozen. List of names forwarded upon application.

A remittance or reference to accompany all orders from unknown correspondents.

Paradise Nursery, Hornsey Road, Islington.

GLENNY'S SUPERB BALSAM SEED, from flowers unequalled in size, colour, and doubleness; in sealed packets, with "the culture." Six classes 37 stamps; a mixed packet, 13 stamps. Full allowance to the Trade, if taken in quantity.—Address G. GLENNY, Dungannon House, Fulham.

THE FOREST, THE PARK, THE SHRUBBERY, AND THE GARDEN.—*Noblemen and Gentlemen requiring Trees, Shrubs, or Fruit Trees during the present Autumn should obtain* RENDLE'S *New Autumnal Descriptive Catalogue, which can be had on application from*

WILLIAM E. RENDLE & CO., Nurserymen and Forresters, Plymouth. Established 1786. New Seeds, growth of 1854. Arrangements are now being made at this establishment for a large supply of genuine and good Seeds for the coming season.

TO THE AGRICULTURISTS OF ENGLAND.

HARRADINE'S "NE PLUS ULTRA" WHEAT.—A single ear of this wonderful Wheat, which was purchased five years ago of a soldier on tramp, who brought it from some distant country, was sown in 1849; the produce of this was again sown in 1850, and also in 1851, when it yielded at the rate of 19 coombs, 1 bushel, and 1 peck per acre. This induced me to continue its cultivation. A sheaf and a quantity of corn will be shown on Messrs. Garratts' Stand in the Agricultural Department of the Crystal Palace, by which its quality and general character may be seen.

The following Gentlemen kindly lent me portions of their land last season, to test the producing quality of the Wheat, and up to this year not one kernel has been sold for seed. The quantity sown on all the varieties of soil has in no instance exceeded 4 pecks per acre. On land of Mr. Wasdale, in the parish of Woodhurst, this Wheat was sown after Tartarian Oats, Clover, Seeds, Peas, and Tares (some being sown in February, and equally productive). On land in the occupation of Mr. Gadsby, in the parish of Godmanchester, 1 acre, the yield of which has been 30 per cent. over his own Wheat, grown in the same field, and has been tested by several Agriculturists in the neighbourhood. On land in my own possession, in Needingworth and other places (both Fen and Highland), it has been sown after Wheat, Clover, Barley, Beans, Oats, and Fallow, and in every instance has been most productive.

I am prepared to part with a limited quantity, which can be had on application to me, at 25s. a bushel. All orders to be accompanied by a remittance.

JOHN THANG HARRADINE, Needingworth, St. Ives, Huntingdonshire.

GARDEN NETS, FISHING NETS, SHEEP NETS, AND RABBIT NETS made by hand, as machine made knots slip, supplied at very low terms. Samples sent free. W. CULLINGFORD, 1, Edmund Terrace, Ball's Pond Road, Kingsland, near the Gate, London.

Six Tents to sell cheap.

LARGE SURPLUS STOCK
OF TREES SHRUBS, ETC.,
NOW ON SALE AT
MESSRS. WM. E. RENDLE AND CO'S NURSERY,
Plymouth.

THE PROPRIETORS, *having a large surplus Stock of the following, can offer them at greatly reduced prices; and all Orders above £10 will be delivered free of carriage to any Station on the* BROAD GAUGE RAILWAYS, *and to Cork, Dublin, and Liverpool by Steamers.*

400,000 Seedling Scotch Fir.
500,000 „ Larch Fir.
200,000 „ Pinus austriaca.
200,000 „ Turkish and English Oaks.
10,000 „ Cedrus Deodara, from 6 ins. to 3 ft. in height.
10,000 fine Laurels of various sizes.
20,000 all the best varieties of Strawberries.
10,000 of the best Rhubarb Roots in cultivation.

With a large and general Assortment of Nursery Stock, including Forest Trees, Shrubs, and Fruit Trees, such as is generally found in a large Provincial Nursery.

All who intend to plant, either in the Forest, the Shrubbery, or the Garden, during the present Autumn, should procure their NEW AUTUMN DESCRIPTIVE CATALOGUE, *which can be had in exchange for one penny stamp on application to*

WILLIAM E. RENDLE AND CO., NURSERYMEN and SEED MERCHANTS, Plymouth.—Established 1786.

NEW CLIMBING HYBRID PERPETUAL ROSE,
THE "DUCHESS OF NORFOLK."—Colour, Vivid Crimson.
To be sent out for the first time about the end of October.

WILLIAM WOOD AND SON beg to refer to their advertisement in the *Gardeners' Chronicle* of September 30, page 627. Standards, half-standards, or dwarfs will be supplied at 10s. 6d. each, with the usual allowance to the trade.

N.B. When six plants or more are ordered by the trade, a very considerable reduction will be made beyond the usual discount, particulars of which may be had on application.

A Drawing of the above may be had for 6 Postage Stamps.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

ROSES.

WILLIAM WOOD AND SON, having a large stock this season, beg to offer fine strong Plants of the following kinds of HYBRID PERPETUAL ROSES, budded on fine selected stocks, from 4 to 6 inches, well suited either for potting or for planting in masses in the Rose Garden.

AT 15s. PER DOZEN (when one dozen of a kind is ordered):—Auguste Mie, Baronne Hallez, Baronne Prevost, Charles Boissière, Duchess of Sutherland, Duplessis Mornay, Egérie, Géant des Batailles, Jaques Lafitte, La Reine, Le Lion des Combats, Louise Odier, Madame Trudeaux, Pius the Ninth, Reine des Fleurs, Robin Hood, &c. &c. &c. Pius the Ninth is particularly recommended as a pillar Rose of extraordinary growth, budded plants of this kind in the Woodlands Nursery having made shoots from 5 to 6 feet in length this season, and flowers until very late in the year.

AT 10s. PER DOZEN (Hybrid Perpetual Roses):—Augustine Mouchelet, Duc d'Aumâle, Lady Fordwich, Madame Laffay, Marquise Boccella, Marquis of Ailsa, Mrs. Elliot, Prudence Rœser, William Jesse, &c.

N.B. The Trade supplied on liberal terms. Catalogues may be had in exchange for two postage stamps.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

RHUBARB ROOTS for FORCING or PLANTING.—Strong one-year planted roots of MYATT'S VICTORIA and LINNÆUS, MITCHELL'S ROYAL ALBERT, at 6s. per doz.; HOWARD'S PRINCE ALBERT, 12s. per dozen. This is a larger variety than the Victoria, and is extensively cultivated about Manchester. Price to the trade of the above, per 100 or 1000, on application to MESSRS. J. MYATT AND SONS.
Manor Farm, Deptford, Nov. 25.

NEW GERANIUMS, ETC.

ISAAC DAVIS, Larkfield Nursery, Wavertree, near Liverpool, begs to offer the following, being the best and most distinct of last year. Regalia, 5s.; Virginia, 3s. 6d.; Lucy, 3s.; Pilot, 3s.; Ladybird, 3s.; Sanspareil, 3s. Very bushy strong healthy plants. The favour of early orders will oblige, as repotting will be required shortly. The usual discount to the Trade.

Also an unrivalled stock of the following RHODODENDRONS, an acre from 1 to 5 feet; Green Hollies, half an acre 1 to 5 feet; many thousands of all the other kinds of Evergreens. Pinuses, Fruit, and Ornamental Trees, Shrubs, Roses, &c.; and a good collection of Greenhouse Plants in flower. An inspection of the above will convince any person desirous of purchasing, that they cannot be surpassed in quality or cheapness. Trees are not cheap at any price unless well grown.

NEW FANCY GERANIUMS.

Enchantress and Compactum, 10s. 6d. each; Mary Jane, 7s. 6d. do. Formosissimum superbum, 7s. 6d.; Eclipse, 10s. 6d. in the spring.
The set for 2l. 2s., with usual allowance to the trade.

JOHN HALLY, NURSERYMAN and FLORIST, Blackheath, begs to refer amateurs and the trade for a description of the above to his Advertisement in the *Gardeners' Chronicle* of November 11; and also to inform them that he will not be able to send out any more of the Eclipse before the spring (except those already ordered), but any one ordering a set may have an extra plant of either of the other kinds instead.

NURSERY AND SEED ESTABLISHMENT, SLEAFORD.

CHARLES SHARPE AND CO., beg to draw the attention of the Nobility, Gentry, and Clergy, to their superior collection of Potatoes. Having devoted much attention to the cultivation and proving of the many different varieties, they can with confidence recommend the following as decidedly the best in cultivation for early planting.

Per Bushel of 4 Stones.		Per Bushel of 4 Stones.	
Early Ashleaf Kidney ...	10s.	Early Round Frame ...	10s.
„ „ „ Jackson's	10s.	„ Hen Nest	12s.
„ Martin's Globe ...	10s.	„ Emperor	10s.
„ Parker's Seedling	12s.	„ Cockney	10s.
„ King's	10s.	„ Oxford	10s.
„ Foxe's Seedling ...	10s.		

The above prices include Hamper and Package, and Delivery at the Great Northern, Manchester and Sheffield, Midland, and Ambergate Railways.

SONERILA MARGARITACEA.—This lovely Plant was exhibited at the Horticultural Society Rooms, 21, Regent Street, on the 7th inst., and was the gem of the exhibition. (See report in *Gardeners' Chronicle*). It is perhaps the most chaste of all variegated plants, producing, with its dark glossy green leaves, dotted all over with silvery white spots, a profusion of beautiful crimson flowers, with yellow stamens. It is a dwarf compact plant, of particularly neat habit. It requires the temperature of a cool Stove or a warm Greenhouse.

Messrs. VEITCH & SON are now prepared to supply plants of the above, and have no hesitation in saying that this is one of the most lovely and delightful little plants it has ever been their good fortune to introduce.

Plants at 21s. each, with one over on three to the Trade.
Nurseries, Exeter and Chelsea, Nov. 25, 1854.
N.B. The Plant exhibited on Tuesday is now at the Exotic Nursery, Chelsea, and can be seen by the public.

NOW READY.

SUTTON'S COMPLETE COLLECTIONS OF KITCHEN GARDEN SEEDS *are now ready, and should be ordered forthwith, by which a full supply of every kind of Vegetable Seed required during the whole year will be secured (including the best sorts yet introduced), and at a very small cost, viz.:—*

No. 1 Collection ...	£3 0 0	No. 3 Collection ...	£1 5 0
No. 2 do. ...	2 0 0	No. 4 do. ...	0 15 0

The quantities in each collection being apportioned to the size of the garden, INSTRUCTIONS ON CULTIVATION will be enclosed with Nos. 1, 2, and 3. To secure the best sorts, orders should be given immediately, addressed

JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

HYACINTHS, TULIPS, ETC.

WILLIAM E. RENDLE AND CO., SEED MERCHANTS, Plymouth, *have still on hand a fine assortment of all the best Hyacinths, Tulips, Anemones, Ranunculus, Gladiolus, Sparaxis, Lilium, Crocus, Iris, Jonquille, Snowdrops, Amaryllis, and other kinds of Bulbous Roots.*

The present is an excellent time for planting them either in pots or in the ground; but the sooner the better. All orders will be properly attended to.

RENDLE'S *Catalogue of Bulbous Roots can be had in exchange for two penny stamps, on application to*
WILLIAM E. RENDLE, and Co., Seed Merchants, Plymouth.

STRONG GRAPE VINES FROM EYES IN POTS.

LUCOMBE, PINCE, AND CO. have this season a fine healthy stock of strong VINES of all the best varieties, raised from eyes which they can especially recommend, as the wood is well ripened and the roots very vigorous. They have a few extra-sized Plants in very large pots in a full bearing state.

They have also a quantity of fine healthy Peaches, Nectarines, and Figs, well established in pots in a bearing state. Prices and further particulars to be had on application.—Exeter Nursery, Exeter. Established in 1720.

The Gardeners' Chronicle.

SATURDAY, NOVEMBER 25, 1854.

WE lately observed in one of the daily papers a letter from a gentleman who took upon himself to inform the world what sort of climate is experienced in the CRIMEA in winter, he having, as he stated, gained ample experience upon the subject by a residence in the *North* of Russia. Such he declares is the severity of the winter that brandy freezes as hard as the bottle which contains it, the fingers come off with a man's glove, his feet with his boots, and a musket barrel can no more be grasped by the naked hand than a bar of red hot iron. Hence he urges the necessity of troops being wrapped in sheepskins or cased in leather; for nothing else will protect them from the cold. We cannot avoid suspecting that the writer of the letter in question has mistaken the White Sea for the Black Sea, and Archangel for Sebastopol.

A more trustworthy account of the South Crimea is to be found in the writings of PALLAS, the great Russian Botanist who lived at Akmetshet, or, as it is now called, Sympheropol. In one of his works this author says—

"The mildest and most fruitful region in all the Russian empire is that continuation of valleys arranged in a natural amphitheatre at the southern base of Taurida (the Crimea), along the coasts of the Black Sea. The climate is little different from that of Anatolia and Asia Minor; *winter is hardly felt*, the Primrose and the Crocus appear above the ground in the month of January, and the Oak retains its green foliage throughout the year. 'No part of Taurida, perhaps of the whole empire, affords the botanist a greater variety of plants, or the husbandman a richer harvest. The ever-verdant Laurel grows beside the Olive, the Pomegranate, the Fig, or the Date tree, which might have been brought to the country in ancient times by Greek colonists. The manniferous Ash, the Mastich, the Sumach, the Bladder-nut, the sage-leaved Cistus, the Emerus and the Arbute of Asia Minor flourish in the open-air. The Walnut and almost every kind of fruit tree thrives in the woods or rather the natural gardens in the valleys. The *Caper bush is scattered along the coast*, the wild Vine reaches to the tops of the highest trees, descends again to the ground, and forms, with the Viburnum, festoons and garlands. High hills, masses of rocks, streams and cataracts, verdant fields and woods, and the sea that bounds the horizon, render the landscape equal to any imagined or described by poets. The simple life of the good Tartars, their cottages cut in the solid rock and concealed by the thick foliage of surrounding gardens, the flute of the shepherd, his flocks scattered on solitary hills, remind the stranger of the golden age. The traveller leaves the people with regret, and envies the destiny of mortals ignorant of war, the frauds of trade, and luxury accompanied with all its vices."

Although there is a dash of fine writing in this statement, the facts included in it give the Botanist satisfactory proof that the winter of the South Crimea has little to be dreaded. Where the Olive and the Caper bush, the Mastich tree and the Fig tree find themselves at home, there can be no serious cold. The Caper bush more especially affords unmistakeable evidence of a climate where a hard winter is unknown; and we know from other authority than that of PALLAS that it is an extremely common plant; in fact, the Capers of the Crimea are a common article of sale in the southern provinces of Russia.

It is undoubtedly true that occasionally there are exceptional winters. PALLAS himself informs us that, in 1847, the frost was so intense during the most boisterous north winds, that not only the whole sea of Azof, together with the Bosphorus, but also great part of the bay of Kaffa, and several creeks of the Black Sea were covered with ice sufficiently strong to support the weight of persons crossing both on foot and horseback. But this seems to have occurred on the north-eastern coast; the southern shore from Balaklava to Aloupka is sheltered from these cold winds, and it is there that we presume the troops will winter, if they winter in the Crimea at all.

We think therefore that those who have friends at Sebastopol may be comforted. On the hills it is cold enough we dare say; but there is no danger of the hands coming off with the gloves, or the feet with the boots, or of the musket barrels of our gallant troops burning their fingers. They are more likely to suffer from rain than frost, and we trust they will be effectually protected against both.

THE fate of EUROPEAN VINEYARDS may be regarded as sealed, for the present. The ruin of the Grapes in Portugal, France, Italy, Germany, and the Balearic Islands, appears to be so extensive that the price of wine must rise considerably, unless its consumption should much diminish. And this becomes the more certain when it is remembered that Madeira is in the same predicament, and when we add, as we can upon good authority, that mildew has begun to show itself in Sicily, whither it seems to have travelled from the kingdom of Naples, where the Grapes are in the same state as in France. How far Spain is exempt we are as yet uninformed, but we know that mildew prevailed largely in Grenada last year, and we have reason to believe that the mischief has this year been much greater.

Under these circumstances it becomes a subject of great interest to ascertain whether any of our colonies are likely, either to fill the void thus created, by exporting wine, or to relieve the market by the production of wine for their own consumption, instead of obtaining it from Europe. About the Cape of Good Hope we know nothing; but the kindness of a correspondent furnishes us with some facts respecting Australia which are worth communicating.

"The wines grown in N. S. Wales are gradually displacing the imported, particularly among families not resident in the towns. If their use be once adopted, the majority of persons discontinue the consumption of imported wines, especially the highly brandied sorts from the south of Europe; alleging that they find those of home growth more wholesome and exhilarating.

Australian soils prove to be well adapted for the Grape, the average produce of well managed vineyards being considerably above what it is represented to be in the corresponding European climates. Perhaps this may be partly attributable to a better system of culture, one founded upon observation and study of the physiology of the plant, instead of empirical treatment, as handed down from generation to generation. Occasionally, however, great losses are experienced. The vineyards near Sydney suffered an almost total loss of crop during *three* years out of the last *five*; twice from heavy storms of hail, and last year from a singularly late and severe spring frost. These two accidents rarely occur twice to the same vineyard within a few years. The spring frosts are confined to a very few situations, and the hail-storms, although of fearful severity, are fortunately, for the most part, of very limited extent. The only other cause of loss to any extent is when a period of rain happens towards the maturity of the crop.

The crop of dry wines in ordinary years may be estimated at from 600 to 1200 gallons to the acre according to the kind of Grape. Of one very productive sort, it has been known to reach 1800 gallons. From this estimate must be excepted the years of failure arising from hail, rain, and frosts. More loss has been sustained during the last five than during the preceding 15 years.

It is, therefore, evident that in the districts near Sydney, wine in abundance may be, and is, obtained. The only question is, as to its quality. Upon this point we have had the opportunity of forming an opinion from samples transmitted by Sir THOMAS MITCHELL, WM. MACARTHUR, Esq., of Camden, and other Australian gentlemen. To Mr. MACARTHUR

we are more especially indebted for a case of samples accompanied by the following memoranda:—

"Memoranda relative to Samples of Wine grown at Camden Park.

No. 1. From Verdeilho Grape (Madeira), March, 1848.
2. „ Aucarôt (Departement des Landes), March, 1848.
3. „ Riessling (Rheingau), March, 1849.
4. „ Scyras, or Red Hermitage, March, 1848.
5. „ Muscat, or Frontignan, No. 1, April, 1851.
6. „ „ „ No. 2, „ „
7. „ „ „ No. 3, „ „

"The first four are dry wines, three of them white and the Scyras red. Of the white, the Verdeilho is the most spirituous, and the Aucarôt the least so, the Riesling the best. All are of a description which by keeping improve for an indefinite number of years. Hitherto the limit to which they may be kept with improvement has not been reached. Wines which occasionally develope an acid flavour during their earlier years part with it gradually.

"The samples in question are produced upon a deep porous alluvial soil, in no places very rich in decayed vegetable matter or other elements of fertility, and occasionally very sandy; but everywhere of immense depth, and from this cause, its free texture, and perfect drainage, favourable to the constitution of the Vine. We have ascertained that it varies little for the first 25 feet, and to the depth of 50 feet still continues to offer conditions favourable for the roots of Vines. The growth of the plants is for the most part luxuriant and uniform, the soil being very rarely in need of moisture, and never too wet. Vine roots have been traced more than 20 feet deep, with the appearance of going much deeper. The stems of the older plants of the Verdeilho (not yet 20 years old), are many of them 7 to 8 inches in diameter.

"The three samples of Muscat are of wholly different character from the other four. They are the produce of three sorts of the Frontignan, the white, black, and red or grizzly, mixed indiscriminately together. They were made in the same year by similar process, but from three different descriptions of soil; and differing considerably from each other may be curious as illustrating how greatly the character of wine is dependent upon the soil in which it is grown. In the colony they are very highly esteemed, the demand for them being much greater than the supply.

"No. 1, considered the best, is from a finely grained reddish loam, a good Turnip soil in which both Camellias and Azaleas flourish, but resting upon a deep bed of ferruginous gravel, almost a bed of pure oxide of iron, well drained but liable to burn in very dry weather. Vines from 20 to 25 years old.

"No. 2, containing the greatest quantity of undecomposed sugar, is from a much stronger soil, fine Wheat land for the first 15 to 18 inches, but resting upon decomposing calcareous rock, and full of fragments of tufaceous limestone.

"No. 3 is from the alluvial soil first mentioned, and less rich in sugar and spirit than the other two. All those soils have been well trenched and mixed 3 feet deep. The produce of this description of wine may be given at 250 to 300 gallons to the acre, quantity being sacrificed to obtain the extreme density of the must requisite for this class of wine.

"None of these wines have been grown with any view but home consumption; the high price of labour precluding the hope of successfully competing with the Vine countries of Europe in the English market, even if no objection on the score of quality existed."

Having been kept for a sufficient time after their arrival, these wines have been tasted, and with the following result. The Sweet Muscat wines 5, 6, and 7, proved to belong to the same class as the best Constantia, and to be in no respect inferior to the finest samples of that variety. In fact it was difficult to distinguish them. No. 4, the Scyras, was a dry sound red wine, not unlike good but over-kept port wine which had partially lost its colour, and undoubtedly such as would prove agreeable as soon as the palate became accustomed to it. Its fault was its want of what is called *bouquet*. Nos. 1, 2, and 3 had evidently been fine generous wines, but they had not borne the voyage well. The Aucarôt was pale, cloudy, and vapid. The Verdeilho was bright and strong, but too acid, and wanted flavour. The Riessling had the same fault, but was quite as good as much of the German wine that goes into consumption.

This result is in accordance with our experience of other samples, and shows that if wines capable of entering into competition with those of Europe are not made in Australia, it is not because the country is unable to produce them but because the colonists do not possess the skill required in their preparation. Even as it is there can be no doubt that Australia may be independent of other countries for her supply of this necessary of life, and that she will become so as soon as the high price of European wines renders it desirable that she should be. She may even supply the Indian market, as we believe she does to a small extent, and thus take off the pressure upon that of Europe.

The manufacture of wine is a much more difficult branch of the pursuit than the culture of the plant. One may spend a life in mastering some of the phenomena which complicate the subject. Like the manufacture of tea, or of beer, or of tobacco, it demands a nicety of manipulation which can only be acquired by long experience. Before the Indian Tea plantations could be made to produce Tea of good quality it was necessary to obtain Chinese who had learned the art of preparing the leaves; and every day's experience tells us the difference in beers produced from ingredients identically the same. What the Australian settlers want is a supply of wine makers from the most celebrated vineyards in Europe; they have long had the finest varieties of the Vine; their vineyards are by this time old enough to produce an excellent article; and they possess all the skill which sound theory and good observation can give them. What they want is something beyond either theory or the observation to be acquired in a lifetime. They want that practical skill which is the result of the observation of ages, and which nothing but experience can supply. The most learned of our chemists can explain philosophically every phenomenon connected with fermentation and preservation, but we should be sorry to entrust them with making our wine. It is probable on the other hand that many a wine-maker in the first class vineyards knows nothing about the chemical theories of the matter, although the wine that comes from his hands is among the finest in the market. We would, therefore, suggest to our Australian friends the desirableness of availing themselves of the present state of paralysis by which European vineyards are now unhappily affected, and of obtaining from some of the most celebrated of them the assistance of those experienced men in whose hands the peculiar art of wine-making alone resides.

New Plants.

102. Diervilla Middendorfiana, *Carrière in Revue Horticole*, 1853, *p.* 306; 1854, *p.* 261, *t.* 14; *aliàs* Weigela Middendorfiana *of Gardens*.

We have this in our gardens under the name of "the yellow Weigela." It is understood to have been received from the Russians, but we do not find any exact locality given for it. It is a deciduous shrub with primrose-coloured flowers, about half as large as those of *Weigela rosea*, and therefore not very shewy. The plant is, however, we are told, perfectly hardy at Paris, where it is grown with success in a peat border facing the east, among "Americans." It was beginning to leaf towards the end of January last; in February the leaves were nearly full grown, when they were a little injured (*fatiguées*) by a frost of 19° Fahr.; but they soon recovered, and the flowers opened on the 2d of April.

103. Marsdenia lucida. *Edgeworth.*

I send a specimen of Marsdenia lucida, of Edgeworth, which is a robust climber from the Himalayas, and sufficiently hardy to stand our winters in Ireland, without protection. Planted against a wall facing the north it has stood during the last three years, and is now very luxuriant, but has not flowered yet out of doors. The Marsdenia lucida was discovered by Major Madden, at an elevation varying from 7000 to 8000 feet, I believe near Almorah, where it climbs to the tops of high trees, and flowers profusely. The seeds from which our plants were raised were sent by that gentleman to me about six years ago, and flowers have been produced for the first time this season. *D. Moore, Botanic Garden, Glasnevin.*

The plant mentioned in the foregoing memorandum, is a stout glabrous climber with oblong coriaceous acute slightly cordate leaves 6 inches long and 3 broad. The flowers are in axillary globular short-stalked heads, not unlike those of *M. macrophylla*. The corolla is dingy purple, like that of Periploca græca, hairy inside. The coronal leaflets are shorter than the anthers, at the back of each of which they form a blunt tooth. The style is long, rostrate and bifid. Its fine foliage will render this welcome, wherever the climate suits it.

VEGETABLE PATHOLOGY.—No. XLVII.

207. Weakness of constitution may be exhibited in various ways, and may either be peculiar to the variety of individual, or may be induced by the vicious action of external agents, the effect of which is not transitory but capable of transmission to future generations, exactly as a man's constitution may be impaired by violent fever, and the evil tendencies induced thereby descend to his posterity. The tendency though first induced by external agents becomes innate, and therefore may then be strictly called constitutional. For if our position be allowed, that no weakness of constitution existed at the first formation of a species, it is clear that some cause must have induced such weakness in the various derived forms, though possibly entirely unappreciable to humane powers of observation and that cause in the first instance external.

208. Sterility or unfruitfulness is one of those conditions which is most clearly constitutional, though it may arise from various causes;—from over-luxuriance, which induces the formation of rampant shoots, instead of flowering branchlets; from malformation of the stamens or pistil; from multiplication of petals, which appropriates the nutritive matter which ought to have caused the development of the ovules, or finally from natural weakness, inducing a general unhealthy state of the tissues, which renders them unequal to such an effort as the production of fertile seed. Almost all these cases admit of remedy more or less complete, except where the cells themselves are diseased as regards structure or chemical condition; mere weakness may be cured by generous diet, and as regards other conditions, each has its peculiar remedy.

209. Chlorosis, again, is evidently in many cases constitutional, though it may sometimes be induced directly by external causes, provided at least all cases of chlorosis are to be considered of the same nature. Partial chlorosis or variegation is not dependent, as far as we know, on any external conditions, for a single twig only of a healthy plant may exhibit it; but if grafts or buds are taken from this shoot, all the descendants will partake of the same affection, which will sometimes be communnicated to the stock. Total chlorosis often exists in seedlings where there is no reason to suspect any external evil agency, but in such cases life is seldom sustained beyond a few days.

210. Preternatural developments of particular parts again depend, in the first instance, on internal causes over which we have no control. These are sometimes capable of propagation by seed if due pains be taken to keep the produce pure; but, in some instances, they are extremely evanescent, and can only be maintained within some very limited district. The variety of Cabbage known under the name of Brussels Sprouts cannot be kept up by propagation from English seed; but not only is this a well-known fact, but there are only a few districts abroad where the seed can be produced in a state of purity. I was surprised to hear, for instance, at Lille some years ago that it was impossible to grow seed there which would with certainty produce this particular variety, though differing but little in external circumstances from the districts where the seed is always produced true to its parent stock. It appears, however, upon the authority of Van Mons, that, while the seed remains true at Brussels and Louvaine, at Malines, which is equidistant from Brussels, it never comes true; and this not because of any difference of soil, for at Brussels it succeeds equally in sandy soil, mixed with black moist loam, and in white clay.

211. It should seem further, as Dr. Lindley observes in his "Theory of Horticulture," p. 316, "as if many of our most esteemed garden plants were the result of debility; and that the succulence, the sweetness, or the excessive size, which render them so well suited for food, were only marks of unhealthiness." It is well known that far truer seed can be raised from many plants when transplanted than when suffered to seed on the ground. Lettuces, for instance, if allowed to grow without transplantation in the spot where a plant has stood for seed are seldom good for anything, and in one or two generations their produce will be worthless. The best growers of Turnip seed always grow it from transplanted roots. When it is remembered that this process takes place at a great expense over perhaps as much as a hundred acres, we may be quite sure that the intelligent nurserymen about London would save themselves this heavy outlay if it did not answer the end proposed. Now the only effect of transplanting at the season immediately preceding the formation of a flower stalk would seem to be that of checking the luxuriance of the individual operated on; or, upon the above assumption, of increasing the debility of constitution.

212. On the same principle it is that good varieties of many of our most beautiful Floral ornaments can be obtained only from that seed which, as regards outward appearance, is the least promising. Plump seed, for instance, from a semi-double Dahlia will prove worthless, while from a flower on the same stem, which has scarcely had strength in consequence of the multiplication of its petals, to produce a small dwarf seed, presenting little hope of vegetation, some new and valuable variety may be raised. Instances might easily be multiplied, but these are quite sufficient for illustration. *M. J. B.*

ORIGIN OF THE PEAR TREE, ITS PROGRESS, AND SUCCESS.

In a previous communication I promised to submit to your readers a list of the most hardy and vigorous varieties of Pear trees, raised from seed in Belgium, and which are probably, even now, but little known to the generality of English amateurs. This promise I am now about to fulfil. But before giving this list, I think it will be well to enter into some preliminary considerations.

Whence came the species of Pears at present cultivated in the north of Europe? How have we succeeded in acclimatising this valuable fruit-tree?

The solution of these questions is necessary, in order that we may know the progress made, especially in our own times, and the improvements which may be effected in certain kinds.

No historical document contains any information as to the native place of the primitive type of the Pear tree. It is presumed to have come from the same countries as the Vine, Cherry, Peach, and Apricot; in

most probably it grew originally on low hills and slopes. Indeed, at the present day, notwithstanding the numerous transformations by seed, it thrives best in such situations after it has arrived at a certain age.

The Pear tree was cultivated more than 2000 years ago by the Greeks and Romans, in whose writings are preserved the names of several varieties raised from seed. It must have been introduced into our countries by the Romans, after the conquest of Gaul and England. It is known that the productions of Italy cannot be preserved in our variable, foggy, and severe climate, unless sheltered by walls with a good aspect. In sowing the seeds of fruits ripened in our country, with the view of raising stocks for the propagation of introduced varieties, some trees more vigorous may have been obtained. Among these trees, some might be observed to produce fruit as standards in the open ground, in good seasons; and the seeds of these would produce hardier trees, better adapted to the climate than those originally introduced.

In Belgium, where the soil is generally deep, and rich in humus, the Pear tree, on its own stock, has been cultivated from time immemorial as a standard in the open ground. One of our ancient authors, Dodonæus, of Mechlin, in speaking of the Pear tree, in his herbal, towards the middle of the 16th century, said that the names of orchard varieties change from one village to the other, and he therefore considered it useless to cite their names. This allegation proves to a certain extent that, even at this period, a great number of varieties existed in the country, doubtless of tolerably good quality for kitchen use. This mode of sowing seeds of Pears, in order to obtain vigorous trees, is continued in Belgium, especially in the gardens of convents, and in those of the nobility and rich citizens, of whom several esteemed varieties bore the names. These varieties are, however, nearly all lost, owing to their not having been propagated in due time.

It is known that a seedling Pear tree passes, if we may use the simile, through the periods of infancy, adolescence, virility, to those of old age and decrepitude. The age which a seedling Pear tree may attain depends on its individual constitution, the soil in which it is planted, and the pruning, trimming, and cleaning from insects which it may undergo during the whole period of its existence. This varies from 100 to 200 years or more. It is during the age of virility, when the tree is in a fruitful condition, and most flourishing state of vegetation, that grafts should be taken for propagation. By so doing, all the inherent qualities of the individual will be transmitted. This observation of general application to all fruit trees is more especially so with regard to Pear trees for the open ground.

Owing to the negligence in propagating, and more especially at the proper time as regards the vigour of the tree, many hardy and good varieties of Pears, known to our ancestors, are now lost. This circumstance has induced some pomologists to believe that a variety of Pear has only a limited term of existence, at the expiry of which it must necessarily become extinct. This opinion appears to be contrary to every principle, and to facts. We see a vast number of kinds of plants perpetuated by artificial propagation, and why should it not be the same with varieties of fruit trees? We believe that varieties of these could be infinitely propagated by scions taken from trees of proper age, and with due care, for ages to come. There are doubtless causes of weakness, but this is not the place for treating that question in detail. These causes could not have existed in Belgium, where we cultivate but few on the Quince, the preference being given to vigorous wild Pear plants raised from seeds of orchard Pears, for stocks whereon to work, standard high, the sorts intended for orchards, and also for dwarfs and pyramids destined for garden culture. It is thus that the Pear tree is preserved in all its vigour, and has been able to produce a more robust progeny. In other localities, the artificial culture on the Quince stock must have accelerated the weakening of the trees, and the degeneration of existing varieties; and it is with justice, we think, that some modern pomologists and men of experience attribute the degeneracy chiefly to the above circumstance.

In directing our attention to more southern countries, we may observe that some good varieties have been obtained in Italy, Spain, and France. But these varieties, such as the Chaumontel, Beurré Gris, and the Virgouleuse, do not succeed in our climate except against a wall furnished with a coping, the soil being previously prepared; or otherwise in gardens in peculiarly well sheltered situations. Everywhere else, formerly, as at the present day, in Belgium as in England, these good varieties have, in ordinary seasons, only produced gritty or unsound fruit, whilst the trees attacked by various diseases have died off.

At Mons, the chief town of the province of Hainault, Belgium, certain varieties of Pears, of great merit as regards delicacy of flavour, were obtained in the latter part of the last century. Of seedlings raised by the Abbé d'Hardenpont, the Passe Colmar, dates from 1758; the Beurré d'Hardenpont from 1759. This variety is known in England under the name of Glou-Morceau (Glou, in Walloon language signifies *Delicious*, or *Dainty*; Moreeau, French, *Morsel or Bit*; the name may therefore be translated *Delicious Morsel*, or *Dainty Bit*. Glou Morceau is its common name, but the true name is Beurré d'Hardenpont. In France it is known by the name of Beurré d'Aremberg, an error which originated with the late M. Noisette of Paris). These varieties, and also the Délices d'Hardenpont and Fondante Panisalle, do not possess sufficient vigour and hardiness to succeed generally, unless against a wall. The variety called Beurré de Rance, found by the same Abbé d'Hardenpont, at the village of Rance, in Hainault, is one of the most vigorous of the varieties of keeping table Pears which were raised in the end of the last century.

The varieties Beurré Capiaumont, Bon Chrétien, Napoléon, and Marie Louise were raised from seeds at Mons, by the late M. M. Liard, Capiaumont, and Delcourt; they are of more recent date, and are more vigorous than any of the others obtained in that town from seed. We shall only mention those which are generally known. Neither La Fortunée of Reumes (not Parmentier; the former was the sower, the latter the propagator); nor the Colmar Nelis, or Nelis d'Hiver de Malines, raised in the garden of the Councillor Nelis; nor the Urbaniste, found by the Comte Coloma in the garden of a religious establishment at Mechlin; nor the Beurré d'Aremberg, or Orpheline d'Enghien; not one of all these have, or ever could have had the hardiness or vigour requisite to succeed well anywhere, except in a situation sheltered from the east and north-east winds. *J. de Jonghe.*

(*To be continued.*)

ENTOMOLOGY.

THE AMERICAN OAK-GALL CLEAR-WINGED SPHINX.

The formation of galls upon the stems, twigs, or leaves of trees, and other vegetables, is one of the curious questions in botanical physiology which has not, we believe, been hitherto satisfactorily explained. That the puncture of an insect is capable of causing much irritation and swelling is well known to every one who has unfortunately happened to be stung or bit by bee, gnat, or other still more obnoxious species; and when we bear in mind that the smallest point of a thorn broken off and left in the finger will rankle and cause a sore if not extracted, and that the puncture of the insect which produces the gall is accompanied by the deposition of one or more eggs in the wound, which remain therein, we may easily account for the continued action and irritation producing effects which, in some cases at least, seem far beyond the apparent cause, resulting in the development of large masses of hard woody matter giving support to the young animals hatched from the eggs deposited in the wound.

Various kinds of galls, indeed, are the result of the simply puncturing of the plant by insects for their own nourishment, of which a very remarkable instance was given in this paper (1849, p. 755), where large woody galls were produced on the stem of a Pear tree by the attacks of a species of aphis; but the majority of the various kinds

of galls are produced by punctures made by the females of the species of the Hymenopterous family Cynipidæ for the deposition of their eggs. But even in such cases it is not only the young of the cynips which is often found inhabiting the interior of the gall. The larvæ of the cynips have their insect enemies, and the same gall will sometimes produce not only the cynips but two or three different kinds of parasites, which have fed upon and destroyed some of the larvæ of the cynips. Lodged in the depths of its woody gall one would imagine it safe from the attacks of its enemies, but an all-wise Creator has endowed all His creatures with instincts fit for the performance of their respective duties; and not only is the female parasitic Callimome enabled by its instinct to discover in what part of the gall the larva destined for the food of its young is lodged, but, being furnished with an ovipositor several times longer than its whole body, it is enabled to thrust it into the gall to the requisite depth till it reaches the cynips larva, where it is deposited and quickly hatched. With the exception of these parasites we believe no other instance is recorded of any other insect inhabiting or feeding upon the galls than the legitimate inhabitant thereof.

We are indebted to Professor Henslow for calling our attention to an instance in which an American species of Oak gall has given support not only to its own peculiar species of cynips, but also to another insect belonging to an order and genus which would scarcely have been supposed likely to have been found in such a situation. On looking at some galls on the American Quercus palustris, then recently received from North America, at the Economic Museum of Botany, in Kew Gardens, Professor Henslow, in company with Mr. H. Smith, the intelligent Curator of the Museum, observed at the bottom of the glass case containing the specimens several of the cynips in the winged state, which had made their escape from the galls, and amongst them were also observed four specimens of a Trochilium, closely resembling our currant clear-winged sphinx (the history and figure of which is given in the *Gardeners' Chronicle* for 1841, p. 780). Professor Henslow further ascertained that they had been feeding, in the larva state, on the galls themselves, as he found the pupa cases still sticking out of them. On examining the galls we had further evidence that the Trochilium larvæ had been feeding on them, as we observed masses of their excrement sticking on the outside, where the larvæ had found or made an aperture, as represented on the upper side of the gall in the accompanying figure, in which two of the pupa cases are seen still sticking out of the gall. Professor Henslow adds that the Trochilium is a cunning fellow to prefer the softer substance of the gall to the hard wood of the Oak. The mode in which the chrysalids of the Trochilium make their way half out of the gall, where they remain fixed, and assume the winged state, is similar to that which is pursued by the goat moth (*Gardeners' Chronicle*, 1847, p. 303) and wood leopard (*Gardeners' Chronicle*, 1846, p. 236), under similar circumstances. We presume it is whilst the gall is young and soft that the Trochilium introduces her eggs into some crevice in the soft surface, as she is not provided with any apparatus capable of boring like the Cynips or Callimome.

The Trochilium* appears to be a new species, nothing like it being described in Dr. T. W. Harris's Monograph on the American Sphingidæ. We may, therefore, describe it under the name of Trochilium gallivorum.

It measures 8 lines in the expanse of the fore wings, and 5 lines in the length of the body. It is of a blue black colour, with two slender pale yellow diverging lines on the sides of the thorax above, and with the edges of the tail also pale yellow; the wings are transparent except the dark fore margin, a curved bar across the middle, and a pale brown apical border. The legs are yellow, with a dark ring round the tibiæ near the tips.

The Cynips likewise appears to be a new species, and may be named C. palliceps; it is of a black colour, with the head and front and under parts of the thorax pale yellow. The males are distinguished by the large size of their heads. It is represented magnified on the left-hand side of the upper part of the accompanying woodcut, its natural length being rather less than 2 lines. *W.*

* We must refer to our work on "British Moths and their Transformations," for the reasons which induced us to adopt this older generic name in lieu of Ægeria. Mr. Stephens has subsequently adopted our views in the recently published British Museum Catalogue of British Lepidoptera; the Trochilium of his former works is the genus Sphecia of Hübner.

Home Correspondence.

Planting Vines in Brick Boxes.—At p. 725 your correspondent "Anxious" has favoured us with his method of making a Vine border, and has certainly taken much trouble to explain the kind of materials employed and their cost; but he has forgotten to mention their carriage, labour, brickwork, &c., which surely, being a practical man, he does not do himself; he further states that he does not know whether his plan is old or new; but at the same time he does not see, he says, why it should not be universally adopted. It is surely, however, to say the least of it, premature to advise people to follow his example before he knows whether he is right or wrong. He ought to have known, however, that the plan of planting Vines in brick channels, or, as he terms it boxes, has been tried years ago. We all approve of a concreted bottom where the subsoil is cold and wet, and also of shutters to screen Vines from bad weather; but planting permanently in a box 8 feet long by about 3½ feet wide is contrary to all experience, for we know that Vine roots in a healthy state run a great distance; and that if there should be any good soil near them they will be sure to find it. Why therefore should we cramp the roots upon all sides? Surely we do not want to plant Vines every six or seven years, which by the plan "Anxious" recommends we should be compelled to do, as they would be entirely exhausted by the time we should expect them to get well established and in good bearing condition. Something will be found to go wrong; the roots, of course, will be examined, when they will be found twisted together like a door-mat; and then down come the channels, and the roots are allowed to ramble. But why does "Anxious" recommend planting in channels? Is it because he wishes to fill up his 25 feet border with several courses of bricks, or has he been a successful grower of Vines in pots, that he admires boxing up their roots? No; it is simply, in the first place, because "if a Vine should be planted wrong to name, he can remove it without injuring the roots of its neighbour; and, again, because if one Vine is a stronger grower than another, its roots may not encroach on the weaker kind." These seem to be the principal reasons why he prefers planting in boxes. Now, if these are the only advantages to be derived from the system, why not plant the strong-growing varieties at each end of the house? and should one by chance be wrongly trained, would it not be better to inarch the right sort on it? This, I think, would be better than boxing up the roots in the manner described. As "Anxious" appears to be a stranger to the method he has adopted, perhaps the following remarks on planting Vines in channels may be useful to him. A short time ago I was at a large establishment where the Vines

had been planted like those recommended by "Anxious," but they were allowed more than double the room he mentions to extend their roots in. For a few years after planting they did well, and bore excellent crops; but they have now entirely exhausted every bit of the soil they are growing in, and the consequence is the Vines are fairly going back. The channels have been opened, and the roots were found matted to such a degree that the front wall has been removed to allow them to extend themselves. "Anxious" cannot therefore expect to succeed in an 8-foot channel when Vines fail whose roots have double the room allowed them to roam in; and if he wishes his plan to be universally adopted, he must hold out greater temptations before he will be able to get many to follow it. *Doubtful.*

Forming an Orchard on thin Soil on Gravel.—In reply to "Beta," permit me to state that much labour would be saved by simply removing the 5 inches of good soil, and on the top of the gravelly subsoil putting 1 foot of clay. Mix the surface soil with good loam and lay it on the clay to the depth of 2 feet. I would not advise the admixture of leaf-mould with dung, as it would tend to induce over luxuriant growth. The clay when buried 2 feet beneath the surface would still retain its capacity for water, but from the gravel beneath, and the action of worms, it would not retain moisture in excess; it would, however, hold sufficient for the growth of the trees, but it will not ultimately prevent their roots from penetrating the gravel. If the climate and exposure are suitable, there is every reason to expect abundant crops from Pear and Apple trees planted in such a soil; but for Cherries, Plums, &c., I would not advise the use of clay. Let the top soil be mixed with the good loam and laid on to the required depth. The finest Mayduke Cherries I have ever seen were grown on a light soil about 15 inches deep on a gravelly subsoil. It may be taken as a general rule that trees bearing stone fruit will do best on a gravelly subsoil, such as Cherries, Plums, &c., and that Apples, Pears, &c., will succeed on well-drained clayey subsoil. Much, however, depends on climate as well as on soil. *James Falconer.*—— If "Beta" will follow his gardener's advice, I think he may succeed, provided the land does not lie too high, in which case the attempt to establish an orchard on such a soil would be useless. As it is, the greater the space broken up for the roots to run in the better, replacing the bad soil with a layer of strong loam or clay as proposed. Plant the trees in good loam, mixed with a little well-decayed manure, to encourage the growth of young roots, and I have no doubt that success will follow; though owing to the unfavourable character of the natural soil, the trees would not perhaps be so long-lived as in more suitable places; but to counterbalance that evil they would be more likely to escape the effects of late frosts, and their more certain enemy canker. They would, however, be apt to be infested with moss and lichens, but an occasional coat of lime-wash would be an effectual remedy for these. Of course as the soil is so porous there is no need of anything in the shape of drainage, but I would advise a layer of the largest stones to be placed on the surface, which would help to check rapid evaporation, and keep the roots comparatively cool and moist in hot dry weather. As regards kinds of fruits most likely to succeed, stone fruits, as Plums, Cherries, &c., seem to prefer a gravelly soil, consequently, they would be the most likely to flourish. Pears and Apples should have the advantage of the deepest soil and the lowest situation if the land is on a descent, and if artificial irrigation could be applied to the soil when necessary it would greatly add to the chances of ultimate success. And as the unsuitable kind of soil would most likely cause a weak and stunted growth in the trees, I would recommend the stronger growing kinds of Pears and Apples to be planted, such as Beurré Diel, Brown Beurré, Beurré Rance, Williams' Bon Chrétien, Chaumontel, Althorp Crassane, Glou Morceau, Jargonelle, Marie Louise, &c. Of Apples, I would take Alexander, Blenheim Pippin, Dumelow's Seedling, Gloria Mundi, King of the Pippins, Keswick Codlin, and Ribston Pippin, &c. *T. X., Salop.*—— "Beta's" best plan will be to dig a hole for each tree separately 3 feet deep, 7 feet wide at the bottom and from 5 to 6 feet wide at the top; to form the hole concave, to line it well with loamy turf, surface downwards, to fill the hole with the composition mentioned, and to plant the trees above the surface and not in the hole. This is the most simple and practical system of proceeding under the circumstances mentioned. *The Manager for Messrs. Weeks & Co., King's Road, Chelsea.*

Heracleum giganteum, Foxglove, and Purple Goat's-beard.—In your volume for 1851, p. 710, there is a communication, with the signature "M. D.," offering, gratuitously, seed of Heracleum giganteum. I was one of those who applied for a packet of the seed; it was immediately sent to me, and was sown late in the autumn of the same year. The young plants appeared the following season, and in the summer of 1853 several of them blossomed; the remainder did not blossom till this summer, but they were more vigorous than those of the preceding year—the finest specimen being 10 feet high, with a stem $10\frac{1}{4}$ inches round, and the tallest 11 feet high. I have saved the seed of the finest blossoms, which I shall be glad to distribute to any who may apply for it. I have also the seed of several fine varieties of the common Foxglove—white, white-spotted, and various shades of rose colour, from faint rosy to full purplish rose. In my garden, the plants this summer were from 6 to 7 feet high. Another plant, of which I have plenty of seed, is the purple Goat's-beard (Tragopogon porrifolius), the produce of seed from a locality in the north of Somersetshire. The plant is rarely found wild, and the seed I have found difficult to procure from the seed shops. A letter addressed to C. Halesleigh, Post-office, Bridgewater, and enclosing a postage stamp, will ensure a packet of either of these seeds, or two of them, or all three, as may be desired, if two stamps be enclosed. *T. C.*

Late Strawberries.—Having observed in one of your late Numbers a notice of a Strawberry gathered on the 31st of October, I am induced to communicate to you the fact of my having gathered a plate of Strawberries on the 2d, and another on the 4th inst., in sufficient quantity to be served with the dessert. They were from a bed of Cuthill's Black Prince, unprotected in any way, and even now several of the plants are still in blossom. The Strawberries were well coloured and of good flavour. *George Cottle, Tedsmore Hall, Shrewsbury, Nov. 20.*

New Pasture Grasses—(*Glyceria renata, &c.*)—Just before Mr. Webb's death in Paris, he sent to England some plants of a Grass, labelled "Glyceria renata, Bois Marécageaux à Meudon," with a recommendation that it should be tried as a pasture Grass. His sudden death prevented me from making any further enquiries. Can you tell me what is known of Glyceria renata, and whether it has been tried heretofore? It seems perfectly hardy, but rather wiry, and unpromising in appearance. May I also ask whether any trials have been made of a large hardy Grass, Ceratochloa unioloides? It seems very well adapted for poor soils especially. Having been long known, perhaps it has been tried, and failed. *W. W. S——r.* [Of the first we know nothing; of the second we have heard nothing.]

Brassavola cucullata.—Will any cultivator of Orchids kindly give me a hint for the cultivation of Brassavola cuspidata or cucullata. The first of the genus which was introduced, and which is figured, if I mistake not, in Sir Hans Sloane's Jamaica, and there represented as flowering profusely. I have cultivated it some 15 years or more, and it now and then produces one or two flowers which are more powerfully fragrant than any other Orchid I know. But why it flowers when it does happen to do so, or it does not flower more regularly or freely, I cannot discover. I have several plants, and have tried every variety of treatment, but the plant which does flower, and is now producing one solitary blossom, is a large mass suspended on a block close to the light in rather a high house, where it is exposed to much heat and light in summer, and rarely receives any water. It grows freely, but its flowering is most capricious. Would it be more likely to flower if grown on a block of pumice-stone? The Brassavolas are said to grow on stones; but in the work to which I refer, this is I think represented as growing on a tree. *J. R. S. O.*

Grafted Rhododendrons.—I have been somewhat surprised at "J. R.'s" remarks on this subject. He states that almost all the plants offered for sale by cultivators are grafted, and, consequently, for most purposes, useless. From what source he has arrived at such a conclusion I am at a loss to guess. I will admit that the Indian varieties, such as Arboreum, &c., have all a tendency to swell too large where they are united with the stock which prevents them from flourishing for any length of time; but still I have known grafted plants of even these to flourish and flower beautifully for many years. As regards hybrids of the more hardy kinds, I can positively refute all "J. R.'s" statements, as I have for many years pursued with the greatest success the system which he has so unceremoniously attacked. I can assure him that grafted plants are in most cases to be preferred to any others. In my nursery may now be seen thousands of all sizes; standards and others, some of which measure from 8 to 10 feet through their heads; these have been grafted upwards of 25 years, and they are as handsome as can be desired. In many cases it is almost impossible to discern where they have been worked. Surely this is a proof that grafted plants are not useless and short-lived. Should "J. R." be pleased to favour me with a visit he will then see that I have not said too much respecting my grafted specimens, and I think he would leave with a different impression from that which he entertains respecting the value of worked plants. *John Waterer, of the American Nursery, Bagshot, Surrey.*——"J. R." asserts "that the Indian Hybrid Rhododendrons are of large and luxuriant growth, in fact, tree-like shrubs, but when grafted on any of the shrubby kinds they are necessarily stinted, and cannot fail to be short-lived." Would your correspondent be so good as name what particular hardy sorts with such habits he alludes to when speaking of Indian hybrids? As far as I am aware, the Indian varieties are mostly crossed with such bushy sorts as Catawbiense, Maximum or Ponticum, by which they lose, to a great extent, their large tree like habit, and most of such hybrids, when grafted on Maximum or Ponticum are not more luxuriant than their stocks, and are as well calculated to form elegant specimens, and to develop their natural habit as those raised from layers or seed, and at the same time they live as long; layering is at once a tardy and expensive process, and if we depended upon it alone, it would be impossible, during the lifetime of the raiser of a new hybrid to procure more than a very limited number of plants; while a plant obtained from a layer will be an unsightly object long after a grafted plant has developed its beauties both as to habit and flowers. Would "J. R." explain what difference he imagines to exist between a grafted Rhododendron and a grafted Apple or Pear tree?—the latter seem to live long and form handsome trees, and a grafted Rhododendron appears to be as closely united to the stock as either of these fruits. I have, indeed, seen some of the finest hybrids which have yet been raised, and which were grafted 20 years ago, exhibiting at the present time all the appearance of perfect health, and in every way as handsome as those raised at the same period from seed. If "J. R." would closely examine the stock of some of those nurserymen who cultivate Rhododendrons largely for sale, he would find that provision is made for the wants of such as himself by the majority of the worked Rhododendrons being grafted not more than 2 inches from the root, so that when put out into the shrubbery they can be planted with safety with the grafted part below the surface; by doing this the scion will emit roots, and will in a short time be independent of the stock for sustenance, a fact to which every one who has had much experience in Rhododendron growing will bear evidence. "J. R." would doubtless confer a favour on Rhododendron growers if he would kindly furnish them with the names of the sorts in his collection which equal Arboreum in colour, and Catawbiense in size. *Hugh Fraser, Stanwell Nurseries, Edinburgh.*

The Sunflower.—In No. 37 of the current year, "B." recommends the cultivation of this plant, particularly on newly-cleared woodlands. Now, being about to cut 5 acres of coppice of 17 years' growth, I should like to try a cheap experiment as to the growth and profit, by planting a part or the whole with Sunflower seed. Will "B." therefore kindly tell me how to proceed, and inform me of any simple machine by which I can get the fibre from the stalk, or one to obtain oil from the seed, or how I can dispose of my crop when grown? *J. B. N., Liverpool.*

Foreign Correspondence.

MR. M'GLASHAN'S APPARATUS.—*Paris, November 22.*—Sir,—Having had the honour of witnessing a trial exhibition of M'Glashan's Transplanting Apparatus, which took place yesterday afternoon, in the Bois de Boulogne, in presence of their majesties the Emperor and Empress, I take the liberty of communicating to you the entire success of the experiment. Their majesties expressed themselves highly pleased with the results obtained, and Mr. Stewart M'Glashan's, the inventor's, explanation of his machine; and the Emperor having bought the apparatus exhibited, requested Mr. M'Glashan's presence at St. Cloud on Thursday morning next, to repeat the experiment in the gardens of the palace. As I have obtained permission to witness this second trial also, I shall have much pleasure in forwarding to you a detailed account of the proceedings on that occasion, feeling persuaded the nature and importance of the subject will induce you to allow it place in the columns of your journal. *Yours most respectfully, Jules G. Brandt.*

LEAVES FROM MY CHINESE NOTE BOOK: No. 7.—*Chinese Entomologists.*—During the hot season, when insects are numerous, I generally carry an insect net and box with me, in order to pick up any specimen of interest that may fall in my way. This proceeding seems to astonish the northern Chinese beyond measure, and from the mixture of awe and pity which I can see depicted in many of their countenances, they evidently think me a little cracked in the head. The more intelligent amongst them fancy I am collecting for medical purposes, and that all my specimens are destined to be chopped up in a mortar and made into pills, to be swallowed by the sick. They have not the slightest idea of the study of entomology, and only laugh at me when I attempt to convice them that insects are collected for such a purpose. The medicinal value of the insects seems to them a much better reason for the trouble of collecting than their value in the cabinet of the entomologist. Amongst themselves an idea is prevalent that the larvæ of coleopterous and other insects form excellent food to give occasionally to young children, and hence in my rambles I meet, not unfrequently, persons employed in collecting larvæ for this purpose. A species of toad found in the rotten or hollow trunks of trees during the hot months is eagerly sought after by the young men in the army who are being trained to the use of the bow, and to whose bones and sinews it is supposed to give additional strength. The children in the different villages are very useful in assisting me with my collections, and the common copper cash of the country is an excellent coin for such purposes. One hundred of this coin is only worth about $4\frac{1}{2}d.$ of our money, and goes a long way with the little urchins. A circumstance connected with transactions of this kind occurred one day which was so laughable that I must endeavour to relate it. In June last the boat in which I was travelling was made fast to the side of the Ningpo river, near its source among the western hills, in the province of Che-kiang. As I went out on my daily rambles, I told all the little fellows I met that I would return to the boat in the evening, when I would be happy to pay them for any rare insects they might bring me. In the evening, when I returned and caught a glimpse of my boat, I was surprised to see the banks of the stream crowded with a multitude of people of all ages and sizes—old women and young ones, men and boys, and infants in arms were huddled together upon the bank, and apparently waiting for my return. At first, I was afraid something of a serious nature had happened, but as I came nearer I observed them laughing and talking good humouredly, and guessed from this that nothing had gone wrong. Some had baskets, others wooden basins, others, again, hollow bamboo tubes, and the vessels they carried were as various in appearance as the motley group which now stood before me. "Mâ jung! mâ

jung!" (Buy insects, buy insects.) was now shouted out to me by a hundred voices, and I saw the whole matter clearly explained. It was the old story, "I was collecting insects for medicine," and they had come to sell them by the ounce or pound. I had unintentionally raised the population of the adjoining villages about my ears; but having done so, I determined to take matters as coolly as possible, and endeavour either to amuse or pacify the mob. On examining the various baskets and other vessels which were eagerly opened for my inspection, what a sight was presented to my view! Butterflies, beetles, dragonflies, bees—legs, wings, scales, antennæ—all broken and mixed up in wild confusion. I endeavoured to explain to the good people that my objects were quite misunderstood, and that such masses of broken insects were utterly useless to me. "What did it signify—they were only for medicine, and would have to be broken up at any rate." What with joking and reasoning with them I got out of the business pretty well. As in all cases I found the women most clamorous and most difficult to deal with, but by showing some liberality in my donations of cash to the old women and very young children I gradually rose in their estimation, and at last it being nearly dark we parted the best of friends. I have been placed in circumstances somewhat similar on various occasions since, but I have hitherto managed to come safely out of the scrape. Sometimes amongst all this chaff there are grains of Wheat, and not the least striking is the beautiful Carabus cœlestis which was exhibited by Mr. Stevens at the Entomological Society's meeting in April last, and which I observe duly reported in the columns of the *Gardeners' Chronicle* which has just reached me. *R. F.*

Societies.

LINNEAN, *Nov.* 7.—The President in the chair. T. F. Robinson, Esq., was elected a Fellow. Various donations of books were announced; also an extensive collection of Australian plants, formed by Sir George and Lady Grey, presented by the Wellington Athenæum of New Zealand; and a monstrous specimen of the common Mushroom, bearing a second pileus in an inverted position on the top of the normal one—this specimen had grown out of a brick wall in the nursery of Mr. W. Taylor, of Park Village West, Regent's Park, by whom it was presented. Mr. S. Stevens exhibited a cone of Araucaria Cooki from New Caledonia, and also the caudex; with specimens of the male and female fructification of the curious Fern-like cycadaceous plant, Stangeria paradoxa, from Natal. Dr. Alexander exhibited specimens, from Mr. Wilson, of the fibre of the following plants, prepared in the Botanic Garden of Bath, Jamaica, namely, Bromelia Karatas and Pinguin, Tillandsia serrata, Yucca aloifolia and gloriosa, Musa coccinea, paradisiaca, and violacea, and a species of Sida. The samples were accompanied by letters dated Aug. 8 and Sept. 25, 1854, and addressed to Dr. Alexander, of which the following are abstracts:—"Textile plants now engross all the talk. This description of plant grows here spontaneously everywhere; and by good, or even very indifferent cultivation, might be made to yield large profits. My estimate of an acre of Plantain fibre is this—say an acre will contain 435 plants, at 10 feet apart; the second year each stool would throw up 3 suckers at least, each of which would produce about ½ lb. of fibre, = 1087 lbs. per acre. The fruit would sell for from 3*d.* to 6*d.* per bunch, thus realising at the lowest 13*l.* 10*s.* 11*d.* This is a very low estimate of the Plantain's capabilities." "I have already prepared fibre from 20 different species, and perhaps might discover 20 others. Those you mentioned, such as the Urtica tribe, produce excellent fibre, but not in quantity sufficient for profitable cultivation among a lazy people. I was agreeably surprised lately by finding so large a quantity of fibre in a species of Sida (S. molli-); it is most admirably adapted for cultivation in any soil or situation. There is also another plant, a species of Triumfetta, a nuisance on every wayside, which produces splendid fibre. I shall be glad if you will show the accompanying samples to the Linnean Society, as it may be the means of attracting attention to a new and profitable article of cultivation in this unfortunate island. We require something to renovate us." The samples consisted of tough fibre of considerable fineness. Papers on the embryo of Nelumbium, and a note on Cephalotea and Belvisiaceæ, both by B. Clarke, Esq., F.L.S., were read. They were illustrated by good magnified drawings.

Notices of Books.

Elliot's Fruit Book; or the American Fruit-Growers' Guide in Orchard and Garden. By F. R. Elliott. New York: C. M. Saxton, 152, Fulton Street. 8vo., pp. 504.

THIS is a compendium of the history, modes of propagation, culture, &c., of fruit trees and shrubs, with descriptions of nearly all the varieties of fruits which are cultivated in America; together with notes of their adaptation to localities and soils, and also a complete list of fruits there thought worthy of cultivation.

The work is intended more especially for the western States, and there it is likely to prove useful; for it would appear that many varieties of fruits that are esteemed first-rate in Europe, and even in the eastern States of America, are considered inferior in the western states; where, on the contrary, some varieties are grown and accounted excellent, which in England are known to be comparatively worthless. It is therefore evident that throughout the vast extent of America, local treatises on fruit trees are necessary in order to point out those sorts of fruits that prove best suited for the respective localities. "It is for the West, then, more especially, that our work is destined," says the author, in his introductory remarks. Nevertheless, some extracts may prove interesting to our readers. We are told that, before the West was, *i. e.*, settled by white men, the impression prevailed, among other errors connected with fruit culture, that "he who plants Pears, plants for his heirs;" and we well recollect being told when a boy, on planting out a young Pear tree, that possibly our children might eat of it, but we, never. Such prophecy, however, failed in our case, as nearly all others, for we have eaten often of it. And now, whether we attribute it to the locomotive age, to the active minds of our eastern brethren, or the spontaneous growth of the west—aided by her industrious denizens—we hardly wait for the season to come round ere we eat of the fruit; our own experience having been to receive the trees and plant them in March, and eat of the fruit in November following. Let this be attributed to what it may, such is now the impress, that no one buys a city lot, intending to keep it over one year, but he plants trees upon it, expecting and reaping the fruit thereof."

According to information obtained by the author from Dr. J. A. Kennicott, it appears that "the first permanent settlements in Illinois were made by the French about 1682, in and about Kaskaskia and Cahokia; and it is said that the first generation of trees there planted had done good service, and gone the way of all living long before the advent of the present race who people 'Lower Egypt.' The Rev. John M. Peck (whom I quote from memory), affirmed that he ate most luscious fruits, some 20 or 30 years ago, the product of the second generation of these old French trees, even then almost of forest size. From this you will perceive, that Illinois is one of the oldest fruit-growing states; and it is very certain that our seedling trees generally yield better fruit than the mass of chance varieties in the east; though, good sooth, I have been unable to trace any of our celebrated varieties in cultivation, to those glorious old trees so graphically described by the Rev. Mr. Peck; and yet, I am by no means certain that some of our most valuable local varieties did not originate in that classic fruit land of Southern Illinois.

"Many of our varieties of the first trees transplanted in western Illinois, and southern Wisconsin, were disseminated by tree pedlars from the region of the Wabash, in Indiana and central eastern Illinois; and I am only aware that some of the sorts came from Ohio, and others from Kentucky, Virginia, Tennessee, and North Carolina, and a few doubtless from the eastern states; though what proportion, or what varieties of those brought us by these tree pedlars I am unable to determine. Very few were sold under Eastern names, however; and now and then a variety is doubtless of native origin."

Chapter 2d of the work contains such instructions, as are usually given for propagation by budding, grafting, &c. The instructions for transplanting trees seem to be much wanted in that part of the world; for the author remarks that "Notwithstanding our people are, as a nation, 'planters of trees,' yet how few, comparatively, ever succeed in carrying the existence of trees planted, beyond the first season; or if a second year, only with a puny sickly habit, anything but satisfactory. The first thing, in the removal of trees, should be care not to destroy the roots in digging. Small trees are less liable to injury from such cause than large ones; but too often have we seen them wrenched out of the ground by the strong arm of man, apparently not to injury of roots, but really they were cracked through every portion, and all the pores [vessels] broken and injured, often as much or more to injury of the tree, than if one-half the roots had been cut off." "With nearly all trees and locations fall is the best time to plant," especially it is stated as regards Cherries. The principles given for pruning are very good, being a translation of those laid down by M. Dubreuil, of Rouen, whose ground-plan of a fruit room, and remarks on keeping fruit, we also recognise.

"Orcharding, as relating to the Apple, has become well understood, and no one who has land in any way suited now hesitates to plant. We have no certain data, but think we do not overstate when we say, that, besides large quantities imported from eastern states, there are propagated and planted annually over 6,000,000 trees in the States of Ohio, Michigan, Indiana, Illinois, and Wisconsin. The western country is already producing by millions of bushels, and her 'orchards,' so to speak, are not yet planted. Such is the value placed on fruit, such the rapid increase of people in cities that no one should be at all deterred from continued planting; for, we have not only the wants of an increased population of our own land to supply, but that of foreign countries. Although the Newtown Pippin, as sent from the Pell orchard, on the Hudson River, has done much towards establishing our reputation abroad, we anticipate an advance in good favour, when the same variety grown on our Southern Ohio, Kentucky, Indiana, and Illinois soils, shall be shown; for certainly their Apples are, like all our western growths, when compared with those of the east, far superior in size.

"The puberty or fruit bearing age of the Apple tree varies according to variety, climate, and cultivation. In the rich deep soils, and under the clear sun of our western states, most varieties come into bearing at about eight years from the bud; or about four or five years from planting out. We speak here only of the cultivated varieties. Wild seedlings would probably require from 12 to 15 years."

The varieties of each kind of fruit are divided into three classes—1st, those worthy of general cultivation; 2d, new and untested, or adapted to certain localities, or amateur gardeners; 3d, those unworthy of cultivation. This is a good arrangement as regards utility; for many excellent first-rate sorts, as regards flavour, and highly esteemed on that account by private growers, would only deserve a second or third-rate character in a pecuniary point of view, which is the principal one in growing for the market. In the third class the author includes those which, in his opinion, ought to be entirely avoided by the Western planter.

In the first class of Apples, many are unknown to us; a considerable number have been tried in this country, some of which have been found good, others not worth growing. Those that have proved good in our climate are the Reinette du Canada, Cornish Aromatic, Dutch Mignonne, Gravenstein, Early Harvest, Pomme Grise, Red Astrachan, Rhode Island Greening, and Boston Russet. Of these, we believe there are only two of American origin, namely, the Early Harvest and the Rhode Island Greening.

On the other hand, we find classed as unworthy of cultivation some of our most esteemed English varieties; for example, the Beauty of Kent, Bedfordshire Foundling, Blenheim Pippin, Cornish Gilliflower, Dumelow's Seedling, Golden Reinette, Golden Harvey, Golden Pippin, Hawthornden, Scarlet Nonpareil, Old Nonpareil, Summer Golden Pippin, &c. These comprise a number of our very best Apples, and that they should all prove so inferior in America is surprising. One would suppose that they had not been fairly tried, or that the true sorts had not been obtained by the growers in the western states. This is not improbable. Judging from the figure and description of the Herefordshire Pearmain, p. 85, it is very doubtful whether they have got that sort correct. The shoots are described as slender; but in the true sort, grown in even moderately rich soil, they are not so.

Several new sorts of Cherries and Plums are described; and as American varieties of these kinds of fruits succeed better in England than their Apples do, we shall refer to the work before us at an early opportunity for some notice of them.

Garden Memoranda.

MR. SALTER'S, VERSAILLES NURSERY, HAMMERSMITH.—Those who are interested about new Chrysanthemums cannot do better than pay a visit to this nursery at the present time, while Mr. Salter's fine collection is in bloom. It contains all the novelties of importance both of last year and this, and will be found well worth inspection. The following are a few of the best of such as were in blossom on Monday last. Large flowered kinds: Auguste Mie, reddish salmon; L'Ingot d'Or, yellow; Albin, dark claret; Trilby, blush; Chevalier Dumage, golden yellow, large and showy; Cassy, red and orange; Triomphe du Nord, reddish chestnut; Bossuet, rose shaded with violet; Rolla, rosy purple, tipped and mottled with silvery markings; Conspicuum, shaded rose; Madame Lebois, delicate peach; Phare de Messine, dark chestnut; Hermine, blush tipped with rose, and one of the most beautiful of this year's flowers; Le Prophète, yellowish buff; Prince Jerome, yellow and brown; Duc de Rohan, light crimson; and Eclipse, straw-coloured. Pompones: Riquiqui, deep plum colour; Pluie d'Or, dwarf yellow; Hélène, rosy purple; Doctor Duval, reddish chestnut; La Vogue, yellow with a brown centre; Madame Rousselon, delicate peach; Hector, dark orange buff; Comte Vigier, pale buff; Mdlle. Elkington, fine white; Rose pompone, quilled pale lilac; Reine des Anemones, fine white; Consuelo, yellow; Berrol, sulphur, suffused with rose; John Salter, dark reddish orange; Brilliant, reddish scarlet; Bayardiere, buff, suffused with silvery markings; Rosita blush lilac, Precoce, deep rose; and Mon. Bijou, pale fawn, shaded with lilac: Hybrids, *i. e.* crosses between the Pompones and large-flowered kinds: Marabout, fringed white; Cedo Nulli, white, with brown centre, a pretty kind; Marceau, lilac-tipped white; Bernard de Rennes, dark fawn; Golden Drop, yellow Anemone-flowered sort; La Radieuse, rose, with white centre; Madame Passy, rose, shaded with lilac; Aurore Boreale, yellowish buff; Berthile, lilac bordered white. These in general have larger flowers than the Pompones.

Among other plants, Manula oppositifolia was still covered with multitudes of starry white flowers, which last long in perfection. This was stated to make a good bedding plant. Chrysanthemum frutescens luteum and album are also reported to form dense masses of blossom in the flower-garden in summer, and if lifted and potted before the frost injures them they make good winter flowering greenhouse plants. We also remarked several handsome Veronicas in the way of Andersoni in bloom. When well grown these make pretty objects at this season of the year.

THE PAMPAS GRASS.—We understand that in the garden of Miss Gurney, of Northrepps Cottage, Cromer, there is now a noble specimen of the Pampas Grass, which has grown there without any protection. The plant was given to this lady three years ago by Sir W. Hooker. There were five flower spikes 12 feet high. The foliage also has a most striking appearance, and the plant covers altogether a very large space of ground.

FLORICULTURE.

CINERARIAS.—The following are the particulars of the mode in which I cultivate my Cinerarias. In raising seedlings I make my first sowing not later than the middle of March, in a mixture of loam and leaf mould, with a little white sand, in seed pans well drained. I then place the pans in a pit or frame, with a slight bottom-heat, giving plenty of air in warm days. As soon as the plants appear above the soil, I keep them shaded from bright sun, and when large enough to handle, I pot them singly into 3-inch pots, and place them again in their former situation, keeping the lights closed for a day or two till the plants get established in their pots. I then remove them to a cold pit, keeping them shaded and giving them plenty of air. As early in May as the weather permits, I place them in the open air under a north wall, and as soon as the plants are hardened to the open air and the pots filled with roots, I repot them into 5-inch pots, in which they remain till the pots are filled with roots, and the plants have thrown up their flower stems about 2 inches, when I repot them into 6-inch pots, and cut the flower stem out close to the surface, which causes the plant to throw out from 10 to 15 side shoots. Some of these I thin out according to the strength of the plant. I keep them shifted into larger pots as the former become filled with roots, and early in September I give them their last shift, and place them in a cold pit and keep them shaded. By the first week in October they begin to flower. I have plants treated on this plan measuring from 3 to 4 feet in diameter, (!) with beautiful dark green foliage, and leaves from 8 to 10 inches across, and they remain in full beauty from September to May. The soil which I use is turfy loam from a rich old pasture, two parts leaf-mould, and one part sheep dung, one year old, with a little white sand, all well mixed but not sifted. I use the turf in as large lumps as I can conveniently place round the ball. I also use plenty of crocks, and place a little moss over them to keep the drainage clear, for nothing is more injurious to Cinerarias than stagnant water at their roots. I water with clear liquid manure about every third time during the summer. In preserving old plants, I cut the flower stems off as soon as they have done flowering, and place them in a growing heat. They soon throw up plenty of suckers, which I take off and pot in the same manner as the seedlings, and I find that they make equally good plants. I should add that I make my second sowing about the middle of April. *W.*

AURICULA INSECTS.—I am much troubled by the attacks of an insect upon my Auriculas, the roots of which it eats through near the surface of the soil, and the mischief is only first discovered by observing the plant to fall on one side, when it will be found, perhaps, to have only one fibre of root left. In the year 1850 I lost many plants in pots in this way, and on removing the earth I found from five to nine fine fat maggots in each pot, very like those found in hazel nuts. Some of these, together with a quantity of the detached roots, I placed in a garden pot covered with a plate of glass, and in May or June of the following year they changed to beetles, two of which I send for your inspection, together with some larvæ just discovered, which appear to me to be the same kind, although these have not attacked the roots very near the surface, but were found deeper in the pots, some near the bottom, but most of the roots are eaten through, leaving about half an inch attached to the plant. If you will examine them, and can give me any information which may enable me to guard against their depredations, you will oblige *A Constant Reader.* [The insects complained of are the perfect beetles and larvæ of the common weevil, Otiorhynchus sulcatus. The most advisable plan, perhaps, for arresting the ravages of the larvæ is to repot the plants, employing earth which has been carefully sifted, as well as sifting that removed from the pots, so as to collect the larvæ, which must be destroyed. The roots of the Auriculas must also be carefully shaken. The perfect insects, from their dark colour and nocturnal habits, are very difficult to be captured.]

WINTERING THE CARNATION.—No one, I should imagine, who has at all studied the nature of this plant will doubt its perfect hardiness. Carnation-frames do not require guarding so much from frost as from excessive wet. My own frames are constantly thrown open when the atmosphere is clear and dry, though the frost may be severe. I prefer narrow frames of considerable inclination, hinged to a hanging stile at the back, to the ordinary Cucumber-frame; for when the lights are propped in front 2 or 3 inches, there is still sufficient slope to throw off the rain. Such frames, after being placed in an aspect as near north as possible, are filled as close to the top as will allow the lights to be closed if necessary without crushing the plants, with finely sifted cinders, which are watered with a rosed watering-pot, and rendered somewhat firm by gently beating with the back of a spade. They are then holed with a hollow tapering tube of tin or copper, which is, in fact, the old-fashioned Tulip-planter, and the pots are plunged to within about half an inch of their rims. By this means a cavity is left below the bottom of the pots which ensures perfect drainage. The surface-soil can be kept moderately dry, as the roots receive sufficient moisture through the sides of the pots from the surrounding bed of ashes, rendering watering unnecessary from the time they are finally arranged, about the end of October, until the first genial shower from the southward, in the latter end of January or beginning of February, occurs, when it may be permitted to fall on them for an hour or two together. Plants so wintered will be found to resist the cutting east winds of March, and, of late years, of April also, better than those which have been rendered tender and delicate by injudicious confinement, and which are excited to premature growth by winter and early spring sunshine. *J. W. N.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—The prevalence of cold damp foggy weather will necessitate a rather free use of fire-heat in houses occupied by a miscellaneous collection of plants in flower. Use this, however, as sparingly as can be done with a proper regard to maintaining a comfortable temperature and preventing injury from damp. Most plants will do very well if the temperature is maintained at about 45°, and very little fire-heat will be sufficient to affect this. Let the plants be looked over and watered early in the morning, so that a little air may be given for an hour or two in the forenoon, in order to get the house dry before night, when a rather low temperature will do no harm. Roses for early forcing should by this time be pruned and placed under shelter, where they will be at least protected from heavy rains, for a few degrees of frost will not injure them. Let them be freely exposed to air on every favourable opportunity. Where common shrubs are used for forcing, these should be taken up and potted, if not already done, placing them in a cold pit, or some sheltered situation for a few weeks after potting. COLD PITS.—Those who have adopted the coddling system with their plants will now be experiencing its bad effects in the susceptibility of the plants to damp, &c. Air should be given here whenever the temperature is a few degrees above freezing, throwing off the sashes altogether on mild dry days, and raising them slightly on the sheltered side when cold winds prevail. The watering-pot will hardly be necessary here until the sun becomes more powerful, but if any of the plants should appear to be suffering from dryness let a little water be given on the morning of a fine day, and avoid wetting the foliage, &c., more than cannot be helped. Be prepared for sharp frost in the way of having sufficient covering materials at hand and the walls of the pits well thatched or otherwise rendered impervious to frost.

FORCING DEPARTMENT.

VINERIES.—Where ripe Grapes are wanted early in spring, forcing must be commenced at once. Attend to former directions, and endeavour to get the root action a little in advance of the top; also secure plenty of moisture in the atmosphere, either by means of a bed of fermenting materials inside the house, or in some other more convenient manner, for there will be no moving Vines at the present season without a thoroughly moist atmosphere, particularly those that have not been started so early formerly. If the roots are outside the house the border must be well protected from the weather by means of wooden shutters or some other contrivance, and a little warmth must also be communicated to the soil. This is best done by having the border chambered, and hot water pipes under, which is doubtless the most economical arrangement in the end; but, in the absence of this, fermenting materials must be used. Let these be covered with something to throw off wet, and keep the fermentation as steady as possible. Do not exceed 50° at night by fire heat, raising it about 10° during the day, and with sun-heat an increase of 20° may be allowed. FIGS.—Keep trees that have ripened their wood cool and airy, but do not expose them to frost, particularly where the future crop is visible. Get the trees thoroughly cleaned and painted, and the house put in readiness for forcing by the time when it may be wanted.

FLOWER GARDEN AND SHRUBBERIES.

Finish planting the beds with their winter and spring occupants as speedily as convenient in order to allow the things any remaining chance of making a few active roots before severe weather sets in. Also take advantage of dry days for clearing and trimming up shrubberies, American beds, &c., for the winter. But if it is intended to remove any of the shrubs, or to plant others, get this or any other projected alterations done first, in order to avoid having to tread upon and disfigure the ground after putting it in order for the winter. Let newly transplanted things receive a mulching of rotten leaves to protect their surface roots from the bad effects of drying frosty winds, and the mulching will also serve to enrich the ground and enable the plants to start away more freely next spring.

HARDY FRUIT AND KITCHEN GARDEN.

Any planting of young trees, or removing of others which may have been unavoidably delayed, should be proceeded with at once, for all such work should be finished in the course of this month at the latest. See to thoroughly securing recently-planted trees, whether large or small, against the wind; for if left to be rocked about, the roots are sure to be greatly injured, and many of the active fibres broken off as soon as they are formed. Pruning and nailing should now be expeditiously proceeded with every fine day, if at the expense of delaying some of the other work which can be done with less discomfort in any state of the weather; for it is most important to get this done when the hands can work at it with some measure of comfort. Nailing is a cold enough job for even a fine winter's day; but to turn men out to it in cold, wet weather, and expect them to do a fair day's work, indicates a total want of good management.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending Nov. 23, 1854, as observed at the Horticultural Gardens.

Nov.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Min.	Mean	Of the Earth 1 foot deep.	2 feet deep.	Wind.	Rain.
Friday 17	26	29.407	29.331	49	39	44.0	46	47½	N.E.	[illegible]
Satur. 18	27	29.828	29.621	44	36	40.0	45	47	N.E.	[illegible]
Sunday 19	28	30.084	29.993	44	32	38.0	45	46½	N.W.	[illegible]
Mon.. 20	●	30.122	30.018	42	32	37.0	45	46½	N.E.	[illegible]
Tues. 21	1	29.876	29.175	44	26	35.0	44½	46	S.W.	[illegible]
Wed. 22	2	28.975	28.924	43	26	34.5	45	46	W.	[illegible]
Thurs. 23	3	29.661	29.057	41	19	30.0	45	46½	N.E.	[illegible]
Average		29.622	29.455	43.8	30.0	36.9	45.1	46.6		[illegible]

Nov. 17—Foggy; rain; overcast; boisterous at night.
— 18—Densely overcast and windy; cloudy; overcast.
— 19—Overcast; cloudy and cold; overcast.
— 20—Cloudy and cold; fine but cold; overcast.
— 21—Overcast; cloudy; great fall in the barometer; rain at night.
— 22—Frosty; clear; densely clouded; clear; frosty.
— 23—Fine; very fine in forenoon; cloudy; frosty.

Mean temperature of the week 5 deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending Dec. 2, 1854.

Nov. and Dec.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 26	47.1	33.1	40.1	14	0.70 in.	1	2	6	1	3	11	1	[illegible]
Mon. 27	46.6	35.2	40.9	12	0.88	1	3	4	1	4	8	4	3
Tues. 28	48.0	35.9	41.9	14	1.21	2	2	2	2	8	4	5	1
Wed. 29	47.8	35.1	41.4	15	0.56	3	1	4	3	4	[illegible]	[illegible]	[illegible]
Thurs. 30	48.6	36.2	42.4	16	0.31	2	3	1	3	3	9	[illegible]	[illegible]
Friday 1	48.4	36.5	42.4	12	0.25	1	2	2	4	2	7	5	[illegible]
Satur. 2	47.6	35.5	41.5	13	0.51	1	2	2	1	4	9	[illegible]	[illegible]

The highest temperature during the above period occurred on the 29th, 1828—therm. 60 deg.; and the lowest on the 29th, 1846—therm. 16 deg.

Notices to Correspondents.

ASPARAGUS: *E F.* Plant it about the beginning or middle of March. Any respectable nurseryman can furnish you with plants. We never give prices, which is the business of advertisers.‡

BOOKS: *A Lady.* Neill's "Fruit, Flower, and Kitchen Garden."

ARALIA JAPONICA: *An Old S.* Loudon's "Encyclopædia of Plants" necessarily wants every novelty. The plant in question is a hardy undershrub, with magnificent deciduous foliage, and thrives in a damp American bed. Its flowers are white and unimportant.

DOUBLE ESPALIERS: *Sub.* From what has been observed of these, single espaliers are preferable. You have after all only two sides fully exposed to light, in double espaliers; the other two shade each other, and the foliage on these will consequently be imperfect. You can, however, try whether one tree with good foliage on both sides is not better for fruit than two trees with half their foliage comparatively bad. The two espaliers forming the double one should be about a foot apart; and then the sides of the trees that face each will do little good. ‖

FRUIT TREES: *Enquirer.* Of the different kinds of fruits which you wish to plant against your south aspect wall 90 feet in length, you may try with probability of success, even in your part of the country, the Noblesse Peach, Glou Morceau, and Knight's Monarch Pears, Greengage Plum and Ribston Pippin Apple, which should be on the Paradise stock, as the space is rather limited. ‖

GAS TAR: *Z Z.* If you wish to kill your trees you will use this material; not otherwise. Walls ditto. No doubt you will kill the insects also, if that will be any satisfaction.

HORTICULTURAL SOCIETY: *A Well-wisher.* The point you argue has been often discussed. We will have your letter laid before the Council, which is the best way of giving practical effect to your suggestions.

IMPORTED CAMELLIAS: *S A.* Wash them very clean, roots and all. Prune neatly the broken roots, leaving the fibres untouched. Pot them in peat and loam, one of the first to two of the last, and place them in your greenhouse, taking care that the pots are thoroughly drained, and kept damp, not wet.

MANURE: *A A.* No manure is better than that made from the runnings of the stable soaked up by leaves, peat, breeze, chaff, coal dust, or any similar material.

NAMES OF FRUITS: *J B H.* The name of the small Pear, if it has ever had one, is unknown. The fruit is, perhaps, the produce of a Pear stock that has been allowed to grow instead of the graft. The fruit is not ripe, so that its flavour cannot now be ascertained.—*W P., Elsenburn.* 1, 8, 21, Winter Nelis; 2, Napoleon; 5, Glou Morceau; 7, Passe Colmar; 15, 22, Chaumontel; 18, Old Colmar, so is 13 probably; 19, St. Germain; 2, Sturmer Pippin; 4, Carlisle Codlin; 5, Wyken Pippin; 6, Downton; 8, Alfriston; 9, Herefordshire Pearmain; 10, Northern Greening.—*Shalford.* 1, Frangipane; 2, Bezi de Montigny: 3, Doyenné Blanc; 4, Probably Napoléon; 5, Glou Morceau.—*J F.* 1, Golden Reinette; 2 or 3, Red Astrachan; these numbers were found detached; 4, Bezi de la Motte.‡

NAMES OF PLANTS: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*Erzeroum.* 1237, Alliaria officinalis; 21, Arabis albida; 77, Æthionema Buxbaumii; 676, Cochlearia officinalis; 43, Conringia austriaca; 138B, Conr. perfoliata; 138A, Conr. orientalis; 69, Alyssum micropetalum; (B), A. Aucheri; (A), A. hirsutum; (I), A. umbellatum; 1213, A. sarranicum of Besser; 939, Cakile maritima; 62, Erophila spathulata; 1262, Iberis taurica; 93. Hesperis laciniata; there is also H. runcinata without a number; 623, Erysimum lanceolatum; 62, Erophila spathulata; 724, Dentaria quinquefolia; 639, Cardamine pratensis; Alyssum A, Alyssum hirsutum; Al. I, Alyssum umbellatum; 1238, Draba glabri-siliqua; 19, Dr. Aizoon; 73, Barbarea arcuata.—*Phyllis.* We fear your books are very much out of date. Peristylus viridis is also called Habenaria viridis and Orchis viridis. Order your gardener to catch the mice with a common brick figure-of-four trap. Any countryman can make it, and it costs nothing.

ORCHID-HOUSE: *Dublin.* The dimensions given appear to be suitable except the width, which should not be more than 12 feet. By all means have two compartments, in order to have a house at pleasure hotter than the other, and for resting plants. You say nothing about ventilation, which is all important; efficient means of securing that must therefore be provided.‡

THE BULRUSH: *Geo Peeke.* The Bulrush is Typha: the common rush is not used at all; what is called a Rush and used in chair-making is the round-stemmed Scirpus lacustris.

TOWN SEWAGE: *Doubtful.* Our friend Mr. Mechi's opinion is entitled to the utmost respect; but it is an opinion and no more. We do not agree with him. The metropolitan case is quite peculiar, and surrounded by impediments which we believe to be insuperable. If, however, Mr. Mechi, or anybody else, can *prove* that we are wrong, no one will be better pleased than we should be. But until the thing is done we must adhere to our belief in its practical impossibility. Its theoretical possibility we shall not dispute.

WATER PLANTS: *T J H.* Valisneria spiralis is the most suitable plant for your small basin which contains gold fish.‡

*** As usual, many communications have been received too late, and others are unavoidably detained till the necessary inquiries can be made.

SUPERPHOSPHATE COMPOST COMPANY,—
427, Strand, London.
The Directors having received numerous applications for Winter Wheat Manure, have the pleasure to notify to their Friends and the Agriculturists generally, that they have 1000 tons expressly prepared for drilling with Winter Wheat, and now ready for delivery at 7*l*. per ton net cash, that is, payment in one month. Carriage free to any Railway Station or Wharf in London. Further particulars may be obtained of the Agents.
W. W. WATSON, Secretary.

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures, Linseed Cakes, &c.
WM. INGLIS CARNE, 10, Mark Lane, London.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7*l*. per ton; Superphosphate of Lime, 7*l*.; Sulphuric Acid and Coprolites, 6*l*.
Office, 69, King William Street, City, London.
N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent. of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

WHEAT SOWING.—The undersigned beg to call attention to their WHEAT MANURE, which has been successfully used during the last two seasons, and which they are prepared to deliver at 6*l*. per ton, free to Railway.
They are also Sole Agents for the sale of PEAT MOSS CHARCOAL, which is a valuable deodoriser and distributor of ammoniacal matter.—English and Foreign Linseed and Rape Cakes, Guano, Superphosphate of Lime, Salt, Bones, and all other Manures of known value on sale.
Apply to MARK FOTHERGILL & Co., 204, Upper Thames Street.

THE LONDON MANURE COMPANY beg to call the attention of Agriculturists to their WHEAT and CLOVER MANURES for present use. The London Manure Company also offer Genuine Peruvian Guano, Nitrate of Soda, Concentrated Urate, Superphosphate of Lime, Fishery and other Salts, and all Artificial Manures of value. The London Manure Company guarantee Peruvian Guano and every Manure they supply to be strictly genuine. EDWARD PURSER, Sec.
Bridge Street, Blackfriars.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and dispatch.
Gentlemen desirous of receiving instructions in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

CORN CRUSHERS AND CHAFF CUTTERS.—A large display of the best Farm Implements shown in operation. Price Lists sent free on application.
BURGESS AND KEY,
103, Newgate Street, and 52, Little Britain, London.

PUMPS AND HOSE PIPES FOR GARDENS AND LIQUID MANURE.—BURGESS & KEY's Pumps were highly commended by the Royal Agricultural Society of England at Lincoln. Price Lists sent free.
103, Newgate Street, and 52, Little Britain, London.

CHURNS.—ANTHONY'S PATENT AMERICAN CHURN.—Since 1849 this Churn has obtained all the Prizes awarded by the Royal Agricultural Society of England. At the trial before the Judges it made in 10 minutes 4 lbs. 6 oz. of Butter from 4 quarts of Cream, being 8 oz. more than any of the other Churns from the same quantity and quality of Cream.
103, Newgate Street, London.

SAMUELSON'S PATENT PRIZE FORKING MACHINE (Silver Medal from the Royal Agricultural Society of England, Prize from the Yorkshire Agricultural Society, Prize from the Cleveland Agricultural Society, and Prize from the Worcestershire Agricultural Society) is now proved by experience to be an invaluable implement for deep tillage, and equally effective as an extractor of Couch Grass and other Weeds, in testimony of which, numerous reports from farmers using it in every part of the kingdom may be had on application. Various imitations have failed, through the absence of its essential feature—the Patent Fork. The amount of horse power is less in proportion to the surface deeply pulverised than that required in the ordinary shallow ploughing. The application of steam power to tillage is still a problem to be solved, and it is not necessary to defer deep cultivation until its solution be accomplished.

SAMUELSON'S IMPROVED GARDNERS' TURNIP CUTTER (Prize for the ninth time, at the Royal Agricultural Society's Meeting, Lincoln, 1854). The improvement is a rasping plate for loosening and voiding dirt from the roots, whilst being cut, whereby the scouring tendency of root feeding is diminished.
B. SAMUELSON (Successor to late Mr. Gardner), Britannia Works, Banbury.

PRIZE MEDAL—1851.
AT A VERY ECONOMICAL RATE.
SAMUEL CUNDY, MASON and BUILDER, PIMLICO MARBLE and STONE WORKS, Belgrave Wharf, Lower Belgrave Place, Pimlico, London.
Marble Chimney-pieces manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price. A good Marble Chimney-piece for 40*s*. Marble Work in all its branches at a remarkably cheap rate for Halls, Dairies, Larders, &c. Circulars sent on application.
N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank.

WEEDS ON WALKS.
MR. FLEMING'S WEEDING OR SALTING MACHINE FOR GRAVEL WALKS, COURT YARDS, &c., manufactured and sold by ALEXANDER SHANKS & SON, Arbroath, Forfarshire, from whom particulars with prices may be had.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.
THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.
The same preparation makes first-rate paving for BARNS, CATTLE SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer."
Manufacturers of the Cement, J. B. WHITE & BROTHERS, Milbank Street, Westminster.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.
Principal—J. C. NESBIT, F.G.S., F.C.S., &c.
The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.
Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

THE BIRMINGHAM CATTLE AND POULTRY SHOW, 1854.—The Sixth Great Annual Exhibition of STOCK and DOMESTIC POULTRY will be held in BINGLEY HALL, on TUESDAY, WEDNESDAY, THURSDAY, and FRIDAY, the 12th, 13th, 14th, and 15th of December next.
The PRIVATE VIEW and ANNUAL DINNER on TUESDAY, December 12.

PRIZE CATTLE SHOW of the SMITHFIELD CLUB.—The Annual Exhibition of Prize Cattle, Seeds, Roots, Implements, &c., will open to the public on Tuesday Morning, and closes on Friday Evening, 5th, 6th, 7th, and 8th of December, Bazaar, King Street, Baker Street. Open from daylight till nine in the evening. Admittance, One Shilling.

The Agricultural Gazette.

SATURDAY, NOVEMBER 25, 1854.

MEETINGS FOR THE ENSUING WEEK.
THURSDAY, Nov. 30—Agricultural Imp. Society of Ireland.

THE dryness of the summer in the eastern counties of England will be easily apprehended from the following facts of rain-fall at Boston. The total fall during the months of April, May, June, July, August, and September, in 1826 (the year of the well-known dry summer) was 8.7 inches: the amount which has fallen during the corresponding months of the present year has been only 7.3 inches; being less by 1.4 inches. But these counties, together with all that have suffered from an unprecedented scarcity of water, contain within their boundaries wide tracts of low ground and river valley, which in addition to the ills of drought are looking forward with painful apprehension to their accustomed winter floodings. The season is already here in which torrents begin to whiten upon the declivities of mountain and moorland, and the rapid streams which they fill are foaming through their rock-built bridges with a power betokening their capacity for demolition. In the deep valleys of the lake districts of North and South Wales, and among the precipitous moorlands in northern, central, and western England; along the banks of the Wye and Severn, the Avon, and the Trent, the Thames, the Ouse, the Nene, and the rivers north of the Humber—in short, wherever a stream plunges over its pebbly bed, or winds with spreading bosom through broad meadows and clustering towns—what anxiety will reign in the wet season for the safety of property, of flocks, crops, hayricks, bridges, embankments, mills, houses; even for the preservation of human life from the suddenly swelling waters, and from the sickness which follows their assuaging.

The scenes of past catastrophe are those which must look for forthcoming disaster; and the partial efforts and preparations made in these various localities will be generally unable to avert the evil; for without a measure of improvement providing efficient channels for the larger streams, so as to relieve the bordering lands of winter floods, no local remedies can be of much avail. We believe that only works of great magnitude can effectually relieve us from so many periodical inundations: but we also perceive a vast array of difficulties delaying or opposing operations of this character. Whatever may be the public feeling as to the proper parties upon whom the labour devolves, or as to the inability of landowners and other classes to bear the burden, we consider a general unwillingness and disaffection towards the work as being the fundamental obstacle. And, moreover, attributing this common apathy or antipathy for comprehensive river improvements to popular misunderstanding or want of knowledge of the subject, we are anxious to diffuse as much light as we can both by facts, wherever they are procurable, and by reasonings founded upon them.

To show that we enter upon our purpose with no violent prejudice against naturally-watered meadows, wherever and however they may be found, and with no rash condemnation of all mills holding back a rivulet to actuate their machinery, we will own that we know of various low meadow lands in the new red sandstone valleys which are a hundred times too contracted in extent to pay the cost of an opened channel to keep off their floods; which could not yield enough increase of hay to defray the expense of removing some small flour-mills now stopping their stream; and which, if completely deprived of the present Grass-producing winter floodings, would become of little value, because the soil is a light spongy peat, thinly covering a weak running sand; of poor promise if brought under the plough, and only to be tilled by a ruinous outlay of labour and pipe-tiles in cutting off the sand-rock springs that keep it "quick."

But to those objectors who say, "Confine TRUNK DRAINAGE to fens and swampy vales, but don't excavate your scientific rivers, with their longitudinal and transverse sections, their fixed slope of bank, &c. &c., among our undulating uplands and precipitous hills;" to such we reply, no!—we except no character of surface or elevation from the application of our principles; and wherever an estuary, a river, a brook, or a torrent may flow, there we would have a competent inspection and adequate provision for works of conservancy or improvement. Indeed, even in some of the most steep and rugged mountain districts, apparently the most unfavourable to all human interference with running waters, there frequently exist the very simplest opportunities for preventing overflow and disaster. Impetuously as the mountain streams come down, they sweep over a bed of rock that stoutly resists their power of attrition, and their declivity is so great that, often, the mere removal of a few large stones from a channel will relieve an entire valley from deluge. Works of the kind are rarely attempted, owing to the comparative unimportance of agricultural drainage in a tract fruitful only in stone and metals. Mining enterprise, however, sometimes effects considerable alterations in this way, as in the case of Llyn Llydaw, a lake more than a mile in length, and nearly half a mile in breadth, at the foot of Snowdon, which, by a deep cut made a year or two ago, was permanently lowered 15 feet, and this merely for the convenience of forming a roadway embankment across one end, leading to a copper-mine. *I. A. C.*

WILTSHIRE CHEESE-MAKING.

(*Concluded from page* 714.)

IN addition to repeated inspections of the dairy at Bentham, near Cricklade, we were gratified by seeing the whole process of manufacture at Calcutt, where everything that a careful, active, and intelligent superintendence can do is done in order to attain uniform excellence of quality.

Like the Gloucester, the North Wilts cheese is not a full milk cheese. The cream is taken from the evening milk before it is mixed with the new milk of the morning. Of course, the whole of the cream is not thrown to the surface in such a short time. In the month of June the average quantity of milk butter made from the 60 cows at Calcutt was about 100 lb. per week. Cheese is made once a-day. In summer the rennet is added to the milk at a temperature of from 80 to 86 degrees, according to the heat of the weather; after harvest, when the weather is colder, the temperature is raised to 90 degrees. In ordinary weather, a small quantity of skimmed milk is heated to bring the whole to the requisite temperature; but in sultry weather a little new milk is heated instead, as the skimmed milk which has already been kept 12 hours is more susceptible of change by turning over. Many people in Wilts like to have the milk at higher temperatures than we have stated when they add the rennet; but Mr. Sadler's dairy manager objects to any greater heat on account of warm coagulation having a tendency to make the cheese heave, and because she thinks that the richer the land is the lower the temperature should be. Mr. Sadler's pastures (Bentham) are very rich.

It is thought that an approximation to acidity in the milk is requisite for making the finest quality of cheese. To produce this condition in cold spring weather, a little sour whey is put into the milk along with the rennet. The rennet is prepared in spring for the whole season. A uniform quality, as regards strength of rennet, is thus obtained. On the average, about a dozen vells suffice for coagulating the milk of 20 cows. In this, as in all other good dairies that we visited in England, the vells are never used until they are a year old. As much arnatto is used as suffices to give the cheese a ruddish-brown colour. The arnatto is procured in bottles in a liquid state, and is applied by measure in order to ensure uniformity of colour. After the rennet and arnatto are added, an hour is allowed for coagulation. If the curd "come" in less time, it will be tough and hard. When the coagulation is sufficient the curd is carefully broken with a circular wooden skimming dish, which is put to the bottom and raised very gently upwards. The breaking is not quite so minute as in the Vale of Berkeley. The curd is allowed to settle a few minutes, and is then again carefully broken. If it be thought rather cold at that stage of the process, a little heated whey is poured over it and well stirred to raise the temperature to about 80 degrees. The part of the process which requires the closest superintendence and the greatest care is now over. The curd is again allowed to settle for a short time, after which it is cut across and heaped to one side of the tub that the whey may be drawn off. The whey is lifted in wooden bowls and poured through a hair sieve into the leads. The curd is repeatedly scored with a knife and again heaped to one side to allow the whey to drain off, and to facilitate this further the tub is raised a little at one side. The curd is afterwards cut into thin slices, well heaped up, and a cheese vat, bottom downwards, and with a 28 lb. weight inside, is placed upon it to press out the whey. This part of the process is analogous to the use of the "dreeper" in Ayrshire. In this state the curd is sliced and turned three times, and the vat, with the weight, is each time placed upon it. With that nice attention to cleanliness which is observable in every good dairy, a cloth is spread over the curd before the vat is placed

upon it. After these turnings, the curd is cut into thin slices and thrown on one side of the tub, where it lies about 10 minutes. It is thought desirable that the curd at this stage should have acquired a slight degree of acidity. An individual with an acute sense of smell will detect this acidity upon the blade of a knife that has been drawn through the curd, although the curd itself may not give the slightest indication of the change which has commenced. When the curd is ripe, a little salt—about 1½ lb. to the cwt.—is thrown over it, and it is broken by the machine. The cheese vats are placed under the machine, and are filled one above the other as the curd falls down. A cloth is put over each vat when the breaking is over, the curd is reversed in the cloth, put back into the vat, covered up, and placed in the press for about three quarters of an hour. After this, the cheese is taken out, and a cloth wrung out of warm water is put on it. It is again changed at two and at six o'clock, after which dry cloths are put on it. Care is taken that the cheese fills the vat properly. To accomplish this, the vats, at making up, are filled rather full, and the edges of the cheese are pared in the afternoon. Next morning the cheese is rubbed on both sides with salt, and the same cloth is put on again. On the third morning it is treated in a similar manner. The cheese is put into the vat without a cloth on the fourth morning, and a little salt is rubbed over it to keep it from adhering to the wood. After the fourth morning, it is reversed in the vat, without a cloth, each morning until the process is complete about the sixth or seventh morning. There are about 40 cheeses to change every morning.

The quantity of whey butter made in the Calcutt dairy during the five weeks preceding our visit averaged 26 lb. per week. In the Wilts, as in the Gloucester dairies, there are no artificial means resorted to in order to raise the temperature of the rooms for maturing the cheese. The rooms are kept in a cool and airy state. The necessity for ripening by any artificially raised temperature, must depend in some measure upon the mode in which the cheese has been manufactured.

We were very much pleased with Mr. Sadler's dairy utensils. There is no extravagance displayed in his establishment; but at the same time no expense is spared to have the most suitable utensils that can be procured. The presses are powerful levers, requiring little weight upon them. The leads are capacious, and are connected with the whey tanks in the piggeries by means of pipes. The vats, as in Gloucester, are turned out of solid Elm; and the large brass tubs are beautifully burnished. When carefully kept, a substantial brass tub may last a lifetime; and even when worn out, the material is of considerable value. Mr. Sadler's tubs at Bentham and Calcutt, were made at Marlborough, and cost 13*l.* and 15*l.* respectively. They have a clean as well as an elegant appearance.

Mr. Sadler's dairy manager objects strongly to cheese tubs of wood, because however carefully they may be scrubbed, they cannot be completely freed from portions of the milk or whey that have been absorbed by them, and which will afterwards emit products injurious to milk. We all know that milk is peculiarly susceptible of injury from a tainted atmosphere.

ANBURY AND FINGER AND TOES.

In all discussions on those disturbances in the tissues and external forms to which the roots of certain plants are subject, called indiscriminately anbury and finger and toes, much confusion arises from regarding as identical two disorders which, in all their indications, appear to be separate and distinct. This indiscrimination may have originally arisen from its having been observed that where the former existed the latter also appeared; but in the gouty and deformed appearance of the subsequent and subsidiary roots there might have been clearly discerned a diseased origin, distinct from that subdivision of tap-root, the effect of some external disturbance of form, unattended with the several signs of disease which invariably are displayed in anbury.

The very term anbury is derived from a disease to which horses are subject, which appears in the form of a wart or tumour on their legs or flanks; in roots its first appearance is that of a small knob, evidently occasioned by the puncture and deposition of its larva by some insect, for it contains the germ of insect life. As this germ becomes indued with life it causes such a perversion of the juices of the plant as to occasion distortion and corruption which is shown in the deformity and putridity of the bulb, and interruption in the regular flow of sap, as is seen in the flaccidity of the leaf. In this precise form, Turnips and the Brassica tribe seem only affected; the Carrot, though its root sometimes corrupts and becomes the prey of insects, yet, neither in this diseased state does it show these excrescences, nor does it send out subsidiary roots, the whole of its lower part rots away, its growth is stopped, and its leaves assume a russet colour; neither does the Parsnip appear liable to the same form of attack. In finger and toes there exist none of these signs of disease, the roots and bulbs retain their natural flavour and consistence, the leaves their pristine verdure; it is not confined to Turnips or the Brassica tribe—in fact, it seems generally not so much developed in them as in Carrots and Parsnips. It, indeed, seems to affect most those plants in which man has induced a supernatural grossness of root, and to indicate a disposition to return to the original wild form, as Professor Buckman has correctly observed with respect to Carrots and Parsnips.

But why should the wild root be predisposed to this malformation, this division of its roots? From this enquiry we may deduce the cause of this disposition in the cultivated root to return to its original form. The wild root, the occupant of uncultivated land, finds at a very few inches below the surface, an indurated, crude, unfertilised soil, and, in the early part of the year, possibly, one supersaturated with water, into which the roots of tap-rooted plants cannot enter, or, in entering, find no food, and where there is excess of water become decomposed; they then break into and spread out these subsidiary roots into the richer surface mould, taking on a form approaching to the fibrous; but as the undersoil parts with its moisture, these roots, obeying the great rule of their nature in seeking and following water, strike into the undersoil, and thus their ramifications retain their quality of tap-roots. Thus the farmers in Mr. Pearson's neighbourhood may be perfectly right in ascribing the forking of their Carrots and Parsnips to the use of long fresh dung. But, as he justly remarks, "What has this to do with finger and toes, as we understand the term?—with us it is a disease resembling the club in cabbages." A sort of a gardener I had some years ago complained he could never grow in my long-worked and old-fashioned garden a crop of Carrots that were not forked; I directed him to put the manure at the bottom of deep drills—he did so, and was so delighted with his crop that he travelled the whole adjacent country with samples to his brother gardeners.

With Mr. Pearson's so-called finger and toes, *i. e.*, his clubs, I do not believe the seed has anything to do, but with the disposition to return to a natural state and to early starting it has everything in the world, else our labours to improve the natural plant by culture must have been unavailing, and we know they have not been.

Mr. Deane's finger and toes are plainly anbury, and his dressing of chalk evidently was destructive of the anbury insect, as it was of the wire-worm; and in this, by long standing accounts, the efficacy of lime with some adjunct or other in the prevention of anbury is certain. In this Mr. Paine, of Farnham, concurs; for though he speaks of finger and toes, he certainly means anbury; but I think, notwithstanding his paper has all the support of a leading article, that he draws an inference on insufficient grounds, that the disease is due "to the condition of the soil, arising, probably, from its deficiency in certain inorganic particles." Mr. George W. Johnson suggests the application of hydro-sulphuret of lime as a preventive of both anbury and the attacks of the Turnip fly — here evidently intimating the destruction of insect life, not an alteration of the condition of the soil.

There may be something in Mr. B. Saunders' view on the cause of finger and toes (not anbury), and the deterioration of seed, in allowing the central umbels and spikes to seed; I think I heard a similar observation by a gardener very many years ago.

By referring to page 442 of last year's *Gazette*, it will be seen that I have there reported the fact of the whole of a thousand of Savoys having suffered most severely from anbury; while a Rape plant, which had accidentally been planted among them, escaped the disease; and while Turnips and Borecole, which were sown and planted all round them, were, without exception, undiseased. How can we account for all these having escaped disease, when it so totally prevailed in the Savoys, on the hypothesis of a defective inorganic structure of the soil?

I will conclude these observations by an extract, rather too long a one perhaps, but most pertinent to the subject, from Wilson's "Rural Cyclopædia:"—"Anbury does not arise from any imperfection or peculiarity in the seeds of Turnips. If two crops grow, in adjoining fields, from the same seed, the one may be much diseased and the other altogether healthy; and even when anbury attacks any one field, it very frequently makes but partial devastations, or appears only in small and isolated patches. Nor does anbury arise from any unfavourableness in the time of sowing, or from unpropitiousness of weather during the growth of the crop; for, if it did, it might be expected to make somewhat uniform and nearly simultaneous attacks in all districts of similar soils and character, and similarly affected by the supposed unsuitableness of meteorological circumstances to sowing and early growth; yet it is found to be both partial and capricious in its attacks upon some districts, occasionally very violent in a few, and either exceedingly slight or altogether unknown in many. Neither is anbury occasioned by any peculiarity in the composition or chemical action of the soil; for it occurs, in the same district, on soils of very widely different and almost contrasted character, and, in the same field, appears at uncertain intervals, or in one year totally disappears and in another breaks out and spreads with virulence. Anbury, when once known in any district, is most likely to appear in fields which have been frequently cropped with Turnips or which have quite recently produced either Turnips or Cabbages, yet it arises on such fields, only from the presence of the insect which feeds upon it, and not from any "tiring" or excrementitious poisoning of the soil by Turnip cropping, for it often does not devastate more than mere patches of an old Turnip field, and occasionally breaks out in fields which have not been previously cropped with Turnips during many years, or within the memory of man. *J. M. Goodiff.*

Home Correspondence.

Waste in Corn.—Permit a few remarks on the probable quantity of corn which predatory birds consume annually. We have several inquiring correspondents as to this particular, who, with us, consider it a subject of very great importance. A royal mandate, it is said, still exists in our statute book for their destruction, which is not repealed; if so, it ought to be put in force and made practicable. Many old people can remember taking the benefit of this Act, by demanding and receiving from the churchwardens of their parish so much a dozen for sparrows, larks, and linnets, or their eggs; also for various descriptions of vermin, &c. Some idea may be formed of the consumption of large birds, such as partridges, pheasants, ringdoves, rooks, pigeons, &c., from the old adage that "one sack of corn in a year will starve a pair of pigeons to death;" which holds strictly true, for let a pair of pigeons have constant access to four bushels of Peas, and allowed no other food, it will be found that all will be consumed before the year is expired; yet many gentlemen and farmers foster them by hundreds on a farm, regardless of the loss sustained by themselves and their neighbours, and finally by their country at large. It may also be observed that in all countries, with but few exceptions, pigeons abound to a more or less extent, so that the waste of corn by them alone in a universal point of view is beyond conception to unthinking minds. Partridges and pheasants, too, are great gormandisers; and, after all their extravagant cost for food, of what benefit are they, except to gentlemen sportsmen, who ought to maintain their game themselves instead of their tenants? A calculation may be made of what the myriads of small birds which infest this country consume, by ascertaining what a single pet bird eats, and by noticing what larger flocks devour on most farms and gardens in every neighbourhood. One half the crops of corn and seeds sometimes falls to the share of these depredators, and always too great a portion to be endured, though all means yet known may be taken to prevent it. It is not too much to say, though a startling fact, "that more corn is consumed by destructive birds and vermin, in most parishes where it is grown, than by the inhabitants themselves!" though what they eat is merely trivial to what they spoil in attaining that object. Excuses are often urged for the destruction of predatory birds, and especially rooks, intimating that they are designed by Nature to keep within due bounds insects, slugs, grubs, wireworms, &c. Granted that this may be a reasonable expostulation; but it is as unreasonable, in our opinion, to argue that we ought to foster them when they become a pest, so as to cause want of corn in a country, as it would be to contend that we ought to preserve wild beasts, rats, mice, and all other kinds of vermin, to devour what, it is said, we cannot grow half enough of to feed our population. It is more reasonable to suppose that Providence has wisely destined only harmless migratory birds, and not those of a predatory nature, such as swallows, martins, &c., for the express purpose of keeping down to a limited extent insects, &c., in the summer months, and others in the winter. Who ever heard or knew of cottagers and allottees, or gentlemen's gardeners, having the worse crops because rooks had not been permitted to enter their grounds? and who would not frighten them off on their first appearance? Who also do not try to scare small birds off their crops, for instance, the "old" sparrows, as they are sarcastically called, which (though not known to some persons) more commonly visit grounds near a neighbourhood than in lonely situations, where hawks and other birds of prey dare frequent with impunity, which would start them off in a jiffy. Hence we seed-growers have recourse, when we can, to growing their favourite dainties near a wood, where they (the seeds) are much safer than near the homestead; at the sight of a hawk they fly for their lives—not so at the presence of man, except he is provided with powder and shot. Gentlemen sportsmen had better study the interests of their tenants and country more, by fostering instead of annihilating such birds as hawks, magpies, jays, owls, and other birds of prey, which are known to gobble up whole broods of nestlings at a meal. Imagine one hawk, where such a solitary creature is to be found, to pounce on only a single bird in a day—recollect it is to get rid of 365 in a year! The cuckoo also is no doubt destined by the Allwise Creator to migrate from one country to another in due season, to destroy the eggs, in order to obviate an excess of predatory birds. Gamekeepers are also very fond of shooting cats; which ought not to be tolerated, although it belongs to their nature to ramble the fields a little, and now and then take a paltry partridge or rabbit, they are also, no doubt, created for the purpose of destroying mice, rats, birds, and other vermin, to a certain extent. In short, it is an insult to the Divine Being to destroy all those innocent creatures, and nail them on a barn by hundreds as examples of depredation, and as if they were a formidable class of his creation. It is much to be deplored that, in localities where woods and forests have been of late demolished, hawks and other birds of prey are nearly extinct; hence the cause, in a great measure, that so many more destructive birds are now known to exist than in years past. Suffice that we have said enough in this article to convince inconsiderate persons of the necessity of exterminating (to some extent at least) predatory birds, in order to avoid waste in corn. We reserve for a future paragraph our remarks on the still more aggravated waste of corn occasioned by the abominable practice of drinking to excess strong ale and ardent spirits. We hesitate not to affirm that sufficient corn is actually grown in our own country to supply its wants, and some to share for exporting occasionally, were it not for waste and extravagance

thick seeding, encouraging predatory birds and destructive vermin, and indulging in strong drinks which are unnecessary for the real sustenance of human nature *Hardy & Sons, Seed-growers and Salesmen, Maldon, Essex.*

Notes from East York.—The past seed time has been unusually fine, and in many instances considered rather too much so, where the hard consistency of the land rendered it almost impossible to proceed with the ploughing preparatory to its being sown with seeds; the late rains, however, having obviated this delay, the sowing of autumn Wheat in this riding may be said to be fast drawing to a close, with the exception of some Turnip soils. Again the weather has been most propitious as regards the taking up and storing of roots, respecting which I would observe that Potatoes generally were a nice healthy crop, not having more than one or two per cwt. of diseased tubers; whilst Carrots were a very inferior crop, almost a failure in most cases that came under our notice. Mangold Wurzel pretty good, considering the season; though some runners might be diseased in every place where the root was grown, yet in our case, independent of this, upwards of 30 tons per imperial acre have been stored. The Turnip crops, I regret to say, are likely to prove far short of an average supply, more especially the Swede portion, which are seriously mildewed; and in the event of a severe winter setting in, which is by no means improbable, as we have already experienced some keen frosty nights and occasional snow showers, it will doubtless affect the value of Linseed cake and other feeding stuffs materially, and cause them to range at enormous high prices; thanks, however, to the valuable information contained in the papers which you lately published by your correspondent "Y," which we have taken a lesson from, by substituting Rape for Linseed cakes, and having carefully tested the quantity and quality of milk and butter produced by a given number of cows, we, after a fortnight's trial, come to the conclusion that there is no deficiency whatever; on the contrary, the quantity of milk has been rather increased by the use of Rape cake, and our feeding beasts are doing as well as might be expected; but the hogs that are on Turnips will not touch it. *P. Deane.*

Tests of Timber.—Having lately received some specimens of timber (hitherto unknown in this country) which seem to me, from their size, hardness, and freedom from shakes and flaws, to be well adapted for shipbuilding purposes and every other use to which Oak is suited, I wish to inquire through the medium of the *Agricultural Gazette* if there is any mode of testing their resistance to rot (wet and dry), marine worms, and all the other influences which destroy timber; and shall be glad—if such methods of testing timber are practised either at the Government or private dock-yards—if they are communicated through the medium of the *Agricultural Gazette*; or if there is any secret involved in them, that it may be stated on what terms such tests will be applied, and how long it will take to determine whether the timber subjected to these tests is or is not fit for the intended purposes. *J. G., Clitheroe.*

Agricultural Statistics.—You reported on the 11th ultimo a very interesting paper by Mr. Burnett, of Black Hedley; but I beg to demur to one of his suggestions, viz., to make a return of the stock and corn taken to market, instead of stating the probable gross yield of corn and quantity of stock on the farm at the time of making the return. As corn is frequently kept over the next harvest, a correct estimate of the annual yield could not be thus arrived at, and as to a large quantity being consumed on each farm, that might be an additional item, but should not be deducted from the estimated bulk of produce harvested. Again, as to stock, the market sales offer a very inadequate criterion of the quantity existing, as sheep, particularly, are often bought as lamb-hogs, and sold again as stores, so with young beasts; and many farmers do a bit of jobbing, so as to prevent this kind of statistics being of any value. The quantity of all kinds of stock on a given day enumerated as the census would be the simplest mode, and perhaps the least expensive. One other limit I would place in the kind of information given, viz., "the expenses incurred in producing" grain or other agricultural commodity; such inquiries would be useless for national purposes, they would be irritating and offensively intrusive. While advocating agricultural statistics, I would not on any account bring a hateful prying incubus on farmers' backs that would be difficult to shake off, and might be turned to the account of taxation projects or other arbitrary schemes of a nature partial and unjust; but simple information about the quantity of corn and meat produced and in stock is necessary to guard against wild speculation and unfounded fears, and may be obtained at little cost and without resistance, if the farmers will bring before their several representatives, the matter carefully considered as this paper of Mr. Burnett's. *J. W., Peterborough.*

Societies.

Royal Agricultural Improvement Society of Ireland, *Nov.* 7. The Earl of Clancarty in the chair. C. W. Hamilton, Esq., read a paper *On High Farming in Scotland and the application of Liquid Manure*, from which the following are extracts:—"I shall now try to describe the most remarkable features in several of the high farms which I visited—such as Myremill, Cunning Park, Dunduff, Harvey's (at Glasgow), Lord Kinnaird's, Burnturk, &c.; in all these places the cattle are kept entirely in the house, and provision is made for saving, increasing, and distributing, by pressure through pipes, large quantities of liquid manure. In the three first, litter is not used to any great extent; in the last two, the box system is adopted, with great profusion of straw as litter. Mr. Kennedy's, of Myremill, near Maybole, contains about 650 Scotch acres—800 statute—with pipes laid over 300, at a cost of 2*l*. per acre. There are 70 acres of Italian Rye-Grass. The homestead and steam-engine are at the top of a hill; the water is pumped up from a river flowing at a considerable distance through the valley, and again discharged, loaded with manure and chemical compounds, containing ammonia, such as gas-tar water, &c.,* through iron pipes, which convey it, under great steam pressure, to hydrants or iron pillars, placed one in the centre of 6 acres or thereabouts, and fitted with valves or turncocks, where the liquid is discharged, at will, through very long tubes of gutta-percha, which are dragged about to every part of the 6 acres, and enable the labourer who holds the nozzle at the far end of the tube in his hand, to direct the shower to any part of the field he likes. This operation follows, during the summer, each day's cutting of the Italian Rye-grass, and it is thus that such immense crops are produced. Mr. Kennedy gets from four to five cuttings; he weighed portions this year to enable him to calculate the quantity cut on the very best part of the 70 acres, and states the cuttings to have been at the rate of—

	Tons.
First cutting	16
Second do.	25
Third do.	18 and expected from the
Fourth do., about	15
	74

He fed this year, since May 1, entirely in the house—

250 bullocks of 8 to 10 cwt., with 3 lbs. cake per diem, added to the soil.
460 wether hoggets, with 1½ lb. cake.
25 cart horses, from 1st May to 1st September.
100 to 150 pigs.

"The bullocks get from 112 lbs. to 150 lbs. of soil, the sheep from 10 lbs. to 12 lbs.; pigs and horses uncertain. Now, if we try these quantities we shall have the consumption on six months.

	Tons	cwt.
250 bullocks getting average 131 lbs. per diem	1400	0
460 sheep at 11 lbs....	411	0
125 pigs, at 4 st. each	385	10
25 horses, at 4 st. each, from May to Sept. ...	77	10
	2274	0

Or somewhere about 32 tons per Scotch acre, or 25 tons to the imperial acre; and evidently a crop of 74 tons per acre would have required a double consumption by each animal, for the soil is all consumed and no hay made. The winter feeding of the cattle in the stalls is—two feeds of cut Turnips, about 80 lbs.; one feed of compound, consisting of ¼ lb. molasses, 2 lbs. Rape-cake, 1 lb. oil-cake, and a little Bean-meal with chaffed straw, making about 15 or 16 lbs. in all, and given at mid-day; uncut straw at other times. Mr. Kennedy's house-feeding of sheep seems to be eminently successful; the pens for 10 sheep are 12 feet by 6 feet, and the spars 2½ inches wide, and ⅝ inch interval; the space beneath for the dung to fall into is shallow, and without any current of air, and is flushed with water frequently to carry the manure into the tanks. The house is perfectly well ventilated; but those sheep flourish most which are farthest from the opening, and in the most equable temperature. Let us now turn to Mr. Telfer's, of Cunning Park, close to the town of Ayr; it is to this farm that I think we shall probably be indebted for the most accurate and reliable information. Mr. Telfer seems anxious to weigh, measure, and record accurately, and to have truth as his object. Cunning Park contains only 40 Scotch acres, of which 20 are under pipes, and 11 under Italian Rye-grass; it is a flat level surface, and consists of poor sandy soil, worth very little in its natural state; but the tiller of rich heavy loams must not imagine that, therefore, Mr. Telfer is working at a disadvantage. On the contrary, a porous soil seems to be the first condition for ensuring success, and every gardener who aims at the production of fibrous roots and luxuriant foliage in his forcing houses seeks for pure sand and the lightest of vegetable matters, as the medium for supplying the roots with water. The system of distribution is the same on all the farms visited, and one hydrant to about 6 acres. Mr. Telfer's is strictly a dairy establishment; and from being within a few minutes' walk of the flourishing town of Ayr, must, under any circumstances, be very profitable. No description can give an idea of the perfect order and cleanliness that pervades the whole establishment. The cowhouse contains 48 cows in a double row, two to each stall; the floor is entirely of white flags, kept as scrupulously clean as the kitchen of an English house; the drain behind the cattle is fitted with an iron perforated plate which lets the liquid pass off at once into the tank, while a shovel, made to fit exactly into the rectangular portion above the iron-plate, carries away all the solid manure, which is also conveyed to the tank. There is no litter used, but the forepart of the stalls is covered with thick cocoa-nut mats, which cost 10*s*. each, supplying two cows; and as some which had been down for three years seemed little the worse for wear, the expense of this substitute for litter is very trifling. The side walls are skirted with large slates as more easily cleaned, and there are many windows, both in the sides and roof, which open to give air, and have also blinds of cocoa-nut fibre, so ingeniously arranged, that pulling a slight cord enables the cowherd to darken the house whenever flies become troublesome. There is an air-channel underneath the floor, by which fresh air is introduced, as it is usually in churches. The food is brought in by the centre passage, in a large box, with three wheels which run over the flags with the greatest ease. There is no provision for supplying water to the troughs, and I believe that the expenditure, upon contrivances to give water to cattle by pipes, as at Mr. Littledale's, near Birkenhead, and Mr. Lawson's, at Burnturk, is not, in any way, to be recommended; for the small quantity that cattle living on green food drink can be easily brought in in buckets. The steam-engine, with its connected appliances for chaffing, steaming food, pumping water from the river, and again forcing the liquid manure through the pipes, is placed at one end of the byre, and the tank, which is open,* and surrounded by a high wall, is at the other; the weighing machine, very conveniently placed at one side, so that every cart must pass over it. The dairy is connected with the building, and has all the beauty of perfect fitness in every part, everything that is necessary for cleanliness and the regulation of temperature, and nothing that is not useful. Mr. Telfer gets the highest price for his fresh butter from a Jermyn Street dealer who supplies the nobility in that part of London, and this sufficiently shows its quality. Now, let us try to calculate what the produce of Italian Rye-grass may have been. The stock kept on the farm is 48 cows and two horses, which we may consider as equivalent to 50 head; his statement to me was that the cows get 4 stones of soil per diem, and 30 lbs. Cabbage per diem in summer, with one feed of compound, 4 lbs. to 8 lbs.—say, average 6 lbs.—of chaffed hay; 1 lb. to 3 lbs.—say, 2 lbs.—of oil-cake; the oil-cake all made into flour, and steamed with the chaff. In winter, grated Mangolds, fresh and not fermented, are substituted for the soil; the winter supply of hay is bought, and as the little hay that was made from the Italian Rye-grass was chiefly consumed before October, I think it safe, in the absence of more correct measurement, to include the summer hay in the produce of the 11 acres, at one stone and a half per diem to each; total consumption, five stones and a half, would be only 33 tons per acre. If 74 tons had been realised per acre, each animal must have consumed, at least, 14 stones per diem, independent of oilcake, on the supposition that the supply lasted six months, which it scarcely does. At Mr. Ralston's, of Dunduff, near Carrick, the dwelling-house and homestead are on a hill, and water is supplied from a still higher level. The tank is an open one, and surrounded by a wall, and cost about 30*l*.; and 50 acres are watered by the force of gravitation, which, as they are at a very much lower level, distributes the liquid manure from the hydrants with great power. The drawback is the expense of carrying the soil home, which is probably about five times that of Mr. Telfer's. Mr. Ralston has this year kept six Ayrshire dry cows, of about 5 to 6 cwt., to the acre, all the summer. Now, if each animal consumed six stones daily,† and the supply lasted six months, the acreable quantity would be about 40 tons. The next farm that I visited was one of Lord Kinnaird's, at Kindstown, in the Carse of Gowrie—the arrangements are calculated to effect the greatest possible consumption of straw, of which the Carse lands give an abundance. The houses are very large and ventilated freely by openwork slating; they are divided into boxes, 15 feet by 7, or 15 by 14, containing two or four beasts. The cattle are littered with straw in abundance, and the manure not removed until the end of the season. The racks, feeding troughs, and gates, are raised according as the manure heap rises. The divisions are three bars, which are also hung higher, like leaping bars, according as the manure heap rises, and are all removable for the purpose of carrying away the manure at the end of the season. Doubtless, an animal will thrive in a box, but there must be good ventilation, and a profuse quantity of straw used to keep the byre clean and sweet; and the question arises whether even the profuse quantity of Carse straw might not be better applied as food. The point here that attracted my attention most was that although there is a steam-engine, the liquid manure is driven through the pipes by a two-horse gear. There is but one hydrant to about 30 or 40 acres, and an immense length of 2-inch gutta-percha tubing. Italian Rye-grass does not suit the Carse lands, and the liquid is applied to Turnips, Clover, and pasture. The next farm was Mr. Lawson's, at Burnturk, in Fifeshire about 7 miles south of Cupar. The system here is in some respects similar to that of Lord Kinnaird. The same abundant use of straw for bedding. There are both boxes and stalls—boxes for two, 14 feet 6 inches (including 2 feet troughs) by 10 feet; passage in front of two rows, 5 feet 5 inches. The troughs are fixed and the racks also fixed on the partition walls, and the manure cleared out every two months, which enables the animal still to use both trough and hay-rack. The stalls for two are 6 feet 9 inches wide, 9 feet long, including trough 1 foot 4 inches; channel, with iron grating, 1 foot 4 inches; back passage, 4 feet 4 inches

* Gas-tar water, 20 proof, is mixed in the proportion of 1 to 400 parts water, thus fixing the ammonia in pure water instead of by an acid, and producing it at one-third of what it would cost in sulphate of ammonia. Mr. Kennedy attaches great value to leaving the liquid manure three months fermenting in the tank before it is used, and this is a very important feature in these systems.

* In these open tanks there was no visible disengagement of gas, and no smell of ammonia; there had been some accumulation of vegetable matter, which Mr. Telfer used sulphuric acid to reduce.

† 20 lbs. meadow hay = 120 lbs. Turnips; and, according to Mr. Telfer's calculation of 3.5,

6 stones soil = 10 stones Turnips, or
= 8 stones Turnips and 27 lbs. of Wheat straw.
—Johnston, p. 1029.

—32 head in each house. The feeding for each large bullock, in winter, was formerly 150, now reduced to 100 lbs. Turnips (and the reduction is found to favour health), 10 lbs. cut straw, 6 lbs. oatmeal, Bean-meal, or oil-cake, damped with water; no cooked food. In summer, Italian Rye-grass *ad libitum* twice a day, with 4 lbs. oil-cake. There are only 11 acres of Italian Rye-grass, and only one hydrant to supply the liquid. What struck me most as defective was the waste of room in these extensive and well-finished buildings, which accommodate only 60 head, and the expense which has been incurred in an elaborate system of pipes for supplying and withdrawing water for the animals to drink. The air-flues under the passages are very good, and have dampers to shut off the cold air in winter. The liquid manure tank is arched over, and the liquid might have been distributed by gravitation, but owing to the faulty construction of the delivery-pipes, can only be propelled by steam-power; and as the engine is a seven-horse-power, and requires one ton of coal per diem to work it, it is not as frequently used as the growth of the Grass would require.* The fourth cutting of Rye-grass seemed to me very poor indeed; but the bailiff told me that he thought they had got 60 tons per acre this season. This, however, was not from measurement. The last instance that I shall refer to, as showing the application of liquid manure, is that of Loughend meadows, near Edinburgh. They lie on one side of a valley, formed between Arthur's Seat and the high ground between it and Granton. The main sewer from Edinburgh discharges through an open course along the valley; this has been caught up at the level of half the declivity of these meadows, and conducted so as, for many years, to water about 20 acres of the lower parts, which are principally clothed with Couch and Poa trivialis. Of late years a contrivance has been made to water the upper part. The filthy stream is conducted under a small water-wheel, which elevates a large portion to the upper level, whence the liquid is distributed, both by means of the common irrigating channels, and also by a hydrant and hose, over the upper portion of the declivity sown with Italian Rye-grass, and divided by furrows into half acres, which are let to the cow-keepers of Edinburgh.† In the other instances which I have mentioned, the Rye-grass is treated as a biennial. The second year's sod broken up in November and sown down in the beginning of March. Here they have begun a system of renewing the Rye-grass by hoeing after the last cutting, and sowing fresh seed in the intervals between the tufts. The produce is estimated by the manager at 50 tons per Scotch acre. There is a good contrivance for carrying about the hose on a very large light windlass fixed upon a cart. I shall now briefly recapitulate what I think there is reason to consider as proved and what is not. I think it proved that by the constant application of liquid manure, at least from 25 to 30 tons of green Italian Rye-grass may be raised from the statute acre, equivalent to from about 7 to 9 tons of hay. Now, assuming 8¾ tons of Rye-grass = 2½ tons of hay to be a good crop under ordinary circumstances, we have a gain of 6½ tons of hay, at the outside, to the production of which Mr. Telfer has expended

1 ton guano—say	£11
8 cwt. of the share per acre and oilcake consumed, at 10s....	4
	£15

And if hay is valued at 4*l.* per ton, he has made a profit of 11*l.*, a very considerable sum, but not involving the question of 50 instead of five sheep. I have no doubt that Mr. Telfer and Mr. Kennedy have weighed and measured fairly what they undertook; but suspect that the small sample taken was the best. It is, however, to enlightened and spirited improvers—such as they are—that we look to corrections of my figures, and, at the same time, truth brought out in the mode which I have humbly suggested. I think it proved that cattle may be kept continually in the house, summer and winter, without suffering in health or in the production of milk and meat, and that straw as litter can be wholly dispensed with. This latter appears to me to be a matter of the greatest importance. The common farmer will ask you how he is to make the manure heap without straw. His only notion is putting as much straw as possible, to be trod under foot, and rotted in the fold; but if we turn to Liebig or Johnston, they tell us that the whole of what passes through the animal returns to the earth. The residue of proteine compound that is retained in the animal is scarcely worth recording. According to the Logan experiments, the increase in quantity as respects our winter house-feeding was 6 stones, allowing for larger animals 8 st. of flesh and fat—say 7½ st. of flesh = 33.7 lbs. dry beef, containing 6.4 lbs. of nitrogen and ashes = 90.6 green Rye-grass, or 25 lbs. of oil-cake. What is valuable in the rest, returns into the manure-heap, and thus is made to do a double duty, ministering to life in the animal, while it becomes more available to the plant as manure. If this view be correct, what a waste of food there is under the box and fold-yard systems. Now, as to what is not proved. I find no experiment from which we may conclude that there is an advantage in this house-feeding as to the manure supplied. I have little doubt that there is a great gain, but can find out no instance where the comparison has been made between the results of cattle-feeding on the Grass, and distributing their manure in a fresh and caustic state, and cattle fed on cut Grass, and their manure carefully fermented and applied to the soil just in the condition and at the time when it is wanted. We greatly want experiments to prove that the liquid-manure system is self-sustaining. It is not proved that the best mode of distribution has been attained, or that great economy might not result from the adoption of more iron pipes and hydrants, and less gutta-percha. It is not proved that dark closed-up tanks have any advantage over open ones."

* This is nearly double the usual allowance of 12 to 13 lbs. per hour per horse power, which would give about 9 cwt. for working 12 hours. I merely give the manager's statements to me, and much depends upon the construction of the steam-engine; but in either case we must see that nothing but the absence of water-power, and the extent of the duty to be done, can justify the application of steam as a driving power. I am inclined to think that all the secondary uses made of the boiler of a steam-engine are injudicious, as a small separate boiler—such as Stanley's—does minor work at a very trifling expenditure of fuel.

† In July last the price of hay was quoted at 11*d.* to 13*d.* per stone of 24 lbs. At this price, soil should have been worth about 25*s.* per ton, allowing for the expense of hay-making; in Dublin, same date, hay was 4*l.* 1*s.*, and soil about 25*s.*, so that the cow-keepers who pay 40*l.* for their acre of meadow, would, at 50 tons, get a gross produce 62*l.* 10*s.*; probably much more than the difference paid between the value of standing meadows and soil or hay

Lord Talbot asked, if Mr. Kennedy used iron pipes. Mr. Hamilton said, he used two-inch iron pipes, which would cost, at present, 19*d.* to 20*d.* a yard. Mr. Ball had been led to believe that the cost of establishing a liquid-manure system would be three or four times the sum stated by Mr. Hamilton—viz., 2*l.* per acre. Mr. Hamilton said, that Mr. Kennedy expended 300*l.* on his tank; but 2-inch pipes cost only 2*l.* per Scotch acre. Mr. Andrews said—Lord Erne might erect very expensive tanks, pipes, and engines, and all the means necessary for the distribution of liquid manure; but where was he to procure it? He consulted Dr. Hodges, of the Chemical Society of Belfast, and him (Mr. Andrews), and they informed his lordship, that from the best consideration which they were able to give to the subject, they considered it to be a very doubtful thing to expend so much money in preparations of the kind before he knew where he could obtain the supply. The result justified that observation. It was not long since a letter was read from Lord Erne, at a meeting in Belfast, inquiring how he was to obtain a supply of liquid manure to pass through those pipes which he had arranged for the purpose. The question was, whether dissolved bones or guano could be made available. He (Mr. Andrews) did not know how the point was settled; but every man appeared to think that, situated as Lord Erne was, it would have been more prudent that he should have compounded the whole of his manure, liquid and solid, and have applied it in a manner that would not only have been advantageous to himself, but he would, at the same time, have been setting an example to his tenantry, and those around, to act in a similar manner. He believed that if a pit be formed, and the whole compressed in a proper way, so as to prevent unnecessary fermentation, with the addition of some dry matter—peat mould, if it could be procured, or, if not, the ordinary application of straw—the whole manure would be absorbed; and if the pit be made water-tight, which was a matter of no great difficulty, it would be in no way a difficult task to apply the manure without the expensive means of pipes and steam-engines. He was the more strengthened in that opinion by the fact, that liquid manure alone, or solid manure alone, was not sufficient; but when both were united they were a proper manure, containing the phosphoric and ammoniacal elements; and if they were compressed into the smallest possible compass, without undue fermentation, everything desirable was obtained. The Irish farmer could not adopt the system of pipes and steam-engines, but he could adopt the plan which he (Mr. Andrews) suggested; and in doing that he did all that was necessary. But when such projects as that of pipes were laid before the farmer, he was led to think that all was nonsense and humbug, and would not listen to the things afterwards which might be of advantage to him. Liquid manure was a very good thing; and if he (Mr. Andrews) could be furnished with such a stream as issued from Edinburgh or Marylebone, he might then get up pipes and steam-engines; but first let him catch the hare, and then he would contrive to cook it. (Laughter.) He had no necessity for anything of the kind until a supply could first be insured. —Dr. Kirkpatrick, in reply to a question from the Chairman, said: I regret that, owing to the advanced period of the season at which the erection of the steam-engine and machinery at the Glasnevin farm was completed, the experiments tried on the application of liquid manure and their results are by no means so satisfactory as I could desire. I, however, confidently look forward to being able to lay before the public interesting and reliable information on this very important subject, as arrangements are being made that will enable us to carry out a series of experiments which will be conducted with as much accuracy as possible, and the results recorded carefully and truthfully. I think the statement which I am now about to submit to your lordships and the meeting will show that the application of liquid manure has been, under the peculiar circumstances of the case, highly successful. You will perceive from this return that on that portion of the field where the liquid was applied, that there is a gross produce of about 38 tons of Italian Rye-grass per statute acre, whilst on the remaining part of the field, which was not irrigated, the produce has been remarkably small—barely four tons per statute acre. It is almost unnecessary for me to remark that the past season was very favourable for the production of Grass, but in addition to this circumstance, I may state that the field on which the experiments were made, is not in a perfectly fertile state, which I attribute chiefly to its having been, some eight or ten years ago, imperfectly drained, and a large portion of the subsoil brought to the surface by trenching. When the Commissioners of National Education, with the view of rendering the course of instruction in practical agriculture as extensive and complete as possible, decided upon having a small steam-engine in addition to the ordinary farm machinery, it was considered advisable to annex the usual apparatus for distributing, by means of steam-power, the large quantity of liquid manure, not merely from the urine of the live stock, but also from the flushings of the privies, contents of the night vessels in the dormitories, and water and soap from the lavatories, and which could not be absorbed by the manure heap, and to cart it over the farm would have been an arduous, if not an impracticable undertaking. Iron pipes, with the usual hydrants, have been laid throughout about 50 statute acres, and it is intended to test the real value of the liquid manure irrigation on this small portion of the farm, and which, if proved to produce satisfactory and remunerative results, as it promises to do, can be extended.

PRODUCE PER STATUTE ACRE OF ITALIAN RYE-GRASS, GROWN WITH AND WITHOUT LIQUID MANURE.

Cutting.	Produce of part to which liquid manure was regularly applied.				Produce of part of same field to which no liquid was applied.			
	Tons.	cwts.	qrs.	lbs.	Tons.	cwts.	qrs.	lbs.
1st cutting, 11th May, 1854...	9	0	0	0	3	10	0	0
2d cutting, 12th June, 1854 ...	12	10	0	0	Not worth weighing.			
3d cutting, 4th August, 1854	8	0	0	0	None.			
4th cutting, 27th September, 1854 ...	8	10	1	24	None.			
5th cutting, 7th November, 1854 ...	3	17	0	0	None.			
Total ...	37	6	1	24	3	10	0	0

Mr. Ball said that so far as his own views went, he thought the practical observations made by Mr. Andrews were the proper view of the system, not looking lightly on the case as it had been brought under their notice by Mr. Hamilton, for he believed it would be advantageous to use liquid manure where a very large amount of it could be obtained, that there the system of engines and pipes would be advantageous. But they should hold fast by the system which Mr. Andrews had propounded for the guidance of the farmers of this country, and not frighten them by advising a system in their case necessarily beyond their means; but rather induce them, if possible, to use to the best advantage the manure which came in their way; if this be done, a great amount of good would be achieved. Mr. Ball then proposed that the remarks of Mr. Andrews be considered as generally applicable to the circumstances of the country; and also to express a strong feeling, which the meeting entertained, of the valuable suggestions made by Mr. Hamilton in the paper which brought the subject under their consideration.

Lord Talbot seconded this proposition, remarking that the very best thanks of the meeting were due to Mr. Hamilton for the able paper which he had read.

MANCHESTER.—At a late meeting of the Corporation and Town Council, the town-clerk read the following letter from Mr. Samuel Brooks, which was received with the most hearty applause:—

"Manchester, 8th Nov., 1854.

"To the Worshipful the Mayor, Aldermen, and Councillors of the City of Manchester.

"Gentlemen,—I am desirous of calling your attention to a subject which has long been spoken of both in public and in private, but which has not yet been fairly grappled with. I allude to the ultimate disposition of night-soil and sewage, the fertilising properties of which, to the extent of at least 100,000*l.* yearly, are now not only lost to us, but also pollute our streams. Our rivers should be maintained pure, and manure in all its varied forms should be preserved for its true and legitimate use, viz., food for vegetable existence. The mode of dealing with so vast a bulk will require a considerable outlay; but if, as I believe, it can be shown to be remunerative, capital will naturally be attracted to the enterprise. Your co-operation will be necessary to the success of any plan; and that you may obtain the best plan, I shall be glad to place at your disposal the sum of 1000*l.*, to be expended in preliminary inquiries, premiums for plans, and experiments as to the value of the night-soil. In inviting your aid for this purpose it should be understood distinctly that you should not be committed to any merely speculative expenditure of public money, but solely to the exercise of such powers as are vested in you for the public good, as may be required by the circumstances, and which it is impossible for any individual or association, without Parliamentary sanction, to bring into active and useful employment. If you will accept the trust, I beg respectfully to suggest that the committee of inquiry appointed by yourselves should secure the services of Mr. Fairbairn and Mr. Bateman for the engineering department, and Mr. Crace Calvert and Dr. Angus Smith for the chemical department.—I am, yours respectfully,

SAM. BROOKS."

Mr. Alderman Pilling said that when any gentleman would put down 1000*l.* for the promotion of a public object, in which he was not specially interested, his conduct must be at once admitted to be most liberal and encouraging. But he would suggest that it would be better that they should first consider whether they should accept the money with the responsibilities, or whether a committee should not inquire and report upon the subject. If they accepted the money upon the conditions stated, they would be bound to observe those conditions and to enter upon the investigation; but nothing would be lost by waiting a few days, or until the council next met, so that the committee might inquire and report more particularly upon the conditions to be attached to the gift of the 1000*l.* He should be very sorry indeed if it could be imagined that he wished to throw any obstacles in the way; his feeling was quite the reverse. He should be proud to be connected with those who could succeed in such an undertaking; and while he was satisfied that the completion of such a thing would be a great credit and an advantage to the city, he was sure that before anything was done, all the talent that could be found would be brought together.—The town-clerk said he had prepared a resolution which quite met Mr. Alderman Pilling's views. It was—"That the thanks of this council be tendered to Mr. Samuel Brooks for his communication, and for the liberal proposal therein made, to place at the disposal of the council, for public purposes, the sum of 1000*l.* That the letter be referred to the committee for general purposes, with instructions to consider and report thereon."

Mr. Alderman Pilling moved the resolution with the greatest pleasure—Mr. Joseph Adshead seconded it. There were conditions annexed to the offer that would require the greatest consideration; for Mr. Brooks's letter nominated the engineers and chemists for the examination of the soils, &c. He thought it would have been as well if Mr. Brooks had omitted those stipulations, leaving it to the council to obtain the very best professional advice they possibly could. No one would question the high position of Mr. Fairbairn, and the very circumstance of the corporation employing Mr. Bateman to construct their water works, seemed to sanction the view taken by Mr. Brooks as to him. But he (Mr. Adshead) must venture to think that, high as those gentlemen were as authorities, Mr. Brooks's letter did appear to limit the committee that might be appointed, in obtaining other advice and counsel. Professor Calvert was a good authority; but there might be gentlemen who understood the particular chemical combinations of night-soils, &c., better than even that gentleman did. If 1000*l.* was to be presented for a preliminary inquiry, let the question be an entirely open one, so that a committee might obtain the very best advice possible.—Mr. Alderman Neild said there was a saying that "A gift was a precious thing in the eyes of him that hath it; for whichever way he turneth it he turneth it to profit." But Mr. Adshead did not seem able to turn this munificent gift to profit, by any means. Could any man name higher authorities than those named by Mr. Brooks. He did not suppose that Mr. Brooks cared much upon the point; but he suggested certain names which he (Mr. Alderman Neild) considered very excellent. He must say, as a farmer—and perhaps there were not many gentlemen in the council chamber who would come within that category—that it was a most valuable donation. He knew that the amount of absurd nonsense that had been talked on this subject of sewage, &c., manure, almost passed belief; and he unfeignedly rejoiced at the prospect of the matter being put prominently before the public in something like a practical shape. He scarcely conceived it possible, so far as the interests of the community were concerned, that the council could discuss a more important question. Mr. Brooks expressly offered his most munificent donation, in order that the thing might be experimentally tested, without the expenditure of public money; and they were enabled to get over a very considerable difficulty. He hoped that beneficial results would come out of the offer; if they did not, it was certainly not the fault of Mr. Brooks.

Miscellaneous.

Guano, Nitrate of Soda, and Common Salt on Wheat.—I take the opportunity while writing to you of sending the result of some experiments made by me this season at Baldoon, on the application of manure to Wheat, and in continuation of similar ones made last year. In the centre of a 50-acre field one acre was left without manure, all the rest of the field receiving 2 cwt. of Peruvian guano per acre in autumn, at the time the seed was sown. The produce of the acre undressed has been tested against that of the adjoining acre, which received Peruvian guano, and this is the result:—

	£	s.	d.
One acre, with guano, 32 bushels, 63 lbs. weight per bushel, at 6s. 6d. per 60 lbs.	£10	18	4
One acre, without manure, 25½ bushels, 60 lbs. weight per bushel, at 6s. 6d. per 60 lbs....	8	5	9
	£2	12	7
Cost of 2 cwt. of guano in 1853	1	0	0
Profit per acre, beside one-fourth more straw ...	£1	12	7

The inferiority in the quality of the unmanured Wheat, as shown by the weight per bushel, is worthy of notice, as well as the fact that the unmanured Wheat was a week later in ripening than the other. The second experiment was made to test the value of nitrate of soda and common salt as a top dressing to Wheat in spring, and the result in this case has been extremely profitable. The Wheat was sown in December after a heavy crop of Swedes, all drawn off; and the whole field was top-dressed in April with 1 cwt. of nitrate of soda and 1 cwt. of salt per acre, given in two applications at a fortnight's interval, one acre near the centre of the field having been left undressed. This and the adjoining acre have been threshed, and yielded as follows:—

	£	s.	d.
One acre, with nitrate and salt, 42 bushels, worth 6s. 6d.	£13	13	0
One acre, without manure, 30 bushels, worth 6s. 6d. ...	9	15	0
	£3	18	0
Cost of manure, 1 cwt. nitrate, 18s., 1 cwt. of salt 2s. ...	1	0	0
Profit per acre...	£2	18	0

These two experiments supply little that is new, as they only corroborate hundreds of others made in various parts of the country in previous years. But they are useful in impressing upon the British grower the power he might possess of increasing the produce of his Wheat crops. It is not merely a question of profit to the farmer. Here are two substances, the application of which in certain known quantities to the soil give an increase which may be stated, on the average, at one quarter of Wheat per acre, or an addition of nearly one-fourth to its natural produce. An addition of one quarter per acre all over the country would be equivalent to the food of one-fourth of our population. It would make all the difference between plenty and scarcity, between the cheap loaf and the dear loaf, between steady prosperity and a drain of gold, with all its commercial disturbances. And yet the arrangements for the supply of articles known to possess such qualities, instead of being a prime object of care to the British Government, are intrusted to the charge of some uninfluential consul at the antipodes. *James Caird, 9, Little Ryder Street, St. James's; in the Times.*

The Horse Power Machine.—The next machine in sequence of farm operations would be the threshing machine, of which several were exhibited, but as all these require power to put them operation, it will be best to describe the horse powers made use of first. Of these there are two, based upon very different mechanical principles: the one known as the "sweep, or lever-horse power," similar to that commonly used in this country; and the other, peculiar to North America, is called,—the "rotary," or "railroad horse power," in which motion is given to an endless chain directly, by the weight and muscular power of the animal pressing on it. Of the former, there were several exhibited, two of which, however, presented points which appear to be worthy of notice, as tending to lessen the great loss sustained in "bringing up the speed" in the ordinary "horse power." These two were somewhat similar in construction, the difference between them being that the one (Taplin's) communicated its power by means of a cogged wheel of large diameter working directly into another or driving-wheel of smaller diameter, while the other (Palmer's) substituted a band for the large wheel, and thus drove the smaller wheel, over which it passed. The "railroad," or endless-chain power, is used far and wide throughout the Union, and for all purposes where power is needed. It may be seen daily in operation, driving threshing machines, circular saws, cotton-gins, elevators at the granaries and stores, ferry-boats, pile-driving, grinding, churning, &c., for all of which purposes it is well adapted, owing to the direct and immediate manner in which it communicates motion, and to its general compactness, cheapness, and facility of being moved about. These are made by almost every agricultural machine maker in the States, and as they vary but slightly in details of construction, and many have high local reputations, I have selected Emery's for description, the first premium having been adjudged to it by the New York State Agricultural Society, at the trial of implements held at Geneva in the autumn of 1852. *Professor Wilson's Report on the New York Exhibition*, p. 106. [Following this are drawings of the endless chain horse power in question, which we regret we cannot give; the above notice will be understood better in connection with that on the same subject by Mr. Thomas, given in another column.]

Calendar of Operations.

NOVEMBER.

"November aye full is of misty days,
Or clouded skies, and storms, and miry ways."

BORDER OF THE FENS, *Nov.* 20.—Much welcome rain fell last week—welcome to those who dwell in towns as well as country, for there is a positive scarcity of water; everywhere complaints abound of wells being dry, so that sweet spring water is with many indeed a luxury. In some towns water cannot be procured to work maltings and breweries, streams do not contain enough for the millers, and all kinds of shifts and contrivances have barely sufficed for a supply of this most necessary element for horses and horned stock: in some cases, the want of water has delayed the sheltering of cattle in the yards, when their drink has to be carted a long distance. As we approach the dark days of Christmas, it becomes daily more apparent that the food for stock will this year be an expensive affair. Hay, 5*l.* a ton and upwards; Linseed cake, 13*l.* 10*s.*; grinding Barley, 34*s.* to 36*s.* per quarter; Oats, 30*s.* to 32*s.*; Pulse, 44*s.* to 46*s.*; Turnips and Mangolds scarcely anywhere an average yield; and no "rough Grass" in the pastures for the hardy "Scots." It is true that straw is plentiful, of excellent quality, deserves to be taken great care of, and will be a real treasure if we should have a prolonged or severe winter. Rape-cake at 6*l.* a ton, and a full crop of Carrots, will help to keep young horses and cows in condition; but the pigs will miss diseased Potatoes, and new schemes should be devised to economise all feeding materials, since we must manufacture sufficient manure, and keep the stock thriving. The "Wheat seeding" progresses favourably, rain being as beneficial to that process as it is to many other accounts. We say plough dry, and sow wet; but much of the seed has gone in dry and laid dry until the last few days. If the October sown can be got in with a moist bed, there is a better chance of the plant becoming strong enough to survive the casualties of winter; but it will be admitted that this year November sown may be expected to succeed as well as that put in earlier. Now, as the only impediment to having the land ploughed soon enough this autumn has been the excessive hardness of the soil, we may presume that there are several instances where the land was ploughed early and yet seeded late, it may not be an inappropriate question to ask whether five or six weeks intermediate is too long a time to elapse, or whether a field sown directly after being ploughed gives better promise of a full crop than one that has lain a considerable time undisturbed? The old Red Lammas Wheat has always in this neighbourhood, a large circle of patrons; next we find a partiality for the "siah" or "sire." The "giant" is a coarse-growing sort, but productive. The Rivet is sold to millers with difficulty, and therefore will not be much used this year. "Bristol Red" yields remarkably well, but is not a favourite Wheat to grind. "White chaff" has many admirers. White Wheat is not sown much; samples of Taunton Dean are most frequent. Talavera is seldom seen. The purchase of seed Wheat being nearly over, we may expect less eagerness to try, and as the prices have gone far beyond any one's expectations, the probability is that to some extent they may recede until winter sets fairly in. Last Saturday good 18-stone Wheat was currently sold here at 74*s.* per quarter. Labourers are fully employed; ordinary men at 13*s.* per week. *J. W., Peterborough.*

SOUTH DEVON, *Nov.* 20.—The weather during the last month having been exceedingly favourable for tillage purposes, a large breadth of Wheat land has already been sown in good condition, especially in the heavy lands, and the work still goes on briskly. We may also add that the young plant looks generally healthy and vigorous. The Turnips in the land intended for Wheat are being consumed by sheep, and the Mangold crop lifted from the ground and stored in canes, either against a dry hedge bank or wall; they are then covered with straw and thatched over with a little reed. Some store them similar to Potatoes, and cover them over with earth, but on the whole the former plan will be found the quickest, straw being generally abundant at this season of the year. The Mangold crop is not a good one, in short all green crops are very partial, none up to the mark, and in many places a decided failure. We are now busy breaking Apples for cider; this is also a very partial and deficient crop, but we have a large supply of foreign fruit which has been the means of keeping down the price to between 30*s.* and 32*s.* 6*d.* per hogshead. The cost of converting the fruit into cider is calculated to be about 4*s.* per hogshead; this includes fetching the Apples and drawing the cider to the cellar, when of course it passes into the hands of the cellarman to be dealt with as required. Our last year's corn crops appear to give satisfaction, so far as the yield is concerned, and are realising good prices. Wheat may be quoted at from 76*s.* to 80*s.*; Barley from 32*s.* to 35*s.*; and Oats from 28*s.* to 30*s.* per quarter. Meat still continues high, both beef and mutton fetching from 6½*d.* to 7*d.* per lb.

Notices to Correspondents.

BONES FOR GRASS LAND: *Routh Court.* We would recommend 3 cwt. per acre of the superphosphate rather than a large dressing of bones unprepared, except by crushing. Bone-dust is a very efficient manure. You can apply it in the state of superphosphate early in spring. It is cheaper and more efficient to use the superphosphate.

BONES ON GRASS: *G B.* What do you mean by "prepared" bones? If you mean the superphosphate of lime, apply in spring or early in February. If you mean merely reduced by crushing, or fermentation, or grinding, apply broadcast.

CHESHIRE BONING: *Theta.* The remark as to the wastefulness of the process referred especially to the large quantities, half reduced, which are applied at once. Three or four quarters of bone-dust will yield annually so much soluble matter. Better purchase and apply annually that quantity of soluble superphosphate yourself than invest a large sum in a great quantity of material from which rain-rater can dissolve the necessary supply per annum. The wastefulness is in the investment of a large sum of money at once, even though it is not to be repeated for 20 years.

GRASS LAND: *A B.* If you cannot get 3 cwt. of guano per acre to mix with a cart-load of loam, and spread by shovel out of the cart per acre, then you can spread, in early spring, 3 cwt. of superphosphate of lime, and afterwards 20 bushels of soot mixed with 3 cwt. of salt.

LIME: *J W R.* It can no doubt be burned with peat. Perhaps some correspondent will state his experience. In a compost of peat and lime there is no harm in an excess of the former, and peat mould from under that ling is probably as good as that from under long-growing ling. We do not know the relative value of leaves as manure, but should not prefer those of the resinous Pine tribe: Oak, Alder, Hazel, &c., would be better. The quantity of lime applied per acre may be increased, according to the coarseness of the herbage on which it is to be applied.

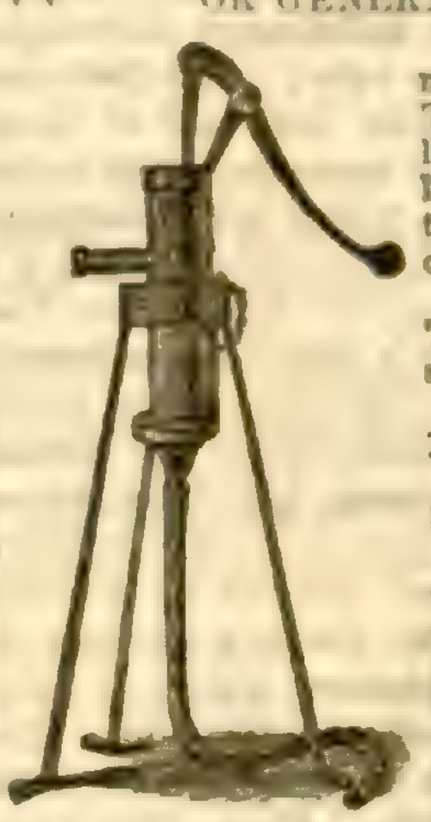
THE "PROPERTIES OF QUICK LIME:" *A Farmer.* They are the subject of a volume rather than of a paragraph. It will neutralise mischievous acid substances in the soil—it will displace, and so fit for use, portions of the soil now fixed and useless—it will so act upon vegetable matters in the soil as to make them capable of contributing to the growth of new vegetable structures—and it is itself directly to some extent the food of plants.

ERRATUM. In the table of weeds and their produce, published in the leading article last week, Centaurea jacobea should have been C. scabiosa; and the produce of Chrysanthemum leucanthemum is 13,500 seeds per plant. Below this table, for—"In my own immediate neighbourhood," read "in our own," &c.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.

MESSRS. BURGESS AND KEY, as Mr. PARKES' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.
103, Newgate Street, and 52, Little Britain, London.

WARNER'S IMPROVED LIQUID MANURE OR GENERAL PORTABLE PUMP.



The valve is a ball of imperishable material, and cannot clog in action. The barrel is of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure. The legs will fold together, and the whole may be carried on shoulder to any pond or tank required.

Price of 4½ in. Pump, with legs, 3*l.* 3*s.* The barrel is 27½ in. long, and the legs are 5 ft. high.

1½ inch Gutta Percha Suction Pipe, 1*s.* 6*d.* per foot.

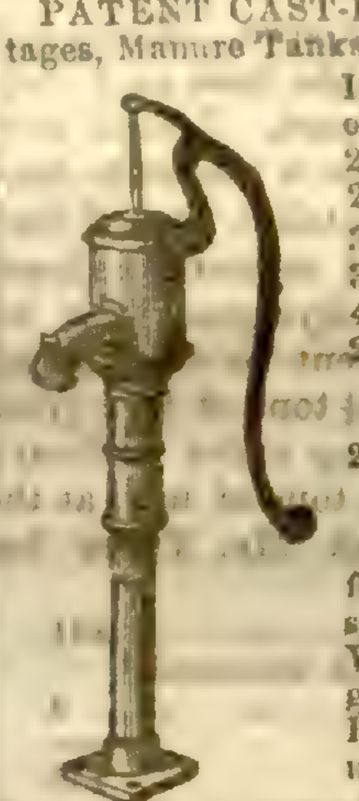
1½ inch Flexible Rubber and Canvas Suction Pipe, 3*s.* 6*d.* per foot.

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water, by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c.—Engravings sent on application.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS, for the use of Farms, Cottages, Manure Tanks, and Wells of a depth not exceeding 30 feet.



Diameter of Barrel	Length of Barrel, under nose.		£ s. d.
2½ in. short	1 ft. 7 in.	Fitted for lead, gutta percha, or cast iron flanged pipe, as required.	1 12 0
2½ " long	3 " 3 "		1 15 0
3 " ditto	3 " 6 "		2 12 0
3½ " ditto	3 " 6 "		2 18 0
4 " ditto	3 " 6 "		3 5 0
2½ in. short, with 15 feet of Lead Pipe attached, and Bolts and Nuts ready for fixing			2 12 0
2½ in. long	ditto	ditto ditto	2 15 0

The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or Country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER AND SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water, by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

THE LINCOLN SHOW.

FIRST PRIZE.

ROOT PULPING MACHINE.—Invented and Patented by FREDERICK PHILLIPS, of the Hall Farm, near Brandon, Suffolk. The object of these Machines is to introduce a more profitable Mode of Feeding Fattening Animals, by giving them Roots and dry food mixed together, instead of the old system of feeding them at one meal with cold sloppy roots, and at another with compact farinaceous or oleaginous food. Their peculiar advantage is that they so effectually pulp or mince down Turnips or other Roots that animals cannot pick them out from any dry meal or chaff they may be mixed with. Animals by this mode improve faster, and at less expense, than by the old system of feeding. It is also an economical method of keeping lean stock, whether the Flock, the Herd, or Horses, as they may be made to eat with a relish Straw, Chaff, or indifferent Hay Chaff, by mixing a portion of minced Roots with them. These Machines have been greatly simplified, improved, and reduced in price, by the Patentee, since they were exhibited at the Lincoln Show. They will be Exhibited at the coming Cattle Show of the Smithfield Club—Stand 236.

THE PATENT SPRING SHAFT CART AND SAFETY CAR.—This vehicle is admirably adapted for the use of country gentlemen, farmers, emigrants, and sportsmen, for whose purposes it will be found superior to any yet introduced, being simple in structure, easy of draught, roomy, light, and safe.

As a family car or chaise cart to convey persons, luggage, &c., or as a sporting or dog cart, its advantages consist in the great number and weight it will carry, its safety in a hilly country, its ease of draught, and the facility it affords, to ladies especially, for getting in and out.

As a Tradesman's, Colonial, Emigrant's, or Farmer's Cart, it is well adapted for the carriage of Implements, Stock (such as calves or lambs), and goods of all kinds.

The peculiarity of the Spring enables it to be applied, without expense, to any ordinary Farm-cart. Specimens of each description may be seen at the Maker's, T. B. AYSHFORD, 56, Drury Lane, London; and will be exhibited at the Smithfield Club Agricultural Show in Baker Street, by Mr. WILLIAM PIERCE, Agricultural Engineer, 78, Mark Lane, City, from whom all information and full particulars may be obtained.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2*d*. to 3*d*. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES.

THOMAS MILLINGTON'S present prices for good 16 oz. sheet glass, boxes included.

6 in. by 4 in. to 6 in. by 5½ in.	13*s*. 3*d*.	per 100 feet.
7 by 5 to 8 by 6	13 6	
8½ by 6½ to 10 by 8	14 0	
10½ by 8½ to 14½ by 10½	16 0	
17 by 10 to 18 by 12	18 0	

A great variety of sizes. Particulars had on application.

ORCHARD HOUSE SQUARES on Mr. RIVERS'S plan, to whom I have sold some thousands of feet.

Large Sheets for cutting up, in cases, at 2½*d*. and 3*d*. per foot.

HARTLEY'S IMPROVED ROUGH PLATE GLASS, Sheet, and Rough Plate, Tiles, Milk Pans, Bee and Propagating Glasses, Wasp Traps, Cucumber Tubes, Preserve Jars, with and without covers; Fern Glasses.

Plate, Sheet, Crown, and Ornamental Window Glass. Crystal Glass Shades for ornaments.

Greenhouses, erected in either wood or iron. Garden Lights and Frames.

87, Bishopsgate Street Without, London—same side as Eastern Counties Railway.

BOYDELL'S PATENT HAND-GLASSES.

Size 15 by 12 by 18½ inches high.

With 16 oz. Glass	9*s*. 0*d*. each.	
„ 21 oz. „	10 0	„
„ 26 oz. „	12 0	„

N.B.—The advantages of these Hand-Glasses are—

1st. *Saving in Packing and Carriage*, being so contrived as to be readily taken to pieces and packed in a small compass.

2d. *Glazing without Putty or Glazier*—the Glass being fixed in grooves in the iron frame.

3d. *Facility for Ventilation*—the two top panes being made to slide up and down at pleasure.

4th. *Durability and Solidity of the Frames*—which are made of wrought iron.

JAMES PHILLIPS & Co., Agents for above, 116, Bishopsgate Street Without, London.

BY ROYAL LETTERS PATENT.

THE COSMOPOLITAN GLASS COMPANY, 296, Oxford Street, London.—The Managers beg to inform the Nobility and Gentry, Farmers, Gardeners, &c., that their new List of Prices may be had free on application at the Company's Depôt.

HARTLEY'S PATENT ROUGH PLATE, for Roofing Conservatories, Halls, and Public Buildings.

PLATE, CROWN, and SHEET WINDOW GLASS.

Coloured and Ornamental Glass of every description.

Glass Milk Pans, Pails, Tests, and Measures; Cream Pots and Syphons; Churns, Butter Tests and Slabs; Tiles and Slates; Bee Hives, &c.

Moore's Patent Ventilator and Lockhead's Patent Perforated Glass, for Dairies and Greenhouses.

Aquavivariums, Fern Shades, Propagating Glasses, Fruit Protectors, Preserve Jars, Cucumber Tubes, Hand Lights, Flower Vases, Labels, &c., and all kinds of Agricultural, Horticultural, Architectural, Domestic, Scientific, and Ornamental Glass, British and Foreign, at the lowest prices.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

ALFRED KENT'S PATENT WEATHER-PROOF GLAZING WITHOUT PUTTY.—For Horticultural Buildings in Wood or Metal.

HORTICULTURAL BUILDING WORKS, CHICHESTER.

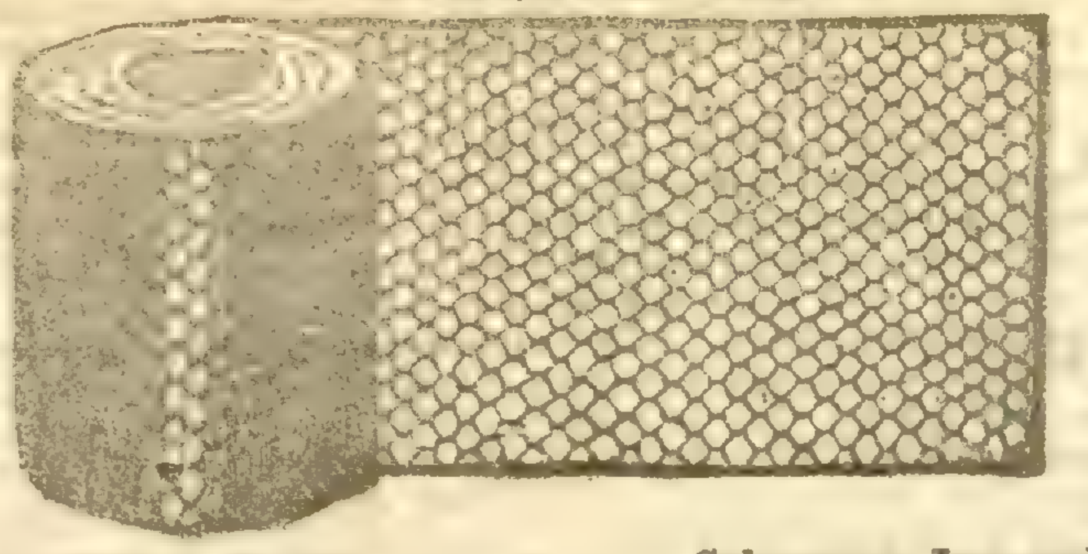
Illustrated Books describing inventions, containing prices and particulars relating to the different designs, sent on receipt of four postage stamps. Nurserymen and others appointed agents on application.

Horticultural Buildings upon this plan having been erected in many different parts of the country, and having stood the trial of all weathers, and more especially the severest of all, viz., frost, A. KENT, with full confidence, strengthened by the many flattering testimonials he has received, can safely guarantee the proper working of his Patent System of Glazing. Estimates and Plans sent, including Heating by Hot Water.

THE COMFORT OF A FIXED WATER-CLOSET FOR 1*l*.—Places in gardens converted into comfortable water-closets by the PATENT HERMETICALLY SEALED PAN, with its self-acting valve, entirely preventing the return of cold air or effluvia. Any carpenter can fix it in two hours. Price 1*l*. Hermetically-sealed Inodorous Chamber Commodes, 1*l*., 2*l*. 4*s*., and 3*l*.; also Improved Portable Water-closets, with pump, cistern, and self-acting valve. A prospectus, with engravings, forwarded by enclosing two postage stamps.—At FYFE & Co.'s Sanatorium, 46, Leicester Square.

GALVANISED WIRE GAME NETTING.—

7*d*. PER YARD, 2 FEET WIDE.



		Galvanised.	Japanned iron.
2-inch mesh, light, 24 inches wide	...	7*d*. per yd.	5*d*. per yd.
2-inch „ strong „	...	9 „	6½ „
2-inch „ extra strong „	...	12 „	9 „
1⅝-inch „ light „	...	8 „	6 „
1⅝-inch „ strong „	...	10 „	8 „
1⅝-inch „ extra strong „	...	14 „	11 „

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasantries, 3*d*. per square foot. Patterns forwarded post free.

Manufactured by BARNARD & BISHOP, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

H. J. MORTON AND Co., 2, Basinghall Buildings, Leeds.—GALVANISED GAME AND POULTRY NETTING, very strong and neat, NEVER REQUIRES PAINTING.

24 inches wide, 3-inch mesh, 4½*d*., 6*d*., and 8½*d*. per yard.
24 inches wide, 2-inch mesh, 7*d*., 9½*d*., and 1*s*. per yard.

GALVANISED IRON SPOUTING, for Dwellings, Cottages, Farm Buildings, &c., NEVER REQUIRES PAINTING.

Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalte Roofing Felt, &c.

FOR IRON CONSERVATORY STEAM PIPES, FENCES, ETC.

WILSHERE'S BLACK VARNISH is the best article that can be used, giving a rich black gloss. Goes twice as far as paint; 4*s*. per gallon.

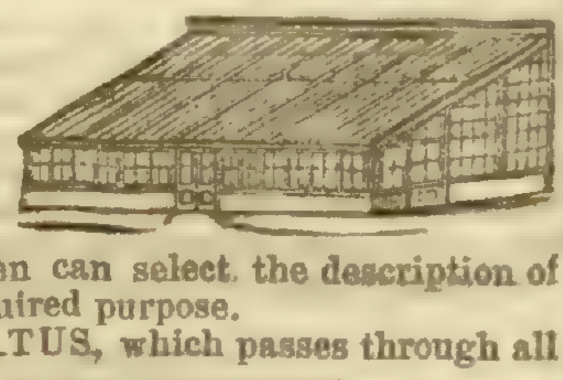
2, Talbot Court, Gracechurch Street, London. Agent, St. David Street, Edinburgh.

HORTICULTURE IN ALL ITS BRANCHES.

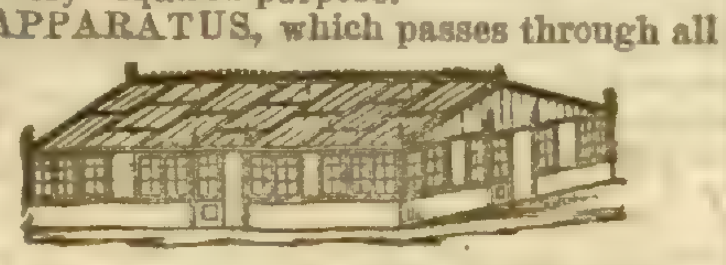
JOHN WEEKS & Co., King's Road, Chelsea,

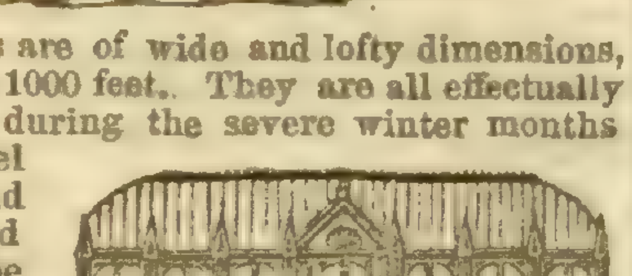
HOTHOUSE BUILDERS.

THE NOBILITY AND GENTRY about to erect Horticultural Buildings, or fix Hot-water Apparatus, will find at our Horticultural Establishment and Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.



The HOT-WATER APPARATUS, which passes through all the Houses and Pits, affording both top and bottom heat, is in constant operation and particularly worthy of attention. Many of the Houses and Pits are of wide and lofty dimensions, and together equal in length 1000 feet. They are all effectually heated by *one boiler*, which, during the severe winter months does not cost in labour and fuel more than 3*s*. 8*d*. per day, and the apparatus is so arranged that each House or Pit may be heated separately and to the required temperature. The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.





Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application to JOHN WEEKS & Co., King's Road, Chelsea, London.

GREEN AND HOT-HOUSES made by machinery, at J. LEWIS'S HORTICULTURAL WORKS, Stamford Hill, Middlesex. Sent to all parts of the United Kingdom. These buildings are warranted of the best materials, and put together in a superior manner. Being manufactured by steam-power, they are considered the cheapest and best made in England. The Trade and Merchants supplied at wholesale prices. List of Prices by enclosing two postage stamps.

WEIR'S DRAINING LEVEL.

PRICE 30*s*.

These Draining Levels have lately been greatly improved; they have stood the test of five years' use, during which upwards of 1000 of them have been sold. They are so simple that any labourer who can read can use them. They require no graduated staff, the index telling at once the rise and fall in inches without any computation.

EDWARD WEIR, Agricultural Engineer, 16, Bath Place, New Road, (6 Doors West of the Hampstead Road), Removed from Oxford Street.

HOSE PIPING.—GREAT REDUCTION IN PRICE.

PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense pressure, and much more than leather, vulcanised rubber, or any other hose, and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented inventions, the cost of manufacturing it is now reduced at least 60 per cent., which advantage is offered to the public.

BURGESS AND KEY, 103, Newgate Street, and 52, Little Britain, who on application will forward wholesale and retail prices.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1*s*. 6*d*. per yard run, of ELISHA THOMAS ARCHER, 7, Trinity Lane, Cannon Street, City, and the Royal Mills, Wandsworth, Surrey.

TO FLORISTS AND OTHERS.

J. JONES, IRON MERCHANT, has always a great variety of CONICAL and SADDLE BOILERS in STOCK; also Fire and Furnace Bars, Ornamental and Plain Supply Cisterns, Double Doors and Frames, Furnace Grates, Soot Doors, Hot Water Pipes, Elbows, Tees, Syphons, Throttle Valves, Stop Cocks, Flange and Socket Elbows, &c.; also Trough Pipes. Drawings and prices of the above, on application to J. JONES, Iron Bridge Wharf, No. 6, Bankside, London, near the Southwark Iron Bridge.

STEPHENSON AND PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

VISITORS TO THE SMITHFIELD CATTLE SHOW are invited to inspect BREIDENBACH'S PERFUMERY WAREHOUSE, 157 B, New Bond Street, where will be found a choice collection of elegant Presents, Christmas, and New Year's Gifts. The GUINEA CASE of PERFUMERY contains every requisite for a lady's or gentleman's toilet, including two bottles of choice perfume for the handkerchief, a glass jar of prepared cream for the hair, a sachet of ground dried flowers, a bottle of smelling salts, or Vinaigrette, a china pot of lip-salve, a jar of rose cold cream, a box of Odonto tooth powder, and a bottle of rose-scented Eau de Cologne. Also a neat case fitted in the same way, 10*s*. 6*d*. each. Real Eau de Cologne, 10*s*. case of six bottles, or 2*s*. singly.

157 B, New Bond Street, London.

METCALFE AND CO'S NEW PATTERN TOOTH BRUSH, PENETRATING HAIR BRUSHES, AND SMYRNA SPONGES.—The Tooth Brush performs the highly-important office of searching thoroughly into the divisions and cleansing in the most extraordinary manner—hairs never come loose. Peculiarly penetrating Hair Brushes, with durable unbleached Russian bristles, which will not soften like common hair, and immense stock of genuine unbleached Smyrna Sponge, with every description of British and Foreign Perfumery, at METCALFE, BINGLEY, & Co.'s only Establishment, 130 B and 131, Oxford Street, second and third doors west from Holles Street.

CAUTION.—Beware of the word "from" Metcalfe's, adopted by some houses. Metcalfe's Alkaline Tooth Powder, 2*s*. per box.

FORD'S EUREKA COLOURED SHIRTING is now ready, in 200 different patterns. Specimens in varied colours sent post free on receipt of six stamps.

FORD'S COLOURED EUREKA SHIRTS, Six for 27*s*.

FORD'S WHITE EUREKAS, best quality, Six for 40*s*.; second quality, Six for 31*s*.; if washed ready for use, 2*s*. extra.

CAUTION.—Ford's Eureka Shirts are stamped, "38, POULTRY, LONDON," without which none are genuine.

⁎ Catalogues with particulars post free.

RICHARD FORD, 38, Poultry, London.

COTTAM'S NEW PATENT FOR STABLE REQUISITES.

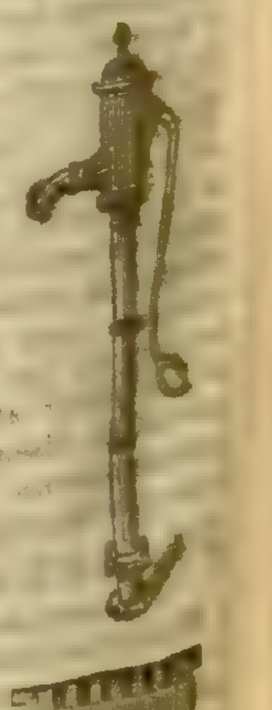
COTTAM AND HALLEN, the original projectors of the above arrangement of MANGER, RACK, and WATER-TROUGH, as one Fixture, which obtained the Great Exhibition Prize Medal, and universally approved of, have added all the latest improvements to their invention (secured by patent), which includes an entirely new method of attaching the halter, ball, and rein, giving to the horse greater freedom, and being noiseless in their operation, add much to its comfort whilst feeding and convenience when at rest.

COTTAM'S ENAMELLED MANGERS

are constructed in the best possible manner, both as to form and utility, are cleanly in appearance, durable and impervious to infection; manufactured PLAIN, GALVANISED, or ENAMELLED.

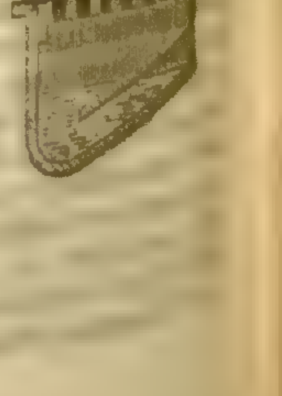
IMPROVED PUMPS,

OF THE BEST WORKMANSHIP AND WARRANTED.



The VALVES and SUCKERS of these Pumps are constructed upon an entirely new and SIMPLE principle; they are not likely to get out of order; should they do so, can easily be repaired, as the Pump is so contrived that the valves can readily be got at.

An Improved CAST IRON TRAP, strongly recommended by the Sanitary Commissioners, and suitable for Sugar Bakers, Slaughter Houses, &c. &c. It is so formed that the Trap-plate will pass any matter the top grating will let through, and therefore is not liable to stoppages; and well adapted to Stables and Stable-yards, for saving the best part of Liquid Manure.



Improved Stable Guttering, with moveable safety covers, Sanitary Traps, Stable Pumps, Double Corner Mangers, Harness-room Appendages, and every article in Stable Furniture. Chaff Cutters and Oat Bruisers, kept on show.

A STALL fitted up, complete, exhibited at the Crystal Palace, Sydenham, Stand No. 19, Agricultural Department; and at

COTTAM & HALLEN'S WORKS, 2, Winsley Street, Oxford Street, London.

WARMING AND VENTILATING.—Descriptive Catalogues and Estimates on application.

DERBY BURIAL BOARD.

TENDERS FOR TREES AND PLANTING.

WANTED, by the Derby Burial Board, TENDERS for PROVIDING and PLANTING TREES in the NEW CEMETERY adjoining the Nottingham Road, Derby. The plan and specification may be seen at the Clerk's Office, 14, Full Street, Derby, after Thursday, the 30th inst. Sealed Tenders addressed to "The Chairman of the Derby Burial Board," marked "Tender for Planting, &c.," must be delivered at the Clerk's Office, not later than 12 o'clock at noon, on Thursday, December 14.

JOHN WALKER,
Clerk to the Board.

November 21.

TO BE SOLD, a few short-legged PARTRIDGE-COLOURED COCHINS, from Mr. Punchard's Stock, at 12s. the pair; also some COCKERELLS, from a "Sturgeon" Hen by a Buff "Andrews" Cock, at 9s. each; the above are good birds, six months old. Also two pairs of SILVER-SPANGLED HAMBURGHS, from Prize Stock, at 10s.—Address R. O., 7, Raeburn Place, Edinburgh.

TO BE SOLD, BUFF COCHIN CHICKENS, from first class Prize Birds, Brahma Pootra Chickens, from imported American Prize Birds, and Spanish Chickens. Also some very good one-year-old Birds of the above descriptions. Wire, Game, and Poultry Netting, Poultry Hurdles, Hen-houses, Chicken Coops, Flower Stands, and Trainers, Garden Arches, and every kind of Wire Work, useful and ornamental.—T. H. Fox's, City of London Wire Works, 44, Skinner Street, and 6 & 8, Snow Hill. Illustrated Catalogues forwarded post free.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction, at the Mart, Bartholomew Lane, on FRIDAY, Dec. 1, at 12 o'clock, a first-class collection of DUTCH BULBS, consisting of the finest Double and Single Hyacinths, Narcissus, Jonquils, Anemones, Crocus, Snowdrops, Tulips, &c.; also a selected assortment of Standard and Dwarf Roses, Ornamental Trees, and American Plants well set with bloom buds, &c. On view the morning of Sale.—Catalogues had at the Mart; and of the Auctioneers, American Nursery, Leytonstone, Essex.

CHOICE COLLECTION OF DUTCH BULBS, STANDARD ROSES, ETC., ETC.

MR. ALEXANDER will Sell by Auction, at the Mart, near the Bank of England, on THURSDAY, November 30th, at 12 o'clock, a choice collection of DUTCH BULBS, comprising Hyacinths, Crocus, Narcissus, Anemones, Ranunculus, Tulips, &c.; also choice Standard, Dwarf, and Climbing Roses, Azaleas, Camellias, and other plants.—May be viewed on the morning of sale, and Catalogues had.

RANELAGH.

TO GENTLEMEN PLANTING, NURSERYMEN, AND OTHERS.

MR. GEO. HAINES has been instructed to sell by Auction, on the grounds (to be cleared for building purposes), near Chelsea Hospital, on TUESDAY, November 28, at 12 o'clock, large Elm, Poplar, and other Timber Trees; Cedar of Lebanon, young Lime Fruit, and other Trees; Shrubs, Evergreens, Roses, Iron Hurdles, Wood Fencing, Brick Walls, Forcing Pits, Burrs, and Effects. May be viewed. Catalogues to be had on the premises; of Mr. Tuck, Nurseryman, Sloane Street; and at Mr. HAINES' Offices, Grosvenor Street West, Eaton Square, and 12, High Street, Kensington.

COLESHILL, BERKS.

MESSRS. FIDEL AND DYKE are honoured with instructions to announce that the annual SALE of STOCK of the Right Honourable the Earl of Radnor is fixed for MONDAY, the 4th December, 1854, (the day before Farringdon Great Market). The Sale will include 34 FAT HEREFORD SHORT-HORNED and DEVON COWS, HEIFERS, and STEERS; 250 SUPERIOR FAT SOUTH-DOWN SHEEP, and 8 FAT PIGS; also 4 FIRST-CLASS HEREFORD and SHORT-HORNED BULLS; 2 VALUABLE CART-HORSES, and about 40 sacks of POTATOES.—Sale to commence punctually at Two o'clock. Catalogues (with Pedigrees of the Bulls) may be had of the Auctioneers, Farringdon, Berks. Coleshill is about four miles from the Shrivenham Station, on the Great Western Railway.

IT IS THE PECULIAR CHARACTERISTIC OF

PARR'S LIFE PILLS

that they purify the system mildly and imperceptibly, so that there is no reaction or tendency to constipation afterwards, as is the case with the purgatives administered by many apothecaries. There are instances of persons with diseased livers and tender lungs who have passed years of misery, pain, and apprehension, but who, after taking PARR'S LIFE PILLS, have actually been made whole, the liver having resumed its proper functions. For Bilious Disorders, Liver Complaints, Indigestion, Costiveness, Sick Headache, Depression of Spirits, Pains in the Back, Gravel, and Lumbago, PARR'S LIFE PILLS will be found a safe and admirable remedy. Invalids should make an immediate trial of this excellent, long-tried, and successful medicine.

Sold by E. Edwards, 67, St. Paul's Churchyard; Barclay and Sons, Farringdon Street; Sutton and Co., Bow Churchyard; Hannay and Co., 63, and Sanger, 150, Oxford Street, London; and by all respectable chemists and medicine vendors in town or country.—In boxes, price 1s. 1½d., 2s. 9d., and in family packets 11s. each.

*** Be sure to ask for PARR'S LIFE PILLS.

HOLLOWAY'S PILLS INFALLIBLE FOR THE CURE OF FEMALE COMPLAINTS.—Mr. G. E. Taylor, of South Cave, informs Professor HOLLOWAY, in a letter dated Sept. 26, 1854, that—"Mrs. Sarah Cave, of Ellakes, was afflicted for a long time with swellings in the stomach (which occurred at the turn of life), giving strong indications of dropsy,—in fact she had been frequently told that dropsy was her complaint. She was ultimately thrown on a bed of sickness, when she commenced using HOLLOWAY'S Pills; after taking a few doses, she was completely cured, and now enjoys excellent health,—better than ever she felt before."—Sold by all Vendors of Medicine; and at Professor HOLLOWAY'S Establishment, 244, Strand, London, and 80, Maiden Lane, New York.

BLAIR'S GOUT AND RHEUMATIC PILLS Price 1s. 1½d. and 2s. 9d. per box.—Mr. William Courtney, of Barton Stacey, Hants, says:—"I had resort to your Pills, and within two hours I was quite easy. The use of these Pills ought really to be known all over the world." Among the many discoveries, none have conferred such a boon u on suffering humanity as that of Blair's Gout and Rheumatic Pills; they require neither attention nor confinement, and are certain to prevent the disease attacking any vital part. Sold by all medicine vendors. Observe that "THOMAS PROUT, 229, Strand, London," is impressed upon the Government stamp.

FRAMPTON'S PILL OF HEALTH.—"For upwards of nine years (writes Mr. Thomas Province, of Winchmore Hall, Middlesex), I have experienced the efficacy of this excellent medicine, and I have the happiness of saying that I never had a better state of health. I beg further to add that this medicine is in general use by my family, and we know of nothing to equal it." For females these pills are truly excellent, removing all obstructions, the distressing headaches so very prevalent with the sex, depression of spirits, dulness of sight, nervous affections, blotches, pimples, and sallowness of the skin, and give a healthy juvenile bloom to the complexion. Sold by all medicine vendors, price 1s. 1½d. per box.—Observe that "THOMAS PROUT" is on the Government stamp.

JOHN MORREN, GENERAL COMMISSION AGENT, Ock Street, Abingdon, is open for Commissions for the sale of Agricultural Implements, Manures, Seeds, &c., and for the purchase of Corn, &c.

AGRICULTURAL TUITION.—Sons of Gentlemen received as Agricultural Pupils into the family of a Clergyman occupying a Farm, cultivated under the Improved System, 25 miles from London.—Address Rev. C. C., Office of this Paper.

NOTICE.

OVER-COATS, CAPES, &c.—One of the largest stocks in London of every description, first-class garments, at lowest charges; also of Youth's ditto, all made thoroughly impervious to rain, without extra charge, or made to order at a day's notice.—W. BERDOE, 96, New Bond Street, and 69, Cornhill (only).

TO LOVERS OF FISH.—100 Genuine Yarmouth Bloaters for 6s., package included, forwarded to all parts on receipt of Penny Postage Stamps, or Post Office Order, for the amount preferred.

Address, THOMAS LETTIS, Jun., Fish Curer, Great Yarmouth.

DEANE, DRAY, AND CO., have a very large and superior stock of FRENCH MODERATOR LAMPS now on sale.—(Opening to the Monument), London Bridge.

ESTABLISHED A.D. 1700.

TEN THOUSAND STOVES.

THE TENTH THOUSAND OF THE PATENT PORTABLE SUSPENSION STOVE is now on sale. These Stoves, so justly celebrated for preserving a pure and healthy atmosphere, and for their extraordinary economy in the consumption of fuel, are sold, wholesale and retail, by DEANE, DRAY, AND CO., 46, King William Street, London Bridge; and may be obtained of most Ironmongers.

The IMPROVED PATENT VENTILATING STOVE, which is strongly recommended, may also be seen at the above establishment. Prospectuses, &c., forwarded post free.

THE MOST APPROVED STOVES.—The demand for the CHUNK and VESTA STOVES (separately patented), still continuing unabated, and numbers having been sold last season (in all upwards of 14,000) through the patronage of families who have had experience of their pre-eminently useful qualities, WILLIAM S. BURTON has renewed confidence in recommending them for their cleanliness, economy, and safety. During the last 13 years they have been found sources of great comfort in the bedroom of the invalid, affording an uniform temperature throughout the day and night, with one supply of fuel, without attention. Particulars sent postage free. Chunk, 30s. to 50s.; Vesta, from 35s.; Stoves for Warehouses, &c., from 10s. each. Joyce's Patent Fuel, 4s. 6d. per sealed bag.

WILLIAM S. BURTON has TEN LARGE SHOW ROOMS (all communicating), exclusive of the shop, devoted solely to the show of GENERAL FURNISHING IRONMONGERY (including Cutlery, Nickel Silver, Plated, and Japanned Wares), Iron and Brass Bedsteads, so arranged and classified that purchasers may easily and at once make their selections.

Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of.

39, OXFORD STREET (corner of Newman Street); Nos. 1, & 3, NEWMAN STREET; and 4 and 5, PERRY'S PLACE.

THE BEST SHOW OF IRON BEDSTEADS in the Kingdom is WILLIAM S. BURTON'S.—He has two very Large Rooms, which are devoted to the exclusive show of Iron and Brass Bedsteads and Children's Cots, with appropriate Bedding and Mattresses. Common Iron Bedsteads, 18s.; Portable Folding Bedsteads from 12s. 6d.; Patent Iron Bedsteads, fitted with dovetail joints and patent sacking, from 21s.; and Cots from 21s. each; handsome Ornamental Iron and Brass Bedsteads, in great variety, from 2l. 19s. to 13l. 13s.

THE PERFECT SUBSTITUTE for SILVER.—The real NICKEL SILVER, introduced 20 years ago by WILLIAM S. BURTON, when Plated by the patent process of Messrs. Elkington & Co., is beyond all comparison the very best article next to sterling silver that can be employed as such, either usefully or ornamentally, as by no possible test can it be distinguished from real silver.

	Fiddle Pattern.	Thread or Brunswick Pattern.	King's Pattern.
Tea Spoons, per dozen	18s.	26s.	32s.
Dessert Forks „	30s.	40s.	46s.
Dessert Spoons „	30s.	42s.	48s.
Table Forks „	40s.	56s.	64s.
Table Spoons „	40s.	58s.	66s.

Tea and Coffee Sets, Waiters, Candlesticks, &c., at proportionate prices. All kinds of replating done by the patent process.

CHEMICALLY PURE NICKEL, NOT PLATED.

	Fiddle.	Thread.	King's
Table Spoons and Forks, full size, per doz.	12s.	28s.	30s.
Dessert ditto and ditto	10s.	21s.	25s.
Tea ditto	5s.	11s.	12s.

GAS CHANDELIERS AND BRACKETS.—The increased and increasing use of gas in private houses has induced WILLIAM S. BURTON to collect from all the various manufacturers all that is new and choice in Brackets, Pendants, and Chandeliers, adapted to offices, passages, and dwelling-rooms, as well as to have some designed expressly for him: these are now ON SHOW in one of his TEN LARGE ROOMS, and present, for novelty, variety, and purity of taste, an unequalled assortment. They are marked in plain figures, at prices proportionate with those which have tended to make his Establishment the largest and most remarkable in the kingdom, viz. from 12s. 6d. (two lights) to 16l.

LAMPS OF ALL SORTS AND PATTERNS.—The largest, as well as the choicest, assortment in existence of FRENCH and ENGLISH MODERATEUR, PALMER'S, CAMPHINE, ARGAND, SOLAR, and other LAMPS, with all the latest improvements, and of the newest and most *recherché* patterns, in ormolu, Bohemian, and plain glass, or papier-maché, is at WILLIAM S. BURTON'S, and they are arranged in one large room, so that patterns, sizes, and sorts can be instantly selected.

Real French Colza Oil, 4s. 9d. per gallon.

Palmer's Candles, 9d., 9½d., and 10d. per lb.

WILLIAM S. BURTON has TEN LARGE SHOW ROOMS (all communicating), exclusive of the shop, devoted solely to the show of GENERAL FURNISHING IRONMONGERY (including Cutlery, Nickel Silver, Plated and Japanned Wares, Iron and Brass Bedsteads and Bedding), so arranged and classified that purchasers may easily and at once make their selections.

Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of.

No. 39, Oxford Street (corner of Newman Street); Nos. 1, 2, and 3, Newman Street; and 4 & 5, Perry's Place.

DO YOU WANT BEAUTIFUL HAIR, WHISKERS, MOUSTACHES, &c.?—ALICE MELVILLE'S PALMAPILLA in all cases strengthens weak hair, prevents its falling off, checks greyness, produces a thick and luxuriant growth, dispels scurf and dandriff, and makes it clean, soft, curly, and brilliant in appearance. For baldness from any cause it is certain and effective; and for the production of Whiskers, Moustaches, Eyebrows, &c., in three or four weeks, it can be fully depended upon. Price 2s., sent post free (anywhere) on receipt of 24 penny postage stamps, by Miss MELVILLE, 25, Argyle Square, King's Cross, London.—"My whiskers are growing very thick." R. Mede, Esq.—"It restored my hair, which I had lost in patches." W. Sturt.—"It has quite checked the greyness." Miss Ellis.—"My Moustache is greatly improved." Capt. Ross.

ROYAL PANOPTICAN OF SCIENCE AND ART, LEICESTER SQUARE.—Lectures for the ensuing week:—Dr. Noad, on Electricity, with Demonstrations on the Gigantic Electrical Machine in the Rotunda, Monday evening, 8.15. Dr. R. G. Latham, on Language, Wednesday, 8.15. The Arctic Regions, and Franklin's Voyages, illustrated with Dioramic Views by Mr. Leicester Buckingham, on Tuesday and Friday, 8.15; Wednesday and Saturday, 8.15. Chemistry, Mr. G. F. Ansell, Monday, Tuesday, and Friday, 3.15; Thursday, 8.15. Geology, Mr. Hugo Reid, Thursday, 3.15. Principal Attractions at the Present Time. Luminous Fountain daily, at 3 and 8. Moving Panorama and Dioramic Views of Verona, 2.45 and 7.45. Grand Performance on the Organ, by Mr. W. S. Best, at 4.15. Cosmorama of St. Petersburgh, with Portrait of Czar Nicholas. Heinke's Diving Apparatus and the Subaqueous Light in the Crystal Cistern, 2.15 and 7.30. Distin's Flugel Horn Union, 9.15. Doors open in the morning at 12, in the evening (Saturday excepted) at 7. Admission 1s. Schools and children under 10 half price. Season admission 1l. 1s. Life admission 10 guineas.

WANTED TO PURCHASE, the GARDENERS' CHRONICLE, No. 36, Sept. 3, 1853.—Apply to JOSEPH CLAYTON & SON, Advertising Agents, 265, Strand, or 223, Piccadilly, London.

BOOSEY'S FOREIGN MUSICAL LIBRARY.—The most extensive Collection of all Classes of Foreign and English Music is to be found at this Library, which resembles rather a Public Institution than a Private Establishment. A Subscriber of Two Guineas has the command of above 100,000 Works, from which he may select two guineas' worth for perusal at one time.—BOOSEY & SONS, 28, Holles Street, London.

AGRICULTURE.—Every Farmer should read the AGRICULTURAL MAGAZINE, it being the only monthly periodical devoted to his interest. It is published at 1s., and can be had by order of any Bookseller, or by sending 12 Stamps to the Publisher, 6, Chenies Street, Bedford Square, London.

A SUPPLEMENT, GRATIS, WITH THE WEEKLY DISPATCH, EVERY WEEK UNTIL FURTHER NOTICE.—The unexampled interest which attaches to every incident connected with the operations of the Allied Armies in the East has determined the Proprietors of the WEEKLY DISPATCH to devote a greater space to the intelligence from the seat of war than the ordinary limits of this, the largest newspaper published, could possibly afford; and, with the view of giving the amplest details, they have resolved upon the issue of a SERIES OF SUPPLEMENTS, GRATIS, which will include every particular of interest connected with the Siege and decision of the contest at Sebastopol, and will be continued whenever demanded by the progress of the Campaign.

By the publication of these Supplements the portion of the Paper usually devoted to incidents of domestic and political importance will be reserved intact, and the engrossing subject of the War will receive the fullest and most varied illustration.

A SUPPLEMENT WILL BE PUBLISHED ON SUNDAY NEXT (GRATIS), and on every succeeding week until further Notice. Orders may be given to all Newsvendors in town and country: and to the Publisher, at the *Dispatch* Office, 139, Fleet Street, London.

Third Edition, considerably enlarged, price 5s. 6d.

RURAL CHEMISTRY.

By EDWARD SOLLY, F.R.S., F.L.S., F.G.S.,

Honorary Member of the Royal Agricultural Society of England, Professor of Chemistry to the Horticultural Society of London Lecturer on Chemistry in the Hon E. I. Co.'s Military Seminary at Addiscombe, &c., &c.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden.

This day, crown 8vo, 12s.

ANCIENT AND MODERN FISH TATTLE.—By the Rev. C. DAVID BADHAM, M.D., Fellow of the Royal College of Physicians, Curate of East Bergholt, Author of "The Esculent Funguses of England." Reprinted, with Additions, from "Fraser's Magazine."

London: JOHN W. PARKER & SON, West Strand.

Just published, price 10s., bound in cloth,

ON THE PHYSICAL MANAGEMENT AND DISORDERS OF INFANCY AND CHILDHOOD. Embracing the whole subject from Birth, with Hints for Young Mothers, Special Rules for all Mothers, and a large Collection of approved Prescriptions for Children's Complaints, &c. By T. J. GRAHAM, M.D., M.R.C.S.

"Written in a clear and interesting manner, and the author displays, as in his previous works, much judgment."—*Medical Circular, Nov. 23.*

"Information of the utmost value to mothers."—*Britannia.*

"Here are those broad principles and rules, the adoption of which by parents will materially conduce to the health and happiness of their children in after years."—*Witness.*

By the same Author, Eleventh Edition, with additions, price 16s.

2. MODERN DOMESTIC MEDICINE. A comprehensive Medical Guide for the Clergy, Families, and Emigrants.

"Of all the medical guides that have come to our hands, this is by far the best. For fulness and completeness they all yield the palm to Dr. Graham's."—*Banner, Aug. 1853.*

London: Published by SIMPKIN, MARSHALL, and Co., Stationers' Court, and LONGMANS, WHITTAKER, and Co. Sold by all Booksellers.

NEW WORKS.

Now ready, and to be had of all Booksellers.

HOME LIFE IN RUSSIA.—By a Russian Noble. Revised by the Editor of "Revelations of Siberia." 2 vols. 21s.

"This work gives a very interesting and graphic account of the manners and customs of the Russian people."—*Observer.*

TURKEY; ITS HISTORY AND PROGRESS; From the Journals of Sir JAMES PORTER, Fifteen Years Ambassador at Constantinople; continued to the Present Time, by his Grandson, Sir GEORGE LARPENT, Bart., 2 vols. 8vo. With Illustrations, 30s.

PAINTING AND CELEBRATED PAINTERS, ANCIENT AND MODERN; including Historical and Critical Notices of the Schools of Italy, Spain, France, Germany, and the Netherlands. Edited by Lady JERVIS. 2 vols 21s.

THE ROMANCE OF THE FORUM; or, Narratives, Scenes, and Anecdotes, from Courts of Justice. Second Series. By PETER BURKE, Esq., Barrister-at-Law. 2 vols. 21s.

HERBERT LAKE. A New Novel. By the Author of "Anne Dysart," &c. 3 vols.

THE CURATE OF OVERTON. 3 vols.

"The story of this work is interesting and vigorously narrated. It will be read by Tractarians and Romanists to decry it, and by Orthodox or Low-church Protestants to praise it to the skies."—*Observer.*

London: HURST & BLACKETT, Publishers, Successors to HENRY COLBURN, 13, Great Marlborough Street.

ON MARRIAGE.

Just published (to be had free, by enclosing 1s. or Twelve Postage Stamps, to Mr. WATSON, Clerical Agent, Robert Street Adelphi, London).

MATRIMONY.—A Pamphlet on Matrimonial Alliances, which merits the attention of those who wish to settle honourably in life. By a Clergyman.

This day is published, in a handsome folio volume, price 12*s.*, containing upwards of 600 Wood Engravings,

PICTURES OF LIFE AND CHARACTER, FROM THE COLLECTION OF MR. PUNCH. By JOHN LEECH.

BRADBURY & EVANS, 11, Bouverie Street.

On the 30th will be published, price 1*s.*, No. XV. of

"THE NEWCOMES." By W. M. THACKERAY. With ILLUSTRATIONS by RICHARD DOYLE.

☞ The First Volume is ready, price 13*s.*, in cloth.

BRADBURY & EVANS, 11, Bouverie Street.

On the 30th November will be published, price 2*s.*, Part XX. of the

ENGLISH CYCLOPÆDIA, extending the NATURAL HISTORY DIVISION from LEMURIDÆ to LOCOMOTION OF ANIMALS, and the GEOGRAPHICAL DIVISION from KENVIG to LIGURIA, and including articles on Khiva, Kiachta, Kiew, Kischeneff, Königsberg, Koniyeh, Kostendje, Kozlov (Eupatoria), Krain (Carniola), Kuban, Kurdistan, Kursk, Labuan, Ladakh, Lago Maggiore, Laos, Lapland, Latium, Lausitz, Terra di Lavoro, Leipzig, Lake Leman, Lemberg, Leon, Lesbos, Liberia, Liège, Liegnitz, and Lieou-Kieou (Loo-Choo) Islands.

BRADBURY & EVANS, 11, Bouverie Street.

THE NATIONAL GARDEN ALMANAC AND HORTICULTURAL TRADE DIRECTORY FOR 1855.

By JOHN EDWARDS, F.H.S. The Third Annual Issue.

No effort will be spared to retain the flattering encomiums universally bestowed on the previous issues of this work, which, for general accuracy, and sound practical utility, is acknowledged to be immeasurably in advance of all similar publications.

Advertisements, Communications, Books for Review, Information relative to Changes of Addresses, &c. &c., gladly received, if not later than the 20th November, by

JOHN EDWARDS, Wace Cottage, Holloway, Middlesex.

CHAPMAN & HALL, 193, Piccadilly.

In Two Volumes, large 8vo, with upwards of 600 Engravings, price 3*l.*, half bound,

THE BOOK OF THE FARM.

By HENRY STEPHENS, F.R.S.E. Seventh Thousand.

"The best practical book I have ever met with."—*Prof. Johnston.*

"One of the completest works on agriculture of which our literature can boast."—*Agricultural Gazette.*

WILLIAM BLACKWOOD & SONS, Edinburgh and London.

Price Threepence, or Fivepence post free,

FANCY GERANIUMS: a Practical Treatise on their Propagation and Culture, showing how they may be had in Bloom all the Year; their Management for Conservatory Decoration, and the Formation of Specimens.

Bristol: Published and Sold by THORNHILL & DICKSON, Lawrence Hill Nurseries, and 1, Wine Street.

BRITISH GUIANA.

Just published, in two vols. 8vo, with Plates, Maps, &c., 36*s.*, royal 8vo, 2*l.* 12*s.* 6*d.*,

THE HISTORY OF BRITISH GUIANA; comprising a General Description of the Colony, a Narrative of some of the Principal Events from the earliest period of its Discovery to the present time; together with an Account of the Climate, Geology, Staple Products, and NATURAL HISTORY. By HENRY G. DALTON, M.D.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

Just published, New and Improved Edition, price 1*s.*,

THE CURABILITY OF CONSUMPTION. Being a Series of Papers, presenting the most prominent and important Practical Points in the Treatment of the Disease. By F. H. RAMADGE, M.D., Fellow of the College of Physicians, late Senior Physician to the Royal Infirmary for Diseases of the Chest, &c. Also, by the same Author, price 10*s.* 6*d.*, A TREATISE ON ASTHMA AND DISEASES OF THE HEART.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

IN ONE HANDSOME VOLUME,

Imperial 8vo, cloth, 7*s.* 6*d.*, gilt edges, 8*s.* 6*d.*

THE HOME COMPANION: a Volume of Popular Literature and the Fine Arts. Illustrated with upwards of 100 Beautiful Engravings.

London: WM. S. ORR and Co., Amen Corner, Paternoster Row.

HANDSOME CHRISTMAS PRESENT.

In One Volume, Imperial 8vo, cloth gilt, price 12*s.*, morocco, 21*s.*,

THE BUTTERFLIES OF GREAT BRITAIN, with their Transformations. Delineated and Described by J. O. WESTWOOD, F.L.S., &c.; with Twenty beautifully-coloured Plates.

London: WM. S. ORR and Co., Amen Corner, Paternoster Row.

Just published, in imperial 8vo., price 10*s.* 6*d.*, cloth,

THE LAND WE LIVE IN: a Pictorial and Descriptive Tour of the British Islands, containing the Midland Counties and the East Coast of England, being the First Volume of a Re-issue of the Work, carefully Revised, and much Enlarged.

London: WM. S. ORR and Co., Amen Corner, Paternoster Row.

LITTLE SECRETS.—By WILLIAM KIDD, of Hammersmith.

1. THE HEART'S PROPER ELEMENT. A Christmas Book. Price 1*s.*
2. LIFE; ITS TINTS AND ITS SHADOWS. Price 1*s.*
3. THE WORLD AND ITS TWO FACES. Price 1*s.*

London: GROOMBRIDGE & SONS, 5, Paternoster Row.

SIEGE OF SEBASTOPOL.

STANFORD'S NEW MAP OF SEPASTOPOL and Country round; including Balaklava, Kamara, Kadikoi, the Belbek and Chernaya Rivers; showing also the Positions of the Allied Camps, the Allied and Russian Batteries, Forts, &c., with number of guns; the Position of the Turkish and other Redoubts; the Head Quarters of Lord Raglan, &c. &c. Compiled from the New Admiralty Charts, and Authentic Sketches by Captain WETHERALL, D.A.Q.M.G., and other Officers, is published this day.—Price, in 1 large sheet coloured, 2*s.*; per post, 2*s.* 6*d.* Case, 4*s.* 6*d.*; per post, 5*s.*

London: EDWARD STANFORD, Mapseller and Mapmounter to Her Majesty's Stationery Office, 6, Charing Cross.

Bound in cloth and interleaved, price 1*s.*,

THE SCOTTISH AGRICULTURIST'S ALMANAC AND YEAR-BOOK OF PROGRESS, FOR 1855. By JOHN LOCKHART MORTON, Civil and Agricultural Engineer, Edinburgh.

"It needs only to be known to be valued, as the work of a man who knows thoroughly what he has in hand."—*Perthshire Advertiser.*

Publishing Office, 9, Pitt Street, Edinburgh.

Sold by all Booksellers.

Just published, Fifth Edition, fcap. 8vo, cloth, 12*s.* 6*d.*,

MEDICAL JURISPRUDENCE. By Dr. A. S. TAYLOR, F.R.S.

By the same Author, fcap. 8vo, cloth, 12*s.* 6*d.*,

ON POISONS; in Relation to Medical Jurisprudence and Medicine.

London: JOHN CHURCHILL, New Burlington Street.

Just published, 24mo, cloth, 6*s.*

THE BOOK OF PRESCRIPTIONS: containing 2900 Prescriptions, collected from the practice of the most eminent Physicians and Surgeons, English and Foreign. By HENRY BEASLEY.

London: JOHN CHURCHILL, New Burlington Street.

Just published, Third Edition, 18mo, cloth, 6*s.*,

THE DRUGGIST'S GENERAL RECEIPT BOOK; comprising a copious Veterinary Formulary; numerous Recipes in Patent and Proprietary Medicines; Druggists' Nostrums, &c.; Perfumery, Cosmetics, and Beverages; Dietetic Articles and Condiments; Trade Chymicals, &c.; with an Appendix of Useful Tables. By HENRY BEASLEY.

London: JOHN CHURCHILL, New Burlington Street.

Just published, 8vo, cloth, 5*s.*,

ON THE TOPICAL MEDICATION OF THE LARYNX IN CERTAIN DISEASES OF THE RESPIRATORY AND VOCAL ORGANS. By EBEN WATSON, A.M., M.D., Lecturer on the Institutes of Medicine in the Andersonian University, Glasgow.

London: JOHN CHURCHILL, New Burlington Street.

Just published, 8vo, cloth, 7*s.* 6*d.*, illustrated with lithograph and woodcuts,

PATHOLOGICAL AND SURGICAL OBSERVATIONS; including an Essay on the Surgical Treatment of Hæmorroidal Tumours. By HENRY LEE, F.R.C.S., Surgeon to the Lock Hospital.

London: JOHN CHURCHILL, New Burlington Street.

Just published, fcap. 8vo, cloth, 6*s.*,

ON PARALYSIS, DISEASE OF THE BRAIN, AND OTHER AFFECTIONS OF THE NERVOUS SYSTEM. By ROBERT BENTLEY TODD, M.D., F.R.S., Physician to King's College Hospital.

London: JOHN CHURCHILL, New Burlington Street.

Just published, with numerous engravings on wood, 8vo, cloth, 8*s.*,

ON LITHOTRITY AND LITHOTOMY. By WILLIAM COULSON, Surgeon to St. Mary's Hospital, &c.

London: JOHN CHURCHILL, New Burlington Street.

Just published, Second Edition, post 8vo, cloth, 3*s.* 6*d.*,

THE TREATMENT OF OBSTINATE ULCERS AND CUTANEOUS ERUPTIONS ON THE LEG, WITHOUT CONFINEMENT. By HENRY T. CHAPMAN, F.R.C.S., late Surgeon to the St. George's and St. James's Dispensary.

London: JOHN CHURCHILL, New Burlington Street.

Just published, Third Edition, post 8vo, cloth 8*s.* 6*d.*,

ON GOUT: its History, its Causes, and its Cure. By W. GAIRDNER, M.D.

"Essentially a practical work, and may be consulted with equal service by the student and old practitioner. We are much mistaken if this volume does not assume a permanent and honourable position in British medical literature."—*Medico-Chirurgical Review.*

London: JOHN CHURCHILL, New Burlington Street.

Just published, fcap., 2*s.* 6*d.*,

HUFELAND'S ART OF PROLONGING LIFE. A New Edition. Edited by ERASMUS WILSON, F.R.S.

London: JOHN CHURCHILL, New Burlington Street.

Just published, Second Edition, 8vo, cloth, 6*s.*,

ON INDIGESTION AND CERTAIN BILIOUS DISORDERS OFTEN CONJOINED WITH IT. By G. C. CHILD, M.D., Consulting Physician to the Westminster General Dispensary.

London: JOHN CHURCHILL, New Burlington Street.

Just published, with plates, post 8vo, cloth, 5*s.*,

HOW TO PRESERVE THE TEETH, CURE TOOTHACHE, AND REGULATE DENTITION FROM INFANCY TO AGE. By J. PATERSON CLARK, M.A., Dentist Extraordinary to his Royal Highness Prince Albert.

London: JOHN CHURCHILL, New Burlington Street.

Just published, Second Edition, fcap. 8vo, cloth, 7*s.* 6*d.*,

ON NEAR SIGHT, AGED SIGHT, IMPAIRED VISION, AND THE MEANS OF ASSISTING SIGHT. With 31 illustrations on wood. By W. WHITE COOPER, F.R.C.S., Ophthalmic Surgeon to St. Mary's Hospital, and Senior Surgeon to the North London Eye Infirmary.

London: JOHN CHURCHILL, New Burlington Street.

Just published, post 8vo, cloth, 7*s.* 6*d.*,

ELEMENTS OF PSYCHOLOGICAL MEDICINE; an Introduction to the Practical Study of Insanity. Adapted for Students and Junior Practitioners. By DANIEL NOBLE, M.D., Medical Officer to the Clifton Hall Retreat, near Manchester.

London: JOHN CHURCHILL, New Burlington Street.

Just published, the Fifth Edition, fcap. 8vo, 2*s.* 6*d.*,

HEALTHY SKIN; a Popular Treatise on the Skin and Hair, their Preservation and Management. By ERASMUS WILSON, F.R.S.

London: JOHN CHURCHILL, New Burlington Street.

ELECTRIC TELEGRAPH. By DR. LARDNER, now complete. A Series of Popular Tracts on the Electric Telegraph is just completed in "Lardner's Museum of Science and Art." The Tracts embrace an account of the Telegraph from its invention to the present time, clearly describing the different instruments and their modes of working. The series also contains full accounts of the English and Foreign Lines of Telegraph, of the Submarine Cables, Tariffs, &c. &c. and is Illustrated by very numerous Engravings on Wood. Price of each Number, 1*d.*

VOLS. I. to IV., each 1*s.* 6*d.*

DR. LARDNER'S MUSEUM OF SCIENCE AND ART: a Miscellany of Instructive and Amusing Tracts on the Physical Sciences, and on their application to the Uses of Life. Illustrated by Engravings on Wood. 12mo.

CONTENTS:—

VOL. I. price 1*s.* 6*d.* PART I., price 5*d.*

No. 1. The Planets, are they inhabited Globes? Chap. I.
2. Weather Prognostics.
3. The Planets, are they inhabited Globes? Chap. II.
4. Popular Fallacies in Questions of Physical Science.

PART II., price 5*d.*

5. Latitudes and Longitudes.
6. The Planets, are they inhabited Globes? Chap. III.
7. Lunar Influences.
8. Meteoric Stones and Shooting Stars. Chap. I.

PART III., price 5*d.*

9. Railway Accidents. Chap. I.
10. The Planets, are they inhabited Globes? Chap. IV and last.
11. Meteoric Stones and Shooting Stars. Chap. II.
12. Railway Accidents. Chap. II.
13. Light.

VOL. II., price 1*s.* 6*d.* PART IV., price 5*d.*

14. Common Things. Air.
15. Locomotion in the United States. Chap. I.
16. Cometary Influences. Chap. I.
17. Locomotion in the United States. Chap. II.

PART V., price 5*d.*

18. Common Things. Water.
19. The Potter's Art. Chap. I.
20. Locomotion in the United States. Chap. III.
21. The Potter's Art. Chap. II.

PART VI., price 5*d.*

22. Common Things. Fire.
23. The Potter's Art. Chap. III.
24. Cometary Influences. Chap. II.
25. The Potter's Art. Chap. IV.
26. The Potter's Art. Chap. V.

VOLUME III., price 1*s.* 6*d.*

PART VII., price 5*d.*

No. 27. Locomotion and Transport, their Influence and Progress.—Chapter I.
28. The Moon.
29. Common Things. The Earth.
30. Locomotion and Transport, their Influence and Progress.—Chapter II.

PART VIII., price 5*d.*

No. 31. Electric Telegraph. Chapter I.
32. Terrestrial Heat. Chapter I.
33. Electric Telegraph. Chapter II.
34. The Sun.

PART IX., price 5*d.*

No. 35. Electric Telegraph. Chapter III.
36. Terrestrial Heat. Chapter II.
37. Electric Telegraph. Chapter IV.
38. Ditto ditto Chapter V.
39. Ditto ditto Chapter VI.

VOLUME IV. Price 1*s.* 6*d.*

PART X. Price 5*d.*

No. 40. Earthquakes and Volcanoes. Chapter I.
41. Electric Telegraph. Chapter VII.
42. Do. do. Chapter VIII.
43. Do. do. Chapter IX.

PART XI. Price 5*d.*

No. 44. Barometer, Safety Lamp, and Whitworth's Micrometric Apparatus.
45. Electric Telegraph. Chapter X.
46. Earthquakes and Volcanoes. Chapter II.
47. Electric Telegraph. Chapter XI.

PART XII. Price 6*d.*

No. 48. Steam.
49. Electric Telegraph. Chapter XII.
50. Do. do. Chapter XIII.
51. Do. do. Chapter XIV.
52. Do. do. Chapter XV.

*** *The Work is continued in Weekly Numbers at 1d., in Monthly Parts at 5d., and Quarterly Volumes at 1s. 6d.*

2.

LIEBIG'S FAMILIAR LETTERS on CHEMISTRY. Third Edition, fcap. 8vo, 6*s.*

3.

GREGORY'S HAND-BOOK of CHEMISTRY. Third Edition, 2 vols, 12mo, 15*s.* Sold separately, INORGANIC CHEMISTRY. 5*s.* 6*d.* ORGANIC CHEMISTRY. 9*s.* 6*d.*

4.

WOHLER'S HAND-BOOK of INORGANIC ANALYSIS. By Dr. HOFFMAN. 12mo, 6*s.* 6*d.*

5.

LIEBIG'S HANDBOOK OF ORGANIC ANALYSIS. Eighty-five Engravings, 12mo, 5*s.*

6.

PARNELL'S ELEMENTS OF CHEMICAL ANALYSIS: Qualitative and Quantitative. Second Edition 8vo, 9*s.*

7.

LIEBIG'S AGRICULTURAL CHEMISTRY. Fourth Edition, 8vo, 6*s.* 6*d.*

London: WALTON and MABERLY, 28, Upper Gower Street and 27, Ivy Lane, Paternoster Row.

This day is published, price 3s. 6d., cloth lettered,

ORR'S CIRCLE OF THE SCIENCES.—VOL. II.;

BEING

THE MATHEMATICAL SERIES.

INCLUDING:—

SIMPLE ARITHMETIC, ALGEBRA, AND ELEMENTS OF EUCLID. By J. R. YOUNG, late Professor of Mathematics, Queen's College, Belfast.

PLANE AND SPHERICAL TRIGONOMETRY, SERIES, LOGARITHMS, AND MENSURATION. By the Rev. J. F. TWISDEN, M.A., Professor of Mathematics, Sandhurst.

AND

PRACTICAL GEOMETRY.—By ALEXANDER JARDINE, Esq., Civil Engineer.

Also, uniformly bound, price 3s. 6d., the FIRST VOLUME,

CONTAINING:—

THE PRINCIPLES OF PHYSIOLOGY; STRUCTURE OF THE SKELETON AND TEETH; AND VARIETIES OF THE HUMAN SPECIES. WITH AN INTRODUCTORY TREATISE ON THE NATURE, CONNECTION, AND USES OF THE GREAT DEPARTMENTS OF HUMAN KNOWLEDGE.

By PROFESSOR OWEN, DR. LATHAM, AND DR. BUSHNAN.

LONDON: HOULSTON & STONEMAN PATERNOSTER ROW; WM. S. ORR & Co., AMEN CORNER.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Church Row, Stoke Newington, both in the County of Middlesex, Printers, at their Office in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, November 25, 1854.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 48.—1854.] SATURDAY, DECEMBER 2. [PRICE 6*d*.

INDEX.

Almanac, Scottish Agri.	780 *b*	Gynerium argenteum	774 *a*
Ammonia, &c., in rain water	778 *a*	Horticultural Society's garden	775 *c*
Babingtonia camphorosmæ	773 *a*	Iron, galvanised	774 *c*
Books noticed	780 *b*	Linnean Society	774 *c*
Brussels Sprouts from English seed	774 *a*	Manure, Coveney's economical	777 *b*
Calceolarias, cross-breeding	776 *a*	Mildew, Vine	774 *b*
Calendar, horticultural	776 *b*	Orchard, to form on gravel	774 *b*
— agricultural	781 *a*	Pathology, vegetable	772 *b*
Chemico Agri. Soc. of Ulster	780 *c*	Pea, Dan. O'Rourke	774 *b*
Chrysanthemums, list of	775 *c*	Peach trellis-house	775 *b*
— at Stoke Newington	776 *a*	Pear, Beurré superfin	774 *c*
Cinerarias, large	776 *a*	Pear trees, origin of, &c.	772 *c*
Climate of the Crimea	771 *b*	Perilla nankinensis	774 *a*
— of Brussels	774 *a*	Plants, new	772 *b*
Coverings for frames	773 *b*	Plant frames, protection for	773 *b*
Crimea, winter in the	771 *b*	Protecting materials	773 *b*
Drill, dry *v.* water	779 *a*	Rain-water, ammonia, &c. in	778 *a*
Exotics, effect of frost on	774 *b*	Rivers' (Mr.), miniature fruit garden	775 *a*
Farm experiments	778 *c*	Rye-grass, Italian	779 *a*
Farming, high	777 *c*	Savings' bank	779 *b*
Farmers' daughters	779 *c*	Sebastopol, Stanford's map of	775 *b*
Ferns, viviparous	774 *c*	Sewage, town	779 *a*
Forbes, the late Prof.	771 *c*	Vegetable pathology	772 *b*
Frames, coverings for	773 *b*	Vine mildew	774 *b*
Frigi Domo	774 *c*	Water, rain, ammonia, &c., in	778 *a*
Frost, effect of, on exotics	774 *b*	Winter in the Crimea	771 *b*
Guano, Irish	780 *c*	Witham Agri. Society	779 *c*

THE BRITISH POMOLOGICAL SOCIETY meets at the rooms, 20, Bedford Street, Covent Garden, London, on the first MONDAY of every month, to receive communications respecting Fruits and Fruit Trees, for the Election of Members, and for General Business.

All communications and packages containing specimens of Fruits, to be addressed to ROBERT HOGG, Secretary.

SMITHFIELD CLUB.—BAKER STREET BAZAAR. STAND 278.

SUTTON AND SONS, READING.

SMITHFIELD CLUB SHOW.

WILLIAM SKIRVING, of Liverpool, begs to acquaint his friends and the public that he will attend, as usual, the ensuing Smithfield Show, on the 5th, 6th, 7th, and 8th of December, to exhibit Roots of his IMPROVED SWEDE TURNIP, and to take orders for the Seed of it, and all other kinds of Agricultural Seeds.—December 2.

SEED GROWERS' SOCIETY.—The Members of the above Society are now prepared to send LISTS of AGRICULTURAL, GARDEN, and FLOWER SEEDS to those who are desirous of having them genuine and direct from the Growers.—Applications addressed to the Secretary, JOHN MOSS, Jun., Faring, Kelvedon, Essex, will meet with prompt attention.

CHRYSANTHEMUMS.

J. AND J. FRASER have now in bloom a very fine collection of the above, comprising the best of Pompone and large flowering varieties. Fine strong plants in bloom, from 9*s.* to 12*s.* per dozen. Several new varieties of the present season, 1*s.* 6*d.* each.—Lea Bridge Road, Essex. Dec. 2.

CHRYSANTHEMUMS.

HUGH LOW AND CO. have to offer extra fine well-shaped blooming Chrysanthemums, both Pompone and large flowering, at 9*s.* per dozen. The plants are large, well-grown, and unusually well furnished with flower buds.

Clapton Nursery, London.

NEW CHRYSANTHEMUMS.

JOHN SALTER'S collection, containing all the established favourites, and upwards of 60 new varieties of this season, is now in bloom, and may be seen every day except Sunday.—Versailles Nursery, William Street, near Hammersmith Turnpike.

NEW CAULIFLOWER.

WAITE'S "ALMA," far superior to Walcheren, very large and firm heads. Price to the trade 24*s.* per lb., smaller quantities 2*s.* 6*d.* per oz. No orders attended to for less quantities than one ounce.—Seed Establishment, 181, High Holborn, London.

HOLLYHOCK SEED.

R. PARKER has now ready for sending out Seed of this year's saving from the finest named varieties in cultivation, in packets at 1*s.* and 2*s.* 6*d.* each. A remittance or reference to accompany all orders from unknown correspondents.—Paradise Nursery, Hornsey Road, London.

EARLY DANIEL O'ROURKE PEAS.

J. G. WAITE begs to inform the Trade that he is now ready to execute orders for this valuable early Pea. Price can be had on application.

Seed Establishment, 181, High Holborn, London.

NONPAREIL PEAS.

WILLIAM FAIRBEARD begs to inform the trade that he is now ready to execute any orders he may be favoured with. This Pea W. F. is confident will become a general favourite both for Garden and Field culture. Price can be had on application.—Mount Pleasant Nursery, Queen Street, Sittingbourne, Kent.

FAIRHEAD'S "EARLY CONQUEROR PEA." To be had wholesale and retail of CLARKE and Co., Seedsmen, 86, Borough, London.

SUTTON'S EARLY CHAMPION PEA, WAITE'S DANIEL O'ROURKE, SANGSTER'S No. 1, FAIRBEARD'S NONPAREIL, *and all other new sorts of Seeds, may be obtained genuine, by retail, at the Grower's retail prices, from*

SUTTON & SONS, Seed Growers, Reading, Berks.

OMER PACHA PEA.

W. NICOL, GARDENER, Roslyn House, Hampstead, begs to announce that he has put his incomparable Pea "OMER PACHA" into the hands of Mr. SOMMERVILLE, Landscape Gardener, Nurseryman, &c., Garden Road, St. John's Wood, London, for Sale in sealed quarts at 10*s.* 6*d.*; and pints, 7*s.* 6*d.* The above Pea is not only the earliest, but the most prolific and best-flavoured hardy variety in cultivation. As the Stock is small, W. NICOL would recommend immediate application to Mr. Sommerville, as above.

HYACINTHS, TULIPS, ETC.

WILLIAM E. RENDLE AND Co., SEED MERCHANTS, Plymouth, *have still on hand a fine assortment of all the best Hyacinths, Tulips, Anemones, Ranunculus, Gladiolus, Sparaxis, Lilium, Crocus, Iris, Jonquille, Snowdrops, Amaryllis, and other kinds of Bulbous Roots.*

The present is an excellent time for planting them either in pots or in the ground; but the sooner the better. All orders will be properly attended to.

RENDLE'S *Catalogue of Bulbous Roots can be had in exchange for two penny stamps, on application to*

WILLIAM E. RENDLE and Co., Seed Merchants, Plymouth.

LILIUM LANCIFOLIUM.

HENRY GROOM, Clapham Rise, near London, by appointment, FLORIST TO HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to say that this is the best time to have Bulbs of the different varieties of this most BEAUTIFUL LILY. They are well adapted for the Flower Garden, American Borders, and Drives in Parks, being quite hardy. His Catalogue may be had on application.

NEW PERPETUAL STRAWBERRY.
"DELICES D'AUTOMNE."

A. VERSCHAFFELT, NURSERYMAN, Ghent, Belgium, begs to offer the new and Perpetual Strawberry "DELICES D'AUTOMNE." The fruit is large, delicious, and very abundant; it is certainly the best perpetual Strawberry of all. A correct drawing will appear shortly in Verschaffelt's "L'Illustration Horticole." Price, per plant, 2*s.* 6*d.*; six plants, 10*s.* 6*d.*

IMPORTANT TO POTATO GROWERS.

HAY, SANGSTER, AND CO., are now ready to send out their celebrated Stock of SEED POTATOES from prepared cuttings, now completely free from disease, of the following sorts, viz.:—

Early Ebrington Kidneys, per bushel	12*s.*	Early American, per bushel	8*s.*
Early Oxford „	10*s.*	York Regents „	6*s.*
		Scotch Cups „	6*s.*

Package and delivery in London, 9*d.* per bushel, and 2*s.* per sack.

Newington Butts, London.

TRUE SEED POTATOES.

JOHN BELL, POTATO SALESMAN, Covent Garden Market, and Great Northern Railway, King's Cross, London, offers the following:—

Per bushel.—	*s.*	*d.*	Per bushel.—	*s.*	*d.*
Ashleaf Kidneys ...	7	0	Early Regents	4	6
Lapstone	6	0	Hens, Nest	6	0
Early Cockney	9	0	Fortyfolds...	5	0
„ Shaws	4	6	Orkney Reds	5	0

Scotch Cups ... ... 4*s.* 6*d.*

Terms cash. The usual allowance to the trade.

FLUKE KIDNEY POTATOES.

FLUKE KIDNEYS, per bushel of 56 lbs. ... ... 7*s.*
IRISH APPLES, most prolific variety, and withstands the disease as well as the Fluke, per bushel of 56 lbs. ... 5*s.*

All orders to be accompanied by a remittance. Sacks 2*s.* each. Delivered to Worcester Station.

HUMPHREY CHAMBERLAIN, Kempsey, Worcester.

THE FLUKE KIDNEY POTATO.—This excellent variety is now planted here as the principal crop, being more free from disease and more prolific than any other in cultivation. It was raised in Middleton, and may be had genuine in any quantity at 5*s.* per bushel of 56 lbs.—Apply to JOHN HOLLAND, Bradshaw Gardens, Middleton, near Manchester.

THE FLUKE POTATO.—A new second early variety, surpassing every other in its capability of resisting the Potato disease, and without exception the finest and most prolific Potato in cultivation. Price per cwt., 15*s.*, bags included.

To be had genuine of THORNHILL & DICKSON, Lawrence Hill Nurseries; and No. 1, Wine Street, Bristol.

SEED POTATOES.

JACKSONS' IMPROVED EARLY ASH-LEAF, 9*s.* per bushel. The celebrated Short-top ditto, 7*s.* 6*d.*; British Queens, 7*s.* 6*d.*; Early Frame and Ash-leaf Seedlings, 8*s.*; Early Yorks, 6*s.*; and York Regents from prepared cuttings, 6*s.*, free to London. No charge for sacks.—JOS. WILSON, Seedsman, Ipswich.

WILD, of Ipswich, has the most magnificent CUCUMBER (Ipswich Standard) and PRIMULAS in Europe. Seeds, in sealed packets, 2*s.* 6*d.* free by post. Testimonials from the most eminent judges, with other particulars, per circular on application.

THE PAMPAS GRASS, GYNERIUM ARGENTEUM.

LUCOMBE, PINCE, & CO. have a fine healthy stock of this highly ornamental plant, well established in pots, and fit to send out immediately.

Specimens of it are now and have long been flowering in their nursery, and it is universally admitted that few plants produce a more beautiful effect than this gigantic Grass. See woodcut and description of it in *Gardeners' Chronicle* of the 4th inst.

Sizes, prices, and all particulars may be had on application to LUCOMBE, PINCE, & Co., Exeter Nursery, Exeter.

READING ONION.—The true Reading Onion is so highly esteemed that MESSRS. SUTTON have annual demands for large quantities of Seed from all parts of the kingdom. The Seed is particularly fine this season, but the quantity not being more than sufficient for MESSRS. SUTTON'S retail Trade, they have none to offer wholesale. Specimens of the true Reading Onion may be seen at their STAND 278, Baker Street, Bazaar, during the Cattle Show. Price of Seed, 7*s.* per pound.

RHUBARB ROOTS for FORCING or PLANTING.—Strong one-year planted roots of MYATT'S VICTORIA and LINNÆUS, MITCHELL'S ROYAL ALBERT, at 6*s.* per doz.; HOWARD'S PRINCE ALBERT, 12*s.* per dozen. This is a larger variety than the Victoria, and is extensively cultivated about Manchester. Price to the trade of the above, per 100 or 1000, on application to MESSRS. J. MYATT AND SONS.

Manor Farm, Deptford Dec. 2.

STRAWBERRIES FOR FORCING.

TO BE SOLD, about 4000 pots of fine strong plants, in 32 pots, of the following sorts of STRAWBERRIES:—Cuthill's Black Prince, Keens' Seedling British Queen, and Kitley's Goliah, delivered in London carriage free at 8*l.* per 100. A reduction made on large quantities. Post-office orders payable at Barnet.—W. LUCKETT, Rabbly Cottage, Shenley, Herts.

TO BE SOLD, at very reduced prices, 10,000 very strong 2, 3, and 4-year old GOOSEBERRIES and CURRANTS, of the best sorts.—For further particulars, apply to LAKE & DYER, Nurserymen, Bridgewater.

TO BE SOLD, VINES for fruiting, in pots:—Fourteen MUSCAT of ALEXANDRIA; Three BLACK BARBAROSSA; Three BLACK HAMBURGH, grown in 12-inch pots, price 7*s.* 6*d.* each.—Apply to J. BURRELL, Builder, Aldenham, near Watford, Herts.

PEACH TREES AND VINES.

TO BE SOLD, a few PEACH and NECTARINE TREES, of best sorts, two years trained, without cutting back, have been grown on a wall under glass, and well set with fruit buds. Price 5*s.* each. Also 50 MUSCAT of ALEXANDRIA VINES, struck from eyes this year, 3 feet high, with fine roots, and warranted true. Price 1*s.* 3*d.* each. Post-office orders payable at Barnet.—W. LUCKETT, Rabbly Cottage, Shenley, Herts.

MANGOLD WURZEL SEED.

TO BE SOLD, LONG RED and YELLOW GLOBE, this year's seed, from superior stock.—Apply to R. S. HEWS, Kelvedon, Essex.

TO BE SOLD CHEAP, two handsome WEEPING ASH TREES, about 15 feet high, and 11 feet diameter.—Apply to CARTER & ELLIS, Hornsey Road, Holloway, London.

TO MARKET GARDENERS.

TO BE SOLD, a quantity of two-years-old HAZEL AND BEURRÉ DE CAPIAUMONT PEARS, GISBORNE PLUMS, WELLINGTON AND KING PIPPIN APPLES. Also a quantity of larger FRUIT TREES suitable for private family gardens.—Apply to Mr. H. WHITING, Bath Road, Hounslow.

TO BE SOLD, Eighty PINES, fruiting and succession.—Apply to Mr. GEORGE WALKER, Humberstone Nurseries, Leicester.

FRUIT TREES.—A Supplement to the Descriptive CATALOGUE OF FRUITS, published October, 1853, is now ready. It contains some useful information respecting New Fruits, &c. &c., free per post, on application to

THOS. RIVERS, Nurseries, Sawbridgeworth.

FRUIT TREES, FOREST TREES, EVERGREEN SHRUBS, &c. Catalogues of the above may be had on application to WILLIAM BARRATT, Wakefield.

☞ A quantity of fine Transplanted White Thorns.

WANTED, PEACH TREES.—*A few well-trained* healthy Peach Trees for walls, consisting of Bellegarde and Royal George; also a few GREEN GAGE TREES for walls; a few dozen well-rooted WALNUT TREES; and a few MORELLO CHERRY TREES. All of them will require to be delivered at a station on the South-Western Railway. Address, stating price (which must be moderate), E., Office of this Paper.

SEED WHEAT.—Samples and Prices of RED HYBRID, NURSERY, and other Kinds of Wheat from the CHALK, sent on application to Mr. H. RAYNBIRD, Basingstoke.

The Red Hybrid and Nursery are well suited for late sowing after Turnips.

LARGE FIRS AND FOREST TREES.

MESSRS. WILLMOTT AND CHAUNDY, of Lewisham, have to dispose of, at low prices, in consequence of the ground (12 acres) having to be cleared for building on, a quantity of large FOREST TREES and FIRS of various kinds; they will come up with good roots.

They have also an extensive stock of large well-grown Evergreens of various sizes, that will come up with good balls.

SPECIMEN IRISH YEWS.

THOMAS JACKSON, AND SON having a large Stock of fine specimens of this very ornamental tree, beg to offer them at the undernamed low prices.

8 to 9 feet high,	and 8 feet in circumference		63*s.*	6*d.*	each.
8 „	and 4 to 5 feet	„	...	21	0	„
7 to 8 „	and 4 feet	„	...	15	0	„
6 to 7 „	and 3 to 4 feet	„	...	10	6	„
6 „	and 3 feet	„	...	7	6	„

Handsome smaller specimens at proportionately lower prices.

Kingston, Surrey.

FINE TRAINED FRUIT TREES IN A BEARING STATE.

LUCOMBE, PINCE, AND CO., have this season for Sale a remarkably healthy stock of fine trained FRUIT TREES of all the best sorts, to which they respectfully beg to call immediate attention. Prices and particulars to be had on application to LUCOMBE, PINCE, & Co., Exeter Nursery, Exeter.

ESTABLISHED 1720.

DWARF PYRAMIDAL PEAR TREES ON QUINCE STOCKS.

EDWARD PARKE FRANCIS offers a very fine collection of the best varieties of PEARS grafted on the Quince; descriptive Catalogues of which may be had on application. Strong Trees, showing Fruit Buds, 2*s.* 6*d.* to 3*s.* 6*d.* each.

Rose Nurseries, Hertford.

PYRAMIDAL PEAR TREES ON QUINCE STOCKS.

J. AND J. FRASER have to offer a very fine collection of the best varieties of PEARS grafted on the Quince; descriptive Catalogues of which may be had on application.

In offering these Pears, grafted on the Quince stock, we would wish particularly to call attention to their many excellent qualities. They are very compact in growth, and most prolific in bearing, fruiting profusely while the trees are small; thus forming a great acquisition for a small garden. Planted by the side of walks, in addition to their utility, they add much to the neatness and beauty of a kitchen garden. Indeed too much can scarcely be said in favour of these miniature Pear trees; as a proof of their merit the demand for them is yearly increasing.

Strong Trees, showing Fruit Buds, 2*s.* 6*d.* to 3*s.* 6*d.* each.

Lea Bridge Road, Essex, December 2.

SUPERB HOLLYHOCKS, ROCKETS, SEEDS, ETC.

WILLIAM CHATER'S descriptive list of his superb HOLLYHOCKS, containing hints on their culture and observations on exhibiting, &c., may be had on application by enclosing a postage stamp. Packets of seed, consisting of 20 varieties, selected from the best show flowers, 5s.; 12 varieties, 2s 6d.; and from good double sorts, 1s.

Very superior Quilled German Asters, 12 distinct varieties, separate 2s., mixed 1s. per packet. Also Choice French Asters, 12 varieties, separate, 3s., mixed, 1s. 6d. Fine Quilled African Marigolds, lemon and orange, 6d. per packet.

New Double Crimson ROCKET, excellent bedding plant for spring flowering, 6s. per dozen, or 2l. per 100. Double French White, 4s. per dozen, or 30s. per 100.

Saffron Walden Nursery, Dec. 2.

NEW CRIMSON DAHLIA "INCOMPARABLE."

MR. E. ABLITT begs most respectfully to announce to the Dahlia Trade that he purposes disposing of the above named splendid Seedling Dahlia in ground roots. Colour rich ruby crimson, fine shape, with great depth of well arranged petals, and good centre; it has been shown at most of the exhibitions in the neighbourhood, and greatly admired. Mr. Glenny also speaks of it in very high terms as one of the best in the crimson class.

☞ See Glenny's Almanack for this year, and Lloyd's Weekly Newspaper for October 29th, initials E. A., and Nov. 11th.

Terms, Five Guineas each root.

Onehouse, Stowmarket, Suffolk.

TO THE AGRICULTURISTS OF ENGLAND.

HARRADINE'S "NE PLUS ULTRA" WHEAT.—A single ear of this wonderful Wheat, which was purchased five years ago of a soldier on tramp, who brought it from some distant country, was sown in 1849; the produce of this was again sown in 1850, and also in 1851, when it yielded at the rate of 19 coombs, 1 bushel, and 1 peck per acre. This induced me to continue its cultivation. A sheaf and a quantity of corn will be shown on Messrs. Garratts' Stand in the Agricultural Department of the Crystal Palace, by which its quality and general character may be seen.

The following Gentlemen kindly lent me portions of their land last season, to test the producing quality of the Wheat, and up to this year not one kernel has been sold for seed. The quantity sown on all the varieties of soil has in no instance exceeded 4 pecks per acre. On land of Mr. Wasdale, in the parish of Woodhurst, this Wheat was sown after Tartarian Oats, Clover, Seeds, Peas, and Tares (some being sown in February, and equally productive). On land in the occupation of Mr. Gadsby, in the parish of Godmanchester, 1 acre, the yield of which has been 30 per cent. over his own Wheat, grown in the same field, and has been tested by several Agriculturists in the neighbourhood. On land in my own possession, in Needingworth and other places (both Fen and Highland), it has been sown after Wheat, Clover, Barley, Beans, Oats, and Fallow, and in every instance has been most productive.

I am prepared to part with a limited quantity, which can be had on application to me, at 25s. a bushel. All orders to be accompanied by a remittance.

JOHN THANG HARRADINE, Needingworth, St. Ives, Huntingdonshire.

GRAPE VINES FROM EYES.

R. GLENDINNING has a large Stock of the undermentioned Vines, extra strong in pots, with well ripened wood, 5 ft. and upwards in the canes. Some of the kinds are new, and which have been proved and found of first-rate quality:

Black Hamburgh	Black Frontignan
The Pope's Hamburgh	Cabul
Wilmot's Hamburgh	Grounir du Cantal
Mill Hill Hamburgh	Welbeck Tripoli
Victoria Hamburgh	Grove End Sweet Water
Muscat of Alexandria	Pitmaston White Cluster
Barnes's Muscat	Chasselas Musque
Reeves's Muscadine	Black Barbarossa
Raisin de Calabre	Muscat non de jura
White Frontignan	Chasselas de Fontainbleau
Grizzly Frontignan	Royal Muscadine
	Large White Sweet Water

Chiswick Nursery, London.

TO GENTLEMEN ENGAGED IN PLANTING.

WATERER AND GODFREY respectfully invite attention to their stock of the following very desirable HARDY PLANTS.

Araucaria imbricata, from 2 to 7 feet high; as handsome as plants can be.
Cedrus Deodara, in any quantity, from 1 to 3 feet high
Do. do., 4, 5, 6, 7, 8, and 10 feet high; splendid plants
Cedars of Lebanon, 3, 4, 6, and 10 feet high
Pinus Douglasi, 3 to 10 feet
" insignis, 2 to 7 feet
" Menziesi, 3 to 7 feet
" pinsapo, fine plants, 3 to 6 feet
" Nordmanniana, 1½ to 3 ft., all from seed and remarkably handsome
" nobilis, 1½ to 2 feet; a few larger, 5 and 6 feet high, on their own roots, and with perfect leaders
" Montezumæ, 2 to 4 feet
Pinus canadensis, 3 to 8 feet
Cupressus macrocarpa or Lambertiana, 4 to 7 feet
" thyoides variegata, 3 to 4 feet (the variegated white Cedar)
Juniperus, Upright Irish, perfect columns, 3 to 7 feet
" chinensis, 2 to 8 feet
Yew, common English, 3 to 8 feet
" Irish, 4 to 10 feet
" gold-striped, 1½ to 3 feet
" do., tall standards, 4 to 7 ft.
" Dovaston, or Weeping, worked on tall straight stems
Thuja aurea, the finest plants in the country
Libocedrus chilensis, the finest plants in the country
Large variegated Hollies
" Standard Bays

Also an immense stock of large Evergreens, Standard Ornamental Trees, &c.

All the plants here offered may be seen, growing in our Nursery; they are removed every year, and will travel any distance with perfect safety. Of some, such as Araucarias, Deodaras, Golden Yews, Thuja aurea, Pinus nobilis, Nordmanniana, we have any quantity; and the plants, for root and branch, are not to be surpassed. Priced Catalogues will be forwarded on application, enclosing two postage stamps, to WATERER and GODFREY, nephews and successors of the late Hosea Waterer, Knap Hill Nursery, Woking, Surrey, near the Woking Station, South-Western Railway, where all trains stop, and where capital conveyances can be obtained.

The 2d. stamp will also include a descriptive Catalogue of their American Plants, Roses, and Nursery Stock in general.

THE NEW CHINESE POTATO (DIOSCOREA JAPONICA).

MR. JOHN HENDERSON,

Formerly of the Firm of JOHN A. HENDERSON & Co., Pine Apple Place, London,

HAS the pleasure of informing the Public that he has just completed the Purchase from M. PAILLET, of Paris, of his entire Saleable STOCK of the above introduction from China, the nutritive properties of which are said so far to surpass the ordinary Potato that it is likely, not only to act as an auxiliary, but entirely to SUPERSEDE that valuable but uncertain esculent.

The most satisfactory results have followed from personal experiments, and proved that when cooked in the ordinary manner, from the large amount of FARINACEOUS properties it contains, it can NEVER become waxy, as is too generally the case with the Potato. Its FLAVOUR resembles in delicacy an early ASH-LEAVED KIDNEY; but, independent of the above excellent qualities, there is every probability of its taking a still more important position in the ECONOMY of this country, for, when dried and reduced to powder, it is equal to the best ARROW-ROOT; or mixed in the proportion of one-third with two-thirds of wheaten flour, it makes an extremely light and wholesome BREAD, as well as very superior PASTRY.

Messrs. VILMORIN & Co., speaking of it, observe:—"Of all the esculent roots proposed as substitutes for the diseased Potato, the DIOSCOREA JAPONICA is certainly the only important one. It is easily propagated. The tubers are large and long, the flesh very mealy and devoid of any peculiar or disagreeable flavour. The DIOSCOREA JAPONICA is, in our opinion, a PRECIOUS ACQUISITION."

M. PELÉ, Horticulturist, Paris, in his Supplementary Catalogue of this autumn says:—"A new alimentary root, introduced into France by M. MONTIGNY, French Consul in China. Serious experiments have shown that this tuber will be much more advantageous to cultivate than the Potato, both in regard to its QUALITY as well as PRODUCE."

M. PAILLET, to whom the Imperial Society of Agriculture and Commerce of France has awarded the sum of 3000 francs as encouragement for having brought it into cultivation, also notices that "this tuber attains at least 1 to 2 lbs. weight. In its growth it is less delicate than the Potato, which unfortunately has of late years much degenerated. It does not require particular care, and its abundant produce amply repays cultivation. Its taste is pleasant, and being a root which contains a large amount of FARINA, will be a great addition to the FOOD OF THE PEOPLE as soon as it becomes generally known. It is so HARDY that it has passed the winters of 1853-4 in the open ground, without having in the least suffered from frost. It is also found that the STEMS and LEAVES, which are very numerous, form an EXCELLENT FOOD FOR CATTLE."

Tubers, with description of the Chinese Mode of Culture, to be obtained of MR. JOHN HENDERSON, KINGSKERSWELL, SOUTH DEVON, at the following prices, for cash only:—

4 Tubers ... ... £0 10 0 | 10 do. ... ... £1 2 6 | 50 do. ... ... £5 5 0 | 100 do. £10 0 0

Post-office orders are requested to be made payable at Newton Abbot, South Devon. The usual discount allowed to the trade when not less than 50 are taken.—P.S. All orders unaccompanied by a remittance will be considered as not received.

To Farmers, Potato Growers, and Others.

JACKSON'S PATENT PREPARATION
FOR
PRESERVING POTATOES, WHEAT, AND OTHER SEEDS.

THIS highly VALUABLE PREPARATION preserves POTATOES, WHEAT, and all other GRAIN, from the RAVAGES OF DISEASE. The CROPS are brought forward in HEALTH AND VIGOUR, and the yield is greatly increased, in proof of which the following extracts are given from numerous letters received by Mr. JACKSON.

EXTRACTS:—

"One of the fields of this farm, the property of MRS. STANBURY, was planted with Regent's Potatoes in April last, some of which were prepared by you. The result now is, that the whole of the crop from the unprepared sets is thoroughly diseased, and hardly worth the trouble of taking up; while those raised by the side of them from the prepared sets, are not only in a beautiful state of preservation from the disease, but the produce is much greater,—the Potatoes are more numerous than the others; indeed, if there were no such thing as the disease to be feared, it would be worth the trouble and expense of preparing the sets by your process, even for the sake of the improved crops. I shall certainly, for the future, prepare all my Potatoes for seed by your process; and I intend to adopt it for preserving my Wheat from the Smut.

"G. B. BAXTER."

"Belmont Farm, Eltham, Kent, August 28, 1854."

"Admiral Sir J. A. GORDON, K.C.B., Marlee House, Blairgowrie.

"SIR,—I have received your note of the 16th. The Potatoes that came here from England, prepared by Mr. JACKSON, were planted in a piece of new ground, and according to the directions sent by him along with them as to distance between the plants, &c. They came up well, with strong healthy stems; I have now taken the whole crop up, and there is not the slightest appearance of any disease amongst them. They are of large equal size and very prolific. There were long black unprepared Kidneys planted in the same patch, and a great deal of them are not fit for use, at least a third part are diseased. I hope Mr. JACKSON'S process may be widely known, as it is a great boon.—I am, &c.,

JOHN SHANKS,

"Forester, Kildrummy Castle.

"Kildrummy Castle, Aberdeenshire, November 17, 1854."

"I am very much pleased with the result of the experiments I have made with your Prepared Potatoes; for I planted them, without any manure, in ground where for several years I have hardly had a sound Potato, and I now find the crop perfectly free from disease, and in a very fine condition; while those of the same sort, unprepared, which were planted at the same time, and next to them, are diseased and eaten by worms.

"The Potatoes from the Prepared Seed were so remarkably good that I was induced to weigh them, and I found, to my great astonishment, that they were as 200 to 150 of the others, or about 25 per cent. in favour of your preparation.

"T. AUSTEN, Nurseryman and Seedsman.

"Blackheath, Kent, 24th August, 1854."

Sold by all Seedsmen and Chemists, and at the Patentee's, 18, Cannon Street, London Bridge, in Packets of One, Two, Three, or Four Pounds, or in Bulk for the use of Farmers and Potato Growers.

SUPERIOR EARLY BROCCOLI.

MITCHINSON'S PENZANCE OR EARLY WHITE CORNISH BROCCOLI.—*Celebrated and valuable for its earliness, coming into use early in February, a full-sized handsome head of excellent quality, but a shy seeder, 1s. 6d. per packet, or 12s. per ounce.* New Seed can be had in sealed packets of the following Agents in London:—NASH, MINIER, and Co., Strand; DAWE, COTTRELL, and BENHAM, Moorgate Street; HURST and MCMULLEN, Leadenhall Street; or from MITCHINSON'S Seed Establishment, Truro, Cornwall.—December 2.

From numerous unsolicited Testimonials we select the following:—

To Messrs. Mitchinson and Co., Seed Merchants, Truro, Cornwall.

"Sirs,—I have enclosed 18 postage stamps for a packet of your Penzance Broccoli Seed, the same kind as you sent me last year. I hope I am not too late, for I am anxious to procure it, if possible, for I can bear testimony to its value as a new, early, and a superior Broccoli, for I have been cutting upwards of 30 heads every week from the beginning of February.

"Dorking, Surrey, April 6, 1854. "W. UNDERWOOD."

To Messrs. Mitchinson and Son, Seedsmen, Truro, Cornwall.

"Sirs,—I enclose you 1s. 6d. worth of stamps, and hope you will send me a small packet of the Early Broccoli you advertised last year. I have beat all my neighbours this year with your Broccoli, which has been very fine and true, and stood the winter well. "GEORGE PENDER."

"Sandgate, Kent, April 10, 1854."

To Mr. Mitchinson, Seedsman, Truro.
(Enclosed with Specimen).

"Sir,—I beg to forward you this Broccoli, one of the sort after your own name. I have had a splendid crop of them this season, many of which measured three feet in circumference, and quality excellent. Cut the first on the 11th of February. If seed is scarce, be kind enough to save two packets.—T. BICE, Gardener, Granpound, Cornwall. April 7, 1854."

THE AMERICAN NURSERY, BAGSHOT, SURREY.

JOHN WATERER begs to recommend to the attention of Gentlemen and others engaged in Planting, the following plants from his general Stock, they are in fine healthy condition. The American Plants annually exhibited at the Royal Botanic Gardens, Regent's Park, are supplied from this establishment.

RHODODENDRONS.—The following is a selection of the most admired scarlet, rose, and high-coloured varieties in cultivation; are perfectly hardy, and bloom for the most part during the month of June.

Blandyanum, fine rosy crimson	5s. to 7s. 6d. each.
Lady Eleanor Cathcart, vermilion rose and dark crimson spots	21s. 0d. "
Lady Wenlock, bright crimson	21s. 0d. "
Atrosanguineum, dark scarlet...	10s. 6d. "
Alaric, dark purplish crimson	7s. 6d. "
Omer Pasha, dark crimson, new	10s. 6d. "
Juba, crimson, intensely marked	10s. 6d. "
Lefevreanum, crimson, tinged with purple ...	10s. 6d. "
Attila, dark crimson	7s. 6d. "
The Grand Arab, fine glowing crimson ...	7s. 6d. "
Brayanum, crimson	10s. 6d. "
Nobleanum bicolor, crimson, white eye ...	7s. 6d. "
Vandyke, light crimson...	10s. 6d. "
Blatteum, dark purplish red	7s. 6d. "
Rubens, light rose	10s. 6d. "
The Duke of Norfolk, clear rose, fine ...	10s. 6d. "
Celebrandum, dark crimson purple	10s. 6d. "
Rembrandt, fine crimson	10s. 6d. "
Congestum roseum, fine rose, well marked ...	21s. 0d. "
Roseum novum, clear rose	10s. 6d. "
Leopardi, rosy purple, and very much marked ...	5s. 0d. "
Floribundum coccineum, fine	10s. 6d. "
Erectum, good crimson	7s. 6d. "
Towardianum, large rose, fine...	10s. 6d. "

For planting extensively, no kinds of Rhododendrons are better calculated for a display than the varieties of the noble Catawbiense; they are all perfectly hardy, producing fine trusses of blooms of various hues—scarlet, rose, purple, white, and spotted white. The list below contains the leading kinds:—

Catawbiense, good bushy plants, 50s. to 63s. per 100.
" larger, 1½ to 2 feet, 12s. to 18s. per doz.
" seedlings, fine bushy plants, 12s., 18s. to 24s. per doz.

Catawbiense bicolor	Gloriosum
" splendens	Sherwoodianum
Album elegans	Bouquet de Flore
" grandiflorum	Melanthauma
Cæleste	Pictum
Cyaneum	Roseum elegans
Candidum	Victoria
Delicatissimum	Maculatum nigrum
Egregium	" purpureum
Everestianum	Macranthum
Finibriatum	Nivaticum
Mirandum	Perspicuum
Lindsayanum	

Good strong well established bushy plants, 30s. to 42s. per doz. Larger plants can be supplied at a corresponding advance of price.

STANDARD RHODODENDRONS.—Of these, without doubt, we possess the largest stock of really good kinds. Nothing can be more imposing when in bloom than a handsome standard. We have them 3 feet to 5 feet stems, and handsome symmetrical heads. The price of such would range from 42s. to 105s. each.

Rhododendron ponticum, good plants, 10s. 6d. per 100; larger, 1 to 1½ to 2 feet, 12s. 6d., 15s. to 25s. per 100. This is especially worthy the attention of planters; it will thrive in any soil, and in the most severe weather; is never injured by hares or rabbits. Unquestionably it is by far the best shrub for under cover.

KALMIA LATIFOLIA, good bushy plants, 60s. per 100; larger, 12s., 18s. to 24s. per dozen.

HARDY HEATHS, in 20 fine, named, varieties, many of them well suited to form edgings for larger clumps, 35s. to 42s. per 100.

HARDY AZALEAS.—A good assortment, if left to our selection, suitable for extensive planting, 1 to 1½ and 2 feet, 3l. 3s. per 100. The very best selected Ghent and other varieties, 18s. to 30s. per dozen. These produce flowers of all colours—scarlet, rich orange, yellow, rose, and white.

STANDARD ROSES, of the most approved Perpetual and Bourbon varieties, 3 to 4½ feet stems, 18s. per dozen.

PINUS Douglasi, handsome seedling plants, 3 to 4 and 6 feet.
" insignis; we strongly recommend our stock of this justly admired Fir, all of which are from seed, 2 to 3, 4 & 5 ft.
" cembra, 3 to 4 and 5 feet.—Pinus excelsa, 3 to 6 feet.
" macrocarpa, 2 to 3 feet.
" Lambertiana, very handsome, 3 to 4 feet.
Araucaria imbricata, splendid formed specimens, 2 to 4 feet.
Cedrus deodara, of all heights, from 1 to 8 feet. We have a large quantity about 4 to 6 feet.
" Africana, 3 to 4 feet.
" Lebanon, handsome grown specimens, 3 to 6 feet.
Cryptomeria japonica, 3 to 12 ft.—Libocedrus chiliensis, 2 to 3 ft.
Fitzroya Patagonica, 2 feet.
Cupressus Goveniana, 3 to 4 feet.
" Lambertiana, 3 to 4 and 5 to 6 feet.
Irish Junipers, 4 to 5 feet.—Irish Yews, 4 to 8 feet.

The above-named Coniferous Plants have been frequently transplanted, are perfect specimens, and have never been grown in pots. Prices will be forwarded on application.

J. W. begs respectfully to solicit an inspection of his stock from those who are engaged in planting. A Catalogue, containing full descriptions of his celebrated Collection of Rhododendrons, as exhibited by him at the Royal Botanic Gardens, Regent's Park, can be obtained by inclosing two Postage Stamps.

TO THE SEED TRADE.

MESSRS. ARTHUR HENDERSON AND CO. are now prepared to supply SEEDS of the following recent introductions.

N.B.—Mr. W. H. DUNNETT, Seed Grower, Denham, Essex, will also execute all orders intrusted to him with the greatest care and attention.

WHITE TOPPED CLARY, a fine showy hardy annual, remaining a long time in flower—
1 oz. .. 5s. | 4 oz. ... 15s. | 8 oz. ... 25s. | 16 oz. ... 40s.

LIMNANTHES SULPHUREA ODORATA; yellow ground, edged with white and rose-coloured stamens; a beautiful trailing hardy annual, very sweet scented, and throwing off its fragrance like the Mignonette, and continuing in flower for a considerable period:
1 oz., 10s. 0d. | 4 do., 35s. | 8 do., 60s. | 16 do., 100s.

DIANTHUS DUNNETTI SUPERBUS; very dwarf, dark Sweet William—
1 oz., 20s. | 2 oz., 35s. | 4 oz., 63s. | 8 oz., 105s. | 16 oz., 163s.

THE LARGEST AND CHEAPEST ESTABLISHMENT IN ENGLAND for GERANIUMS (show and fancy), FRENCH GERANIUMS, FUCHSIAS, VERBENAS, FAIRY ROSES, CHRYSANTHEMUMS, HELIOTROPES, CINERARIAS, CALCEOLARIAS, PRIMULAS, and other soft-wooded plants, is the Floral Nursery, Acton Road, Turnham Green, near London. More than 250,000 plants are there cultivated annually.

The stock of show Geraniums exceeds 50,000, and comprises upwards of 750 varieties, amongst which almost every known kind will be found. The newest sorts, such as Carlos, Virginia, Rosa (Foster's), Leah, Pictum, Marginatum, Empress, Neatness, &c., can be had at 3s. 6d. each, or 40s. per dozen. The older varieties from 9s. to 25s. per dozen.

The selection of FRENCH GERANIUMS consists of 40 distinct sorts (exclusive of those English Geraniums which some class with them), at 2s. 6d. each, or 25s. per dozen.

SEEDLING CINERARIAS (10,000), from seed of first-rate flowers, at 4s. per dozen, in 60-sized pots.

20,000 SEEDLING HERBACEOUS CALCEOLARIAS now on hand at 4s. per dozen in 60-sized pots. These flowers have been raised from the seed of the best of last year's stock, which received general praise.

An immense quantity of good fimbriated PRIMULAS at 4s. per dozen in 60-sized pots, and 6s. per dozen in 48's.

CHRYSANTHEMUMS (Lilliputian and large flowering) at 6s. and 9s. per dozen for plants which will flower this season. Large magnificent plants at 18s. and 15s. per dozen—all the best sorts.

The foregoing have been selected as examples only, it being impossible within the limits of an advertisement to afford particulars of a stock so extensive; Catalogues will, however, be forwarded to all parts gratis.

Every possible exertion will be made to give the most perfect satisfaction to all who may favour this Establishment with their patronage. None but thoroughly established Plants will be sent out, and full reliance may be placed on prompt attention and fair dealing.

The Trade will be liberally dealt with. Provincial Nurserymen and Florists will do well to try this Establishment.

Terms cash or a satisfactory reference.

JOHN WESTWOOD, PROPRIETOR.

CHOICE GREENHOUSE PLANTS, &c.—We beg respectfully to offer the following, all of which are handsome well furnished plants, and such as cannot fail of giving satisfaction to those who may honour us with their commands.

EPACRIS, in 50 of the most choice varieties, fine bushy plants, 1½ to 2 feet in height, 12s. per dozen; smaller do., 9s.

ERICAS, fine bushy plants, in 48-sized pots, of all the best kinds in cultivation, 12s. per dozen; smaller do., 9s. (The above are well deserving the notice of the trade, prices of which may be had on application.)

CAMELLIAS, of the handsomest and most select varieties, well furnished with flower buds, 24s. and 30s. per dozen.

GREENHOUSE PLANTS, comprising an extensive collection of the choicest kinds, fine selections from which will be made at 12s. per dozen.

CINERARIAS, in 20 of the very best and newest kinds, for 25s. the set.

MIMULUS, in 6 new and splendid varieties, for 6s. the set.

TREE, or PERPETUAL FLOWERING CARNATIONS.—These new and beautiful introductions, so well adapted for affording a profusion of bloom throughout the winter months, 18s. per dozen.

CARNATIONS AND PICOTEES.

The finest varieties, by name, in strong healthy Plants	...	18s. and 24s.	per doz. pairs.
Fine mixed border ditto ditto	... ...	9s.	"
True old Clove Carnation ditto ditto	...	12s.	"
PINKS, finest varieties by name	...	9s. to 12s.	"
PHLOXES, finest new varieties	... ...	9s.	per dozen.

PÆONIAS, in 20 choice kinds, for 1l.

ROCKETS, per doz.:—New double crimson, 12s.; double white, 3s.; double purple, 4s.

PRIMROSES, per doz.:—Double white, 4s.; crimson, 12s.; yellow, 5s.; purple, 4s.; lilac, 4s.

BELGIAN DAISIES, in 50 new varieties, 4s. per dozen.

HERBACEOUS PLANTS, in very choice variety, 30s. per 100, or 6s. per dozen.

LILY OF THE VALLEY, strong for forcing, 5s. per 100.

HYACINTHS, the finest for glasses or forcing, 9s. per dozen.

TULIPS, extra fine mixex, all from named flowers, 12s. per doz.

CHOICE FRUITS (WARRANTED TRUE TO NAME.)

APPLES, Standard, in best selection, good heads,			9s.	0d.	per doz.
" Dwarf	ditto	ditto	6	0	"
" Trained	ditto	ditto	30	0	"
PEARS, Standard	ditto	ditto	12	0	"
" Dwarf	ditto	ditto	8	0	"
" Trained	ditto	ditto	30	0	"
PLUMS, Dwarf	ditto	ditto	9	0	"
" Trained	ditto	ditto	36	0	"
PEACHES, Df. trained, in fine strong plants,		36s. to	60	0	"
NECTARINES, Dwarf trained	ditto	36s. to	60	0	"
APRICOTS	ditto	ditto 36s. to	60	0	"
CHERRIES, Standard, in fine variety,	ditto	...	12	0	"
" Dwarf	ditto	ditto ...	9	0	"
" Trained	ditto	ditto 36s. to	42	0	"

FASTOLFF RASPBERRY (true), as originally sent out by YOUELL & Co., strong, well-rooted canes, 15s. per 100; Large White Raspberry, 24s. per 100; New Monthly Fruiting, 24s. per 100; Belle de Fontenay, 9s. per dozen.

GOOSEBERRIES, 25 of the finest varieties (good bushes), selected for size and flavour, 30s. per 100, or 4s. per dozen.

CURRANTS.—Improved large White Dutch, Black Naples, Raby Castle (red), and large Red Grape, 4s. per dozen; Knight's Sweet Red, 6s. per dozen. These are the most desirable kinds in cultivation, and are highly recommended.

ASPARAGUS, Giant, 2 years	per 100	2s.	6d.
" " 3 years	"	3	6
RHUBARB, Myatt's Victoria	per doz.	8	0
" " Linnæus	"	8	0
" Mitchell's Royal Albert	"	8	0
" Hawke's Champagne, new ...	each	2	0
SEAKALE, strong, 1 year	per doz.	5	0
" " for forcing	"	10	0

All orders of 2l. and upwards are delivered carriage free to London, Hull, and Newcastle-on-Tyne, as well as to any Railway Station within 150 miles of the Nursery. Communications by Steamer and Railway to all parts of England, Ireland, and Scotland, as well as the Continent. Post-office orders to be made payable to YOUELL & Co.

YOUELL AND CO., Royal Nursery, Great Yarmouth.

TO PLANTERS OF CEDRUS DEODARA.

TO BE SOLD, about 200 handsomely furnished and perfect specimens (from seed) of the above, from 3 to 5 feet in height, all transplanted last season.—For particulars, address "Cedrus," Office of this Paper.

THE FOREST, THE PARK, THE SHRUBBERY, AND THE GARDEN.—*Noblemen and Gentlemen requiring Trees, Shrubs, or Fruit Trees during the present Autumn should obtain* RENDLE'S *New Autumnal Descriptive Catalogue, which can be had on application from*

WILLIAM E. RENDLE & Co., Nurserymen and Foresters, Plymouth. Established 1786. New Seeds, growth of 1854. Arrangements are now being made at this establishment for a large supply of genuine and good Seeds for the coming season.

NOW READY.

SUTTON'S COMPLETE COLLECTIONS OF KITCHEN GARDEN SEEDS *are now ready, and should be ordered forthwith, by which a full supply of every kind of Vegetable Seed required during the whole year will be secured (including the best sorts yet introduced), and at a very small cost, viz.:—*

No. 1 Collection	... £3 0 0	No. 3 Collection	... £1 5 0
No. 2 do.	... 2 0 0	No. 4 do.	... 0 15 0

The quantities in each collection being apportioned to the size of the garden, INSTRUCTIONS ON CULTIVATION will be enclosed with Nos. 1, 2, and 3. To secure the best sorts, orders should be given immediately, addressed

JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

The Gardeners' Chronicle.

SATURDAY, DECEMBER 2, 1854.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY, Dec. 5—Horticultural .... 2 P.M.

A MISPRINT in the remarks we made last week upon the winter in the Crimea, induces us to add something to the evidence obtainable from the relations of PALLAS, whose personal experience outweighs all conjectural assertions.

The severe winter to which allusion was made by him seems to have been that of 1787, not of 1847, as was stated, owing to a slip of the pen; hard winters are also recorded by PALLAS in 1798-9, and in 1799-1800, but owing to the confused language of the English translation of his works it is not clear whether it may not have been 1799-1800, instead of 1787, when Kaffa bay and creeks in the N.E. of the Euxine were frozen over; even then, however, we are told that the mercury of the thermometer did not sink more than 18° below freezing in the bleak regions adjoining the Sea of Azoff. "Such inclement winters," he adds, "as well as copious falls of snow, are not very common; and the latter seldom remains on the ground throughout that season." This, be it observed, is mentioned of the Crimea generally, and does not seem to apply at all to the southern shore.

The dromedary, or camel, is a common beast of burthen. What says PALLAS of that? "*The mild winter of the Crimea* is very favourable to the habits and propagation of camels; and these quadrupeds are more numerous than is commonly supposed. In the year 1796 a thousand camels were bought up in Crim Tartary for the use of the army in Persia, and they were procured in a few weeks without any remarkable diminution of their numbers."

Speaking of sheep, the same authority reports that "in winter large flocks are driven into the mountains, on the Chersonesus, and other places along the sea coast *where the falls of snow are slight*, so that they find a scanty subsistence throughout the winter."

The winter of 1793-4 was considered a hard one, though not so severe as the two already mentioned, and even then the thermometer never fell below 8° Fahr., although ice drifted down from the Sea of Azoff, as it usually does, rendering the vernal months "cool." Of Bakshiserai, the Russian present head quarters, we are told that being sheltered from north winds, the weather is generally mild throughout the winter. Sebastopol, "in consequence of the shelter afforded by the mountains to the north and east, is milder in the winter than many other parts of the Crimea."

On the 4th of April, PALLAS found near the road between Balaclava and the village of Kamara Peaches and Almonds in flower in the gardens, and a variety of wild plants blossoming in the woods, among which was the southern *Clypeola*, unknown in a wild state where winters are severe.

Among the wild plants of the country the Terebinth (*Pistacia Terebinthus*), the Jujube (*Zizyphus Jujuba*), the Pomegranate, and the Christ's Thorn (*Paliurus aculeatus*), are mentioned by the writers on the Crimea—not to mention the Arbutus Andrachne. There is not a gardener in England of any experience who does not know that all these plants indicate a better climate than our own; the climate, in fact, of the northern shore of the Mediterranean. We also learn from PALLAS not only that wine is made from the vineyards of the Alma, but that the Vines are trained over trellis and up poles—a circumstance by itself proving that the climate is Italian rather than Russian. But "common things" like these are beneath the notice of some people, although they convey information of much more practical value than even thermometrical registers, which, we may add, entirely support the foregoing statements. As to feet and fingers coming off from cold where camels breed, and the vegetation is Italian, we suppose we shall hear no more of that.

At all events there is no gainsaying either the particular or general facts now shown to be connected with the climate of the south-western part of the Crimea. We have purposely taken the most familiar examples we could find in the excellent records left by PALLAS. Had we been so disposed we might have introduced his account of Alupka, a place more to the north-eastward, where Oranges require no greater protection in winter than is afforded by the slight shelter of a rude Tartar hut; but such an instance is no doubt local and exceptional. Upon the whole we cannot doubt that the winter climate of the scene of operations is in no degree worse, at the worst, than that of Hampshire and Sussex; but probably is more like that of Rome, and certainly bears no resemblance to the extravagant exaggerations of some of the correspondents of the daily press. And when we remember that the Duke of WELLINGTON led his troops across the Pyrenees in November, notwithstanding the resistance of such an army as the French and such a commander as SOULT, we cannot believe that mere winter weather in the south-west of the Crimea, even in the face of Prince MENSCHIKOFF, can have any danger for British soldiers and their brave allies.

OF the many distinguished men of science who have passed away from amongst us during the present year, there is none whose death is so widely and deeply mourned as that of PROFESSOR EDWARD FORBES. Endowed with real genius, possessing many and highly cultivated talents, no less conspicuous as an original thinker than as a hard and conscientious worker; accomplished in literature and art, equally graceful and ready with pencil or pen, in the lecture-room as in the closet, and with far rarer qualities than all these—the purest and most disinterested love of science, and the most generous appreciation of the labours of others—it is no wonder that he was beloved and admired beyond any natural historian of his day.

We must refer our readers to the *Athenæum* and *Literary Gazette* for details of his career as a geologist and zoologist, which commenced with a child's attempt to form a museum of nature on the shores of the Isle of Man, and terminated in the Professorship of Natural History in the University of Edinburgh, long the height of his ambition. Prof. FORBES was born in 1816, and from his earliest years devoted the whole powers of his mind to Natural History in its most comprehensive meaning. Fortunately he had at the commencement of his studies means at his disposal, but his inclinations were divided between science and art; he commenced with the fine arts and studied in London, but soon finding that progress in science was incompatible with the necessary devotion to the easel, he abandoned the latter; not, however, before he had obtained considerable proficiency in the practice and great knowledge of the theory of drawing and painting. In pursuance of a new plan he chose Edinburgh as a school, and medicine as the study which would best fit him to become a naturalist by profession. There he resumed his zoological pursuits with redoubled ardour, collecting on the land, the shore, and in the depths of the sea; there, too, he became attached to botany, attracted (as were hundreds of his day) by the zeal and enthusiasm of Dr. GRAHAM, then Professor of Botany at that university. At that time Edinburgh was conspicuous amongst the schools of Britain for the number of devotees to science amongst its alumni; and these EDWARD FORBES's genius and accomplishments, his singularly amiable and lively disposition, and agreeable manners and love of science soon attracted to himself; so that he became the centre of a choice knot of young and ardent naturalists. Excursions into all parts of Scotland, Scandinavia, France, Germany, Italy, and Algeria, alternated with his college sessions, and to these he was impelled by the opportunities they afforded him of studying geographical distribution, morphology, and the habits of plants and animals. Some of his earliest contributions to botany were the fruits of these excursions, and appeared in various periodicals between the years 1836 and 1840.

In 1841 FORBES was appointed naturalist to the Syrian expedition for exploring the sites of ancient cities in that part of Asia Minor; there he employed himself during his dangerous excursions in the interior chiefly in the study of Testacea and plants,

also in sketching and sharing the hardship and excitement of antiquarian research; much of the time was also spent at sea on board H.M.S. Beacon, when he collected materials in marine zoology and botany for developing the laws that regulate the distribution of life in the depths of the ocean. During one of these excursions he was seized with an all but fatal fever, and contracted the seeds of the organic disease that 12 years later laid him in an early grave. He returned to England in 1842 with invaluable collections, and a portfolio of drawings of scenery, antiquities, plants, and animals, men and their manners, that for extent, variety, scientific value, and artistic skill, have never been rivalled by any naturalist. A sum of money was voted by the treasury for the publication of these, which Prof. FORBES intended appending to a treatise on the "Natural History" of ARISTOTLE, a work for which he had collected ample materials, and which he alone was capable of executing. In the meantime he published, in conjunction with Lieut. SPRATT, a narrative of his journeys, a classical work richly stored with episodes in natural history, and especially in observations on the botany of Asia Minor and the Ægean Sea.

On his return to England, Professor FORBES found himself elected to the chair of Botany in King's College, London, where he became a most valuable and efficient teacher; his lectures were greatly applauded, his devotion to his students was only equalled by their admiration of him, and his introductory address on taking the chair, which was printed at the request of the College, is not less conspicuous for its eloquence than for its originality and sterling merit. Soon after this he accepted the posts of Curator and Assistant Secretary to the Geological Society of London, to the duties of which he applied himself with a zeal and ability that gave him a high rank amongst European geologists, and led to his occupying the President's chair, ten years afterwards. From this Curatorship he was appointed Palæontologist to the then rapidly increasing Geological Survey of Great Britain, and latterly he became Professor of Zoology and Palæontology in the Government School of Mines. From this he was finally removed early in the present year to the Professorship of Natural History in Edinburgh, vacated by the death of his old master, Prof. JAMESON. His departure from London was considered almost in the light of a national loss, and a reflection upon the Government whom he had served so devotedly and successfully. The assurance that Edinburgh possessed unrivalled advantages for fostering a school of natural science, and that FORBES was of all men the best qualified for forming it, reconciled his friends to the step he had taken in a public point of view, whilst in a private one they rejoiced that he had so early found an arena altogether suited to his talents, and a prospect of reaping the emoluments he so richly deserved. He had scarcely thrown out his masterly plans for the accomplishment of his great scheme, and he had not yet enjoyed the fruits of his labour, when he was seized with an inflammatory attack upon an organ that had become affected during the experience and hardship of his Syrian journeys, and which had been for many years extensively diseased, and this carried him off at the early age of 38.

We have reserved a few lines to devote more especially to Professor FORBES's career as a Botanist; and it is indeed wonderful how the author of so many and varied geological and zoological treatises should have found time to aim at original researches in any other department of science; and that doing so, the motto "nil tetigit quod non ornavit" should still apply with so much force to all he did. This was mainly due to the early age at which he acquired its rudiments; to the efficient practical training in systematic Botany and collecting that he received in Edinburgh; to his quick perception of affinities; to his philosophical views of morphology, distribution, structure, functions, and the mutual relations of all these; to his mind being richly stored with the literature of the science; to the wide experience obtained during his travels, and finally to that heaven-given power of generalization and abstraction that he so eminently possessed. Besides many smaller papers alluded to above, he published a most important one in the Records of the Geological Society upon the relations of the existing Fauna and Flora of Great Britain to certain geological changes, a most remarkable work, opening a wide field of speculative research into every branch of natural science, and embodying a mass of information on the natural history of the British Islands. Of more direct value to botanists are Prof. FORBES's contributions to JOHNSTONE's physical atlas, to which he supplied the geological and palæontological maps of the British Isles, and another on the distribution of marine life over the globe.

It is difficult to sum up, at a few days' or even weeks' notice, the prominent and most useful labours of a man who has done so much by precept and by example, and who for his years has accomplished more than any other naturalist of his day. As a practical naturalist Professor FORBES will always be held in the highest esteem, for the efficient purpose to which he applied the dredge; for his remarkable powers of collecting with system and judgment in all departments of natural history; for his labours as Curator of the Geological Society's Museum, and in that of the Geological Survey: as an original and philosophical naturalist for his many essays on the distribution of life, in time and over space, "per mare per terras:" as a systematic writer, for his paper on Indian fossils in the "Geological Transactions," his many monographs and local faunas, his able work in conjunction with Mr. HANLEY on the British Testacea, and his beautiful History of British Starfishes: as a travelling naturalist for his extensive European, North African, and Oriental journeys, and for his volumes of travels in Syria (by himself and Lieut. SPRATT): as an artist for the accurate and beautiful sketches and views in his travels, for his illustrations of his book on Starfishes and other works; and, above all perhaps, for his sometimes humorous and sometimes sentimental, but always exquisitely graceful and artistic vignettes and tail-pieces to his own books, and those of some of his friends: as a public teacher, for his lectures at King's College, the Royal Institution, the Government School of Mines, Marlborough House, and at many other schools and institutions throughout the kingdom. And, finally, his memory will always be held in the most affectionate regard by all that knew him, for his sterling moral worth, integrity of purpose and strength of mind, utter absence of jealousy, incapability of detraction, his noble temper, untouched by flattery and good or ill-fortune, and by his generosity in words and in deeds. In the wide circle of our experience we can point to no more brilliant example of a naturalist's career, short as it was, nor to any devotee to science more universally and deservedly beloved. *J. D. H.*

New Plants.

104. TRICHOCENTRUM PINELI.

T. columnæ alis truncatis denticulatis, labelli oblongi emarginati callis 2 linearibus oblique truncatis parallelis glabris dentibusque totidem juxta basin hirsutis, calcare pedicello subæquali apice uncinato.

We have received a specimen of this little plant from Messrs. Veitch; and we have it in a wild state, with a coloured drawing, from our friend the Chevalier Pinel, who found it near Rio. It is much like *T. fuscum;* but the wings of the column, the callous lines on the lip, and the peculiar spur, readily distinguish it. In Brazil the sepals and petals are cinnamon brown, the lip white with crimson freckles near the base, and the leaves are spotted with red, as in *Oncidium Papilio;* the live specimen was paler in all respects.

105. TRICHOCENTRUM PURPUREUM.

T. columnæ alis dolabriformibus denticulatis, labelli obovato-oblongi emarginati callis 2 linearibus obtusis adjecto minore utrinque juxta apicem dentibusque totidem juxta basin glabris, calcare ovarii longiore crasso obtuso sub-falcato.

This also was sent us the other day by Messrs. Veitch. It has the dull olive green sepals and petals of T. fuscum, but its lip is purple, and its thick curved spur is peculiar. Like all the others, it is a stemless fleshy-leaved epiphyte, with little radical one or two-flowered scapes. The native country is said to be Demerara. *Plectrophora iridifolia* of Focke is another species of the genus.

VEGETABLE PATHOLOGY.—No. XLVIII.

213. If it be granted that the first formation of useful or ornamental varieties of plants, and their preservation true to their distinctive characters, depend upon an abnormal debility, whether constitutional or induced by artificial means, though such conditions cannot be recognised as due to disease in the agricultural or horticultural definition of the term, a tendency to sport, that is, to give rise to multitudes of variations for the most part difficult of preservation, will readily be allowed to be symptomatic of constitutional weakness, while the inclination to revert to the original type is so far a symptom of returning strength. This tendency is in part original, in consequence of which varieties arise, but in far greater measure is due to the facility with which varieties are impregnated even in a state of nature with their kindred pollen and the increased susceptibility of their produce. It is to this cross-breeding that by far the greater part of the most valuable objects of cultivation is due. The produce of hybridisation between two cognate species is for the most part barren, while cross-breeding, which is not, strictly speaking, hybridisation, is often productive of increased fertility, though the resultant forms are for the most part extremely transient. There is in fact but little certainty in cross-breeding, while the results of muling are to a great extent normal.

214. All varieties and variations of plants are not, however, equally fleeting. There is a marked constitutional difference in this respect between different races, and as regards particular organs.

Mr. Knight informs us that the tendency to sport may be greatly checked by impregnation with the pollen of a pure male parent of permanent habits. The question as to the influence of the male and female parent respectively on the different organs is far from settled, the experiments of Knight and Herbert leading to precisely different results.

215. If the main objects of cultivation are really due to what, strictly speaking, must be considered as diseased conditions of the parents from which they spring, it is not surprising that those qualities which make them answer the purposes of man should be accompanied by others which impede his views. That there is under the present improvement both of the system of cultivation and of the varieties cultivated, in which every abnormal peculiarity, so long as it is useful, is increased to the greatest possible degree, a tendency to decay which did not exist some 20 years ago, will scarcely be denied by any one who is intimately acquainted with our farms and gardens. It is notorious, for instance, to take one example by way of illustration, that the cultivation of Cucumbers, which was once considered the most certain of success, is now precarious even in the hands of the best cultivators; while that of Melons, which always demands a more than ordinary degree of skill and care, is in many localities all but hopeless. It is impossible to assign the actual cause of this tendency to decay, though it may in some measure be surmounted by constant care and observation of the conditions under which alone health can be preserved, but that it does exist to a great extent, and that, from whatever cause it may have arisen, it has become constitutional to a very great extent, is almost certain. The tendency to decay in such cases is sometimes confined more especially to particular parts, and those generally the most succulent, but in the instances just mentioned, though it is not exhibited very often till the fruit is formed, it sometimes commences at a very early stage of growth, insomuch that the plant perishes even before the flowers are fully formed.

216. This tendency is usually accompanied by a difficulty of healing, which is peculiarly indicative of constitutional vice. In the vegetable, no less than the animal world, where health is present, there is a power of reparation which at least protects all subjacent parts from external injury. The young wood, for instance, in trees, where the death of the generative tissue is not immediately caused by exposure to drying air, throws out, when denuded, a cellular mass, which is soon resolved into wood and bark, and similar effects are produced in other parts. I have now before me Pears, whose surface was in a great measure eaten off by caterpillars in the early part of the summer, in which a new cuticle has been formed perfectly continuous with the old, though covered with the scurfy remains of the exposed external cells. Even in some cases of disease, arising from other than constitutional causes, as in the Potato scab, a new cuticle is formed beneath the old, doubtless preventing the complete destruction of the tuber. In the cases, however, under consideration, the tissues which lie immediately beneath the exposed cells have no strength to repair the damage, or at any rate to form a sufficient barrier to the penetration of noxious influences; and so an additional cause of decay exists which greatly aggravates the original evil. Even the necessary shortening of the branches, or the removal of superfluous leaves, in such cases too often induces decay, which is rapidly communicated to the main stem, of which a more or less speedy death is the consequence.

217. In such cases fungi are frequently produced in the decayed tissues, and when produced propagate the mischief far more speedily than would have been the case without their agency, but there is no tendency in diseased tissues to produce them, nor will they appear without previously existent germs.

218. Each plant has its own peculiar attributes, and can be maintained in health only under certain outward conditions, which may be more or less definitely circumscribed. The alteration of these conditions may be more or less destructive, but such destruction is not to be ascribed to constitutional weakness, inasmuch as under normal circumstances it answers the end for which it was created. Such peculiarities are but rarely, and only after many generations, altered by cultivation. In most instances what is called acclimatisation, is, we believe, impossible, except by the production of new races. Out of all the varieties of potatoes which have been produced, there is not one which can resist a few degrees of frost, a circumstance which makes it absolutely impossible that the plant should ever become wild in Europe. *M. J. B.*

ORIGIN OF THE PEAR TREE, ITS PROGRESS, AND SUCCESS.

(*Continued from p. 757*).

IN the endeavours to obtain new and improved varieties of fruits by seed, the chemist, Van Mons, of Brussels, was the first in Belgium who was guided chiefly by the idea of raising seedlings from the pips of fruit of vigorous trees in the first instance, and continually resowing the seeds obtained from the last generation of seedlings, in order to obtain improved fruits, in form and taste. He is also the only one who has stated the principles by which he was guided in his researches. These were commenced at Brussels, about the end of the last century, in a nursery bearing the name of La Fidélité. Called at a later date to be Professor of Chemistry at the University of Louvain, he transferred, in 1819, his numerous seedlings to that place, not, however, without losing a great many; and he continued his essays till 1842, the time of his decease. After continuing his researches for 25 years, the first catalogue, indicating the new varieties obtained, was

printed at Louvain in 1823. Some of these varieties have been described by the author, and published in the following works :—

Annales des Sciences Naturelles : MM. Tobard et Weissenbruck, 1819-30. New [American] Orchardist, by Mr. Kenrick : Boston, 1833. American Gardeners' Magazine, T. G. Hovey : Boston, 1835. Systematisches Handbuch der Obstkunde, J. G. Dittrich : Jena, 1837. Album de Pomologie, par A. Bivort, and others : 4 vols. 4to, 1847—1851. La Pomonomie Belge, of the late Van Mons, appeared at Louvain in 1835 and 1836, in 2 vols. 8vo.

In 1845 the nurseries of Louvain were given over by the heirs of Van Mons to M. A. Bivort, and the collections transferred to the gardens of the village of Geest St. Remy, near Jodoigne. In consequence of the vigorous trees having been transplanted into a less favourable soil than that of Louvain, many of them again fruited in 1847 and 1848. The new and good varieties were named and sent out, at least a great number of them ; nevertheless they are still but little known, and not widely distributed. A better knowledge of them would therefore be advantageous to amateurs. M. Bivort, having retired from business in 1852, formed a society, a committee of which is charged to ascertain the good varieties which may be found among those that have not yet fruited, and of which, consequently, the merits have not been proved. Major Esperen, of Mechlin, commenced researches of the same kind somewhat later than Van Mons, and he also obtained results deserving notice.

M. Bouvier, of Jodoigne, one of Van Mons' pupils in pharmacy, also turned his attention to the raising of new varieties of Pears from seed. Like Van Mons and Esperen, Bouvier has left a number of very vigorous and hardy varieties of Pears, and of good quality ; but the two last have not left any account of their mode of proceeding. We may remark, that these three gentlemen had no other object than that of obtaining a good result ; and that they gratuitously distributed to amateurs and nurserymen grafts of their seedling trees, after these had borne fruit approved by themselves and their friends. Still it is certain that these essays, carried on for half a century, especially those of Van Mons, must have cost a considerable sum of money. In his nurseries at Brussels, Van Mons did not possess less than 80,000 seedlings. Persons capable of judging of the matter estimated, that at the time of his decease, which took place at Louvain in September, 1842, the nurseries must have cost a sum, including interest, of about 300,000 francs (12,000*l.*) There are few examples, in the history of gardening of a like sacrifice of time, talent, and money having been made by a private individual in the disinterested pursuit of a useful object. It is with unfeigned pleasure that we state these facts, which are but little known abroad. At the same time, we take the opportunity of paying homage to the man to whom we are indebted for a greater number of fine varieties of Pears than have been handed down to us from all previous ages, and from all the nurserymen and pomologists of modern times. In his Catalogue of 1823, second and third series, several fruits are noticed by the author as being very remarkable, and to which names had been given. The following are some of these :—

94. Archiduc Jean d'Autriche ; form of Colmar Admirable.
1237. Bergamotte Pasteels ; form between Bergamotte and Doyenné.
1253. Beurré Driessen ; form of Beurré d'Hiver.
1165. Bezi Reinwardt ; form of Bezi de la Motte.
471. Bosc Desfontaines ; form of Calebasse Bosc.
893. Calebasse Bauchan ; form of Calebasse.
29. Capiaumont Lints ; form of a large Capiaumont.
134. Charlotte d'Anvers ; form of Doyenné—of little merit.
2160. Chevalier d'Onyn ; form between that of the Rousselet and Passe Colmar.
2143. Colmar Herzog ; form of Passe Colmar, a large fruit.
93. Colmar Gossart ; form of Colmar, excellent.
2466. Comte de Lacepède ; form of Calebasse Bosc.
2069. Duc de Bedford ; a delicious variety.
72. Duc de Saxe Weimar ; form of Grand Bretagne Fondante.
549. Du Petit Thouars ; form of Royale d'Hiver.
180. Grand Duc de Toscane ; form of the Bergamot Sans Pepins.
481. Louise Bonne Réal ; form of Louise Bonne.
248. Marie Louise Slightinger ; form of Marie Louise.
252. Marquise Stas ; form of Marquise.
2636. Mertens-fils ; form of Gros St. Germain.
36. Pentecôte Hervy ; form of Bergamotte de Pentecôte or Easter Beurré.
891. Prince d'Orange ; form and flavour of Passe Colmar.
1537. St. Germain Tacotat ; form of St. Germain.
806. Van Gobbelschroy ; form of d'Espagne, extra.
325. Van Hultem ; form between that of Doyenné Gris and Capiaumont.
2054. Vannes de St. Haye ; form of Superb Urbaniste.

Another series of varieties indicated by a designation of form only, need not be repeated here, although they are worthy of recommendation according to the opinion of the author. Alas ! with few exceptions, these varieties no longer exist in the collections of amateurs, nor in the nurseries, at least not in ours. Van Mons had numerous correspondents, in America especially, in Germany, England, and France ; and he frequently sent grafts of his new Pears with numbers only. The above indications may, therefore, prove useful to those who may have received grafts, but are not in possession of the catalogue of 1823. *J. de Jonghe.*

(*To be continued.*)

BABINGTONIA CAMPHOROSMÆ.

This, although not one of the most showy of our hard-wooded plants, has the good property of flowering in autumn, when hard-wooded specimens in bloom are scarce, and being of a free elegant habit of growth, and flowering profusely as it does for many weeks in succession, it is well worth a place in every collection. It is perhaps one of the easiest of greenhouse hard-wooded plants to propagate ; cuttings selected of the young wood in a half ripe state, and treated in the ordinary way, very soon emit roots. The cuttings should be potted singly in small pots as soon as they are moderately well rooted, using nice rich fibry peat in a small state with a large admixture of silver sand, and placing them till fairly established in their pots in a close rather moist pit. Beginners will, however, save time by procuring good strong young plants from the nursery. If obtained at once they should be placed in the warmest part of the greenhouse, and as near the glass as convenient. Water must be carefully administered to the soil during winter, giving just sufficient to preserve it in a healthy state, and the plants must be guarded against damp ; giving air on fine days, and avoiding wetting the foliage too much. If the plants are supposed to be at all pot-bound, examine the roots, and give a moderate-sized shift early in March, keeping rather close and moist after shifting and watering very carefully, until the roots get hold of the fresh soil.

During spring the plants should be placed in a pit or house where the night temperature may average from 40° to 45°, allowing it to rise 10° or 15° with sun-heat and a circulation of air, placing them near the glass, and affording them a nice moist atmosphere. Let the branches be nicely tied out, keeping the stronger shoots well down, and pinching out their points, in order to equalise the flow of the sap, and secure a compact close growth, but stopping should not be performed immediately before or after repotting. When growth fairly commences take every favourable opportunity of exposing the plants to air, avoiding cold drying currents, and moisten them overhead every fine afternoon, with a fine rosed syringe ; also give water more freely to the soil. Towards the middle of April remove the plants to a cold pit, which will be the best situation for them after fine weather sets in, and they will be found to grow much more freely here in summer than in a large or lofty house, where it is always difficult to maintain a moist state of the atmosphere. Should cold drying winds occur after removing the plants to a cold pit, or frame, give air very sparingly, raising the sash on the sheltered side, and use a thin shade to keep down the temperature, but give air freely on fine days, and secure a thoroughly moist atmosphere, by sprinkling the floor of the pit and the plants overhead early in the afternoon, shutting up for the evening, but giving a little air before retiring for the night. A thin shade should be used for a few hours on the forenoons of bright days, but beginners are apt to use this so as to induce thin weakly growth, and this should be avoided. As growth advances, attend to stopping any shoot which may be taking the lead of the others and keep them nicely tied out. If a second is wanted let this be given before the roots become pot-bound, and see to the ball being in a proper state as to moisture, as also the soil, for there is considerable risk in shifting pot-bound plants during the heat of summer, and still more if the ball or fresh soil is not in a properly moist state. Remove the plants to a light airy part of the greenhouse immediately damp cold weather occurs in autumn, and attend to them carefully with water, &c., in winter. If the shoots do not appear as if they would break strongly and make a close growth, cut them slightly back about the beginning of March, and place the plants in the warmest part of the house, keeping them near the glass, and draw the syringe lightly over them on the afternoons of fine days. As soon as they start into growth, examine the state of the roots, and if these are found to be in want of more pot room give a liberal shift and otherwise treat them during the summer as recommended for last season.

If the plants are intended for blooming the following season, however, they should not be stopped promiscuously till late in autumn, for this would probably cause them to bloom irregularly and sparingly, but they should rather be stopped all over about the middle of August so as to secure their breaking evenly, and having shoots of about equal strength before winter. And in this case they should occupy a cool airy part of the greenhouse until they can be removed to a cold frame or pit, or until after they have done flowering, for there will be nothing gained by exciting plants intended for flowering too early in spring. They should occupy a cool shady part of the greenhouse while in bloom, and after the beauty of the flowers is over cut the shoots back sufficiently to secure a bushy close growth ; also attend to shifting as may be necessary to afford sufficient space for the roots, and keep the specimens cool, affording them a moist atmosphere until they start into growth, and during the growing season. *Alpha.*

PROTECTION OF FORCING PITS AND PLANT FRAMES.

As many gardeners and amateurs will doubtless be obliged to find some substitute for their usual supply of Russia mats this year, a few remarks on the most economical mode of protecting these structures may not be without interest. The object for which protecting material of all kinds is used is vulgarly to keep out cold, philosophically to prevent the escape of heat, and hence that which with the least expenditure of money and time best secures the object in view must be the best to adopt. The market gardeners round London use principally long litter, and they prepare it through the summer by taking the longest straw from the dung as it is brought from the stables, and this where it is well shaken out and dried is formed into a stack contiguous to the frame ground, ready for its winter's use. This is simply thrown over the frames to the thickness of 4, 6, or 12 inches, according to the severity of the weather, and answers very well. But it is untidy for a gentleman's garden, and moreover makes the glass very dirty, depriving the plants of much light, and rendering a great loss of labour necessary in washing the frames ; and also much breakage. It is, however, very surprising how little attention some of the best market growers seem to pay to the importance of light ; you may go into their forcing grounds in the dark months of winter, when they are forcing Cucumbers and other early crops, but you might as well try to look through a 14-inch wall, as to discover the contents of the frames through the glass ; yet how astonishing is their success !

Wood shutters and thatched hurdles have been used since the days of Abercrombie ; but if they are durable they must be awkward and clumsy, and if they are not durable they become expensive. They have also another and still worse objection, which is, that if not very carefully handled they rub the paint off the sashes.

Mats, if they are good, so long as they remain in that condition are a very effective protection ; but thin, hard common mats, as too many of them have been of late years, are dear at any price. A really good mat, if held by the four corners, ought to hold water for a considerable time without its soaking through, but even the "best Archangel" mats of this description are few. Mats, however, are expensive, troublesome, and littery, and when shabby they are shabby indeed. The price of good mats will average about a guinea per dozen ; and supposing each mat to cover three square yards, that fixes the price at 7*d.* per yard, or, as double mats must be used, at 1*s.* 2*d.* per yard annually. Frigi Domo may be compared to a poor blanket ; it is a good non-conducting substance, but thin, and I fear not very durable —but still, I should think, as good as mats.

Now, it is an established fact that confined air is an excellent non-conductor, and hence a covering, to be really effective, should be as nearly as can be air-proof, and of course at the same time it will be water-proof. Hence, acting upon this hypothesis, some nine years back, I had water-proof covers prepared for all the pits and frames under my charge ; these were made of sail cloth, of which several qualities were offered by the dealers, but the best was procured from Henry and Co. of Mark Lane, being such as is used by the Admiralty for sails for our first class men-of-war vessels ; in width it was something less than a yard, and the expense at that time something like 1*s.* 3*d.* per yard. This was made up by a sail-maker into cloths of a size suitable for the pits to be covered, allowing six or nine inches to hang over at the back and front of the pits, and being elevated about two inches above the glass, and fastened tightly down, it became both air-tight and water-proof ; each cover was fastened at one end to a roller, and the other end was fastened to the frame of the pit, and at the time for covering up nothing more was necessary than to roll the cloth on and fasten it down by strong strings to staples back and front fixed for the purpose ; and hence, "Let the storm pelt us" or not, we could retire for the night certain that everything so protected was safe from frost. These covers, with a coat of boiled oil every alternate autumn, lasted for seven years, and I believe one of them at the present time forms the cover of one of Mr. Colyer's principal plant vans. Of course such a covering in the first outset will be more expensive than mats or other temporary appliances, but the first expense is the last for seven years, and consequently the saving is considerable. With proper care, and applied only to their legitimate purpose, I believe such covers would last several years longer than mine did, and perhaps with some preparation of gutta percha they might be rendered still more durable. But my covers were used for all kinds of purposes, such as shading seed-beds or cuttings in the open ground in the summer, protecting Strawberry beds when in fruit from drenching rain, sheltering plants in temporary frames, harvesting seeds, and sometimes protecting the hay-ricks in catching harvest weather ; and this last was the most destructive use of all, for the heat caused the oil to liquefy, and hence a good deal of it was lost.

For shading during the summer months thin straw mats made with tar-twine, or still better where they can be procured, reed mats, are very useful, as they may be made sufficiently thin to shade the plants without obstructing much light ; but possibly good screens, or Haythorn's hexagon netting, would be still less expensive, and certainly preferable, and more convenient for use.

For purposes of protection I look upon it to be of as much importance to have a waterproof covering as one capable of preventing the escape of heat ; for if on cold stormy nights, or in heavy falls of snow, it runs through the covering, and trickles down the glass, it is quite certain it cannot do so without abstracting a considerable portion of heat in its progress. I think a waterproof and air-tight substantial cloth, supported 2 inches above the glass, is as nearly perfect as can be ; and those who make the experiment will find (though expensive at the first) that in a few years they have avoided the general rule in such matters, viz., that of being "penny wise and pound foolish."

Where pits are heated sufficiently by hot water or flues, the expense of covering may be avoided ; but, in all cases of very severe weather, it will be found more advantageous to cover than to use much firing—not because of the expense of the fire, but to avoid the dryness of atmosphere, inevitable where a high internal

temperature has to be maintained at the same time that all the moisture contained in the atmosphere is being condensed upon the cold glass. All forcing houses would be best covered in severe weather, especially where it is indispensable to maintain a high moist temperature, and where fuel is dear, I think the expense of providing good waterproof covering would soon be covered by the saving in fuel.

It may not be out of place to give our great horticultural builders a hint which, if carried out, would offer considerable facilities to gardeners in large establishments, and that is in making a new garden to have the whole of the sashes of the same size, so that the sashes of a late might be placed over an early Peach house or Vinery, and thus form the best covering that could be had for such a purpose.

In the practical management of covering of course it is important in severe weather that cold pits and frames should be covered up before the glass becomes frozen and while there is yet some heat in the frame; in continued frosts such pits are better covered up than exposed in the daytime if the atmosphere is dry, and indeed with the cloth covers sufficient light is admitted for all plants in a state of hybernation for several weeks together, especially if care be taken afterwards not to expose the plants to strong sunlight, until they have been exposed to moderate light for some few days. *W. P. Ayres.*

Home Correspondence.

Brussels Sprouts from English Seed.—Permit me to correct an error which I observe in your columns of Saturday last. In the article "Vegetable Pathology," No. XLVII., paragraph 210, "M. J. B." says:—"The variety of Cabbage known under the name of Brussels Sprouts cannot be kept up by propagation from English seed; but not only is this a well-known fact, but there are only a few districts abroad where the seed can be produced in a state of purity." This subject I endeavoured to set at rest so long back as the year 1845. I then communicated to you my experience as to the possibility and certainty of producing this kind of Cabbage tree from English seed; I having, at that time, grown it from seed saved myself five years, and my father before me having done the same thing twenty years previously; I have now grown it nine years longer from seed of my own saving, making fourteen years in all during which I have had it under my own care, independent of my father's experience. In the *Gardeners' Chronicle* of April 12, 1845, you published my communication, and at that time I sent two specimens for your inspection; I now send you six specimens from the same stock of seed, taken as they come from one quarter of Brussels Sprouts growing at this place, and I flatter myself you will pronounce them perfect, as you did on the former occasion. There can be no deception in my case, for I never once purchased any Brussels Sprouts seed. At the time I wrote to you before on the subject you requested some seed; I sent you all I could spare, and if you could recollect the result of the produce and report the same, it would tend to correct an error into which many have fallen, and set the matter at rest for ever. I shall feel proud if "M. J. B." will pay my quarter of Brussels Sprouts a visit, when he will be better able to judge of the genuineness of specimens grown from English seed. I do not think that I have a "rogue" amongst them; I have had several run to seed in consequence of the dry summer, which has also been the case with Scotch Kale, sprouting Broccoli, and most of the brassica tribe this year, but that has nothing to do with the degeneracy of any of them. *Daniel Judd, Althorp Gardens, Northampton, November* 27. [The plants sent were as good as possible; and so were those raised in 1847, at Chiswick, from the seed he then sent. We have our own experience in confirmation; and there is no doubt that the opinion quoted in the Theory of Horticulture, to which "M. J. B." refers, was formed upon insufficient observation.]

Perilla nankinensis.—There is a quality possessed by this new Chinese annual which I have not seen noticed. I had imagined it to be allied to Mint, as perhaps it is; but its odour and taste, when strongly bruised, I find nearly resembles Cinnamon—so much so that I question if it is not deserving of a place among kitchen herbs. Do you think its use at all likely to be injurious? *O. P., Nov.* 23. [Certainly not.]

Pear-growing—Climates of London, Brussels, and St. Malo.—It is with much interest that I peruse M. de Jonghe's contributions to your journal, and I do not doubt that we shall obtain many valuable hints from so practical a man. But I beg your readers to note the difference of climate between Brussels and London, as appears from "Black's Atlas." I do not insert the winter quarter, as it has no reference to Pear growing. I should like to have added the climate of Jersey, but the tables only give St. Malo, which is close by.

	Spring.	Summer.	Autumn.
London	48.56	63.14	50.18
Brussels	53.24	66.20	51.08
St. Malo	52.16	66.02	55.76

S. B.

Gynerium argenteum.—During a recent visit to the family of an old and valued servant, near Devonport, I was shown a floral spike of this most beautiful Grass, which I was informed had recently been brought by a friend from South America. The recent inquiries made by the *Chronicle* as to its habitat induced me to put many questions to the possessor regarding it, which have elicited the following information, which I give in the writer's own words: "The Grass was cut by the steward of the Vixen steamer; she is on the Rio Janeiro station, and last summer was ordered down to Buenos Ayres, on the river de la Plata, where she anchored for some little time, and then went where a Government steamer never did before, 2000 miles up the river Parana, which it appears is a long but shallow and narrow river, which rises somewhere in the mountains of Brazil, and there he went on shore, and cut four pieces of Grass; one I had, two were given to another friend, and one to his mother. I have carefully shaken the flower-spikes, but no seeds have appeared, though there were plenty in the paper in which they came home, and which were burnt." The last portion of the information is most distressing to a horticulturist, especially as the seed would, I know, have been presented to me. *A Devonian.*

Forming an Orchard on Gravel.—I have had some experience of the effects of such a soil as "Beta's" on Apple and Pear trees; and I would recommend him to make the holes for the trees about 10 or 12 feet wide and 18 inches deep, and then to concrete the bottom well with lime and gravel about 6 inches deep; or if lime riddlings, such as are rejected by bricklayers, can be procured, they will answer equally well, taking care to water and ram them well, as the firmer the concrete is put together the more certain is the attainment of the object in view, viz., the preventing the roots from descending into the subsoil, which would cause canker. It is advisable to let the concrete stand a few days previously to planting the trees, in order that it may become dry and get thoroughly hardened. I would then advise your correspondent to procure the top spit of a good pasture, chopped well, and mix it with the natural light soil, where he intends planting the trees. The concrete having become quite hard, I would recommend him to proceed with planting, by filling the holes with the prepared soil, a little higher than the natural ground, say about eight or nine inches, then place the tree on the surface of the fresh earth, and having some finely chopped mould for the purpose, proceed to lay out the roots quite flat with the hand, taking care to fill in well between them with the finest soil, making all firm with the hand; then cover with about three inches of mould, but avoid treading on the roots, particularly if the soil should be surcharged with moisture. Afterwards put about four or five inches of good manure on the top, to protect the roots from severe frost, and prevent rapid evaporation from the soil, caused by dry March winds. *G. L. O. M.*

Galvanised Iron.—In the autumn of 1851 some tanks were made of this material for a Pine-house here. They were fitted up by a plumber from Northallerton, who was of opinion that water either hot or cold would not rust or injure this description of iron. On examining them a few days ago I found that they were crumbling fast to pieces, being rusted quite through in several places and leaking, and I am of opinion that this kind of iron is perfectly useless for the purpose. *John Hatherly, Gardener to W. Jackson, Esq., Scruton, near Northallerton.* [A specimen of the iron in question accompanied this communication, and quite confirms our correspondent's statement.]

Waite's Dan. O'Rourke Pea.—I quite agree with the writer of your Calendar that this is an invaluable early Pea. In January last I purchased 2 quarts of it, which I sowed on the 3d of February; on the 12th of April they were one mass of bloom; by the 1st of May I gathered pods fit for table, and by the 24th the forward pods were too old for use. I have been accustomed to consider the 24th of May early even for the first gathering, to say nothing of having them spoiling for want of using. The flavour of this Pea is excellent, the pods are large and full, and universally admired. *H. Arnold, late of Blendworth Park, Hants.*

Effects of Frost on Exotics.—List of plants seriously hurt, but not killed by the Winter and Spring of 1854, at Abbotsbury:—Piper excelsum, W. P.; Edwardsia grandiflora, Eurybia argophylla, Jasminum azoricum, W. P.; Kennedya monophylla, W.; Viburnum sp. Mexico, Buddlea salvifolia and salicifolia, W.; Rhododendron Dalhousiæ, P; Melia Azedarach, W.; Acacia Julibrissin, Myrica Faya, Standard Orange, P.; Menispermum laurifolium, Sapium ilicifolium, W. P.; Myoporum dulce, Eriostemon, sp., Clethra arborea, W.; Osteomeles ferruginea, Melosma, sp., W.; Cassia australis, W.; Ceanothus africanus, Laurus indica and fœtens, W.; Pittosporum salicinum, W.; Duranta Deppei, Habrothamnus, sp., Halleria lucida, Fuchsia corymbosa, W. P.; Mesembryanthemums, in gen. P.; Brugmansia sanguinea.—W., wall; P., protected, slightly in general; all the rest standard. *S.*

Vine Mildew.—I have read with interest Mr. Bennetts' remarks on this disease, at p. 679. The evil certainly did appear in the vinery he mentions in its very worst form, and spread with wonderful rapidity—attacking the foliage, young wood, and even the bunches, in a very short time. To cure it seemed a hopeless task; but I am happy to say that, by putting sulphur on the pipes, I did overtake and conquer it, although with some trouble, in consequence of my hot-water pipes being copper, which did not hold sufficient heat to evaporate the sulphur, as iron ones would have done. My Vines are now as healthy as they could possibly be, and are quite free from mildew. With the exception of a few marks on the Muscats, the berries have swelled and coloured quite to my satisfaction, and I am convinced that no one could trace on them the slightest signs of the mischief. The weight of my bunches has been stated to exceed 6 lbs.; but I beg to say that I have bunches heavier than that, although I had not cut any that weight when my case was mentioned in your paper. I feel perfectly satisfied that by the method of curing the evil mentioned by Mr. Bennett at p. 679, we may bid defiance to both mildew and red spider; for by adopting it, I have not only saved my Grapes, but I have secured good wood for another season. *J. W. Hall, gardener to J. Freeman, Esq., Gaines, near Worcester, Nov.* 20.

Viviparous Ferns.—Mr. Newman, at p. 120 of the last edition of his interesting "History of British Ferns," quotes Polystichum angulare, *var.* subtripinnatum, as the only known species that is viviparous. I have, therefore, much pleasure in announcing that I possess two forms of Scolopendrium (phyllitis) vulgare, Polystichum lobatum, Lastræa (Lophodium) fœnisecii, and Lastræa (Dryopteris) Filix Mas, all of which have either produced a viviparous plant, or are gradually developing bulbillæ. I could name other parties who have Ferns exhibiting the same phenomenon, but I do not feel warranted in bringing their names before the public. It is only fair to Mr. Newman to state that it was since the publication of his work that these singular instances of reproduction were observed, and further that it is questionable whether these deviations may become permanent. At a future period I hope to have occasion to resume this subject; meanwhile will you do me the favour to ask your correspondents to give their experience with respect to the success they have met with in raising hybrid Ferns. *Abraham Clapham, Scarbro', Nov.* 21.

Frigi Domo.—After two winters' experience of this material as a protection from frost, I have come to the conclusion that it is the best covering for pits and frames which ever came under my notice. It will keep out more frost than two mats, while it only costs the price of one; it is more tidy than loose litter, and fits more closely than straw hurdles, and it is much more manageable, for when fitted on to a roller end-ways, covering and uncovering can be effected in half the usual time, and there is no danger of breaking the glass. In wet weather it lies quite close to the glass, but as soon as frost sets in it becomes almost as tight as a drum, thus forming a space between it and the glass, a thing very desirable where the edges fit tightly, which they do. I believe that any greenhouse plant is perfectly safe under it until the thermometer indicates 10° of frost. *J. Rust, Broom House, Fulham.*

Foreign Correspondence.

Beurré Superfin Pear.—In the report of the exhibition of the Pomological Society, page 727, I observe a Pear is mentioned under the name of Beurré Superfin. This name was applied in 1846-'47, at Angers, to a seedling raised by the late Van Mons, which fruited for the first time in his nurseries at Louvain, in 1827, and was named in honour of His Royal Highness the Duke of Cumberland, who visited the grounds of our pomologist about that period. It is important that English amateurs and nurserymen should adopt the original name of this remarkable variety, which is thus condemned to an aliàs. In the gardens of some amateurs trees of this variety, 20 years old, are found under the name of Cumberland. It is impossible to mistake it on examining a tree somewhat grown up, without even seeing the fruit; for it bears a particular stamp which is not found in any other existing variety in cultivation. Its wood grows upright, and exhibits a vigorous pyramidal appearance, the shoots are very long, moderately thick, downy, streaked with greyish-green and a blackish colour. Buds triangular, pointed, deep brown shaded with black, flat at the base, diverging at the apex. The fruit is large, or very large, somewhat irregular, turbinate, pyriform; the skin is green, smooth, and shining, becoming somewhat yellow at maturity. The calyx is spreading, very regular, with stiff dark brown segments. The flesh is white, fine, melting; juice very abundant, sugary vinous, and agreeably perfumed. The seeds are large, oval, pointed, and of a chestnut colour. Season, end of September till beginning of November. It is surprising to us Belgians that none of the judges should have known how to distinguish this Pear among a thousand, and restore to it the original name of Cumberland. *De Jonghe, Brussels, November* 13.

Societies.

LINNEAN, *Nov.* 21.—The President in the chair. Dr. Iliff exhibited Baccharis genistelloides, and a species of Senecio from Peru, transmitted as pharmaceutical simples. Mr. B. Y. Brocas exhibited numerous specimens of leaf skeletons, prepared so as to represent, by portions of the leaf artificially preserved, delineations of natural objects, portraits, and other subjects. There were also exhibited and presented from the College Botanic Garden, Dublin, a cluster of the fruit of Sabal Blackburniana, and fruit of Hakea undulata, and Banksia prostrata; and from the garden of the Royal Dublin Society at Glasnevin, the beautiful vermilion fruits of Solanum ciliatum, and specimens of the fruits of Banksia marcescens, and other plants. Read, a continuation of "Observations on the structure of the seed, and the peculiar form of the embryo in the Clusiaceæ," by John Miers, Esq. Mr. Miers deduces from the analogy afforded by the seeds of the Garcinieæ, that the external covering of the seed in Clusieæ, on the nature of which doubts have been suggested by eminent botanists, is a true Arillus, and entered at some length on the grounds of this conclusion. "Although," he says, "it be true that the several envelopes of the seed in different families are not to be recognised alone by their consistency, which may be, contrary to general rule,

more or less membranaceous, ligneous, cellular, or composed of oily or resinous granules, according to circumstances, yet they may be determined by their relative position in regard to raphe, chalaza, diapyle, micropyle, hilum, &c., from which their true nature may always be inferred with greater certainty." In a note to this passage he observes that the want of precaution in attending to the nature of the nourishing vessels proceeding from the placenta, and penetrating the different integuments, has frequently led to misconception. These vessels present themselves in the shape of a raphe-like cord, under three very different aspects; (*a*), when the cord originating in the base of the cell loses itself, often at the opposite extremity, in the hilum of the contained seed; it is then properly the funicular cord, of which the common Cherry affords a good example; sometimes it is inappreciably short—in other cases, as in Magnolia, it forms a very long thread; (*b*), when these vessels, existing in the form of a thread, either free and exterior to the testa, or partially embedded in its substance, spring from the point of attachment of the hilum of the testa, and extending along its surface, penetrate its substance at a spot called the diapyle, to unite with the chalaza of the inner integument, which is invariably opposite to the cotyledonary end of the embryo; this is the well-known raphe; (*c*), when the vessels passing from the hilum penetrate the inner integument, and extend in the shape of a thread beneath its surface in order to attain the radicular end of the embryo; in this case they constitute the suspensor, which has sometimes been mistaken for a raphe; it occurs in Tropæolum. The want of attention to the existence and position of the true raphe has often led to erroneous inferences in regard to the affinities of genera; and among the Clusiaceæ may be cited the instance of Calophyllum, in which the peculiar nature of these structures, added to other differences, serve to remove the genus from the Clusiaceæ, its position being probably in Lophiriaceæ, as was long ago suspected by Professor Lindley. Mr. Miers then entered into a minute and interesting investigation of the origin and mode of growth of the arilliform covering of seeds; and concluded the paper by summing up his views as follows:—"The facts I have brought together relative to the structure of the seeds in this family, must in a considerable degree change our views of the affinities of the Clusiaceæ. They serve to bring the order into close proximity with the Rhizobolaceæ, a relationship founded upon analogies in the floral structure long ago pointed out by Cambessedes, but now rendered still more evident by the great similarity observed in their extraordinary embryonal development. In this last mentioned family, the embryo of its exalbuminous seed exhibits in like manner a gigantic radicle furnished with exceedingly minute cotyledons, with this difference however, that the cotyledons here are separated from the great body of the radicle by a slender free caulicle or neck. But if we imagine the suppression of this caulicular extension in the Rhizobolaceæ, and the close approximation of its minute cotyledons to its monstrous radicular mass, there would be little or no difference in the form of the embryo in the two families. At the same time that these circumstances tend to draw closer the affinities of the Clusiaceæ to the Hypericaceæ and Marcgraaviaceæ, they remove them to a considerable distance from the Terraströmiaceæ, with which order they have been hitherto considered to be most intimately related." The President announced that the third part of the 21st volume of the Society's Transactions was ready for distribution to the Fellows.

Notices of Books.

The Miniature Fruit Garden, or The Culture of Pyramidal Fruit Trees; with Instructions for Root Pruning, &c. By Thomas Rivers, of the Nurseries, Sawbridgeworth, Herts. Sixth edition, Longman & Co.

Those interested in dwarf fruit-tree culture will find that much useful and some new information, and many valuable instructions are comprised in the new edition of the 34 quarto pages of which the above work consists. The author, as is generally well known, has paid great attention to the subject, and has had the advantage of long and extensive experience, yet he himself says that with regard to keeping "our fruit trees in a nicely balanced state, we are all young and inexperienced." By this balance is to be understood the equality of the force of vegetation throughout the tree, so that one part may not become too strong whilst another is too weak; and so long as the means of preserving this balance is not known, or not duly attended to, the trees cannot be said to be properly managed. This principle should be kept in view, whether the trees are intended to occupy a large space or a small, like those that form the subject of the present work. The author's clear practical instructions are in accordance with this essential principle, and their adoption can therefore be satisfactorily recommended.

"When the sap is regularly distributed, the tree is much more likely to come into a bearing state than when it flows very irregularly into the different parts, but notwithstanding good management in this respect, fruit trees are often inclined, in our climate, to grow to wood rather than to produce fruit. To counteract this tendency, the author proposed root-pruning some 15 years ago, and it has proved successful when judiciously performed, but his instructions as given in the work before us should be carefully studied, in order that the operation may not be improperly or unnecessarily performed. In this edition, the biennial removal of fruit trees without root-pruning is recommended, and is doubtless a good plan, not only for bringing the trees into early bearing, but also for preserving them from canker in bad or wet sub-soils.

Besides directions for the planting and after-management of the Pear, Apple, Plum, and Cherry, subjected to dwarf training, lists are given of the varieties of these fruits most suitable for the purpose; and also the distances at which the trees should be planted under different circumstances of situation and modes of training.

The appendix contains an account and description of Mr. Ker's protected trellis for Peach and Nectarine trees, a report of the produce of which is given in the *Gardeners' Chronicle*, vol. for 1852, p. 614. The author now adds a description of the Peach trellis-house of Mr. White. It is of the following dimensions, and cost somewhere about 40 :—

Length	80 feet
Width (inside)	12 "
Height at back	8 "
Height at front	14 inches
Rafters (fixed 20 inches apart) ..	14 feet long
Trellis (15 inches from the glass) ...	13 feet wide
Sunken path in centre	2 feet deep

"The front and back plates both rest on Larch poles about 4 or 5 feet apart; a shutter 12 inches wide, on hinges, forms with a slip of board the front wall. The back wall is made with long fagots of brushwood—a double row; the ends are boarded up, and a door is at each end. Perhaps no gardening structure was ever built so cheaply, and none ever produced such marvellous effects. The trees, dwarf and standard trained Peaches and Nectarines, two to three years trained, 12 of the former and six of the latter, were planted in February, 1852; and this season (1854), only the third year of their growth, they have given 5000 Peaches and Nectarines. On one tree of the Noblesse Peach there were 500 Peaches, and the same number or more on a tree of the Ebruge Nectarine. This seems enough to ruin the health of the trees, and so I thought when I heard of it; but when I saw the excessive vigour of the trees, I thought Mr. White and his gardener not so far wrong in allowing them to bear such an enormous crop. The dwarf trees have reached to the top of the trellis, and cover it so completely, that the standards must be removed this autumn.

"Mr. White was, I believe, offered the sum that the house cost him—somewhere about 40*l*.—for his crop of Peaches and Nectarines. The vigour of the trees is quite astonishing; the stems of some of them are 12 or more inches in circumference; they are planted inside the front shutter, and laid directly on the trellis. The remarkable success of this simple structure seems owing entirely to the perfection of its ventilation; the front shutter has been open night and day in warm weather, and the air passes gently and constantly through its brushwood back wall, so as entirely to prevent stagnation. The trees have been syringed regularly night and morning, and are in the finest possible health. As this brushwood wall is unsightly, and dangerous in some situations owing to its capability of harbouring rats and mice, we must now see what can be substituted for its perfect ventilating property. Hedges to lean-to houses, as I know from experience, are too cold to ripen Peaches and Nectarines, although highly favourable to the growth of the trees; it therefore appears to me that the perforated bricks, now largely manufactured, could be used with advantage in this way. The wall, 8 feet in height, should be built 5 feet from the ground with common bricks; and then 3 feet up to the top for the plate to rest on, with perforated bricks placed edgewise; in very cold weather in March, when the trees are in blossom, a curtain of calico, or any other convenient material, might be arranged so as to cover this space of the perforated wall at night, and in May it may be removed for the summer. This perforated space, with the front shutter constantly open, will, in my opinion, be perfect for a Peach trellis, and not unsightly."

Stanford's New Map of Sebastopol (Stanford, 6, Charing Cross,) is a remarkably clear plan of the ground of the siege operations and of the operations themselves, and is the best which we have yet seen. To all the detail included in the map issued by the Hydrographer's Office, is added the country itself as far as Tchorgoun, so as to include the scene of action at Balaklava on the 25th Oct., with the Turkish redoubts and the Russian advance. It is equally illustrative of the battle of Inkermann, extending far enough eastward to show the hills that were occupied by the Russian artillery, as well as the unintrenched gorge by which the Russians attempted to penetrate the English camp.

Garden Memoranda.

Horticultural Society's Garden, Turnham Green.—The large Phalænopsis amabilis in the Orchid house is now in full bloom, which, indeed, it nearly always is; but at this season of the year, when flowers are comparatively scarce, its numerous beautiful large white blossoms are especially remarkable. Cattleya maxima, one of the handsomest of the genus, is also in flower. Both this and the Phalænopsis are growing on blocks suspended from the roof, and are thus seen to good advantage.

In the adjoining greenhouse the most striking plants at present are two examples of the Tropæolum Triomphe de Gand—one in a pot, the other trained up a rafter. Both are profusely clothed with large showy orange scarlet blossoms, which look as if they would keep in perfection for a long time to come. This variety of Tropæolum cannot be too well known; for it certainly ranks among the very gayest of our winter and spring flowering plants. Chorozema Lawrenceanum was also in full bloom, its brick red violet-tinged flowers producing a pleasing effect.

In the curvilinear stove, the plants now in blossom consist of the purple Justicia speciosa, Achimenes coccinea, one of the latest flowering of the genus, Manettia bicolor loaded with scarlet tubular flowers tipped with yellow, the lilac Ruellia isophylla, and the bright blue flowering Eranthemum pulchellum. By means of these and the pink flowered Balsam Impatiens latifolia, Epiphyllum truncatum, Geissomeria aurantiaca, Gesnera zebrina, the White Eranthemum, Aphelandra cristata, Begonia fuchsioides, and a Franciscea or two, a good display of floral beauty is at present maintained in this house, which also contains another glorious plant for flowering at this season, viz., Linum trigynum; the yellow blossoms of this plant are each quite as large as a half crown piece, and that they are produced in profusion will be best gleaned from the fact that on one small branch we counted no fewer than twelve, all expanded at one time. On the roof Passiflora fragrans, or Middletoniana, was in blossom.

In the Rose house the plants are still full of flower-buds, many of which are half blown, and they appear only to want a little sun to bring them out. Owing to the dampness of the house, mildew has begun to make its appearance, but it is kept in check by means of dusting the leaves with sulphur.

Several of the Cape and Scarlet Geraniums in the small greenhouse in front of the Rose house are even now in good bloom, and here, as in the larger greenhouse, were fine specimens of Tropæolum Triomphe de Gand. The yellow Coronilla glauca is also at present in blossom here, together with Statices, Chinese Primulas, and the variety of Mignonette called by the French grandiflora. It certainly appears to be more robust than Common Mignonette, which is said to flower a little earlier than this new continental kind. The winter blooming Selago distans was also coming into bloom in this house, which is always full of flower both winter and summer.

In the stove here, the large variety of Zygopetalum Mackaii was in flower, as were also Cymbidium giganteum, Maxillaria picta, and one or two other orchids, together with Begonias which we need not say are invaluable for winter decoration, Pentas carnea, the variety of Thunbergia called Fryeri, and the sweet smelling Franciscea latifolia which quite scented the air with its fragrance. The great mass of Begonias is, however, not yet in flower; they are coming on in a pit in which they have been all summer. Cinerarias, Chinese Primulas, Calceolarias, and Mignonette are also all at present in pits, growing on for the decoration of the shelves of the large conservatory.

The fine collection of Chrysanthemums which the society possesses is arranged along one side of the path all round the large conservatory, making a line on either side of the house 180 feet in length; it is at present in full bloom, and the plants being well grown and clothed with healthy foliage down to the pots, it makes as may well be conceived a grand display. The Pompones are perhaps those which will be the greatest favourites. Among these the best were Calliope, a finely-formed and very double lilac kind; Nitidum, white, with a yellow eye; Lais, purple, with yellow eye; Madame Lemichez, lilac, late and good; Aramis, deep purple, a fine kind; Tacitum, blush; Fenella, neat, small yellow; Drine Drine, a well-known pale yellow sort; Atropos, orange and brown; Louisa Miellez, white, with a yellow eye, fine in form; Circe, a very double lilac kind; Mignonette, yellow, with a buff outline; Liliputian King, dark brown; President Decaisne, purple, very full of petals and fine in form; Henrietta Lebois, like the last, but rather darker in colour; Graziella, lilac, with brown eye; and the Bride, a finely-shaped, small, white kind. The large-flowered sorts, though not very new, are also well worth inspection, as are likewise the Anemone kinds, which are favourites with some. These were all struck as late as the first week of July, and considering the time they have had to grow, they are wonderfully fine plants.

As regards the orchard-house a nice collection of fruit trees in pots has been obtained for it from Mr. Rivers, consisting of Peaches, Nectarines, and Apricots, 40 in all; and Messrs. Lee, of Hammersmith, have kindly presented the Society with 21 pots of Cherries, Plums, Nectarines, and Peaches. Among the latter is stated to be the Flat Peach of China, which has been lost sight of for years. The trees of it which the Society had before were killed by the severe winter of 1838, which is usually called Murphy's winter.

In the orchard department, pruning of Pear trees on walls has been commenced. The heads of old standard trees are also being thinned out, and the ground among the young espalier trees is being dug. The foliage of Peaches, owing to the late growth they made this year, is still quite green; but in general the wood is pretty well ripened, and in good condition for bearing a crop next year.

Of Lettuces, various sorts have been planted out on open borders, in order to test their comparative hardiness this winter; some are also under hand-glasses, and some under bell-glasses. Green and White Paris Cos now ready for use have been lifted and planted in the beds of old Melon-frames, under glass, where they can grow

free from frost, and be at hand whenever they may be wanted. Some Endive has also been put into frames in the same way.

Frigi Domo is now largely employed here as a protecting material instead of mats. All houses and pits to which it can be usefully applied are covered with it at night, and it is found to give entire satisfaction. It lasts longer than mats, is cheaper, and keeps out frost equally well.

FLORICULTURE.

CROSS-BREEDING CALCEOLARIAS.—The leading sorts of Calceolarias of the last few seasons have been devoid of that shrubbiness and neatness of foliage which are so very desirable. If I am correct in my assertion, that the present race of Calceolarias is of too herbaceous a character, it is evident that no advance towards shrubbiness can be obtained by crossing the present florists' varieties amongst themselves; consequently recourse must be had to the strictly shrubby sorts. In support of this view, I will endeavour to give some idea of what the probable result would be of crossing the opposite kinds. In 1848 I obtained a few of the best Calceolarias which I could procure; these I crossed with Rugosa and others of a similar character; the seedlings from this union showed very shrubby habits, but the flowers, with one exception, were long, flat, and small; one variety which I saved was a decided advance on the old sorts in every property but size. The seed of 1849 gave a still further improvement: two plants produced flowers almost as round as a marble; another was almost as shrubby as Rugosa, with marks in the style of Lady Constable; another shrubby variety gave flowers nearly an inch in diameter; besides which, there were a dozen seedlings fully equal to the new Calceolarias that are annually inflicted on the public as superior selections. Though the whole of these seedlings are far from possessing the properties of a perfect Calceolaria, I feel confident, that as a whole, they comprehend the materials out of which a clever hybridist would soon produce something good; indeed I entertain so favourable an opinion of the capabilities of these plants, that, having no spare room in my greenhouse, I have presented them to a florist,—with the understanding that I should enjoy the pleasure of raising seed for him. I trust that I have said enough to induce a few amateurs to adopt my suggestions; as I feel satisfied that half a dozen persons leaving the present beaten path, and depending on some of the old (possibly new) shrubby varieties, to give them both form of flower and habit of plant, would in a few seasons elevate the Calceolaria to the rank of a real florists' flower. *A. Clapham.*

CINERARIAS.—Is not your correspondent "W." mistaken in his measurement of his Cinerarias, which, he says, are from 3 to 4 feet in diameter? Does he not mean that much in circumference? I, too, grow Cinerarias. I have them now 28 inches in diameter, and many of my leaves are from 10 to 11 inches across; but I confess my inability to grow them 4 feet. Perhaps "W." will inform us whether he ties out his plants, which I do not; and whether, after cutting down his leading flower-stem, his blooms are as fine as they otherwise would be. *E. I. Edwards, Wells.*

STOKE NEWINGTON CHRYSANTHEMUM SOCIETY, Nov. 21.—On this occasion there was an excellent display both of plants and cut blooms, and altogether the show was quite equal, if not superior, to those of former years. The six plants exhibited by Mr. Gilkins, gr. to P. Johnson, Esq., which took the first prize, a silver cup, were admirably grown specimens and beautifully flowered, the blooms being of good quality. The varieties were, Mount Etna, Queen of England, Annie Salter (which was the specimen plant of the entire exhibition), Christine, Defiance, a huge specimen, and Madame Camerson, a plant not less than 5 feet in diameter. Mr. W. Holmes, of Hackney, was second, with Defiance, Pilot, Chevalier Dumage, rich golden yellow; Mount Etna, a splendid plant; Christine, full 6 feet in diameter; Annie Salter, profusely flowered. A third collection was contributed by Mr. James. For six Pompones, Mr. Scruby was first, with Madame Rousselon, delicate rosy peach colour; Cedo Nulli, Drine Drine, Model, Autumnum, and Dame Blanche, yellow with white. These were all well-grown specimens. The second prize was awarded to Mr. Goodenough, for Cedo Nulli, Solfaterre, Ninon, Model, Autumnum, and Surprise; other collections were also staged in this class. Cut flowers, nine collections of 24 blooms, were staged for competition. The first prize, a silver cup, was awarded to Mr. G. Taylor, of Hackney, for a stand of very fine blooms, consisting of Queen of England, Campestroni, Themis, Nonpareil, Beauty, Madame Audry, Defiance, Aregina, Duke, Rolla (rosy purple and good), Two-coloured Incurved, Rosa mystica, Plutus (beautiful), Racine, Formosum, Cyclops, Dupont de l'Eure (symmetry itself), and Trilby (a new blush variety); second, Mr. A. Wortley, whose stand contained a beautiful bloom of Golden Cluster, and Versailles Defiance (a beautiful incurved rosy purple), and Pio Nono (a good flower); third, Mr. G. Hutton, who had in his stand fine blooms of Racine (deep yellow, with small purple tip on the under side of the petal) and Nonpareil (a good deep lilac flower); fourth, Mr. R. James, who sent a fine bloom of Themis (a noble back row flower), Arc en Ciel (also good), Christopher Columb (deep chestnut, with gold tip, distinct and good), Miss Kate (pale lilac, a small flower, but smooth); fifth, Mr. Scruby, who had good blooms of Plutus, Annie Salter, and Racine (a flower always difficult to obtain good); sixth, Mr. E. Sanderson, in whose collection we noticed Goliath, good blooms of Leon Lequay (shaded lilac, a stout incurved flower, with a light centre), and Aristides (dull orange, margined with red). In 12 blooms the first prize, a silver cup, was awarded to Mr. G. Hutton, of Shacklewell, for Campestroni, Defiance, very good, Themis, Aregina, deep rosy purple, stout and bold; Queen of England, Strafford, delicate peach, and globular, Formosum, Nonpareil, Dupont de l'Eure, Gem, Rosa mystica, and Plutus; second, Mr. E. Sanderson, who had a fine bloom of Themis and Beauty, and Leon Lequay, again very fine. Other collections were also exhibited. In six blooms, Mr. E. Sanderson was first, with Leon Lequay, Themis, Queen of England, Rosa mystica, Gem, and Plutus, a noble pyramid. Some other collections were staged in this class. Seven collections of six Anemone-flowered varieties were exhibited. Mr. Taylor was first, with Fleur de Marie, Marguerite d'Anjou, Madame Godereau, Marguerite de York (a lemon-coloured Gluck), and Nancy de Sermet. Mr. R. James was second, with good blooms of Gluck, Fleur de Marie, Marguerite de York, Madonna, Sulphureum, Pallidum, and Madame Godereau. Mr. Scruby was third, having in his stand a fine bloom of Marguerite d'Anjou, and a well proportioned Gluck. Other collections were also exhibited. In the maiden class, for six blooms, for those having never previously taken a prize, four collections were staged. The first prize was awarded to Mr. J. Stapleton, of Stamford Hill, for Themis, Queen of England, Beauty, Rosa mystica, Nonpareil and Dupont de l'Eure.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Some of the earliest Chrysanthemums will be past their best, and should be replaced with others from the retarded lot. Give those in bloom plenty of clear manure water, which will assist in preserving the foliage in health, and increasing the size of the flowers. While the principal collection is in flower, a careful selection of the best and most useful sorts should be made; for, although we have had many fine varieties introduced within the last few years, we have also had many others that are comparatively worthless; and it is better to grow duplicates of really good sorts than to keep indifferent kinds merely for the sake of having a long list of names. Cinerarias are excellent subjects for the conservatory, provided they can be placed near the glass, and kept free from insects. These will require a little artificial warmth to bring them into flower at this season; but the temperature should not exceed 50° at night, and air must be admitted rather freely every fine day; otherwise the plants will become very weakly and be a prey to insects. Also encourage the late Primulas with a gentle warmth and a moist atmosphere. See to maintaining a regular and as plentiful a succession of Camellias of the various colours as circumstances will admit; for these are, without exception, our most showy and useful winter flowering plants.

FORCING DEPARTMENT.

PINERIES.—The plants expected to show fruit early next year will be greatly benefited by being kept in a comparatively dry state for a few weeks previous to subjecting them to a warm moist temperature. The atmosphere should be kept dry, also allowing the soil about the roots to become as dry as can be done with safety; do not, however, subject the plants to a very low temperature, but keep this at from 60° to 65° by means of fire heat, for although the plants will bear a considerably lower temperature without any apparent injury, those not subjected to any unnecessary extremes will produce the finest fruit; and a short period of comparatively dry treatment will ripen the growth, and just as effectually induce a tendency to show fruit as checking the energies of the plants by an unnaturally low temperature, and without any of the ill effects of the latter method. No dependence can be placed on the weather at this season, therefore see to plants in pits with insufficient means of heating, being well protected by means of covering at night, and maintain the command of a rather high temperature by frequently renewing the linings, &c., so as to be prepared for any sudden decrease of the external temperature; avoid anything approaching excess of atmospheric moisture among young stock, whether in pits heated by linings, or in better arranged structures, which only tends to promote a too free rate of growth for the amount of light, and weakly blanched foliage is the result. PEACHES.—These cannot be subjected to anything like hard forcing without the trees, if not the present crop, being seriously injured, and those who wish to have ripe fruit early next May cannot commence forcing too early, for although a good crop may be secured in a considerably shorter period, it will be at the expense of seriously injuring the trees. Let the temperature for the first month be kept at about 40° at night and 50° by day with fire-heat; and directions as to moisture, &c., as given previously will be quite applicable here. Also embrace the first convenient opportunity for pruning, painting, and retieing the trees in the late-house, and cleaning the paint, &c., if not already done. Late Vineries and Peach-houses are generally used for storing plants in winter, but after cleaning the houses care should be observed not to place in them plants infested with black thrips, or any other troublesome insects.

FLOWER GARDEN AND SHRUBBERIES.

Except where alterations are in hand, there will be little here requiring attention at present, except the clearing up of leaves and putting the borders, &c., into neat order for the winter. Get this done, however, with as little delay as possible, in order that the place may be as enjoyable as the season will admit. Also roll the gravel walks and lawns frequently, and keep these firm and smooth; for, without good dry firm walks, pleasure-ground is next to useless at this season. The present is an excellent time for applying strong liquid manure to Roses. It is astonishing how vigorous even the weaker-growing varieties will become if treated with a liberal allowance of strong liquid manure, made with night-soil, and applied annually at about this season. This may be used again in spring, diluting it to about the consistency of thin paint, and giving each plant from 2 to 3 gallons. A portion of the surface soil should be removed, and the ground stirred as deeply as can be done without injuring the stronger roots, replacing the surface soil after the manure-water has soaked into the ground. The tender sorts, as Teas, should have a coating of Moss placed round their stems, and also over their roots, before severe weather sets in, which, in the event of our experiencing such a winter as the last, will preserve the roots from injury; and if the plants should be killed to the ground, they will push vigorously from the stems, and form nice bushes next season. But perhaps the best way of wintering the tenderer varieties of Roses in unfavourable localities is to lift them every season, and place them on the north side of a wall, under the shelter of a canvas frame or screen. Managed in this way, they will resist a severe winter unhurt, and, with a little attention after replanting in spring, they will hardly feel the shift.

HARDY FRUIT AND KITCHEN GARDEN.

It is desirable to get all vacant ground turned up as early in winter as it can be accomplished, if only for the sake of the clean fresh appearance which it then presents. Therefore take every opportunity of forwarding this work, and get Currant and Gooseberry trees pruned; also prune and tie Raspberry plants, in order that the ground occupied by these may also be ready for digging. Where caterpillars are annually troublesome, a good dressing of quicklime applied before digging the ground will be of service in preventing the attacks of these pests. Some experienced growers assert that two applications of quicklime — the one applied before digging the ground in winter, and the other just before the leaves appear in spring, slightly stirring the surface of the ground with an iron rake to cover it—will entirely prevent the appearance of caterpillars, and the practice is at least well worth the trifling expense it involves. The Raspberry buds are frequently destroyed by a red coloured small insect, which secretes itself in the young shoot and eats out the heart of the bud. A good dressing of gaslime placed round about the roots of the plants now, and repeated again in spring, will save any farther trouble from this enemy.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending Nov. 30, 1854, as observed at the Horticultural Garden.

Nov.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind.	Rain.
Friday 24	4	29.266	29.186	42	30	36.0	44	45	N.E.	[illegible]
Satur. 25	5	29.487	29.130	40	26	33.0	44	45	N.	[illegible]
Sunday 26	6	29.942	29.302	39	28	33.5	43	44	N.E.	[illegible]
Mon. 27	☽	29.932	29.797	24	29	31.5	42	43	S.W.	[illegible]
Tues. 28	8	29.702	29.371	49	42	45.5	43	43½	S.W.	[illegible]
Wed. 29	9	29.199	28.990	50	29	39.5	43	44	W.	[illegible]
Thurs. 30	10	29.516	29.123	51	37	44.0	42	44	W.	[illegible]
Average		29.577	29.271	43.5	31.5	37.5	43.0	44.1		[illegible]

Nov. 24—Low clouds; cloudy and cold; slight frost.
— 25—Overcast and cold; cloudy; overcast; frosty.
— 26—Clear and frosty; overcast; frosty.
— 27—Foggy; low temperature throughout; overcast.
— 28—Overcast throughout; windy at night; heavy rain.
— 29—Fine; cloudy; clear; slight frost.
— 30—Very clear; fine; rain at night.

Mean temperature of the week 3½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending Dec. 9, 1854.

Dec.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.
Sunday 3	47.1	35.8	41.5	13	0.17 in.	[illegible]
Mon. 4	47.0	36.7	41.8	12	0.39	[illegible]
Tues. 5	47.5	35.6	41.5	17	0.25	[illegible]
Wed. 6	46.8	35.6	41.2	15	0.30	[illegible]
Thurs. 7	47.3	36.7	42.0	17	0.62	[illegible]
Friday 8	46.1	33.5	39.8	16	0.36	[illegible]
Satur. 9	46.0	35.9	40.9	15	0.31	[illegible]

The highest temperature during the above period occurred on the 7th, 1843—therm. 58 deg.; and the lowest on the 5th and 6th, 1844—therm. 14 deg.

Notices to Correspondents.

BLIGHT: *W H.* Your Acacia armata is overrun with the scale insect, and it is likely to ruin your whole house. All you can do now that the plant has got into this terrible state, is to wash it carefully with hot water, at 150°, and to repeat the operation whenever the insect reappears. If you don't value your Acacia you had better burn it, the earth in which it grows, and the pot in which it stands.

EMIGRATION: *N O P.* Go to Canada. Take nothing with you except a good heart and what money you have. Tools and all such things abound there, and it does not pay to speculate in them. Speculate not at all, but rely upon the sure though slow profits of industry and intelligence. Read Hutton's "Emigrants' Guide to Canada."

M'GLASHAN'S TREE LIFTER: *T G P.* It is necessary to communicate with Mr. M'Glashan, Edinburgh. He intends, we believe, again to exhibit the action of his machine next week in the Gardens of the Horticultural Society, for which he has received permission.

NAMES OF FRUITS: *W A E.* Your Pear is Beurré Diel.—*B R Cant.* Your seedling Pear is very good, but much resembles the Beurré d'Aremberg.—*W M T.* 1, 2, Passe Colmar; 3, Beurré Diel.

NAMES OF PLANTS: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*G B.* We have failed in the attempt to ascertain the name of the fragments you have favoured us with.—*J. Bruce.* Gongora fulva.

NASSAU: *J C L.* The seeds of Casuarina equisetifolia arrived this morning. Those of Chamærops are in London, but have not yet been delivered. We will write as soon as we get them.

PROTECTION: *J F.* We did not collect your meaning from your previous note. Since you want not only shelter but light you must be satisfied with glass sashes of the common kind. Varnished calico, and similar contrivances are cheap enough, but they so soon perish that glass is least expensive in the long run.

VERONICA: *L P & Co.* Your V. Kermesina is a handsome dark variety of V. speciosa. Its beautiful large spikes of deep purplish crimson blossoms cannot fail to make it a favourite.

MISC.: *West Countryman.* Both the plants you mention may doubtless be had of any of the great London nurserymen. We never recommend dealers. ‡

, As usual, many communications have been received too late and others are unavoidably detained till the necessary inquiries can be made. We must also beg the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

SUPERPHOSPHATE COMPOST COMPANY.—
427, Strand, London.
The Directors having received numerous applications for Winter Wheat Manure, have the pleasure to notify to their Friends and the Agriculturists generally, that they have 1000 tons expressly prepared for drilling with Winter Wheat, and now ready for delivery at 7*l.* per ton net cash, that is, payment in one month. Carriage free to any Railway Station or Wharf in London. Further particulars may be obtained of the Agents.
W. W. WATSON, Secretary.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7*l.* per ton; Superphosphate of Lime, 7*l.*; Sulphuric Acid and Coprolites, 6*l.*
Office, 69, King William Street, City, London.
N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent. of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures, Linseed Cakes, &c.
WM. INGLIS CARNE, 10, Mark Lane, London.

WHEAT SOWING.—The undersigned beg to call attention to their WHEAT MANURE, which has been successfully used during the last two seasons, and which they are prepared to deliver at 6*l.* per ton, free to Railway.
They are also Sole Agents for the sale of PEAT MOSS CHARCOAL, which is a valuable deodoriser and distributor of ammoniacal matter.—English and Foreign Linseed and Rape Cakes, Guano, Superphosphate of Lime, Salt, Bones, and all other Manures of known value on sale.
Apply to MARK FOTHERGILL & Co., 204, Upper Thames Street.

THE LONDON MANURE COMPANY beg to call the attention of Agriculturists to their WHEAT and CLOVER MANURES for present use. The London Manure Company also offer Genuine Peruvian Guano, Nitrate of Soda, Concentrated Urate, Superphosphate of Lime, Fishery and other Salts, and all Artificial Manures of value. The London Manure Company guarantee Peruvian Guano and every Manure they supply to be strictly genuine. EDWARD PURSER, Sec.
Bridge Street, Blackfriars.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and dispatch.
Gentlemen desirous of receiving instructions in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

SEWAGE CHARCOAL MANURE.—This highly fertilising Manure, which is Peat Charcoal completely saturated with London Sewage, will be found most efficient for every species of crop; more especially for Peas, Beans, Turnips, Mangold Wurzel, and other root crops. It will produce a greater return for the outlay than Guano or any other Manure at an equivalent value; it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained at the SEWAGE MANURE WORKS, Stanley Bridge, Fulham, at 4*l.* per ton, and in quantities less than half a ton, at 5*s.* per cwt., for ready money only; and in quantities not less than a ton, will be delivered at the London Termini of the Railroads free of charge for carriage. No charge for sacks.
It may also be had from Messrs. G. GIBBS & Co., 26, Down Street, Piccadilly, Agricultural Seedsmen, Agents for London; and from all the other Agents of the Company.

LAND DRAINAGE.
MR. BAILEY DENTON'S TABLES OF COST, &c., price 1*s.* 4*d.* Sold by METCHIM, Parliament Street.
MR. BAILEY DENTON'S WORKMAN'S A LEVEL, price 1*l.* 10*s.* Sold by JONES & Co., High Holborn, London.

JOHN MORREN, GENERAL COMMISSION AGENT, Ock Street, Abingdon, is open for Commissions for the sale of Agricultural Implements, Manures, Seeds, &c., and for the Purchase of Corn, &c.

CORN CRUSHERS AND CHAFF CUTTERS.—
A large display of the best Farm Implements shown in operation. Price Lists sent free on application.
BURGESS AND KEY,
103, Newgate Street, and 52, Little Britain, London.

PUMPS AND HOSE PIPES FOR GARDENS AND LIQUID MANURE.—BURGESS & KEY'S Pumps were highly commended by the Royal Agricultural Society of England at Lincoln. Price Lists sent free.
103, Newgate Street, and 52, Little Britain, London.

CHURNS.—ANTHONY'S PATENT AMERICAN CHURN.—Since 1849 this Churn has obtained all the Prizes awarded by the Royal Agricultural Society of England. At the trial before the Judges it made in 10 minutes 4 lbs. 6 oz. of Butter from 4 quarts of Cream, being 8 oz. more than any of the other Churns from the same quantity and quality of Cream.
103, Newgate Street, London.

IMPORTANT TO AGRICULTURISTS.
BOYDELL'S PATENT APPARATUS OR ENDLESS RAILWAY will effect a saving of Two Horses out of Three, in carrying out Manure, and all produce of the Farm home, as well as the damage done to wet fields by carrying heavy loads over them in bad weather.
A Cart with the Railway attached may be seen at Boydell and Glasier's, Camden Works, Hawley Crescent, Camden Town, near the Canal Bridge, London. The Invention will be exhibited, and its capabilities explained and proved, by drawing loads by weights over a pulley, at these works, between the hours of 10 and 4 o'clock, on the days of the Prize Cattle Show, viz., the 5th, 6th, 7th, and 8th of December; and each succeeding Monday. At these Exhibitions it will be shown, that a cart carrying 2 tons with the Patent Apparatus attached, can be drawn over ground by 1 cwt. and 3 qrs. over a pulley; and that on the same ground a cart precisely similar, without the apparatus, with the same load transferred from the other cart, will require 5½ cwt. to draw it.
The value of the invention will also be shown in going over obstructions, as well as in the saving of the wear and tear of the wheels, and its applicability to using it for drawing ploughs by steam-power, proved and explained.
Endless Railways for carts will be supplied and attached to any wheels, provided by the owner (but light new ones are recommended), and sent to Camden Works, upon the following terms, viz.:—

To Wheels to carry 2 tons	£7	10	0
Ditto ditto 3 tons	10	0	0

Patentee's charge for the use of them, 5*l.* per pair for the term of the Patent, or 20*s.* per annum. If wheels exceed 4 feet 6 inches, an extra charge.
The attention of Agriculturists is also called to Boydell and Glasier's Patent Hurdles, Portable Conservatories, Patent Ventilating Hand Glasses, Iron Buildings, &c., which may be seen at the Works.

THE LINCOLN SHOW.
FIRST PRIZE.
ROOT PULPING MACHINE.—
Invented and Patented by FREDERICK PHILLIPS, of the Hall Farm, near Brandon, Suffolk. The object of these Machines is to introduce a more profitable Mode of Feeding Fattening Animals, by giving them Roots and dry food mixed together, instead of the old system of feeding them at one meal with cold sloppy roots, and at another with compact farinaceous or oleaginous food. Their peculiar advantage is that they so effectually pulp or mince down Turnips or other Roots that animals cannot pick them out from any dry meal or chaff they may be mixed with. Animals by this mode improve faster, and at less expense, than by the old system of feeding. It is also an economical method of keeping lean stock, whether the Flock, the Herd, or Horses, as they may be made to eat with a relish Straw, Chaff, or indifferent Hay Chaff, by mixing a portion of minced Roots with them. These Machines have been greatly simplified, improved, and reduced in price, by the Patentee, since they were exhibited at the Lincoln Show. They will be Exhibited at the coming Cattle Show of the Smithfield Club—Stand 286.

THE GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY.
INCORPORATED BY SPECIAL ACT OF PARLIAMENT.
Offices, 52, Parliament Street, London.
DIRECTORS.
HENRY KER SEYMER, Esq., M.P., *Chairman.*
SIR JOHN V. SHELLEY, Bart., M.P., *Deputy-Chairman.*

John C. Cobbold, Esq., M.P.	William Fisher Hobbs, Esq.
Sir William Cubitt, F.R.S.	Edward J. Hutchins, Esq., M.P.
Henry Currie, Esq.	Samuel Morton Peto, Esq., M.P.
Thomas Edward Dicey, Esq.	William Tite, Esq., F.R.S.

William Wilshere, Esq.
Empowered to execute, or to assist Landowners in executing with their own Capital, works of Land Improvement, viz., Drainage, Irrigation, Road-making, Enclosing, Reclaiming, and the Erection of Farm Buildings upon any Estates, under Settlement, Mortgage, or Disability, and without any investigation of Title, to charge the total amount of the outlay and expenses upon the property improved, to be repaid by annual instalments, varying according to the number of years over which Landowners may determine the repayment shall extend.
WILLIAM CLIFFORD, Secretary.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL AND GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.
Principal—J. C. NESBIT, F.G.S., F.C.S., &c.
The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.
Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

BAKER STREET BAZAAR.
SUTTON'S LINCOLNSHIRE RED GLOBE TURNIP.—This Turnip has endured the drought better, and produced heavier crops than any other. Messrs. Sutton having grown a fine crop of Seed of this popular sort will take orders at the Baker Street Show for new Seed, at 1*s.* per pound, being desirous of charging very moderately *while they have a large Stock of Seed.*
STAND 278.
SUTTON AND SONS, Seed Growers, Reading.

PRIZE CATTLE SHOW of the SMITHFIELD CLUB.—The Annual Exhibition of Prize Cattle, Seeds, Roots, Implements, &c., will open to the public on Tuesday Morning, and closes on Friday Evening, 5th, 6th, 7th, and 8th of December. Bazaar, King Street, Baker Street. Open from daylight till nine in the evening. Admittance, One Shilling.

THE BIRMINGHAM CATTLE AND POULTRY SHOW, 1854.—The Sixth Great Annual Exhibition of STOCK and DOMESTIC POULTRY will be held in BINGLEY HALL, on TUESDAY, WEDNESDAY, THURSDAY, and FRIDAY, the 12th, 13th, 14th, and 15th of December next.
The PRIVATE VIEW and ANNUAL DINNER on TUESDAY, December 12.
There will be SPECIAL TRAINS on all the principal RAILWAYS, full particulars of which will be announced in the Advertisements and Bills of the several Companies.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.
The December GENERAL MEETING will be held at the Society's House, in Hanover Square, on SATURDAY, the 9th December, at Eleven o'clock in the Forenoon.—By order of the Council, JAMES HUDSON, Secretary.

The Agricultural Gazette.
SATURDAY, DECEMBER 2, 1854.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY,	Dec.	5	The Farmers' Club. Show of the Smithfield Club.
WEDNESDAY,	—	6	Agricultural Society of England.
THURSDAY,	—	7	Agricultural Imp. Society of Ireland.

COVENEY'S "ECONOMICAL MANURE."

IT will be in the remembrance of our readers that we some months since published extracts from the "Cyclopædia of Agriculture," and the "Journal of the Agricultural Improvement Society of Ireland," giving analyses, by Dr. VOELCKER, Professor APJOHN, and Mr. NESBIT, of the so-called PATENT ECONOMICAL MANURE, which had been during the past year largely advertised throughout the country, and had obtained in many places a certain amount of sale. The purport of these analyses was brought before our readers in two or three leading articles, in which their bearing on the real worth of the substance was pointed out. As to its market value, we showed that the materials of which the so-called economical manure is manufactured,—for which Mr. COVENEY asks 12*l.* per ton—could be purchased for less than 4*s.* a cwt.; and as to its agricultural effect, we published a letter from a correspondent expressing the hope that the exposure we had given of its worthlessness would have sufficient weight to caution people from using it. This letter stated that the writer had employed the manure on four different crops, and had applied it to each in different ways, and in no case with the least benefit, so that, from his placing confidence in the testimonials written in its favour he had entirely lost his Turnip crop. Such a statement was to be depended on; and it described an experience which tallied with the chemists' account of the stuff employed.

For the publication of our correspondent's letter, we received some weeks ago (in fact on the very day of its appearance, Sept. 9), notice of an action for damages on account of the libel which it was alleged that it contained,—so that Mr. COVENEY and his solicitors must have been watching us in the hope that in our exposure of their proceedings we might legally trip. And if the sale of an article yielding at least 200 per cent. of profit to its fortunate manufacturer and salesman was thereby injured, no doubt damages would have been laid at a good round sum. That no jury would have awarded them, however, we felt satisfied; and that Mr. COVENEY thinks the same would appear from his having failed to avail himself of the opportunities which have since arisen for carrying the affair further. We have heard no more of his action. Damaged characters, juries are apt to consider, cannot *wait* for a justification: Mr. COVENEY'S patent "economical" manure has lost one term—*ergo*——

Our correspondent, speaking of the "economical" manure, stated that he was desirous of adding his "testimony to the truth of its worthlessness." Now the fact is, that, while numberless cases may be adduced in which the stuff has done no good, and in which indeed it has been mischievous, still the thing *is* worth a certain sum per ton; and if a jury of philologists and lexicographers were empannelled, their verdict might declare that we had not justified the libel of which it was alleged that we were guilty; but "worthlessness," in the mouth of a farmer, does not convey exactly the idea which Dr. JOHNSON attached to it:—and if an agricultural jury be empannelled—or a jury of chemists—or a jury of manure manufacturers—or a special jury selected in the ordinary way—we venture to believe that they will not consider "worthlessness" too strong a term to use in reference to a mixture made up of green vitriol, plaster of Paris, common salt, Glauber's salts, &c.—in reference to a so-called "economical" manure, of whose failure evidence in every county to which we have written on the subject will be forthcoming if Mr. COVENEY likes to go into court—in reference to a compound for which materials may be purchased for less than 4*l.*, although its manufacturer has the face to ask three times that sum. It may not be literally worthless, for it is worth, *though not to the agriculturist*, 3*l.* or 4*l.* per ton; but it is worthless in the same sense in which a character is worthless which when it is assailed is not thought worth defence.

We were delighted to receive notice of the action, for we felt that an opportunity would thus be given us of proving either that the agricultural community had been grossly victimised, or that we had been erroneously informed, and were unjustly prejudicing an article—the product of Mr. COVENEY'S honest enterprise and skill. This opportunity, however, it appears we are to wait for. Be it so; our character is not at stake, it is only the manure's. The threat of an impending action will not, however, deter us from publishing whatever evidence we please on this subject. We have abundance already in our hands to justify all that has been said.

Mr. COVENEY has advertised that the testimonials for 1854, to the value of the "economical" manure, are of the most favourable character. Out of every thousand doses of any quack medicine there will be 990 cases of its failure of which no report is given by the invalids; and yet if its manufacturer would only faithfully report *all* the testimony which reaches him, the public would not be misled, for the righteous indignation of nine would overbalance the ignorant gratitude of one. Let Mr. COVENEY publish *all* the evidence which has reached him on this subject, and we might risk our case upon his own presentment of it. Perhaps he will tell us how many actions he has been obliged to threaten, in order to get payment for his drug from poor farmers; or how many of his agents, being people of high character, have, on finding out its true value, thrown up their agency. Should he have no list and like to go into court, we will summon some of them with pleasure.

THE agricultural mind is now becoming alive to the fact, that task the powers of cultivation and of the soil as we may, we are likely to be wholly unable to keep up with the demands made upon them by our rapidly increasing population; a population, too, whose powers of consumption are increasing even in a greater ratio than its numbers, so that it exhibits day by day an increasing desire to revel in beef and mutton, and good wheaten bread,

and will not be satisfied with the scanty and coarse fare on which in bygone times it used to exist.

This is a cheering prospect. It shows a gradually widening circle, within which material comforts are more common than they used to be; and it is the strongest evidence of the healthful advance of the country in material prosperity. We say healthful, because our prosperity is not like that of some ancient and even modern nations of which we read; where the prosperity of one class meant the degradation of another, where the social scale remained in its wonted position, with the distinctive classes which it marked crowded together at either end, the highest luxury at the one separated by a wide blank from squalid misery at the other. Here we have the happier spectacle of a general upraising of the whole scale; the zero of yesterday is no longer the zero of to-day; but all partake in the general improvement.

These reflections, based as they are upon statistical data of the most undeniable description, combined with the well-known fact of the increasing demand for food over all the world, may well satisfy all those connected with the cultivation of the soil that they will have no lack of customers, that they need not throw away their ploughshares under the vain impression that the produce of their acres will no longer fetch a remunerative price; their difficulty will rather be, we apprehend, to produce enough to satisfy the craving appetites around them, or to ward off from these islands the evils of a short supply, amounting, it may be, at times to something little short of famine.

Within these few weeks it has become almost a trite saying that, inasmuch as we cannot increase our acres, we must try what we can do to increase their productiveness. Now this is the process which we wish to stimulate and encourage. There is neither logic nor policy in quarrelling with our neighbour because he tells us that he grows more Turnips or hay than we have done: let us rather patiently investigate the matter, and endeavour to find out how it was accomplished, and try to copy the example. It has long been the fashion to apologise for the backward state of the cultivation of a district by laying the blame on embarrassed landlords, whose powers of making those primary and essential improvements necessary under a system of high farming are paralysed by burdens on their estates, created by their own or their ancestors' extravagance. This has been the excuse; but it ought no longer to pass current; for it does mischief, by allowing people to think they have done all they could do, or rather that they are powerless to make improvements, and so to neglect their duty and excuse themselves, on grounds which have no existence. No owner of landed property, be he tenant for life *only*, owner in tail or fee, no matter though his property be mortgaged, can now plead any excuse for not improving it short of the legitimate one—if he can prove it—that it will not pay to do so.

We have long had the Government Drainage Acts in force, by which money might be borrowed for drainage, and for trenching and fencing and otherwise improving waste or uncultivated land, at a rate of interest far below what the borrower could have obtained it for, even under the most favourable circumstances. Now, we have in full operation several companies (and amongst them one whose act may justly be styled a well devised and efficient scheme) for advancing money under the sanction of the inclosure commissioners for drainage, irrigation, building, machinery, and other improvements on land.

The company to which we now more particularly refer is called the "Lands' Improvement Company." It proceeds on a totally different principle from the other companies previously established, in so far as it advances the money at a reasonable rate of interest, leaving it to the borrower to arrange his improvements, by means of his own architect, and engineers or surveyors, controlled by the inspection of the inclosure commissioners. We think this company calculated to do great good; we shall therefore return to the subject, and give some account of its mode of procedure, which we know will prove acceptable to a large class of our readers.

ON THE AMOUNTS OF, AND METHODS OF ESTIMATING, AMMONIA AND NITRIC ACID IN RAIN-WATER.—By J. B. Lawes, Esq., F.R.S., and Dr. J. H. Gilbert, F.C.S.

(British Association, Liverpool, 1854.)

(Section B: *Read* Monday, September 25.)—*Abstract.*—We were indebted to Cavendish for the observation that ammonia and nitric acid were formed when humid air was submitted to voltaic action. About the commencement of the present century, De Saussure detected ammonia in the atmosphere; a few years later Chevreul observed its presence in the Seine; and in 1825 Brande detected it in rain-water. Since that time much more minute attention has been paid to this subject, and also to the presence of nitric acid in meteoric and other waters. Liebig and Boussingault have particularly called attention to the influence which the ammonia carried down from the atmosphere must have upon the growth of plants; and the former of these philosophers pointed out the occurrence of nitric acid also in a considerable number of rain-waters which he examined, especially those of thunder-storms. Dr. H. Bence Jones has also found nitric acid in rain which fell in various parts of England, and in the south of Ireland. But it is to the more recent labours of Boussingault that we are indebted for our most elaborate quantitative estimations of the ammonia in rain, and other waters; and M. Barral has made a series of quantitative determinations of both the nitric acid and the ammonia contained in the rain-water which fell at Paris during several consecutive months in 1851. It was chiefly with a view to the agricultural bearings of the subject that the authors had entered upon the same field of investigation. But the object of the present paper was rather to discuss the methods of analysis than to rely with confidence on the conclusions to which we might be led by the more direct application of the results yet obtained to the solution of the several important scientific and practical questions upon which they bore. Tables were exhibited, showing the experimental results obtained in the estimation of ammonia in rain-water by several different methods. In the first instance, very large amounts (from 100 to 200 pounds or more) of rain-water, to which a little caustic potass was previously added, had been distilled; and the distillation of the product repeated—collecting in each case about one half the amount put into the retort—until the whole was reduced to a convenient bulk for further concentration in an open vessel. This was then evaporated with a known amount of sulphuric acid to a given volume; and measured portions of this final product were then neutralised by a standard alkaline solution, in the usual manner of liquid analysis. This method the authors conceived gave very good results; but it had been abandoned from the great practical inconvenience, and frequent breakage, in conducting distillations in glass on so large a scale. They had next adopted a method substantially the same as that of M. Boussingault, which was to submit to a single distillation, generally not more than one litre (about 35 ounces) of water; two or more successive tenths or fifths of the product being then, with certain precautions, tested for ammonia by the liquid method. In this manner exceedingly minute actual amounts of ammonia could be determined; and by a careful and constantly practised hand very valuable comparative results might be obtained. It happened, however, that, in relation to the average total amount of ammonia contained in a litre of rain or other waters, the minimum error was frequently not less, and sometimes considerably more, than 4 or 5 per cent. of such total amount. The authors had therefore, in their more recent experiments, operated upon several litres of water in the first instance, reducing it by successive distillations to one half, until thus brought to a convenient amount for final distillation, and subsequent testing of measured proportional amounts of the product, according to Boussingault's method. This modification, which the authors found M. Boussingault had himself suggested, but apparently not generally adopted, was considered to be important, and to be more applicable to this delicate subject of enquiry than either of the other methods which had been attempted. However, some results obtained by the first method of large distillation, by the side of others of the same waters, by Boussingault's plan of small single distillations, showed considerable coincidence; such as to give confidence in the general principle of the methods. The average of the determinations made on monthly mixed samples of the rain which fell at Rothamsted, during more than a year, gave about one part of ammonia per million of rain-water; the average of many determinations made by Boussingault at Liebfrauenberg in Alsace, was about 4-5ths of this amount; whilst the estimations, both of M. Barral and M. Boussingault, at Paris, gave as much as three or four parts, or even more, of ammonia, per million of rain water. It was interesting too, to notice, that the variations in the amount of ammonia which the authors had obtained in the rain of different but entire months, when considered in connection with the registered amounts of the fall, the direction of the wind, and the general character of the weather, were perfectly consistent in kind with the results of M. Boussingault in his special examinations of rain falling, under different circumstances, of the water of dews, of fogs, &c. The process adopted by the authors for determining the nitric acid was to evaporate the rain-water with an alkaline carbonate several times to dryness, to weigh the solid residue, and determine its per centage of nitrogen by Dumas' direct volume method of combustion with oxide of copper. With some of the results thus obtained, however, they were not satisfied; and they considered an accurate method for the determination of small quantities of nitrogen, or rather nitric acid, still a great desideratum. They hesitated therefore to apply with confidence all the results yet obtained to the discussion of the important questions, with a view to the solution of which the investigation had been undertaken, and which they hope in future further to elucidate. As a general result, however, it would seem, that whilst the per centage amount of ammonia was generally less in the rain of thunder-storms and when there was a large fall of rain, the amount of nitric acid, on the other hand, appeared to be increased under the influence of storms. The results further indicated that the amount of nitrogen yielded by rain-water in the form of nitric acid was considerably greater than that which existed as ammonia, and since there could be no doubt that nitrates applied as manures greatly enhanced the growth of plants by virtue of the nitrogen they contained, the amount of nitrogen brought down from the atmosphere in the form of nitric acid must be considered to have a very important influence on vegetation.

Home Correspondence.

Farm Experiments valuable in proportion to their size and duration.—No one can entertain a higher regard for, or appreciate more thoroughly the value of, practical experiments in agriculture than myself; but in my humble judgment, to be practical they must be fair; to be fair, they ought not to be very minute either in size or duration. The greatest and most successful experimentalist of his day, the late Mr. Coke, of Norfolk, held it as a maxim, to which he rigidly adhered throughout his long farming career (a period of at least half a century), that no experiment could be satisfactory to himself, or beneficial to the community, that was not of three years duration, and of a magnitude in some degree proportionate to the extent of the farm for which it was required. If, for instance, in riding over his extensive crops in and around Holkham, any particular variety of Corn, Turnips, or what not, attracted the notice of his farming friends, and he was asked his opinion thereon, the answer was sure to be, "I never give an opinion on this, or any other experiment, till after a three years' trial. This is only my first or second year" (as the case may be). "Come to see me at the three years' end, and I will tell you all about it." Nor was this a mere lilliputian garden-pot experiment, but one in some sort commensurate with the scale of his arable occupation (about 2000 acres in and around the park at Holkham), probably not less than 40 or 50 acres. There is both sense and value in a trial of this magnitude and duration; and though I do not go the length of asserting the necessity or even the possibility of such in all cases, we contend for the principle that the larger the experiment and the oftener it is repeated, the more satisfactory and valuable it will be, both to the experimentalist and the public. I have been led to these remarks by the letter of Mr. Wm. Dickenson, of New Park, Lymington, in a late Number on the enormous produce he tells us he has obtained and expects to obtain from Italian Rye-grass. Far be it from me to undervalue any experiment if fairly conducted; but I beg most respectfully to submit that this is not, and cannot be, a fair experiment; and in a practical point of view, it is of no value or weight whatever. The bare idea of selecting from a field (we are not told of what size) an insignificant patch of only a yard square, and thence deducing the acreable amount of the produce, does appear to me to border on the ridiculous; and somewhat of a piece with the land valuer, who produced a bag of earth as a sample of the soil of an estate. Where and how was this particular yard selected? In a field of any size—say 5, 10, or whatever might be the number of acres—there will, and must be, great inequalities in the length, strength, and thickness of the plants. Was it taken from the best, the worst, or an average of the general crop? How was it cut? and, above all, how was the exact measure defined? I have a right to ask these questions, because much, very much, depends on the manner in which the operation is conducted: one man, by a little close shaving, and a sort of Russian grasp at the boundaries of his yard, may make tons per acre more than another, who, from the same field, confines himself within the exact limits of his allotted patch. Do it the best way you can, it is not a fair experiment. The errors, whether of under or over weight, and there are sure to be some, will be multiplied 4840 times if an English, or 6150 times if a Scotch acre. By-the-bye, why talk of Scotch acres in the New Forest? This is complicating matters without any adequate reason. English experiments ought always to be in English measure; and any departure therefrom, in England, will only lead to confusion, and ought to be avoided. I hope Mr. Dickenson will not infer from what I have said that I mean to cast any reflection on his *protegée*, the Italian Rye-grass, as a crop. Far from it; and if I cannot go all lengths in his encomiums of it, I admit at once that it is superior in weight, and I think in quality, to the common Rye-grass. I only wish he would let us see and hear a little more of it; instead of one poor solitary yard, for instance, 5, 10, or more acres if he likes; the more the better. His proffered stake of 100*l.* would then, but not till then, carry weight with it in the minds of practical men. Just in the same category, and on the same page with Mr. Dickenson, we find Messrs. Hardy & Son with their yard of land, planted with 18 grains of Wheat, producing, as they tell us, after the rate of nearly 19 quarters per statute acre! Now, of what practical value is such a statement as this? Suppose a field of Clover-lea, say 20 acres—soil light sand and gravel, perhaps in a game district—all ready for putting in a Wheat crop; do Messrs. Hardy mean to say that 6 pints of seed are all they would advise to an acre? The thing is so ridiculous that it is hardly worth refuting; game, rooks, larks, and slugs, to say nothing of wireworms, would make such havoc with the plant from its very thinness that the poor farmer would be very fortunate to reap as much as "2 quarters, 2 bushels

3 pecks, and 5 quarts per acre," being the result of Messrs. Hardy's second experiment from the common mode of seeding. In practice I have no doubt such would be about the fact; viz., that the thin seeding would furnish the poor crop; the 2 bushels or 2½ bushels, not an extraordinary crop, perhaps, but a fair average for such land; probably 3½, 4, or even more, quarters per acre. But my present object is not so much to argue the question of thick or thin sowing as to enter my protest in this, as in Mr. Dickenson's case, against drawing an inference, either pro or con, from so contemptible a trial as a square yard of ground; and that, too, rich, highly cultivated garden ground. It can satisfy no one, least of all the practical tenant farmer, to whom his Wheat crop is, or ought to be, the first and most important object, and who, if foolish enough to act upon it, will assuredly find himself most lamentably deceived; and if he escape a lunatic asylum, can hardly fail of a berth in the county jail. *T., Gloucester, Nov. 22.*

Italian Rye-Grass.—Much of the misapprehension and diversity of opinion respecting productiveness of Italian Rye-grass has, we believe, arisen from the assumption that there is but one kind of Italian Rye-grass, or that all varieties possess the same properties or nearly so, whereas we have repeatedly proved that there are probably many varieties of Italian, as of English or Scotch Rye-grasses, and that the productive and nutritive properties of some greatly exceed others. This we found to be the case with a kind we procured from Mr. Dickenson, then at Mayfair, a few years since, as also another very productive variety, which for distinction we have kept under the name of "Sutton's" and the other "Dickenson's." So great is the difference in the produce of these and that of other varieties of Italian Rye-grass which we have sown, that we are not surprised at the great weight per acre grown by Mr. Dickenson with a copious supply of manure. Much of course depends on the cultivation, but we think the difference of the variety of Grass is too little attended to. *J. Sutton and Sons.*

Town Sewage.—Like Mr. Mechi, I was startled when I read the editorial remark which he has prefixed to his observations in a late number of this paper. My object, however, in addressing you is not to reiterate what Mr. Mechi has said, but to suggest to that gentleman that he would really do the public some good service if he would go down to Ayr and inspect, unprejudicedly, the lands of Mr. Telfer, and then publish with his characteristic candour the result of his investigation. The vexed question as to the capability of an occupier of an ordinary-sized farm to produce in a regular course of husbandry, on soils of average fertility and of different geological formation, the enormous crops of green Grass and dry hay quoted by Mr. Caird at Tiptree, would then perhaps be fairly represented. The following is a note from my diary, made on the occasion of a visit to Mr. Telfer's after the last Tiptree gathering. "Aug. 31, 1854.—Visited Mr. Telfer's dairy farm, near Ayr, in consequence of Caird's speech at Tiptree, in which he said that Telfer had made above 20 tons of hay per acre (Scotch) from his Italian Rye-grass, irrigated with liquid manure by steam power. I find the growing Grass most excellent; but as to the hay it does not exist, except to the extent of 1 cwt. or so, which was cut and dried by way of experiment from a small patch of a perch or so, and instanced by Telfer to Caird as a criterion of produce—not as a crop made—without any idea of his figures being quoted. It appears difficult to determine whether the extraordinary growth of this succulent Grass is to be attributed to the manure distributed by liquid, or to the copious application of water to the Grass in a growing state on a free and fertile soil, having the benefit of a peculiarly mild and (from close proximity to the sea) humid atmosphere. No frosts and extreme colds check growth; the land is protected by hills, and the soil being deep and open, little evaporation takes place. The rain-fall has been very small, hence the great benefit of water artificially applied. The manure does some good, but it is a secondary matter altogether. Mr. Telfer's root crops are admirable; but you cannot distinguish between the Mangolds which have been irrigated and those which have not. Mr. Telfer's cow-byres are well arranged. The cows lie on cocoa-nut mats, which save litter and are a cheap substitute. Mr. Telfer was most candid and communicative." *J. Bailey Denton, 52, Parliament Street.*

Dry-drill v. Water-drill.—Curiosity is usually excited when any novelty is introduced to the agricultural world. Various and contradictory opinions are frequently elicited from observers. There are those who are always prepared to pronounce favourably of anything that is new, and to lend it their advocacy; whilst others appear to manifest a natural abhorrence of novelty, and regard every new invention as utopian. But the great class of practical men are mainly guided in the formation of their opinions by close observation and the results of successive and repeated experiments. During the last few years the water-drill has shared no small measure of public attention, and opinions respecting it have been numerous and conflicting. Having witnessed some very successful results from its use in the north of Lincolnshire, I was induced to purchase one of Chandler's last year. At the London Farmers' Club last April, when Mr. Spooner introduced the following subject for discussion, viz, "On the application of manure, in a liquid state, to roots, Grasses, and grain crops," I stated that I was about to make a series of experiments with Mangolds, to test the comparative merits of the dry and water drills, the results of which I promised to publish in the autumn. I now redeem my pledge, and append a table showing every necessary particular, and giving the produce per acre of each experiment. The season has been an unfavourable one for making the experiments, as the drought and heat during the months of August and September were so intense as to stop the growth of the Mangolds in one or two intsances entirely, whilst that of the others was greatly impeded. Nos. 4, 5, and 6 were the hottest land, and consequently the crop is a very light one. In No. 7 those sown with the dry drill were a total failure. I am therefore only able to give the produce resulting from the use of the water drill.

No. of experiment.	When sown.	What Drill used.	Quantity and description of artificial manure per acre.	Cost per acre for artificial manure.	Farm-yard manure per acre.	When weighed.	Produce per acre.
				s. d.			Ton. ct. st. lb.
1.	April 1	Water-drill	1½ cwt. of Lawes' superphosphate of lime.	11 3	16 loads.	Oct. 5	20 16 6 4
		Dry-drill.	Ditto.	11 3	16 loads.		15 9 5 2
		Dry-drill.	None.		16 loads.		13 13 4 8
2.	April 3	Water-drill	1½ cwt. of Lawes' superphosphate of lime.	11 3	16 loads.	Oct. 5	20 19 2 4
		Dry-drill.	Ditto.	11 3	16 loads.		15 16 6 4
		Dry-drill.	None.		16 loads.		15 0 0 0
3.	April 17	Water-drill	1 cwt. of Lawes' superphosphate of lime.	7 6	11 loads.	Oct. 4	17 7 6 12
		Dry-drill.	Ditto.	7 6	11 loads.		13 15 2 12
		Dry-drill.	None.		11 loads.		8 15 0 0
4.	April 5	Water-drill.	1½ cwt. of Lawes' superphosphate of lime.	11 3	11 loads.	Oct. 3	15 14 5 2
		Dry-drill.	Ditto.	11 3	11 loads.		14 14 2 4
		Dry-drill.	None.		11 loads.		11 17 4 0
5.	April 18	Water-drill.	1 cwt. of Lawes' superphosphate of lime.	7 6	13 loads.	Oct. 4	13 13 2 4
		Dry-drill.	Ditto.	7 6	13 loads.		10 8 1 10
		Dry-drill.	None.		13 loads.		6 18 4 8
6.	April 4	Water-drill.	1½ cwt. of Lawes' superphosphate of lime.	11 3	15 loads.	Oct. 8	9 18 7 6
		Dry-drill.	Ditto.	11 3	15 loads.		8 12 1 2
		Dry-drill.	None.		15 loads.		6 10 0 0
7.	April 20	Water-drill.	1 cwt. of Lawes' superphosphate of lime.	7 6	13 loads.	Oct. 17	27 14 2 4

Alfred S. Ruston, Wenny Road, Chatteris, Nov. 7.

St. Marylebone Bank for Savings, 76, Welbeck Street, Established July 5, 1830:—

COMPARATIVE STATEMENT OF PROGRESS AT SPECIFIED PERIODS DURING THE LAST SEVEN YEARS.

	Open deposit Accounts.	Sums invested with National Debt Commissioners.
On November 20, 1848 ...	19,019	£291,386
„ 1849 ...	20,382	311,694
„ 1850 ...	21,110	321,775
„ 1851 ...	22,176	344,934
„ 1852 ...	22,774	364,526
„ 1853 ...	23,308	367,973
„ 1854 ...	23,227	351,269

D. Finney, Secretary and Actuary.

Farmers' Daughters.—I am a working man myself, and therefore not likely to be biassed by any aristocratic prejudices in what I am about to say. The readers of the *Agricultural Gazette* are aware that a gentleman named Colville has recently brought a hornet's nest about his ears by having at a public dinner made some remarks which appear to me to have been either misrepresented or misunderstood. I cannot now call to mind Mr. C.'s exact words, but I believe the purport of them was simply this:—That as farmers' daughters in the course of time become farmers' wives, it is better that they should be taught the proper management of a farmer's household than be trained up as imitation ladies,—learning a little of everything that is of no use to them, and very little of anything likely to be really serviceable in their future condition of wives and mothers. Now, supposing that my construction of Mr. Colvile's meaning is correct, can any reasonable man say that he is not right? Or will any one practically acquainted with the habits and manners of the middle classes at the present day deny that in their anxious aspirations after gentility the rising generation neglects, and too frequently despises, that more useful and substantial knowledge which is necessary to enable them to do their duty in that state of life to which they are likely to be called? Every man who is in the habit of associating with young women (young ladies I ought to have written, there are no women now) knows full well that they are far better acquainted with the manufacturing of "anti-macassars," fancy stool-covers, bead bottle-stands, and similar tawdry ornaments, than with making a shirt or darning a stocking; and as to making up the butter after it is churned, preparing a meat-pie for the family dinner, or getting a fowl ready for the spit, why the bare idea of doing anything so "very low" is sufficient to make many a modern young lady blush. And not only in behaviour and occupation, but in dress, it is the fashion for young women of the middle class to ape those above them: and the daughter of a little tradesman is often more showily dressed when she appears in public than the daughter of the proprietor of three-fourths of the parish. Then, as a matter of course, the servant girl apes her young mistress—for fondness of finery is as catching as the measles—and so every maid-of-all-work sports her stylish bonnet and her parasol, even if she has not a decent change of under clothing. This passion for dress is an increasing evil;—it "grows with the growth, and strengthens with the strength:" and when honestly earned wages are found insufficient to supply the growing demand, dress must be obtained by other means. This is not an imaginary or even a highly coloured picture; those who are loudest in condemning Mr. Colvile's "selfish illiberality," and so forth, might see such things happen under their own eyes, if they are not blinded by the rapidity with which they run after what the cant of the day calls the "onward movement." Now, I am myself as strenuous an advocate for progress as any one of those who have taken up the cudgel against Mr. Colvile; but I would have us advance cautiously and securely, feeling that the ground before us is firm before trusting ourselves upon it, not hastily striding forwards on to slippery soil where we cannot establish ourselves, and then sliding two steps backward. In other words, I would have the rising generation made useful rather than only ornamental members of society. By all means let young people learn all the accomplishments within their reach: but first teach them those things that are absolutely necessary to fit them for the proper performance of the duties of their station. By all who will be obliged to work for their living, music, dancing, and fancy-work ought to be looked upon only as recreations for their leisure hours, not made the chief end of their existence. In short, I would have our sons and daughters taught to be men and women, instead of mere male and female "gents." *A Countryman.* [Mr. Colville's meaning *and* his words (for the two appear to have materially differed) may be so explained as that every one shall be ready to adopt them, just as they will to acquiesce in the very sensible letter written by "a Countryman." The question, however is not one of general truths, but simply this, whether or not in the case and to the audience before him, Mr. Colville was justified in speaking as he did. It is impertinent to talk of "aping" gentility to those in whom it naturally exists; and those who invest their 2000*l.* to 3000*l.* in agriculture, ought not to be blamed for seeking a liberal as well as a practical education for their children.]

Societies.

WITHAM AGRICULTURAL: At the late meeting of the Labourers' Friend Society here, Mr. Mechi congratulated the society sincerely on its determination to have it of a purely agricultural character; it was quite clear that in a society constituted like this, where men of all parties could meet on the most amicable footing for the sole purpose of improving our national agriculture, if they converted it into a political arena, they must also convert it into as many societies as they had differences of opinion, and that would be destructive to it. They were met for practical purposes, and he would proceed to those points. There was one part as to the prizes for drainage on which he thought they were not pursuing a right path. Some years ago he proposed a prize for drains, 5 feet deep and not opened very wide, with small inch pipes, in strong clay soils. The committee, after one or two trials, considered that not a proper depth, and they gave separate prizes for a depth of 3 feet. Now, on public grounds, he objected to this, because they were acting against the perfectly understood opinion of the country. If they went to the Drainage Commissioners, or the other public bodies, for advancing money for this purpose, they would not grant them 1s. for drainage done so shallow, and, therefore, so inefficient as 3 feet; and thus they were positively setting up their individual opinion on drainage against all the authorities on the subject, and at the same time doing a great evil, because they were encouraging a wrong principle. He trusted their neighbourhood would not consider its own practical knowledge superior to the whole practical knowledge of the kingdom on that subject; and that the matter would be reconsidered. Another point he would allude to, and on which he could congratulate them, was the improved feeling as to the employment of agricultural steam machinery. A few years ago, when he put up his steam-engine, a good deal of ridicule was passed upon him, and a great many sneers were heaped upon his head; but it was a great source of comfort to him, on public grounds, to find that steam-engines were adopted now as commonly as the old-fashioned machinery used to be; and he knew it would be more common, year by year, as the agricultural mind became more intelligent on that matter. They had steam-engines that would have been thought most extravagant a few years ago at 300*l.*, for the farmer now said "with a steam-engine to thresh corn I can turn my horses to other things." He should like to see a prize given for the engineer who had been the longest on a farm; for the man who had a steam-engine now was in rather an unfortunate position—if anything was the matter with it, whither was he to go to have it repaired? At present they had at every parish, at their own doors, a blacksmith and a wheelwright, and if they used steam-engines, as they were using them, it would be necessary to have at the smithy a turning-lathe, and the apparatus that was required for the

repair of all moving machinery. There were many fixed charges that pressed upon them, such as rent, rates, taxes, and labour, and these could not be reduced; how important, then, was it they should progress, and augment their production, for as they increased their produce they reduced all these expenses. A great story had been made lately of Mr. Caird's statement of a large production of green food.

Mr. Wm. Hutley: Dry hay.—Mr. Mechi: I see no difference between Grass and hay. Will not so much Grass make so much hay?—Mr. Hutley: It was not a question of Grass, but hay.—Mr. Mechi: Grass becomes hay. Am I right, my lord?—Lord Rayleigh: You can't make hay without Grass. (Laughter.)—Mr. Hutley: The question was asked two or three times—do you mean, tons of dry hay, and he said, "yes." It was in print.—Mr. Mechi: Should you be satisfied if you got the Grass?—Mr. Hutley: I should not know what to do with it—I could not make it.—Mr. Mechi: I am sorry for you.—Mr. Hutley: I am sorry for the man who can tell such lies.—Mr. Mechi: The hay could not be made without Grass, and he showed there was so much Grass.—Mr. Hutley: I deny it.

Mr. Mechi said, Mr. Telfer, to diminish the cost and charges, the fixed charges on the land, put on one ton 5 cwt. of guano washed in with the liquid manure of 10 cows and 500 tons of water, which was 5 inches more than the natural rain gave him, and he produced from 60 to 75 tons of green Grass per acre. He alluded to this to show that if they could thus largely increase the produce of the soil, they diminished rent, rate, taxes, and every fixed charge to a great extent, and they not only produced more food for the people, but they employed more labour; if they did not allow that, they must say that the less they produced the better it was for them. (Hear.) Mr. H. Dixon said, he stated something at the last meeting as to an attempt he had made to farm on the system of Mr. Smith, of Lois Weedon, but he was not then able to state the result, which he would now do. The first year, as he stated, he put the land under an 18-inch digging of two spits, and he put in Beans 5 feet apart in single rows, and between the Beans he put rows of various vegetables, to ascertain which would answer the best—Carrots, Parsnips, Mangold, Onions, Swedes, and Potatoes. When he was here last year he had no opportunity of realising the crops; but he could now state that the Carrots and Mangold were good crops; the Bean crop was rather over 2 quarters an acre, which he called a decided failure; the mangold was 15 tons an acre, and rather over; the Turnip crop he did not take the weight of—they were not well planted but fine Turnips. The Potato crop yielded 160 bushels to the acre, which he sold at 4s. per bushel, being 32l. per acre; the Parsnips were good; altogether he thought the result was in favour only of the Potatoes, Mangold, Turnips, and Parsnips; and taking the general result, he had an ample crop on the whole. This land was 52½ rods long; and in every row of roots he used 14 lbs. of guano and 14 lbs. of salt. Where the roots grew last year he this year had Wheat on Mr. Smith's system, and between the Wheat rows of Mangold; he had the crop of Wheat realised this morning, and it was 34 bushels to the acre, which was below his expectations, for the land by the side of it produced 6 quarters an acre, and he had seen 8 quarters on it, which, however, he should never see again if he farmed for 100 years. But then there was the deep cultivation of this piece of land, which he expected to reap an advantage from hereafter, for he believed its physical condition was much improved. Then came the Mangold, and this was to a great extent a failure. He told the roots that morning, and he had a little over 7000 an acre, and if they weighed 1¼ lb. each, that would be 5 or 6 tons an acre. But then he had 32 bushels of Wheat, which was a fair crop. On the whole he should say that the system would not be profitable to farm that land on, and he thought he could make more of it by having it in a uniform crop. He knew, however, that Mr. Smith had grown 24 tons of Swedes an acre, and 8 quarters of Beans on the same land, for no one would question Mr. Smith's statement; Sir T. Parkins, too, had told him that he himself weighed the crop, and he had no reason to question it. Whether they should ever grow a crop like that he could not say. This year, as he had another large farming operation in hand, he should stop in the trial of the system, and whether he should go on again hereafter he could not say; but he believed that he had gained nothing by it, and that he had lost nothing. It was a curious fact in connection with the matter that these Potatoes were planted entirely in the under soil, the 9 inch upper soil being turned below, and they had less disease than any in the neighbourhood. He was happy to say, from information he had acquired from various directions, and from what he had seen of the specimens in the field to-day, that the Potato disease seemed far less virulent than it had been since 1844,—not that the Potatoes in the field to-day were fully free from it, for few of the thin-skinned Potatoes were free from it—they all exhibited symptoms of it, and he believed they would be rotten before Christmas; but the rough skins appeared in a sound state. Mr. Skirving, while exhibiting some Potatoes on his stand last year, told him (Mr. D.) that he wished him to try them and cultivate them; he did take a few of them, and having tried them found them the best he had ever eaten; he had 9 bushels of them. They were called "Flukes's," and were grown by a farmer in Lancashire, for whom Mr. Skirving sold them, and he (Mr. D.) gave 10s. a bushel for them—a good price. He put them into a good piece of ground. At the same time a friend of his from Ireland, who was on a visit to him, observed he had got better than them, on which he told him to send him some. He did send him some, which he called Irish Dons, and he set them. When he took them up he had from those he bought of Mr. Skirving 51 bushels of fine Potatoes, and 1 bushel only of defective Potatoes and chats. The other Potatoes, which he had from Ireland, he put in whole, and they produced 3 bushels to the rod—the Flukes from Lancashire were nearly the same. Then again, he had 42 Potatoes from Shelley, who exhibited his produce here last year; he planted them on the third of a rod of ground, and he had 2 bushels of Potatoes. Now, no crop, he thought, was so essential as Potatoes to the poor man; and on their allotments they had not only got a large crop, but they brought from the soil a greater quantity than any farmer could. (Hear.) He meant to say that they decidedly improved the poor by this system of allotments. (Cheers.) It was quite certain that the poor man paid for his plot of ground a higher rent than an ordinary tenant would do; but he was thoroughly persuaded that if they would secure him an allotment in this way, without trenching on the time of his master, they conferred a greater boon on him than had been conferred by any other means within his recollection. Let the poor man have every possible advantage that could be given him, and they could not do him a greater benefit than in letting him a small piece of land. Again, if the commons could be brought into cultivation, and the claims of lords of manors done away, a great quantity of land would be let loose, and that would be a great benefit, because labour was the wealth of this country.—The Chairman said Mr. Dixon had stated the results of his experiments on Mr. Smith's system, and he (Lord R.) had tried it in another way; for, instead of having manure for crops between, he had a naked fallow and no crop at all. The field had been three harvests ago in the natural four-course shift in Wheat, and so he began it by giving Wheat. He planted half the field in intervals with Wheat, and trenched the intermediate ground. Last year his produce was 2¼ quarters per acre; this year he had Wheat where the fallow was last year, and he had 5 quarters 5 bushels, which sold at 14l. in Chelmsford market.

Mr. W. Hutley asked, had not the field been down in Grass a great many years?—Lord Rayleigh said it was originally Grass, but it had not been Grass in his recollection.—Mr. Mechi asked what was formerly the average crop of that field? Lord Rayleigh: I cannot say.—Mr. Dixon: To what depth did you double dig it?—Lord Rayleigh: Not so deeply as you did. I should be almost inclined to say you brought up too much maiden earth at a time; I did not bring up more than 2 inches.—Mr. Dixon: What did it cost you?—Lord Rayleigh: I have not the figures. I do not mean to say it pays. I have tried the experiment, and got my crop, and that is a point I may begin to consider now.—Mr. Dixon: What I paid my men was, 2d. for the first rod and 2½d. for the second, and they could earn 2s. 6d. a day.

Mr. Forster said he was glad to hear Lord Rayleigh state the amount of crop in his field, for he had watched it often and he did not think it would come to 5 quarters an acre. He thought if it had had a fair trial it would have done better, for he considered that those trees by the side had injured it to the extent of 2 bushels. Some time since he requested his lordship's permission to stub up some wood land, and he then stated to him that he should lose 50l. by it in 20 years. He did not know whether his lordship agreed with him, but he gave him leave to do it; and he would now give them the statement of what would have been his actual loss:—

WOOD LAND.

Debtor and Creditor Account of 1 acre of wood land (underwood) for 28 years, cut once in 14 years.

	£	s.	d.
Dr.			
14 years' rent, tithe, rates, and income-tax	28	0	0
Interest at 5 per cent. upon payments as made yearly for 14 years	9	2	0
	37	2	0
Cr.			
By 14 years' growth underwood sold	6	10	0
Ditto loss first 14 years	30	12	0
Ditto second 14 ditto	30	12	0
Compound interest at 5 per cent. upon 30l. 12s. the loss of first 14 years, for the last 14	30	0	0
	91	4	0

Loss in 28 years, 91l. 4s. but much more if compound interest is charged upon every payment half-yearly.

Then, as to timber—he had stubbed 13 acres of his own; he had bought it, and he knew what it cost; it had grown five years afterwards, and he was convinced it would not pay him 3 per cent.—would not pay him so well as it would if he sold it and put the money into the bank, and therefore he stubbed it. Then as to hiring land in high and low times, if one farmer hired a farm of 445 acres in a low time, at 23s. 3d. per acre, and another hired in high time the same quality and quantity of land at 30s. per acre, and farmed them at the same rent for 32 years, the difference to the one who hired at the cheaper rate, if he improved it by putting it out at interest every half year, would amount to 11,571l. 10s. 7d.* (Hear.) As to the growth of Wheat, he did not like this new specimen of Wheat, but he thought they were wrong in not raising new varieties of all sorts of grain, for there was scarcely ever a new stock of Beans. He had raised four stocks of Wheat, and with them could beat the old stock for a certain number of years, but after that they degenerated. It was stated that this new specimen was Egyptian Mummy Wheat, raised from some kernels that came from a mummy; but a few years ago he bottled some Wheat, which he sowed this year, and did not see a kernel of it come up.—Mr. Dixon said, he had ploughed some turf and had been burning it, and he had upwards of 1000 loads of ashes burned on 4½ acres; the plough went over and then the ashes were spread on the top, and next year he should have the results to tell them.

Chemico-Agricultural of Ulster.—*Qualities of the Guano sold in the North of Ireland in 1854.*—Dr. Hodges brought under notice his tables displaying the extraordinary extent to which our northern farmers are victimised by manure dealers. In Belfast and the neighbouring districts, owing to the information afforded by the publications of the Society, comparatively little injury had been done, and the vendors of the unadulterated manure had been protected; but in remote districts where the farmers had not become members, and

Table I.—Peruvian Guano.

	Belfast.	Belfast.	Strabane.	Belfast.	Belfast.	Belfast.	Belfast.	Derry Bolivian.
Water	9.80	22.66	10.06	8.64	9.48	12.30	11.81	7.96
Organic matter and ammoniacal salts	54.30*	52.38*	49.88*	55.32*	54.84*	43.14*	50.92*	32.64*
Alkaline sulphates and chlorides	9.02	6.00	8.32	8.83	7.64	6.20	9.09	19.19
Phosphates of lime and magnesia	24.64	17.52	24.04	24.16	26.04	23.36	23.21	28.88
Sulphate of lime (gypsum)	...	...	2.02	0.88	0.32	3.22	1.17	2.38
Carbonate of lime	0.72	0.50	0.74	0.19	0.12	5.44	...	[illegible]
Insoluble siliceous matter	1.52	0.94	4.94	1.78	1.56	6.44	4.24	
	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
*Capable of yielding of ammonia	16.15	14.83	16.17	16.48	16.33	13.04	16.24	[illegible]
Value per ton	£12 13	£11 10	£13	£13 5	£13	£10 10	£13	£9 [illegible]

Table II.—Inferior and Adulterated Guano.

	Belfast.	Temple-patrick.	Derry.	Newtown-limavady.	Derry.	Belfast.	Belfast.	Lisburn.	Carrick-fergus.
Water	22.90	17.54	20.70	5.40	9.54	10.70	15.64	9.80	10.86
Organic matter and ammoniacal salts ...	14.68*	17.86*	23.16*	12.44*	14.74*	18.20*	11.50*	21.68*	32.70*
Alkaline sulphates and chlorides	7.60	11.52	4.00	9.97	5.23	22.04	4.56	14.88	9.26
Phosphates of lime and magnesia	0.64	48,84	38.12	7.12	6.88	37.34	21.45	18.40	24.16
Sulphate of lime (gypsum)	...	...	5.77	6.27	5.62	3.75	5.81	10.76	21.42
Carbonate of lime	47.16	...	2.11	trace	trace.	5.13	3.56	4.88	...
Oxide of iron	4.72	...	...	7.64	3.24	...	...	...	...
Insoluble siliceous matter	2.30	4.24	6.14	54.16	54.75	2.84	37.48	19.60	1.60
	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
*Capable of yielding of ammonia	0.48	3.16	2.28	2.59	2.85	4.99	2.11	5.77	9.01
Value per ton	£1 6	£6 15	£5 5	£3 0	£3 0	£7 0	£3 10	£6 12	£8 12

where proprietors had not a sufficient amount of intelligence to encourage their tenants to avail themselves of the assistance offered by the Society, much had indeed been lost "from lack of knowledge," and cargoes of stuff worth not more than 3l. per ton, had been sold for genuine guano. It was not wonderful that farmers, thus foolishly induced to purchase mixtures of earth merely perfumed with guano, should lose all confidence in foreign manures. One of the samples pointed out by Dr. Hodges was worth only 26s. per ton, and another which had been sold in the county Derry, contained 54 per cent. of earthy matters.

Reviews.

The Scottish Agriculturist's Almanack and Year Book of Progress for 1855. By J. L. Morton. Published at 9, Pitt Street, Edinburgh.

This in its business information is strictly a Scottish almanac: but as to its calendar of operations and agricultural intelligence, it is English as well as Scottish. It contains blank pages interleaved, which make it useful as a pocket memorandum book. To make it more thoroughly what for this purpose it should be, we would cancel all its poetry, and much of its conversational style, and cram what space could be allowed for the price with agricultural data, results, instructions, and information. Prolixity is unpardonable in a "Year Book of Progress" such as agriculture is now making. We extract the following condensed statement of Col. M'Douall's experiments on cattle feeding, to which reference has already been made in our columns:—

"The cattle were Galloway bullocks two and three years old, and the experiments extended over a period of a hundred days. The Bean-meal used cost per ton 7l.; oil-cake, 7l. 15s.; and Rape cake, 4l. 10s.

"Lot 1. Each animal consumed daily 95 lbs. Mangold in three feeds, 4 lbs. dry Bean-meal, and 7 lbs. of Oat straw fodder. The gain between the lean and fat value, irrespective of manure, was

* Or the 6s. 9d. per acre will buy him 3 cwt. of guano every year at 10l. per ton per acre, for his Turnips 100 acres; or three 100 acres of Wheat and 100 of Barley; or drain 62½ acres with 2-inch pipes, 2 roods apart, thus draining all his land in 7 years, or employ five men at 10s., and a strong lad all the year.

1*l.* 15*s.* 10½*d.* per head; and taking 20 tons of Mangold and 30 tons of Swedes as a fair crop, the return for roots consumed amounted to 16*l.* 13*s.* 4*d.* per acre. When not otherwise mentioned the same quantity of fodder is to be understood as having been used in the experiments.

"Lot II. Each bullock took 130 lbs. Swedes per day in three feeds, and 4 lbs. dry Bean-meal, and yielded a clear return of 1*l.* 15*s.* 9*d.*, thus leaving 18*l.* 5*s.* 7*d.* per acre for Turnips consumed.

"Lot III. By each animal 130 lbs. Swede Turnips were daily consumed, besides 3⅔ lbs. oil-cake. The clear gain per head was 1*l.* 15*s.* 11½*d.*, and the return per acre for Turnips 18*l.* 5*s.* 7*d.* The oil-cake used was therefore equivalent to 4 lbs. Bean-meal.

"Lot IV. Nothing but Mangold and straw were given, 120 lbs. of the former, and 7 lbs. of the latter being consumed by each animal. The profit per head was 2*l.* 12*s.* 10¾*d.*, but this only yielded 17*l.* 18*s.* 4*d.* per acre as the price of the Mangold.

"Lot V. Each animal used 150 lbs. Swede Turnips, and 7 lbs. Oat straw per day, and left of profit 2*l.* 11*s.* 11½*d.*, being at the rate of 20*l.* 14*s.* 0¾*d.* per acre for the Swedes.

"Lot VI. Swede Turnips were given in two feeds, 100 lbs. being consumed per day by each animal, besides 4 lbs. Bean-meal, and 3 lbs. cut straw cooked and given at noon. The returns, after counting firing and extra labour in cooking, were 2*l.* 5*s.* 5½*d.* per head, or 24*l.* 6*s.* 3*d.* per acre for the Turnips.

"Lot VII. With 80 lbs. of Mangold per day, and cooked food, same as in Lot 6, the clear profit was 1*l.* 18*s.* 9½*d.* per head, and the return for Mangold 18*l.* 17*s.* 1*d.* an acre.

"Lot VIII. Each animal took 100 lbs. Swedes per day, and a cooked feed consisting of 5 lbs. Rape-cake, 5-7ths of a lb. of Bean-meal, and 2⅓ lbs. cut straw for 82 days. Afterwards same quantity of Turnips with 4½ lbs. Rape-cake, ¾ of a lb. Bean-meal, and ¾ of a lb. oil-cake cooked with cut straw. The profit per head was 1*l.* 10*s.* 3*d.*, equal to 19*l.* 7*s.* 6*d.* an acre for Turnips.

"Lot IX. Small Mangolds, 16 tons per acre, were given at the rate of 75 lbs. to each animal per day, along with 3 lbs. cut straw, 3 lbs. Bean-meal, and 2⅓ lbs. Rape-cake cooked, and given in one feed, and gave a profit of 2*l.* 0*s.* 4½*d.* per head, and 16*l.* an acre for the roots.

"Lot X. Large Mangold, 20 tons per acre, same in other respects as No. 9, gave 1*l.* 16*s.* 2½*d.* of profit, and 18*l.* 15*s.* 11*d.* per acre for the crop consumed.

"Lot XI. Each animal consumed 100 lbs. of Swedes per day, and 3 lbs. cut straw, 3 lbs. Bean-meal, and 2⅓ lbs. Rape-cake cooked. The Turnips were grown on good land worth 25*s.* an acre, and the returns which are meant to be contrasted with those of Lot 12, were per head 2*l.* 2*s.* 1*d.*, and by the acre 23*l.* 2*s.* 6*d.*

"Lot XII. Cattle fed same as in No. 11, but with Turnips grown on land only worth 15*s.* an acre. The profit on each animal was 1*l.* 11*s.* 11½*d.*, and the feeding value of the Turnips by the acre 19*l.* 13*s.* 9*d.*

"Lot XIII. Fed with 100 lbs. of Swedes per day, and 3 lbs. cut straw, 3 lbs. Bean-meal, and 2⅓ lbs. Rape-cake cooked. Instead of straw, 7 lbs. hay cut before flowering were allowed. The gain per head was 1*l.* 14*s.* 1*d.*, while 19*l.* 8*s.* 10½*d.* were left for each acre of Turnips used.

"Lot XIV. No difference in treatment, only the hay used had been cut when *in flower*. Returns 1*l.* 8*s.* 10*d.* per head, and for Turnips 18*l.* 13*s.* 9*d.* per acre.

"Lot XV. Fed as in Lot 13, but hay used not cut till ripe. Profit on feeding 1*l.* 8*s.* 0½*d.*, return for Turnips 17*l.* 6*s.* 7*d.* per acre.

"Lot XVI. Each animal fed as in Lot 13, but got Oat straw instead of hay, and left 2*l.* 1*s.* 4½*d.* of profit, and 22*l.* 19*s.* 7*d.* per acre for the Turnips.

"Lot XVII. Long Red Mangold 70 lbs. per day, cooked feed same as in No. 13, and 7 lbs. Oat straw; left 1*l.* 14*s.* 5*d.* of profit, and for the acre of Mangold 18*l.* 17*s.* 9½*d.*

"Lot XVIII. Fed as in No. 17, but with Yellow Globe instead of Long Red Mangold. Each bullock left 1*l.* 16*s.* 2*d.* of profit, and the Mangold was worth 17*l.* 10*s.* an acre.

"Lot XIX. A cooked feed same as in last lot, but 84 lbs. white Carrots were given instead of Mangold. The returns per head were 1*l.* 12*s.* 5*d.*, and the roots by the acre 16*l.* 10*s.* 6½*d.*

"Lot XX. Cattle in loose boxes fed on Turnips 150 lbs. per day, and 7 lbs. Oat straw, left per head 2*l.* 19*s.* 11*d.*, and per acre for Turnips used 20*l.* 18*s.* 9*d.*

"Lot XXI. Fed in stalls instead of loose boxes with same food as in No. 20; yielded 2*l.* 16*s.* 8*d.* per head, and 20*l.* 6*s.* 3*d.* per acre for Turnips.

"The practical conclusions to be drawn from these important experiments seem to be the following:—

"1st. Swedish Turnips and Mangold can be most profitably used along with a cooked feed of cut straw and Bean-meal, each acre of roots being sufficient to keep one additional animal if so consumed.

"2d. Bean-meal at the prices stated is of greater fattening value than Rape-cake, and 4 lbs. of raw Bean-meal is equal in feeding value to 20 lbs. of Swede Turnips, and if cooked becomes equal to 50 lbs.

"3d. Oil-cake at 7*l.* 15*s.*, and Bean-meal at 7*l.* per ton, are about equal in feeding value.

"4th. Turnips grown on good land, weight for weight, are of greater value than those grown on inferior soils.

"4th. Good Oat straw is of as great feeding value as the best hay, weight for weight, and is superior to second or third-rate hay.

"6th. Red Mangold is of fully greater feeding value than yellow, and both are better than white Carrots.

"7th. Where straw is abundant loose boxes are to be preferred to stalls for feeding stock, and both are far superior, as proved by former experiments, to open courts.

"The cooked food was prepared as under:—The water in a boiler being brought to the boiling point, 4 lbs. of Bean-meal were stirred in for each animal. To this 3 lbs. of cut straw chaff per head were added (5 lbs. are now given), and on being well mingled together the fire was withdrawn, the mixture covered up for a few hours, and served out at mid-day."

Calendar of Operations.

NOVEMBER.

Berwickshire Merse Farm, *Nov.* 20.—The protracted dry weather of this autumn has been very favourable to Wheat sowing on fallows and Bean stubbles; especially as the latter required a little cleaning, the early and superior claims of the Turnip plants having somewhat curtailed their due amount of hand-hoeing. Showers, though neither heavy nor frequent, along with fresh weather, have produced a good braird, which could not have been so speedily obtained in the over-dry state of the soil previous to the middle of October. Turnips, with rare exceptions, are now ascertained to be below an average crop, and all their bright promise has been blasted by mildew, save on some strong clays where the drought had less effect. Prices consequently range high for the time of year, viz., 4*d.* for hogs, and 6*d.* for old sheep per week. Thus there is need to economise the crop as much as possible, and it is only now that some breaks have been got cleared for Wheat sowing. But the weather has been soft for a week past, and we cannot expect the land to work so favourably as during last month. Thrashing has proceeded to some extent now, except where water powers are ill supplied; and the universal result is far from realising the extravagant statements current of a double crop, or even a half more than usual. The facts, as ascertained by the late statistical inquiry, seem to be that Wheat and Barley are somewhat above an average, and Oats quite as much below it, that Pease are a small crop, and that Beans alone have equalled the very moderate expectations formed from their appearance during summer. All kinds of fodder, except Oat-straw, are abundant enough. On the 26th October the frost was pretty hard, but otherwise the weather has been uniformly open. *J. T.*

Lammermuir Sheep Farm, *Nov.* 18.—Hill sheep are this year in first-rate condition to face the winter. The pastures have this summer been excellent, and the long and open back-end has put the stock into higher condition than they have been for several years. A considerable number of ewes that have brought lambs this season are now pretty fat, and this is very rarely the case on a common and mixed hill range. Bathing has this year been accomplished in most favourable weather. The usual time for doing this is in the end of October or beginning of November; October is preferable, as there is then the best chance of good weather, and it is essential that the operation should be got over when the weather is dry. Cheviot hogs are now getting Turnips, the crop of which seems rather small; the bulbs have, however, made marked progress during this month and are still swelling. Hogs do much better when they are allowed a run off during the day, or part of it, into a Grass field, or better still on to Heather. Sheep relish much a variety of food, and it is especially healthy for hogs. We have observed an inferior lot make great progress and winter without much loss when allowed this liberty, when to have confined them close on Turnips would have killed many of the weakly ones. This, moreover, seems quite a natural system of wintering hogs, for when they are set at liberty they are seen to spread away diligently over their range, and in a few hours return to the Turnip break of their own accord and begin to eat with great relish. It is also observable that when they have liberty of going off and on to Turnips and Grass land at their own pleasure, that nearly as many are on the Grass as on the Turnips. It is of great consequence, however, that the land of which they have the range should be dry and sound pasture. We have experienced the bad results of letting hogs regularly off their Turnips over undrained meadow land, and never succeeded better in wintering Cheviot hogs than when along with Turnips they had the range of a hard, sound, heathery hill. It is desirable that hogs should learn to eat Turnips well before hard weather sets in. Experience has shown that ewe hogs are much more hardy and vigorous, and can be wintered on far fewer Turnips, or as is pretty generally the case, without Turnips at all, than wedder hogs. It is necessary, however, to draught out the weakly ones at this season, and give them the Turnip wintering of the wedder hogs. *J. B*

West Sussex, *Nov.* 22.—We may now be said to have got to the end of Wheat sowing, and never has there been a finer season. The land has worked light, and the labour has not been nearly so much as usual. The summer was far too dry for some things, but the fine showers that we have had from time to time during the last two months have brought the land into the best possible state for working; and now there is no time to lose in getting that intended for root crops turned up as quickly as can be done, as the way it now turns up will leave it so open that the frost will find its way through it well; but there has been a great extent of it sown with Rye and Tares for spring feed, the Turnips having turned out so far below an average crop; but even they have made up very much in the last two months. The grub got at them, and hardly one escaped without more or less damage, but when the land got a little moist, they left them, and since then they have recovered, and Swedes, though small, are of good quality; but Turnips have not done so well, especially those that were sown very early. The dry weather brought them to maturity too quickly, and they were past remedy when the rain came, and many of them have rooted. But the good appearance of Tares and Rye, and also Trifolium, will more than make up for this drawback, so that we are not likely to be worse off than usual. Hay is scarce, and will perhaps be dear, but all straw is healthy, and we must make that of the Oats and Barley to take its place partly. Mangold Wurzel is mostly all got under cover; it has also been a light crop. The cold checked it when coming up, then the dry weather came upon it before it had time to get to any size, but it is good so far as it goes; and here we must say a few words in its behalf, as a crop on land too heavy for Turnips. It seems the only root that we can have for this purpose, as it matters little how heavy the land be: if it is laid up in raised drills, the dung buried right below the seed, in ordinary years there is no fear of a crop. We like the raised drills best for it, because that allows the dung to be put where it is wanted—right below the plant; and because the earth being raised higher lies lighter, and every time the horse or hand hoe is used, the earth crumbles down, thus leaving the plant more room to spread itself. But one more advantage in heavy or wet land is that we can take it off in time to get in Wheat, and thus most likely be able to work it at a time when it is drier than it will be in early spring; but if unable to sow Wheat in it, we can leave it till the spring, and sow Oats early, or Barley at a later period, so that by no other method that I know of can heavy land be turned to better account; and where part of a farm is heavy, it ought to be set apart for 1, Wheat; 2, Mangold Wurzel; 3, Wheat, Oats, or Barley, with seeds sown in spring, and 4, Clover mown. The Wheat after Clover will require dung, and so will the Mangold Wurzel, as everything is carried off. Respecting their running to seed, that has been rather common this year—the dryness of the weather has no doubt assisted it—we have had but few of the Red Globe that have done so. The Orange Globe were worst, but not so bad as some say they have had them, certainly not one per cent.; but even then the field presented a rough appearance, and a passer by might have put it at much more, as perhaps has been done in similar cases. But why is it that they are more liable to run up now than they used to be? I am disposed to think that it is because they are more acclimatised, and so should not be sown quite so early if we wish to prevent it, but, as I said, there are so few that do run that we ought not to put off sowing on that account. The Yellow Globe have been longest cultivated, and therefore may be most likely to seed. *G. S.*

Notices to Correspondents.

Barley: *G B.* It is often given to fatting sheep. Peas are better. Perhaps some of our correspondents will state their experience. A bushel a day among a hundred will be sufficient to begin with.

Dr. Newington's Dibble. *An Old Sub.* We do not know who now sells it. Probably it may be shewn next week at Baker Street.

Farm Accounts: *Danum.* If you have access to the "Cyclopædia of Agriculture" published by Blackie read the article on that subject, and tell us your difficulty after doing so. The best plan of managing the valuation of tenant right is to have in your ledger several accounts opened to be closed at the several dates named, in order to which you must, at the close of each year, take credit for a portion only of what appears on the Dr. side—a certain fraction (whose denominator is the number of years the account has yet to run), being each year a burden on the profits of that year. And then if you have by extra manuring or otherwise invested a sum not fairly chargeable upon the produce of the current year, it must be placed on the Dr. side of that particular tenant-right account in your ledger which closes at the date where this particular improvement is supposed to become exhausted. If this is not intelligible we will explain further; but read that article in the first place.—As to poultry, Mr. Baily's book will answer your purpose.

Gorse: *D N M* asks for a method of destroying Gorse out of a pasture without pulling it up. "It is young as it is frequently mown, but it has a strong root-hold." It is plain that this root-hold must be destroyed, and how that can be done unless by grubbing up the plants we do not know.

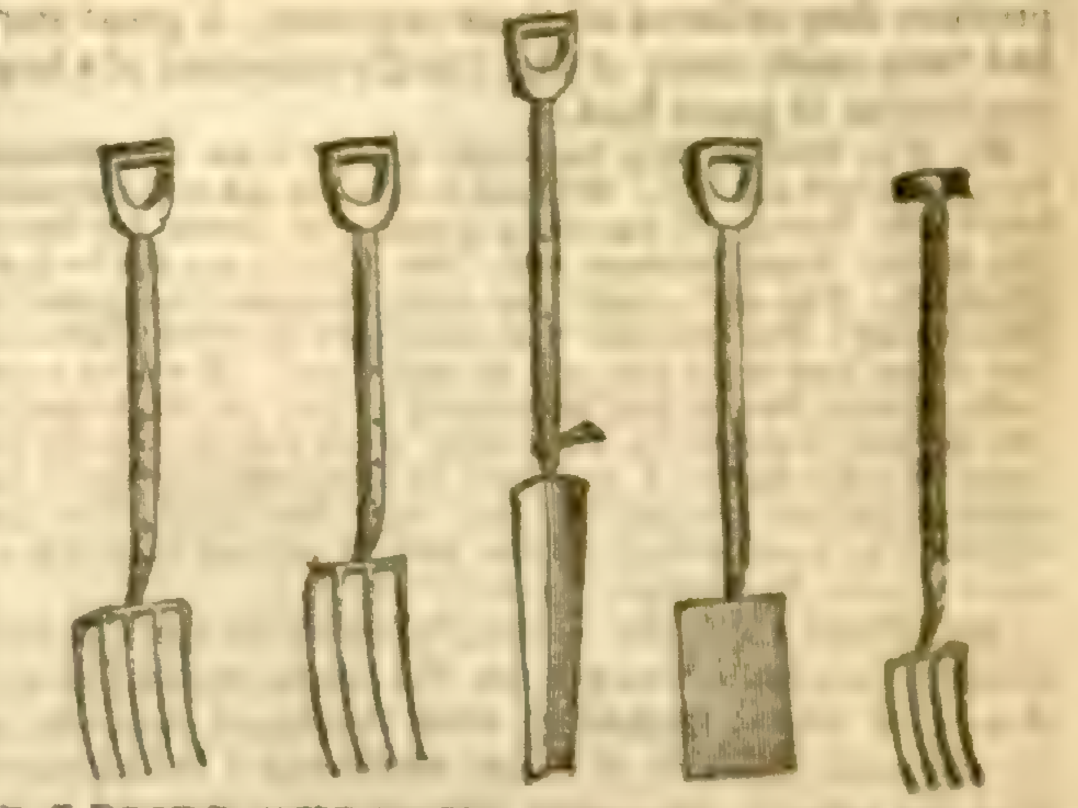
Liquid Manure: *A Clergyman's Wife.* It may be applied to all sorts of garden vegetables and fruit trees. The mere drainings of a farm-yard are not likely to be too strong, and you may apply just as much as you can obtain, and as strong as you can get it.

Sewage Manure: *Nemo.* The particulars of Mr. Brooks' offer were given in our last.

WEEDS ON WALKS.

MR. FLEMING'S WEEDING or SALTING MACHINE for GRAVEL WALKS, COURT YARDS, &c., manufactured and sold by Alexander Shanks & Son, Arbroath, Forfarshire, from whom particulars with prices may be had.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.



MESSRS. BURGESS and KEY, as Mr. Parkes' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.

108, Newgate Street, and 52, Little Britain, London.

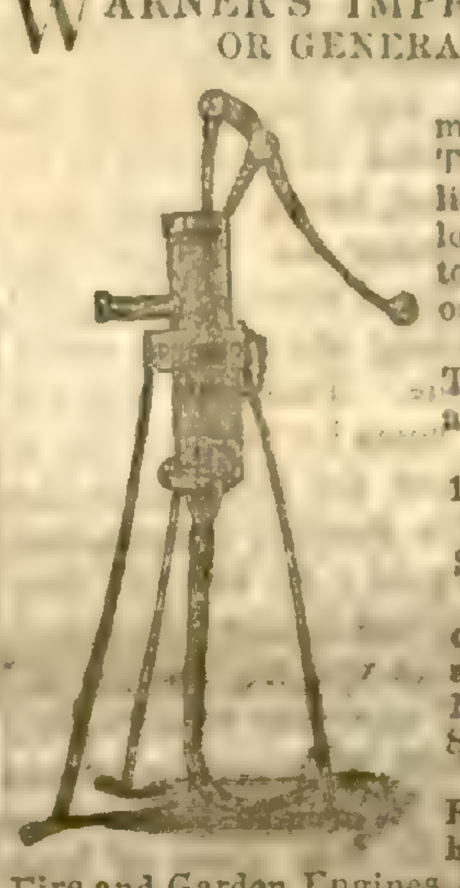
WEIR'S DRAINING LEVEL.

Price 30s.

These Draining Levels have lately been greatly improved; they have stood the test of five years' use, during which upwards of 1000 of them have been sold. They are so simple that any labourer who can read can use them. They require no graduated staff, the index telling at once the rise and fall in inches without any computation.

Edward Weir, Agricultural Engineer, 16, Bath Place, New Road, (6 Doors West of the Hampstead Road), Removed from Oxford Street.

WARNER'S IMPROVED LIQUID MANURE, OR GENERAL PORTABLE PUMP.



The valve is a ball of imperishable material, and cannot clog in action. The barrel is of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure. The legs will fold together, and the whole may be carried on shoulder to any pond or tank required.

Price of 4½ in. Pump, with legs, 3*l.* 3*s.* The barrel is 27½ in. long, and the legs are 5 ft. high.

1½ inch Gutta Percha Suction Pipe, 1*s.* 6*d.* per foot.

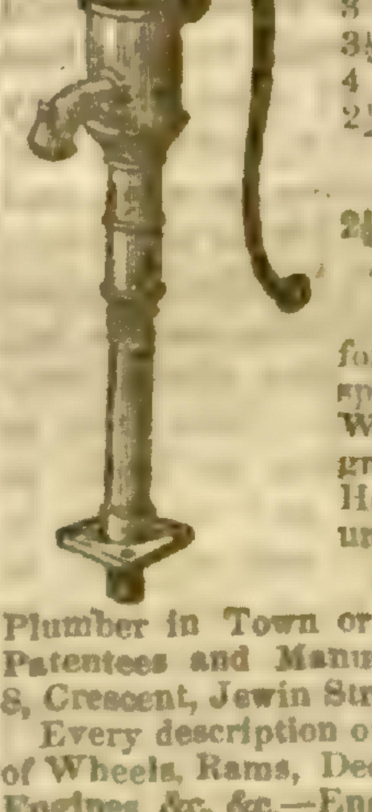
1½ inch Flexible Rubber and Canvas Suction Pipe, 3*s.* 6*d.* per foot.

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, John Warner & Sons, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water, by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c.—Engravings sent on application.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS, for the use of Farms, Cottages, Manure Tanks, and Wells of a depth not exceeding 30 feet.



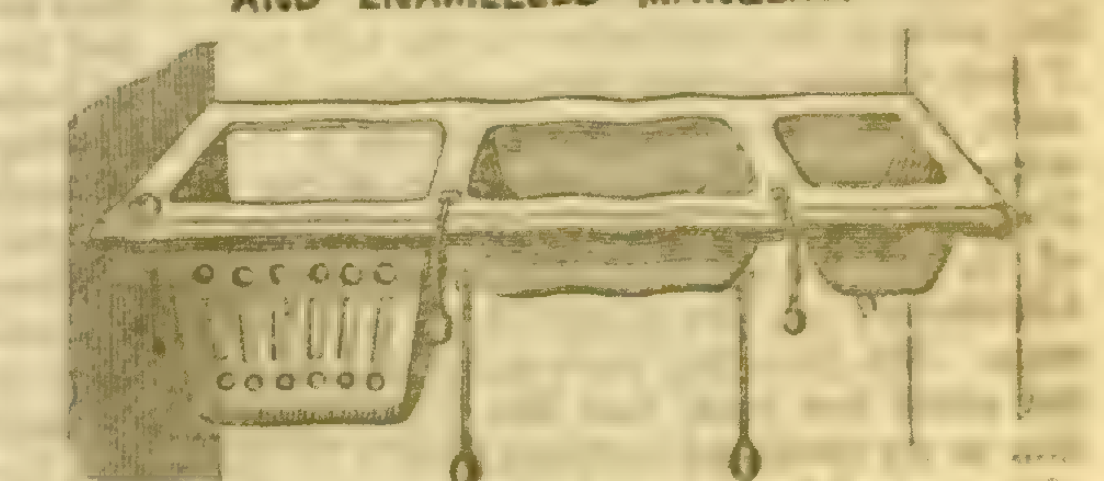
Diameter of Barrel	Length of Barrel under nose.		£ s. d.
2½ in.	short 1 ft. 7 in.	Fitted for lead, gutta percha, or cast iron flanged pipe, as required.	1 12 0
2½ „	long 3 „ 3 „		1 15 0
3 „	ditto 3 „ 6 „		2 12 0
3½ „	ditto 3 „ 6 „		2 18 0
4 „	ditto 3 „ 6 „		3 5 0
2½ „	short, with 15 feet of Lead Pipe attached, and Bolts and Nuts ready for fixing		2 12 0
2½ in. long	ditto	ditto ditto	2 15 0

The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or Country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER and SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water, by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

BARTON'S PATENT SAFETY STABLE FITTINGS, AND ENAMELLED MANGERS.



THE only Patented invention of this description constructed so as to prevent considerable waste of Hay and Corn, together with all the newest improvements.

STABLE FITTINGS, FORTY SHILLINGS PER SET, to fill up the whole width of Stalls, and can be had enamelled or galvanised. Every description of Mangers, Racks, and Stable Furniture in stock; Iron Hurdles, Gates, Fencing, &c.

Manufacturer of Kite's Patent Noiseless Cast-Iron Smoke-Curing Chimney Caps (200 on Buckingham Palace), price 25s. each. Cattle Show, Stand Nos. 275, 276, and 277.—James Barton, Iron Founder, &c., 370, Oxford Street, a few doors east of the Pantheon.

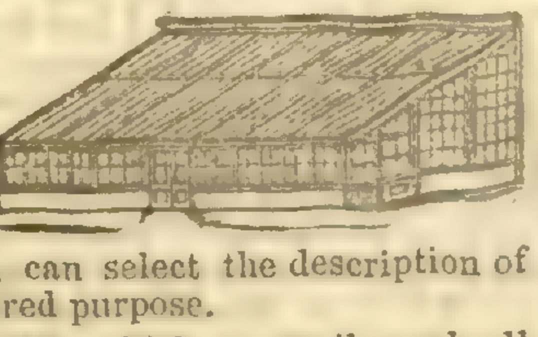
GREEN AND HOT-HOUSES made by machinery, at J. LEWIS'S Horticultural Works, Stamford Hill, Middlesex. Sent to all parts of the United Kingdom. These buildings are warranted of the best materials, and put together in a superior manner. Being manufactured by steam-power, they are considered the cheapest and best made in England. The Trade and Merchants supplied at wholesale prices. List of Prices by enclosing two postage stamps.

HORTICULTURE IN ALL ITS BRANCHES.

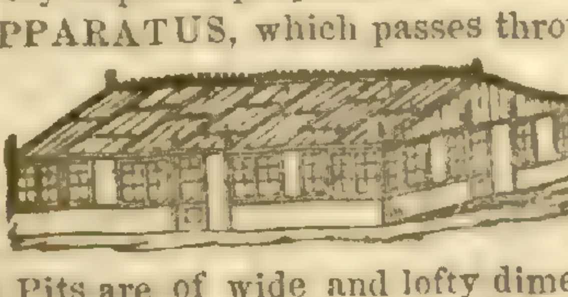
JOHN WEEKS & Co., King's Road, Chelsea,

HOTHOUSE BUILDERS.

THE NOBILITY and GENTRY about to erect Horticultural Buildings, or fix Hot-water Apparatus, will find at our Horticultural Establishment and Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.



The HOT-WATER APPARATUS, which passes through all the Houses and Pits, affording both top and bottom heat, is in constant operation and particularly worthy of attention.



Many of the Houses and Pits are of wide and lofty dimensions, and together equal in length 1000 feet. They are all effectually heated by *one boiler*, which, during the severe winter months does not cost in labour and fuel more than 3s. 8d. per day, and the apparatus is so arranged that each House or Pit may be heated separately and to the required temperature. The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application to John Weeks & Co., King's Road, Chelsea, London.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement, J. B. White & Brothers, Milbank Street, Westminster.

TO FLORISTS AND OTHERS.

J. JONES, Iron Merchant, has always a great variety of CONICAL and SADDLE BOILERS in STOCK; also Fire and Furnace Bars, Ornamental and Plain Supply Cisterns, Double Doors and Frames, Furnace Grates, Soot Doors, Hot Water Pipes, Elbows, Tees, Syphons, Throttle Valves, Stop Cocks, Flange and Socket Elbows, &c.; also Trough Pipes. Drawings and prices of the above, on application to J. Jones, Iron Bridge Wharf, No. 6, Bankside, London, near the Southwark Iron Bridge.

STEPHENSON and PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

THE CRYSTAL PALACE FLOWER BASKETS, as exhibited in Nave and Transepts of the Crystal Palace, Sydenham, made to the original and other new elegant designs, by W. RICHARDS, at the Wire Works, 370, Oxford Street, nearly opposite the Princess's Theatre. Conservatories and Aviaries fitted up. Wire work in all its varieties. Game and garden fence—parrot cages and all others. Choice birds kept on sale. Window Blinds of every possible description, of the very best materials and workmanship.

N.B. An allowance to nurserymen and the trade.

HOSE PIPING.—Great Reduction in Price.

PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense pressure, and much more than leather, vulcanised rubber, or any other hose, and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented inventions, the cost of manufacturing it is now reduced at least 60 per cent., which advantage is offered to the public.

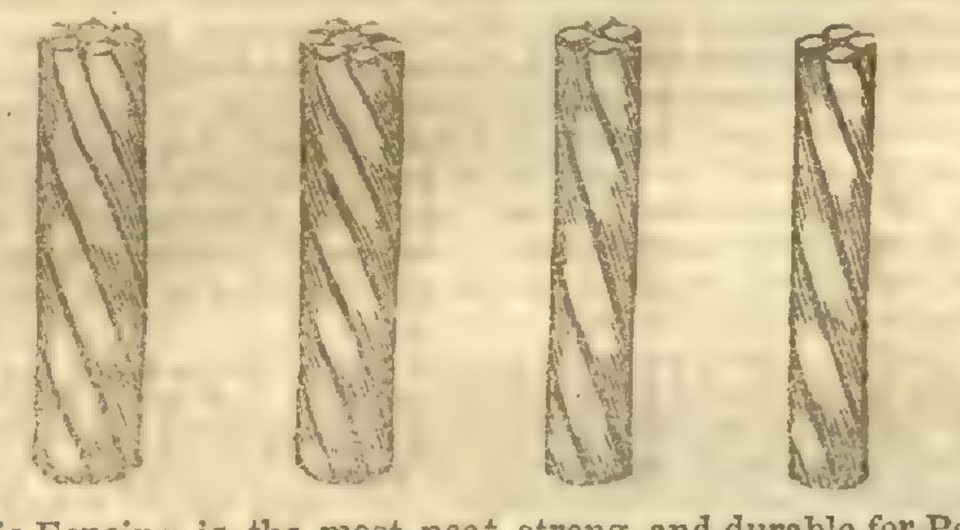
BURGESS and KEY, 103, Newgate Street, and 52, Little Britain, who on application will forward wholesale and retail prices.

TO AMATEUR GARDENERS, LOCAL BOARDS OF HEALTH, & SANITARY WORKS.

PATENT SLUICE COCKS, Gutta Percha, Combinated ditto, Patent Flexible India Rubber Tubing, and every other Hose for Watering Gardens. The Hydraulic Ram, Fire, Garden, and every other kind of Pump, Hydrants, High Pressure Cocks, and all other articles to be had, Wholesale and Retail, of FREEMAN ROE, Hydraulic Engineer, 70, Strand, and Bridgefield, Wandsworth.

H. J. MORTON and Co., Galvanised Iron Roofing Works, 2, Basinghall Buildings, Leeds.

PATENT WIRE STRAND FENCING FOR PARKS, &c.



This Fencing is the most neat, strong, and durable for Parks and Agricultural purposes in use. It cannot be bent or put out of form by any amount of trespassing upon or over. Upwards of 700 miles of this Fence have been fixed by us in the last few years. Apply as above.

IRON HURDLES and all kinds of WIRE FENCING and Ornamental Wire Work.

CHEAP WIRE GAME & POULTRY NETTING 5d. per running yard. GALVANISED DITTO, 7d. per running yard, 2 feet wide.

	Galvanised.	Not Galvanised
24 in. wide, 2 in. mesh,	7d. per yard,	5d. per yard
30 in. " 2 in. "	9d. "	6½d. "
36 in. " 2 in. "	10½d. "	7½d. "
48 in. " 2 in. "	1s. 2d. "	10d. "

Sparrow Proof Netting, Galvanised, 3d. per square foot, made to any size for the same proportionate price. This article was shown at the Great Exhibition, where it was so much admired for its light and durable appearance, and acknowledged to be the cheapest and best article of the kind ever offered. Extra strong Wire Sheep Netting, 3 feet high, 1s. 6d. and 2s. 3d. per yard. Also every description of Flower Trainers, Dahlia Rods, Garden Arches, Bordering, Flower Stands, Tying Wire, Trellis Work, Invisible Wire Fencing, Hurdles, and every description of Wire Work for Horticultural purposes.—Illustrated Catalogues of Patterns forwarded, post free, on application to T. H. Fox, City of London Wire Work and Iron Fence Manufactory, 44, Skinner Street, and 6 and 8, Snow Hill, London.

CHEAP WIRE GAME AND POULTRY NETTING.

	Plain.	Galvanised.
24 inches wide, 2-inch mesh,	3d. to 4d. per yard.	6d. per yard.
36 inches wide, 2-inch mesh,	6d. per yard.	9d. "
48 inches wide, 2-inch mesh,	9d. "	1s. 0d. "

Sparrow Proof Netting, galvanised, 3d. per square foot, made to any size. This article is shown at the Sydenham Exhibition, where it is much admired.

W. CULLINGFORD, 1, Edmund Terrace, Ball's Pond Road, near the Gate, Kingsland, London.

POULTRY, RABBIT, SHEEP, AND CAT FENCING. Hare or Rabbit Nets, on Cords, for Covert Shooting, 12 mesh over, 4 feet wide, 1½d. per yard; 18 mesh over, 6 feet wide, 2½d. per yard; 24 mesh over, 8 feet, 3d. per yard; each Edge Corded, ½d. per yard extra: extra Stout ditto, 18 mesh wide, 4d. per yard, suitable for Poultry Fencing. Square Mesh Cricketing Net, fix its full width and length, made of stout cord, 3d. to 4d. per square yard; this is the best article made for fencing against fowls, cats, &c., at W. Cullingford's, No. 1, Edmund Terrace, Ball's Pond Road, near Kingsland Gate, London.

NETTING FOR SHEEPFOLDS, made of Cocoa-nut Fibre; a material known to possess the most extraordinary durability when exposed to the alternations of weather. It will wear out several sets of tarred hemp netting, and is so light that a herdsman may with ease carry 200 yards of it. Price 4d. and 6d. per yard. Sold in Nets of 50 and 100 yards long, 48 inches high, by the Manufacturer, W. Cullingford, 1, Edmund Terrace, Ball's Pond Road, near Kingsland Gate, London.

BIRD NETS, BAT-FOLDING NETS, for Bird Catching, 5s. each; with Bamboo Poles complete, 10s.; extra large, 15s. complete. Clap Nets for Bird Catching, 12 yards long, 5 feet deep, 15s.; with staffs, pull-line, and stop-cord, 1l. Lark Nets, made square mesh, any size required, 3d. per square yard. A Partridge Trammel, 30 yards long, 5 yards wide, made square mesh, 1l. 11s.; or any less size, 2d. per square yard.

W. Cullingford, 1, Edmund Terrace, Ball's Pond Road, near Kingsland Gate, London.

GARDEN NETS, FISHING NETS, SHEEP NETS, and RABBIT NETS (made by hand, as machine-made knots slip), supplied at very low terms. Samples sent free.

W. Cullingford, 1, Edmund Terrace, Ball's Pond Road, Kingsland, near the Gate, London.

Six Tents to sell cheap.

The above are exhibited at the Smithfield Cattle Show.

GARDEN NETS, FISHING NETS, SHEEP NETS, and RABBIT NETS, made by Machinery, and supplied at very low terms. Samples sent free.—R. Richardson, 21, Tonbridge Place, New Road, near King's Cross, London.

WIRE FENCING, 6¾d. per square yard, in various widths, from 6 feet to 15 inches, mesh less than 2 inches. An effectual fence against Hares, Rabbits, Sheep, Deer, &c., and for the enclosure of Poultry, Pheasants, &c. 4-inch mesh, 4d. per square yard.

R. Richardson, 21, Tonbridge Place, New Road, London.

SUBSTITUTE FOR GARDEN MATS.—Waxed Sheeting nearly 2 yards wide, 1s. per yard run—admits light and excludes cold; thick Canvas Tarpauling, 1s. per square yard; thick Canvas Waxed Sheeting, 1s. per square yard, may be had in various widths. These Canvases are excellent for roofing Sheds and Outhouses, as they are quite waterproof.—R. Richardson, 21, Tonbridge Place, Judd Street, New Road, London. N.B. Waterproof Capes, large size, 3s.; Police Capes, 1s. and 24s. per dozen; Driving Aprons, Capes, and Coats of India Rubber, Horses' Loin Cloths, Waggon and Cart Covers, Sacks, &c.

B. SAMUELSON (Late James Gardner),

BRITANNIA WORKS, BANBURY,

AND AT

IMPLEMENT STANDS, 57, 58, 59, 60, 61, 62, and 63, SMITHFIELD CATTLE SHOW.

SAMUELSON'S PATENT FORKING AND DIGGING MACHINE

Has been awarded the Royal Agricultural and numerous County Prizes.

SAMUELSON'S GARDNER'S TURNIP CUTTERS,

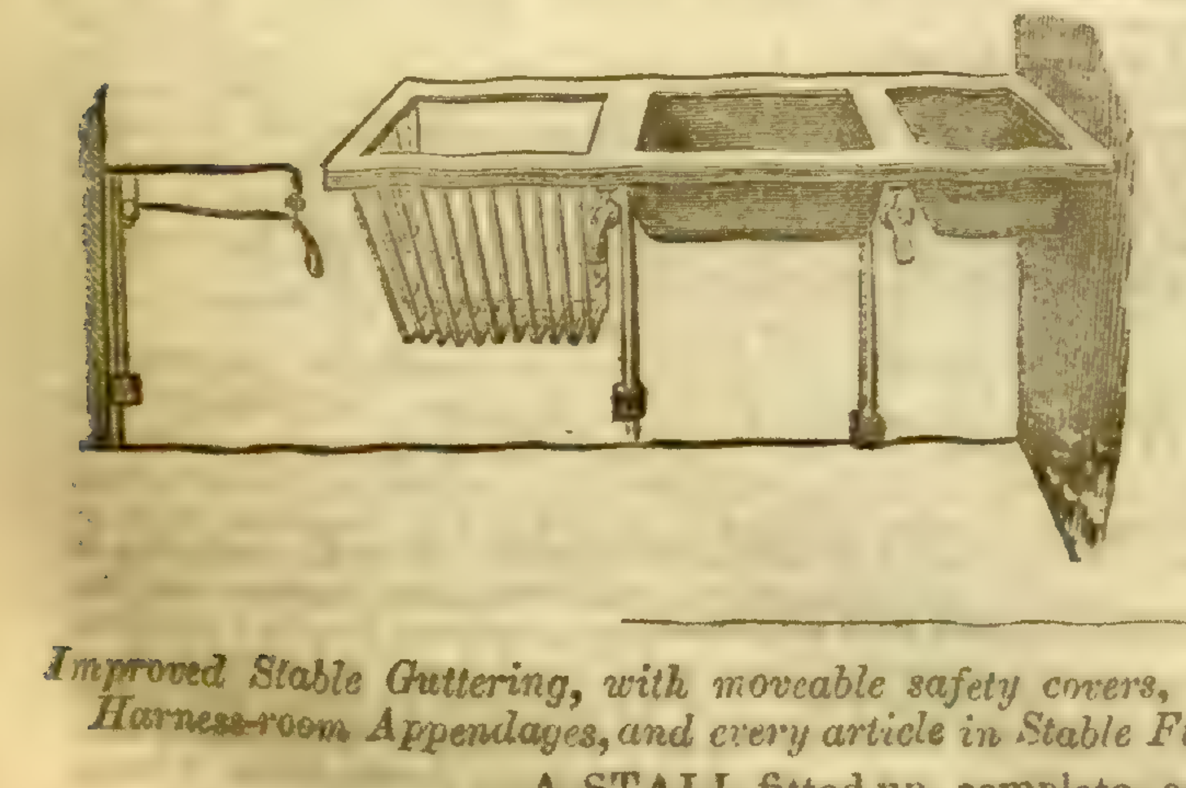
With new PATENT DIRT REAPING PLATE, received the First Prize of the Royal Agricultural Society at Lincoln, and at all the Royal Agricultural Society's Shows from 1844.

- Economical Chaff Cutters
- Corn Bruising Mills
- Oilcake Breakers
- McCormick's Reaping Machines
- Registered Budding's Lawn Mowers
- Patent American and Atmospheric Churns
- Patent Force Pumps for Farm Use
- Field Rollers, &c. &c. &c.

Illustrated Catalogues and other particulars may be had of any Ironmonger or respectable Implement Dealer in town or country; at Stands 57 to 63, Smithfield Cattle Show, or free by post of

B. SAMUELSON, Britannia Works (late Gardner's), Banbury.

COTTAM'S NEW PATENT FOR STABLE REQUISITES.



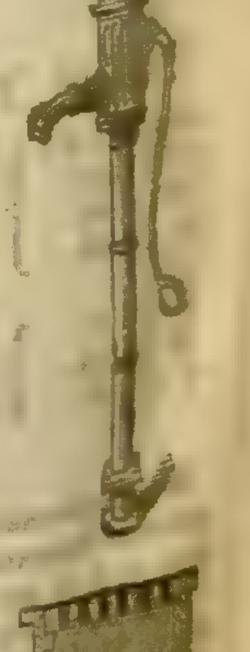
COTTAM and HALLEN, the original projectors of the above arrangement of MANGER, RACK, and WATER-TROUGH, as one Fixture, which obtained the Great Exhibition Prize Medal, and universally approved of, have added all the latest improvements to their invention (secured by patent), which includes an entirely new method of attaching the halter, ball, and rein, giving to the horse greater freedom, and being noiseless in their operation, add much to its comfort whilst feeding and convenience when at rest.

COTTAM'S ENAMELLED MANGERS

are constructed in the best possible manner, both as to form and utility, are cleanly in appearance, durable and impervious to infection; manufactured PLAIN, GALVANISED, or ENAMELLED.

IMPROVED PUMPS,

Of the best Workmanship and Warranted.



The VALVES and SUCKERS of these Pumps are constructed upon an entirely new and SIMPLE principle; they are not likely to get out of order; should they do so, can easily be repaired, as the Pump is so contrived that the valves can readily be got at.

An Improved CAST IRON TRAP, strongly recommended by the Sanitary Commissioners, and suitable for Sugar Bakers, Slaughter Houses, &c. &c. It is so formed that the Trap-plate will pass any matter the top grating will let through, and therefore is not liable to stoppages; and well adapted to Stables and to Stable-yards, for saving the best part of Liquid Manure.

Improved Stable Guttering, with moveable safety covers, Sanitary Traps, Stable Pumps, Double Corner Mangers, Harness-room Appendages, and every article in Stable Furniture. Chaff Cutters and Oat Bruisers, kept on show.

A STALL fitted up, complete, exhibited at the Crystal Palace, Sydenham, Stand No. 19, Agricultural Department; and at

COTTAM & HALLEN'S WORKS, 2, Winsley Street, Oxford Street, London.

WARMING and VENTILATING.—Descriptive Catalogues and Estimates on application.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

HETLEY AND CO. are supplying 16-oz. Sheet Glass of British Manufacture, packed in boxes, containing 100 square feet each, at the following REDUCED PRICES for cash. A reduction made on 1000 feet.

Sizes.—Inches.	Inches.	Per foot.	Per 100 feet.
	Under 6 by 4	at 1½d. is	£0 12 6
From 6 by 4	„ 7 „ 5	„ 2d. „	0 16 8
7 „ 5	„ 8 „ 6	„ 2¼d. „	0 18 9
8 „ 6	„ 10 „ 8	„ 2½d. „	1 0 10
10 „ 8	„ 12 „ 9	„ 2¾d. „	1 2 11

Larger sizes, not exceeding 40 inches long.
16 oz. from 3d. to 3½d. per square foot, according to size.
21 oz. „ 3½d. to 5d. „ „ „
26 oz. „ 3½d. to 7½d. „ „ „

PATENT ROUGH PLATE, THICK CROWN GLASS, and PATENT PLATE GLASS for Horticultural purposes, at reduced prices, by the 100 square feet.

GLASS TILES AND SLATES made to any size or pattern, either in sheet or Rough Plate Glass.

Propagating Glasses, Beehive Glasses, Cucumber Tubes, Glass Milk Pans, Glass Water Pipes, and various other articles not hitherto manufactured in Glass.

PATENT PLATE GLASS.—The present extremely moderate price of this superior article should cause it to supersede all other inferior window glass in a gentleman's residence. No alteration connected with the sash is required.

GLASS SHADES, as ornamental to, and for the preservation of every description of goods susceptible of injury by exposure. Prices, since the removal of the excise duty, reduced one-half. List of Prices and Estimates forwarded on application to JAMES HETLEY & Co., 35, Soho Square, London.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

JAMES PHILLIPS AND Co. have the pleasure to hand their present prices of Glass for Cash:—

	SHEET SQUARES. In Boxes of 100 feet.	CROWN SQUARES. In Boxes of 100 feet.
Under 6 by 4	£0 12s. 6d. ...	8s 6d.
6 by 4, and 6½ by 4½	0 13 0 ...	12 6
7 „ 5, — 7½ „ 5½ / 8 „ 6, — 8½ „ 6½	0 15 0 ...	14 0
9 „ 7, — 10 „ 8, 12 by 9, 12 by 10, 14 by 10	1 0 0	

Larger Sizes, not exceeding 40 inches long.
16 oz. from 3d. to 3½d. per square foot, according to size.
21 oz. „ 4½d. to 5d. „ „ „
26 oz. „ 6d. to 7½d. „ „ „

SIXTEEN-OUNCE SHEET GLASS OF ENGLISH MANUFACTURE FOR ORCHARD HOUSES, THE SAME QUALITY AS WE SUPPLY TO Mr. RIVERS, and of various dimensions, always on hand,

at 20s. per 100 feet.

Double-crown Glass of various dimensions in 100 feet boxes

GLASS HYACINTH AND FLOWER DISHES.

12 inches diameter ... ... 2s. 6d.
9 „ ... ... 1s. 6d.
6 „ ... ... 1s. 0d.

Hyacinth Dishes are a new article, intended to contain a number of roots bedded in sand and covered with moss, instead of the common Hyacinth Glass.

HYACINTH GLASSES.

Common shape ... 4d. each ... 3s. 6d. per doz.
Improved ... ... 9d. „ ... 7s. 6d. „

CROCUS GLASSES.

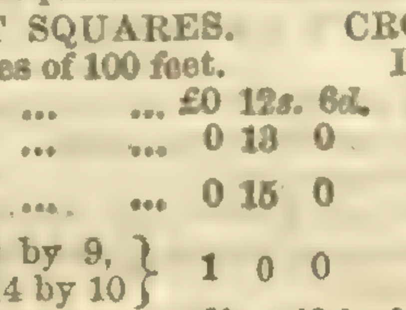
Improved shape ... ... 2s. 6d. per doz.
Crocus Dishes ... ... 6s. „

London Agents for the Sale of HARTLEY'S PATENT ROUGH PLATE GLASS.

Glass Tiles, ¼ of an inch thick, packed in cases, containing 50, at 1l. 17s. 6d. per case. Packages 2s. each extra, but allowed for when returned.

Glass Milk Pans, 21s. per dozen; Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoys' Milk Syphons, Wasp Traps; Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the trade.

Horticultural Glass Warehouse, 116, Bishopsgate Street Without, London.

BY ROYAL  LETTERS PATENT.

THE COSMOPOLITAN GLASS COMPANY, 296, Oxford Street, London.—The Managers beg to inform the Nobility and Gentry, Farmers, Gardeners, &c., that their new List of Prices may be had free on application at the Company's Depôt.

HARTLEY'S PATENT ROUGH PLATE, for Roofing Conservatories, Halls, and Public Buildings.

PLATE, CROWN, and SHEET WINDOW GLASS.

Coloured and Ornamental Glass of every description.

Glass Milk Pans, Pails, Tests, and Measures; Cream Pots and Syphons; Churns, Butter Tests and Slabs; Tiles and Slates; Bee Hives, &c.

Moore's Patent Ventilator and Lockhead's Patent Perforated Glass, for Dairies and Greenhouses.

Aquavivariums, Fern Shades, Propagating Glasses, Fruit Protectors, Preserve Jars, Cucumber Tubes, Hand Lights, Flower Vases, Labels, &c., and all kinds of Agricultural, Horticultural, Architectural, Domestic, Scientific, and Ornamental Glass, British and Foreign, at the lowest prices.

THE MOST APPROVED STOVES.—The demand for the CHUNK and VESTA STOVES (separately patented), still continuing unabated, and numbers having been sold last season (in all upwards of 14,000) through the patronage of families who have had experience of their pre-eminently useful qualities. WILLIAM S. BURTON has renewed confidence in recommending them for their cleanliness, economy, and safety. During the last 13 years they have been found sources of great comfort in the bed-room of the invalid, affording an uniform temperature throughout the day and night, with one supply of fuel, without attention. Particulars sent postage free. Chunk, [illegible] to [illegible]; Vesta, from 35s.; Stoves for Warehouses, &c., from 1[illegible]s. each. [illegible]'s Patent Fuel, 1s. 6d. per sealed bag.

WILLIAM S. BURTON has TEN LARGE SHOW ROOMS (all communicating), exclusive of the shop, devoted solely to the show of GENERAL FURNISHING IRONMONGERY (including Cutlery, Nickel Silver, Plated, and Japanned Wares), Iron and Brass Bedsteads, so arranged and classified that purchasers may easily and at once make their selections.

Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of.

39, OXFORD STREET (corner of Newman Street); Nos. 1, & 3, NEWMAN STREET; and 4 and 5, PERRY'S PLACE.

THE BEST SHOW OF IRON BEDSTEADS in the Kingdom is WILLIAM S. BURTON'S.—He has two very Large Rooms, which are devoted to the exclusive show of Iron and Brass Bedsteads and Children's Cots, with appropriate Bedding and Mattresses. Common Iron Bedsteads, 18s.; Portable Folding Bedsteads from 12s. 6d.; Patent Iron Bedsteads, fitted with dovetail joints and patent sacking, from 21s.; and Cots from 21s. each; handsome Ornamental Iron and Brass Bedsteads, in great variety, from 2l. 19s. to 13l. 13s.

THE PERFECT SUBSTITUTE for SILVER.—The real NICKEL SILVER, introduced 20 years ago by WILLIAM S. BURTON, when Plated by the patent process of Messrs. Elkington & Co., is beyond all comparison the very best article next to sterling silver that can be employed as such, either usefully or ornamentally, as by no possible test can it be distinguished from real silver.

	Fiddle Pattern.	Thread or Brunswick Pattern.	King's Pattern.
Tea Spoons, per dozen	18s. ...	26s. ...	32s.
Dessert Forks „	30s. ...	40s. ...	46s.
Dessert Spoons „	30s. ...	42s. ...	48s.
Table Forks „	40s. ...	56s. ...	64s.
Table Spoons „	40s. ...	58s. ...	66s.

Tea and Coffee Sets, Waiters, Candlesticks, &c., at proportionate prices. All kinds of replating done by the patent process.

CHEMICALLY PURE NICKEL, NOT PLATED.

	Fiddle.	Thread.	King's
Table Spoons and Forks, full size, per doz.	12s. ...	28s. ...	30s.
Dessert ditto and ditto	10s. ...	21s. ...	25s.
Tea ditto	5s. ...	11s. ...	12s.

GAS CHANDELIERS AND BRACKETS.—The increased and increasing use of gas in private houses has induced WILLIAM S. BURTON to collect from all the various manufacturers all that is new and choice in Brackets, Pendants, and Chandeliers, adapted to offices, passages, and dwelling-rooms, as well as to have some designed expressly for him; these are now ON SHOW in one of his TEN LARGE ROOMS, and present, for novelty, variety, and purity of taste, an unequalled assortment. They are marked in plain figures, at prices proportionate with those which have tended to make his Establishment the largest and most remarkable in the kingdom, viz. from 12s. 6d. (two lights) to 16l.

LAMPS OF ALL SORTS AND PATTERNS.—The largest, as well as the choicest, assortment in existence of FRENCH and ENGLISH MODERATEUR, PALMER'S, CAMPHINE, ARGAND, SOLAR, and other LAMPS, with all the latest improvements, and of the newest and most recherché patterns, in ormolu, Bohemian, and plain glass, or papier-mâché, is at WILLIAM S. BURTON'S, and they are arranged in one large room, so that patterns, sizes, and sorts can be instantly selected.

Real French Colza Oil, 4s. 9d. per gallon.
Palmer's Candles, 9d., 9½d., and 10d. per lb.

WILLIAM S. BURTON has TEN LARGE SHOW ROOMS (all communicating), exclusive of the shop, devoted solely to the show of GENERAL FURNISHING IRONMONGERY (including Cutlery, Nickel Silver, Plated and Japanned Wares, Iron and Brass Bedsteads and Bedding), so arranged and classified that purchasers may easily and at once make their selections.

Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of.

No. 39, Oxford Street (corner of Newman Street); Nos. 1, 2, and 3, Newman Street; and 4 & 5, Perry's Place.

SOUND AND WHITE TEETH are not only indispensably requisite to a pleasing exterior in both sexes, but they are peculiarly appreciated through life as highly conducive to health and longevity. Among the various preparations offered for the purpose, ROWLAND'S ODONTO, or PEARL DENTIFRICE, stands unrivalled in its capability of embellishing, purifying, and preserving the teeth to the latest period of life. Prepared from Oriental herbs with unusual care, transmitted to this country at great expense, it will be found to eradicate all tartar and concretions, and impart a pearl-like whiteness to the enamelled surface, remove spots of incipient decay, render the gums firm and red, and thus fix the teeth firmly in their sockets; and from its aromatic influence imparts sweetness and purity to the breath.—Price 2s. 9d. per box. Caution.—The words "Rowlands' Odonto" are on the label, and "A. ROWLAND & SONS, 20, Hatton Garden," engraved on the Government stamp affixed on each box. Sold by them, and by chemists and perfumers.

KNOW THYSELF!—The secret art of DISCOVERING the TRUE CHARACTER of INDIVIDUALS from the peculiarities of their HANDWRITING, has long been practised by ELLEN GRAHAM with astonishing success. Her startling delineations are both full and [illegible], differing from anything hitherto attempted. All persons wishing to know themselves, or any friend in whom they are interested, must send a specimen of their writing, stating sex and age, enclosing 13 penny post stamps to Miss GRAHAM, [illegible] New Road, [illegible], Middlesex, and they will receive in a few days a minute detail of the mental and moral qualities, talents, tastes, affections, virtues, failings, &c., of the writer, with many other things hitherto unsuspected.—"Miss GRAHAM is a most successful graphiologist." [illegible]

DO YOU WANT BEAUTIFUL HAIR, WHISKERS, MOUSTACHES, &c.?—ALICE MELVILLE'S PALMAPILLA is [illegible] weak hair, prevents its falling off, checks greyness, [illegible] a thick and luxuriant growth, dispels scurf and dandriff, and makes it clean, soft, curly, and brilliant in appearance. For baldness from any cause it is certain and effective, and for the production of Whiskers, Moustaches, Eyebrows, &c. in three or four weeks, it can be fully depended upon. [illegible] sent post free anywhere on receipt of 24 penny postage stamps, by Miss MELVILLE, 28, Argyle Square, King's Cross, London. —"My whiskers are growing very thick." R. Mede, Esq.—"It restored my hair, which I had lost in patches." W. [illegible].—"It has quite checked the greyness." Miss Ellis.—"My Moustache is greatly improved." Capt. F[illegible].

DO YOU WANT BEAUTIFUL HAIR, WHISKERS, &c.?—COUPELLE'S CRINUTRIAR though extensively imitated, is universally acknowledged as the only preparation to be really depended upon for the [illegible] production of Hair and Whiskers in two or three weeks; as also checking Greyness, Baldness, &c., and rendering the Hair beautifully luxuriant, curly and glossy. Mr. WILLIAMS, 8, Lowther Street, Liverpool.—"I can now show as fine a head of hair as any person, solely from using your Crinutriar." Sergeant CRAVEN, Longford Barracks, Ireland.—"Through using your Crinutriar, I have an excellent Moustache, which I had before despaired of." Mrs. CARTER, Pangbourne, Berks.—"My head, which was quite bald, is now covered with new hair." Price 2s. per Bottle, and four times the quantity at 6s. each, through all Druggists and Perfumers, or of ROSALIE COUPELLE, 69, Castle Street, Newman Street, Oxford Street, London.

DINNEFORD'S PURE FLUID MAGNESIA has been for many years sanctioned by the most eminent of the Medical Profession, as an excellent remedy for Acidities, Heartburn, Headache, Gout, and Indigestion. As a mild aperient, it is admirably adapted for delicate females, particularly during pregnancy; and it prevents the food of infants from turning sour during digestion. Combined with the Acidulated Lemon Syrup, it forms an Effervescing Aperient Draught, which is highly agreeable and efficacious.—Prepared by DINNEFORD & Co., Dispensing Chemists (and General Agents for the Improved Horse-Hair Gloves and Belts), 172, New Bond Street, London, and Sold by all respectable Chemists throughout the Empire.

DERBY BURIAL BOARD.

TENDERS FOR TREES AND PLANTING.

WANTED, by the Derby Burial Board, TENDERS for PROVIDING and PLANTING TREES in the NEW CEMETERY adjoining the Nottingham Road, Derby. The plan and specification may be seen at the Clerk's Office, 14, Full Street, Derby, after Thursday, the 30th inst. Sealed Tenders addressed to "The Chairman of the Derby Burial Board," marked "Tender for Planting, &c.," must be delivered at the Clerk's Office, not later than 12 o'clock at noon, on Thursday, December 14. JOHN WALKER,
November 21. Clerk to the Board.

TO FLORISTS, FRUITERERS, & GREENGROCERS.

TO BE LET, a BUSINESS in the above line within 4 miles of town; capital Shop, Conservatory, and Greenhouse, all in excellent working order. The situation is highly respectable, and for a clever man it is a most desirable opportunity. Coming in moderate.—For particulars apply to Mr. C. BROWN, House and Estate Agent, Westcroft Place, Hammersmith

TO BE LET, with immediate possession, 180 Acres, or, if desired, 230 Acres of highly productive ARABLE and PASTURE LAND, well situated, in the county of Essex, together with excellent Dwelling house, Bailiff's and other Cottages, commodious Barns, Stables, and requisite Outbuildings. This eligible occupation is worthy of the attention of a first-class farmer; the lands are in good condition, being now and for many years in the hands of the proprietor.—For rent and particulars, apply to Mr. PARTRIDGE, Land Agent, Great Braxted Hall, Witham, Essex.

THE BEST AND CHEAPEST FOOD FOR PIGS, ETC.

PIG RICE, 9l. per ton; 10s. per 112 lbs., in bags, containing 168 lbs., fattens Pigs more quickly than Barley—only requires boiling.—WILSHERE & Co., 2, Talbot Court, Gracechurch Street, London.

ALDERNEY BULL.—A Clergyman has a very fine Bull of the above breed for sale, 14 months old, and very strong and handsome.—Apply to Rev. F. H. L., Merevale, Atherstone.

TO BE SOLD, BUFF COCHIN CHICKENS, from first class Prize Birds, Brahma Pootra Chickens, from imported American Prize Birds, and Spanish Chickens. Also some very good one-year-old Birds of the above descriptions. Wire, Game, and Poultry Netting, Poultry Hurdles, Hen Houses, Chicken Coops, Flower Stands, and Trainers, Garden Arches, and every kind of Wire Work, useful and ornamental.—T. H. FOX'S, City of London Wire Works, 44, Skinner Street, and 6 & 8, Snow Hill. Illustrated Catalogues forwarded post free.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction, at the Mart, Bartholomew Lane, on FRIDAY, Dec. 8, at 12 o'clock, a first class collection of DUTCH BULBS, consisting of the finest Double and Single Hyacinths, Narcissus, Jonquils, Anemones, 1000 Saracenia purpurea, Crocus, Tulips, Snowdrops, Ranunculuses, Gladiolus, &c.; also a selected assortment of Standard and Dwarf Roses, consisting of Perpetual Hybrids, Chinas, Bourbons, Noisettes, with fine American Plants well set with bloom buds, &c. On view the morning of Sale.—Catalogues had at the Mart; and of the Auctioneers, American Nursery, Leytonstone, Essex.

WOOLWICH.

TO GENTLEMEN, NURSERYMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are directed by Mr. Williams, who is declining business, to submit to an unreserved sale by Auction, on the premises, Bowater Nursery, Woolwich, on FRIDAY, December 15th, at 11 o'clock, the whole of the NURSERY STOCK, consisting of Evergreens, Ornamental Trees, and Deciduous Shrubs; also the GREENHOUSE PLANTS, comprising Fine Double Camellias, and Azalea Indica well set with bloom buds, Geraniums, &c.; with several Brick Pits, 2 and 3 Light Boxes, capital Hot-water Pipe, Saddle Boiler, a quantity of Hand and Bell-glasses, two capital Nests of Seed Drawers, Counter, Garden Seeds, Wheelbarrows, and sundry effects.—May be viewed one week prior the Sale. Catalogues may be had on the Premises, of the principal seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

GLASS FOR HORTICULTURAL PURPOSES.

THOMAS MILLINGTON'S

Present Prices for good 16 oz. SHEET GLASS per 100 feet, boxes included:—

Size	Per 100 feet.	Size	Per 100 feet.	Size	Per 100 feet.	Size	Per 100 feet.
6 ins. by 4 ins.	... 13s. 3d.	8½ „ 6½	... 14s. 0d.	12½ ins. by 9½ ins.	... 16s. 0d.	15 „ 10	... 18s. 0d.
6 „ 4½		9 „ 7		12 „ 10		15½ „ 10½	
6½ „ 4¾		9½ „ 7¼		12¼ „ 10¼		16 „ 10	
6 „ 5½		10 „ 8		13 „ 10		16½ „ 10½	
7 „ 5	... 13s. 6d.	10½ „ 8½	... 16s. 0d.	13½ „ 10½		17 „ 10	
7½ „ 5¼		11 „ 9		14 „ 10		17½ „ 10½	
8 „ 6		11½ „ 9½		14½ „ 10½		13 „ 11	
		12 „ 9				18½ „ 11½	

And many other sizes not exceeding 1 foot 6 inches superficial.

Orchard House Squares on Mr. Rivers's plan, to whom I have sold some thousands of feet, in 20 inches by 12, 20 by 13, 20 by 14, 20 by 15, 20 by 16, 20 by 18, at 1l. per 100 feet.

Large sizes cut, not exceeding 40 inches long, 16 oz. from 3d. to 3½d.; 21 oz., from 3½d. to 5d.; 26 oz., from 4½d. to 7½d.; 26 oz., from 5d. to 9d., according to size.

Large Sheets in 200 feet cases, from 40s. to 46s. per case.

Genuine White Lead, Black, Green, Yellow Red, and Anti-Corrosion Paint; Oils, Varnishes, Brushes, and any article in this branch.

HARTLEY'S IMPROVED ROUGH PLATE GLASS, Sheet and Rough Plate Tiles, Milk-pans, Bee and Propagating Glasses, Wasp Traps, Cucumber Tubes, Preserve Jars, with and without covers, and Fern Shades. Plate, Sheet, Crown, and Ornamental Window Glass; Crystal Glass Shades for Ornaments.

Greenhouses erected in either Wood or Iron, Garden Lights and Frames.

A full List furnished on application at the Warehouse.

ESTABLISHED MORE THAN ONE HUNDRED YEARS.

87, Bishopsgate Street Without, London (same side as Eastern Counties Railway.)

PRICED NURSERY CATALOGUES.

A. PAUL AND SON will be happy to forward the following priced Nursery CATALOGUES in return for one postage stamp each:—A, ROSES; B, ORNAMENTAL TREES AND CONIFERS; C, FRUIT TREES; D, HERBACEOUS PLANTS; F, GREENHOUSE PLANTS, &c.; G, SEEDS; H, HOLLYHOCKS; I, BULBS.—Nurseries, Cheshunt, Herts.

THE PLANTING SEASON.

WM. URQUHART AND SONS, Dundee, respectfully intimate that their PRICED LIST may now be had on application.

MESSRS. TOPFS AND CO., of Erfurt, Prussia, announce that their CATALOGUE of CHOICE FLOWER SEEDS, grown by themselves, will be ready for distribution to the Trade on and after December 7.—Mr. WILLIAM HASLAM, Epping, Agent for Great Britain and France.

ROBERT KENNEDY, Agent for Messrs. Platz and Son, Seed Growers, Erfurt, has much pleasure in announcing he has received their Catalogue of Flower and Vegetable Seeds for the trade for 1855, which abounds with new articles of great interest, and will be forwarded, per post, on application to R. KENNEDY, Bedford Conservatory, Covent Garden, London.

P.S. Also, R. Kennedy's General Catalogue of British and Foreign Ferns forwarded on receipt of six postage stamps.

GEORGE JACKMAN begs to announce that he has just published a new and complete CATALOGUE of his Ornamental Evergreens, Conifers, Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., and may be had on application by enclosing two postage stamps.

Woking Nursery, 1½ mile from Woking Station, South Western Railway, where all Trains stop, and where capital conveyances may be had.—December 2.

AMERICAN NURSERY.

GEORGE BAKER'S DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS, &c., as exhibited by him in the Royal Botanic Gardens, Regent's Park, may be had by inclosing two postage stamps.

G. B. begs to call attention to his fine stock of Weeping Hollies, Coniferous Plants, Ornamental Shrubs, &c.—American Nursery, Windlesham, near Bagshot, Surrey, near Staines Station, South-Western Railway, where conveyances may be obtained.

AMERICAN PLANTS.

JOHN WATERER begs to announce that he has published a new Catalogue of his Rhododendrons, &c., as exhibited by him in the Gardens of the Royal Botanic Society, Regent's Park, London. It describes the colours of all the Rhododendrons considered worthy of cultivation, with a Treatise on their successful management, and may be had by enclosing two postage stamps.

The American Nursery, Bagshot, Surrey, near Farnborough Station, South-Western Railway.

AMERICAN PLANTS.—A Descriptive Priced CATALOGUE of HARDY AMERICAN PLANTS for the coming season is just published, and may be had by enclosing two stamps for postage. As everything in the way of American Plants is grown to an unequalled extent at this Nursery, intending purchasers would do well to provide themselves with this Catalogue.

WATERER AND GODFREY, Nephews and Successors to the late Hosea Waterer, Knap Hill Nursery, Woking, Surrey.

BASS AND BROWN'S NEW AUTUMN CATALOGUE, supplied free for three Penny Stamps. They have this season a very fine and vigorous stock of the finest Roses, among which are a number of very superb new Continental varieties, consisting chiefly of the perpetual class. The following selections will be highly approved,

ROSES.

	£	s.	d.
100 Standards in 100 very superior varieties	7	10	0
100 " 50 " "	6	10	0
50 " 50 varieties ditto, all selected from perpetuals	4	0	0
100 dwarfs and half standards, or all dwarfs, in 100 very superior varieties	4	0	0
100 ditto in 50 varieties, ditto	3	0	0
50 ditto in 50 varieties, ditto, all from perpetuals ...	2	10	0
Fine mixed dwarfs, per 100...	1	10	0

Hardy Herbaceous Plants, Hollyhocks, prize-named Gooseberries, Strawberries, Standard Dwarf and Trained Fruit Trees, Flower Roots, and a variety of desirable articles offered in selection for present planting, for which see *Gardeners' Chronicle*, Oct. 14, page 659, and Oct. 28th, page 690.—Goods, carriage free (not under 20s.), to all the London termini, and all Stations on the London and Norwich Colchester Line. Plants added gratis with orders of 40s. and upwards.

Seed and Horticultural Establishment, Sudbury, Suffolk.

R. PARKER begs to offer the following:—CINERARIAS (Seedlings), from all the finest varieties carefully selected, including the new varieties sent out last autumn. Strong established plants, in 4-inch pots, at 4s. per dozen. A choice collection of named Cinerarias in strong established plants, purchaser's selection, at 9s. per dozen.

ROSES, consisting of the best varieties of Hybrid Perpetuals, Teas, Bourbons, &c., well established in pots. Purchaser's selection, at 12s. per dozen. List of names forwarded upon application.

A remittance or reference to accompany all orders from unknown correspondents.

Paradise Nursery, Hornsey Road, Islington.

NEW CLIMBING HYBRID PERPETUAL ROSE,

THE "DUCHESS OF NORFOLK."—Colour, Vivid Crimson. Sent out for the first time about the end of October.

WILLIAM WOOD AND SON beg to refer to their advertisement in the *Gardeners' Chronicle* of September 30, page 627. Standards, half-standards, or dwarfs will be supplied at 10s. 6d. each, with the usual allowance to the trade.

N.B. When six plants or more are ordered by the trade, a very considerable reduction will be made beyond the usual discount, particulars of which may be had on application.

A Drawing of the above may be had for 6 Postage Stamps.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

ROSES.

WILLIAM WOOD AND SON, having a large stock this season, beg to offer fine strong Plants of the following kinds of HYBRID PERPETUAL ROSES, budded on fine selected stocks, from 4 to 6 inches, well suited either for potting or for planting in masses in the Rose Garden.

AT 15s. PER DOZEN (when one dozen of a kind is ordered):—Auguste Mie, Baronne Hallez, Baronne Prevost, Charles Boissière, Duchess of Sutherland, Duplessis Mornay, Egérie, Géant des Batailles, Jaques Lafitte, La Reine, Le Lion des Combats, Louise Odier, Madame Trudeaux, Pius the Ninth, Reine des Fleurs, Robin Hood, &c. &c. &c. Pius the Ninth is particularly recommended as a pillar Rose of extraordinary growth, budded plants of this kind in the Woodlands Nursery having made shoots from 5 to 6 feet in length this season, and flowers until very late in the year.

AT 10s. PER DOZEN (Hybrid Perpetual Roses):—Augustine Monchelet, Duc d'Aumâle, Lady Fordwich, Madame Laffay, Marquise Boccelia, Marquis of Ailsa, Mrs. Elliot, Prudence Rœser, William Jesse, &c.

N.B. The Trade supplied on liberal terms. Catalogues may be had in exchange for two postage stamps.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

LARGE SURPLUS STOCK
OF TREES, SHRUBS, ETC.,
NOW ON SALE AT
MESSRS. WM. E. RENDLE AND CO'S NURSERY, Plymouth.

THE PROPRIETORS, *having a large surplus Stock of the following, can offer them at greatly reduced prices; and all Orders above £10 will be delivered free of carriage to any Station on the* BROAD GAUGE RAILWAYS, *and to Cork, Dublin, and Liverpool by Steamers.*

400,000 Seedling Scotch Fir.
500,000 " Larch Fir.
200,000 " Pinus austriaca.
200,000 " Turkish and English Oaks.
10,000 " Cedrus Deodara, from 6 ins. to 3 ft. in height.
10,000 fine Laurels of various sizes.
20,000 all the best varieties of Strawberries.
10,000 of the best Rhubarb Roots in cultivation.

With a large and general Assortment of Nursery Stock, including Forest Trees, Shrubs, and Fruit Trees, such as is generally found in a large Provincial Nursery.

All who intend to plant, either in the Forest, the Shrubbery, or the Garden, during the present Autumn, should procure their NEW AUTUMN DESCRIPTIVE CATALOGUE, *which can be had in exchange for one penny stamp on application to*

WILLIAM E. RENDLE AND CO., NURSERYMEN and SEED MERCHANTS, Plymouth.—Established 1786.

STRONG GRAPE VINES FROM EYES IN POTS.

LUCOMBE, PINCE, AND CO. *have this season a fine healthy stock of strong* VINES *of all the best varieties, raised from eyes which they can specially recommend, as the wood is well ripened and the roots very vigorous.* They have a few extra-sized Plants in very large pots in a full bearing state.

They have also a quantity of fine healthy Peaches, Nectarines, and Figs, well established in pots in a bearing state. Prices and further particulars to be had on application.

Exeter Nursery, Exeter. Established in 1720.

T. PERKINS, Atherstone, Warwickshire, begs to offer to the Trade strong GRAPE VINES from single eyes, of the following kinds, at 12s. per dozen. Samples sent on receipt of 24 postage stamps.

Chassel's Musque	Pitmaston White Cluster
Black Hamburg	Dutch Sweet Water
Groves End Sweet Water	Black Frontignac
Grizzle Frontignac	White do.
White Muscat	Black Prince
Muscat of Alexandria	Black St. Peter

Post Office Orders payable at Atherstone.

NEW CHRYSANTHEMUMS OF 1854.

Aurore boreale	Louis Delaborde	Dr. Bois
Auguste Mie	Bob	Eclipse
Comte Achille Vigier	Indiana	Marguerite de Valois
Zebra	Hermine	" de Wildemar
Pluie d'Or	Turris Eburnea	Juanita
		Duval

MESSRS. E. G. HENDERSON & SON beg to announce that the above choice varieties, flowered for the first time in this country, can now be seen in their winter garden, at the Wellington Nursery, St. John's Wood, London.

THE TRUE LANCASHIRE PRIZE GOOSEBERRIES.

JOHN HOLLAND, Bradshaw Gardens, Middleton, near Manchester, will supply 24 strong Plants for 12s., or 12 Plants for 7s., package, &c., included, of the below named Gooseberries. Weights taken from the Gooseberry Register of 1854:—

	dwts.	grs.		dwts.	grs.
London	31	16	Banksman	24	19
Drill	29	12	Tally Ho	24	12
Thumper	28	0	Briton	24	10
Conquering Hero ...	27	11	Peacock	24	1
Companion	27	0	Weathercock ...	24	0
Overall	26	22	Lancashire Lad ...	23	15
Napoleon	26	10	Birdlime	23	14
Wonderful	26	9	Broomgirl	23	8
Lion's Provider ...	26	6	Railway	23	5
Pilot	25	13	Guido	23	4
Slaughterman ...	25	10	Two-to-One	22	19
Roaring Lion... ...	25	6	Marigold	22	7
Goldfinder	25	5	Gunner	20	12

Post Office Orders to be made payable at Middleton, Lancashire. Priced and Descriptive Lists are now ready of AURICULAS, ALPINES, POLYANTHUSES, DOUBLE PRIMROSES, CARNATIONS, PICOTEES, PINKS, PANSIES, &c. &c. &c., and may be had on application, inclosing a Postage Stamp.

MESSRS. E. G. HENDERSON AND SON, of the Wellington Nursery, St. John's Wood, London, beg to announce that they are now sending out the following new Plants:

HELIOTROPIUM, BEAUTY OF THE BOUDOIR; the best for Garden and Pot Culture.

CHRYSANTHEMUM, ANNIE HENDERSON; the summer flowering variety; colour yellow, and form of Annie Salter; very dwarf.

GERANIUM, PRETTY POLLY; the loveliest hybrid bedding Geranium; colour, orange salmon.

ACHIMENES HENDERSONI; the newest and prettiest hybrid variety out.

FANCY GERANIUMS: CLOTH OF SILVER, EVENING STAR, and CRYSTAL BEAUTY; for form, colours, and general good qualities unequalled.

CINERARIAS: MRS. ROGERS, MRS. GERARD LEIGH, FASCINATION, and PRINCE OF PRUSSIA. (No further orders can be executed for Mrs. Rogers and Mrs. Gerard Leigh until next spring.)

See Autumn Catalogue for full descriptions, price, &c. &c.

The NEW RHODODENDRONS discovered on the Bhootan Alps, by THOMAS J. BOOTH, Esq., surpassing in magnificence of flower the Sikkim species. Full particulars of them will be seen on reference to their Spring Catalogue.

SPLENDID NEW RHUBARB.
SALT'S CRIMSON PERFECTION.

ROBERT SALT begs leave to inform the Gentry, Nurserymen, Gardeners, &c., that this splendid variety of Rhubarb is now ready for distribution. It is universally allowed to be the most early, prolific and delicious variety ever offered to the Public.

See *Gardeners' Chronicle* June 11, 1853: "Very good, and of a most beautiful crimson; compared with others, it is remarkable for the small amount of acidity it contains."—ED.

Certificates of Merit were awarded for specimens exhibited at the Meeting of the Horticultural Society, Regent Street, London, June 28th, 1853—at Nottingham, May 24th, 1854—at Derby Midland, May 25th, 1854—at Ormskirk, Lancashire, August 30th, 1854. Price 7s. 6d. per root, 3 for one guinea, and 6 for 2l.

Orders addressed to ROBERT SALT, Longton, Staffordshire; or the following agents, will have immediate attention: Messrs. HURST & M'MULLEN, 6, Leadenhall Street, London; Messrs. BURGESS & KENT, Penkhull, Staffordshire; Mr. WOOD, Nurseryman, Coppice, near Nottingham; Messrs. FRANCIS & ARTHUR DICKSON, East-gate Street, Chester; Mr. SALISBURY, Melbourne, Derbyshire. A liberal discount allowed to the trade. A Post-office order from unknown correspondents.—Longton, Dec. 2.

WILLIAM BARRATT, LANDSCAPE GARDENER, Wakefield.
*** Plans and Estimates furnished.

FIVE HUNDRED BUSHELS OF POTATOES TO THE ACRE.—This enormous crop was grown this year by a gentleman in Surrey, and out of which there were only 5 bushels diseased; nearly all the quantity were large sized, some weighing 2 lbs. and 1 oz., and not above 30 bushels of Chats out of the whole. This Potato was originally reared in Scotland, and is called by its grower the Scottish Champion. It is a good baker and boiler. Price 2l. 2s., inclusive of the sack of 3 bushels, delivered free at the South Western Railway station in London. Early application is necessary, as only a few sacks are for sale, the party growing intending to plant largely next season. A reference as to the quantity and quality can be given in the neighbourhood.—Apply by letter, post-paid, to B. S., 4, Crooked Lane, London Bridge.

All orders must be accompanied by a remittance.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard run, of ELISHA THOMAS ARCHER, 7, Trinity Lane, Cannon Street, City, and the Royal Mills, Wandsworth, Surrey.

THE COMFORT OF A FIXED WATER-CLOSET FOR 1l.—Places in gardens converted into comfortable water-closets by the PATENT HERMETICALLY SEALED PAN, with its self-acting valve, entirely preventing the return of cold air or effluvia. Any carpenter can fix it in two hours. Price 1l. Hermetically-sealed Inodorous Chamber Commodes, 1l., 2l. 4s., and 3l.; also Improved Portable Water-closets, with pump, cistern, and self-acting valve. A prospectus, with engravings, forwarded by enclosing two postage stamps.—At FYFE & Co.'s Sanatorium, 46, Leicester Square.

FORD'S EUREKA COLOURED SHIRTING is now ready, in 200 different patterns. Specimens in varied colours sent post free on receipt of six stamps.

FORD'S COLOURED EUREKA SHIRTS, Six for 27s.

FORD'S WHITE EUREKAS, best quality, Six for 40s.; second quality, Six for 31s.; if washed ready for use, 2s. extra.

CAUTION.—Ford's Eureka Shirts are stamped, "38, POULTRY, LONDON," without which none are genuine.

*** Catalogues with particulars post free.

RICHARD FORD, 38, Poultry, London.

NOTICE.

OVER-COATS, CAPES, &c.—One of the largest stocks in London of every description, first-class garments, at lowest charges; also of Youth's ditto, all made thoroughly impervious to rain, without extra charge, or made to order at a day's notice.—W. BERDOE, 96, New Bond Street, and 69, Cornhill (only).

DEANE, DRAY, AND CO., have a very large and superior stock of FRENCH MODERATOR LAMPS now on sale.—(Opening to the Monument), London Bridge.

ESTABLISHED A.D. 1700.

TEN THOUSAND STOVES.

THE TENTH THOUSAND OF THE PATENT PORTABLE SUSPENSION STOVE is now on sale. These Stoves, so justly celebrated for preserving a pure and healthy atmosphere, and for their extraordinary economy in the consumption of fuel, are sold, wholesale and retail, by DEANE, DRAY, AND CO., 46, King William Street, London Bridge; and may be obtained of most Ironmongers.

The IMPROVED PATENT VENTILATING STOVE, which is strongly recommended, may also be seen at the above establishment. Prospectuses, &c., forwarded post free.

METCALFE AND CO.'S PERFUMERY DEPARTMENT.—PROPRIETARY ARTICLES.—METCALFE's celebrated ALKALINE TOOTH POWDER is acknowledged as the safest and most efficient now in use. Dupuytren's Medicated Pomade is the most certain remedy for preventing the hair prematurely falling off, and for restoring it when baldness has already commenced. Dupuytren's Medicated Balm strengthens, cleanses, and improves the growth, and is generally acknowledged as the best wash for the hair.—Manufacturers of British and Importers of Foreign Soaps, Perfumery, and J. M. Farina's only genuine Eau de Cologne, at METCALFE, BINGLEY, & Co.'s Establishment, 130B and 131, Oxford Street, second and third doors west from Holles Street.

VISITORS TO THE SMITHFIELD CATTLE SHOW are invited to inspect BREIDENBACH'S PERFUMERY WAREHOUSE, 157 B, New Bond Street, where will be found a choice collection of elegant Presents, Christmas, and New Year's Gifts. The GUINEA CASE OF PERFUMERY contains every requisite for a lady's or gentleman's toilet, including two bottles of choice perfume for the handkerchief, a glass jar of prepared cream for the hair, a sachet of ground dried flowers, a bottle of smelling salts, or Vinaigrette, a china pot of lip-salve, a jar of rose cold cream, a box of Odonto tooth powder, and a bottle of rose-scented Eau de Cologne. Also a neat case fitted in the same way, 10s. 6d. each. Real Eau de Cologne, 10s. case of six bottles, or 2s. singly.

157 B, New Bond Street, London.

BIRMINGHAM CATTLE AND POULTRY SHOW.—TESTIMONIAL TO MR. T. B. WRIGHT.—At a meeting of gentlemen desirous of raising a fund for the purpose of presenting a Testimonial to Mr T. B. Wright, in acknowledgement of his important services in originating the Birmingham Cattle and Poultry Show, and the valuable assistance he has contributed towards its management, held at the house of Mr. Jeremiah Mathews, on Friday, the 24th November, 1854, Mr. J. Mathews in the chair; present—Howard Luckcock, Esq., W. Mathews, Esq., Messrs. John Shackel, John Lowe, Benjamin Dain, John Harlow, Joseph Jennens, and John Morgan, jun., it was resolved—

That Subscription Lists be forthwith opened, and that the Gentlemen now present be a Committee, with power to add to their number, for the purpose of carrying out the object of the Meeting.

That Howard Luckcock, Esq., be the Chairman of the Committee; Mr. Shackel, Treasurer; and Messrs. John Lowe and John Morgan, jun., Joint Secretaries.

J. MATHEWS.

Subscriptions to the fund will be received by the Treasurer, Mr. John Shackel, Blenheim House, Small Heath; Mr. John Lowe, of the firm of Mapplebeck and Lowe, Bull Ring, Birmingham; Mr. John Morgan, jun., Cattle Show Offices, 38, Bennett's Hill; and by the Bankers, Messr. Attwoods, Spooner, & Marshalls, New Street, Birmingham.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 27, Victoria Street, in the Parish of St. Margaret and St. John, Westminster, both in the County of Middlesex, Printers, at their Office in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, December 2, 1854.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 49.—1854.] SATURDAY, DECEMBER 9. [Price 6*d*.

INDEX.

Agriculture, British, Mr. Mechi on ... 793 *b*—796 *a*	Pampas Grass ... 787 *c*
Agricultural vicissitudes ... 797 *a*	Paper, materials for ... 792 *a*
— power ... 797 *b*	Pathology, vegetable ... 788 *b*
Angelonia grandiflora ... 788 *c*	Paxton, M.P., Sir Joseph ... 788 *b*
Bean straw for pigs ... 795 *c*	Pears, list of ... 789 *b*
Birch, American ... 792 *c*	— Beurré Superfin ... 789 *c*
Books noticed ... 791 *b*	Pear growing ... 790 *a*
Bull, Lord Ducie's Duke of Gloucester ... 793 *c*	Pear tree, origin, &c., of ... 789 *a*
Calendar, horticultural ... 792 *a*	Peat, lime burned by ... 795 *c*
Cattle, pedigree of short-horned 793 *c*	Pigs, food for ... 795 *c*
Cattle show, Smithfield Club ... 794 *b*	Pomological Soc. ... 791 *a*
— — Birmingham ... 795 *a*	Potato culture ... 795 *b*
Cineraria, the ... 791 *c*	Poultry, Birmingham show of 795 *a*
Cupressus Lamberti or macrocarpa ... 789 *c*	Protections, mode of making straw ... 791 *a*
Drainage, Mr. B. Denton on ... 797 *b*	Ranunculus, the ... 791 *b*
Farmers, improvement of ... 795 *a*	Rye-grass, Italian and Lucerne 795 *c*
Farming, good ... 793 *c*	Seeds, manuring ... 795 *c*
Farming capital ... 796 *b*	Smithfield club ... 794 *b*
Food for pigs ... 795 *c*	Society of Arts—Mr. Mechi's lecture ... 796 *a*
Grapes, diseased Italian ... 788 *a*	Steam cultivation ... 796 *b*
Gynerium argenteum ... 787 *c*	Straw protections ... 791 *a*
Horticultural Society ... 790 *c*	Strawberries, late ... 790 *b*
Lime burned with peat ... 795 *c*	Swedes in 1853 ... 798 *a*
London Farmers' Club — Drainage ... 797 *b*	Tree lifter, M'Glashen's ... 791 *c*
M'Glashen's tree-lifter ... 791 *c*	Turnips, Swede in 1853 ... 798 *a*
Mechi (Mr.) on British Agriculture ... 793 *b*—796 *a*	Vegetable pathology ... 788 *b*
Mildewed Grapes, Italian ... 788 *a*	Vintage, state of in Italy ... 788 *a*
	Weather, the ... 790 *a*
	Wells, French railway ... 790 *b*
	Wheat, guano, &c., for ... 795 *b*

HORTICULTURAL SOCIETY OF LONDON, 21, REGENT STREET.—Notice is hereby given that the New SCHEDULE of REWARDS offered to Exhibitors at the Society's Meetings in 1855, both in Regent Street and at the Garden, will shortly be issued. In the meanwhile intending exhibitors may obtain incomplete copies gratis upon application at this Office. (By Order,) WILLIAM BEATTIE BOOTH.

THE BRITISH POMOLOGICAL SOCIETY meets at the rooms, 20, Bedford Street, Covent Garden, London, on the first MONDAY of every month, to receive communications respecting Fruits and Fruit Trees, for the Election of Members, and for General Business.

All communications and packages containing specimens of Fruits, to be addressed to ROBERT HOGG, Secretary.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Notice is hereby given that the Annual General Meeting of the Members of this Society will take place at the Horticultural Rooms, No. 21, Regent Street, for the purpose of receiving the Accounts of the Society for the past year, and Electing Officers for the ensuing year. An Election of Three Pensioners will afterwards take place from among the following Candidates, whose testimonials have been examined and approved by the Committee:—

Name.	Residence.	Age.	
John Appleby	Clapham	65	10th Application.
Cornelius Robinson	Greenwich	77	9th "
Henry Schneider ...	Ford, Wilts	89	7th "
John Blacke	Ryme, Dorset ...	80	4th "
Robert Oliver ...	Sheffield	72	4th "
Wm. Thacker	Wimbledon	67	4th "
Charles Charlton	Hornsey	69	3d "
Eliz. Curtis	Clapham	70	3d "
Joseph Jeffrey ...	Liskeard	62	3d "
John Kent	Clapham	71	3d "
George Kidd	Twickenham ...	69	3d "
John Lawson	Appleby	76	2d "
James Smith	Brighton	68	2d "
Amo Arnold	Cheshunt	62	1st "
Thomas Blair	Longton, Stafford	70	1st "
F. L. Burnet	Brixton	53	1st "
Wm. Demgate	Bath	68	1st "
Alexr. Gregory ...	Leyton	62	1st "
Wm. Thornton ...	Bath	69	1st "

No person will be allowed to Vote whose Subscription for the Year 1854 is unpaid on the day of Election.

By order of the Committee,

Dec. 8, 1854. E. R. CUTLER, Secretary.

14, Tavistock Row.

GARDENERS' BENEVOLENT INSTITUTION.

FOURTH APPLICATION.

WILLIAM THACKER begs earnestly to appeal to the subscribers, through the medium of an advertisement, from his total inability to incur, for the FOURTH TIME, the heavy expense of issuing circulars. He is aged 68, and he rests his claim to their benevolence on having been 50 years a gardener and five years a subscriber to the Institution; and that both his wife and himself are totally incapacitated, through infirmity, from supporting themselves. His case is strongly recommended by Mr. Alex. Dancer, Fulham; Messrs. J. & C. Lee, Hammersmith; Mr. T. Gaines, Battersea; Mr. Barto Chaundy, Lewisham.

COLLECTION OF PEARS.—The Collection of nearly 100 Pears exhibited by RENE LANGELIER at the Society for the Encouragement of Horticulture may be seen for a few days at Dungannon House, Fulham, where orders for the trees will be taken by Mr. GLENNY, Horticultural Agent, Auctioneer, and Valuer.

CHRYSANTHEMUMS.

HUGH LOW AND CO. have to offer extra fine well-shaped blooming Chrysanthemums, both Pompone and large flowering, at 9*s*. per dozen. The plants are large, well-grown, and unusually well furnished with flower buds.

Clapton Nursery, London.

HOLLYHOCK SEED.

R. PARKER has now ready for sending out Seed of this year's saving from the finest named varieties in cultivation, in packets at 1*s*. and 2*s*. 6*d*. each. A remittance or reference to accompany all orders from unknown correspondents. —Paradise Nursery, Hornsey Road, London.

DILCOCK'S BRIDE BROCCOLI.

SIXPENCE PER PACKET.

BAINBRIDGE AND HEWISON (Proprietors of this far-famed Broccoli), beg to inform their friends and customers that they are prepared to send it out this season from selected stock of their own growth. The trade can have price on application, and early orders are respectfully solicited.

York Nurseries, Dec. 9.

EXOTIC NURSERY, CHELSEA.

JAMES VEITCH, JUN., will be happy to forward his new Retail VEGETABLE, AGRICULTURAL, AND FLOWER SEED LISTS on application, and desires to assure those who may kindly favour him with their orders, that he has spared no pains in procuring his supplies from the first growers on the Continent as well as in this country, and that he will use his best endeavours to give his customers entire satisfaction.

VICTORY OF BATH MELON (TRUE).

THE BEST FOR EARLY FORCING.

J. SALTER has a few SEEDS of this excellent MELON to dispose of. A packet forwarded on receipt of 13 postage stamps.—Ampthill Nursery, Hampstead Road, London.

CAMELLIAS.

CHANDLER AND SONS beg to inform their friends and customers that they have a large stock of young CAMELLIAS this season, beautifully set with flower buds, and now in a fit state to travel without injury. Fine bushy Plants 30*s*. and upwards per dozen.—Wandsworth Road, Vauxhall.

THE PRINCE ALBERT PEAR.—This fine late Pear is like the Beurré Rance, but is hardier, and in general keeps longer. Young healthy trees, on the Pear and on the Quince stock, on which it grows freely, 5*s*. each—price to London.

THOMAS RIVERS, Nurseries, Sawbridgeworth.

HALF STANDARD PEACHES, NECTARINES, AND APRICOTS IN POTS.—In addition to the dwarf trees in pots of Peaches, &c., the above can be supplied of the leading varieties; they have well ripened shoots full of bloom buds, and straight stems about 3 feet in height. The Apricots of one kind, the Peach Apricot, are 4 feet in height, and are also full of bloom buds. The above are well adapted for Orchard-houses with high roofs. Price 5*s*. each.

THOMAS RIVERS, the Nurseries, Sawbridgeworth.

NOTICE.—WILLIAMS' EVERGREEN CLIMBING ROSE.

WM. WOOD AND SON beg to announce that they are unable to supply any more plants of WILLIAMS' CLIMBING ROSE at present; they will, however, be ready to execute orders for the same in the spring with well established plants. Any orders received after this date for the above Rose will be carefully filed and executed in the spring. Notice of the time when the plants will be ready will be duly announced in the *Gardeners' Chronicle*.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.—Dec. 9.

NEW CHRYSANTHEMUMS OF 1854.

Aurore boreale	Louis Delaborde	Dr. Bois
Auguste Mie	Bob	Eclipse
Comte Achille Vigier	Indiana	Marguerite de Valois
		" de Wildemar
Zebra	Hermine	Juanita
Pluie d'Or	Turris Eburnea	Duval

MESSRS. E. G. HENDERSON & SON beg to announce that the above choice varieties, flowered for the first time in this country, can now be seen in their winter garden, at the Wellington Nursery, St. John's Wood, London.

NEW PERPETUAL STRAWBERRY.

"DELICES D'AUTOMNE."

A. VERSCHAFFELT, NURSERYMAN, Ghent, Belgium, begs to offer the new and Perpetual Strawberry "DELICES D'AUTOMNE." The fruit is large, delicious, and very abundant; it is certainly the best perpetual Strawberry of all. A correct drawing will appear shortly in Verschaffelt's "L'Illustration Horticole." Price, per plant, 2*s*. 6*d*.; six plants, 10*s*. 6*d*.

SUTTON'S EARLY CHAMPION PEA, WAITE'S DANIEL O'ROURKE, SANGSTER'S No. 1, FAIRBEARD'S NONPAREIL, *and all other new sorts of Seeds, may be obtained genuine, by retail, at the Grower's retail prices, from*

SUTTON & SONS, Seed Growers, Reading, Berks.

FAIRHEAD'S "EARLY CONQUEROR PEA." To be had wholesale and retail of CLARKE and Co., Seedsmen, 86, Borough, London.

EARLY DANIEL O'ROURKE PEAS.

J. G. WAITE begs to inform the Trade that he is now ready to execute orders for this valuable early Pea. Price can be had on application.

Seed Establishment, 181, High Holborn, London.

NONPAREIL PEAS.

WILLIAM FAIRBEARD begs to inform the trade that he is now ready to execute any orders he may be favoured with. This Pea W. F. is confident will become a general favourite both for Garden and Field culture. Price can be had on application.—Mount Pleasant Nursery, Queen Street, Sittingbourne, Kent.

OMER PACHA PEA.

W. NICOL, GARDENER, Roslyn House, Hampstead, begs to announce that he has put his incomparable Pea "OMER PACHA" into the hands of Mr. SOMMERVILLE, Landscape Gardener, Nurseryman, &c., Garden Road, St. John's Wood, London, for Sale in sealed quarts at 10*s*. 6*d*.; and pints, 7*s*. 6*d*. The above Pea is not only the earliest, but the most prolific and best-flavoured hardy variety in cultivation. As the Stock is small, W. NICOL would recommend immediate application to Mr. Sommerville, as above.

SEED GROWERS' SOCIETY.—The Members of the above Society are now prepared to send LISTS of AGRICULTURAL, GARDEN, and FLOWER SEEDS to those who are desirous of having them genuine and direct from the Growers.—Applications addressed to the Secretary, JOHN MOSS, Jun., Feering, Kelvedon, Essex, will meet with prompt attention.

RHUBARB ROOTS for FORCING or PLANTING. —Strong one-year planted roots of MYATT'S VICTORIA and LINNÆUS, MITCHELL'S ROYAL ALBERT, at 6*s*. per doz.; HOWARD'S PRINCE ALBERT, 12*s*. per dozen. This is a larger variety than the Victoria, and is extensively cultivated about Manchester. Price to the trade of the above, per 100 or 1000, on application to MESSRS. J. MYATT AND SONS.

Manor Farm, Deptford, Dec. 9.

NEW CAULIFLOWER.

WAITE'S "ALMA," far superior to Walcheren, very large and firm heads. Price to the trade 24*s*. per lb. smaller quantities 2*s*. 6*d*. per oz. No orders attended to for less quantities than one ounce.—Seed Establishment, 181, High Holborn, London.

LILIUM LANCIFOLIUM.

HENRY GROOM, Clapham Rise, near London, by appointment, FLORIST TO HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to say that this is the best time to have Bulbs of the different varieties of this most BEAUTIFUL LILY. They are well adapted for the Flower Garden, American Borders, and Drives in Parks, being quite hardy. His Catalogue may be had on application.

BULBS.

JOHN WEEKS AND CO. beg to intimate that they still have on hand a considerable Stock of DUTCH and other BULBS. They are in excellent condition; and being imported direct from the Grower, can be supplied at the following reasonable quotations, viz.:—

HYACINTHS, single and double, of the finest named varieties ... 8*s*., 12*s*., 15*s*. per doz.

" fine mixtures for borders ... 30*s*. per 100.

CROCUS, of the best sorts ... ... 2*s*. 6*d*. & 3*s*. 6*d*. "

Also selections of Narcissus, Jonquil, Tulip, Amaryllis, Gladiolus, Anemone, Lilium, Ranunculus, &c., on terms equally reasonable. N.B.—A Seed Catalogue is in course of preparation, and shortly will be furnished on application.

King's Road, Chelsea, Dec. 9.

PRICED NURSERY CATALOGUES.

A. PAUL AND SON will be happy to forward the following priced Nursery CATALOGUES in return for one postage stamp each:—A. ROSES; B, ORNAMENTAL TREES AND CONIFERS; C, FRUIT TREES; D, HERBACEOUS PLANTS; F, GREENHOUSE PLANTS, &c.; G, SEEDS; H, HOLLYHOCKS; I, BULBS.—Nurseries, Cheshunt, Herts.

TO THE SEED TRADE.

ABRAHAM HARDY AND SON, SEED GROWERS, beg to announce that their Wholesale Priced CATALOGUE of SEEDS, growth 1854, is now ready, and may be had on application.—Maldon, Essex, December 9.

ROBERT KENNEDY, Agent for Messrs. Platz and Son, Seed Growers, Erfurt, has much pleasure in announcing he has received their Catalogue of Flower and Vegetable Seeds for the trade for 1855, which abounds with new articles of great interest, and will be forwarded, per post, on application to R. KENNEDY, Bedford Conservatory, Covent Garden, London.

P.S. Also, R. Kennedy's General Catalogue of British and Foreign Ferns forwarded on receipt of six postage stamps.

WANTED, PEAR STOCKS and MANETTI ROSES. Size and price per 1000, with quantity to offer, may be addressed to Messrs. HURST & M'MULLEN, 6, Leadenhall Street, London.

DWARF PYRAMIDAL PEAR TREES ON QUINCE STOCKS.

EDWARD PARKE FRANCIS offers a very fine collection of the best varieties of PEARS grafted on the Quince; descriptive Catalogues of which may be had on application. Strong Trees, showing Fruit Buds, 2*s*. 6*d*. to 3*s*. 6*d*. each.

Rose Nurseries, Hertford.

FINE TRAINED FRUIT TREES IN A BEARING STATE.

LUCOMBE, PINCE, AND CO., have this season for Sale a remarkably healthy stock of fine trained FRUIT TREES of all the best sorts, to which they respectfully beg to call immediate attention. Prices and particulars to be had on application to LUCOMBE, PINCE, & Co., Exeter Nursery, Exeter.

ESTABLISHED 1720.

FOREST AND ORNAMENTAL TREES AND SHRUBS.

DAVID REID AND SON, NURSERYMEN AND FLORISTS, Leith Walk, Edinburgh, beg to intimate their CATALOGUES as above are ready, and to be had free on application.

LARGE FIRS AND FOREST TREES.

MESSRS. WILLMOTT AND CHAUNDY, of Lewisham, have to dispose of, at low prices, in consequence of the ground (12 acres) having to be cleared for building on, a quantity of large FOREST TREES and FIRS of various kinds; they will come up with good roots.

They have also an extensive stock of large well-grown Evergreens of various sizes, that will come up with good balls.

TO GENTLEMEN, NURSERYMEN, PLANTERS, ETC.

J. SELFE begs to announce that he has a large stock of SPRUCE FIR from 2 to 8 feet high. LAURELS from 2 feet 6 inches to 8 feet. Box, Hollies, Yews, Rhododendron Ponticum, Laurestinus, &c. To be disposed of at moderate prices, as the ground is required for building purposes.

Surbiton Hill, Kingston, Surrey, Dec. 9.

FRUIT TREES, FOREST TREES, EVERGREEN SHRUBS, &c. Catalogues of the above may be had on application to WILLIAM BARRATT, Wakefield.

☞ A quantity of fine Transplanted White Thorns.

MANGOLD WURZEL SEED.

TO BE SOLD, LONG RED and YELLOW GLOBE, this year's seed, from superior stock.—Apply to R. S. HEWS, Kelvedon, Essex.

TO BE SOLD, at very reduced prices, 10,000 very strong 2, 3, and 4-year old GOOSEBERRIES and CURRANTS, of the best sorts.—For further particulars, apply to LAKE & DYER, Nurserymen, Bridgewater.

CEMETERIES.

MESSRS. MAJOR AND SON having been repeatedly asked whether the laying-out of Cemeteries falls within their province, beg to announce publicly that they consider it does strictly fall within their province as Landscape Gardeners, that they have directed especial attention to it, and have the arrangement of several at the present time, and, therefore, beg respectfully to offer their services to all who are in any way concerned in the formation of Cemeteries.—Knosthorpe, near Leeds.

FLUKE KIDNEY POTATOES.

FLUKE KIDNEYS, per bushel of 56 lbs. ... ... 7s.
IRISH APPLES, most prolific variety, and withstands the disease as well as the Fluke, per bushel of 56 lbs. ... 5s.
All orders to be accompanied by a remittance. Sacks 2s. each. Delivered to Worcester Station.
Humphrey Chamberlain, Kempsey, Worcester.

THE FLUKE KIDNEY POTATO.—This excellent variety is now planted here as the principal crop, being more free from disease and more prolific than any other in cultivation. It was raised in Middleton, and may be had genuine in any quantity at 5s. per bushel of 56 lbs.—Apply to John Holland, Bradshaw Gardens, Middleton, near Manchester.

THE FLUKE POTATO.—A new second early variety, surpassing every other in its capability of resisting the Potato disease, and without exception the finest and most prolific Potato in cultivation. Price per cwt., 15s., bags included. To be had genuine of THORNHILL & DICKSON, Lawrence Hill Nurseries; and No. 1, Wine Street, Bristol.

TRUE SEED POTATOES.

JOHN BELL, Potato Salesman, Covent Garden Market, and Great Northern Railway, King's Cross, London, offers the following:—

Per bushel.—s. d.			Per bushel.—s. d.		
Ashleaf Kidneys	7	0	Early Regents	4	6
Lapstone	6	0	Hens, Nest	6	0
Early Cockney	9	0	Fortyfolds...	5	0
„ Shaws	4	6	Orkney Reds	5	0

Scotch Cups ... ... 4s. 6d.
Terms cash. The usual allowance to the trade.

IMPORTANT TO POTATO GROWERS.

HAY, SANGSTER, and CO., are now ready to send out their celebrated Stock of SEED POTATOES from prepared cuttings, now completely free from disease, of the following sorts, viz.:—

Early Ebrington Kidneys, per bushel 12s.	Early American, per bushel, 8s.
	York Regents „ 6s.
Early Oxford „ 10s.	Scotch Cups „ 6s.

Package and delivery in London, 9d. per bushel, and 2s. per sack.
Newington Butts, London.

ABRAHAM HARDY and SON, Seedgrowers and Seedsmen, Maldon, Essex.—Best and earliest selected SEED POTATOES, round or kidney varieties, warranted free from disease, at 2s. 6d. per peck, or 7s. 6d. per bushel of 56 lbs.; Ash-leafed, 10s. per bushel, or 3s. per peck. Also remarkable sound SEEDLINGS, raised from Seed of the earliest selected varieties 1854, numbering about 1000 Tubers in a peck, sufficient to plant 7½ rods at 1 foot by 2 feet apart, warranted to produce a full and early crop at a small cost, by the directions to be given for planting. Price 4s. per peck, new sacks or bags for all included, and carriage paid to London, or to any station on the Eastern Counties, or Eastern Union Railways, except for quantities less than a peck. A 6d. Packet of 4000 genuine selected POTATOE SEEDS, early or late, round or kidney, free by post, directions for sowing, &c. Early applications solicited. Remittances requested.

EARLY SEED POTATOES.—Jackson's Improved Thorough High-bred Early Ashleafs, price 9s. per bushel, and the celebrated Short-tops, 7s. 6d., are unequalled for quality and yield; they by far surpass the "old stock," which is generally a sluggish bearer. British Queens, 7s. 6d., the earliest round variety, known; Early Frame and Ashleaf Seedlings, 8s.; Regents, from prepared cuttings, 6s. Free to London; no charge for sacks. Joseph Wilson, Seedsman, Ipswich.

The grower of the new Mammoth variety, "Lord Raglan," has on hand a few sacks of the medium size, which he is willing to dispose of, price 2l. 2s. per sack. Parties who were too late for the first lot are requested to apply again.

To Farmers, Potato Growers, and Others.

JACKSON'S PATENT PREPARATION FOR PRESERVING POTATOES, WHEAT, AND OTHER SEEDS.

THIS highly VALUABLE PREPARATION preserves POTATOES, WHEAT, and all other GRAIN, from the RAVAGES of DISEASE. The CROPS are brought forward in HEALTH and VIGOUR, and the yield is greatly increased, in proof of which the following extracts are given from numerous letters received by Mr. Jackson.

EXTRACTS:—

"One of the fields of this farm, the property of Mrs. Stanbury, was planted with Regent's Potatoes in April last, some of which were prepared by you. The result now is, that the whole of the crop from the unprepared sets is thoroughly diseased, and hardly worth the trouble of taking up; while those raised by the side of them from the prepared sets, are not only in a beautiful state of preservation from the disease, but the produce is much greater,—the Potatoes are more numerous than the others; indeed, if there were no such thing as the disease to be feared, it would be worth the trouble and expense of preparing the sets by your process, even for the sake of the improved crops. I shall certainly, for the future, prepare all my Potatoes for seed by your process; and I intend to adopt it for preserving my Wheat from the Smut.
"G. B. Baxter.
"Belmont Farm, Eltham, Kent, August 28, 1854."

"Admiral Sir J. A. Gordon, K.C.B., Marlee House, Blairgowrie.
"Sir,—I have received your note of the 16th. The Potatoes that came here from England, prepared by Mr. Jackson, were planted in a piece of new ground, and according to the directions sent by him along with them as to distance between the plants, &c. They came up well, with strong healthy stems; I have now taken the whole crop up, and there is not the slightest appearance of any disease amongst them. They are of large equal size and very prolific. There were long black unprepared Kidneys planted in the same patch, and a great deal of them are not fit for use, at least a third part are diseased. I hope Mr. Jackson's process may be widely known, as it is a great boon.—I am, &c., John Shanks,
"Forester, Kildrummy Castle.
"Kildrummy Castle, Aberdeenshire, November 17, 1854."

"I am very much pleased with the result of the experiments I have made with your Prepared Potatoes; for I planted them, without any manure, in ground where for several years I have hardly had a sound Potato, and I now find the crop perfectly free from disease, and in a very fine condition; while those of the same sort, unprepared, which were planted at the same time, and next to them, are diseased and eaten by worms.

"The Potatoes from the Prepared Seed were so remarkably good that I was induced to weigh them, and I found, to my great astonishment, that they were as 200 to 150 of the others, or about 25 per cent. in favour of your preparation.
"T. Austen, Nurseryman and Seedsman.
"Blackheath, Kent, 24th August, 1854."

Sold by all Seedsmen and Chemists, and at the Patentee's, 18, Cannon Street, London Bridge, in Packets of One, Two, Three or Four Pounds, or in Bulk for the use of Farmers and Potato Growers.

FIVE HUNDRED BUSHELS OF POTATOES TO THE ACRE.—This enormous crop was grown this year by a gentleman in Surrey, and out of which there were only 5 bushels diseased; nearly all the quantity were large sized, some weighing 2 lbs. and 1 oz., and not above 30 bushels of Chats out of the whole. This Potato was originally reared in Scotland, and is called by its grower the Scottish Champion. It is a good baker and boiler. Price 2l. 2s., inclusive of the sack of 3 bushels, delivered free at the South Western Railway station in London. Early application is necessary, as only a few sacks are for sale, the party growing intending to plant largely next season. A reference as to the quantity and quality can be given in the neighbourhood.—Apply by letter, post-paid, to B. S., 4, Crooked Lane, London Bridge, where samples may be seen, and the name of the grower given.
All orders must be accompanied by a remittance.

Great Novelties for the Ensuing Season,
FUCHSIAS WITH WHITE COROLLAS.

LUCOMBE, PINCE and CO. beg leave to announce that they shall be prepared to send out two splendid and entirely novel Seedling Fuchsias, early in May next, viz.:—

FLORENCE NIGHTINGALE—Pure white corolla, with brilliant scarlet sepals, finely reflexed; an extremely lovely and novel variety.

GALANTHIFLORA-PLENA—(The Double Snowdrop Corolla'd Fuchsia)—Pure double white corolla, resembling a fine large double snowdrop, with rich scarlet sepals; altogether distinct from anything of the kind ever yet produced.

Price 10s. 6d. each. The usual discount to the Trade when three or more are taken.
Exeter Nursery, Exeter; established 1820.

THE NEW CHINESE POTATO (DIOSCOREA JAPONICA).

MR. JOHN HENDERSON,

Formerly of the Firm of John A. Henderson & Co., *Pine Apple Place, London,*

Has the pleasure of informing the Public that he has just completed the Purchase from M. Paillet, of Paris, of his entire Saleable STOCK of the above introduction from China, the nutritive properties of which are said so far to surpass the ordinary Potato that it is likely, not only to act as an auxiliary, but entirely to supersede that valuable but uncertain esculent. The most satisfactory results have followed from personal experiments, and proved that when cooked in the ordinary manner, from the large amount of farinaceous properties it contains, it can never become waxy, as is too generally the case with the Potato. Its flavour resembles in delicacy an early Ash-leaved Kidney; but, independent of the above excellent qualities, there is every probability of its taking a still more important position in the economy of this country, for, when dried and reduced to powder, it is equal to the best Arrow-root; or mixed in the proportion of one-third with two-thirds of wheaten flour, it makes an extremely light and wholesome BREAD, as well as very superior PASTRY.

Messrs. Vilmorin & Co., speaking of it, observe:—"Of all the esculent roots proposed as substitutes for the diseased Potato, the DIOSCOREA JAPONICA is certainly the only important one. It is easily propagated. The tubers are large and long, the flesh very mealy and devoid of any peculiar or disagreeable flavour. The DIOSCOREA JAPONICA is, in our opinion, a precious acquisition."

M. Pelé, Horticulturist, Paris, in his Supplementary Catalogue of this autumn says:—"A new alimentary root, introduced into France by M. Montigny, French Consul in China. Serious experiments have shown that this tuber will be much more advantageous to cultivate than the Potato, both in regard to its quality as well as produce."

M. Paillet, to whom the Imperial Society of Agriculture and Commerce of France has awarded the sum of 3000 francs as encouragement for having brought it into cultivation, also notices that "this tuber attains at least 1 to 2 lbs. weight. In its growth it is less delicate than the Potato, which unfortunately has of late years much degenerated. It does not require particular care, and its abundant produce amply repays cultivation. Its taste is pleasant, and being a root which contains a large amount of farina, will be a great addition to the FOOD of the PEOPLE as soon as it becomes generally known. It is so hardy that it has passed the winters of 1853–4 in the open ground, without having in the least suffered from frost. It is also found that the stems and leaves, which are very numerous, form an excellent FOOD for CATTLE."

Tubers, with description of the Chinese Mode of Culture, to be obtained of Mr. JOHN HENDERSON, Kingskerswell, South Devon, at the following prices, for cash only:—
4 Tubers ... ... £0 10 0 | 10 do. ... ... £1 2 6 | 50 do. ... ... £5 5 0 | 100 do. £10 0 0
Post-office orders are requested to be made payable at Newton Abbot, South Devon. The usual discount allowed to the trade when not less than 50 are taken.—P.S. All orders unaccompanied by a remittance will be considered as not received.

TO GENTLEMEN ENGAGED IN PLANTING.

WATERER and GODFREY respectfully invite attention to their stock of the following very desirable HARDY PLANTS.

Araucaria imbricata, from 2 to 7 feet high; as handsome as plants can be.
Cedrus Deodara, in any quantity, from 1 to 3 feet high
Do. do., 4, 5, 6, 7, 8, and 10 feet high; splendid plants
Cedars of Lebanon, 3, 4, 6, and 10 feet high
Pinus Douglasi, 3 to 10 feet
„ insignis, 2 to 7 feet
„ Menziesi, 3 to 7 feet
„ pinsapo, fine plants, 3 to 6 feet
„ Nordmanniana, 1½ to 3 ft., all from seed and remarkably handsome
„ nobilis, 1½ to 2 feet; a few larger, 5 and 6 feet high, on their own roots, and with perfect leaders
„ Montezumæ, 2 to 4 feet
Pinus canadensis, 3 to 8 feet
Cupressus macrocarpa or Lambertiana, 4 to 7 feet
„ thyoides variegata, 3 to 4 feet (the variegated white Cedar)
Juniperus, Upright Irish, perfect columns, 3 to 7 feet
„ chinensis, 2 to 8 feet
Yew, common English, 3 to 8 feet
„ Irish, 4 to 10 feet
„ gold-striped, 1½ to 3 feet
„ do., tall standards, 4 to 7 ft.
„ Dovaston, or Weeping, worked on tall straight stems
Thuja aurea, the finest plants in the country
Libocedrus chilensis, the finest plants in the country
Large variegated Hollies
„ Standard Bays

Also an immense stock of large Evergreens, Standard Ornamental Trees, &c.

All the plants here offered may be seen, growing in our Nursery; they are removed every year, and will travel any distance with perfect safety. Of some, such as Araucarias, Deodaras, Golden Yews, Thuja aurea, Pinus nobilis, Nordmanniana, we have any quantity; and the plants, for root and branch, are not to be surpassed. Priced Catalogues will be forwarded on application, enclosing two postage stamps, to Waterer and Godfrey, nephews and successors of the late Hosea Waterer, Knap Hill Nursery, Woking, Surrey, near the Woking Station, South-Western Railway, where all trains stop, and where capital conveyances can be obtained.

The 2d. stamp will also include a descriptive Catalogue of their American Plants Roses, and Nursery Stock in general.

CUCUMBER AND MELON SEED.

THE FOLLOWING SORTS MAY BE HAD OF

JOHN CATTELL, NURSERIES, WESTERHAM, KENT.

CUCUMBERS.

First-rate sorts for early framing, &c., per dozen seeds, 13 Penny Stamps.

SION HOUSE (Lord Keynon's Favourite).	CARPENTER'S WONDER.	WALKER'S.
EMPEROR.	NORFOLK HERO.	WARWICKSHIRE HERO.
MAN OF KENT.	VICTORY OF BATH.	KERRYSON'S PRIZE.
	MANCHESTER PRIZE.	ABAN'S CONQUEROR OF THE WEST.

Approved sorts for frame or ridge, per dozen seeds, 7 Penny Stamps:—

CATTELL'S LONG BLACK SPINE.	CUTHILL'S BLACK SPINE.
Do. do. WHITE do.	CHAMBERLAIN'S PROLIFIC.

MELONS.—Finest sorts, per dozen seeds, 13 Penny Stamps.

	Season.	Form.	Colour.	Flesh	Weight.	Remarks.
ALLNUTT'S	Late	Round	Greenish white	Green	2 to 3 lbs.	Good.
BEECHWOOD	Early	Oval	Greenish yellow	Green	2 to 3 lbs.	Excellent.
BELLEGARDE...	Early	Round	Yellow	Green	5 to 8 lbs.	Beautifully quartered, good flavoured.
BROMHAM HALL	Late	Round	Greenish white	Green	3 to 4 lbs.	Good.
CANTALOUP	Early	Round	Yellow	Scarlet	2 to 4 lbs.	Excellent for preserving. [sugary.
LARGE OVAL...	Late	Oval	Greenish yellow	Green	5 to 7 lbs.	Requires keeping after being cut, very
MONTREAL	Late	Round	Green	Green	3 to 4 lbs.	Excellent flavour, beautifully netted.
SEREPTA	Early	Oval	Greenish yellow	Green	3 to 4 lbs.	Very good. [very best and earliest.
TRENTHAM HYBRID (Persian) ...	Early	Oval	Yellow	White	2 to 3 lbs.	Thin rind, high flavoured, one of the
VICTORY OF BATH	Early	Oval	Greenish yellow	White	3 to 5 lbs.	Thin rind, one of the earliest.

GLENNY'S SUPERB BALSAM SEED from the largest and most double Flowers in the world. Six classes, 37 stamps; 50 seeds mixed, 13 stamps—in sealed packets only—with Directions for Culture.—Letters to Mr. Glenny, Horticultural Agent, Auctioneer, and Valuer, Dungannon House, Fulham.

WILLIAM BARRATT, Landscape Gardener, Wakefield.
, Plans and Estimates furnished.

THE CRYSTAL PALACE FLOWER BASKETS, as exhibited in Nave and Transepts of the Crystal Palace, Sydenham, made to the original and other new elegant designs, by W. RICHARDS, at the Wire Works, 370, Oxford Street, nearly opposite the Princess's Theatre. Conservatories and Aviaries fitted up. Wire work in all its varieties. Game and garden fence—parrot cages and all others. Choice birds kept on sale. Window Blinds of every possible description, of the very best materials and workmanship.
N.B. An allowance to nurserymen and the trade.

PRIZE MEDAL—1851.
AT A VERY ECONOMICAL RATE.

SAMUEL CUNDY, Mason and Builder, Pimlico Marble and Stone Works, Belgrave Wharf, Lower Belgrave Place, Pimlico, London.

Marble Chimney-pieces manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price. A good Marble Chimney-piece for 40s. Marble Work in all its branches at a remarkably cheap rate for Halls, Dairies, Larders, &c. Circulars sent on application.

N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank.

THE LARGEST AND CHEAPEST ESTABLISHMENT IN ENGLAND for GERANIUMS (show and fancy), FRENCH GERANIUMS, FUCHSIAS, VERBENAS, FAIRY ROSES, CHRYSANTHEMUMS, HELIOTROPES, CINERARIAS, CALCEOLARIAS, PRIMULAS, and other soft-wooded plants, is the Floral Nursery, Acton Road, Turnham Green, near London. More than 250,000 plants are there cultivated annually.

For further particulars, see Advertisement in last week's *Chronicle*. Catalogues forwarded to all parts gratis.

Every possible exertion will be made to give the most perfect satisfaction to all who may favour this Establishment with their patronage. None but thoroughly established Plants will be sent out, and full reliance may be placed on prompt attention and fair dealing.

The Trade will be liberally dealt with. Provincial Nurserymen and Florists will do well to try this Establishment.

Terms cash or a satisfactory reference.

JOHN WESTWOOD, PROPRIETOR.

AMERICAN PLANTS.

JOHN WATERER begs to announce that he has published a new Catalogue of his Rhododendrons, &c., as exhibited by him in the Gardens of the Royal Botanic Society, Regent's Park, London. It describes the colours of all the Rhododendrons considered worthy of cultivation, with a Treatise on their successful management, and may be had by enclosing two postage stamps.

The American Nursery, Bagshot, Surrey, near Farnborough Station, South-Western Railway.

AMERICAN NURSERY.

GEORGE BAKER'S DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS, &c., as exhibited by him in the Royal Botanic Gardens, Regent's Park, may be had by inclosing two postage stamps.

G. B. begs to call attention to his fine stock of Weeping Hollies, Coniferous Plants, Ornamental Shrubs, &c.—American Nursery, Windlesham, near Bagshot, Surrey, near Staines Station, South-Western Railway, where conveyances may be obtained.

AMERICAN PLANTS.—A Descriptive Priced CATALOGUE of HARDY AMERICAN PLANTS for the coming season is just published, and may be had by enclosing two stamps for postage. As everything in the way of American Plants is grown to an unequalled extent at this Nursery, intending purchasers would do well to provide themselves with this Catalogue.

WATERER AND GODFREY, Nephews and Successors to the late Hosea Waterer, Knap Hill Nursery, Woking, Surrey.

GEORGE JACKMAN begs to announce that he has just published a new and complete CATALOGUE of his Ornamental Evergreens, Conifers, Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., and may be had on application by enclosing two postage stamps.

Woking Nursery, 1½ mile from Woking Station, South Western Railway, where all Trains stop, and where capital conveyances may be had.—December 9.

NURSERY AND SEED ESTABLISHMENT, LEXDEN ROAD, COLCHESTER.

(ESTABLISHED UPWARDS OF THIRTY-FIVE YEARS).

HORATIO BUNTING begs to announce that his extensive CATALOGUE of FLOWER and VEGETABLE SEEDS is now ready, and may be had on application, by inclosing two postage stamps. He can confidently recommend the articles therein enumerated, as nearly every article is his own growth, true to name, and of first-rate quality. Early orders will oblige, as the quantities of Lettuce and several other things are limited.

N.B. Please to observe the Address.

R. PARKER begs to offer the following:—CINERARIAS (Seedlings), from all the finest varieties carefully selected, including the new varieties sent out last autumn. Strong established plants, in 4-inch pots, at 4*s*. per dozen. A choice collection of named Cinerarias in strong established plants, purchaser's selection, at 9*s*. per dozen.

ROSES, consisting of the best varieties of Hybrid Perpetuals, Teas, Bourbons, &c., well established in pots. Purchaser's selection, at 12*s*. per dozen. List of names forwarded upon application.

A remittance or reference to accompany all orders from unknown correspondents.

Paradise Nursery, Hornsey Road, Islington.

MESSRS. E. G. HENDERSON AND SON, of the Wellington Nursery, St. John's Wood, London, beg to announce that they are now sending out the following new Plants:

HELIOTROPIUM, BEAUTY OF THE BOUDOIR; the best for Garden and Pot Culture.

CHRYSANTHEMUM, ANNIE HENDERSON; the summer flowering variety; colour yellow, and form of Annie Salter; very dwarf.

GERANIUM, PRETTY POLLY; the loveliest hybrid bedding Geranium; colour, orange salmon.

ACHIMENES HENDERSONI; the newest and prettiest hybrid variety out.

FANCY GERANIUMS: CLOTH OF SILVER, EVENING STAR, and CRYSTAL BEAUTY; for form, colours, and general good qualities unequalled.

CINERARIAS: MRS. ROGERS, MRS. GERARD LEIGH, FASCINATION, and PRINCE OF PRUSSIA. (No further orders can be executed for Mrs. Rogers and Mrs. Gerard Leigh until next spring.)

See Autumn Catalogue for full descriptions, price, &c. &c.

The NEW RHODODENDRONS discovered on the Bhootan Alps, by THOMAS J. BOOTH, Esq., surpassing in magnificence of flower the Sikkim species. Full particulars of them will be seen on reference to their Spring Catalogue.

TO THE AGRICULTURISTS OF ENGLAND.

HARRADINE'S "NE PLUS ULTRA" WHEAT.—A single ear of this wonderful Wheat, which was purchased five years ago of a soldier on tramp, who brought it from some distant country, was sown in 1849; the produce of this was again sown in 1850, and also in 1851, when it yielded at the rate of 19 coombs, 1 bushel, and 1 peck per acre. This induced me to continue its cultivation. A sheaf and a quantity of corn will be shown on Messrs. Garratts' Stand in the Agricultural Department of the Crystal Palace, by which its quality and general character may be seen.

The following Gentlemen kindly lent me portions of their land last season, to test the producing quality of the Wheat, and up to this year not one kernel has been sold for seed. The quantity sown on all the varieties of soil has in no instance exceeded 4 pecks per acre. On land of Mr. Wasdale, in the parish of Woodhurst, this Wheat was sown after Tartarian Oats, Clover, Seeds, Peas, and Tares (some being sown in February, and equally productive). On land in the occupation of Mr. Gadsby, in the parish of Godmanchester, 1 acre, the yield of which has been 30 per cent. over his own Wheat, grown in the same field, and has been tested by several Agriculturists in the neighbourhood. On land in my own possession, in Needingworth and other places (both Fen and Highland), it has been sown after Wheat, Clover, Barley, Beans, Oats, and Fallow, and in every instance has been most productive.

I am prepared to part with a limited quantity, which can be had on application to me, at 25*s*. a bushel. All orders to be accompanied by a remittance.

JOHN THANG HARRADINE, Needingworth, St. Ives, Huntingdonshire.

TO THE SEED TRADE.

MESSRS. ARTHUR HENDERSON AND CO. are now prepared to supply SEEDS of the following recent introductions.

N.B.—Mr. W. H. DUNNETT (the raiser), Seed Grower, Dedham, Essex, will also execute all orders intrusted to him with the greatest care and attention.

WHITE TOPPED CLARY, a fine showy hardy annual, remaining a long time in flower—

1 oz. ... 5*s*. | 4 oz. ... 15*s*. | 8 oz. .. 25*s*. | 16 oz. ... 40*s*.

LIMNANTHUS SULPHUREA ODORATA; yellow ground, edged with white and rose-coloured stamens; a beautiful trailing hardy annual, very sweet scented, and throwing off its fragrance like the Mignonette, and continuing in flower for a considerable period:

1 oz., 10*s*. 0*d*. | 4 do., 35*s*. | 8 do., 60*s*. | 16 do., 100*s*.

DIANTHUS DUNNETTII SUPERBUS; very dwarf, fine dark Sweet William—

1 oz., 20*s*. | 2 oz., 35*s*. | 4 oz., 63*s*. | 8 oz., 105*s*. | 16 oz., 168*s*.

Pine Apple Place, Edgeware Road, London.

SEED WHEAT.—Samples and Prices of RED HYBRID, NURSERY, and other kinds of Wheat from the CHALK, sent on application to Mr. H. RAYNBIRD, Basingstoke.

The Red Hybrid and Nursery are well suited for late sowing after Turnips.

PYRAMIDAL PEAR TREES ON QUINCE STOCKS.

J. AND J. FRASER have to offer a very fine collection of the best varieties of PEARS grafted on the Quince; descriptive Catalogues of which may be had on application.

In offering these Pears, grafted on the Quince stock, we would wish particularly to call attention to their many excellent qualities. They are very compact in growth, and most prolific in bearing, fruiting profusely while the trees are small; thus forming a great acquisition for a small garden. Planted by the side of walks, in addition to their utility, they add much to the neatness and beauty of a kitchen garden. Indeed too much can scarcely be said in favour of these miniature Pear trees: as a proof of their merit the demand for them is yearly increasing.

Strong Trees, showing Fruit Buds, 2*s*. 6*d*. to 3*s*. 6*d*. each.

Lea Bridge Road, Essex, December 9.

J. AND J. FRASER beg to offer strong Standards of the following new ROSES, viz.:—

HYBRID PERPETUALS.

Alexandrine Bachmeteff, 3*s*. 6*d*.	Mrs. Rivers, 2*s*. 6*d*.
Baron Heeckeren, 3*s*. 6*d*.	Prince Leon, 5*s*.
Comte de Nanteuil, 3*s*.	Souvenir de Leveson Gower, 5*s*.
Docteur Juillard, 3*s*.	Triomphe de Paris, 5*s*.
General Castellane, 5*s*.	Bourbon, Paxton, 2*s*. 6*d*.
Gloire de France, 5*s*.	Reveil, 3*s*. 6*d*.
Jules Margottin, 5*s*.	Scipion Cochet, 2*s*.
L'Enfant du Mont Carmel, 3*s*.	Perpetual Moss André Thouin, 5*s*.
Le Leon des Combats, 2*s*.	Tea scented Melaine Willermorz, 3*s*. 9*d*.
Madame Domage, 5*s*.	Vicomtesse de Cazes, 3*s*.
Madame Fremion, 2*s*.	China, 2*s*.
Mère de St. Louis, 2*s*. 6*d*.	Citoyen des deux Mondes, 2*s*.

If one dozen are ordered the purchaser may select one in addition as a compensation for carriage. For a description of these new Roses, see Rose Catalogue, which may be had on application.—Lea Bridge Road, Essex, Dec. 9.

SPECIMEN IRISH YEWS.

THOMAS JACKSON AND SON, having a large Stock of fine specimens of this very ornamental tree, beg to offer them at the undernamed low prices.

8 to 9 feet high,	and 8 feet in circumference	...	63*s*. 0*d*. each.
8 „	and 4 to 5 feet „	...	21 0 „
7 to 8 „	and 4 feet „	...	15 0 „
6 to 7 „	and 3 to 4 feet „	...	10 6 „
6 „	and 3 feet „	...	7 6 „

Handsome smaller specimens at proportionately lower prices.

Kingston, Surrey.

GRAPE VINES FROM EYES.

R. GLENDINNING has a large Stock of the undermentioned Vines, extra strong in pots, with well ripened wood, 5 ft. and upwards in the canes. Some of the kinds are new, and which have been proved and found of first-rate quality:

Black Hamburgh	Black Frontignan
The Pope's Hamburgh	Cabul
Wilmot's Hamburgh	Gronnir du Cantal
Mill Hill Hamburgh	Welbeck Tripoli
Victoria Hamburgh	Grove End Sweet Water
Muscat of Alexandria	Pitmaston White Cluster
Barnes's Muscat	Chasselas Musque
Reeves's Muscadine	Black Barbarossa
Raisin de Calabre	Muscat non de jura
White Frontignan	Chasselas de Fontainbleau
Grizzly Frontignan	Royal Muscadine
	Large White Sweet Water

Chiswick Nursery, London.

BASS AND BROWN'S NEW AUTUMN CATALOGUE, supplied free for three Penny Stamps. They have this season a very fine and vigorous stock of the finest Roses, among which are a number of very superb new Continental varieties, consisting chiefly of the perpetual class. The following selections will be highly approved,

ROSES.

100 Standards in 100 very superior varieties	£7 10 0
100 „ 50 „ „	6 10 0
50 „ 50 varieties ditto, all selected from perpetuals	4 0 0
100 dwarfs and half standards, or all dwarfs, in 100 very superior varieties	4 0 0
...	3 0 0
100 ditto in 50 varieties, ditto	2 10 0
50 ditto in 50 varieties, ditto, all from perpetuals ...	1 10 0
Fine mixed dwarfs, per 100...	

Hardy Herbaceous Plants, Hollyhocks, prize-named Gooseberries, Strawberries, Standard Dwarf and Trained Fruit Trees, Flower Roots, and a variety of desirable articles offered in selection for present planting, for which see *Gardeners' Chronicle*, Oct. 14, page 659, and Oct. 28th, page 690.—Goods, carriage free (not under 20*s*.), to all the London termini, and all Stations on the London and Norwich Colchester Line. Plants added gratis with orders of 40*s*. and upwards.

Seed and Horticultural Establishment, Sudbury, Suffolk.

SPLENDID NEW RHUBARB.

SALT'S CRIMSON PERFECTION.

ROBERT SALT begs leave to inform the Gentry, Nurserymen, Gardeners, &c., that this splendid variety of Rhubarb is now ready for distribution. It is universally allowed to be the most early, prolific and delicious variety ever offered to the Public.

See *Gardeners' Chronicle* June 11, 1853: "Very good, and of a most beautiful crimson; compared with others, it is remarkable for the small amount of acidity it contains."—ED.

Certificates of Merit were awarded for specimens exhibited at the Meeting of the Horticultural Society, Regent Street, London, June 28th, 1853—at Nottingham, May 24th, 1854—at Derby Midland, May 25th, 1854—at Ormskirk, Lancashire, August 30th, 1854. Price 7*s*. 6*d*. per root, 3 for one guinea, and 6 for 2*l*.

Orders addressed to ROBERT SALT, Longton, Staffordshire; or the following agents, will have immediate attention: Messrs. HURST & M'MULLEN, 6, Leadenhall Street, London; Messrs. BURGESS & KENT, Penkhull, Staffordshire; Mr WOOD, Nurseryman, Coppice, near Nottingham; Messrs. FRANCIS & ARTHUR DICKSON, East-gate Street, Chester; Mr. SALISBURY, Melbourne, Derbyshire. A liberal discount allowed to the trade. A Post-office order from unknown correspondents.—Longton, Dec. 9.

SUPERB HOLLYHOCKS, ROCKETS, SEEDS, ETC.

WILLIAM CHATER'S descriptive list of his superb HOLLYHOCKS, containing hints on their culture and observations on exhibiting, &c., may be had on application by enclosing a postage stamp. Packets of seed, consisting of 20 varieties, selected from the best show flowers, 5*s*.; 12 varieties, 2*s*. 6*d*.; and from good double sorts, 1*s*.

Very superior Quilled German Asters, 12 distinct varieties, separate 2*s*., mixed 1*s*. per packet. Also Choice French Asters, 12 varieties, separate, 3*s*., mixed, 1*s*. 6*d*. Fine Quilled African Marigolds, lemon and orange, 6*d*. per packet.

New Double Crimson ROCKET, excellent bedding plant for spring flowering, 6*s*. per dozen, or 2[illegible] per 100. Double French White, 4*s*. per dozen, or 30*s*. per 100.

Saffron Walden Nursery, Dec. 9.

THE PAMPAS GRASS, GYNERIUM ARGENTEUM.

LUCOMBE, PINCE, & CO. have a fine healthy stock of this highly ornamental plant, well established in pots, and fit to send out immediately.

Specimens of it are now and have long been flowering in their nursery, and it is universally admitted that few plants produce a more beautiful effect than this gigantic Grass. See woodcut and description of it in *Gardeners' Chronicle* of the 4th ult.

Sizes, prices, and all particulars may be had on application to LUCOMBE, PINCE, & Co., Exeter Nursery, Exeter.

BEAUTIFUL NEW PLANT.

LUCOMBE, PINCE, AND Co., are now prepared to send out their beautiful New VERONICA KERMESINA, raised by that eminent Horticulturist, J. Luscombe, Esq., of Coombe Royal, who sent specimens to Dr. Lindley at the time of its first flowering, who thus pronounced his first opinion of it:—

"*The variety sent with this was charming; a decided rose colour having mingled with the violet.*"

See also notice of Dr. Lindley in the *Chronicle* for December 2d, 1854, as follows:—

"*L., P., and Co.: Your V. Kermesina is a handsome dark variety of V. Speciosa, its beautiful large spikes of deep purplish crimson blossoms cannot fail to make it a favourite.*"

Price 7*s*. 6*d*. each.—A few extra sized specimens may be had. The usual discount to the trade when three or more are taken.

Exeter Nursery, Exeter, Established 1720.

NOW READY.

SUTTON'S COMPLETE COLLECTIONS OF KITCHEN GARDEN SEEDS *are now ready, and should be ordered forthwith, by which a full supply of every kind of Vegetable Seed required during the whole year will be secured (including the best sorts yet introduced), and at a very small cost, viz.:—*

No. 1 Collection	... £3 0 0	No. 3 Collection	... £1 5 0
No. 2 do.	... 2 0 0	No. 4 do.	... 0 15 0

The quantities in each collection being apportioned to the size of the garden, INSTRUCTIONS ON CULTIVATION will be enclosed with Nos. 1, 2, and 3. To secure the best sorts, orders should be given immediately, addressed

JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

The Gardeners' Chronicle.

SATURDAY, DECEMBER 9, 1854.

THE hope we lately expressed that some of the readers of our columns might be able to favour us with certain information respecting the place where the so-called Pampas Grass (*Gynerium argenteum*) grows wild, has already been kindly responded to by "H. K." at p. 741, and more recently by "a Devonian" at p. 774. To the information thus obligingly communicated we have now the pleasure to add the following important facts.

In the first place, Sir WILLIAM HOOKER has been good enough to examine his immense herbarium, in which he finds wild specimens from the following quarters, viz.:—Monte Video, Captain PHILLIP KING and SELLOW; Rio Grande do Sul, TWEEDIE; Buenos Ayres, TWEEDIE; Chiloe, Captain PHILLIP KING; and Chili, CUMING, No. 386.

"It would thus appear," observes Sir WILLIAM, "to extend across from the South Atlantic to the South Pacific (unless it be a kind of maritime Grass, which is very possible), in south latitude from about 30° to 42°. NEES, in Mart. Fl. Brasil. Gramineæ, gives St. Sebastian and province of St. Paulo, in about 24° S. Travellers, who know nothing of Grasses, probably mistake the Gynerium saccharoides for this. The panicle is very like in habit, but the foliage quite different—infinitely broader."

Our distinguished friend Mons. WEDDELL, the intrepid traveller in S. America, writes from Paris as follows:—

"Whilst examining, this morning, a parcel of Chilian plants, I fell in with a fine panicle of Gynerium argenteum, gathered by BERTERO from the table-lands of the province of Colchagua; and I had scarcely glimpsed at it when I remembered having myself picked in the Bolivian Andes, and classed under the name of G. speciosum, something very similar to it. Thinking the subject might interest you, I lost no time in comparing notes, and soon found my supposition confirmed. I am now, then, enabled to assert that one of the habitats of Gynerium argenteum, *aliàs* G. speciosum (NEES et MEYEN), is the Cordillera of the Andes, from 14,000 feet downwards. By MEYEN it was picked on the banks of the Rio Copiapo (North Chili), at about 50 miles from the coast; that is, a few miles only beyond the famous copper mines of San Francisco. PŒPPIG, again, met with it in the province of Concepcion (Centr. Chil.), on the steeps of the volcano of Antuco, situated, I believe, at about 100 miles from the sea. The precise locality from which BERTERO brought his specimens is Rancagua, a town situated on the 34° of south latitude. I myself picked the plant near La Paz, in the north of

Bolivia, at about 12,000 feet, but I remember well seeing it in several other spots round about the great lake of Titicaca, a thousand feet higher up. Near La Paz it may be said to grow profusely, hedging in, as it were, the sides of some rivulets used for irrigation or for working mills. My not being more struck with its beauty (for struck a little I was) may be accounted for by the fact that the stems do not, in those elevated regions, attain anything like the height they appear to have under a more genial sky, although the panicles themselves are a foot or a foot and a half long. Besides this, the tussocks have a very untidy appearance, arising from the persistency of the dead, brown, and wiry leaves. The mean temperature of the districts in which this Grass grows accounts very well for its hardiness in European gardens, and it appears very natural that its dominions should extend from Chili towards Monte Video, or Buenos Ayres, but I can hardly believe that it is to be found in the torrid regions of South America, as we are led to infer from the note inserted in your last week's columns by "a Devonian." Might not the panicle seen by your correspondent be that of Gynerium sagittale (G. saccharoides, Humbl. and Boupl.) and not that of G. argenteum. In appearance they are very much akin, but there are only two flowers in each spikelet of the former, whereas the latter has constantly a greater number (three to six). I can the better imagine this *quiproquo* to have taken place, having been myself to the very part of the Parana alluded to by your correspondent; I am therefore able to state that G. sagittale is very abundant there. Indeed the Indians of North Paraguay employ no other material for their long arrows than the remarkably straight woody peduncles of this magnificent plant, far more magnificent than any other Grass I know of. Let me add that in the course of my numerous visits to Mount Corcovado, during a three months' stay at Rio, I saw nothing that could be taken for a Gynerium, unless it were a Sugar Cane! A circumstance not to be lost sight of by those who may wish to import this beautiful Grass by cuttings is, that it, as well as all its congeners, have their male and female flowers borne by separate individuals, so that for there to be even a chance of the plant eventually propagating by seed in Europe, due attention ought to be paid to sexes."

It is perhaps not so generally known as it should be that we owe the possession of this magnificent exotic to the skill of David Moore, Esq., the indefatigable superintendent of the Botanic Garden at Glasnevin, near Dublin. He has favoured us with the following account of its introduction to Ireland. "I have to state that I received the seeds from which *two* plants were raised from my valued old friend, Mr. Tweedie, of Buenos Ayres, who collected it somewhere in South Brazil. I have just laid my hand on his letter which accompanied the seeds, where I find the following note:—

'I now send one specimen, Aira gigantea, which is the most showy plant of any class in this country. It has flower stems from 10 to 12 feet high, with large white spikes of flowers, 12 to 15 inches long; appearing, when in blossom, like white sheets hung on poles, and seen at a distance of many miles in our flat plains. It likes a cool clay soil.'

"There cannot be any male plants in the country, as all have been propagated from the two plants raised here, both of which were females."

It is to be hoped that these very satisfactory details will secure an abundant supply of seed, so that the most magnificent of Grasses may be made to decorate every cottage garden. We may add that the plant in the garden of the Horticultural Society has lost none of its beauty as yet (Dec. 6), but continues to rear its graceful plumes with all their original silvery brilliancy on the bank of evergreens where it is stationed.

Samples of Grapes from Sorrento, for which we are obliged to Mr. Taylor, have just reached us, showing the deplorable state to which the vintage is reduced so low down in Italy as the Bay of Naples. On a bunch now before us there are barely half a dozen tolerably sound Grapes, under the guise of diminutive and meagre raisins, while the remainder presents nothing save mere husks containing two or three seeds. As in other cases of mildewed Grapes these are perfect and abundant, notwithstanding the depraved condition of the pulp, on which it might be supposed that they would depend for nutriment. There is, however, reason to believe that they cannot be in precisely the same condition as those which ripen where the accompanying parts are healthy and fully developed, and since the most useful varieties of cultivated plants are raised from seed which has been less grossly nourished, or in which the accompanying tissues may not have reached their full development, it would be worth the trial whether something might not be elicited, with new and profitable qualities, from the seeds of diseased Grapes of superior kinds. Attempts are now in progress to improve the properties of American Vines, so as to make them more suitable to the climate of the more northern states and more calculated to produce wine of a first-rate class, and there is no reason why similar experiments should not be conducted on a much broader scale than heretofore in Europe, whether by crossing with the American varieties more extensively cultivated in Europe, such as the Isabella, which almost entirely resists the mildew, or by raising seedlings from native varieties. Count Odart's experiments, indeed, were not very encouraging, as they gave no result till after the lapse of 25 years, but M. Vibert has now succeeded in obtaining fruit from trained seedlings in five years, and he has not neglected the Isabella, though his experiments had no especial reference to the prevalent disease. In consequence of the diœcious habits of the varieties of Vitis Labrusca, of which the Isabella is a seedling, they have a peculiar tendency to produce new forms under the influence of the pollen of neighbouring Vines, and accordingly the seedlings of the Isabella not only depart in some cases from the peculiar Raspberry flavour of the original, but present almost every conceivable difference in shape and colour.

As regards the diseased berries from Sorrento, most of them are covered with white or olivaceous mould. The former consists of more or less decomposed Oidium, and the latter of the common Cladosporium. Amongst the former we could find no trace of any secondary form of fruit. The latter has, in all probability, made its appearance during the course of transmission. Sulphur has been used on a large scale with great success during the present season in our Hop grounds, and unless the prejudices of the peasantry interfere, we feel sure that the results would be highly beneficial in the vineyards, where it could be applied with far less difficulty and at a less expense. It must, however, if employed at all, be used as soon as the evil makes its appearance, and a second or even a third application may be necessary, if not entirely conquered by the first or second. *M. J. B.*

Sir Joseph Paxton has now received, through the electors of Coventry, the highest honour which his countrymen have it in their power to bestow. And he has well deserved it. From a very humble station he has risen by a rare combination of industry, talent, enterprise and integrity, to the highly honourable post just conferred upon him. Long may he live to fill it with credit to himself and advantage to his country.

We are precluded by our compact with the public from engaging in party politics. Even in the absence of such a compact we should avoid them. We may, however, venture to say, what we know that the great middle class of English will heartily re-echo, that such men are much wanted in the House of Commons, independent, honest, fearless, not to be intimidated by mob violence, not to be deluded by sentimental folly, not to be cajoled by Treasury blandishment. What his politics may be is in our eyes immaterial; good men and true are to be found on every side in the House of Commons. But this we may say of Sir Joseph Paxton, whom we have known for many a long year, that he is a thoroughly upright as well as clever man, and of the true stuff of which recruits for Parliament should be made.

—VEGETABLE PATHOLOGY.—No. XLIX.

219. *b. External or Accidental.*—It has been shown that even constitutional tendencies to disease are in the first instance induced by external causes, though capable afterwards of being handed down to remote posterity.* There are, however, many maladies which are derived at once from outward agents, the effect of which is immediately visible, and, in many cases, as speedily and certainly recognised. The perfect health, for instance, of every particular species depends upon a certain combination of temperature and moisture, the composition of the atmosphere, and of the nutriment imbibed, and a great part of the success of the cultivator depends upon a due appreciation of the requisite conditions, and an artificial compensation where they cannot be otherwise secured. The conditions are as variable almost as the plants themselves. Some require constant moisture, accompanied either by a dry or moist state of the atmosphere, others actual immersion in water; others, again, demand a winter, others a summer rest; others are impatient of any direct moisture, imbibing principally what is contained in the surrounding air; many will flourish only in the pure attenuated air of alpine regions, while others are as greedy of the heavy atmosphere of swamps, and all these with almost every possible variety of combination. If such conditions do not exist the vital action is impaired, and either a sickly growth is the consequence or absolute death. The influence of external atmospheric and climatic agency on the health of plants has already been considered, and need only be mentioned here as a simple indication of the causes from which disease arises. Details will hereafter be requisite in the consideration of particular diseases.

220. There are, however, other external causes which produce either disease or injury, which do not depend upon any mere atmospheric conditions affecting the chemical constitution and the attendant vital energies of plants, but upon specific circumstances, whether of rare or frequent occurrence. The violence of winds, the destructive force of lightning, an atmosphere depraved from manufactures of corrosive chemical matters, the impurity due to crowded population, accidental injury or injudicious pruning, excessive manuring or the presence of matters prejudicial to vegetable life, whether in greater or less quantities, are all in turn fruitful sources of disease. The consequent malady is not always speedy in its effects, but destruction is not less sure on that account.

221. In order to the maintenance of a due balance between the several parts of creation, Providence has provided not only that one order should live at the expense] of the other, as is the case virtually with the animal and vegetable kingdoms, for even carnivorous animals are themselves, in the end, "served by the field," but that one portion of the vegetable world, and that to no insignificant degree, should maintain its existence from the other. Nay, even the vegetable world in turn preys on animal life, and perhaps to a far greater extent than is at present recognised. Thus it is that a mutual interchange of destruction is constantly at work. It is not however in general the larger animals, which are less numerous, that cause extensive injury, but rather the almost infinite myriads of insect plagues, abundant both in numbers of individuals and species, that cause real injury to plants, almost every species, or at least natural group, having one or more enemies, and sometimes a considerable number, destined to live at its expense, either impairing luxuriance by the destruction of its roots or foliage, or destroying fertility by injuries to the fructifying organs, which are frequently the parts most especially subject to injury. The ravages of caterpillars and locusts are too notorious to require particular notice, fatal in the case of plants of annual growth, and frequently prejudicial to health to those of a more enduring nature, in consequence of the destruction of the organs more especially necessary for the accomplishment of the purposes of due elaboration, and the preternatural efforts at development to replace the loss which can only be made at the expense of the stores already deposited in the tissues, and intended for use at some more distant period. The attacks of different species of aphis though more insidious are not less certainly destructive, as they live at the expense of the nutritive matter already in greater or less measure prepared in the cellular tissue, and directed from its proper office of maintenance and increase of the several organs of the plant. The Wheat midge affords an excellent example of sterility consequent on the ravages of minute insects, both on account of the apparent insignificance of the object, and the extent of evil to which it gives rise. It is but seldom that any direct remedy can be employed against these inflictions. But happily, either from the peculiar habits of the species, or from countervailing enemies in other members of the animal world, their visits are few and far between, or their multitudes disappear without leaving behind a proportionate progeny. *M. J. B.*

* Other instances of disease arising from internal causes might have been mentioned, as the formation of besom-like fascicles in the Birch, the knots in the bark of Beech, or the tufts of branches in the Fir, which have given rise to what is called Pinus Clanbrasiliana. These, however, and other like matters, will find their place under a different head.

—ANGELONIA GRANDIFLORA.

This is a really useful plant for summer decoration, producing spikes of Pine-apple scented flowers very freely, and remaining in beauty for months; being also of quick growth and easy culture, useful sized specimens of it may soon be obtained. Cuttings selected of short-jointed rather firm bits of the young shoots should be put in early in summer, placing them in a moderate bottom-heat, where with proper care in watering and shading, &c., they will emit roots in a few weeks, and may then be potted singly in small pots. Replace them in a warm moist situation after potting, and guard them from the direct rays of the sun until they become established in their pots, when they should be gradually inured to a free circulation of air, and placed near the glass. Let the young plants be stopped as frequently as may be necessary to secure a bushy habit of growth, and attend to shifting when they require more pot room.

With ordinary management strong bushy plants in 7-inch pots may easily be obtained by autumn from cuttings rooted in spring, and these with common care will form specimens of almost any desired size the following season. The plants are somewhat liable to damp off in winter unless properly treated, therefore place them near the glass in a light airy part of a house, where the temperature is kept at about 50° by fire-heat, and give water sparingly while the plants are in a dormant state. Early in February cut back and tie out the principal shoots sufficiently to secure a thick bushy habit of growth, and place the plants near the glass in a warm house, and thoroughly moisten the balls in order to induce active growth. Also see to the state of the roots shortly after placing the plants in heat, and give a liberal shift to such as are found to require more pot room, and water carefully until the plants get into free growth, but moisten

them overhead with the syringe on the afternoons of fine days, and maintain a moist atmosphere. As the season advances, give air freely on fine days, and attend to stopping any shoots that may incline to outgrow the others, and keep them nicely tied out, so as to promote a bushy habit of growth.

When good sized bushes are obtained, which, with good management, will be the case by May, discontinue stopping, and in order that the flowering shoots may be as dwarf as they can be obtained, keep the specimens near the glass, and admit air rather freely on fine days, keeping the shoots thin by staking. If the specimens appear to want more pot room, this should be seen to as soon as they start into growth after the final stopping, and if they are expected to continue growing and flowering the greater part of the summer and autumn, they must be afforded sufficient space for their roots. When they are fairly in bloom they may be removed to a warm corner in the conservatory or show-house; an occasional watering with weak clear manure water will be of great service in maintaining them in a vigorous healthy state, and securing a succession of flower; and, if necessary, they may be cut over, and removed to a warm situation, where they will soon throw up an abundance of young wood, and flower profusely a second time. When the specimens become useless for decorative purposes in autumn they may be thrown away at once, as young plants grow so rapidly that it is useless wintering large bulky old specimens—but be provided with young plants before throwing away the old ones. Any light rich fibry soil, such as equal parts of loam, leaf soil and peat, with a proper admixture of sand, will answer perfectly for the growth of this plant; but a small proportion of well decayed manure may be added with advantage at the last shift, and good drainage should be secured. *Alpha.*

ORIGIN OF THE PEAR TREE, ITS PROGRESS, AND SUCCESS.

(*Continued from p.* 773.)

TWENTY-FIVE years ago, I commenced the formation of my present collection of fruit trees; and I have successively added to it all the best varieties in the trade, and also such as I could discover in the collections of the most intelligent amateurs. These varieties, which are all grown on the Pear stock, have been carefully studied in my nursery, and in the gardens of my friends, under different circumstances of soil and aspect. Their examination is, however, far from being complete as regards the latest novelties; for, in order to be sure of them, they must be seen during several periods of growth and production. Indeed, it is not sufficient to remark the vigour of a variety of the Pear tree; it is also necessary to ascertain its hardiness after it has been for some time in full bearing, this being the principal test of its merit. The last three seasons have been very favourable for ascertaining this property of hardiness, on account of the extreme variations of the weather during the winter and spring.

My nursery of fruit trees is established in a situation exposed to every wind, and all severities of the climate throughout the year. The ground is slightly inclined to the west; the surface soil is light; the subsoil in certain parts a layer of siliceous marl, or marly clay. The subsoil of the lower portion is alluvial. The land, in short, possesses all the conditions desirable for the growth of the Pear tree, both on the Pear stock and on the Quince. In this nursery, about a hectare [nearly 2½ acres] is planted for examination and comparison:—

1st. 450 varieties of Pear trees of English, French, American, German, and more especially of Belgian origin.
2d. 150 varieties of Apple trees which have originated in the same countries.
3d. 150 varieties of Plum trees.
4th. 50 " of Cherry trees.
5th. 20 " of Peach and Nectarine trees.
6th. 10 " of Apricot trees.

Whilst visiting, from time to time, the gardens of amateurs, I have been fortunate enough to find some of the varieties mentioned in Van Mons' Catalogue of 1823, and with which the numbers had been given with the bud or graft. After having ascertained their identity, I had them propagated. Perhaps the Americans and Germans will send back to us some of these varieties with new names, as has already been the case. It is also likely that some of the varieties mentioned with names, but without numbers in the catalogue above referred to, have been named afresh by the successor of the late Van Mons. By adding his own name to the names of varieties raised by Van Mons he has exceeded his limits, by passing for the raiser, whilst he was only the owner of an object produced by another. The successor of the late Esperen has taken the same liberty with the seedlings left by the latter. I confine myself to the statement of these facts for the interest of that part of fruit-tree culture which will indisputably continue to be the most interesting in the annals of this division of the horticulture of the 19th century.

Having briefly explained the history and progress of the Pear-tree, we come now to the success obtained in its cultivation, which is the principal object of the present communication. Before proceeding further, it will, however, be necessary to make some general observations.

In the denominations of new varieties, three of the raisers have applied to their seedlings that by which the generic name is known, according to their form and flavour, and as understood by pomologists in arranging them under the forms of *Beurré*, *Bergamotte*, *Bezi*, *Bon Chrétien*, *Calebasse*, *Colmar*, *Rousselet*, and *St. Germain*. The terms of Belle, Beurré, Fondante, and Délices do not apply to form, but to qualities which are found in the seven distinct forms, and might, without inconvenience, be left out for the future.

By adding to the generic name [Beurré, Bergamotte, &c.], either that of the raiser of the variety, or that of a friend, the name of the place of its origin, or whatever may be thought desirable, the variety is then definitely named. After having borne fruit two or three times, if the form was not fixed, the prefix of *Poire* only was employed, as we see in the case of the Poire des deux Sœurs, Poire Prévost, the forms of which belong to none of the seven denominations generally known.

Varieties of Pears in every respect worthy of recommendation, raised from seed since the commencement of the present century and till recently, by the late Van Mons, Major Esperen, Bouvier, and others.—In the climate of Belgium, and in those similar, these varieties, with scarcely any exceptions, are suited for pyramids and standards, and do not absolutely require the protection of a wall for the production of good fruit. Cultivated on the Pear stock, the trees in general grow vigorously in a light deep alluvial soil, and better still in one rich in humus, provided always that the subsoil is free from stagnant water during winter. The form and quality of the fruits depend, in a great measure, on the conditions of the soil and subsoil, careful cultivation, the proper management of the trees, and the vigour of the stocks. The mean period of the maturity of the fruits is subject to the influence of the same causes. The temperature of the season, the period of gathering the fruit, and their preservation in the fruit room exercise likewise a certain effect on the quality of the fruit.

It is certain, that if the varieties obtained from seed, indicated in the following list, were deducted from the number of those cultivated in our climate in the open ground, the varieties of good late table Pears would be very limited.

ABBREVIATIONS.

(B) placed within parenthesis, after the name of the fruit, signifies that the variety has been raised from seed by the late Bouvier, of Jodoigne.
(Esp.) signifies by Esperen, of Mechlin.
(Grég.) " by Grégoire, of Jodoigne.
(V. M.) " by Van Mons, of Brussels.
The names of other raisers are given at full length.
Med. signifies medium size.
Vig. " vigorous.

NAME OF THE VARIETY.	NAME OF THE RAISER.	VIGOUR.	SIZE.	TIME OF RIPENING.
Abbé Edouard	(V. M.)	Vig.	Med.	November
Alexandre Bivort	(Esp.)	Not vig.	Med.	January
Alexandre Lambré	(V. M.)	Vig.	Med.	Nov., January
Alexandrina	(V. M.)	Very vig.	Large	September
Amand Bivort	(V. M.)	Not vig.	Med.	End October
Bergamotte Dussart	(Dussart)	Not vig.	Med.	Nov., February
" Esperen	(Esp.)	Vig.	Med.	January, April
" Heimbourg	(V. M.)	Very vig.	Large	Middle October
Beurré Antoinette	(V. M.)	Vig.	Med.	October, Nov.
" Bennert	(V. M.)	Not vig.	Med.	January, Feb.
" Berckmans	(V. M.)	Very vig.	Large	Nov., Dec.
" Bretonneau	(Esp.)	Vig.	Med.	January, April
" de Hemptinne	(V. M.)	Very vig.	Large	Sept., October
" Delfosse	(Grég.)	Not vig.	Med.	Dec., January
" Dumon-Dumortier	(Stas.)	Not vig.	Med.	December
" Hamacker	(V. M.)	Vig.	Large	October, Dec.
" Kennes	(V. M.)	Vig.	Med.	Middle October
" Stappaerts	(V. M.)	Very vig.	Small	Dec., January
" Sterckmans	(Sterckmans.)	Very vig.	Large	Nov., January
Calebasse d'Eté	(Esp.)	Vig.	Long	August, Sept.
" Tougard	(V. M.)	Very vig.	Large, long	End October
Colmar d'Arenberg	(V. M.)	Vig.	Large	October
" Josse Smet	(V. M.)	Very vig.	Large	October, Nov.
Comte de Flandre	(V. M.)	Very vig.	Med.	Dec., January
" de Paris	(V. M.)	Vig.	Large	October, Dec.
Conseiller de la Cour	(V. M.)	Very vig.	Large	November
Cumberland	(V. M.)	Vig.	Large	October, Nov.
Delavault	(V. M.)	Vig.	Large	September
De la Martine	(V. M.)	Not vig.	Med.	Dec., January
Délices de Jodoigne	(B.)	Vig.	Med.	September
" de Louvenjoul	(V. M.)	Not vig.	Med.	October
Désiré Cornélis	(V. M.)	Very vig.	Large	September
Desirée Van Mons*	(V. M.)	Vig.	Large	October, Nov.
Docteur Trousseau	(V. M.)	Very vig	Med.	Nov., Dec.
Doyenné Sentelet	(V. M.)	Vig.	Med.	October, Nov.
Duc d'Aumale	(V. M.)	Vig.	Long	Sept., October
Duc d'Orleans	(V. M.)	Very vig.	Large	December
Duchesse Hélène d'Orléans	(V. M.)	Very vig.	Large	End October
" d'Angoulême	(Audusson)	Vig.	Large	October, Nov.
" " panaché	(id.)	Vig.	Large	October, Nov.
Elisa d'Heyst	(Esp.)	Vig.	Large	October
Fondante de Noël	(Esp.)	Vig.	Large	Dec., January
Frédéric Leclerc	(Esp)	Very vig.	Med.	November
Général Dutilleuil	(V. M.)	Very vig.	Med.	End November
Henri Bivort	(V. M.)	Vig.	Large	September
Jean Dewitte	(Witzhumb)	Vig.	Med.	December
Josephine de Malines	(Esp.)	Vig.	Small or med.	January, April
Léon Leclerc de Laval	(V. M.)	Very vig.	Large	Feb., April
Louise Bonne d'Avranches	(Longueval)	Very vig.	Long	October, Nov.
Louise de Prusse	(V. M.)	Vig.	Large	October
Lucien Leclerc	(V. M.)	Very vig.	Med.	October
Marie Louise Nouvelle	(V. M.)	Very vig.	Very large	End October
Monseigneur Affre	(V. M.)	Very vig.	Med.	December
Nouveau Poiteau	(V. M.)	Very vig.	Large	End November
Pie IX.	(V. M.)	Very vig.	Med.	End September
Poire des deux Soeurs	(Esp.)	Very vig.	Large	November
" Prévost	(V. M.)	Vig.	Med.	Feb., April
St. Jean-Bapt. Van Mons	(V. M.)	Very vig.	Large	January, Feb.
Seigneur Esperen	(Esp.)	Vig.	Med.	Sept., October
Socquet	(V. M.)	Vig.	Med.	September
Soldat laboureur	(Esp.)	Very vig.	Med.	Sept., Nov.
Souvenir Esperen	(V. M.)	Vig.	Med.	November
Théodore Van Mons	(V. M.)	Vig.	Med.	End Oct., Nov.
Triomphe de Jodoigne	(B.)	Very vig.	Very large	Nov., Dec.
Vicomte de Spoelberg	(V. M.)	Not vig.	Med.	Nov., Dec.
Willermoz	(V. M.)	Vig.	Large	November
Zéphirin Grégoire	Grég.)	Vig.	Med.	Nov., January
" Louis	(Grég.)	Not vig.	Large	Dec., January

NEWEST VARIETIES.

NAME OF THE VARIETY.	NAME OF THE RAISER.	VIGOUR.	SIZE.	TIME OF RIPENING.
Aglaé Grégoire	(Grég.)	Not vig.	Large	March, April
Barbe Nélis	(Grég.)	Vig.	Med.	July, August
Beurré Clairgeau	(Clairgeau.)	Vig.	Large	Nov., January
Docteur Nélis	Grég.)	Vig.	Med. large	Nov., Dec.
Gloire de Binche	(Gaudière.)	Vig.	Med. large	Dec., January
Leopold I.	(V. M.)	Vig.	Med.	Dec., January
Morel	(V. M.)	Vig.	Med.	February
Prince Albert	(V. M.)	Vig.	Med. large	Feb., April
Rousselet de Janvier	(V. M.)	Very vig.	Med.	Dec., January
Thérèse Kumps	(Grég)	Vig.	Med.	October, Nov.

I have not included in the preceding lists old varieties already well known; I have also omitted many others, from not being quite sure of their merits. The varieties mentioned as being

* We retain the primitive name given to this variety. The name of Duc de Brabant, subsequently given to it by M. Bouvier, ought to be reserved for a longer keeping and superior variety.

not vigorous are, notwithstanding, sufficiently hardy to produce fruit in our climate as standards. Although some sorts worked on the Pear stock will scarcely form a good pyramid, yet when they are budded standard high they become very fruitful. We may instance the Beurré Bennert, Bergamotte Dussart, Beurré Delfosse, Dumont-Dumortier, Colmar Nelis, Fortunée de Rennes, Fondante de Charneuse, Beurré Six, Poire de Tongres, and others of somewhat weakly growth.

In general, all the less vigorous sorts, when grown on a wall, produce fruits of larger size than when grown as standards. We have seen the following succeed perfectly well upon a wall. The Chaumontel, Beurré d'Hardenpont, on an east or west aspect; La Fortunée on a south-east; the Josephine de Malines on south-east and south-west; and the Virgouleuse, which we consider the best of those we have received from France, on account of the delicacy and beauty of its fruit, when the tree is grown on its own stock, and against a wall with a south-east, south, or south-west aspect.

We invite amateurs desirous of ascertaining the vigour and hardiness of the new varieties of Pear trees to visit our collection of fruit trees, in the months of July, August, and September. They may then satisfy themselves of the real merits of a variety, by examining well-managed pyramids from 10 to 25 years old, grown on the Pear stock, and bearing fruit in abundance in a situation exposed to the winds, and to all the severities of the seasons.—J. DE JONGHE, 20, *Rue des [illegible], Brussels, Nov.* 11, 1854.

Home Correspondence.

Cupressus Lamberti, or macrocarpa.—Surely there must be some mistake about the plants to which the preceding names are applied being identical; at least, all the plants which I have seen at Singleton, Tirydale, and other places in South Wales, are so different in character from the original C. Lamberti as seen growing in the gardens of the Horticultural Society and other places near London, that if they are not specifically different they must be very distinct varieties. In this country, and I speak of plants sent direct from Chiswick, C. macrocarpa grows as upright and compact as C. Goveniana, attaining the height of from 8 to 10 or 12 feet in a very short time; and the largest of the plants not being more than from 2 to 3 feet in diameter, and nearly the same thickness from the base to the apex, the branches all growing vertically and not even the small branchlets are seen to assume an horizontal position; on the contrary, the C. macrocarpa (I speak of the plant, for example, growing on the south side of the large conservatory in the garden at Chiswick) scarcely assumes a vertical position at all; even the leader seems loath to take the lead, while the whole of the branches are, more or less, horizontal, and the diameter of the plant is, at the least, two-thirds as much as its vertical height. At Brooklands and Kimuel, near Chislehurst, and also in Messrs. Waterer and Godfrey's specimen plants, at Knap Hill, the horizontal prevails over the upright habit, and this not only among specimens of full development, but also in young plants of not more than 2 or 3 feet in height. Of botanical distinctions I say nothing, I merely speak of appearances patent to every one; and if these appearances are not sufficient for specific characters they are at any rate marks strong enough to entitle either one to be called the "upright," or the other the "horizontal" variety of C. macrocarpa. Apart, however, from the name, this is a plant which cannot be too strongly recommended, for it grows splendidly, whether sheltered or exposed, and is at all times rich in colour, and strong and robust in habit. Some of the plants at Singleton have grown as rapidly as Willows, and I think I may say that they have made as much as 3 feet of wood in one season. Conifers generally do not do well in this locality (Swansea); the Larch and Scotch Fir do not refuse to grow, but the smoke from the copper works almost every season plays sad havoc with the young growth, and in time totally destroys strong established plants. This Cypress seems not to suffer, and even last winter, which was more severe than the winters generally are in South Wales, it escaped quite unscathed. *W. P. Ayres, Nov.* 14.

The Beurré Superfin Pear.—In common with other members of the council of the Pomological Society, I am much obliged to M. de Jonghe for his description of the Cumberland Pear; he has once or twice written to me on the subject, and as this Pear has not yet borne fruit with me, I was quite inclined to think that the Cumberland was the original name of the Beurré Superfin. His description, however, of the former Pear has put all to rights, for I think I can now say with confidence, that M. de Jonghe has been victimised by having the Cumberland Pear sent to him under the name of the Beurré Superfin. I need not quote here M. de Jonghe's description of the Cumberland Pear given in p. 774, as it is so easily referred to, but I will describe faithfully the characters of the Beurré Superfin grown here, the fruit of which, sent by M. Langelier, was tasted by the

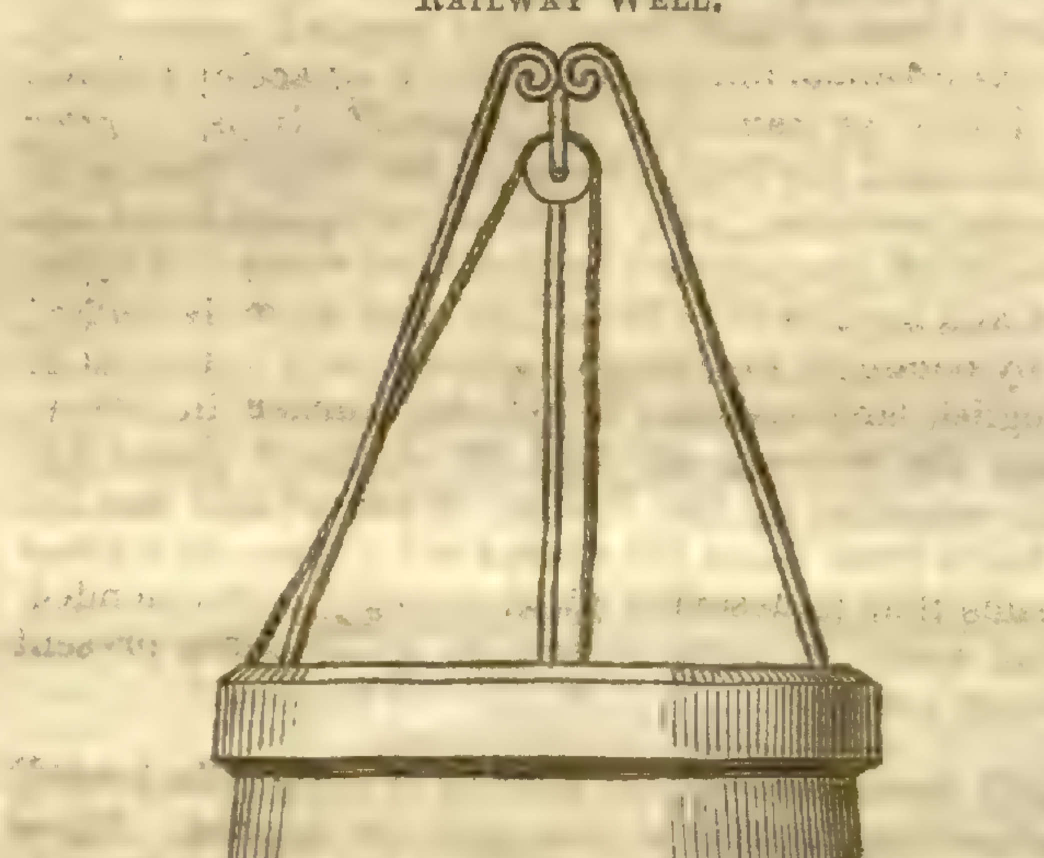
council of the society on the 6th of November. Shoots moderately vigorous, pale, yellowish-brown, spotted with grey, much inclined to horizontal growth; when young very thorny, so much so that when I first received the sort from Angers and observed the young grafted trees, I thought I had been cheated, and that a wild Pear had been sent to me with a superfine name; buds acutely pointed, so as to prick the finger if pressed forcibly; fruit constantly covered with a light brown russet, scarcely even a spot of green to be seen through it; in form much like a large winter Nelis; calyx small. In 1851, 1852, and 1853, it ripened here from the middle to the end of September; its flesh melting, vinous, very slightly perfumed, but full of juice and exceedingly agreeable. I was surprised to see a specimen sound and good so late as the first week in November as I have never before observed its keeping so long. The tree is remarkable for its hardiness, for although coming from the beautiful climate of Angers it does not know how to canker, and has a robust habit similar to some of the Pears raised by Mr. Knight, such as the Eyewood, March Bergamot, and others. M. de Jonghe having mentioned the necessity of making the name Beurré Superfin a synonym reminds me forcibly of the great inconvenience occasioned by making synonyms with the facility they do on the continent; it is a great evil, and ought to be avoided as much as possible. I have received the Beurré Rance from Belgium under six or more different names; among them I remember the following:—Banneaux (Van Mons), Beurré d'Hiver (Van Mons), Beurré Beymont (Bouvier), Délices de Charles (Bouvier), and Present Van Mons (Van Mons). Now, if I had followed the custom of the continental pomologists, I should have made all these names synonyms of the Beurré Rance; but, as I detest them, I merely considered that I had been deceived, and there the matter rested and does rest. I have what the French call a "school" of Pear trees (*i. e.* specimen trees, one of a sort) of 1000 or more varieties; the history, description, and, above all, the synonyms of these Pears would fill a volume I fear not very readable. The very few (I mean few as compared with the large number of names) good sorts I find among them I propagate; the mediocre and inferior varieties I forget, and forgive those who sent them to me. Permit me in conclusion to observe that we owe you thanks for allowing these amicable discussions in your columns; they serve to bring out little matters of fact which would otherwise be forgotten in the hurry of our busy English life. *Thomas Rivers.*

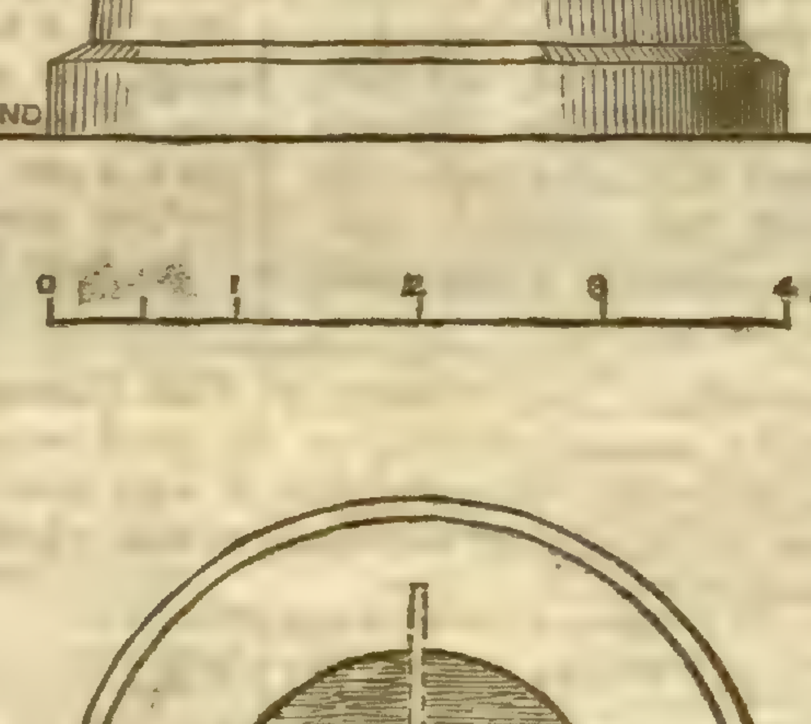
The Weather.—I see by your paper of Saturday last that the minimum temperature at Chiswick on the night of 26th November was 28°. Should this not be an error for 18°; it affords a curious instance of partial distribution of frost. Here on the morning of the 27th my thermometer at 8 o'clock stood at 20°; and I heard from good authority that in a low situation three miles from this place it was observed as low as 11°. I have carefully perused the Chiswick observations, and have found the night minimum considerably below that of this place with few exceptions. *C. B. N. P., Stevenage, Herts, December 4.* [The minimum temperature at Chiswick on the night of the 26th was 28°, according to two registering thermometers.]

Pear-growing.—The observations made by my friend, Mr. Rivers, in the *Gardeners' Chronicle*, p. 741, cannot be taken in earnest. He supposes that I am enthusiastic; he imagines that I am very happy in combating with nature, bidding defiance to frosts, and the inclemencies of northern climates. There is nothing in any of my previous communications which authorises him to make these gratuitous suppositions, the responsibility of which I therefore leave to himself. In pointing out the places near London where the Pear trees appear to be in every respect defective, I undoubtedly did not wish to judge of those which I had neither seen nor examined. In criticising, I have said in what way the Pear trees should have been reared, in order to yield fruit regularly. It was upon this ground that I had hoped my friend, Mr. Rivers, would have stood, for the interest of pomology, and of the numerous amateurs who would have benefited by his so doing. I repeat that it is far from my wish to include in my strictures that which I have not seen and verified. It is very possible that in ordinary seasons Pear trees badly reared, badly planted, and allowed to grow without any systematic pruning may occasionally bear abundantly; but these unusual crops are exceptions to the general rule. They may be looked for once in ten years. Would it not be deplorable to depend on chance for plenty, when this could be obtained with certainty by the judicious application of the precepts of science? What does science say? Whether a dwarf or tall pyramid be reared, it must have a straight and upright stem furnished with branches at regular distances, in order that there may exist between them a certain harmony, or proportion, which is pleasing to the eye and favourable to the regular and yearly production of fruit. These notions are indeed entertained by the pruners of forest trees, but simple as they are, we have not seen them applied at any of the places which we have pointed out. In Belgium, as in England, wherever we have seen the Pear tree abandoned to itself, we have rarely seen fruit; or, if there is, it is generally defective and bad. I beg my amiable opponent to persuade himself of this, which partakes neither of enthusiasm nor of poetry. The Pear tree, as regards the varieties which modern science has produced, is a civilised tree, which likes to grow near habitations, in the gardens of towns where it can breathe freely, and in those of the country. It requires the constant attention of an intelligent man to yield to him with interest, by its delicious products, the just recompense of his pains. It must, at least, be planted in a proper soil and situation; it must receive the nourishment necessary for its growth and support of its fruits; if it is thirsty, its thirst must be allayed. The insects which attack it must be removed, and the diseases from which it suffers, and which hasten its decay, must be cured. The sap should rise by the vertical stem, and circulate equally through all the branches, in order that the organs of fructification may be formed, and arrive at perfect maturity. The shoots which originate in places where they can never be wanted must be at once removed, in order to save the tree from wounds difficult to heal over. It is absolutely necessary that the air should circulate, and that the rays of light should penetrate among the branches, to produce their beneficial effects on the organs of fructification. When a Pear tree, sufficiently vigorous and hardy for our climate, is managed according to these instructions, which are, in fact, a recapitulation of those contained in my previous communications, I think that we need not dread the frosts of our rigorous winter, nor the variable weather of our springs; for the tree thus treated will better resist these at the time of setting its fruit, than one will do that is abandoned to chance cultivation. Have we not had in Belgium, situated in the same latitude, and subject to the same winds, the same variations of climate in the month of April as in England? Very well, then, all the amateurs who were careful in the management of their trees had a crop, whilst the negligent had none. In conclusion, I am aware that it is difficult to persuade and convince by reasoning, supported by facts, a person who, from motives of whatever kind, will not be convinced (*qu'il est difficile de persuader et de convaincre par le raisonnement appuyé de faits une personne qui ne veut point l'être pour des motifs quelconques*), but I hope that amateurs will profit by instructions, which are the result of long experience, of which we can exhibit numerous proofs in our gardens. *J. De Jonghe, Brussels, Nov. 20.*

Railway Wells in France.—I send you plans and drawings of two wells on the railways near Paris, one on the Chalons, the other on the Dieppe side of Paris.

RAILWAY WELL.





PLAN OF WELL.

Somerset, Winscombe Hill, near Axbridge. [The annexed woodcut represents one of the wells in question. The other is so like it as to render a second illustration unnecessary. It answers the inquiry made lately by a correspondent desirous to construct such wells.]

Late Strawberries.—In making the following remarks on the capabilities of the Strawberry plant to blossom and fruit twice a year (without forcing), I must first observe that I have not the least wish to disparage or in any way lessen the merits of the new French Strawberry Délices d'Automne, though it was the reading its characteristics in an article in your Paper of the 18th ult. which has called forth my observations on the subject. My new seedling Sir Harry (a specimen of which I send for your inspection), which did not cease its first bearing till the beginning of August, was again in blossom and fruit in October and November in the open beds. Now, although this fecundity tends to show the strong disposition of the seedling to fruit, its value, in my estimation, is not thereby increased, for Strawberries ripened in the open beds at a late season of the year must always want that rich full flavour which the summer's sun alone can give them; not only have the parent plants borne a second crop, but their autumnal runners have both blossomed and fruited. By forcing the best fruiting sorts you may always obtain two well flavoured crops; for by trimming and nourishing the plants with liquid manure, and plunging the pots after spring bearing in the ground, they will blossom and fruit again in the autumn, when the pots must be moved once more into artificial heat to colour and flavour the fruit. There are many of the nobility who expect to see a plate of Strawberries on the breakfast table all the year round, therefore, under such circumstances, the Délices d'Automne and Sir Harry, as Perpetuals, will be found desirable acquisitions. *Richard Underhill, Sir Harry's Road, Edgbaston, Birmingham, Nov. 30th.*—Since writing the above I have been to my beds, and find that the severe frost of last Saturday night and Sunday has destroyed the fruit and blossoms. *R. U.*

Societies.

HORTICULTURAL, *December* 5.—MR. GLENDINING in the chair. A. W. Mactier and C. W. Waterlow, Esqs., were elected Fellows. The more important features of this meeting were the different exhibitions of fruit, particularly of Pears, of which there was a great number of very fine specimens. Of this kind of fruit Mr. Ingram, of the Royal Gardens, Frogmore, sent a collection at once perfect, both as to colour, ripeness, and growth. The sorts were Easter Beurré, Beurré Diel, Passe Colmar, Chaumontel, Vicar of Winkfield, Glou Morceau, and Winter Nelis. These received, as they well deserved, a Silver Knightian Medal. Collections of equal merit, but both inferior to that from Frogmore, were furnished by Mr. Snow, gr. to Earl de Grey, Wrest Park, Beds, and Mr. Tillyard, gr. to the Right Hon. the Speaker at Heckfield, Hants. From Wrest Park came Beurré Diel, beautifully coloured; Easter Beurré, small, and not ripe; Chaumontel; Winter Nelis, very good, and ready for table; small fruit of Napoleon; Vicar of Winkfield; very good examples of Passe Colmar; Old Crassane in good condition; Glou Morceau, well coloured; Susette de Bavay; and fine specimens of Uvedale's St. Germain. Mr. Tillyard had Winter Nelis, Passe Colmar, Glou Morceau, Beurré Rance, Easter Beurré, large, but not ripe; Susette de Bavay, three nice fruits of the true Knight's Monarch, large specimens of Ne Plus Meuris, Forelle or Trout Pear, Beurré Diel, large and finely coloured, and Grosse Calebasse. A Banksian medal was awarded to each of these collections. J. Abell, Esq., of Limerick, sent a collection of Pears, which served to show with what success this kind of fruit can be grown in that part of Ireland. They were mostly from trees worked on Quince stocks, and were not very large, but in general finely coloured. The sorts consisted of Beurré Rance, both from Pear and Quince stocks, those from the former not larger than from the latter, but the crop on the trees on the Pear stock was stated to be the heaviest; Easter Beurré, large and fine from a south-east wall; Spring Beurré, from a standard; Beurré Diel, covered all over with cinnamon russet; Beurré Teurlinckx, Poire d'Avril, Eliza d'Heyst, from an espalier, Catillac, Susette de Bavay, from a south-west aspect, Ne Plus Meuris, from a south-west wall, Vicar of Winkfield, nice fruit from a pyramid; Winter Nelis, Rouse Lench, from a standard, and Glou Morceau. A Certificate of Merit was awarded. Mr. M'Ewen, gr. to the Duke of Norfolk, at Arundel Castle, produced a collection of Pears, among which were the following kinds:—Beurré Bosc, Easter Beurré, Beurré Rance, Beurré Diel, Beurré d'Aremberg, Winter Nelis, Ne Plus Meuris, Marie Louise, Old St. Germain, Bishop's Thumb, Vicar of Winkfield, Glou Morceau, and Passe Colmar. The same grower also furnished beautiful specimens of the following sorts of Apples:—Minchal Crab, Scarlet Admirable, White Calville, Shepherd's Seedling, the true Cockle Pippin, Lancashire Reinette, Margil, Royal Russet, Broad-eyed Pippin, Golden Harvey or Brandy Apple, Court Pendu Plat, Dumelow's Seedling, King of Pippins, highly coloured, Hubbards' Pearmain, American Pippin, a sort resembling the scarlet Pearmain, Ribston Pippin, Norfolk Beaufin, Gravenstein, and Blenheim Orange. Mr. Snow produced a trayful of beautiful specimens of the true old Golden Pippin from a west wall, showing that in a warm situation and with the help of a wall this much esteemed fruit can still be had in perfection. Those exhibited were clean in the skin, large, and with no symptom of "wearing out" about them. From M. Langelier, of Jersey, came a large collection of Pears, many of them new kinds, but from being bruised from bad packing, and the numbers under which they were sent being in some instances lost, and in others not corresponding with the list of names to which they should have belonged, it is impossible to give any particular account of them here. Of well-known kinds there were a few fair specimens, but on the whole they were not equal either in size or colour to any of the English collections in the room. The only exception to this statement was the Beurré Diel, which had a rich warm red colour, not possessed by any of the English specimens of this Pear.

Of PINE APPLES, Mr. McEwen sent a specimen of Cayenne weighing 5 lbs. 7 oz., for which and for his ...

lection of Apples, mentioned above, a Silver Knightian Medal was awarded. Mr. Fleming, gr. to the Duke of Sutherland at Trentham, sent three Montserrats, weighing respectively 4 lb. 4 oz., 4 lbs. 4 oz., and 3 lbs. 13 oz., and a Prickly Cayenne weighing 5 lbs. 4 oz. A Banksian Medal was awarded. Mr. Brown, gr. to J. Parnell, Esq., of Waltham Abbey, had a Queen, 3lbs. 10 oz., for which a Certificate of Merit was awarded; and a similar award was also made to Mr. Jones, gr. to Lady Charlotte Guest, for a Ripley Queen weighing 4 lbs.

Of Grapes, remarkably fine basketfuls both of Muscats and Black Hamburghs were furnished by J. C. Nash, Esq., of Bishop's Stortford, whose success in the cultivation of this fruit has now become proverbial. The two varieties in question were perfect both in bunch and berry — in every respect equal to Mr. Nash's exhibitions of the same kinds in former years, a fact which speaks well for the mode of management adopted, and for the lasting properties of the border, a full account of the construction of which will be found in our volume for 1847, p. 683. A Banksian medal was awarded. Mr. Snow showed a bunch of the late keeping Black Barbarossa Grape, weighing 4 lbs. It could not measure less than 18 inches in length and a foot across the shoulder; and the berries were plump and well coloured. A Banksian medal was awarded it. From Mr. South, gr. to A. H. Davenport, Esq., came four well ripened bunches of the White Syrian Grape, for which a Certificate of Merit was awarded. It was mentioned that the flavour of this Grape is much improved by allowing it to hang on the Vines till it is thoroughly ripe, which is many weeks after it has become transparent, and apparently ready for cutting. Mr. Hill, gr. to R. Sneyd, Esq., received a Certificate of Merit for three bunches of Muscats, and a similar number of Black Hamburgh Grapes, both of which were a little past their best. Mr. Miller, gr. to Sir W. Smith, Bart., had three bunches of Muscats large and well grown; but greatly rubbed from travelling, and in some of the bunches there were bad berries. Mr. Fleming sent some Citrons full grown, but green—a condition in which they were said to be most liked for confectionary.

Of Chrysanthemums, Mr. Robinson, gr. to J. Simpson, Esq., again showed a fine collection, although this time they were a little past their best. All of them were Pompones, except Anne Salter and Fleur de Marie; the latter, a White Anemone kind, was just in perfection. A Knightian Medal was awarded. A boxful of cut blooms of Chrysanthemums, without names, came from Mr. Spary, of Hardwick, Worksop, Notts.

Other plants consisted of a beautiful specimen of the brilliant crimson-flowered Sericographis Ghiesbreghtiana from Mr. Fleming, of Trentham, who received for it a Certificate of Merit. It was growing in a hard green-glazed pot, or rather deep green glass basin, in which plants are found to thrive equally well as in the common porous garden-pot. Along with it was also a small plant of Dracæna terminalis, in a clear glass pot, through whose sides could be seen the soil, drainage, and roots. Messrs. Henderson, of Pine-apple Place, exhibited a specimen of Hebeclinium aurantiacum, a Mexican plant with brilliant orange Marigold-like flowers, which although not produced in very great profusion are very ornamental at this season, and from the number of buds still unexpanded it looked as if it would keep on flowering for some time to come. It may, therefore, be a useful winter warm greenhouse plant for cutting. A Certificate of Merit was awarded it.

The dearth of Russia mats has caused people to look for other kinds of winter protections to supply their places, and among other things the old kind of coverings made of long Wheat straw woven together with tar twine has been found to be a cheap and good substitute. These were wont to be made on a floor or bench; but it occurred to Mr. Brewer, of Pine-apple Place, that a better way of making them than that might be devised. He accordingly invented a contrivance for the purpose, a model of which he exhibited. It resembled a small clothes-horse with upright spars in it, to which was fastened a slight wooden frame by means of moveable pins. Between these two frames the covering is woven, each succeeding tier of straw being thus kept in its place till it has been tied by the tar twine, and when the frame has been filled with made-covering the moveable pins are withdrawn and the covering allowed to slip down, leaving the frame empty and ready to be filled again. The advantage of the contrivance is that it allows the operator to stand upright and thus to work with greater ease and speed. In this way it was stated that a straw covering 4 feet wide and 6 feet in length, and equal, as far as protection from frost is concerned, to a double mat, could be made for 9*d.*, including labour and material. A Certificate of Merit was awarded to Mr. Brewer for his contrivance.

Dr. Lindley announced that an entire change in the manner of conducting these meetings had been decided upon by the Council; the nature of which change would be explained in the printed schedule, a few copies of which were distributed.

From the garden of the Society came a collection of Chrysanthemums, the beautiful large yellow-flowered Linum trigynum, Echeveria retusa, a nice specimen of Begonia incarnata, the little yellow-flowered Calceolaria ericoides and other plants, together with fruit of Glou Morceau and Passe Colmar Pears.

Pomological, *Dec.* 4.—Mr. Johnson in the Chair. This was an ordinary meeting for the election of members, of which the names of several new ones were added to the list, and for settling some small matters of detail connected with the future management of the Society. The only fruit exhibited was a collection of Apples, many of them Cider sorts, from Herefordshire, and among which none were found to be better than the old Foxwhelp. Among kinds for dessert there was nothing remarkable, except it was a very fine specimen of the Brandy Apple, or Golden Harvey. This was a highly-coloured and beautiful fruit of this deservedly much esteemed variety.

Notices of Books.

Archer's First Steps to Œconomic Botany (Reeve), announced as published for the department of Science and Art at Marlborough House, is a contribution to a knowledge of common things founded upon the author's former book upon the same subject. Such works are calculated to do much good; but to effect this they must be accurate even in small matters, or their tendency will be the reverse of what is proposed. For instance, in speaking of feculæ the exploded term hilum should not have been employed, for it leads to totally false ideas of the origin of fecula. Nor should the Cowslip flavour of certain kinds of tea be referred exclusively to the introduction of flowers of Olea fragrans; we know that they are said to be thus used; but we never yet saw them in a sample of tea; whereas it is notorious that the Chulan or Chloranthus is generally employed for the purpose, as, indeed, is evident from the large quantity of its fragments contained in samples of Cowslip teas. In like manner, the account of Indian tea cultivation is a mere tissue of errors and misconceptions. We regret to find it our duty to make these observations; but it is clear that if works having official sanction are not more carefully prepared, the rising generation will have to unlearn as fast as possible much of what it has learnt in modern places of education.

A Popular History of British Mosses, by R. M. Stark (Reeve), is an acceptable addition to the store of illustrated works on Natural History, and will doubtless become as popular as the subject to which it relates. In a square 12mo of 322 beautifully printed pages, Mr. Stark has given as full and instructive an account of our wild Mosses as can well be desired. It is founded avowedly upon the long labours of Sir Wm. Hooker in the same direction, and this alone guarantees the soundness of the author's systematic views. All the genera and species of "Moss," as that term is understood by botanists, are clearly but succinctly described in the English language, and to aid the learner in understanding the subject, we find 20 coloured plates admirably executed by Mr. Fitch. When we add that the work has a good index the reader will require no further assurance that it deserves to be strongly recommended. Nothing would be better suited for a Christmas present for young people.

Page's Introductory Text Book of Geology (Blackwood) is another contribution to this popular science. Those of the same class recently published are all so good in their way that the best advice we can give to a student is to buy them all. They are cheap enough, and as they regard the subject from different points of view, may all be studied with advantage. Mr. Page's is one of the clearest and best digested, and therefore one that particularly deserves commendation. Its fault is that it has no index.

Piscator's Choice and Cookery of Fish (Longmans) has reached a second edition, as its good sense and plain style deserved. We only wish it were possible to make cooks act upon the excellent advice which such books convey.

FLORICULTURE.

The Cineraria.—In reply to the remarks of "*E. T. Edwards*," on my treatment of Cinerarias, I beg to assure him that I was not at all exceeding the mark in stating that my plants are, many of them, from 3 to 4 feet in diameter. They are only tied out just enough to permit the flowers to expand without crowding each other, and the plants are perfectly compact in form. I think the flowers are not at all diminished in size by cutting out the leading flower stem. I can also add, that from my second sowing I have plants which have not been tied out at all, and which will not be in flower before the end of January, which measure 30 inches in diameter. *W.*

The Ranunculus.—I am glad to see your correspondents directing attention to this flower. All who have ever seen a well-conducted bed of the Ranunculus will agree that there is nothing which grows in the open air to surpass it, and that some expense and care are well laid out in procuring one. Yet, how rarely do we find even a moderate collection in the gardens of persons who are otherwise devoted florists. The reason of this is to be found in the great difficulty of preserving the tubers from year to year. A good bed may be easily grown if strong roots are procured from the cultivator, in a plump and healthy condition; but, after one year, it is often found there is a complete failure. The tubers either rot in the ground or they shoot again before they are taken up; or, being stored away, they get mouldy, shrink up, and produce only feeble flowers. The grower becomes discouraged; and as good Ranunculuses are too expensive to be purchased every year, the amateur relinquishes his attempts, and turns his attention to flowers less precarious. Carnations are touchy matters to deal with, but there is more certainty with them than with the Ranunculus; while many fine flowers demand comparatively scarcely any anxiety. But I think the causes of failure intimated above are only such as could be easily overcome, and I make these remarks in the hope of stimulating your readers to make a vigorous attempt in the forthcoming season. A bed of Ranunculuses was a grand exhibition in the time of our forefathers, but modern cultivators have shed upon it still greater glories. The process of hybridising has been eminently successful in producing new varieties, and, what is of more importance, it has thrown a vigorous and healthy habit into a plant particularly liable to degenerate. A bed of the old kinds is covered with scant and feeble foliage, and the flowers, although very lovely, have a frailness of stem and smallness of petal indicative of extreme delicacy. But look at a bed of seedling varieties, and how great is the contrast! The foliage is larger; the stems are robust and tall; and the petals attain a size far beyond that of the more ancient kinds. At first these seedlings are apt to sport an eye, but this disappears by cultivation. There are some situations where it is scarcely possible to grow the Ranunculus successfully, as in dry and gravelly soils; for although this impediment may be partly overcome by the introduction of composts, it can never be quite removed. Such localities are in all their circumstances droughty and uncongenial, and success can only be obtained by considerable practical knowledge, and daily watchfulness. A moist subsoil is indispensable for the successful growth of the Ranunculus, and as it strikes its roots very deeply in congenial situations, the beds should be prepared to the depth of 2 feet some time before planting. The plentiful use of rotted cow-dung is recommended for keeping up a cool moisture in the bed. A thick layer of this at the depth of 18 inches below the surface will be highly beneficial. At the same time a moist soil must not be confounded with a heavy one, for if it is not well drained the Ranunculus will not prosper in it. Marshy grounds, which are the natural habitat of this plant, are spongy and porous, pointing out to us the distinction between light and heavy wet lands. I have always found the Ranunculus to grow best in beds which are thoroughly porous, and yet composed of a soil not disposed to become dry. To preserve the roots wire-worms must be guarded against; and after the foliage decays, no water must be allowed to come on the beds. If you earnestly intend to grapple with the difficulties in the way of securing an annual show you must watch the weather; and if rains come on before you can take up the tubers, protect the beds by some kind of covering. When taken up, lay the tubers in a room perfectly dry, but cool, for if subjected to heat they are apt to shrivel up. It is desirable to retain their plumpness as much as possible, and this can only be done by a gradual process of drying. I prefer placing them in drawers where they can be often looked at to burying them in sand. Dryness and coolness are the requisite conditions for preserving Ranunculus tubers in a state of health until planting time arrives. *S.*

Propagation of Fancy Pelargoniums.—About the beginning of February is as good a time as any for taking cuttings: select some good tops from the very best sorts that are out; get as many thumb-pots as you will require for the purpose; fill them with rich turfy mould, and put one cutting into each pot; but previous to filling the pots let them be well drained with broken charcoal or potsherds; then with a piece of round stick make a hole an inch deep, fill it with silver sand, and then put in the cutting, giving the pot a slight tap on the potting-board to settle the soil: dip a piece of stick into some water, and hold it downwards, in order that three or four drops may fall close to the side of the cutting; this will settle the whole together, and the quantity of water will be quite sufficient for three or four days; after that add a little more in a similar way, or with a fine-rosed watering-pot, as may be thought needful. When you have finished this part of the work, let all the pots be plunged in a slight bottom-heat, say from 65° to 70°; give a little air in the daytime, to prevent the cuttings from damping off. *R.*

Stoke Newington Chrysanthemum Exhibition.—In your report last week of the list of awards in Class 4 for the best 24 cut blooms, a mistake occurs in the address of the exhibitor. It should read thus:—"A silver cup was awarded to Mr. George Taylor, of Stoke Newington," not of Hackney, as has been printed. *G. Taylor.*

Miscellaneous.

M'Glashan's Transplanting Apparatus.—We read in the *Moniteur* as follows:—Some new experiments with a machine for transplanting trees, invented by Mr. Stewart M'Glashan, took place at St. Cloud, by the desire of his Majesty the Emperor, who wished the first trial to be made in the Bois de Boulogne, in order that her Majesty the Empress might honour it with her presence. M. Mathieu, head of the gardens of St. Cloud, directed these experiments, which were as successful as the preceding one. It was tried upon a tree of about 30 feet high, and more than 20 inches in circumference, which even a force of 20 horse power could scarcely have raised from the ground, supposing the preliminary operations all complete, such as removing the earth from around the roots, in order to facilitate the transplanting of the tree. The tree in question was an Acacia, naturally firmly fixed in the soil, its straight roots offering a great resistance, which must

have subjected the machine to a very hard trial Twenty minutes sufficed to uproot and replace the Acacia in its former hole. The principle of Mr. Stewart M'Glashan's machine was so powerful that with an apparatus of reasonable dimensions it would be possible to remove the largest trees, such for example as the Elms and ancient Chesnuts of our public promenades. A third experiment was tried under the direction of M. Mathieu at Villeneuve l'Etang near St. Cloud, upon an Apple tree, which was very difficult to transplant, but the attempt proved perfectly successful.

Materials for Paper.—The Palmetto has long been the great obstacle to Algerian cultivation. It is considered useless to such a degree that large rewards have been offered for its extirpation, which is attended with great difficulty on account of its deep and tough roots. Some Arabian tribes have, however, used the fibres which are furnished by the stem, mixed with camel's hair, for their tent covers; others make baskets of the leaves; and all prepare cordage from the whole plant properly twisted. These usages have called attention to the Palmetto as likely to afford materials for paper, and experiments have been crowned with complete success. Millions of hundredweights can be collected in Africa; the price of a hundredweight of the green leaves would not exceed two francs; and since rags in France are always dear, and cost at present from 20 to 50 francs the hundredweight, it cannot be doubted that the use of this plant will lead to important results. The Palmetto already furnishes a kind of fibre which resembles horsehair, and is very firm and elastic, and is used in great quantities for the manufacture of carpets, under the name of vegetable or African hair. Better sails are made from it than from the Spanish broom, for which it may henceforth be substituted, to the annual saving of large contributions to Spain for raw material. This is, however, not all; for it has lately been discovered that the fibres, divested of the glutinous matter which binds them together, are extremely divisible, and, notwithstanding their inferior length (from 25 to 40 centimetres), are as fine as those of Flax, and can be used for the preparation of Flax-cotton. There are already four kinds of manufactures—paper, carpets, sailcloth, and thread—which are furnished by this plant, which, but a short time since, was regarded in Algiers as a mere scourge. *M. J. B.* (*Revue de l'Orient, May*, 1854; *quoted in Bot. Zeitung, Aug.* 18, 1854.)

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

Conservatory, &c.—The winter-flowering Heaths and some of the Epacrises will now be in bloom: these are exceedingly gay plants, and last longer in beauty than most things, but they must be afforded an airy part of the house; for to keep them in a close confined situation for any length of time would be certain ruin to the plants. Some of the early potted bulbs should now be placed in heat, provided they are moderately rooted. A little bottom-heat is of great service to them, and if this can be afforded them in a pit or frame where they will be near the glass, and can be kept cool and airy, they will be found to do much better than if placed in the stove, or any other warm house. Take advantage of every fine day to admit a little fresh air; but do this by opening all the ventilators on the sheltered side of the house a little, and avoid cold currents, which would be most injurious to the tender blossoms of plants that have been brought forward in heat. The Hydrangea japonica variegata is an excellent subject for the decoration of the conservatory in winter, but its fine foliage is somewhat liable to be injured by damp; therefore it should be placed in a dry part of the house, and in watering avoid wetting the leaves. Stove.—Be sparing in the use of fire-heat here for the present, except in the case of things being pushed on with the view of getting them to flower before their natural season; and it is much better to provide a small compartment, which can be managed at will for these, than to overdrive the whole stock at this season on their account. Keep a sharp look out for black thrips, &c., upon Ixoras and other plants making growth, and see to getting the whole collection as thoroughly freed from insects of all kinds as possible; for if these are neglected now they will not fail to be troublesome next spring when it will be difficult to spare time for washing plants, &c. Also see to getting the houses well cleaned, painting, or whitewashing the walls, as the case may be. Greenhouse.—Look well to the management of the fire here, for more mischief is usually done by too much than too little. On frosty nights the temperature need not exceed 36°, and no injury will result if it is allowed to sink a few degrees lower. Give air freely on mild days, and if damp threatens to be troublesome among any of the specimen plants slight fires should be used during the day, when air can be given. Examine Leschenaultias carefully for green-fly, for they are very subject to the attacks of a small species of aphis which at this season very soon disfigures them, and also renders them more liable to be injured by damp. These, with Boronias and Croweas, &c., must be very carefully supplied with water, keeping them rather dry at the root during the winter, and avoiding unnecessarily wetting the foliage, &c., in watering. The Boronias, especially B. serrulata, are very impatient of currents of cold air, and should be placed in the warmest end of the house, and not exposed to cold drying winds. See to getting a good stock of the various kinds of soil used in potting placed under cover where they will be dry and fit for use when wanted; also get plenty of potsherds, broken, and sorted out in sizes, and make every possible preparation for spring when time will be doubly precious with the plant grower. The preparation of stakes and labels should also be seen to whenever the weather is unfavourable for out-doors operations, and the washing of pots should be gone on with.

FORCING DEPARTMENT.

Pineries.—Plants that bloomed late in autumn will require very careful management to prevent their being injured by damp. It is nearly impossible to get fruit to swell properly at this season, therefore unless for the purpose of maintaining a succession of ripe fruit these had better not be hurried until the days become longer. See, however, to affording them a rather dry atmosphere, admitting a little fresh air every fine day. The night temperature may average from 55° to 60°, allowing it to rise a few degrees during the day. Fruit approaching maturity must be assisted with a brisk temperature, say 65° by night and 75° by day. Keep the atmosphere moderately moist until the fruit begins to change colour, after which it can hardly be kept too dry. Also endeavour to have these near the glass, and maintain a healthy root action. Vineries.—As soon as the early house is closed for forcing, be careful to secure a thoroughly moist state of the atmosphere by frequently sprinkling the floors and every available surface, but as observed previously, a regularly moist state of the atmosphere is most effectually secured by means of a slight bed of fermenting materials in the house, which will also afford a little warmth, and the moisture from this is much more congenial to vegetation than anything that can be effected by the most careful use of the syringe or evaporating pans. But the most essential point in successful early forcing is securing a healthy and vigorous root action, and unless this is provided, the best and most careful management of the atmosphere will be of but little importance. An occasional application of water at a temperature of about 90° will greatly assist to infuse warmth into the soil and excite the roots, and there is no good reason why the roots of Vines for early work should not, to a large extent, be inside the house. But where this is not the case give careful attention to the fermenting material placed on the outside border, keeping it well protected from the weather and frequently turned over, and by additions, as may be necessary, endeavour to secure a steady warmth of about 60° at a foot below the surface.

FLOWER GARDEN AND SHRUBBERIES.

The weather is still comparatively favourable for executing alterations; and where these are in hand they should be prosecuted with the greatest possible despatch, taking advantage of frosty mornings, &c., for wheeling. Planting, or the removal of large trees or shrubs, cannot be finished too soon; for it is of the utmost importance that the plants should be afforded some chance of making fresh roots before the trying winds of March. See to even small plants being secured against the wind; for these are often greatly injured by being blown about after planting, which a small stake and a few minutes' work would prevent. Get in a stock of briars for budding upon next season. Let the roots be well trimmed, cutting back closely the strong ones; for these, if left, will be of little use save to furnish an endless supply of suckers. As soon as alterations are completed, and the beds and borders are put into proper order for the winter, let a little fresh gravel be put upon the walks if necessary, in order to render them firm and dry for the winter. The stock of half-hardy plants in pots for next summer's decoration must be freely exposed to the air on every favourable opportunity, and every means used to protect them from damp. Very little water will be required for some time to come, and no more should be given than will suffice to keep the plants from flagging. Keep the surface of the soil clean, and the plants perfectly free from insects.

RISTS' FLOWERS.

Carnations and Picotees.—By no means smother these very hardy plants, they will stand any amount of frost provided they are inured to it. Abundance of air, and a medium state of moisture is a *sine qua non*. Then give air at every favourable opportunity—rain at this season it is as well to avoid. Dahlias.—Examine the tubers, probably the labels may be getting nearly illegible, or the ties decayed; in either case, immediate attention is requisite. Tulips.—Those who had not planted at the time-honoured date (Nov. 9) would have had something to do to find a right period for intrusting their bulbs to the ground; like late sown corn they may occasionally be up to the mark, but we prefer taking time by the forelock.

HARDY FRUIT and KITCHEN GARDEN.

If any transplanting or root pruning of fruit trees has yet to be done let this be attended to without further loss of time, and see that those exposed to the wind are securely staked before leaving them. Also get the ground prepared for fresh plantations, and the trees planted as soon as possible. Take every opportunity of pushing forward pruning and nailing. Give air freely to Lettuce and Cauliflower plants under glass; indeed the sashes should merely be used to exclude frost, and throw off rains, for they will do all the better in spring for being kept hard and stocky over the winter. If not already done make a sowing of Peas and Beans on well-sheltered dry ground, and do not spare the seed of the former, for it will be some time exposed to the depredations of mice, &c. In favourable localities a second sowing may be made if the first sowing is through the ground. Take advantage of the first dry day that may occur with the ground in a rather dry state to earth up closely any of the Celery that may have outgrown the previous soiling, and be prepared to protect the ridges in case of severe frost. Dry stable litter answers very well for this purpose, but where they can be afforded, light straw or reed shutters are preferable as being more easily applied, causing less litter, and these are also useful in excluding wet. It will soon be time to be providing seed for the early crop of Celery next season, and for this purpose we know no variety equal to Cole's dwarf white. This is, as its name indicates, a dwarf variety, and cannot be grown to a large size, but where quality is preferred to size it will give satisfaction, for it is very crisp, soon blanches, and the flavour is everything that could be wished. Attend to keeping up a regular succession of Seakale, Asparagus, and Rhubarb, by introducing moderate quantities at short intervals into heat.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending Dec. 7, 1854, as observed at the Horticultural Gardens.

Dec.	Moon's Age.	Barometer.		Temperature.					Wind.	Rain.
				Of the Air.			Of the Earth			
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Friday 1	11	29.730	29.422	51	30	40.5	42	44	W.	[illegible]
Satur. 2	12	29.951	29.768	46	34	40.0	43	44	N.W.	[illegible]
Sunday 3	14	29.937	29.762	50	41	45.5	42½	44½	N.W.	[illegible]
Mon. 4	○	30.025	29.894	50	38	44.0	42	45	W.	[illegible]
Tues. 5	15	29.569	29.318	51	32	41.5	45	46	S.W.	[illegible]
Wed. 6	16	29.656	29.421	45	31	38.0	46	46	W.	[illegible]
Thurs. 7	17	30.137	30.035	42	23	32.5	45	44½	N.	[illegible]
Average.		29.858	29.660	47.8	32.7	40.3	43.6	45.0		[illegible]

Dec. 1—Clear; fine throughout.
— 2—Low clouds; overcast; fine; very large halo round the moon in the evening.
— 3—Overcast; cloudy; clear at night.
— 4—Clear and fine.
— 5—Fine; cloudy; rain in afternoon; clear at night.
— 6—Clear; fine; with bright sun; cloudy.
— 7—Very clear and fine; cloudy; frosty.

Mean temperature of the week 1½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending Dec. 16, 1854.

Dec.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Wind.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 10	46.5	34.8	40.6	10	0.20 in.	—	4	2	1	7	7	4	3
Mon. 11	46.0	33.0	39.5	7	0.62	—	3	1	4	5	7	3	3
Tues. 12	45.8	34.3	40.0	11	0.26	2	2	2	1	6	8	5	2
Wed. 13	46.8	32.9	39.9	9	0.16	1	3	4	1	8	8	2	1
Thurs. 14	45.8	33.7	39.8	10	0.32	2	3	2	2	8	7	4	—
Friday 15	46.6	35.7	41.1	17	0.50	1	3	1	3	9	7	3	1
Satur. 16	46.1	35.6	40.9	14	0.68	1	3	2	2	4	7	4	5

The highest temperature during the above period occurred on the 13th, 1842—therm. 61 deg.; and the lowest on the 16th, 1853—therm. 7 deg.

Notices to Correspondents.

American Birch: *Diss.* This hard heavy wood, now so generally used in England, is, we believe, produced by Betula lenta. Plants may be had in such nurseries as Lee's of Hammersmith, or Osborne's of Fulham; or seed may be obtained from the importers of North American tree seed. We will not, however, guarantee its *paying* for cultivation in this country.

Boilers: *R V S.* Use cast-iron, by all means. Their form is not so important as their setting and connection with the pipes. The conical form, either in one piece, or consisting of upright tubes, as Weeks's, are now chiefly used. For other particulars you should apply to those who sell such articles. As to the Pear, you will find 500 as good and 100 better, and more easily procured.

Books: *B Y.* There is not any book on foreign Ferns answering at all to Moore's on "British Ferns."—*K O.* All extensive modern works on horticulture contain the information you seek. The most recent and most complete is Mackintosh's "Book of the Garden," now in course of publication in numbers. We have no experience on the Chichester mode of glazing: but do not see why it should not answer if the work is well executed.—*J W.* Inquire for Lindley's "School Botany." Any bookseller can supply it. ‡

Hollies: *Old Sub.* If you sow yellow Holly berries the trees produced from them are very likely to be yellow berried; but they will not *necessarily* bear berries of that colour. ‡

Liquid Manure: *E H.* Look next week in the Notices to Correspondents on the agricultural side.

Lists of Plants: *Filix.* We are unable to answer your question. Probably your botanical neighbours may know. Enquire of Mr. Stark, who is well able to advise you.

Names of Plants: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*J S W.* Phaius maculatus.—*Erzeroum.* 75A, Thlaspi strictum; 761, Capparis spinosa; 760, Cleome ornithopodioides; 1296, Lepidium ruderale; 41, Lep. perfoliatum; 1073, Lavatera olbia; and 454, Althæa Kurdistanica.—*E C T.* Ruscus racemosus. There is no such plant as Sophora pinnata; all Sophoras are pinnated.

Names of Fruits: *J Moore, and G S F.* Your Pears are the Beurré Diel. ||

Quince Stocks: *J S.* We never heard of Peach trees being worked upon Quince stocks. You state that you have written to some of the largest establishments in England respecting "Rider Peach trees on Quince stocks without success; but no one has yet said that they are not to be had on the Quince." We do not suppose that such a union has been attempted in modern times. If a man says he can cross a Thistle with Wheat, do you think others are called upon to deny the possibility of such a feat? Sheer absurdity corrects itself. ‖

Ventilation: *Dublin.* We are not sanguine about your plan of ventilation. Indeed, we doubt whether it would act at all if the walls through which the air is introduced are warm, as they should be. Instead of hollow walls it would be far better to use deep underground drains opening by an upright shaft (closeable by a wooden cap) in the front walk *outside*, and in the inside immediately below and in contact with the back of the hot-water pipes. We should build a stage along the middle of the house and carry a shelf all round. That is all you need.

Vines: *J.* You may graft a Muscat on the Black Hamburgh. It may be done with safety just after the buds have burst into leaf. There will then be no danger of bleeding. ‡

THE FOLLOWING MANURES are manufactured at Mr. Lawes' Factory, Deptford Creek:—Turnip Manure, 7l. per ton: Superphosphate of Lime, 7l.; Sulphuric Acid and Coprolites, 6l.
Office, 69, King William Street, City, London.
N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent. of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

THE LONDON MANURE COMPANY beg to call the attention of Agriculturists to their WHEAT and CLOVER MANURES for present use. The London Manure Company also offer Genuine Peruvian Guano, Nitrate of Soda, Concentrated Urate, Superphosphate of Lime, Fishery and other Salts, and all Artificial Manures of value. The London Manure Company guarantee Peruvian Guano and every Manure they supply to be strictly genuine. Edward Purser, Sec.
Bridge Street, Blackfriars.

SUPERPHOSPHATE COMPOST COMPANY.—
427, Strand, London.
The Directors having received numerous applications for Winter Wheat Manure, have the pleasure to notify to their Friends and the Agriculturists generally, that they have 1000 tons expressly prepared for drilling with Winter Wheat, and now ready for delivery at 7l. per ton net cash, that is, payment in one month. Carriage free to any Railway Station or Wharf in London. Further particulars may be obtained of the Agents.
W. W. Watson, Secretary.

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures, Linseed Cakes, &c.
Wm. Inglis Carne, 10, Mark Lane, London.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. Nesbit, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and dispatch.
Gentlemen desirous of receiving instructions in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

CORN CRUSHERS AND CHAFF CUTTERS.—A large display of the best Farm Implements shown in operation. Price Lists sent free on application.
BURGESS and KEY,
103, Newgate Street, and 52, Little Britain, London.

PUMPS AND HOSE PIPES FOR GARDENS AND LIQUID MANURE.—Burgess & Key's Pumps were highly commended by the Royal Agricultural Society of England at Lincoln. Price Lists sent free.
103, Newgate Street, and 52, Little Britain, London.

CHURNS.—ANTHONY'S PATENT AMERICAN CHURN.—Since 1849 this Churn has obtained all the Prizes awarded by the Royal Agricultural Society of England. At the trial before the Judges it made in 10 minutes 4 lbs. 6 oz. of Butter from 4 quarts of Cream, being 8 oz. more than any of the other Churns from the same quantity and quality of Cream.
103, Newgate Street, London.

HOSE PIPING.—Great Reduction in Price.
PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense pressure, and much more than leather, vulcanised rubber, or any other hose, and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented inventions, the cost of manufacturing it is now reduced at least 60 per cent., which advantage is offered to the public.
Burgess and Key, 103, Newgate Street, and 52, Little Britain, who on application will forward wholesale and retail prices.

TO FLORISTS AND OTHERS.
J. JONES, Iron Merchant, has always a great variety of CONICAL and SADDLE BOILERS in STOCK; also Fire and Furnace Bars, Ornamental and Plain Supply Cisterns, Double Doors and Frames, Furnace Grates, Soot Doors, Hot Water Pipes, Elbows, Tees, Syphons, Throttle Valves, Stop Cocks, Flange and Socket Elbows, &c.; also Trough Pipes. Drawings and prices of the above, on application to J. Jones, Iron Bridge Wharf, No. 6, Bankside, London, near the Southwark Iron Bridge.

STEPHENSON and PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.
From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.
"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard run, of Elisha Thomas Archer, 7, Trinity Lane, Cannon Street, City, and the Royal Mills, Wandsworth, Surrey.

WEEDS ON WALKS.
MR. FLEMING'S WEEDING or SALTING MACHINE for GRAVEL WALKS, COURT YARDS, &c., manufactured and sold by Alexander Shanks & Son, Arbroath, Forfarshire, from whom particulars with prices may be had.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.
THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.
The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.
Manufacturers of the Cement, J. B. White & Brothers, Millbank Street, Westminster.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.
Patron—His Royal Highness PRINCE ALBERT.
President of Council—Earl BATHURST.
Principal—Rev. J. S. HAYGARTH, M.A.
Professors, &c.
Chemistry—J. A. C. Voelcker, Ph.D., F.C.S.
Zoology, Geology, and Botany—James Buckman, F.G.S., F.C.S.
Veterinary Medicine and Surgery—G. T. Brown, M.R.C.V.S.
Surveying, Civil Engineering, and Mathematics—F. Armstrong, C.E.
Manager of Farm—G. Austin.
The first Session of 1855 will begin in February. The Annual Fees for Boarders vary from 45 to 80 guineas, according to age and other circumstances. The Fee for Out-Students is 40l. per annum. The College Course of Lectures and Practical Instruction is complete in one twelvemonth—though a longer course is recommended. There is a department for general as well as for agricultural purposes. Prospectuses and information can be had on application to the Principal.

THE GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY.
Incorporated by Special Act of Parliament.
Offices, 52, Parliament Street, London.
Directors.
Henry Ker Seymer, Esq., M.P., *Chairman.*
Sir John V. Shelley, Bart., M.P., *Deputy-Chairman.*
John C. Cobbold, Esq., M.P. | William Fisher Hobbs, Esq.
Sir William Cubitt, F.R.S. | Edward J. Hutchins, Esq., M.P.
Henry Currie, Esq. | Samuel Morton Peto, Esq., M.P.
Thomas Edward Dicey, Esq. | William Tite, Esq., F.R.S.
William Wilshere, Esq.
Empowered to execute, or to assist Landowners in executing with their own Capital, works of Land Improvement, viz., Drainage, Irrigation, Road-making, Enclosing, Reclaiming, and the Erection of Farm Buildings upon any Estates, under Settlement, Mortgage, or Disability, and without any investigation of Title, to charge the total amount of the outlay and expenses upon the property improved, to be repaid by annual instalments, varying according to the number of years over which Landowners may determine the repayment shall extend.
William Clifford, Secretary.

COLLEGE of AGRICULTURE and CHEMISTRY, and of PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.
Principal—J. C. Nesbit, F.G.S., F.C.S., &c.
The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.
Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

THE BIRMINGHAM CATTLE AND POULTRY SHOW, 1854.—The Sixth Great Annual Exhibition of STOCK and DOMESTIC POULTRY will be held in BINGLEY HALL, on TUESDAY, WEDNESDAY, THURSDAY, and FRIDAY, the 12th, 13th, 14th, and 15th of December next.
The PRIVATE VIEW and ANNUAL DINNER on TUESDAY, December 12.
There will be SPECIAL TRAINS on all the principal RAILWAYS, full particulars of which will be announced in the Advertisements and Bills of the several Companies.

The Agricultural Gazette.

SATURDAY, DECEMBER 9, 1854.

MEETINGS FOR THE ENSUING WEEK.

Tuesday,	Dec.	12—Midland Counties Show at Birmingham.
Wednesday,	—	13—Agricultural Society of England.
Thursday,	—	14—Agricultural Imp. Society of Ireland.

The past week has been fruitful of agricultural discussion and excitement. The Smithfield Club has held its annual meeting and exhibition; the London Farmers' Club has met, and listened to one of the most useful papers on land drainage that has yet been written; and Mr. Mechi has read his fourth paper on British Agriculture before a crowded meeting of the Society of Arts. On all these points we have endeavoured to lay before our readers the fullest information that we could. Mr. Mechi's paper will be found in another page: an abstract of that by Mr. Bailey Denton, too, is given; and a report of the Smithfield Cattle Show, with the award of prizes. Reports of the discussions which followed the reading of the papers before the Farmers' Club and the Society of Arts, must be postponed till another week. In the meantime, we wish to say one word on the part taken by Mr. Mechi, and towards him, at the two places respectively.

Our readers know that without agreeing with Mr. Mechi on all, perhaps on many, of the points on which he has insisted, the *Agricultural Gazette* has, throughout his career, heartily sympathised with him in his efforts to stir up action and discussion in the agricultural world. His *status* as a farmer and as an agricultural teacher are two altogether different things. If any one wants to see good agriculture, let him visit farms like those of Mr. Hudson, of Castle Acre, in the south, and Mr. Hope, of Fenton Barns, in the north—or counties like Norfolk and Lincolnshire in the south, and the Lothians and Fifeshire in the north. After returning (especially from the last-named county, probably the most *wholly* cultivated county in Great Britain) from an excursion to the north in August (when the Turnip fields are as green as Clover and as clean as fallow), or still later (for on the gloomiest day of October, when we last saw Fifeshire, the bright clean stubbles had all the effect of sunshine on the landscape), he will not be disposed—after witnessing the great scale, orderly arrangement, and perfect management of all the operations of agriculture—to rank a small farm in a poor district, with an ill-arranged set of buildings, very high in the agricultural scale. And yet its tenant is pursuing there a costly course of agricultural experiment—with what of good management, or of neatness and practised skilfulness we do not say—with how much energy and earthiness, and public spirit, everybody knows; and he is publishing his results not merely quietly and through the press, but by public speech and cordial intercourse and well-sustained controversy, through evil report and through good report, without abatement of an inexhaustible good-nature by the one, without a slackening of his efforts or temptation to relaxation of his labours by the other.

Whatever may be the general opinion of Mr. Mechi's status as a farmer, we are sure that but one exists as to his usefulness as an agricultural agitator and teacher. It was therefore with great satisfaction that, notwithstanding the independent criticism and opposition which many of his statements received last Wednesday at the Society of Arts, we heard every speaker in succession bear testimony to the valuable services which he has rendered. And it was with great regret that, notwithstanding the life and spirit he has so often thrown into the discussions before the London Farmers' Club, we heard last Tuesday evening, at the meeting of that club, a personal attack upon him and his errors, which, if an even-handed justice had guided the discussion, would at once have been stopped as out of order, or if an intelligent and well-conditioned spirit had influenced the speaker would never have been uttered. The attack was not sympathised with by the majority of the members of the Society; if it had been, Mr. Mechi would, no doubt, not again expose himself to the like; and, in that, we are sure that many others would follow his example to indicate their sympathy with him, not as an agriculturist but as a gentleman.

Have any of our readers ever undertaken the investigation of pedigrees? In the case of the *human* subject there is generally sufficient interest hinging upon the result of the inquiry to maintain a perseverance in what is, in itself, one of the dreariest and most laborious of researches. And to this may be added that we have not there to contend with one prolific cause of puzzle and perplexity in tracing animal descent, namely the reappearance of the same individual in half a dozen different generations in the same genealogical tree.

In the spring of this year we had the advantage of inspecting the herd of short-horned cattle at Hendon Farm, in the occupation of J. S. Tanqueray, Esq.; we went there intending to report to our readers all that we should see and learn of the very skilful management, well-regulated appliances, and valuable stock for which Mr. Tanqueray's farm is known. The herd itself, one of the largest and most valuable in the kingdom, has been gathered together during the past six years, and is necessarily still somewhat mixed and heterogeneous. It is not yet in the position in which the herd of many an older breeder exists—with a uniform character and family likeness impressed upon the whole. Blood of various tribes of the great short-horn family is found, not as it may be hereafter, in the same, but in *different* animals; and of course we cannot yet speak of the Hendon herd as possessing any known characteristic quality—such as is indicated when we speak of Mr. Bates's blood, or Mr. Booth's.

Our idea was to take Coates's herd book in hand and study the individuals of this herd, tracing th m back as far as possible so as to ascertain their relationship and origin, and so make ourselves and readers better acquainted with the history of the great short-horn breed of cattle which is doing so much to increase the agricultural wealth of Great Britain. For this purpose we took down the names of all the cattle, upwards of 100, and the references to the herd-book which should identify them there, and we set to work in the case of one which was soon to leave us for America, where he has since arrived, and which was one of the most valuable of the many costly animals sold at Lord Ducie's sale 15 months ago. If we have not long before this carried out our intention of reporting fully on this stock, it has been because of the labour we found connected with this one animal. Sitting down to our task at 9 a.m. it occupied us till midnight, with a three hours' interval, to record the names, where known, of the ancestors of this one animal, to only the 10th generation back. And a similar task in reference to every other in this herd would have occupied us from spring time on till Christmas, even though no 10 hours' bill interferes to restrict labour of this kind within a reasonable period daily.

Let us, however, give the result of this inquiry in the case of this one animal, as that will throw considerable light on the history of the breed, especially in one of its most valuable families. This bull, the Duke of Gloucester, is descended from its gr. gr. gr. gr. gr. gr. gr. g. dam Duchess 1st, or

"young Duchess," sold at CHARLES COLLING's sale in 1810 to Mr. BATES. As pedigrees are ordinarily worded, its dam was Duchess 59th by Second Duke of Oxford (9046):—

"g. d. (Duchess 56th) by Second Duke of Northumberland (3646),
gr. g. d. (Duchess 51st) by Cleveland Lad (3407),
gr. gr. g. d. (Duchess 41st) by Belvedere (1706),
gr. gr. gr. g. d. (Duchess 34d) by 2d Hubback (1423),
gr. gr. gr. gr. g. d. (Duchess 19th) by Hubback (1423),
gr. gr. gr. gr. gr. g. d. (Duchess 12th) by The Earl (646),
gr. gr. gr. gr. gr. gr. g. d. (Duchess 4th) by Ketton 2d (710),
gr. gr. gr. gr. gr. gr. gr. g. d. (Duchess 1st) by Comet (155),
gr. gr. gr. gr. gr. gr. gr. gr. g. d. by Favourite (252),
gr. gr. gr. gr. gr. gr. gr. gr. gr. g. d. by Daisy Bull (186)
gr. gr. gr. gr. gr. gr. gr. gr. gr. gr. g. d. by Favourite (252),
gr. gr. gr. gr. gr. gr. gr. gr. gr. gr. gr. g. d. by Hubback (319),
gr. gr. gr. gr. gr. gr. gr. gr. gr. gr. gr. gr. g. d. by Mr. J. Brown's Red Bull (97)."

But these names represent but a very small portion of the blood to which its quality as a short-horn bull is owing. It had, of course, two ancestors in the first generation, four in the second, eight in the third, and so on, up to 1024 * in the 10th generation to which we have traced it; and every one of these animals has affected its character. What that character is may be gathered from the fact that the Duke of Glo'ster sold at Tortworth for 682*l*. 10*s*.—that its sire, Grand Duke, has been sold for 1000 guineas, and its dam for 367*l*. 10*s*.—that its calf, six months old, the fifth Duke of Oxford, sold for 315*l*.—and that its calf Duchess 70th, six weeks old, sold for 325*l*. 10*s*. And now let us see what has produced this quality. One of the four cows in the third generation backwards from which, through "Cleveland Lad" (3408), he descended was an animal (Matchem cow) almost without a pedigree; that is to say, its dam was by young Wynyard (2859), and that is all that is known about her. The cow herself was once offered for 11*l*. in Darlington market, and brought home again for want of a purchaser!—and in the opinion of all other breeders, Mr. BATES was doing immense mischief when he introduced her into his herd. The cross, for such it was to all intents and purposes, was, however, maintained with Mr. BATES's characteristic resolution, and the animal having been selected by the wonderfully educated or perhaps intuitive skill which characterised him, the result has been most beneficial. Matchem cow was got by Matchem (2281); and *he* was by Bonnyface (807) *or* St. Albans (1412), so *there* again is an uncertainty in the pedigree; Matchem's dam was by Farmer (261), and Farmer was by Bumper (101), out of a cow entirely unknown: so that, altogether, Matchem cow was a most exceptional sort of animal—which only a resolute and confident judgment such as Mr. BATES's would have ventured on introducing into a pure bred herd of short-horns.

We refer to this case as an instance in which a well selected cross has wonderfully improved the breed, and saved it from the evils of in-and-in breeding which would inevitably have shown themselves in Mr. BATES's herd, as they will wherever the practice is closely followed. For in the history of this one bull—Duke of Glo'ster—there is parentage from every conceivable (for closeness) relationship between the dam and sire, the same animal occurring over and over and over again in many successive generations, and the same blood being crossed by the same, as many successive times. To take an instance in the bull Favourite (252), which has had more influence on the short-horn breed than any other animal known. There were 32 cows and bulls in the 6th generation back from Duke of Glo'ster—*one* of them is by Favourite: there are of course 64 cows and bulls in the 7th generation, and of these 28 are by Favourite: there are 128 cows and bulls in the 8th generation, and of these 97 are by Favourite. There are 256 in the 9th generation, and of these no fewer than 141 are by Favourite! And its blood existed in generations before that, so that even these figures do not represent the full extent of his influence on the character of the Duke of Glo'ster. To repeat it, so far as we know, however, we may just say that every animal in the 1st generation contributes of course one half, in the 2d one quarter, in the 3d one-eighth, to the character of any animal whose pedigree is in question: and calculating the matter on these principles, carefully avoiding all counting over again of animals in the same line, we find that there is $\frac{1}{128}+\frac{27}{256}+\frac{95}{512}+\frac{140}{1024}$ of Favourite's blood in the Duke of Glo'ster $=\frac{233}{512}$, or nearly one-half!!

Much more might be added, but we have already filled our space. We shall probably return to this subject, although our present reference to it has had the effect, we think, of proving several interesting points: (1) the immense quantity of other blood mixed up in the line of the so-called Duchess tribe; (2) the degree of doubt and impurity in the most pure and certain of all the short-horn families; and (3) the very interesting light which yet remains to be thrown upon the practice of our most successful breeders.

* These numbers represent names rather than separate individuals, for many, both cows and bulls, may have had as offspring several individuals in any one generation. At the time of so distant a generation as the 10th, there were not 1000 pure bred short-horns in the kingdom.

SMITHFIELD CLUB CATTLE SHOW.

THE Bazaar was opened on the evening of Monday for the private view, an opportunity which was made use of by remarkably few visitors; and the number on the succeeding days has not equalled that of last year's meeting. The exhibition is, however, equally attractive: to the mere amateur more so than ever, and to the professional man as well. For the former, the elegant forms of the Devon and the Down, the most beautiful of breeds in cattle and sheep respectively, never appeared either in equal perfection or in such numbers. For the latter there are matters just as usefully demanding his attention, whether in satisfaction or regret. He finds as much to attract his notice among the implements upstairs; and among the cattle, sheep, and pigs, he has pressed upon him such matters as the *relative merits of breeds* (for notwithstanding that Devons, Herefords, and Short-horns are separated now, yet there are the medals for the best cow and ox respectively in the yard, for which they still come into mutual competition; and the Short-horns have now for three years in succession carried off the palm). There is also the *progress of individual breeders*, and the decadence of others. We can observe the entrance of new names, and the gradual progress of well-known ones—how Lord Walsingham's sheep are obviously year by year gaining in quality and weight, and his Grace the Duke of Richmond's too, whose young Down sheep are astonishing; and there are matters connected with breeding generally, as, for instance, in the cross-bred classes, where there is a singular illustration of the *relative influence of the male and female parent* on the character of the offspring—the bull in every instance impressing his character on the cross to the almost entire absorption of the influence of the dam, Lord Radnor's cross-bred Hereford and Short-horns being to all appearance pure bred Herefords, while Mr. Hewer's Short-horn and Hereford—which, however, is not a half and half cross—being apparently a Short-horn. The *cross-bred sheep*, too, were well deserving notice, and Mr. Druce, of Oxfordshire, who deserves great credit for his energy and success in enforcing the profitableness of the cross-bred Down and long-woolled sheep, has worthily carried off the first prize in his class. It is in a case of this kind that the relative spheres of the Smithfield Club and the Royal Agricultural Society of England come under observation. The former rewards well-made fat meat, and encourages agriculture through the feeder, the latter aims at the agricultural interest through the breeder exclusively. The English Agricultural Society therefore does not offer prizes for cross-bred animals. Nothing is more clearly made out in agriculture than that *bold* crosses will not last; the first cross is a good animal and profitable to its breeder and its feeder; but if you breed from him he will revert to a degenerate copy of one or other of his parents. The cross-bred animal may therefore be properly the subject of a prize offered by the Smithfield Club; while the Agricultural Society do well to encourage the pure bred animals, without which the cross cannot be had. There is one more point on which the two societies come into contact, or more properly antagonism. The former offers prizes for young cows and heifers—"Short-horn heifers not exceeding four years old, &c.," "Short-horn cows above four years, that must have had at least one live calf, &c.;" and there are 17 animals shown in these two classes. The ages of the heifers are from 3 years and 8 months to 3 years and 10 months; those of the cows from 4 years to 8 years. Now, we are sure that there is no one interested in the progress of agriculture but must regret to see pure bred cows and heifers of so valuable a breed find their way to the butcher with so little fruit, or none at all, as is the case in many of the instances shown here. Take, for instance, No. 89, the cow "Alice"—the best cow in the yard—purchased as a calf by Mr. Towneley, the gentleman who protested against Lord Ducie's rule for a previous examination of the animals shown in the English Agricultural Society's yard by judges of fat, in order that excessively fat stock might be rejected. This cow, Alice, has had one calf, and it died as soon as it dropped, we believe; we understand she was exhibited at the Lewes Show, and Mr. Towneley has never bred from her since, or, indeed, at all, and she is now fat meat—so fat, indeed, that with her excessive covering, all, and evenly, over the upper part of her body, and her somewhat scantily covered legs and thighs, she reminds one of those locomotive engines carrying on their cylindrical boiler an additional coating in the shape of a reservoir for water which keeps the boiler warm. If this animal would breed, she is worth 200*l*. or 300*l*.: she has been as fat as she is for the last four years, no doubt as the result of natural character in a great measure, but also no doubt to some extent as the consequence of the over-fattening system in the commencement: and we imagine that "Alice" might be made the text of a very impressive sermon to her breeder and feeder, if they would only listen to it. The award of prizes is given below; but we may, in addition to the mere announcement of the judgment by which it has been guided, just make a remark or two as we walk round.

No. 2, the first prize Devon ox under three years old, is bred by H.R.H. Prince Albert; it is a remarkably compact well got up little thing, *polished* to the very tips of its horns, which, by the way, are hardly of the Devon character. The most elegant and beautiful specimen of an animal in the yard, perhaps, is No. 25, the first prize Devon heifer, by the Earl of Leicester, somewhat lighter in colour, beautifully fine in bone, horn, and muzzle; it is a remarkably fine specimen of the Devon breed.

As to the Hereford classes, they are, we believe, hardly up in quality to those of former years. The first prize ox, shown by Mr. Niblett, of Bristol, is a well-bred remarkably evenly fattened ripe ox, very thick in the flesh all over, especially on the parts most valuable to the butcher. No. 36, which received the 2d prize, was bred by Prince Albert, and is a large compact beast—somewhat coarser than its neighbour, but remarkably thickly covered with useful flesh.

In the Short-horn classes the oxen under three years old are inferior to their usual character; the 1st prize animal in the older class, 4 years and 4 months old, was probably never excelled in quality; very fat but evenly so; extraordinarily thick in the twist and rump, and very fully covered on all the most valuable parts. The Short-horn heifers and cows have been already referred to. In the class for oxen of any other pure breed the prize was awarded to a long-horn ox, inferior as it seemed to us in quality, form, ripeness, and age, to the very well made younger Sussex ox by its side, and we should like to know the grounds of the decision between them.

In the sheep classes we have merely to say that there was a very fine show of South Down sheep, a comparatively inferior show of long wools, and a very good display of the cross between them.

The classes of pigs were represented not by any great number, but certainly by remarkable quality. The classes were more evenly matched in size than we have known them. The large classes were nearly of one size, and the small one also nearly matched in size and also in quality, for the judges must have had a very difficult office here. We give their awards below. We have the measurements of all the cattle shown, and shall hereafter use them, and compare them with those of the Birmingham cattle next week, and make use of them for elucidating other points in reference to the history and progress of the breeds:—

AWARD OF PRIZES.

CATTLE.

Class I. Devon Steers, not exceeding 3 years old.—1st, 20*l*., his Royal Highness Prince Albert; S. M. to the breeder, R. Mogridge, Molland, South Molton. 2d, 10*l*., Walter Farthing, Stowey Court, Bridgewater.

Class II. Devon Steers or Oxen, above 3 years old.—1st, 25*l*., the Earl of Leicester, Holkham Hall; S. M. to the breeder, the Earl of Leicester. 2d, 10*l*., Fred. King, Nursling, Southampton.

Class III. Devon Heifers, not exceeding 4 years old.—1st, 15*l*., the Earl of Leicester, Holkham Hall; S. M. to the breeder, the Earl of Leicester. 2d, 5*l*., his Royal Highness Prince Albert.

Class IV. Devon Cows above 4 years old, that must have had at least one live calf.—1st, 20*l*., John Hudson, Castle Acre Lodge, Swaffham, Norfolk; S. M. to the breeder, John Hudson. 2d, 10*l*., Thos. Bond, Park, North Petherton.

Class V. Hereford Steers, not exceeding 3 years old.—1st, 25*l*., Isaac Niblett, Filton, Bristol; S. M. to the breeder, T. L. Meire, Cound, Shrewsbury. 2d, 10*l*., his Royal Highness Prince Albert.

Class VI. Hereford Steers or Oxen, above 3 years old.—1st, 25*l*., Wm. Heath, Ludham Hall, Norwich; S. M. to the breeder, Thomas Carter, Dodmore, Ludlow. 2d, 10*l*., J. Ford, jun., Rushton, Dorset.

Class VII. Hereford Heifers, not exceeding 4 years old.—1st, 15*l*., Fred. King, Nursling, Southampton; S. M. to the breeder, T. Samson, Kingston Russell, Dorchester.

Class VIII. Hereford Cows, above 4 years old, that must have had at least one live calf.—1st, 20*l*., Wm. Heath, Ludham Hall, Norwich; S. M. to the breeder, Edward Longmore, Ludlow. 2d, 10*l*., John Stevens, Holywell Street, Oxford.

Class IX. Short-horned Steers, not exceeding 3 years old.—1st, 25*l*., Jas. Futcher, jun., Fovant, Salisbury; S. M. to the breeder, the Right Hon. Sidney Herbert, M.P., Wilton, Salisbury. 2d, 10*l*., Wm. Aldworth, Frilford, Berks.

Class X. Short-horned Steers or Oxen, above 3 years old.—1st, 25*l*., the Duke of Rutland, Belvoir Castle; S. M. to the breeder, the Duke of Rutland. 2d, 10*l*., the Rev. J. Holmes, Brooke Hall, Norwich.

Class XI. Short-horned Heifers, not exceeding 4 years old.—1st, 15*l*., Joseph Phillips, Ardington, Berks; S. M. to the breeder, Wm. Fussell, Laycock, Chippenham. 2d, 5*l*., the Earl Spencer, Althorp Park.

Class XII. Short-horn Cows, above 4 years old, that must have had at least one live calf.—1st, 20*l*., Charles Towneley, Towneley Park; S. M. to the breeder, Alex. Bannerman, South Cottage, Chorley. 2d, 10*l*., J. H. Langston, M.P., Sarsden House, Chipping Norton.

Class XIII. Scotch or Irish Steers or Oxen, of any age.—1st, 10*l*., J. H. Gurney, Catton Hall, Norwich.

Class XIV. Scotch or Irish Heifers or Cows, of any age.—1st, 5*l*., Hugh Hamilton, Lindsay, Westdean.

Class XV. Welsh Steers or Oxen (Runts), of any age.—1st, 10*l*., B. E. Bennett, Marston Trussell Hall.

Class XVI. Welsh Heifers or Cows, of any age.—1st, 5*l*., Richard Worthington, Saddington.

Class XVII. Steers or Oxen, of any pure breed (except Devons, Herefords, Short-horns, and Scotch, Welsh, or Irish), of any age.—1st, 10*l*., R. H. Chapman, Upton, Nuneaton; S. M. to the breeder, R. H. Chapman.

Class XVIII. Heifers or Cows, of any pure breed (except Devons, Herefords, Short-horns, and Scotch, Welsh, or Irish), of any age.—1st, 10*l*., Charles Neame & Sons, Selling; S. M. to the breeders, Charles Neame & Sons.

Class XIX. Cross or Mixed-bred Steers, not exceeding 3 years old.—1st, 15*l*., the Earl of Radnor, Coleshill House; S. M. to the breeder, the Earl of Radnor.

Class XX. Cross or Mixed-bred Steers or Oxen, above 3 years old.—1st, 15*l*., William Hewer, Sevenhampton; S. M. to the breeder, William Hewer.

Class XXI. Cross or Mixed-bred Heifers, not exceeding 4 years old.—1st, 10*l*., John Tucker, Abbey Print Works; S. M. to the breeder, John Tucker.

SHEEP.

Class XXII. Fat Wether Sheep, of any Long-woolled breed, 1 year old (under 22 months).—1st, 20*l*., the Marquis of Exeter, Burghley Park, Stamford; S. M. to the breeder, the Marquis of Exeter. 10*l*., G. S. Foljambe, Osberton Hall; 5*l*., Thomas Twitchell, Willington.

Class XXIII. Fat Wether Sheep, of any Long-woolled breed, 1 year old (under 22 months). Each Sheep not to exceed 200 lbs. live weight.—20*l*., G. S. Foljambe, Osberton Hall; S. M. to the

breeder, G. S. Foljambe. 10*l.*, the Marquis of Exeter, Burghley Park, Stamford; 5*l.*, Richard Newman, Harrowden.

Class XXIV. Fat Wether Sheep, of any Long-woolled breed (not Leicesters), 1 year old (under 22 months).—10*l.*, William Slatter, Stratton, Cirencester, Gloucester. S. M. to the breeder, William Slatter.

Class XXV. Long and Short-woolled Cross-bred fat Wether Sheep, 1 year old (under 22 months).—10*l.*, Samuel Druce, Eynsham, Oxford. S. M. to the breeder, Samuel Druce. 5*l.*, John Overman, Burnham Sutton, Norfolk.

Class XXVI. Long and Short-woolled Cross-bred fat Wether Sheep, 1 year old (under 22 months). Each Sheep not to exceed 2?? lbs live weight.—10*l.*, John Overman. S. M. to the breeder, John Overman.

Class XXVII. Fat Wether Sheep, of any Short-woolled breed 1 year old (under 22 months).—20*l.*, the Duke of Richmond, Goodwood. S. M. to the breeder, the Duke of Richmond. 10*l.*, Lord Walsingham, Merton Hall.

Class XXVIII. Fat Wether Sheep, of any Short-woolled breed, 1 year old (under 22 months). Each Sheep not to exceed 200 lbs. live weight.—10*l.*, William Rigden, Hove, Brighton. S. M. to the breeder, William Rigden.

Class XXIX. Fat Wether Sheep, of any Short-woolled breed, 2 years old (above 22 and under 34 months).—20*l.*, the Duke of Richmond. S. M. to the breeder, the Duke of Richmond. 10*l.*, Lord Walsingham, Merton Hall.

Class XXX. Fat Wether Sheep, of any Short-woolled breed (not South Downs), 1 year old (under 22 months).—10*l.*, William King, New Hayward Farm. S. M. to the breeder, William King.

PIGS.

Class XXXI. Pigs of any breed, above 13 and not exceeding 26 weeks old.—10*l.*, J. V. Williams, Haygrove-Farm. S. M. to the breeder, J. V. Williams. 5*l.*, Wm. Mills Barber, Langley Broom.

Class XXXII. Pigs, of any breed, above 26 and not exceeding 52 weeks old.—10*l.*, John Coate, Hammoon, Dorset. S. M. to the breeder, John Coate. 5*l.*, Samuel Druce, Eynsham.

Class XXXIII. Pigs of any breed, above 12 and under 18 months old.—10*l.*, Samuel Druce, Eynsham. S. M. to the breeder, Samuel Druce. 5*l.*, Stewart Majoribanks, Bushey Grove.

GOLD MEDALS.

Gold Medal to the feeder, for the best steer or ox in any of the Classes. The Duke of Rutland, Belvoir Castle, Grantham, Lincoln.

Gold Medal to the feeder, for the best heifer or cow in any of the Classes. Charles Towneley, Towneley Park, Burnley.

Gold Medal to the feeder, for the best pen of long-woolled sheep in any of the Classes. The Marquis of Exeter, Burghley Park.

Gold Medal to the feeder, for the best pen of one year old short-woolled sheep in any of the Classes. The Duke of Richmond, Goodwood, Chichester.

Gold Medal to the feeder, for the best pen of pigs, in any of the Classes. J. V. Williams, Haygrove Farm, Bridgewater, Somerset.

EXTRA STOCK.

S. M. for the best beast in extra stock. Lord Feversham, Duncombe Park, Helmsley, York.

S. M. for the best long-woolled sheep in extra stock. William Sandy, Holme Pierrepoint, Nottingham.

S. M. for the best cross-bred sheep in extra stock. George Hine, jun., Oakley, Bedford.

S. M. for the best short-woolled sheep in extra stock. William Rigden, Hove, Brighton.

S. M. for the best pig in extra stock. His Royal Highness, Prince Albert.

We must add a few words on the implement show, which was as full and interesting as ever. Implements of tillage and of carriage and for sowing and for reaping were not so numerous as those connected with the preparation of food—chaff-cutters, corn-knives, grinding-mills, Turnip-cutters and graters, steaming apparatus, &c. And this was rightly in accordance with the period of the year, and the interests of the farmer at the winter season. There were a number of root graters, which hardly amounted to pulping machines, but yet effected so far a reduction of the root that it might be more thoroughly incorporated with chaff, meal, &c., for food. Perhaps the most effectual one was Philips's, which results in a mincing of the Turnips, whereas all the others, as Bushe and Barter's, merely act by cutting or scraping off a thin riband-shaped piece. We do not believe, however, that the process of mincing or pulping is worth, in its result, the enormous amount of labour that must be spent upon it.

Among the other machines exhibited, we may mention Williams's Patent Self-holding Lever Plough, which we refer to simply as, in our opinion, an extravagant attempt to combine a lot of ploughs or other implements in one, without any advantage arising from such combination to compensate for the cumbrous bulky awkwardness of so large an implement. There is considerable mechanical ingenuity displayed in its construction, but we do not think it is likely to displace either the plough or the cultivator. We may also name as a novelty Mr. Peirce's (73, Mark Lane) spring shaft cart, and car, in which a trussed shaft is used as a cart bed in place of springs.

Besides stands on which the implements of most of our agricultural machine-makers were represented, the London and provincial seedsmen had many of them stands, on which magnificent specimens, especially of Mangold Wurzel and of Swedes, were exhibited; we did not see the splendid specimens of Cow Cabbage which we had seen the previous year.

Home Correspondence.

The Birmingham Cattle and Poultry Show.—The sixth of the great annual exhibitions of stock and domestic poultry, will open in Bingley Hall, on Tuesday, the 12th inst. The nature and extent of the entries, and the other arrangements which are in progress, are such, we understand, as to hold out abundant promise of a highly satisfactory meeting. The show of poultry—always in Bingley Hall a most agreeable and striking feature—will, it is stated, this year be of extraordinary excellence. Since last year a change has been made in the amount of subscription giving the right to exhibit poultry, which has been raised from 10*s.* to 1*l.*, the entries at the same time being limited to four instead of six as heretofore. Notwithstanding this change, however, the total number of pens will be very nearly 1800.

Farmers improve as much as other People.—Every one in the remotest degree connected with the soil of England must derive satisfaction from the present aspect of the agricultural "interest" emerging gradually from the slough of despond into which it had been so long dragged. Hard was the fate of those on whom fell the first reverses wrought by the political change—a change so sudden that no occupier was prepared to meet it, and against the consequences of which no shield was provided. The farmers were naturally identified with high prices because their rents depended on them; and they thought free trade insisted upon the possibility of paying landlords and labourers out of inadequate receipts: their payments were certain, and if they cultivated their farms with any degree of skill and judgment their expenses could be only extracted from half-fed and hostile consumers by artificial processes, which bewildered and irritated the pauper population;—ever-varying enactments only delayed the day of reckoning; cunning speculators only pocketed the harvest of intricate calculations that always baffled the anxious cares of the simple husbandman: he never knew on what ground he stood, and while he supposed by a sliding scale he could not lose any money, his attention was diverted from the proper exercise of skill and intelligence to acquiesce in any custom or agreement imposed by a "farmer's friend," instead of looking to improvement of cultivation, increase of fertility, or sound economy of management, as the true springs of future welfare. Now that the chill plunge is over into the stream of unrestricted competition, what do we see? Everywhere signs of a new era. The farmer now knows on what he has to depend; his own inherent resolution is called into life, he is determined not to be beaten on his own ground; he cleans his land, he selects his stock, he provides machinery, he stipulates that his landlord shall perform at least a part of his share of the required obligation, and he goes to work like a man of business, no longer propped up by the fiction of high prices, but reasonably calculating on a home market annually more importunate for food. Instead of land going out of cultivation, waste lands are made productive, well husbanded manure converts sand or clay or chalk to an efficient supporter of root crops, artificial grasses tax the credulity of sceptical men who are positively envious at any quicker advance than they themselves can make; and so in honourable rivalry, careless of published accounts of successful achievement, a wonderful spirit seems to animate all classes of farmers in fields hitherto scarcely trodden in the march of improvement, the analyses of soils and succedaneums are followed by the analyses of food. Steam is working its wonders with precision and celerity, railroads and telegraphs aid the traffic of corn and cattle even more than that of cloth and hardware, and a great stride of industry is made in the elevation of all the human agency of agriculture by the constantly increasing exercise of intelligence called forth in every department belonging to the farmer. *J. W., Peterborough.*

Potato Culture.—I send you the result of several years' experience and observation on the cultivation of the Potato. The plan here recommended is simple and inexpensive, and if followed out will prove profitable to the cultivator as well as beneficial to the community, producing sound tubers of superior quality. In order to success four things must be attended to. 1st. A moderately dry friable soil deeply stirred before planting. 2d. No direct application of manure of any kind. 3d. Whole sets of middling size and sound. 4th. A clear space of 20 inches between the sets along drills. I believe all the parts of the above plan have been already tried separately, or partially combined, and by some commended and by others condemned, but in thorough combination it has not been followed out, and as far as I know never before recommended. In this neighbourhood whole sets are condemned because they produce a superabundance of shaws and a multitude of small tubers, the reason of which is they are set too close by one-half. No manure is also condemned, as producing a poor return, but it has been tried only with puny cut sets which have not strength to send up a vigorous stem without the aid of manure. In like manner wide setting is condemned as a waste of ground, and so undoubtedly it is when the sets are small and cut, as they would rarely under any circumstances expand over a space of 20 inches between. I do not attempt to give the *rationale* of the plan; we have already had plenty of theorising, it is enough if success follow its prosecution. A paying crop without a fresh application of manure must always be profitable to the cultivator. *S., Forfarshire.*

Guano, Nitrate of Soda, and Common Salt, for Wheat.—The importance of Mr. Caird's experiments, reported in a recent number of your Paper (p. 765), must be generally appreciated, and would have been, to me, still more interesting if the salt had been applied with the guano instead of with the nitrate of soda; the latter, being itself a neutral salt, with base of soda, appears, chemically, less to require another neutral soda salt than the guano, which is highly alkaline and putrescent. For 10 years I have frequently recommended the admixture of guano with half its weight of tolerably pure salt, or up to its own weight of used pilchard salt, where obtainable; with the view not so much of augmenting the increase in quantity of grain as of improving its quality. The sea-coast Wheats have been long noticed, hereaway, as cleaner and fuller in grain, and stiffer in straw, than those grown inland, and pilchard salt does seem also to increase quantity. The tendency to rot in guano is best remedied by salt, whilst it prevents over growth (but rather retards early vegetation). A mixture of Mr. Caird's three ingredients—1 cwt. each of guano, nitrate of soda, and salt (preferring fishery or other animal-foul salt), would seem to possess a union of qualities likely to produce abundant crops, with clean full grain and firm straw, and leave the ground in a healthy state. *J. Prideaux.*

Manuring Seeds.—I dare say most people know a little sweetmeat called comfits, viz., an Aniseed or something of the sort incrusted with sugar to the size of a Pea, or thereabouts. I have often thought if farmers and gardeners could incrust their seeds in a similar way before sowing, with an artificial manure suitable to their early growth, it would be a saving, and also a greater certainty that all the seeds would be left by birds, &c., to vegetate. Take for instance the Turnip crop in the counties of Northumberland and Durham. It is usual to sow in drills, manuring partly with farm yard dung and guano, the latter scattered by the hand on the top of the former. Now, besides the irregularity of depth between the seed and guano, a part of the latter is not covered up by the plough, and thereby serves to encourage the early growth of weeds quite as much as the Turnips. I am not aware if this has been tried, but fancy there would be little difficulty in making a small machine to incrust seeds, which would effect a saving in guano. *W. H., Tyneside.*

Cooked Bean-straw as food for Pigs.—In a number of your Paper about a year since a correspondent spoke favourably of Bean-straw cut into chaff, and boiled, and mixed with meal, as being an economical food for pigs. I am now feeding a quantity of pigs, and having for several years past found that pigs have "eaten their heads off" by being fed entirely on meal when put up, in common store condition, to feed, I have determined this year, not being able to obtain grains, and being short of Turnips, to try an experiment with cooked Bean-straw. I have had about a score good sized pigs at feed a fortnight on a compound of Barley-meal and cooked chaff in equal quantity; the chaff is boiled three hours, and mixed while warm with the Barley-meal. The mixture stands about twelve hours. The pigs are fed twice a day, and, so far, it appears to me they have made as much progress as if they had been fed entirely on meal. The pigs consume a bushel of meal each per week. I shall be obliged to the correspondent who noticed the subject last year, or any other who has experience, by any suggestion. Will the pigs become ripe for the butcher on this diet, or should they not rather be finished the last month with meal alone? Will they remain healthy upon it without a change? *R. F. W.*

Italian Rye-grass and Lucerne.—May I beg you will afford me information as to the relative merits of Italian Rye-grass and Lucerne. My lands are situated near the water, scarcely salt, as the estuary runs up here from the open sea some 12 miles; the soil is light, subsoil gravelly, latitude 57.30. I have heard so much of Italian Rye-grass the past 3 or 4 years, and nothing of Lucerne, that I presume that the latter is a more troublesome, expensive, and precarious crop, and more suited to warmer regions, or is it that agriculturists are swayed as much by fashion in crops as ladies are in dress? In your *Gazette* of 1852, p. 388, I observe Messrs. Hardy & Son strongly recommend Lucerne, but I still cannot suppose such men as Kennedy, Telfer, &c., would have grown the Rye-grass if they had not some objection to the other crop, either of relative yield, expense, or climate. Lucerne, it appears, will last from 5 or 6 to 10 or 12 years, whereas the Italian Rye-grass does not exceed 3 years, if so much. If you recommend my trying the Lucerne, I should grow, or rather sow, it after a crop of Potatoes, or Turnips. Could I attempt to sow it in autumn for the spring following? I believe irrigation is very favourable to it, and I have a command of water. *H. W. W.* [We should prefer the Italian Rye-grass. The Lucerne must be sown in spring.]

Lime burned with Peat ("J. W. R.," p. 765.)—Lime is universally burned with peat throughout Ireland, wherever peat is to be had; the kilns for burning it are either what they call pot-kilns, being in form of a gipsy cooking pot, or parallelograms, about 6 feet wide, 5 feet deep, and of any length, with ash-holes along the side most exposed to wind to admit air, and which are placed about 6 feet asunder; the pot-kiln is of any size, but generally about 6 or 7 feet deep and 5 or 6 feet diameter at the top. Neither of these kilns are draw kilns, and although I do not see why peat would not answer as well in draw kilns as coal, yet I do not recollect having seen it used for them. As peat does not make so lasting or so strong a fire as coal, as it is indeed a more bulky fuel, it must be used in much larger quantities, I think about three or four times in bulk of the quantity of stone; and the stone is also broken much smaller than for larger kilns and coal fuel, say about the size of eggs, from pullets to geese. Light brushwood is placed at the bottom of the kiln, and then alternate layers of turf and stone, as where coal is used, but the layers of stone are thinner, that is 3 or 4 inches thick, and the layers of turf about 1 foot or 15 inches thick (this will somewhat depend on the sort of peat used, for both the light fuzzy kind and the hard stone turf answer the purpose equally well). The turves are carefully placed by hand on their ends as close as possible. When the kiln is full it is covered over at top with a layer of turf, but this is more carelessly thrown on. The kiln is lighted, and, when burned, the lime is taken away from the top as it is wanted. The lime is burned well enough in these little kilns with peat for any purpose; indeed, it is as perfectly burned as in the larger kilns with coal. Some years ago, when reclaiming waste lands, I excavated

three very large kilns in a turf bank (it is not an uncommon thing to do this in our bogs, and they serve for some time without any lining of any kind, the moisture of the bog only permitting of a slight charring of the sides), and filled and burned them in the usual way; as dried turf was scarce, when the fire had reached the top and the contents had sunk, I filled the kilns again to the top with layers of stone and raw stuff dug fresh from the bog, and thrown in from the spade. The heat of the under fires dried and ignited this raw stuff, and the stone turned out as well burned as that which had been subjected to the action of the fire from the dried peats. The country people were astonished. *J. M. Goodiff.*

Societies.

SOCIETY OF ARTS, *December* 6.—Mr. Mechi read his fourth paper on Agriculture this evening, and, excepting the introductory paragraphs and a few abridgements elsewhere, the following is a report of it:—

A FOURTH PAPER ON BRITISH AGRICULTURE.

There is something of stern admonition in our present food position. With an abundant harvest, for which we have just returned grateful thanks, the prices of corn are enormous. I venture to assert, from my own experience, that we could grow more than all the food that is required by the British people; but it must be done by investment and improvement. The mere drainage of all the land that requires it would add millions of quarters of corn and much additional meat to our present supply. My own farm may be taken as an instance of greatly and amply increasing our food supply. I therefore purpose this evening to lay before you my own agricultural balance sheet, which is again highly satisfactory and remunerative, showing an advantage to me in rent and profit of about 750*l.* I shall glance at the progress of British agriculture, and enter into some details connected with its internal economy, thinking that such information may be a useful preparative for those who, like myself, hitherto engaged in other pursuits, may be disposed to divert some portion of their capital to agricultural practice and amendment. I do not know anything more rational and more desirable than that the surplusage of our town and city profits should find useful employment on the land. It is much needed.

The agricultural cry is always "but where is the money to come from for these improvements?" and therefore every landlord and tenant should rejoice at an increase of "apron-string" farmers and improvers, seeing that the inflowing of capital and intelligence diminishes rates and increases profits and comforts in a thousand various ways. If I were asked "Why so little town capital finds its way to agricultural improvement?" I should say, you have hitherto not held out to it the hand of invitation. Great landed proprietors with poor, unimproved and entailed estates, either from want of knowing that means for their improvement exist, or from a false delicacy as to borrowing the money, or from a disbelief or doubt of the improvements resulting profitably to themselves and their tenantry, have not generally availed themselves to any extent of the two or three existing companies, which have the means and legal powers to effect every necessary amendment, even on strictly entailed estates. I know a great many small land-holders whose property and tenantry would be equally benefited by such investments.

In a national point of view, it would be highly desirable that some hundred millions of our surplus capital should be engaged in producing British food on British soil by British means and labour*, rather than that the cash boxes of our capitalists should be crammed with bonds and responsibilities from every foreign nation and foreign undertaking, to the very casting of Russian cannon to be used against our own troops. I could readily point out how 100 millions could be at once profitably employed in agricultural amendment. But ere this can be done there is an immense amount of prejudice to be removed and self-satisfaction to be disturbed. I, then, venture to predict that in a comparatively short period we shall see every farmery covered in with sufficient shelter for its stock, lighted with gas, its fixed steam engine, economising the costly labour of horses, and warming by its waste steam the various sheds. The food which the farm produces having done its office in the town will run back to restore the fertility which it had exhausted —our land will be drained and irrigated—the residences will be worthy of a more intelligent and more capitalled tenantry, rejoicing in pianos and libraries. The waste and loss occasioned by misplaced buildings, bad roads, and queer-shaped fields, will be corrected by the facile sale or transfer and interchange caused by an easy legal registration.

If we have capital in this country — and who can deny that we have it in superabundance? — let it avail to give to agriculture a higher and more dignified, more intelligent, and consequently a more profitable position. The clumsy appliances and prejudiced neglects of antiquated agricultural customs are not profitable. The men who now suffer most in agriculture are precisely those, whose ill-farmed, wooded, small, and undrained fields, and unimproved buildings, are slowly but surely absorbing the tenant's capital, binding him in poverty and discontent. It will be a happy day for the tenantry of this country, when their rents are doubled, provided that increase represents a proper interest for necessary improvements. This takes place in our towns and cities—why not in our agriculture?

* By companies, or by an improved law of partnership.

I do attach much importance to the application of our town sewage to agricultural fructification. It is going on rapidly in various quarters; and I have been delighted to find that my intelligent and calculating friend, Mr. Samuel Brooks, of Manchester, has placed at the disposal of the managing council of that city the munificent sum of 1000*l.* to be expended in prizes, or means to obtain the best mode of applying the sewage of that city to the fructification of the surrounding country. My own experience in this matter, with two miles of pipe on my farm, convinces me that the engineering difficulties are perfectly insignificant, and that a nation which has passed its iron railways through every man's house and property, *nolens volens*, for a useful general purpose, will not be deterred from acting similarly in the great question of feeding the British people. One thing is quite certain, that you must convince landlords and tenants that manure liquefied is better and more available than solid manure; this it will take some time to do; and you must also convince engineers that they do not at all know at present the greediness of soil for manure, for if they did, a recent writer in your Journal would never have made the mistake of over-estimating some 30 times the area that would appropriate the sewage of the metropolis. Our excrement is literally our food, disagreeable and disgusting in form and smell, but unaltered in elementary value. Injurious to man it is vitality to plants; and much of the luxuriant vegetables that grace our table are a mere re-embodiment of our own excretæ. The time is gone by for false delicacy in these matters—we must entertain this great privy question. The Chinese would be starved did they follow our example; but that wise people economise with rigid care that which they alone depend upon for the reproduction of their food. I am informed they do not, as we do, fat cattle at a loss with purchased food to produce manure for the growth of corn.

In order to learn the extent to which our food might be increased by the application of town sewage, let us consider that 300 sheep on a farm of 100 acres would keep it in a high state of fertility, and that therefore, reckoning 450 men, women, and children as equivalent to 300 sheep, our population would fertilise 500,000 additional acres. I say nothing of dogs, cats, parrots, canary birds, and horses; they consume largely, each horse consuming the food of eight men. Then you have enormous supplies of waste blood and offal, and a thousand other things that should add millions of quarters to your food. The mere disintegration of your alkaline granites by the abrasion and triturition of traffic—the carbon, or smuts from your roofs, which is but too perceptible after a shower, are all sources of fertility. Amongst the coming improvements in agriculture is—

CULTIVATION BY STEAM.—On public grounds, I expended some money in the construction of Mr. Romaine's machine. Our trials with it were only partially successful; we had too much velocity, and too little steam. The act of raising the soil must evidently be by a slow steady motion. Enough, however, was shown to prove that cultivation by steam will soon be the order of the day; several parties are engaged upon it, and I have a strong impression that Mr. Usher's, of Edinburgh, will not be one of the least successful. I find there is one at work in Germany, of which a drawing lies on the table for your inspection. I think Mr. Romaine's has an advantage by the attachment of horse-power in the case of undulating surfaces; but I need hardly tell you, that it requires an immensity of time and no small investment of capital to bring new inventions to perfection. The Royal Agricultural Society of England have very properly offered a premium of 200*l.*, which will no doubt develope many attempts. When we consider that the farm horses consume the produce of nearly one-fourth of the arable land of the country, and when we calculate for how few hours daily they can be kept at work, the whole question is one of great importance to agriculture and to the nation. I hope, now that agricultural statistics are becoming acceptable, that we shall have comprehensive details of the number of acres undrained and otherwise imperfectly farmed, amount of steam power employed, number of acres under lease or annual tenure, customs of valuation to incoming tenant, extent of irrigation, number and position of cottage residences, and other details, necessary to form sound conclusions as to the present condition of British agriculture. As there are, no doubt, several in this large and influential meeting who may hereafter desire to enter upon British agriculture, I think it will be useful to lay bare its internal economy in a popular and simple form, unencumbered with tedious details. Farming, although a most agreeable occupation, is notoriously a slow business, attended with small profits. Fortunately it is so, otherwise our towns and cities would be comparatively deserted; yet, how desirable it is, that the surplus profits of trade, commerce, and manufactures should flow into the lap of poorer Ceres, to develope her powers and increase her riches. One thing is quite certain, that if high farming is slow, unimproved farming in ruinous.

There is nothing more difficult than to obtain from farmers a statistical detail of the cost and return of the various branches of their occupation. Comparatively few keep books, nor do they appear to have considered it necessary to investigate details. By-the-bye, I know a great many tradesmen who have much to revise in this respect.

FARMING CAPITAL.—I may, perhaps, be permitted to say generally, that to farm 400 acres of land you should have at least 5000*l.*, or 12*l.* per acre; but if you are to carry out subterranean irrigation and all the modern improvements, you will want 6000*l.* to 7000*l.*, irrespective of landlord's improvements for building, drainage, &c. You will then be in a condition to avail yourself of opportunities, to buy when you see anything cheap, and to sell when things are dear. I assume that you have judgment and a thorough knowledge of your business in all its details, for unless by yourself or others acting for you the most is made of everything, you must expect to lose your capital. There always are in every market men of extraordinary powers, ready to absorb the injudicious or uninformed. Look at my own live stock account; if five per cent. mistake were made in buying and selling it would derange my balance sheet to the extent of 250*l.*

FARM PROFITS.—As a general rule, 10 per cent. on the capital invested is considered a very good profit in farming. There are thousands who do not realise half of it. Here and there a man of extraordinary powers and great personal economy accumulates a large fortune, but it is the exception, not the rule. A return of four rents per acre is generally considered satisfactory; the average of the kingdom is, I think, less. In cases of improved farms it is sometimes five rents, or more. The necessity for diminishing the fixed expense by an increased produce is illustrated by the statement of a first-rate north-country farmer, who says that, if he spends 1*l.* per acre, or 600*l.* a year for artificial manure he makes a profit; if he omits it he makes a loss. If stock is too dear, or you are short of capital, plough in green and root crops, particularly on heavy land.

DISPOSAL OF CAPITAL.—As a general rule, your capital will be absorbed as follows:—

	£	s.	d.	
Valuation	£2	10	0	
Live stock	2	0	0	to £5
Implements	1	0	0	
Labour	1	15	0	to £2 5s.
Seed	0	10	0	
Tradesmen's bills	0	5	0	
Rent	1	10	0	
Poor rates, tithes, &c.	0	10	0	
Artificial manure...	1	0	0	
Farm horses	1	0	0	
Personal expenditure				
	£12	0	0	

Farmers have generally the advantage of house-rent free, although too many of our farmeries are entirely unfit for a tenant of capital and intelligence, who will seldom enter upon such occupations. Supposing we take a farm of 400 acres on the four-course or mixed husbandry system, we shall find that one-half the farm produces nothing in the way of profit, but on the contrary leaves a considerable charge against, or upon the remaining half which is in corn. For instance the horses consume one quarter of the farm, the sheep and cattle consume the other quarter; and you will find, if you give your live stock much oil-cake or corn, that the whole of the expenses of one half the farm have to be paid by the other half, which is in corn—and whether that corn is at 40*s.* or 80*s.* per quarter, makes a very serious difference to the occupier:—

Example.—400 acres (manure, fences, buildings, roads, and waste, for which the tenant always pays rent) really 380 acres.

50 acres in Clover
30 acres in Beans
20 acres in pasture
40 acres in Tares, Rye-grass, &c.
50 acres in roots
100 acres in Wheat
90 acres in Barley and Oats
———
380

It follows then that your 190 acres of corn have to pay two rents, two tithes, two rates, two manual labours, two seedings, two tradesmen's bills, and merely make a polite bow to the other half of the farm for the manure left, by the consumption of its crops. Now, it seems very ungracious that when you have grown a splendid crop of Turnips, at an expense of 7*l.* to 10*l.* the acre, the sheep are to consume it, leaving you nothing but the price of the hay and cake you gave them with it; but it is a system that can't be avoided, until you find some cheaper sources of manure. The man who does not feed off his green crops, but attempts to steal extra crops of corn, soon impoverishes the land and himself too. All our most successful farmers are large purchasers of cake and artificial manure. But if manure is so costly to produce, how important is it that not one drop or atom of it should be wasted! or allowed to run down the ditches or road-sides with every shower. Amongst the evidences of enlightenment and improvement of the present day is the introduction of covered homestalls or farm-yards, where the animals and manure are both sheltered from adverse weather. This is one of the paying moves in agriculture.

But to return to live stock, a reference to my balance-sheet will confirm what I have stated. After paying for purchased food, shelter, and attendance, the sheep and bullocks left a mere nothing for the cost of producing some 70 acres of fine roots and green crops. Owing to my system of managing live stock, I never have disease; but when I find insurance companies charging 20 per cent. for insuring animals! it is evidence of ruinous mismanagement, and would form a charge on my farm of 200*l.* per annum. In pastoral and dairy cheese districts where a suitable soil and climate combine to produce a natural fertility, live stock may be reared, or sustained with advantage on the natural produce, and I believe in parts of Scotland the Turnip is produced more cheaply and nutritively than elsewhere, owing to the climate, but my remarks will apply to a great portion of this kingdom, especially where the rain-fall is under 26 inches, and the climate dry and suitable for the cereals—as on the Eastern and South-Eastern coast. In such districts the retention of poor worthless pastures is a great mistake, and they should give way to a mixed husbandry. On the subject of live stock, I once asked a Lancashire farmer who consumed 500*l.* worth of cake annually, how he charged it. "Oh!" said he, "I charge half to the bullocks, and half to the manure." As a general rule, when we are buying sheep for fattening, we pay 1*d.* per lb. more for them than we could realize for the same weight when fat. This is the penalty we have to pay to the breeder, who has to provide the bone and offal in the animal. Breeding is not all profit, for it robs the corn side of the farm, unless much purchased food and manure is used to restore the balance: but to return to my 400 acre farm. Now I have no doubt this statement will startle many a practical farmer, and will raise a storm of indignation amongst stock feeders and stock breeders; but the naked truth is best told, which is "that live stock are necessary evils, mere manufacturers of manure, and unattended with any direct profit." That if you give them cake and hay whilst feeding off your Turnips and green crops, the return for these green and root crops will be "nil," and their cost must be charged to the corn crops against the manure.

I am firm in this opinion, not only from my own extensive feeding, but from an extended observation, as well as by the undeniable proofs recorded by Mr. Lawes in the "Royal Agricultural Society's Journal." It is a want of this knowledge or belief that leads to so much vexation and disappointment. I remember receiving an inquiry from a novice on farming how much the bullocks should leave for his roots and hay. I told him if he gave them much cake, he would get nothing for his roots, and about two-thirds the marked value of his hay. He evidently was not prepared for this, and suspected foul play. He has since retired from farming in disgust. Another correspondent wrote to state he was about to prepare for the accommodation and feeding a large number of pigs as a matter of profit. I told him the only profit he would get would be the manure, which would cost him a loss of 10 to 20 per cent., including attendance, casualties, &c. Of course, he thanked me, and gave up all idea of making a fortune by pig-feeding. The same remark applies with increased force to poultry, which should only be in sufficient number to consume the waste corn. Now there is nothing loses so little as a pig, because he makes a quick return; and you get paid meat-price for his skin, which is not the case with other animals; his offal is also valuable. I find, with a very extensive practice, that with fine heavy Barley at 30*s.* per quarter, and pork at 6*d.* per lb. net, pigs will "clear their teeth," or pay for their food, leaving attendance, housing, and casualties, as a charge against the manure. This agrees with the Suffolk saying, that a bushel of Barley, 56 lbs., will make a stone of pork (8 lbs.) For fattening pigs, nothing beats one-third Pea-meal, two-thirds Barley-

meal, and some milk, if you have a dairy. I am particular in enlarging and insisting on this important question in agriculture, because there is much mistaken opinion about it; and even the editor of the best Scotch agricultural periodical ("The North British Agriculturist") will continue to assert that live stock will pay, irrespective of manure.

AGRICULTURAL VICISSITUDES.—Three years ago, when I had the honour of addressing you, Wheat was at 38s. per quarter, and agriculture gloomy and desponding. Now Wheat is 78s. per quarter, with an abundant harvest, and agriculturists happy. Those who will refer to my predictions at that period will admit that I was a true prophet. I will not detain this great meeting with details, but will refer you to "Norfolk Agriculture," by Bacon, a most valuable book, where you will see many honest farming balance-sheets exhibiting all the phases of agricultural prosperity and adversity. You will there see (pages 99 and 100) a difference of 1000*l.* between a "good year" and a "bad one.' It is precisely these strange agricultural vicissitudes that should teach us wisdom. They always have occurred, and they always will occur. A wise agriculturist will, therefore, when things are palmy, put by a little to meet future difficulties, and not invest his happy balance in enlarged holdings, which may hereafter be a dead weight and loss in times of difficulty. On a farm of 400 acres of highly farmed arable land, the discrepancy in price between the two periods would be enormous. Take the 200 acres in grain, the difference would be something like 1500*l.* If I were to advise you, I would say never take a farm that is not thoroughly drained, more particularly if of heavy clay; the alternative is one of profit or ruin. I know so many estates where I see the tenant's capital wasting away under the evil influence of undrained clay, that it is quite a painful consideration. I am prepared to prove that if a tenant will pay his landlord 5s. per acre extra, or 5 per cent. on 5*l.* per acre drainage, the gain will, in various ways, far exceed the charge. I may be asked—why I attach so much importance to drainage? Why, you might as well ask me, why I attach importance to circulation, vital or monetary? Stagnated water, or stagnated air, are as ruinous to the plants as they would be to our own vitality. Fix a cork in the drainage hole of your flower-pot, and you will soon have a practical illustration of my meaning. The sallow and bilious plants (like many Turnip crops I know of on undrained land) will show by their expression what is denied to them in speech. This is not the occasion to enter into a subterranean examination of gravity, capillarity, aëration, or filtration, much less of all those affectionate or repulsive interchanges, that turn air, water, and earth, into food for man or beast; but be assured, circulation is vitality—stagnation death and ruin.

AGRICULTURAL POWER.—I lay down as a great axiom in agriculture, in the mere question of physical labour or power, independent of skill, that steam is cheaper than horse, and horse cheaper than man. A steam-horse costs 1s. 6d. per day, and will do as much work as two real horses. A real horse costs 2s. per day (including harness, shoeing, &c.), and a farm labourer, nearly the same. But as a good horse weighs 1600 lbs. and a man only 160 lbs. the power being as from eight or ten to one in favour of the horse, it follows that horse-power is considerably the cheaper, probably (including the necessity for manual superintendence) as four to one. This brings me to the fearful question—what portion of the acreage of this kingdom do farm horses consume? I answer, nearly one-fourth of all the arable land in the kingdom. In ordinary arable culture, where there is little permanent Grass, it requires four farm horses to 100 acres. Each of these horses will consume on the average from 5 to 6 acres (landlord's measure, which includes hedges, roads, waste, farm buildings, &c.) Forty-two weeks, 84 bushels of Oats; 157 trusses of hay, or 78½ cwt.; 10 summer weeks (no corn) will clear 2½ acres of Clover. This will be found to amount to 10s. per week, or 26*l.* per annum, and will be the produce of about 6 acres at 4*l.* 10s., or four rents per acre. I speak, of course, of average land, rented at 20s. to 22s. 6d. per acre, ordinary farming. Many farmers give Oats all the year round. On very poor farming, like some I know of, 10 acres would hardly keep a horse, whilst on very high farming (especially on the irrigation system), one to two acres would suffice. This brings us to consider the imperious necessity and advantage of forcing from the land its utmost possible development. If one acre will keep a horse, there is only one rent, one tithe, one rate, one seeding, and so on; but all these are multiplied from five to ten times, by middling and bad farming. Those who have watched the discrepant productions of three tons or 50 tons of green food per acre, can at once apply my observations. But a great economy may be effected in horse-keep, by crushing the Oats, cutting the green food, and mixing with it a proper proportion of straw, &c., instead of turning the horses out to trample down and defile their food.

Dr.	£ s. d.	£ s. d.	*Cr.*	£ s. d.	£ s. d.
To valuation, 31st October, 1853.			By Valuation, 31st October, 1854—		
Horses ...	£74 0 0		Horses ...	£140 0 0	
Pigs ...	255 6 0		Pigs, &c. ...	131 14 0	
Sheep ...	448 0 0		Sheep ...	555 2 0	
Cattle and cows ...	239 10 0		Cattle and cows ...	189 10 0	
Implements ...	390 12 0		Implements ...	390 12 0	
Tillages, hay, &c. ...	471 18 9		Tillages, hay, &c. ...	542 6 7	
		£1879 6 9			£1949 4 7
Rent of chapel land ...		45 0 0			
Tithes, rates ...		75 0 0			
Labour, including engineer, bailiff, &c. ...		450 0 0	Wheat, 4 qrs. 6 bush. per acre, 70s.—50 acres.		831 5 0
Guano, bones, and superphosphate of lime ...		100 0 0	Barley, 7 ,, ,, 35s.—16 ,,		196 0 0
Seed corn and seeds ...		50 0 0	Beans, 5 ,, ,, —13 ,,		100 16 0
Live stock bought ...		1619 0 6	Oats 13 ,, ,, 28s.—12 ,,		218 18 0
Corn and cake for feeding purposes, horses' keep, &c. ...		1021 10 9	Produce of cows and poultry ...		50 0 0
Coals for engine, tradesmen's bills, &c. ...		160 0 0	Hay sold ...		—
Interest on irrigation pipes, 7½ per cent. ...		55 0 0	Horse work, labour, hay, manure, &c., for private establishment ...		90 0 0
		5454 18 0	Live stock and wool sold ...		2576 19 5
My improved rent, 36s. per acre ...	£240 0 0		200 tons of Mangold Wurzel, to be sold to London cowkeepers, 20s. ...		200 0 0
Profit ...	517 15 0	757 15 0			
		£6212 13 0			£6212 13 0

LIVE STOCK ACCOUNT.

Cr.	£ s. d.	*Dr.*	£ s. d.
To Valuation, 1853 ...	£1016 16 0	By Valuation, 1854 ...	£1016 6 0
Corn, cake, and feeding stuffs bought ...	1021 10 9	Live stock and wool sold ...	2576 19 5
Live stock bought (including 2 horses) ...	1619 0 6	Loss, independent of the root and green crops consumed...	64 11 10
	£3657 7 3		£3657 7 3

The quantity of green food consumed by the stock is estimated as follows (this includes the keep of six farm horses):—
12 Acres of Mangold Wurzel.
6 Acres of Italian Rye-grass, well irrigated, and five times cut or fed (a very heavy crop).
A good second growth of Clover, irrigated, about 9 acres. A first growth on 8 acres.
20 Acres of Tares and winter Oats.
16 Acres of good white Turnips and Swedes.
The straw of the farm.
5 Acres of pasture.
Grinding meal, attendance, interest for shelter, &c., may be considered as a set off against the horse-keep.

Mr. Mechi's paper was followed by an animated discussion, of which we shall next week give a report. Mr. Sidney defended British agriculturists as being fully alive to the demands made upon them by consumers, and as having progressed as rapidly as any other class of manufacturers. His speech gave a remarkably able history and general description of the agriculture of the country. He contended that steam cultivators were as yet not within the reach of agricultural discussion: and that sewage manure and the liquid system generally were not inapplicable to farming. Mr. Oakley referred to his experience on box-feeding as superior to all other systems for the quality of the manure produced.—Another speaker gave a very interesting experience on the application of liquid manure to Italian Rye-grass. Mr. Caird contended that many of Mr. Sidney's instances of agricultural energy and progress were as exceptional as the case of Mr. Mechi himself, the particulars of which Mr. Sidney had condemned. He stated that Mr. Morton referred to the economy of horse labour, and the profitableness of cattle feeding, as points on which Mr. Mechi's views were open to criticism. Colonel Challoner and Mr. Hoskyns wound up the discussion with remarks in acknowledgment of Mr. Mechi's services. The latter gentleman referred to the solid form as being, in our climate, practically the most useful form in which to apply manure; and, on another point which had been mooted, he acknowledged the practical difficulties in the way of steam power as to its application to cultivation. The chairman spoke of solid and liquid manure, and stated his opinion, that the latter was especially, if not exclusively, adapted for the Grasses and pasture.

Farmers' Clubs.

LONDON, *Dec. 5.—On Land Drainage.*—Mr. Bailey Denton read a most substantial valuable paper on this subject—the best practical treatise and discussion of land drainage which we have yet seen or heard. It is to be published in a separate form, and we are therefore permitted to lay only an abstract of it before our readers, though to some of the points treated by its author we shall hereafter direct their attention. The paper commences with a comparison of Smith of Deanston's system and of Mr. Parkes's:—

"The characteristic views of Mr. Smith were—

"1st. *Frequent* drains at close intervals of from 10 to 24 feet. 2d. *Shallow* depth—not exceeding 30 inches—designed for the single purpose of freeing the depth of soil of stagnant and injurious water. 3d. '*Parallel drains at regular distances*, carried throughout the whole field, without reference to the wet and dry appearance of portions of the field,' in order 'to provide frequent opportunities for the water *rising from* below and falling on the surface to pass freely and completely off.' 4th. The minor drains to be directed 'down the steep,' and the mains to be directed along the bottom of the chief hollow, with tributary mains for the lesser hollows. (The reason assigned for the minor drains following the line of steepest descent was, that 'the stratification generally lies in sheets at an angle to the surface.'*) 5th. Stones preferred to tiles and pipes.'

"The characteristic views of Parkes, then, were—

"1st. *Less frequent drains*, at intervals varying from 21 to 50 feet, *with preference for wide intervals*. 2d. *Deeper drains at a minimum depth of 4 feet*, designed with the twofold object of not only freeing the active soil of stagnant and injurious water, but of converting the water falling on the surface into an agent for fertilising; no drainage being deemed efficient that did not remove both the water falling on the surface and 'keep down the subterranean water at a depth exceeding the power of capillary attraction to elevate it too near the surface.' 3d. *Parallel arrangement of drains*, as advocated by Smith of Deanston. 4th. *The advantage of increased depth put forth as compensating for any disadvantages attending increased width between the drains.* 5th. *Pipes of an inch bore the 'best-known conduit'* for the parallel drains. (See Evidence before Lords' Committee on Entailed Estates, 1845, Q. 67.) 6th. *The cost of draining uniform clays should not exceed 3l. per acre.* (See Evidence before Lords' Committee, 1845, Q. 151 and 152.)"

* "There is no doubt that all stratification that is not parallel with, but outcrops at the surface, must describe an angle with it; but Mr. Smith was wrong in asserting that the soils operated upon by drainage 'generally lie in sheets.' Lamination of soil is found to be the exception, not the rule."

On this Mr. Denton remarked that, "Mr. Smith's or the shallow system, aiming only at getting rid of the enemy, was most popular in the country, because the object was simple, and it approximated more to past practices. Mr. Parkes's, or the deeper system, on the contrary, aimed at the conversion of the enemy into a friend." The main criticism Mr. Denton makes on Mr. Parkes's system is on the score of the excessive cheapness recommended. "In the desire for economy, soils that should have been drained from 18 to 24 feet apart have been drained at from 30 to 45 feet, and yet the average actual cost of parallel drainage, executed in Great Britain within the last eight years, will be found to be at least three times the cost instanced by Mr. Parkes, and which he gave, in 1846, as that which might be taken as a guide to the future cost of drainage in this country." Mr. Denton then goes into the subject generally, and the points discussed "are four in number, and may thus be taken—*Depth of drains, distance between drains, arrangement of system; and direction of drains.*" On the first he states—

"The character of the evidence I have collected is so condemnatory of the shallow system of drainage, and, with one exception only, so much in favour of the deep system, that I consider the superiority of the latter incontestibly admitted. In fact, I have failed altogether to gain evidence detracting from the utility of deep draining as compared with shallow, although prompted in my inquiries by an honest and earnest anxiety to promote discussion on the comparative advantages of the two systems. Cases without number may be quoted in which an indiscreet desire to economise has led to the recognition of the theory that depth will compensate for distance in soils to which it would not apply. But these instances, though they prove that drainage is not so cheap an operation as was supposed, do not affect the abstract question of the superior efficacy of deep drains compared with shallow ones. We have abundant instances of deep drains taking the place of shallow ones, and effectively draining land not hitherto drained, although excoriated with shallow drains; while it is difficult, if not impossible, to name a single case where deep drainage properly executed, and on a good system of arrangement, has failed. So numerous, indeed, are the instances throughout Great Britain of the complete success of deep draining as a principle, that one can hardly bring one's mind to the expediency of a compromise of that principle under any circumstances whatever."

An immense body of evidence is referred to on this subject, and he sums up thus:—

"I submit that upon the first point, *depth*, the results of the practice of the last few years have confirmed the soundness of the principle of a minimum depth of four feet, where outfalls will admit of it."

On the next point, *distance between drains*, the relations of climate to soil—*i. e.* the composition of clays, and the quantity and distribution of the rain-fall—which are the two elements to the decision of this point, are both of them very usefully discussed, and he sums up thus:—

"I submit upon the second point, *distance between drains*, that the results of the practice of the last few years have established the principle, that depth may govern distance in soils of an uniformly open and porous nature; that in the denser clay soils the compensating principle is inadmissible, and that much clay land has been drained imperfectly from being drained too widely. And that in lands suffering from springs, or from a pressure of water, where each drain should be designed for a special service, there is no dependence of one drain upon another, and therefore no rule of distance whatever can apply."

As to *arrangement of drains*, Mr. Denton concludes that if—

"We are to profit by experience, we shall be led to modify the parallel system of arrangement by a closer attention to the variation in the texture of the soil, and in the inclination of the surface. We shall look more to a subdivision of fields, which are now too frequently prejudiced by a love of mathematical uniformity: we shall cease to continue the drains of low flat-lands, up the face of steep hilly ground for the sake of straight lines; we shall look upon all continuous hollows, and lateral valleys, as nature's drains, which cannot be overridden by even the closest parallelism, but must be retained as the proper course of drainage, though the conduit be in future below, as it has hitherto been above the surface; and we shall for the same reason apply distinct relief drains to those slacks or planes of lesser inclination, which constantly interpose in fields apparently of one slope and aspect, and which, when drained on one uniform plan, never fail to exhibit tell-tale spots which are not unlike a black eye on a healthy schoolboy's face: the mark of both being signs of weakness."

The fourth point is *direction of drains*, and on this he concludes as follows:—

"The results of the practice of the last few years have confirmed the principle of laying out the minor drains with the fall of the ground in the generality of circumstances—that the principle of carrying the drains across ridge and furrow may be departed from in certain soils without disparaging effect—and that, let the direction of the drains be what they may, a constant and effective discharge can only be secured and maintained in perpetuity by carefully designing, and by substantially securing the outlets with due regard to arterial channels."

Several minor systems of drainage were then discussed—among others Lord Wharncliffe's combined deep and shallow, which is condemned; and Mr. Trimmer's Keythorpe system, which makes use of the natural furrows in the subsoil as carriers of water, which is also condemned as to its practical carrying out, though it is admitted that the knowledge of the distribution of surface soils over uneven, scored, and channelled subsoils will be useful. Mr. Denton then discusses spring drainage, syphon drainage, &c., matters of local rather than general interest, and to which, therefore, we shall not here refer. His concluding paragraphs are on drainage legislation; he enumerates all the various powers conferred by law, whether on departments of the executive or on companies for the purposes of agricultural improvement. We shall at another time go fully

into this point, enumerating the powers of all the different companies; but we must not, at present, extract so largely from the pamphlet which Mr. Denton is to publish. We conclude with his statement of the expenditure of the 4,000,000*l.* at the disposal of the commissioners under the Public Drainage Acts. The amount already spent is 2,239,157*l.* 12*s.* 10*d.*; the amount bespoken is 3,951,150*l.*, which has been applied for as follows:—

England,	957 applicants	for	£1,706,584
Wales	53	,,	,, 107,199
Scotland	892	,,	,, 2,137,367
Total	...	...	£3,951,150

There is thus little left for further applicants.

Mr. Denton's paper was received with great satisfaction by the large and influential body before whom it was read; and an interesting discussion followed, of which, however, we cannot now lay any report before our readers. Mr. Cuthbert Johnson referred to the uses of drainage water for purposes of irrigation. Mr. Baker, of Writtle, discussed the policy of tenants-at-will, and advocated the cheapest possible efficient system, as being the one which was proper in their circumstances. Mr. Bullock Webster, with great influence on the meeting and evidently commanding the sympathies of the majority present, condemned the practice of going deeper than 3 feet in stiff clay subsoils not surcharged with water. Mr. Thomas, of Bedfordshire, discussed Mr. Mechi's agricultural experience in drainage. Mr. Walton referred with great humour and force to his own experience. Mr. Stokes contended for the general efficacy of 4 feet drains. Mr. Mechi referred to the depths to which roots would go, as properly guiding a decision on the depth of drains. Mr. Bailey Denton replied. The discussion was a most animated and interesting one, and we hope to give an abridgement of it in our next.

Miscellaneous.

Crops of Swedes in 1853.—Prizes of silver medals, 5*l.*, 4*l.*, and 2*l.* are given by the Manchester Agricultural Society in the following instances:—1. T. J. L. Brooke, Esq., Mere Old Hall, near Knutsford. Claimant's farm is 125 acres. Extent in Turnips, 5 acres. Previous crop, Oats. The soil is a deep friable loam, upon a clay and sandy subsoil, well drained. The seed, 2¼ lbs. per acre, was sown in drills, on the 16th May, and 14 tons of farm-yard manure, 5 cwt. of raw bones, and 1½ cwt. of guano, was applied per acre. The cultivation was very clean, and the bulbs large and handsome, but some of them were unsound. Two statute perches were weighed, which gave an average of 33 tons per acre. 2. Mr. J. Birch, Orrell, near Liverpool. This claimant's farm contains 121 acres, of which 8 acres were in Swedish Turnips. The previous crop had been Wheat after Potatoes. The soil is a sandy loam, on a subsoil of sand, clay, and foxbench. The drills were 25 inches apart, and the bulbs 12 inches. Two lbs. of seed were sown per acre, on the first week in May. Twenty-five tons of stable manure and nightsoil, mixed together, and 2½ cwt. of guano, were applied per acre. The land was very clean, the crop remarkably uniform, and the bulbs large and sound. Average weight, 42 tons 8 cwt. 2 qrs. 8 lbs. per acre. Weighed 10th November, 1853. 3. To Mr. T. Atherton, Speke, near Liverpool. This claimant's farms contain 146 acres, and he had five in Swedes. The land had been Grass, cut for hay the previous year. Average weight 48 tons 12 cwt. 3 qrs. 2 lbs, per acre. Mr. Atherton obtained a prize for common Turnips. The land had been mown the previous year (three years old Grass). The soil was a good deep, sandy loam, on sand and gravel, and properly drained. The land was planted with early Potatoes last spring, in rows 27 inches apart. 2 lbs. of Turnip seed per acre was sown in the intervals between each row of Potatoes, in the month of June. In taking up the Potato crop, care was taken not to cover the young Turnip plants. Twenty-five tons per acre of night-soil was applied to the land, and ploughed in in the autumn of 1852, and 25 tons per acre of cowdung in the spring, when the Potatoes were planted, and also 3 cwt. of guano per acre to the Turnip crop. The land was very clean, the bulbs sound, well grown, and of good shape. Average weight of crop, 20 tons 16 cwt. 1 qr. 20 lbs. Weighed November 15, 1853. *Journal of Manchester and Liverpool Agricultural Society*, 1854.

Notices to Correspondents.

Flax: *J Bell.* We know of no joint stock company for purchasing Flax straw, A Flax rettery cannot draw profitably beyond a radius of 15 or 20 miles around it.

Grass Land: *Weekly Reader.* If exhausted by continual mowing, you may get it up again soon by pasturing sheep and giving them food on the land. 3 cwt. of guano, in compost with a lot of ditch mould (if you can get that free of weeds), will set the land up at once. Italian Rye-grass may be sown in August on fresh-stirred stubble; but is best sown in April.

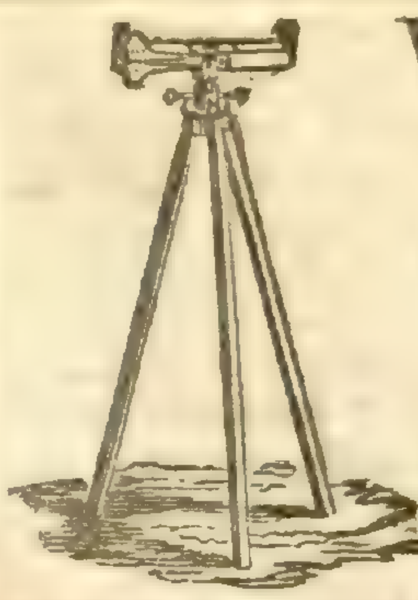
Mangold Wurzel: *Constant Sub.* You may commence feeding on them now, giving more dry food in addition to them than you would with Turnips.——We do not know the natural history of the badger, but will inquire.

Nitrate of Soda and Salt: *Young Farmer.* The common salt would have been better mixed with the guano. It is to be thrown broadcast over the field, and harrowed in during March or April. If it be sown in wet weather, it will not injure the Clover seeds.

Philipps' Turnip Cutter: *W D.* We do not know their present address; they have left Bristol, we believe.

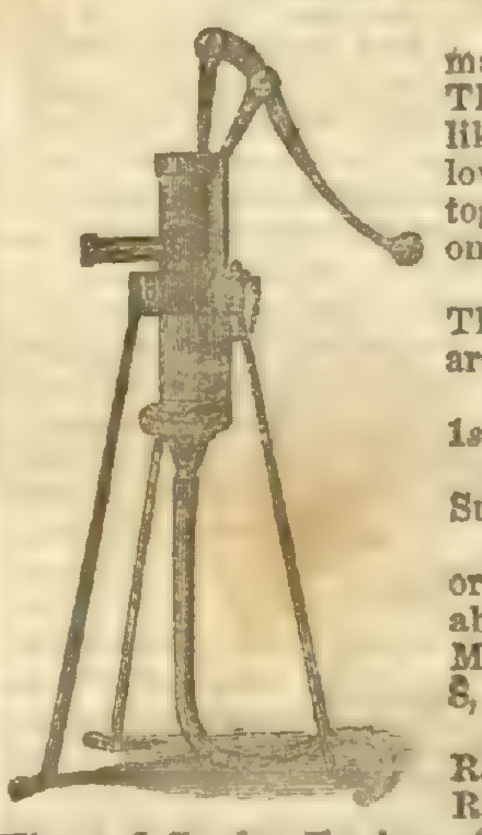
Stables: *Old Sub.* It is better for the horses that they be well ventilated, and that is easier done when there are no lofts.

Wheat: *J S C.* Any kind of Wheat (not the April) will do to sow now. We should try and get Bristol red or Redstraw white; sow 6 pecks an acre if in the south of England. Gas-lime becomes gypsum and common lime by exposure to air. You may put a ton per acre on the ground, spread broadcast on the stubbles before ploughing in. You must not dress young Wheat with it.



WEIR'S DRAINING LEVEL.
Price 30s.
These Draining Levels have lately been greatly improved; they have stood the test of five years' use, during which upwards of 1000 of them have been sold. They are so simple that any labourer who can read can use them. They require no graduated staff, the index telling at once the rise and fall in inches without any computation.
Edward Weir, Agricultural Engineer, 16, Bath Place, New Road, (6 Doors West of the Hampstead Road), Removed from Oxford Street.

WARNER'S IMPROVED LIQUID MANURE, OR GENERAL PORTABLE PUMP.



The valve is a ball of imperishable material, and cannot clog in action. The barrel is of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure. The legs will fold together, and the whole may be carried on shoulder to any pond or tank required.
Price of 4½ in. Pump, with legs, 3*l.* 3*s.* The barrel is 27½ in. long, and the legs are 5 ft. high.
1½ inch Gutta Percha Suction Pipe, 1*s.* 6*d.* per foot.
1½ inch Flexible Rubber and Canvas Suction Pipe, 3*s.* 6*d.* per foot.
May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, John Warner & Sons, 8, Crescent, Jewin Street, London.
Every description of Machinery for Raising Water, by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c.—Engravings sent on application.

WARNER'S PATENT VIBRATING STANDARD PUMPS.
PATENT CAST-IRON PUMPS, for the use of Farms, Cottages, Manure Tanks, and Wells of a depth not exceeding 30 feet.

Diameter of Barrel	Length of Barrel, under nose.		£ s. d.
2½ in.	short 1 ft. 7 in.	Fitted for lead, gutta percha, or cast iron flanged pipe, as required.	1 12 0
2½ ,,	long 3 ,, 3 ,,		1 15 0
3 ,,	ditto 3 ,, 6 ,,		2 12 0
3½ ,,	ditto 3 ,, 6 ,,		2 18 0
4 ,,	ditto 3 ,, 6 ,,		3 5 0
2½ ,,	short, with 15 feet of Lead Pipe attached, and Bolts and Nuts ready for fixing	....	2 12 0
2½ in.	long ditto	ditto ditto	2 15 0

The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.
May be obtained of any Ironmonger or Plumber in Town or Country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER and SONS, 8, Crescent, Jewin Street, London.
Every description of Machinery for Raising Water, by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.

MESSRS. BURGESS and KEY, as Mr. Parkes' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.
103, Newgate Street, and 52, Little Britain, London.

GLASS FOR CONSERVATORIES, ETC.
HETLEY and CO. supply 16-oz. SHEET GLASS of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.
Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES to James Hetley & Co., 35, Soho Square, London.
See *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES.
THOMAS MILLINGTON'S present prices for good 16 oz. sheet glass, boxes included.

6 in. by 4 in. to 6 in. by 5½ in.	... 13*s.* 3*d.*	per 100 feet.
7 by 5 to 8 by 6 ...	... 13 6	
8½ by 6½ to 10 by 8	... 14 0	
10½ by 8½ to 14½ by 10½ ...	... 16 0	
17 by 10 to 18 by 12 ...	... 18 0	

A great variety of sizes. Particulars had on application.
ORCHARD HOUSE SQUARES on Mr. Rivers's plan, to whom I have sold some thousands of feet.
Large Sheets for cutting up, in cases, at 2½*d.* and 3*d.* per foot.
HARTLEY'S IMPROVED ROUGH PLATE GLASS, Sheet, and Rough Plate, Tiles, Milk Pans, Bee and Propagating Glasses, Wasp Traps, Cucumber Tubes, Preserve Jars, with and without covers; Fern Glasses.
Plate, Sheet, Crown, and Ornamental Window Glass. Crystal Glass Shades for ornaments.
Greenhouses, erected in either wood or iron. Garden Lights and Frames.
87, Bishopsgate Street Without, London—same side as Eastern Counties Railway.

HARTLEY'S PATENT ROUGH PLATE GLASS, 1-8th thick, or 2 lbs. to the foot; 3-16ths, or 3 lbs.; and 1-4th, or 4 lbs. to the foot, for Ridge and Furrow Roofs, Greenhouses, Railway Stations, Engine Sheds, Mills, Market Halls, and Public Buildings generally.
Packed in Boxes of 50 feet each.

6 by 4 and 6½ by 4½	10*s.* 6*d.* per box.
7 ,, 5 ,, 7½ ,, 5½	12 0 ,,
8 ,, 6 ,, 8½ ,, 6½	13 6 ,,
9 ,, 7 ,, 9½ ,, 7½ and 10 by 8 ...	15 0 ,,

For larger sizes a full List of Prices will be sent on application. Boxes are charged 2*s.* each extra, full price allowed if returned free of expense.—For further information apply to
JAMES PHILLIPS & Co.,
116, Bishopsgate Street Without.
"Rough Plate has never been, and never can be, prejudicial to the colouring of Grapes; though we can easily believe that it has been charged with such a fault by persons who have not skill enough to manage Grapes under glass."—*Gardeners' Chronicle.*
"There *can be no question now* that Rough Plate Glass is the most beautiful as well as the most useful kind of glass that can be employed in horticulture. It is free from all the faults of transparent glass, and has many advantages peculiar to itself, *without a single disadvantage as a set off.*"—*Gardeners' Chronicle.*

BY ROYAL LETTERS PATENT.
THE COSMOPOLITAN GLASS COMPANY, 296, Oxford Street, London.—The Managers beg to inform the Nobility and Gentry, Farmers, Gardeners, &c., that their new List of Prices may be had free on application at the Company's Depôt.
HARTLEY'S PATENT ROUGH PLATE, for Roofing Conservatories, Halls, and Public Buildings.
PLATE, CROWN, and SHEET WINDOW GLASS.
Coloured and Ornamental Glass of every description.
Glass Milk Pans, Pails, Tests, and Measures; Cream Pots and Syphons; Churns, Butter Tests and Slabs; Tiles and Slates; Bee Hives, &c.
Moore's Patent Ventilator and Lockhead's Patent Perforated Glass, for Dairies and Greenhouses.
Aquavivariums, Fern Shades, Propagating Glasses, Fruit Protectors, Preserve Jars, Cucumber Tubes, Hand Lights, Flower Vases, Labels, &c., and all kinds of Agricultural, Horticultural, Architectural, Domestic, Scientific, and Ornamental Glass. British and Foreign, at the lowest prices.

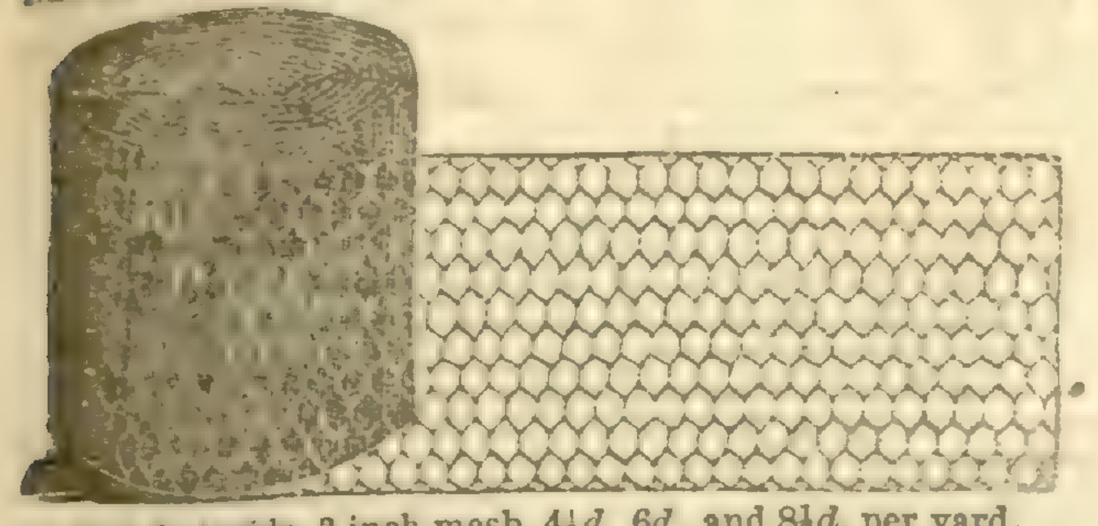
CLAYTON, SHUTTLEWORTH, and CO.'S PRIZE PORTABLE STEAM-ENGINES, and COMBINED THRASHING, STRAW SHAKING, RIDDLING and WINNOWING MACHINE may be seen at their London Establishment, 6, Fitzroy Terrace, New Road, where all information relative thereto can be obtained. These Machines are constructed to horn Barley, and make a perfect separation of the chaff from the pulse. They are fitted with Elevators, which deposit the grain into bags, and beyond the feeder of Machine require no hands except to take away the Corn, &c., as thrashed, the whole of the operations being performed by self-acting machinery, whereby the Corn, Straw, Chaff, and Pulse are delivered in the places assigned for them.
C. S. and Co. have paid special attention to this class of Machinery, and Fixed Barn Machinery, and from the position they have taken at the Royal and all the leading agricultural shows of England, flatter themselves that for efficiency, durability, and simplicity, their Engines and Machines are not surpassed by any other maker in England. All letters forwarded to the Works at Lincoln will have immediate attention; and Illustrated Catalogues forwarded to all parts of the kingdom postage free.

B. SAMUELSON (Late James Gardner),
BRITANNIA WORKS, BANBURY,
and at
IMPLEMENT STANDS, 57, 58, 59, 60, 61, 62, and 63, SMITHFIELD CATTLE SHOW.
SAMUELSON'S PATENT FORKING AND DIGGING MACHINE
Has been awarded the Royal Agricultural and numerous County Prizes.
SAMUELSON'S GARDNER'S TURNIP CUTTERS,
With new PATENT DIRT RASPING PLATE, received the First Prize of the Royal Agricultural Society at Lincoln, and at all the Royal Agricultural Society's Shows from 1844.

Economical Chaff Cutters	Registered Budding's Lawn Mowers
Corn Bruising Mills	Patent American and Atmospheric Churns
Oilcake Breakers	Patent Force Pumps for Farm Use
McCormick's Reaping Machines	Field Rollers, &c. &c. &c.

Illustrated Catalogues and other particulars may be had of any Ironmonger or respectable Implement Dealer in town or country, at Stands 57 to 63, Smithfield Cattle Show, or free by post of
B. SAMUELSON, Britannia Works (late Gardner's), Banbury.

H. J. MORTON AND Co., 2, Basinghall Buildings, Leeds.—GALVANISED GAME AND POULTRY NETTING, very strong and neat, NEVER REQUIRES PAINTING.

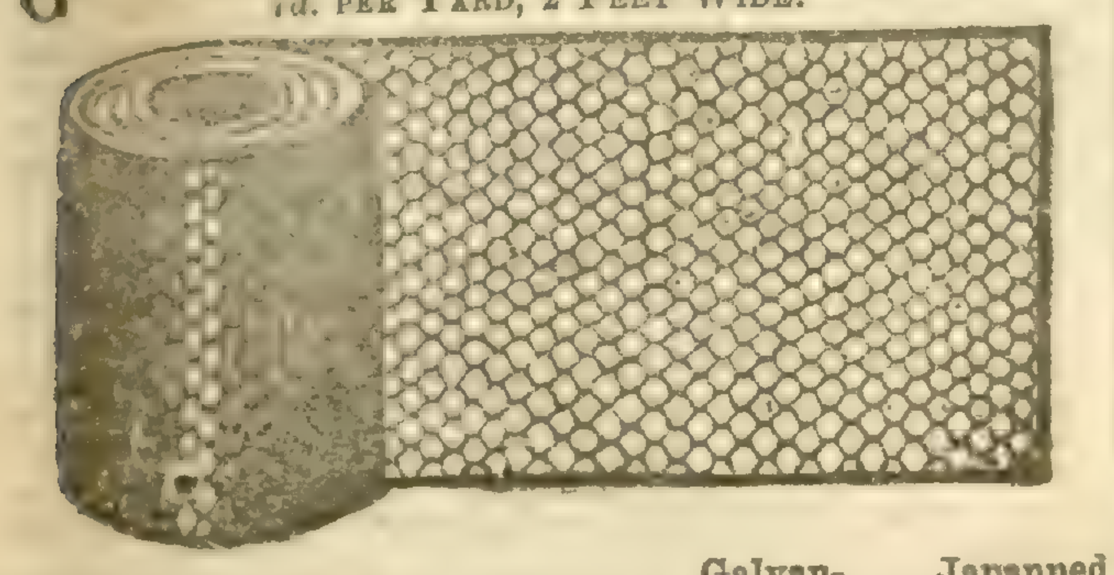


24 inches wide, 3-inch mesh, 4½*d.*, 6*d.*, and 8½*d.* per yard.
24 inches wide, 2-inch mesh, 7*d.*, 9½*d.*, and 1*s.* per yard.

GALVANISED IRON SPOUTING, for Dwellings, Cottages, Farm Buildings, &c., NEVER REQUIRES PAINTING.

Galvanised Iron Liquid Manure Pumps, Water Cisterns, Troughs, and all kinds of Iron Work, Asphalte Roofing Felt, &c.

GALVANISED WIRE GAME NETTING.—
7*d.* PER YARD, 2 FEET WIDE.



		Galvanised.	Japanned iron.
2-inch mesh, light, 24 inches wide	...	7*d.* per yd.	5*d.* per yd.
2-inch " strong "	...	9 "	6½ "
2-inch " extra strong "	...	12 "	9 "
1½-inch " light "	...	8 "	6 "
1½-inch " strong "	...	10 "	8 "
1½-inch " extra strong "	...	14 "	11 "

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasantries, 3*d.* per square foot. Patterns forwarded post free.

Manufactured by BARNARD & BISHOP, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.

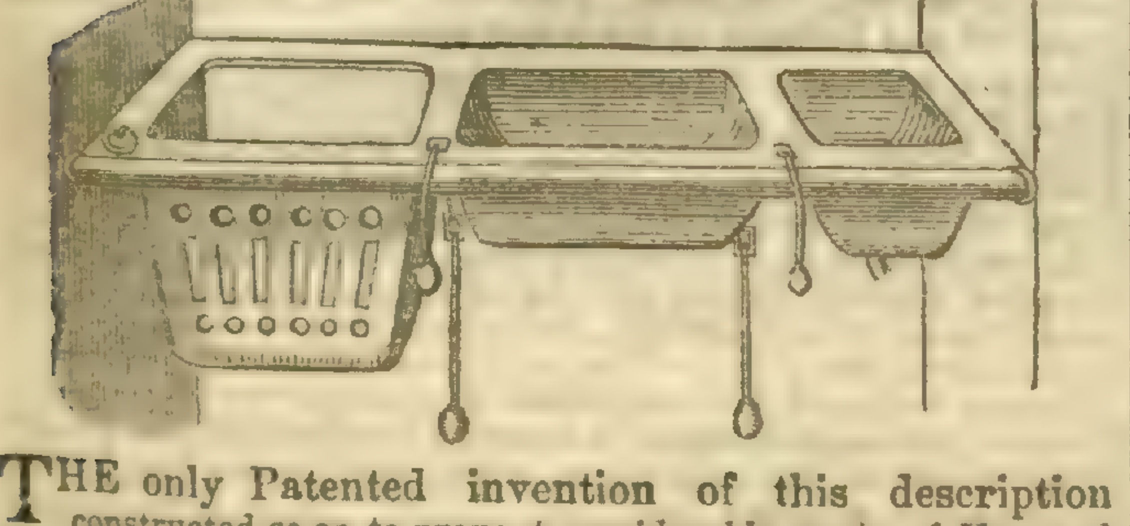
THE MOST APPROVED STOVES.—The demand for the CHUNK and VESTA STOVES (separately patented), still continuing unabated, and numbers having been sold last season (in all upwards of 14,000) through the patronage of families who have had experience of their pre-eminently useful qualities, WILLIAM S. BURTON has renewed confidence in recommending them for their cleanliness, economy, and safety. During the last 13 years they have been found sources of great comfort in the bedroom of the invalid, affording an uniform temperature throughout the day and night, with one supply of fuel, without attention. Particulars sent postage free. Chunk, 30*s.* to 50*s.*; Vesta, from 35*s.*; Stoves for Warehouses, &c., from 10*s.* each. Joyce's Patent Fuel, 4*s.* 6*d.* per sealed bag.

WILLIAM S. BURTON has TEN LARGE SHOW ROOMS (all communicating), exclusive of the shop, devoted solely to the show of GENERAL FURNISHING IRONMONGERY (including Cutlery, Nickel Silver, Plated, and Japanned Wares), Iron and Brass Bedsteads, so arranged and classified that purchasers may easily and at once make their selections.

Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of.

39, OXFORD STREET (corner of Newman Street); Nos. 1, & 2, NEWMAN STREET; and 4 and 5, PERRY'S PLACE.

BARTON'S PATENT SAFETY STABLE FITTINGS, AND ENAMELLED MANGERS.



THE only Patented invention of this description constructed so as to prevent considerable waste of Hay and Corn, together with all the newest improvements.

STABLE FITTINGS, FORTY SHILLINGS PER SET, to fill up the whole width of Stalls, and can be had enamelled or galvanised. Every description of Mangers, Racks, and Stable Furniture in stock; Iron Hurdles, Gates, Fencing, &c.

Manufacturer of Kite's Patent Noiseless Cast-Iron Smoke-Curing Chimney Caps (200 on Buckingham Palace), price 35*s.* each. Price Lists and Illustrated Catalogues forwarded on receipt of two postage stamps.

JAMES BARTON, IRON FOUNDER, &c., 370, Oxford Street, a few doors east of the Pantheon.

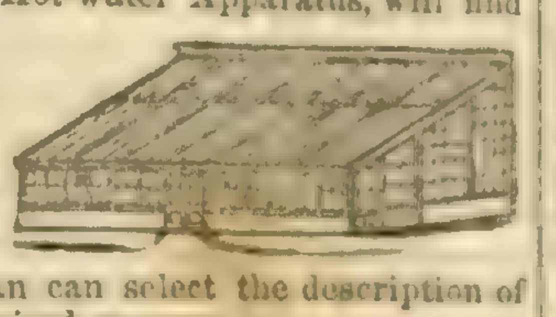
GREEN AND HOT-HOUSES made by machinery, at J. LEWIS'S HORTICULTURAL WORKS, Stamford Hill, Middlesex. Sent to all parts of the United Kingdom. These buildings are warranted of the best materials, and put together in a superior manner. Being manufactured by steam-power, they are considered the cheapest and best made in England. The Trade and Merchants supplied at wholesale prices. List of Prices by enclosing two postage stamps.

HORTICULTURE IN ALL ITS BRANCHES.

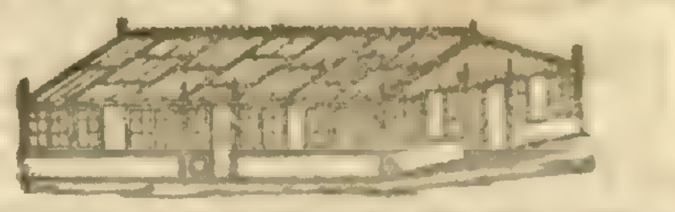
JOHN WEEKS & Co., King's Road, Chelsea,

HOTHOUSE BUILDERS.

THE NOBILITY AND GENTRY about to erect Horticultural Buildings, or fix Hot-water Apparatus, will find at our Horticultural Establishment and Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.



The HOT-WATER APPARATUS, which passes through all the Houses and Pits, affording both top and bottom heat, is in constant operation and particularly worthy of attention. Many of the Houses and Pits are of wide and lofty dimensions, and together equal in length 1000 feet. They are all effectually heated by *one boiler*, which, during the severe winter months does not cost in labour and fuel more than 3*s.* 8*d.* per day, and the apparatus is so arranged that each House or Pit may be heated separately and to the required temperature. The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.



Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application to JOHN WEEKS & Co., King's Road, Chelsea, London.

THE COMFORT OF A FIXED WATER-CLOSET FOR 1*l.*—Places in gardens converted into comfortable water-closets by the PATENT HERMETICALLY SEALED PAN, with its self-acting valve, entirely preventing the return of cold air or effluvia. Any carpenter can fix it in two hours. Price 1*l.* Hermetically-sealed Inodorous Chamber Commodes, 1*l.*, 2*l.* 4*s.*, and 3*l.*; also Improved Portable Water-closets, with pump, cistern, and self-acting valve. A prospectus, with engravings, forwarded by enclosing two postage stamps.—At FYFE & Co.'s Sanatorium, 46, Leicester Square.

DEANE, DRAY, AND CO., have a very large and superior stock of FRENCH MODERATOR LAMPS now on sale.—(Opening to the Monument), London Bridge.
ESTABLISHED A.D. 1700.

TEN THOUSAND STOVES.

THE TENTH THOUSAND OF THE PATENT PORTABLE SUSPENSION STOVE is now on sale. These Stoves, so justly celebrated for preserving a pure and healthy atmosphere, and for their extraordinary economy in the consumption of fuel, are sold, wholesale and retail, by DEANE, DRAY, AND CO., 46, King William Street, London Bridge; and may be obtained of most Ironmongers.

The IMPROVED PATENT VENTILATING STOVE, which is strongly recommended, may also be seen at the above establishment. Prospectuses, &c., forwarded post free.

FORD'S EUREKA COLOURED SHIRTING is now ready, in 200 different patterns. Specimens in varied colours sent post free on receipt of six stamps.

FORD'S COLOURED EUREKA SHIRTS. Six for 27*s.*

FORD'S WHITE EUREKAS, best quality, Six for 40*s.*; second quality, Six for 31*s.*; if washed ready for use, 2*s.* extra.

CAUTION.—Ford's Eureka Shirts are stamped, "38, POULTRY, LONDON," without which none are genuine.

*** Catalogues with particulars post free.

RICHARD FORD, 38, Poultry, London.

RUPTURES EFFECTUALLY CURED WITHOUT A TRUSS!—Dr. BARKER continues to supply the afflicted with his celebrated remedy for this complaint, the great success of which for 16 years past renders further comment unnecessary. It is easy and painless in use, causing no inconvenience or confinement, and is applicable to every variety of single or double ruptures, however bad or long standing, in either sex, of any age. The remedy will be sent post free to any part of the world, with Instructions for use, on receipt of 7*s.* 6*d.* in postage stamps, or post-office order (preferred), payable at the General Post Office, to ALFRED BARKER, M.D., 25, Argyle Square, King's Cross, London. Patients received every morning except Sunday from 11 till 2, and at no other hour, unless by appointment made two days previously. Consultation fee, One Guinea.

TO LOVERS OF FISH.—100 Genuine Yarmouth Bloaters for 6*s.*, package included, forwarded to all parts on receipt of Penny Postage Stamps, or Post Office Order, for the amount preferred.

Address, THOMAS LETTS, Jun., Fish Curer, Great Yarmouth.

TO HOP MERCHANTS AND IMPORTERS.

WANTED, a COMMISSION in HOPS, for Scotland.—References, &c., on application to W. A., *Herald Office*, Glasgow.

ALDERNEY BULL.—A Clergyman has a very fine Bull of the above breed for sale, 14 months old, and very strong and handsome.—Apply to Rev. F. H. L., Merevale, Atherstone.

PURE BRED SOUTH-DOWN EWES.

TO BE SOLD by a gentleman who has a large flock of sound pure bred SOUTH DOWN SHEEP, will be overstocked at Lady-day, in consequence of [illegible] one of his Farms. He wishes to sell 100 Ewes, in lamb [illegible] on the Farm. The ewes may be selected. Apply to Mr. W. Turner, The Shepherd, Dowdeswell, near Cheltenham, Gloucestershire.

TO NURSERYMEN, SEEDSMEN, AND FLORISTS.

TO BE SOLD, in consequence of the Proprietor retiring from business, a capital BUSINESS in the above line, with a first-rate connection, and of 1[illegible] years' standing. The Premises, which are convenient and well [illegible], will be sold with the Business. Such an opportunity seldom occurs.—For particulars apply to Mr. [illegible], Nurseryman, &c., Wellington, Somerset.

TO BE SOLD, BLACK POLAND FOWLS (Cock and Three Hens), Birds that took the second prize at Derby at the recent Show. Price 2*l.*—Apply to Mr. [illegible], Breadsall Moor, near Derby.

TO BE SOLD, eight couple of WHITE DORKING PULLETS, hatched in March, at Ten Shillings per couple, and one Cock for Six Shillings.—Apply to J. TOTTON, Gardener, Mordon Park, Mordon, Surrey.

TO BE SOLD, BUFF COCHIN CHICKENS, from first class Prize Birds, Brahma Pootra Chickens, from imported American Prize Birds, and Spanish Chickens. Also some very good one-year-old Birds of the above description. Wire, Game, and Poultry Netting, Poultry Hurdles, Hen-houses, Chicken Coops, Flower Stands, and Trainers, Garden Arches, and every kind of Wire Work, useful and ornamental.—T. H. FOX & Co., City of London Wire Works, 44, Skinner Street, and 6 & 8, Snow Hill. Illustrated Catalogues forwarded post free.

TO FANCIERS OF PIGEONS AND COCHIN CHINA FOWLS.

TO BE SOLD, by a Gentleman, in consequence of his leaving his residence, his entire stock of PIGEONS and COCHIN CHINA FOWLS. The pigeons have been selected from pure birds, and at a very considerable expense. They consist of Owls, Nuns, Jackdaws, Almond Tumblers, Horsemen, Fantails (white and black), Barbs, and Archangels. The Cochin China Fowls (cinnamon coloured) are very large and first-class birds. Address, prepaid, A. B., Post-office, Atherstone, Warwickshire.

WOOLWICH.

TO GENTLEMEN, NURSERYMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are directed by Mr. Williams, who is declining business, to submit to an unreserved Sale by Auction, on the premises, Bowater Nursery, Woolwich, on FRIDAY, December 15th, at 11 o'clock, the whole of the NURSERY STOCK, consisting of Evergreens, Ornamental Trees, and Deciduous Shrubs; also the GREENHOUSE PLANTS, comprising [illegible] Camellias, and Azalea Indica well set with bloom buds, Geraniums, &c.; with several Brick Pits, 2 and 3-Light Boxes, capital Hot-water Pipe, Saddle Boiler, a quantity of Hand and Bell-glasses, two capital Nests of Seed Drawers, Counter, Garden Seeds, Wheelbarrows, and sundry effects.—May be viewed one week prior to the Sale. Catalogues may be had on the Premises, of the principal seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will Sell by Auction, at the Mart, Bartholomew Lane, on THURSDAY, December 14th, at 12 o'clock, a first-class collection of DUTCH BULBS, consisting of the finest Double and Single Hyacinths, Narcissus, Jonquils, Anemones, Crocus, Tulips, Snowdrops, Ranunculuses, Gladiolus, &c.; also a selected assortment of fine Standard and Dwarf ROSES, with fine American Plants, well set with bloom buds, &c. On view the morning of sale.—Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

MITCHAM.

MESSRS. PROTHEROE AND MORRIS are directed by J. W. Dawson to sell by Auction without reserve, on the premises, Mordon Road, Mitcham, Surrey, on MONDAY, Dec. 18, 1854, at 11 o'clock, the NURSERY STOCK, consisting of Evergreens; comprising Chinese Arbor Vitæ, Laurel, Privet, Laurestinus, Hollies, Aucubas, Rhododendrons, Pyracantha, Honeysuckles, Currants, quantity of Rhubarb, Herbs, &c.—May be viewed prior to the Sale.—Catalogues may be had on the premises of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

TO FLORISTS AND OTHERS.

MESSRS. JONAS AND THOMAS PAXTON are instructed to sell by Auction, on WEDNESDAY, December 20th, at 11 o'clock, the whole of the choice collection of Picotees, Chrysanthemums, &c., of the late Rev. A. H. Mathews, at Weston-on-the-Green, midway between Oxford and Bicester. —Catalogues may be had of the Auctioneers, Bicester, Oxon.

COTTAM'S NEW PATENT FOR STABLE REQUISITES.

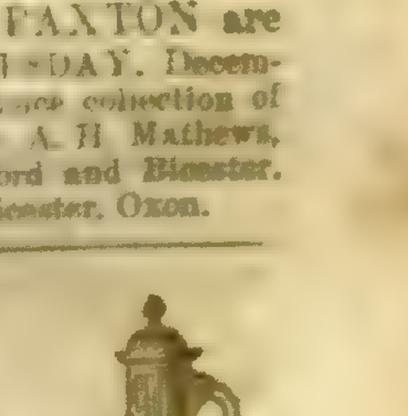
COTTAM AND HALLEN, the original projectors of the above arrangement of MANGER, RACK, and WATER-TROUGH, as one Fixture, which obtained the Great Exhibition Prize Medal, and universally approved of, have added all the latest improvements to their invention (secured by patent), which includes an entirely new method of attaching the halter, ball, and rein, giving to the horse greater freedom, and being noiseless in their operation, add much to its comfort whilst feeding and convenience when at rest.

COTTAM'S ENAMELLED MANGERS

are constructed in the best possible manner, both as to form and utility, are cleanly in appearance, durable and impervious to infection; manufactured PLAIN, GALVANISED, or ENAMELLED.

IMPROVED PUMPS,

OF THE BEST WORKMANSHIP AND WARRANTED.



The VALVES and SUCKERS of these Pumps are constructed upon an entirely new and SIMPLE principle; they are not likely to get out of order: should they do so, can easily be repaired, as the Pump is so contrived that the valves can readily be got at.

An Improved CAST IRON TRAP strongly recommended by the Sanitary Commissioners, and suitable for Sugar Bakers, Slaughter Houses, &c. &c. It is so formed that the Trap-plate will pass any matter the top grating will let through, and therefore is not liable to stoppages; and well adapted to Stables and Stable-yards, for saving the best part of Liquid Manure.

Improved Stable Guttering, with moveable safety covers, Sanitary Traps, Stable Pumps, Double Corner Mangers, Harness-room Appendages, and every article in Stable Furniture. Chaff Cutters and Oat Bruisers, kept on show.

A STALL fitted up, complete, exhibited at the Crystal Palace, Sydenham, Stand No. 19, Agricultural Department; and at

COTTAM & HALLEN'S WORKS, 2, Winsley Street, Oxford Street, London.

WARMING AND VENTILATING.—Descriptive Catalogues and Estimates on application.

In One large Volume, 8vo, with upwards of Six Hundred Woodcuts, price 50s. half-bound,

BLAINE'S ENCYCLOPÆDIA of RURAL SPORTS, Hunting, Coursing, Shooting, &c. &c. A New and revised Edition, corrected to the Present Time.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

The 16th Edition, corrected and extended, with the Statutes and Legal Decisions to Michaelmas Term, 17 and 18 Victoria; in foolscap 8vo, price 10s. 6d.

THE CABINET LAWYER: A Popular Digest of the Laws of England, Civil and Criminal; with a Dictionary of Law Terms, various other useful Additions, and Supplements of the Acts of the Sessions of 1853 and 1854.

Uniform with the above, price 10s. 6d., or calf lettered, 13s.,

THE CABINET GAZETTEER: A Popular Exposition of all the Countries of the World. By the same Author.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

Ninth Edition, revised and enlarged, in fcp. 8vo, price 5s.

HINTS to MOTHERS for the MANAGEMENT of their HEALTH during PREGNANCY and in the LYING-IN ROOM. With Hints on Nursing, &c. By THOMAS BULL, M.D.

By the same Author, 5th Edition, fcp. 8vo, price 5s.

The MATERNAL MANAGEMENT of CHILDREN in HEALTH and DISEASE.

London: LONGMAN, BROWN, GREEN, & LONGMANS.

ACTON'S COOKERY BOOK.

The Fourteenth Edition, in fcp. 8vo, price 7s. 6d.

ELIZA ACTON'S MODERN COOKERY, reduced to a System of Easy Practice: With Directions for Carving.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

Second Edition, enlarged, in fcp. 8vo, price 5s. 6d.

THE CHOICE and COOKERY of FISH. A Practical Treatise. By PISCATOR.

London: LONGMAN, BROWN, GREEN, & LONGMANS.

Price Threepence, or Fivepence post free,

FANCY GERANIUMS: a Practical Treatise on their Propagation and Culture, showing how they may be had in Bloom all the Year; their Management for Conservatory Decoration, and the Formation of Specimens.

Bristol: Published and Sold by THORNHILL & DICKSON, Lawrence Hill Nurseries, and 1, Wine Street.

INTELLECTUAL PRESENT.

New Edition, 550 pages,

TRUTHS ILLUSTRATED BY GREAT AUTHORS. A Dictionary of 4000 Aids to Reflections and Quotations from Great Writers, in Prose and Verse, Ancient and Modern, including 1000 from the Works of Shakspeare.

12mo. Edition, beautifully printed, antique, cloth, gilt edges, price 6s.
The same, superior morocco, elegant, 12s.
8vo, Library Edition, cloth, price 10s. 6d.
The same, vellum paper, gilt edges, 10s. 6d.
Ditto antique, calf, extra, 18s.
Ditto superior morocco, elegant, 21s.

"Every imaginable topic of interest or inquiry finds an apt illustration or felicitously selected apothegm."—*Globe.*

London: W. WHITE, 70, Piccadilly; and all Booksellers.

GLENNY'S QUARTERLY REVIEW of HORTICULTURE, LITERATURE, &c.—No. 8, the most important of all the work, will appear January 1st, price 1s., or by post 1s. 6d. Advertisements must be forwarded promptly to Mr. GLENNY, Dungannon House, Fulham.

On Thursday, December 14th, will be published, price 3d., or Stamped for post, 4d.,

THE SEVEN POOR TRAVELLERS, being the CHRISTMAS NUMBER of HOUSEHOLD WORDS, conducted by CHARLES DICKENS, and containing the amount of One Regular Number and a Half.

Office, 16, Wellington Street North, Strand; and sold by all Booksellers and Newsvenders.

In Two Volumes, large 8vo, with upwards of 600 Engravings, price 3l., half bound,

THE BOOK OF THE FARM. By HENRY STEPHENS, F.R.S.E. Seventh Thousand.

"The best practical book I have ever met with."—*Prof. Johnston.*
"One of the completest works on agriculture of which our literature can boast."—*Agricultural Gazette.*

WILLIAM BLACKWOOD & SONS, Edinburgh and London.

THE GIFT BOOK.

In 4to, beautifully printed, and handsomely bound in cloth, gilt edges, price 1l. 11s. 6d.; morocco, 2l. 8s.; in morocco, by Hayday, 2l. 12s. 6d.,

TUPPER'S PROVERBIAL PHILOSOPHY. ILLUSTRATED.—The Designs by

C. W. Cope, R.A.	George Dodgson	William Harvey
Fred. R. Pickersgill, A.R.A.	Edward Duncan	J. C. Horsley
	Birket Foster	William Leitch
John Tenniel	John Gilbert	Joseph Severn
Edward H. Corbould	James Godwin	Walter Severn

The Ornamental Initials and Vignettes by Henry Noel Humphreys.

London: THOMAS HATCHARD, Piccadilly.

NEW PRACTICAL WORK ON THE CULTURE OF HEMP AND FLAX.

Price One Shilling, sewed,

FLAX AND HEMP: THEIR CULTURE AND MANIPULATION. By E. SEBASTIAN DELAMER, Author of "Pigeons and Rabbits." With many Illustrations.

"Now that the war with Russia will interfere materially with our supply of these articles, there is little doubt our landowners and farmers will turn their attention to their culture. A work by a practical man on this subject appears most opportunely, and cannot but excite attention."

London: GEORGE ROUTLEDGE & Co., 2, Farringdon Street.

PRACTICAL MECHANIC'S JOURNAL, PART 81, DECEMBER, Price 1s.

ILLUSTRATIONS.—Large Folio Plate of Messrs. Scott, Sinclair, and Co.'s New Screw Propellers, and 30 Wood Engravings.

CONTENTS.—Royal Society—American Notes by our own Correspondent: Boring Arbor, Steam Cock, Tool Block, Locomotive Performance, Railway Ventilation—Educational Exhibition, Report of Committee on Art—Davidson's Floating Break-Water—Messrs. Scott and Sinclair's New Screw Propellers—Illustrated Specifications of Recent Patents: Portable Wooden Bedsteads, Brown; Knife Cleaners, Hilliard; Railway Timber Truck, Eassie; Centrifugal Cloth-Drying Machine, Johnson; Ornamentation of Pottery and Glass, Bale and Lucas; Medicinal Gas Administrator, Barth; Envelope, Aston; Washing Machine, Patterson; Steam Washer, Johnson—Reviews of New Books—Proceedings of Societies—Monthly Notes—Lists of all New Patents.

HEBERT, 88, Cheapside; Editor's Offices (Offices for Patents), 47, Lincoln's Inn Fields, London.

GARDENERS' CHRONICLE for Sale, from 1844 to 1853, inclusive.—Apply by Letter, to E. H., care of Mr. Low, Stationer, 31, Abchurch Lane, City.

A SUPPLEMENT, GRATIS, WITH THE WEEKLY DISPATCH, EVERY WEEK UNTIL FURTHER NOTICE.—The unexampled interest which attaches to every incident connected with the Operations of the Allied Armies in the East has determined the Proprietors of the WEEKLY DISPATCH to devote a greater space to the intelligence from the seat of war than the ordinary limits of this, the largest newspaper published, could possibly afford; and, with the view of giving the ample details, they have resolved upon the issue of a SERIES OF SUPPLEMENTS, GRATIS, which will include every particular of interest connected with the Siege and decision of the contest at Sebastopol, and will be continued whenever demanded by the progress of the Campaign.

By the publication of these Supplements the portion of the Paper usually devoted to incidents of domestic and political importance will be reserved intact, and the engrossing subject of the War will receive the fullest and most varied illustration.

A SUPPLEMENT WILL BE PUBLISHED ON SUNDAY NEXT (GRATIS), and on every succeeding week until further Notice.—Orders may be given to all Newsvendors in town and country; and to the publisher, at the *Dispatch* Office, 139, Fleet Street, London.

Just out (3d year), 1s.; or bound as a pocket-book, 2s. 6d., post-free, 6d. extra each, stamps equivalent,

THE ANGLER'S ALMANAC; a Hand-book and Guide to the Rivers and Lakes in Great Britain and Ireland. Richly illustrated.

London: GEORGE COX, King Street, Covent Garden. Sold by Booksellers and Tackle Makers.

Illustrated London News.

THE YEAR 1855 bids fair to be one of the most important and eventful of modern history. On the 6th of January, 1855, will be issued the first number of a new volume of the ILLUSTRATED LONDON NEWS, and not merely a new volume, but of a New Year—each volume being perfect and complete in itself—containing, for the time, a faithful record, pictorial and descriptive, of all Events of Interest in every part of the world. To that limited portion of the public who do not subscribe to this Journal it may be stated that no period could be selected more opportune for commencing,—the whole expense being but 26s. per annum, exclusive of double numbers, which are issued on rare occasions, when it would be impossible to crowd the important events and Engravings into a single number; for this small sum the subscriber will receive 24 large pages—72 columns—of the most interesting information, carefully selected from the News of the Week, interspersed with a variety of charming Articles on the chief topics of the day.

The ILLUSTRATED LONDON NEWS has, by its impartial and consistent advocacy of the welfare of the public, secured for itself a political influence scarcely second to any Newspaper in the Empire; and reference can, with some pride, be made to the support afforded to all beneficial measures proposed and adopted by the English Parliament.

Foreign Politics will ever command the attention which ought to be devoted to so important a feature of a Newspaper. On the question of the Russian War, during the year 1854, ONE THOUSAND ENGRAVINGS appeared in the ILLUSTRATED LONDON NEWS. Extensive arrangements, calculated to improve this popular Journal, and engagements such as will greatly enrich its Literary, Scientific, and other departments, have been made, and will thus combine on this Paper the greatest talent of the day.

The ILLUSTRATED LONDON NEWS has been established 13 years, during which period it has received a greater degree of encouragement and approbation than any Journal ever published. This is proved by the Return of Stamps issued from time to time by order of Parliament. The Stamps applied for the first six months of 1854 were upwards of 2,734,000—showing a WEEKLY CIRCULATION OF UPWARDS OF ONE HUNDRED AND THIRTY THOUSAND COPIES!

Terms (for payment in advance)—Half-year, 13s. 6d.; Year, 26s.

Any of the Volumes of the ILLUSTRATED LONDON NEWS, from the commencement to the present time, may now be had, in paper or cloth. Covers for Binding the Volumes 2s. 6d. each.

All Numbers may be sent free by post to any part of the Kingdom and the Colonies.

Give an order for six months to ensure all the gratuitous Prints and Supplements. Supplied by all Booksellers and Newsmen.

The ILLUSTRATED LONDON NEWS is published in London every Saturday, stamped, to go free by post, 6d. per copy.

Office, 198, Strand, London.

BOARD OF TRADE, DEPARTMENT OF SCIENCE AND ART.—AID TO PUBLIC SCHOOLS IN OBTAINING EXAMPLES FOR ART-INSTRUCTION.—The Lords of the Committee of Privy Council for Trade having resolved to furnish examples to Schools in accordance with the plan adopted by the Committee of Privy Council for Education, and to discontinue the practice of keeping a stock of such articles at the Department, NOTICE IS HEREBY GIVEN, that on and after the 1st of January, 1855, Examples will not be supplied directly from the Department of Science and Art as at present, but through Agents in London and the Provinces.

Forms of application for aid, and further information may be obtained at the Offices, Marlborough House, Pall Mall, London.

Marlborough House, 30th November, 1854.

ROYAL PANOPTICON OF SCIENCE AND ART, LEICESTER SQUARE.—Lectures for the ensuing week:—Dr. Noad, on Electricity, with Demonstrations on the Gigantic Electrical Machine in the Rotunda, Monday evening, 8.15. Dr. R. G. Latham, on Language, Wednesday, 8.15. The Arctic Regions, and Franklin's Voyages, illustrated with Dioramic Views by Mr. Leicester Buckingham, on Tuesday and Friday, 8.15; Wednesday and Saturday, 3.15. Chemistry, Mr. G. F. Ansell, Monday, Tuesday, and Friday, 3.15; Thursday, 8.15. Geology, Mr. Hugo Reid, Thursday, 3.15. Principal Attractions at the Present Time. Luminous Fountain daily, at 4.55 and 9.55. Moving Panorama and Dioramic Views of Verona, 2.45 and 7.45. Grand Performance on the Organ, by Mr. W. T. Best, at 4.15. Cosmorama of St. Petersburgh and Moscow, with Portrait of Czar Nicholas. Heinke's Diving Apparatus and the Subaqueous Light in the Crystal Cistern, 2.15 and 7.30. Distin's Flügel Horn Union, 9.15. Doors open in the morning at 12, in the evening (Saturday excepted) at 7. Admission 1s. Schools and children under 10 half price. Season admission 1l. 1s. Life admission 10 guineas.

JOHN MORREN, GENERAL COMMISSION AGENT, Ock Street, Abingdon, is open for Commissions for the sale of Agricultural Implements, Manures, Seeds, &c., and for the purchase of Corn, &c.

THE BIRMINGHAM CATTLE AND POULTRY SHOW, 1854.

MAPPLEBECK AND LOWE, MACHINISTS and MANUFACTURERS, respectfully invite Agriculturists and others who may visit the BIRMINGHAM CATTLE and POULTRY SHOW, in the week commencing December 11, to inspect their very extensive Collection of AGRICULTURAL IMPLEMENTS, in the SMITHFIELD and GLOUCESTER STREET WAREHOUSES; also many Choice WORKS of ART, and every kind of useful Hardware, in their FURNISHING IRONMONGERY SHOW ROOMS, BULL RING. Wholesale and Retail.

MECHI'S PREPARATIONS FOR CHRISTMAS AND NEW YEAR'S PRESENTS.—Sensible that the season is approaching when love and friendship give their tangible testimonials, MECHI has taken care to provide an abundance of objects for tasteful selection. None need deny themselves the luxury of giving, for the most inexpensive, as well as the most costly, articles are to be found at his Repository of Utilities and Elegancies, 4, Leadenhall Street, near the India House. England has always been renowned for its hearty Christmas liberality, while "Le Jour de l'An" of our lively neighbours the French is equally consecrated to the gifts of affection. MECHI invites a visit from the natives of all countries to his Emporium. In his elegant show-rooms are displayed a superb stock of Ladies' and Gentlemen's Dressing-Cases, Work-Boxes, Tea-Trays, Work-Tables, Chess-Tables, Tea-Caddies, Card-Cases, &c. Those who desire to make really useful presents will find in the general department the best Table Cutlery, Scissors, Thimbles, Pen-Knives, Writing-Desks, Ivory and other Hair Brushes and Combs, and a variety of goods adapted to every exigency. Also Bagatelle Tables, affording a charming amusement on a wintry or wet day.—4, Leadenhall Street.

On the 18th December will be published, price 3d., or Stamped 4d.,

PUNCH'S ALMANACK FOR 1855.

ILLUSTRATED BY JOHN LEECH AND JOHN TENNIEL.

OFFICE, 85, FLEET STREET.

CHEMISTRY.

FOWNES'S MANUAL OF CHEMISTRY.

Edited by H. BENCE JONES, M.D. F.R.S., and A. W. HOFFMANN, Ph.D. F.R.S. Fifth Edition, fcap. 8vo, 12s. 6d. cloth.

CHEMISTRY, AS EXEMPLIFYING THE WISDOM AND BENEFICENCE OF GOD.

By GEORGE FOWNES, F.R.S. Second Edition, fcap. 8vo, 6s. 6d. cloth.

PRACTICAL CHEMISTRY, INCLUDING ANALYSIS.

With numerous Illustrations on Wood. By JOHN E. BOWMAN, Professor of Practical Chemistry in King's College, London. Second Edition, fcap. 8vo, 6s. 6d. cloth.

By the same Author,

MEDICAL CHEMISTRY.

With Illustrations on Wood. Second Edition, fcap. 8vo, 4s. 6d. cloth.

HANDBOOK OF CHEMISTRY

THEORETICAL, PRACTICAL, AND TECHNICAL.

By F. A. ABEL, F.C.S., Chemist to the Board of Ordnance, and C. L. BLOXAM, Demonstrator of Practical Chemistry in King's College. 8vo, 15s. cloth.

INSTRUCTION IN CHEMICAL ANALYSIS.

By C. REMIGIUS FRESENIUS. Edited by LLOYD BULLOCK.

QUALITATIVE. Third Edition, 8vo, cloth, 9s.—QUANTITATIVE. Second Edition, 8vo, cloth, 15s.

THE FIRST STEP IN CHEMISTRY.

By ROBERT GALLOWAY. Post 8vo, cloth, 3s.

By the same Author,

A MANUAL OF QUALITATIVE ANALYSIS.

Post 8vo, cloth, 4s.

CHEMISTRY OF THE FOUR SEASONS:

SPRING, SUMMER, AUTUMN, WINTER.

Illustrated with Engravings on Wood. By THOMAS GRIFFITHS. Second Edition, fcap. 8vo, cloth, 7s. 6d.

LONDON: JOHN CHURCHILL, NEW BURLINGTON STREET.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 27, Victoria Street, in the Parish of St. Margaret and St. John, Westminster, both in the County of Middlesex, Printers, at their Office in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, December 9, 1854.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 50.—1854.] SATURDAY, DECEMBER 16. [PRICE 6d.

INDEX.

Agriculture, British .... 811 c
Agri. Soc. of England .... 811 a
— — of Ireland .... 810 a
Aralia japonica .... 808 c
Books noticed .... 807 b
Botany, Archer's Economic .. 806 a
Calendar, horticultural .... 808 a
Canada, wages in .... 811 a
Cattle Show, Midland Counties 810 b
Cattleya, monstrous .... 804 a
Crimea, climate of .... 803 b
Crocuses and mice .... 806 a
Cupressus Lambertiana and macrocarpa .... 806 b
Drainage, deep .... 809 c
Entomological Society .... 807 a
Grape growing .... 806 c
Gynerium argenteum .... 806 a
Heating at Mr. Weeks' .... 807 b
Linnean Society .... 807 a
Linum grandiflorum .... 805 c
Lois-Weedon Turnips .... 804 a
Manure, "economical" .... 809 c
Mice and Crocuses .... 806 a
Mechi's (Mr.) annual statement ... .. 809 c
— — British Agriculture .... 811 c
Orange trees .... 806 b
Pathology, vegetable .... 804 c
Pear, Beurré Clairgeau .... 805 a
— — Superfin .... 806 b
Pear growing .... 806 c
Plants, new .... 805 c
— long Latin descriptions of 804 b
Potato, Early Cruffle .... 806 b
— Fluke .... 805 c
Raspberry, to force .... 805 b
Roses, new .... 807 c
Rye-grass, Italian .... 812 b
Scale, to kill .... 808 c
Smithfield Market .... 813 b
Society of Arts .... 811 c
Steam digging .... 812 a
Teas, scented .... 806 a
Turnips, Lois-Weedon .... 804 a
Vegetable pathology .... 804 c
Weeks' (Messrs.), nursery .... 807 b

THE BRITISH POMOLOGICAL SOCIETY meets at the rooms, 20, Bedford Street, Covent Garden, London, on the first MONDAY of every month, to receive communications respecting Fruits and Fruit Trees, for the Election of Members, and for General Business.
All communications and packages containing specimens of Fruits, to be addressed to ROBERT HOGG, Secretary.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Notice is hereby given that the Annual General Meeting of the Members of this Society will take place at the Horticultural Society's Rooms, No. 21, Regent Street, on WEDNESDAY, 17th January next, for the purpose of receiving the Accounts of the Society for the past year, and Electing Officers for the ensuing year. An Election of Three Pensioners will afterwards take place from among the following Candidates, whose testimonials have been examined and approved of by the Committee:

NAME.	RESIDENCE.	AGE.	
JOHN APPLEBY	Clapham	65	10th Application.
CORNELIUS ROBINSON	Greenwich	77	8th "
HENRY SCHNEIDER ...	Ford, Wilts	89	7th "
JOHN BLACKE	Ryme, Dorset ...	80	4th "
ROBERT OLIVER ...	Sheffield	72	4th "
WM. THACKER	Wimbledon	67	4th "
CHARLES CHARLTON	Hornsey	69	3d "
ELIZ. CURTIS	Clapham	70	3d "
JOSEPH JEFFREY ...	Liskeard	62	3d "
JOHN KENT	Clapham	71	3d "
GEORGE KIDD	Twickenham ...	69	3d "
JOHN LAWSON	Appleby	76	2d "
JAMES SMITH	Brighton	68	2d "
ANN ARNOLD	Cheshunt	62	1st "
THOMAS BLAIR	Longton, Stafford	70	1st "
F. L. BURNET	Brixton	53	1st "
WM. DUNGATE	Bath	68	1st "
ALEXR. GREGORY ...	Leyton	62	1st "
WM. THORNTON ...	Bath	69	1st "

The Chair will be taken at 12 o'clock. The Ballot will close at 2 o'clock precisely.

By order of the Committee,
Dec. 8, 1854. E. R. CUTLER, Secretary.
14, Tavistock Row, Covent Garden.

SEED GROWERS' SOCIETY.—The Members of the above Society are now prepared to send LISTS of AGRICULTURAL, GARDEN, and FLOWER SEEDS to those who are desirous of having them genuine and direct from the Growers.—Applications addressed to the Secretary, JOHN MOSS, Jun., Feering, Kelvedon, Essex, will meet with prompt attention.

MANGOLD WURZEL SEED.
TO BE SOLD, LONG RED and YELLOW GLOBE, this year's seed, from superior stock.—Apply to R. S. HEWS, Kelvedon, Essex.

CEMETERIES.
MESSRS. MAJOR AND SON having been repeatedly asked whether the laying-out of Cemeteries falls within their province, beg to announce publicly that they consider it does strictly fall within their province as Landscape Gardeners, that they have directed especial attention to it, and have the arrangement of several at the present time, and, therefore, beg respectfully to offer their services to all who are in any way concerned in the formation of Cemeteries.—Knosthorpe, near Leeds.

CEMETERIES.
WILLIAM BARRATT having had considerable experience for more than 20 years in Laying out and Planting Cemetery Grounds, begs to offer his services in that department of LANDSCAPE GARDENING, and also to observe that he has a large Stock of well grown Trees, Weepers, and Shrubs, suitable for such planting.—St. John's Nurseries, Wakefield.

EXOTIC NURSERY, CHELSEA.
JAMES VEITCH, JUN., having engaged in addition to his other able foreman, the assistance of Mr. John Milne, late gardener to Byam Martin, Esq., of Kingston-on-Thames, and before that gardener and steward to the Right Hon. the Earl of Clare, Mount Shannon, Ireland, feels increased confidence in being able to give complete satisfaction to those who may kindly patronize him.
The long and extensive practical experience which he has himself had at Exeter, as well as since he came to Chelsea, combined with Mr. Milne's high standing as a practical gardener, induces him to tender his services to any lady or gentleman requiring advice in the Improvement of their Gardens and Grounds, and in other Horticultural matters, particularly in reference to the erection of Conservatories, Forcing and Plant Houses, Heating Apparatus, &c., plans for which will be furnished on application, and examples can be seen both at the Exotic Nursery, Chelsea, and at Exeter.
JAMES VEITCH, Jun., is fully impressed with the fact that to make Horticultural Buildings what they really should be, thorough practical Gardening experience is required to adapt the various erections to the several purposes for which they are intended. This desirable object it will be his anxious endeavour to accomplish.—Dec. 16.

RENDLE'S PRICE CURRENT AND GARDEN DIRECTORY FOR 1855 *is now in the press, and will shortly appear. Due notice will be given in the columns of this paper.*

LYNCH'S STAR OF THE WEST CUCUMBER, *the best frame variety in cultivation. For description, see* RENDLE'S *"Price Current and Garden Directory" for 1855.*
Price 1s. 6d. and 2s. 6d. per packet.—Apply to WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

NEW SEEDS JUST HARVESTED *can now be obtained of the most genuine description, from* WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

TO THE SEED TRADE.
DAWE, COTTRELL, AND BENHAM'S (successors to Frederick Warner) Wholesale LIST OF AGRICULTURAL AND GARDEN SEEDS is now ready.—3, Laurence Pountney Lane, London. Established 1720 at 28, Cornhill.

DAWE, COTTRELL, AND BENHAM'S Wholesale FLOWER SEED CATALOGUE is now ready for the Trade. Post free on application.—3, Laurence Pountney Lane, and 36, Moorgate Street, London.
Established 1720 at 28, Cornhill.

EARLY DANIEL O'ROURKE PEAS.
J. G. WAITE begs to inform the Trade that he is now ready to execute orders for this valuable early Pea. Price can be had on application.
Seed Establishment, 181, High Holborn, London.

NONPAREIL PEAS.
WILLIAM FAIRBEARD begs to inform the trade that he is now ready to execute any orders he may be favoured with. This Pea W. F. is confident will become a general favourite both for Garden and Field culture. Price can be had on application.—Mount Pleasant Nursery, Queen Street, Sittingbourne, Kent.

NEW CAULIFLOWER.
WAITE'S "ALMA," far superior to Walcheren, very large and firm heads. Price to the trade 24s. per lb. smaller quantities 2s. 6d. per oz. No orders attended to for less quantities than one ounce.—Seed Establishment, 181, High Holborn, London.

HOLLYHOCK SEED.
R. PARKER has now ready for sending out Seed of this year's saving from the finest named varieties in cultivation, in packets at 1s. and 2s. 6d. each. A remittance or reference to accompany all orders from unknown correspondents.—Paradise Nursery, Hornsey Road, London.

PRICED NURSERY CATALOGUES.
A. PAUL AND SON will be happy to forward the following priced Nursery CATALOGUES in return for one postage stamp each:—A, ROSES; B, ORNAMENTAL TREES AND CONIFERS; C, FRUIT TREES; D, HERBACEOUS PLANTS; F, GREENHOUSE PLANTS, &c.; G, SEEDS; H, HOLLYHOCKS; I, BULBS.—Nurseries, Cheshunt, Herts.

EXOTIC NURSERY, CHELSEA.
JAMES VEITCH, JUN., will be happy to forward his new Retail VEGETABLE, AGRICULTURAL, AND FLOWER SEED LISTS on application, and desires to assure those who may kindly favour him with their orders, that he has spared no pains in procuring his supplies from the first growers on the Continent as well as in this country, and that he will use his best endeavours to give his customers entire satisfaction.

GEORGE JACKMAN begs to announce that he has just published a new and complete CATALOGUE of his Ornamental Evergreens, Conifers, Flowering Shrubs, Standard and Dwarf Roses, Fruit and Forest Trees, &c., and may be had on application by enclosing two postage stamps.
Woking Nursery, 1½ mile from Woking Station, South Western Railway, where all Trains stop, and where capital conveyances may be had.—December 16.

SEED WHEAT.—Samples and Prices of RED HYBRID, NURSERY, and other kinds of Wheat from the CHALK, sent on application to Mr. H. RAYNBIRD, Basingstoke.
The Red Hybrid and Nursery are well suited for late sowing after Turnips.

TRUE SEED POTATOES.
JOHN BELL, POTATO SALESMAN, Covent Garden Market, and Great Northern Railway, King's Cross, London, offers the following:—

Per bushel.—	s.	d.	Per bushel.—	s.	d.
Ashleaf Kidneys ...	7	0	York Regents	4	6
Lapstone	6	0	Hens, Nest	6	0
Early Cockney	9	0	Fortyfolds...	5	0
" Shaws	4	6	Orkney Reds	5	0

Scotch Cups ... ... 4s. 6d.
Terms cash. The usual allowance to the trade.

THE FLUKE KIDNEY POTATO.—This excellent variety is now planted here as the principal crop, being more free from disease and more prolific than any other in cultivation. It was raised in Middleton, and may be had genuine in any quantity at 5s. per bushel of 56 lbs.—Apply to JOHN HOLLAND, Bradshaw Gardens, Middleton, near Manchester.

THE FLUKE POTATO.—A new second early variety, surpassing every other in its capability of resisting the Potato disease, and without exception the finest and most prolific Potato in cultivation. Price per cwt., 15s., bags included.
To be had genuine of THORNHILL & DICKSON, Lawrence Hill Nurseries; and No. 1, Wine Street, Bristol.

EARLY SEED POTATOES.—Jackson's Improved Thorough High-bred Early Ashleafs, price 9s. per bushel, and the celebrated Short-tops, 7s. 6d., are unequalled for quality and yield; they by far surpass the "old stock," which is generally a sluggish bearer. British Queens, 7s. 6d., the earliest round variety known; Early Frame and Ashleaf Seedlings, 8s.; Regents, from prepared cuttings, 6s. Free to London; no charge for sacks. JOSEPH WILSON, Seedsman, Ipswich.

THE PAMPAS GRASS, GYNERIUM ARGENTEUM.
LUCOMBE, PINCE, & CO. have a fine healthy stock of this highly ornamental plant, well established in pots, and fit to send out immediately.
Specimens of it are now and have long been flowering in their nursery, and it is universally admitted that few plants produce a more beautiful effect than this gigantic Grass. See woodcut and description of it in *Gardeners' Chronicle* of the 4th ult.
Sizes, prices, and all particulars may be had on application to LUCOMBE, PINCE & Co., Exeter Nursery, Exeter.

FINE TRAINED FRUIT TREES IN A BEARING STATE.
LUCOMBE, PINCE, AND CO., have this season for Sale a remarkably healthy stock of fine trained FRUIT TREES of all the best sorts, to which they respectfully beg to call immediate attention. Prices and particulars to be had on application to LUCOMBE, PINCE, & Co., Exeter Nursery, Exeter.
ESTABLISHED 1720.

SEEDLING FOREST TREES AND SHRUBS.
DAVID REID AND SON, NURSERYMEN AND FLORISTS, Leith Walk, Edinburgh, beg to direct the attention of the trade to their Stock of Seedlings as above.
Catalogues free on application.

W. AND T. ANDERSON, SEEDSMEN, &c., can supply TREE SEEDS, including Larch, Spruce, Scotch and Silver Fir, Balm, &c., also Whin (Furze) and Broom on moderate terms.—Dundee, December 16.

FRUIT TREES, FOREST TREES, EVERGREEN SHRUBS, &c. Catalogues of the above may be had on application to WILLIAM BARRATT, Wakefield.
☞ A quantity of fine Transplanted White Thorns.

DWARF PYRAMIDAL PEAR TREES ON QUINCE STOCKS.
EDWARD PARKE FRANCIS offers a very fine collection of the best varieties of PEARS grafted on the Quince; descriptive Catalogues of which may be had on application. Strong Trees, showing Fruit Buds, 2s. 6d. to 3s. 6d. each.
Rose Nurseries, Hertford.

COLLECTION OF PEARS.—The Collection of nearly 100 Pears exhibited by RENE LANGELIER at the Society for the Encouragement of Horticulture may be seen for a few days at Dungannon House, Fulham, where orders for the trees will be taken by Mr. GLENNY, Horticultural Agent, Auctioneer, and Valuer.

THE PRINCE ALBERT PEAR.—This fine late Pear is like the Bourré Rance, but is hardier, and in general keeps longer. Young healthy trees, on the Pear and on the Quince stock, on which it grows freely, 5s. each—price to London.
THOMAS RIVERS, Nurseries, Sawbridgeworth.

HALF STANDARD PEACHES, NECTARINES, AND APRICOTS IN POTS.—In addition to the dwarf trees in pots of Peaches, &c., the above can be supplied of the leading varieties; they have well ripened shoots full of bloom buds, and straight stems about 3 feet in height. The Apricots of one kind, the Peach Apricot, are 4 feet in height, and are also full of bloom buds. The above are well adapted for Orchard-houses with high roofs. Price 5s. each.
THOMAS RIVERS, the Nurseries, Sawbridgeworth.

SPECIMEN IRISH YEWS.
THOMAS JACKSON AND SON, having a large Stock of fine specimens of this very ornamental tree, beg to offer them at the undernamed low prices.

8 to 9 feet high,	and 8 feet in circumference		..	63s.	6d.	each.
8	"	and 4 to 5 feet	"	... 21	0	"
7 to 8	"	and 4 feet	"	... 15	0	"
6 to 7	"	and 3 to 4 feet	"	... 10	6	"
6	"	and 3 feet	"	... 7	6	"

Handsome smaller specimens at proportionately lower prices.
Kingston, Surrey.

LARCH AND SPRUCE TREES.
TO BE SOLD by private contract, at Edgefield, near Holt, Norfolk, 250,000 Excellent LARCH PLANTS, transplanted, 2 to 4 feet; 20,000 ditto SPRUCE ditto, ditto, 1 to 3 feet.—For price, &c., apply to Mr. ALEX. LAWRIE, Edgefield; if by letter, to be post paid.

TO BE SOLD, at very reduced prices, 10,000 very strong 2, 3, and 4-year old GOOSEBERRIES and CURRANTS, of the best sorts.—For further particulars, apply to LAKE & DYER, Nurserymen, Bridgewater.

PINE PLANTS.
R. GLENDINNING begs to offer the following kinds of PINE PLANTS, in 5-inch pots, well-rooted and perfectly clean, in a condition to shift into larger pots, or to plant out:—
50 MOSCOW QUEEN
50 RIPLEY do.
12 PRICKLY CAYENNE
12 BLACK JAMAICA
12 PROVIDENCE
Price on application.
Chiswick Nursery, London.

RHUBARB ROOTS for FORCING or PLANTING.—Strong one-year planted roots of MYATT'S VICTORIA and LINNÆUS, MITCHELL'S ROYAL ALBERT, at 6s. per doz.; HOWARD'S PRINCE ALBERT, 12s. per dozen. This is a larger variety than the Victoria, and is extensively cultivated about Manchester. Price to the trade of the above, per 100 or 1000, on application to MESSRS. J. MYATT AND SONS.
Manor Farm, Deptford, Dec. 16.

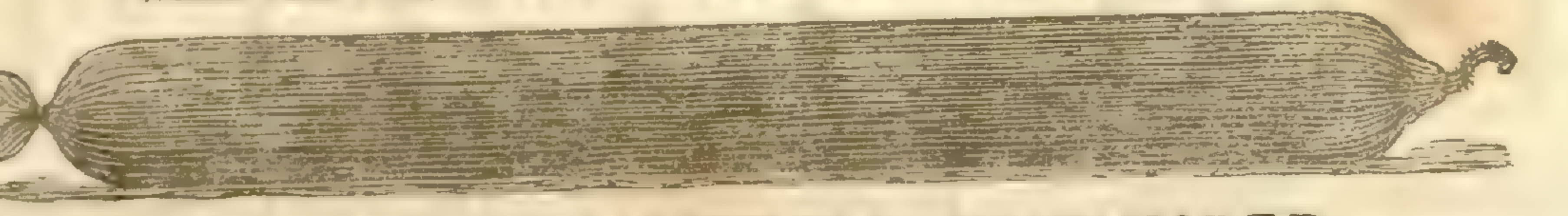
TO THE SEED TRADE.
ABRAHAM HARDY AND SON, SEED GROWERS, beg to announce that their Wholesale Priced CATALOGUE of SEEDS, growth 1854, is now ready, and may be had on application.—Malden, Essex, December 16.

GLENNY'S SUPERB BALSAM SEED from the largest and most double Flowers in the world. Six classes, 37 stamps; 50 seeds mixed, 13 stamps—in sealed packets only—with Directions for Culture.—Letters to Mr. GLENNY, Horticultural Agent, Auctioneer, and Valuer, Dungannon House, Fulham.

TWO NEW CUCUMBERS.

SIR COLIN CAMPBELL AND GENERAL CANROBERT.

THE ABOVE are two of the Finest and most Superb New Hybrid Cucumbers ever yet sent out for Exhibition, Winter Cultivation, and every other purpose for which a Cucumber is required.



SIR COLIN CAMPBELL CUCUMBER.

The above Cut is an exact representation of one of the fruit grown this summer, which measured exactly ten of its diameter long, being 25 inches, with not more than half an inch handle. It is a splendid Black Spine, of a dark green colour, and free from ribs or shrivels; grows very quick, sets free, and carries its bloom well. As a Cucumber for Exhibition nothing can surpass it, and is very prolific, often throwing out four or five fruit from every joint, and the vines are short jointed. The fruit is solid, and eats very crisp, and for market it keeps its bloom well for many days, not turning colour at the stem or point as most varieties do. Fruit was cut from the above in January last, and the same plants continued to produce fine fruit until the end of October.

GENERAL CANROBERT CUCUMBER.

This is also a most superb variety for winter cultivation, for which it is best adapted, being a hybrid from Lord Kenyon's Favourite and Phenomena. It has a great advantage over Kenyon's in length, growing to about 18 inches, in the same time in which Kenyon's will grow 12 inches; it is equally as hardy and productive. Of a dark green appearance, Black Spine, and a free setter; fruits freely during the whole of the winter, and always grows a very even size from stem to point. It will swell off two or three fruit at a time on a plant, during the depth of winter, and carry them out well, which it does with less heat than any other: this has been proved when several varieties have been grown together, this having the coldest part of the house. The object of the raiser of the above superb varieties has been to obtain perfection and hardiness, in which he has succeeded, by continually hybridising different varieties.

Sold in Packets of Five Seeds, 3s. 6d. each, or 1 Packet of Sir Colin Campbell and General Canrobert for 6s.

The following fine varieties of Cucumbers and Melons, which have been thoroughly proved and have given the greatest satisfaction to all Purchasers, can be supplied.

CUCUMBERS.

Captivation ...	... 2s. 6d.	Hunter's Prolific	... 1s. 0d.
Phenomena ...	... 2 6	Mills' Jewess ...	... 1 0
Lord Kenyon's ...	... 2 6	Cheltenham Surprise	... 1 0
Essex Hero ...	... 2 0	Manchester Prize	... 1 0
Victory of Bath ...	... 1 0	Sion House True	... 1 0
Gordon's White Spine ...	1 0	Cuthill's Black Spine	... 1 0
Sunderland Wick	... 1 0	Conqueror of the West ...	1 0

MELONS.

The Queen ...	... 1s. 0d.	Beechwood ...	... 1s. 0d.
Bromham Hall ...	... 1 0	Windsor Prize ...	... 1 0
Incomparable ...	... 1 0	Emperor	... 1 0
Golden Ball ...	... 1 0	Fleming's Hybd. Persian	1 0
Bowood	... 1 0	Blackall's Green Flesh	1 0
Victory of Bath ...	... 1 0	Bailey's "	1 0
Camerton Court	... 1 0	Snow's Hybrid ...	... 1 0

A Packet of either of the Melons will be given to all Purchasers of the two new Cucumbers advertised above.

A Remittance must accompany every Order by Cash or Penny Postage Stamps, and the whole, or any part (as the case may be), will be immediately forwarded.

EDWARD TILEY, NURSERYMAN, SEEDSMAN, and FLORIST, 14, Abbey Church Yard, Bath, Somersetshire.

To Farmers, Potato Growers, and Others.

JACKSON'S PATENT PREPARATION

FOR

PRESERVING POTATOES, WHEAT, AND OTHER SEEDS

From DISEASE, the RAVAGES of the SLUG, GRUB, and WIREWORM, in addition to which the CROPS are brought forward in HEALTH AND VIGOUR, and the yield is greatly increased, in proof of which the following extracts are given from numerous letters received by Mr. Jackson.

EXTRACTS:—

"One of the fields of this farm, the property of Mrs. Stanbury, was planted with Regent's Potatoes in April last, some of which were prepared by you. The result now is, that the whole of the crop from the unprepared sets is thoroughly diseased, and hardly worth the trouble of taking up; while those raised by the side of them from the prepared sets, are not only in a beautiful state of preservation from the disease, but the produce is much greater,—the Potatoes are more numerous than the others; indeed, if there were no such thing as the disease to be feared, it would be worth the trouble and expense of preparing the sets by your process, even for the sake of the improved crops. I shall certainly, for the future, prepare all my Potatoes for seed by your process; and I intend to adopt it for preserving my Wheat from the Smut.

"G. B. Baxter.

"Belmont Farm, Eltham, Kent, August 28, 1854."

"Admiral Sir J. A. Gordon, K.C.B., Marlee House, Blairgowrie.

"Sir,—I have received your note of the 16th. The Potatoes that came here from England, prepared by Mr. Jackson, were planted in a piece of new ground, and according to the directions sent by him along with them as to distance between the plants, &c. They came up well, with strong healthy stems; I have now taken the whole crop up, and there is not the slightest appearance of any disease amongst them. They are of large equal size and very prolific. There were long black unprepared Kidneys planted in the same patch, and a great deal of them are not fit for use, at least a third part are diseased. I hope Mr. Jackson's process may be widely known, as it is a great boon.—I am, &c., John Shanks,

"Forester, Kildrummy Castle.

"Kildrummy Castle, Aberdeenshire, November 17, 1854."

"I am very much pleased with the result of the experiments I have made with your Prepared Potatoes; for I planted them, without any manure, in ground where for several years I have hardly had a sound Potato, and I now find the crop perfectly free from disease, and in a very fine condition; while those of the same sort, unprepared, which were planted at the same time, and next to them, are diseased and eaten by worms.

"The Potatoes from the Prepared Seed were so remarkably good that I was induced to weigh them, and I found, to my great astonishment, that they were as 200 to 150 of the others, or about 25 per cent. in favour of your preparation.

"T. Austen, Nurseryman and Seedsman.

"Blackheath, Kent, 24th August, 1854."

Sold by Messrs. Charlwood & Cummins, Seedsmen, Covent Garden; and John Kernan, Seedsman, 4, Great Russell Street, Covent Garden; all Seedsmen and Chemists; and at the Patentee's, 18, Cannon Street, London Bridge, in Packets of One, Two, Three or Four Pounds, or in Bulk for the use of Farmers and Potato Growers.

THE NEW CHINESE POTATO (DIOSCOREA JAPONICA).

MR. JOHN HENDERSON,

Formerly of the Firm of John A. Henderson & Co., Pine Apple Place, London,

Has the pleasure of informing the Public that he has just completed the Purchase from M. Paillet, of Paris, of his entire Saleable STOCK of the above introduction from China, the nutritive properties of which are said so far to surpass the ordinary Potato that it is likely, not only to act as an auxiliary, but entirely to SUPERSEDE that valuable but uncertain esculent

The most satisfactory results have followed from personal experiments, and proved that when cooked in the ordinary manner, from the large amount of FARINACEOUS properties it contains, it can NEVER become waxy, as is too generally the case with the Potato. Its FLAVOUR resembles in delicacy an early Ash-leaved Kidney; but, independent of the above excellent qualities, there is every probability of its taking a still more important position in the ECONOMY of this country, for, when dried and reduced to powder, it is equal to the best Arrow-root; or mixed in the proportion of one-third with two-thirds of wheaten flour, it makes an extremely light and wholesome BREAD, as well as very superior PASTRY.

Messrs. Vilmorin & Co., speaking of it, observe:—"Of all the esculent roots proposed as substitutes for the diseased Potato, the DIOSCOREA JAPONICA is certainly the only important one. It is easily propagated. The tubers are large and long, the flesh very mealy and devoid of any peculiar or disagreeable flavour. The DIOSCOREA JAPONICA is, in our opinion, a PRECIOUS ACQUISITION."

M. Pelé, Horticulturist, Paris, in his Supplementary Catalogue of this autumn says:—"A new alimentary root, introduced into France by M. Montigny, French Consul in China. Serious experiments have shown that this tuber will be much more advantageous to cultivate than the Potato, both in regard to its QUALITY as well as PRODUCE."

M. Paillet, to whom the Imperial Society of Agriculture and Commerce of France has awarded the sum of 3000 francs as encouragement for having brought it into cultivation, also notices that "this tuber attains at least 1 to 2 lbs. weight. In its growth it is less delicate than the Potato, which unfortunately has of late years much degenerated. It does not require particular care, and its abundant produce amply repays cultivation. Its taste is pleasant, and being a root which contains a large amount of FARINA, will be a great addition to the FOOD OF THE PEOPLE as soon as it becomes generally known. It is so HARDY that it has passed the winters of 1853–4 in the open ground, without having in the least suffered from frost. It is also found that the STEMS and LEAVES, which are very numerous, form an EXCELLENT FOOD FOR CATTLE."

Tubers, with description of the Chinese Mode of Culture, to be obtained of Mr. JOHN HENDERSON, Kingskerswell, South Devon, at the following prices, for cash only:—

4 Tubers ... ... £0 10 0 | 10 do. ... ... £1 2 6 | 50 do. ... ... £5 5 0 | 100 do. £10 0 0

Post-office orders are requested to be made payable at Newton Abbot, South Devon. The usual discount allowed to the trade when not less than 50 are taken.—P.S. All orders unaccompanied by a remittance will be considered as not received.

TO THE SEED TRADE.

MESSRS. ARTHUR HENDERSON AND CO. are now prepared to supply SEEDS of the following new introductions.

N.B.—Mr. W. H. Dunnett (the raiser), Seed Grower, Dedham, Essex, will also execute all orders intrusted to him with the greatest care and attention.

WHITE TOPPED CLARY, a fine showy hardy annual, remaining a long time in flower—

1 oz. ... 5s. | 4 oz. ... 15s. | 8 oz. ... 25s. | 16 oz. ... 40s.

LIMNANTHUS SULPHUREA ODORATA; yellow ground edged with white and rose-coloured stamens; a beautiful trailing hardy annual, very sweet scented, and throwing off its fragrance like the Mignonette, and continuing in flower for a considerable period:

1 oz., 10s. 0d. | 4 do., 35s. | 8 do., 60s. | 16 do., 100s.

DIANTHUS DUNNETTII SUPERBUS; very dwarf, fine dark Sweet William—

1 oz., 20s. | 2 oz., 35s. | 4 oz., 63s. | 8 oz., 105s. | 16 oz., 180s.

Pine Apple Place, Edgeware Road, London.

SPLENDID NEW RHUBARB.

SALT'S CRIMSON PERFECTION.

ROBERT SALT begs leave to inform the Gentry, Nurserymen, Gardeners, &c., that this splendid variety of Rhubarb is now ready for distribution. It is universally allowed to be the most early, prolific and delicious variety ever offered to the Public.

See *Gardeners' Chronicle* June 11, 1853: "Very good, and of a most beautiful crimson; compared with others, it is remarkable for the small amount of acidity it contains."—Ed.

Certificates of Merit were awarded for specimens exhibited at the Meeting of the Horticultural Society, Regent Street, London, June 28th, 1853—at Nottingham, May 24th, 1854—at Derby Midland, May 25th, 1854—at Ormskirk, Lancashire, August 30th, 1854. Price 7s. 6d. per root, 3 for one guinea, and 6 for 2l.

Orders addressed to Robert Salt, Longton, Staffordshire; or the following agents, will have immediate attention: Messrs. Hurst & M'Mullen, 6, Leadenhall Street, London: Messrs. Burgess & Kent, Penkhull, Staffordshire; Mr. Wood, Nurseryman, Coppice, near Nottingham; Messrs. Francis & Arthur Dickson, East-gate Street, Chester; Mr. Salisbury, Melbourne, Derbyshire. A liberal discount allowed to the trade. A Post-office order from unknown correspondents.—Longton, Dec. 16.

GRIGOR'S AQUILEGIA GLANDULOSA.—To insure a vigorous display of this beautiful flower, the Subscribers can supply strong flowering roots, encased in bulbs of a congenial soil, similar to the plants which received the honorary premium of the Royal Caledonian Horticultural Society, in 1853. In reference to this beautiful Columbine, the Editor of the *Gardeners Chronicle* says:—"This plant is, perhaps, the handsomest hardy perennial in cultivation; its stems rise about 2 feet high, and sometimes carry from 50 to 80 blossoms. The effect is beautiful in the extreme, and no description that we have formerly given of it has done justice to its exquisite appearance." The plants are adapted for the open ground, or they may be forced into bloom early in spring.—On the receipt of 20s. per dozen, packages will be sent carriage free to London or Edinburgh.

JOHN GRIGOR and CO., Nurseries, Forres, N.B.

THE LARGEST and CHEAPEST ESTABLISHMENT in ENGLAND for Geraniums (show and fancy), French Geraniums, Fuchsias, Verbenas, Fairy Roses, Chrysanthemums, Heliotropes, Cinerarias, Calceolarias, Primulas, and other soft-wooded plants, is the Floral Nursery, Acton Road, Turnham Green, near London. More than 250,000 plants are there cultivated annually.

For further particulars, see Advertisement in previous Numbers. Catalogues forwarded to all parts gratis.

Every possible exertion will be made to give the most perfect satisfaction to all who may favour this Establishment with their patronage. None but thoroughly established Plants will be sent out, and full reliance may be placed on prompt attention and fair dealing.

The Trade will be liberally dealt with. Provincial Nurserymen and Florists will do well to try this Establishment.

Terms cash or a satisfactory reference.

JOHN WESTWOOD, Proprietor.

GODFREY'S BLACK SPINE.

Splendid and Prolific Frame Cucumber.

WOOD and INGRAM beg to offer seeds of the above beautiful variety. Colour, magnificent dark green, with a very fine bloom; average length, 18 to 21 inches, and produces in great abundance through an entire season. Packets containing 12 seeds, 2s. 6d.; 6 ditto, 1s. 6d.

W. & I. will be happy to refer any persons wishing further information respecting the variety to three or four Noblemen and Gentlemens' Gardeners who have grown it, and prefer it to any other.

London Agents: Messrs. Hurst & M'Mullen, 6, Leadenhall Street.

W. & I. have also the following esteemed varieties to offer, in packets, 1s. each, containing 12 seeds:—

Sion House	Sagg's Royal Exhibition
Barnes's Fearnought	Conqueror of the West
Walker's Prolific	Improved Sion House
Constantine's Incomparable.	Manchester Hero.

Huntingdon Nurseries, Dec. 16.

TO GENTLEMEN ENGAGED IN PLANTING.

WATERER and GODFREY respectfully invite attention to their stock of the following very desirable HARDY PLANTS.

Araucaria imbricata, from 2 to 7 feet high; as handsome as plants can be.
Cedrus Deodara, in any quantity, from 1 to 3 feet high
Do. do., 4, 5, 6, 7, 8, and 10 feet high; splendid plants
Cedars of Lebanon, 3, 4, 6, and 10 feet high
Pinus Douglasi, 3 to 10 feet
" insignis, 2 to 7 feet
" Menziesi, 3 to 7 feet
" pinsapo, fine plants, 3 to 6 feet
" Nordmanniana, 1½ to 3 ft., all from seed and remarkably handsome
" nobilis, 1½ to 2 feet; a few larger, 5 and 6 feet high, on their own roots, and with perfect leaders
" Montezumæ, 2 to 4 feet
Pinus canadensis, 3 to 8 feet
Cupressus macrocarpa or Lambertiana, 4 to 7 feet
" thyoides variegata, 3 to 4 feet (the variegated white Cedar)
Juniperus, Upright Irish, perfect columns, 3 to 7 feet
" chinensis, 2 to 8 feet
Yew, common English, 3 to 6 feet
" Irish, 4 to 10 feet
" gold-striped, 1½ to 3 feet
" do., tall standards, 4 to ...
" Dovaston, or Weeping, worked on tall straight stems
Thuja aurea, the finest plants in the country
Libocedrus chilensis, the finest plants in the country
Large variegated Hollies
" Standard Bays

Also an immense stock of large Evergreens, Standard Ornamental Trees, &c.

All the plants here offered may be seen, growing in the Nursery; they are removed every year, and will travel any distance with perfect safety. Of some, such as Araucarias, Deodaras, Golden Yews, Thuja aurea, Pinus nobilis, Nordmanniana, we have any quantity; and the plants, for root and branch, are not to be surpassed. Priced Catalogues will be forwarded on application, enclosing two postage stamps, to Waterer and Godfrey, nephews and successors of the late Hosea Waterer, Knap Hill Nursery, Woking, Surrey, near the Woking Station, South-Western Railway, where all trains stop, and where conveyances can be obtained.

The 2d. stamp will also include a descriptive Catalogue of the American Plants Roses, and Nursery Stock in general.

LILIUM LANCIFOLIUM.

HENRY GROOM, Clapham Rise, near London, by appointment, FLORIST TO HER MAJESTY THE QUEEN, and to HIS MAJESTY THE KING OF SAXONY, begs to say that this is the best time to have Bulbs of the different varieties of this most BEAUTIFUL LILY. They are well adapted for the Flower Garden, American Borders, and Drives in Parks, being quite hardy. His Catalogue may be had on application.

R. PARKER begs to offer the following:— CINERARIAS (Seedlings), from all the finest varieties carefully selected, including the new varieties sent out last autumn. Strong established plants, in 4-inch pots, at 4s. per dozen. A choice collection of named Cinerarias in strong established plants, purchaser's selection, at 9s. per dozen.

ROSES, consisting of the best varieties of Hybrid Perpetuals, Teas, Bourbons, &c., well established in pots. Purchaser's selection, at 12s. per dozen. List of names forwarded upon application.

A remittance or reference to accompany all orders from unknown correspondents.

Paradise Nursery, Hornsey Road, Islington.

FLEMING'S HYBRID CASHMERE MELON.— The above new Melon was raised by Mr. Fleming at Trentham, and exhibited by him for the first time at the Great Meeting of the Horticultural Society of London at Chiswick on the 15th June last against a multitude of competitors, when it was awarded the first prize, and pronounced by the judges to be very far superior to all others produced, and decidedly the best Melon known. The entire stock is in the hands of the undersigned. Packets of Six Seeds, 2s. 6d.; of 15 do., 5s.

R. GLENDINNING, Chiswick Nursery, London.

GARAWAY, MAYES, AND CO. having succeeded in saving some fine SEEDS of that truly magnificent Lily, LILIUM GIGANTEUM, which are now well matured, they offer fine picked Seed at 25s. per 100. Fine, new, long prolific Cucumber Ne Plus Ultra, Victory of Bath, do. Syon House, Lord Kenyon's Favourite, Roman Emperor, Berkshire Champion, Manchester Hero, Pollington's Black Spine, Pollington's Early Prolific. Victory of Bath Melon, Bromham Hall, Cameron Court Green-flesh, Beechwood, with all other most approved kinds in cultivation, 1s., 1s. 6d., to 2s. 6d. per packet.

Durdham Down Nursery, Bristol, Dec. 16.

SUPERB HOLLYHOCKS, ROCKETS, SEEDS, ETC.

WILLIAM CHATER'S descriptive list of his superb HOLLYHOCKS, containing hints on their culture and observations on exhibiting, &c., may be had on application by enclosing a postage stamp. Packets of seed, consisting of 20 varieties, selected from the best show flowers, 5s.; 12 varieties, 2s. 6d.; and from good double sorts, 1s.

Very superior Quilled German Asters, 12 distinct varieties, separate, 2s., mixed 1s. per packet. Also Choice French Asters, 12 varieties, separate, 3s., mixed, 1s. 6d. Fine Quilled African Marigolds, lemon and orange, 6d. per packet.

New Double Crimson ROCKET, excellent bedding plant for spring flowering, 6s. per dozen, or 2l. per 100. Double French White, 4s. per dozen, or 30s. per 100.

Saffron Walden Nursery, Dec. 16.

BASS AND BROWN'S NEW AUTUMN CATALOGUE, supplied free for three Penny Stamps. They have this season a very fine and vigorous stock of the finest Roses, among which are a number of very superb new Continental varieties, consisting chiefly of the perpetual class. The following selections will be highly approved,

ROSES.

100 Standards in 100 very superior varieties	£7 10 0
100 " 50 " "	6 10 0
50 " 50 varieties ditto, all selected from perpetuals	4 0 0
100 dwarfs and half standards, or all dwarfs, in 100 very superior varieties	4 0 0
100 ditto in 50 varieties, ditto	3 0 0
50 ditto in 50 varieties, ditto, all from perpetuals ...	2 10 0
Fine mixed dwarfs, per 100	1 10 0

Hardy Herbaceous Plants, Hollyhocks, prize-named Gooseberries, Strawberries, Standard Dwarf and Trained Fruit Trees, Flower Roots, and a variety of desirable articles offered in selection for present planting, for which see Gardeners' Chronicle, Oct. 14, page 659, and Oct. 28th, page 690.—Goods, carriage free (not under 20s.), to all the London termini, and all Stations on the London and Norwich Colchester Line. Plants added gratis with orders of 40s. and upwards.

Seed and Horticultural Establishment, Sudbury, Suffolk.

NURSERY AND SEED ESTABLISHMENT, LEXDEN ROAD, COLCHESTER. (ESTABLISHED UPWARDS OF THIRTY-FIVE YEARS.)

HORATIO BUNTING begs to announce that his extensive CATALOGUE of FLOWER and VEGETABLE SEEDS is now ready, and may be had on application, by inclosing two postage stamps. He can confidently recommend the articles therein enumerated, as nearly every article is his own growth, true to name, and of first-rate quality. Early orders will oblige, as the quantities of Lettuce and several other things are limited.—N.B. Please to observe the Address.

AMERICAN PLANTS.

JOHN WATERER begs to announce that he has published a new Catalogue of his Rhododendrons, &c., as exhibited by him in the Gardens of the Royal Botanic Society, Regent's Park, London. It describes the colours of all the Rhododendrons considered worthy of cultivation, with a Treatise on their successful management, and may be had by enclosing two postage stamps.

The American Nursery, Bagshot, Surrey, near Farnborough Station, South-Western Railway.

AMERICAN NURSERY.

GEORGE BAKER'S DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS, &c., as exhibited by him in the Royal Botanic Gardens, Regent's Park, may be had by inclosing two postage stamps.

G. B. begs to call attention to his fine stock of Weeping Hollies, Coniferous Plants, Ornamental Shrubs, &c.—American Nursery, Windlesham, near Bagshot, Surrey, near Staines Station, South-Western Railway, where conveyances may be obtained.

AMERICAN PLANTS.—A Descriptive Priced CATALOGUE of HARDY AMERICAN PLANTS for the coming season is just published, and may be had by enclosing two stamps for postage. As everything in the way of American Plants is grown to an unequalled extent at this Nursery, intending purchasers would do well to provide themselves with this Catalogue.

WATERER AND GODFREY, Nephews and Successors to the late Hosea Waterer, Knap Hill Nursery, Woking, Surrey.

PYRAMIDAL PEAR TREES ON QUINCE STOCKS.

J. AND J. FRASER have to offer a very fine collection of the best varieties of PEARS grafted on the Quince; descriptive Catalogues of which may be had on application. In offering these Pears, grafted on the Quince stock, we would wish particularly to call attention to their many excellent qualities. They are very compact in growth, and most prolific in bearing, fruiting profusely while the trees are small; thus forming a great acquisition for a small garden. Planted by the side of walks, in addition to their utility, they add much to the neatness and beauty of a kitchen garden. Indeed too much can scarcely be said in favour of these miniature Pear trees; as a proof of their merit the demand for them is yearly increasing.

Strong Trees, showing Fruit Buds, 2s. 6d. to 3s. 6d. each.

Lea Bridge Road, Essex, December 16.

J. AND J. FRASER beg to offer strong Standards of the following new ROSES, viz.:—

HYBRID PERPETUALS.

Alexandrine Bachmeteff, 3s. 6d.	Mrs. Rivers, 2s. 6d.
Baron Heeckeren, 3s. 6d.	Prince Leon, 5s.
Comte de Nanteuil, 3s.	Souvenir de Leveson Gower, 5s.
Docteur Juillard, 3s.	Triomphe de Paris, 5s.
General Castellane, 5s.	Bouthon, Fayon, 2s. 6d.
Gloire de France, 5s.	Revel, 2s. 6d.
Jules Margottin, 5s.	Scipion Cochet, 2s.
L'Enfant du Mont Carmel, 3s.	Perpetual Moss Andre Thouin, 5s.
Le Leon des Combats, 2s.	Tea scented Melaine Willermoz, 2s. 6d.
Madame Domage, 5s.	Vicomtesse de Cazes, 3s.
Madame Fremion, 2s.	China, Citoyen de deux Mondes, 2s.
Mère de St. Louis, 2s. 6d.	

If one dozen are ordered the purchaser may select one in addition as a compensation for carriage. For a description of these new Roses, see Rose Catalogue, which may be had on application.—Lea Bridge Road, Essex, Dec. 16.

CUCUMBER AND MELON SEEDS.

JOHN CATTELL, Nurseries, Westerham, Kent, begs to offer the following sorts:—

CUCUMBERS.

First-rate sorts for early framing, &c., per dozen seeds, 13 penny stamps.

Sion House (Lord Keynon's Favourite)	Victory of Bath
	Manchester Prize
Emperor	Walker's
Man of Kent	Warwickshire Hero
Carpenter's Wonder	Kerryson's Prize
Norfolk Hero	Aban's Conqueror of the West

Approved sorts for frame or ridge, two dozen seeds, 13 penny stamps.

Cuthill's Long Black Spine	Cuthill's Black Spine
Do. do. White do.	Chamberlain's Prolific

MELONS.

Finest sorts, per dozen seeds, 13 penny stamps.

Allnutt's	Large Oval
Beechwood	Montreal
Bellegarde	Scripta
Bromham Hall	Trentham Hybrid (Persian)
Cantaloup	Victory of Bath

For description of Melons, see Advertisement in *Gardeners' Chronicle* of December 9.

RENDLE'S COMPLETE COLLECTION OF KITCHEN GARDEN SEEDS *will be ready in a few days. They can be had to suit various sized Gardens at the following prices:—*

No. 1 COLLECTION	£3 0 0
" 2 "	2 0 0
" 3 "	1 5 0
" 4 "	0 15 0

The quantities are fully detailed in their "Price Current and Garden Directory," a new edition of which is now in the Press.

WILLIAM E. RENDLE & CO., Seed Growers, Plymouth. ESTABLISHED 68 YEARS.

GENUINE GARDEN SEEDS.

LUCOMBE, PINCE, AND CO., beg leave to announce that they have just completed their supply of the above, all carefully selected from the stocks of the best growers, superior in quality and economical in price, to which they respectfully call the attention of those who require a really genuine article. Their long experience in the Seed Trade (always also proving the vitality of their seeds before sending them out) fully justifies them in saying that their seeds cannot fail to give great satisfaction.—Catalogues may be had on application.

Exeter Nursery, Exeter. Established in 1720.

STRONG GRAPE VINES FROM EYES IN POTS.

LUCOMBE, PINCE, AND CO. *have this season a fine healthy stock of strong* VINES *of all the best varieties, raised from eyes which they can specially recommend, as the wood is well ripened and the roots very vigorous.* They have a few extra-sized Plants in very large pots in a full bearing state.

They have also a quantity of fine healthy Peaches, Nectarines, and Figs, well established in pots in a bearing state. Prices and further particulars to be had on application.

Exeter Nursery, Exeter. Established in 1720.

The Gardeners' Chronicle.

SATURDAY, DECEMBER 16, 1854.

WE perceive that the remarks which have been made in this journal upon the CLIMATE OF THE South Western part of the CRIMEA have attracted the attention of the correspondents of our contemporaries, among whom are to be found some who continue to insist upon the extreme rigour of the winter in that part of the world, while others adopt more or less completely the opinions we have ventured to form from the evidence of known authorities. For ourselves, we beg to be excused if we prefer the statements of PALLAS and others, who speak from their own personal experience, to those of gentlemen who do not care to enable us to judge of the value of their testimony by giving their names. At present we adhere to the statements we have made; but if PALLAS was wrong we shall be ready to stand corrected, only it must be by some one having the same means of judging as PALLAS had.

Since this question is one just now of the highest interest we venture to repeat what we did say, in order to prevent misconception. On November 25 occur the following words: "On the hills it is cold enough we dare say; but there is no danger of the hands coming off with the gloves, or the feet with the boots, or of the musket barrels of our gallant troops burning their fingers. They are more likely to suffer *from rain than frost*, and we trust they will be effectually protected against both." If the reports from Sebastopol are to be credited, this view has been entirely confirmed by the event; for the camp is described as being so deluged with rain as to have become a sea of mud. On the 2d inst. we wrote as follows: "Upon the whole, we cannot doubt that the winter climate of the scene of operations is in no degree worse, at the worst, than that of Hampshire and Sussex."

What the mean winter temperature of our South downs may be we do not find recorded, but the following data, taken from Dove's tables, seem to bear out the opinions we have ventured to express.

	Mean Temperature	
	January	February
LONDON, Neighbourhood of	35·14	[illegible]
Nicolaieff	24·51	[illegible]
Sympheropol	[illegible]	[illegible]
SEBASTOPOL	34·27	[illegible]
Vienna	[illegible]	[illegible]
Moscow	[illegible]	[illegible]

From this we learn that the mean temperature of January at Sebastopol is not one degree lower than that of London. Even at Sympheropol, 700 feet above the sea, and nearly a degree to the northward, the difference is little more than 3°, and yet it receives the cold north easterly winds before they can reach Sebastopol. Assuming, however, that the heights of Sebastopol have the same temperature as Sympheropol, which is improbable, since the former is more screened and more southerly, even then the cold of January is little greater than that of York. We have no cold in these islands equal to that of the continent of Europe; but most people know that even at Vienna no such formidable cold is felt as that with which one of the correspondents of the *Times* has terrified the public; and yet at Vienna the mean temperature of January is 29·2°, or 5° lower than at Sebastopol. On the other hand, at Moscow, where consequences something like what is spoken of do exist, they are brought about by a mean temperature nearly 21° below that of Sebastopol, or 18° below that of Sympheropol.*

Let no one imagine that these remarks are intended to show that the winter clothing demanded by the troops is less necessary than has been represented. Certainly we have no such purpose. What we wish is that the truth should be known, without exaggeration, which produces much additional distress among the friends of our noble army of heroes, and can do no possible good. The facts are formidable enough as we put them, and there is no need of misrepresentation in order to show that the houses which are leaving London in December ought to have been erected in the Crimea at the latest in November.

When we first touched upon this subject, we did not contemplate returning to it. Since, however, we have been obliged to do so, in order to show that the opinions we have expressed have been formed upon the most accurate data that exist, and upon the evidence of persons long resident in the country, we venture to occupy yet a little space with some further remarks on the productions of the Crimea, in which we again trust entirely to the testimony of eye-witnesses.

Every gardener knows that in hard winters, even near London, Cistuses of all kinds are killed; but we learn from MARSCHALL v. BIEBERSTEIN that *Cistus creticus* is not uncommon (minime rarus) on the hills of the S. Crimea overlooking the Black Sea. PALLAS also relates that the Manna Ash, a tender tree near London, inhabits the warm southern dales; therefore the winters to which these are exposed cannot be worse than those round London. The same remark applies to the dyer's Sumach, *Rhus Coriaria*, which forms trees in the southern valleys, and which entirely justifies the inference we formerly drew from the presence of *Pistacia Terebinthus*, a tender tree common in the South Crimea, where it forms a trunk as thick as a man's body. We have lately heard the accuracy of our statement about the Caper plant questioned, and doubts expressed as to whether it really grows in the Crimea at all. We, therefore, beg to quote the words of our authority as to this: "Perfrequens in sterilibus subsalsis Tauriæ, ad pontum Euxinum, et in planitiebus

* Since the above was in type we have received two private communications upon this subject. In one the writer, who has some personal acquaintance with the Crimea, says "I have no doubt our troops are cold enough (at Sebastopol), but only from exposure to a temperature not lower in itself than that of its latitude near the sea—that, for instance, of the Apennines of Genoa, which exactly corresponds with Balaclava." The other correspondent says, "On consulting Dove's work on the temperature of the globe, with reference to the Crimean winter, I find the isothermal lines for October and March pass through England; for November through Brussels and Nashville, U.S.; for December, through Vienna, Berlin, and [illegible]; for January, through Berlin and Halifax; for February, through Vienna and Boston. From all accounts it is the wind which makes the cold more intolerable than in other places of like temperature. This would not affect the roots of plants such as those you enumerate." We have not Dove's work at hand, but the inference derived from his isothermal lines is difficult to reconcile with his own tables of temperature. For example, he gives the temperature of January at Sebastopol as 34° 27', and that of Berlin 27° 72, while to Halifax is assigned 20°. These numbers and the others that apply to other places and other months are so irreconcileable, that we infinitely prefer the unmistakable evidence afforded by vegetation. Such covering of snow as lies at Sebastopol could not have much effect upon Jujube *trees* (*Zizyphus vulgaris*, not *Jujube*), Terebinth *trees* with trunks as thick as a man's body, and Manna Ash *trees*, although it might upon Caper bushes, and even such a vegetation as that of Cistus creticus.

caspico-caucasicis. Colliguntur- Capparides ab incolis oppidi Kisljar et per omnem Rossiam divenduntur." (*Bieb. Fl. Taur. Cauc.*, II., 2.) This is said of the sharp-leaved variety of *Capparis spinosa*, called *ovata*. PALLAS also mentions the Caper bush, and says it is called Shaitan-Karbus.

PALLAS enumerates as many as 24 distinct varieties of Grapes cultivated either for wine or the table. Some of these are no doubt European varieties introduced, others are not recognisable as such. None of them appear to be of importance enough to deserve cultivation in this country. Far otherwise is it with the Apples of the Crimea, of which we hope that some of our officers will be able to secure cuttings when the fatigues of their campaign shall be over. PALLAS speaks of one called Sinap-Alma, which keeps till July, and only acquires its excellence before the new year. Of this we are told that waggon loads are annually sent to Moscow and even to St. Petersburgh. There is also an autumn Apple, which a friend, who was on the south coast in 1847 or 1848, thought by far the best he had ever tasted in any country.

We must not omit, in taking our farewell of the Crimean climate, to mention the existence of a Cobnut of extraordinary size, for a few specimens of which we are indebted to Captain GEORGE ELLIOT, R.M., of H.M. ship Arethusa, who obtained them at Eupatoria. PALLAS calls them Trebizond-Funduk, describes them as "short obtuse Nuts of uncommon size," and says that they are the produce of *Corylus Colurna*. What we have received are larger than any that we have before seen.

THE accompanying cut represents a very remarkable monster of CATTLEYA PUMILA OR MARGINATA, for which we are indebted to Mr. RUCKER. The reader will at once observe that the lower flower has wholly lost the lip which is so characteristic of the genus, in place of which is a flat petal exactly like the two others. The column exhibited no peculiarity. The case in question furnishes another example of the singular tendency which Orchids have to sport from their ordinary condition, sometimes assuming forms wholly alien to their usual nature, but not less irregular; in other cases attempting, as it were, to revert to that regular type of structure to which it is the business of theorists to reduce them.

A similar instance occurs in the *Dendrobium normale* of GRIFFITH, a plant occasionally seen in cultivation, which is also a sport from one of the common yellow Indian Dendrobes, but in that instance the column is also metamorphosed.

The loss of lip was not the only instance of transformation in the Cattleya before us. The other flower had produced a strong white tooth in the middle of its lip near the point, a circumstance which was owing to one of the three parallel ribs which naturally belong to the lip becoming free. The signification of this will be easily understood by the philosophical botanist.

FROM the many remarks formerly made in these columns upon the Lois-Weedon system of cultivation, our readers will be aware that we regard it as one of the most judicious examples of the application of science to practice, and of horticulture to agriculture, that has yet been recorded. We are, therefore, glad to be able to transcribe the following description of the present state of Mr. SMITH's Turnip crop from the letter of an eye-witness:—"Planted in single rows, 5 feet apart, the tops again met across the intervals in August; and at the beginning of September Mr. SMITH cut off the tops and buried them in the intervals as manure for his winter Beans to be sown the 1st of October. A fresh set of leaves was then thrown out from the crown of the Swedes, which evidently and beyond a doubt continued to grow; and when the crop was carted off a few days ago the sight of the fresh, green rows was really beautiful. It is a very heavy crop for the season, estimated, fairly I think, at 20 tons. It is very even, with a great portion very nearly as large as the two I send you. I understand that with a view to ascertain the real difference in quality as compared with Swedes treated in the usual way, Mr. SMITH has sent a couple to Dr. GILBERT, of Rothamsted, for comparative examination. The winter Beans were up before the Swedes were drawn off."

Of the specimens of Turnips, mentioned by our correspondent, one weighed 11 lbs. 3 oz.; the other 11 lbs. 14 oz.; they were not so solid as some we formerly received from Lois-Weedon, and were evidently not genuine Swedes, but belonged to some one of the hybrid races.

Having thus adverted to Lois-Weedon, we avail ourselves of the opportunity of announcing the appearance of a new edition of the "*Word in Season*," in the new prefatory matter of which will be found some excellent remarks upon the subject of clay—a subject so important to the gardener as well as the farmer; since the knowledge of the existence in that despised description of soil, among other fertilisers, of the costly potash which is indispensable to vegetation, cannot but be of service to the cultivator, whether horticultural or agricultural. But the subject is too large a one to be treated incidentally, and we must refer to it at length in some future article.

WE have had the misfortune, it seems, to hurt the susceptibility of a respectable German Botanist. In our number for April 22, of the present year, we presumed to criticise the "bad German habit of attaching to every supposed novelty a long Latin description, four-fifths of which are superfluous." At this Dr. STEETZ, whose contributions to the Botany of the *Herald* called forth the remark, has taken offence. We really had no intention to say anything disagreeable to the learned gentleman; but it was our duty to animadvert upon a pernicious though well-meant practice, which has already rendered systematical Botany more chaotic, and infinitely more uninviting than it was when Linnæus swept away its rubbish; and upon reperusing the remarks in question, we are at a loss to know in what manner our opinion could have been expressed with greater courtesy, so that our meaning should be unmistakeable. Surely Dr. STEETZ cannot think himself above criticism; and most certainly we have not regarded him as being beneath it.

The evil of which we presumed to complain has become so notorious, that proof of its existence is superfluous. It may, however, be worth while to point out what it goes to. In the instance before us we found four Compositæ, belonging to two vulgar genera, published as new species, each accompanied by the average number of thirty-one lines of technical description, or about ¾ of a quarto page. If works are to be written upon such a system, every species of plant will occupy, on an average, one quarto page, for mere technical matter, for to the description must be added the space required for synonyms, references, &c. Now, there are thought to be about 100,000 species of plants already discovered, a calculation which the majority of our botanical contemporaries will regard beneath rather than above the truth. The mere technical descriptions of them would, therefore, occupy a hundred thousand quarto pages, or *two hundred quarto volumes*, of 500 pages each. We venture to think that such a result, which would put an end to the study of systematical botany, is one that should be averted, if possible, by the friends of science, especially when it is considered that, in addition to the evil of tedious, prolix, and wholly unnecessary details is added the terrible and growing evil of multiplying what are called species to the most preposterous degree.

The truth must be told, whoever may be hurt by it. There is no doubt that some writers endeavour to conceal in a fog of mere words the want of clear and well-defined ideas, as well as of that critical knowledge which is indispensable in Natural History. And it is out of this that has arisen that legion of botanical phantoms which so effectually bewilder the inexperienced.

VEGETABLE PATHOLOGY.—No. L.

222. Besides the direct ravages of insects, diseased states of the tissue are produced by the punctures made by insects with a view to the deposition of their eggs. The presence of a strange body causes an abnormal development, and diverts a portion of the nutritious matter which should have gone to other parts. Galls, however, are seldom injurious, except when they grow on the organs of fructification. A case, indeed, has lately been recorded in this journal in which the production of a large gall on Oaks prevented the formation of fruit, and wherever they are produced abundantly there can be little doubt that the plant must suffer.

223. The injury derived from the animal world, though occasionally very great, is not in general to be compared with the more insidious attacks of vegetable parasites. As before remarked respecting predatory insects (with one or two exceptions), it is not the larger and more evident which are most destructive. A few phænogamic parasites indeed inflict from time to time considerable injury, but the minute parasitic fungi are always at work, pervading the tissues of the plants, at whose expense they live, and only waiting a favourable moment for their development.

224. The parasitic fungi vary considerably in habit, and are either real or merely apparent parasites. Those which flourish in the healthy sacs of the constituent tissue, or whose mycelium traverses their interstices in search of food derived through the cell walls by means of endosmose, or those, again, which are either wholly or partially external, imbibing nutriment by means of little swellings, which may be compared to the processes on the stems of Cuscuta, are entitled to the name of real parasites, while those which are developed in the first instance on decayed matter, even though they ultimately cause the death of subjacent structures, can be considered merely as false parasites.

225. That certain fungi do fructify within closed cells and those to all appearance healthy, has been proved by several observers, and unless spontaneous or equivocal generation be admitted, it is equally certain that particles capable of producing fungi do traverse the tissues of healthy plants. Of those fungi, then, whose reproductive bodies, in whatever condition they may be, for the matter is oppressed with almost impenetrable difficulty, circulate with the juices in various parts of the plant, a vast number do not arrive at their perfect growth till partial or complete decay takes place. In some cases a diseased condition may be induced by the fungi, but this is not always true, as the parasites do not appear till cold or some other sufficient cause has produced fatal effects. The death of such fungi as have fructified within the cells, especially if they are at all numerous, may very possibly communicate a putrefactive taint to the surrounding cell walls, and produce disorganisation of the tissue, ending in more or less complete decay.

226. Many, however, as the whole tribe of fungi which produce rust and smut, with the exception of a few species only, do not fructify without establishing a communication with the external atmosphere, sometimes immediate, and sometimes through some thin interposed tissue. In many such instances the neighbouring tissue is to a great extent decomposed, and

either the general health of the plant is affected in consequence of the diversion of a large portion of its juices, or partial organs, especially those of fructification, are entirely destroyed. In a few cases, as in the gelatinous parasites belonging to the genera Podisoma and Gymnosporangium, which affect the different species of Juniper, and in Cyttaria, a genus which grows upon living boughs of the Beech trees of the southern hemisphere, the mycelium when once compacted into a cushion-shaped mass, produces year after year a new crop of fungi, ending in the destruction of the branch which has been attacked, and ultimately of the whole plant.

227. The white mildews are, for the most part, either wholly superficial or luxuriate in the large intercellular spaces of the spongy tissue, or the under sides of leaves. The same species, as for instance the grape mildew, is sometimes strictly superficial, and sometimes originates within the leaves, protruding its fructifying threads through the gaping stomates. In either case it lives upon the juices of the leaves and impedes the action of air and light, though not so completely as the black sooty Fumagos which are the pest of the Orange, Olive, and Coffee plantations of warmer climates, which are probably maintained by imbibition of matter from the atmosphere more than from the plants on which they grow.

228. The larger and more highly organised fungi are produced mostly on perennial plants. They originate probably in the first instance without exception on tissues already passing into decay; but inasmuch as their mycelium is perennial, when once it is established, as fast as the neighbouring tissues become tainted with diseased matter acting as a putrefactive ferment, it pushes forward its threads in search of fresh nutriment, and thus gradually effects the destruction of the largest trees. When such fungi for instance as *Polyporus squamosus*, *P. hispidus*, &c. make their appearance, the tree affected may be considered as doomed, though it may take some 50 years before the total destruction has been accomplished. Lichens and Mosses do not live upon the juices of the plants on which they grow, and so long as they are confined to the older parts, as the thick bark, they do no injury, but on the thin branches in which the tissues are still partially acted upon by transmitted light, Lichens are certainly injurious, and require to be checked or wholly removed. *M. J. B.*

BEURRÉ CLAIRGEAU PEAR.

At the exhibition of the Pomological Society, on the 6th of November, and of which a report is given at page 727 of the *Gardeners' Chronicle*, it appears that three fruits of the Beurré Clairgeau were exhibited; two of these from a wall with a south-east aspect, and the other from a pyramid on the Quince stock. These fruits were tasted; but part of the decision of the judges, we think, they will some day alter, when they have an opportunity of again tasting the fruit. All agreed that the fruits were remarkable, and they found that the flesh was tender and juicy, but not buttery, and the flavour watery and flat; and, accordingly, the variety was ranked second-rate.

The variety has but recently commenced bearing, and consequently its properties cannot be positively judged. The trees which bore the fruits in question have not been long enough planted to enable them to give to the fruit all the qualities it naturally possesses; perhaps there may have been other causes which ought to have been taken into consideration. Some account of the history of this variety may be interesting to pomologists.

On the 22d of October, 1848, Peter Clairgeau, a gardener at Nantes, France, exhibited to the Horticultural Society of that place specimens of fruit, obtained from the seedling tree, in order that they might be tasted, and their merits decided on. The form having been considered perfect, and the flavour excellent, M. Jules d'Airoles, Secretary of the Society, opened a subscription in order to obtain the seedling. A notice, accompanied with a drawing of the fruit, appeared, February 15th, 1849, in the "Revue Horticole" of Paris. According to this, maiden plants were to be supplied to the subscribers in the following autumn, provided the number of subscribers amounted to 200, but this not being the case, the trees were not delivered. In the meantime we had an opportunity of seeing two members of the Horticultural Society of Nantes, and we subjoin their statements respecting the vigorous growth of the seedling, even on the Quince stock; the beauty and good qualities of the fruit, two specimens of which we have now before us from Nantes. It remained to be ascertained whether the qualities would be the same in our climate. This was doubtless a difficult problem to solve. On the recommendation of M. d'Airoles we subscribed for ten specimens. The resolution was taken to cover the subscriptions and to purchase the seedling. It was thus that the parent tree and three hundred plants propagated from it, on Quince, were planted in different situations as regards soil and aspect in the open ground in our gardens. Moreover, a number of grafts, taken from the upper part of the original tree, were worked on stocks at standard height. From that time we have observed this plantation during the periods of its growth, flowering, and fruiting; and we have examined the fruits at the time of their maturity. In the autumn of 1851, nearly all the plants that had been two or three years propagated on Quince bore from three to six fruits, not only in one part of the garden, but in the different situations in which they had been planted. This circumstance is a proof of the hardiness and fertility of the variety. However, it was resolved not to send out a single plant until all the fruits grown on the Quince stock had been tasted. Among these fruits, some which commenced to ripen towards the 20th of October were found inferior in quality to those received from Nantes; but among some very large fruits grown on trees planted in excellent soil, we tasted several whose quality was equally as good as at Nantes. The maturity of the latter occurred about the 25th November. Having paid attention to this variety, we had a description made of it, 8th October, 1851. This was inserted at p. 143 of the "Album de Pomologie," accompanied with a figure of a handsome fruit, obtained in our grounds, and drawn from nature by a good artist, M. Yerna, of Brussels.

[The following are some extracts from the description alluded to; the original tree appears to have been raised about 1835 or 1836. The young shoots are short-jointed, of a bright brown, dotted with white specks; leaves nearly flat, lanceolate, the margins finely toothed. The parent tree was transplanted from Nantes to Brussels in the month of November, 1850, and had then many of its upper branches furnished with vigorous spurs.] The fruit was tasted on November 23, 1851, by M. Bivort, editor of the "Album de Pomologie," and the description was then completed. The fruit was very large, pyramidal, sometimes flattened on the side, and curved, about 4½ inches in length, and 3¼ inches in diameter. Stalk short and very thick, but not fleshy, obliquely inserted. Eye in a small shallow cavity. Flesh white, fine, melting, buttery, with abundance of sugary and agreeably perfumed juice.

The Commission Royal de Pomologie Belge has given in its Annales, p. 29, a notice equally favourable. M. d'Airoles, of Nantes, who has seen the original tree in bearing for eight years, and the fruit of propagated plants for four or five years, has given a description of the variety, which is inserted in the *Gardeners' Chronicle*, p. 388. In our Catalogue for the spring of 1854 we have stated of the Beurré Clairgeau:—Fruit very large and long. Flesh melting, ripe in November and December. Tree vigorous, suitable for a wall, pyramid, and standard. There is, then, a great difference between the appreciation of the fruit by the British Pomological Society, from specimens obtained from Redleaf, and that by M. d'Airoles from fruit grown at Nantes, and also that by M. Bivort, from the produce of trees on Quince, in my garden.

Although we have cultivated this new variety of Pear during four years, we should not wish to constitute ourselves the arbitrators between the different opinions respecting the merits of the fruit; for we know, from long experience, that a certain lapse of time is necessary, and which experimental connoisseurs fix at from 5 to 20 years, from the period of the first production of a new fruit before, in consequence of comparative observations, a definite opinion can be given of the real merits of the variety. All that we can say at present is, that this new variety, the Beurré Clairgeau, originated at Nantes, is the most vigorous, hardy, and productive of all new sorts received from France. In order to preserve its qualities from deterioration in the climates of Belgium and England, we are of opinion that the variety ought to be worked on the Pear stock; or if worked on the Quince, the grafts should only be taken from trees growing on Pear stocks; otherwise the trees will degenerate in vigour and produce. The quality of the fruit will every year improve as the trees get better established, and are placed in situations found to be most favourable, as is the case with all other varieties of which the qualities approach to first-rate. With regard to the period of maturity, we may here mention that in four years we have had fruit ripe from the 20th of October till the 25th of December. The mean period appears to be the month of November. Without in the least suspecting the sincerity of any one, we believe we shall be rendering a service to amateurs by stating the results of actual experiment. *De Jonghe, Brussels, Nov. 13.* [Two ripe specimens accompanied this letter; one from a Pear stock, the other from a Quince. Both were melting, high-flavoured, and excellent; and by no means inferior to the best varieties of the season.]

FORCING THE RASPBERRY.

Fully acknowledging the intelligence and superiority of the English gardener above the continental ones, I yet venture to direct attention to the forcing of a fruit shrub, which seems to be doomed to oblivion, and which yet offers us such an excellent dessert. I mean the Raspberry, when forced, to be ripe in the latter end of May and June. I shall ever remember the splendid crops of the sweetest flavour which we raised when I was a journeyman at the Royal Hanoverian Gardens in Germany. It is true the Raspberry cannot be ranked as a first-rate dessert fruit even among the low growing fruit shrubs, but when the dessert has been ornamented for weeks with the universal favourite, the Strawberry, the Raspberry forms a good succession in the list of forced fruit, and is welcomed by our German gentry as a most desirable change.

Being a reader of the *Chronicle* for four or five years, it has been my custom to look through the columns for fruit growing and forcing with great interest, but I do not remember ever to have seen or heard anything relative to the forcing of the Raspberry. It is, however, very easily forced, and with uniform success. The *modus operandi* at the Royal Gardens of Hanover was as follows. In the latter end of October, when in our country vegetable vitality has ceased, we selected quantity of canes, choosing those which looked the most promising with respect to fruit buds. Without bestowing the exactitude which guides the English gardener in all his operations, we merely lifted them, picked off the embryo buds on the roots, which are so very troublesome during forcing if not removed betimes, and left as much soil on the balls as would adhere to them in lifting. We then potted them in 12 and 14-inch pots each, according to the size of the ball, cramming the roots rather than allowing them too much room. No especial compost was prepared for them, but the common garden soil was used, being in itself composed of rich and alluvial ingredients. After potting they received a good soaking, and were stored away behind a north wall or sheltered vacant place, and surrounded with a good thick layer of tree leaves when frost was threatening to set in.

French Beans were forced in the said garden very extensively, and the front shelves of the Bean houses were generally intended for an early set of Raspberry pots. But it is not my wish to enter into details about the early forcing of them, for in February and March they are rather deficient in flavour, and a plague in the houses, on account of the innumerable green flies which attack them if not very carefully syringed. We had, however, an upright wooden frame about 30 feet long, 5 feet high, and 4 feet wide inside measure. In this frame the Raspberries grew admirably. No artificial heat was applied, the frame being surrounded back and front with stable litter. Airing was performed on the top of the frame by pushing a piece of wood between the lights and the framework. In February the pots were brought into this pit, which was permitted to receive as much solar heat as was considered to be consistent with proper ventilation during the following months.

As the sun became more powerful syringing was necessary, and plenty of water was applied to the roots, and also to the old tan bed, in which they were plunged, in order to maintain a humid atmosphere. The young shoots were carefully tied to the back of the frame, giving each shoot room enough to be fully exposed to the rays of the sun. I forgot to mention that the canes were reduced to a length of about from 3 to 3½ feet previous to their being started in the frame. The neighbourhood of a few beehives, and plenty of air being allowed to play about the plants, rendered artificial fertilisation unnecessary.

By the above treatment we had a crop of Raspberries after the middle of May, and in June, which, I dare say, was unrivalled. Indeed, my employer enjoyed a high reputation for his Raspberries at the Court. I have myself every morning cut two or three scores for three weeks, dished them up in nice little baskets with a margin of bright green foliage so temptingly, that the Royal gardener used to allow no one but me to gather them. *It will thus be seen how little skill, comparatively speaking, is necessary in order to insure a good crop of this truly estimable berry.*

Respecting watering, I am decidedly of opinion that this should be done copiously, between the flowering and colouring. At that time they are greedy devourers of it, and as they have had no chance of establishing themselves after being potted, they are compelled to make up for the deficiency of newly made feeding rootlets by absorbing the water rapidly. Of course during the ripening process the supply is slightly diminished, and the then powerful sun gives the fruit a most delicious flavour. The end of August would doubtless be a more preferable time for potting, as they would then have time enough to establish themselves before winter, and would be in better condition for forcing, their treatment having been better suited for it from the beginning. My principal object, however, has been to show the facility with which this shrub can be forced, even when unestablished, which is so very important a point in the case of other fruits or flower shrubs in pots.

In conclusion, I must observe to those who may consider the Raspberry a mere second rate kitchen garden fruit, of no value except for preserves and jellies, that the forced Raspberries are far superior in flavour to those grown in the open air, and have always been graciously accepted by the late King of Hanover and the late Duke of Cumberland, as well as by his courtiers, whose palates, I presume, might be considered authorities in such matters. *T. v. S. (of Germany.)*

New Plants.

106. Linum grandiflorum, *Desfontaines*. We find in the last No. of the "Flore des Serres" a figure of this plant, which, if to be relied upon, shews that the species in question must be one of the finest annuals in cultivation. It has been already noticed at p. 39; but nothing then known to us led to the supposition that it could equal what is represented by Mr. Van Houtte's artist, according to which the flowers are at least 1¾ inch in diameter, and the colour of the deepest crimson Anemone. We are informed that it has succeeded perfectly with Mr. Van Houtte, in the *dry sandy soil* of his garden. The seeds were sown in the beginning of May. He calls it an "adorable" plant. He, however, points out the important fact that a very inferior plant bears the same name in trade, namely the Linum procumbens, also an Algerine species. This has been dispersed by the French seedsmen, from whom it was received by the Horticultural Society among others. It is a poor thing, looking like a dirty red Linum perenne, and not worth a moment's attention.

Home Correspondence.

Gynerium Argenteum.—How this has got the name of Pampas Grass I am at a loss to guess. It has been my misfortune to cross the Pampas twice, and no such Grass is to be found there—nothing but miserable brown stunted Grasses as far as the eye can see. The first time I saw the plumes of this Grass was at Corrientes, on the river Parana, in La Plata, but I was not able to find the plant growing till some months after, when I saw it at Cauza, on the Pilcomazo, a branch of the river Paragua, where it is abundant on the rich moist banks of the river. I saw it again at Sanguexuga, on the Paranat, in about lat. 19° S., and in several other places in San Paulo, in Brazil. I do not believe that it is found near Monte Video, but as I sail in a few days for South America I will do what I can to ascertain the fact, and procure seed, which I will forward to the Horticultural Society for distribution. A friend informs me that a short time back he saw at St Vulcen's, near Dublin, two plants of this Grass, which are probably the finest in Europe: one plant had 62 and the other 48 flower stems, 10 feet high: these plants are 11 years old. My friend was informed that the gardener at Woodlands, near Dublin, has propagated this plant with success—a fact at which I am not at all surprised, considering the knowledge he has of the habits of southern plants, having studied their growth in their native wilds. I last met him on Mount Santa Nova, in Brazil. I have not the least doubt that he can, if he feels inclined, throw some light on the subject in question. *A. W., Liverpool.*

"First Steps to Economic Botany"—Perfumed Teas.—In your Notices of Books last week your comments upon the above little work just published by me are less favourable than I could have hoped. "The First Steps to Economic Botany" is simply an abridgment of my "Popular Economic Botany," which you did me the honour to approve rather highly; you, however, pointed out some errors in a kindly spirit, and I thankfully accepted the correction, well knowing your more extensive means of information gave value to your suggestions. The errors you now mention were in that work, which doubtless contained many more not yet pointed out. This, I think, is almost a matter of course in the present state of our information respecting raw materials: I could point out very many in works professing a much higher character than mine. I will not attempt to defend the use of the term *hilum*, which word seems to employ an adhesion to Turpin's theory of the nature of starch granules; but it must be conceded that the term has been much employed by many authors of eminence, who have been perfectly aware that the granules are not adherent by the *umbilicus*. But, with respect to your remarks upon the perfumed Teas, I must protest against their correctness. I am sure, from actual experience, that you are in error. My daily occupations bring me in contact with the vast Tea imports of the Port of Liverpool, and many thousands of boxes of scented Teas have been examined by me this year. Orange Pekoes and scented Capers I believe are wholly perfumed with the flowers of Olea fragrans. Orange Pekoe is the most common scented tea, and if you examine a package you will find every leaf so beautifully twisted that the most perfect similarity exists throughout the whole of them; there are no fragments of any kind, and certainly not of Chloranthus flowers or leaves; but in the bottom of the package you will find about a tablespoonful of dust in which the minute petals and buds of Olea fragrans are often visible; the perfume of the Tea also is exactly that of the fragrant Olive. Scented Caper from its peculiar manufacture does not admit of such easy proof, but the odour is exactly similar. In the scented Tea, called "Flowery Pekoe," and in those green Teas which are sometimes perfumed, you may detect the fragments of Chulan in great abundance, but the odour of these Teas is not so much like Cowslips as the higher scented ones before mentioned. Moreover they are not so common as the orange-scented Pekoes and scented Capers, which now form a very large proportion of our imports. If I have been misinformed as to the growth and preparation of Teas in India, I shall gladly make the correction should I ever have the opportunity. I, however, thought I had consulted the best authorities. I have for many years read your Paper, and I should read with great satisfaction any article upon this interesting subject. *Thos. C. Archer, Higher Tranmere, Cheshire, Dec.* 11. [We should be the last to depreciate the merits of Mr. Archer, whom we know to be a zealous and experienced investigator of the history of imported vegetable substances; nor should we have thought it worth while to criticise minutely the little work which has elicited these remarks had it not been intended for the young or very ignorant. Books for their use require to be written with the utmost care, for minute errors become in their minds the fruitful parents of misconception and confusion of ideas. If it is worth teaching young people such subjects as economic botany, and we think it extremely desirable, everything uncertain or conjectural should be omitted. It signifies little how small is the amount of knowledge that is conveyed to the young mind, provided it is incontestably true as far as it goes. With regard to the question of *Olea fragrans*, we can only say that if our correspondent will favour us with a little of the dust he speaks of. we will [illegible] report [illegible] will examine it and publicly the result.]

Crocus Beds and Mice.—My Crocus beds are infested with mice to such a degree that I fear I shall not have a single blossom in the spring. Can you advise me how to set about remedying this evil? *F. R. S., The Bowers, Burkisland, near Halifax, Dec.* 8.

Early Cruffle Potato.—As this is a first-rate sort of Potato, and not generally known in the south of England (at least under this name), I am anxious to bring it under the notice of your readers. It is extensively grown here, much valued, and sells one-fifth higher than any other Potato, except of course the Ash-leaf, when it first appears in the market. It is an abundant bearer, of pretty good size, very round and slightly rough, with very shallow eyes. It, moreover, is an early kind, coming in 10 or 14 days after the Ash-leaf Kidney; and when it comes out of the pot, it cannot be surpassed for mealiness and excellence; since the disease appeared I have eaten none so good. I am of opinion that it should have the greatest breadth given to it both in the garden and on the farm. A correspondent in England thinks that the early Champion, spoken highly of there, is the same as our early Cruffle. He sent me a small one by post, but I am not quite sure that they are one and the same kind of Potato. *A. Pettigrew, Ballymenoch, Belfast.*

Cupressus Lambertiana and macrocarpa (see p. 789).—The distinction between C. Lambertiana and macrocarpa (or the plants so sought to be distinguished) seems to reside, in the absence of their respective fruits, in the stronger resinous scent of the latter when rubbed. Many Conifers have a tendency to vary in habit, *e. g.*, the upright and horizontal Cypress, the upright and horizontal or spreading red Cedar—perhaps C. torulosa and others might be added. Let the cones and flower be compared, and the question will be decided. *S.*——I do not think that C. macrocarpa and Lambertiana are synonymous. C. macrocarpa is in growth and habit superior to that much admired variety, C. Goveniana; its beautiful light green foliage and compact vertical growth, together with its extreme hardiness, make it more valuable than C. Goveniana, that variety being very apt to lose lateral branches by frost, which injures its appearance; a thing which very rarely occurs with macrocarpa. With us C. Lambertiana has foliage of a much darker green, and set, as Mr. Ayres says, horizontally; and although the young growth of the tree has rather a straggling appearance, it does not increase in size so rapidly as C. macrocarpa, until it attains the height of from 8 to 10 feet, when it works its way up more speedily than C. macrocarpa. It is easy to separate the two sorts from a bed in which they are intermixed by two important points, viz., C. macrocarpa seems to overgrow itself so much as to lack strength to support its elegant leader. Lambertiana, on the contrary, "as I have noticed in the very fine collection of Messrs. Lucombe and Pince, of Exeter, where they were side by side," grows more robust than macrocarpa, and promises to make a finer tree. That they are two distinct varieties we cannot doubt; but has the Horticultural Society no records of their introduction; if it examines it will doubtless find that though both come from California they are from different parts of that vast tract of country. Perhaps some one who has been in California, and seen them growing there, may be able to throw some light on the subject. *Aspasia Devoniana, Exmouth.*

Orange Trees.—Having a lot of these favourite trees under my care not doing so well as I should like, I am induced to ask some of your correspondents who manage Orange trees successfully what can be the cause of my failure, which consists in their foliage changing to yellow in summer, and to a great extent dropping off. They are kept in a large metallic house (glazed with 21-ounce sheet glass), which was built two years ago, partly for the Orange trees, and partly for a late vinery. The house is furnished with pipes connected with the boiler of another house. The heat is, however, never turned on except on frosty nights, when it is required for other plants, which are kept in the same house. The Orange trees are from 5 to 8 feet high, and are planted in red deal boxes, 2 feet square, in which they have all been planted within the last four years, from the boxes of the same size, which were decayed. The boxes are filled up with a compost of very rotten turf, taken from a sheep pasture, with some leaf mould mixed with it, and each box has 2 or 3 inches of broken tiles in the bottom for drainage. The trees are arranged along the principal walk in the kitchen garden from the beginning of June until the beginning of October, exposed to the full influence of the sun; and they begin to turn yellow soon after they are taken out, and after being out about a month they begin, as I have stated, to drop their foliage; and soon after they are taken indoors they begin to break out all over afresh. Several times in summer they are watered with liquid manure, and the surface of the boxes is covered with sheep dung. They flower abundantly in the spring, and bear an enormous quantity of fruit, some of them very large. A few years ago they were grown in a house having glass only in front, and which never had any artificial heat applied to it in winter, and they were turned out under the shade of large trees in summer. They remained then always very green, flowered in summer, and never bore any fruit. Some advice on the subject would much oblige. *A. M. D.*

Beurré Superfin.—This and the Cumberland Pear are two distinct varieties, and neither of them was raised by Dr. Van Mons. Beurré superfin originated at Angers with M. Goubault, where the original tree is still growing, a fact which M. de Jonghe can satisfy himself of either by writing to the President of the Horticultural Society there or by ocular demonstration the first time he visits that place. The Cumberland is an American variety, and the original tree is still existing where it was raised, at Cumberland in Rhode Island, hence the origin of the name; so that the story about the Duke of Cumberland is entirely fabulous. That Dr. Van Mons was the first to disseminate the Cumberland Pear in Belgium is not at all improbable; but that he raised it is not the case. These two Pears therefore being distinct varieties, there can be no doubt that M. de Jonghe is growing the Cumberland for Beurré superfin; and that M. de Jonghe does not know Beurré superfin is also evident from the fact that the description he gives of that variety in the *Gardeners' Chronicle* is a *verbatim* copy of the description of the Cumberland Pear, taken from the "Album de Pomologie," and not from observations of his own. The description I have of Beurré superfin, taken from observations of my own, is — Fruit obovate, narrowing abruptly towards the stalk; skin lemon coloured on the shaded side, but considerably covered with thin pale brown russet. On the side next the sun it is so much covered with cinnamon-coloured russet that none of the ground colour is visible, except small spots here and there, and the whole of that side assumes a slight orange tinge when fully exposed to the sun's influence. The stalk is woody, but fleshy at the base, $1\frac{1}{4}$ inch long, and inserted without depression; eye very small, set in a shallow basin; flesh very fine grained, buttery and melting, very juicy, with a brisk and piquant flavour peculiar to itself, and with a delicate perfume of musk, which is so slight as not to offend the most fastidious taste. Ripe in the middle of October. *Robert Hogg.*

The Fluke Potatoe.—I had a small quantity of this Potatoe given me by a friend in March last, for the purpose of testing with other sorts its capability of resisting the disease. Although it has not so fully maintained its high character here as to be proof against the attacks of the evil, it has notwithstanding been so little affected compared with all other sorts, both early and late, grown precisely under the same treatment, that I consider it worthy of recommending for more extensive cultivation. Although the crops were much injured throughout the north of Scotland by early attacks of the malady, yet there were evident signs of its getting weaker, and of its losing much of that virulence which it had in former years, when whole fields would change colour in a week or ten days. The plague-spot was first observed here on the 2d of July, on some early sorts, and it soon afterwards became general in the fields, but so slowly did it progress, that those which were planted late were still green in the fields near the end of September, and the Flukes above mentioned growing adjacent to where the disease first broke out were still partly green in the first week in October, and upon taking them up a few only were found to be diseased: they were a large crop and of excellent quality. *J. Webster, Gordon Castle, Dec.* 11.

Grape Growing (see p. 774).—Will Mr. Hall be so kind as to furnish the names of the varieties of Grapes which he grows to the weight of 6 lbs. per bunch. If he alludes to the Syrian or White Nice, I do not think very much of it; but if he grows Black Hamburghs, Muscats, &c., to that weight, then I must confess that he is leaving some of us in the rear as regards Grape growing. *A Grape Grower, Dec.* 12.

Pear Growing.—That the public discussion of a subject is likely to elicit something useful there can be no doubt, provided the subject is conducted with candour and a close adherence either to facts or well grounded opinions. Now in the matter of "Pear growing," I find myself opposed to persons I did not expect to see ranged against me, and I somewhat reluctantly take up my pen in defence of the party by whom our metropolis is in a great measure supplied with fruits, and feel surprised at some of the reasons thrown out why we are not able to do so more extensively. Mr. May says that the crop of Pears is often lost owing to the careless way in which the fruit is gathered the preceding year. This idea is certainly entirely new, and exactly at variance with what, since a boy, I have been led to believe; for we invariably encourage rather than try to prevent the breaking out of some of the spurs or embryo buds, thinking that in so doing the remaining ones will attain more vigour that autumn, and blossom stronger the next year. Mr. May also tells us how to mix the ingredients in which the trees are to be planted; this is no doubt very well, and in the places he mentions will for a time doubtless be attended with benefit: but I would like to ask him if he ever knew a case wherein Pears were profitably grown for the world's market (not private sale) on ground which required so much artificial preparation (remember I grow for the million and not for isolated individuals who might perhaps be inclined to put a fictitious value on the trees they use); and I may state further that the ground my Pears are growing on contains by nature most of the ingredients Mr. May advises to be added by art, for it is a light hazel loam resting on a sort of soft shingle, which at the depth of a few feet becomes gradually harder until it merges into limestone. This dry substratum seems to suit most sorts of fruit trees very well, for they generally thrive and produce abundance of blossoms; but, alas, it does not become all fruit, neither does it always happen that the fruits which it does produce are alike in quality. During the present year I gathered 3 or 4 bushels of fine healthy Crassane Pears from a young tree, which last year produced only a peck or two of gnarled, cracked, useless rubbish, and the Beurré Diel and Duchesse d'Angoulême presented similar symptoms of diseased fruit last year, and have been good this. Now

assuredly no one will say that the above result was owing to any particular treatment they received, since that was the same in both seasons, and no quantity of brickbats, rubble stone, or mounds of compost mixed with mathematical precision could have prevented it. The question therefore arises—"Are the varieties we are in the habit of growing the best adapted to our climate?" On this subject I have considerable doubts, though I have but little hopes of our ever competing successfully with our continental neighbours, while we have our usual atmospheric influences to contend against. Some horticultural writers have sneered at what they call our bad management, but I can endure it very well, until it can be pointed out how I am to make sure of a good crop of Pears each season, by some mode not more expensive than the extra value of the fruit. Until this is done, I must be content to let my trees remain where they are, some of which are three-quarters of a century old, and be satisfied with gathering such fruits as our precarious seasons admit of. I am willing, however, to try experiments, but I feel less sanguine that way than I was some twenty or more years ago. Nevertheless, some of the points insisted on by M. de Jonghe shall have a fair trial, and I may add on as fair a field for the purpose as most have. *H. S. H.*

Societies.

Linnean, *December* 5.—W. Yarrell, Esq., V.P., in the chair. N. B. Ward, Esq., exhibited a series of specimens of Asplenium lanceolatum, collected on disintegrating sandstone banks in the island of Jersey. The specimens, which had grown almost close to each other, were intended to show the effects of exposure on plants of this nature, those from a situation densely shaded by surrounding vegetation having formed vigorous well-proportioned fronds of from 15 to 18 inches in length; whilst others from the upper parts of exposed banks of the same soil were only from 2 to 3 inches long, and altogether stunted in appearance. Other specimens from the interior of a well showed a corresponding vigour of growth with the former. The following papers were read:—1. "On Decaisnea, a remarkable genus of Lardizabalaceæ," by Drs. Hooker and Thomson. 2. "Notice of a large fish left by the tide on a sand bank in Tees bay in September last," by J. Hogg, Esq., The fish was determined to be the Tunny, and was remarkable from the presence of hard horny scales embedded between the layers of the thick skin of its back, forming a very powerful defence against external attack. 3. "Observations on the identity of Pinus (Abies) hirtella and P. religiosa of Humboldt and Bonpland," by Dr. Berthold Seeman, and also communicated by the same, 4. "Remarks on Fossil Palms," by Dr. Goeppert of Breslau. In the remarks on the Abies, Dr. Seeman observes that, finding the specimens collected by himself in the western parts of Mexico, as well as those named A. religiosa in the herbaria of Sir W. Hooker and Mr. Bentham, and those growing at Kew and in other establishments, all to have hirtellous branches, and the only difference between the two species above named, insisted on by authors, consisting in the one having glabrous and the other hirtellous branches, he was led to suspect their identity. In order to determine this point he requested his friend Dr. C. Bolle, of Berlin, to examine Humboldt and Bonpland's original specimens of P. religiosa; and the result of this examination showed that they had, as suspected, hirtellous branches, and that the two were consequently identical. As, however, the two names were published at the same time, it became a question which to adopt for the species. Hirtella might perhaps seem most appropriate, as incorporating a botanical character; but religiosa being much more diffused, and equally appropriate (on account of the uses made by the Mexicans of its ornamental branches), Dr. Seeman concluded that religiosa should be retained. 5. "Extracts from a Letter addressed to Sir W. Hooker, by Mr. R. Spence, dated at San Carlos di Rio Negro, Venezuela, March 10, 1854." This letter contained a very interesting account of Mr. Spence's movements on the Orinoco and its tributaries, and will shortly be published elsewhere.

Entomological, *4th Dec.*—The President in the chair. After the announcement of numerous donations to the library by the Secretary, the chairman exhibited a remarkable specimen of the common orange tip butterfly, captured by Mr. Machin, the upper surface of which, as well as the antennæ and abdomen, agreed with the ordinary females of the species, but on the under surface the fore wing on the right side exhibited the orange spot of the males. M. Pretsch, Director of the Royal Printing-office of Vienna, exhibited a number of photographic figures of microscopical details of various insects, and explained the process by which they had been produced; several of them were, however, very deficient in clearness of outline of the articulations, although others, as the sucker of the common fly, were beautifully developed. He also exhibited a number of entomological dissections, mounted as microscopical objects, and Mr. Westwood stated that he had received a quantity similarly prepared with great care from Mr. Menzel, of Zurich, who had established a microscopical emporium in Switzerland. Mr. Pickersgill exhibited a fine variety of Vanessa Urticæ, with the black spots of the wings suffused, and also a specimen of Argynnis Lathonia, taken at Eastbourne, in July. Mr. W. W. Saunders exhibited a curious patelliform nidus containing eggs, with an operculum, attached to plants received from the Amazons, probably the nest of a spider. Mr. S. Stevens exhibited a portion of the trunk of a wild Cherry tree, bored in various places by the larvæ of a Lamellicorn insect, most probably Trichius nobilis; specimens of Helops cœruleus were also found in the decayed parts. Mr. Tweedy exhibited a box of beautiful insects just received from St. Domingo. Mr. Westwood exhibited a small skein of the silk of Saturnia cynthia, grown and spun in Malta, which he had just received from the governor of that island, through Dr. Templeton. He had also received a number of cocoons, and notwithstanding the cold to which they had been subjected, the chrysalides were still found alive, so that he hoped to rear this fine Indian insect in London. Mr. Douglas read an extract from the Journal of the Society of Arts, stating the successful unwinding of the Cynthia cocoons at Turin, and that the larvæ had succeeded, when fed upon Willow and Lettuce leaves. Mr. Stainton read a note relative to the galls of Cynips Quercus petioli, which the writer had observed 20 years ago, and had used in manufacturing ink for his own use; and Mr. Curtis stated that the development of the galls was certainly the cause of the absence of Acorns on the trees, the place of the latter being usurped by the galls. Mr. Curtis also read a series of notes, containing lists of the different kinds of insects (chiefly Diptera) which he had reared from different kinds of wild plants. He also read a note from the Rev. Mr. Kuper, on the larvæ of Elater (Ctenicerus) castaneus. Mr. Westwood mentioned the recent acquisition of a specimen of the extremely rare and beautiful Papilio antenor, by the British Museum, from Madagascar. The locality of the species had hitherto been doubtful. Mr. F. Smith read a monograph on the British species of ants, describing 28 different species, together with notices of their habits, &c.

Notices of Books.

Village Development. Cox, Covent Garden.—This little volume contains many valuable hints and suggestions, in a letter written by an old vicar to a new incumbent, for the improvement (why development?) of the population of rural villages. It would be easy for any clergyman to carry out some of the plans here recommended, in any locality; but it is not so clear that the author has spoken from personal experience of the success of all, even in his own village. Some would probably be better adapted to one place, some to another, and we heartily recommend the whole to the attentive consideration of our rural clergy. Studied courteousness to all, upon all occasions, forms a prominent feature in his advice, even to "finding excuses for those who have gone astray." This is, perhaps, stretching an excellent principle to an extreme hardly compatible with the warning "not to desire that *all* men should speak well of us." He would inspire, and most justly, his poorer parishioners with a spirit of self-reliance, and allow them greater independence in certain cases than is usual with less judicious monitors, in regard to the administration of clothing clubs, &c. We most thoroughly agree with him in discountenancing prizes for "best brought up families, best church-goers," &c. As he justly observes, you are here placing a prize in front of a higher principle. We would recommend this sentiment to the serious consideration of all teetotallers, and whoever else prefer bowing down before pledges and medals to seeking strength at the throne of grace against grovelling propensities.

When speaking of the village library, he advises that "specimens of plants, fossils, shells, ferns, &c., should be gradually collected" in the neighbourhood, to teach a closer intercourse with nature. We wish he had gone further, and advised the grouping and classifying such objects on strictly scientific principles. But to teach such things requires the teacher should be first taught, and perhaps the good old vicar is no naturalist, or else his pen seems to have made a slip when intercalating "fossils and shells" between "plants and ferns," as though ferns were not plants.

Rees' Diary is one of the neatest almanacs in which Garden directions are to be found. We observe that it is a little enlarged this year. The directions are however very concise, as indeed is inevitable in so small a book.

Garden Memoranda.

Messrs. John Weeks and Co.'s Nursery, King's Road, Chelsea.—Those who wish to see the heating of horticultural buildings well carried out, on a somewhat novel plan, should visit this establishment, the numerous glass-houses of which are now all heated from one furnace. Until very lately there were six boilers of various sizes, but all on the same principle, employed here to heat the different houses and pits, and although those boilers were found both efficient and economical during eight years, recent improvements convinced Messrs. Weeks and Co. that highly important results were attainable by substituting one boiler, of a similar construction, for the six; and now the whole of the houses in the establishment are heated effectually by one tubular boiler, five feet high by three feet six in diameter, exposing to the immediate action of the fire a surface of 340 superficial feet. It is fed from the top, which is nearly on a level with the surface of the surrounding ground, but there are furnace doors, and the usual openings in the brickwork below, from which it is cleared out, and to cause a draft. The glass houses, which may be said to be built round the four sides of a long square, or parallelogram, which has a gentle fall to the end farthest from the boiler, are certainly well placed for being all warmed from one boiler, which is effected as follows. The boiler is placed at, say the right hand corner of the square. A 4-inch flow pipe is led in a straight line from it on the same side to the bottom of the square, or as far as there are houses, and the return pipe is brought back to the boiler in the same drain immediately below it. Another main 4-inch flow and return pipe is taken through the show houses and down the other side of the square, to furnish means of heating the houses on that side, and from these two main pipes all the houses are warmed by connecting the pipes which are carried round them with the two main pipes just mentioned, which are also made to pass through as many houses as lie in their way; and in order that the heat they contain may be turned to as good an account as possible, the drains in which they are placed have been covered, inside the houses, with cast iron gratings, which permit the warmth to pass through into the house.

To these two flow and return pipes then the whole of the series of piping which warms the different houses in the place is attached, and as the hot water in them can either be turned on or off each house at pleasure, by means of valves, worked with a screw, every house and pit can either be heated separately or all together as may be desired. In this way every house has been effectually warmed, and that at a very great saving in fuel and labour. The importance of this new arrangement to horticultural establishments of any magnitude can therefore scarcely be overrated. We have already stated the size of the boiler, and to give some idea of the amount of work it has to do, we may mention that if the houses and pits were all placed in a line they would extend about 1000 feet, exposing to the atmosphere upwards of 16,000 superficial feet of glass. The water is said to circulate in the various houses and pits through 5000 feet of pipe, and yet at the distance of 365 feet from the boiler the temperature in a pit can be raised, it is said, to 65° in about two hours.

The furnace is fed with coke, about 3*s.* worth of which is, we are told, consumed in winter in about 24 hours. The boiler is reported to require attention only once in 12 hours, and then but for one hour; thus occupying a man but for two hours out of the 24, at a cost of say 8*d.* per day. In fact so great is the saving effected by this new arrangement, that it is thought the expense attending the alteration of connecting all the pipes of the various houses and pits to one boiler, will be fully repaid in one season. Such at least is the opinion formed upon the subject by Mr. Weeks. Of course we have no means of testing its accuracy.

Where the main hot-water pipes pass under walks they are laid in drains among brick bats, kept together with tiles, and covered with gravel. The stoves and houses to be kept warmest are, as a matter of course, nearest the boiler, and the New Holland and Geranium houses, &c., are on the other or coolest side. The seed shop as well as show houses are also all warmed by the same apparatus, whose working has, as yet, been, as we have stated, perfectly efficient, and the great advantage of having only one fire to attend, instead of six, needs no comment.

FLORICULTURE.

Roses of 1854.—Never since Roses have been cultivated in England to any extent has such a fatal season as the past been experienced by the growers. The severe frost in winter killed nearly all the buds of the Tea-scented and other delicate Roses, and numbers of the plants. The dry weather in March and April destroyed from half to two-thirds of the stocks planted in December; and the frost on the 25th of April so injured the young and tender shoots, which were soon after smothered with aphides, that scarcely any Roses bloomed at their usual season in June and July. It was not till August that the Hybrid Perpetuals showed themselves in character, and after that they flowered satisfactorily. As usual with a favoured class of Roses like the above, we are inundated with so-called novelties from France, plenty of variety in names, lacking, however, difference in character; but there are some few really good and distinct, and quite worthy of a few words of praise, and so I will endeavour to describe them. Hybrid Perpetuals are *the* Roses of the day: they seem destined to supply all our out-door wants at least, and one is never tired of their varied beauties. There were 40 or more Roses of this class alone, with new names introduced last winter and spring, most of them of the same unvarying tints of "rose," "pale rose," and so on; many of them really good, but not differing enough from well established varieties to make them acceptable to the amateur. There are, however, a few and very few, distinct, good, and acceptable to all lovers of Roses: and who is not? Holding a first rank among the few is Jules Margottin, which is quite worthy of its descriptive English name, Perpetual Brennus; its very vigorous habit, and large finely-shaped light vivid crimson flowers, remind us much of that very fine old Hybrid China Rose, Brennus. For growing on its own roots, and pegging down, for a pillar Rose, and as a standard, it is equally well adapted, and will soon be in every Rose garden. Sir John Franklin and Gloire de la France are of the race of the Géant des Batailles, and

two fine robust growing Roses; the former bright red, the latter more approaching to deep crimson; they are two fine varieties. General Jaqueminot is, like the above, one of our new Roses, and most striking, from the size of its flowers, which are of rich shaded crimson. It has, however, two faults—its flowers are not sufficiently double, and its habit of growth is rather slender and delicate. We now require Roses perfect in all points; large and double flowers, opening freely, fine healthy foliage, and a vigorous hardy habit. Duchess of Norfolk will probably form a nice pillar Rose. Now we come to a host of new names applied to Roses, with shades of rose colour and pink, such as Alphonse de Lamartine, Colonel de Rougemont, Madame Domage (both varieties of the race of Baronne Prevost), Ceres, Gloire de Parthenay, La Ville de St. Denis, Lady Milsom, Madame Hector Jacquin, a large and vigorous growing Rose. Madame Harriet Stowe, Aline Gilbon, Mademoiselle Quetel, Marie de Bourges, Sephora, Triomphe en Beauté, James Veitch, Leon Plée, and several others, all pretty enough—for what Rose is not!—but with very little distinction in their characters. Gervaise Rouillard is a cheat; it is the old Hybrid China, General Lamoricière. Some few of the Roses among the Hybrid Perpetuals introduced in 1853 have bloomed this season in great perfection, and have proved themselves worthy of a place in every Rose garden. Such are Prince Léon Hotschoubey, or simply Prince Léon, which is a shorter and better name; and Paul Dupuy, two charming Roses. Alexandrina Bachmeteff, with its brilliant carmine flowers, is also a great acquisition, as is another Rose, with a tiresome Russian name, Prince Chipetouzikoff, with brilliant deep red flowers; Adam Paul is too double and large to open well in our climate. Souvenir de Leveson Gower is a magnificent crimson and first-rate Rose, and Triomphe de Paris, very dark crimson, has also bloomed beautifully. Lady Stuart, of the same colour, is not equal to Madame Rivers. Victoria has not opened well, and seems tender, as it suffered much by the winter. Archimède, Volta, and Ferdinand Deppe, are good rose-coloured and pink Roses, but not distinct enough. Among Bourbon Roses we have but one this season really worthy of attention, viz., La Quintinie; this is most superb, its deep crimson flowers are of the most perfect shape; but it has one fault, it is delicate in its habit, and requires the highest cultivation. François Herincq, also a new Rose of this class, is too much like Prince Albert, and Surpasse Comice de Seine et Marne. In Tea-scented Roses, we have one really fine and distinct, viz., Gloire de Dijon; in its foliage, habit, and shape, and size of its flowers, it is almost an exact resemblance of the Bourbon Rose, Souvenir de la Malmaison, and, like that fine Rose, it requires dry warm weather to open its flowers in perfection. Its perfume is Tea-like and powerful, and in colour it is quite unique, being tinted with fawn, salmon, and rose, and difficult to describe. Auguste Vacher is also a new Tea Rose, perhaps too much like Noisette Ophirie in colour and habit to be highly esteemed. It is long since we have had any new and good Noisette Roses; but this season a new variety called Augusta has been sent from America, which has bloomed in great perfection; it is of the race of Solfaterre, and resembles it closely in habit; its flowers are, however, more double and globular, remarkably elegant in shape, and in the centre of its flower it is a little deeper in colour. Another new Noisette Rose is Marie Chargé, of the Ophirie class; its flowers are larger, more brilliant in colour than that well-known Rose, and its habit seems very vigorous and hardy. *T. Rivers, Sawbridgeworth.*

Cinerarias: *A B.* The marks on your Cineraria leaves are the galleries of some mining grub.

Calendar of Operations.
(For the ensuing week.)

PLANT DEPARTMENT.

Conservatory, &c. — Notwithstanding the many plants which we have suitable for flowering at this season, considerable foresight will be necessary to maintain a regular display for the next six or eight weeks, for it requires considerably longer time in the dead of winter to bring things forward than in spring with sunny days, and the naturally increased energies of the plants. But this should have been kept in view in the treatment of the plants throughout the season, so as to have induced those wanted for early forcing to mature their growth at a correspondingly early period, and where this has been the case, comparatively little forcing will be requisite to bring things into bloom, and there will be few or no failures. But where this has been neglected, and the plants are not well prepared, the most that can be done now will be to select the more forward and such as look the most promising for blooming freely, and place them in heat considerably earlier than would otherwise have been necessary. Where there is a good collection of Azaleas to work upon, a few of the commoner sorts may be placed in heat, for these are amongst the gayest subjects we possess for decorative purposes, and come in very useful where cut flowers are wanted largely. Some of the early pruned Roses should also be introduced to gentle heat, choosing some of the Teas, Bourbons, and Hybrid Perpetuals; these should be placed close to the glass, in a pit where they can be afforded a very moderate bottom heat, keeping the plants rather cool and airy for the first month, to insure their breaking strongly. Give every possible attention to the management of the house, so as to preserve the delicate blossoms from any excess of damp or dryness, endeavouring to preserve their beauty as long as possible, and regulate the application of fire heat, strictly with a view to maintain the atmosphere in the state which may be found most congenial for the inmates. Also spare no pains to maintain perfect neatness, keeping all the plants as trim and orderly as possible, occasionally shifting the position of any conspicuous pot specimens, which will greatly assist in adding to the interest of the house. Greenhouse.—Soft-wooded plants require very careful attention at present, for damp or insects soon do irreparable damage at this season. Pelargoniums should be kept rather cool and dry, giving whatever water may be necessary early in the day, so that the superfluous moisture may be dried up before evening. Give air freely on every favourable opportunity, and keep the plants near the glass, affording them plenty of room, and keeping the shoots tied out rather thinly to admit light and air among the foliage. If green-fly is perceived upon any of the specimens, let these be removed and smoked at once. Calceolarias are particularly liable to the attacks of green-fly, and the whole stock must be narrowly watched, and smoked lightly immediately that the enemy is perceived, for they rarely do any good if green-fly or thrips are allowed to gain a footing upon the foliage. Keep these also close to the glass, and supply them freely with air on mild favourable days, and look out for, and pick off fogged leaves, for these, if allowed to remain, often occasion the loss of the plant. See that those in free growth do not suffer for the want of pot room, and keep them growing as freely as circumstances will permit. Cinerarias should not be trusted any longer in cold pits where this can possibly be avoided, for they are very impatient of frost. These should also have an airy situation near the glass.

FORCING DEPARTMENT.

Pineries.—Where the bottom-heat is maintained by tan or any other fermenting material it is very apt to fall off too much at this season while the temperature of the house is being kept low. If this is found to be the case, a slight surfacing of fresh tan should be applied, which in most cases will be sufficient; but if the beds have not been renewed for some time, and the tan has got spent, it may probably be necessary to remove the plants, and mix a quantity of fresh tan with the old. A quantity of tan should always be kept dry and in readiness for such purposes where shed room can be spared for it, for if it is used fresh from the tan yard it is very difficult to obtain a steady moderate lasting heat from it, and it is also liable to starve the roots of the plants before fermentation commences when used green in winter, and afterwards it heats much too violently. Let no trouble be spared, however, which circumstances may render necessary to secure a steady bottom heat, in order that the roots may be preserved in a healthy state, for without healthy roots it will be in vain to expect vigorous growth in spring. Vineries.—We are now arrived at the period of the year when ripe Grapes require very nice management to preserve them from the ill effects of the prevailing damp, and of too much fire heat. Admit fresh air whenever the state of the weather allows of this being done with advantage, and use fire heat as sparingly as can be rendered effective in keeping the atmosphere of the house in motion and rather dry. Also examine the bunches often, so as to make sure of removing decaying berries immediately they are affected. Houses which it is intended to close for forcing the beginning of next month should have a little fermenting litter placed on the outside border at once, if it is intended to use this, for a little encouragement given to the roots before shutting up the house will greatly assist in getting the buds to push strongly, and without loss of time.

FLOWER GARDEN AND SHRUBBERIES.

Draining has now become so fashionable in most parts of the country, and its advantages so well understood, that it seems almost unreasonable to suppose that there are any instances in gentlemen's gardens where it is wanted and neglected. It is, however, a fact that there are many pleasure-grounds in the country that would be greatly improved by thorough draining. Wherever the turf becomes spongy and unfit to walk upon for days after heavy rains, there is an evident want of draining. But we do not recommend the application of a few shallow drains, as is still frequently practised, save where the mischief to be remedied arises from something in the way of a land spring, which, in most cases, may be remedied by a few drains. In most instances it will be found a much more effective plan to cut drains 4 feet deep, and from 8 to 12 yards apart, throughout the whole extent of the ground that requires draining, than to merely surface drain it in the worst parts. Where any work of this kind is required, the present is a very favourable season for executing it, and it should be done at once, so as to allow of the turf being yet made level for next summer. On strong marly or clayey soils it is very difficult to manage the filling up, so as to prevent considerable sinking afterwards, and if the work is done at once the winter rains will consolidate the soil, so that it will stand over next summer, and will probably require very little filling up afterwards.

HARDY FRUIT AND KITCHEN GARDEN.

Take advantage of every fine day that may occur to concentrate all the available strength upon the nailing, and get this in as forward a state as possible while the weather is comparatively favourable for such work. Also go over large standard trees, and thin out the branches to proper distances apart, so as to admit light and air freely among the branches when the foliage is on, and secure good sized well flavoured fruit, which can hardly be expected when the trees are neglected, and their branches allowed to get as thick as brooms. Also clean the stems of old trees of moss and Lichens by well scraping them with a piece of hoop iron, and then coating them with a thich wash of lime, soot, cow-dung, and some soft soap, or wood ashes. Let there be no further delay in the preparation of ground intended to be planted with fruit trees, and get the trees in as quickly as possible. A mulching of decayed leaves placed over the roots of recently planted trees will be beneficial in maintaining the temperature of the ground somewhat more regular than would be the case without any such precaution, and it will also be useful to the young roots when turned into the ground. Look over the fruit in the fruit-room, frequently removing any that are found to be decaying, and putting aside any that are only slightly tainted for immediate use. Endeavour to keep the atmosphere moderately dry by admitting sufficient air on mild days to carry off the moisture exhaled by the fruit, and also keep the room cool. Any fruit that it is desired to forward the ripening of should be removed to a warmer room, and by no means keep the whole stock too warm, which would cause many sorts to shrivel and become worthless. See to the protection of any surplus stock of Snow's Broccoli which may be hearting.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending Dec. 14, 1854, as observed at the Horticultural Gardens.

Dec.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind	Rain.
Friday 8	18	29.892	29.483	50	38	44.0	45	45	S.W.	[illegible]
Satur. 9	19	29.634	29.442	45	30	37.5	45	44	W.	[illegible]
Sunday 10	20	30.057	29.833	39	19	29.0	44	44	N.	[illegible]
Mon.. 11	21	30.045	29.856	44	24	34.0	42	43½	S.W.	[illegible]
Tues. 12	[illegible]	30.057	29.9 9	45	30	37.5	41	43	S.W.	[illegible]
Wed. 13	23	30.190	29.967	52	42	47.0	41	43	S.W.	[illegible]
Thurs. 14	24	30.017	29.945	55	49	52.0	42	43½	S.W.	[illegible]
Average.		29.984	29.785	47.1	33.1	40.1	42.8	43.7		[illegible]

Dec. 8—Densely overcast; slight drizzle; overcast.
— 9—Low clouds; bright sun in forenoon; cloudy; clear.
— 10—Clear and cold; sharp frost at night.
— 11—Sharp frost; fine; overcast.
— 12—Clear; very fine; overcast at night; rain.
— 13—Hazy; overcast; slight rain at night.
— 14—Densely overcast throughout, with occasional slight rain.

Mean temperature of the week equal to the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 28 years, for the ensuing week, ending Dec. 23, 1854.

Dec.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 17	46.3	34.2	40.3	15	0.37 in.	4	2	1	2	4	9	4	2
Mon. 18	45.2	34.7	40.0	15	0.34	2	7	—	2	5	7	[illegible]	—
Tues. 19	45.4	36.3	40.8	15	0.38	2	4	3	2	5	8	3	1
Wed. 20	44.8	34.3	39.6	10	0.76	1	7	1	2	9	5	1	2
Thurs. 21	43.3	33.7	38.5	10	0.30	—	7	2	1	2	10	3	3
Friday 22	45.0	33.8	39.4	14	0.37	3	5	3	1	2	7	4	3
Satur. 23	43.5	32.2	37.9	14	1.13	4	7	2	2	1	7	1	4

The highest temperature during the above period occurred on the 17th, 1832, and 23d, 1839—therm. 57 deg.; and the lowest on the 17th, 1846—therm. 15 deg.

Notices to Correspondents.

Amherstia: *J S.* We are unable to inform you. The great success which attended Mrs. Lawrence's management resulted in repeated blossoming. But we can give you no further information.

Aralia Japonica: *An Old Sub.* The Aralia mentioned Oct. 11, 1846, was described as a variety called Maxima, not by us but by a correspondent. The true plant is what is technically called an under-shrub, that is to say, half woody half herbaceous. It grows as high as a man, has very large palmate leaves and whitish flowers.

Books: *J Smith.* The title of the treatise on Pectinous matters respecting which you ask for information is "Chemische Untersuchungen über das Reifen der Früchte; Pektose, Pektase." Von E. Frêmy. Deutsch von U. Graeger. Halle 1851. Information will be found also in Mulder's Physiological Chemistry (German Edition, 1851), Vol. 1, p. 241; and in Gregory's Handbook. *M. J. B.—A B.* Probably: but we are not certain. The "Penny Cyclopædia" now publishing appears in weekly numbers price 6*d.* each; and if you can spare as much is well worth your having.—*A Man of Kent.* Harvey's Marine Algæ and Greville's Algæ Britannicæ.

Dioscorea japonica: *J F.* We have ascertained that under this name is meant the Dioscorea Batatas, concerning which we beg to refer you to p. 467 of the present volume, where you will find all that is known in England upon the subject. No recent French reports have appeared as far as we are aware.

Insects: *A R.* The insect sent in the quill, together with the empty skin, was the larva and its exuvia of the Museum beetle (Anthrenus Museorum) and not that of a moth.—*J F.* The difficulty in extirpating the minute young of the Coccus of the Beech bark, arises from their being so densely enveloped in the white waxy filamentous secretion which renders the trees which they infest so conspicuous. The application of an oily or a gummy wash would be more serviceable than turpentine. *W.*

Names of Fruits: *H R B, Daglingworth.* 1, Duchesse d'Angoulême; 2, Glou Morceau; 3, Winter Nelis; 4, Beurré Diel; 5, Easter Beurré; 6, Passe Colmar; 7, Beurré Rance; 8, Marie Louise; 9, Vicar of Winkfield; 10, Beurré de Capiaumont; 11, Jean de Witte.‖

Names of Plants: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*W. F. S.* The fungus which has come up in the earth of some plants from South America is Bulliard's Agaricus nudus. The fleshy fungi of extra-European countries are so often identical with our own, that it is very possible the spores or mycelium may have been introduced with the soil.—*A B C.* It is not possible to name either Grasses or Sedges when they are out of flower.—*M. J. B.—F J.* Maxillaria variabilis.

Scale: *W S.* Try the effect of washing your Pear trees well with water heated to the temperature of between 150° and 160°. That has been found to kill scale without injuring the trees.‡

Silver Beet: *A Subscriber.* If by this name you mean Chard Beet, the leaf-stalks only of which are eaten, it requires no blanching, and is cooked like Seakale.

Vines: *Reader.* We do not know who planted the large Vine now growing at Hampton Court, or when it was planted.‡

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7l. per ton; Superphosphate of Lime, 7l.; Sulphuric Acid and Coprolites, 6l.

Office, 69, King William Street, City, London.

N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent. of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

THE LONDON MANURE COMPANY beg to call the attention of Agriculturists to their WHEAT and CLOVER MANURES for present use. The London Manure Company also offer Genuine Peruvian Guano, Nitrate of Soda, Concentrated Urate, Superphosphate of Lime, Fishery and other Salts, and all Artificial Manures of value. The London Manure Company guarantee Peruvian Guano and every Manure they supply to be strictly genuine. EDWARD PURSER, Sec.

Bridge Street, Blackfriars.

SUPERPHOSPHATE COMPOST COMPANY.—427, Strand, London.

The Directors having received numerous applications for Winter Wheat Manure, have the pleasure to notify to their Friends and the Agriculturists generally, that they have 1000 tons expressly prepared for drilling with Winter Wheat, and now ready for delivery at 7l. per ton net cash, that is, payment in one month. Carriage free to any Railway Station or Wharf in London. Further particulars may be obtained of the Agents.

W. W. WATSON, Secretary.

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures, Linseed Cakes, &c.

WM. INGLIS CARNE, 10, Mark Lane, London.

SEWAGE CHARCOAL MANURE.—This highly fertilising Manure, which is Peat Charcoal completely saturated with London Sewage, will be found most efficient for every species of crop; more especially for Peas, Beans, Turnips, Mangold Wurzel, and other root crops. It will produce a greater return for the outlay than Guano or any other Manure at an equivalent value: it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained at the SEWAGE MANURE WORKS, Stanley Bridge, Fulham, at 4l. per ton, and in quantities less than half a ton, at 5s. per cwt., for ready money only; and in quantities not less than a ton, will be delivered at the London Termini of the Railroads free of charge for cartage. No charge for sacks.

It may also be had from Messrs. G. GIBBS & Co., 26, Down Street, Piccadilly, Agricultural Seedsmen, Agents for London; and from all the other Agents of the Company.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and dispatch.

Gentlemen desirous of receiving instructions in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

CORN CRUSHERS AND CHAFF CUTTERS.—A large display of the best Farm Implements shown in operation. Price Lists sent free on application.

BURGESS AND KEY,
103, Newgate Street, and 52, Little Britain, London.

PUMPS AND HOSE PIPES FOR GARDENS AND LIQUID MANURE.—BURGESS & KEY'S Pumps were highly commended by the Royal Agricultural Society of England at Lincoln. Price Lists sent free.

103, Newgate Street, and 52, Little Britain, London.

CHURNS.—ANTHONY'S PATENT AMERICAN CHURN.—Since 1849 this Churn has obtained all the Prizes awarded by the Royal Agricultural Society of England. At the trial before the Judges it made in 10 minutes 4 lbs. 6 oz. of Butter from 4 quarts of Cream, being 8 oz. more than any of the other Churns from the same quantity and quality of Cream.

103, Newgate Street, London.

HOSE PIPING.—GREAT REDUCTION IN PRICE.

PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense pressure, and much more than leather, vulcanised rubber, or any other hose, and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented inventions, the cost of manufacturing it is now reduced at least 50 per cent., which advantage is offered to the public.

BURGESS AND KEY, 103, Newgate Street, and 52, Little Britain, who on application will forward wholesale and retail prices.

CLAYTON, SHUTTLEWORTH, AND CO.'S PRIZE PORTABLE STEAM-ENGINES, AND COMBINED THRASHING, STRAW SHAKING, RIDDLING, AND WINNOWING MACHINE may be seen at their London Establishment, 6, Fitzroy Terrace, New Road, where all information relative thereto can be obtained. These Machines are constructed to horn Barley, and make a perfect separation of the chaff from the pulse. They are fitted with Elevators, which deposit the grain into bags, and beyond the feeder of Machine require no hands except to take away the Corn, &c., as thrashed, the whole of the operations being performed by self-acting machinery, whereby the Corn, Straw, Chaff, and Pulse are delivered in the places assigned for them.

C. S. and Co. have paid special attention to this class of Machinery, and Fixed Barn Machinery, and from the position they have taken at the Royal and all the leading agricultural shows of England, flatter themselves that for efficiency, durability, and simplicity, their Engines and Machines are not surpassed by any other maker in England. All letters forwarded to the Works at Lincoln will have immediate attention; and Illustrated Catalogues forwarded to all parts of the kingdom postage free.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE; which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

WEEDS ON WALKS.

MR. FLEMING'S WEEDING OR SALTING MACHINE FOR GRAVEL WALKS, COURT YARDS, &c., manufactured and sold by ALEXANDER SHANKS & SON, Arbroath, Forfarshire, from whom particulars with prices may be had.

LAND DRAINAGE.

MR. BAILEY DENTON'S TABLES OF COST, &c., price 1s. 4d. Sold by METCHIM, Parliament Street.
MR. BAILEY DENTON'S WORKMAN'S A LEVEL, price 1l. 10s. Sold by JONES & Co., High Holborn, London.

THE GENERAL LAND DRAINAGE AND IMPROVEMENT COMPANY.
INCORPORATED BY SPECIAL ACT OF PARLIAMENT.
Offices, 52, Parliament Street, London.
DIRECTORS.
HENRY KER SEYMER, Esq., M.P., *Chairman.*
SIR JOHN V. SHELLEY, Bart., M.P., *Deputy-Chairman.*

John C. Cobbold, Esq., M.P.	William Fisher Hobbs, Esq.
Sir William Cubitt, F.R.S.	Edward J. Hutchins, Esq., M.P.
Henry Currie, Esq.	Samuel Morton Peto, Esq., M.P.
Thomas Edward Dicey, Esq.	William Tite, Esq., F.R.S.

William Wilshere, Esq.

Empowered to execute, or to assist Landowners in executing with their own Capital, works of Land Improvement, viz., Drainage, Irrigation, Road-making, Enclosing, Reclaiming, and the Erection of Farm Buildings upon any Estates, under Settlement, Mortgage, or Disability, and without any investigation of Title, to charge the total amount of the outlay and expenses upon the property improved, to be repaid by annual instalments, varying according to the number of years over which Landowners may determine the repayment shall extend.

WILLIAM CLIFFORD, Secretary.

THE LANDS IMPROVEMENT COMPANY, INCORPORATED BY SPECIAL ACT OF PARLIAMENT FOR ENGLAND AND SCOTLAND.—To Landowners, the Clergy, Solicitors, Surveyors, Estate Agents, &c.—Loans may be contracted for the execution by the proprietor or by the Company of every landed improvement, especially Drainage, Building, Clearing, Enclosing, Warping, Irrigation, Embanking, Reclamation, Roads, Planting, Machinery, &c. The plans (of buildings), specifications, and estimates are prepared by the proprietors, and are submitted to the approval of the Enclosure Commissioners. Proprietors may avail themselves of the powers of the Act to recover from the inheritance their own funds to be expended on improvements. They may also apply jointly for the execution of a mutual improvement, such as a common outfall, &c. For forms of application, &c., apply to the Hon. WM. NAPIER, Managing Director, 2, Old Palace Yard, Westminster.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.
Principal—J. C. NESBIT, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.
PATRON—His Royal Highness PRINCE ALBERT.
PRESIDENT OF COUNCIL—Earl BATHURST.
PRINCIPAL—Rev. J. S. HAYGARTH, M.A.
PROFESSORS, &c.
Chemistry—J. A. C. Voelcker, Ph.D., F.C.S.
Zoology, Geology, and Botany—James Buckman, F.G.S., F.C.S.
Veterinary Medicine and Surgery—G. T. Brown, M.R.C.V.S.
Surveying, Civil Engineering, and Mathematics—F. Armstrong, C.E.
Manager of Farm—G. Austin.

The first Session of 1855 will begin in February. The Annual Fees for Boarders vary from 45 to 80 guineas, according to age and other circumstances. The Fee for Out-Students is 40l. per annum. The College Course of Lectures and Practical Instruction is complete in one twelvemonth—though a longer course is recommended. There is a department for general as well as for agricultural purposes. Prospectuses and information can be had on application to the Principal.

The Agricultural Gazette.

SATURDAY, DECEMBER 16, 1854.

MEETINGS FOR THE ENSUING WEEK.

THURSDAY, Dec. 21—Agricultural Imp. Society of Ireland.

COVENEY'S "ECONOMICAL" MANURE.

A SHORT report from the daily papers is given below of a trial, "COVENEY *v.* LOVICK," before the Exchequer Court last Wednesday, in which the merits of the "Patent Economical Manure" seem to have been pretty fully published. The verdict was for the defendant. He is a Norfolk farmer occupying 600 acres of land under the Earl of LEICESTER. Seventy-seven pounds worth of the manure had been applied to the Turnip crop, which in due course came up, but the roots, instead of attaining the corpulence of a Turnip, had never exceeded that of a good-sized Radish. That being the case defendant had refused to pay the price demanded, on the ground that he had not been furnished with the genuine article. *The fertilising power of the real thing was no doubt extraordinary! all that the advertisement represented!!* but, if so, Mr. LOVICK had not received what he had ordered, and was not therefore bound to pay for it.

The jury agreed with Mr. LOVICK, and their VERDICT WAS FOR THE DEFENDANT.

COURT OF EXCHEQUER—WEDNESDAY. (*Sittings at Nisi Prius at Guildhall, before the* LORD CHIEF BARON *and a Common Jury.*) COVENEY v. LOVICK.—Mr. M. Chambers and Mr. James appeared for the plaintiff; Mr. Atherton and Mr. Holl for the defendant. The defendant in this action is a farmer, who occupies 600 acres of land in Norfolk, under the Earl of Leicester; and the plaintiff is the agent of a M. Papillot, a manufacturing chemist, and the inventor of the British Economical Manure, which it is almost unnecessary to state was, in the language of the advertisements, endowed with every fructifying quality that can be conceived, as well as the advantage of drawing to the soil the moisture of the atmosphere. Attracted by these, Mr. Lovick purchased a considerable quantity for 77l., applied it to dress his Turnip land, and waited anxiously for the result. In due course the Turnips came up; but instead of attaining the corpulence of a Turnip, they never exceeded that of a good-sized Radish, and for the most part were never gathered. The season, moreover, was very dry, and the moisture which ought, under the influence of the manure, to have been deposited, remained, so far as the defendant was concerned, with all its other advantages, in nubibus. Such being the state of things, the defendant refused to pay the price, on the ground that the article furnished was not the genuine British Economical Manure. The fertilising powers of the real thing might be, and probably were, excellent; but if that were so, Mr. Lovick had not received what he had ordered, and was not, therefore, bound to pay for it.—On the other side arguments were used to show that the ingredients of the manure had been misused by the defendant himself, by being mixed in improper proportions, and that the plaintiff could not be responsible for the defendant's negligence.—The jury eventually gave a verdict for the defendant, expressing their belief that he did not get the genuine Economical Manure.

MR. MECHI's annual statement is looked for now not for the test which his balance-sheet affords of the soundness of his teaching—so much as for the opportunity it gives of discussing those tendencies and details of farming practice which it enunciates and insists upon. As to the balance-sheet itself, we do not suppose that the profit which it shows, whether actual or imaginary, teaches much this year when everybody has a balance-sheet as profitable; and many, farming far more quietly, a balance-sheet more profitable than any Tiptree yet can boast of. There are, however, certain points referred to in the statement which accompanies it, which deserve discussion here, and which will, we hope, receive it.

A single paragraph on one of them is all, however, that we can now allow. The unprofitableness of cattle-feeding which Mr. MECHI insists upon is, if true, a very heavy difficulty in the way of agricultural progress; but we are sure there are many men of large experience who differ from Mr. MECHI here. We were, only the other day, conversing with a Shropshire farmer who has often made from 8l. to 10l. per acre of his Swedes on 50 or 60 acres annually, by feeding cattle; and 9s. and 10s. per ton is often made in like manner by those who know how to breed and how to purchase stock. The question cannot be decided for all England by the answer which it receives on any single farm. The average truth is to be arrived at not only by a comparison of farms and varying circumstances of soil—but also by a comparison of farmers and varying circumstances as to skill, whether in marketing or in breeding.

It is impossible, we doubt not, to make feeding pay where such very high feeding is the practice as is followed at Tiptree, unless it be in the case of the best bred animals, which we have never seen there. Profit is to be made in the manufacture of beef and mutton, just by accommodating the management to the style of animal in the stalls or feeding boxes. And to assert of any experience, especially of so exceptional a one as that exhibited at Tiptree, that it represents the average experience of the country, is certain to mislead.

Mr. MECHI's agitation of this point, as of the others—liquid manuring—draining—farm buildings—hedgerow timber, &c,—on many of which his influence has been most beneficial—will be sure to do good; but it will in this case result not in the copying of his example, but in the avoidance of those errors to which we believe his experience to be due.

IN another page we give a report of the discussion which followed the reading of Mr. MECHI's paper last week before the Society of Arts. We regret we have not room to give a similar report of the discussion on LAND DRAINAGE, which followed Mr. DENTON's paper on that subject before the London Farmers' Club. It must suffice us to refer generally to the character which it assumed, and to the remarks of one or two of the speakers who engaged in it. Mr. BAKER, of Writtle, had, we think, the greatest influence on the former, which, from the commencement, accordingly took the form of an answer to the question:—How can land be drained most cheaply? rather than to the more important question—How can it be drained most efficiently?

Mr. R. BAKER said there was one element which entered into the question before them that Mr. DENTON had not touched upon, but which was of great importance to the tenant occupier. He meant the economy of drainage. In his district, and he believed in most other districts, the whole expense of the drainage must be met by the farmers themselves, and frequently this was done under very disadvantageous circumstances, from the fact that they had no security on the land, being merely occupying tenants from year to year. The prevailing mode of letting lands had, therefore, induced the farmer to adopt the least expensive system for effecting its drainage; and if the work was well done, without regard to duration—that was to say, if it were efficient for the purposes of the occupying tenant, during the period he held the

land, that was all he would care to accomplish. He submitted, then, that some of the old methods of draining might in such cases be resorted to as beneficially for the time being as the most elaborate tile draining that could be adopted. He knew he was venturing upon tender ground, and that he should startle certain gentlemen present, when he said, that a drain cut to the depth of from 20 to 30 inches, filled up with a portion of wood and covered with straw, was a good and an effective one. He might be told by tile drainers that it was impossible to attain the object desired by such a drain; but he was willing to put in competition with any pipe drainage in the country portions of the county of Essex, which have been drained after this manner, at a cost of only 40s. an acre; and where the land was as effectually drained as it was possible to be by any of the more expensive processes. Where the draining according to this system was well executed, it was generally found to last the duration of a lease of 14 years, and upon the wet chalky clays 21 years.

This, accordingly, was the real question under discussion:—How the best result can be attained by the use of existing means and under given circumstances? And there is no doubt that it is a very important question; and practically the only question which every tenant farmer asks himself upon the subject. It is not, however, the question of greatest importance, because it is of far greater moment that sound principles should be established and accepted—which should then be influential everywhere, as far as possible—than that the conduct proper in any particular case should be specified and defended.

Accordingly those who advocate the shallow drainage of clay lands, and the cheaper methods of proceeding (provided they were attended with a profitable degree of efficiency), carried the meeting with them throughout; and though the Farmers' Club did not commit themselves to any definite resolution, yet, had expression been given to their conclusions on the subject, there is little doubt that those who advocate the deep drainage of stiff clays would have been outvoted.

The general opinion seemed very well represented when Mr. Walton, in his very excellent and well-toned address, declared that, give him 20 inches of good dry soil, and he "cared not though the Hellespont ran beneath it." Now, this represents the whole matter in dispute. We quite agree with Mr. Walton; but it is because we cannot have 20 inches of dry soil over standing water that we contend for those deep drains by which the water level is put low enough to ensure sufficient depth through which rain water shall percolate with facility. We could have wished that the advocates of this deeper drainage had been present in larger numbers, and that their views had been more fully represented in the discussion. In Mr. Denton's paper they were, however, amply represented; and its publication, which we hope soon to announce, will go far to correct any such evils as are likely to arise from an exclusive attention to what is expedient rather that to what is most efficient in this matter.

The half-yearly meetings of the Agricultural Societies of England and Ireland have just been held. The report of the former is given in another page; for that of the latter we have not at present room, but we refer to it here in order to notice the discussion which ensued upon the motion that it should be received and adopted. An amendment to this motion was carried—resolving that a certain portion of it should be excepted from the general confirmation which was sought. It appears that the secretary, to whose energy we cannot but think very much of the increased prosperity of the Society is due, has failed—no extraordinary thing—to secure the cordial sympathy and good will of all with whom he works; and this outstanding minority, it seems, thought proper—at a meeting of three!—to pass a rule requiring that—

"In future an attendance book be kept, in which the secretary and accountant shall enter the hours of their arrival and departure; and should either of them find it necessary to leave the house, he will, on his return, state how long he has been absent, and the cause, under the head of 'Observation.'"

This, which was regarded as a personal indignity offered to Mr. Harkness, that gentleman—considering that the status of secretary to such an influential and national society was a position which ought not to be degraded in his person—refused to obey; and his presence was accordingly dispensed with at the meetings of the council, until a general meeting of the Society should decide the matter in dispute. The decision is in these terms:—"that the report be confirmed, except that part relating to the regulation of the 31st of October, 1854; and that while, on the one hand, we consider the managing committee to have, in this instance, exceeded their powers, on the other hand, we cannot but censure the conduct of the secretary in not obeying the orders both of the committee and of the council."

Now, this appears to be a fair and conclusive determination of a dispute which we have no wish to revive; and yet the status of the office bearers in our great national agricultural societies is a matter of sufficiently general and public interest to justify us in pointing out in what respect it appears to us to be deficient.

It asserts that the managing committee exceeded their powers in the rule which they passed; it ought, we think, to have expressed an opinion, not merely on the legality of the rule in question, but also on its character. In the able defence which Mr. Harkness and others made of the office which he holds, and the position which its occupant should maintain, evidence from all the national agricultural societies in the country was brought forward to prove what, without it, any man of judgment or of gentlemanly feeling might have known, that this rule imposed upon the secretary was enforced in no other case, and could not be, except with the certain degradation of the office, and, therefore, the inefficient discharge of its duties. What a society of this kind aims at is incapable of attainment, except through the agency of men of resolute, energetic, and high minded spirit; and whether such an one is likely to submit to conditions imposed only on menials or on weekly servants let any one decide.

One of the gentlemen concerned in the passing of this rule seemed annoyed at the course which had been taken, by which all "their little acts" had been exposed to public view. It seems plain to us, however, that the conduct of a public body, and of those responsible for its actions, is properly public property: and a national agricultural society, whether strictly public or not, ought certainly to aim at being so; cordially accepting the disagreeableness, or rather, let us say, the advantages, of public criticism, along with the increased usefulness which such a course ensures.

THE MIDLAND COUNTIES CATTLE SHOW.

Bingley Hall has been this week crowded by the large number of visitors who have been attracted by the Birmingham Exhibition of fat Cattle and Poultry.

The show was the best that has yet been held—not quite so great in number, either in cattle or poultry, as those of previous years, but quite as high in quality. The entries of cattle are some eight or ten under those of 1853; and those of poultry—owing to the higher entrance fee demanded—are also somewhat under the number shown last year; but here, too, the excellence of the birds exhibited, especially in Spanish and in Dorking classes, is unrivalled; and the Cochins, which have lost their extraordinary reputation, were never worthier of it than, according to their standing at the show this week, they are at present. The awards in cattle, sheep, and pigs, are given below; those of poultry we have not room to give in detail, but we shall name the winners in the principal classes.

As regards the cattle, it will be seen that several of the prize animals at the Smithfield Show appear again as winners. Mr. Towneley's extraordinary cow is the best short-horn in the yard here, as she was in Baker Street, but the gold medal for the best cow in the yard, irrespectively of breed, is given to a Hereford exhibited by Mr. Stedman, of Ludlow. We know that this was not a unanimous decision of the judges, and we believe that the majority of those who examined the two with any care, even in the neighbourhood of Herefordshire, will feel with the protesting judge that the judgment is mistaken. The Hereford is neither so level in the back, so wide at the hocks, so broad in the bosom, nor so good in the flank and thighs as the short-horn cow. The former is more smoothly and evenly covered, and thicker in fat probably along the back; but she has drooping rumps, smaller girth, and is altogether not nearly so even and well made a beast. She is, however, an extraordinary animal, and her age—4 years and 10 months—is less than that of the short-horn cow. We have her dimensions, and those of every other animal in the Hall, and as soon as we have their carcase weights we shall compare them for the information of our readers. We may refer here to an extraordinary short-horn cow shown in the extra class by Mr. Wilson, of Brawith. This cow had been successful at Norwich, and had once (or twice) won the challenge cup in Ireland. She is now at an early age to be slaughtered by the butcher, another victim, we cannot but think, to the system of over-feeding breeding stock for exhibition.

Probably the next most extraordinary animal in the yard was a heifer shown by Mr. Heath, of Ludham Hall, Norwich, the same age as the prize cow—a somewhat smaller animal in frame, but even more thickly covered, and covered evenly. There was no unsightly excrescence, such as is sometimes seen, but an extraordinary thickness of flesh over back, ribs, loin, and rump, which made her, in our opinion, an even nearer competitor with Mr. Towneley's cow than its more successful rival. She is an animal of fidgetty temper, which is a rare thing in the case of so successful a feeder.

Among Short-horns Mr. Stratton, of Swindon, is here a successful exhibitor, although beaten at the Smithfield show; and Mr. Towneley, as we have said, carries off the first prize with the cow "Alice;" Mr. Langston taking the second with a remarkably well-grown and well-fed cow, which was also successful at Baker Street. The Devon classes are not equal in merit to the show of the same kind last week in town. Mr. Burbery, of Wroxhall, takes the prize for Long-horns, which, as might be expected from their neighbourhood to their proper county, were a better show of animals than appeared at Baker Street. It is obvious, however, that except as milkers their merits are far surpassed by any of the three standard breeds of cattle.

There was a better show of sheep than we have yet seen in Bingley Hall, and the Shropshire Down came out in great force, and with some success. We have not space for a detailed examination of the pens. The pigs have hitherto been one of the principal features in the exhibition; and although the other classes have improved more rapidly in quality and importance, they still command a large share of attention. We do not think they are quite equal in merit to former years. The classes of large pigs may perhaps be excepted from this remark, as a considerable number of pens of very useful, even, and well sorted animals were shown. Some of them, we notice, were disqualified by Prof. Simonds and his colleagues on the score of age. Two pens shown by his Grace the Duke of Sutherland were thus thrown out; and we shall no doubt, therefore, have the history of these animals fully investigated, and the trustworthiness of the professor's tests of age determined.

AWARD OF PRIZES.

Class I. Hereford Oxen or Steers.—1st, 10*l*., and G. M., Mr. W. Heath, Ludham Hall, Norwich. 2d, 5*l*., Earl of Warwick, Warwick Castle.

Class II. Hereford Steers.—1st, 10*l*., H.R.H. Prince Albert, Windsor Castle. 2d, 5*l*., Mr. I. Niblett, Filton, Gloucestershire.

Class III. Hereford Cows.—1st, 10*l*. and G. M., Mr. W. Stedman, Bedstone Hall, near Ludlow. 2d, 5*l*., Mr. W. Cother, Middle Aston, near Woodstock.

Class IV. Hereford Heifers.—1st, 10*l*., Mr. W. Heath, Ludham Hall. 2d, 5*l*., Mr. W. Hall, Ashton, near Leominster.

Class V. Short-horn Oxen or Steers.—1st, 10*l*., and S. M., Mr. R. Stratton, Broad Hinton, near Swindon. 2d, 5*l*., Mr. J. H. Lees, Bacon's End, Coleshill.

Class VI. Short-horn Steers.—1st, 10*l*. and S. M., Mr. L. Cowley, Ashby St. Ledger's, Daventry. 2d, 5*l*., C. Barnett, Esq., Stratton Park, Biggleswade.

Class VII. Short-horn Cows.—1st, 10*l*., C. Towneley, Esq. Towneley Park, Burnley. 2d, 5*l*., J. H. Langston, Esq., M.P., Sarsden House, near Chipping Norton.

Class VIII. Short-horn Heifers.—1st, 10*l*., Mr. J. Phillips, Ardington, near Wantage. 2d, 5*l*., Mr. W. Fletcher, near Mansfield, Notts.

DEVONS.

Class IX. Devon Oxen or Steers.—1st, 10*l*., and S. M., Earl of Leicester, Holkham, Norfolk. 2d, 5*l*., Earl of Leicester.

Class X. Devon Steers.—1st, 10*l*., H.R.H. Prince Albert Windsor Castle. 2d, 5*l*., Earl of Leicester, Holkham.

Class XI. Devon Cows.—1st, 10*l*., Earl of Leicester, Holkham.

Class XII. Devon Heifers.—1st, 10*l*., H.R.H. Prince Albert, Windsor Castle. 2d, 5*l*., Mr. W. Heath, Ludham Hall, Norwich.

Class XIII. Long-horn Cows or Heifers.—1st, 10*l*., and S. M., Mr. S. Burbery, Wroxhall, near Warwick. 2d, 5*l*., Mr. S. Burbery, Wroxhall.

OTHER BREEDS.

Class XIV. Fat Oxen or Steers.—1st, 10*l*., Mr. R. Hawkes, Hunscote, near Wellesbourne, Warwickshire. 2d, 5*l*., Mr. P. F. Hussey, Wyrley Grove, Walsall.

Class XV. Fat Cows.—1st, 10*l*., and S. M., Mr. R. Timms, Branston, near Daventry. 2d, 5*l*., Mr. W. Bodington, Montagu House, Kenilworth.

Class XVI. Fat Heifers.—1st, 10*l*., Mr. J. Stewart, New Market, Aberdeen. 2d, 5*l*., Mr. J. Lawrance, Cawston, Rugby.

Class XVII. Scotch or Welsh Oxen or Steers.—1st, 10*l*., R. Sneyd, Esq., Keele Hall, Staffordshire. 2d, 5*l*., the Duke of Beaufort, Badminton, Gloucestershire.

Class XVIII. Scotch or Welsh Heifers.—5*l*., Mr. R. Thomas, Ryton, Shiffnal.

EXTRA CLASSES.

Class XX. Cows or Heifers.—S. M., Mr. B. Wilson, Brawith, Thirsk.

SHEEP.

Class XXI. Leicesters. Fat Wethers, not exceeding 22 months old.—1st, 10*l*., and S. M., G. S. Foljambe, Esq., Osberton Hall, near Worksop. 2d, 5*l*., the Marquis of Exeter, Burghley Park, near Stamford.

Class XXIII. Long-woolled Sheep, not being Leicesters.—Fat Wethers, not exceeding 22 months old.—1st, 10*l*., Mr. W. Slatter, Stratton, Gloucestershire. 2d, 5*l*., Mr. W. Hewer, Highworth, Wiltshire.

Class XXIV. Long-woolled Sheep, not being Leicesters.—Fat Wethers, exceeding 22 but not exceeding 34 months old. 1st, 10*l*., Mr. T. Walker, Newbold, near Rugby. 2d, 5*l*., Mr. T. Walker, Newbold.

Class XXV. South and other Down Sheep.—Fat Wethers, not exceeding 22 months old. 1st, 10*l*., Mr. J. Williams, Buckland, Berkshire. 2d, 5*l*., Lord Walsingham, Merton Hall, near Thetford, Norfolk.

Class XXVI. South and other Down Sheep.—Fat Wethers, exceeding 22 but not exceeding 34 months old. 1st, 10*l*., and S. M., Sir R. Throckmorton, Bart., Buckland, Berkshire. 2d, 5*l*., Lord Walsingham, Merton Hall, near Thetford.

Class XXVII. Shropshire, and other Black or Grey-faced Short-woolled Sheep.—Fat Wethers, not exceeding 22 months old. 1st, 10*l*., T. C. Whitmore, Esq., Apley, Salop. 2d, 5*l*., Mr. S. Matthews, Montford, Shrewsbury.

Class XXVIII. Shropshire, and other Black or Grey-faced Short-woolled Sheep.—Fat Wethers, exceeding 22 but not exceeding 34 months old. 1st, 10*l*., Mr. W. Foster, Kinver Hill Farm, near Stourbridge. 2d, 5*l*., the Earl of Aylesford, Packington, near Coventry.

Class XXIX. Cross-bred Sheep.—Fat Wethers, not exceeding 22 months old. 1st, 10*l*., and S. M., Mr. A. C. Keep, Wollaston, Northamptonshire. 2d, 5*l*., Mr. W. Gillett, Southleigh, Oxfordshire.

PIGS.

Class XXXI.—Fat Pigs of one litter, not exceeding 10 months old. 1st, 10*l*., H. R. H. Prince Albert. 2d, 5*l*., Mr. J. Wyley, jun., Longdon, Rugeley, Staffordshire.

Class XXXII.—Fat Pigs of one litter, not exceeding 15 months old. 1st, 10*l*., H. R. H. Prince Albert. 2d, 5*l*., Mr. J. Wyley, jun., Longdon, Rugeley, Staffordshire.

Class XXXIII.—Fat Pigs, exceeding 15 months old. 1st, 6*l*., J. Baldwin, Esq., King's Norton, Worcestershire. 2d, 3*l*., J. Baldwin, Esq., King's Norton.

BREEDING PIGS.

Class XXXIV.—Pigs of a large breed.—Five Pigs of one litter, exceeding 3 and not exceeding 6 months old. 1st, 10*l*., Mr. W. J. Sadler, Bentham Purton, Swindon, Wiltshire. 2d, 5*l*., Mr. W. Hewer, Sevenhampton, Highworth, Wiltshire.

Class XXXV.—Pigs of a small breed.—Five Pigs of one litter, exceeding 3 and not exceeding 6 months old. 1st, 10*l*., R. H. Watson, Esq., Bolton Park, near Wigton, Cumberland. 2d, 5*l*., Mr. J. Alderson, Thornby, Aikton, Cumberland.

JUDGES OF CATTLE.

Mr. John Booth, Killerby, Catterick, Yorkshire; Mr. Philip Halse, Molland, near South Moulton, Devon; and Mr. Henry Chamberlin, Desford, near Leicester.

JUDGES OF SHEEP AND PIGS.

Mr. Valentine Barford, Foscote, near Towcester; Mr. John Meire, Moon, Eggesford, near Chulmleigh, Devon; Mr. John Meire,

Newport, Salop; and Mr. Benjamin Swaffield, Pilsbury, near Ashbourne.

THE POULTRY show is, after all, at Birmingham, the great feature of the Midland Counties Exhibition. The classes most notable for merit are the Dorkings, Spanish, Cochins, and Game. The Polands too, and some of the classes of Hamburghs are of extraordinary merit. The Silver Spangled Hamburghs are awarded a general certificate of excellence by the judges; and the class of coloured Dorkings for chickens of 1854 is spoken of as being the whole class very meritorious and deserving of the highest commendation.

There was an extraordinary show of ducks and geese; the former especially being excellent. In this, as in the other classes, the office of judge being one of very great difficulty. Classes are not now, as formerly, easily divisible into the deserving and undeserving: every bird needs careful examination, in order to its being justly placed. We may mention as receiving first prizes in the Hamburgh class, Mr. W. C. Worrall, Rice House, Knotty Ash, Liverpool; Mr. W. Tyler, Friday Bridge, Birmingham; Mr. Joseph Conyers, 42, Boar Lane, Leeds; Mr. C. S. Dixon, Sun Bridge, Bradford, Yorkshire; Mr. John Andrew, Waterhouses, near Ashton-under-Lyne; the Rev. F. Cartwright, Oakley, Thame; Mr. Josiah B. Chune, Coalbrookdale.

The following are the leading prize-men in the classes of Polish Fowl:—Mr. T. P. Edwards, Railway Station, Lyndhurst, Hampshire; Mr. E. B. Guest, Ivy House, Broadwas, Worcestershire; Mr. Joseph Conyers, 42, Boar Lane, Leeds; Mrs. Mills, Bisterne, near Ringwood, Hampshire; Mr. George C. Adkins; Mr. P. Jones, High Street, Fulham, London; Miss Vivian, Singleton, Glamorganshire.

The first prizes to the classes of Spanish Fowls were awarded as follows:—Mrs. Stow, Breedon, near Tewkesbury; Mr. Joseph Rake, Bristol.

Among Dorkings the first prizes were received by Mr. Henry Smith, The Grove, Cropwell Butler, near Bingham; Mrs. Jennens, Mosely, near Birmingham; Francis J. Coleridge, Esq., Ottery St. Mary, Devonshire.

Among the Cochin China classes, the prize birds first in each class had been contributed by the following exhibitors:—Mr. Thomas Burnett, Hutton, near Preston, Lancashire; Mr. Charles Punchard, Blunt's Hall, Haverhill, Suffolk; the Rev. Grenville F. Hodson, Banwell, Somersetshire; Mr. Cyrus Clark, Street, near Glastonbury; Mr. James Turner, Northbrook, near Exeter; Mr. Charles Thomas Nelson, The Lozells, near Birmingham; Mr. Thomas Smith, Stableford, near Bridgnorth.

We have not space for a more detailed report, either of the awards or of the birds. But we must not conclude without noticing the extraordinary show of vegetable produce exhibited by Messrs. Burbidge, of Birmingham, and Dickson and Chivas of Chester. Very splendid specimens of the Drumhead Cabbage, of Swedes, Mangold Wurzel, and Carrots, besides collections of Wheats and Grasses, were appropriately rewarded with Silver Medals by the judges.

Home Correspondence.

Wages in Canada.—The subjoined letter I received from a gentleman in Upper Canada; perhaps in publishing it you might enforce the necessity of providing our labouring classes with more comfortable dwellings, with some little ground, sufficient to make them feel an interest in their father-land. *Thomas Sibbald, Axmouth.*

"Sutton Georgine, Canada West.

"Dear Sir,—I have to acknowledge the receipt of your letter, requesting information what openings there might be at this village for labourers and mechanics; with regard to such tradesmen as bricklayers, blacksmiths, and carpenters, &c., I have to state that this summer their wages were from 7*s.* 6*d.* to 12*s.* 6*d.* per day, and very difficult to get at those wages. Good millers are much wanted; ours get 100*l.* a-year. Labourers' wages are from 2*l.* 10*s.* to 3*l.* 10*s.* a month, with board and lodging, and employment for any number. I have also to observe that there is a capital opening for a medical man of good talent. I can with truth hold out every inducement to agricultural labourers; they can, if they are sober, industrious people, secure to themselves a comfortable home. Were I to enumerate all the men of this class who have purchased farms for themselves out of their wages in this immediate neighbourhood, and who came to this country without any means whatever, I might fill volumes."

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

THE half-yearly meeting of the members of the Royal Agricultural Society was held at their rooms in Hanover Square on Saturday, W. MILES, Esq., M.P., president of the Society, in the chair. There were present the Earl of Feversham, Sir John Shelley, M.P., Colonel Challoner, Mr. Raymond Barker, Mr. Barthrop (Suffolk), Mr. Astbury (London), Mr. Wassop (Huntingdon), Mr. R. W. Baker (Rutland), Mr. Dyer, Professors Simonds and Way, Mr. Joseph Davies (Oxfordshire), &c.

The Secretary (Mr. Hudson) read the following report:—

The Council have to report, that since the last General Meeting in May, the Society has lost 45 of its members by death or otherwise, while 185 new members have during the same period been elected on its list, which now contains 89 life governors, 145 annual governors, 778 life members, 4236 annual members, and 19 honorary members. The vacancy in the Council created by the death of Mr. French Burke has been filled up by the appointment of the Earl of Darnley. In consequence of the losses incurred by the meeting at Lewes, and by the non-payment of subscriptions due, the Council have found it necessary to sell out of the funds the sum of 1500*l.*, thereby reducing the amount of funded property to 9264*l.* When all the outstanding claims of the Society, which by inattention have not yet been sent in, are paid, a fair balance will remain in the hands of the bankers. The whole of the second part of the Journal for the current year is now in type, and in the course of being printed for distribution among the members. It will contain, among other papers, two lectures delivered before the Society by Professor Simonds, on the Age of Animals as indicated by their Teeth; and Professor Way's lecture on the Agricultural Action of Lime. The Council have agreed to the following schedule for the prize essays to be sent in for competition to the secretary by the 1st of March next:—

Farming of Warwickshire	£50	0	0
Farming of Buckinghamshire	50	0	0
Chemical changes in the fermentation of dung	30	0	0
Artificial manures, and principles of their application	20	0	0
Artificial feeding stuffs	20	0	0
Causes of fertility and barrenness in soils ...	40	0	0
Retention of moisture in dry Turnip land ...	10	0	0
Prevention and cure of mildew in cereal crops	20	0	0
Lameness in sheep and lambs	20	0	0
Any other agricultural subject	10	0	0
	£270	0	0

The country meeting at Lincoln has proved in every respect to have been one of the most successful hitherto held by the Society. The cordial greeting and hospitality the members received, the liberality of the mayor, and the co-operation of the local committee, alike contributed to promote most effectively the objects of the Society on that occasion; while the special prizes offered by the Mayor to the owners of hunting horses and to the breeders of improved Lincoln sheep, and those for long wool offered by the local committee, increased the variety of the show. A peculiar international interest was at the same time given to the proceedings by the presence of a body of gentlemen deputed specially to attend the meeting by his Majesty the Emperor of the French, as a mark of his respect towards the Society and the agriculturists of the kingdom. The trials of implements on that occasion were conducted with great care, and with strict attention to results. In the testing of power, two important inventions were introduced, which still further promoted that highly important object, viz.—1. Mr. Amos's improved dynamometer, for self-registering, at one and the same time, the power and velocity required in working the various classes of machines exhibited; and 2. Mr. Balke's employment of a vibrating pendulum, to supersede certain personal superintendence required previously in the trial of steam engines. The Society have been indebted to Mr. Amos and the Messrs. Ransomes and Simms respectively for the use of these instruments at the Lincoln trials. The Council have accepted the invitation of the authorities of Carlisle to hold the Society's country meeting of 1855 in that city; and measures have already been taken for preparing the land for the trial of implements and for the purposes of the show-yard. The Council have agreed to the following schedule of prizes to be awarded at that meeting in the classes of cattle, horses, sheep, and pigs, viz.:—

Short-horned cattle	£160	0	0
Hereford cattle	160	0	0
Devon cattle...	160	0	0
Scotch cattle	105	0	0
Agricultural horses, generally	150	0	0
Clydesdale horses	50	0	0
Leicester sheep...	110	0	0
Southdown and other short-woolled sheep ..	110	0	0
Long-woolled sheep, not Leicesters... ...	110	0	0
Mountain sheep	40	0	0
Pigs	70	0	0
Total	£1225	0	0

They have postponed to their first meeting in February the consideration of the question of prizes for farm poultry, and their decisions on those for agricultural implements and machinery. The Council continue to be favoured by the Earl of Clarendon with returns furnished by the English Ministers and Consuls of the existence of guano or nitrates within their respective jurisdictions. The noble lord has likewise intimated that special instructions have been given by the Admiralty for investigations to be made by cruisers in tropical seas in cases where a probability of success is indicated by collateral circumstances. These various communications will eventually form a body of valuable evidence for the Society; and the Council cannot too strongly express their deep sense of Lord Clarendon's great interest in promoting the objects of the Society. The French Government have transmitted to the Society, through the Minister of Agriculture and Commerce in Paris, a valuable collection of the most important agricultural works recently published in France; intimating that all requests from the Society for any information from France will be complied with. The Council, in acknowledging this mark of distinguished consideration on the part of the French Government, have availed themselves of the opportunity of transmitting a complete set of the Society's *Journal* for their acceptance. The constant influx of new members from every part of the kingdom affords presumption of the public usefulness of the Society, and of the advantages derived from a national institution which, uniting in itself so large a proportion of the agricultural community dispersed throughout the country, becomes a powerful engine for carrying into effective action and practical operation those improvements or alterations which, while tending to advance individual interests, promote the general welfare of the nation.—By order of the Council,

JAMES HUDSON, Secretary.

The Earl of Feversham moved that the report just read be received and adopted.

Mr. R. W. Baker seconded the motion, which was agreed to.

Mr. Raymond Barker (as chairman of the Finance Committee) then read a statement of accounts for the past half-year, from which it appeared that the receipts for that period amounted to 4696*l.* Acting under the power deputed to them 12 months ago, the Finance Committee had, to meet the necessities of the case, sold out 1500*l.* of funded stock, and at the November meeting of the Council he was authorised to address a simple statement of the position of the Society to such of the members as were in arrear with their subscriptions, and having submitted that statement to them, he would do them the justice of saying that most of them had promptly responded to the appeal. The result was, that at the present moment they had a balance at the bankers' (about 1000*l.*) upon which no claim could be made, except an unsettled account for unavoidable repairs to the Society's premises during the last winter. Sir J. Shelley moved a vote of thanks to the auditors, and explained that the Finance Committee had been driven to a sale of funded stock in consequence of the Lewes Show having been held in the midst of the general election of 1852, by reason of which a considerable falling off was experienced in the receipts at the show-yard. Mr. Astbury seconded the motion, and it was agreed to.

On the motion of Mr. Joseph Druce, seconded by Mr. Warsop, the auditors were re-elected.

Colonel Challoner proposed a vote of thanks to Professor Way for his chemical lectures during the past half-year, and the services he had rendered to agriculture by his researches and experiments. Through the assistance of the learned Professor the Society had been enabled to accomplish one of the most useful results that could have been secured to the farmer—he meant the providing of facilities for detecting the adulteration of guano and other artificial manures. That was a matter of paramount importance to the agriculturist; for if a man went into the market and had to pay 12*l.* a ton for an article that was not intrinsically worth 2*l.*, it was nothing else than a wholesale robbery, as well as possibly causing a serious detriment to the land. Professor Way had honestly prosecuted his researches, and shown where the shoals lay, upon which if the farmer were wrecked, it would be his own fault, and not the fault of this Society or of the Professor.—Mr. Barthrop seconded the motion, which was agreed to, the President adding his own thanks to those of the meeting.

Professor Way was exceedingly glad to receive this public testimony of the interest the Society took in his researches and lectures. Colonel Challoner had referred to the subject of manures—a matter which came home to the farmer nearer, perhaps, at this moment than at any other; but he hoped that, after a time, such a feeling would be produced amongst the manure-makers that adulteration would be impossible, which meant that by keeping the cat active they would no longer have mice to kill. (A laugh.) He was happy to add, that a better class of persons were now going into the manure trade, and by and by he had no doubt they would find in every locality respectable and trustworthy men engaging in it, thus relieving the farmer from the necessity of having recourse to chemical experiments for testing the quality of the manure he purchased.

On the motion of Mr. Barker, seconded by Colonel Chaloner, a vote of thanks was also passed to Prof. Simonds, who acknowledged the compliment.

Sir J. Shelley proposed, and the Earl of Feversham seconded, a vote of thanks to the president, which was adopted with applause.

The President, in acknowledgment of the compliment, said it had always given him pleasure to labour for the society because it commenced on a sound basis—not taking science alone for its guide, but practice and science combined.

The meeting then separated.

SOCIETY OF ARTS, *December 6.—On British Agriculture.*—The following is an abridged report from the Journal of the Society of the discussion that followed the reading of Mr. Mechi's paper:—Mr. Samuel Sidney said, as he had made it his business for some years past to visit and gather the opinions of the best farmers in almost every county from Yorkshire to Devonshire, he should venture, in the most friendly spirit, to criticise Mr. Mechi's statements and opinions. He never had been a political opponent of Mr. Mechi—he agreed with the principles that he laid down, although, fortified by the experience of the first farmers of the day, he dissented from his agricultural recommendations. Mr. Mechi had not done justice to the improving spirit of the farmers of England. By his silence, in a paper on "British Agriculture," as to all doings except his own, he had led that unagricultural assembly to believe that an improving agriculture was only to be found in his little farm in Essex. This was not the case. There was no doubt that well drained land—appropriate farm buildings—the best implements the agricultural mechanic could produce—a steam-engine, fixed or locomotive—stock of good quality—the use of artificial manures and artificial food, were essential to developing to the utmost the food producing capabilities of the kingdom. This every modern farmer acknowledged. Why, as to drainage, it was no new thing; it had been practised in Essex and Norfolk years ago, as could be confirmed by a Norfolk farmer now at his side, of 40 years experience. For many years the Journal of the Royal Agricultural Society, and the discussions at farmers' clubs had been directed to the subject; and wherever he went, whether for farming or for hunting, he found the ground drained, or in process of being drained, by landowners and tenants, without reference to proceedings at Tiptree. The same remark applied to farm buildings.—In Lincolnshire, in Norfolk in Bedfordshire, and in Essex, excellent farm buildings had long existed. But none of these buildings were on the model, or planned on the principles, of Mr. Mechi's. As to steam-engines, they were not new; in Scotland they were as common as barns; and long before Mr. Mechi erected his, their construction was an established branch of trade with half a-dozen agricultural implement makers. The enormous, the constantly increasing demand for the most improved implements by real farmers, showed that our agriculturists were awake and up to the spirit of the times. As to stock, he preferred Mr. Mechi's advice to his example. He had seen his stock, and compared it with that he saw tied up feeding on Lincolnshire and Bedfordshire farms, and he must say the comparison was not to the advantage of Mr. Mechi's system. They had heard something of the amount of meat sold off Mr. Mechi's farm; why, he could tell those who now looked into farming details for the first time, of Mr. Hudson's farm of 2000 acres, where, besides enormous corn crops, he sent off to the London market 10 fat bullocks and from 200 to 250 fat sheep every week, from January to July, where the bill for oil-cake was 600*l.* or more, and this on the same farm which in 1822 would only carry in the year 200 beasts and 250 sheep. The owner of that farm had

been farming more than 30 years, and had been improving every year of that time. He could tell them, too, of a farm in Bedfordshire where on no remarkable soil 1000 sheep and lambs and 150 bullocks were sent off to market out of 900 acres; and these were specimens of modern and successful farming principles, which for many years had been making constantly increasing progress without any reference or benefit from the little farm in Essex. It was unfair to compare farmers to shopkeepers and manufacturers. The profits of a farmer were limited to one return in the year,—his occupation required his personal attention. In an hour the inhabitants of a town could receive all the advantages of such meetings as those of the Society of Arts. The farmer, from his local position, was deprived of the same benefit of discussion, comparison, and competition to be obtained by a town population. The value of land must always be limited by the extent of its markets. But he maintained confidently that the progress of agriculture had kept pace with the improved means of communication. On Mr. Mechi's balance-sheet he did not mean to make any remarks, although on a fitting occasion it might give rise to many inquiries. He hoped that Mr. Mechi would every year report to that Society the results of his many experiments, and give it the benefit of his shrewd and wily observations. But a balance-sheet, whether of a farm or a railway, was not the sort of thing to be discussed with any advantage by a public meeting. Mr. Mechi had been very unfairly worried into producing it, but he might now with a good grace discontinue it; especially as a favourable or unfavourable balance proved nothing on an experimental farm. At present prices every kind of industrious cultivation paid, or ought to pay. In conclusion, he would say a few words on the only subjects in Mr. Mechi's paper which raised any disputed points—steam digging and liquid *versus* solid manure.

Steam digging might be dismissed in a sentence—it had nothing to do with British agriculture—it was a mere theory, very proper for the investigation of mechanics, but no working digger had yet been produced. So far the plough was the best instrument, and the efforts of agricultural reformers would be most usefully directed to inducing our farmers in dark districts to adopt the improved iron ploughs of Howard and Ransome, instead of their clumsy wooden affairs, without waiting for the invention of a steam digger. As to the liquid manure, there were, no doubt, circumstances under which it might be used with great advantage, but the balance of evidence was against its exclusive employment for every kind of crop. The use of it was twofold—mechanical and chemical. Solid long straw manure was invaluable as a disintegrator of heavy clays. It had another advantage: when once laid in the soil, the labour was done; thenceforth it gradually and surely gave forth its fertility to every crop. But the crops of a farm were, at any rate, of three kinds: root crops, corn crops, and Grass crops. The whole balance of experiments tried in every part of England showed that liquid manure was not more advantageous or economical, and sometimes positively injurious to root crops. To corn crops it was positively injurious, stimulating the straw at the expense of the ear, and washing away the soil from the roots. On Grass crops the results, when applied in sufficient quantities, and at proper times, were very satisfactory, especially on the perennial Italian Rye-grass. It would depend on circumstances whether green crops should be the chief object of cultivation. But, at any rate, young farmers must pause before they altered the whole economy of their farm, went to enormous expense in iron pipes, hose, labourers, and coal for pumping, and incurred the difficulty of building great tanks for a manure available for only one kind of crop. At present the whole current of opinion was towards covered homesteads and feeding in boxes, for the purpose of producing solid concentrated manure. That plan was rapidly superseding open yards, and that was the very reverse of tanks, pipes, pumps, and squirts. The most effectual application of liquid manure he had ever seen was in the Water Meadows of Exmoor, where a stream, carried through the farm-yard of Mr. Robert Smith, was impregnated with a dung-heap, and on rainy days 80 acres were flooded in an hour. By this means land not worth 2*s.* was made worth 40*s.* a year; but that depended on local peculiarities, as to form of land and flow of water. He (Mr. Sidney) deprecated the hasty adoption of the enormous expenses attendant on applying liquid manure to farms where dairy produce was not the principal object. As to town sewage, that was quite a different question; it would, he hoped, be shortly discussed separately at the Society of Arts. He would not enter into any elaborate details as to the sewage question, which had been exhausted in a recent paper by Mr. Way, the consulting chemist of the Royal Agricultural Society. Sewage manure was not night-soil; it was a very weak solution, the solid matter floating in 1400 times its weight of water. Night-soil was largely used by our market-gardeners, who brought it back from towns in their carts when they sold their vegetables. London manure could be sent down the Medway to Kent for 1*s.* 6d. a ton. But the Chinese plan of collecting soil from house to house would not pay here. There wages were a penny, here they were 3*s.* a day. For his part he said, let those who could use town sewage and night-soil; but do not let the towns wait for a profit from nuisances, when farmers can more cheaply send thousands of miles for guano. In conclusion, he begged to thank Mr. Mechi for having opened so important a subject as British agriculture, and to recommend those who were inclined to commence the study not to be satisfied with books and lectures, but to visit our best counties. From long acquaintance with farmers he would promise them a hospitable reception from a body of men not inferior, having regard to their opportunities, in intelligence and enterprise to any class of men in the kingdom.

Mr. Oakley thought the farmers of this country had a great deal to thank Mr. Mechi for—not only for the good he had accomplished, and the money he had spent in effecting improvements, but also for having pointed out to the agriculturist the shoals and breakers which he should steer clear of. As far as his own experience went, he would say the best economy of manure, and the cheapest way to make it available and profitable was to make it under cover, and to keep the rain of heaven from it, in order that the real manure might go into the land in that state; and if that was done, the manure so used had been proved to have a stronger fertilising power than manure made in the open air. Believing that to be the case, he had adopted the system of box feeding, which he first saw in practice on the farm of Mr. Beadel, in Essex. He saw the system in operation there, and took an opportunity to introduce what he considered some improvements, and those persons who had adopted the plan had thanked him over and over again for having called their attention to it, and had acknowledged the great advantages resulting from it. He was happy to inform them that it had been proved beyond doubt that the same area of land, covered with buildings—be they stables, barns, cattle-sheds, or piggeries—could be closed under one roof at less expense than upon the old plan, leaving as much stable and yard room as under the old system. If that were so the landlord was benefited by the buildings costing him less; and he was, moreover, benefited, because the tenant would also thrive.

Mr. Davis gave the statistics of an experiment upon a small scale in Scotland. There were 15 acres of Italian Rye-grass sown in 1853, and 25 acres sown in 1854, also 15 acres of ordinary Grass. The latter was very badly treated, inasmuch as there was not a sufficiency of liquid manure either for that or the Italian Rye-grass, owing to the tanks not being completed, so as to save the sewage of the winter of 1853. The Italian Rye-grass of 1854 was sown between the 17th April and 1st of May, and yielded four good cuttings. There were also four cuttings from the ordinary Grass, and four from the Italian Rye-grass, sown in 1853. Upon these 55 acres of Grass there were put on, 8th of May, 1854, 25 cattle, all sold by the end of September; on the 18th of May, 20 cattle, and on the 22d of June, 11 cattle, all sold by the end of October; and 68 cattle, rising two-years old, which had been put out between the 26th of June and the 19th of July, were on hand at the end of October. He would mention that the cattle were fed in covered yards, and out of 124 cattle, 260 sheep, and 15 pigs, put on between the 24th of April and the 11th of October, not one case of death occurred. These 55 acres fed at the rate of two head of cattle and five sheep per acre, and that was in a poor county, where, in general, they would be glad to fatten one beast upon 2 or 3 acres of land. As to the profit, without laying a balance-sheet before them, he would give them the figures. The net profit, after deducting all expenses for labour, horse-work, interest on outlay for buildings and machinery, wear and tear, interest of money on stock, cost of cake and corn, and all other charges, was 4*l.* 6*s.* 10¾*d.* per acre, or, on 55 acres, 238*l.* 19*s.* 4*d.*; that was the result of the application of capital and skill upon very bad land. He had been induced to make this statement in consequence of what had been said as to there being no profit got out of feeding cattle upon Rye-grass. They need not go to foreign countries for guano, when they had enough at home of excellent quality if they would only put it upon their land, but as to watering-carts and hand-barrows they were child's play. It was like asking the cotton manufacturers to take up the distaff again. As Mr. Mechi has justly remarked, as long as they stayed at home hugging their own notions, they thought themselves very clever, but when they went abroad they very soon found there were others more clever than themselves. Why, a manufacturer in Manchester would not hesitate to go to Switzerland, if he found out that some one there could dye a cloth a better red than he could produce it, but it was difficult to get the farmer to go into the next town. No; he would stop at home—his father was a farmer before him, and therefore he ought to know a good deal about it.

Mr. James Caird thought there was no real difference between Mr. Mechi and Mr. Sidney. The latter gentleman had given a correct history of the improved methods of agriculture which were now in operation throughout the country; but Mr. Mechi had come forward to speak of his own experience, and not the experience of others. It was no slur upon that gentleman that he did not tell them what other eminent men had done. He would ask any practical man present whether the instance which Mr. Sidney had given of sending from a farm in Norfolk 10 fat bullocks and 250 fat sheep per week into the market was not an exception? Would any one say it was the rule? But the observations both of Mr. Sidney and Mr. Mechi tended to the same direction of progress, and they were equally indebted to both gentlemen for this expression of their opinion. With regard to liquid manure, he agreed with Mr. Sidney, it was a question of profit to each individual farmer. Some would doubtless find Mr. Mechi's plan most advantageous, whilst others, differently situated in matters which must come into the calculation, might find the application of solid manure the most advisable. It was a question which must be decided by the peculiarities of each case.

Mr. Morton said there were no two more important points in the whole range of agricultural subjects than the economy of labour, on the one hand, which Mr. Mechi touched upon when saying that one quarter of the arable produce of this country was consumed by farm horses; and, on the other, the profitableness of feeding stock, which he denied. Now he (Mr. Morton) was quite sure that the agricultural experience of the northern half of the island was against Mr. Mechi on both these points. Horses did not consume one-fourth of the arable produce of North Britain; nor were sheep and cattle necessary evils on the arable land of Scotland. They were necessary there as they were here; but they were profitable there, whether they were here or not. On the question of horse labour, he might say that there were, last year, on the 250,000 arable acres of Roxburghshire and Haddington, 9400 horses—a pair to every 54 acres; while over 1,630,000 arable acres of Norfolk and Hunts there were 73,000 horses, or a pair to every 44 acres. Now it did not need 5½ acres in the south of England to feed a horse, and he was quite sure it did not need 6¾ acres in the Lothians to feed a horse; and to say that the farm horse consumes a quarter of the food his labour produces was an exaggeration in both north and south, which he would be inclined to put at nearly once and a-half the truth in England, and as nearly twice the truth in Scotland. Then, as to the practice of feeding stock for the sake of the manure, he believed that his experience would pretty nearly bear out what Mr. Mechi said was his own; but, notwithstanding that, he should not venture to found upon it a general assertion, in the expectation that it would apply with truth to the whole of the country. He found that during four years, with 1500*l.* worth of stock a year, he sold more fat beef, mutton, and bacon, than he bought of cattle, sheep, and pigs, and food and attendance, by 160*l.* a year—this then was the sum he received for the green food, at least 1000 tons, which during each year they consumed—this was the sum out of which he had to pay the rent and cultivation of the 60 acres on which those 1000 tons were grown. Well, that was not a very paying concern, but still it was a little better than the loss of 64*l.* on 3600*l.* worth of stock and food, which was Mr. Mechi's position during this past year. In the former case, about 3*s.* 6*d* worth of meat was made by the consumption of a ton of green food, and of course green food could not be grown for 3*s.* 6*d.* per ton—not even on an ordinary Grass field, and still less in the Turnip field. But he believed, that when good judgment guided the purchaser or the breeder, and skilful management conducted the feeding process, that you might calculate on 1 lb. of meat for every 175 to 200 lbs. of English grown Turnips; and he believed you might expect one-third to one-half more from the consumption of Scotch grown Turnips—there was all that difference in the feeding quality of the food. This amounted to 5*s.* or 6*s.* a ton for green food in England, and 7*s.* to 9*s.* a ton for green food in Scotland, at which prices, taking roots and Grass together, it could be grown. There was all this difference as the result of differences of climate in the two countries: and under such variable agricultural conditions, he submitted that general sweeping assertions, however calculated to stir up attention, were not possibly applicable to the agriculture of the whole of so variable a country as Great Britain. He believed the value of Mr. Mechi's example amongst farmers to be very considerable, but in an indirect rather than a direct way. As he himself had told us, it was a great point "to provoke people to talk about such matters, causing a little wonder, disbelief, anger, and ultimate calculation and conviction." And all this Mr. Mechi had effected so as no other man could, for no other man, he believed, possessed such exuberance of good nature, or could stand the badgering which had been his lot, and was the lot of all enthusiastic teachers, especially if they carried on the learning and the teaching together, which had been Mr. Mechi's plan, or at least, had been his plan in the earlier years of his agricultural history. The so-called failures which he experienced at first were not forgotten yet, as was found at the meeting of the Farmers' Club last night. But his honesty in relating his experience, whatever it might be, was one of the most useful points in his character as a teacher. It seemed that people had yet to learn that in a fully recorded experiment the word "failure" was altogether a misnomer. Let all the circumstances, from the beginning to the end, from the first outlay to the "balance sheet"—from the first operation to the full weight and measure of the result—be recorded; and, let that result be what it might, it could not be a failure. An experiment was just a question put to Nature, and the answer *no* was often as useful and as valuable as the answer *yes.* He hoped, therefore, that whether his experience were a warning or a guide, whether its information were negative or affirmative, Mr. Mechi would continue, as he had done, to give it to the public; and then, whether he were considered the best of farmers or not, he would certainly continue to be one of the most useful men in the agricultural world.

Colonel Challoner had listened with attention and with very great pleasure both to the paper and to the discussion which had followed upon its reading. They had heard a great deal from Mr. Sidney—part of which he agreed with, whilst from other parts he must take the liberty of dissenting. One gentleman had said he should like to have a farm-yard entirely covered in. As far as his own little experience went, he should certainly like to have every animal under cover; but he should be sorry to run the risk of any inattention on the part of his farm-bailiff to have the yard entirely covered over, except so far as the cattle was fed in Warne's boxes, where the urine ran in such proportion as to keep the manure in a proper state. He could mention an instance of a yard being covered over, and he had seen the manure turned out in the month of March absolutely with a dry blue heat upon it. No one could say that was in a proper state to be used upon the land. As a general rule, he did not think farm-yards entirely covered in were very desirable. He would now perform the pleasing task which had been assigned him of proposing that the thanks of this meeting be given to Mr. Mechi, not only for his lucid and interesting paper, but in the name of the farmers of this country, for the expense, pains, and trouble he had been at to throw some light upon the science of farming.

Mr. Wren Hoskyns, on rising to second Colonel Challoner's proposal to the meeting, said it was difficult not to feel the application of the old motto—"Quot hominum tot sententiæ" to the wide field of opinion as well as experiment that the topics of agriculture had presented that evening. So infinitely various were the conditions of climate, soil, and season; so different, and often conflicting, the circumstances under which agri-

cultural experiment was made; so many and various the sciences, and even the faculties of mind called into play, that the difficulty of arriving at absolute conclusions was preceded by the more embarrassing one to a speaker, of selecting one topic out of so many. "British agriculture" was a wide field. Having, however, been requested to say a few words, he would address them on what appeared the more prominent topic of the evening's discussion, and indeed of very general discussion in all parts of the country—the application of sewage manure. Should it be applied in a liquid or in a dry condition? This seemed to him a most important and preliminary question. Were we employed upon the right problem in attempting its carriage and distribution, diluted with so enormous and costly a bulk of water, in a climate already so moist, and occasioning us so much labour and pains to part with our surplus fluid by drainage; or, was the truer and more economical problem, how to obtain the fertilising matter in its most condensed and solid form? He confessed the latter was the view to which he had been led, both by the results of his own experience and by that of others, whose opinions and experiments had been very convincing to his mind. He could not help indulging the belief, that if it were possible for all the fertilising matter produced or brought upon a farm, to be equally spread over it in its dry and "fixed" condition, we might trust to the abundant precipitation of moisture in this climate to dissolve and dilute it amply for the wants of the soil. Such, too, was the conclusion arrived at upon Mr. Huxtable's farms, which he had revisited only last week, and which had presented to him a strong instance of the abandonment of the "liquid" system. There the tanks had become receptacles for burnt soil, saw-dust, and pulverulent matter of every kind, to imbibe and solidify the liquid outpour of the farm-yard and buildings; and such he (Mr. Hoskyns) believed to be the most profitable and convenient mode of its applications; in the form, in short, of drill manure. He must, he supposed, add a word upon the subject of the steam-engine as applied to agricultural purposes, on which, while he cordially agreed with part of what had fallen from a previous speaker (Mr. Sidney), he could not accept his assertion that the subject of its future application and cultivation was beyond the pale of practical discussion. Had such a rule been acted on in the other arts of life, where would have been all the advancement which had carried civilization itself over the globe, by all the various operations to which the steam-engine had been, from time to time, and from invention to invention, newly applied? The practical difficulty which at present beset all the experiments towards this end with the steam-engine, was its own bulk and weight, increasing in equal ratio with its power, and thus appearing to refuse the twofold office of simultaneous cultivation and progression over the yielding surface of the field. But this, like other difficulties, might yet be overcome. Before sitting down, he must beg leave to second the proposition of Colonel Challoner, and in so doing to express his gratification at the interesting paper read to them that evening by Mr. Mechi, whose undaunted pioneering had led to so much interesting and valuable discussion, and whose ready and eloquent call had awakened many a slumbering agricultural question, and whose good-natured advocacy, where it failed to make a convert, had never made an enemy. He begged to second the vote of thanks to Mr. Mechi, proposed by Colonel Challoner.

The Chairman was sure he was only expressing the sentiments of all present in saying that they were greatly obliged to Mr. Mechi for the very interesting and instructive paper he had read to them. Indeed, although a great variety of topics had been touched upon by Mr. Mechi and the gentleman who had followed him, it was evident that the great question of interest had been as to the comparative merit of applying manure in the dry or liquid form. When it was considered how large a sum was paid by the British farmer for foreign and for artificial manures, it certainly became his duty, as well as his interest, at least fully to inquire how far such a course was necessary. That was to say, whether any process could be adopted by which the manure of the farm could be more effectively and economically distributed on the land. Although the utility of the sewage of towns, and the methods of applying the manures of the farm, had been mixed up in the discussion, he thought it did not follow that the most economical mode of employing the one must necessarily be so for the other also. The sewage of towns already existed almost entirely in a liquid form, whilst the manure of the farm was principally solid. If therefore the liquid form be the most practicable for the application of the sewage of towns, it did not follow that it would be the most profitable to convert the manures of the farm into the same condition. He was of opinion that where a large bulk of green produce was to be obtained within a limited area of land, the liquid form of manure would be the most effective. And if the sewage of London and other large towns were to be rendered available for agricultural purposes, he considered the most likely plan to effect it would be that of irrigation upon Grass; irrigated manures acting, in his opinion, much more successfully upon Italian Rye-grass or common pasture, than upon any other crop. However, he agreed with the opinion expressed by Mr. Sidney, that this question between solid and irrigated manures was entirely one of cost. And, that being the case, he did not think that at the present moment sufficient experimental evidence was before them to prove the economy of converting the manures of the farm into the liquid form, and in that state distributing them over the land.

SMITHFIELD.—*The "Great Market"*—1854, *Dec.* 11.—The usual bustle and excitement was again witnessed at this great gathering of fat meat.—The Devon breed was present in large numbers. The great improvement in the size of the animals of this breed is to-day universally admitted. It is so evident that we believe those who only know the breed as it appears at the Baker Street Bazaar would not take these large and splendid animals for the same class. Their quality in the market to-day is pretty good; but there is a general deficiency in ripeness. Their number must exceed 1500. Many would weigh from 150 to 190 stone of 8 lbs., and some few might exceed 200.—The Herefords are far behind our expectation both as to quantity and quality. The rails to which the cattle are tied, and which we have seen closely packed with these fine animals, are to-day studded with but few here and there, and many of them deficient in the qualities that mark good bullocks.—The short-horns are bulky, ripe, and well-proportioned animals, maintaining the position which they held in Baker Street. We would especially refer to those sent from Lincolnshire and Suffolk. Many splendid animals came from Leicestershire and Northamptonshire. Many sales effected under our notice could not have been less than 5*s.* 10*d.* per stone of 8 lbs. Great as has been the improvement in Devon breed, and praiseworthy as is the energy and intelligence of the breeders in the west, they have much to do before their breed stands on an equality with short-horns for weight and early maturity. Whatever may have been the deficiency in our market supplies of beef during the last six months, it has been less in the case of short-horn beef than in that of any other breed.—The Scots too have been tolerably abundant: of these there is a fair supply to-day, both of West Highlanders and Galloways, and all possessing in the highest degree good quality and symmetry and general excellence. And as far as our judgment goes of the sales that we witnessed nothing in the market fetched so high a price; the butcher had very little change indeed out of 6*s.* a stone. If the committee of the Smithfield Club had taken a walk round the show to-day, and paused a few minutes over about 40 Scots, shown by Mr. Macdonald, and bred by Mr. M'Combie, of Aberdeenshire, they must have come to the unanimous opinion that this breed stands second to none in merit; and we hope to see it greatly encouraged at our fat exhibition.—There was a fair show of foreign cattle not over fat, but containing among them some very fine bullocks, which found their way out of the market very early in the day. The Dutch cattle have yet plenty of room for improvement. They send us, however, some good calves, and the breed would stand higher in our estimation if they were all sent over while their bones are soft. As a whole we do not think the market equal to those of previous years either as to beef or mutton shown. In sheep some very fine old Downs were shown, and some capital cross breeds, and Mr. Hewser and others showed some good Cotswolds. A few fetched enormous prices, which were evidently the reserve of the Baker Street Show. The mutton trade was not so brisk, generally, however, as the beef. Though both fetched high enough prices to stop all mouths on the subject of agricultural distress, unfortunately the prices are also high enough to close the mouths of many agricultural consumers.—This, then, is the report of the last Christmas market that will be held in Smithfield. In a few weeks the new market in Copenhagen Fields will be opened; and the next Christmas market will be held in the larger space and more favourable circumstances which it presents. We hope shortly to lay before our readers with a full account of the arrangements there.

Notices to Correspondents.

COVENEY'S ECONOMICAL MANURE: *H S, and Others.* Thanks for your letters. If we have occasion to use them we will do so.

FOOD FOR OXEN: *W J B.* If you can get 2½ bushels of Barley meal for the same money as one bushel of Linseed meal, we should prefer the former. But your best plan is to use a mixture of the two—and the same money spent on this mixture, in the proportion of about two of the former to one of the latter, will purchase a more efficient food.

HAY: *J H.* We do not understand your question: if you mean which is best food for horses, then the answer depends altogether upon the circumstances of the case, though natural hay is generally better than artificial for the purpose.

LIQUID MANURE: *E H.* We suppose your small field to be in Grass: and in that case the application of the contents of your tank in the liquid form, if sufficiently diluted, to the surface of the land by means of pump and hose is probably the best plan of using it. The tank will be large enough, we presume, to hold a week's collection. The use of the pump at weekly intervals would not be a very heavy cost.

ROOFING: *J H.* In your circumstances asphalted felt is probably the best roofing—a little annual attention will keep it tolerably watertight.

SEED GROWERS: *J Moss.* It appears to us that "the reasonable request of the growers to have a voice in fixing prices" is not properly the subject of a "*request*" at all. If you don't like the prices offered you need not accept them, and so, instead of *asking* to have a voice, you will without asking cause your voice to be heard.

STEAMING APPARATUS: *W J B* asks what sort of boiler is most approved for steaming pigs' food. He requires to steam about one-half to three-quarters of a ton of Swedes or Mangold daily. He has kettles, &c., for the roots, but he wants to know the sort and size of boiler, the sized pipes required, and the proper method of securing against explosion, whether the pipe always being left open in some part is sufficient security.

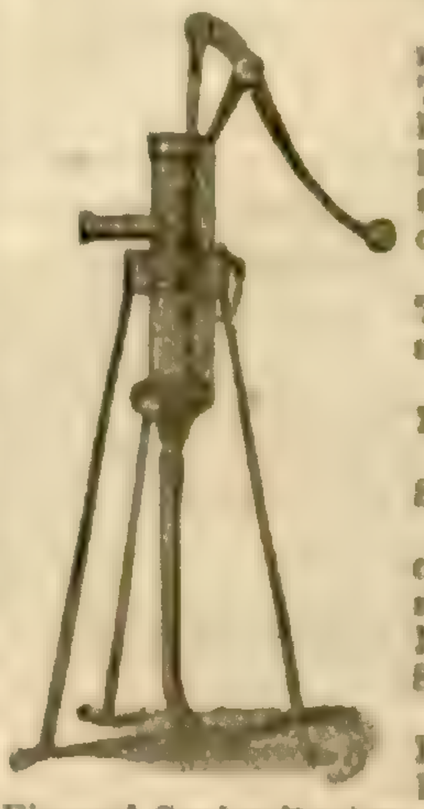
SUGAR: *Omega.* Sugar can only tend to produce a sleek coat by conveying into the system a readily soluble heat-producing or fattening substance. Linseed cake of the best kind would produce as good an effect or better at less expense. *W. C S.*

ERRATA.—In the 1st line of col. *c*, page 793, for "earthiness" read "heartiness." In p. 797, col *a*, 14th line from the bottom, for "He stated that Mr. Morton referred," &c., read "Mr. Morton referred," &c.

TO AMATEUR GARDENERS, LOCAL BOARDS OF HEALTH, & SANITARY WORKS.

PATENT SLUICE COCKS, Gutta Percha Combinated ditto, Patent Flexible India Rubber Tubing, and every other Hose for Watering Gardens. The Hydraulic Ram, Fire, Garden, and every other kind of Pump, Hydrants, High Pressure Cocks, and all other articles to be had, Wholesale and Retail, of FREEMAN ROE, Hydraulic Engineer, 70, Strand, and Bridgefield, Wandsworth.

WARNER'S IMPROVED LIQUID MANURE, OR GENERAL PORTABLE PUMP.



The valve is a ball of imperishable material, and cannot clog in action. The barrel is of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure. The legs will fold together, and the whole may be carried on shoulder to any pond or tank required.

Price of 4½ in. Pump, with legs, 3*l.* 3*s.* The barrel is 27½ in. long, and the legs are 5 ft. high.

1½ inch Gutta Percha Suction Pipe, 1*s.* 6*d.* per foot.

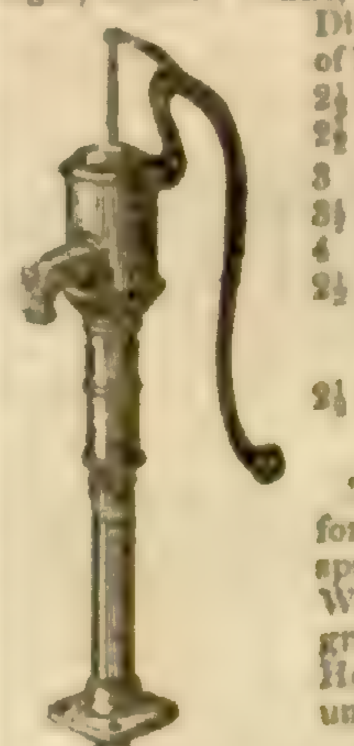
1½ inch Flexible Rubber and Canvas Suction Pipe, 3*s.* 6*d.* per foot.

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water, by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c.—Engravings sent on application.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST IRON PUMPS, for the use of Farms, Cottages, Manure Tanks, and Wells of a depth not exceeding 30 feet.



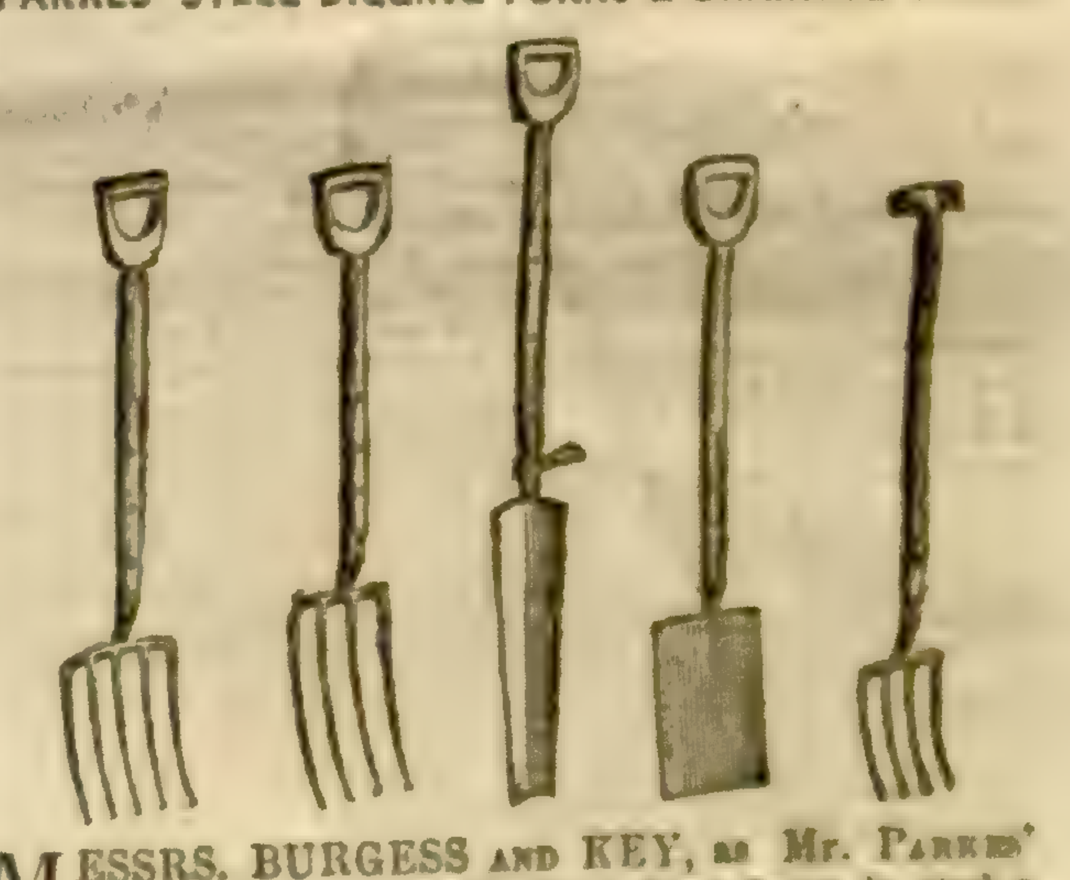
Diameter of Barrel	Length of Barrel, under nose.		£ s. d.
2½ in.	short 1 ft. 7 in.	Fitted for lead, gutta percha, or cast iron flanged pipe, as required.	1 12 0
2½ "	long 3 " 3 "		1 15 0
3 "	ditto 3 " 6 "		2 12 0
3½ "	ditto 3 " 6 "		2 [illegible] 0
4 "	ditto 3 " 6 "		3 5 0
2½ "	short, with 15 feet of Lead Pipe attached, and Bolts and Nuts ready for fixing	...	2 12 0
2½ in. long	ditto ditto	ditto	2 15 0

The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or Country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER AND SONS, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water, by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.



MESSRS. BURGESS AND KEY, as Mr. PARKES' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps. 103, Newgate Street, and 52, Little Britain, London.

THE CRYSTAL PALACE FLOWER BASKETS, as exhibited in Nave and Transepts of the CRYSTAL PALACE, SYDENHAM, made to the original and other new elegant designs, by W. RICHARDS, at the Wire Works, [illegible], Oxford Street, nearly opposite the Princess's Theatre. CONSERVATORIES AND AVIARIES fitted up. Wire work in all its varieties. Game and garden fence—parrot cages and all others. Choice birds kept on sale. WINDOW BLINDS of every possible description, of the very best materials and workmanship.

N.B. An allowance to nurserymen and the trade.

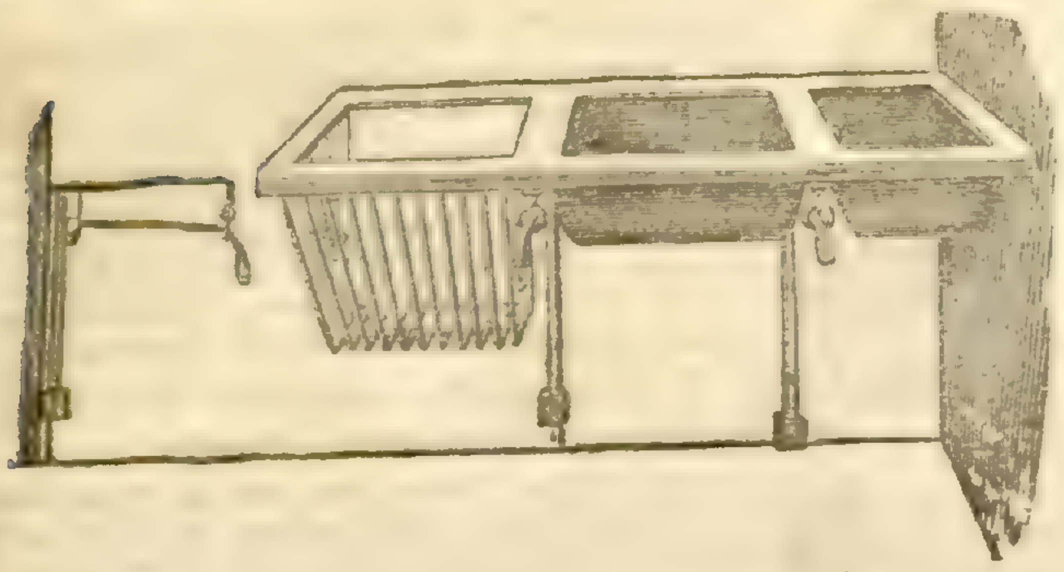
STEPHENSON AND PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1*s.* 6*d.* per yard run, of ELISHA THOMAS ARCHER, 7, Trinity Lane, Cannon Street, City, and the Royal Mills, Wandsworth, Surrey.

COTTAM'S NEW PATENT FOR STABLE REQUISITES.



COTTAM AND HALLEN, the original projectors of the above arrangement of MANGER, RACK, and WATER-TROUGH, as one Fixture, which obtained the Great Exhibition Prize Medal, and universally approved of, have added all the latest improvements to their invention (secured by patent), which includes an entirely new method of attaching the halter, ball, and rein, giving to the horse greater freedom, and being noiseless in their operation, add much to its comfort whilst feeding and convenience when at rest.

COTTAM'S ENAMELLED MANGERS

are constructed in the best possible manner, both as to form and utility, are cleanly in appearance, durable and impervious to infection; manufactured PLAIN, GALVANISED, or ENAMELLED.

IMPROVED PUMPS,

OF THE BEST WORKMANSHIP AND WARRANTED.

The VALVES and SUCKERS of these Pumps are constructed upon an entirely new and SIMPLE principle; they are not likely to get out of order; should they do so, can easily be repaired, as the Pump is so contrived that the valves can readily be got at.

An Improved CAST IRON TRAP, strongly recommended by the Sanitary Commissioners, and suitable for Sugar Bakers, Slaughter Houses, &c. &c. It is so formed that the Trap-plate will pass any matter the top grating will let through, and therefore is not liable to stoppages; and well adapted to Stables and Stable-yards, for saving the best part of Liquid Manure.

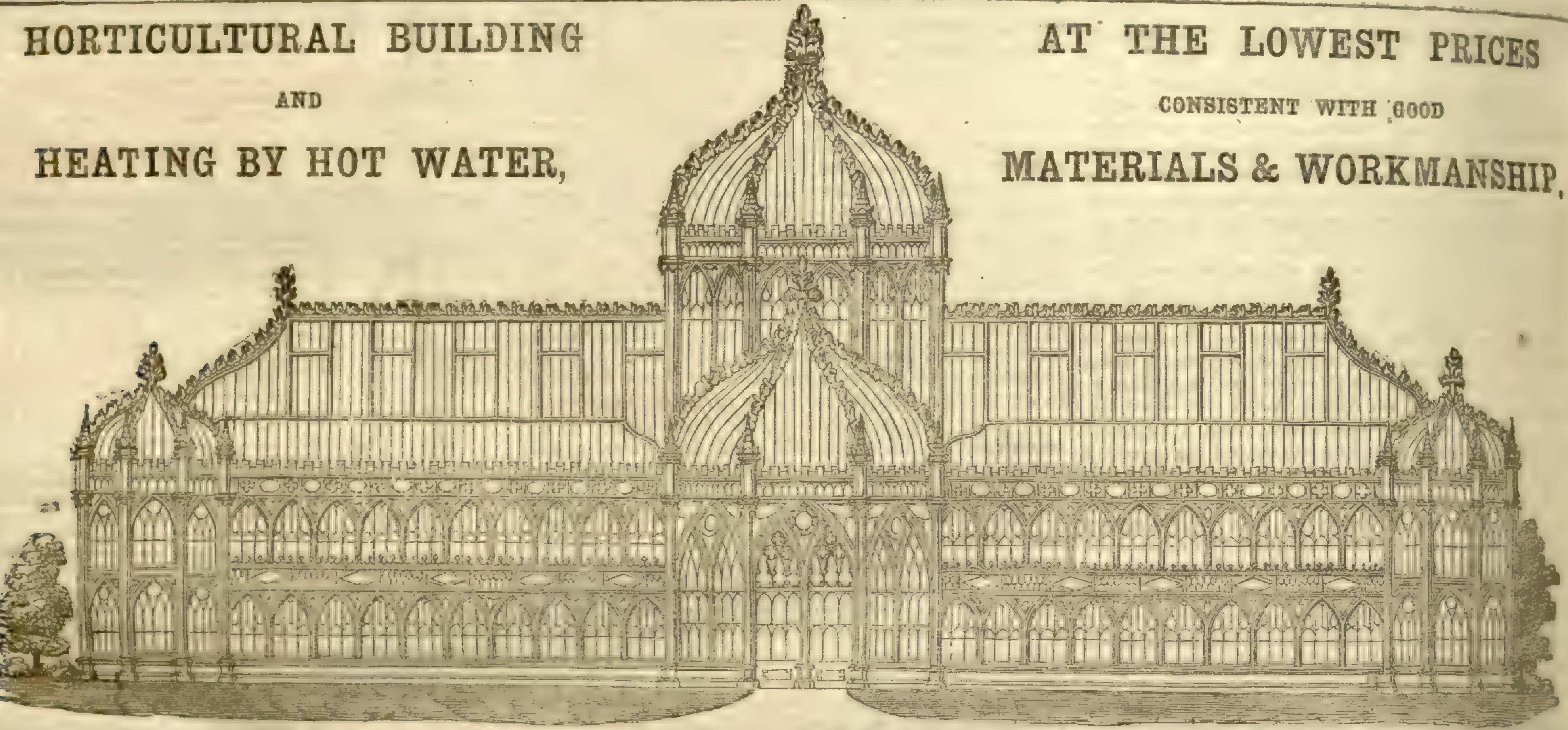
Improved Stable Guttering, with moveable safety covers, Sanitary Traps, Stable Pumps, Double Corner Mangers, Harness-room Appendages, and every article in Stable Furniture. Chaff Cutters and Oat Bruisers, kept on show.

A STALL fitted up, complete, exhibited at the Crystal Palace, Sydenham, Stand No. 19, Agricultural Department; and at

COTTAM & HALLEN'S WORKS, 2, Winsley Street, Oxford Street, London.

WARMING AND VENTILATING.—Descriptive Catalogues and Estimates on application.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER, AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS & WORKMANSHIP.



GRAY & ORMSON, DANVERS STREET, CHELSEA, LONDON.

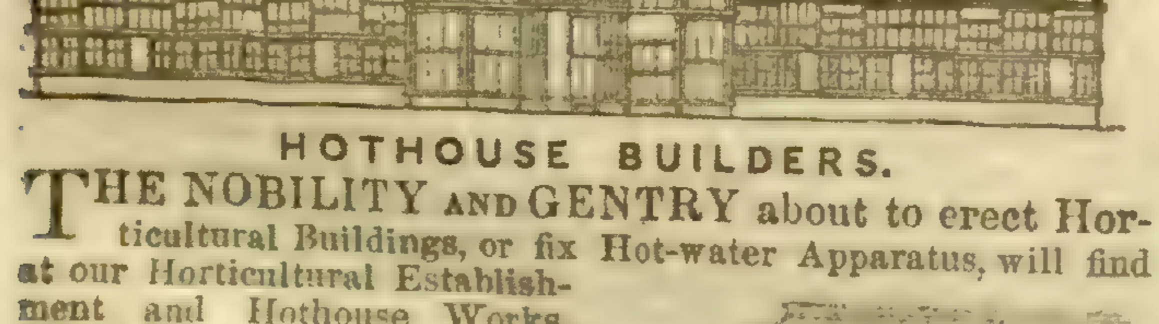
GRAY AND ORMSON, Danvers Street, Chelsea, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and they can with the greatest confidence give the most satisfactory references to all by whom they have been favoured with orders. Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

GREEN AND HOT-HOUSES made by machinery, at J. LEWIS'S HORTICULTURAL WORKS, Stamford Hill, Middlesex. Sent to all parts of the United Kingdom. These buildings are warranted of the best materials, and put together in a superior manner. Being manufactured by steam-power, they are considered the cheapest and best made in England. The Trade and Merchants supplied at wholesale prices. List of Prices by enclosing two postage stamps.

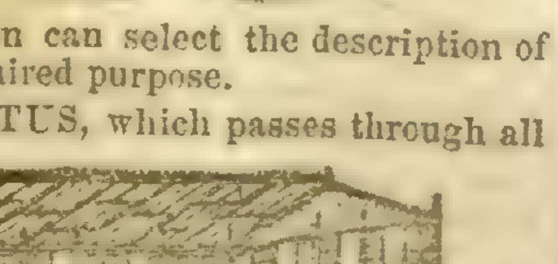
HORTICULTURE IN ALL ITS BRANCHES.

JOHN WEEKS & Co., King's Road, Chelsea,

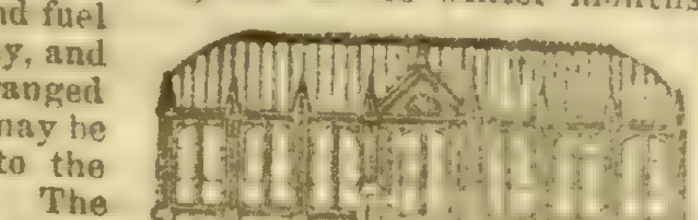


HOTHOUSE BUILDERS.

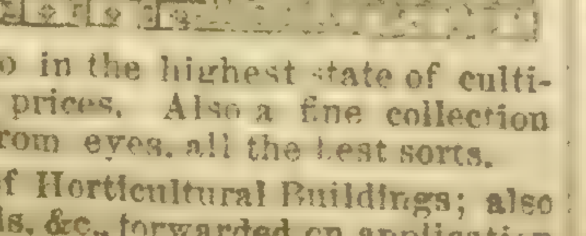
THE NOBILITY AND GENTRY about to erect Horticultural Buildings, or fix Hot-water Apparatus, will find at our Horticultural Establishment and Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.



The HOT-WATER APPARATUS, which passes through all the Houses and Pits, affording both top and bottom heat, is in constant operation and particularly worthy of attention.



Many of the Houses and Pits are of wide and lofty dimensions, and together equal in length 1000 feet. They are all effectually heated by *one boiler*, which, during the severe winter months does not cost in labour and fuel more than 3s. 8d. per day, and the apparatus is so arranged that each House or Pit may be heated separately and to the required temperature. The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.



Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application to JOHN WEEKS & Co., King's Road, Chelsea, London.

GLASS FOR CONSERVATORIES.

THOMAS MILLINGTON'S present prices for good 16 oz. sheet glass, boxes included.

6 in. by 4 in. to 6 in. by 5½ in.	... 13s. 3d.	per 100 feet.
7 by 5 to 8 by 6	... 13 6	
8½ by 6½ to 10 by 8 ...	... 14 0	
10½ by 8½ to 14½ by 10½ ...	... 16 0	
17 by 10 to 18 by 12 ...	... 18 0	

A great variety of sizes. Particulars had on application.

ORCHARD HOUSE SQUARES on Mr. RIVERS's plan, to whom I have sold some thousands of feet.

Large Sheets for cutting up, in cases, at 2½d. and 3d. per foot.

HARTLEY'S IMPROVED ROUGH PLATE GLASS, Sheet, and Rough Plate, Tiles, Milk Pans, Bee and Propagating Glasses, Wasp Traps, Cucumber Tubes, Preserve Jars, with and without covers; Fern Glasses.

Plate, Sheet, Crown, and Ornamental Window Glass. Crystal Glass Shades for ornaments.

Greenhouses, erected in either wood or iron. Garden Lights and Frames.

87, Bishopsgate Street Without, London—same side as Eastern Counties Railway.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

JAMES PHILLIPS AND Co. have the pleasure to hand their present prices of Glass for Cash:—

	SHEET SQUARES. In Boxes of 100 feet.	CROWN SQUARES. In Boxes of 100 feet.
Under 6 by 4	£0 12s. 6d.	... 8s. 6d.
6 by 4, and 6½ by 4½	0 13 0	... 12 6
7 „ 5, — 7½ „ 5½ / 8 „ 6, — 8½ „ 6½	0 15 0	... 14 0
9 „ 7, — 10 „ 8, 12 by 9, 12 by 10, 14 by 10	1 0 0	

Larger Sizes, not exceeding 40 inches long.

16 oz. from 3d. to 3½d. per square foot, according to size.

21 oz. „ 4½d. to 5d. „ „ „

26 oz. „ 6d. to 7½d. „ „ „

SIXTEEN-OUNCE SHEET GLASS OF ENGLISH MANUFACTURE FOR ORCHARD HOUSES, THE SAME QUALITY AS WE SUPPLY TO Mr. RIVERS, and of various dimensions, always on hand.

Double-crown Glass of various dimensions in 100 feet boxes.

Glass Tiles, ¼ of an inch thick, packed in cases, containing 50, at 1l. 17s. 6d. per case. Packages 2s. each extra, but allowed for when returned.

Glass Milk Pans, 21s. per dozen; Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoys' Milk Syphons, Wasp Traps; Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the trade.

Horticultural Glass Warehouse, 116, Bishopsgate Street Without, London.

DEANE, DRAY, AND CO., have a very large and superior stock of FRENCH MODERATOR LAMPS now on sale.—(Opening to the Monument), London Bridge.

ESTABLISHED A.D. 1700.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz. SHEET GLASS of British Manufacture, at prices varying from 2d. to 3d. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

THE COMFORT OF A FIXED WATER-CLOSET FOR 1l.—Places in gardens converted into comfortable water-closets by the PATENT HERMETICALLY SEALED PAN, with its self-acting valve, entirely preventing the return of cold air or effluvia. Any carpenter can fix it in two hours. Price 1l. Hermetically-sealed Inodorous Chamber Commodes, 1l., 2l. 4s. and 3l.; also Improved Portable Water-closets, with pump, cistern, and self-acting valve. A prospectus, with engravings, forwarded by enclosing two postage stamps.—At FYFE & Co.'s Sanatorium, 46, Leicester Square.

TEN THOUSAND STOVES.

THE TENTH THOUSAND OF THE PATENT PORTABLE SUSPENSION STOVE is now on sale. These Stoves, so justly celebrated for preserving a pure and healthy atmosphere, and for their extraordinary economy in the consumption of fuel, are sold, wholesale and retail, by DEANE, DRAY, AND CO., 46, King William Street, London Bridge, and may be obtained of most Ironmongers.

The IMPROVED PATENT VENTILATING STOVE, which is strongly recommended, may also be seen at the above establishment. Prospectuses, &c., forwarded post free.

FORD'S EUREKA COLOURED SHIRTING is now ready, in 200 different patterns. Specimens in various colours sent post free on receipt of six stamps.

FORD'S COLOURED EUREKA SHIRTS, Six for 27s.

FORD'S WHITE EUREKAS, best quality, Six for 40s.; second quality, Six for 31s.; if washed ready for use, 2s. extra.

CAUTION.—Ford's Eureka Shirts are stamped, "38, POULTRY, LONDON," without which none are genuine.

*** Catalogues with particulars post free.

RICHARD FORD, 38, Poultry, London.

METCALFE AND CO.'S PERFUMERY DEPARTMENT.—PROPRIETARY ARTICLES.—METCALFE's celebrated ALKALINE TOOTH POWDER is acknowledged to be the safest and most efficient now in use. Dupuytren's Medicated Pomade is the most certain remedy for preventing the hair prematurely falling off, and for restoring it when baldness has already commenced. Dupuytren's Medicated Balm strengthens, cleanses, and improves the growth, and is generally acknowledged as the best wash for the hair.—Manufacturers of British and Importers of Foreign Soaps, Perfumery, and J. M. Farina's genuine Eau de Cologne, at METCALFE, BINGLEY, & Co.'s old Establishment, 130B and 131, Oxford Street, second and third doors west from Holles Street.

SHOOTING WANTED.

WANTED, within 40 miles of London, easy of access by rail or road, from 400 to 1000 acres of good PARTRIDGE AND COVER SHOOTING. Possession will be required early in February next.—Address to W. A., 2, King's Bench Walk, Row, London.

PURE BRED SOUTH-DOWN EWES.

TO BE SOLD by a gentleman who has a large flock of pure bred SOUTH-DOWN SHEEP, will be overstocked at Lady-day, in consequence of giving up one of his Farms. He wishes to sell 100 Ewes, in lamb to tups now on the Farm. The ewes may be selected. Apply to Mr. W. Turner, the Shepherd, Dowdeswell, near Cheltenham, Gloucestershire.

TO BE SOLD, BUFF COCHIN CHICKENS, from first-class Prize Birds, Brahma Pootra Chickens, from imported American Prize Birds, and Spanish Chickens. Also some very good Birds of the above descriptions. Wire, Game, and Poultry Netting, Poultry Hurdles, Hen-houses, Chicken Coops, Flower Stands, and Trainers, Garden Arches, and every kind of Wire Work, useful and ornamental.—T. H. Fox's, City of London Wire Works, 44, Skinner Street, and 6 & 8, Snow Hill. Illustrated Catalogues forwarded post free.

FANCY POULTRY.—PERIODICAL SALE.

MR. J. C. STEVENS will sell by Auction at his Great Room, 38, King Street, Covent Garden, on TUESDAY, 19th December, at 12 o'clock precisely, a selection of first-class DORKING FOWLS from the yard of Mrs. FINCH NOYES, of Salisbury, very choice SPANISH POLANDS, BANTAMS, and many first-rate Vulture-hocked COCHINS, from celebrated breeders. Catalogues, by enclosing a stamped directed envelope to Mr. J. C. STEVENS, 38, King Street, Covent Garden.

PEAR TREES.

THE CULTIVATION OF M. DE JONGHE, OF BRUSSELS.

MR. J. C. STEVENS will sell by Auction, at his Great Room, 38, King Street, Covent Garden, on SATURDAY, 23d December, at 12 for 1 o'clock, a collection of 25 of the best new varieties of PEAR TREES (Pyramid), some of which are on Quince Stocks, and comprising Prince Albert, Leopold I., Duc d'Orleans, Comte de Paris, Dr. Trousseau, &c., all of which are from the renowned establishment of M. DE JONGHE, of Brussels. — May be viewed on the morning of Sale and Catalogues had.

TO FLORISTS AND OTHERS.

MESSRS. JONAS AND THOMAS PAXTON are instructed to sell by Auction, on WEDNESDAY, December 20th, at 11 o'clock, the whole of the choice collection of Picotees, Chrysanthemums, &c., of the late Rev. A. H. Mathews, at Weston-on-the-Green, midway between Oxford and Bicester. —Catalogues may be had of the Auctioneers, Bicester, Oxon.

MITCHAM.

MESSRS. PROTHEROE AND MORRIS are directed by J. W. Dawson to sell by Auction without reserve, on the premises, Mordon Road, Mitcham, Surrey, on MONDAY, Dec. 18, 1854, at 11 o'clock, the NURSERY STOCK, consisting of Evergreens; comprising Chinese Arbor Vitæ, Laurel, Privet, Laurestinus, Hollies, Aucubas, Rhododendrons, Pyracantha, Honeysuckles, Currants, quantity of Rhubarb, Herbs, &c.—May be viewed prior to the Sale.—Catalogues may be had on the premises of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

CHRISTMAS PRESENTS.—The most appropriate offerings for this season of festivity are those which tend to the promotion of health and personal attraction: none can be more acceptable than ROWLANDS' MACASSAR OIL, for imparting a transcendent lustre to the hair, and sustaining it in decorative charm. ROWLANDS' KALYDOR imparts a radiant bloom to the cheek, and a delicacy and softness to the hands, arms, and neck; and ROWLANDS' ODONTO, or PEARL DENTIFRICE, bestows on the teeth a pear - like whiteness, and renders the breath sweet and pure. The patronage of royalty throughout Europe, their general use by rank and fashion, and the universally-known efficacy of these articles give them a celebrity unparalleled.— Sold by A. ROWLAND & SONS, 20, Hatton Garden, London, and by Chemists and Perfumers.—Beware of spurious imitations.

DO YOU WANT LUXURIANT HAIR, WHISKERS, &c.?— No other compound for the Hair has maintained such an enduring celebrity as EMILY DEAN'S CRINILENE. It is guaranteed to produce Whiskers, Moustachios, Eyebrows, &c., in a few weeks, and restore the Hair in Baldness, from whatever cause, strengthen it when weak, prevent its falling off, and effectually check Greyness in all its stages. For the nursery, Dr. Wilson says it is unrivalled.—Price 2s. per Package (elegantly perfumed); sent post free, on receipt of 24 penny postage stamps, by Miss DEAN, 37 A, Manchester Street, Gray's Inn Road, London. Sold by every Chemist in the Kingdom.—" In one fortnight it produced a beautiful set of moustachios." H. ADAMS.—" It has prevented my hair falling off." J. HICKSON.—" It has quite checked the greyness that was coming on." Mrs. ELDER.

DO YOU WANT BEAUTIFUL HAIR, WHISKERS, &c.?—COUPELLE'S CRINUTRIAR, though extensively imitated, is universally acknowledged as the only preparation to be really depended upon for the unfailing production of Hair and Whiskers in two or three weeks; as also checking Greyness, Baldness, &c., and rendering the Hair beautifully luxuriant, curly and glossy. Mr. WILLIAMS, 8, Lowther Street, Liverpool.—" I can now show as fine a head of hair as any person, solely from using your Crinutriar." Sergeant CRAVEN, Longford Barracks, Ireland.—" Through using your Crinutriar, I have an excellent Moustache, which I had before despaired of." Mrs. CARTER, Pangbourne, Berks.—" My head, which was quite bald, is now covered with new hair." Price 2s. per Bottle, and four times the quantity at 6s. each, through all Druggists and Perfumers, or of ROSALIE COUPELLE, 69, Castle Street Newman Street, Oxford Street, London.

DINNEFORD'S PURE FLUID MAGNESIA has been for many years sanctioned by the most eminent of the Medical Profession, as an excellent remedy for Acidities, Heartburn, Headache, Gout, and Indigestion. As a mild aperient, it is admirably adapted for delicate females, particularly during pregnancy; and it prevents the food of infants from turning sour during digestion. Combined with the Acidulated Lemon Syrup, it forms an Effervescing Aperient Draught, which is highly agreeable and efficacious.—Prepared by DINNEFORD & Co., Dispensing Chemists and General Agents for the Improved Horse-Hair Gloves and Belts), 172, New Bond Street, London, and Sold by all respectable Chemists throughout the Empire.

HOLLOWAY'S PILLS STAND PRE-EMINENT FOR THE CURE OF ASTHMA.—Mr. Griffiths, Gardener of Gellygynan Hall, Denbighshire, was afflicted for a number of years with a violent Asthmatic Cough which caused him many sleepless nights, in truth the attacks were so severe at times that he could scarcely keep any food on his stomach for days together, and notwithstanding he resorted to various reputed medicines for the cure of Asthma yet he obtained no beneficial effect. At last he tried HOLLOWAY'S Pills, which he persevered in for about five weeks: the result was a perfect cure, and he now enjoys most excellent health. Sold by all vendors of Medicine; and at Professor HOLLOWAY'S Establishment, 244, Strand, London; and 80, Maiden Lane, New York.

FENDERS, STOVES, AND FIRE-IRONS.— Buyers of the above are requested, before finally deciding, to visit WILLIAM S. BURTON'S SHOW ROOMS, 39, Oxford Street (corner of Newman Street), Nos. 1 and 3, Newman Street, and 4 and 5, Perry's Place. They are the largest in the world, and contain such an assortment of FENDERS, STOVES, RANGES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with bronzed ornaments and two sets of bars, 2l. 14s. to 5l. 10s.; ditto, with ormolu ornaments and two sets of bars, 5l. 10s. to 12l. 12s.; Bronzed Fenders complete, with standards, from 7s. to 3l.; Steel Fenders from 2l. 15s. to 6l.; ditto, with rich ormolu ornaments, from 2l. 15s. to 7l. 7s.; Fire-irons from 1s. 9d. the set to 4l. 4s. Sylvester and all other Patent Stoves, with radiating hearth plates. All which he is enabled to sell at these very reduced charges,

1st,—From the frequency and extent of his purchases; and,

2dly,—From those purchases being made exclusively for cash.

THE PERFECT SUBSTITUTE for SILVER.— The real NICKEL SILVER, introduced 20 years ago by WILLIAM S. BURTON, when Plated by the patent process of Messrs. Elkington & Co., is beyond all comparison the very best article next to sterling silver that can be employed as such, either usefully or ornamentally, as by no possible test can it be distinguished from real silver.

	Fiddle Pattern.	Thread or Brunswick Pattern.	King's Pattern.
Tea Spoons, per dozen	18s. ...	26s. ...	32s.
Dessert Forks ,, ...	30s. ...	40s. ...	46s.
Dessert Spoons ,, ...	30s. ...	42s. ...	48s.
Table Forks ,, ...	40s. ...	56s. ...	64s.
Table Spoons ,, ...	40s. ...	58s. ...	66s.

Tea and Coffee Sets, Waiters, Candlesticks, &c., at proportionate prices. All kinds of replating done by the patent process.

CHEMICALLY PURE NICKEL, NOT PLATED.

	Fiddle.	Thread.	King's
Table Spoons and Forks, full size, per doz.	12s. ...	28s. ...	30s.
Dessert ditto and ditto	10s. ...	21s. ...	25s.
Tea ditto	5s. ...	11s. ...	12s.

CUTLERY WARRANTED.— The most varied assortment of TABLE CUTLERY in the world, all warranted, is on Sale at WILLIAM S. BURTON'S, at prices that are remunerative only because of the largeness of the sales; 3½-inch ivory-handled table knives, with high shoulders, 11s. per dozen; desserts to match, 10s.; if to balance, 1s. per dozen extra; carvers, 4s. per pair; larger sizes, from 14s. 6d. to 26s. per dozen; extra fine, ivory, 32s.; if with silver ferrules, 37s. to 50s.; white bone table knives, 7s. 6d. per dozen; desserts, 5s. 6d.; carvers, 2s. 3d. per pair; black horn table knives, 7s. 4d. per dozen; desserts, 6s.; carvers, 2s. 6d.; black wood-handled table knives and forks, 6s. per dozen; table steels, from 1s. each. The largest stock in existence of plated dessert knives and forks, in cases and otherwise, and of the new plated fish carvers. Also a large assortment of Razors, Penknives, Scissors, &c., of the best quality.

LAMPS OF ALL SORTS AND PATTERNS.— The largest, as well as the choicest, assortment in existence of FRENCH and ENGLISH MODERATEUR, PALMER'S, CAMPHINE, ARGAND, SOLAR, and other LAMPS, with all the latest improvements, and of the newest and most *recherché* patterns, in ormolu, Bohemian, and plain glass, or papier-mâché, is at WILLIAM S. BURTON'S, and they are arranged in one large room, so that patterns, sizes, and sorts can be instantly selected.

Real French Colza Oil, 4s. 9d. per gallon.

Palmer's Candles, 9d., 9½d., and 10d. per lb.

DISH COVERS AND HOT-WATER DISHES in every material, in great variety, and of the newest and most *recherché* patterns. Tin Dish Covers, 6s. 6d. the set of six; Block Tin, 12s. 3d. to 28s. 9d. the set of six; elegant modern patterns, 34s. 0d. to 58s. 6d. the set; Britannia Metal, with or without silver-plated handles, 76s. 6d. to 110s. 6d. the set; Sheffield Plated, 10l. to 16l. 10s. the set; Block Tin Hot-water Dishes, with wells for gravy, 12s. to 30s.; Britannia Metal, 22s. to 77s.; Electro-plated, on Nickel, full size, 11l. 11s.

WILLIAM S. BURTON has TEN LARGE SHOW ROOMS (all communicating), exclusive of the shop, devoted solely to the show of GENERAL FURNISHING IRONMONGERY (including Cutlery, Nickel Silver, Plated and Japanned Wares, Iron and Brass Bedsteads and Bedding), so arranged and classified that purchasers may easily and at once make their selections.

Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of.

No. 39, Oxford Street (corner of Newman Street); Nos. 1, 2, and 3, Newman Street; and 4 & 5, Perry's Place.

Illustrated London News.

THE YEAR 1855 bids fair to be one of the most important and eventful of modern history. On the 6th of January, 1855, will be issued the first number of a new volume of the ILLUSTRATED LONDON NEWS, and not merely a new volume, but of a New Year—each volume being perfect and complete in itself—containing, for the time, a faithful record, pictorial and descriptive, of all Events of Interest in every part of the world. To that limited portion of the public who do not subscribe to this Journal it may be stated that no period could be selected more opportune for commencing,—the whole expense being but 26s. per annum, exclusive of double numbers, which are issued on rare occasions, when it would be impossible to crowd the important events and Engravings into a single number: for this small sum the subscriber will receive 24 large pages—72 columns—of the most interesting information, carefully selected from the News of the Week, interspersed with a variety of charming Articles on the chief topics of the day.

The ILLUSTRATED LONDON NEWS has, by its impartial and consistent advocacy of the welfare of the public, secured for itself a political influence scarcely second to any Newspaper in the Empire; and reference can, with some pride, be made to the support afforded to all beneficial measures proposed and adopted by the English Parliament.

Foreign Politics will ever command the attention which ought to be devoted to so important a feature of a Newspaper. On the question of the Russian War, during the year 1854, ONE THOUSAND ENGRAVINGS appeared in the ILLUSTRATED LONDON NEWS. Extensive arrangements, calculated to improve this popular Journal, and engagements such as will greatly enrich its Literary, Scientific, and other departments, have been made, and will thus combine on this Paper the greatest talent of the day.

The ILLUSTRATED LONDON NEWS has been established 13 years, during which period it has received a greater degree of encouragement and approbation than any Journal ever published. This is proved by the Return of Stamps issued from time to time by order of Parliament. The Stamps applied for the first six months of 1854 were upwards of 2,734,000—showing a WEEKLY CIRCULATION OF UPWARDS OF ONE HUNDRED AND THIRTY THOUSAND COPIES!

Terms (for payment in advance)—Half-year, 13s. 6d.; Year, 26s.

Any of the Volumes of the ILLUSTRATED LONDON NEWS, from the commencement to the present time, may now be had, in paper or cloth. Covers for Binding the Volumes 2s. 6d. each.

All Numbers may be sent free by post to any part of the Kingdom and the Colonies.

Give an order for six months to ensure all the gratuitous Prints and Supplements. Supplied by all Booksellers and Newsmen. The ILLUSTRATED LONDON NEWS is published in London every Saturday, stamped, to go free by post. 6d. per copy.

Office, 198, Strand, London.

THE ANNUAL EXHIBITION AT GORE HOUSE KENSINGTON GORE, OF THE ELEMENTARY WORKS OF STUDENTS IN ALL THE SCHOOLS OF ART, in connection with the Department of Science and Art, both local and metropolitan, will be opened to the public on and after FRIDAY, the 22d December, Christmas Day excepted. Admission free, daily from 10 to 4 and in the evening from 7 to 9.

BOARD OF TRADE, DEPARTMENT OF SCIENCE AND ART.—AID TO PUBLIC SCHOOLS IN OBTAINING EXAMPLES FOR ART-INSTRUCTION.—The Lords of the Committee of Privy Council for Trade having resolved to furnish examples to Schools in accordance with the plan adopted by the Committee of Privy Council for Education, and to discontinue the practice of keeping a stock of such articles at the Department, NOTICE IS HEREBY GIVEN, that on and after the 1st of January, 1855, Examples will not be supplied directly from the Department of Science and Art as at present, but through Agents in London and the Provinces.

Forms of application for aid, and further information may be obtained at the Offices, Marlborough House, Pall Mall, London.

Marlborough House, 30th November, 1854.

Third Edition, considerably enlarged, price 5s. 6d.

RURAL CHEMISTRY.

By EDWARD SOLLY, F.R.S., F.L.S., F.G.S.

Honorary Member of the Royal Agricultural Society of England Professor of Chemistry to the Horticultural Society of London Lecturer on Chemistry in the Hon E. I. Co.'s Military Seminary at Addiscombe, &c., &c.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden.

Price 3d. each, or 5s. for 25 copies for distribution among Cottage Tenantry, delivered anywhere in London, on a Post-office order being sent to the Publisher, JAMES MATTHEWS at the office of the *Gardeners' Chronicle.*

In consequence of the new postal arrangements parties in the country who desire it can have copies sent by post; six stamps, in addition to the cost of the numbers, will pass 10 copies free by post.

The cost of a single copy, free by post, is therefore 7d.; and of ten, free by post, is 3s.

THE COTTAGER'S CALENDAR OF GARDEN OPERATIONS.

By Sir JOSEPH PAXTON.

Reprinted from the GARDENERS' CHRONICLE; above 91,000 have already been sold.

CONTENTS.

African Lilies
Agapanthus
Anemones
Annuals
Apples
Apricot
Auriculas
Beans
Beet
Biennials
Black Fly
Books for Cottagers
Borage
Borecole
Box Edgings
Broccoli
Brussels Sprouts
Budding
Bulbs
Cabbage
Cactus
Calceolarias
Californian Annuals
Campanulas
Carnations
Carrots
Cauliflowers
Celery
Cherries
China Asters
China Roses
Chrysanthemums, Chinese
Chives
Clarkias
Clematis
Collinsias
Colewort
Cress
Creepers
Crocus
Crown Imperials
Cucumbers
Cultivation of flowers in windows
Dahlias
Daisies
Dog's-tooth Violets
Exhibitions, preparing articles for
Ferns, as protection
Fruit
Fuchsias
Gentianella
Gilias
Gooseberries
Grafting
Green fly
Heartsease
Herbs
Herbaceous Perennials
Heliotrope
Hollyhocks
Honeysuckle
Horse-radish
Hyacinths
Hydrangeas
Hyssop
Indian Cress
Iris
Kidney Beans
Lavender
Layering
Leeks
Leptosiphons
Lettuce
Lobelias
London Pride
Lychnis, double
Marigold
Marjoram
Manures
Marvel of Peru
Mesembryanthemums
Mignonette
Mint
Mustard
Narcissus
Nemophilas
Œnothera bifrons
Onions
Pæonies
Parsnip
Parsley
Peaches
Pea-haulm
Pears
Peas
Pelargoniums
Perennials
Persian Iris
Petunias
Phlox
Pigs
Pinks
Planting
Plums
Polyanthus
Potatoes
Pruning
Privet
Propagation by cuttings
Pyracantha
Radishes
Ranunculus
Raspberries
Rhubarb
Rockets
Roses
Rue
Rustic Vases
Sage
Salvias
Savoys
Saxifrage
Scarlet Runner Beans
Seeds
Sea Daisy or Thrift
Seakale
Select Flowers
Select Vegetables and Fruit
Snails and Slugs
Snowdrops
Spinach
Spruce Fir
Spur Pruning
Stocks
Strawberries
Summer Savory
Sweet William
Thorn Hedges
Thyme
Tigridia Pavonia
Transplanting
Tree Lifting
Tulips
Turnips
Vegetable Cookery
Venus's Looking-Glass
Verbenas
Vines
Virginian Stocks
Wallflowers
Willows
Zinnias

Post-office orders to be made payable to JAMES MATTHEWS, 5, Upper Wellington Street, Covent Garden, London.

Price 2s. 6d., free by post.

THE TREE ROSE.—Practical Instructions for its Formation and Culture. Illustrated by 24 Woodcuts. Reprinted from the GARDENERS' CHRONICLE, with additions

CONTENTS.

Annual pruning time, principle of execution, &c.
Binding up
Budding knife
Budding, time of year, day, time of day, state of the plant, care of buds
Budding upon body
Bud, insertion of, into stock
Bud, preparation of, for use
Buds, dormant and pushing
Buds, failing
Buds, securing a supply of
Caterpillars, slugs, and snails, to destroy
Causes of success
Dormant buds, theory of replanting with, explained
Guards against wind
Labelling
Loosing ligatures
March pruning
Mixture for healing wounds
Pruning for transplantation
Planting out, and arrangement of trees
Pushing eye, spring treatment of dwarf shoots from
Roses, different sorts on the same stock
Roses, short list of desirable sorts for budding with a pushing eye
Sap-bud, treatment of
Shape of trees
Shoots and buds, choice of
Shoots for budding upon, and their arrangement
Shoots, keeping even, and removing thorns
Shortening wild shoots
Stocks, planting out for budding upon; the means of procuring; colour, age, height; sorts for different species of Rose; taking up, trimming roots, sending a distance, shortening heads, &c.; saw proper for the purpose.

GRAFTING.

Aphides, to keep down
Free growers, remarks on
Graft, binding up and finishing of
Grafting, advantage
Grafting, disadvantage of
Operations in different months
Preliminary observations
Roses, catalogue and brief description of a few sorts
Scion, preparation and insertion of
Scion, choice and arrangement of
Stock, preparation of

APPENDIX.

A selection of varieties
Comparison between budding and grafting.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden.

BEAUTIFUL NEW PLANT.

LUCOMBE, PINCE, AND Co., are now prepared to send out their beautiful New VERONICA KERMESINA, raised by that eminent Horticulturist, J. Luscombe, Esq., of Coombe Royal, who sent specimens to Dr. Lindley at the time of its first flowering, who thus pronounced his first opinion of it:—

"*The variety sent with this was charming; a decided rose colour having mingled with the violet.*"

See also notice of Dr. Lindley in the *Chronicle* for December 2d, 1854, as follows:—

"*L., P., and Co.: Your V. Kermesina is a handsome dark variety of V. Speciosa, its beautiful large spikes of deep purplish crimson blossoms cannot fail to make it a favourite.*"

Price 7*s.* 6*d.* each.—A few extra sized specimens may be had. The usual discount to the trade when three or more are taken.

Exeter Nursery, Exeter, Established 1720.

GREAT NOVELTIES FOR THE ENSUING SEASON,

FUCHSIAS WITH WHITE COROLLAS.

LUCOMBE, PINCE AND CO. beg leave to announce that they shall be prepared to send out two splendid and entirely novel Seedling Fuchsias, early in May next, viz.:—

FLORENCE NIGHTINGALE.

Pure white corolla, with brilliant scarlet sepals, finely reflexed; an extremely lovely and novel variety.

GALANTHIFLORA-PLENA

(The DOUBLE Snowdrop Corolla'd Fuchsia.)

Pure double white corolla, resembling a fine large double snowdrop, with rich scarlet sepals; altogether distinct from anything of the kind ever yet produced. Price 10*s.* 6*d.* each.

The usual discount to the Trade when three or more are taken.

Exeter Nursery, Exeter.—ESTABLISHED 1720.

GERMAN FLOWER SEEDS.

MOSCHKOWITZ AND SIEGLING, Erfurt, beg to inform the trade that their new Wholesale Catalogue of Choice German and other Flower Seeds, is now ready, and may be had on application to their Agent, Mr. H. HENKEL, 70, Fenchurch Street, London.

NEW PERPETUAL STRAWBERRY.

"DELICES D'AUTOMNE."

A. VERSCHAFFELT, NURSERYMAN, Ghent, Belgium, begs to offer the new and Perpetual Strawberry "DELICES D'AUTOMNE." The fruit is large, delicious, and very abundant; it is certainly the best perpetual Strawberry of all. A correct drawing will appear shortly in Verschaffelt's "L'Illustration Horticole." Price, per plant, 2*s.* 6*d.*; six plants, 10*s.* 6*d.*

ROBERT KENNEDY, Agent for Messrs. Platz and Son, Seed Growers, Erfurt, has much pleasure in announcing he has received their Catalogue of Flower and Vegetable Seeds for the trade for 1855, which abounds with new articles of great interest, and will be forwarded, per post, on application to R. KENNEDY, Bedford Conservatory, Covent Garden, London.

P.S. Also, R. Kennedy's General Catalogue of British and Foreign Ferns forwarded on receipt of six postage stamps.

TRANSON FORTEAU, NURSERYMAN, Orleans, France, can furnish a hundred SHRUBS, healthy and bushy, in 10 or 15 varieties, at his choice, for 25*s.*:—Mahonia, Spirea (of sorts), Chamæcerasus, Syringa, Cytisus viburnum opulus, Caprifolium, Elder, and others.

Oranges, in pots, from 2 to 4 feet	8*s.* to 15*s.*
Cupressus pyramidalis, from 3 to 4 feet	2
Leban Cedar, from 3 to 7 feet	2*s.* to 4
Alnus cordata, a year seedling, 3 to 4 inches, per 100 ...	2
Cupressus disticha, do., 1 to 1½ feet ... ... „ ...	40
Leycesteria formosa, do., 4 to 10 inches ... „ ...	3
Mahonia, 2 years transplanted, 5 to 10 inches „ ...	4

MESSRS. A. TOPFS AND CO., Erfurt, Prussia, in addition to their usual Catalogue of Flower Seeds, offer to the trade as under:—

CARNATIONS—STAGE FLOWERS.

	s.	*d.*
1000 Seeds from Choice Show Plants, unequalled for size, fragrance, and brilliancy	21	0
1000 from 500 named sorts	9	0
1000 Striped Yellow Ground...	11	0
1000 „ White „	9	0
1000 Flaked	11	0
1000 Flame Coloured	11	0
1000 Shaded Light Border	9	0
1000 Self Coloured	9	0
Also, from Bedded Plants, 1st ... per oz.,	10	6
„ „ 2d ... „	7	0

Agent, Mr. W. HASLAM, South Essex Nurseries, Epping.

WILLIAM BARRATT, LANDSCAPE GARDENER, Wakefield.

*** Plans and Estimates furnished.

JOHN MORREN, GENERAL COMMISSION AGENT, Ock Street, Abingdon, is open for Commissions for the sale of Agricultural Implements, Manures, Seeds, &c., and for the purchase of Corn, &c.

CALAMITOUS FIRE AT MR. HOWIT'S, NURSERYMAN AND FLORIST, Norbiton.—On the morning of the 7th inst., a fire, attended with a great loss of property, broke out in the Propagating and Cucumber Houses of the above Nursery, and before it could be extinguished, had destroyed all the valuable Stock, including the whole of his Cucumber Plants, upon the produce of which he entirely depended for the support of himself and family during the winter. The whole of many years' savings he has expended in building and stocking the above, and unfortunately NOT BEING INSURED, he is by this accident suddenly deprived of the means of carrying on his business, and is therefore reluctantly compelled to solicit the assistance of his friends to enable him to do so until the spring.

The under-mentioned Ladies and Gentlemen recommend this case as deserving the benevolence of the public:—W. Byam Marten, Esq., Bank Grove House; Miss Fassett, Grove House, Kingston; John Edwards, Esq., Wace Cottage, Holloway; Miss Massie, Themis Cottage, Kingston; Miss Cox, Grove House, Kingston; and Lady Colebrooke, Surbiton. The following have kindly consented to receive Subscriptions:—D. Beaton, Esq., Surbiton; Shrubsole, Mayor of Kingston; Mr. Gould, Market Place; Mr. Bond, Sun Hotel; Mr. Eldridge, Station Master, Kingston; Mr. Fairchild, Sycamore Grove, New Malden; and Mr. W. Ball, Chestnut Grove, New Malden.

Bound in cloth and interleaved, price 1*s.*,

THE SCOTTISH AGRICULTURIST'S ALMANAC AND YEAR-BOOK OF PROGRESS, FOR 1855. By JOHN LOCKHART MORTON, Civil and Agricultural Engineer, Edinburgh.

"It needs only to be known to be valued, as the work of a man who knows thoroughly what he has in hand."—*Perthshire Advertiser.*

Publishing Office, 9, Pitt Street, Edinburgh.

Sold by all Booksellers.

Just published, with a Coloured Plate, price Half-a-Crown,

THE ENTOMOLOGIST'S ANNUAL FOR 1855, comprising Notices of the New British Insects detected in 1854.

LEPIDOPTERA. By the EDITOR.

HYMENOPTERA. By FREDERICK SMITH.

COLEOPTERA. By E. W. JANSON.

Edited by H. T. STAINTON.

London: JOHN VAN VOORST, 1, Paternoster Row.

On the 18th December will be published, price 3*d.*, or Stamped 4*d.*,

PUNCH'S ALMANACK FOR 1855. Illustrated by JOHN LEECH and JOHN TENNIEL.

Office, 85, Fleet Street.

This day is published, in a handsome folio volume, price 12*s.*, containing upwards of 600 Wood Engravings,

PICTURES OF LIFE AND CHARACTER, FROM THE COLLECTION OF MR. PUNCH. By JOHN LEECH.

BRADBURY & EVANS, 11, Bouverie Street.

Lately Published,

THE ELEMENTS OF BOTANY, STRUCTURAL AND PHYSIOLOGICAL. With a Glossary of Technical Terms, and numerous Illustrations. 12*s.* cloth.

This completes the series of Elementary Botanical Works by Professor LINDLEY, of which "School Botany," and "The Vegetable Kingdom," form the other parts.

The first two Parts of THE ELEMENTS OF BOTANY, comprising Structural and Physiological Botany, and a Glossary of Technical Terms, are published in one octavo volume, price 12*s.*

These three parts form a complete manual of Botany for Medical and other Students who have made themselves acquainted with the author's "School Botany."

N.B. The Glossary may be had separately, price 5*s.*

BRADBURY & EVANS, 11, Bouverie Street.

This day is published, price 3*d.*, or Stamped for post, 4*d.*,

THE SEVEN POOR TRAVELLERS, being the CHRISTMAS NUMBER of HOUSEHOLD WORDS, conducted by CHARLES DICKENS, and containing the amount of One Regular Number and a Half.

Office, 16, Wellington Street North, Strand; and sold by all Booksellers and Newsvenders.

PETER PARLEY'S TALES ABOUT EUROPE, ASIA, &c.

In one large Pocket Volume, embellished with numerous Illustrations and Maps engraved on Steel, a New Edition, with great Additions, price 5*s.*, in cloth, and gilt edges,

PETER PARLEY'S TALES ABOUT EUROPE, ASIA, AFRICA, AMERICA, AND OCEANIA.

*** "The design of this work is to convey, by conversational remarks, a knowledge of Geography and History; it is interspersed with personal adventures, and adapted to the taste and knowledge of children. The author never fails to win attention and raise curiosity; he then uses such familiar terms in gratifying it, that the rudiments of Geography are insensibly impressed on the mind, and science is rendered a pleasing study."

London: WILLIAM TEGG & Co., 85, Queen Street, Cheapside.

PARLEY'S GEOGRAPHY.

In one Volume, Illustrated with numerous Engravings, and 13 Maps engraved on Steel, price 3*s.* 6*d.*, bound in cloth,

A GRAMMAR OF MODERN GEOGRAPHY. By PETER PARLEY, Author of Tales about Europe, Asia, &c.

London: WILLIAM TEGG & Co., 85, Queen Street, Cheapside.

Fcap, 8vo, price 3*s.* 6*d.*,

TALPA; OR, THE CHRONICLES OF A CLAY FARM. An Agricultural Fragment. By CHANDOS WREN HOSKYNS. New and Cheaper Edition, with Frontispiece by GEORGE CRUIKSHANK.

London: LOVELL REEVE, 5, Henrietta Street, Covent Garden.

Price Threepence, or Fivepence post free,

FANCY GERANIUMS: a Practical Treatise on their Propagation and Culture, showing how they may be had in Bloom all the Year; their Management for Conservatory Decoration, and the Formation of Specimens.

Bristol: Published and Sold by THORNHILL & DICKSON, Lawrence Hill Nurseries, and 1, Wine Street.

PROFESSOR LINDLEY'S INTRODUCTION TO BOTANY, 4th Edition, with Corrections and Additions, now ready, in 2 vols. 8vo, with Six Copper Plates and numerous Wood Engravings. Price 24*s.* cloth.

London: LONGMAN, BROWN, GREEN, & LONGMANS.

ACTON'S COOKERY BOOK.

The Fourteenth Edition, in fcp. 8vo, price 7*s.* 6*d.*

ELIZA ACTON'S MODERN COOKERY, reduced to a System of Easy Practice: With Directions for Carving.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

In fcp. 8vo., price 3*s.* 6*d.* cloth,

THE INVALID'S OWN BOOK: a Collection of Recipes from various Books and various Countries. By the Honourable LADY CUST.

"This little book ought to be in the hands of every housekeeper, and of every young lady who aspires to be a housekeeper, in the British Empire." *British Banner.*

London: LONGMAN, BROWN, GREEN, and LONGMANS.

In One large Volume, 8vo, with upwards of Six Hundred Woodcuts, price 50*s.* half-bound,

BLAINE'S ENCYCLOPÆDIA OF RURAL SPORTS, Hunting, Coursing, Shooting, &c. &c. A New and revised Edition, corrected to the Present Time.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

The Ninth Edition, in One Volume, medium 8vo, with 36 Woodcut Illustrations, price One Guinea,

BOWDLER'S FAMILY SHAKSPEARE.—This is the only Shakspeare which can be read aloud in Families. *** Also a New Edition (with the same Illustrations) in Six Pocket Volumes, price 5*s.* each.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

In square crown 8vo, 21*s.* cloth; or 36*s.* in morocco, by Hayday,

THOMSON'S SEASONS. Edited by BOLTON CORNEY. With about Eighty Engravings on Wood, from Designs by Members of the Etching Club.

Uniform with the above in size and price,

GOLDSMITH'S POEMS, illustrated by the Etching Club.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

In fcp. 8vo, price 10*s.* each, cloth, 12*s.* roan, or 12*s.* 6*d.* calf,

MAUNDER'S TREASURY OF KNOWLEDGE, and Library of Reference; A Popular Compendium of Universal Knowledge: Comprising a Grammar, Dictionary, Gazetteer, and a large amount of other Miscellaneous Information. The Twenty-first Edition, revised throughout; with Additions.—Also, all uniform in size and price:—

THE SCIENTIFIC and LITERARY TREASURY.
THE TREASURY of NATURAL HISTORY.
THE HISTORICAL TREASURY.
THE BIOGRAPHICAL TREASURY.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

NEW AND ENLARGED EDITIONS OF HUDSON'S WILLS AND EXECUTORS, CORRECTED TO THE PRESENT TIME.

Just published, in foolscap 8vo., price 6*s.* boards,

THE EXECUTOR'S GUIDE. By J. C. HUDSON, Esq., late of the Legacy-Duty Office, London. A New and Enlarged Edition; with the Addition of Directions for Paying Succession Duties on Real Property under Wills and Intestacies, and a Table for finding the values of Annuities and the Amount of Legacy and Succession Duty thereon.

Also, in foolscap 8vo price Half-a-Crown,

Mr. HUDSON'S PLAIN DIRECTIONS FOR MAKING WILLS in conformity with Law.

London: LONGMAN, BROWN, GREEN, & LONGMANS.

Price 1*s.* 6*d.*, free by post 1*s.* 10*d.*

LABELS FOR THE HERBARIUM, CONSISTING OF THE NAMES OF THE CLASSES, ALLIANCES, ORDERS, AND SUB-ORDERS, OF PROFESSOR LINDLEY'S "VEGETABLE KINGDOM." So printed in large type, that they can be cut out and pasted into THE HERBARIUM.

J. MATTHEWS, 5, Upper Wellington Street, Covent Garden.

GLENNY'S QUARTERLY REVIEW OF HORTICULTURE, LITERATURE, &c.—No. 8, the most important of all the work, will appear January 1st, price 1*s.*, or by post 1*s.* 6*d.* Advertisements must be forwarded promptly to Mr. GLENNY, Dungannon House, Fulham.

THE BEST PRESENTS IN MUSIC.

MESSRS. BOOSEY AND SONS' New Editions of the following complete Operas for Pianoforte Solo (without words), most beautifully engraved and printed, and bound in embossed green cloth, ornamental lettering in gold, and gilt edges:—Norma, 5*s.*; Sonnambula, 5*s.*; Lucrezia Borgia, 5*s.*; Fille du Regiment, 5*s.*; Don Juan, 6*s.*; Fra Diavolo, 6*s.*; Lucia di Lammermoor, 6*s.*; Huguenots, 9*s.*

London: BOOSEY & SONS, 28, Holles Street.

THE COUNTRY GENTLEMAN IS INFORMED THAT

THE FIELD, THE COUNTRY GENTLEMAN'S NEWSPAPER, under new management, is devoted to the Sports, Occupations, and Amusements of the Country, the Field, the Garden, the Farm, the Country House. It is a first-class family newspaper. A copy sent to any person inclosing six postage stamps to the *Field* Office, 408, Strand.

A SUPPLEMENT, GRATIS, WITH THE WEEKLY DISPATCH, EVERY WEEK UNTIL FURTHER NOTICE.—The unexampled interest which attaches to every incident connected with the operations of the Allied Armies in the East has determined the Proprietors of the WEEKLY DISPATCH to devote a greater space to the intelligence from the seat of war than the ordinary limits of this, the largest newspaper published, could possibly afford; and, with the view of giving the amplest details, they have resolved upon the issue of a SERIES OF SUPPLEMENTS, GRATIS, which will include every particular of interest connected with the Siege and decision of the contest at Sebastopol, and will be continued whenever demanded by the progress of the Campaign.

By the publication of these Supplements the portion of the Paper usually devoted to incidents of domestic and political importance will be reserved intact, and the engrossing subject of the War will receive the fullest and most varied illustration.

A SUPPLEMENT WILL BE PUBLISHED ON SUNDAY NEXT (GRATIS), and on every succeeding week until further Notice.—Orders may be given to all Newsvendors in town and country; and to the publisher, at the *Dispatch* Office, 139, Fleet Street, London.

Just published, price 2*s.* 6*d.* boards, post prepaid 3*s.*, the Third Edition, revised and enlarged, of

THE BURIAL ACTS, 1852, 1853, 1854: being the Metropolitan Burials Act, 1852; the Burials (beyond the Metropolis) Act, 1853; and the Burials (beyond the Metropolis) Amendment Act, 1854; with the Incorporated Clauses from Cemeteries Clauses Act, 1847, &c. The Instructions and Regulations of the Home Office for providing Cemeteries and conducting Interments, and an Explanatory Analytical Abstract of all these Statutes; with Directions for the Constitution of Burial Boards, the Choice of Sites, and Formation and Planting of Burial Grounds, with Estimates for Works, &c.; and Copious Index. By JAMES J. SCOTT, of the Middle Temple, Barrister-at-Law.

London: KNIGHT & COMPANY, 90, Fleet Street, Publishers by Authority to the Poor Law Board and the General Board of Health.

Price 4*d.*, sewed,

CEMETERY CONSTRUCTION AND REGULATION. Instructions issued by the Secretary of State for the Home Department to guide Burial Boards in providing Cemeteries; also the Home Office Regulations for conducting Interments in Burial Grounds; with Introduction and Index. By JAMES J. SCOTT, of the Middle Temple, Barrister-at-Law.

London: KNIGHT & COMPANY, 90, Fleet Street, Publishers by Authority to the General Board of Health and the Poor Law Board.

BOOKS AND FORMS REQUIRED UNDER THE BURIALS ACTS, 1852, 1853, 1854, published by KNIGHT AND COMPANY, 90, Fleet Street, London.

Notice of a Vestry Meeting to consider the providing of a Burial Ground	per dozen each, 1*s.*, or 1 dozen each, by post, prepaid 3*s.* 6*d.*
Transmitting Copy of Resolution of Vestry to provide Burial Ground, to Secretary of State	
Requisition to convene Meeting to provide Burial Ground	
Minute Book, foolscap, with Index	£1 5 0
Ledger „ „	1 5 0
Letter Book „ „	0 16 0
Cash Book „	0 16 0
Book for Entry of Copies of Contracts made by Burial Board, each	1 1 0
Book for Entry of Fees Received and Paid for Burials, &c., 1*l.* 5*s.*; smaller ditto	0 16 0
Register of Graves, 1*l.* 5*s.*; smaller ditto	0 16 0
Register of Purchased Graves, 1*l.* 11*s.* 6*d.*; smaller ditto	1 1 0
Register of Burials (as the Act directs), 5000 names, 3*l.* 3*s.*; ditto 4000 ditto, 2*l.* 12*s.* 6*d.*; ditto 3000 ditto, 2*l.* 2*s.*; ditto 2000 ditto, 1*l.* 11*s.* 6*d.*; ditto 1000 do, 1*l.* 1*s.*	
☞ The Register of Burials may be had of any size to order, and the Name of the Burial Board printed in where required without extra charge. It may also be had on Vellum or Parchment.	
Index Book to Register of Burials ... ... Each	0 16 0
Certificates of Burial, in books of 100 Certificates „	0 5 0
Contract and Bond for Works ... ... „	0 1 0
Requisition to convene Ordinary, Adjourned, or Extraordinary Meeting of Members, per quire	0 2 6
Notice of Ordinary, Adjourned, or Extraordinary Meeting of Members, per quire...	0 3 6
Notice of Members of Burial Board to Overseers of the Poor to pay Contribution from Poor Rates, with Counterpart, in books, each	0 5 0
Yearly Statement of Auditors, per quire	—

The other Forms required under the several Burial Acts are in preparation, and may be obtained, on application, from KNIGHT & COMPANY, and any of the Books can be had bound in russia, calf, &c., to order.

Seals of Burial Boards prepared in Steel, with Ivory Handles, of the very best workmanship, of which Specimens may be had post free, on application.

Plans of Burial Grounds drawn and lithographed to order.

Table of Fees charged in Burial Grounds, printed and framed to order.

Embossing Press, with Die and Counterpart, complete.

London: KNIGHT & COMPANY, 90, Fleet Street, Publishers by Authority to the Poor Law Board and the General Board of Health.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 7, Victoria Street, in the Parish of St. Margaret and St. John, Westminster, both in the County of Middlesex, Printers, at their Office in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, December 16, 1854.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 51.—1854.] SATURDAY, DECEMBER 23. [Price 6*d*.

INDEX.

American blight	824 *c*	Lee's (Messrs.) nursery	823 *a*
Aphis blight and the weather	829 *a*	Lois Weedon Wheat, Dr. Daubeny on	827 *a*
Books noticed	822 *c*	Mangosteen, fruiting of the	819 *b*
Blight, American	824 *c*	Meteorological Society	829 *a*
Calceolaria, the	823 *b*	Mice, to kill	822 *b*
Calendar, horticultural	824 *a*	Orange trees	822 *a*
— agricultural	829 *b*	Orobanche, germination of	823 *c*
Cattle, pedigrees of	826 *c*	Pampas Grass	822 *b*—823 *a*
Champion, death of Col.	819 *c*	Pathology, vegetable	820 *c*
Cucumbers, greenhouse	824 *c*	Peach trellises	822 *b*
Crimea, vegetation of the	822 *a*	Pear, Nutmeg	822 *c*
Coal, substitutes for	822 *b*	Pink, to propagate	824 *b*
Coal ash	829 *b*	Potato Yam	820 *a*
(Dioscorea japonica) Batatas	820 *a*	Protections for glass houses	822 *a*
Farm buildings	828 *c*	Reaping machines	825 *b*
Flowers, what are wild	824 *c*	Rhododendrons, grafted	821 *b*
Fowls, fatting Dorking	829 *b*	Rye-grass, Mr. Telfer's	825 *c*
Fruits, new	821 *a*	Tobacco, history of	823 *c*
Fuel, cheap	822 *b*	Traps, mouse	822 *b*
Gardening in Victoria	822 *c*	Vegetation of the Crimea	822 *a*
Glass houses, coverings for	822 *a*	Vegetable pathology	820 *c*
Grape growing	822 *c*	Vincas	820 *c*
Gynerium argenteum	822 *b*—823 *a*	Weather in Bucks	822 *b*
Heating, fuel for	822 *b*	Weather and aphis blight	829 *a*
Hop blight	829 *a*	Wheat, Dr. Daubeny on Lois Weedon	827 *a*
Hort. Society admission fee	824 *c*	Yam, Chinese	820 *a*
Ink for zinc labels	824 *c*	Zinc labels, ink for	824 *c*
Kohl Rabi	821 *c*		
Land Improvement Company	826 *a*		

HORTICULTURAL SOCIETY OF LONDON.—SCHEDULE OF OBJECTS, THE EXHIBITION OF WHICH IS INVITED AT THE SOCIETY'S WINTER MEETING; 21, Regent Street; TUESDAY, February 6.

The following Prizes are offered on this occasion:—

LS.—Large Silver Medal	£3 0 0
SK.—Silver Knightian Medal	2 0 0
SB.—Silver Banksian Medal	1 0 0
C 1.—First certificate	0 15 0
C. 2.—Second certificate	0 10 0
H.M.—Honourable mention.	

(This is a printed declaration of the opinion of the Judges, where an exhibition shall have been found deserving of very special mention; and is not exchangeable for money.)

Newly introduced plants of horticultural value. (These will be objects of special notice.)	—	—	—
Epacrises, in threes ...	SB	C 1	C 2
Epiphyllums, in threes ...	SB	C 1	C 2
Camellias, in threes ...	SK	SB	C 1
N. Holland Acacias, in threes ...	SB	C 1	C 2
Indian Azaleas, in threes ...	SK	SB	C 1
Orchids, in sixes ...	LS	SK	SB
Chinese Primulas, in sixes ...	SB	C 1	C 2
Single Specimens of any kind. (SK is the highest medal that can be awarded under this head.)	—	—	—
Late Grapes, in three bunches ...	SK	SB	C 1
N.B.—The exhibitor must state in writing by what means he has preserved them, and how long, before exhibition, they were cut.			
Early Grapes, in three bunches, perfectly coloured	SK	SB	C 1
Pine Apples ...	SK	SB	C 1
Apples, in collections of six kinds, three to be shown of each kind, neatly labelled ...	SB	C 1	C 2
Pears, in collections of three kinds, six to be shown of each kind, neatly labelled ...	SB	C 1	C 2
Forced Vegetables, six sorts ...	SK	SB	C 1
Do. Salads, do. ...	C 1	C 2	—
Cucumbers, in braces ...	C 1	C 2	—

*** In addition to the foregoing, the Society invites the exhibition of any objects possessing horticultural interest, among which are included not only ORNAMENTAL PLANTS and FRUIT of all kinds, in addition to those above enumerated, but ESCULENT VEGETABLES remarkable for their excellence; RAW MATERIALS from the Vegetable Kingdom useful in Arts, Manufactures, or as Food (Agricultural produce excepted), whether of home or colonial growth; GARDEN IMPLEMENTS; HORTICULTURAL MODELS; HONEY, in the comb or hive; and objects of Garden Decoration.

In no case can an exhibitor take more than one prize in the same class.

Everything intended for exhibition must be in Regent Street by 10 A.M. at the latest. WHATEVER ARRIVES LATER WILL BE ABSOLUTELY EXCLUDED FROM COMPETITION FOR PRIZES. Objects not perishable should be delivered the day before. At 11 A.M. the Judges will proceed to make their awards.

The exhibition will be open for inspection from 12 to 4 P.M.; after which hour, but not earlier, the exhibitors can remove their property. The chair will be taken at 2 P.M.

THE BRITISH POMOLOGICAL SOCIETY meets at the rooms, 20, Bedford Street, Covent Garden, London, on the first MONDAY of every month, to receive communications respecting Fruits and Fruit Trees, for the Election of Members, and for General Business.

All communications and packages containing specimens of Fruits, to be addressed to ROBERT HOGG, Secretary.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—The Polling Papers for the ensuing Election of Pensioners on the 17th of January next having been issued as usual, in the event of any subscriber not having received one, the Committee will be obliged by his making such omission known to the Secretary, that it may be rectified. No person will be allowed to vote whose subscription for the year 1854 is unpaid on the day of election. Subscriptions are due on the 1st of January.

E. R. CUTLER, Secretary.
December 23. 14, Tavistock Row, Covent Garden.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.—HENRY SCHNEIDER, of Ford, Colerne, Chippenham, through his Advertisement, again appeals to the sympathy and kind support of the Subscribers of this Institution, being now 90 years of age, and in very destitute circumstances. His testimonials remain unimpaired, and he is encouraged to make another application to his kind friends who have hitherto favoured him with their votes, and other subscribers who will charitably lend him their aid at the forthcoming election in January next.

The following gentlemen will be gratified in receiving proxies in his favour:—Mr. Gregory, Cirencester, Gloucestershire; Mr. Burbank, Grittleton, Chippenham, Wilts; Mr. Spencer, Bowood, Calne, Wilts; Messrs. Garraway, Mayes, & Co., Bristol; Mr. Trotter, Badminton, Chippenham, Wilts; John Arthur Henderson, Esq., 64, Hamilton Terrace, London.

GARDENERS' BENEVOLENT INSTITUTION. FOURTH APPLICATION.

WILLIAM THACKER begs earnestly to appeal to the subscribers, through the medium of an advertisement, from his total inability to incur, for the FOURTH TIME, the heavy expense of issuing circulars. He is aged 68, and he rests his claim to their benevolence on having been 50 years a gardener and five years a subscriber to the Institution; and that both his wife and himself are totally incapacitated, through infirmity, from supporting themselves. His case is strongly recommended by Mr. Alex. Dancer, Fulham; Messrs. J. & C. Lee, Hammersmith; Mr. T. Gaines, Battersea; Mr. Barto Chaundy, Lewisham.

RENDLE'S PRICE CURRENT AND GARDEN DIRECTORY FOR 1855 *will be published on* TUESDAY *next, December 26. Price 6d.; to be had of all Booksellers, and from* WILLIAM E. RENDLE & Co., *Seed Merchants, Plymouth.*

LYNCH'S STAR OF THE WEST CUCUMBER, *the best frame variety in cultivation. For description, see* RENDLE'S "*Price Current and Garden Directory*" *for* 1854.

Price 1*s*. 6*d*. and 2*s*. 6*d*. per packet.—Apply to WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

NEW SEEDS JUST HARVESTED *can now be obtained of the most genuine description, from* WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

THE PAMPAS GRASS, GYNERIUM ARGENTEUM.

LUCOMBE, PINCE, & CO. have a fine healthy stock of this highly ornamental plant, well established in pots, and fit to send out immediately.

Specimens of it are now and have long been flowering in their nursery, and it is universally admitted that few plants produce a more beautiful effect than this gigantic Grass. See woodcut and description of it in *Gardeners' Chronicle* of the 4th ult.

Sizes, prices, and all particulars may be had on application to LUCOMBE, PINCE, & Co., Exeter Nursery, Exeter.

FINE TRAINED FRUIT TREES IN A BEARING STATE.

LUCOMBE, PINCE, AND CO., have this season for Sale a remarkably healthy stock of fine trained FRUIT TREES of all the best sorts, to which they respectfully beg to call immediate attention. Prices and particulars to be had on application to LUCOMBE, PINCE, & Co., Exeter Nursery, Exeter.

ESTABLISHED 1720.

LARCH AND SPRUCE TREES.

TO BE SOLD by private contract, at Edgefield, near Holt, Norfolk, 250,000 Excellent LARCH PLANTS, transplanted, 2 to 4 feet; 20,000 ditto SPRUCE ditto, ditto, 1 to 3 feet.—For price, &c., apply to Mr. ALEX. LAWRIE, Edgefield; if by letter, to be post paid.

FRUIT TREES, FOREST TREES, EVERGREEN SHRUBS, &c. Catalogues of the above may be had on application to WILLIAM BARRATT, Wakefield.

☞ A quantity of fine Transplanted White Thorns.

FOREST AND ORNAMENTAL TREES AND SHRUBS.

DAVID REID AND SON, NURSERYMEN AND FLORISTS, Leith Walk, Edinburgh, beg to intimate their CATALOGUES as above are ready, and to be had free on application.

W. AND T. ANDERSON, SEEDSMEN, &c., can supply TREE SEEDS, including Larch, Spruce, Scotch and Silver Fir, Balm, &c., also Whin (Furze) and Broom on moderate terms.—Dundee, December 23.

SEED WHEAT.—Samples and Prices of RED HYBRID, NURSERY, and other kinds of Wheat from the CHALK, sent on application to Mr. H. RAYNBIRD, Basingstoke. The Red Hybrid and Nursery are well suited for late sowing after Turnips.

WANTED, 200,000 2-year-old TRANSPLANTED QUICKS.—Apply by letter, post paid, stating price, to A. B., 12, Conduit Street, West, Bayswater.

WANTED, AMERICAN ARBOR-VITÆ, about 1 foot high. Quantity to offer, with price per thousand, may be addressed to HUGH LOW & Co., Clapton Nursery, London.

WANTED IMMEDIATELY,

PINES	GRAPES
MUSHROOMS	CAMELLIAS
CUCUMBERS	CHOICE PEARS
ASPARAGUS	SEAKALE

&c., &c., &c., &c.

Apply or forward to GEORGE TAYLOR, Jun., Fruit Salesman, St. John's Market, Liverpool.

TRUE SEED POTATOES.

JOHN BELL, POTATO SALESMAN, Covent Garden Market, and Great Northern Railway, King's Cross, London, offers the following:—

Per bushel.—	*s.*	*d.*	Per bushel.—	*s.*	*d.*
Ashleaf Kidneys ...	7	0	York Regents	4	6
Lapstone	6	0	Hens, Nest	6	0
Early Cockney	9	0	Fortyfolds...	5	0
" Shaws	4	6	Orkney Reds	5	0

Scotch Cups ... ... 4*s*. 6*d*.

Terms cash. The usual allowance to the trade.

THE FLUKE KIDNEY POTATO.—This excellent variety is now planted here as the principal crop, being more free from disease and more prolific than any other in cultivation. It was raised in Middleton, and may be had genuine in any quantity at 5*s*. per bushel of 56 lbs.—Apply to JOHN HOLLAND, Bradshaw Gardens, Middleton, near Manchester.

THE FLUKE POTATO.—A new second early variety, surpassing every other in its capability of resisting the Potato disease, and without exception the finest and most prolific Potato in cultivation. Price per cwt., 15*s*., bags included. To be had genuine of THORNHILL & DICKSON, Lawrence Hill Nurseries; and No. 1, Wine Street, Bristol.

CHINESE POTATO (DIOSCOREA JAPONICA).

SUTTON AND SONS, IMPORTERS of the above-named popular esculent have the pleasure of informing their friends that they will be able to supply them at a moderate price, particulars of which may be had on application, addressed JOHN SUTTON & SONS, Reading, Berks.

SUTTON'S EARLY CHAMPION, WAITE'S DANIEL O'ROURKE, FAIRBEARD'S NONPAREIL, and other new early PEAS may be obtained genuine at moderate prices, by retail of SUTTON and SONS, Seed Growers, Reading, Berkshire.

EARLY DANIEL O'ROURKE PEAS.

J. G. WAITE begs to inform the Trade that he is now ready to execute orders for this valuable early Pea. Price can be had on application.

Seed Establishment, 181, High Holborn, London.

NONPAREIL PEAS.

WILLIAM FAIRBEARD begs to inform the trade that he is now ready to execute any orders he may be favoured with. This Pea W. F. is confident will become a general favourite both for Garden and Field culture. Price can be had on application.—Mount Pleasant Nursery, Queen Street, Sittingbourne, Kent.

NEW CAULIFLOWER.

WAITE'S "ALMA," far superior to Walcheren, very large and firm heads. Price to the trade 24*s*. per lb. smaller quantities 2*s*. 6*d*. per oz. No orders attended to for less quantities than one ounce.—Seed Establishment, 181, High Holborn, London.

HOLLYHOCK SEED.

R. PARKER has now ready for sending out Seed of this year's saving from the finest named varieties in cultivation, in packets at 1*s*. and 2*s*. 6*d*. each. A remittance or reference to accompany all orders from unknown correspondents —Paradise Nursery, Hornsey Road, London.

GENUINE GARDEN SEEDS.

LUCOMBE, PINCE, AND CO., beg leave to announce that they have just completed their supply of the above, all carefully selected from the stocks of the best growers, superior in quality and economical in price, to which they respectfully call the attention of those who require a really genuine article. Their long experience in the Seed Trade (always also proving the vitality of their seeds before sending them out) fully justifies them in saying that their seeds cannot fail to give great satisfaction.—Catalogues may be had on application.

Exeter Nursery, Exeter. Established in 1720.

GERMAN FLOWER SEEDS.

MOSCHKOWITZ AND SIEGLING, Erfurt, beg to inform the trade that their new Wholesale Catalogue of Choice German and other Flower Seeds, is now ready, and may be had on application to their Agent, Mr. H. HENKEL, 70, Fenchurch Street, London.

PRICED NURSERY CATALOGUES.

A. PAUL AND SON will be happy to forward the following priced Nursery CATALOGUES in return for one postage stamp each:—A, ROSES; B, ORNAMENTAL TREES AND CONIFERS; C, FRUIT TREES; D, HERBACEOUS PLANTS; F, GREENHOUSE PLANTS, &c.; G, SEEDS; H, HOLLYHOCKS; I, BULBS.—Nurseries, Cheshunt, Herts.

EXOTIC NURSERY, CHELSEA.

JAMES VEITCH, JUN., will be happy to forward his new Retail VEGETABLE, AGRICULTURAL, AND FLOWER SEED LISTS on application, and desires to assure those who may kindly favour him with their orders, that he has spared no pains in procuring his supplies from the first growers on the Continent as well as in this country, and that he will use his best endeavours to give his customers entire satisfaction.

TO THE SEED TRADE.

ABRAHAM HARDY AND SON, SEED GROWERS, beg to announce that their Wholesale Priced CATALOGUE of SEEDS, growth 1854, is now ready, and may be had on application.—Maldon, Essex, December 23.

TO THE SEED TRADE.

DAWE, COTTRELL, AND BENHAM'S (successors to Frederick Warner, Wholesale LIST OF AGRICULTURAL AND GARDEN SEEDS is now ready.—3, Laurence Pountney Lane, London. Established 1720 at 28, Cornhill.

DAWE, COTTRELL, AND BENHAM'S Wholesale FLOWER SEED CATALOGUE is now ready for the Trade. Post free on application.—3, Laurence Pountney Lane, and 36, Moorgate Street, London.

Established 1720 at 28, Cornhill.

SEED GROWERS' SOCIETY.—The Members of the above Society are now prepared to send LISTS of AGRICULTURAL, GARDEN, and FLOWER SEEDS to those who are desirous of having them genuine and direct from the Growers.—Applications addressed to the Secretary, JOHN MOSS, Jun., Feering, Kelvedon, Essex, will meet with prompt attention.

THE CHAMPION OF ENGLAND DAHLIA, one of eight recommended last year by Mr. Glenny, but not let out for want of sufficient stock, and one of the best eight this year is for sale. Mr. Glenny, Horticultural Agent, Dungannon House, Fulham, is authorised to sell the stock for the raiser to one or more persons in the trade. Particulars on application. The demand for this Dahlia will be greater than for any other.

RHUBARB ROOTS for FORCING or PLANTING. —Strong one-year planted roots of MYATT'S VICTORIA and LINNÆUS, MITCHELL'S ROYAL ALBERT, at 6*s*. per doz.; HOWARD'S PRINCE ALBERT, 12*s*. per dozen. This is a larger variety than the Victoria, and is extensively cultivated about Manchester. Price to the trade of the above, per 100 or 1000, on application to MESSRS. J. MYATT AND SONS.

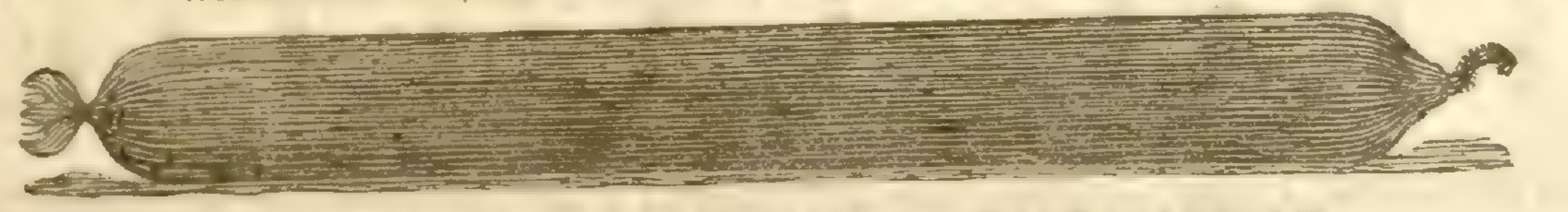
Manor Farm, Deptford, Dec. 23.

GLENNY'S SUPERB BALSAM SEED from the largest and most double Flowers in the world. Six classes, 37 stamps; 50 seeds mixed, 13 stamps—in sealed packets only—with Directions for Culture.—Letters to Mr. GLENNY, Horticultural Agent, Auctioneer, and Valuer, Dungannon House, Fulham.

TWO NEW CUCUMBERS.

SIR COLIN CAMPBELL AND GENERAL CANROBERT.

THE ABOVE are two of the Finest and most Superb New Hybrid Cucumbers ever yet sent out for Exhibition, Winter Cultivation, and every other purpose for which a Cucumber is required.



SIR COLIN CAMPBELL CUCUMBER.

The above Cut is an exact representation of one of the fruit grown this summer, which measured exactly ten of its diameter long, being 25 inches, with not more than half an inch handle. It is a splendid Black Spine, of a dark green colour, and free from ribs or shrivels; grows very quick, sets free, and carries its bloom well. As a Cucumber for Exhibition nothing can surpass it, and is very prolific, often throwing out four or five fruit from every joint, and the vines are short jointed. The fruit is solid, and eats very crisp, and for market it keeps its bloom well for many days, not turning colour at the stem or point as most varieties do. Fruit was cut from the above in January last, and the same plants continued to produce fine fruit until the end of October.

GENERAL CANROBERT CUCUMBER.

This is also a most superb variety for winter cultivation, for which it is best adapted, being a hybrid from Lord Kenyon's Favourite and Phenomena. It has a great advantage over Kenyon's in length, growing to about 18 inches in the same time in which Kenyon's will grow 12 inches; it is equally as hardy and productive. Of a dark green appearance, Black Spine, and a free setter; fruits freely during the whole of the winter, and always grows a very even size from stem to point. It will swell off two or three fruit at a time on a plant, during the depth of winter, and carry them out well, which it does with less heat than any other: this has been proved when several varieties have been grown together, this having the coldest part of the house. The object of the raiser of the above superb varieties has been to obtain perfection and hardiness, in which he has succeeded, by continually hybridising different varieties.

Sold in Packets of Five Seeds, 3s. 6d. each, or 1 Packet of Sir Colin Campbell and General Canrobert for 6s.

The following fine varieties of Cucumbers and Melons, which have been thoroughly proved and have given the greatest satisfaction to all Purchasers, can be supplied.

CUCUMBERS.

Captivation ...	2s. 6d.	Hunter's Prolific ...	1s. 0d.
Phenomena ...	2 6	Mills' Jewess ...	1 0
Lord Kenyon's ...	2 6	Cheltenham Surprise ...	1 0
Essex Hero ...	2 0	Manchester Prize ...	1 0
Victory of Bath ...	1 0	Sion House True ...	1 0
Gordon's White Spine ...	1 0	Cuthill's Black Spine ...	1 0
Sunderland Wick ...	1 0	Conqueror of the West ...	1 0

MELONS.

The Queen ...	1s. 0d.	Beechwood ...	1s. 0d.
Bromham Hall ...	1 0	Windsor Prize ...	1 0
Incomparable ...	1 0	Emperor ...	1 0
Golden Ball ...	1 0	Fleming's Hybd. Persian	1 0
Bowood ...	1 0	Blackall's Green Flesh	1 0
Victory of Bath ...	1 0	Bailey's "	1 0
Camerton Court ...	1 0	Snow's Hybrid ...	1 0

A Packet of either of the Melons will be given to all Purchasers of the two new Cucumbers advertised above.

A Remittance must accompany every Order by Cash or Penny Postage Stamps, and the whole, or any part (as the case may be), will be immediately forwarded.

EDWARD TILEY, NURSERYMAN, SEEDSMAN, and FLORIST, 14, Abbey Church Yard, Bath, Somersetshire.

The New Chinese Potato, Dioscorea (Japonica) Batatas.

MR. JOHN HENDERSON,

Formerly of the Firm of JOHN A. HENDERSON & Co., Pine Apple Place, London,

HAS the pleasure of informing the Public that he has just completed the Purchase from M. PAILLET, of Paris, of his entire Saleable STOCK of the above introduction from China, the nutritive properties of which are said so far to surpass the ordinary Potato that it is likely, not only to act as an auxiliary, but entirely to SUPERSEDE that valuable but uncertain esculent.

The most satisfactory results have followed from personal experiments, and proved that when cooked in the ordinary manner, from the large amount of FARINACEOUS properties it contains, it can NEVER become waxy, as is too generally the case with the Potato. Its FLAVOUR resembles in delicacy an early ASH-LEAVED KIDNEY; but, independent of the above excellent qualities, there is every probability of its taking a still more important position in the ECONOMY of this country, for, when dried and reduced to powder, it is equal to the best ARROW-ROOT; or mixed in the proportion of one-third with two-thirds of wheaten flour, it makes an extremely light and wholesome BREAD, as well as very superior PASTRY.

Messrs. VILMORIN & Co., speaking of it, observe:—"Of all the esculent roots proposed as substitutes for the diseased Potato, the DIOSCOREA JAPONICA is certainly the only important one. It is easily propagated. The tubers are large and long, the flesh very mealy and devoid of any peculiar or disagreeable flavour. The DIOSCOREA JAPONICA is, in our opinion, a PRECIOUS ACQUISITION."

M. PELÉ, Horticulturist, Paris, in his Supplementary Catalogue of this autumn says:—"A new alimentary root, introduced into France by M. MONTIGNY, French Consul in China. Serious experiments have shown that this tuber will be much more advantageous to cultivate than the Potato, both in regard to its QUALITY as well as PRODUCE."

M. PAILLET, to whom the Imperial Society of Agriculture and Commerce of France has awarded the sum of 3000 francs as encouragement for having brought it into cultivation, also notices that "this tuber attains at least 1 to 2 lbs. weight. In its growth it is less delicate than the Potato, which unfortunately has of late years much degenerated. It does not require particular care, and its abundant produce amply repays cultivation. Its taste is pleasant, and being a root which contains a large amount of FARINA, will be a great addition to the FOOD OF THE PEOPLE as soon as it becomes generally known. It is so HARDY that it has passed the winters of 1853-4 in the open ground, without having in the least suffered from frost. It is also found that the STEMS and LEAVES, which are very numerous, form an EXCELLENT FOOD FOR CATTLE."

Tubers, with description of the Chinese Mode of Culture, to be obtained of MR. JOHN HENDERSON, KINGSKERSWELL, SOUTH DEVON, at the following prices, for cash only:—

4 Tubers ... ... £0 10 0 | 10 do. ... ... £1 2 6 | 50 do. ... ... £5 5 0 | 100 do. £10 0 0

Post-office orders are requested to be made payable at Newton Abbot, South Devon. The usual discount allowed to the trade when not less than 50 are taken.—P.S. All orders unaccompanied by a remittance will be considered as not received.

To Farmers, Potato Growers, and Others.

JACKSON'S PATENT PREPARATION

FOR

PRESERVING POTATOES, WHEAT, AND OTHER SEEDS

From DISEASE, the RAVAGES of the SLUG, GRUB, and WIREWORM, in addition to which the CROPS are brought forward in HEALTH AND VIGOUR, and the yield is greatly increased, in proof of which the following extracts are given from numerous letters received by Mr. JACKSON.

EXTRACTS:—

"One of the fields of this farm, the property of MRS. STANBURY, was planted with Regent's Potatoes in April last, some of which were prepared by you. The result now is, that the whole of the crop from the unprepared sets is thoroughly diseased, and hardly worth the trouble of taking up; while those raised by the side of them from the prepared sets, are not only in a beautiful state of preservation from the disease, but the produce is much greater,—the Potatoes are more numerous than the others; indeed, if there were no such thing as the disease to be feared, it would be worth the trouble and expense of preparing the sets by your process, even for the sake of the improved crops. I shall certainly, for the future, prepare all my Potatoes for seed by your process; and I intend to adopt it for preserving my Wheat from the Smut.

"G. B. BAXTER.

"Belmont Farm, Eltham, Kent, August 28, 1854."

"Admiral Sir J. A. GORDON, K.C.B., Marlee House, Blairgowrie.

"SIR,—I have received your note of the 16th. The Potatoes that came here from England, prepared by Mr. JACKSON, were planted in a piece of new ground, and according to the directions sent by him along with them as to distance between the plants, &c. They came up well, with strong healthy stems; I have now taken the whole crop up, and there is not the slightest appearance of any disease amongst them. They are of large equal size and very prolific. There were long black unprepared Kidneys planted in the same patch, and a great deal of them are not fit for use, at least a third part are diseased. I hope Mr. JACKSON'S process may be widely known, as it is a great boon.—I am, &c., JOHN SHANKS,

"Forester, Kildrummy Castle.

"Kildrummy Castle, Aberdeenshire, November 17, 1854."

"I am very much pleased with the result of the experiments I have made with your Prepared Potatoes; for I planted them, without any manure, in ground where for several years I have hardly had a sound Potato, and I now find the crop perfectly free from disease, and in a very fine condition; while those of the same sort, unprepared, which were planted at the same time, and next to them, are diseased and eaten by worms.

"The Potatoes from the Prepared Seed were so remarkably good that I was induced to weigh them, and I found, to my great astonishment, that they were as 200 to 150 of the others, or about 25 per cent. in favour of your preparation.

"T. AUSTEN, Nurseryman and Seedsman.

"Blackheath, Kent, 24th August, 1854."

Sold by Messrs. CHARLWOOD & CUMMINS, Seedsmen, Covent Garden; and JOHN KERNAN, Seedsman, 4, Great Russell Street, Covent Garden; all Seedsmen and Chemists; and at the Patentee's, 18, Cannon Street, London Bridge, in Packets of One, Two, Three or Four Pounds, or in Bulk for the use of Farmers and Potato Growers.

SPLENDID NEW RHUBARB. SALT'S CRIMSON PERFECTION.

ROBERT SALT begs leave to inform the Gentry, Nurserymen, Gardeners, &c., that this splendid variety of Rhubarb is now ready for distribution. It is universally allowed to be the most early, prolific and delicious variety ever offered to the Public.

See *Gardeners' Chronicle* June 11, 1853: "Very good, and of a most beautiful crimson; compared with others, it is remarkable for the small amount of acidity it contains."—ED.

Certificates of Merit were awarded for specimens exhibited at the Meeting of the Horticultural Society, Regent Street, London, June 28th, 1853—at Nottingham, May 24th, 1854—at Derby Midland, May 25th, 1854—at Ormskirk, Lancashire, August 5th, 1854. Price 7s. 6d. per root, 3 for one guinea, and 6 for 2l.

Orders addressed to ROBERT SALT, Longton, Staffordshire, or the following agents, will have immediate attention: Messrs. HURST & M'MULLEN, 6, Leadenhall Street, London; Messrs. BURGESS & KENT, Penkhull, Staffordshire; Mr. WOOD, Nurseryman, Coppice, near Nottingham; Messrs. FRANCIS & ARTHUR DICKSON, East-gate Street, Chester; Mr. SALISBURY, Melbourne, Derbyshire. A liberal discount allowed to the trade. A Post-office order from unknown correspondents.—Longton, Dec. 23.

SUPERIOR EARLY BROCCOLI.

MITCHINSON'S PENZANCE OR EARLY WHITE CORNISH BROCCOLI.—*Celebrated and invaluable for its earliness, coming into use early in February, a full-sized handsome head of excellent quality, but a shy seeder, 1s. 6d. per packet, or 12s. per ounce.* New Seed can be had in sealed packets of the following Agents in London:—NASH, MINIER, and Co., Strand; DAWE, COTTRELL, and BENHAM, Moorgate Street; HURST and MCMULLEN, Leadenhall Street; FLANAGAN & SON, 9, Mansion House Street; or from MITCHINSON'S Seed Establishment, Truro, Cornwall.—December 23.

From numerous unsolicited Testimonials we select the following:—

To Messrs. Mitchinson and Co., Seed Merchants, Truro, Cornwall.

"Sirs,—I have enclosed 18 postage stamps for a packet of your Penzance Broccoli Seed, the same kind as you sent me last year. I hope I am not too late, for I am anxious to procure it, if possible, for I can bear testimony to its value as a new, early, and a superior Broccoli, for I have been cutting upwards of 3 heads every week from the beginning of February.

"Dorking, Surrey, April 6, 1854. "W. UNDERWOOD."

To Messrs. Mitchinson and Son, Seedsmen, Truro, Cornwall.

"Sirs,—I enclose you 1s. 6d. worth of stamps, and hope you will send me a small packet of the Early Broccoli you advertised last year. I have beat all my neighbours this year with your Broccoli, which has been very fine and true, and stood the winter well. "GEORGE PENDER.

"Sandgate, Kent, April 10, 1854."

To Mr. Mitchinson, Seedsman, Truro.

(Enclosed with Specimen).

"Sir,—I beg to forward you this Broccoli, one of the sort after your own name. I have had a splendid crop of them this season, many of which measured three feet in circumference, and quality excellent. Cut the first on the 11th of February. If seed is scarce, be kind enough to save two packets.—T. BICE, Gardener, Grampound, Cornwall. April 7, 1854."

DICKSON'S EARLY FAVOURITE PEA.

FRANCIS AND ARTHUR DICKSON AND SONS, SEED MERCHANTS, &c. Chester, have much satisfaction in introducing the above NEW Pea, which they believe they are perfectly justified in saying is the BEST and MOST PROLIFIC EARLY PEA in cultivation.

It has been tried side by side with all the best early and second early Peas of the day, and has been pronounced by many eminent gardeners who saw it under these circumstances to be much superior to any variety of its season hitherto introduced.

It comes in about a week later than the Early Emperor (sown at same time), grows about 4 feet high, and produces a wonderful profusion of pods, which contain on an average TEN PEAS of EXCELLENT QUALITY and FLAVOUR. It has been grown the last two seasons in the Gardens of the Horticultural Society, and Mr. Thompson, in reporting upon it, writes as follows:—

"Horticultural Society's Gardens, Dec. 20th, 1853.

"In reply to your inquiry respecting DICKSON'S EARLY FAVOURITE PEA, I beg to state that I consider it a new and very *desirable* variety. It is very prolific in pods, and also as regards the number of Peas in the pods, and the quality is excellent. It most resembles the Auvergne, but is earlier than that excellent sort, and the pod is not so much hooked. "R. THOMPSON.

"Horticultural Society's Gardens, June 28th, 1854.

"I beg to hand you a copy of the memorandum which I made respecting your Early Favourite Pea, amongst others, again this season. About 4 feet high, very prolific; pods long, roundish, slightly curved, containing on an average nine to ten Peas of excellent quality. Bears some resemblance to the Auvergne, but differs in having straighter pods, and it is much earlier than the Auvergne. *An excellent prolific Early Pea.* "R. THOMPSON."

Price 3s. 6d. per quart; per pint, 2s.

Messrs. HURST & M'MULLEN, Seedsmen, &c., 6, Leadenhall Street, London Agents.

N.B. The trade supplied on liberal terms.

106, Eastgate Street, Chester, and 14, Corporation Street, Manchester.—December 23.

TO GENTLEMEN ENGAGED IN PLANTING.

WATERER AND GODFREY respectfully invite attention to their stock of the following very desirable HARDY PLANTS.

Araucaria imbricata, from 2 to 7 feet high; as handsome as plants can be.
Cedrus Deodara, in any quantity, from 1 to 3 feet high
Do. do., 4, 5, 6, 7, 8, and 10 feet high; splendid plants
Cedars of Lebanon, 3, 4, 6, and 10 feet high
Pinus Douglasi, 3 to 10 feet
" insignis, 2 to 7 feet
" Menziesi, 3 to 7 feet
" pinsapo, fine plants, 3 to 6 feet
" Nordmanniana, 1½ to 3 ft., all from seed and remarkably handsome
" nobilis, 1½ to 2 feet; a few larger, 5 and 6 feet high, on their own roots, and with perfect leaders
" Montezumæ, 2 to 4 feet
Pinus canadensis, 3 to 8 feet
Cupressus macrocarpa or Lambertiana, 4 to 7 feet
" thyoides variegata, 3 to 4 feet (the variegated white Cedar)
Juniperus, Upright Irish, perfect columns, 3 to 7 feet
" chinensis, 2 to 8 feet
Yew, common English, 3 to 5 feet
" Irish, 4 to 10 feet
" gold-striped, 1½ to 3 feet
" do., tall standards, 4 to 7
" Dovaston, or Weeping, worked on tall straight stems
Thuja aurea, the finest plants in the country
Libocedrus chilensis, the finest plants in the country
Large variegated Hollies
" Standard Bays

Also an immense stock of large Evergreens, Standard Ornamental Trees, &c.

All the plants here offered may be seen, growing in the Nursery; they are removed every year, and will travel any distance with perfect safety. Of some, such as Araucaria, Deodaras, Golden Yews, Thuja aurea, Pinus nobilis, Nordmanniana, we have any quantity; and the plants, for root and branch, are not to be surpassed. Priced Catalogues will be forwarded on application, enclosing two postage stamps, to WATERER and GODFREY, nephews and successors of the late Hosea Waterer, Knap Hill Nursery, Woking, Surrey, near the Woking Station, South-Western Railway, where all trains stop, and where conveyances can be obtained.

The 2d. stamp will also include a descriptive Catalogue of the American Plants, Roses, and Nursery Stock in general.

NURSERY AND SEED ESTABLISHMENT. LEXDEN ROAD, COLCHESTER.
(ESTABLISHED UPWARDS OF THIRTY-FIVE YEARS.)

HORATIO BUNTING begs to announce that his extensive CATALOGUE of FLOWER and VEGETABLE SEEDS is now ready, and may be had on application, by enclosing two postage stamps. He can confidently recommend the articles therein enumerated, as nearly every article is his own growth, true to name, and of first-rate quality. Early orders will oblige, as the quantities of Lettuce and several other things are limited.—N.B. Please to observe the Address.

SUPERB HOLLYHOCKS, ROCKETS, SEEDS, ETC.

WILLIAM CHATER'S descriptive list of his superb HOLLYHOCKS, containing hints on their culture and observations on exhibiting, &c., may be had on application by enclosing a postage stamp. Packets of seed, consisting of 20 varieties, selected from the best show flowers, 5s.; 12 varieties, 2s. 6d.; and from good double sorts, 1s.

Very superior Quilled German Asters, 12 distinct varieties, separate, 2s., mixed 1s. per packet. Also Choice French Asters, 12 varieties, separate, 3s., mixed, 1s. 6d. Fine Quilled African Marigolds, lemon and orange, 6d. per packet.

New Double Crimson ROCKET, excellent bedding plant for spring flowering, 6s. per dozen, or 2l. per 100. Double French White, 4s. per dozen, or 30s. per 100.

Saffron Walden Nursery, Dec. 23.

PYRAMIDAL PEAR TREES ON QUINCE STOCKS.

J. AND J. FRASER have to offer a very fine collection of the best varieties of PEARS grafted on the Quince; descriptive Catalogues of which may be had on application. In offering these Pears, grafted on the Quince stock, we would wish particularly to call attention to their many excellent qualities. They are very compact in growth, and most prolific in bearing, fruiting profusely while the trees are small; thus forming a great acquisition for a small garden. Planted by the side of walks, in addition to their utility, they add much to the neatness and beauty of a kitchen garden. Indeed too much can scarcely be said in favour of these miniature Pear trees; as a proof of their merit the demand for them is yearly increasing.

Strong Trees, showing Fruit Buds, 2s. 6d. to 3s. 6d. each.

Lea Bridge Road, Essex, December 23.

R. PARKER begs to offer the following:—

CINERARIAS (Seedlings), from all the finest varieties carefully selected, including the new varieties sent out last autumn. Strong established plants, in 4-inch pots, at 4s. per dozen. A choice collection of named Cinerarias in strong established plants, purchaser's selection, at 9s. per dozen.

ROSES, consisting of the best varieties of Hybrid Perpetuals, Teas, Bourbons, &c., well established in pots. Purchaser's selection, at 12s. per dozen. List of names forwarded upon application.

A remittance or reference to accompany all orders from unknown correspondents.

Paradise Nursery, Hornsey Road, Islington.

THE NEW CHINESE POTATO, DIOSCOREA (JAPONICA) BATATAS.

TUBERS OF THE ABOVE ESCULENT MAY BE OBTAINED OF

MR. JOHN HENDERSON, KINGSKERSWELL, South Devon, to whom POST-OFFICE ORDERS should be made payable at "NEWTON ABBOT," South Devon. They may also be had genuine from the following Nurserymen and Seedsmen who have received their supplies from Mr. J. H.

Mr. John Slater, Malton, Yorkshire; Mr. Alex. Pontey, Plymouth; Messrs. Minchin and Son, Hook Norton, Oxford; Mr. John Halley, Blackheath, Kent; Mr. William Nicholson, Egglescliffe, Yorkshire; Messrs. Dickson and Co., Edinburgh; Mr. Joseph Bates, Oxford; Messrs. J. Major and Son, Knosthorpe, Leeds; Messrs. Drysdale and Co., Glasgow; Messrs. Jas. Veitch and Co., King's Road, Chelsea; Messrs. Garraway and Co., Bristol; Mr. W. Deans, Jedburgh, N.B.; Messrs. Edward Sang and Sons, Kirkaldy, N.B.; Mr. Wm. Mitchell, Endfield Highway, Middlesex; Mr. J. Roy, jun., Aberdeen, N.B.; Mr. Jas. Carter, 238, High Holborn, London; Mr. Daniel Livingston, Dublin; Messrs. Morrison and Son, Banff, N.B.

TO THE SEED TRADE.

MESSRS. ARTHUR HENDERSON AND CO. are now prepared to supply SEEDS of the following recent introductions.

N.B.—Mr. W. H. DUNNETT (the raiser), Seed Grower, Dedham, Essex, will also execute all orders intrusted to him with the greatest care and attention.

WHITE TOPPED CLARY, a fine showy hardy annual, remaining a long time in flower—
1 oz. ... 5s. | 4 oz. ... 15s. | 8 oz. ... 25s. | 16 oz. ... 40s.

LIMNANTHUS SULPHUREA ODORATA; yellow ground, edged with white and rose-coloured stamens; a beautiful trailing hardy annual, very sweet scented, and throwing off its fragrance like the Mignonette, and continuing in flower for a considerable period:
1 oz., 10s. 6d. | 4 do., 35s. | 8 do., 60s. | 16 do., 100s.

DIANTHUS DUNNETTII SUPERBUS; very dwarf, fine dark Sweet William—
1 oz., 20s. | 2 oz., 35s. | 4 oz., 63s. | 8 oz., 105s. | 16 oz., 163s.

Pine Apple Place, Edgeware Road, London.

TO THE SEED TRADE.—In consequence of numerous applications for WHOLESALE priced Lists of Seeds, causing considerable expense and inconvenience in replying by post, we beg respectfully to intimate that we do not profess to do the Wholesale Trade, as we grow our seeds expressly for Retailing, and take more care in keeping each kind true and fine, than we could possibly afford to do were we to grow for the purpose of selling at Wholesale prices. It does, however, occasionally happen that we have more than we require of some few articles, which we are glad to offer to the Trade on advantageous terms.

The undermentioned can be warranted new and genuine, the Wholesale prices of which may be obtained on application, stating quantity required.

Yellow Globe Mangold Wurzel.	Sutton's Lincolnshire Red Turnip
Long Red " "	White Globe "
White Swede.	Sutton's Imperial Cabbage.
Orange Jelly Turnip.	" Solid White Celery.
	" Superb Pink Celery.

JOHN SUTTON AND SONS, Seed Growers, Reading, Berks.

BASS AND BROWN'S NEW AUTUMN CATALOGUE, supplied free for three Penny Stamps. They have this season a very fine and vigorous stock of the finest Roses, among which are a number of very superb new Continental varieties, consisting chiefly of the perpetual class. The following selections will be highly approved,

ROSES.

100 Standards in 100 very superior varieties	£7 10 0
100 " 50 "	6 10 0
50 " 50 varieties ditto, all selected from perpetuals	4 0 0
100 dwarfs and half standards, or all dwarfs, in 100 very superior varieties	4 0 0
100 ditto in 50 varieties, ditto	3 0 0
50 ditto in 50 varieties, ditto, all from perpetuals ...	2 10 0
Fine mixed dwarfs, per 100	1 10 0

Hardy Herbaceous Plants, Hollyhocks, prize-named Gooseberries, Strawberries, Standard Dwarf and Trained Fruit Trees, Flower Roots, and a variety of desirable articles offered in selection for present planting, for which see *Gardeners' Chronicle*, Oct. 14, page 659, and Oct. 28th, page 690.—Goods, carriage free (not under 20s.), to all the London termini, and all Stations on the London and Norwich Colchester Line. Plants added gratis with orders of 40s. and upwards.

Seed and Horticultural Establishment, Sudbury, Suffolk.

GREAT NOVELTIES FOR THE ENSUING SEASON.

FUCHSIAS WITH WHITE COROLLAS.

LUCOMBE, PINCE AND CO. beg leave to announce that they shall be prepared to send out two splendid and entirely novel Seedling Fuchsias, early in May next, viz.:—

FLORENCE NIGHTINGALE.

Pure white corolla, with brilliant scarlet sepals, finely reflexed: an extremely lovely and novel variety.

GALANTHIFLORA-PLENA

(The DOUBLE Snowdrop Corolla'd Fuchsia.)

Pure double white corolla, resembling a fine large double snowdrop, with rich scarlet sepals; altogether distinct from anything of the kind ever yet produced. Price 10s. 6d. each.

The usual discount to the Trade when three or more are taken.

Exeter Nursery, Exeter.—ESTABLISHED 1720.

RENDLE'S COMPLETE COLLECTION OF KITCHEN GARDEN SEEDS *will be ready in a few days. They can be had to suit various sized Gardens at the following prices:—*

No. 1 COLLECTION	£3 0 0
" 2 "	2 0 0
" 3 "	1 5 0
" 4 "	0 15 0

The quantities are fully detailed in their "Price Current and Garden Directory," a new edition of which is now in the Press.

WILLIAM E. RENDLE & Co., Seed Growers, Plymouth.

ESTABLISHED 68 YEARS.

A. VERSCHAFFELT, NURSERYMAN, Ghent, Belgium, begs to offer to the trade:—

Lilium lancifolium album, strong bulbs, ... per 100	£3 0 0
" " speciosum " ... "	5 0 0
" Browni (true), ... " ... "	0 7 6

The Bulbs are strong and healthy.

A. V. begs to offer also good and fresh Seed of the fine LILIUM GIGANTEUM at the following prices:—A Parcel of 50 Seeds, 7s. 6d.; ditto 100 ditto, 13s.

P.S. The last number of the first volume of VERSCHAFFELT'S L'ILLUSTRATION HORTICOLE is just out, and contains:—1, Magnolia Lenné; 2, Gentiana Fortunei; 3, a plate with seven new Geraniums (Odier); 4, Azalea indica alba illustrata; and 5, a View of the Editor's Horticultural Establishment.

PRIZE CUCUMBERS.

SUTTON'S BERKSHIRE CHAMPION, the finest formed Cucumber in cultivation, 18 to 24 inches, per packet 1s. 6d.

CRAWSHAY'S PRIZETAKER, 30 to 34 inches, quite new, has gained prizes at several important Shows, per packet, 1s. 6d.

CONSTANTINE'S INCOMPARABLE, fine black spine, per packet, 1s.

LORD KENYON'S FAVOURITE, the most prolific and suitable for early forcing, 14 to 18 inches, black spine, per packet, 1s.

CUTHILL'S BLACK SPINE, seed direct from Mr. Cuthill, per packet, 6d.

Seed of the above superior sorts of Cucumbers may be had, post free, of JOHN SUTTON & SONS, Reading, Berks.

The Gardeners' Chronicle.

SATURDAY, DECEMBER 23, 1854.

AMONG what are usually thought uncultivable plants the MANGOSTEEN was once pre-eminent. Indian gardeners pronounced it hopeless to attempt its growth beyond the hot and damp Indian archipelago. In Bengal it perishes. When it was first brought over some 30 years ago, all the seedlings quickly died, although placed in the care of different gardeners at that time standing high in their business. Even when carried to Surinam, the moist and warm climate of which was expected to agree with it, still the attempt to make it even live was a failure.

Nevertheless the high reputation borne by the Mangosteen continued to lead to further trials. Of all known fruits it is the pride of the countries to which it exclusively belongs, and seems to meet the approbation of persons of the greatest diversity of taste in other matters. In shape and size the fruit resembles a middle-sized Apple; but has a thick dark purple or brownish red rind, which is hard on the outside but soft and succulent within. This encloses three or four cloves consisting of a soft semi-transparent snow-white pulp, which is the part eaten, or rather sucked, for it dissolves in the mouth. Its characteristic quality is extreme richness of flavour, without being luscious or cloying; and it may be eaten in any moderate quantity without danger of surfeit or other unpleasant effects. Dr. ABEL, speaking of it, says that he and his companions were anxious to carry away with them some precise expression of its flavour, but after satisfying themselves that it partook of the compound taste of the Pine-apple and the Peach, they were obliged to confess that it had many other equally good but utterly inexpressible flavours.

The word impossible has of late years been generally struck out of gardening books; and certainly in the case of the Mangosteen, it has proved to be wholly inapplicable, for it is well known that both in the tropical fruit-house at Syon, preserved with such great care by the Dukes of NORTHUMBERLAND, and at Leigh Park, in Sir GEORGE STAUNTON'S stoves, the plant has for several years continued to remain in the most perfect health. We are now able to announce, with great satisfaction, that the care and skill with which it has been treated have been at last rewarded; and that first at Syon, and then at Leigh Park, the plants have produced their flowers—for the first time, we believe, out of the western portion of the Malay Archipelago. We are unacquainted with the precise circumstances which led to this gratifying event at Leigh Park, but we are enabled, by the favour of his Grace the Duke of NORTHUMBERLAND, to publish the following very satisfactory account of the cultivation at Syon and its results, drawn up by Mr. JOHN IVISON, to whom belongs the honour of having achieved the first success.

"The Mangosteen plant now fruiting at Syon, and another about the same size, were brought from Calcutta by Capt. WHITE in 1833, and were most probably forwarded by the late Dr. WALLICH while superintendent of the botanic garden there. Both plants were very small when they arrived; they were placed in a warm stove, and were permitted to remain in the soil in the case in which they were imported until they began to grow; after that they were potted in turfy loam and white sand, well drained, and were plunged into a bark bed. When they became too tall for that situation, they were removed to the tropical-house, where they increased rapidly in size, making two growths regularly every season. They were shifted into larger pots or tubs as they appeared to require it, until about three years ago, when the plant now bearing fruit was placed in a tub 3 feet square, and his Grace the Duke of NORTHUMBERLAND, thinking it had become large enough to fruit, caused a partition to be made in the tropical-house and a space to be wholly set apart for the Mangosteens, in which bottom-heat of from 80° to 90° could be maintained by means of hot-water tanks running alongside the tubs in which the largest plant was growing, and the soil in which another was planted out. An atmospheric temperature, ranging from 65° to 90°, was at the same time kept up together with a continual supply of fresh air from cold air drains which crossed the house, and discharged themselves amongst the hot-water pipes at the back, on which water in pans kept continually evaporating abundance of moisture. Under these conditions, and by means of shading in bright weather, and giving plenty of water when the plants were growing, they made a most vigorous growth two years ago, since which time they have apparently been preparing for flowering, having only made one growth in a season with much shorter-jointed wood and smaller leaves, and the shoots which have now produced flowers have remained stationary since last October twelvemonth. The first flowers expanded on the 18th of November last; the petals fell off the following day, and the fruit, which almost immediately began to swell, is now the size of a Greengage Plum, with every appearance of arriving at perfection. At the present time there are four fruit swelling, and one flower has been taken off for botanical examination. The plant is about 15 feet high, 9 feet in diameter, and the stem 6 inches in circumference. The flowers were about 2 inches in diameter, and the petals brownish red shaded with yellow."

Whether these fruits will prove to have really set is uncertain. When the flowers expanded the anthers appeared to be destitute of pollen; a camel hair pencil was, nevertheless, drawn carefully among the anthers, and then applied to the stigma, in the hope that a few particles of pollen might lurk among the anthers, although invisible to the eye. Possibly this was the case; possibly the fruit was set before the flowers expanded; possibly the fruit may still drop off. But, in the meanwhile, we are informed that it presents no symptoms whatever of being otherwise than in the most perfect state that could be desired.

WE perceive with great sorrow among the announcements of deaths at Scutari that of LIEUT.-COL. JOHN GEORGE CHAMPION, of the 95th Regiment. It is not because our gallant friend is thus early lost to the profession he adorned (he was only 39) that we advert to the melancholy event, but because of the important services he rendered to systematical botany. While stationed in Ceylon he formed extensive collections of the plants of that island, in connection with the late Mr. GARDNER; and a memoir which he published on *Hyalisma*, &c., evinced the attention he had even then paid to this his favourite pursuit. His regiment having afterwards proceeded to Hongkong, Captain CHAMPION employed himself so sedulously in investigating the botany of that singular island that he speedily reaped a most abundant harvest of novelties, among which was the magnificent *Rhodoleia*, called *Championi* by Sir W. HOOKER. The herbarium which he then formed was of the highest scientific importance, as the result of its careful examination by Mr. BENTHAM published in the "Journal of Botany," abundantly shows. Upon arriving in the Crimea he was present at the victory of the Alma, to the gaining which MAJOR CHAMPION and his glorious 95th greatly contributed; in the affair of Oct. 26, we again hear of him leading on his hardy soldiers in pursuit of the Russians almost up to the defences of Sebastopol; and finally in the heroic battle of Inkermann Major CHAMPION and the

95th were again foremost in that wonderful defence, which paralysed the Muscovite army, and saved the allied forces from destruction. It was here he fell, at the head of his men, dangerously wounded. For his gallant conduct on that occasion he was promoted to the rank of Lieut.-Colonel, which alas! he only received to surrender with his noble spirit. It is not his family alone which mourns the loss of the gallant soldier—science also must bow her head in sorrow for his fate.

An advertisement having appeared in our columns respecting a new esculent root called Dioscorea japonica, it seems desirable to state what has up to the present time been ascertained respecting the plant. In the *Gardeners' Chronicle* for the 22d of July last, an account was given of a newly introduced hardy Chinese Yam called Dioscorea Batatas, by Prof. Decaisne, which is identical with this *Dioscorea japonica*, a name that, according to M. Decaisne, belongs to a very different species, and must therefore be abandoned.

Since the appearance of the account alluded to, a couple of plants were received by the Horticultural Society, and placed under the care of Mr. Thompson, who however failed in inducing them to form tubers. Others have been more successful, especially M. Pépin, who in a late communication to the Imperial and Central Agricultural Society of France, gives the following interesting account of his experiments :—

"This plant arrived in a very bad state, nearly all the roots having been destroyed by the fermentation which had taken place in the box during the voyage.

"After the pieces of the roots which were sound had been cleaned and dried for three days, they were planted in well-drained pots filled with sandy peat, mixed with about one-fifth of rotten dung so far decomposed as to be reduced to the state of mould. The pots were plunged in a hot-bed, not covered by a frame, in order that vegetation might be accelerated by a gentle and steady bottom-heat; at the same time water was very sparingly given.

"At the end of a fortnight, by the aid of this artificial heat, fibrils and young stems had been developed. The plants were then taken out of the pots and planted in the open ground, in the end of May; a few were planted on an exhausted hot-bed, in order that they might take root more readily, and produce a greater number of roots and stems. These means succeeded perfectly well, and we were enabled to preserve and propagate the plant. The roots taken up in the autumn of 1850 were put into a cellar where the frost could not reach them; and, having kept well through the winter, they were planted out in the spring of 1851, in well pulverised, deep garden soil. The growth of the plants was very vigorous, and the roots attained a large size; one of them, measured in the autumn of 1851, was about 3 feet in length; its form was cylindrical and tapering.

"The stems of this plant wither every year in the end of October. The first year they were cut off soon after, and the roots taken up under the impression that they had been injured by frost. The roots were in a growing state when taken up, and this led me to suppose that they might have been left in the ground till the end of November, and that they would have attained a still greater size. I have observed, up to the present time, that the tubers were simple, and had no tendency to ramify; but I have also seen two together, of equal size, that grew from the lower part of the terminal shoot, and had their origin from the same point.

"In August, 1851, before the stems of that year were fully matured, some young shoots were taken for cuttings. They were cut in lengths of between 4 and 5 inches, and horizontally below an eye. They were inserted in pots filled with peat, and placed on bottom-heat in a hot-house, covering them for several days with a bell-glass, so as to completely exclude the air. These cuttings succeeded perfectly well. At the end of a month they had made a sufficient quantity of roots to admit of their being potted singly in 3-inch pots. They were kept in a hot-house, where they continued to grow till December. They had then pushed to the length of from 12 to 14 inches. Up to the present time cuttings made during summer from the herbaceous shoots have only yielded tubers after the lapse of from 14 to 16 months; but those raised from pieces of the roots produced tubers which could be used in the same year.

"It was doubtful whether the roots of this plant would withstand our winters, although some small pieces that were left in the soil when the roots were taken up in 1852 remained alive all winter, and made shoots 13 to 19 inches in length during the ensuing summer; and the roots of one of these plants were as much as 14 inches deep. The roots which remained in the ground throughout the winter pushed their shoots about the 15th or 20th of April; those roots, on the other hand, which were planted in April did not exhibit shoots till the end of May, or more frequently not till the beginning of June. There is no longer any doubt as to the hardiness of the plants; they have withstood, as I have already stated, the 25° of frost which we have had this winter, and when taken up the skin was smooth and fresh, and the roots altogether were in a sound state, as M. Brongniart, who was present, can testify.

"I preserved a root in a cellar from October, 1852, to the 30th May, 1853, without any appearance of the development of shoots. It was unchanged, and had not lost weight. I think the tubers may be kept nearly throughout the year, which is not the case with either the common or the sweet Potato.

"In June, 1853, after having been seven months out of the ground, a root of this plant was analysed, in order to ascertain the amount of nutritive matter which it contained. The following was the result in 100 parts:—

Water	70.40
Starch	18.30
Alkaline phosphates (ashes) ...	0.78
Albuminous matter (a large quantity), saccharine matter (trace), cellulose, mineral substances, &c.	10.52
	100.00

"The proportion of starch was determined with the greatest possible care, but the quantity analysed was very small (463 grains); it would therefore be necessary to repeat the analysis with a greater quantity of the root.

"In a few years we shall know to what extent the roots left in the ground will acquire weight and bulk, and how long they may remain in the soil without deterioration of quality. We know, however, that a tuber taken up at the end of three years had its cellular tissue healthy to the centre, where it was also neither hard nor woody.

"From these facts I believe that this plant will be admitted among our cultivated tuberous species, and I am also led to conclude that it will be useful in an agricultural point of view, inasmuch as it remains several years in the ground like the Jerusalem Artichoke, requiring after planting little or no cultivation, and finally that it will furnish, at all seasons of the year, an aliment within the reach of every one."

This report appears to establish the fact that the roots of the Chinese Yam are hardy and productive enough for garden cultivation. Of their quality we can speak from personal knowledge, a portion of a full-grown tuber having been obligingly sent us by Mr. J. Henderson, Kingskerswell, S. Devon, in whose hands, we understand, is the whole saleable stock of the plant. Boiled like a Potato it proved extremely good, with rather a nutty taste, but it did not become mealy, although the Potatoes which were cooked with it were perfectly so; from which we infer that the roots require to be either steamed or roasted, if to be brought to table in perfection. At all events, it is certain that the Chinese Yam belongs to the first class of garden root crops. Experience only will teach the best way of cooking it, and, we may add, of cultivating it also. Upon the latter important subject we have the following practical directions from Mr. Henderson :—

"The manner in which the Chinese cultivate it is extremely simple. The earth is first formed into ridges, when small tubers, or portions of large ones, are planted on the top, at about 3 feet apart; after the plants have attained a little strength, the shoots are spread over the sides of the ridges and pegged down at the leaf end, 6 or 8 inches from each other (care being taken to cover the joints or parts pegged down with a portion of earth), when they soon strike root and throw out tubers; by this means, immense quantities of roots, of the size of early-framed Kidney Potatoes, are raised on a comparatively small piece of ground. The above is the ordinary Chinese mode of culture; but to obtain them of a large size, small tubers, or portions, are planted on ridges, from 10 inches to 1 foot apart, and the plants are allowed to grow freely till late in the autumn, when the foliage is cut away and dried, or partially dried, and given to cattle; the tubers by this means attain on an average 1 lb. and upwards in weight. The produce, when the ground is required for other purposes, is taken up and stored away for the winter and spring; and it seems a peculiarity in this root, if exposed to the frost, it is not injured by it, nor does it have any inclination for sprouting till the natural season for planting."

Mr. Henderson further states—

"That he finds a much quicker way of procuring a stock of young tubers for seed by growing them in a cold frame, or on a gentle hot-bed, and taking the cuttings as soon as they appear; it being only necessary to cut off a leaf, with a small piece of wood without a joint, which is inserted in the mould (ordinary cutting mould) to the leaf—a pot of 6 inches diameter would contain about 50 cuttings—the pots should then be placed in a gentle heat, and kept close, either by means of bell-glasses or otherwise. Before the cuttings strike root they will throw out small tubers on the surface of the mould (similar to those sent out to the public); as soon as they are the size of a Pea they should be hardened off, and planted out thickly in the open ground, when many of the large ones will be fit for use the same season, if required. A good gardener, with a stock of 50 small tubers, ought to obtain from two to three thousand roots fit for the next year's seed."

There can be no doubt that the plant deserves the immediate and serious attention of all gentlemen's gardeners.

VEGETABLE PATHOLOGY.—No. LI.

229. *c. Doubtful or conjectural.* Though many of the causes of disease in the vegetable world are known, and even the manner of their operation ascertained with tolerable accuracy, it is quite impossible, in so difficult a subject, to obtain satisfaction on every point. There is, however, a concurrent tendency in the human mind to seek a cause for everything, and at the same time to rest contented with mere words, which give no solution of the difficulty, or with assertions which do not rest upon a single fact. How often, for instance, as regards diseases to which man is subject, is every inquiry silenced by such a word as neuralgia, which in reality only expresses the very fact under consideration without any attempt at assigning a cause. And the case is just the same with the diseases of the vegetable world. The mouth of the vulgar is stopped by mere "words without knowledge," while the person who uses them perhaps plumes himself on his superior insight into the secrets of nature. Thus, for example, the diseases which have of late been so prevalent amongst our more valuable objects of cultivation, have been asserted to arise from some unknown cause, distinguished by the name of blight, which, though not derived from a Greek fountain, like the favourite neuralgia, equally evades inquiry by the substitution of a name: or, on the other hand, some conjectural cause has been assigned, like that of electricity, without a single fact to render it probable. It is far better, under such circumstances, to confess our ignorance than to blindfold our own eyes, or those of others, by unmeaning phrases or by unsupported conjecture; because the tendency of such attempts is to discourage experiment or to mislead it.

230. The word blight, with numerous synonyms, was at one time supposed quite sufficient to account for every disease, though perhaps as many distinct causes as there are synonyms might have been at work, and these capable of being ascertained and sometimes remedied by a little close attention and common sense. The fancies of equivocal generation are merely the substitution of conjecture for observation, with a view to meet difficulties which perhaps may never be entirely cleared up. But the truth is that, after all, we are not the least nearer to the solution of difficulties under such a supposition, for, allowing the truth of the theory, we have still to discover what it is which gives the tissues or their contained fluids the tendency to produce those organisms which pass under the common name of blight or some of its equivalents. If we can ascertain the different conditions under which intestinal parasites exist and are developed, we shall have obtained important information which may lead not only to their suppression when formed, but to their entire prevention; while a conviction that they arise spontaneously will at once prevent the acquisition of such information. It cannot, therefore, be impressed too strongly upon the minds of Vegetable Pathologists, of every degree, to divest themselves of all such vanities, and to track nature herself into her secret recesses. In such a case, supposing even that notions should be prevalent as to the degeneration necessarily due to reproduction from repeated division of an individual stock, or to any other conjectural cause, however untrue or insufficient, they will be supported by well-ascertained facts, and not by mere assertion; and if so light will be elicited illustrative of some point of interest, though possibly not of the particular matter under consideration. Mere theory is too often deceptive, and by itself for the most part deserving of little consideration, whereas the wildest conjectures, if tested experimentally, may lead to the acquisition of useful knowledge. When it is asserted, for instance, that the seasons have changed, that the contents of the atmosphere are altered by the excessive consumption of fuel induced by the use of steam, that the electrical condition of the earth is different, or any other similar fancy, it is clear that as mere assertions they are valueless, but if such conjectures lead to a close examination of the several phenomena, information of the most important nature may possibly be obtained. *M. J. B.*

VINCAS.

Most amateurs possess two or three kinds of Vincas, but very few seem to care any further about them than merely to keep them alive. They, however, deserve better treatment than this; for they are almost perpetual bloomers, and form when well grown exceedingly attractive specimens. They, however, require a warm moist atmosphere while growing, and they will hardly bear removal to a cool house while in flower; they are, therefore, useless, except a warm house can be afforded them. Rather firm, short jointed, young shoots, should be selected for cuttings, inserted in a well drained pot filled with sandy peaty compost covered with a bell-glass, and plunged in bottom heat in a close pit or frame, where, with proper attention in the way of shading and watering, they will be well rooted in the course of a few weeks. When they are observed to be rooted, expose them to the atmosphere of the house, and pot them singly in 4-inch pots as soon as they are sufficiently hardened and strong to bear the operation, replacing them in a warm, moist situation. When they get established keep them near the glass, stop the principal shoots, and attend to repotting as the roots are found to require more space. They will, probably, not be of sufficient size the first season to be worth notice for flowering, but if propagated early in the season they should form nice little plants, with several strong well-ripened shoots before winter. Place them near the

them in a house where the temperature may average from 50° to 60°, and give water sparingly to the soil in winter. Towards the beginning of February remove them to a warm, moist atmosphere, pruning and tying out the branches, so as to secure compact growth; and when they start into growth examine the roots and shift into larger pots as may be necessary to afford the roots free scope. Maintain a moist, warm atmosphere, keep the plants near the glass, and stop the shoots, keeping them nicely tied out; attend to potting as may be requisite until specimens of the desired size are acquired, and with plenty of warmth and moisture, and attentive management, large plants may be grown in the course of a few months. While in flower the best situation for them is a kind of intermediate house, rather warmer and moister than the ordinary greenhouse, but not so hot and damp as the stove, and if they can be afforded a situation of this kind they will furnish a long succession of their pretty blossoms. After wintering the specimens, as recommended for last season, prune the shoots pretty closely before starting them into growth in spring, cutting out those that are weakly or ill-placed, and when the buds start into growth, the plants should be shaken out of the old soil, disrooting them freely in order to allow of repotting them in smaller pots in fresh soil. Keep them close and warm, and sprinkle over-head frequently with the syringe, but give water to the soil sparingly until the plants appear to have made fresh roots. Stopping may be continued as long as it may be desirable to increase the size of the specimen, attending also to shifting as may be necessary for the same purpose, but observe not to repot directly before or after stopping as the roots sooner strike into the fresh soil when the plants are in free growth. Specimens that are allowed to bloom early in the season, may, in the event of their becoming shabby by July, be slightly cut back and placed in growing circumstances, where in the course of a month or five weeks they will be covered with flowers again. See, however, to having the wood rather firm before winter in the case of specimens intended for early work the following spring, and allow them a rest of some two months.

The best compost for the growth of the Vinca is about equal parts of turfy loam, peat, well-decayed leaf-soil, and thoroughly decomposed cowdung, but the latter had better not be used for newly-disrooted plants, and it will be as well left out in the case of young plants. The plants require a very liberal supply of water while in free growth, therefore secure efficient drainage, and add a good sprinkling of clean sharp sand to the compost. —*Alpha.*

NEW FRUITS.

APRICOTS.—*St. Ambroise.* This is evidently a seedling from the Large Early, and is one of the best Large Early Apricots known. In size it approaches very nearly to the Moor Park; is very much compressed or flattened; its flesh is juicy, rich, and sugary, much superior to the Large Early; and it ripens fully a fortnight before the Moor Park. The tree is remarkably vigorous and healthy, and it is a profuse bearer.—*Kaisha.* This is also an early Apricot, not so large or so early as the preceding, but follows closely upon it. Its flesh is high-coloured, very juicy, rich, and agreeable. It succeeds admirably as a pot tree for the orchard house, and bears abundantly.—*Beaugé.* This is a new variety of the Moor Park race, and has the valuable quality of ripening 10 or 12 days after it. Its fruit is large, juicy, and rich, and the tree is very hard and productive.—*Tardive d'Orléans.* This is still later than it at first appeared to be, and this season ripened in the orchard house more than a fortnight after the Moor Park, hanging on the tree till the middle of September, shrivelling and becoming very rich.—Peach or *Pêche* of the French, or *Gros Pêche.* Although the Moor Park has for many years been reckoned the standard of excellence in England, this is a larger and better fruit; in fact, it is the best of all Apricots, and often confounded with the Moor Park. Its leaves are larger and more round; its buds are more prominent than those of that variety, and one great difference exists, it will not grow when budded on the same plum-stock as that used for the Moor Park. Its habit is most robust, and it bears profusely either as a wall tree, or in pots in the orchard house.—*Alberge de Montgamet* is a small but useful and agreeable early Apricot either for the wall or orchard house.

CHERRIES.—The *Belle Agathe* Cherry, figured and described in the "Album de Pomologie" as a full-sized sweet and good variety, hanging on the tree till the end of October, proves to be no better or larger than Tardive de Mons, a small hard late Cherry. Some American Cherries, raised by Dr. Kirtland, of Ohio, have proved of great excellence. Of these Governor Wood, Rockport Bigarreau, Cleveland Bigarreau, and Ohio Beauty, are the best.

CURRANTS.—*La Versaillaise, La Hâtive,* and *La Fertile,* three varieties comparatively new, are well worthy of cultivation. The first is the largest Currant known, larger even than the Cherry Currant; its bunches are very long. The second and third are well named, for La Hâtive is as early as Knight's Early Red, but with berries much larger, and La Fertile is a most prodigious bearer, so that its leaves are hidden by its fruit. Transparent White proves a most excellent sort. Its fruit is more amber-coloured than any other white Currant.

PEACHES.—The American Peaches, hitherto thought lightly of in this country on account of our climate being too humid for them when cultivated on walls in the open air, are of the highest excellence in the orchard house. *Scott's Early Red,* ripening about the middle of August, and *George the IVth,* ripening the second week in September, were this season juicy, vinous, and rich beyond any other varieties; the Early York was also very good, and the large Early York equal to George the IVth. A new late Grosse Mignonne Peach (*Mignonne grosse tardive*), gained by Monsieur Lepère, of Montreuil, from a sporting branch of the Grosse Mignonne, is a most excellent variety. It ripens a fortnight later than its parent, and is equally good. *Monstrueuse de Doué,* a seedling raised from Reine des Vergers, is a new French variety, like its parent in excellence of flavour, but very large, and more deep in colour than most Peaches. Its skin is entirely of a deep crimson. The *Angers Large Purple* Peach is one of the largest and finest of Peaches, and ripens about the same time, or rather just after the Chancellor, forming a capital successional Peach. Gregory's Peach, raised from seed in Gloucestershire, is a very hardy late Peach, melting and very good; it closely succeeds the Late Admirable, and is a most abundant bearer. All the above are freestone melting Peaches of first quality.

PEARS.—*Beurré Clairgeau.* This large and very handsome Pear was not of first-rate quality last year, which was imputed to the cool moist season; but this season it has also proved of inferior quality, its flesh tender and juicy, with a slight perfume, but flat and watery, and very inferior to that standard of perfection in autumn Pears, the Marie Louise.—*Bergamotte Dussart.* This, a medium-sized Pear, ripening in December and January, is a most delicious melting Pear, with a peculiar aroma; it is hardy, and ripens well as a pyramid, but does not appear to grow very freely on the quince stock. —*Prevost.* This very handsome and prolific variety requires a warm soil and situation as a pyramid; it is not melting, but becomes soft late in spring, and has a highly perfumed flavour.—*Prince Albert* (Van Mons). This is a variety likely to be very valuable; it is in shape like Beurré Rance, and usually keeps longer, often till April and May, which that variety rarely does; its flesh is half melting, juicy, and rich; the tree is very hardy, and grows well on the quince stock, and will form a handsome prolific pyramid; it may be planted against walls with S.E., E. or W. aspects with advantage. Trees are now 5*s.* each.—*Surpasse Crassane* (Van Mons). This is the Crassane in quality and shape, which is enough. No finer Pear has ever yet been raised than that old favourite variety, large trees of which may often be found in the gardens of our old country mansions, bearing Pears few and far between. The habit of this seedling Crassane is very vigorous and healthy; it grows well on the quince stock, and seems inclined to bear well as a pyramid or bush, and also well deserves a S.E. or E. wall.

PLUMS.—*Belle de Septembre.* This proves to be a useful variety. It is large, oval, of a bright red colour. In England it does not ripen till the middle of October, and is a very hardy, excellent kitchen fruit.—*Cloth of Gold* (Esperen) proved this season of excellent quality from a S.E. wall. Shape, roundish oval; colour, bright golden yellow; size, as large or larger than the Washington, and very juicy and rich. It ripened just before Coe's Golden Drop.—*Diamond.* This large and magnificent Plum cannot be too highly recommended for preserving or kitchen use; its agreeable acid is never killed; and it is quite equal, if not superior, to the Winesour of Yorkshire, and, like that well-known variety, it is a most disagreeable Plum to eat.—*Frost Gage.* This should be called the American Damson, as it is a Damson in every respect, and the best of all. Its fruit is round, or very slightly inclined to oval; of a deep purple; will hang on the tree even to the end of October, and is always brisk in its flavour, juicy and agreeable. It bears most profusely either as a standard or pyramid.—*Prince Englebert.* This is a Plum from Belgium, of the same race as the Diamond; of the same deep purple colour; but in a tart it is more sugary. It forms a handsome pyramid, and bears abundantly. It ripens about a week before the Diamond Plum.

RASPBERRIES.—The *Black Raspberry* proves to be a most distinct and useful variety; its brisk acid serves so well to correct the cloying sweetness of jam made of the common sorts.—The *Belle de Fontenay* is a dwarf-growing variety, with large and deep-green leaves. It bears large fruit all the autumn, of good flavour, but requires a warm soil and exposure.—The *Merveille de Quatre Saisons* is, of all the autumnal Raspberries, the most abundant bearer. Its spikes of fruit are often 2 feet long, and produced till the end of October. The Merveille de Quatre Saisons is a new variety raised from the above. It bears abundantly in the autumn, and its fruit is sweet and well flavoured. *T. R.*

Home Correspondence.

Grafted Rhododendrons (see p. 758).—I shall be happy to be convinced of my error, if such it be, on the subject of grafted Rhododendrons. There is, however, nothing in the statements of your correspondents which as yet gives me reason to alter my opinion. I was so dissatisfied with the appearance of the grafted plants offered for sale in the nurseries of my own neighbourhood, that I took a journey last summer, on purpose to see whether finer specimens existed in the large American nurseries, where I recollect most magnificent plants of the older Rhododendrons some 30 years ago. My visit was one of complete disappointment. I saw thousands of plants, all apparently grafted, and all starved and unhealthy looking. In a large collection I do not recollect that I saw one really fine healthy-looking plant, such as I am used to see on their own roots in private gardens around me. I much regret that I did not visit Mr. Waterer's, and if I live till the summer I hope to remedy the omission. In the meantime I observe Mr. W. states that he has Rhodendrons grafted upwards of 25 years, which are from 8 to 10 feet in diameter. Now to my apprehension he could hardly give a stronger proof that his Rhodendrons are dwarfed and stunted by grafting. Even the common Ponticum in the favourable soil of Bagshot would have attained greater size in the same time, much more the strong growing hybrids of Indian parentage. I have this summer seen some Indian hybrids certainly not more than 25 years old, which are 15 feet high, and at least 25 in diameter. My own plants, not more than 10 years planted, and checked by three removals, vary from 8 to 10 feet in diameter; there are others in my neighbourhood of similar growth, and I am persuaded that Mr. Waterer's plants, had they not been grafted, would have been double their present size. From what I have observed of the habits of hybrid Rhododendrons, I conceive an Indian hybrid grafted on R. ponticum is precisely in the condition of a strong growing Apple on a Paradise stock, with the effect of which every gardener is familiar. I may be mistaken as to their probable duration, but I believe experience has shown that Apples on Paradise stocks are not durable, especially the strong growing kinds, and I know that grafted Rhododendrons require constant attention to prevent the stock throwing out shoots, and starving the grafted plant, which would soon destroy it. The question seems to resolve itself into one of the stature and growth of Indian hybrids. I do not speak of the varieties raised between R. arboreum and the dwarf varieties, R. dauricum and R. caucasicum, &c., because these may naturally be expected to be of smaller growth than R. ponticum, and may flourish if grafted on it; but I speak of the hybrids, with R. catawbiense, maximum, and ponticum, all of which are large shrubs, especially R. maximum; and these crosses with arboreum may be expected greatly to exceed the stature of their parents, and as far as my observation goes, they do. And I contend, that all these hybrids are checked in their growth if grafted on R. ponticum. R. maximum would be a better stock, especially the variety R. arborescens; but these are comparatively rare plants, and I have no reason to suppose that these are used as stocks, and even if they were they are still of smaller growth than the hybrids. With respect to grafted plants forming independent roots if planted sufficiently deep, I shall be glad to find it the case; perhaps with very young plants it may succeed. I have tried the experiment with one or two rare varieties, which were doing ill upon stocks, but the experiment was altogether unsuccessful, and the plants died. I regret I cannot comply with Mr. Fraser's request to name the varieties I possess, because those to which I refer are, as far as I know, unnamed seedlings. Some which have been in my possession upwards of 10 years, and are probably from 15 to 18 years old, have not flowered; others only flowered last year for the first time, and it is to one of these that I referred when I quoted it as equalling catawbiense in size, and arboreum in colour. It was mistaken last spring, when in flower, for R. arboreum by a friend recently returned from the Himalayas; and in foliage it closely resembles R. arboreum. It is quite hardy, as last spring proved. My seedlings are of different batches; some approaching nearer to catawbiense, some, I believe, showing R. maximum parentage, and many clearly hybrids of ponticum—these are by far the smallest in growth and habit. In conclusion, I do not wish to deter nurserymen from propagating some hybrid Rhododendrons by grafting, but I do desire that purchasers should have a choice of laid as well as of grafted plants. Those who desire compact plants and immediate effect, can choose the latter; those who wish to have the natural habits of the plants in full luxuriance will probably prefer the former. I am principally anxious that our gardens should not be deprived of the ornaments anticipated for them by one of the first (if not the first) and most zealous of hybridizers, "that the stature of the hybrids would be increased by the intermixture with R. arboreum." Such has unquestionably been the case, and if 30 years has sufficed to produce American Rhododendrons at Embley, "50 feet in diameter and 20 feet high," there is no reason whatever why the Indian hybrids should not attain still greater size in less time. I would add one remark: I find that the hybrid Rhododendrons root much deeper, and make much larger and stronger roots than the American or pontic varieties. So obviously is this the case that I believe they might almost be distinguished by their roots alone, and they require to be removed with very large balls. *J. R.*

Kohl Rabi.—Increased importance being given in the present age to the products of the kitchen garden by the progress of vegetarian habits, the following remarks are offered on a vegetable which is not so much known as it deserves. The plant meant is the Turnip-Cabbage, Nol-Kohl or Kohl Rabi. My first acquaintance with it was in India, where the seed is brought from the Cape of Good Hope; and I subsequently saw some excellent produce from seed sent to England by a missionary from the same quarter. I have also had seed from Hamburgh, but the produce was not remarkably good. There is scarcely a seed shop in London from which the seed is not to be procured; and the produce has been of nearly equal quality. On making inquiries from an agricultural friend, I ascertained that particular attention had been given to the cultivation

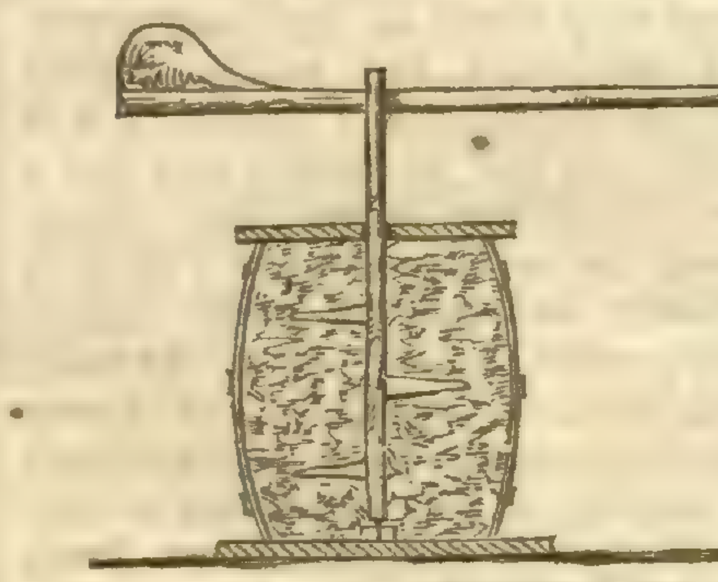
of the plant by the Messrs. Sutton, of Reading. They grow no great quantity, being only for seed to private gardens in their neighbourhood; but they profess to take great pains in the selection of kinds. They recommend their green and their purple, and the price is stated to be 3s. a pound, from which an estimate may be made for writing for small quantities to be sent by post. It is dangerous to presume on tastes; but to a certain extent prices confirm. The dearest, and therefore probably the most valued vegetables, are Asparagus, Artichokes, and, except in the height of the season, green Peas, and these are the only kinds to which the Nol-Kohl may not be declared superior. Its resemblance is greatest to the bottom of an artichoke, and the upper half is better than the lower, a fact which may be turned to advantage without waste, where there are cattle to consume the rejected halves. It is recommended to sow in February, or as early as possible, and monthly afterwards till the end of May. The bulb should be used before it arrives at its utmost growth, as afterwards it grows what is called strong. It is better to avoid transplanting, as the plants grow irregularly afterwards. *A Vegetarian, Dec.* 11.

Protections for Glass-houses.—Would you be kind enough to give me your opinion on the following point. I wish to protect a span-roofed house, 20 feet wide; 1 was thinking of using frigi domo—can you tell me, 1st, whether it has been found to answer the purpose? and, 2d, whether a covering hung up under the rafters inside the house would keep out the frost as well as if it was outside? There have been several articles on the subject of coverings for pits in your paper lately; I have never found anything so satisfactory as the following: make a light deal frame, the same size as your light, in this way; on this nail some roofing felt, and give it a coat of tar, sprinkling sand over it whilst hot; this is always dry—leaves a space between the glass and the covering, and keeps out more frost than two or three mats; in addition to this, it is durable. My coverings are several years old, and to all appearance they are as good as new. *Adonis, Bentley, Dec.* 18. [Experience confirms the good qualities of frigi domo.]

Orange Trees.—Judging from your correspondent "A. M. D.'s" remarks respecting his Orange trees (see p. 806), I can perceive that he is in the same fix with which I have contended for these last three years, viz., having Vines, Orange trees, and plants all in the same house, an occurrence too often to be met with in small establishments. When Orange trees are taken under protection for the winter they should have all the light and air which it is possible to give them, in order to keep them in a dormant state during the winter months. In spring start them slowly into growth with the returning light and heat of the season, in order to give them a strong robust constitution, so as to be able to bear the refreshing breeze, the genial showers, and the powerful sunlight of summer. But how is this to be done when they are under the same roof with Roses, Azaleas, Hyacinths, Primroses, and other conservatory plants which require a milder temperature. One or the other must suffer, and so it is with "A. M. D.s" Orange trees. They "broke out all over afresh" at a season when they should have been at rest. It was, however, wrong to water them with liquid manure in summer, when they were in a sickly state; pure soft water was sufficient until they regained strength. As, however, they are well drained and growing in good compost, with proper treatment they will soon recover. *W. Fitzsimon, Reigate.* ——About 25 years ago I had under my care about 12 or 14 Orange trees, each as much as four men could lift in the same state as "A. M. D.'s." I washed the wood all over with soft soap, using long small brushes to get among the small branches. I employed no more soft soap than was necessary to cleanse the wood. I allowed the lather of the soap to run on the mould in the tub, and when the trees were syringed it was washed into the soil. This put new life into the trees, and they became the handsomest I ever saw, and never afterwards cast their leaves. Soap-suds doubtless make good dressings for Orange trees. My trees were kept in one of the old-fashioned Orange houses. *J. H.*

Vegetation of the Crimea.—In the first part of Dr. Clarke's travels in various countries of Europe, &c., are several chapters wherein the details of the author's journies in the Crimea are given. In some of these journies, too, the doctor was accompanied by Prof. Pallas. The descriptions of Inkermann and of Balaklava (of the harbour of which town an engraving is given), possess great interest at the present moment, while an appendix containing a list of the plants gathered in the Crimea may also be serviceable to a botanist. Scattered throughout the book there are allusions to the vegetation of the country, which are interesting in reference to certain articles that have lately appeared in the *Chronicle* on this subject. In speaking of the "principal spontaneous vegetable productions of the rocks and mountains upon the south coast of the Crimea," he mentions the wild Sage as "growing, in some instances, to such a size as to be almost considerable enough to rank as a shrub." The black Date (? what is meant), the Pomegranate, the Olive, and the Fig tree, are said to "flourish along the coast as in the south of Italy." Vines are alluded to as covering the porticoes of all the doors in Balaklava, and as growing so rapidly that in two years one Vine yielded two bushels of Grapes. The mountains as well as the plains are mentioned as being "thick set with Oak, Wild Pear, Crab, and Cornelian Cherry," while the villages are overshadowed "by an exuberant vegetation of the Walnut, the Mulberry, the Fig, the Olive, the Pomegranate, the Peach, the Apricot, the Plum, the Cherry, and the tall black Poplar. The Crimean Water Melon is said not to attain half "the size in which it is seen at Naples, but the flavour is nearly as fine; while at Cherson, which is more to the north, it grows as large as in Italy." The flora of the south of the Crimea, judging from the plants enumerated in the above-mentioned appendix, as well as from specimens from Compère and others deposited in the Fielding Herbarium, would appear to resemble to a considerable extent that of the Archipelago, especially in the prevalence of species of Cistus, of Salvia, and of other southern genera; but it is in the sheltered valleys that the luxuriant vegetation described by Dr. Clarke occurs; elsewhere, and especially to the north, so different is the aspect of vegetation, that "the narrow tract of cultivated land on the southern coast may be compared to an edging of lace on the lower rim of a large apron." *M. T. M., Botanic Garden, Oxon.*

Substitutes for Coal.—Coals are very dear; bread is very dear, allowing less money for firing; why should not Barley awns, but especially sawdust, be mixed with clay, as they do small coal with clay in South Wales? In our country both sawdust (except a little screened deal) and Barley screenings are utterly wasted; old thatch would mix with clay; all of these would be more readily mixed in an old mortar pug. I intend trying some sawdust. Peat-dust is of no use to burn; but if mixed with clay, it would do very well, and what glorious manure it would make. Any old barrel would

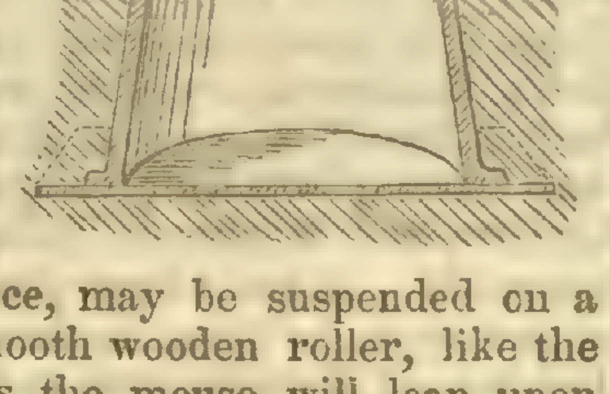


Section of Pug.

serve for a pug, with a board at the top and bottom to let the spindle work in. *Somerset.*

Weather in Buckinghamshire.—I see by the weather table in your paper for the week ending Nov. 30th, that the thermometer at Chiswick did not register more than 6° of frost on the night of Nov. 26th and morning of the 27th. At this place the cold was remarkably severe, the thermometer registering no less than 23° of frost, going down to 9° Fahrenheit. The instrument (a self-registering one) was placed on a low terrace wall, about two feet from the ground, on the south side of the house, and protected from cold winds. All bedded out plants were killed, except a few scarlet Verbenas, and some young strong plants of Mignonette. Cinerarias, in a greenhouse without fire, were struck by the frosts but were not killed. *H. B., Wavendon Rectory, Newport Pagnell.*

Crocus Beds and Mice (see p. 806).—With reference to the inquiry of "F. R. S.," I beg to suggest that he might try the trap for mice recommended in M'Intosh's "Practical Gardener:"—"Take a large flower-pot, invert it on a board or slate, and sink it in the ground, nearly level with the surface. Opposite the hole in the bottom of the pot, and about 2 inches from the surface or entrance, may be suspended on a crooked piece of wire a smooth wooden roller, like the caster of a bed-post; this the mouse will leap upon and from thence be precipitated to the bottom, from whence it cannot escape. The surface may be sprinkled with chaff and seeds about the hole, and the roller smeared with lard and dusted with Oatmeal. In wet weather a ridge tile may be set over the hole. *W. S. G.* ——If "F. R. S.," will procure a small packet of Battle's vermin killer, which he can obtain from any respectable chemist, and spread the powder thinly over a small piece of bread and butter, and place it on his beds, I will guarantee that it will destroy all the vermin in a few nights; for the moment they eat it they die. *E. Bennett, Perdiswell.* ——I find that Whins (Gorse) chopped small, and sprinkled over the roots of Crocuses, are very effectual in preserving them from mice. The Whins should be pressed down so as not to blow away. *A. Z.* ——The simplest garden mousetrap is the following: Take a handful of Beans, soak them in water until soft, string them on a stout thread, one bean on each end; tie each end of the thread to a peg, and thrust the pegs into the ground at the distance apart of the width of a brick; rest a brick on the ground and across the string, so that the Bean shall be as nearly as possible in the centre of the brick, which should stand at an angle of 45°. The mouse in gnawing the Beans cuts the thread, the brick falls and crushes it. These traps set where mice frequent gardens will soon destroy them all. *G. W., Bushey.*



Peach Trellises and Pampas Grass.—I have read, with much interest, in your Paper of December 2d, the remarks made upon Mr. Bellenden Ker's method of training Peaches on trellises under garden-frames. Since that time I have also seen the statement, that all the plants of Pampas Grass in the country have been propagated from two plants raised in Ireland by Mr. Moore. This leads me to ask if you can explain the reason why, in the garden of the Horticultural Society, the attempts to imitate Mr. Ker's gardener on the one hand, and Mr. Moore on the other, have so signally failed. *D. E., Dec.* 11.——[The cause of failure in the Peach-frame above alluded to was explained in the Journal of the Horticultural Society, vol. vii., p. 234. *R. Thompson.* ——The splendid plant of Pampas Grass which has been the admiration of every person this autumn in the Society's Garden, would not have been so if it had been cut to pieces and mutilated for propagation. *G. Gordon.*]

Pampas Grass.—I got a plant of this in July, 1853, not rooted separately, and I was afraid that it would not take with the ground before winter. It, however, did so, and stood out all last winter (it was like a small leek when I got it), and it has grown during the summer to a good-sized bunch with leaves about 3 feet long, and now (Dec. 12) quite green; there were two or three stems like flower stems, but being a young plant they did not come to anything. I intend to propagate it next season. *John Hutchison, Monyruy, Buchan, North-east of Aberdeenshire.*

Old Pear Tree.—The inclosed Pear has been in cultivation in the garden of Sir Gilbert Heathcote for at least 100 years. Can you tell me what is its name? The specimen is an average sized one. *M. J. B.* [The Pear is the Nutmeg, or Bezy de Caissoy, a very nice variety.]

Grape Growing.—In answer to the inquiry of a Grape grower (see p. 806), I beg to say that the varieties grown by me which exceeded 6 lbs. were the Cochin China and White Nice. I have also had bunches of Muscats, Black Hamburghs, and West St. Peters, weighing from 3 lbs. to 4 lbs. each. When I mentioned the weight of my bunches it was not because I considered them to be unusually large, for I was then perfectly aware of the size and weight to which the White Nice will attain. Had Mr. Bennett not alluded to the weight of my bunches in his remarks on the Vine mildew, I certainly should not have again adverted to them; it was to the cure of the mildew that my article chiefly referred; and although I stated that the bunches exceeded 6 lbs., I did not give their exact weight, for some of them were doubtless heavier than that, which, for bunches partially destroyed and rotten with mildew, is not to be despised, even in the case of White Nice. *J. W. Hall, Grimley, Worcester.*

Foreign Correspondence.

State of Horticulture in Victoria.—Now that the excitement of the great gold discoveries has somewhat subsided, horticulture is becoming an object of attention, not only as a means of affording the luxuries of the vegetable world for the tables of the wealthy, but as a means of improving the moral and social condition of the people. Up to the present time there is nothing to boast of in the gardens of Victoria, but there is much to be ashamed of. With a climate and a soil capable of producing, with so little trouble, almost all the fruits and vegetables which England, with all her "Crystal Palaces," sacrifices so much for, it does not say much for the energy of our colonists when we look at the gardens of Victoria. *J. M., Geelong, Victoria, Sept.* 5, 1854. [We should be glad to hear further from our correspondent.]

Notices of Books.

Manual of Mechanics; Manual of Hydrostatics; Manual of Optics; Manual of Plane Trigonometry. By the Rev. J. A. Galbraith and the Rev. S. Haughton. Longmans. 12mo.

INTRODUCTIONS to the study of natural philosophy are both numerous and in some respects good. Nevertheless, with the exception of a few books too dear to be accessible to the masses, there has always appeared to us to be wanting that which the three first of the above manuals supply, we mean a link between wholly non-mathematical treatises and those which are only intelligible to persons versed in the higher branches of mathematics. Many persons know a little geometry, a little algebra, and a little trigonometry, quite enough to enable them to understand the great principles of physics much better than they can possibly do, so long as they confine themselves wholly to elementary works from which mathematics are purposely excluded; but there has been much difficulty felt in prosecuting the study of natural philosophy further, simply because there was no work sufficiently accessible, and suited to such limited acquirements. Messrs. Galbraith and Haughton have done much towards remedying this defect; pre-supposing a knowledge of elementary mathematics, the mode in which that knowledge can be made available in physical inquiries is shown in a series of propositions arranged with skill, and clearly stated and demonstrated. For schools and private instruction these little works appear well calculated, and their price (2s.) is such as to place them within reach of all.

Xenia Orchidacea; Beiträge zur Kenntniss der Orchideen. von H. G. Reichenbach fils. 4to. Leipzig. Brockhaus. Parts 1—3.

Under this name Professor Reichenbach, the younger, is bringing out a very useful miscellaneous collection of notes and illustrations, explaining his views of the systematical arrangement of the natural order of Orchids. No one on the Continent is so capable of conducting a work of this kind as the author; he has a very large knowledge of the subject, possesses great industry, and is provided with all the information that Continental gardens can supply; in addition to which

his cabinet materials are of considerable importance. He describes carefully, and elaborately—we think too elaborately—and in this, his own book, he escapes from the typographical errors which have made some of his contributions to German periodicals so perplexing to those who are occupied with the same subject. If he has fallen into errors here and there, the writer of the present remarks, who has sins enough of that kind to answer for himself, would be the last to reproach him. In fact, both mistakes and oversights are inevitable in so very difficult an order, especially when bad garden specimens or mere fragments preserved in herbaria are the materials upon which the botanist has to work. But this circumstance should teach all who are engaged in the branch of study in question to distrust their own judgment, to avoid criticism unless they are very sure of their own accuracy, and above all things not to dogmatise about such questions as the limits of species or genera, which after all are matters of opinion and experience, and not points to be settled by any known invariable principles.

Each number of the work before us consists of three sheets of letter-press in Latin and German, and ten plates partly black, partly coloured. Being drawn by the author the latter have the merit of expressing exactly what he intends, and this, in a scientific view, compensates for any want of artistic skill which the critical reader may remark. We observe with much pleasure, in the third part just received, that Mr. Reichenbach has commenced giving analyses of genera; and we venture to predict that, if he perseveres in this excellent course, we shall soon be able to point to him as a leader among his countrymen, who will rescue them from the just imputation that at present they too often mistake a cloud of words for a ray of light.

Garden Memoranda.

Messrs. Lee's Nursery, Hammersmith. — A little Grass plot at the entrance of this nursery is always kept so neat and trim as to deserve a passing remark. During the summer months the beds which it contains are filled with some of the choicest plants for massing, among which variegated Geraniums for which this nursery is so celebrated form a conspicuous feature, and in winter they are ornamented with standard Portugal Laurels, Laurustinus, and Conifers, the latter being set on raised mounds covered with turf. This kind of arrangement exhibits the plants to good advantage, and has altogether a pleasing appearance. The centre mound contains a well grown specimen of Picea nobilis, and on both sides of the broad walk leading from this plot to the glass houses are some handsome Conifers, consisting of specimen plants of all the better kinds of this useful class of plants. Among them are numbers of thriving young trees of Araucaria imbricata, beautifully grown and in the best possible condition, varying from 4 to about 5 feet in height.

As regards plants under glass some young examples of Epiphyllum truncatum are now in full flower, while on the roof Ipomœa Horsfalliæ is in a similar condition, and the glowing Euphorbia jacquiniflora is blossoming profusely against an inside end wall of the same house. In a cool greenhouse in front of rows of small Orange trees in pots, we noticed a stageful of Chrysanthemums now in good bloom, and still maintaining a considerable amount of gaiety, in which they were assisted by Double Chinese Primulas, than which what can be handsomer at this season of the year?

Near this was an intermediate house, in which were several young plants of the Pampas Grass. These had been obtained by dividing the tussack into as many parts as had roots attached to them, potting them in light sandy soil, and plunging them in a spent tan bed, where they have rooted satisfactorily. In the absence of seeds this, therefore, would appear to be the best way of propagating this deservedly much admired Grass. On the roof of the same house Tropæolum "Caroline" was in bloom. It resembles T. Triomphe de Gand, but is scarcely so good in colour.

At each end of the Camellia-house, which is furnished with fine plants well set with bloom buds, were two beautiful specimens of standard Portugal Laurels, each measuring at least 5 feet through the head, the stems being straight and clean, and quite 5 feet in height.

In the Heath-houses several of the winter flowering species, such as hiemalis, gracilis, mutabilis, multiflora, and rubens, were in flower; and among Epacrises, of which there are large quantities of young plants here, one or two of grandiflora are even now sufficiently in flower to make a tolerable display. A span-roofed Azalea house was well furnished with promising specimens, and the same may be said of a New Holland house in which various Correas were in bloom, together with the pretty white Pimelea Neipergiana, the white Diosma ambigua, and one or two other plants; of Boronias there were many nice plants of B. Drummondi, a handsome, and we need not add, somewhat scarce species.

At the entrance of a span-roofed stove was a beautiful plant of Platycerium grande in a pot, in which it looked well, and appeared to thrive as satisfactorily as it does against a board or a wall. The pot was filled with peat soil heaped up above the rim in the shape of a cone covered with crocks, and on this the plant was set, and, as we have stated, with good effect. Associated with it was the white berried Ardisia which, although not so striking as the red kind, serves to create variety. Torenia asiatica was growing freely in pots swung from the roof, and intermixed with Orchids in baskets and on blocks its long pendulous branches well furnished with flowers had a good appearance. Among variegated plants, of which there is a good collection here, none showed themselves to more advantage than Aphelandra Leopoldi, whose bright green leaves veined with white are extremely beautiful. The variegated Pine too makes a good variety, mixed with Ixoras and similar plants. Among Orchids in bloom here was Maxillaria picta, whose fragrance quite scented the air of the whole house. Clerodendron splendens was in bloom on the roof, and on a damp shady end wall were Ficus barbata and repens, which fixing themselves to the stones like Ivy covered the whole wall with green leaves, and made a good background for Ferns, of which a small collection was arranged in front of them.

In a light wooden span-roofed house were numbers of variegated Geraniums, not only of Golden Chain, Flower of the Day, and Mountain of Light, but also of new kinds, of whose merits we hope hereafter to have a better opportunity of judging.

A small stove adjoining the propagating house contained a charming collection of variegated Orchids, and on the shelves of the latter house we remarked thriving young plants of Thujopsis borealis, Wellingtonia gigantea, and other rare Conifers, and along with them a young plant of Fuchsia Dominiana, which is found to make such a good autumn blooming conservatory plant. In another house were some very fine plants of Libocedrus Doniana and Chilensis; and here the autumn and early winter flowering Acacia oleæfolia elegans was in blossom.

Among out-door stock we noticed a good assortment of fruit trees in pots, to the growing of which, since they are likely to become an important feature in fruit gardening, many nurserymen have turned their attention.

FLORICULTURE.

Propagation of Pinks.—These often suffer in winter, from not being rooted early enough in the season. Although many persons defer propagating until a later period, yet I would not recommend it to be delayed longer than the last week in June or the first week in July. The reason for commencing thus early is obvious. Not only will the young plants form more vigorous roots before the approach of cold weather, but their blooms next season will be finer than could be produced by cuttings, which not being properly rooted would have a hard struggle to live through the winter. The most certain and expeditious method of propagation is by pipings or cuttings of the grass of the present year. Before commencing this operation a slight hot-bed should be formed of leaves, or any other material, which is not likely to heat violently. Upon this a layer of the rough siftings of decayed vegetable mould should be spread, to serve for drainage, and upon the whole a mixture of fine leaf-mould and silver sand to the depth of 3 or 4 inches. This bed after being made perfectly level, and firmly beaten down with the back of a shovel should be well watered through a fine-rosed watering-pot, and in a few days it will be fit for use. In selecting the grass for pipings strong and short-jointed shoots should be chosen. The piping should be cut off with a sharp knife immediately below the second or third joint from the top of the shoot, and it may then be readily disengaged from the two leaves which surround its base, and which are commonly termed a sheath. The tips of the leaves should be shortened for the sake of convenience, otherwise when planted it will be difficult to prevent the hand-glass from resting upon them or disturbing them whenever it is removed. As the pipings are prepared they should be put into a basin or pan filled with water to prevent them from flagging before they are planted. For this and similar delicate operations the cool hours of the evening are most suitable. In planting the pipings they should be pressed firmly into the soil to the depth of about half an inch, leaving them an inch and a half apart every way, and after being properly secured they should be gently watered through a fine-rosed pot to settle the mould closely round their stems, and as soon as the leaves become thoroughly dry a bell glass should be placed over them. The glass should be pressed lightly into the mould to prevent as much as possible the ingress of air. In sunny days the bed should be shaded from 7 or 8 o'clock in the morning until 5 or 6 in the afternoon; and if there is any appearance of damp amongst the pipings the glasses should be occasionally taken off to allow them to dry, and all plants so attacked should be immediately removed. It is very probable that the pipings will not require to be watered until the greater part of them has taken root. Should watering, however, be necessary, the leaves must be allowed to become dry before the glasses are replaced. As soon as roots are formed the hand-glasses should be slightly raised on one side, and this may be gradually increased until at last they may be entirely dispensed with. The young plants after being by degrees inured to the sun may be transplanted 6 inches apart in an open bed previously prepared for the purpose, in which situation they may remain until required for planting finally in the beds where they are to bloom. *S.*

The Calceolaria being a plant very easily cultivated provided a little care is taken to keep it free from green-fly, and when well grown very ornamental, I beg to give a few particulars by which amateurs should be guided in its management. The seed should be sown in September, in a common garden-pot, and covered as lightly as it is possible to cover it. The pot should then be placed under a common hand-glass in a shady situation, where the seed will very soon germinate; as soon as the seed leaves are expanded, the tiny seedlings should be pricked out into other pots or shallow pans, and placed in a frame, keeping them shaded for a few days; after which they may be gradually exposed both to sun and air. As the leaves increase in size and number abundance of air should be given, and if green-fly has made its appearance fumigate immediately, taking care, however, that it is done sparingly and often, for the leaves are liable to be damaged when tobacco smoke is too strongly applied. In the course of a few weeks the plants may be potted off into 4-inch pots, and still kept in a frame; but as they are liable to be injured by damp in that situation, an airy shelf near the glass in a greenhouse is generally preferred for them, although I have kept them in common frames during winter, and, by the admission of plenty of air in fine weather, have succeeded admirably; they grow and flower much better in the absence of any artificial excitement. In February, or the beginning of March, they may be shifted into their flowering pots, and if kept in the frame or pit they should be placed near the glass, and little air should be given them for a week or two, until they shall have begun to grow. During their growth see that they are kept clear of insects, for on this nearly all depends. Varieties which have been cultivated the previous season, and which are esteemed for their good qualities, should be layered in the pots in which they have flowered; they will soon root, when they may be removed and treated precisely as the seedlings. The most suitable soil for the Calceolaria is a mellow sandy loam, moderately enriched with well rotted manure—that from an old hot-bed answers perfectly; a sixth part silver sand may be advantageously added to the compost. This, however, will depend upon the nature of the loam. *D.*

Miscellaneous.

Germination of Orobanche.—Dr. Caspary, on the 18th of July, 1854, laid before the Berlin Society of Natural History some observations on the seeds of Orobanche and their mode of germination. The seed has an elliptico-ovate perisperm, near the micropyle of which is a suborbicular embryo containing oil, which has no trace of radicle, cotyledons, or vascular system, but consists of perfectly uniform cells. Dr. Caspary has followed out the germination in Orobanche ramosa through all its stages. The embryo is first elongated into a thread of greater or less length, which at the extremity which answers to the chalaza, is still capped with the testa. When this thread comes in contact with the root of a plant suitable for its nourishment, the radicle extremity, that has no coleorhize, penetrates through the parenchym, till it meets with a vascular bundle, from which the vessels branch into the young Orobanche, so that it forms, as it were, a ramification to the root. The Orobanche then thickens at the base, and forms radiating adventitious roots, which often become attached to their matrix by a lateral branch. The chalaza end of the embryo at length developes two opposite scale-like leaves, which perform the part of cotyledons. A second pair follows alternating with these, and the others with a $\frac{3}{8}$ arrangement. Dr. Caspary has not detected any adventitious buds on the stem.* *M. J. B., Botanische Zeitung, Sept.* 15, 1854.

Tobacco.—There is no plant, observes Professor Targioni, whose history shows so many vicissitudes as that of the Tobacco (Nicotiana tabacum). Imported from America soon after the discovery of that continent, it was received into the old world with a species of enthusiasm, and Europeans, Asiatics, and Africans began everywhere to smoke, to chew, and to snuff. It was not long, however, before some of the evils and inconveniences involved in the practice began to appear, and a host of enemies were raised up against it. Theologists pronounced it an invention of Satan, which destroyed the efficacy of fasting, a point much disputed in the 16th and 17th centuries. Councils forbade it to all ecclesiastics under their control. Popes Urban VIII. and Innocent XI. punished the use of it with excommunication; Sultan Amurat IV. with the most cruel kinds of death; Schah Abbas II. with penalties almost as severe; Michael Feodorovitch Tourieff ordered a bastonade for the first offence, cutting off the nose for the second, and the head for the third offence; Prussia and Denmark simply prohibited; and James, of England, wrote against it. Finding, however, that no penalties, however severe, could check the indulgence in a luxury so highly appreciated, sovereigns and their governments soon found it much more advantageous to turn it into a source of revenue; and the cultivation and manufacture of Tobacco was gradually subjected almost everywhere to fiscal regulations, restrictions, or monopolies, which still prevail under various forms over the greater part of Europe. In Tuscany its growth was prohibited, except in a few localities, where it was allowed under certain restrictions from 1645 till 1789, when the enlightened Grand Duke Peter Leopold declared free the cultivation of Tobacco over the whole territory. But the country did not long enjoy this privilege; the intrigues of private speculators prevailed on Ferdinand III. to restrict it to the same localities only which had previously possessed it. The number of them was further reduced in 1826, and the permission totally withdrawn in 1830, and Tobacco is now only grown here and there by stealth. Tobacco was in such general use in America when first discovered, and is there so

* Perhaps the vessels do not really branch into the young plant, but merely cause the tender tissue which rests on the vascular bundle of the matrix to undergo transformation. *M. J. B.*

widely spread, that it is difficult to come to any conclusion as to what precise part of that vast continent is its native country—probably some portion of the Mexican empire. As to the precise dates of its introduction into Europe, it has been already stated that it followed closely upon the discovery of America. The Spaniards under Columbus had scarcely landed in Cuba in 1492 when they began to smoke cigars; but they could only fully appreciate its luxuries when, in 1518, Fernando Cortez occupied the island of Tobago, where the plant was found growing in great abundance. Hernandez, the naturalist, was, it is believed, the first who brought it into Spain from Mexico, in 1539. It was introduced into Portugal from Florida by one Flamingo, and into France by Father André Thevet, or by some friend of his, although the more common opinion is that the first seeds received there were those sent about the year 1560 to Queen Catharine of Medicis by Jean Nicot, French ambassador in Portugal. It was probably raised also in England a few years later, but received no notice till its well known introduction by Sir Francis Drake, from Virginia, in 1586. In Tuscany it was first cultivated under Cosmo dei Medici, who died in 1574, having been originally raised by Bishop Alfonso Tornabuoni, from seeds received from his nephew, Monsignor Nicolò Tornabuoni, then ambassador at Paris, a great amateur of plants. After him it long bore the name of Erba Tornabuoni. A second, but smaller and coarser species, Nicotiana rustica, much grown in some parts of South-eastern Europe, is generally said to be a native of Europe and Asia, but this is a mistake; like the N. tabacum it is of American origin. So also is the long white-flowered Shirag Tobacco, recently published under the name of Nicotiana persica, but which is a mere variety of the N. longiflora, a species not uncommon in South America, and introduced from thence like the others since Columbus' discovery. *Journal of the Horticultural Society.*

Calendar of Operations.
(For the ensuing week.)

PLANT DEPARTMENT.

Conservatory, &c.—The Red Leschenaultias, although seldom used for the purpose, are capital subjects for flowering in the conservatory in winter, but they are very impatient of a damp confined atmosphere, and must be placed in a light airy part of the house, without exposing them to cold draughts. Care should also be used not to wet their foliage unnecessarily, and to keep them perfectly clear of green fly. Plants that are in vigorous health, and have been prevented from blooming since about June, and kept rather hard in autumn, will bloom profusely for months in a temperature of 50° or 55°. There is however considerable risk of injuring, if not losing them by this treatment, and valuable specimens had better not be placed here at present. Bulbs that are well rooted may be introduced to the forcing house pretty largely, for, as the season advances, there will be many things coming in which will render these less necessary; but there is no chance of their blooming strongly unless they are well-rooted before they are introduced to heat. And where hardy plants are forced for the decoration of the conservatory, these should be employed for early use as largely as circumstances will permit; for they are hardly admissible in any well-kept house, save in winter, when any gay-looking flowers are acceptable. All these things must be brought on very gradually, and a gentle bottom-heat would be useful towards securing a free root action. The busy season will soon be upon us, therefore, if any cleaning of plants remains to be done, this should be gone about at once; also see that the glass is perfectly clean, for plants require every ray of light which can possibly be afforded them at this season, and no greasy pots nor Lichen-covered balls should be allowed here, but everything should present a clean fresh appearance.

FORCING DEPARTMENT.

Pineries.—If circumstances should render it necessary to subject a portion of the "fruiters" to a brisk temperature, at once to induce them to start the most promising plants for fruiting should be very carefully selected, and placed in a small house or pit by themselves; and, where anything like a regular supply of ripe fruit is required, several houses, or separately heated compartments, should be at command; and without this convenience no gardener can reasonably be blamed for having too many ripe at one time, and none at others. It is not by any means desirable to start more plants into fruit at this early season than may be absolutely necessary, for they will produce finer fruit later in the season than can possibly be obtained from them now; and where a separate house cannot be commanded for those which must be subjected to a high temperature, we would advise that the plants selected for fruiting should be placed in the warmest part of the house at command, filling the rest of the house with young stock. The former should be afforded a bottom heat of about 85°, and the latter about 10° or 15° lower; the atmosphere should range from 68° to 75° by fire heat, allowing it to rise 5° with the assistance of sunshine, keeping the young plants near the glass, and properly supplied with water at the root. This temperature will be considerably too high for young stock at this season, but we have seen this system practised with considerable success; and although the young plants may get somewhat drawn, they will gain substance as light increases, and the evil will be less than running the risk of starting at this early period of the season the greater portion of the plants that are at command for keeping up the supply throughout the summer. Vineries.—Until the buds are fairly broken the points of the shoots should be kept nearly on a level with the lowest part of the Vine; and if this should not be found sufficient to induce the buds to start equally throughout the length of the Vine, the rod should be bent so as to bring the most forward buds to the lowest level, elevating those that are backward. Maintain a thoroughly moist atmosphere by frequently sprinkling the floor and passages, &c.; and syringe the vines lightly at least twice a day until the leaves begin to appear, when the amount of moisture must be moderated. Give every attention towards securing a gentle warmth for the roots; turning the litter, and adding fresh as may be requisite, and keeping it well protected from the effects of heavy rains and severe weather. Be satisfied with a moderate night temperature, until the buds begin to push, when it may be gradually raised to 60°, by the time that the leaves fairly begin to open. Peaches.—Until the trees are fairly on the move do not keep the night temperature higher than from 40° to 45° by means of fire-heat; but an advance of 10° early in the day, with plenty of moisture in the atmosphere, should be secured. Syringe the trees frequently, and secure a thoroughly moist atmosphere. Also see that the inside border is in a moist healthy state, and if this is not the case, two or three applications of tepid water should be given. It is becoming very much the order of the day to have Peach trees, and most other things which are wanted for very early forcing, in pots; and this plan offers the advantage of being able to afford the roots a mild regular bottom-heat, which is of the greatest importance in early forcing, and excellent crops are also obtained. But the trees must be prepared for this purpose by having been grown some time in pots; and where these are not on hand, unless they can be purchased from the nurserymen who prepare them, nothing can be done this season except to procure and pot the trees, and prepare them for next year.

FLOWER GARDEN AND SHRUBBERIES.

In situations where the tenderer varieties of Roses are found to require protection, this should be applied at once, as it may soon be too late. Also get in the stock of Briars for budding upon next year, if not already done, for it is generally desirable that these should make early and strong growth, and early planting is the best way of securing this. Some persons have an objection to planting shrubs or trees in the dead of winter, believing that the roots, if hurt at this season, are liable to rot, &c., and early autumn is certainly a very preferable season, but we would not delay such work unnecessarily a single day while the weather is favourable; and if the soil is properly prepared by draining, &c., where necessary, as should always be done before planting, there will be fewer failures from planting now than if the work is delayed until March. But where the ground to be planted is of a clayey nature, and in a wet unkind state at present, it will probably be better to dig the pits and defer planting until the soil thrown out has been frozen through, and then to select a rather dry time for putting in the plants. Soils of this nature should always, when it is practicable, be dug early in autumn, for neither draining nor anything but exposure to the atmosphere will bring them into a fit state for planting with a fair prospect of success. Roll walks and lawns after frost to keep them firm and smooth, and they will require the same attention frequently if the weather continues mild and wet. There will be comparatively little to be done in the flower garden, and any spare time will be well spent in going over the stock of plants in pits for next season's use, removing every decaying leaf, and cleaning the surface of the soil where this has got green or unhealthy, and replacing it by a covering of fresh sandy loam. There is nothing so inimical to these plants at this season as damp; therefore take every opportunity of admitting fresh air, and keep them hardy and stocky. Be prepared with plenty of covering to ward off severe frost, should such come upon us suddenly, as it did last year.

HARDY FRUIT AND KITCHEN GARDEN.

It is always desirable to get as much of the pruning and nailing done before the approach of spring as possible, therefore, while the weather is favourable for such operations, lose no opportunity of forwarding them. Besides the advantage of having so much work done, the garden will look much neater after the wall trees are nailed, and the borders made trim, and the small fruit bushes, &c. pruned, and the ground among them dug. See that standard trees which have been recently root-pruned, or moved, are firmly secured against wind, and also get any root-pruning or transplanting remaining to be done this season executed as soon as possible. Endeavour as far as circumstances will permit to have a good supply of Parsley under the protection of glass, for in the event of such a January as last, this will probably be rendered useless for an immediate supply, unless it can be afforded the protection of glass, and there is a large demand for this at all seasons in most families. Small Salads being wintered in cold pits should be freely exposed, except during heavy rains or frost. Look over the stores of roots occasionally, to see that they are keeping sound; also examine the Broccoli, and remove any heads that may be turning in and not wanted for immediate use where they can be protected from frost. See to maintaining a regular supply of small Salads, and any forced vegetables which may be in demand, and of which the convenience will allow of maintaining a regular supply, for it often happens with a casual supply that a thing is particularly wanted when it cannot be furnished.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON
For the week ending Dec. 21, 1854, as observed at the Horticultural Garden

Dec.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind.	Rain.
Friday 15	25	30.112	29.868	54	42	48.0	43	45	W.	[illegible]
Satur. 16	26	29.869	29.657	47	[illegible]	[illegible]	45	44½	W.	[illegible]
Sunday 17	27	29.939	29.752	45	33	39.0	42	44	N.W.	[illegible]
Mon.. 18	28	29.464	29.002	39	29	34.0	41	44½	N.	[illegible]
Tues. 19	[illegible]	29.730	29.701	44	33	38.5	41	44	W.	[illegible]
Wed. 20	1	29.955	29.416	44	24	34.0	41	43	N.	[illegible]
Thurs. 21	2	30.125	29.953	51	39	45.0	42	44	S.W.	[illegible]
Average.		29.884	29.611	46.3	32.3	39.3	42.1	44.6		[illegible]

Dec. 15—Low dusky clouds; overcast; rain at night.
— 16—Cloudy; fine; slight frost at night.
— 17—Clear; fine; rain.
— 18—Rain; heavy clouds; clear and cold.
— 19—Clear; very fine; rain at night.
— 20—Rain; boisterous with rain; clear; frosty.
— 21—Fine; rain; overcast; boisterous.

Mean temperature of the week 1 deg. below the average.

RECORD OF THE WEATHER AT CHISWICK.
During the last 28 years, for the ensuing week, ending Dec. 30, 1854.

Dec.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 24	43.1	31.7	37.4	10	0.26 in.	3	4	3	2	1	10	[illegible]	4
Mon. 25	42.7	28.7	35.7	5	0.22	2	6	3	—	2	6	[illegible]	3
Tues. 26	42.7	31.7	37.2	10	0.39	1	4	3	4	4	8	[illegible]	3
Wed. 27	42.5	30.1	36.3	9	0.40	4	4	1	—	5	6	[illegible]	2
Thurs. 28	41.5	28.9	35.2	9	0.16	4	3	3	3	2	2	—	4
Friday 29	42.7	34.0	38.3	12	0.17	2	5	1	3	4	4	5	4
Satur. 30	41.3	32.7	38.5	10	0.30	1	5	2	2	2	8	7	1

The highest temperature during the above period occurred on the [illegible], 1827—therm. 58 deg.; and the lowest on the 28th, 1853—therm. 9 deg.

Notices to Correspondents.

American Blight: *B P.* Prune your tree hard in; then paint it all over down to as far below ground as you can get with the following mixture, viz., half a peck of quicklime, half a pound of flowers of sulphur, and a quarter of a pound of lampblack, mixed with boiling water till of the consistency of paint. First of all scrape off all loose bark, which *burn*.

Books: *T. Sparrow.* The *Gardeners' Chronicle* is of course "the best weekly publication on gardening in general." The best cure for the black thrips is dusting the parts affected with sulphur.‡

Diseases: *D J.* You are quite right in supposing that your Grapes are not affected with rust, and that the disease is not identical with that from Lord Harewood's garden to which you allude. As far as I can judge from the four berries you forwarded, of which three were crushed, it arises from some constitutional derangement, and not from any external parasite. The leaves are perfectly healthy. If it spreads, I should feel inclined to try very cautiously a weak solution of sulphate of iron, provided I were satisfied that the condition of the roots is good. The sulphur and lime will have no effect if I am correct in my supposition as to the nature of the disease; but I would not speak too positively, for, according to your own account, it is only incipient, and the specimens did not arrive in the best order possible. At any rate, the evil is more than skin deep, and you will probably find that the berries will enter upon a further stage of decay. *M. J. B.*

Greenhouse Climbers: *Anxious.* Clematis azurea grandiflora, Dolichos lignosus, Hardenbergia macrophylla and monophylla; Kennedya Marryattæ, Mandevilla suaveolens, and Tropæolum Triomphe de Gand will doubtless answer your purpose.‡

Ink for Zinc Labels: *J M'D.* It is prepared as follows, viz: verdigris, in powder, one drachm; sal ammoniac, ditto, one drachm; lampblack, half a drachm; and water, 10 drachms.‡

Kalmias: *H B.* No doubt they suffer from dryness. Give them a good mulching with *old* cow-dung; and if that is not enough pave the surface of the peat-earth with pebbles, as large as Walnuts or small Apples, to prevent excessive evaporation from the soil.

Lime Trees: *W E.* Instead of sowing Grass seeds, lay down some good turf under these trees; it will grow, provided the branches are not near the ground; and provided also the soil does not burn in summer.

Names of Fruits: *C L.* Your Pear is the Easter Beurré.

Names of Plants: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*J E H.* Billbergia amœna; 2, Miltonia spectabilis.—*J C.* Vallota purpurea.—*L M J.* The botanical name of the plant that yields the "St. Ignatius Bean," is Strychnos Ignatii, *aliàs* Ignatia amara.—*Vinex.* They are not in a state to be identified; but they probably are all varieties of Hippeastrum Johnsoni.

Roses: *Henry.* Move them in any dry not frosty weather, now rather than at a later period. Take the branch off the stone Pine now.—*Reader.* Guano, or fowls' dung, properly mixed with the soil, will be found a much better manure for Roses than night-soil. We would apply it in spring, just after they have begun to grow.‡

The Horticultural Society: *W R.* The admission fee is 4*l.* 4*s.*; 2*l.* 2*s.*; the annual subscription, *not* payable in advance, and the Society distributes gratuitously among its members such plants and seeds as it obtains from its collectors and correspondents, at home and abroad. It is, however, a rule in making such distributions, not to allow them to interfere with the "trade."

The Cherimoyer: *S A.* This is a tree, bearing a fruit of great excellence. It ought to be grown in a hot-house.

Thinning Plantations: *Inquirer.* No empirical rule can be given. The best practice, in general, is to leave between trees a space equal to half their height. But all such operations must after all be judged of on the spot. If your thinning, for example, has been neglected, then the space might be too great.

Transplanting: *H B.* If the Lime tree was moved early it will not be necessary to prune its top. Under no circumstances is it advisable to use the knife if it can be avoided. In the month of March look at the roots, and if they have made any attempt at growth all will be safe.

Vines: *G F.* You can do nothing till you bring the roots of your Vines up to the surface, which you may do safely if you remove them carefully. They will then be benefited by covering the border with sufficient stable manure to produce a little heat in it, and after they have become re-established and begun to grow freely you may give them a little weak manure water now and then with advantage.‡

Wild Flowers: *D E.* All flowers, except domesticated varieties, are wild somewhere. In their own countries they are called wild: in other countries they are called garden plants. Thus in England Snowdrop and Daffodil are as truly wild flowers as a Primrose or a Daisy; but in New Holland they would be exotics or garden plants.

*** As usual, many communications have been received too late and others are unavoidably detained till the necessary inquiries can be made. We must also beg the indulgence of those numerous correspondents, the insertion of whose interesting contributions is still delayed.

THE FOLLOWING MANURES are manufactured at Mr. Lawes' Factory, Deptford Creek:—Turnip Manure, 7l. per ton; Superphosphate of Lime, 7l.; Sulphuric Acid and Coprolites, 6l.

Office, 69, King William Street, City, London.

N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent. of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures, Linseed Cakes, &c.

Wm. Inglis Carne, 10, Mark Lane, London.

THE LONDON MANURE COMPANY beg to call the attention of Agriculturists to their WHEAT and CLOVER MANURES for present use. The London Manure Company also offer Genuine Peruvian Guano, Nitrate of Soda, Concentrated Urate, Superphosphate of Lime, Fishery and other Salts, and all Artificial Manures of value. The London Manure Company guarantee Peruvian Guano and every Manure they supply to be strictly genuine. Edward Purser, Sec.

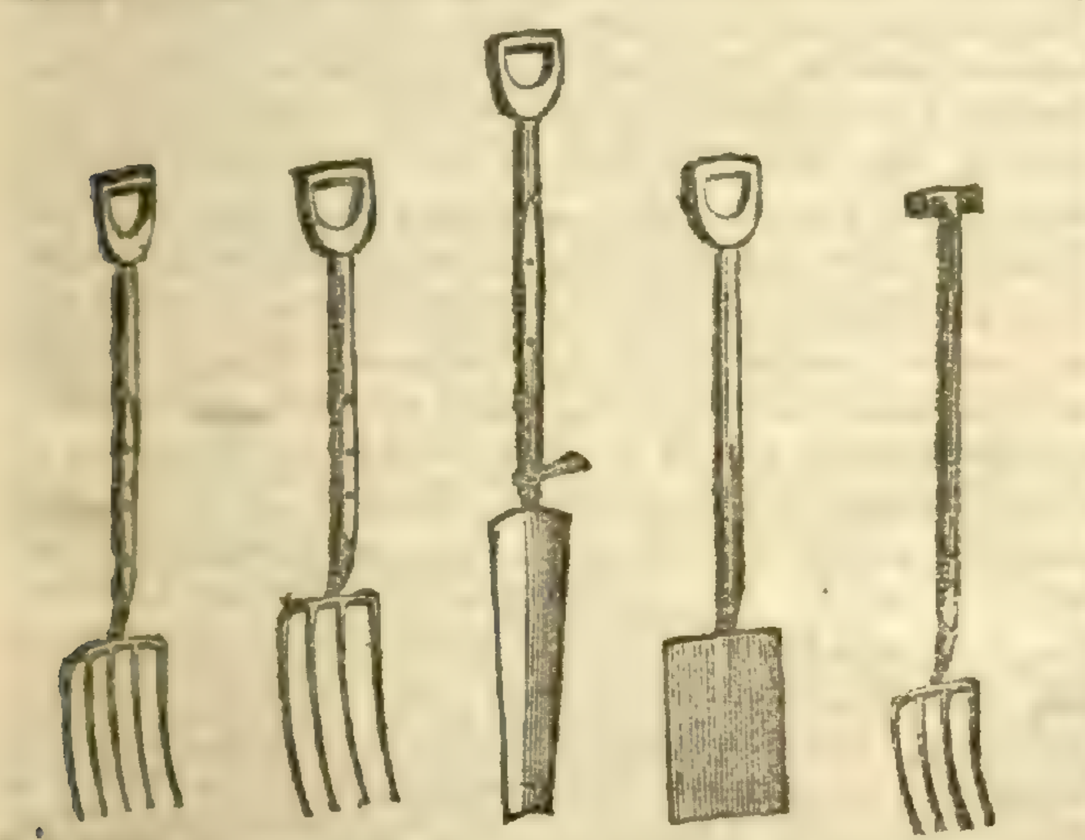
Bridge Street, Blackfriars.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. Nesbit, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and dispatch.

Gentlemen desirous of receiving instructions in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

JOHN MORREN, General Commission Agent, Ock Street, Abingdon, is open for Commissions for the sale of Agricultural Implements, Manures, Seeds, &c., and for the purchase of Corn, &c.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.



MESSRS. BURGESS and KEY, as Mr. Parkes' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.

103, Newgate Street, and 52, Little Britain, London.

CORN CRUSHERS AND CHAFF CUTTERS.—A large display of the best Farm Implements shown in operation. Price Lists sent free on application.

BURGESS and KEY,
103, Newgate Street, and 52, Little Britain, London.

PUMPS AND HOSE PIPES FOR GARDENS AND LIQUID MANURE.—Burgess & Key's Pumps were highly commended by the Royal Agricultural Society of England at Lincoln. Price Lists sent free.

103, Newgate Street, and 52, Little Britain, London.

CHURNS.—ANTHONY'S PATENT AMERICAN CHURN.—Since 1849 this Churn has obtained all the Prizes awarded by the Royal Agricultural Society of England. At the trial before the Judges it made in 10 minutes 4 lbs. 6 oz. of Butter from 4 quarts of Cream, being 8 oz. more than any of the other Churns from the same quantity and quality of Cream.

103, Newgate Street, London.

CLAYTON, SHUTTLEWORTH, and CO.'S PRIZE PORTABLE STEAM-ENGINES, and COMBINED THRASHING, STRAW SHAKING, RIDDLING, and WINNOWING MACHINE may be seen at their London Establishment, 6, Fitzroy Terrace, New Road, where all information relative thereto can be obtained. These Machines are constructed to horn Barley, and make a perfect separation of the chaff from the pulse. They are fitted with Elevators, which deposit the grain into bags, and beyond the feeder of Machine require no hands except to take away the Corn, &c., as thrashed, the whole of the operations being performed by self-acting machinery, whereby the Corn, Straw, Chaff, and Pulse are delivered in the places assigned for them.

C. S. and Co. have paid special attention to this class of Machinery, and Fixed Barn Machinery, and from the position they have taken at the Royal and all the leading agricultural shows of England, flatter themselves that for efficiency, durability, and simplicity, their Engines and Machines are not surpassed by any other maker in England. All letters forwarded to the Works at Lincoln will have immediate attention; and Illustrated Catalogues forwarded to all parts of the kingdom postage free.

HOSE PIPING.—Great Reduction in Price.

PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense pressure, and much more than leather, vulcanised rubber, or any other hose, and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented inventions, the cost of manufacturing it is now reduced at least 60 per cent., which advantage is offered to the public.

BURGESS and KEY, 103, Newgate Street, and 52, Little Britain, who on application will forward wholesale and retail prices.

STEPHENSON and PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.

From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

WEEDS ON WALKS.

MR. FLEMING'S WEEDING or SALTING MACHINE for GRAVEL WALKS, COURT YARDS, &c., manufactured and sold by Alexander Shanks & Son, Arbroath, Forfarshire, from whom particulars with prices may be had.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.

THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it, and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.

The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.

Manufacturers of the Cement, J. B. White & Brothers, Milbank Street, Westminster

SMITHFIELD CLUB.

TESTIMONIAL TO Mr. B. T. BRANDRETH GIBBS, Honorary Secretary of the Club.

At a General Meeting of the Members of the Smithfield Club, held at the Show Yard, on Tuesday, Dec. 5, 1854, it was unanimously resolved:—"That a Subscription towards a Testimonial, to be presented to the Honorary Secretary, should be entered into, for his valuable and long-continued exertions on behalf of the Club, and in testimony of the highly satisfactory manner in which he has discharged the onerous duties in connexion therewith.

Chairman.
His Grace the Duke of Richmond, K.G.

Vice-Chairman and Treasurer.
Charles Barnett, Esq., Stratton Park, Biggleswade.

Bankers.—Messrs. Hoare and Co., Fleet Street, London.

Committee.
T. Raymond Barker, Esq., Hambledon, Henley-on-Thames.
R. W. Baker, Esq., Cottesmore, Oakham.
John Clayden, Esq., Littlebury, Saffron Walden.
J. Tanner Davy, Esq., Rose Ash, South Molton.
Samuel Druce, Esq., Eynsham, Oxford.
Edward Frost, Esq., West Wratting, Linton, Cambridge.
Richard Garrett, Esq., Leiston, Saxmundham, Suffolk.
Thomas Greetham, Esq., Stainfield, Wragby, Lincoln.
W. Fisher Hobbs, Esq., Boxted Lodge, Colchester.
James Hole, Esq., Knowle House, Dunster, Somerset.
John Hudson, Esq., Castleacre, Swaffham.
R. Milward, Esq., Thurgarton Priory, Southwell, Notts.
Edward Pope, Esq., Great Toller, Maiden-Newton, Dorset.
Allen Ransome, Esq., Ipswich.
Professor Simonds, Royal Veterinary College.
Charles Stokes, Esq., Kingston, Kegworth.
William Torr, Esq., Aylesby Manor, Grimsby.
James S. Turner, Esq., Chinton Farm, Seaford, Sussex.
Jonas Webb, Esq., Babraham, Cambridge.
Lawrence Willmore, Esq., The Newarke, Leicester.
(With power to add to their number.)

In order to afford all persons interested in the success of the SMITHFIELD CLUB an opportunity of recording their names amongst the List of Subscribers, it has been determined by the Committee that the maximum amount of Subscription shall be limited to One Guinea.

Subscriptions may be paid to the Hon. Sec., or any Member of the Committee, or to the Bankers, Messrs. Hoare & Co., Fleet Street, London. William Fisher Hobbs, *Hon. Sec.*

York Hotel, Bridge Street, Blackfriars, London.

THE LANDS IMPROVEMENT COMPANY incorporated by special Act of Parliament for England and Scotland.—To Landowners, the Clergy, Solicitors, Surveyors, Estate Agents, &c.—Loans may be contracted for the execution by the proprietor or by the Company of every landed improvement, especially Drainage, Building, Clearing, Enclosing, Warping, Irrigation, Embanking, Reclamation, Roads, Planting, Machinery, &c. The plans (of buildings), specifications, and estimates are prepared by the proprietors, and are submitted to the approval of the Enclosure Commissioners. Proprietors may avail themselves of the powers of the Act to recover from the inheritance their own funds to be expended on improvements. They may also apply jointly for the execution of a mutual improvement, such as a common outfall, &c. For forms of application, &c., apply to the Hon. Wm. Napier, Managing Director, 2, Old Palace Yard, Westminster.

COLLEGE of AGRICULTURE and CHEMISTRY, and of PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.

Principal—J. C. Nesbit, F.G.S., F.C.S., &c.

The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.

Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

The Agricultural Gazette.

SATURDAY, DECEMBER 23, 1854.

MEETINGS FOR THE ENSUING WEEK.

Thursday, Dec. 28—Agricultural Imp. Society of Ireland.

We are unfortunately precluded by the limits of our space from more than a reference, at present, to the meeting of the East of Berwickshire Farmers' Club, which we hope hereafter more fully to report. The subject principally discussed was Reaping by Machinery, and many of our readers in the south will be surprised to learn the extent to which this is practised on many farms in the East and South of Scotland. Mr. Hope, of Fenton Barns, cut nearly 80 acres this harvest with Crosskill's machine, at about 5*s.* 6*d.* an acre. Mr. Anderson, of Black Dykes, cut 50 acres. Mr. Hunter, of Thurston, cut 260 acres at the expense of 8*s.* 6*d.* an acre, "a charge being made for two pairs of horses a day." Mr. J. Hope, of Elphingstone, cut 79 acres with the sickle, 85 acres with the scythe, and 35 with the reaper. Three scythes cut 18 acres in four days, at 9*s.* 9*d.* per acre. Bell's reaper cut 15 acres in two days at 5*s.* 5*d.* per acre. This is evidence from East Lothian. As to that from Berwickshire, and the other particulars elicited at this meeting, we must postpone our remarks. Meanwhile our readers will see that while practical farmers generally amongst us look upon the reaping-machine as unlikely to come into general use, practical farmers in the Lothians are *using it and profiting by its use.*

If asked to name the most remarkable truth which has been illustrated by the agricultural experience of the past year, we should point to the proved productiveness of Italian Rye-grass under the liquid method of manuring it. The extraordinary produce of green food thus obtainable, to which Mr. Caird most properly referred at the Tiptree gathering as the great agricultural feature of the day, has been abundantly canvassed, and is still so generally doubted, that the terms in which we have spoken of it have been condemned as wild and extravagant. Let us refer once more to the subject, in order to give the evidence which has appeared upon it since it was last named in these columns.

On the 7th of last month, at a meeting of the Royal Agricultural Improvement Society of Ireland, a paper on "High Farming in Scotland" was read by Mr. Hamilton, containing a great deal of information, the result of personal inquiry, which threw considerable doubt on the statements made regarding the produce of Italian Rye-grass on Mr. Telfer's farm and at Myre Mill, near Ayr. This paper, professing as it did to give the results of personal inquiry, appeared to us to contain evidence that ought to be laid before our readers, and they will accordingly find that most of it is given at page 763. Our object, of course, is to ascertain and print the truth, and, however strongly our wishes or opinions may have been expressed, no trustworthy evidence against them shall ever knowingly be withheld.

Mr. Hamilton, in reference to Mr. Telfer's farm, says that it contains 11 Scotch acres under Italian Rye-grass; and that the 50 head of cattle on it (48 cows and 2 horses) receive 4 stones of Grass and 30 lbs. of Cabbage apiece each day during summer, along with 6 lbs. of compound (hay and oil-cake steamed together). In winter grated Mangolds are substituted for the Grass. The summer hay is supposed to be made from the Rye-grass, and it, with the 4 stones apiece of "soil," is made equivalent to $5\frac{1}{2}$ stones of Grass daily to each cow = 275 stones, or upwards of 34 cwt. daily; which, again, is made equal to 33 tons per acre over the 11 acres; Mr. Hamilton imagining, we suppose, that the supply was maintained after this rate during seven months of the year. And a very extraordinary result this is—so wonderful, that taken by itself and apart from the character of the evidence, we do not hesitate to say that incredulity in reference to it is quite as natural and justifiable as in reference to the still more extraordinary statement given on Mr. Telfer's authority at Tiptree. This astonishing produce, certified by so cautious and even reluctant a witness will, then, doubtless be believed; perhaps the more so that Mr. Hamilton, not content with the hesitation with which he commits himself to it, takes the opportunity of denouncing the recklessness of others—the carelessness of Mr. Caird, and the mischievous assertions which he made at Tiptree on this subject! And there, excepting the publication of a correspondence between these gentlemen, the matter might have rested; and those who found it difficult enough to credit Mr. Hamilton's assertions would have left those of Mr. Caird in scornful unbelief.

Fortunately, however, a letter from Mr. Telfer appears, and from it we learn to whom the charge of carelessness properly attaches. We learn from it, as to matters of detail, that in Mr. Hamilton's statement "one hydrant to every $2\frac{1}{2}$ acres" of Mr. Telfer's land is put for "1 to every 6 acres;" the "application of solid dung from the cattle mixed with the liquid" is put for "liquid alone;" the "autumn feeding of the cattle" is put for "what they have during summer;" and, as to the main matter under consideration, "*eleven acres of Italian Rye-grass*" are put for "*three and a half!*" The question now arises what degree of dependence is to be placed on this gentleman's account of the other farms he visited, with the view of ascertaining the merits of the practice of liquid manuring. His aim was no doubt praiseworthy, and no one doubts his honesty; but his evidence is valueless, simply from that carelessness which he has charged on Mr. Caird. Personal reference in this way to the subject is allowable when a matter of such first-class agricultural importance hinges on the trustworthiness of witnesses, and it is especially allowable when used, as we have used it, in personal defence.

One word more, however, apart from the character of witnesses:—Mr. Telfer's letter does not say that the cattle were fed from $3\frac{1}{2}$ acres only. He manured and cut from $3\frac{1}{2}$ acres up till July, and

then when the Rye-grass on other 3½ acres sown this spring was ready, he manured *it*, and let the former 3½ acres go to seed. Seven acres were thus concerned in the produce of this food—but 3½ acres was the maximum extent *manured*; and he would have done as well to go on with what he had begun as to turn the manure on to the young Grass. Among the food given to the cattle was 270 tons of Rye-grass, cut *in this way* from 3½ acres. Most people will imagine that from July on till October, 3½ acres of one-year-old Grass would be more productive than the same extent of Rye-grass sown the same spring; and this is borne out by the fact that from a portion of the original field which Mr. TELFER continued manuring, he obtained 82½ tons per acre.

We believe the experience thus related entirely corroborates what we have already published on the subject, in reference to Mr. TELFER's farm; and that, however difficult gentlemen may find it to believe—it is the fact that there is a method of manuring by which these prodigious growths of green food are obtainable; there is a crop which, under treatment of this kind, will maintain the extraordinary head of stock to which, on Mr. TELFER's and Mr. KENNEDY's farms, reference has been made.

IF it be a fact that the land of England and Wales, to say nothing of Scotland and Ireland, is at this moment prepared to absorb at least 100,000,000*l.* of capital in permanent and profitable improvements, such as drainage and kindred operations on the soil, and in the improvement of buildings and fences, and the extended application of machinery to the business of the farmer—and no one at all acquainted with the state of the country, and knowing that it possesses an area of 37,324,915 acres will doubt that such an estimate is considerably under the mark;—and if it is likewise a fact that the country abounds with capital, which, but for the legal and other difficulties in the way, would at once find its legitimate occupation in supplying the improvements here partially enumerated, instead of applying itself to Spanish and Pennsylvanian bonds and other forlorn hopes in its search after employment, then it follows that any association which finds out and applies a practical remedy for this state of things, which discovers a means of bridging over the gulf between land on the one hand and capital on the other, so as to permit of their being united in an easy and effectual manner, confers not only a benefit on the land which wants the capital, and on the capital which wants employment, but on the country at large, whose resources are cramped, and whose supplies are stinted for lack of this mutual accommodation.

We lately drew attention to the "Lands Improvement Company;" and the services which we have above described are precisely those which that company undertakes to render. The idea, if we may so speak, upon which it is founded is that no reasonable or supposable amount of paid-up or nascent capital of an ordinary company would be equal to the magnitude of the operations which it has in view; and, therefore, instead of coming forward and announcing itself as a company with a certain amount of paid-up capital, which it is willing to lend out on the land under certain conditions, on the faith of certain acts of Parliament which it has obtained, it sets itself forth merely as an agent—an agent, on the one hand for the land, *i.e.* the borrower; on the other for capital, *i.e.* the lender. In fact it is the bridge by which any amount of capital which can be profitably invested, may be safely and easily carried over and laid out in the improvement of our fields and homesteads. It does not undertake to lend, and does not lend its own capital, except to a very limited extent under certain circumstances, and even that proportion, small as it is, it is now about to ask Parliament to permit it to decline in future; so that it may confine itself wholly to negociating and facilitating loans, contenting itself with a moderate per centage on the transactions, as a remuneration for its trouble and risk of alterations in the money market, and the use of its powers.

In this respect we believe this company is unique among land improvement companies; and we feel satisfied that the plan merits, and will receive the support of our readers. Let us now examine the means by which it is carried out.

The act which regulates the company is an act of 16 and 17 Vict., which received the Royal assent 4th August, 1853, having now therefore been in operation rather more than a year. It is entitled "An act for incorporating the Lands Improvement Company, and to afford facilities for the improvement of land by enabling the company to issue transferable mortgage debentures."

"Absolute owners of land are within the scope of the act; its value, however, mainly consists in enabling substantial improvements to be effected by, or on behalf of, parties possessing merely limited or special interests in the land, such as tenants for life, trustees, incumbents of livings, bodies corporate, tenants by the curtesy, married women, and generally all persons (except tenants at rack rent, &c.), in actual possession of the land, or in receipt of the rents. In Scotland, the provisions of the act extend to every fiar, life renter, heir of entail, husband of a married women seised in her own right, tutor, curator, and other guardian for any infant, minor lunatic, or idiot, fatuous or furious person, and every trustee, when in the actual possession of the land, or in receipt of the rents.

"Every such person is empowered by the act to charge the inheritance by way of terminable annuity (for from 14 to 25 years at will), with the outlay on any one or more of the following improvements, authorised by the enclosure commissioners:

"1. The drainage of any lands by any such means as the enclosure commissioners shall approve.
"2. Irrigation and warping of land.
"3. Embanking of land from the sea, or tidal waters, or rivers, in a permanent manner.
"4. Enclosing any land, or improving the drains, streams, or watercourses of the land.
"5. Reclamation of land lying waste.
"6. Making farm roads, to the extent of one-half of the outlay for such roads.
"7. Clearing lands.
"8. Erection of farm houses, and other buildings required for farm purposes, to the extent of three-fourths of the outlay for such farm houses and other buildings.
"9. Planting for shelter, to the extent of one-half of the outlay for such planting.

"Together with all such works, engines, machinery, engine-houses, mills, kilns, sheds, yards, shafts, tanks and reservoirs, pipes, conduits, and water-courses for irrigation, tram-roads and other ways, bridges, weirs, sluices, flood-gates, and hatches, as may be necessary for carrying into effect any such improvements."

The above is quoted from the prospectus of the company. We add to it that we understand that it is about to ask Parliament for powers to charge the whole cost of some of those improvements, of which at present, as it will be seen, it can only charge certain proportions.

The company finds the money required for the improvements and all charges connected therewith, taking in lieu thereof a rent-charge, or terminable annuity upon the security of the land, which may be made to extend over any period from 14 to 25 years, at a rate of annual payment varying with the number of years over which it is spread, and the market value of money at the time the loan is contracted. At present the rate for a rent-charge ceasing at the end of 25 years is 6¾ per cent.

Where the company negotiates the loan, the charge for trouble, risk of increase in the market rate of money during the subsistence of the rent-charge, and use of the act is 5 per cent. The law charges for sums under 10,000*l.* are ¼ per cent.; for sums above that amount, ⅛ per cent.; and the fixed charge for paper, postages, &c., is from 2*l.* 10*s.* to 7*l.* 10*s.* on the whole loan, according to the extent of the loan and the correspondence required.

Where the lands are entailed, the works must be executed to the satisfaction and under the sanction of the Enclosure Commissioners, who are the legally constituted guardians of the reversionary interests in such cases. Where parties wish to expend their own money; but at the same time to preserve a rent-charge on their estates for the money so expended, they are allowed to use the powers of the company, on paying from 2½ to 3 per cent. on the amount so charged by way of terminable annuity, as a remuneration for the trouble of the Company in arranging with agents and the Enclosure Commissioners, and for the use of the act. By this means parties being tenants for life in possession of settled estates may apply their own money to the improvement of the property, and still possess the power of disposing by will of such portions of it as may not have been repaid. This provision, it will at once be seen, is of the greatest possible value to men in the enjoyment of strictly settled estates, with families to provide for, and capital of their own to employ.

We have already adverted to the fact that this company does not interfere in the execution of the works, but leaves the proprietor to deal with his own agents, architects, or surveyors, in reference to the carrying out of the improvements. The only restriction is that in the case of *settled* estates, the Enclosure Commissioners must be satisfied that the proposed works are judicious and likely to be profitable; and that they are properly carried out.

The great and novel feature in this company is its debenture system. It is empowered to borrow money at all times on debentures founded on the rent charges and certified under the hands and seals of the Enclosure Commissioners, in exchange for the money which it may lend on land. These debentures form a first charge on the estates for which they are issued, and inasmuch as they are based upon the best of securities, and are not fluctuating in their value, they will no doubt, when they are better known and understood, come into great favour as a class of securities, the result of which will be that money will be obtained at a very moderate rate of interest upon them.

We have on former occasions noticed approvingly the proceedings of other companies having similar objects in view; and, in now particularly mentioning the "Lands Improvement Company," we have no wish to be supposed to disparage the others in any degree. We believe that in the great field of this country there is room for them all and to spare; but we have felt that we are called upon to keep the agricultural world *au courant* of matters so deeply interesting to it, and to bring under notice the plans and operations of a company with the proceedings of which we have taken pains to make ourselves acquainted, and which we feel merits our hearty meed of praise for having taken a step in the right direction, by bringing into play a principle so new, and yet so valuable, as that we have now endeavoured to explain.

We have been informed that the company has already contracted loans to the extent of no less than 200,000*l.*; and so thoroughly satisfied are those who have made this subject their study of the soundness of the principles involved that, we understand, one at least of the existing companies is about to make application to Parliament to permit it to do business in the same way. In all this we see great advantages to the cause of agricultural progress; and we hail with satisfaction any extension of the facilities for the application of capital to land.

PEDIGREES OF SHORT-HORNS.

"HAVE any of our readers ever undertaken the investigation of pedigrees?" Such is the question at the head of one of the articles in the *Agricultural Gazette* of Dec. 9. There are few short-horned breeders who have not studied the "Herd Book" more or less; but though that source of information on the important subject of pedigrees is as perfect as it well can be expected to be, it will afford to the general investigator very little assistance as a practical breeder, and he must apply to other sources for the information he wants, and which is essential to his success. The fact is that certain tribes of short-horns, or families, have established characters as good breeders, which has raised them in public estimation and made them valuable, and though in an old established family a strong cross may sometimes answer, yet the case in which it does is the exception, and no short-horned breeder would attempt it if he could possibly avoid the risk. Now with regard to the instance which you produce of Mr. Bates's Cleveland Lad, it would be a dangerous precedent for two reasons, 1st, the Matchem cow was not "almost without a pedigree;" she was bred by Mr. Brown. Now Mr. Brown, though he kept no written pedigrees, was a breeder of short-horns, for, I believe, half a century; he bred from Mr. Mason's best bulls, of which Matchem was one; this was well known to Mr. Bates, and when the cow produced a first-rate bull, Mr. Bates used him with confidence, well knowing the purity of the blood. It is well known to those persons who were acquainted with Mr. Bates that he did not speak very favourably of other short-horned herds, and that he very frequently disparaged the Mason blood. He therefore did not search after the pedigree of the Matchem cow, because he knew well it would lead him up to Mason; he preferred leaving the pedigree in the state we have it in the "Herd Book;" however there is more than one short-horned breeder now alive, who has heard Mr. Bates describe the Matchem cow and say she had no inconsiderable dash of Mason blood. Mr. Mason's sale of short-horns was in 1829. Two Irish gentlemen attended them and were purchasers, and after the sale was over, this Mr. Brown, the breeder of the Matchem cow, came up to them, seeing they wanted short-horns, and told them then he had a very good well bred herd; that they were always crossed by Mr. Mason's best bulls; and that if they went home with him he would sell them as good as any sold at Mr. Mason's sale, and for half the money paid there. They did go to Mr. Brown's, and did purchase from him, and there can be no doubt his herd was purely bred for many generations. "Matchem's dam was by Farmer, and Farmer was out of a cow entirely unknown." Now this would lead many to believe that Farmer was not well bred, and I rather think the supposition would be incorrect, for the dam of Farmer was bred by Mr. John Newby, a man who bred good short-horns, of pure blood, though he did not keep his herd book. The fact is at that early day there were few of the short-horned breeders who kept the pedigrees of their herds, if we except Mr. Charles and Mr. Robert Colling and Mr. Mason. Let any one look into the "Herd Book" now and read the pedigrees of some of Mr. Booth's herd, and yet is there a breeder in the United Kingdom who has any doubt of the purity of the blood, and of the pedigree being as good as the Duchess, or any other of the celebrated families of short-horns contained in the "Herd Book;" but from not having kept herd books at that early time, the pedigrees are apparently short though in reality as long or longer than the others. Secondly, the Cleveland Lad cross is assumed by the writer in the *Gazette* to have been an improvement on Mr. Bates's herd; however this may or may not prove to be the case, it must be admitted that with English breeders the fact is disputed. The writer of these few observations was fortunate enough to meet a large number of the best short-horned breeders in England immediately after Mr. Bates's sale; they were not breeders of yesterday, with characters to establish: they had most of them established their characters, and there was not a second opinion among this assemblage, that the cross of the Cleveland Lad had considerably deteriorated the Bates herd. Well, the Tortworth sale came on in no very long period after, and appeared to have stamped the character of the Bates blood with the

seal of public approbation, but though the writer had on that occasion every opportunity of hearing the opinions of disinterested individuals on that remarkable sale, he never heard an opinion as to the cause of the extraordinary prices that did not attribute it to the Duchess blood altogether; in fact, the Cleveland Lad cross was never thought of, and I am persuaded is never thought of as being in any degree the cause of the great sums paid for Lord Ducie's herd on that occasion. Therefore I would warn the public not to get too fond of crosses, and not to imagine that it is an undoubted fact that this well-selected cross of Cleveland Lad has wonderfully improved the Bates blood. The truth is, crossing injudiciously has been the ruin of half the herds in England, and no rule that can safely be depended on has yet been laid down to guide the breeder in this respect. There are families of short-horns whose male animals have been, generally speaking, valuable crossings: I may mention Mr. C. and Mr. R. Colling, Mr. Mason, and the late Earl Spencer; I omit the names of living breeders, as I do not like to raise any difference of opinion on the subject. I think the value of the male animals of these herds I have named is undisputed. Now, it will be observed, they were themselves particularly free from crosses, and to this cause—one common to all of them—I am disposed to attribute their great value for crossing; it is well known the most powerful influence of the male animal appears to act where there has been a good pedigree, and that males of imperfect or doubtful pedigrees have never (no matter what their external form may have been) been safe stock getters; this is so universally admitted that it is unnecessary to dilate on it, and we shall find that all the first-rate bulls that are celebrated in short-horned history were all closely bred, had few if any crosses, and propagated their own perfections to their offspring with certainty. My object in these few remarks is to caution the inexperienced breeder against adopting the crossing system; it will be found to be attended with great danger, seldom successful, and the injury thereby inflicted irreparable. Some first-rate families of short-horns have been at once ruined by *one* injudicious cross, and it is now time to guard against the evil; in-and-in breeding to a great and unwise extent was first the practice, then the crossing system followed—the breeder was directed to go any distance for a cross, and paid dearly for his journey. Now the middle course is recommended; but as yet no safe rule or guide exists to direct the unlearned, and experience alone has any chance of success. *A Member of the Royal Agricultural Improvement Society of Ireland.*

LOIS-WEEDON:
A LECTURE ON THE REV. MR. SMITH'S SYSTEM OF GROWING WHEAT.

Delivered at Oxford by Dr. Daubeny, Sibthorpian Professor of Rural Economy.

In the lectures that I have hitherto given, the general tenour of my remarks, would lead my hearers to infer, that it must be necessary for the farmer to be continually replacing the loss which his land is sustaining by the crops drawn from it in the course of cultivation. The application of manures—which forms the subject of one principal part of agricultural chemistry—seems built upon this supposition, and when instances are given of land not requiring manure, they are treated as exceptional, and pointed out as extraordinary cases of exuberant fertility.

Nevertheless a little reflection will convince us, that if this be indeed in the existing state of society the most usual condition, it is not that which would present itself in an earlier and a less artificial one, and that perhaps the more normal arrangement would be that in which the land yielded to the crop a sufficiency of inorganic as well as organic materials for its growth, without requiring any assistance from without.

For let us consider the state of a purely agricultural community, without much commerce or manufactures. In such a case all that was produced by the soil would, under common circumstances, be consumed upon it, and consequently the greater part of what had been extracted would, in the course of a certain cycle of years, be returned to it again.

The cereals, for example, would become the food of man and beast; and thus, after the lapse of a certain term, only so much nutritious matter would be really lost to the land as was equivalent to the increase of population during that period.

But it must be recollected, that by the system of fallows in use amongst all nations in an early state of civilisation, time is allowed for the subsoil to undergo that action from the elements which is necessary in order to enable it to render the phosphates, the alkalies, and the other materials of nutrition locked up in it, soluble in water, and thus available for a future crop.

No fear, therefore, need be entertained under such a state of things, that a soil possesing originally the ordinary amount of fertilising principles should become poorer in the course of cultivation, even although no artificial manure be added to it.

In a community, however, like our own, the circumstances are much changed. The existence of populous cities, non-producing so far as animal subsistence is concerned, occasions a continual drain upon the agricultural districts, which must frequently exhaust the nutritious principles soluble in the soil, quicker than they can be supplied in the ordinary way by the decomposition of those portions that are exposed to the air. Thus, for instance, the pastures set apart for dairy farms in Cheshire supply the cows which browze upon them with the phosphates contained in their milk, and the latter converted into cheese is carried off to the large cities, where it is consumed.

Hence has arisen, in the course of time, a scanty produce arising out of the deficiency of phosphoric acid, and for this, as was strikingly proved in Cheshire, the application of bone-earth, which abounds in phosphates, was the most appropriate remedy.

A similar explanation may probably be given of the advantage derived from guano and other artificial manures, although it seems probable that if the sewage of great cities could only be collected and returned to the agricultural districts from which their constituents originally proceeded, there would be no need of any of those artificial substitutes which have lately been so much in vogue.

I have now, however, to detail two instances, one that occurred at the beginning of the last century, the other going on at the present time, in which a constant succession of abundant Wheat crops has been produced upon the same land without the application of any manure whatsoever. The former of these was afforded us by Jethro Tull, whose main principle it was to pulverise the soil effectually to the bottom of all that could be made available for the purposes of agriculture, in order that every particle of the mould might be brought into contact with the atmosphere, and the roots of the plant might be enabled easily to permeate the loosened earth, and so take up the food placed within their reach. The plan, it appears, suggested itself to him during his travels on the continent, from observing the mode in which the Vine was cultivated. He found that in this instance the principal stress was laid upon pulverising the soil between the rows, no manure, indeed, in his time appearing to have been used at all, under the impression that the taste of the grape would be affected by its use. I believe that at present the best Vine growers condemn this practice of manuring as injurious to the quality of the wine; but it is no less true, that those who are more solicitous about quantity than quality, are wont to manure their vineyards highly.

I do not think therefore that the argument as applied to other crops is a very sound one, especially as the objection is only to animal manures, it being the received practice to enrich the vineyards by cultivating in them once in three years Beans, Buckwheat, Lupines, and other plants, which are dug in at the roots of the Vines when they have come up, and which constitute a kind of vegetable manure. The practice is as old as Columella. (See the article "Vigne," in the "Nouveau Cours d'Agriculture;" Paris, 1838.)

In other places a compost is made with the soil of the vineyard and leaves of trees, grass, dried herbs, &c.; and these are placed at the roots of the Vines. Thus Jethro Tull would seem to have been led to a right result by an erroneous principle.

With a view, then, of affording a free passage to the fibres of the roots of his crop, Tull divided his field by broad and deep furrows into sections, each of 6 feet in width. In the centre of each section he drilled his seed in two rows, about 10 inches apart, so that there was an interval between them and the next double row of about 5 feet. He then before winter, after closing up the furrow, ploughed up the whole space intervening between the rows of corn, with the exception of the 6 or 8 inches of ground nearest to the latter, so that in fact his plough must have been within 3 or 4 inches of the crop—a nice and delicate operation, as the slightest deviation of the plough from its straight course would tend to cut through the roots of the corn.

In the spring the soil thus fertilised by exposure was thrown up against the growing crop, by restoring the furrow in the centre of the intervening spaces, and using the soil dug out for the purpose.

But the operation to which he attached the greatest importance was that of horse-hoeing, which was practised again and again in the course of the summer throughout the intervening spaces, only taking care to recede farther and farther from the growing crop as the roots spread themselves outwards. In the culture of the Turnip the same principles were pursued. The ridges were of the same width as for Wheat, but only one row was drilled in each ridge, and the seeds were deposited at different depths, half about 4 inches deep, and the rest 4 inches deeper, so that in wet weather the shallower, in dry the lower ones, made their appearance first.

He was no advocate for a rotation of crops, but maintained that by this thorough pulverisation of the soil, cereals and others might be grown year after year in the same soil, and all manure be dispensed with.

The perusal of Tull's work is somewhat repulsive from its controversial character, and its frequent allusion to persons and to practices now forgotten, nor are his theoretical views such as are calculated to command attention at the present day. He however has the merit of first demonstrating, how much may be done by these simple mechanical means, which, as we now know, liberate the latent resources of the soil, and attract from the atmosphere the ammonical salts which are so essential to vegetation. That he obtained better crops than the farmers around him, and that his method was particularly successful as applied to root crops, is generally admitted; but in spite of this, the system after his death came to be discontinued, and gradually died away altogether. For this Mr. Smith, of Lois Weedon, who has lately revived the same system of culture, endeavours, in the pamphlet to which I shall have frequent occasion to refer in this Lecture, to account, by alleging that the difficulty of putting into practice Tull's principal rules had deterred farmers in general from following in his footsteps.

First, he remarks, it was necessary at the first ploughing before winter to guide the plough with such unerring nicety, that a slice should be cut from the sides of the Wheat 3 or 4 inches only from the tender plant, and again in early spring when the plant was weak, to throw back the slice against the rows. Both these operations required the greatest exactness; the first lest the plant should be cut through or injured, the second lest the Wheat should be too much buried in the soil. Few labourers could be depended upon to perform so delicate an operation.

Mr. Smith also justly remarks, that there is a vagueness in Jethro Tull's statements, which robs them of the authority otherwise to be attached to them; and it must, I think, be admitted that although he stumbled upon an improved method of practice, he damaged its success by attributing it to wrong principles, and by combating other methods of long standing and approved utility, which were in vogue amongst his neighbours and in the country generally.

He contends, for example, that manure is of no use whatever, except it be to pulverise or divide the soil, and that earth is the only food which plants require for their growth. The former proposition few will be disposed in the present day to accede to; the latter contains a basis of truth, if by the earth we suppose him to mean all that the soil contains or can collect from the atmosphere, but in the vague manner in which the statement is put forth, it would be rather calculated to mislead than to direct us in the right path. Tull, moreover, never gives us his balance-sheet, or even the amount of his crop, although it may be inferred from trials made and reported upon by some of his best disciples—Chateauvieux and Duhamel for instance—that the corn crops produced on his plan would not, on the average, exceed 16 bushels an acre, an amount which in those times might perhaps be regarded as considerable, but which we have since learnt means of greatly surpassing.

Whilst, therefore, the success which attended his efforts may suffice to persuade us of the benefits resulting from a more thorough pulverisation of the soil than can be obtained by ordinary ploughing, we are naturally led to inquire whether his principles may not be carried out in a more effectual manner by the aid of modern skill and experience.

Now the other system, which in many of its leading characteristics resembles that of Tull, is carried on in this very part of the country, within a morning's drive from Oxford, by the Rev. S. Smith, the intelligent clergyman of Lois Weedon in Northamptonshire, who, in a little unpretending pamphlet, entitled, "A word in Season; or how to Grow Wheat with Profit, addressed to the stout British Farmer," which has gone through 13 editions, gives us the following account of his method of proceeding.

He begins by dividing his corn field into sections of 5 feet in width. In the centre of each section he drops or drills the seed in triple rows 3 feet apart, so that between each triple row there is an interval of 3 feet left fallow when the plant is up. He trenches the spaces between the cultivated portion with the fork, taking up the soil to within 3 inches of the Wheat crop. These spaces are kept clean at spring and during summer with the blades of the sharp-cutting horse-hoe, and are kept open with the tines of the scuffler. Thus each year 2½ feet of each section of the field are trenched and prepared for the succeeding crop, whilst the other 2½ feet are left for the crop at the time growing, so that one half of the land is yielding Wheat, and the other half left fallow in preparation for the succeeding year.

By this treatment Mr. Smith assures us that the average yield of half an acre for the last nine years, ending with the present, has been no less than 34 bushels; so that he can calculate upon this return every year from each acre of land set apart for the growth of corn. The crop of this year not having been threshed out cannot be exactly ascertained; but certainly when I visited the spot in July last, even the most unpractised eye must have been struck by the extraordinary height, evenness, and fulness of ear which the field exhibited; nor can there be any reasonable doubt that the produce in this particular instance does, on an average, greatly exceed that of the neighbouring lands cultivated in the ordinary method.

But two questions will naturally occur, to which it is perhaps not easy to return so decisive an answer. The first relates to the quality of the land. Would the treatment which is found so successful on the field in Mr. Smith's occupation succeed equally well on land of average fertility?

To this it may be replied, that the subsoil in the above instance is of two different descriptions. One portion is a clay—the other a gravelly loam. The former is rich enough to require no addition; the latter, which is in some parts hungry, was dressed with the clay taken off the other portion, and with this addition can itself dispense with manure.

Now, Mr. Smith has very justly remarked, in the preface to his 12th edition, "that if we set aside the cases of pure clay and porcelain clay, the great majority of argillaceous soils contain every mineral element of fertility for the Wheat plant in abundance—that abundance varying according to the quality of the clay itself; for when the analytical chemist speaks of mere traces of such and such an ingredient being found in a given soil, he is speaking of what he finds in the few ounces of each under examination.

"But bring up even a superficial inch of subsoil from an acre of land, and these few ounces are increased to a hundred tons, when the slight *traces* will become deep *foot-marks*.

"Increase by degrees the quantity to 10, 12, 18 inches, and there will be no fear then for that promised and lasting abundance. But clay, in its natural state and position—that is, as it lies unmoved and cohesive below the surface—does not yield up its hidden treasures, which remain almost wholly insoluble, and all but inaccessible to the roots of the plant."

Dr. Völcker, of the Agricultural College at Cirencester, has shown, that clay otherwise inert, and consequently barren, may have its resources rapidly developed by a temporary exposure to a high temperature. He found that if a specimen of clay were exposed to a dull red heat for only about half an hour in a closed crucible, the proportion of soluble inorganic substances extractible from it was increased from 6.7 to 10.5 per cent.; but that if the heat were increased and prolonged beyond that time, the amount diminished so as to become less than it had been previously. He also found that by this treatment the quantity of potass that could be extracted was sensibly increased.

"Bring up then," says Mr. Smith, "the clay to the surface. Apply to it the action of fire at the due temperature, and its condition will be wholly changed. Its texture is altered, and it has become porous. It absorbs the organic substances of the atmosphere. Its dormant inorganic substances are awakened, and become gradually soluble. And if the heat should have dissipated in some degree the ammonia, and rendered less soluble the phosphates, it has been proved abundantly that clay properly burnt is still, chemically as well as mechanically, of very great agricultural value."

Improperly burnt, however, that is, burnt beyond that due and proper temperature, the baked clay loses its high value. The solubility of its mineral ingredients is quickly diminished. The ammonia has vanished altogether. It is less absorbent of that principle from the atmosphere, and the labour and expense of the process in a great measure are thrown away.

Now, Mr. Smith contends that by the practice I have been describing of simply bringing up the clay, and exposing its surface to the action of the atmosphere, all the good effects of burning are secured, and all the evil avoided.

"The clay becomes pulverised and porous, and in a condition to absorb and retain the atmospheric ammonia. Whatever ammonia already exists in the clay remains, and a sufficiency of every inorganic element of fertility is rendered soluble and available to the wants of the growing plant. Such has been my process on land not naturally suited for Wheat, and there can be no doubt, I conceive, that the good effects of this single inexpensive dressing of clay will survive for several years. Comparatively inexpensive, for one spit deep will now suffice for the digging of the intervals, since the mineral substances being already on the surface, no double digging need search for them from below."

"On the original piece of land," Mr. Smith adds, "which is strictly Wheat land, there is now coming up very vigorously the 10th crop of Wheat, the crop for 1854 having been even heavier in appearance than that on the gravelly loam. The subsoil here is tenacious yellow clay of good quality, so tenacious, indeed, that in forming my water-tight liquid-holding tanks I have but to dig and the feat is done. When, therefore, I have reminded the reader that heavy loams and clay subsoils, those very soils which are the hardest and most expensive to work in the ordinary way, are the soils expressly suited for the scheme I propose, I have nothing further to add under this head. For it will be self-evident, that what in the case of the lighter soil had to be conveyed to the intervals, is at hand here and under the spadesman's feet, and that when this clay is brought to the surface before winter, it has a 10 months' fallow at least, while a full crop of Wheat is growing at its side. It is a common fallow in short, without the common accompaniment of a fallow—the loss of a crop."

With regard to the second question, namely the economy of Mr. Smith's method of culture, or the balance between the receipts and the expenditure, the report given by the author is very satisfactory. Notwithstanding the greater expense of spade husbandry than of the plough, the profit per acre is stated to be no less than 7*l.* 0*s.* 6*d.*, the Wheat being estimated at 40*s.* the quarter, and the straw at 2*l.* per ton. The following are the items by which this favourable result is made out.

Expenditure.	£	s.	d.
One double digging	1	10	0
Two single diggings, with fork	1	0	0
Pressing, sowing, hoeing, carrying, thrashing, rates and taxes	2	1	0
2 pecks of Seed (5*s.* per bushel)	0	2	6
Total	£4	13	6
Income.	£	s.	d.
4 qrs. and 2 bush. of Wheat (at 40*s.* per qr.) ...	8	10	0
1 ton and 12 cwt. of straw (at 2*l.* per ton) ...	3	4	0
Total amount of produce ...	£11	14	0
Deduct outlay	4	13	6
Total amount of profit	£7	0	6

From this, however, must be deducted the rent which a tenant would have to pay for such land; but, supposing this to be as high even as 2*l.* per acre, the profit to the tenant would, according to this calculation, be no less than 5*l.*

There is also a further recommendation of this practice in the employment it affords to the agricultural labourer, for nothing can be a better state of things than that an increase in the labour bestowed upon the soil should, amongst an overflowing population, give rise to an increase of produce, equivalent, at least, in value to the greater expenditure lavished in obtaining it.

"I look," says Mr. Smith, "upon this as one of the greatest advantages of the scheme I advocate; that if it were carried out, it would enable the farmer willingly to find constant and most productive employment for those for whom at present, whether occupied or not, he is forced to find bread."

Now the great secret of Mr. Smith's success appears to be the care he takes in stirring up the subsoil and exposing it as completely as possible to the action of the air and water.

"The diggings," he says, "at first are to be as much as two spits deep, but the depth is to be measured year after year until they reach the depth of 20 or 24 inches. The first spit is turned over the superficial soil, and upon this the second spit is thrown, so as to be uppermost of all, thus allowing the frost to penetrate through the entire mass. In this manner the soil is thrown up in ridges, which rising higher than the winter crop, tend to shelter and protect it. It is then stirred again with the fork in the spring, and is again treated, after the crop is carried, with the fork and pulveriser, after which it is levelled for seed time." In this respect there is a great contrast between his practice and the original one of Jethro Tull, who would dissuade us from ever ploughing below what he calls the staple of the land, or, in other words, bringing up the sub-soil.

Now let us consider how far land treated in this way can be expected to supply for a number of successive years that amount of the organic and inorganic principles, which is required for the growth of a Wheat crop averaging 34 bushels to the acre. The organic matters present in the crop are composed of oxygen, hydrogen, carbon, and nitrogen. The three former are presented to every plant in sufficient abundance for any conceivable amount of produce, in the form of water and carbonic acid. The nitrogen therefore presents the only difficulty. It has been generally assumed that this element, although present in such large quantities in the atmosphere, can only be obtained by plants from the ammonia brought into contact with its absorbent surfaces.*

Let us, then, inquire whether upon this supposition the soil would be likely to furnish the nitrogen which is present in a crop of Wheat of the quantity supposed. If we take up this question upon theoretical grounds, I fear we shall hardly find sufficient data upon which to proceed. Liebig's authority has been quoted in proof that every pint of rain water contains one quarter of a grain of ammonia, according to which estimate it would follow that, as the average amount of rain which falls upon an acre of ground is not less than 5,096,520 lbs., no less than 166 lbs. of ammonia would be brought into contact with that breadth of soil in the course of a single year. But I do not find that this is anywhere absolutely affirmed to be the quantity present by the above-mentioned chemist, or that it is put forward by him excepting hypothetically; whilst undoubtedly the most recent experiments of Boussingault seem to show, that the largest quantity present in rain water is 1 grain to 33 gallons; and that even in pump water, when contaminated with animal impurities, not more than 1 grain to 2 gallons would be present, which is only half the quantity suggested by Liebig.

With regard to rain water, 1 grain of ammonia to 5 gallons,† or 40 lbs., was the proportion indicated by Boussingault's experiments, and consequently 16½ lbs. only would be imparted to an acre of ground in a year by the rain which falls. To this, however, we ought of course to add the amount at all times floating in the atmosphere, which will be absorbed in greater or less abundance according to the nature of the soil, and here we must undoubtedly look for the advantage which certain soils derive from a careful subdivision, according to Mr. Smith's practice. The amount, indeed, actually present in the atmosphere is exceedingly small,‡ but nevertheless in the course of a year the quantity of air which is brought into contact with the soil is so enormous, that the difficulty of imagining the remaining portion to be thus absorbed becomes very much lessened.

We know indeed from Mr. Lawes' own experiments, that the Turnip crop, in consequence of its wide-spreading leaves, can dispense with ammoniacal manure; and we are therefore, perhaps, entitled to conjecture, that a principle which is collected in such quantities by the leaves of a vegetable, may exist in the air abundantly enough, to enter into combination with a properly prepared soil in quantity sufficient to supply the wants of vegetation.

If so, the original *dictum* of Baron Liebig, which has been so much controverted, may not be incorrect in principle; although the ill success of the mineral manure framed upon this assumption affords a useful lesson, as to the risk we run of failure in applying to practice any general principle, in the present imperfect state of our knowledge of all the bearings of the question; since it undoubtedly appears from Mr. Lawes' experiments, that on ordinary soils, under a common system of cultivation, cereals are benefited by nitrogenous manures, on account of the large quantity of ammonia which is consumed in their growth over and above that which provides them with nitrogen—a fact which Professor Way, in his memoir on the "Power of Soils to absorb Manure," published in the 13th vol. of the Journal of the Royal Agricultural Society, attributes to the necessity of ammonia for rendering silica soluble, and thereby conveying it to the plant in the form in which it can constitute the epidermis of the straw.*

(*To be concluded next week.*)

* The experiments of M. Ville go to establish the contrary, but when we find such discrepancies between the results of his researches on the amount of ammonia in the atmosphere and those of others, we must pause before we adopt his conclusions.

† M. Marten, in the "Ann. de Chemie" for this year, gives nearly the same proportion, viz. 0.003144 gr. per kilogramme of water.

‡ The following statements are given of the proportion of ammonia in air. The enormous discrepancies show that little dependence can be placed on any:—1,000,000 kilogrammes of air, according to Gräger, a chemist of Mulhausen, contain 0.333 kilog. of ammonia; according to Kemp, an Irish chemist, 3,880 kilog.; according to Fresenius 0.098 by day, and 0.169 by night; whilst the recent experiments of M. Ville, which appear to have been conducted with great care, and by the aid of a most elaborate apparatus, make it much smaller, for in the years 1850 and 1851 the average was no more than 23.7 grammes in 1,000,000 kilog., or 0,000,000,0237 to 1, and in 1852 0,000,000,0210 to 1. Thus the several reports will stand as follows:—

In 1,000,000 parts—

Kemp's	3.8800 of ammonia
Gräger's...	0.3330 "
Fresenius's	0.1690 by night
"	0.0980 by day
Ville's, from	0.0237
to	0.0210

* Silica, according to Way, forms a soluble compound with ammonia, which, however, deposits its silica in an insoluble form as the ammonia flies off. Hence it is first taken up by the juices of the plant and afterwards decomposed in the parts exposed to the air. Now this compound of silica with ammonia is not formed by the direct union of the two bodies, but only through the medium of a compound of silica, either with lime or with alumina, which exists in all argillaceous soils. These silicates, as it appears from Way's experiments, have the property of abstracting carbonate of ammonia from the air and of retaining its base for the purposes of vegetation. Hence the fertility of the soil will depend upon the presence of these compounds, and according to Way, the advantage of the Tullian practice of pulverising the soil consists in bringing these important compounds of silica which have the power of absorbing ammonia into contact with the atmosphere, and, consequently, producing with them the soluble silicates of the earths with ammonia which is so important in husbandry.

† [Is not this a *reductio ad absurdum*, either of your reasoning or of the data on which it is founded?]

Home Correspondence.

On Farm Buildings.—A question discussed lately at the London Farmers' Club, "On the best and most Economical Plan of Farm Buildings, which can be recommended to Landed Proprietors," was closed by the only resolution at which it seemed possible to arrive; namely, that the nature of the buildings must depend upon the varied circumstances of farms. But there seems to me in every case a preliminary question; namely, is there *any* plan of farm buildings, which it would be economical to a landlord to provide on the majority of farms? Say, that the buildings are destroyed or worn out, will it pay him to replace them? In fact, the economical question for the landlord is—what is the smallest expense he can be at to secure himself the largest permanent net return? How important a question this must be to a landlord should be clear, when we consider the large amount of landlord capital sunk in a farm, and the small return it secures. The population report gives the average size of farms at 110 acres. The average rent does not exceed 1*l.* per acre. Now, to secure that rent, the landlord must have sunk not less than 800*l.* in a house and buildings with their appurtenances, on which he ought to receive 7*l.* per cent. at least as a builder; and not less than 300*l.* in fencing and roads, on which he might obtain, if otherwise invested, an average interest of say 4*l.* per cent. Besides this, in some shape, cottage tenements, say three, must be provided for the labourers on the farm, at an average cost including fencing of gardens, water, and so forth of say 100*l.* each; which should also give a building per centage of 7*l.* per cent; say 4*l.* paid as rent by the labourers, and 3*l.* derived indirectly from the farm; for it seems to me that it is only on this theory that cottages for farm labourers can be afforded at all, since the rents the labourers pay give no sufficient return for the outlay of capital in cottages. Now the annual interest on these several outlays at the per centages given will amount to a sum of 77*l.* On an average sized farm, therefore, of 110 acres, at a rent of 1*l.* per acre, about 6*s.* 6*d.* per acre would be nearly all the landlord receives as net rent. On many farms of that acreage the whole rent does not amount to the sum of 77*l.*, and capital sunk has really been sunk at a loss. In other words, the land was not worth receiving originally as a gift, if coupled with a stipulation to fence it and erect the necessary buildings. This would be found to be the case with a good deal of poor country. If landlords, therefore, are to be like all other classes of the community in seeking the best returns for their outlays, it is very clear that they have something more to consider than the most economical plan of farm buildings. Their first question should be what is the most economical distribution of their land. The resolution of this question may lead to a considerable diminution of the number of farms, and a considerable diminution of the agricultural population. The proceeds of agriculture, after deducting generally but a low rate of profit and wages for the farmer and labourer, leaves for the most part so bare an interest on the capital sunk from generation to generation by the landowner, that I am persuaded if outlay on landed property had always been made a matter of calculation, and no outlay had been made on the land by a landowner which did not promise to return as good an interest for his money as any other investment, that there are large extents of England which would never have been enclosed or cultivated, and which would even now make

a larger net return to the owner if allowed graduallly to fall back into rough pasture or into woodland. *Alexander Bell Hall.*

Societies.

Meteorological, *Nov.* 28.—Dr. Lee in the Chair. *Upon the Weather in connection with Aphis Blight and Growth of Hops*, by F. W. Doggett, Esq.—The author commenced by observing that about the spring of the year, 1849, his attention was called to the subject of the aphis blight in Hops, in connection with the fall of rain, by having an extract from Mr. Glaisher's "Quarterly Report of Meteorological Observations" placed in his hands, a copy of which he took; but from a variety of circumstances the matter passed from his mind until the present spring, when, meeting with the extract again, he was struck with the fact of the similarity of the weather of the past autumn with that of the year alluded to in the report, and which was succeeded by a short crop of Hops. The following is a copy of the extract:—"The rain in the quarter ending September, 1848, amounted to 9 inches at Greenwich. The average fall of rain during this quarter, as derived from observations since the year 1815, is 7 inches:—

In the year 1824 the fall of rain in this quarter was	9 ins.
" " 1828	$12\frac{1}{2}$
" " 1829	11
" " 1839	$12\frac{1}{2}$
" " 1848	9

Upon applying at the Greenwich Observatory, the author was furnished with a table containing the monthly fall of rain for 38 years, from which he deduced the average fall of rain for each month per quarter of the above period of 38 years, and compared the quarterly average of each year with the quarterly average of the whole number of years, and found that the years in which an excess of rain had fallen in or about the quarter ending September of the previous year, the quarter ending December and the month of March following being both comparatively deficient, were followed by a short crop of Hops, arising from the aphis blight; and on the contrary, when the quarter ending September of the previous year had been dry, an average or large crop had been grown; when the quarter ending September had been wet, and the December quarter very wet, a like result had followed. The author then became anxious to carry his investigations further back, and obtained from Mr. Glaisher the monthly fall of rain taken at the apartments of the Royal Society from the year 1787 to 1815, which being treated in the same manner yielded similar results. There appear, however, to be a few exceptions to the before-mentioned rules; but on referring to Mr. Glaisher's table of temperature (Phil. Trans., Part 2 for 1850), it was found that the temperatures of the summer quarters of the years in which such exceptions occur, were much below the average of 79 years for the same quarter. For example, take the year 1816. The fall of rain in the quarter ending September of the previous year had been below the average, and therefore a full average crop might have been anticipated; but the quantity grown was short, and on reference to the table of temperature it appears that the summer quarter of the year 1816 was below the average of 79 years by 5° nearly; similar results appear with respect to the following years.

1795 was 2°.2 below the average.
1791 ,, 0 .5 " "
1799 ,, 1 .8 " "

When the weather of the previous year has been such as to indicate a blight, there may be partial recovery if the temperature succeeding should be hot, as in the years 1807 and 1849, which were respectively 1°.6 and 1°.0 above the average. On the other hand, the heat may come too late to cause much improvement in the plant, as in the years 1825, 1800, and 1798. On referring to the table of temperature it was found that, with few exceptions, all the small crops were grown in years in which the temperature of the summer quarter was below the average, and the large crops were produced in years in which the temperature of the like period was high. If we take the temperatures of the years in which the 22 smallest crops were grown, and compare them with those of the years which produced the 22 largest crops, we find that, in the first instance, the average produce was equal to 55,728*l.* duty, with an average defect of temperature of the summer quarter of 0°.9, and, in the latter case, the average produce was 211,969*l.*, with an average excess of temperature of 1°.5. The author instanced a few years, comprised within each of the two above instances. The author did not think that we should confine ourselves too strictly within the limits of either month or quarter, in the consideration of this subject, as he found in some cases where a blight has occurred, the fall of rain in the quarter ending September has not always been much in excess; but on referring to the fall which took place in the months immediately previous, he found that the fall of rain had been such as fully to make up such excess, as in the years below:—

1792 March, April, May, June, July, Aug., and Sept. in excess
1797 June in excess (fall 4.2 inches)
1789 " (fall 3.2 inches)
1824 May and June " (fall 3.8 and 3.5 inches)
1848 June " (fall 3.5 inches)

The author concluded by remarking that without doubt the result of each crop is influenced by various circumstances; for instance, the condition of the plant produced by the crop of the preceding year (whether crop or blight), and gales of wind, which reduce the quantity of growth considerably at times, as in the year 1833, when there was a hurricane blowing for three days, August 30, 31, and September 1; during which period the quantity supposed to have been blown away was about one-fourth of the quantity grown.

Miscellaneous.

Fatting Dorkings.—To produce the fat fowls that are seen in greater perfection in the London markets than elsewhere, and which are generally termed (although they are not) capons, Dorkings are cooped for fatting at the age of three to four months in summer and five to six in winter, being fed with oatmeal, mixed with water or milk; this must be given fresh three times a day, the first meal being early in the morning; and, in addition, the birds should be supplied with whole corn (either dry or boiled), gravel, clean water, and a turf or green meat; the most scrupulous cleanliness as to troughs, coops, &c., being observed. By these means a fowl, if previously well fed, will be fat enough for any useful purpose in a fortnight to three weeks; should they be required very fat, some mutton suet, or, what is equally good, the parings of the loins of mutton, may be chopped up with the food. The unnatural process of cramming is frequently recommended, but I have never found it necessary. It should be borne in mind that a fowl cannot be kept in the greatest degree of fatness for any length of time, as the over repletion soon causes internal disease. The houses must be dry, quiet, dark, and warm, and the fatting coops carefully kept from draught, and warmly covered at night during cold weather. *Tegetmeier's Profitable Poultry.*

Calendar of Operations.

DECEMBER.

Wester Ross, *Dec.* 12.—The weather for the last few weeks has been particularly wet and boisterous. We have already had two snowstorms, but having come somewhat earlier than usual, they speedily disappeared. Unfortunately, however, along with the thaw we had torrents of rain, and such was the redundancy of water, that drains were burst or overflowed, bank land was cut, and level fields submerged. We have now had a few more settled days, and for some time we expect better weather. The ground has been so wet and cold that Wheat has been making little progress, and a large proportion of it is not yet above ground. The weather although wet has been fresh and open, and the labour of the farm is well advanced. A full average quantity of Wheat has been sown. A large proportion of next year's green crop lot has been turned over, and in some instances leas have been seed-furrowed for Oats. Much of our cultivated land in this quarter being steep, we are in the habit, when ploughing for green crops, of turning it all over with one furrow down hill. In this way, with one pair of horses, we can have our cleaning lot ploughed to the depth of some 12 or 13 inches. Although the horses go up hill without a furrow, there is a respectable speed attained, as a larger breadth can be taken down hill. Our threshing machines have been pretty often at work, and now a fair proportion of the crop has been threshed out. We cannot say that the returns, although satisfactory, are much beyond an average. Wheat threshes out well, and had it not been for our damp summer, and its attendant blight, we would have had an uncommon yield, our light Wheat being more than ordinarily abundant. Last year, at this season, we were all busy shipping Potatoes; this year a few vessels will suffice to take away our surplus stock, and ere the planting season be over, the few we are now shipping will, peradventure, be sadly missed. Sheep were thriving well on Turnips until these storms came, since then their wool has been well nigh constantly saturated, their footing miry, and their bed constantly wet; so that, with all these drawbacks, they have had difficulty in maintaining their former condition. Our Turnip crop being good, it is standing out well. A number of the farmers in this neighbourhood entered into a sweepstakes for the best five acres of Swedes, and the best ten acres of any other kind of Turnips, and the result is the following—of which we can scarcely say that we are ashamed—the best acre of Swedes weighed 27 tons; the best acre of any other sort weighed 29 tons 16 cwt.; whilst the average weight of Swedes was 25 tons 2 cwt.; and that of the other kinds 24 tons 5 cwt. per imperial acre. Meetings on behalf of the Patriotic Fund are being held throughout the north, and there are certainly few classes of her Majesty's subjects that might respond more readily, or contribute more cheerfully and liberally than the agricultural class.

Notices to Correspondents.

Books: *A Young Farmer.* M'Intosh's "Book of the Garden," and the volumes on the "Horse," "Ox," and "Sheep," by the Useful Knowledge Society.

Butter: *W H.* Try pouring a lot of hot water into the milk-pan along with the milk, keeping the whole warm for an hour or two before the cream rises. The aroma of the Turnip is said to *go* in the vapour.

Coal-ash: *Tyro.* Coals vary exceedingly in the quantity of ash they contain, and they cannot be classified as containing much or little respectively, according to the designation you specify; for north country coals vary between 2 and 10 per cent., Newcastle coals between 2 and 9, Lancashire coals between 2 and 11, and Welsh coals between $1\frac{1}{2}$ and 10—the differences being according to the particular bed or mine from which the specimens are taken. Coal-ash is generally so mixed with imperfectly burned material, that it is to be considered useful chiefly for its influence on the texture of the soil.

Oil-cake: *Subscriber.* 1 lb. of oil-cake a day per head will, with "steamed straw and a few sliced Turnips, keep young stock in good condition."

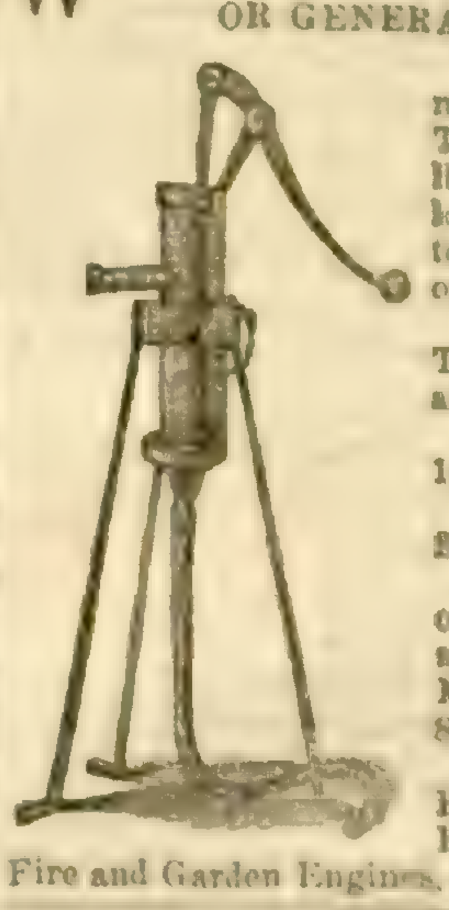
Permanent Grass: *Constant* would feel particularly obliged if any of our correspondents would kindly state the result of their experience on the subject of laying land down to permanent Grass without an accompanying crop of corn. It is important to learn under what circumstances such a proceeding would be desirable or objectionable? whether the superior growth of the Grass would be likely in any degree to compensate for the loss of a crop of corn? whether any other spring crop might be substituted for one of corn? what condition the ground ought to be in? the season for sowing? the quantity of seed, and the after management of the field?—[If you will state the character of the soil, we can give you the kinds and quantities of seed desirable. A thin seeding of Barley along with them will not interfere with the permanent interests of the Grass, and the crop is worth harvesting.]

Seed Growing: If you do not think that you are offered enough for your seeds, advertise them for sale.

Situation: *Inquisitor.* You should advertise your qualifications, giving such references as shall prove that you really possess them: and as to salary, from 80*l.* to 150*l.* is common for the manager of home farms of any extent. We do not know anything as to the counties in which you are likeliest to meet with what you want. You had better advertise in the London agricultural papers.

Steaming Apparatus: *W J B.* should communicate with Richmond and Chandler, Manchester.

WARNER'S IMPROVED LIQUID MANURE, OR GENERAL PORTABLE PUMP.



The valve is a ball of imperishable material, and cannot clog in action. The barrel is of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure. The legs will fold together, and the whole may be carried on shoulder to any pond or tank required.

Price of $4\frac{1}{2}$ in. Pump, with legs, 3*l.* 3*s.* The barrel is $27\frac{1}{2}$ in. long, and the legs are 5 ft. high.

$1\frac{1}{2}$ inch Gutta Percha Suction Pipe, 1*s.* 6*d.* per foot.

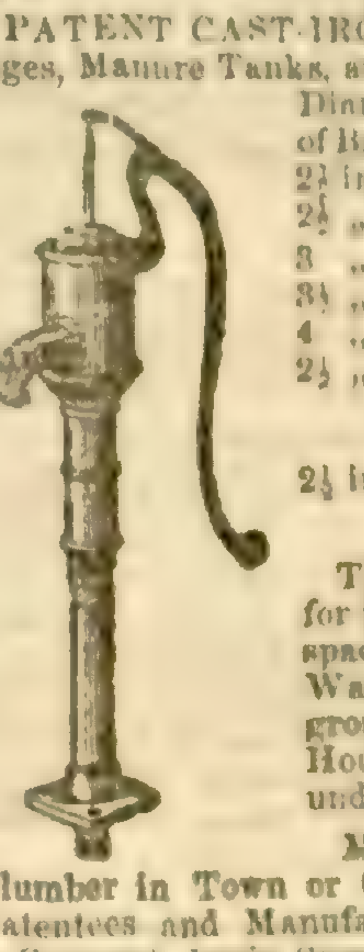
$1\frac{1}{2}$ inch Flexible Rubber and Canvas Suction Pipe, 3*s.* 6*d.* per foot.

May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, John Warner & Sons, 8, Crescent, Jewin Street, London.

Every description of Machinery for Raising Water, by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c.—Engravings sent on application.

WARNER'S PATENT VIBRATING STANDARD PUMPS.

PATENT CAST-IRON PUMPS, for the use of Farms, Cottages, Manure Tanks, and Wells of a depth not exceeding 30 feet.



Diameter of Barrel	Length of Barrel, under nose.		£ s. d.
$2\frac{1}{2}$ in. short	1 ft. 7 in.	Fitted for lead,	1 12 0
$2\frac{1}{2}$,, long	3 ,, 3 ,,	gutta percha,	1 15 0
3 ,, ditto	3 ,, 6 ,,	or cast iron	2 12 0
$3\frac{1}{2}$,, ditto	3 ,, 6 ,,	flanged pipe,	2 18 0
4 ,, ditto	3 ,, 6 ,,	as required.	3 5 0
$2\frac{1}{2}$,, short, with 15 feet of Lead Pipe attached, and Bolts and Nuts ready for fixing			2 12 0
$2\frac{1}{2}$ in. long	ditto	ditto ditto	2 15 0

The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.

May be obtained of any Ironmonger or Plumber in Town or Country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER and SONS, 8, Crescent, Jewin Street, London.

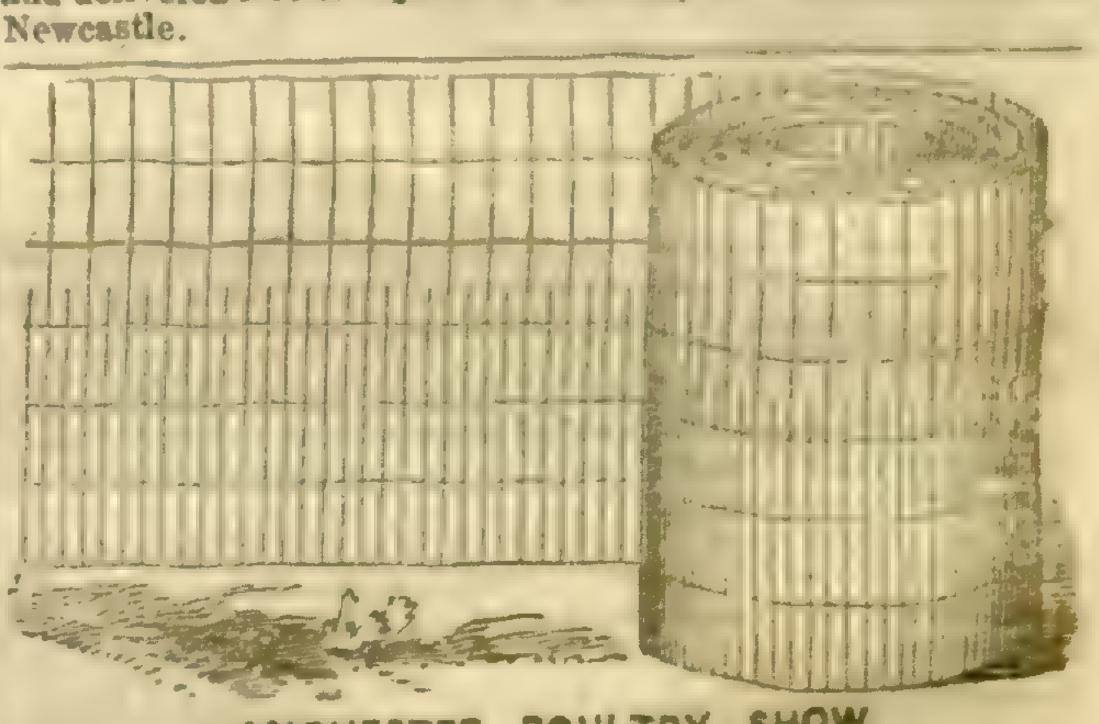
Every description of Machinery for Raising Water, by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

GALVANISED WIRE GAME NETTING.—
7*d.* per Yard, 2 Feet Wide.

				Galvanised.	Japanned iron.
2-inch	mesh,	light,	24 inches wide ...	7*d.* per yd.	5*d.* per yd
2-inch	,,	strong	,, ...	9 ,,	$6\frac{1}{2}$,,
2-inch	,,	extra strong	,, ...	12 ,,	9 ,,
$1\frac{5}{8}$-inch	,,	light	,, ...	8 ,,	6 ,,
$1\frac{5}{8}$-inch	,,	strong	,, ...	10 ,,	8 ,,
$1\frac{5}{8}$-inch	,,	extra strong	,, ...	14 ,,	11 ,,

All the above can be made any width at proportionate prices. If the upper half is a coarse mesh, it will reduce the prices one-fourth. Galvanised Sparrow-proof Netting for Pheasantries, 3*d.* per square foot. Patterns forwarded post free.

Manufactured by Barnard & Bishop, Market Place, Norwich, and delivered free of expense in London, Peterborough, Hull, or Newcastle.



MANCHESTER POULTRY SHOW.

B. GREENING and CO., the Contractors for fitting up this Show, beg to invite visitors to inspect the patterns of their Patent Fencing, exhibited by kind permission of the Committee in the Free Trade Hall during the days of Exhibition. Orders can be left with the attendants and Price Lists and Pattern Sheets of the various kinds may be previously obtained by post on application to B. Greening & Co. 1 and 3, Church Gates, Manchester.

B. Greening & Co's Poultry Show Pens are engaged for the Manchester Poultry Show. Pens bought during the Show will be sent home immediately after. Price of pens, 6*s.* 6*d.* each, applicable to showing Poultry in as well as for hen coops, chicken feeding cages, &c.

Subscribers' names to B. G. & Co.'s Subscription List for reducing the price of the pens to 5*s.* 6*d.* each, will be received by the attendants in the Hall.

B. Greening & Co., Church Gates and Cateaton Street, Manchester.

PRIZE MEDAL—1851.
AT A VERY ECONOMICAL RATE.

SAMUEL CUNDY, Mason and Builder, Pimlico Marble and Stone Works, Belgrave Wharf, Lower Belgrave Place, Pimlico, London.

Marble Chimney-pieces manufactured by improved machinery. The public are invited to view the stock, unequalled for quality and price. A good Marble Chimney-piece for 40*s.* Marble Work in all its branches at a remarkably cheap rate for Halls, Dairies, Larders, &c. Circulars sent on application.

N.B. The "Royal Blue" Omnibuses pass the Works every ten minutes from the Bank.

GLASS FOR CONSERVATORIES, ETC.

HETLEY AND CO. supply 16-oz. SHEET GLASS, of British Manufacture, at prices varying from 2*d*. to 3*d*. per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to JAMES HETLEY & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES.

THOMAS MILLINGTON'S present prices for good 16 oz. sheet glass, boxes included.

6 in. by 4 in. to 6 in. by 5¼ in.	... 13*s*. 3*d*.	per 100 feet.
7 by 5 to 8 by 6	... 13 6	
8¼ by 6¼ to 10 by 8	... 14 0	
10¼ by 8¼ to 14¼ by 10¼ ...	... 16 0	
17 by 10 to 18 by 12	... 18 0	

A great variety of sizes. Particulars had on application.

ORCHARD HOUSE SQUARES on Mr. RIVERS's plan, to whom I have sold some thousands of feet.

Large Sheets for cutting up, in cases, at 2½*d*. and 3*d*. per foot.

HARTLEY'S IMPROVED ROUGH PLATE GLASS, Sheet, and Rough Plate, Tiles, Milk Pans, Bee and Propagating Glasses, Wasp Traps, Cucumber Tubes, Preserve Jars, with and without covers; Fern Glasses.

Plate, Sheet, Crown, and Ornamental Window Glass. Crystal Glass Shades for ornaments.

Greenhouses, erected in either wood or iron. Garden Lights and Frames.

87, Bishopsgate Street Without, London—same side as Eastern Counties Railway.

HARTLEY'S PATENT ROUGH PLATE GLASS, 1-8th thick, or 2 lbs. to the foot; 3-16ths, or 3 lbs.; and 1-4th, or 4 lbs. to the foot, for Ridge and Furrow Roofs, Greenhouses, Railway Stations, Engine Sheds, Mills, Market Halls, and Public Buildings generally.

Packed in Boxes of 50 feet each.

6 by 4 and 6½ by 4½	10*s*. 6*d*. per box.
7 " 5 " 7½ " 5½	12 0 "
8 " 6 " 8½ " 6½	13 6 "
9 " 7 " 9½ " 7½ and 10 by 8 ...	15 0 "

For larger sizes a full List of Prices will be sent on application. Boxes are charged 2*s*. each extra, full price allowed if returned free of expense.—For further information apply to

JAMES PHILLIPS & Co.,

116, BISHOPSGATE STREET WITHOUT.

"Rough Plate has never been, and never can be, prejudicial to the colouring of Grapes; though we can easily believe that it has been charged with such a fault by persons who have not skill enough to manage Grapes under glass."—*Gardeners' Chronicle.*

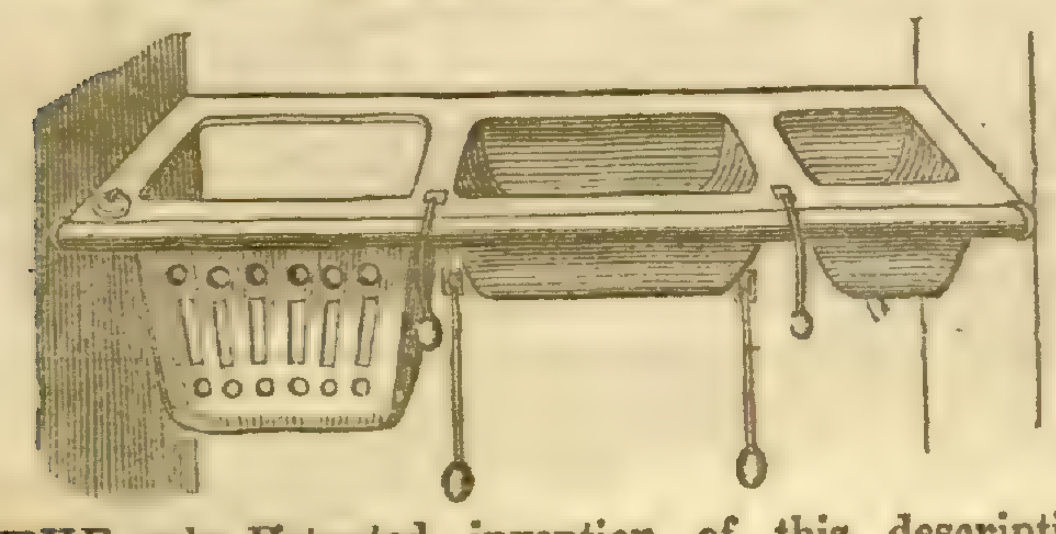
"There *can be no question now* that Rough Plate Glass is the most beautiful as well as the most useful kind of glass that can be employed in horticulture. It is free from all the faults of transparent glass, and has many advantages peculiar to itself, *without a single disadvantage as a set off.*"—*Gardeners' Chronicle.*

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.

"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1*s*. 6*d*. per yard run, of ELISHA THOMAS ARCHER, 7, Trinity Lane, Cannon Street, City, and the Royal Mills, Wandsworth, Surrey.

DEANE, DRAY, AND CO., have a very large and superior stock of FRENCH MODERATOR LAMPS now on sale.—(Opening to the Monument), London Bridge. ESTABLISHED A.D. 1700.

BARTON'S PATENT SAFETY STABLE FITTINGS, AND ENAMELLED MANGERS.



THE only Patented invention of this description constructed so as to prevent considerable waste of Hay and Corn, together with all the newest improvements.

NEWLY IMPROVED ECONOMIC STABLE FITTINGS, FORTY SHILLINGS PER SET, to fill up the whole width of Stalls, and can be had enamelled or galvanised. Every description of Mangers, Racks, and Stable Furniture in stock; Iron Hurdles, Gates, Fencing, &c.

Manufacturer of Kite's Patent Noiseless Cast-Iron Smoke-Curing Chimney Caps (200 on Buckingham Palace), price 35*s*. each. Price Lists and Illustrated Catalogues forwarded on receipt of two postage stamps.

JAMES BARTON, IRON FOUNDER, &c., 370, Oxford Street, a few doors east of the Pantheon.

GREEN AND HOT-HOUSES made by machinery, at J. LEWIS'S HORTICULTURAL WORKS, Stamford Hill, Middlesex. Sent to all parts of the United Kingdom. These buildings are warranted of the best materials, and put together in a superior manner. Being manufactured by steam-power, they are considered the cheapest and best made in England. The Trade and Merchants supplied at wholesale prices. List of Prices by enclosing two postage stamps.

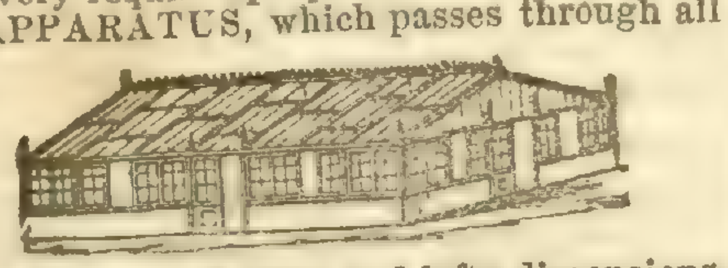
HORTICULTURE IN ALL ITS BRANCHES.

JOHN WEEKS & Co., King's Road, Chelsea,

HOTHOUSE BUILDERS.

THE NOBILITY AND GENTRY about to erect Horticultural Buildings, or fix Hot-water Apparatus, will find at our Horticultural Establishment and Hothouse Works, King's Road, Chelsea, an extensive variety of Hothouses, Greenhouses, Conservatories, Pits, &c., erected, and in full operation, combining all modern improvements, so that a lady or gentleman can select the description of House best adapted for every required purpose.

The HOT-WATER APPARATUS, which passes through all the Houses and Pits, affording both top and bottom heat, is in constant operation and particularly worthy of attention.



Many of the Houses and Pits are of wide and lofty dimensions, and together equal in length 1000 feet. They are all effectually heated by *one boiler*, which, during the severe winter months does not cost in labour and fuel more than 3*s*. 8*d*. per day, and the apparatus is so arranged that each House or Pit may be heated separately and to the required temperature. The splendid collections of Stove and Greenhouse Plants are also in the highest state of cultivation, and for sale at very low prices. Also a fine collection of strong Grape Vines in pots, from eyes, all the best sorts.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application to JOHN WEEKS & Co., King's Road, Chelsea, London.

EXOTIC NURSERY, CHELSEA.

JAMES VEITCH, JUN., having engaged in addition to his other able foremen, the assistance of Mr. John Milne, late gardener to Byam Martin, Esq., of Kingston-on-Thames, and before that gardener and steward to the Right Hon. the Earl of Clare, Mount Shannon, Ireland, feels *increased confidence* in being able to give complete satisfaction to those who may kindly patronise him.

The long and extensive *practical experience* which he has himself had at Exeter, as well as since he came to Chelsea, combined with Mr. Milne's high standing as a *practical gardener*, induces him to tender his services to any lady or gentleman requiring advice in the *Improvement of their Gardens and Grounds, and in other Horticultural matters*, particularly in reference to the erection of Conservatories, Forcing and Plant Houses, Heating Apparatus, &c., plans for which will be furnished on application, and examples can be seen both at the Exotic Nursery, Chelsea, and at Exeter.

JAMES VEITCH, Jun., is fully impressed with the fact that to make Horticultural Buildings what they really should be, *thorough practical Gardening experience* is required to adapt the various erections to the several purposes for which they are intended. This desirable object it will be his anxious endeavour to accomplish.—Dec. 23.

THE CRYSTAL PALACE FLOWER BASKETS, as exhibited in Nave and Transepts of the CRYSTAL PALACE, SYDENHAM, made to the original and other new elegant designs, by W. RICHARDS, at the Wire Works, 370, Oxford Street, nearly opposite the Princess's Theatre. CONSERVATORIES AND AVIARIES fitted up. Wire work in all its varieties. Game and garden fence—parrot cages and all others. Choice birds kept on sale. WINDOW BLINDS of every possible description, of the very best materials and workmanship.

N.B. An allowance to nurserymen and the trade.

CHRISTMAS PRESENTS.—The most appropriate offerings for this season of festivity are those which tend to the promotion of health and personal attraction: none can be more acceptable than ROWLANDS' MACASSAR OIL, for imparting a transcendent lustre to the hair, and sustaining it in decorative charm. ROWLANDS' KALYDOR imparts a radiant bloom to the cheek, and a delicacy and softness to the hands, arms, and neck; and ROWLANDS' ODONTO, OR PEARL DENTIFRICE, bestows on the teeth a pearl-like whiteness, and renders the breath sweet and pure. The patronage of royalty throughout Europe, their general use by rank and fashion, and the universally-known efficacy of these articles give them a celebrity unparalleled.—Sold by A. ROWLAND & SONS, 20, Hatton Garden, London, and by Chemists and Perfumers.—Beware of spurious imitations.

IRON PIPES, IRON AND WOOD FENCING

WILSHERE'S BLACK VARNISH goes twice as far as paint, 4*s*. per gallon.

N.B.—Several orders having, by an accident, been destroyed, the parties ordering will oblige by repeating them.

2, Talbot Court, Gracechurch Street, London.

CURE FOR GRAPE MILDEW.

JOHN HAYES, FLORIST, Farnham, Surrey, begs to say he will send a receipt for the above Composition to dress Vines for Eight Stamps. It has not failed these [illegible] years, and only costs a few pence for three or four houses [illegible] no risk of over-sulphuring.

THE COMFORT OF A FIXED WATER-CLOSET FOR 1*l*.—Places in gardens converted into comfortable water-closets by the PATENT HERMETICALLY SEALED PAN, with its self-acting valve, entirely preventing the return of [illegible] air or effluvia. Any carpenter can fix it in two hours. [illegible] Hermetically-sealed Inodorous Chamber Commodes, [illegible] and 3*l*.; also Improved Portable Water-closets, with pump, cistern, and self-acting valve. A prospectus, with engravings, forwarded by enclosing two postage stamps.—At FYFE & Co.'s Sanatorium, 46, Leicester Square.

HOT-AIR, GAS, VESTA, JOYCE'S STOVES.—STOVES for the economical and safe heating of halls, shops, warehouses, passages, basements, and the like, [illegible] this season demanded, WILLIAM S. BURTON invites attention to his unrivalled assortment, adapted (one or the other) to every conceivable requirement, at prices from 10*s*. to 30 guineas. His variety of register and other stoves is the largest in existence.

THE PERFECT SUBSTITUTE for SILVER.—The real NICKEL SILVER, introduced 20 years ago by WILLIAM S. BURTON, when Plated by the patent process of [illegible] Elkington & Co., is beyond all comparison the very best article next to sterling silver that can be employed as such, either usefully or ornamentally, as by no possible test can it be distinguished from real silver.

	Fiddle Pattern.	Thread or Brunswick Pattern.	King's Pattern.
Tea Spoons, per dozen	18*s*.	26*s*.	32*s*.
Dessert Forks "	30*s*.	40*s*.	46*s*.
Dessert Spoons "	30*s*.	42*s*.	48*s*.
Table Forks "	40*s*.	56*s*.	64*s*.
Table Spoons "	40*s*.	58*s*.	66*s*.

Tea and Coffee Sets, Waiters, Candlesticks, &c., at proportionate prices. All kinds of replating done by the patent process.

CHEMICALLY PURE NICKEL, NOT PLATED.

	Fiddle.	Thread.	King's.
Table Spoons and Forks, full size, per doz.	12*s*.	28*s*.	[illegible]
Dessert ditto and ditto	10*s*.	21*s*.	[illegible]
Tea ditto	5*s*.	11*s*.	[illegible]

CUTLERY WARRANTED.—The most varied assortment of TABLE CUTLERY in the world, all warranted, is on Sale at WILLIAM S. BURTON'S, at prices that are remunerative only because of the largeness of the sales. 3½-inch ivory-handled table knives, with high shoulders, [illegible] per dozen; desserts to match, 10*s*.; if to balance, 1*s*. per dozen extra; carvers, 4*s*. per pair; larger sizes, from 14*s*. 6*d*. to 26*s*. per dozen; extra fine, ivory, 32*s*.; if with silver ferrules, 37*s*. [illegible] white bone table knives, 7*s*. 6*d*. per dozen; desserts, 5*s*. [illegible] carvers, 2*s*. 3*d*. per pair; black horn table knives, [illegible] per dozen; desserts, 6*s*.; carvers, 2*s*. 6*d*.; black wood-handled table knives and forks, 6*s*. per dozen; table steels, from 1*s*. each. The largest stock in existence of plated dessert knives and forks, in cases and otherwise, and of the new plated fish carvers. Also a large assortment of Razors, Penknives, Scissors, &c., of the best quality.

LAMPS OF ALL SORTS AND PATTERNS.—The largest, as well as the choicest, assortment in existence of FRENCH and ENGLISH MODERATEUR, PALMER'S, CAMPHINE, ARGAND, SOLAR, and other LAMPS, with all the latest improvements, and of the newest and most [illegible] patterns, in ormolu, Bohemian, and plain glass, or papier-mâché, is at WILLIAM S. BURTON'S, and they are arranged in one large room, so that patterns, sizes, and sorts can be instantly selected.

Real French Colza Oil, 5s. per gallon.

Palmer's Candles, 9d., 9½d., and 10d. per lb.

DISH COVERS AND HOT-WATER DISHES in every material, in great variety, and of the newest and most *recherché* patterns. Tin Dish Covers, 6*s*. 6*d*. the set of six; Block Tin, 12*s*. 3*d*. to 28*s*. 9*d*. the set of six; elegant modern patterns, 34*s*. 0*d*. to 58*s*. 6*d*. the set; Britannia Metal, with or without silver-plated handles, 76*s*. 6*d*. to 110*s*. 6*d*. the set; Sheffield Plated, 10*l*. to 16*l*. 10*s*. the set; Block Tin Hot-water Dishes, with wells for gravy, 12*s*. to 30*s*.; Britannia Metal, 22*s*. to 77*s*.; Electro-plated, on Nickel, full size, 11*l*. 11*s*.

WILLIAM S. BURTON has TEN LARGE SHOW ROOMS (all communicating), exclusive of the shop, devoted solely to the show of GENERAL FURNISHING IRONMONGERY (including Cutlery, Nickel Silver, Plated and Japanned Wares, Iron and Brass Bedsteads and Bedding), so arranged and classified that purchasers may easily and at once make their selections.

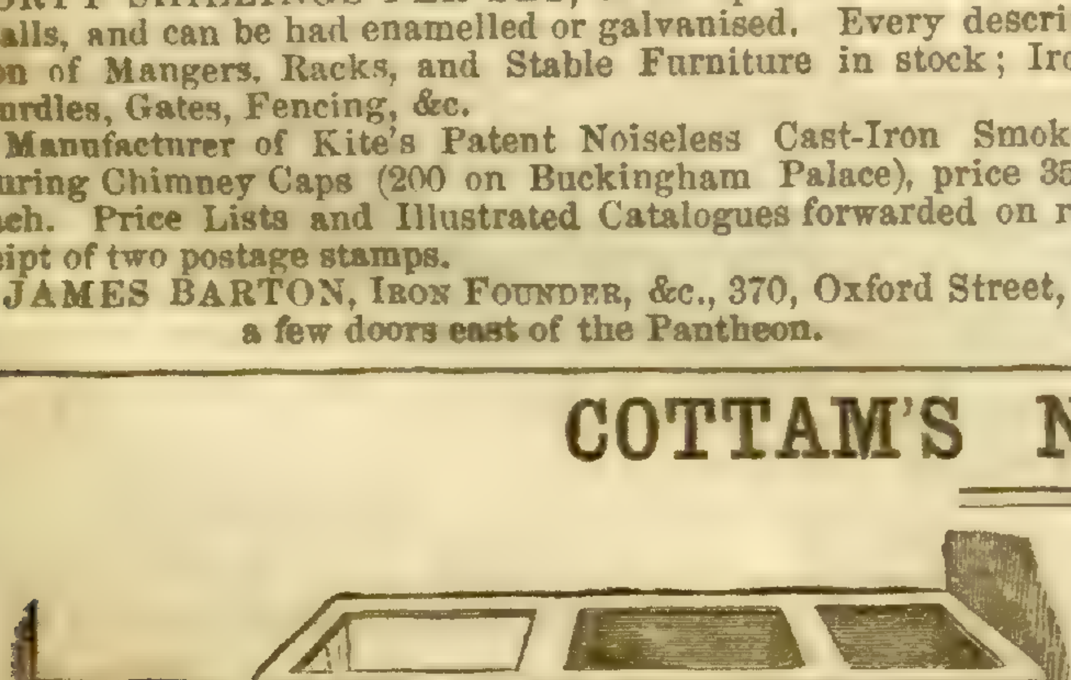
Catalogues, with engravings, sent (per post) free. The money returned for every article not approved of.

No. 39, Oxford Street (corner of Newman Street); Nos. 1, 2, and 3, Newman Street; and 4 & 5, Perry's Place.

TO NERVOUS SUFFERERS.

A RETIRED CLERGYMAN having been restored to health in a few days, after many years of great nervous suffering, is anxious to communicate to others the means of cure; he will therefore send (free), on receiving a stamped envelope properly addressed, a copy of the prescription used.—Direct the E. DOUGLASS, 18, Holland Street, Brixton, London.

COTTAM'S NEW PATENT FOR STABLE REQUISITES.



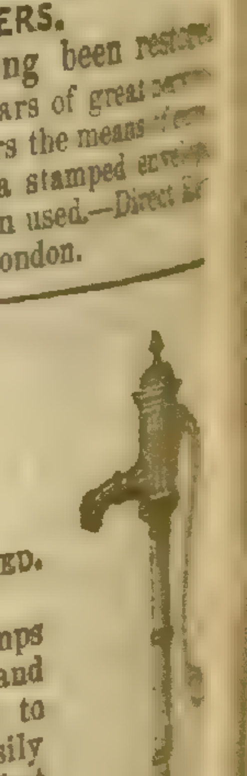
COTTAM AND HALLEN, the original projectors of the above arrangement of MANGER, RACK, and WATER-TROUGH, as one Fixture, which obtained the Great Exhibition Prize Medal, and universally approved of, have added all the latest improvements to their invention (secured by patent), which includes an entirely new method of attaching the halter, ball, and rein, giving to the horse greater freedom, and being noiseless in their operation, add much to its comfort whilst feeding and convenience when at rest.

COTTAM'S ENAMELLED MANGERS

are constructed in the best possible manner, both as to form and utility, are cleanly in appearance, durable and impervious to infection; manufactured PLAIN, GALVANISED, or ENAMELLED.

IMPROVED PUMPS,

OF THE BEST WORKMANSHIP AND WARRANTED.



The VALVES and SUCKERS of these Pumps are constructed upon an entirely new and SIMPLE principle; they are not likely to get out of order; should they do so, can easily be repaired, as the Pump is so contrived that the valves can readily be got at.

An Improved CAST IRON TRAP, strongly recommended by the Sanitary Commissioners, and suitable for Sugar Bakers, Slaughter Houses, &c. &c. It is so formed that the Trap-plate will pass any matter the top grating will let through, and therefore is not liable to stoppages; and well adapted to Stables and Stable-yards, for saving the best part of Liquid Manure.

Improved Stable Guttering, with moveable safety covers, Sanitary Traps, Stable Pumps, Double Corner Mangers, Harness-room Appendages, and every article in Stable Furniture. Chaff Cutters and Oat Bruisers, kept on show.

A STALL fitted up, complete, exhibited at the Crystal Palace, Sydenham, Stand No. 19, Agricultural Department; and at

COTTAM & HALLEN'S WORKS, 2, Winsley Street, Oxford Street, London.

WARMING AND VENTILATING.—Descriptive Catalogues and Estimates on application.

WANTED to Rent, from Lady Day, a SMALL FARM near London, from 40 to 80 Acres, chiefly Pasture, with a good House upon it and the requisite Outbuildings; and [illegible] miles from town.—Apply, by letter, to the [illegible] *Agricultural Gazette*, 5, Upper Wellington Street, [illegible]

TO BE SOLD, the BOAR of the small breed which [illegible]d the first prize at Reading; aged 8 months. Also the sire of the same, aged 20 months, of the improved [illegible] bred by Mr. Coate. They are both remarkably fine [illegible]—Apply to Mr. HORNE, Egham, Surrey.

TO COCHIN CHINA FOWL AND PIGEON FANCIERS.

TO BE SOLD a few very large and first-rate CINNAMON and BUFF COCHIN CHINA FOWLS. Also a [illegible] of PIGEONS which have been selected from [illegible] at very considerable expense. They consist of [illegible] Jacobines, Almond Tumblers, Horsemen, Fantails, [illegible] Barbs, and Archangels.—Address, prepaid, A. B., Post-office Atherstone, Warwickshire.

TO BE SOLD, BUFF COCHIN CHICKENS, from [illegible] Prize Birds, Brahma Pootra Chickens, from imported American Prize Birds, and Spanish Chickens. Also some very [illegible] Birds of the above descriptions. Wire, Game, and Poultry Netting, Poultry Hurdles, Hen-houses, Chicken Coops, Flower Stands, and Trainers, Garden Arches, and every kind of Wire Work, useful and ornamental.—T. H. FOX's, City of London Wire Works, 44, Skinner Street, and 6 & 8, Snow Hill. Illustrated Catalogues forwarded post free.

METCALFE AND CO'S NEW PATTERN TOOTH BRUSH, PENETRATING HAIR BRUSHES, AND SMYRNA SPONGES.—The Tooth Brush performs the highly-important office of searching thoroughly into the divisions and cleaning in the most extraordinary manner—hairs never come loose. Peculiarly penetrating Hair Brushes, with durable unbleached Russian bristles, which will not soften like common hair, and immense stock of genuine unbleached Smyrna Sponge, with every description of British and Foreign Perfumery, at METCALFE, BINGLEY, & Co.'s only Establishment, 130 B and 131, Oxford Street, second and third doors west from Holles Street.

CAUTION.—Beware of the word "from" Metcalfe's, adopted by some houses. Metcalfe's Alkaline Tooth Powder, 2s. per box.

DO YOU WANT LUXURIANT HAIR, WHISKERS, &c.?—No other compound for the Hair has maintained such an enduring celebrity as EMILY DEAN'S CRINILINE. It is guaranteed to produce Whiskers, Moustachios, Eyebrows, &c., in a few weeks, and restore the Hair in Baldness, from whatever cause, strengthen it when weak, prevent its falling off, and effectually check Greyness in all its stages. For the nursery, Dr. Wilson says it is unrivalled.—Price 2s. per Package (elegantly perfumed); sent post free, on receipt of 24 penny postage stamps, by Miss DEAN, 37 A, Manchester Street, Gray's Inn Road, London. Sold by every Chemist in the Kingdom.—"In one fortnight it produced a beautiful set of moustachios." H. ADAMS.—"It has prevented my hair falling off." J. BICKSON.—"It has quite checked the greyness that was coming on." Mrs. ELDER.

DO YOU WANT BEAUTIFUL HAIR, WHISKERS, &c.?—COUPELLE'S CRINUTRIAR, though extensively imitated, is universally acknowledged as the only preparation to be really depended upon for the unfailing production of Hair and Whiskers in two or three weeks; as also checking Greyness, Baldness, &c., and rendering the Hair beautifully luxuriant, curly and glossy. Mr. WILLIAMS, 8, [illegible] Street, Liverpool.—"I can now show as fine a head of hair as any person, solely from using your Crinutriar." Sergeant [illegible], Longford Barracks, Ireland.—"Through using your Crinutriar, I have an excellent Moustache, which I had before despaired of." Mrs. CARTER, Pangbourne, Berks.—"My head, which was quite bald, is now covered with new hair." Price 2s. per package, through all Druggists and Perfumers, or sent post free on receipt of 24 penny stamps by ROSALIE COUPELLE, 69, Castle Street, Newman Street, Oxford Street, London.

DO YOU WANT LUXURIANT HAIR, WHISKERS, &c.? If so, ELLEN GRAHAM'S NIOUKRENE is unfailing in its efficacy. It reproduces the hair when lost by disease or decay, prevents its falling off, effectually checks greyness, strengthens weak hair, and is guaranteed to produce Whiskers, Moustachios, &c., in three or four weeks. For beautifying the hair, and sustaining its curling powers, it has no equal. Sent post free on receipt of 24 penny post stamps, by Miss GRAHAM, 10, Chichester Place, King's Cross, London. "My whiskers are greatly improved." J. SHORT, Dudley.—"It has produced hair where I was bald." W. MORGAN, Milford.—"My hair has thickened since using it." Miss COWIE, Bridgewater.—"I have a full pair of whiskers." H. ROBB, Hertford.—"It has effectually checked the greyness." Mrs. HOOD, Dorking.

IT IS THE PECULIAR CHARACTERISTIC OF PARR'S LIFE PILLS that they purify the system mildly and imperceptibly, so that there is no reaction or tendency to constipation afterwards, as is the case with the purgatives administered by many apothecaries. There are instances of persons with diseased livers and tender lungs who have passed years of misery, pain, and apprehension, but who, after taking PARR'S LIFE PILLS, have actually been made whole, the liver having resumed its proper functions. For Bilious Disorders, Liver Complaints, Indigestion, Costiveness, Sick Headache, Depression of Spirits, Pains in the Back, Gravel, and Lumbago, PARR'S LIFE PILLS will be found a safe and admirable remedy. Invalids should make an immediate trial of this excellent, long-tried, and successful medicine.

Sold by E. Edwards, 67, St. Paul's Churchyard; Barclay and Sons, Farringdon Street; Sutton and Co., Bow Churchyard; Hannay and Co., 63, and Sanger, 150, Oxford Street, London; and by all respectable chemist and medicine vendors in town or country.—In boxes, price 1s. 1½d., 2s. 9d., and in family packets 11s. each. *_* Be sure to ask for PARR'S LIFE PILLS.

FRAMPTON'S PILL OF HEALTH.—"For upwards of nine years (writes Mr. Thomas Province, of Winchmore Hall, Middlesex), I have experienced the efficacy of this excellent medicine, and I have the happiness of saying that I never had a better state of health. I beg further to add that this medicine is in general use by my family, and we know of nothing to equal it." For females these pills are truly excellent, removing all obstructions, the distressing headaches so very prevalent with the sex, depression of spirits, dulness of sight, nervous affections, blotches, pimples, and sallowness of the skin, and give a healthy juvenile bloom to the complexion. Sold by all medicine vendors, price 1s. 1½d. per box.—Observe that "THOMAS PROUT" is on the Government stamp.

HOLLOWAY'S PILLS, A SURE REMEDY FOR INDIGESTION, BILE, AND DISORDERED STOMACHS.—Mr. Patrick O'Brien, of Newtownards, had frequent attacks of Bile and Indigestion, particularly after indulging freely in the luxuries of the table; his appetite was good but his digestion weak, which obliged him to have recourse to medicine, as [illegible] as told, for he seldom obtained more than temporary relief, relapsing again into the same unpleasantness. HOLLOWAY'S PILLS were recommended to him after all, and it is quite astonishing to see the benefit he has derived from them, as he can now eat indiscriminately without fear of suffering from his former ailments.—Sold by all Vendors of Medicine, and at Professor HOLLOWAY'S Establishment, 244, Strand, London, and 80, Maiden Lane, New York.

FORD'S EUREKA COLOURED SHIRTING is now ready, in 200 different patterns. Specimens in varied colours sent post free on receipt of six stamps.

FORD'S COLOURED EUREKA SHIRTS, Six for 27s.

FORD'S WHITE EUREKAS, best quality, Six for 40s.; second quality, Six for 31s.: if washed ready for use, 2s. extra.

CAUTION.—Ford's Eureka Shirts are stamped, "38, POULTRY, LONDON," without which none are genuine.

_ Catalogues with particulars post free.

RICHARD FORD, 38, Poultry, London.

VALUABLE REMEDIES FOR THE AFFLICTED.

DR. ROBERTS'S Celebrated Ointment, called the POOR MAN'S FRIEND, is confidently recommended to the Public as an unfailing remedy for wounds of every description, a certain cure for Ulcerated Sore Legs, if of 20 years' standing; Cuts, Burns, Scalds, Bruises, Chilblains, Scorbutic Eruptions and Pimples on the Face, Sore and Inflamed Eyes, Sore Heads, Sore Breasts, Piles, Fistula, and Cancerous Humours, and is a specific for those afflicting eruptions that sometimes follow vaccination. Sold in pots, at 1s. 1½d. and 2s. 9d. each.

Also his PILULÆ ANTISCROPHULÆ, confirmed by more than 40 years' experience to be, without exception, one of the best alterative medicines ever compounded for purifying the blood, and assisting Nature in all her operations. Hence they are used in Scrofulas, Scorbutic Complaints, Glandular Swellings, particularly those of the neck, &c. They form a mild and superior Family Aperient, that may be taken at all times without confinement or change of diet. Sold in boxes, at 1s. 1½d., 2s. 9d., 4s. 6d., 11s., and 22s. Sold Wholesale by the Proprietors, Beach and Barnicott, at their dispensary, Bridport; by the London houses. Retail by all respectable Medicine Vendors in the United Kingdom.

Observe.—No Medicine sold under the above name can possibly be genuine, unless "Beach and Barnicott, late Dr. ROBERTS, Bridport," is engraved on the Government Stamp affixed to each package.

BLAIR'S GOUT AND RHEUMATIC PILLS. Price 1s. 1½d. and 2s. 9d. per box.—Mr. William Courtney, of Barton Stacey, Hants, says:—"I had resort to your Pills, and within two hours I was quite easy. The use of these Pills ought really to be known all over the world." Among the many discoveries, none have conferred such a boon upon suffering humanity as that of Blair's Gout and Rheumatic Pills; they require neither attention nor confinement, and are certain to prevent the disease attacking any vital part. Sold by all medicine vendors. Observe that "THOMAS PROUT, 229, Strand, London," is impressed upon the Government stamp.

PETER PARLEY'S TALES ABOUT EUROPE, ASIA, &c.

In one large Pocket Volume, embellished with numerous Illustrations and Maps engraved on Steel, a New Edition, with great Additions, price 5s., in cloth, and gilt edges,

PETER PARLEY'S TALES ABOUT EUROPE, ASIA, AFRICA, AMERICA, AND OCEANIA.

_ "The design of this work is to convey, by conversational remarks, a knowledge of Geography and History: it is interspersed with personal adventures, and adapted to the taste and knowledge of children. The author never fails to win attention and raise curiosity; he then uses such familiar terms in gratifying it, that the rudiments of Geography are insensibly impressed on the mind, and science is rendered a pleasing study."

London: WILLIAM TEGG & Co., 85, Queen Street, Cheapside.

PARLEY'S GEOGRAPHY.

In one Volume, Illustrated with numerous Engravings, and 13 Maps engraved on Steel, price 3s. 6d., bound in cloth,

A GRAMMAR OF MODERN GEOGRAPHY. By PETER PARLEY, Author of Tales about Europe, Asia, &c.

London: WILLIAM TEGG & Co., 85, Queen Street, Cheapside.

Published this day, crown 8vo, cloth gilt, 2s. 6d.

THE UNSPEAKABLE; or, LIFE AND ADVENTURES OF A STAMMERER.

London: CLARKE & BEETON, Fleet Street; and all Booksellers.

This day, Third and Cheaper Edition, thoroughly revised, 5s.

POPULAR PHYSIOLOGY; Familiar Explanations of interesting Facts connected with the Structure and Functions of Animals, and particularly of Man. By P. P. LORD, M.D.

London: JOHN W. PARKER & SON, West Strand.

BOOKS FOR PRESENTS.

DR. MERLE D'AUBIGNE'S HISTORY of the REFORMATION. Oliver and Boyd's Revised Editions, containing the New Volume—Subject, "THE REFORMATION IN ENGLAND."

1. The Finest Library Edition. Large Type. 5 vols. 8vo, 57s.
2. The Smaller Library Edition. 5 vols. post 8vo, 20s.
3. The One Volume Edition, 5 vols. bound together, 8s. cloth, very neat; or 9s. gilt edges, elegant.

Edinburgh: OLIVER & BOYD. London: SIMPKIN, MARSHALL, & Co.

Just published, with a Coloured Plate, price Half-a-Crown,

THE ENTOMOLOGIST'S ANNUAL FOR 1855, comprising Notices of the New British Insects detected in 1854. LEPIDOPTERA. By the EDITOR. HYMENOPTERA. By FREDERICK SMITH. COLEOPTERA. By E. W. JANSON. Edited by H. T. STAINTON.

London: JOHN VAN VOORST, 1, Paternoster Row.

GLENNY'S QUARTERLY REVIEW OF HORTICULTURE, LITERATURE, &c.—No. 8, the most important of all the work, will appear January 1st, price 1s., or by post 1s. 6d. Advertisements must be forwarded promptly to Mr. GLENNY, Dungannon House, Fulham.

Just published, price 6d.,

THE POULTRY-KEEPER'S POCKET ALMANACK; and Diary of Proceedings in the Poultry Yard. By the EDITORS of "The Poultry Book." Besides the usual contents of an Almanack, it will comprise a RULED DIARY, with the requisite directions for recording the transactions of the Poultry Yard. Also directions for the Management of Poultry; Drawings of Spangled, Pencilled, and Laced Feathers; with much other useful information.

Published by W. S. ORR & Co., Amen Corner, Paternoster Row, London; and to be had of all Booksellers.

PRACTICAL MECHANIC'S JOURNAL, PART 81, DECEMBER, Price 1s.

ILLUSTRATIONS.—Large Folio Plate of Messrs. Scott, Sinclair, and Co.'s New Screw Propellers, and 30 Wood Engravings.

CONTENTS.—Royal Society—American Notes by our own Correspondent: Boring Arbor, Steam Cock, Tool Block, Locomotive Performance, Railway Ventilation—Educational Exhibition, Report of Committee on Art—Davidson's Floating Break-Water—Messrs. Scott and Sinclair's New Screw Propellers—Illustrated Specifications of Recent Patents: Portable Wooden Bedsteads, Brown; Knife Cleaners, Hilliard; Railway Timber Truck, Eassie; Centrifugal Cloth-Drying Machine, Johnson; Ornamentation of Pottery and Glass, Bale and Lucas; Medicinal Gas Administrator, Barth; Envelope, Aston; Washing Machine, Patterson; Steam Washer, Johnson—Reviews of New Books—Proceedings of Societies—Monthly Notes—Lists of all New Patents.

HEBERT, 88, Cheapside; Editor's Offices (Offices for Patents), 47, Lincoln's Inn Fields, London.

Beautifully illustrated, nearly 200 octavo pages, only 1s.,

A NEW YEAR'S GIFT FROM A FATHER TO HIS SON, A MOTHER TO HER DAUGHTER: HEAD AND HEART, INSTRUCTION FOR YOUTH, JUDGMENT AND AFFECTION FOR ALL. Containing Topics of the Day, Moral Essays, Moral Tales, &c., in which is comprised essential advice to Mankind.

London: H. BALE, 310, Strand; GEORGE V[illegible], and all Booksellers.

AGRICULTURAL STATISTICS.—Practical Suggestions for a National System, with Observations on the Experiments of Sir John Walsham, Mr. Hawley, and Mr. Maxwell, in 1853. By JAMES M. BUCKLAND, Statist, Gloucester.

D. M. WALKER, Printer, Gloucester; Ridgway & Co., Publishers, London. Price 1s.

RENDLE'S PRICE CURRENT AND GARDEN DIRECTORY FOR 1855, *with Newspaper Stamp to go Free by Post, is now in the Press, and will be Published on* TUESDAY, *December* 26.

The proprietors of this well-known Publication have endeavoured in the present edition to render it even more complete than the last; and have again obtained the valuable assistance of Mr. Robert Errington, Gardener to Sir P. Egerton, Oulton Park, who is acknowledged to be one of the best practical writers on Horticulture of the day.

It will contain a very valuable descriptive list of KITCHEN GARDEN SEEDS, with prices affixed to every article, and in addition to the descriptions, there will be short and concise cultural remarks for every kind of Vegetable, pointing out the best varieties for early, medium, and general crops.

The List of FLOWER SEEDS has been much improved, and contains descriptions of all the leading sorts, with directions for sowing seeds, and other useful practical remarks; and in this department Mr. Errington has written expressly for the work an original article on ANNUAL AND OTHER FLOWER SEEDS, which will be read with much interest.

The CALENDAR OF OPERATIONS for the whole of the year has also been revised, and will be found even more useful than the one in the last edition.

There will be a good Garden ALMANACK as usual, and the detailed quantities of seeds contained in their useful COLLECTIONS OF SEEDS are given in full.

A valuable report of the experiments in their TRIAL GROUNDS is also given, and descriptions of the NEWLY INVENTED CLOCHE, or Hand Glass, and of the new CHINESE POTATO (DIOSCOREA BATATAS). The following original articles have also been written expressly by Mr. Errington, on VEGETABLE FORCING, LIGHT AND AIR, LIQUID MANURE, and ROTATION OF CROPS. And in addition to the above, the proprietors have been favoured with an original paper by J. B. Lawes, Esq., of Rothamstead Park:—"ON THE ARTIFICIAL MANURES MOST SUITABLE FOR THE GROWTH OF BARLEY."

At the request of several correspondents the Publishers have printed the present Edition the size of the "Gardeners' Chronicle," so that those who wish it can bind it with the present volume of that valuable Paper. It will contain 32 folio Pages, "Chronicle" size.

Copies can be obtained after Tuesday next, price 6d. each, or free to purchasers of seeds; and can be obtained through the medium of any bookseller in the United Kingdom, from the

LONDON PUBLISHING OFFICE, 204, STRAND;

Or from the Proprietors, WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

A SUPPLEMENT, GRATIS, WITH THE WEEKLY DISPATCH, EVERY WEEK UNTIL FURTHER NOTICE.—The unexampled interest which attaches to every incident connected with the operations of the Allied Armies in the East has determined the Proprietors of the WEEKLY DISPATCH to devote a greater space to the intelligence from the seat of war than the ordinary limits of this, the largest newspaper published, could possibly afford; and, with the view of giving the amplest details, they have resolved upon the issue of a SERIES OF SUPPLEMENTS, GRATIS, which will include every particular of interest connected with the Siege and decision of the contest at Sebastopol, and will be continued whenever demanded by the progress of the Campaign.

By the publication of these Supplements the portion of the Paper usually devoted to incidents of domestic and political importance will be reserved intact, and the engrossing subject of the War will receive the fullest and most varied illustration.

A SUPPLEMENT WILL BE PUBLISHED ON SUNDAY NEXT (GRATIS), and on every succeeding week until further Notice.—Orders may be given to all Newsvendors in town and country; and to the publisher, at the *Dispatch* Office, 139, Fleet Street, London.

Illustrated London News.

THE YEAR 1855 bids fair to be one of the most important and eventful of modern history. On the 6th of January, 1855, will be issued the first number of a new volume of the ILLUSTRATED LONDON NEWS, and not merely a new volume, but of a New Year—each volume being perfect and complete in itself—containing, for the time, a faithful record, pictorial and descriptive, of all Events of interest in every part of the world. To that limited portion of the public who do not subscribe to this Journal it may be stated that no period could be selected more opportune for commencing,—the whole expense being but 26s. per annum, exclusive of double numbers, which are issued on rare occasions, when it would be impossible to crowd the important events and Engravings into a single number; for this small sum the subscriber will receive 24 large pages—72 columns—of the most interesting information, carefully selected from the News of the Week, interspersed with a variety of charming Articles on the chief topics of the day.

The ILLUSTRATED LONDON NEWS has, by its impartial and consistent advocacy of the welfare of the public, secured for itself a political influence scarcely second to any Newspaper in the Empire; and reference can, with some pride, be made to the support afforded to all beneficial measures proposed and adopted by the English Parliament.

Foreign Politics will ever command the attention which ought to be devoted to so important a feature of a Newspaper. On the question of the Russian War, during the year 1854, ONE THOUSAND ENGRAVINGS appeared in the ILLUSTRATED LONDON NEWS. Extensive arrangements, calculated to improve this popular Journal, and engagements such as will greatly enrich its Literary, Scientific, and other departments, have been made, and will thus combine on this Paper the greatest talent of the day.

The ILLUSTRATED LONDON NEWS has been established 13 years, during which period it has received a greater degree of encouragement and approbation than any Journal ever published. This is proved by the Return of Stamps issued from time to time by order of Parliament. The Stamps applied for the first six months of 1854 were upwards of 2,740,000—showing a WEEKLY CIRCULATION OF UPWARDS OF ONE HUNDRED AND THIRTY THOUSAND COPIES!

Terms for payment in advance.—Half year, 13s. 0d.; Year, 26s.

Any of the Volumes of the ILLUSTRATED LONDON NEWS, from the commencement to the present time, may now be had in paper or cloth. Covers for Binding the Volumes 2s. 6d. each.

All Numbers may be sent free by post to any part of the Kingdom and the Colonies.

Give an order for six months to ensure all the gratuitous Prints and Supplements. Supplied by all Booksellers and Newsmen.

The ILLUSTRATED LONDON NEWS is published in London every Saturday, stamped, to go free by post, 6d. per copy.

Office, 198, Strand, London.

RENDLE'S PRICE CURRENT AND GARDEN DIRECTORY FOR 1855 *will be published on* TUESDAY *next, December 26. Price 6d.; to be had of all Booksellers, and from* WILLIAM E. RENDLE & Co., *Seed Merchants, Plymouth.*

AMERICAN PLANTS.

JOHN WATERER begs to announce that he has published a new Catalogue of his Rhododendrons, &c., as exhibited by him in the Gardens of the Royal Botanic Society, Regent's Park, London. It describes the colours of all the Rhododendrons considered worthy of cultivation, with a Treatise on their successful management, and may be had by enclosing two postage stamps.

The American Nursery, Bagshot, Surrey, near Farnborough Station, South-Western Railway.

AMERICAN NURSERY.

GEORGE BAKER'S DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS, &c., as exhibited by him in the Royal Botanic Gardens, Regent's Park, may be had by inclosing two postage stamps.

G. B. begs to call attention to his fine stock of Weeping Hollies, Coniferous Plants, Ornamental Shrubs, &c.—American Nursery, Windlesham, near Bagshot, Surrey, near Staines Station, South-Western Railway, where conveyances may be obtained.

AMERICAN PLANTS.—A Descriptive Priced CATALOGUE of HARDY AMERICAN PLANTS for the coming season is just published, and may be had by enclosing two stamps for postage. As everything in the way of American Plants is grown to an unequalled extent at this Nursery, intending purchasers would do well to provide themselves with this Catalogue.

WATERER AND GODFREY, Nephews and Successors to the late Hosea Waterer, Knap Hill Nursery, Woking, Surrey.

ROBERT KENNEDY, Agent for Messrs. Platz and Son, Seed Growers, Erfurt, has much pleasure in announcing he has received their Catalogue of Flower and Vegetable Seeds for the trade for 1855, which abounds with new articles of great interest, and will be forwarded, per post, on application to R. KENNEDY, Bedford Conservatory, Covent Garden, London.

P.S. Also, R. Kennedy's General Catalogue of British and Foreign Ferns forwarded on receipt of six postage stamps.

FLEMING'S HYBRID CASHMERE MELON.—The above new Melon was raised by Mr. Fleming at Trentham, and exhibited by him for the first time at the Great Meeting of the Horticultural Society of London at Chiswick on the 10th June last against a multitude of competitors, when it was awarded the first prize, and pronounced by the judges to be very far superior to all others produced, and decidedly the best Melon known. The entire stock is in the hands of the undersigned. Packets of Six Seeds, 2*s.* 6*d.*; of 15 do., 5*s.*

R. GLENDINNING, Chiswick Nursery, London.

GARAWAY, MAYES, AND CO. having succeeded in sav_ng some fine SEEDS of that truly magnificent Lily, LILIUM GIGANTEUM, which are now well matured, they offer fine picked Seed at 25*s.* per 100. Fine, new, long prolific Cucumber Ne Plus Ultra, Victory of Bath, do. Syon House, Lord Kenyon's Favourite, Roman Emperor, Berkshire Champion, Manchester Hero, Pollington's Black Spine, Pollington's Early Prolific. Victory of Bath Melon, Bromham Hall, Camerton Court Green-flesh, Beechwood, with all other most approved kinds in cultivation, 1*s.*, 1*s.* 6*d.*, to 2*s.* 6*d.* per packet.

Durdham Down Nursery, Bristol, Dec. 23.

SPECIMEN IRISH YEWS.

THOMAS JACKSON AND SON, having a large Stock of fine specimens of this very ornamental tree, beg to offer them at the undernamed low prices.

8 to 9 feet high,	and 8 feet in circumference	...	63*s.* 0*d.* each.
8 „	and 4 to 5 feet „	...	21 0 „
7 to 8 „	and 4 feet „	...	15 0 „
6 to 7 „	and 3 to 4 feet „	...	10 6 „
6 „	and 3 feet „	...	7 6 „

Handsome smaller specimens at proportionately lower prices.

Kingston, Surrey.

J. LANCASTER, MARKET GARDENER, Edward Street, Deptford, begs to offer the following Surplus Stock of ASPARAGUS, &c.:—

Five Thousand 3-year old ASPARAGUS, planted expressly for Forcing, per 100	8*s.* 0*d.*
SEAKALE, ditto ditto	7 0
SEEDLING ASPARAGUS, ditto	2 0
SEEDLING KALE ditto	2 6
WALCHEREN CAULIFLOWER SEED, warranted very true, per lb.	12 0

GODFREY'S BLACK SPINE.

SPLENDID AND PROLIFIC FRAME CUCUMBER.

WOOD AND INGRAM beg to offer seeds of the above beautiful variety. Colour, magnificent dark green, with a very fine bloom; average length, 18 to 21 inches, and produces in great abundance through an entire season. Packets, containing 12 seeds, 2*s.* 6*d.*; 6 ditto, 1*s.* 6*d.*

W. & I. will be happy to refer any persons wishing further information respecting the variety to three or four Noblemen and Gentlemens' Gardeners who have grown it, and prefer it to any other.

London Agents: Messrs. HURST & M'MULLEN, 6, Leadenhall Street.

W. & I. have also the following esteemed varieties to offer, in packets, 1*s.* each, containing 12 seeds:—

Sion House	Sagg's Royal Exhibition
Barnes's Fearnought	Conqueror of the West
Walker's Prolific	Improved Sion House
Constantine's Incomparable.	Manchester Hero.

Huntingdon Nurseries, Dec. 23.

MANGOLD WURZEL SEED.

TO BE SOLD, LONG RED and YELLOW GLOBE, this year's seed, from superior stock.—Apply to R. S. HEWS, Kelvedon, Essex.

EARLY SEED POTATOES.—Jackson's Improved Thorough High-bred Early Ashleafs, price 9*s.* per bushel, and the celebrated Short-tops, 7*s.* 6*d.*, are unequalled for quality and yield; they by far surpass the "old stock," which is generally a sluggish bearer. British Queens, 7*s.* 6*d.*, the earliest round variety, known; Early Frame and Ashleaf Seedlings, 8*s.*; Regents, from prepared cuttings, 6*s.* Free to London; no charge for sacks. All orders must be accompanied with a remittance.—JOSEPH WILSON, Seedsman, Ipswich.

FIVE HUNDRED BUSHELS OF POTATOES TO THE ACRE.—This enormous crop was grown this year by a gentleman in Surrey, and out of which there were only 5 bushels diseased; nearly all the quantity were large sized, some weighing 2lbs. and 1 oz., and not above 30 bushels of Chats out of the whole. This Potato was originally reared in Scotland, and is called by its grower the Scottish Champion. It is a good baker and boiler. Price 2*l.* 2*s.*, inclusive of the sack of 3 bushels, delivered free at the South Western Railway station in London. Early application is necessary, as only a few sacks are for sale, the party growing intending to plant largely next season. A reference as to the quantity and quality can be given in the neighbourhood.—Apply by letter, post-paid, to B. S., 4, Crooked Lane, London Bridge, where samples may be seen, and the name of the grower given.

All orders must be accompanied by a remittance.

BEAUTIFUL NEW PLANT.

LUCOMBE, PINCE, AND Co., are now prepared to send out their beautiful New VERONICA KERMESINA, raised by that eminent Horticulturist, J. Luscombe, Esq., of Coombe Royal, who sent specimens to Dr. Lindley at the time of its first flowering, who thus pronounced his first opinion of it:—

"*The variety sent with this was charming; a decided rose colour having mingled with the violet.*"

See also notice of Dr. Lindley in the *Chronicle* for December 2d, 1854, as follows:—

"*L., P., and Co.: Your V. Kermesina is a handsome dark variety of V. Speciosa, its beautiful large spikes of deep purplish crimson blossoms cannot fail to make it a favourite.*"

Price 7*s.* 6*d.* each.—A few extra sized specimens may be had. The usual discount to the trade when three or more are taken.

Exeter Nursery, Exeter, Established 1720.

PINES READY FOR MARKET.

GROWERS having the above Fruit for sale, will do well to apply or forward to GEORGE TAYLOR, Jun., Fruit Salesman, St. John's Market, Liverpool.

PIG RICE, 9*l.* per ton; 10*s.* per 112 lbs. POULTRY RICE; 14*s.* per 112 lbs. in bags of 168 lbs.; RICE MEAL, 8*l.* 10*s.* per ton.

At WILSHERE'S, 2, Talbot Court, Gracechurch Street, London.

WILLIAM BARRATT, LANDSCAPE GARDENER, Wakefield.

*** Plans and Estimates furnished.

Now ready, price 3*d.*, or Stamped 4*d.*,

PUNCH'S ALMANACK FOR 1855. Illustrated by JOHN LEECH and JOHN TENNIEL.

Office, 85, Fleet Street.

This day is published, in a handsome folio volume, price 12*s.*, containing upwards of 600 Wood Engravings,

PICTURES OF LIFE AND CHARACTER, FROM THE COLLECTION OF MR. PUNCH. By JOHN LEECH.

BRADBURY & EVANS, 11, Bouverie Street.

On the 30th will be published, price 1*s.*, No. XVI. of

"THE NEWCOMES." By W. M. THACKERAY. With ILLUSTRATIONS by RICHARD DOYLE.

☞ The First Volume is completed, and may be had, bound in cloth, price 13*s.*

BRADBURY & EVANS, 11, Bouverie Street.

On the 30th of December will be published, price 2*s.*, Part XXI. of the

ENGLISH CYCLOPÆDIA, extending the NATURAL HISTORY DIVISION from LOCOMOTION OF ANIMALS, to MALVA, and the GEOGRAPHICAL DIVISION from LIGURIAN APENNINES to LYDIA, and including articles on Lima. Limburg, Linz, Lipari Islands, Lippe, Lisbon, Lithuania, Liverpool, Livonia, Livorno (Leghorn), Lombardo-Venetian Kingdom, London, Louisiana, Lübeck, Lucca, Lüneburg, Luxemburg, Luzern, &c.

BRADBURY & EVANS, 11, Bouverie Street.

This day is published, price 3*d.*, or Stamped for post, 4*d.*,

THE SEVEN POOR TRAVELLERS, being the CHRISTMAS NUMBER of HOUSEHOLD WORDS, conducted by CHARLES DICKENS, and containing the amount of One Regular Number and a Half.

Office, 16, Wellington Street North, Strand; and sold by all Booksellers and Newsvenders.

HOUSEHOLD WORDS.—Conducted by CHARLES DICKENS. On the 30th inst. will be published, Price Fourteen-pence, Part 57 of "HOUSEHOLD WORDS," containing besides the usual number of Articles, "THE SEVEN POOR TRAVELLERS," being the EXTRA CHRISTMAS NUMBER.

Office, 16, Wellington Street North, Strand. Sold by all Booksellers and Newsvenders.

Price 4*d.*, sewed,

CEMETERY CONSTRUCTION AND REGULATION. Instructions issued by the Secretary of State for the Home Department to guide Burial Boards in providing Cemeteries; also the Home Office Regulations for conducting Interments in Burial Grounds; with Introduction and Index. By JAMES J. SCOTT, of the Middle Temple, Barrister-at-Law.

London: KNIGHT & COMPANY, 90, Fleet Street, Publishers by Authority to the General Board of Health and the Poor Law Board.

BOOKS AND FORMS REQUIRED UNDER THE BURIALS ACTS, 1852, 1853, 1854, published by KNIGHT AND COMPANY, 90, Fleet Street, London.

Notice of a Vestry Meeting to consider the providing of a Burial Ground	per dozen each, 1*s.*, or 1 dozen each, by post, prepaid, 3*s.* 6*d.*		
Transmitting Copy of Resolution of Vestry to provide Burial Ground, to Secretary of State			
Requisition to convene Meeting to provide Burial Ground			
Minute Book, foolscap, with Index	£1	5	0
Ledger „ „	1	5	0
Letter Book „ „	0	16	0
Cash Book „	0	16	0
Book for Entry of Copies of Contracts made by Burial Board, each	1	1	0
Book for Entry of Fees Received and Paid for Burials, &c., 1*l.* 5*s.*; smaller ditto	0	16	0
Register of Graves, 1*l.* 5*s.*; smaller ditto	0	16	0
Register of Purchased Graves, 1*l.* 11*s.* 6*d.*; smaller ditto	1	1	0
Register of Burials (as the Act directs), 5000 names, 3*l.* 3*s.*; ditto 4000 ditto, 2*l.* 12*s.* 6*d.*; ditto 3000 ditto, 2*l.* 2*s.*; ditto 2000 ditto, 1*l.* 11*s.* 6*d.*; ditto 1000 do, 1*l.* 1*s.*			

☞ The Register of Burials may be had of any size to order, and the Name of the Burial Board printed in where required without extra charge. It may also be had on Vellum or Parchment.

Index Book to Register of Burials ... ... Each	0	16	0
Certificates of Burial, in books of 100 Certificates „	0	5	0
Contract and Bond for Works ... ... „	0	1	0
Requisition to convene Ordinary, Adjourned, or Extraordinary Meeting of Members, per quire	0	2	6
Notice of Ordinary, Adjourned, or Extraordinary Meeting of Members, per quire...	0	2	6
Notice of Members of Burial Board to Overseers of the Poor to pay Contribution from Poor Rates, with Counterpart, in books, each	0	5	0
Yearly Statement of Auditors, per quire	—		

The other Forms required under the several Burial Acts are in preparation, and may be obtained, on application, from KNIGHT & COMPANY, and any of the Books can be had bound in russia, calf, &c., to order.

Seals of Burial Boards prepared in Steel, with Ivory Handles, of the very best workmanship, of which Specimens may be had, post free, on application.

Plans of Burial Grounds drawn and lithographed to order.

Table of Fees charged in Burial Grounds, printed and framed to order.

Embossing Press, with Die and Counterpart, complete.

London: KNIGHT & COMPANY, 90, Fleet Street, Publishers by Authority to the Poor Law Board and the General Board of Health.

In 16mo. price 3*s.* 6*d.*; or in 3 Parts, 1*s.* each.

RUSSIA. By the MARQUIS DE CUSTINE. Translated from the French.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

LORD CARLISLE'S NEW WORK.

Fourth Edition, in 1 vol. post 8vo. price 10*s.* 6*d.*

DIARY IN TURKISH AND GREEK WATERS. By the Right Hon. the EARL OF CARLISLE.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

THE ABBE HUC'S NEW WORK.

On Friday, Jan. 5, will be published, in 2 vols. 8vo.

THE CHINESE EMPIRE: a Continuation of Huc and Gabet's "Travels in Tartary and Thibet." By the ABBE HUC, many years Missionary Apostolic in China. Copyright Edition, translated from the French with the Author's sanction.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

Second Edition, revised, in fcp. 8vo, price 5*s.*

PSYCHOLOGICAL INQUIRIES, in a Series of Essays intended to illustrate the Influence of the Physical Organisation on the Mental Faculties. By SIR BENJAMIN C. BRODIE, Bart., D.C.L. V.P.R S, Corresponding Member of the Institute of France, &c.

London; LONGMAN, BROWN, GREEN, and LONGMANS.

On Saturday next, in 16mo., price 1*s.*,

VOYAGES AND DISCOVERIES IN THE ARCTIC REGIONS, from the 16th Century to the Return of Dr. Rae in October last. Edited by F. Mayne. Forming Part 73 of the Travellers' Library.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

The Ninth Edition, in One Volume, medium 8vo, with 36 Woodcut Illustrations, price One Guinea,

BOWDLER'S FAMILY SHAKSPEARE.—This is the only Shakspeare which can be read aloud in Families. *** Also a New Edition (with the same Illustrations) in Six Pocket Volumes, price 5*s.* each.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

PROFESSOR LINDLEY'S INTRODUCTION TO BOTANY, 4th Edition, with Corrections and Additions, now ready, in 2 vols. 8vo, with Six Copper Plates and numerous Wood Engravings. Price 24*s.* cloth.

London: LONGMAN, BROWN, GREEN, & LONGMANS.

In fcp. 8vo, with Woodcuts, price 7*s.* 6*d.*,

PROFESSOR BRANDE'S LECTURES on the ARTS connected with ORGANIC CHEMISTRY as APPLIED to MANUFACTURES, including Dyeing, Bleaching, Calico-Printing, Sugar Manufacture, the Preservation of Wood, Tanning, &c., delivered before the Members of the Royal Institution. Arranged by permission from the Lecturer's Notes by J. SCOFFERN, M.B.

London: LONGMAN, BROWN, GREEN, & LONGMANS.

In fcp. 8vo, price 10*s.* each, cloth, 12*s.* roan, or 12*s.* 6*d.* calf.

MAUNDER'S TREASURY OF KNOWLEDGE and Library of Reference; A Popular Compendium of Universal Knowledge: Comprising a Grammar, Dictionary, Gazetteer, and a large amount of other Miscellaneous Information. The Twenty-first Edition, revised throughout; with Additions.—Also, all uniform in size and price:—

THE SCIENTIFIC and LITERARY TREASURY.
THE TREASURY of NATURAL HISTORY.
THE HISTORICAL TREASURY.
THE BIOGRAPHICAL TREASURY.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

On Friday next will be published, in One Volume, 8vo. with 159 Engravings on Wood,

FOOD AND ITS ADULTERATIONS: Comprising the Reports of the Analytical Sanitary Commission of "The Lancet" for the years 1851 to 1854 inclusive, on Food and its Adulterations. By ARTHUR HILL HASSALL, M.D., &c., Chief Analyst of the Commission; Author of "The Microscopical Anatomy of the Human Body." Illustrated by Woodcuts, showing the intimate Structure of the greater number of the Vegetable Substances employed as articles of Food, also the majority of the Substances used for Adulteration.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

New and *cheaper* Edition, crown 8vo, 10*s.* 6*d.* boards; 21*s.* morocco, by Hayday.

SIR ROGER DE COVERLEY. By "THE SPECTATOR." With Notes and Illustrations by W. HENRY WILLS; and Twelve Wood Engravings by JOHN THOMPSON from Designs by FREDERICK TAYLER.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

Just published, in crown 8vo, price 9*s.* 6*d.*,

THE LAST OF THE OLD SQUIRES: A Sketch. By CEDRIC OLDACRE, Esq., of Sax-Normanbury, sometime of Christ Church, Oxon.

"That the sterling wisdom which is spread forth in this volume like a feast may be laid to heart by those on whose comprehension of their position the destinies of this country are dependent must be the wish of every thoughtful reader, as it was evidently the aim of the writer, of one of the most exquisite books that we have for many a long day had under our hands."—*John Bull.*

London: LONGMAN, BROWN, GREEN, and LONGMANS.

In One Volume, with 118 Woodcuts of all the Plants mentioned in the Bible, price One Guinea.

A SCRIPTURE HERBAL. By Lady CALLCOTT. "My chief object and aim in writing this book has been to induce those who read and love God's written word, to read and love the great unwritten book which he has everywhere spread abroad for our learning."—*Author's Preface.*

London: LONGMAN, BROWN, GREEN, and LONGMANS.

ACTON'S COOKERY BOOK.

The Fourteenth Edition, in fcp. 8vo, price 7*s.* 6*d.*

ELIZA ACTON'S MODERN COOKERY, reduced to a System of Easy Practice: With Directions for Carving.

London: LONGMAN, BROWN, GREEN, and LONGMANS.

NEW AND ENLARGED EDITIONS OF HUDSON'S WILLS AND EXECUTORS, CORRECTED TO THE PRESENT TIME.

Just published, in foolscap 8vo., price 6*s.* boards.

THE EXECUTOR'S GUIDE. By J. C. HUDSON, Esq., late of the Legacy-Duty Office, London. A New and Enlarged Edition; with the Addition of Directions for Paying Succession Duties on Real Property under Wills and Intestacies, and a Table for finding the values of Annuities and the Amount of Legacy and Succession Duty thereon.

Also, in foolscap 8vo, price Half-a-Crown,

Mr. HUDSON'S PLAIN DIRECTIONS FOR MAKING WILLS in conformity with Law.

London: LONGMAN, BROWN, GREEN, & LONGMANS.

Printed by WILLIAM BRADBURY, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and FREDERICK MULLETT EVANS, of No. 27, Victoria Street, in the Parish of St. Margaret and St. John, Westminster, both in the County of Middlesex, Printers, at their Office in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be ADDRESSED TO THE EDITOR.—SATURDAY, December 23, 1854.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Stamped Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 52.—1854.] SATURDAY, DECEMBER 30. [PRICE 6*d*.

INDEX.

Aquilegia californica .... 836 *b*
Beet, to store .... 838 *c*
Books noticed .... 839 *a*—845 *b*
Botanic Garden, Glasgow .... 840 *a*
Caledonian Hort. Society .... 838 *c*
Calendar, horticultural .... 840 *a*
— agricultural .... 845 *c*
Carnations, training of .... 839 *c*
[illegible], vegetable .... 839 *a*
Cattle, pedigrees of .... 844 *b*
Cirencester Farmers' Club .... 844 *c*
Dioscorea Batatas .... 838 *c*
[illegible] "Word in Season to" .... 842 *b*
Farming, deep and shallow .... 844 *c*
Flax culture, improving .... 845 *c*
Forests, Royal .... 835 *b*
Glasgow Botanic Garden .... 840 *a*
Hexacentris mysorensis .... 837 *b*
Holcus saccharatus .... 835 *c*
Land, value of .... 844 *b*
Lois-Weedon Wheat growing .... 842 *b*
Manure, sewage .... 836 *a*
— Coveney's economical .... 841 *c*
— Chinese economy of .... 845 *b*
Pathology, vegetable .... 835 *b*
Pears, Beurré Superfin .... 838 *b*
Pears, Cumberland .... 838 *b*
Pear trees, sale of .... 840 *a*
— — culture of .... 836 *c*
Persia, expedition to .... 837 *b*
Plants, new .... 836 *b*
— American .... 839 *b*
Poultry show, Birmingham .... 846 *a*
Railway, Boydell's endless .... 842 *a*
Rhodendrons, hardiness of .... 837 *c*
Roses, exaggerated description of .... 840 *a*
Rye-grass, Italian .... 843 *c*—844 *a*
Seeding, thin .... 844 *b*
Sewage, manure .... 836 *a*
Talpa, or Chronicles of a Clay Farm, noticed .... 845 *b*
Tenant, incoming .... 845 *b*
Tillage, deep and shallow .... 844 *c*
Vegetable pathology .... 836 *b*
Vinegar plant .... 840 *c*
Vine borders, Mr. Nash's .... 840 *c*
Waterer's (John) catalogue .... 839 *b*
Wheat growing, Lois-Weedon .... 842 *b*
Woods and forests .... 835 *b*

THE BRITISH POMOLOGICAL SOCIETY meets at the rooms, 20, Bedford Street, Covent Garden, London, on the first MONDAY of every month, to receive communications respecting Fruits and Fruit Trees, for the Election of Members, and for General Business.

All communications and packages containing specimens of Fruits, to be addressed to ROBERT HOGG, Secretary.

GARDENERS' BENEVOLENT INSTITUTION. SEVENTH APPLICATION.

HENRY SCHNEIDER, of Ford, Colerne, Chippenham, through his Advertisement, again appeals to the sympathy and kind support of the Subscribers of this Institution, being now 90 years of age, and in very destitute circumstances. His testimonials remain unimpaired, and he is encouraged to make another application to his kind friends who have hitherto favoured him with their votes, and other subscribers who will charitably lend him their aid at the forthcoming election in January next.

The following gentlemen will be gratified in receiving proxies in his favour:—Mr. Gregory, Cirencester, Gloucestershire; Mr. Burbank, Grittleton, Chippenham, Wilts; Mr. Spencer, Bowood, Calne, Wilts; Messrs. Garraway, Mayes, & Co., Bristol; Mr. Trotter, Badminton, Chippenham, Wilts; Messrs. Arthur Henderson & Co., Pine Apple Place, and John Arthur Henderson, Esq., 64, Hamilton Terrace, London.

PRIVETS.

WANTED, about 20,000 of the above Plants, from one to two years from cuttings well rooted.—Address, stating terms, &c., to BROWN & TAYLOR, Nurserymen, Hackney, London.

WANTED, PINASTER AND STRONG TRANSPLANTED QUICK.—Any party having stock of the above, stating size and price, will oblige R. WHITE, Nursery, Poole.—December 30.

WANTED, AMERICAN ARBOR-VITÆ, about 1 foot high. Quantity to offer, with price per thousand, may be addressed to HUGH LOW & Co., Clapton Nursery, London.

LARGE STOCK OF LARCH.

LUCOMBE, PINCE, AND CO., have a very large stock of fine, stout, well-rooted twice-transplanted Larch, from 2 to 3 feet and 3 to 4 feet high, which they can offer at very low prices. Particulars may be had on application to the Exeter Nursery, Exeter. Established 1720.

FINE TRAINED FRUIT TREES IN A BEARING STATE.

LUCOMBE, PINCE, AND CO., have this season for Sale a remarkably healthy stock of fine trained FRUIT TREES of all the best sorts, to which they respectfully beg to call immediate attention. Prices and particulars to be had on application to LUCOMBE, PINCE, & Co., Exeter Nursery, Exeter.

ESTABLISHED 1720.

SEEDLING FOREST TREES AND SHRUBS.

DAVID REID AND SON, NURSERYMEN AND FLORISTS, Leith Walk, Edinburgh, beg to direct the attention of the trade to their Stock of Seedlings as above.

Catalogues free on application.

FRUIT TREES, FOREST TREES, EVERGREEN SHRUBS, &c. Catalogues of the above may be had on application to WILLIAM BARRATT, Wakefield.

☞ A quantity of fine Transplanted White Thorns.

SPECIMEN IRISH YEWS.

THOMAS JACKSON AND SON, having a large Stock of fine specimens of this very ornamental tree, beg to offer them at the undernamed low prices.

8 to 9 feet high, and 8 feet in circumference ... 63*s*. 0*d*. each.
8 " and 4 to 5 feet " ... 21 0 "
7 to 8 " and 4 feet " ... 15 0 "
6 to 7 " and 3 to 4 feet " ... 10 6 "
6 " and 3 feet " ... 7 6 "

Handsome smaller specimens at proportionately lower prices.
Kingston, Surrey.

LARCH AND SPRUCE TREES.

TO BE SOLD by private contract, at Edgefield, near Holt, Norfolk, 250,000 Excellent LARCH PLANTS, transplanted, 2 to 4 feet; 20,000 ditto SPRUCE ditto, ditto, 1 to 3 feet.—For price, &c., apply to Mr. ALEX. LAWRIE, Edgefield; if by letter, to be post paid.

PINE PLANTS.

TO BE SOLD, about 200 PINE PLANTS in fine order, principally the Bacaxi, a very superior sort from the North of Brazil. Would be exchanged for good Greenhouse Plants.—Apply H., 25, Faulkner Street, Manchester.

MANGOLD WURZEL SEED.

TO BE SOLD, LONG RED and YELLOW GLOBE, growth of 1854, from superior stock.—Apply to R. & HAWS, Kelvedon, Essex.

RENDLE'S PRICE CURRENT AND GARDEN DIRECTORY for 1855 *is now published, price* 6d. *To be had of all Booksellers, and from* WILLIAM E. RENDLE & Co., *Seed Merchants, Plymouth.*

LILIUM LANCIFOLIUM, NEW GLADIOLI, AND OTHER BULBS FOR SPRING PLANTING. See SUTTON & SON'S Seed and Plant List, just published, price 6*d*., or gratis to purchasers.

PRICED NURSERY CATALOGUES.

A. PAUL AND SON will be happy to forward the following priced Nursery CATALOGUES in return for one postage stamp each:—A, ROSES; B, ORNAMENTAL TREES AND CONIFERS; C, FRUIT TREES; D, HERBACEOUS PLANTS; F, GREENHOUSE PLANTS, &c.; G, SEEDS; H, HOLLYHOCKS; I, BULBS.—Nurseries, Cheshunt, Herts.

TO THE SEED TRADE.

ABRAHAM HARDY AND SON, SEED GROWERS, beg to announce that their Wholesale Priced CATALOGUE of SEEDS, growth 1854, is now ready, and may be had on application.—Maldon, Essex, December 30.

EXOTIC NURSERY, CHELSEA.

JAMES VEITCH, JUN., will be happy to forward his new Retail VEGETABLE, AGRICULTURAL, AND FLOWER SEED LISTS on application, and desires to assure those who may kindly favour him with their orders, that he has spared no pains in procuring his supplies from the first growers on the Continent as well as in this country, and that he will use his best endeavours to give his customers entire satisfaction.

TO THE SEED TRADE.

DAWE, COTTRELL, AND BENHAM'S (successors to Frederick Warner) Wholesale LIST OF AGRICULTURAL AND GARDEN SEEDS is now ready.—3, Laurence Pountney Lane, London. Established 1720 at 28, Cornhill.

DAWE, COTTRELL, AND BENHAM'S Wholesale FLOWER SEED CATALOGUE is now ready for the Trade. Post free on application.—3, Laurence Pountney Lane, and 36, Moorgate Street, London.

Established 1720 at 28, Cornhill.

SEED GROWERS' SOCIETY.—The Members of the above Society are now prepared to send LISTS of AGRICULTURAL, GARDEN, and FLOWER SEEDS to those who are desirous of having them genuine and direct from the Growers.—Applications addressed to the Secretary, JOHN MOSS, Jun., Feering, Kelvedon, Essex, will meet with prompt attention.

ROBERT KENNEDY, Agent for Messrs. Platz and Son, Seed Growers, Erfurt, has much pleasure in announcing he has received their Catalogue of Flower and Vegetable Seeds for the trade for 1855, which abounds with new articles of great interest, and will be forwarded, per post, on application to R. KENNEDY, Bedford Conservatory, Covent Garden, London.

P.S. Also, R. Kennedy's General Catalogue of British and Foreign Ferns forwarded on receipt of six postage stamps.

GERMAN FLOWER SEEDS.

MOSCHKOWITZ AND SIEGLING, Erfurt, beg to inform the trade that their new Wholesale Catalogue of Choice German and other Flower Seeds, is now ready, and may be had on application to their Agent, Mr. H. HENKEL, 70, Fenchurch Street, London.

AMERICAN PLANTS.

JOHN WATERER begs to announce that he has published a new Catalogue of his Rhododendrons, &c., as exhibited by him in the Gardens of the Royal Botanic Society, Regent's Park, London. It describes the colours of all the Rhododendrons considered worthy of cultivation, with a Treatise on their successful management, and may be had by enclosing two postage stamps.

The American Nursery, Bagshot, Surrey, near Farnborough Station, South-Western Railway.

AMERICAN NURSERY.

GEORGE BAKER'S DESCRIPTIVE CATALOGUE OF AMERICAN PLANTS, &c., as exhibited by him in the Royal Botanic Gardens, Regent's Park, may be had by inclosing two postage stamps.

G. B. begs to call attention to his fine stock of Weeping Hollies, Coniferous Plants, Ornamental Shrubs, &c.—American Nursery, Windlesham, near Bagshot, Surrey, near Staines Station, South-Western Railway, where conveyances may be obtained.

AMERICAN PLANTS.—A Descriptive Priced CATALOGUE of HARDY AMERICAN PLANTS for the coming season is just published, and may be had by enclosing two stamps for postage. As everything in the way of American Plants is grown to an unequalled extent at this Nursery, intending purchasers would do well to provide themselves with this Catalogue.

WATERER AND GODFREY, Nephews and Successors to the late Hosea Waterer, Knap Hill Nursery, Woking, Surrey.

EARLY DANIEL O'ROURKE PEAS.

J. G. WAITE begs to inform the Trade that he is now ready to execute orders for this valuable early Pea. Price can be had on application.

Seed Establishment, 181, High Holborn, London.

NONPAREIL PEAS.

WILLIAM FAIRBEARD begs to inform the trade that he is now ready to execute any orders he may be favoured with. This Pea W. F. is confident will become a general favourite both for Garden and Field culture. Price can be had on application.—Mount Pleasant Nursery, Queen Street, Sittingbourne, Kent.

SEED WHEAT.—Samples and Prices of RED HYBRID, NURSERY, and other kinds of Wheat from the CHALK, sent on application to Mr. H. RAYNBIRD, Basingstoke.

The Red Hybrid and Nursery are well suited for late sowing after Turnips.

GLENNY'S SUPERB BALSAM SEED from the largest and most double Flowers in the world. Six classes, 37 stamps; 50 seeds mixed, 13 stamps—In sealed packets only—with Directions for Culture.—Letters to Mr. GLENNY, Horticultural Agent, Auctioneer, and Valuer, Dungannon House, Fulham.

THE PAMPAS GRASS "GYNERIUM ARGENTEUM."

LUCOMBE, PINCE, AND CO. have a fine healthy stock of this highly ornamental Plant well established in pots, and fit to send out immediately. It is universally admitted that few plants produce a more beautiful effect than this gigantic Grass. See woodcut and description of it in *Gardeners' Chronicle* of the 4th ult. Sizes, prices, and all particulars may be had on application to LUCOMBE, PINCE, & Co., Exeter Nursery, Exeter.

ESTABLISHED 1720.

SEED POTATOES.

SUTTON AND SONS, SEED GROWERS, Reading, have a large STOCK of the best early kinds of POTATOES, very true and free from disease. Prices, &c., with instructions on cultivation, will be found at page 20 of SUTTON'S Seed and Plant List, just published, price Sixpence (or gratis to purchasers).

SUTTON and SONS, Seed Growers, &c., Reading.

CHINESE POTATO. DIOSCOREA (JAPONICA) BATATAS.

SUTTON AND SONS have the pleasure of announcing that they have imported a stock of roots of the above valuable esculent, and can supply them at moderate prices, particulars of which will be seen at p. 41 of their new Seed and Plant List. The stock being limited, Messrs. SUTTON will consider it due to those who usually honour them with their commands, that they should have the preference, in the event of the demand being greater than the supply; for which purpose it is desirable that orders should be given immediately.

SUTTON and SONS, Seed Growers, Reading.

DIOSCOREA BATATAS—THE NEW CHINESE POTATO.—This new esculent was fully described by Professor Lindley in the *Chronicle* last week.

The Subscribers are now importing a choice lot of Roots, and can supply them on the following terms:—

Four Tubers	£0 10 0	Fifty Tubers	£5 5 0
Ten "	1 2 6	Hundred "	10 0 0

First Orders will have the best Roots.—Apply to WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

THE FLUKE KIDNEY POTATO.—This excellent variety is now planted here as the principal crop, being more free from disease and more prolific than any other in cultivation. It was raised in Middleton, and may be had genuine in any quantity at 5s. per bushel of 56 lbs.—Apply to JOHN HOLLAND, Bradshaw Gardens, Middleton, near Manchester.

THE FLUKE POTATO.—A new second early variety, surpassing every other in its capability of resisting the Potato disease, and without exception the finest and most prolific Potato in cultivation. Price per cwt., 15s., bags included.

To be had genuine of THORNHILL & DICKSON, Lawrence Hill Nurseries; and No. 1, Wine Street, Bristol.

NEW SEEDS JUST HARVESTED *can now be obtained of the most genuine description, from* WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

LYNCH'S STAR OF THE WEST CUCUMBER, *the best frame variety in cultivation. For description, see* RENDLE'S "*Price Current and Garden Directory*" *for* 1854.

Price 1*s*. 6*d*. and 2*s*. 6*d*. per packet.—Apply to WILLIAM E. RENDLE & Co., Seed Merchants, Plymouth.

ARTHUR HENDERSON AND CO. beg leave to inform their patrons and friends that their Stock of VEGETABLE and FLOWER SEEDS (containing many choice and new kinds) is now ready for sending out.

Their Seeds may be fully relied on as being in every respect of first-rate quality, and true to their sorts. Catalogues may be had on application.

Pine Apple Place, Edgeware Road, London.

NEW CAULIFLOWER.

WAITE'S "ALMA," far superior to Walcheren, very large and firm heads. Price to the trade 24*s*. per lb.; smaller quantities 2*s*. 6*d*. per oz. No orders attended to for less quantities than one ounce.—Seed Establishment, 181, High Holborn, London.

DILCOCK'S BRIDE BROCCOLI.

SIXPENCE PER PACKET.

BAINBRIDGE AND HEWISON (Proprietors of this far-famed Broccoli), beg to inform their friends and customers that they are prepared to send it out this season from selected stock of their own growth. The trade can have price on application, and early orders are respectfully solicited.

York Nurseries, Dec. 30.

RHUBARB ROOTS for FORCING or PLANTING.—Strong one-year planted roots of MYATT'S VICTORIA and LINNÆUS, MITCHELL'S ROYAL ALBERT, at 6*s*. per doz.; HOWARD'S PRINCE ALBERT, 12*s*. per dozen. This is a larger variety than the Victoria, and is extensively cultivated about Manchester. Price to the trade of the above, per 100 or 1000, on application to MESSRS. J. MYATT AND SONS.

Manor Farm, Deptford, Dec. 30.

FLEMING'S HYBRID CASHMERE MELON.—The above new Melon was raised by Mr Fleming at Trentham, and exhibited by him for the first time at the Great Meeting of the Horticultural Society of London at Chiswick on the 10th June last against a multitude of competitors, when it was awarded the first prize, and pronounced by the judges to be very far superior to all others produced, and decidedly the best Melon known. The entire stock is in the hands of the undersigned. Packets of Six Seeds, 2*s*. 6*d*.; of 15 do., 5*s*.

R. GLENDINNING, Chiswick Nursery, London.

R. PARKER begs to offer the following:—CINERARIAS (Seedlings), from all the finest varieties, carefully selected, including the new varieties sent out last autumn. Strong established plants, in 4-inch pots, at 4*s*. per dozen. A choice collection of named Cinerarias in strong established plants, purchaser's selection, at 9*s*. per dozen.

ROSES, consisting of the best varieties of Hybrid Perpetuals, Teas, Bourbons, &c., well established in pots. Purchaser's selection, at 12*s*. per dozen. List of names forwarded upon application.

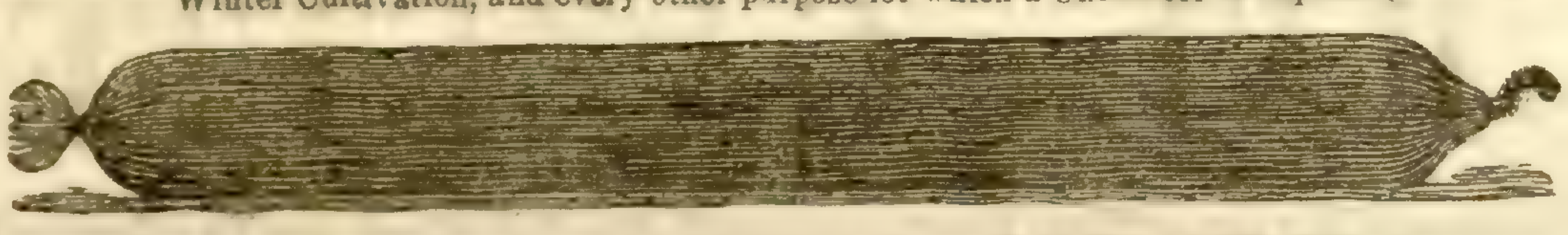
A remittance or reference to accompany all orders from unknown correspondents.

Paradise Nursery, Hornsey Road, Islington.

TWO NEW CUCUMBERS.

SIR COLIN CAMPBELL AND GENERAL CANROBERT.

THE ABOVE are two of the Finest and most Superb New Hybrid Cucumbers ever yet sent out for Exhibition, Winter Cultivation, and every other purpose for which a Cucumber is required.



SIR COLIN CAMPBELL CUCUMBER.

The above Cut is an exact representation of one of the fruit grown this summer, which measured exactly ten of its diameter long, being 25 inches, with not more than half an inch handle. It is a splendid Black Spine, of a dark green colour, and free from ribs or shrivels; grows very quick, sets free, and carries its bloom well. As a Cucumber for Exhibition nothing can surpass it, and is very prolific, often throwing out four or five fruit from every joint, and the vines are short jointed. The fruit is solid, and eats very crisp, and for market it keeps its bloom well for many days, not turning colour at the stem or point as most varieties do. Fruit was cut from the above in January last, and the same plants continued to produce fine fruit until the end of October.

GENERAL CANROBERT CUCUMBER.

This is also a most superb variety for winter cultivation, for which it is best adapted, being a hybrid from Lord Kenyon's Favourite and Phenomena. It has a great advantage over Kenyon's in length, growing to about 18 inches in the same time in which Kenyon's will grow 12 inches; it is equally as hardy and productive. Of a dark green appearance, Black Spine, and a free setter; fruits freely during the whole of the winter, and always grows a very even size from stem to point. It will swell off two or three fruit at a time on a plant, during the depth of winter, and carry them out well, which it does with less heat than any other: this has been proved when several varieties have been grown together, this having the coldest part of the house. The object of the raiser of the above superb varieties has been to obtain perfection and hardiness, in which he has succeeded, by continually hybridising different varieties.

Sold in Packets of Five Seeds, 3s. 6d. each, or 1 Packet of Sir Colin Campbell and General Canrobert for 6s.

The following fine varieties of Cucumbers and Melons, which have been thoroughly proved and have given the greatest satisfaction to all Purchasers, can be supplied.

CUCUMBERS.

Captivation ...	2s. 6d.	Hunter's Prolific ...	1s. 0d.		
Phenomena ...	2 6	Mills' Jewess ...	1 0		
Lord Kenyon's ...	2 6	Cheltenham Surprise ...	1 0		
Essex Hero ...	2 0	Manchester Prize ...	1 0		
Victory of Bath ...	1 0	Sion House True ...	1 0		
Gordon's White Spine ...	1 0	Cuthill's Black Spine ...	1 0		
Sunderland Wick ...	1 0	Conqueror of the West ...	1 0		

MELONS.

The Queen ...	1s. 0d.	Beechwood ...	1s. 0d.
Bromham Hall ...	1 0	Windsor Prize ...	1 0
Incomparable ...	1 0	Emperor ...	1 0
Golden Ball ...	1 0	Fleming's Hybd. Persian	1 0
Bowood ...	1 0	Blackall's Green Flesh	1 0
Victory of Bath ...	1 0	Bailey's "	1 0
Camerton Court ...	1 0	Snow's Hybrid ...	1 0

A Packet of either of the Melons will be given to all Purchasers of the two new Cucumbers advertised above.

A Remittance must accompany every Order by Cash or Penny Postage Stamps, and the whole, or any part (as the case may be), will be immediately forwarded.

EDWARD TILEY, NURSERYMAN, SEEDSMAN, and FLORIST, 14, Abbey Church Yard, Bath, Somersetshire.

The New Chinese Potato, Dioscorea (Japonica) Batatas.

MR. JOHN HENDERSON,

Formerly of the Firm of John A. Henderson & Co., Pine Apple Place, London,

HAS the pleasure of informing the Public that he has just completed the Purchase from M. Paillet, of Paris, of his entire Saleable STOCK of the above introduction from China, the nutritive properties of which are said so far to surpass the ordinary Potato that it is likely, not only to act as an auxiliary, but entirely to supersede that valuable but uncertain esculent.

The most satisfactory results have followed from personal experiments, and proved that when cooked in the ordinary manner, from the large amount of farinaceous properties it contains, it can never become waxy, as is too generally the case with the Potato. Its flavour resembles in delicacy an early Ash-leaved Kidney; but, independent of the above excellent qualities, there is every probability of its taking a still more important position in the economy of this country, for, when dried and reduced to powder, it is equal to the best Arrow-root; or mixed in the proportion of one-third with two-thirds of wheaten flour, it makes an extremely light and wholesome BREAD, as well as very superior PASTRY.

Messrs. Vilmorin & Co., speaking of it, observe:—"Of all the esculent roots proposed as substitutes for the diseased Potato, the DIOSCOREA JAPONICA is certainly the only important one. It is easily propagated. The tubers are large and long, the flesh very mealy and devoid of any peculiar or disagreeable flavour. The DIOSCOREA JAPONICA is, in our opinion, a precious acquisition."

M. Pelé, Horticulturist, Paris, in his Supplementary Catalogue of this autumn says:—"A new alimentary root, introduced into France by M. Montigny, French Consul in China. Serious experiments have shown that this tuber will be much more advantageous to cultivate than the Potato, both in regard to its quality as well as produce."

M. Paillet, to whom the Imperial Society of Agriculture and Commerce of France has awarded the sum of 3000 francs as encouragement for having brought it into cultivation, also notices that "this tuber attains at least 1 to 2 lbs. weight. In its growth it is less delicate than the Potato, which unfortunately has of late years much degenerated. It does not require particular care, and its abundant produce amply repays cultivation. Its taste is pleasant, and being a root which contains a large amount of farina, will be a great addition to the FOOD of the PEOPLE as soon as it becomes generally known. It is so hardy that it has passed the winters of 1853–4 in the open ground, without having in the least suffered from frost. It is also found that the stems and leaves, which are very numerous, form an excellent FOOD for CATTLE."

Tubers, with description of the Chinese Mode of Culture, to be obtained of Mr. JOHN HENDERSON, Kingskerswell, South Devon, at the following prices, for cash only:—

4 Tubers ... ... £0 10 0 | 10 do. ... ... £1 2 6 | 50 do. ... ... £5 5 0 | 100 do. £10 0 0

Post-office orders are requested to be made payable at Newton Abbot, South Devon. The usual discount allowed to the trade when not less than 50 are taken.—P.S. All orders unaccompanied by a remittance will be considered as not received.

To Farmers, Potato Growers, and Others.

JACKSON'S PATENT PREPARATION

FOR

PRESERVING POTATOES, WHEAT, AND OTHER SEEDS

From DISEASE, the RAVAGES of the SLUG, GRUB, and WIREWORM, in addition to which the CROPS are brought forward in HEALTH and VIGOUR, and the yield is greatly increased, in proof of which the following extracts are given from numerous letters received by Mr. Jackson.

EXTRACTS:—

"One of the fields of this farm, the property of Mrs. Stanbury, was planted with Regent's Potatoes in April last, some of which were prepared by you. The result now is, that the whole of the crop from the unprepared sets is thoroughly diseased, and hardly worth the trouble of taking up; while those raised by the side of them from the prepared sets, are not only in a beautiful state of preservation from the disease, but the produce is much greater,—the Potatoes are more numerous than the others; indeed, if there were no such thing as the disease to be feared, it would be worth the trouble and expense of preparing the sets by your process, even for the sake of the improved crops. I shall certainly, for the future, prepare all my Potatoes for seed by your process; and I intend to adopt it for preserving my Wheat from the Smut.

"G. B. Baxter.

"Belmont Farm, Eltham, Kent, August 28, 1854."

"Admiral Sir J. A. Gordon, K.C.B., Marlee House, Blairgowrie.

"Sir,—I have received your note of the 16th. The Potatoes that came here from England, prepared by Mr. Jackson, were planted in a piece of new ground, and according to the directions sent by him along with them as to distance between the plants, &c. They came up well, with strong healthy stems; I have now taken the whole crop up, and there is not the slightest appearance of any disease amongst them. They are of large equal size and very prolific. There were long black unprepared Kidneys planted in the same patch, and a great deal of them are not fit for use, at least a third part are diseased. I hope Mr. Jackson's process may be widely known, as it is a great boon.—I am, &c., John Shanks,

"Forester, Kildrummy Castle.

"Kildrummy Castle, Aberdeenshire, November 17, 1854."

"I am very much pleased with the result of the experiments I have made with your Prepared Potatoes; for I planted them, without any manure, in ground where for several years I have hardly had a sound Potato, and I now find the crop perfectly free from disease, and in a very fine condition; while those of the same sort, unprepared, which were planted at the same time, and next to them, are diseased and eaten by worms.

"The Potatoes from the Prepared Seed were so remarkably good that I was induced to weigh them, and I found, to my great astonishment, that they were as 200 to 150 of the others, or about 25 per cent. in favour of your preparation.

"T. Austen, Nurseryman and Seedsman.

"Blackheath, Kent, 24th August, 1854."

Sold by Messrs. Charlwood & Cummins, Seedsmen, Covent Garden; and John Kernan, Seedsman, 4, Great Russell Street, Covent Garden; all Seedsmen and Chemists; and at the Patentee's, 18, Cannon Street, London Bridge, in Packets of One, Two, Three or Four Pounds, or in Bulk for the use of Farmers and Potato Growers.

NEW PEA.

W. J. EPPS, Seed Merchant and Grower, Maidstone, has much pleasure in offering the following Pea, feeling assured it will give the highest satisfaction.

LORD RAGLAN, OR IMPROVED MAMMOTH.

This Pea was selected from Hair's dwarf Mammoth two years since, and is unquestionably the best and finest in cultivation, and will prove to be the standard Pea of the day. It is a dwarf green wrinkled marrow of very large size, and an immense cropper. Habit dwarf, branching 3 to 4 feet high, producing immense clusters of large bright green pods from the base of the haulm to the top, and similar in shape to the Scimitar, but of greater size, well filled with seven to ten Peas, which are larger than the British Queen, and equal, if not superior in its flavour.

Price, 5s. per Quart. Wholesale Prices to be had on application.

Agent: Messrs. Hurst and M'Mullen, Seed Merchants, Leadenhall Street, London.

NEW SORTS OF PEAS.

Carriage Free, except Parcels under 10s. value.

SUTTON and SONS *have much confidence in recommending the undermentioned* PEAS, *as being not only new and distinct from others, but also as possessing superior properties.*

Prices per peck or bushel may be had on application.

PRIZETAKER.—New, fine long green pods, which hang so closely as almost to cover the haulm from top to bottom. Numerous prizes were awarded to the Prizetaker last summer. This is the first season we have offered it for sale. Height 5 feet ... ...

BECK'S EARLY GEM.—New, prolific, and fine flavour; particularly adapted for narrow borders and for small gardens. Height 1½ foot ... ...

BECK'S ECLIPSE.—Similar to Scimetar, but earlier and more dwarf. Height 2 feet ... ...

SUTTON'S EARLY CHAMPION.—One of the forwardest sorts known, good flavoured, and prolific. This Pea is worth a much higher price, but having grown a large crop, we are enabled to offer it very moderate; 3 feet

WAITE'S DANIEL O'ROURKE.—A very popular variety, considered by some to be the forwardest Pea yet out. It should be tried against our Early Champion; 3 ft. high

FAIRHEAD'S EARLY CONQUEROR.—Height 3 feet

PAUL'S EARLY DWARF.—One of the most prolific early Peas, forming a complete mass of blossoms and pods. Height 2 feet ... ...

FAIRBEARD'S NONPAREIL.—New wrinkled marrowfat, very sweet, juicy, and prolific; 9 or 10 will be found in every pod, and the pods extremely numerous; 4 ft. high

WAITE'S KING OF MARROWS.—As large as British Queen, with fine green pods, very long and full; 6 ft. high

HAIRS' DEFIANCE.—Like Knight's tall, but earlier and not so tall; 5 feet high ... ...

HAMILTON'S NOVEMBER PROLIFIC.—Excellent for all seasons; 3 feet high ... ...

NE PLUS ULTRA.—One of the finest green wrinkled; 6 ft.

Sutton & Sons have a large stock of good old kinds at low prices, as see their Priced List, just published, price 6d., or gratis to purchasers.

Sutton & Sons, Seed Growers, Reading.

DICKSON'S EARLY FAVOURITE PEA.

FRANCIS and ARTHUR DICKSON and SONS, Seed Merchants, &c. Chester, have much satisfaction in introducing the above New Pea, which they believe they are perfectly justified in saying is the best and most prolific Early Pea in cultivation.

It has been tried side by side with all the best early and second early Peas of the day, and has been pronounced by many eminent gardeners who saw it under these circumstances to be much superior to any variety of its season hitherto introduced.

It comes in about a week later than the Early Emperor (sown at same time), grows about 4 feet high, and produces a wonderful profusion of pods, which contain on an average Ten Peas of excellent quality and flavour. It has been grown the last two seasons in the Gardens of the Horticultural Society, and Mr. Thompson, in reporting upon it, writes as follows:—

"Horticultural Society's Gardens, Dec. 20th, 1853.

"In reply to your inquiry respecting Dickson's Early Favourite Pea, I beg to state that I consider it a new and very *desirable* variety. It is very prolific in pods, and also as regards the number of Peas in the pods, and the quality is excellent. It most resembles the Auvergne, but is earlier than that excellent sort, and the pod is not so much hooked. "R. Thompson."

"Horticultural Society's Gardens, June 28th, 1854.

"I beg to hand you a copy of the memorandum which I made respecting your Early Favourite Pea, amongst others, again this season. About 4 feet high, very prolific; pods long, round, slightly curved, containing on an average nine to ten Peas of excellent quality. Bears some resemblance to the Auvergne, but differs in having straighter pods, and it is much earlier than the Auvergne. *An excellent prolific Early Pea.* "R. Thompson."

Price 3s. 6d. per quart; per pint, 2s.

Messrs. Hurst & M'Mullen, Seedsmen, &c., 6, Leadenhall Street, London Agents.

N.B. The trade supplied on liberal terms.

106, Eastgate Street, Chester, and 14, Corporation Street, Manchester.—December 30.

TO GENTLEMEN ENGAGED IN PLANTING.

WATERER and GODFREY respectfully invite attention to their stock of the following very desirable HARDY PLANTS.

Araucaria imbricata, from 2 to 7 feet high; as handsome as plants can be.
Cedrus Deodara, in any quantity, from 1 to 3 feet high
Do. do., 4, 5, 6, 7, 8, and 10 feet high; splendid plants
Cedars of Lebanon, 3, 4, 6, and 10 feet high
Pinus Douglasi, 3 to 10 feet
" insignis, 2 to 7 feet
" Menziesi, 3 to 7 feet
" pinsapo, fine plants, 3 to 6 feet
" Nordmanniana, 1½ to 3 ft., all from seed and remarkably handsome
" nobilis, 1½ to 2 feet; a few larger, 5 and 6 feet high, on their own roots, and with perfect leaders
" Montezumæ, 2 to 4 feet
Pinus canadensis, 3 to 8 feet
Cupressus macrocarpa or Lambertiana, 4 to 7 feet
" thyoides variegata, 3 to 4 feet (the variegated white Cedar)
Juniperus, Upright Irish, perfect columns, 3 to 7 feet
" chinensis, 2 to 5 feet
Yew, common English, 3 to 5 feet
" Irish, 4 to 10 feet
" gold-striped, 1½ to 3 feet
" do., tall standards, 4 to 7 ft.
" Dovaston, or Weeping, worked on tall straight stems
Thuja aurea, the finest plants in the country
Libocedrus chilensis, the finest plants in the country
Large variegated Hollies
" Standard Bays

Also an immense stock of large Evergreens, Standard Ornamental Trees, &c.

All the plants here offered may be seen, growing in the Nursery; they are removed every year, and will travel any distance with perfect safety. Of some, such as Araucaria, Deodaras, Golden Yews, Thuja aurea, Pinus nobilis, Nordmanniana, we have any quantity; and the plants, for root and branch, are not to be surpassed. Priced Catalogues will be forwarded on application, enclosing two postage stamps, to Waterer and Godfrey, nephews and successors of the late Hosea Waterer, Knap Hill Nursery, Woking, Surrey, near the Woking Station, South-Western Railway, where all trains stop, and where conveyances can be obtained.

The 2d. stamp will also include a descriptive Catalogue of the American Plants, Roses, and Nursery Stock in general.

Great Novelties for the Ensuing Season,
FUCHSIAS WITH WHITE COROLLAS.

LUCOMBE, PINCE and CO. beg leave to announce that they shall be prepared to send out two splendid and entirely novel Seedling Fuchsias, early in May next, viz.:—

FLORENCE NIGHTINGALE.
Pure white corolla, with brilliant scarlet sepals, finely reflexed; an extremely lovely and novel variety.

CALANTHIFLORA-PLENA
(The Double Snowdrop Corolla'd Fuchsia.)
Pure double white corolla, resembling a fine large double snowdrop, with rich scarlet sepals; altogether distinct from anything of the kind ever yet produced. Price 10s. 6d each.
The usual discount to the Trade when three or more are taken.
Exeter Nursery, Exeter.—Established 1720.

GENUINE GARDEN SEEDS.
LUCOMBE, PINCE, and CO., beg leave to announce that they have just completed their supply of the above, all carefully selected from the stocks of the best growers, superior in quality and economical in price, to which they respectfully call the attention of those who require a really genuine article. Their long experience in the Seed Trade (always also proving the vitality of their seeds before sending them out) fully justifies them in saying that their seeds cannot fail to give great satisfaction.—Catalogues may be had on application.
Exeter Nursery, Exeter. Established in 1720.

NOW READY.
SUTTON'S COMPLETE COLLECTIONS OF KITCHEN GARDEN SEEDS *are now ready, and should be ordered forthwith, by which a full supply of every kind of Vegetable Seed required during the whole year will be secured (including the best sorts yet introduced), and at a very small cost, viz.:—*

No. 1 Collection	... £3 0 0	No. 3 Collection	... £1 5 0
No. 2 do.	... 2 0 0	No. 4 do.	... 0 15 0

The quantities in each collection being apportioned to the size of the garden, Instructions on Cultivation will be enclosed with Nos. 1, 2, and 3. To secure the best sorts, orders should be given immediately, addressed
John Sutton & Sons, Seed Growers, Reading, Berks.

RENDLE'S COMPLETE COLLECTIONS OF KITCHEN GARDEN SEEDS *are now ready. They can be had to suit various sized Gardens at the following prices:—*

No. 1 COLLECTION	£3 0 0
„ 2 „	2 0 0
„ 3 „	1 5 0
„ 4 „	0 15 0

The quantities are fully detailed in their "Price Current and Garden Directory," a new edition of which is just published.
William E. Rendle & Co., Seed Growers, Plymouth.
Established 68 Years.

BASS and BROWN'S NEW AUTUMN CATALOGUE, supplied free for three Penny Stamps. They have this season a very fine and vigorous stock of the finest Roses, among which are a number of very superb new Continental varieties, consisting chiefly of the perpetual class. The following selections will be highly approved,

Roses.

100 Standards in 100 very superior varieties ...	... £7 10 0
100 „ 50 „ ...	... 6 10 0
50 „ 50 varieties ditto, all selected from perpetuals	4 0 0
100 dwarfs and half standards, or all dwarfs, in 100 very superior varieties	... 4 0 0
100 ditto in 50 varieties, ditto	... 3 0 0
50 ditto in 50 varieties, ditto, all from perpetuals	... 2 10 0
Fine mixed dwarfs, per 100	... 1 10 0

Hardy Herbaceous Plants, Hollyhocks, prize-named Gooseberries, Strawberries, Standard Dwarf and Trained Fruit Trees, Flower Roots, and a variety of desirable articles offered in selection for present planting, for which see *Gardeners' Chronicle*, Oct. 14, page 659, and Oct. 28th, page 690.—Goods, carriage free (not under 20s.), to all the London termini, and all Stations on the London and Norwich Colchester Line. Plants added gratis with orders of 40s. and upwards.
Seed and Horticultural Establishment, Sudbury, Suffolk.

CHARLWOOD and CUMMINS have to offer Seeds of the LILIUM GIGANTEUM in packets of 100 Seeds, at 2s., free by post. Also Acorns of the following varieties of American Oaks:—

Quercus alba	per quart 2s. 6d.
„ Banisteri	
„ obtusiloba	
„ nigra	
One-year's Seedling Plants of each ...	per 100 seeds 3s. 0d.
Abies pinsapo	ditto 8 0d.

They will also have in time for this Season's sowing Seed of the Osage Orange, at 4s. per lb., for which early orders are solicited. Their Catalogue of Agricultural, Garden, and Flower Seeds are ready, and will be sent free on application.
14, Tavistock Row, Covent Garden.

SUPERB HOLLYHOCKS, ROCKETS, SEEDS, ETC.
WILLIAM CHATER'S descriptive list of his superb HOLLYHOCKS, containing hints on their culture and observations on exhibiting, &c., may be had on application by enclosing a postage stamp. Packets of seed, consisting of 20 varieties, selected from the best show flowers, 5s.; 12 varieties, 2s 6d.; and from good double sorts, 1s.
Very superior Quilled German Asters, 12 distinct varieties, separate, 2s., mixed 1s. per packet. Also Choice French Asters, 12 varieties, separate, 3s., mixed, 1s. 6d. Fine Quilled African Marigolds, lemon and orange, 6d. per packet.
New Double Crimson ROCKET, excellent bedding plant for spring flowering, 6s. per dozen, or 2l. per 100. Double French White, 4s. per dozen, or 30s. per 100.
Saffron Walden Nursery, Dec. 30.

GARAWAY, MAYES, and CO. having succeeded in saving some fine SEEDS of that truly magnificent Lily, LILIUM GIGANTEUM, which are now well matured, they offer fine picked Seed at 25s. per 100. Fine, new, long prickly Cucumber Ne Plus Ultra, Victory of Bath, do. Syon House, Lord Kenyon's Favourite, Roman Emperor, Berkshire Champion, Manchester Hero, Pollington's Black Spine, Pollington's Early Prolific. Victory of Bath Melon, Bromham Hall, Camerton Court Green-flesh, Beechwood, with all other most approved kinds in cultivation, 1s., 1s. 6d., to 2s. 6d. per packet.
Durdham Down Nursery, Bristol, Dec. 30.

PYRAMIDAL PEAR TREES ON QUINCE STOCKS.
J. and J. FRASER have to offer a very fine collection of the best varieties of PEARS grafted on the Quince; descriptive Catalogues of which may be had on application. In offering these Pears, grafted on the Quince stock, we would wish particularly to call attention to their many excellent qualities. They are very compact in growth, and most prolific in bearing, fruiting profusely while the trees are small; thus forming a great acquisition for a small garden. Planted by the side of walks, in addition to their utility, they add much to the neatness and beauty of a kitchen garden. Indeed too much can scarcely be said in favour of these miniature Pear trees; as a proof of their merit the demand for them is yearly increasing. Strong Trees, showing Fruit Buds, 2s. 6d. to 3s. 6d. each.
Lea Bridge Road, Essex, December 30.

GODFREY'S BLACK SPINE.
Splendid and Prolific Frame Cucumber.
WOOD and INGRAM beg to offer seeds of the above beautiful variety. Colour, magnificent dark green, with a very fine bloom; average length 18 to 21 inches, and produces in great abundance through an entire season. Packets, containing 12 seeds, 2s. 6d.; 6 ditto, 1s. 6d.
W. & I. will be happy to refer any persons wishing further information respecting the variety to three or four Noblemen and Gentlemens' Gardeners who have grown it, and prefer it to any other.
London Agents: Messrs. Hurst & M'Mullen, 6, Leadenhall Street.
W. & I. have also the following esteemed varieties to offer, in packets, 1s. each, containing 12 seeds:—

Sion House	Sagg's Royal Exhibition
Barnes's Fearnought	Conqueror of the West
Walker's Prolific	Improved Sion House
Constantine's Incomparable.	Manchester Hero.

Huntingdon Nurseries, Dec. 30.

The Gardeners' Chronicle.

SATURDAY, DECEMBER 30, 1854.

This being the last number of the *Gardeners' Chronicle* for the present year, it seems desirable that the public should be made acquainted with the course which affairs have taken in the Woods and Forests since we last noticed them. It will be remembered that on the 1st of May Mr. Kennedy was dismissed from his office of Commissioner, and that Mr. Gore was charged with the duties of the right honourable gentleman until a successor could be found. Eight months have since elapsed and no successor has been nominated; not that the Treasury has been altogether idle, but because its industry has been abortive.

Finding that the removal of Mr. Kennedy met with no approbation except from a few gentlemen connected with Government, and not with all even of them, and seeing moreover that the public dissatisfaction was likely to find expression in a way by no means agreeable to the parties concerned, it was thought desirable to coax some of the opponents of the Treasury into acquiescence in what had happened; and the notable plan was hit upon of offering Colonel Romilly, *Mr. Kennedy's brother-in-law*, the office from which his sister's husband had been dismissed! What reply this very decent proposal received may be easily imagined. The scheme having failed, Lord Courtenay appears to have been asked to accept the vacant office, quitting the Poor Law Board, where he received 1500*l*. a year, for the commissionership of Woods and Forests, with a salary of 1200*l*. a year. The consideration which the noble lord was to have received for the surrender of 300*l*. a year will, we suppose, be known in due time. One thing, however, is notorious, namely, that he was to have been succeeded at the Poor Law Board by Mr. Hayward, Q.C., a friend, we believe, of the Duke of Newcastle. Unluckily for the Treasury, this agreeable arrangement caused such an outcry both "in Parliament and out of Parliament," that the advisers of Government shrank back aghast—the appointments, though announced, were abandoned—and the office held by Mr. Kennedy still remains open. Finally Sir John Shelley has given notice that he will move, immediately after the recess, for a committee to inquire into the circumstances attending the dismissal of the late commissioner. In the meanwhile the autumn has passed, and her Majesty's Woods and Forests still remain without the control of a chief officer responsible to Parliament.

The *Civil Service Gazette* hints, indeed, that Mr. George Arbuthnot is to be rewarded with this office, the transfer of Lord Courtenay not having been found practicable. Of Mr. Arbuthnot we know little, except that before Mr. Drummond's committee he gave some evidence, which we would not call discreditable if we could find a better epithet for it. Our contemporary, however, which seems to understand him, speaks of him in the following terms—"We warn the Treasury, and particularly Mr. Gladstone, who so emphatically and solemnly declared that the Commissionership of Forests 'was a place of too much importance to be hastily bestowed, and that the Government were in search of a duly qualified person to fill it,' that an antiquated Treasury obstructive is not the man, after all the trouble the Department of Woods and Forests has cost the House of Commons, to place in so important a post. As a Treasury Clerk, Mr. Arbuthnot knows nothing of that department. He is ignorant upon every subject, except what relates to the jobbery of its patronage for several years back, than which there could not be a greater disqualification for one who would undertake a task for which, Mr. Drummond says, 'less than Mr. Kennedy's virtue and intelligence will not suffice.' Not only as to the 'Woods and Forests' has Mr. George Arbuthnot obtained the unenviable distinction of opposing all change and reform, but, if he had had his way, no such men as a Trevelyan and an Anderson, at the Treasury, or a Bromley, at the Admiralty, would have been allowed so prominently to serve their country; whilst as long as he remains at the Treasury, reform in the Civil Service seems destined, through his influence, to keep pace with his tardy perceptions of its necessity."

Among the deputy-surveyors we hear of changes, but of nothing certain. It is reported that Sir James Campbell, a protégé of the Duke of Newcastle's, is promoted from Bere and Parkhurst to the Forest of Dean, that Mr. Higginbotham has taken charge of Bere and Parkhurst, and that Mr. Lipscombe still enjoys the Forest of Delamere. We cannot, however, authenticate these statements; they are only given upon what we believe to be good authority. Should it be true that Sir James Campbell is in charge of Dean Forest, his presence would not seem to be much respected there, for, according to the newspapers, robbery on an enormous scale is renewed in that lawless district, for the complete subjugation of which the friends of Mr. Machen, the late deputy-surveyor, have insisted that he deserved the greatest credit, if for nothing else.

A novelty has this year appeared in the form of a tall, reedy grass, called Holcus saccharatus, of whose economical value we find that great expectations are entertained. What has more especially brought it into notice is the recent French law prohibiting the distillation of spirit from grain. A specimen was exhibited before the Horticultural Society some weeks since by Mr. Ingram, who had raised it in the Royal Garden at Frogmore; but so little had at that time been heard of it that it attracted small attention. Now, however, that our neighbours are actively engaged in experimenting on its qualities, it is as well that what has been published concerning it should be made known; and we, therefore, give the following translation of a paper on the subject by the distinguished French horticulturist, M. Louis Vilmorin.

"An incorrect account of the Holcus saccharatus which I presented to the Central Society of Agriculture, at its sitting of the 18th of January, having appeared in the *Moniteur Universel* of the 20th of January, 1854, and having thus prematurely drawn attention to this plant, attributing to it, by an error of figures, qualities which, if they had been real, would easily have justified the rapidity with which the article was copied into many of the journals, in order to prevent the further propagation of these false notions, I am now obliged to return to the notice of this plant, to which I should not otherwise have reverted till I had more completely studied it.

"The plant in question, which I presented to the Agricultural Society in the name of one of its correspondents, M. Rantonnet, of Hyères, is called *Holcus saccharatus*. It has long been known, and was even cultivated in Italy in the beginning of the present century; but whether owing to the methods of extraction known at that time being not sufficiently good to be used with advantage, or that the variety was not so rich in saccharine products as that which we now possess, its cultivation was abandoned.

"Four years ago, M. de Montigny, the French Consul at Shanghae, sent to the Geographical Society a collection of seeds, among which was found labelled "Sugar Cane of the north of China." The seeds were liberally distributed by the Geographical Society, and this year I had in cultivation a small lot which I had received from one of my correspondents in Champagne, M. Ponsard, of Omey. The plant is the same, botanically, as the *Holcus saccharatus* formerly cultivated by L. Arduino, and the letter of M. Rantonnet, by which I was intrusted to present it in his name to the Agricultural Society, has enabled me to trace the source of this new introduction to the collection of seeds forwarded by M. de Montigny. The way in which the plants were obtained being thus regularly established, I may now state the nature of the carefully conducted experiments to which they were subjected.

"One stem, weighing 6944 grains, gave on the first trial, made October 13th, 231½ grains of limpid juice with no other flavour than that of sugar and water. The juice obtained from the whole stem yielded 10.8 per cent. of its weight of sugar.

"Another trial, made with the saccharometer, Nov. 28th, gave results varying from 14.6 to 13.8 per cent. of sugar; I have ascertained that the proportion of sugar decreases in the successive internodes or joints, from the base upwards, those at the base and middle being the most sugary.

"I have only had in cultivation some square yards of our *Sorghum* (Holcus saccharatus), in rather poor garden soil, and in the vicinity of trees unfavourable for it. In that situation, however, there were about 20 stems per square mètre, or more than 17 per

square yard, and of sufficient weight for the extraction of juice; this would be at the rate of 3 kilogrammes of juice per square mètre, or 30,000 per hectare, or 27,180 lbs. per acre; and, estimating the quantity of sugar at 10 per cent. of the juice, the produce per acre would be 2718 lbs. of sugar, which is much more than the average produce of Beet-root.

"According to these corrected figures, there is a probability that the plant in question may prove worth cultivation; but several years' trial will doubtless be necessary before we can ascertain whether it will really answer in a commercial point of view.

"The plant bears much analogy to the Maize, and is similarly cultivated; that is to say, by sowing in rows or in patches, in the open ground, from the middle of April to the end of May."

Such was the information existing in France in the beginning of the present year; since which we have seen no authentic report of further experiments; for an announcement in the *Gazette de France*, and copied into other journals, that this "Chinese Sugar Cane" produces 30,000 kilos an acre *more than Beet* is undeserving notice. We understand, however, that the plant is attracting great attention among the Continental distillers in consequence of its richness in sugar, and the extraordinary purity of its juice.

Whether it will be of value in this country depends upon three circumstances as yet unascertained; 1, Whether our climate is warm enough for it; 2, Whether the Excise-laws will permit its use for distillation; and 3, Whether its refuse can be utilised. Upon all these points we must wait for further explanation; it will, however, be easy to determine them next year, for we understand that a certain quantity of the seed is likely to come into our market in a week or two.

A few weeks ago we ventured to express an unfavourable opinion of a gigantic plan for utilising the sewage of London, to which plan our excellent friend Mr. Mechi afterwards announced his adhesion. The objection that we took to that plan in particular, and which we have always taken to all similar schemes, as concerns the metropolis, was that they will not pay. We have never denied the value of liquid sewage; we have only expressed the opinion that more money must be expended in obtaining it than the article is worth. It is only solid metropolitan sewage that we have wholly condemned.

Our course has not been taken without a full knowledge that we are obliged to disagree with many gentlemen for whom we have the greatest possible respect, and to pull down the paper castles of many an ingenious speculator. We have hitherto, however, only expressed our individual opinion; there was nothing positive to which we could appeal. A late number of the "Journal of the Society of Arts" has, fortunately, brought to our support no less an argument than one derived from practical experience gained at Manchester. Mr. Thompson, Secretary to the "Manchester Sewage Guano Company," makes the following statement:—"We several years ago incurred considerable expense in testing the value of liquid sewage by the erection of suitable charcoal filters, and the precipitation by lime water and other means of the solid matters of the sewage; and succeeded in arresting all the feculent and organic matter, except that which was in a perfect state of solution. The sewage operated upon was of the best description, and had been reported, according to chemical analysis, to contain an unusual amount of highly fertilising ingredients. The result obtained, after long and expensive trials, was the perfect filtration of the water, so that, after it had passed the filter it was clear and transparent, thus effectually obtaining one of the objects in view; but the other equally important point, viz, the securing of the agricultural value of the sewage matter, *was very unsatisfactory*, as the most valuable chemical salts, &c., passed off through the filter in a state of solution with the clear water. Various chemical expedients were adopted to arrest them, but the expense of doing so, in consequence of the bulk of water to be treated, was found to be *much greater than their agricultural value*. The sewage manure made by the process of simple filtration was only worth 25*s*. per ton, or little more than the value of the charcoal, and consequently during the years of 1850 to 1852 we sold at considerable loss all the manure so manufactured at that price."

And again, "I can fully bear out the assertion of another of your correspondents, 'that all that has yet been done in manufacturing a concentrated manure from the liquid sewage of towns has failed, or resulted in the spending of a *shilling* in labour and chemical materials, to produce an article worth *tenpence*,' and, as the experience of this company may possibly be found useful in some measure to Local Boards of Health or other parties following in the same direction, and as there is a wide field open for similar undertakings, I have been authorised to communicate to you the result of our operations."

Here then we have no longer the mere opinion of ourselves or anybody else to rely upon, but the practical experience of men who have attempted with skill to make the liquid sewage of a large town pay, and who have wholly failed. It is true that Mr. Brooks has boldly come to the rescue of liquid sewage speculation, and offered 1000*l*. to the person who shall make its removal for agricultural purposes pay, but we know nothing of the issue of this last attempt, and can hardly expect it to have more success than its predecessors. Therefore, until the weight of evidence now before us is overbalanced by what does not as yet exist, we must adhere to our opinion that instead of asking market gardeners to pay towns for the article in question great towns must be content to pay cultivators to take it away, or at least deliver it to them without any such charge as the cost of delivery incurs. Should the metropolis be able to remove its sewage at the cost to itself of a million a year, and to vend it to the suburbs for half a million, it ought to be perfectly contented, and willing to pay the other half million out of the rates.

New Plants.

107. Aquilegia californica. *Hartweg.*

A plant from California distributed by the Horticultural Society under Hartweg's name of *A. californica*, proves upon careful examination to be a mere form of *A. canadensis*. The flowers are rather brighter, with more yellow in them, so that it produces a showier appearance than the old species, which it resembles

in all its habit; but there is nothing to justify its being considered more than a good garden variety, as will be obvious from the accompanying sketch of a small piece of the inflorescence.

— VEGETABLE PATHOLOGY.—No. LII.

231. Classification of Disease.—In proposing the plan of this treatise on the diseases of plants, it was considered that the most simple mode of classification would be to divide them into two ground classes, comprising those which arise respectively from internal or external causes; or, in other words, which are properly constitutional or merely accidental. External causes may indeed, in some cases, produce the same effects as mere weakness of constitution, but still the consequent diseases may have essential marks of distinction, and may in reality be only very remotely allied. In either case the functions of the plants may be affected, or there may be an organic change, and hence we have two distinct heads of sub-division, according as the disease is functional or organic.

232. As far as is at present known, the functions of vegetables are far less numerous than in the animal kingdom. There is, for instance, nothing like a general system of circulation, proceeding from a common centre. In some cases there is indeed a sort of circulation of the juices in individual cells, as in the hairs of the stamens of Tradescantia, the cells of Chara, and some other Cryptogams; while in many Phœnogams and some Fungi a system of vessels, containing a milky juice of various colours, as in Chelidonium, Lactarius, &c., runs through the plant, and a sort of circulation has in some cases been supposed to exist. The matter, however, rests at present on uncertain facts, or wrong explanations of evident phenomena, and is, after all, very different from the circulation of the blood in animals. The object of such circulation is twofold, viz., to supply nutriment to every part of the organism, and to restore the waste of oxygen incurred by exposing as large a surface as possible to communication with the atmospheric air in the lungs or Branchiæ. Now in the processes of vegetable chemistry, oxygen is constantly eliminated, and in consequence it is given out from those channels which communicate with the external air, but more especially under the influence of light, inasmuch as many of those processes are favoured by the action of light, and some cannot be perfectly accomplished in its absence. There is then a constant interchange of juices from cell to cell, and a general upward current induced mainly by evaporation, and as these juices are exposed to the influence of light, more especially in the leaves, and to the atmospheric air through the stomates, the sap previous to its descent—which is regulated partly by gravity, partly by the laws of endosmose—and exosmose, becomes more highly elaborated, and therefore, on the whole, though with many exceptions due to the lateral as well as vertical motion of the sap, we have an ascending current of weak juices, and a descending current of more highly elaborated sap; but it would evidently be incorrect to consider these analogous to venous and arterial blood, because it cannot be said that the ascending current has lost its vital properties, inasmuch as it never attains its perfect attributes till it has passed through the leaves, where it parts with a portion of its water and enters into new combinations. The ascending current is in fact rather to be compared with raw matter taken up into the stomach, though it may, where the attracting power is small, acquire new properties from interchange with matter already stored up in its passage to the leaves, and it is only by way of illustration that the roots of a plant can be called the stomach and the leaves the lungs, because there are no functions in plants strictly correlative with digestion and respiration.

233. Again, there is no system of nerves in plants. The phenomena of nervous energy, galvanism, electricity, chemistry, magnetism, &c., are so marvellously connected with each other, that it is probable that they are all mere modifications of one common unknown power, and therefore, though there are no visible nerves, much less any common nervous centre, there may be notwithstanding certain isolated phenomena, as for example those of the sensitive plant, which simulate the effects of nervous energy; and there is the greater probability that they are really due to some common agent, since certain chemical matters, such as chloroform, prussic acid, &c., produce analogous results to those which they produce in animals. Irritability is clearly due to something more than mere mechanical force.

234. In three great points, therefore, circulation, respiration, and nervous energy, our limits of inquiry are very narrow, and as the functions themselves are obscure the derangements of those functions can scarcely be appreciated with any great degree of nicety.

235. But further difficulty arises from the circumstance that the several functions carried on by the organs of plants are by no means so isolated as in the animal kingdom. We have no distinct set of veins and arteries and nerves; neither have we of lacteals, absorbents, and excretory vessels; but though there are a variety of modifications of cellular tissue, various functions, except possibly in those cells which contain peculiar secretions, are carried on in common by all. The ducts and vessels in an early stage participate in these common functions, and when arrived at their ultimate form are probably capable of nothing more than containing or conveying air, without much vital action. It is scarcely possible, then, in plants as in animals to divide diseases accurately into such as affect the respiration, circulation, digestion, nervous system, &c.; but we must be content with mere approximations to these phenomena, while we may hope for more accuracy when we speak of absorption of nutritive fluids, evaporation, assimilation, and other points which admit more readily of estimation. *M. J. B.*

PEAR TREE CULTURE.

The firmness of the English character is now pretty well established; at Waterloo Napoleon said, "These English don't know when they are beaten:" for "beaten" in my case read convinced. M. de Jonghe has written to a great extent about his system of pruning enabling the blossoms of fruit trees to resist frost (Why is it that a cankered branch, or one that has been partially broken or injured, and crowded with blossom buds, will often bear a full crop when all the vigorous healthy blossoms are killed by frost?), and yet I am as fully convinced as ever that he is entirely wrong in this, and also in his estimate of our climate, which he does not know. He reminds me in this matter of a naval friend who was for some years in St. Helena. At a horticultural show held there a few years since English and Chinese gardeners competed for the prizes in Cabbages one of the latter, a very clever gardener, had the best; but the judge in that department (my friend), whose knowledge of Cabbages was not very

deep, and from a little national feeling, gave the prize to the Englishman. At this John Chinaman was very indignant; but as he had a great respect for my friend, he vented it in the following good-natured way: "Misser Gulliver him very good man, but him no savvey Cabbage," which means Mr. G. is a very good man, but he don't know Cabbage; for Mr. G. read M. de Jonghe, and for Cabbage read climate. You lately gave the mean temperature of Brussels as 3° higher than that of London; the temperature of August and September, when fruit trees are ripening their fruit and their fruit-buds, is at least 6° higher than that of London. And any visitor to Brussels, towards the end of July, must be struck with the bushels of Breda Apricots hawked about the streets, gathered from standards, when such articles grown in England are not to be seen in London; thus showing the superiority of the climate over that of London.

I have only recently recollected some peculiar cases of the influence of climate on culture, which pray allow me to register in your columns. In one of my Judge orchard-houses I have a pyramidal tree on the Quince of the Duchesse d'Angoulême Pear, planted in the border and pruned carefully; about 20 yards from this I have another pet tree of the same sort, a pyramid, on the Quince planted on my lawn, and pruned with equal care;—the frost last April destroyed every fruit on my lawn tree, but on the tree under glass I had an abundant crop. At Chelmsford, about 15 miles from here, direct south east, in the nursery of Mr. Saltmarsh, trees of Marie Louise Pear were this season full of fine fruit, an abundant crop, and those of Beurré Capiaumont were ready to break down, so heavily were they laden; those trees are all standards, and entirely unpruned, except the usual thinning out of crowded branches. Now, in the first instance I have named, my lawn tree ought to have withstood the frost, as it was under the best culture, and the trees of Mr. Saltmarsh ought not to have borne any fruit, because the blossom buds had not been thinned out and the trees systematically pruned. But, mark the influence of climate; my tree under glass gave me a full crop, and the trees at Chelmsford, growing in a sheltered situation, in a warm soil, did the same. I may also remark that trees trained to the walls in the gardens of the Horticultural Society at Chiswick, although pruned and managed in the best possible manner, have not been able, for several seasons, to withstand the effects of our spring frosts; therefore, although pruning and attending perfectly to fruit trees is of first-rate importance, it is almost ridiculous in M. de Jonghe to affirm and re-affirm that pruning will enable fruit trees to resist the effects of an adverse season; in like manner, his advocacy of growing dessert Pears on standards, with stems 6 to 7 feet in height, is inadmissible: for in our climate, the "Channel winds," as they are called, blow over the whole surface of our island. At Brussels they are not known; and I have often felt surprised to see the fruit on those tall, but not very ornamental trees for gardens, hanging unscathed by equinoctial gales at the end of September. Depend upon it, we cannot keep our choice fruit trees in England too near mother earth; for in most of our gardens large dessert Pears on tall standards would be dashed to pieces by our autumnal gales. Let me here state that I have "no motive" in writing what I have done but that of preventing people being led away by, to a certain extent, false Pear doctrine. Our foreign teacher has said many excellent things; but, in common with most foreigners, he does not know enough of either our climate or our productions.

In looking over the list of Pears given by M. de Jonghe, one cannot help regretting that instead of giving us 76 names of Pears, the greater part of which ripen in September, October, and November—when we have such Pears as Williams' Bon Chrétien, Beurré d'Amanlis, Marie Louise, Louise Bonne of Jersey, and many others—he had not given us the names of say just 20 varieties hardier than the above, and to succeed each other all through the season; this would have been a great benefit. We want the Marie Louise reproduced (for no finer Pear can be imagined), so as to be as hardy as a perry Pear, a hardy Glou Morceau, and so on. I have grown for some years nearly all those in M. de J.'s list. Many of them are much hardier than our older varieties, but none of them withstood the frost of last April. Some seedlings raised here did so; in particular a seedling raised from Beurré Gris d'Hiver Nouveau, one of the most tender varieties, and which was in full bloom on the fatal 25th of April last; and yet nearly every blossom set its fruit. This was the case with other seedlings. Now this seems the true way to acclimatise the Pear, and we must not rest till we raise Pears from seed in England as good as Marie Louise and Glou Morceau, and as hardy as our perry Pears, some of which do not know how to canker, and grow so freely as to be real ornamental trees (I may instance the Poplar Pear) in the most cold and unfavourable soils.

I ought to mention, for the information of your readers, that a few of the Pears in the list alluded to are known here by other appellations, having been received from Belgium with the following names attached:—Beurré d'Hardenpont as Glou Morceau, Beurré Hamacker as B. Hamecher, Conseiller de la Cour as Marechal de Cour, Fondante de Noel as Belle de Noel, Seigneur Esperen as Fondante d'Automne.

I may also remark that Colmar d'Aremberg is generally coarse and second-rate here, Delices de Jodoigne rots at the core, Doyenné Sentelet is too tender—it becomes deformed and cracks; Duchesse d'Angoulême, and its panachéd or striped varieties are rarely first-rate in England; Marie Louise Nouvelle is the sort generally cultivated here. I, however, received it under the above name and also as Marie Louise (Delcourt), and two or three other appellations. Colmar Nelis is our winter Nelis, Fortunée de Reumes is Fortunée (Parmentier), the Virgouleuse is a flat watery Pear in England; Calebasse Tougard cankers, and does not thrive as a pyramid. *Thos. Rivers.*

HEXACENTRIS MYSORENSIS.

This is certainly one of the most beautiful plants of recent introduction, and its value for decorative purposes is very much enhanced by its long drooping racemes of singularly formed bright yellow and crimson blossoms being freely produced in the dead of winter, when the best furnished collections possess few if any twining plant which for general effect can be compared with this. It is moreover a plant of extremely easy culture, forming a large specimen or covering a large space in a very short time, and is well worth a place wherever there is a warm house for it.

Those who do not possess it should obtain it soon, in order that it may be got into growth early in spring, so as to secure large plants for blooming next winter. The young plants should be placed in a warm part of the stove by the beginning of February, and as soon as they show any indications of growth, examine the roots, and if these appear to want more space shift into a pot a good size larger. If a mild bottom-heat can be commanded, this will assist in encouraging the production of roots.

Before starting the plant into growth any weakly shoot should be cut out, and the stronger ones may also be shortened back to prominent eyes. Keep the plant as near the glass as convenient and the atmosphere moist, syringing over-head every fine afternoon, but do not give too much water at the root until it starts into free growth. If it is intended to train the plant to a trellis it should be shifted into the pot in which it is intended to bloom it as soon as possible, in order to be able to train the shoots as they grow, and a plant that is well rooted in a 7-inch pot may be safely transferred to a 15-inch pot which will be large enough for any reasonable sized specimen. But as the beautiful blossoms are borne on drooping racemes, these are apt to find their way inside the trellis, and get partly hid by the foliage if an ordinary shaped trellis is used, and except in the case of those who have some particular object for growing it on a trellis it would be better to allow it to run along wires under the roof of a stove or intermediate house. Treated in this way it will be decidedly more showy than confined to the limits of even a large trellis, and will bloom longer and more profusely. I would not, however, advise that it should be planted out in a border, for it is of a very free habit of growth, and probably would flower but sparingly if its roots were allowed too much space. If a trellis is used, it should be spread out at the top, somewhat in the form of an umbrella, so that the flowers may hang clear of the foliage and shoots, of which there will be a large mass before it will bloom freely; and for a plant in a 15-inch pot the trellis should not be less than four feet across, for just in proportion as the shoots can be exposed to light in autumn will be the number and size of the racemes which they will produce. The plant need not be kept too warm after the trellis is well covered with wood, as a slight check will assist in inducing it to bloom freely; and, in the case of plants trained under the rafters in the stove, they should be kept rather dry at the root, and as freely exposed to air as circumstances will admit, while those that are moveable may be removed to a cooler house for a month or so. They should be removed to a light airy part of the stove for blooming, and when the racemes begin to appear thickly, manure water may be given once or twice a week with advantage. See that the foliage is quite clear of red spider before blooming commences, as heavy syringing after that time would be apt to spoil and break off the flowers. I have no doubt that where it is desirable to have this plant in bloom late in spring, that it may be wintered in a house where the temperature is just high enough to save the foliage (50° by fire heat will be quite sufficient for this) and roots from injury, and will bloom splendidly when placed in a moderate heat in spring, but it is perhaps most valuable for winter use. If young plants are provided to succeed those that have bloomed, the old plants may be thrown away as soon as their beauty is faded, but if they are to be retained for further use, they should be well rested before starting them into growth a second time, and the shoots severally thinned out, reducing the ball sufficiently, so as to allow of giving them a good shift in the same-sized pot. About equal parts of turfy loam, leaf soil and fibry peat, with a fair proportion of sharp sand, may be used for potting, but any rich light soil will answer, for it does not appear to be particular in this respect. *Alpha.*

PROPOSED EXPEDITION TO PERSIA.

We hasten to make public the following communications upon a subject which will probably interest many other gentlemen than those who belong to the Caledonian Horticultural Society.

Copy of a Letter from Lord Murray to the Caledonian Horticultural Society:—

Lord Murray is desirous to bring under the notice of the Council and Committees of the Horticultural Garden the expediency of employing a fit man to collect Fruit trees, Seeds of Melons, &c. &c., in Persia, and send them to Britain.

Most persons who have been in Persia agree that Peach, Nectarine, and Apricot trees and Melon seeds are better in Persia than in any other country, and may be purchased at very moderate prices. This is confirmed by the annexed extract from a letter from Sir John McNeill and his obliging offer to give his aid; and the appointment of the Honble. Charles Murray as Ambassador to Persia is a most favourable circumstance.

It is proposed that a subscription should be opened to all the Members of the London and Caledonian Horticultural Societies. Those subscribing 50*l*., for instance, will receive fifty portions. Those subscribing 1*l*. will receive a proportionally smaller portion.

"102, George Street, Nov. 4, 1854.

"My Dear Lord Murray,

"It appears to me to be very desirable that your proposal to send a competent person to Persia to collect seeds and plants, especially of Fruit trees, should be acted upon. If it should be resolved to send such a person for that purpose, I shall be happy to furnish him with such information as I may have upon the subject, and with letters to such friends as I may still have in that country.

"I am not sure whether the route by Trebisond is open; but if not, other routes could be taken by a person going to Persia, and we may hope that the way by Trebisond, which is by far the best for the transport of plants, would be available before your employé would be prepared to return.

"Believe me, &c.

(Signed) "John McNeill."

We have reason to believe that Dr. Balfour, of Edinburgh, would willingly receive communications upon the subject of Lord Murray's suggestion.

HARDINESS OF SIKKIM AND OTHER RHODODENDRONS.

Report on the effects of the winter and spring of 1854 on the following Sikkim and other Rhododendrons at Preston Hall, 12 miles S.E. of Edinburgh, at an altitude of about 450 feet above the level of the sea. The lowest temperature was on the nights of the 2d and 3d of January, when Fahr. thermometer fell to 12° and 11° respectively. But the greatest injury was sustained by vegetation about the beginning of the fourth week of April, when, after some weeks of mild genial weather, there occurred several nights of sharp frost followed by days of bright sunshine; the lowest night temperature being 21° Fahr.

(Communicated by Sir W. J. Hooker, K.H.)

Rhododendron Falconeri.—Two plants in the open border were uninjured by the winter frost, but that of April completely destroyed all their terminal buds, which were then just bursting into leaf. The reserve buds, however, supplied numerous healthy shoots in the course of the summer, which seem to have ripened their wood, so that the April damage is now undistinguishable save by the bushy habit of the plants. One plant growing at the bottom of a stone wall with an east exposure, and slightly protected by Spruce branches, completely escaped injury, and has now a fine undivided stem about a foot high, with large healthy foliage.

R. argenteum verum.—One plant growing at the bottom of the stone wall along with the last, and protected in the same manner, was not in the least injured; it has now a single stem about 18 inches high, and its last formed leaves measure about a foot in length. I consider this to be the true species, as figured and described in Dr. Hooker's "Rhododendrons of the Sikkim-Himalaya," and which is rare at least in Scotland.

R. argenteum vulgare.—A plant in the open ground was uninjured by the winter frost, but lost its buds in April. In course of summer it produced several shoots which appear healthy, and seem to have perfected their wood. In Scotch collections this is much more common than the last, and although possessed of the characteristic large leaf-buds in spring, yet its foliage by no means corresponds with the last—being smaller, more rough, or wrinkled, and more dingy coloured underneath. Judging from the present appearance of the young plants they do not agree with any of those figured in the above-mentioned work, but present an intermediate like appearance between R. argenteum and R. Falconeri.

R. Hodgsoni.—The same remarks apply to this as to the first, R. Falconeri, only that the plant at bottom of wall, instead of only one, has several stems, the longest of which does not exceed 4 inches.

R. Thomsoni.—Several plants in the open ground all stood the winter admirably, but lost their terminal buds by the April frost. They however speedily produced numerous new shoots, with fine healthy foliage, which seems perfectly matured. Plants from 1 to 1½ feet in height, but as yet destitute of flower-buds.

R. Thomsoni *.—A plant so marked was received from the late Mr. Cunningham, of Comleybank Nursery, Edinburgh. Can this be R. Candelabrum? Stood the winter, and was affected by the April frost, same as the last.

R. Dalhousiæ.—A plant was killed in winter 1852-3, although covered by a hand-glass, and another in winter 1853-4. I have not had an opportunity of trying this species on the stone wall along with R. Falconeri and some others, but doubt its succeeding.

R. Edgeworthi.—Several plants of this species stood in the open air uninjured till April, when they lost not only their expanding leaf-buds but also their old foliage. They all, however, pushed out numerous young shoots, which were in an immature state in October last, when they were all browned by a 31° night of frost, followed by hot sun, which cut up the Dahlias in the gardens of the neighbourhood, and even browned the tender leaves of second-growth shoots of R. ponticum and other common sorts in adjoining beds. A plant at the bottom of a stone wall with east aspect, which was covered with Spruce branches, escaped the April frost without injury.

N.B. I do not think that this species is so partial to peat as the other kinds. At least, the plants here which are grown in black heath peat mixed with white sharp sand have never attained that vigour of growth which I have observed in several instances when they were grown in a mixture of exhausted peat, light loam, and leaf-mould.

R. barbatum.—Several plants all in the open ground stood throughout the winter uninjured (two have been out three winters), but the whole had their first buds destroyed in April, the consequence of which was a rapid prolongation and after growth of the reserve buds; the plants assuming a dense bushy habit, which unless corrected by pruning, will prevent them assuming their natural tree-like appearance.

R. lancifolium.—The same remarks apply to the plant I have under this name as to the last. I have however great doubts of its being correctly named.

R. ciliatum.—Withstood the winter uninjured. Flowered in the open ground on the 24th March, but most of its flowers as well as its more exposed leaf-buds were killed by the April frost. The plants however soon recovered, and are now profusely furnished with flower-buds.

R. glaucum.—Of several plants, all equal in hardihood, the oldest was planted out when very young in autumn, 1851, and stood unscathed till the end of last winter. It flowered on the 12th of April, producing in all 29 heads or corymbs; these, being unprotected, were mostly killed by the succeeding frost, which, however, scarcely injured the leaf-buds. And the same plant is at present furnished with more than 70 flower-buds, it being about 1 foot high and 20 inches in diameter.

R. arboreum.—A plant of the old or originally introduced form of this species has stood unprotected for about six years at the bottom of a stone wall facing east but without making much progress, the young and generally vigorous shoots being less or more killed back every winter; like most others its swelling buds were destroyed by the April frost, but it is at present pretty well clothed with healthy foliage and ripened wood.

R. arboreum roseum.—Of two plants received under this name and said to have been from Sikkim, one stood in the open ground all winter uninjured; lost its buds in April, but recovered healthy

shoots and foliage. The other, which was planted at the bottom of an east wall, and covered with Spruce branches, was unhurt.

R. Campbellii ?—The only plant I have under this name stood the winter uninjured, but lost its buds in April. It much resembles the last, and I have never been satisfied of its being the correct sort.

R. niveum.—Uninjured by the winter, but had its buds killed by the April frost; the plants, however, soon recovered.

R. formosum (R. Gibsoni).—Stood throughout the winter and spring uninjured, at the bottom of a stone wall with an east exposure, and covered with Spruce branches.

R. campanulatum.—Old, middle-aged, and young plants all stood the winter without the least injury, and commenced pushing strong buds in early spring, from which the leaves were just protruding when the April frost destroyed the whole. The old plants flowered on the 29th March, and afforded a rich display of bloom till it was likewise killed by the April frost; and although a profuse growth of shoots was afterwards produced from the reserve buds, not a single flower-bud is to be seen upon them. One old plant, trained on a stone wall with east exposure, but otherwise unprotected, had only its buds and flowers (which protruded from the wall) injured; the latter, which rested on its surface, having since perfected seed.

R. campanulatum robustum.—In the nurseries and other collections about Edinburgh, five or six distinct varieties are known under this name; all of which differ from the common form of R. campanulatum in having larger foliage and a more robust habit of growth; and some, but not all, are further distinguished by having their bud scales as well as the bark of their young shoots greenish instead of purplish coloured. In hardiness they all stand much on a par with R. campanulatum, having stood uninjured throughout last winter, but lost their expanding leaf-buds in April; and although their 1854 growth has been good, yet they are entirely destitute of flower-buds.

A variety known about Edinburgh as the Stanwell robustum produced its splendid flowers on the 6th of April. These were not much inferior in size to Hooker's figure of R. Dalhousiæ, of a delicate purplish shaded white at first changing to almost pure white, and strongly marked with dark spots. These flowers, as well as their embryo seed-vessels, were killed by the frost of April. The origin of this variety was a very small packet of seeds, received about 16 or 18 years since, marked "New Tree Rhododendron, from Nepal, with white flowers and rosy eyes," and distributed by the Highland and Agricultural Society of Scotland. It first flowered in Stanwell nursery, near Leith; and another plant of the same origin exists in the Dalkeith gardens, which, however, has not flowered.

R. Wallichi.—Stood uninjured throughout winter, but lost all its expanding leaf-buds by the spring frost. The use of the reserve buds under such circumstances was very marked in one plant, which had made a fine strong leading shoot the previous season topped with one leading on three lateral buds, all of which commenced growing in spring, and were consequently killed. Not having any reserve buds of the growth of 1853 left, the plant had to fall back on those of 1852, which have produced several healthy shoots.

R. Wighti ?—Two plants (the produce of seeds received under this name by the late Mr. James Cunningham, of Comleybank Nursery) are greenish underneath the leaves, unlike Dr. Hooker's figure. They both stood uninjured throughout the winter, but lost their first expanding buds in April.

R. lanatum withstood the winter frost perfectly, but lost the leading buds in April—a check recovered in the growth of 1854.

R. fulgens.—One plant of this has stood for three, and several for two winters, without suffering the least injury until April last, when they had all their leading buds killed; but put forth numerous healthy shoots in the course of the season.

R. æruginosum.—Exactly like the last in hardiness, as well as in other respects, in so far as can be judged from the young plants—several varieties, or perhaps species, having been received under both names.

R. campylocarpum.—Several plants received under this name are in no way distinguished from R. niveum, which see.

R. cinnabarinum.—Quite hardy, not even having been injured by the frost of April last. Plant now (Nov. 1854) about 2 ft. high.

R. elæagnoides.—This species has stood two winters without sustaining injury from frost, even that of April last having done it no harm. Although grown in good heath peat, in which most of the other species seem to luxuriate, it has never presented a healthy appearance. In June last it produced two flowers of a deep purple colour, exactly resembling that of the flowers of the old well-known herbaceous plant Verbascum phœnicium.

R. anthopogon.—Have no Sikkim plants of this species, but others have stood in the open border for six years without sustaining the slightest injury.

R. setosum.—Withstood the two last winters as well as the frost of April, 1854, without suffering the least injury.

Rhododendron cinnamomeum.—This species has stood without protection for seven years, suffering occasionally in its flowers and leaf-buds from late spring frost, but never so much as in April last, when these were completely killed, its flowers having been fully expanded on the 10th of April, or about a fortnight before the frost occurred.

R. sp. from Kamaon.—The growth of this sort for five or six years has shown it to be equally hardy with the last, to which some of the plants bear so close a resemblance as not to be distinguished; while among others all shades of colour are to be found on the under side of the leaves, from that of cinnamon to almost pure white. Has not yet flowered at Preston Hall, but at Dalkeith Gardens, in the vicinity, several plants bloomed both in spring 1853 and in 1854; the colour being whitish with blackish spots, showing a further identity with R. cinnamomeum.

For comparison with the preceding, the effects of winter and spring 1854 on the following well-known species are here recorded, viz.:—

Rhododendron atrovirens.—Uninjured by the winter, having flowered profusely in March and beginning of April; but the severe frost towards the end of that month killed alike the remaining flowers and few expanding flower-buds, as well as some of the most advanced and exposed leaf-buds. The plants are now (Nov. 5) richly clothed with flower-buds.

R. catawbiense.—Uninjured either by winter or April frosts, the buds having scarcely commenced their expansion when the latter occurred, except in exposed sunny places, where a very few of the most prominent flower-buds were wholly or partly destroyed.

R. caucasicum.—Uninjured by the winter; but about half of the flowers having been expanded and the rest very far advanced when the April frosts occurred, the whole were killed or too much injured for producing seeds, while a few of the principal leading shoot buds were also injured.

R. ferrugineum.—On some plants a very few of the most exposed flower-buds suffered injury from the April frosts, but were otherwise unharmed.

R. maximum.—Unharmed by either winter or spring frost farther than having a few of its long slender leaves broken by wind when in a frozen state.

R. ponticum.—Of numerous plants of this species in various situations and exposures, some which had made late autumn or second growth shoots had their unripened points injured by the winter frost, and when exposed to both sun and wind a good deal of their foliage was browned. The April frost, however, did little injury farther than destroying a few of the most exposed flower-buds.

R. punctatum majus.—This species sustained no injury through the winter; but the frost of April killed the whole of its flower and leaf-buds except on such parts of the plant as were protected by overspreading foliage.

Rhododendron arboreum, mas.; crossed with R. campanulatum, fem.—Of about a dozen eight-year-old home-raised plants of this cross none have yet flowered, and although in foliage and habit they present a decided improvement on R. campanulatum, yet they are more susceptible of injury from cold than that species, or even than any of the following classes of hybrids. The frost of last winter having not only destroyed the leaves on the more exposed shoots, but also cracked the bark on some of the stems; while that of April destroyed every leading bud, injuries which have, however, been in a great measure repaired by the 1854 growths from the reserved buds.

Four plants, the produce of seeds received 10 or 12 years since as "*Tree R. from Simla,*" seem identical with this cross in foliage, habit, and hardiness. Two of these flowered last spring, the one of a pale whitish, and the other a light rose colour. The former being in the open ground had its flowers killed in April; but the latter being on an east wall escaped injury, and has ripened its seed.

R. arboreum, mas., *crossed with R. caucasicum,* fem.—This comprises a numerous class of scarlet flowering hybrids, dwarfish in habit, of which the well-known R. noblianum is typical. The frost of last winter killed a few of their earliest and most exposed flower-buds; while that of April killed all their flowers and most of their expanding flower-buds, as well as leaf-buds, unless in the centres and lower parts of the bushes, when the shelter of the upper foliage protected them. Plants, however, which were close trained on a stone wall with east aspect entirely escaped and perfected their seeds, as did also those of the next three races.

R. arboreum, mas; *crossed with R. catawbiense,* fem.—This cross, of which the old R alta-clerense is a good representative, stood last winter without sustaining injury in either foliage or leaf buds, and but very slightly in some of the most exposed flower-buds of the earliest flowering varieties. The April frost, however, killed most of the swollen leaf buds, as well as the expanded and nearly expanded flowers; but on the latest plants the flower buds almost escaped injury. In foliage, flowers, habit, and hardiness, the produce of this cross generally is superior to either the last, or two next races of "scarlet-flowering hybrids."

R. arboreum, mas.; *crossed with R. maximum,* fem.—The last winter's frost proved hurtful to the flower-buds, as well as to the foliage of this tribe; while the frost of April killed most of the remaining flower-buds, and all the expanding leaf-buds. The foliage of this cross, from its slender, open, and loose habit, is peculiarly liable to injury from winds, especially when in a frozen state.

R. arboreum, mas.; *crossed with R. ponticum,* fem.—This tribe proved much the same as the last in respect of hardiness, both in winter and April, its loose habit of foliation rendering it also subject to injury from frost-winds.

NOTE. There is in the gardens at Dalkeith Palace a large old grafted plant of R. arboreum, which, for size and form of flower, as well as in the compact habit of its corymbs, may be said to bear the same relation to the common forms of R. arboreum that R. catawbiense bears to R. ponticum. Having been kindly favoured with a supply of pollen of this plant, I have with it crossed both the last-named species, but the plants being only two years old, little can yet be said regarding them; only among the plants from R. ponticum are a number with very peculiar long Willow-like leaves, much narrower than those of either of the parents. (Can this Dalkeith R. arboreum be the R. Nilagiricum or R. nobile, No. 19, page 3 of Conspectus ** in Part II. of Hooker's "Sikkim Rhododendrons?")

R. campanulatum, mas.; *R. ponticum,* fem.—None of the preceding races of hybrids equal this in the size and vigorous healthy appearance of its foliage, which is retained in the old wood as in the female parent, not falling off, like that of the male, when little more than a year old. Plants about two feet high, but which have not yet flowered, stood last winter without sustaining the least injury, but lost most of their leading buds in April.

R. cinnamomeum, mas.; *crossed with R. ponticum,* fem.—The plants of this cross are still smaller and younger than the last, consequently have not flowered. They stood throughout last winter without injury, but lost all their swollen leaf-buds in April. When first expanded, the leaves are of a bright, golden, yellowish colour, which goes off as the season advances, till in autumn they become darkish green. And it may be remarked, that in their earliest stages they are somewhat liable to become browned or scorched when exposed to hot sunshine. A few plants, which had not ripened their young wood and foliage in October last, had their youngest leaves browned by a Dahlia-killing night of frost. *William Gorrie, Preston Hall, Ford, by Dalkeith, Dec. 9, 1854.*

Home Correspondence.

Beurré Superfin and Cumberland Pear.—There is nothing which I desire so much as to learn with certainty anything which may tend to establish the history of a remarkable variety of Pear. With regard to an American Pear called the Cumberland, I read about 20 years ago the following description in the "New American Orchardist," by William Kenrick, Boston, 1833:—"This native Pear is stated by Mr. Smith to be extraordinary for its size and beauty, some specimens having weighed nearly a pound. The colour is yellow or orange, with a bright blush of crimson next the sun; the flesh is rich, juicy, and melting; little inferior to the old St. Michael. The original tree was first shown to him in 1830, growing in Cumberland, Rhode Island. It is about 30 years old, apparently hardy and free from blight. It ripens in autumn, and may be kept till into winter." Is this description, as regards the colour of the fruit, applicable to the one found at page 171 of the second volume of the *Album de Pomologie* published at Brussels in 1849? I do not think so. In the description above quoted, nothing is said of the habit of growth of the tree; the form of the fruit is likewise omitted. There are only the weight, colour, some qualities of the fruit, and the time of ripening. These, I am aware, may differ in different latitudes. For one accustomed to study trees of a certain age, cultivated on the Pear stock, it is necessary to examine the tree minutely before the identity of a variety can be established. Is Mr. Robert Hogg in the position to make such examination with respect to his own trees, or those of his friends? Has he had, growing under his own eyes, the Cumberland Pear, generally attributed by the amateurs here to sowings made by the late Van Mons, and which fruited in the nurseries of Louvain in 1827, and previously? Has he compared this variety with that described in the "New American Orchardist" in 1833? Has he, on the Pear stock and in a bearing state, the variety which appeared at Angers, about 1845, under the name of Beurré Superfin? If these indispensable comparisons have been made, then, and then only, will he be in a position to determine with certainty and settle the question. In his catalogue published in 1823, and in the manuscript one at present in the hands of his successor, Van Mons has never attributed to himself a variety which was not raised by him. His authority is certainly as good as those of Mr. Smith and M. Goubault. Besides, this would not be the first time that we have seen several of our best varieties of Pears invested with new names, I do not say in England, for I know of no case that I could cite, but I could name at least 10 varieties which have experienced elsewhere this fate, either owing to culpable speculation or for other motives. But at present this question is not the one with which we have to deal. It is simply whether the Beurré Superfin has a different form, a different flavour, and period of maturity from that of the fruit figured in the *Album de Pomologie* above referred to. If this difference be fully established, and of this I am doubtful, I must consider the trees received, for the last eight years, from respectable nurserymen, and from the most direct sources, as nothing else than the Cumberland of Van Mons; and all the trees observed, in the above period, in the gardens of my friends, doubtless obtained from the same sources, are identical with mine. The description of the tree and fruit of the Cumberland Pear in the *Album de Pomologie* is, in general, very correct, and agrees with vigorous trees in my nursery and with their fruits. It is usual to refer to established descriptions; and I have taken the most prominent characters. It is not difficult to make a very correct description when one is acquainted with the proper terms and is daily in the habit of laying down the distinctive characters of new varieties taken into cultivation. *J. de Jonghe, Brussels, Dec. 17.*

Dioscorea Batatas.—In a leading article in last week's Paper (Dec. 23), it is stated that I failed in inducing the Dioscorea Batatas to produce tubers. This statement is perfectly true; at the same time, in fairness, it ought also to have been stated that the plants were only under my charge for 12 days. A farmer might as well be expected to sow his Wheat in one week, and reap it the next. The plants of the Dioscorea were in good condition when received on the 26th of July, 1854, from the administration of the Museum of Natural History at Paris, and were left in a healthy growing state on the 7th (12th) of August. *Robert Thompson.* [There was no intention to be unfair to our worthy friend. But as he planted the specimens in question, he made all the preparation that was expected to ensure success.]

Storing Beet.—Some time ago there was something said about keeping Beet-root. I have sent two roots for inspection. No. 1 is part of the crop of 1853, of which I have a good many left quite sound; No. 2 is from the crop of 1854, and is sent to show the difference of the two, which are both from the same stock of seed. The colour of No. 1 is very much changed, and some of the same crop has lost all its sweetness. My plan of keeping Beet is to store it in a cold dry shed after it is thoroughly dry among dry sand. *Findax.* [Of the two roots sent No. 1 had begun to decay, the other was quite sound.]

Societies.

CALEDONIAN HORTICULTURAL, *Dec. 7.*—At this meeting office-bearers were elected for the ensuing year, and several new members added to the list of Fellows. Premiums were awarded as follows, viz.:—For 6 dessert Pears: 1st, Mr. Morrison, gr. to R. Ainslie, Esq., with Crassane Marie Louise; 2d, Mr. Wyllie, Ninewar, with Crassane; and 3d, Mr. Anderson, gr. to the Earl of Stair, with Beurré d'Aremberg. Best collection of dessert Pears: 1st, Mr. Wyllie, with Crassane, Beurré d'Aremberg, Easter Beurré, Beurré Rance, Beurré Diel, and Duchesse d'Angoulême; 2d, Mr. Morrison, Elvingston, with Beurré Diel, Gansel's Bergamot, Napoleon, Marie Louise, Crassane, and Beurré d'Aremberg; and 3d, Mr. Anderson, with Beurré d'Aremberg, Beurré Diel, Easter Beurré, Crassane, Winter Nelis, and Colmar d'Aremberg. Best 6 dessert Apples: 1st, Mr. Morrison, with Ribston Pippin; 2d, Mr. Calder, also with Ribston Pippin; 3d, Mr. Addison, Gosford, with Borsdorffer; and 4th, Mr. Young, Archerfield, with Blenheim Pippin. Best collection of dessert Apples: 1st, Mr. Young, with Ribston Pippin, Blenheim Pippin, Hawthornden-eyed Pippin, Borsdorffer, Scarlet Nonpareil, and old Nonpareil; 2d, Mr. Crocket, Raith, with Blenheim Pippin, Ribston Pippin, Scarlet Nonpareil, Hubbard's Pearmain, Court of Wick, and Syke House Russet. Best bunch of retarded Grapes: 1st, Mr. Crocket, with Muscat of Alexandria; 2d, Mr. Gavin, Hopetoun, with White Nice; and 3d, Mr. Morrison, with Black Hamburgh. Best 12 Chrysanthemum blooms: 1st, Mr. Young, with Defiance, Queen of England, Duke, Trilby, Dauphans, Annie, Warden, Princess Marie, Goliah, Dupont de l'Eure, Nonpareil, Formosum, and Plutus; 2d, Mr. Addison, with Queen of England, Princess Marie, Cloth of Gold, Salter's Annie, Defiance, Pio Nono, Formosum, and Warden, Beauty, Dupont de l'Eure, Formosum, and Queen. The prize for the finest flowered Chrysanthemum in pot was awarded to Mr. Addison, for Queen; a second was voted to Mr. Crombie, Cramond, for Salter's Annie. Best 6 blooms of Anemone flowered Chrysanthemums: 1st, Mr. Young, with Marguerite d'Anjou, Fleur de Marie, Gluck, Norah, Madonna, and Cleopatra; 2d, Mr. Noble, Belleville, with Fleur de Marie, Gluck, Marguerite d'Anjou, Nancy, Madame Godereau, Lermet, and Racine. For the finest flowered Pompone the prize was awarded to Mr. Young, the kind being Ne Plus Ultra. In Leeks: the prize was gained by Mr. Cleghorn, Ayton Castle, Berwickshire, for a variety named Giant. In red Celery: the prize was awarded

to Mr. Ferrier, Eskbank. The prize for White was gained by Mr. Goodall, Newbattle, with Goodall's Broad White. Onions: 1st, Mr. Lees, Tyninghame, with James' Keeping and White Spanish; 2d, Mr. Young, with Strasburg. Savoys: 1st, Mr. Porterfield, Hermitage, with Dwarf Cape; 2d, Mr. Lees, with Hardy Green. Broccoli: 1st, Mr. Goodall, with Snow White; 2d, Mr. Reid, Broomfield; and 3d, Mr. Addison, with Stewart's Broccoli. The Silver Medal offered by the Society for the best collection of dried specimens of British Flowering Plants and Ferns was awarded to Mr. James Hogg, journeyman gardener, Leith Walk. The collection contained about 650 correctly-named species. An award was voted to Mr. Mitchell, Panmure Gardens, for an Essay on the Training and Management of Fruit Trees on open walls in Scotland. The Hon. Lord Murray sent a peculiar concrete substance called "Mushroom stone," which he had received from Naples, and the Superintendent was requested to try its efficacy in the garden.

Notices of Books.

Among the small works on our table hitherto unnoticed we find the following. The *Head and Heart* (Bale): 160 8vo. pages of readable matter, and many woodcuts, calculated to produce a good effect upon young people, for a shilling.—*Remarkable Sieges* (Ingram) is another shilling volume, beautifully printed, and illustrated with woodcuts of considerable merit. It records the sieges of various great places, from that of Constantinople, in 1453, to the unfinished operations against Sebastopol, of which place there is one of the best views that have yet appeared. The subject will make this volume popular at the present moment; but we think Mr. Ottley would have done no injury to his reputation had he avowed the sources from which his "observations on fortification" have been taken *verbatim*, or nearly so. Does he imagine that "Sir John Jones's Sieges" is a work that nobody reads except himself?—*The Angler's Almanac* (Cox) will, we imagine, be acceptable to those who take pleasure in the amusement.—*Rejected Addresses* and *Taylor's Notes from Life* (Murray's Railway Reading) are reprints of well-known works of standard excellence, and will be welcome to everybody who can only afford to buy sterling literature at a low price. For ourselves, we greatly prefer these charming miniature editions to those of more pretence, even irrespective of their cost.—*The Monastery and the Mountain Church* (square 18mo, Murray) is a new work by the clever author of "Sunlight through the Mist." Intended as it is for the inculcation of high moral and religious principles in children, it cannot be otherwise than acceptable to parents. When we add that it is well printed on good strong paper which will bear "thumbing," is written in a simple style, with few "hard words," and is embellished with clever pen and ink sketches, we need not add that it is a book which may be heartily recommended.

Of *Murray's Official Hand-book* a new edition, corrected to the latest moment, has just appeared. It is superfluous to say that this work is indispensable to all persons who wish to be well informed respecting the civil, military, judicial and ecclesiastical administration of their country. For ourselves we regard this as the most generally useful of all Mr. Murray's hand-books.

Sowerby's Popular British Conchology (square 18mo, Reeve,) gives as good and well illustrated an account of the shells of our country as is possible in a work which is professedly popular and nothing more. It forms a very good introduction to the more scientific works on general conchology of the same publisher. To young people it is more especially useful, and will become, we have no doubt, a constant companion at the sea-side.

Traditions and Superstitions of the New Zealanders. By E. Shortland, M.A. 12mo. Longmans. Pp. 300. —Mr. Shortland lived long enough in New Zealand to become thoroughly acquainted with the religious as well as domestic habits of the natives and the ancient myths which abound in the traditional history of all uncivilised people. The result he has given in a volume that will be read with satisfaction by all who take an interest in the origin and analogy of nations. The only bit of Natural History we have met with is the following:

"*The Vegetable Caterpillar.*—The moth from whose eggs are produced this caterpillar is of the genus sphinx, and is named by the New Zealanders *pepe*. Its period of life is from November to December—the commencement of the summer in their country. Its caterpillar, called by the natives *awheto* or *hotete*, makes its appearance in the eighth month, viz., the end of January, and feeds on the leaves of the *kumara* and *pohuehue* plants, both of them varieties of Convolvulus, and also on the flowers of a tree called *rata* (metrosideros robustus), which is of the same order as the Myrtle. This insect is very destructive to the *kumara*, which forms so favourite an article of the New Zealanders' diet; and a great many persons are constantly employed in their gardens to pick them from off the leaves of that plant, for several weeks in the year. It is a common belief, however, that the caterpillar is rained down from the sky: for although vast numbers are destroyed by them day after day, many more are still found to reappear. About the end of the eighth or the beginning of the tenth month, this caterpillar buries itself in the ground to the depth of 5 or 6 inches, previous to assuming the chrysalis form; and it is a singular fact, that the insect descends into its subterraneous hiding-place with its hind-part downwards. Such is the position in which it is invariably found. Were its position reversed, it would perhaps be impossible for the moth into which it is subsequently transformed to escape. In the second month of the following year small reed-like plants, about 3 or 4 inches high, may be seen growing in great numbers from the ground under the shade of the *rata* trees. This plant being dug up carefully is found to grow out of the head of the caterpillar just described, which, however, no longer possesses any vitality; for cutting into its body, it is found to consist of a tough whitish substance, similar to a fungus. In this state it is collected by the New Zealanders, and after having been hung up to dry for some time in their houses, it is burnt to a coal; the coal supplying them with an excellent black pigment, which is much used in the operation of tatooing. In the tenth month the reed-like plant dies away, but springs up again the following year, dying again in the tenth month, and sending out a fresh shoot in the second month yearly for three or four years, probably till all the animal matter supplied by the caterpillar has been consumed. I have sometimes met with specimens in which the plant grew from other parts of the body than the head; but in all these the upper part of the body was deficient, and it appeared to me that it might have been destroyed by the rooting of pigs or otherwise, and that the plant had afterwards thrown out a fresh shoot from the summit of the part left in the ground. The reed-like plant just described is the fructifying part of a fungus; and the part which was once the body of a caterpillar corresponds with what botanists call its mycelium, and gardeners call its spawn. While burying itself in the ground no doubt some of the germs of the fungus lying scattered on the ground become attached to the skin of the caterpillar, and there developing with the extraordinary rapidity known only to this class of vegetable, kill the animal while in its torpid state, and very soon occupy the whole of its body, so as to correspond with it exactly in form."

John Waterer's Catalogue of American Plants for 1854-5 is before us, and should be procured by all growers of this beautiful race. We cannot undertake to enumerate the novelties which are therein announced, but we must find room for the practical directions which Mr. Waterer gives for their cultivation.

"'American Plants,' then, as may be premised, include certain genera, all belonging to the natural order Ericaceæ; the principal species, from which the best varieties have more recently been raised, having been originally introduced from the American continent. They are all more or less beautiful; but the Rhododendrons and Azaleas are especially remarkable for their dazzling colours and the profusion of their flowers, which, when displayed on a grand scale, as in our London exhibition or in our Nursery, present a scene which admits of no parallel. They are all connected by certain and easily recognisable affinities; and therefore, when we speak of soil and general culture, we wish it to be understood that our directions are equally applicable to the whole tribe. There can be no doubt that, compared with other hardy evergreen flowering shrubs, they present one or two features peculiar to themselves; yet long experience has given us the fullest opportunities of forming an opinion on the point, and we venture to presume that we have some claim to be heard. Let none be discouraged, then, in their first efforts to grow these beautiful plants; for we have no hesitation in asserting that they may be successfully managed with only the exercise of ordinary care and intelligence, without which the most elaborate dissertation, or even specific directions, would be of little or no avail.

"The plants of which a tribe or order is composed are characterised by a particular constitution. This remark is especially applicable to those now under consideration. It has long been known that Cape Heaths—forming the type of the order to which American plants belong—have never been grown in France, Belgium, and many parts of Germany, to the same perfection as in England; and the cause assigned has been chiefly the want of proper peaty soil, without which these beautiful greenhouse and hardy plants will not thrive, however favourable other circumstances may be. This fact, however, has been frequently urged as an argument against the possibility of growing Rhododendrons, and other genera known as American plants, except in a certain kind of peaty soil; and it is unfortunate for the tenability of an opposite position, that the objection has derived apparent weight by being associated with isolated cases of failure. Yet nothing can be more erroneous than the supposition that there is any difficulty in supplying them, in almost every locality, with soil sufficiently fertile for all practical purposes.

"That some districts are more favoured than others, as respects the composition of soil, cannot for a moment be doubted; and it is perfectly true that a rich, well-pulverised peaty soil is the most preferable for these plants; but we have only to visit such places as Sion, the seat of the Duke of Northumberland; Kenwood, the seat of the Earl of Mansfield; and other famed gardens round London, to perceive that Rhododendrons will grow in any kind of good and fertile soil to great perfection, and that they will even propagate themselves to a wonderful extent, covering large plots of ground in wild luxuriance and beauty, as freely as if growing on the borders of an American forest. Indeed, there are numerous instances of their thriving well in what is called a light, friable, fertile loam, of which the much-prized peat forms but a very insignificant part; and we may safely say that there is no soil in which plants can be grown at all that is not equally suitable for growing Rhododendrons: and no tribe of plants admits so readily of being removed at almost any season. They can be easily taken out of the ground, even when nearly in flower, and conveyed to any part of the country, without suffering the least injury: so that a whole garden may be furnished with a mass of bloom with little more than a week's notice, or plants already established may be removed on any emergency, about their flowering time, to positions where they may be required to increase the effect or add to the display, either into large pots near the house or planted out.

"But, though American plants are not so strictly exclusive in their predilections as may have been supposed, it should not be forgotten that a rich peaty soil is that which most accords with their natural constitution. Yet it is scarcely necessary to state that this soil may be found more or less plentiful in every county in England. Peat, it must be remembered, is composed of certain vegetable substances which have undergone a long and slow process of decay. These substances are chiefly the softer portions of trees or leaves, of nuts, tender twigs or branches, and other *debris* generally abounding in forests. When it is desired, therefore, to provide a good substitute for peat, nothing will be found more suitable than 'leaf-mould,' or rotten leaves mixed with a portion of light sandy soil. Another mode of meeting the want of good bog is to prepare a compost in the following manner:—Collect several loads of what is called the top or surface spit of any plantation, wood, or even Grass field; and the more this surface is impregnated with decayed vegetable particles the better. The thickness of the spit will depend, of course, on circumstances, being more or less according to its composition. When a supply has been obtained, it should be thrown together; then carefully and freely mixed with leaf-mould, or old and well-rotted dung from a Melon frame. In this operation the turfy parts should not be chopped fine, but preserved as rough and large as is compatible with the mixture of the whole mass. When the plants are to be planted in beds, or compartments of more irregular outline, the average depth may be stated at about 20 inches. To this depth the soil should be taken out, and an equivalent portion of the compost already described placed in its stead. At the time of planting, should the weather be very dry, nothing is of greater importance than a copious supply of water. This injunction is the most urgent during the first season; for after they are fairly established there is, comparatively speaking, but little to be apprehended. In very dry seasons, however, every precaution should be observed to prevent the balls of earth round the roots from becoming too dry—an evil to which they are liable in elevated positions.

"We may just state, in conclusion, that we merely offer these directions respecting soil for the benefit of those who may have ready access to a plentiful supply of leaf-mould and the other ingredients of a rich compost; but we beg to repeat that American plants will grow in any ordinary garden soil, and therefore all who are desirous of having a display of their beautiful flowers need never be deterred from attempting to grow them from a fear of failure and disappointment."

We certainly cannot undertake to endorse the whole of this statement; we can only give it as that of a very celebrated and experienced grower of American plants, who we doubt not is as willing as he is able to substantiate all he says. The Catalogue itself includes a very large and select assortment of fine varieties.

FLORICULTURE.

Carnations.—I will thank you to say to what causes the running of the Carnation is attributable, other than freshness and excess of manure (supposing stable-dung the kind used). In 1851 a number of Carnations and Picotees bloomed fairly with me in the open ground, except Yeomanson's Triumphant, crimson bizarre, which was very much run and ill-shaped. In 1852 the layers from this flower did not bloom; they were grown in pots. In 1853 layers from these again were grown in pots, in compost of loam and leaf-mould, equal parts, with the addition of a half part stable-dung, and a little sand and gypsum. They bloomed extremely well, both in shape and colour, while many others, grown in the same compost, and treated like them, ran. This year my Carnations were growing in the open ground, in what had been a border containing principally herbaceous plants; this was trenched in the last autumn (just before the layers were planted in it) 2 feet deep, and a little fresh soil and a very little old manure added. It was top-dressed with an inch of very old horse manure this spring, and occasionally watered with very weak manure-water. The aspect is south; the flower-garden is a perfectly horizontal bit of table land on the side of a hill, and extremely warm. The plants were unprotected from rain, sun, or frost the entire year. Now, the layers taken from the plants of Yeomanson's Triumphant that bloomed so well last year, this year all ran (10 plants), as well as a number of other Carnations, and this in the very slightly manured bed that I have just described. The garden is well drained. Would you say at the same time what the best compost is for potting Carnations and Picotees in for blooming, making a difference, if such is necessary, between that for varieties apt to run, and that for others? *Dianthus.* [It is evident from our correspondent's own showing that his plants have been too highly manured. The

compost of 1853 was much nearer the mark. We do not recommend liquid manure applied at an early stage of their growth. It is best given when the colour can be ascertained to be correct by raising the point of the pod. We think that the bed which was trenched 2 feet deep, and fresh soil and old manure added at planting time, and then top-dressed in spring with an inch deep of old horse manure—the plants being watered with liquid manure—would be too rich. An excellent compost for Carnations and Picotees is 2 parts rotten turfy loam, 2 parts leaf-mould, 1 part rotten horse-dung, 1 part sharp river sand; mixed and well incorporated at least 12 months previous to using.]

Miscellaneous.

Botanic Garden, Glasgow.—We are glad to see, from the annual report just published, that this institution is in a prosperous state. The income last year was 1065*l.*, and the expenses only 955*l*, although the cost of a horse was charged to expenses instead of to capital.

Exaggerated Descriptions.—An English horticultural periodical is quoted as describing the new Rose, the "Duchess of Norfolk," as a "brilliant coloured climbing Hybrid Perpetual Rose"—the term climbing being merely an exaggeration of its vigorous growth. This kind of exaggeration is, we believe, not entirely new with English gardeners, more particularly in describing colours. It ought not to be tolerated among horticulturists, whose language should be as pure and truthful as the beautiful forms they cultivate. Falsehood and elegant Roses make a bad mixture—and we might with equal propriety describe the Bartlett Pear as a foot long, and the Winkfield as so productive that 200 bushels are usually produced per tree the third year. *American Paper.*

Sale of Pear Trees.—A collection of about 300 pyramidal Pear trees from M. De Jonghe, of Brussels, both on Quince and Pear stocks, and from three to four years old, were sold by Mr. Stevens, at his rooms in King Street, Covent Garden, on Saturday last. The collection consisted for the most part of new kinds, or others little known in this country. They fetched from 1*l.* to 2*l.* per lot of six sorts, with the exception of one lot (40) which was sold for 4*l.*

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

Conservatory, &c.—Any specimens in pots of the more valuable hard wooded plants which it may be necessary to winter in this house should be frequently examined, turning them partly round every week to expose the foliage equally to light, for, when in unsuitable quarters, they are sure to suffer from the slightest neglect. Keep such things as near the glass, and as much in the way of air as circumstances will admit. The beauty of the earliest portion of the Camellias will probably be over for the season, and when this is the case let them occupy a comparatively cool house, and have all the light possible until their buds promise a close bushy growth, for plants when grown year after year at an early season are apt to become thin unless care is taken to have plenty of buds well up before placing the plants in heat. Endeavour to maintain the greatest possible amount of gaiety here at present, and never allow any plant to remain in the house after it becomes unsightly or shabby if anything better can be found to supply its place. Let Cytisuses and other early flowering greenhouse plants occupy the coolest part of the house where air can be admitted on favourable opportunities. Cold Pits.—The inmates of these structures will require but little water for some time to come, and the little that may be necessary should be given early on a fine morning, when air can be given to dry up the atmosphere before night. Look over the Heaths and anything else that is liable to the attacks of mildew frequently, and apply sulphur the moment this pest makes its appearance. Also guard against the ill effects of damp by giving air whenever it can be done without risk, but do not expose the stock to cold north or north-easterly winds, which seldom fail to turn the foliage brown and rusty. Stove.—If there is any prospect of a scarcity of plants in flower next May, a portion of the Gloxinias and Achimenes which have been the longest at rest may be started at once, as also a few Clerodendrons. The latter should be cut back to the lowest eyes, so as to secure having bushy specimens, and the pots covered with foliage, and when they fairly start into growth the balls should be reduced sufficiently to allow of giving a good shift of fresh soil without increasing the size of the pots. A few of the Allamandas may also be pruned and placed in heat, provided the wood is well ripened. Where there is not the convenience of a house that can be kept at a rather high temperature for such things as it is desirable to push into growth at this early season, they should be placed in a bottom-heat of 80° or 85°, which will encourage the roots, and render a high atmospheric temperature, or over-driving the other inmates of the house less necessary.

FLOWER GARDEN AND SHRUBBERIES.

The weather is still exceedingly favourable for the execution of alterations or new work, and it will not be the fault of the weather if such work is not finished in good time this season: but we know from experience that it is, in many cases, easier to commence such operations than to know where or when they will end; and we would merely recommend here that every possible dispatch should be used to get all such operations finished as speedily as possible, in order to have the hands at liberty for the regular work, which, save in a few favoured cases, will soon require all the labour that is allowed. If not yet done, the leaves should be cleared up, and the shrubbery borders lightly dug over, to give them a fresh appearance. Lawns and gravel walks must be frequently rolled, so as to keep them firm and smooth. Those who purpose planting in the spring—for many persons still retain the notion that planting can be done in spring with greater certainty of success than at any other season—should lose no time in getting the ground prepared by trenching, or whatever may be deemed necessary, and the pits for the plants thrown out, so as to secure having friable soil for planting in. On light sandy soils there will be no particular necessity for making the pits at once; but, however friable the nature of the soil may be, it will be all the better for exposure for a month or two to the action of the weather. Where Rhododendrons are grown in masses, and exhibit any indications of having exhausted the soil, a top dressing of rotten cow manure, some 3 inches deep, and extending as far as the roots, should be applied at once. This will strengthen the plants for flowering, and will prevent rapid evaporation in summer, and keep the ground cool and moist, which is essential to the well-being of this handsome tribe of plants.

FORCING DEPARTMENT.

Pineries.—The supply of ripe fruit from May until August being usually obtained from plants that start into fruit without making growth in spring, therefore a fair proportion of the stock should be in a well matured state by or shortly after this season, and any sudden changes of temperature which might induce too many of them to show fruit at once should be carefully avoided. That portion of the stock expected to furnish the autumn supply of fruit should not be too much checked at present, indeed these may be kept growing slowly all the winter, which is perhaps the most certain method of preventing their fruiting too early in spring. Where the stock of plants likely to fruit without making farther growth is considered insufficient to meet the demand until August, the stronger plants of those for autumn fruiting should be encouraged to make growth as early as can be done without weakening the foliage, with the view of preparing them for showing fruit in April. Examine the soil occasionally about young stock growing in the open bed, and do not allow it to become unhealthily dry, for this would probably result in a great portion of the stock showing fruit prematurely, and it is also a work of some difficulty properly to moisten the bed if it is once allowed to get too much dried up. Use no more fire-heat for the present than will suffice to maintain the requisite temperature, which, for the general stock, need not be high for some time yet. Vineries.—Although the day temperature must be raised to about 65° as soon as the buds are fairly started, this should not be exceeded by fire-heat, but a rise of 10° with the assistance of sunshine may safely be allowed; still on cold cloudy days it will be advisable to be rather under than over the mean, taking advantage of bright days to keep considerably higher, for there is but little gained by maintaining a high temperature in the partial absence of light. Where fermenting material has been used inside the house, this should be removed as soon as the leaves make their appearance, but the atmosphere must still be kept comparatively moist by means of sprinkling the floors, &c. The foliage should, however, be allowed to become dry every day, for should it escape the attacks of mildew, there is great risk of its getting scorched early in spring, if the atmosphere is kept constantly saturated with moisture. Give careful attention to the roots, and where it is not attempted to warm the border, see that it is efficiently protected from wet and sudden changes of the weather. If fermenting materials are used, be prepared to make additions in the event of sharp weather setting in, and endeavour to secure a regular gentle warmth. Let Vines in pots, or boxes, being forced, be well supplied with strong clear manure water, using it in a tepid state; these will also enjoy an occasional top dressing with rich materials. Get the Vines in the late house pruned, and everything about the house cleaned, &c., directly the Grapes are cut. Where Strawberries are wanted early, a portion of the stronger plants may now be selected and placed in a pit where they can be afforded a gentle bottom heat, or in a Vinery or Peach-house which has just been closed for forcing. They must, however, be kept close to the glass, for they require all the light that can possibly be afforded them, and a free admission of air on mild days, and if these conditions can be combined with a mild bottom-heat, success will be more certain than under any other circumstances.

HARDY FRUIT AND KITCHEN GARDEN.

Make a point of examining all the choicer fruits that are approaching ripeness, or are found not to be keeping well, every week, so that everything may be used at the proper time; for some of our best Pears are worthless enough if allowed to get over ripe before using, and the same is the case with many varieties of Apples. Also look over the whole stock when time can be spared, removing any that exhibit symptoms of decay, and putting them aside for immediate use. Any of the choicer kinds that do not appear to ripen properly in the fruit-room should be removed to a warm dry room for a few days. Keep the fruit-room as dry as possible; and if frost is excluded, it cannot be too [illegible]. Push forward pruning, nailing, tying espalier trees, and such like tedious operations, as fast as the weather and circumstances will admit; also see to having manure in readiness to be wheeled upon vacant ground when frost occurs. A dressing of fresh loam is in many cases preferable to manure for land that has been long cropped with vegetables, and where this is wanted, and can be obtained, it should be got to hand, in order that advantage may be taken of favourable weather for heavy wheeling. Where fresh soil cannot be obtained, charred vegetable refuse, such as prunings of shrubberies, edgings of turf, and many things which turn up in the course of the season, will form an excellent substitute; and there are few gardens that would not be improved by a dressing of charred vegetable matter.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the week ending Dec. 28, 1854, as observed at the Horticultural Gardens.

Dec.	Moon's Age.	Barometer.		Temperature.					Wind.	Rain.
		Max.	Min.	Of the Air. Max.	Min.	Mean	Of the Earth. 1 foot deep.	2 feet deep		
Friday 22	3	29.882	29.828	54	28	41.0	42	45	S.W.	[illegible]
Satur. 23	4	29.895	29.778	47	26	36.5	42	45	S.W.	[illegible]
Sunday 24	5	29.879	29.768	52	40	46.0	43	44½	S.W.	[illegible]
Mon.. 25	6	29.778	29.528	54	33	43.5	45	45½	S.W.	[illegible]
Tues. 26	7	29.818	29.722	46	32	39.0	42	45	W.	[illegible]
Wed. 27	8	29.948	29.811	41	25	33.0	43	46	N.W.	[illegible]
Thurs. 28	9	30.431	30.313	40	20	30.0	42	44	N.W.	[illegible]
Average.		29.947	29.821	47.7	29.1	38.4	42.7	45.0		[illegible]

Dec. 22—Cloudy and boisterous; overcast; boisterous; rain.
— 23—Fine; cloudy; overcast; rain.
— 24—Fine; rain at night.
— 25—Densely clouded; slight rain; clear and fine.
— 26—Clear; very fine; clear.
— 27—Clear; fine; slight shower of sleet in the evening; clear; frosty.
— 28—Clear and frosty; very fine; clear and frosty.

Mean temperature of the week 1⅓ deg. above the average.

RECORD OF THE WEATHER AT CHISWICK.
During the last 28 years, for the ensuing week, ending Jan. 6, 1855.

Dec. and Jan.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 31	43.5	32.7	38.1	8	0.44 in	—	6	—	1	5	6	[illegible]	[illegible]
Mon. 1	42.3	30.3	36.3	8	0.70	5	3	2	3	3	[illegible]	[illegible]	[illegible]
Tues. 2	41.5	29.1	35.3	10	0.21	3	1	5	—	3	4	[illegible]	[illegible]
Wed. 3	42.1	31.1	36.6	14	0.56	1	2	6	—	5	[illegible]	[illegible]	[illegible]
Thurs. 4	42.1	31.4	36.8	13	0.86	3	3	3	5	2	[illegible]	[illegible]	[illegible]
Friday 5	41.6	30.4	36.0	10	0.40	6	3	5	—	1	[illegible]	[illegible]	[illegible]
Satur. 6	41.3	30.0	35.7	11	0.30	2	6	3	3	4	5	[illegible]	—

The highest temperature during the above period occurred on the [illegible] 1852, 1st, 1851, 5th, 1844, and 6th, 1845—therm. 54 deg.; and the lowest on the 2d, 1854—therm. 4 deg.

Notices to Correspondents.

Beet Root: *H A B.* Pull off the leaves, and pack the roots in dry sand. There is no art in boiling it, except to boil it enough. Of course, the roots must be kept from frost and damp.

Books: *W H E.* Will you be so good as say of whose "Shrubbery and Flower Garden" you speak. There is no periodical devoted exclusively to hardy plants, nor is there likely to be until the public taste becomes more scientific and less [illegible]. People now-a-days care for little except colour, and disregard form, which is the only foundation of beauty.

Greenhouses: *A B.* A span roof is the best form; Hartley's rough plate is the best glass for the roof; you may use sheet or thick crown for the sides. Hot-water pipes will heat it. In Mackintosh's "Book of the Garden" are many excellent designs.

Gynerium argenteum: *K S.* Next week.

Heating: *W C.* There is no difficulty. If your three houses and pit are higher than the stoves, so much the better.

Names of Plants: We have been so often obliged to reluctantly decline naming heaps of dried or other plants, that we venture to request our correspondents to recollect that we never have, or could have, undertaken an unlimited duty of this kind. Young gardeners, to whom these remarks more especially apply, should bear in mind that, before applying to us for assistance, they should exhaust their other means of gaining information. We cannot save them the trouble of examining and thinking for themselves; nor would it be desirable if we could. All we can do is to *help* them—and that most willingly. It is now requested that, in future, not more than four plants may be sent us at one time.—*H B.* 1, 2, 3, 4, 6, are different states of Aspidium (Lastræa) Filix-mas; the same and [illegible] forms are widely spread over the temperate regions of the earth. They have been described as distinct species by various authors, viz., 1. Aspidium Filix-mas, the common European form. 2. A. affine, C. Meyer, some parts of Europe—being the Filix-mas var. incisa of British writers. 3. Aspidium paleaceum, [illegible] A. patentissimum, Wall.; A. parallelogramma, Kunze; A. crinitum, Mart. et Galeot.; A. adnatum, Blume. Found in Mexico, Guatemala, New Grenada, Venezuela, Peru, [illegible] &c.; also Nepaul, Himalayas, and other parts of India; Ceylon, Java, &c. 4. A. rigidum, Sm., Europe and East Indies. 5. Polystichum affine (Lowe), Madeira and South of Europe. [illegible] P. aculeatum, [illegible] lobatum—various states of this, as also P. aculeatum, are common over the earth, from the most southern limit of the growth of Ferns, and in the tropics, to the extreme temperate latitudes of the north; the number of intermediate states quite set aside the characters used by British writers on Ferns for distinguishing P. aculeatum from P. lobatum. *S.*

Pines and Evergreens: *X Y Z* will thank some of our correspondents to inform him "which are the best kinds of Pines and evergreens for planting on a granite rock."

The Venetian Sumach: *A Sub.* This is perfectly hardy, but requires a warm light soil in which it may be able to ripen its wood. You cannot get the tar off your young plants; [illegible] uncertain whether they will suffer from the application. Hares and rabbits cannot be kept off them by any other means than fences. If you do not fence you must kill your game, or allow it to kill your trees.

The Vinegar Plant: *Elia.* This is the spawn of a fungus called Penicillium glaucum. It thrives in a weak solution of sugar, which it soon turns to vinegar. You may cut the plant in pieces as often as you like. Every piece will grow.

Vine Borders: *Old Sub., &c.* Mr. Nash's border is constructed as follows:—The houses are built on the side of a low hill with a gravelly bottom. On the surface of the natural ground, which was coated with concrete, the border has been formed 3½ feet deep at the back and 2½ feet deep in front, so that it slopes from back to front, where it is rounded off. No rain can ever lodge there. It was formed with burnt clay (the bottoms of some old brick-kilns), loamy turf from an old pasture, plasterers' rubbish, hair and trimmings of hides (called fleshings) from the tan-yards, and an enormous quantity of thoroughly rotten stable manure. All these materials were *thoroughly incorporated.* They being thrown together were [illegible] form so loose a bed that a stick may be easily pushed through it to the bottom. Every November these borders receive a good mulching of stable manure, which remains to rot in the succeeding summer, so that the surface is always covered by a rich decaying material which absorbs heat from the sun and detains the natural dampness of the border. The Vines are managed upon Mr. Crawshay's plan. ‡

PERUVIAN GUANO, Bolivian Guano, Superphosphate of Lime, Nitrate of Soda, Sugar Scum, and every description of Artificial Manures, Linseed Cakes, &c.
WM. INGLIS CARNE, 10, Mark Lane, London.

THE FOLLOWING MANURES are manufactured at Mr. LAWES' Factory, Deptford Creek:—Turnip Manure, 7l. per ton; Superphosphate of Lime, 7l.; Sulphuric Acid and Coprolites, 5l.
Office, 69, King William Street, City, London.
N.B. Genuine Peruvian Guano, guaranteed to contain 16 per cent. of ammonia. Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

THE LONDON MANURE COMPANY beg to call the attention of Agriculturists to their WHEAT and CLOVER MANURES for present use. The London Manure Company also offer Genuine Peruvian Guano, Nitrate of Soda, Concentrated Urate, Superphosphate of Lime, Fishery and other salts and all Artificial Manures of value. The London Manure Company guarantee Peruvian Guano and every Manure they supply to be strictly genuine. EDWARD PURSER, Sec.
Bridge Street, Blackfriars.

SEWAGE CHARCOAL MANURE.—This highly fertilising Manure, which is Peat Charcoal completely saturated with London Sewage, will be found most efficient for every species of crop; more especially for Peas, Beans, Turnips, Mangold Wurzel, and other root crops. It will produce a greater return for the outlay than Guano or any other Manure at an equivalent value: it also possesses the property of retaining its fertilising power longer than other Manures now in use. It may be obtained at the SEWAGE MANURE WORKS, Stanley Bridge, Fulham, at 4l. per ton, and in quantities less than half a ton, at 5s. per cwt., for ready money only; and in quantities not less than a ton, will be delivered at the London Termini of the Railroads free of charge for cartage. No charge for sacks.
It may also be had from Messrs. G. GIBBS & Co., 26, Down Street, Piccadilly, Agricultural Seedsmen, Agents for London; and from all the other Agents of the Company.

ARTIFICIAL MANURES, &c.—Manufacturers and others engaged in making ARTIFICIAL MANURES may obtain every necessary instruction for their economical and efficient preparation, by applying to J. C. NESBIT, F.G.S., &c., Principal of the Agricultural and Chemical College, Kennington, London. Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and dispatch.
Gentlemen desirous of receiving instructions in Chemical Analyses and Assaying, will find ample facility and accommodation at the College.

CORN CRUSHERS AND CHAFF CUTTERS.—A large display of the best Farm Implements shown in operation. Price Lists sent free on application.
BURGESS AND KEY,
103, Newgate Street, and 52, Little Britain, London.

PUMPS AND HOSE PIPES FOR GARDENS AND LIQUID MANURE.—BURGESS & KEY'S Pumps were highly commended by the Royal Agricultural Society of England at Lincoln. Price Lists sent free.
103, Newgate Street, and 52, Little Britain, London.

CHURNS.—ANTHONY'S PATENT AMERICAN CHURN.—Since 1849 this Churn has obtained all the Prizes awarded by the Royal Agricultural Society of England. At the trial before the Judges it made in 10 minutes 4 lbs. 6 oz. of Butter from 4 quarts of Cream, being 8 oz. more than any of the other Churns from the same quantity and quality of Cream.
103, Newgate Street, London.

HOSE PIPING.—GREAT REDUCTION IN PRICE.
PATENT FLAX TUBING (1 inch to 3 inches diameter) is woven without seam, to stand immense pressure, and much more than leather, vulcanised rubber, or any other hose, and it is prepared so as to be anti-rot. The difficulty of producing this HOSE at a moderate rate has hitherto been its only drawback; but, owing to recent important patented inventions, the cost of manufacturing it is now reduced at least 60 per cent., which advantage is offered to the public.
BURGESS AND KEY, 103, Newgate Street, and 52, Little Britain, who on application will forward wholesale and retail prices.

WEEDS ON WALKS.
MR. FLEMING'S WEEDING OR SALTING MACHINE FOR GRAVEL WALKS, COURT YARDS, &c., manufactured and sold by ALEXANDER SHANKS & SON, Arbroath, Forfarshire, from whom particulars with prices may be had.

WATERPROOF PATHS.—BARN AND CATTLE SHED FLOORS.
THOSE who would enjoy their Gardens during the winter months should construct their walks of PORTLAND CEMENT CONCRETE, which are formed thus:—Screen the gravel of which the path is at present made from the loam which is mixed with it and to every part of clean gravel add one of sharp river sand. To five parts of such equal mixture add one of Portland Cement, and incorporate the whole well in the dry state before applying the water. It may then be laid on 2 inches thick. Any labourer can mix and spread it. No tool is required beyond the spade, and in 48 hours it becomes as hard as a rock. Vegetation cannot grow through or upon it, and it resists the action of the severest frost. It is necessary, as water does not soak through it, to give a fall from the middle of the path towards the sides.
The same preparation makes first-rate paving for BARNS, CATTLE-SHEDS, FARM-YARDS, and all other situations where a clean, hard bottom is a desideratum. May be laid in winter equally well as in summer.
Manufacturers of the Cement, J. B. WHITE & BROTHERS, Millbank Street, Westminster.

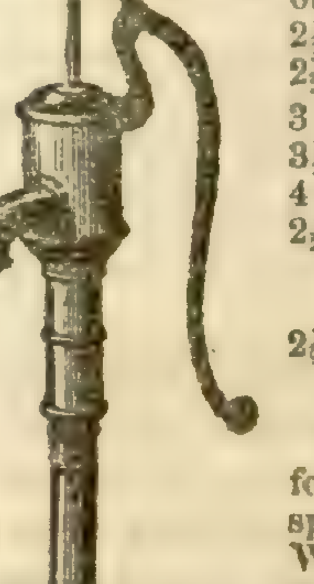
STEPHENSON AND PEILL, 61, Gracechurch Street, London, and 17, New Park Street, Southwark, Manufacturers of Copper Cylindrical and Improved Conical Iron BOILERS, and Conservatory and Hothouse Builders, either in Wood or Iron, respectfully call the attention of the Nobility, Gentry, and Nurserymen to their simple but efficacious method of warming Horticultural and other Buildings by Hot Water.
From the extensive works they have executed, references of the highest respectability can be given, and full particulars furnished on application.

"FRIGI DOMO."—Patronised by her Majesty the Queen, Duke of Northumberland for Syon House, His Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, and Mrs. Lawrence, of Ealing Park.
"FRIGI DOMO," a Canvass made of prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, and from attacks of insects and morning frosts. To be had in any required length, upwards of 2 yards wide, at 1s. 6d. per yard run, of ELISHA THOMAS ARCHER, 7, Trinity Lane, Cannon Street, City, and the Royal Mills, Wandsworth, Surrey.

PARKES' STEEL DIGGING FORKS & DRAINING TOOLS.

MESSRS. BURGESS AND KEY, as Mr. PARKES' Wholesale Agents for England, have always in stock a large assortment. These Forks and Tools are now in use by upwards of 1000 of the Nobility and Farmers, members of the Royal Agricultural Society, who pronounce them to be the best ever invented, and to facilitate labour at least 20 per cent. The Royal Agricultural Society has three times awarded their prize. Price Lists sent on application, and Illustrated Catalogues of the best Farm Implements, on receipt of eight postage stamps.
103, Newgate Street, and 52, Little Britain, London.

WARNER'S PATENT VIBRATING STANDARD PUMPS.
PATENT CAST-IRON PUMPS, for the use of Farms, Cottages, Manure Tanks, and Wells of a depth not exceeding 30 feet.



Diameter of Barrel	Length of Barrel, under nose.		£ s. d.
2½ in. short	1 ft. 7 in.	Fitted for lead, gutta percha, or cast iron flanged pipe, as required.	1 12 0
2½ " long	3 " 3 "		1 15 0
3 " ditto	3 " 6 "		2 12 0
3½ " ditto	3 " 6 "		2 18 0
4 " ditto	3 " 6 "		3 5 0
2½ " short, with 15 feet of Lead Pipe attached, and Bolts and Nuts ready for fixing			2 12 0
2½ in. long	ditto	ditto ditto	2 15 0

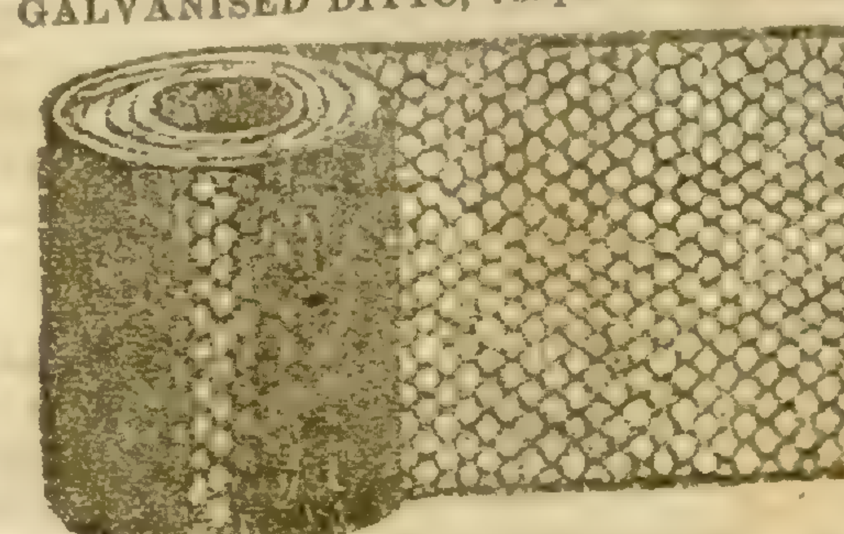
The short barrel Pump is very convenient for fixing in situations of limited height and space, for the supply of coppers and sinks in Wash-houses with soft water from underground tanks, or in Hot, Forcing, and Plant Houses; they may be fixed, when desired, under the stage.
May be obtained of any Ironmonger or Plumber in Town or Country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER AND SONS, 8, Crescent, Jewin Street, London.
Every description of Machinery for Raising Water, by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c. &c.—Engravings sent on application.

WARNER'S IMPROVED LIQUID MANURE, OR GENERAL PORTABLE PUMP.

The valve is a ball of imperishable material, and cannot clog in action. The barrel is of galvanised iron, not likely to corrode, and can be raised or lowered at pleasure. The legs will fold together, and the whole may be carried on shoulder to any pond or tank required.
Price of 4½ in. Pump, with legs, 3l. 3s. The barrel is 27½ in. long, and the legs are 5 ft. high.
1½ inch Gutta Percha Suction Pipe, 1s. 6d. per foot.
1½ inch Flexible Rubber and Canvas Suction Pipe, 3s. 6d. per foot.
May be obtained of any Ironmonger or Plumber in town or country, at the above prices, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Jewin Street, London.
Every description of Machinery for Raising Water, by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c.—Engravings sent on application.

TO AMATEUR GARDENERS, LOCAL BOARDS OF HEALTH, & SANITARY WORKS.
PATENT SLUICE COCKS, Gutta Percha, Combinated ditto, Patent Flexible India Rubber Tubing, and every other Hose for Watering Gardens. The Hydraulic Ram, for Watering Gardens. Fire, Garden, and every other kind of Pump, Hydrants, High Pressure Cocks, and all other articles to be had, Wholesale and Retail, of FREEMAN ROE, HYDRAULIC ENGINEER, 70, Strand, and Bridgefield, Wandsworth.

CHEAP WIRE GAME & POULTRY NETTING, 5d. per running yard.
GALVANISED DITTO, 7d. per running yard, 2 feet wide.



	Galvanised.		Not Galvanised.
		... ...	5d. per yard
24 in. wide, 2 in. mesh,	7d. per yard.	... ...	6½d. "
30 in. " 2 in. "	9d. "	... ...	7½d. "
36 in. " 2 in. "	10½d. "	... ...	10d. "
48 in. " 2 in. "	1s. 2d. "		

Sparrow Proof Netting, Galvanised, 3d. per square foot, made to any size for the same proportionate price. This article was shown at the Great Exhibition, where it was so much admired for its light and durable appearance, and acknowledged to be the cheapest and best article of the kind ever offered. Extra strong Wire Sheep Netting, 3 feet high, 1s. 6d. and 2s. 3d. per yard. Also every description of Flower Trainers, Dahlia Rods, Garden Arches, Bordering, Flower Stands, Tying Wire, Trellis Work, Invisible Wire Fencing, Hurdles, and every description of Wire Work for Horticultural purposes.—Illustrated Catalogues of Patterns forwarded, post free, on application to T. H. FOX, City of London Wire Work and Iron Fence Manufactory, 44, Skinner Street, and 6 and 8, Snow Hill, London.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.
PATRON—His Royal Highness PRINCE ALBERT.
PRESIDENT OF COUNCIL—Earl BATHURST.
PRINCIPAL—Rev. J. S. HAYGARTH, M.A.
PROFESSORS, &c.
Chemistry—J. A. C. Voelcker, Ph.D., F.C.S.
Zoology, Geology, and Botany—James Buckman, F.G.S., F.C.S.
Veterinary Medicine and Surgery—G. T. Brown, M.R.C.V.S.
Surveying, Civil Engineering, and Mathematics—F. Armstrong, C.E.
Manager of Farm—G. Austin.
The first Session of 1855 will begin in February. The Annual Fees for Boarders vary from 45 to 60 guineas, according to age and other circumstances. The Fee for Out-Students is 40l. per annum. The College Course of Lectures and Practical Instruction is complete in one twelvemonth—though a longer course is recommended. There is a department for general as well as for agricultural purposes. Prospectuses and information can be had on application to the Principal.

COLLEGE OF AGRICULTURE AND CHEMISTRY, AND OF PRACTICAL and GENERAL SCIENCE, 37 and 38, Lower Kennington Lane, Kennington, near London.
Principal—J. C. NESBIT, F.G.S., F.C.S., &c.
The system of studies pursued in the College comprises every branch requisite to prepare youth for the pursuits of Agriculture, Engineering, Mining, Manufactures, and the Arts; for the Naval and Military Services, and for the Universities.
Analyses and Assays of every description are promptly and accurately executed at the College. The terms and other particulars may be had on application to the Principal.

THE LANDS IMPROVEMENT COMPANY, INCORPORATED BY SPECIAL ACT OF PARLIAMENT FOR ENGLAND AND SCOTLAND.—To Landowners, the Clergy, Solicitors, Surveyors, Estate Agents, &c.—Loans may be contracted for the execution by the proprietor or by the Company of every landed improvement, especially Drainage, Building, Clearing, Enclosing, Warping, Irrigation, Embanking, Reclamation, Roads, Planting, Machinery, &c. The plans of buildings, specifications, and estimates are prepared by the proprietors, and are submitted to the approval of the Enclosure Commissioners. Proprietors may avail themselves of the powers of the Act to recover from the inheritance their own funds to be expended on improvements. They may also apply jointly for the execution of a mutual improvement, such as a common outfall, &c. For forms of application, &c., apply to the Hon. WM. NAPIER, Managing Director, 2, Old Palace Yard, Westminster.

JOHN MORREN, GENERAL COMMISSION AGENT, Ock Street, Abingdon, is open for Commissions for the sale of Agricultural Implements, Manures, Seeds, &c., and for the purchase of Corn, &c.

AGRICULTURAL TUITION.—A Gentleman, possessing 500 acres of Arable and Grazing Land, has a vacancy for a PUPIL. Terms, a premium of 80 guineas per annum.—Address J. P., Post-office, Peterborough.

The Agricultural Gazette.

SATURDAY, DECEMBER 30, 1854.

MEETINGS FOR THE ENSUING WEEK.
THURSDAY, Jan. 4—Agricultural Imp. Society of Ireland.

COVENEY'S ECONOMICAL MANURE.

A TON of COVENEY'S PATENT "ECONOMICAL" MANURE contains, according to Professor APJOHN'S report of its composition, about 4 cwt. of plaster of Paris, 4 cwt. of Glauber salts, nearly 8 cwt. of green vitriol, and 2½ cwt. of common salt, together with 1½ cwt. of other things, which include 30 lbs. of sulphate of ammonia. Of course these salts contain a large quantity of water—a mere useless addition to the weight of the mixture. The Glauber salts or sulphate of soda contains 55 per cent. its weight of water; the plaster of Paris, sulphate of lime, contains one quarter of its weight of water; and the green vitriol, sulphate of iron, 42 per cent. of water.

In the case examined by Dr. VOELCKER, this water amounted to more than 7 cwt. in every ton; the other ingredients in the dry state being—green vitriol nearly 5 cwt., bisulphates of potash and soda nearly 3 cwt., Glauber salts about 3 cwt., sulphate of ammonia about ½ cwt., together with 1½ cwt. of other things, chiefly sand. Excepting the absence of gypsum, and the greater quantity of ammonia present in the latter of these instances, they do not materially differ; the sulphuric acid, soda, and iron being in both the principal and characteristic ingredients. *And, in themselves, and as direct applications, three less useful additions to ordinary English soils it would be difficult to select.*

No wonder Mr. COVENEY has professed a disregard and even a suspicion of chemical analysis. It exposes his agricultural ignorance just as clearly as his commercial acuteness; for his sharp practice is combined with the clumsiest blundering in the history of the patent "economical" manure. A fertiliser to act quickly must consist mainly of nitrates or of ammoniacal salts, and if, in addition to these, it contain a due proportion of the phosphate of lime, it will be, like guano, lasting as well as rapid in its influence. Now, of these two principal fertilising agents Mr. COVENEY'S manure may be said to contain none, for the poorest farm dung is much richer in both. But of the things which it does contain a very large proportion are positively mischievous! The problem which its manufacturer has been puzzling over—How to make a manure for 3l. which shall sell for 12l.?—is happily insoluble in these days: and it is the facility of obtaining correct analyses which is the insuperable difficulty—if, however, we desired to compete with Mr. COVENEY

in the matter, we certainly should not lay in a stock of green vitriol to begin with.

The following is Professor Johnston's account of this substance:—

"Of the sulphates of iron which are known, there is only one—the common *green vitriol* of the shops—that occurs in the soil in any considerable quantity. There are few soils, perhaps, in which its presence may not be detected, though it is in bogs and marshy places that it is most generally and most abundantly met with. It is often exceedingly injurious to vegetation in such localities, but it is decomposed by quicklime, by chalk, and by all varieties of marl, and thus its noxious effects may in general be entirely prevented. To soils which abound in lime, it may even be applied with a beneficial effect.* When a solution of this salt is exposed to the air it speedily becomes covered with a pellicle of a yellow ochrey colour, which afterwards falls as a yellow sediment. This sediment consists of *per*-oxide of iron, containing a little sulphuric acid; but by the separation of this oxide the sulphuric acid is left in excess in the solution, which becomes sour, and still more injurious to vegetation than before. In boggy places the waters impregnated with iron are generally more or less in this acid state, and lime, chalk, and marl, with perfect drainage, are the only available means by which such lands can be sweetened and rendered fertile."

The object of the cultivator when this salt of iron is naturally present is to get rid of it as soon as possible. He drains the soil that it may be washed out of it, and that, by the continual passage of air, the mischievous material may be decomposed: he adds calcareous matters by which this decomposition may be hastened; and it is not till the iron is peroxidised and harmless, and it is not till the sulphuric acid is combined with lime, and also harmless, that he is satisfied; AND YET OF THIS SULPHATE OF IRON—THE CHARACTERISTIC NUISANCE OF MARSHY SOILS AND BOGGY INFERTILITY—ONE FOURTH TO ONE THIRD OF THE ECONOMICAL MANURE IS MADE!

How are we to account for such a blunder? Two causes may have operated—green vitriol will hasten, in the manner which Professor Johnston indicates, the reduction of vegetable fibre, and so facilitate the use of long manure or vegetable structures of any kind, while its sulphuric acid, both that which is combined with the iron, and that which is gradually being liberated from this combination by the action of the air, will unite with any ammoniacal products of this vegetable decomposition; and so it may have been considered useful, in both an active and a conservative capacity. The latter, indeed, of these qualities marked it out some years ago as one of the substances which were available as fixers of the ammonia wasted in the ordinary management of farm-yard manure; so that it was recommended as a cheap and efficient addition to manure tanks, able to retain the volatile products of the fermentation proceeding there. Unfortunately for its character in this particular, however, it has the power not only of rendering ammonia *non volatile*, but also of rendering phosphoric acid insoluble; for while its sulphuric acid unites with the one, its oxide of iron is uniting with the other—and this was at once held to be so fatal to its use for such a purpose, that we believe it never received extensive trial. There was a little phosphoric acid in the sample of economic manure examined by Professor Apjohn, and it will accordingly be seen (p. 428) that along with peroxide of iron and sand it is enumerated as "insoluble in water."

This, then, is the character of green vitriol—generally mischievous; with its only good feature fairly neutralised: and yet this is the characteristic ingredient of the economical manure. The gypsum and the alkaline sulphates which are present have indeed proved agriculturally useful; the latter in particular instances, the former generally, when applied in quantity large enough; but no one with the smallest knowledge either of the wants of plants or the deficiencies of soils would think of making a manure for general application depend for its value on the presence of Glauber salts, nor would any intelligent person expect much from gypsum, except it were applied at the rate of many cwts. per acre. The whole affair is a blunder. And if, in spite of it, instances of its usefulness have been adduced, this only tallies with the ordinary run of agricultural experience; for there are records enough of extraordinary results in the field of which there has been no extraordinary cause apparent, to ensure that extraordinary success should sometimes follow the application of a manure, however worthless it may be, just as it sometimes follows absolute inaction.

How much worse than blundering Mr. Coveney's conduct of this business may have been we do not pretend to say. Our readers have now before them ample grounds of judgment upon that.

Our attention has been called to Boydell's Patent Wheels, or Endless Railway. It is plain that the efficiency of a railway over soft land for agricultural purposes depends upon the weight of the material to be carried on it being borne, and therefore sustained, by a large *flat* surface. In the ordinary carriage of that weight it is apt to sink beneath the surface, and so rendered difficult of conveyance—for wheels sink into the ground not only because they are narrow, but because they necessarily present a curved surface to the land. Now, Messrs. Boydell make their wheels carry, disposed along their circumference, a number of flat pattens as it were, which, as the wheel revolves, are placed, rolled over, and lifted successively, forming, in effect, what in the prospectus they are called—an endless railway. The apparatus is a sufficiently cumbrous looking thing, and to what extent it has yet been tried under circumstances capable of testing it, we do not know. Until some such test has been undergone, any opinion on the merely mechanical ingenuity of the contrivance is of little value.

* We know of no agricultural experience to sanction this opinion of Professor Johnston; if, however, any advantage were derivable from the application of green vitriol to a calcareous soil, it would be owing to the rapid decomposition of this noxious salt, the formation of gypsum being, in such a case, one of the results of that decomposition.

We would gladly give insertion to the whole of the preface to the new edition of the "Word in Season to the Farmer,"* containing, as it does, matter referring to the treatment of clay, of no small importance to every cultivator of the soil. Our purpose in publishing that portion of it, for which alone we have room, is not to advocate, as for general and immediate adoption, the scheme which its author proposes, but, in accordance with the rule by which we have been guided in other instances, where authentic results in agriculture are borne out by sound principles, to give our readers an opportunity of judging of the merits of the case themselves. And this they will be the better able to do, for the full and valuable discussion of the whole subject which Professor Daubeny has given it in the lecture reported in our columns.

The author in his address to those who have tried this plan of growing Wheat and succeeded, refers first to the history of the 4-acre piece spoken of in pages 23, 24, and 25 of the pamphlet. He says:—

"The produce of the first year (1851) was 41 bushels; of the second (1852) 30 bushels; and of the third year (1853) only 26 bushels. There was no difficulty in accounting for the shorter crop in 1852, since the early sowing season was so hot and dry that the seed actually malted in the ground, and the field was re-sown with the only seed I could then readily procure, and that was faulty and crushed, and consequently yielded ill. But the degradation of 1853 demands some comment. For at harvest no one, I believe, out of the numbers who inspected it, gave an estimate of less than 40 bushels. The land, therefore, had produced the crop. But the season in reality had told on the grain; the yield partook in a degree of the general and unheard-of deficiency; and, though it still gave a very high average for the year, I was thus defeated of my hopes by a reduction to 3 quarters and 2 bushels."

The crop of the past harvest is estimated at 5 quarters per acre, and the confidence with which this is expected is justified by the character of the season, which ensures the realisation of grain-crop estimates. The soil of this 4-acre piece, it will be remembered, is not Wheat land, but a light gravelly loam, with a subsoil containing less of the loam and more of the gravel as it descends.

In order therefore to preserve the mineral wealth of the soil, which successive crops of Wheat are sure to diminish, a supply from without is needed, and the following describes the mode in which it is provided.

"At the corner of the field in question there is a narrow vein of clay, of fair quality; and here, in the autumn of 1853, I dug and raised a sufficient supply for my present purpose, and left it on the spot in ridges, to be acted on by the frost. Twice during the winter it was turned; and after that it was wheeled on to the intervals, between each triple row of growing Wheat, where it was most and soonest required, being those parts where the gravel abounded most; and during the summer it was well stirred in with the horse-hoe.

"In the winter of 1853-4 another lot of clay was raised, and turned at spring and during summer; and after harvest, and when the stubble had been pared and burnt, it was carted on to the land, and spread, and rolled, and harrowed in. There is now only a small portion of the field in want of such a dressing; and that will be treated in a similar way next season.

"The value of burnt clay is now well known, in a great degree through the well-digested experiments of Dr. Voelcker. Setting aside altogether the cases of pure pipe and porcelain clay, the great majority of clay soils contain every mineral element of fertility for the Wheat plant in abundance,—that abundance varying, of course, according to the quality of the clay itself. For when the analytical chemist speaks of mere traces of such and such a substance being found in a given soil, he is speaking of what he finds in the few ounces of earth under examination. But bring up even a superficial inch of subsoil from an acre of land, and those few ounces are increased to a hundred tons, when the slight traces will become deep footmarks. Increase by degrees the quantity to 10,—12,—18 inches, and there will be no fear then for that promised and lasting abundance.

"But clay, in its natural state and position, that is, as it lies unmoved and cohesive below the surface, does not yield up its hidden treasures, which remain almost wholly insoluble and all but inaccessible to the roots of the plant. Bring up the clay, then, to the surface. Apply to it the action of fire at the due temperature; and its condition is wholly changed. Its texture is altered, and it has become porous. It absorbs the organic substances of the atmosphere. Its dormant inorganic substances are awakened, and become gradually soluble. And if the heat has dissipated in some degree the organic substance ammonia, and rendered less soluble the inorganic phosphate, it has been proved abundantly that clay, properly burnt, is still chemically as well as mechanically of very great agricultural value.

"Improperly burnt, however,—that is, burnt beyond that due and proper temperature, the baked clay has lost its high value. The solubility of its mineral ingredients is greatly diminished. The ammonia has vanished altogether. It is less absorbent of that from the atmosphere; and the labour and expense of the process, in a great measure, are thrown away.

"I come back now to the practice I have been describing, of simply bringing up the clay and turning it, and exposing its surface to the action of the atmosphere. By this process all the good effects of burning are secured, and all the evil avoided. The clay becomes pulverised and porous, and in a condition to absorb and retain the atmospheric ammonia. Whatever ammonia already exists in the clay, remains; and a sufficiency of every inorganic element of fertility is rendered soluble and available for the wants of the growing plants.

"Such has been my process on land not naturally Wheat land; and there can be no doubt, I conceive, that the good effects of this single inexpensive dressing of clay will survive for several years. Comparatively inexpensive; for one spit deep will now suffice for the digging of the intervals; since the mineral substances being already on the surface, no double digging need search for them below."

As to the original experimental ground, which is strictly Wheat land, its 10th crop of Wheat is, we are informed, now coming up vigorously.

"The subsoil here is tenacious; so tenacious, indeed, that in forming my water-tight liquid-holding tanks I have but to dig and the feat is done. When, therefore, I have reminded the reader that heavy loams and clay subsoils,—those very soils which are the hardest and most expensive to work in the ordinary way,—are the soils expressly suited for the scheme I propose, I have nothing further to add under this head. For, it will be self-evident that what, in the case of the lighter soil, had to be conveyed to the intervals, is at hand here and under the spademan's feet; and that when this clay is brought to the surface before winter, it has a ten months' fallow at least, while a full crop of Wheat is growing at its side; it is a common fallow, in short, without the common accompaniment of a fallow,—the loss of a crop."

The preface concludes with a word to those who have tried the plan and not succeeded. We recommend them to procure the pamphlet and study the whole process in its principles and details, both of which are amply discussed.

* Thirteenth Edition. Ridgway, Piccadilly

LOIS-WEEDON:

A LECTURE ON THE REV. MR. SMITH'S SYSTEM OF GROWING WHEAT.

Delivered at Oxford by Dr. Daubeny, Sibthorpian Professor of Rural Economy.

(*Concluded from page 828.*)

The following may also be suggested as another possible source of the supply of nitrogen to plants. Schœnbein states that ozone, when brought into contact with nitrogen, an alkali, or an alkaline earth being at the same time present, generates nitric acid; and he suggests this as the probable mode in which nitric acid is produced during natural as well as artificial electrical disturbances. Now, oxygen seems to be converted into ozone in every case of combustion, whether slow or rapid; and if by combustion, why not during that process of *eremacausis* which is taking place in all humus. Hence it is conceivable that exposure to air and light may enable a soil to supply plants with nitrogen, not only through the medium of the ammonia which it absorbs from the atmosphere, but likewise by means of the nitric acid which it causes to be generated, owing to the ozone which its own *eremacausis* occasions. May not the difference of fertility in soils be in part connected with a difference in this supposed capacity?

In a former lecture* I stated my grounds for objecting to the facts alleged by Professor Johnston in favour of the direct absorption of nitrogen, but the discovery of ozone and its properties seems to place the question in rather a new light, and to render the supposition a more tenable one.

Accordingly it is not difficult to believe that, in so far as the organic constituents of the crop are concerned, no extraneous matters of an azotised nature in the shape of guano, stable dung, or nitrate of soda, may be required in this system of culture.

We come next to the inorganic constituents, and here the only one which need detain us is the phosphoric acid, for it is well known that all ordinary clays contain, locked up within their substance, sufficient alkali to supply any amount of produce. Now, assuming a bushel of Wheat to weigh 60 lbs., and 100,000 parts to contain 400 of phosphoric acid, then 34 bushels

* I showed, that in all the cases cited either the nitrogen or the oxygen were in a nascent state, but Schœnbein has lately observed that in the nascent state oxygen often exists as ozone.

2000 lbs. of Wheat will contain 8 lbs. of phosphoric acid. But an acre of ground from the surface to 1 foot in depth may be calculated as containing 1600 tons, consequently in order to yield phosphoric acid enough for a crop of the supposed magnitude, only $\frac{1}{363000}$ part of its amount would be required. In other words, if the soil contained only 3 grains of phosphoric acid to 1,000,000 grains of earth, it would supply enough for a single crop.*

Now it may be seen that the proportion of phosphoric acid present in soils varies from 3 parts in 20,000, which was the composition of the poorest subsoil in the neighbourhood of Brunswick, to 5, 19, and even as high as 60 and 120; the two latter figures representing that of rich soils in Moravia and in Belgium respectively. (Johnston, p. 414.)

Granting, however, the very lowest of these numbers to represent the composition of the Lois-Weedon clay, there would still be in the acre 435 lbs. of phosphoric acid, or enough for nearly 54 crops, and if the highest quantity, enough for more than 17,000 crops of the same magnitude. I believe that one part in 1000 is not an uncommon proportion, and this would give to the acre not less than 2900 lbs., or a sufficiency of phosphoric acid for 362 crops.

Consequently, provided means can be found for disengaging the whole of this quantity, it is quite conceivable that the soil might for a considerable time continue to yield large crops without the application of manure.

In summing up the advantages and disadvantages of the Lois-Weedon system, I think it may, in the first instance, be conceded, that we must not rush to a conclusion in favour of its applicability to land in general from its success in this individual instance. Before such a result can be arrived at with any kind of confidence, trials must be made on limestones and on granites as well as on clays and loams, and on light soils as well as on heavy ones. Until this has been done, it is impossible to predict in any particular case that a sufficient amount of ammonia can be absorbed by the soil through the mere process of pulverisation, to answer our purpose, and to provide materials for an abundant crop. Neither are we justified in assuming, that every kind of soil which we cultivate contains within itself a sufficient amount of phosphoric acid in that state of combination which allows it to become soluble and available for the purposes of plants.

I have in a former lecture alluded to the distinction between the dormant and active ingredients of plants.†

By the active I mean those which water impregnated with carbonic acid alone is capable of taking up; by the dormant, those which resist the solvent action of this menstruum, but which may be extracted by muriatic acid. The former represents the portion which is at the time available, since carbonic acid and water are the means which Nature employs for introducing these materials into the organism of plants; the latter represents what may be expected after a year or two of fallow to become available. But even after carbonic acid and muriatic acid have both acted, it is conceivable that a portion of these materials may remain, which might be extracted by a more elaborate process of fusion with barytes or lead, and subsequent digestion in the mineral acids; and this, inasmuch as it will remain, for many years at least, inoperative upon the plants which grow in the soil, I have denominated the passive ingredients. I have shown that, by a series of successive croppings, I reduced the amount of active ingredients in the soil of the Botanic Garden, without much affecting that of the dormant ones, and hence have concluded that the farmer has often three courses open to him, namely—

1st. To apply a sufficient quantity of the same materials in a state in which they can be absorbed by the plants without delay. 2d. To allow the ground to remain fallow, by which expedient time is given for a further decomposition of its materials, and for a renewed extrication of its useful ingredients to take place. 3d. To produce, by the various methods in daily use, such a stirring and pulverisation of the ground, as may admit of a more thorough admission of air and moisture, and consequently accelerate the process of disintegration in a greater degree than would take place under natural circumstances.

The choice between the above three methods will, of course, be determined in each instance by a balance of economy; and if the conditions are such in the case of Lois-Weedon as to make the balance incline in favour of the third method, which proceeds upon the principle of making the fullest use of the materials inherent in the soil without seeking for them elsewhere, and of accelerating those processes of decomposition by which Nature herself is ever evolving the latent resources which the earth contains, it must not be taken for granted that the same is the case everywhere.

But even assuming that we have land to operate upon as favourable for the experiment, in all respects, as that of Lois-Weedon, would it be wise to discard all assistance from manure, and to rely upon pulverisation and bringing up the subsoil alone? It would be as foreign to the expressed views of the author, as it is to the carrying his principles into practice, that such a rule should be adopted.

Mr. Smith, indeed, having only about 20 acres under cultivation, possessed no live stock of any consequence, and therefore had no stable dung to spread upon his land. But it does not follow that a farmer whose concerns supplied him with abundance of this fertilising material would be wise in throwing it aside as superfluous or injurious. Even on Mr. Smith's farm, that portion of his land which consisted of gravelly loam would have been benefited by such an application, as it required the addition of some of the clay taken from another part of the estate to supply its deficiencies. It would be absurd, therefore, to reject that amount of azotised matter which has been already accumulated by the processes of agriculture, in reliance upon the powers of the soil to extract a fresh quantity from the atmosphere. It would be like the fisherman throwing into the water the remaining contents of his net after his meal was over, confident that his skill would enable him to catch a sufficiency for his subsistence on the morrow.

Manures, indeed, as I have remarked on a former occasion, contain the products which Nature has, with so large a consumption of time, and by such a number of complicated operations, elaborated from the raw material contained in the soil, and has at length brought into the condition in which they are most soluble, and therefore best fitted for assimilation by the organs of plants. To waste them is therefore to undo what has been expressly prepared for our use by a beautiful system of contrivances, and to place ourselves under the necessity of performing, by an expenditure of our own labour and capital, those very processes which Nature has already accomplished for us, without cost, by the aid of those animate or inanimate agents which she has ever at her disposal.

Nevertheless, with all these deductions, it must be admitted that Mr. Smith has conferred a benefit on agriculture, by proving that much of the money, which is now expended on guano and other extraneous manures, may be spared by that careful and complete subdivision of the soil which is so well carried out in the Lois-Weedon system.

He has also shown that there are certain soils in this country in which a much greater breadth of Wheat can be grown than is generally supposed, because instead of a five years' rotation, which would be equivalent to the setting apart one-fifth of the farm for Wheat, one-half may be profitably cultivated each year for that purpose.

But is not, it may be asked, the employment of spade husbandry a retrograde movement in agriculture. Can it be the case, that whilst all other trades advance by substituting machinery for the rude manual efforts which were originally employed, husbandry alone, in the most perfect state in which it has been yet brought, should return to that most simple condition in which it existed at the very earliest times, so that, after having advanced from the hoe to the plough, and from the plough to the other more refined machines which modern ingenuity has found out, it should at last appear, that the system of culture which can be performed with the simplest tools is after all the most advantageous.

To this it may be replied, that the comparison here instituted with the manufactures is not altogether a correct one. In these, machinery not only does its work with infinitely greater rapidity than manual labour, but at least equally well; whereas in farming, the plough, although it may abridge the labour of preparing the soil for the seed, can never cause the same thorough stirring of it, which is effected by other and by simpler implements.

It may be sufficient, indeed, in land recently brought into cultivation, and therefore of exuberant fertility, to move the surface just enough to create furrows, in which the seed may be deposited, because the principles required for the nutrition of plants are abundantly present in a condition in which they are readily absorbed. But the case is different in land of only average fertility which has long been cropped. There it is necessary to bring the soil as completely as possible into communication with the atmosphere, in order, as we have seen, to elicit its latent treasures; and in this case the additional labour of stirring it up with the fork and hoe, in the manner recommended by Mr. Smith, may be amply repaid by the results obtained. In short, the plough is the proper instrument for virgin soils, the spade and the fork for exhausted ones; the former, although the invention of a more advanced period of husbandry than the latter, is in reality best suited for the earliest stages of cultivation—whilst these, although from their simplicity they are the implements that would occur to the first tillers of the land, are found to become more and more advantageous in proportion as the soil is worked out.

But, after all, may not these operations be facilitated by the employment of mechanical contrivances; and may not we thus obtain the same result without so great an expenditure?

To this, Mr. Smith's reply is in the negative, for he affirms that, for preparing the fallow for the next year's crop, there exists no implement at present but the spade or the fork.

This, of course, is a point on which it would not become me to speak with any degree of confidence; but granting that the fact continues to be in times to come as Mr. Smith asserts it to be at present, namely, that the necessary pulverisation of the soil can only be effectually performed by manual labour, no inference can be drawn from thence against the use of machinery in general; because the conclusion would be, not that manual labour is preferable to mechanical skill where they can be brought into competition, but only that a certain task requires to be performed to which machinery has not yet been found applicable, and for which therefore the labour of the hands of the peasantry must be devoted, not indeed as a matter of preference but of pure necessity. Such a circumstance, indeed, need not be a subject for condolence; for, although it seldom is well to employ labourers where the end can be answered more economically by the use of machinery, still it may be regarded as a fortunate circumstance, that a larger proportion of the labour required for the profitable cultivation of our farms should fall upon our rural population, rather than upon those employed in manufactures at a distance from the spot where the results are to be obtained.

After all, however, the main impediment to the adoption of the Lois-Weedon system on a large scale consists, as I am informed, in the difficulty of obtaining an adequate amount of labourers to carry it out effectually.

Such at least is the statement made to me by a gentleman of this neighbourhood, who appears to have tried the plan himself, and also to have watched the working of the system in other hands than his own.

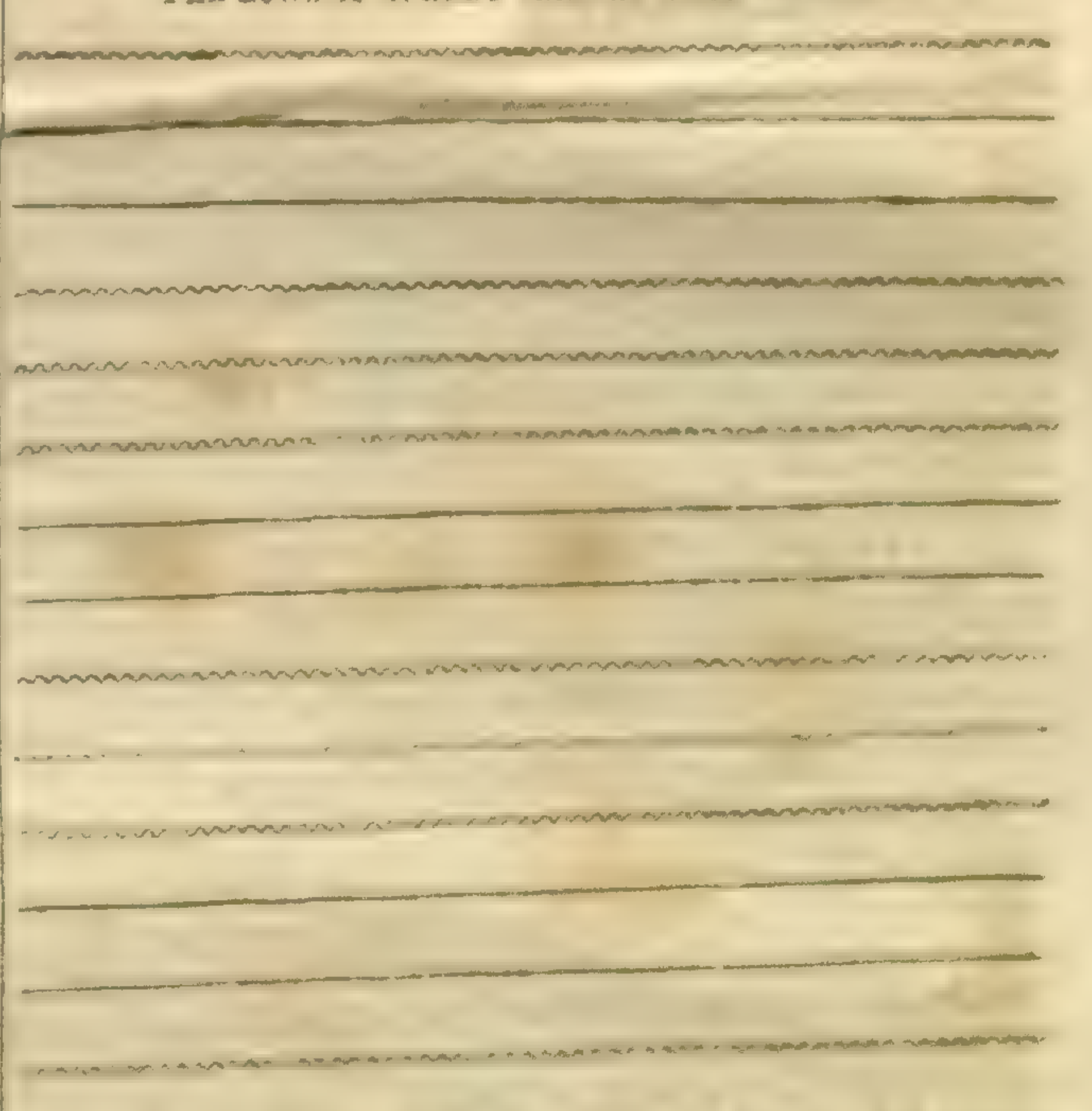
In a note which he has kindly communicated to me on the subject, he states as follows:—

"Long Wittenham, Abingdon, Nov. 9, 1854.

"MY DEAR SIR,—I cultivated about half an acre of Wheat on Mr. Smith's system for three years. I gave it up because I found it inconvenient to bestow the necessary labour upon it at a time when the green or root crops required the most attention; and it it was for the same reason that Lord Essex, who began the system on a large scale, also gave it up. I believe that all Mr. Smith's statements are correct, and the experience of three years showed me that Wheat may be grown on the same ground without manure for a succession of years without any diminution of quantity. By the side of the crop on Mr. Smith's system, I grew Wheat three successive years, sowing it some broadcast, and some dibbled in rows and a foot apart, over the whole ground. Last year I ploughed up the whole piece, and sowed it broadcast with Wheat. There was a very striking difference in favour of the part which had been under Mr. Smith's system, showing that the land had been less exhausted by it than where Wheat had been planted over the whole ground for the same period of three years. The yield of Wheat for the last two years—1852-3—was so bad that it was impossible to form a correct estimate of the value of the system on that score, but it is quite clear that there is an economy in manure. The difficulty of the labour question may perhaps be got over where the cultivation of other crops requiring attention at the same time is not carried on, and I believe that the expenses would be amply returned by the crop. I had a discussion as to the quantity of land cropped, or rather the quantity occupied by the three rows; I contended that three-fifths of the land was cropped, because space was left only for two additional rows. I send a diagram to explain my meaning, and I still adhere to the opinion that three-fifths are cropped. This, perhaps, is of little moment, but when I tried the experiment I was at first led into a mistake by Mr. Smith's book, first edition, and left the space for three rows instead of two. I have not tried the experiment on green or root crops, but I should be tempted to do so if I had not rather more land than I have as yet been able to bring into a high state of cultivation, having entered on it in a bad condition.—I am, dear Sir, yours faithfully,

"Dr. Daubeny. "JAMES CLUTTERBUCK."

ROWS ONE FOOT APART.
THE ROWS OF WHEAT MARKED THUS ~~~~~~



But after all, if the difficulty of obtaining labourers be the sole objection that can be brought against the practice, time alone is wanting to secure its general adoption. Private interest will in this case provide in the long run the means of accommodating the number of hands to the work required to be done, and after an interval the supply and the demand will adjust themselves in such a manner, that no more difficulty will be experienced in obtaining an increase of labourers for this species of rural labour, than is found in any other kind of manufacturing industry. Only let it not be supposed, that other methods of ameliorating the soil are to be superseded by the adoption of this one, or that the utmost skill in rendering available its latent resources ought to render us neglectful of those means and appliances which every large and well-conditioned farm has at its disposal, in the form of manure accumulated through the culture of preceding years, and containing the materials of fertility already in the very condition in which it is the aim of the husbandman to bring his soil by the laborious process of subdivision and of aeration noticed in this lecture.

ITALIAN RYE-GRASS AND LIQUID MANURE.

[The following is the letter from Mr. Telfer to Mr. Hamilton to which we alluded last week. We take it from the Journal of the Royal Agricultural Improvement Society of Ireland.]

"Cunning Park, 6th December, 1854.

"DEAR SIR,—I observe from a report in the *Farmers' Gazette* of a meeting of the Royal Agricultural Society of Ireland, that in giving a description of my farm you have unintentionally allowed

* The following are the calculations upon which this result is arrived at:—An acre of ground to the depth of 1 foot contains 1600 tons of earth = 2,904,000 lbs. Now, 7 lbs. of phosphoric acid would be withdrawn from it by one crop of Wheat, amounting to 34 bushels, and this bears the proportion of 1 to 363,000 to the weight of the soil.

† Bakerian Lecture, Phil. Trans., 1845.

some inaccuracies to occur, which have led you into most erroneous conclusions.

"There is one hydrant to every $2\frac{1}{4}$ acres, instead of every 6 acres, and the solid dung is wheeled out in a barrow, not put into the tanks. People would infer from your statement that besides the liquid of my cattle, the Italian Rye-grass had the solid dung as well applied to it, which is contrary to fact.

"You have also mistaken my autumn feeding for summer. The food raised on the farm for my cattle consists of Mangold, used during the first four months of the year, Italian Rye-grass during the succeeding six months, four months at four feeds per day, and two months at two feeds per day, and Cabbage during the remainder of the season.

"I was partly on Cabbage when you visited me in September, and in getting a description of the food then used, you have concluded that Cabbage was consumed during the whole summer, which makes an error of 150 feeds of 10 cwt., or 75 tons of Grass instead of Cabbage consumed by the cattle.

"In the extent of land under Grass and the quantity of manure applied, you are in still greater error.

"I have only 7 acres Italian Rye-grass, not 11, as you state; one-half of this 7 was sown this season, and was not ready for cutting till July. As soon as it was fit for use, I ceased manuring the other half, which, according to Dr. Kirkpatrick's experiment, is equivalent to stopping growth. I seeded and made hay of what remained on the ground, and afterwards prepared for an early spring cut by ploughing and sowing. There is now a fine braird on that half of the field.

"The conversion into Grass of the ammonia contained in the application of guano and the liquid of the cows was thus effected previous to July by the $3\frac{1}{2}$ acres of last year's sowing. Since that time the conversion has been carried out by $3\frac{1}{2}$ acres of this year's sowing.

"By referring to the statement of the feeding of my cattle you will find that during the four months I was on full feeding, 480 feeds of 10 cwt. each was consumed, and during the last two months on half feeding, 120 feeds—in all 600 feeds, less 60 taken from a perennial Rye-grass field not under irrigation. This gives 540 feeds = 270 tons Grass. Now in this calculation there is none of the Italian Rye-grass of the $3\frac{1}{2}$ acres which was seeded and made into hay. I have, therefore, obtained 540 feeds of green food for 48 cattle, by which, taken at 2*d.* per cow, and this is 50 per cent. cheaper than any other food I can purchase, you have each feed worth 8*s.*, giving, of money value, 210*l.* from the application of a certain quantity of ammonia to either $3\frac{1}{2}$ acres, $5\frac{1}{4}$, or 7, as you may prefer. The difference at the outside will merely be the rent of $3\frac{1}{2}$ acres at 2*l.* = 7*l.*, which does not affect the calculation to any extent.

"If you take the land at $3\frac{1}{2}$ acres you will have 77 tons Grass per acre, and $3\frac{1}{2}$ acres is the maximum extent that I manured at any one time this season. This corresponds very closely with the results obtained from a portion of the field which I continued manuring, 82 tons 10 cwt. per acre being the weight of Grass taken off that part of the field in five cuts. Several of the weighings were made in presence of agricultural friends, and the Grass selected was considered by them a fair average of the crop as it stood.

"I regard this as a question not so much of land as of ammonia used on the land. Dr. Kirkpatrick's experiments show that with a weak solution of ammonia—liquid manure being well known to stand in that relation to guano as a source of ammonia—1 acre irrigated gave more than 10 acres without any application, 37 tons 6 cwt. 1 qr. 24 lbs. against 3 tons 10 cwt. I obtained similar results four years since, and that is the reason why I now apply such large quantities of guano or other concentrated sources of ammonia. I am astonished at your making the mistake of my having 11 acres Italian Rye-grass. To have given this quantity of land the liquid I mentioned in my letter to the *Mark Lane Express*, which you read, I would require to have had 110 cattle instead of 50.

"This is under the supposition that I used the whole liquid to my Rye-grass, which is not the case, the liquid of 10 cows being applied to the Cabbage crop, and five to the Mangold ground before sowing.

"A field of Italian Rye-grass does not vary as roots do. I have had such repeated weighings, almost daily, as enable me to speak with perfect confidence on the subject. The greatest uniformity can be obtained by a careful distribution of guano with the proper quantity of water to carry the ammonia immediately within reach of the roots of the plants. My root crops have received attention on this point, and I have succeeded in raising my average weight of mangold from $1\frac{1}{2}$ to 8 lbs., but you cannot use your pipes with the same freedom in root crops as you can in Italian Rye-grass; besides, you have to contend against bad seed in root crops.

"In root crops I have hitherto been able to carry my applications of guano successfully only to the extent of 8 cwt. per acre. In Italian Rye-grass, from having more frequent opportunities of applying guano efficiently, I have now the length of 25 cwt. per acre, with profit.—Yours, faithfully, "A. B. Telfer."

Home Correspondence.

Italian Rye-grass.—Having seen in your Paper several accounts of Italian Rye-grass and its prolific amount questioned, I beg to send you the subjoined account of the results on my farm of 2 acres of light land joining the town. We carefully weighed and measured a rod of each cutting of the Grass, and found the weight to be as follows:—15 stones, 16 stones, 12 stones, 8 stones, 7 stones, 7 stones, making a total of 65, and as a stone a rod is equal to a ton an acre, this would be 65 tons of Grass to the acre. To ascertain the quantity this would probably give in hay, I had the curiosity to have 10 lbs. weight of Grass kiln-dried on the 4th of December, and the result was that in two or three experiments we found that 10 lbs. were dried down to $2\frac{1}{4}$ lbs., and that it made a sweet smelling hay that horses ate with avidity. Now, supposing the whole crop of Grass were made into hay; if 10 lbs. of Grass gives $2\frac{1}{4}$ lbs. of hay 65 tons of Grass will give $14\frac{1}{2}$ tons of hay. It has been said that Mr. Telfer has grown 20 tons of hay to the acre; now if it be true that he has grown 90 tons of Grass, which I believe quite possible, it is true to say he had grown 20 tons of hay to the acre, on the principle that hay shrinks in drying from 10 to $2\frac{1}{4}$ lbs. The length of the cuttings during the year being put together is 19 feet 2 inches; this is the result of the best part of each crop. We were careful, also, in taking an average of each crop, and the result we found to be in weight 49 tons, and the length 11 feet 6 inches. The mode of farming we imagine not to be so high as Mr. Telfer's; about a barrel of water to the rod was pumped by horse power on the land after each cutting. The water was impregnated with the sewage water of a few houses and stables of about 15 horses, and the waste water from a brewery. The quality of the sewage water thus put on the land is generally believed not to be either so strong or effective as that obtained in farms like Mr. Telfer's. If Mr. Telfer has not already grown 20 tons of hay to the acre I think it is quite possible that he may, and by farming a little higher I don't know but I shall do it myself. *Arthur Morse, Swaffham, Dec. 26.* [It is probable that you dried your Grass more perfectly than Nature does in the hay-making process.]

Value of Land.—Referring to the editorial note on my communication on "Farm Buildings," I should explain that I was treating of outlay on the land solely in a commercial point of view. My assertion certainly appeared to involve an anomaly. The true explanation I believe to be that, of old, land was not viewed in a commercial light. A man acquired land either as owner or tenant as a means of livelihood. He gave little or nothing for it in money, either in way of purchase or as rent. He exhausted his means and his labour upon it for his convenience and enjoyment, without regard to a money percentage. Since land has become the frequent subject of sale, its price has depended not upon the original cost (estimated in money) of reclaiming it and of erecting the buildings upon it, but in ordinary cases upon the annual rent it will bring in its actual circumstances. But though it passes into each new proprietor's hands upon such a calculation, yet, when once in his possession, the common course is to maintain or improve the farm as far as the proprietor's means permit, without any nice calculation. I am satisfied that the more the subject is investigated the more apparent it will be that generation after generation has sunk money unreproductively in the land; and that much land at its present rent does not return common interest on the capital represented by the buildings, roads, enclosures, &c., upon it. *Alex. Hall Hall.*

Pedigrees of Short Horns.—A "Member of the Royal Agricultural Improvement Society of Ireland" is somewhat too captious in his remarks on the "Matchem cow." To all intents "she was almost without a pedigree," and the "Member" brings nothing but conjecture to refute the statements of the *Agricultural Gazette.* It is very probable that the bull "Farmer" was descended from good cows, but there is no proof of this, and it is in reference to written proofs that any pedigree can be called perfect or imperfect. Nothing is more certain, then, that "Cleveland Lad" did not injure Mr. Bates' herd, even if it be impossible to demonstrate that he improved it. The "Member" utters a truism when he states that "crossing injudiciously has been the ruin of half the herds in England;" but did judicious crossing injure Charles Colling's Teeswater breed? Did not the Galloway blood lay the foundation of these beautiful herds, which adorned and adorn the estates of the Ducies, the Bates, the Tanquerays, and the Booths of the present generation? The error of breeders in the present day is not that to which the "Member" refers—the hazard likely to be incurred is not that of crossing, but that of selecting animals for breeding stock, because of their colour and their pedigree only, rather than because of more important qualities upon which their excellence as breeding stock must depend. Few breeders have maintained their reputation through a long series of years, because they have not sufficiently studied the principles upon which success is dependent. There are, it is true, many anomalies in this, as in all vital functions; yet, as in other functions, enough is known to serve as a practical guide, and which, in the great majority of instances, will be crowned with success. Charles Colling with short-horns, and Bakewell with long-horns, were successful, because they were not the blind adherents of a system, but could perceive defects, and had the genius to discover the means of their removal. "Crossing," "breeding in and in," and other "bugbears" were disregarded by them when they had an object to achieve, and thus the "Teeswater" heifer was inoculated with "Galloway" blood, and the qualities of "Favourite" were permitted to blend and remingle with his near relations. Deformity to the herd, and ruin to its owner would most assuredly follow, if "crossings" were recklessly pursued; but the skilful breeder can detect the time and the agents when and by which such a process may be tolerated. It is a popular belief among breeders, that a well-bred, although misshapen animal, will produce a better offspring than a good shaped one without a pedigree; this is a dangerous fallacy, first, because as a rule "like begets like;" and next, the good shape may be the representative of a long line of unnamed beauties, and like "Hubback," and "Farmer" of old, become the sire of priceless offspring. Certain animals have special and dominant qualities which they impart to their progeny with such vital force, that they ooze out through many generations: in one the reproductive, in another the assimilative functions predominate, and he only is entitled to rank as a "breeder" of animals who has the intuition to recognise, and the experience to apprehend the qualities, which are most required for maintaining his herd at the standard of excellence. *J. H., Mickleover.*

Thin Seeding.—Your correspondent, "T., Gloucester," asks, Nov. 22, "do Messrs. Hardy mean to say that 6 pints of seed are all they would advise to an acre? The thing is so ridiculous that it is hardly worth refuting; game, rooks, larks, and slugs, to say nothing of wire-worms, would make such havoc with the plant, from its very thinness, that the poor farmer would be very fortunate to reap as much as 2 quarters, 2 bushels, 3 pecks, and 5 quarts per acre," &c. Now, although I am no farmer, it struck me on reading the above that, if it could be shown that 6 pints of seed to an acre, or even a smaller quantity would be sufficient, it would be conferring a real benefit upon the community at large, and would be an immeasurable relief to the editorial apprehension recorded in your paper of the 2d inst., "That task the powers of cultivation and of the soil as we may, we are likely to be wholly unable to keep up with the demands made upon them by our rapidly increasing population." And since I have no experience of my own, I transcribe an account of an experiment made 88 years since, which I presume will be very consolatory to "T.," and to all who, like him, apprehend diminished produce from thin seeding:—"On the 2d of June, 1766, Mr. C. Miller, of Cambridge, sowed some grains of the common red Wheat, and on the 8th of August a single plant was taken up and separated into 18 parts, and each planted separately; these plants having pushed out several side shoots, about the middle of September some of them were taken up and divided; and the rest between that time and October. This second division produced 67 plants. These plants remained throughout the winter; and another division of them, made between the middle of March and the 12th of April, produced 500 plants. They were divided no further, but permitted to remain in the field. These plants were in general stronger than any of the Wheat in the field. Some of them produced upwards of 100 ears from a single root; and many of the ears measured 7 inches in length, and contained between 60 and 70 grains. The whole number of ears produced from the single plant was 21,109, which yielded 3 pecks and 3 quarters of clear corn, weighing 47 lbs. 7 oz., and, from a calculation made by counting the grains in an ounce, the whole number of grains was about 576,840. Mr. Miller thinks that, had he made a second division in the spring, the number of plants would have amounted to 2000." Now, supposing the plants at their final planting to be placed 6 inches apart in the rows, and 1 foot from row to row, we shall find 28 plants to a square yard, and the 500 plants occupying a space of $17\frac{6}{7}$ square yards, and the number of grains necessary for the cultivation of an acre (supposing each grain to yield an equal number of plants) to be $271\frac{1}{125}$; and this mere fraction of a pint of seed yielding, not 2 quarters, 2 bushels, 3 pecks, and 5 quarts, nor yet upwards of 19 quarters of Messrs. Hardy's computation, but 31 quarters, 6 bushels, 1 peck, 1 gallon, and all this without any casualties arising from the mischievous propensities "of game, rooks, larks, and slugs," for the final planting being so late, as, at a medium, the beginning of April into well prepared ground, they would take root at once, and progress rapidly with the season. The mode detailed in the above quotation would of course involve considerable labour and attention, but the extra expense of labour, &c., would be more than compensated by the very great saving effected in the seed. The foregoing quotation is taken from the exposition of the parable of the sower in St. Matthew's Gospel, by the Rev. Dr. Adam Clarke, and is quoted by him as a proof of the goodness of the Creator in the amazing fecundity of nature. I trust the above may meet the eye of some one or more to whom it may be useful. *William Chitty, Stamford Hill.* [The use made of this experiment by Dr. Adam Clarke is perfectly right and reasonable; but your use of it for the advocacy of thin seeding is extravagant if not illogical.]

Farmers' Clubs.

Cirencester, *Dec.* 2.—At the annual meeting of this Society Mr. Lawrence and Dr. Voelcker delivered addresses from which we extract the following passages:—

Deep and Shallow Tillage.—Mr. Lawrence referred to this subject because a farmer, at a previous meeting, had advocated shallow tillage; a man of considerable experience too, whose opinion was likely to secure attention. He said:—

I am quite alive to the folly of attempting to lay down any system of tillage as of universal application. There are, however, certain principles with which we should be familiar, before we can safely determine our practice in any particular case. The first question would seem to be, what are the essential agents to vegetable life and nutrition? The second, by what means is the action of these most effectually and economically secured? The successful growth of all our crops is dependent on the due supply of each of two classes of elements; the one distinguished as organic, the other as inorganic. Professor Liebig at one time taught that inorganic or mineral matter alone was essential to vegetable growth, and that organic matters were non-essential. In other words, that with inorganic matter alone we could raise our crops, and in the absence of it we could not. That a combination of both organic and inorganic elements is essential to the greatest produce has, however, been well established. Ammonia and carbon exemplify organic, and the phosphates and alkalies exemplify the inorganic elements. Ammonia is believed to be derived by plants chiefly from the atmosphere, but in part from the decomposition of animal substances by the free admission of air. Now, by what means is the action of those agents most effectually and economically to be secured? You must divest your minds for our present purpose of the popular notion—that earth, strictly speaking, is the source of vegetable nutrition; for the earth, apart from the elements we have been considering, is an inert mass, into which the roots of vegetables spread themselves in search of their respective foods—the means by which they are retained in their after growth in an erect position, spreading out their foliage to those atmospheric influences on which their successful maturity greatly depends. Plants draw from the soil such nourishment as they derive from that source by the minute mouths at the end of their delicate roots, and from the air by means of the absorbent vessels contained in their leaves. You will readily understand, therefore, that such minute organs cannot take up anything in a solid state. They can only absorb nourishment in the state of fluid or gas. If the soil were deprived of the access of water and air, it would be utterly unproductive, though full of the sources of nutrition. Our time does not admit of any minute description of the mode in which these elements are severally rendered available to plants. It is sufficient for our present purpose to know, that the soil is the medium of communication; and therefore it is essential that every portion of it into which the roots extend should be rendered easily accessible to the natural solvents, air and water. The moisture in the atmosphere absorbs the ammonia floating in it, and rain brings this down to the earth. Water and air accelerate decomposition, both of the animal and vegetable substances applied to the soil;

this decomposition produces a further supply of ammonia, carbonic acid gas, and warmth. Carbonic acid renders soluble many inorganic or mineral elements, which by that agency alone are assimilable by plants. Some portion of these mineral elements are being continually absorbed, and carried off our land in the shape of corn, beef, mutton, &c. The subsoil is in most cases the almost inexhaustible bank of deposit of this mineral matter, on which we can most readily and successfully draw. It is by loosening this, and exposing every particle of it to the action of the atmosphere, that the requisite supply of mineral matter is rendered gradually available. It is simply on this principle that fallowing depends. When land has been to a certain extent exhausted of its available mineral elements required by a crop of Wheat, by free exposure to the atmosphere for a time, a further supply is rendered soluble and available for the succeeding crop. The popular notion is, that fallowing is resorted to merely for the purpose of destroying couch and other weeds—a very useful accident of fallowing—but the other is the more important result. Deep tillage, then, is the means by which the air is freely admitted to the subsoil, where it promotes the decomposition of organic matters, and the production and absorption of ammonia, and with the aid of water, it also renders soluble the mineral matters contained in it for the use of future crops. A further result is, an increased temperature of the subsoil, by the free admission of air and water, which you all know greatly promotes vegetation. Our forefathers were at some pains to facilitate the escape of rain from the surface of the soil, which science teaches us to welcome as a very important fertiliser, and to afford a free passage through it. Mons. Balard, a French chemist, has demonstrated by experiments that where about 25 inches of rain fall in the course of a year (which is under the average of this district), that which falls on an acre of land contains, and conveys to the soil, fertilising matter equivalent to the quantity of ammonia contained in 2 cwt. of Peruvian guano, with the addition of 150 lbs. of nitrogenous matter of a highly fertilising character; nearly all of which the late experiments of Professor Way prove is absorbed in the passage of the rain through an adequate depth of soil. The experiments of Mons. Balard have been repeated, and the results have been confirmed by Dumas, Boussingault, and other well-known chemists. The same influences which have rendered our surface soil productive will produce the same effect on our subsoils if freely admitted. Subsoils of sand, and of some gravels, are exceptional cases, but in nearly all clays and in all subsoils of an aluminous or tenacious character, and into which we know the roots of our crops will extend themselves in search of food, common sense would seem to point out the advantage of adopting those means by which that food can be most readily supplied. I am no advocate for radical reform, and turning matters upside down, and bringing the subsoil to the surface; but merely that it should be loosened by the common subsoil plough, and rendered accessible to atmospheric influences, and thus gradually prepared for vegetable nutrition. When so prepared, the ordinary plough may be set from time to time a little deeper, and the subsoil be thus gradually incorporated with the surface-soil. There is hardly a parish in the kingdom in which a practical demonstration cannot be found of the advantage of deep tillage, and in which land become comparatively unproductive after long shallow ploughing, has not become productive enough under the fork and spade of the gardening labourer, who has no other aid to give it. I wish to be clearly understood as not recommending deep ploughing on all occasions; for instance, not Clover lea for the Wheat crop, nor to follow the sheep-fold by a deep furrow for the Barley crop, &c.; but that in the course of the shift, whether the 3, 4, or 5 years' course, deep tillage for the root crop should be the rule with very few exceptions.

The Chairman proposed "The Royal Agricultural College." Mr. Holland facetiously referred to a conversation which he had had with Lord Gifford, in which his lordship had expressed a favourable opinion of the College, Dr. Voelcker having kindly analysed the contents of a fox's stomach which he thought had been poisoned. (Cheers and laughter.) Dr. Voelcker, in the absence of the principal, the Rev. J. S. Haygarth, in returning thanks, said :—

In my intercourse with farmers I have never encountered any difficulty with a thoroughly practical man, but have often been involved in endless discussions with the inexperienced who, whilst deficient in practice, possessed only a smattering of science. True science and sound practice will always be found to harmonise with each other; both are founded on experience, and experience is acquired only by constant observation. The study of science sharpens the powers of observation, and must be therefore attended with considerable benefit to the practical man, who but too often neglects the aid which science does afford. I have seldom paid a visit to any of my agricultural friends without becoming acquainted with something worth remembering, and have met often with something worthy of imitation. Thus for instance, the admirable way in which Mr. Lawrence manufactures and preserves his manure from sustaining any loss, is well worthy to be imitated by all who follow the system of box feeding. The layer of clay and road scrapings, with which Mr. Lawrence covers his manure heaps, preserves most effectually, and at the least expense, all the volatile fertilising constituents which it is so important to retain in manure heaps, and at the same time shuts out to a great extent rain and air, the combined influence of which causes the deterioration of well made dung. The subject for discussion moved by Mr. Lawrence reminds me to notice the excellent manner in which my neighbour, Mr. Benjamin Whiting, has lately cleaned and prepared for Turnips a very foul field, on which Wheat was grown this year. Mr. Whiting ploughed it deep, and then sent a scarifier through it. The remains of the Wheat crop and the long spreading roots of couch, were brought to the surface and carefully raked together. This vegetable matter afforded abundant fuel for burning the soil, a practice of which Mr. Whiting took advantage by the dry autumn weather. In this way, not only the land was thoroughly cleaned from the nasty couch and other weeds, but also a most useful manure for the Turnip crop,—burnt clay and ashes—was obtained in great quantity, whilst the advantages of deep culture were secured at the same time. There can be little doubt that deep ploughing is not practised as much as it ought to be, and I fully agree with Mr. Lawrence that the benefits resulting from deep culture cannot be too highly estimated. Frequently renewed contact with the air greatly facilitates the decomposition of the organic matters in soils, which decomposition is so necessary before they can afford food to the growing plant; but the action of the air on the inorganic soil constituents is still more important. It is well known that plants cannot assimilate any solid matters, and that consequently those constituents which are found in the ashes of plants must be presented to their roots in a soluble state. Many soils, especially clay soils of the better description, may be said to contain inexhaustible supplies of inorganic fertilising constituents, which only require to be brought into active service,—rendered soluble in order to act most beneficially in increasing the produce of the land. It is evident, therefore, that deep ploughing, which has the effect of exposing fresh quantities of soil to the decomposing action of the atmosphere, must be attended with considerable benefits. Another, but less important result of deep culture, is the finely powdered condition in which the soil is obtained. The increased porosity enables it to absorb more abundantly the highly useful ammonia and other fertilising gases existing in the atmosphere, and thus organic food will be incorporated into the soil more abundantly by this practice, whilst it is found to yield its inorganic fertilising constituents for the benefit of the growing crops. A great deal, however, must depend upon the composition of the soil, for it is clear that no amount of ploughing, stirring, or grubbing, can develop any fertilising properties if the elements of fertility are not present in the soil. In clay soils, deep culture is so pre-eminently successful, because such soils contain inexhaustible supplies of all the inorganic matters required as food for plants, which are rendered valuable by coming into more frequent and more perfect contact with the air, and because such stiff and heavy soils, more than any other, require to be rendered more porous. But in purely silicious land, deep ploughing cannot possibly be attended with any benefit, since it is too porous already, and does not contain any constituents which, on contact with air, are rendered more soluble. On the whole, deep culture will be found the more successful in its results the more the land resembles, in composition and mechanical condition, heavy clay land, and its advantages will be less perceptible the more it approaches purely sandy soils. I ought to mention, however, that even in sandy soils sub-soil ploughing was found occasionally useful, and the reason is that some sandy soils rest on an impervious clay sub-soil, which does not allow a free circulation of air through the mass of the soil, in consequence of which the surface water becomes stagnant, and the decomposition of the roots and other remains of former crops is retarded to such an extent, that instead of the final products of decomposition, namely, carbonic acid, ammonia and soluble inorganic substances, an imperfectly charred substance, sour humus, is produced. It is well known that sour humus acts injuriously on vegetation, and care should be taken therefore to prevent its formation. Sub-soil ploughing, by admitting free access of air, most effectually does this, and next to thorough drainage is perhaps one of the most efficient means of bringing land into a high state of cultivation. Like so many practices, however, sub-soil ploughing requires to be carried out with judgment, for if the surface soil is but thin and poor, and a large mass of the sub-soil is brought up, which often requires many years exposure to the air before it can yield anything, the thin surface soil is completely buried by the unprepared subsoil.

Notices of Books.

Talpa, or the Chronicles of a Clay Farm. 3d edition. Reeves & Co.

We mention with pleasure the issue of a third and cheap edition of this admirable little treatise of the principles, and history of the practice, of agriculture.

Excepting one or two verbal alterations, and the introduction of a foot-note, the present edition does not, so far as we have noticed, differ from those previously published. The foot-note, however, is important as furnishing the striking illustration, given in the circumstances of Mr. Justice Talfourd's death, of that portion of the text with which it is connected. Mr. Hoskyns is there lamenting "the hateful chasm that lies too broad and forbidding between employer and employed in civilised England." And we all know how the last words spoken by the judge were in accordance with this sentiment,—how much of the crime with which in the mineral districts of Staffordshire he had to deal, he attributed to that "separation between class and class which is the present curse of British society."

Miscellaneous.

Chinese Economy of Manure.—My first excursion was to a place called Gading, 13 miles from Malacca, where I had permission to reside in a house occupied by some Chinese Christians who are cultivating a Gambir and Pepper plantation. The house was a mere huge shed. I lived in it a fortnight, as, strange to relate, the Chinese (I trust because they were Christians) kept it clean. No people in the tropics really cultivate the soil as these do. They do not merely plant and reap. They dig, and trench, and level; they eradicate weeds and stumps; they keep the ground clean, and they manure. The process of manuring, indeed, was the only thing I objected to, as the tank was a large bucket kept standing for convenience in a corner of the house. The rage for liquid manure is such, that in the Chinese villages a bucket often stands near the door for public use. The pigs for the same reason are far better lodged than with us, having a floor of poles with a tank beneath, in which all the manure is collected. *From a Correspondent of the Literary Gazette.*

The Incoming Tenant.—The incoming as well as the outgoing tenant has rights of which he ought not to be deprived, as well as duties which he ought to perform, to himself and family, to his landlord, and to the community in which he dwells. But a few years ago, when offers for farms were far too numerous and competition too high, the rights of the outgoing tenant were most looked after, and towards the preservation of these, tenant-right societies lent their aid in rather a clamorous manner. Now, however, emigration has lessened home competition for land; and though sufficiency of competitors for a good farm may still be expected, we seem to be nearer the time looked forward to by some, when, instead of a tenant looking out for a good landlord, a landlord will have to seek after a good tenant. This state of affairs induces incoming tenants to hold more firmly by their rights than they were formerly in a position for doing; and it is well that it is so, since it is by a fair and equitable commencement that a lease can tend to the advantage of either the granter or the holder. The system of leases has many merits over the tenancy-at-will mode; but it has also its attendant evils when, as sometimes happens, an outgoing tenant finds himself compelled to scourge or run out the land at the end of his lease, or else fail in getting himself remunerated for money that he may have expended in permanent improvements. While we would protest against ever giving an incoming tenant a copy of his predecessor's lease, a practice which sometimes leads to evil results when the new tenant finds himself in the position of a pursuer at law for previous miscropping, we would, at the same time, advocate the justice of not allowing him to suffer from the exhausted state in which he receives the farm. Let the landlord alone deal with the outgoing tenant in regard to rotations of cropping; and if the landlord cannot re-let his farm in a state of fair culture, let him drain and manure it sufficiently at the outset of the new lease, or give the new tenant money to do so; and by this means he may receive a higher rent, while the incoming tenant will not be "thrown on his beam ends" at the very outset of his lease by having to lay out his capital on renovating or draining the soil, leaving an insufficient sum at his disposal for carrying on the yearly routine of the farm with profit to himself. But where is the landlord to get the money, if his estate be burdened by mortgage or entail, or the payment of annuities to relations! Ten years ago the question might have been answered dubiously; and even now it is difficult to obtain money for such purposes in the ordinary way in which merchants obtain it for carrying on their system of rapid sales and speedy profits. But it has now been proved by experience that the plan of borrowing money at redeeming interest, either from Government or from a joint stock association, is well fitted for the special wants of agriculture, providing as it does for the redemption of the whole debt after a certain number of years by paying large interest in the meantime. This is a mode of getting clear of debt peculiarly well suited for agricultural improvements. The six per cent. of interest is paid in those years in which the advantage of the improvements is experienced, and there is nothing left to pay at a future time, when the drains and buildings, and other improvements, have begun to lose their value because of tear and wear. It has been reasonably objected to the present entail laws that they are inefficient for carrying out their principal object, namely, the descent of the patrimonial inheritance undiminished in value, and this because they make no adequate provision for the tear and wear of the subject. From want of adopting the plan of borrowing money for permanent improvements on redeeming interest, and from refraining from the investing that capital in the soil which an improved system of agriculture requires, many landlords have allowed their estates to fall behind in the progress of improvement; or the absence of the capital which they should have expended has been the means of crippling the exertions of the incoming tenant; or, supposing him able enough to carry on a system of good farming, has forced him, for the sake of his family, to take back his expended capital at the end of his lease by running out his farm. And then the next tenant gets the farm, as he got it, in an inferior state of culture, and the same story has to be told over again. *Perth Courier.*

Jenning's Process for Improving Quality of Flax Fibre.—The process is very simple, and consists in throwing down upon the Flax a small quantity of oil, say about half an ounce to the pound of Flax; this is done by boiling the Flax in an alkaline soap ley, washing with water, and then boiling it in water slightly acidulated with some acid, for which purpose acetic acid is, perhaps, the most suitable, from its exerting no injurious action upon vegetable fibre. The acid decomposes the soap, the fatty constituent of which is left in the fibre, or, perhaps, a mixture of an acid soap and a small portion of free oil. These enter into and through every part of the fibre. After this treatment it is washed, and is then found to be soft and silky, its spinning quality being thereby much improved, and its value being very considerably increased; and, whilst the fibre is not weakened, this process gives to it what is known in the trade as "nature." The improvement in quality may be estimated at from 8*l.* to 10*l.* per ton, and is capable of being made, with ease, probably double. *Dublin Journal of Industrial Progress.*

Calendar of Operations.

DECEMBER.

Border of the Fens, *Dec.* 20.—December must ever be an unsettled month in England for field operations; alternations of rain and frost, wind and snow, make all directions by the farmer to his men conditional or provisional; two or three sharp frosts stop ploughing, but are favourable for manure carting, and well would it be if surveyors of highways could restrict some people from ruinous wearing of roads during wet, as we were lately annoyed by either thoughtlessness or love of mischief, in a large charge-bearer running half-a-dozen carts during the whole of a rainy week, two miles on a parish road, making it like a quagmire. Earth carting is another employment during frost, where dykes have been cleaned, burning the grassy fibrous parts, and mixing salt with the heavier portion in a large heap, with the addition of 1-10th or 1-20th part of gas-lime. Gas-lime is said to keep away or to kill wire-worms; it is certainly a useful ingredient for fen-land. When rain is prevalent, at every interval we direct the litter and dirt accruing in and about the homestead on the roadways and open spaces to be collected and stowed away ready to top the heaps of manure when carted from sheds and crew-yards; the occasional showers we have lately had have an excellent effect, let wise men say what they will. We do not observe any liquor to exude from the sides of such heap, but a rapid fermentation ensues, and if a good coating of the aforesaid collection of road scrapings are thrown over it, a solid mass of rich manure is the result. There is an evidently increasing disposition to obtain manure, and genuine guano is in high favour, its portability on heavy lands being a great recommendation; nitrate of soda also, not being much liable to adulteration, has also several advocates, but the nondescript and beggarly mixtures trumpeted by quacks are regarded with dislike and suspicion by nearly all our bustling and intelligent neighbours. We have not as yet made much progress in black draughts and drenching mixtures, one tank being only available to moisten and impregnate heaps of "farmyard manure" with their strong ammoniacal contents; our progress, therefore, in these mysteries is not rapid, but it is highly encouraging. stiff stubbles, and a full average weight of "green" crops approve the practice, and convince us that a careful preservation of the ordinary proceeds of any farmyard, with the addition of a few genuine, and some of the cheap and common manures, as chalk, salt, town soil, or gypsum, will in most cases suffice to maintain fertility, and so far diminish the chances of failure at harvest day. Every December finds jobs for the carpenter, sheds to be altered, yards enlarged, new ones made, repairs of gates, sheep trays, carts, &c., posts and rails about fences require renewing, and the short days seem only to prolong the work instead of seeing it completed, much time is also consumed in attending to stock; what with cutting Turnips, littering yards, cutting chaff, breaking cake, and measuring corn, the days are gone before any one is aware of it; lamps and candles cannot be dispensed with by

horsekeepers, but they are of no use to drainers, or gravel diggers, or hedgers, and tallow, "like everything else," as they say, is very expensive. It is always a matter of rejoicing with us to get the turn of the shortest day, and no good labourer is sorry when he no longer has to trudge home in "the dark," or in the dark grope his way to his task, from 6 to 6; the cheerful daylight has also more warmth and less wet, and with the old far more than the young; the glad fields and jocund woods sing to him with joyfulness, when the winter is past, and the spring is at hand, with dry garments to work in, and light enough to see his way home. *J. W., Peterborough.*

Farm near Chelmsford, *Dec.* 25.—The work requisite to the field cultivation of this farm is brought to a close, with the exception of drilling a few acres of Turnip land with Wheat. The season has been so propitious that nearly every department of the usual spring processes is anticipated. Winter Beans and hog Peas are sown; the former above ground and looking well; the latter beneath the surface have vegetated, and are, therefore, considered safe from the effects of frost. A larger breadth of Wheat than ordinary has been drilled, a moiety of which is up and looking extremely well, nor do we anticipate that any deficiency of plant whatever will ensue, and the same observation applies also to the entire county; but from the fine tillage many pieces are foul with seedling Grasses and weeds; for ourselves we are glad to state we are free. The seedling plants of black Grass (Agrostis stolonifera) are a pest upon the heavy land districts of this county, and the Wheat sowing is usually deferred until the middle of November to counteract the evil, thus frequently endangering a plant by late sowing. The fallows for the root crops of next summer are duly prepared and in excellent condition; a moiety is sown with early broad-leaf Rye for foddering in April and May, and it is then cut into chaff with straw until sufficiently advanced in growth to be used alone for that purpose. The yield is from 4 to 10 tons per acre, and affords excellent keep for cart and nag horses for six weeks. The yield of both Mangold Wurzel and Swede Turnips is this season found to be deficient; the dry season did not suit early root crops, and the attack of aphis nearly destroyed some and injured all pieces more or less. The crop of white Turnips is also deficient and the quality inferior; some pieces of green round, sown in the last week of July, are however very good, and afford excellent food for the cows and young stock, as well as the sheep, upon this farm daily; they are pulled and carted upon dry pastures for feeding, the stock returning to the yards at night. The easy distance from this farm to the metropolis, and a railway station being within two miles has induced us to keep cows, the milk from which is supplied to the London market, and at the present moment the sum of 1*s.* 3*d.* for the barn gallon of 17 pints is obtained, free of carriage. The cows are milked twice in 24 hours, viz., at 10 o'clock A.M., and at 12 o'clock at night; the amount realised is about equal to dairying and selling the butter at 1*s.* 3*d.* per lb., and the skim milk at 3*d.* per gallon of eight pints. It was our practice, upon first commencing this system, to feed the cows upon grains with large quantities of oil-cake, bran, and other purchased food; but it is now effected upon the produce of the farm only, and this year they have been fed from the early part of September mainly upon the leaves of the Mangold Wurzel and Swede Turnips, which are cut up with hay and Oat straw into chaff—this is a desideratum in feeding that we had not before attained—for although we had applied the roots by admixture with cut chaff, the leaves had been little heeded, and the major portion was wasted by being strewed over the land upon which they had grown by way of manure, and afterwards ploughed in. We have no hesitation now in stating that both descriptions of the leaves are superior to the roots at this season, and the cows have maintained their condition, and have given an abundance of milk without unpleasant flavour. We are thus spared two months' consumption of roots, and intend next year to grow Cow Cabbages in addition for using through the early spring months in the same manner. Much discussion has taken place upon the feeding value of roots, and in the publication in which this article is inserted a long value has been attached; the price here is estimated at per ton as equivalent to the value of *a stone of meat by graziers.* The ordinary selling price is 12*s.* per ton at the time of pulling in the field, and they may be readily sold at that price. The mode of estimating roots upon merely their fattening properties is not the true mode of fixing their value. From the large proportion of water they contain, they are rendered proportionately of little value when combined with nitrogenous oleaginous food, and therefore they ought to be considered rather as an adjunct to other food for fattening cattle and sheep than as a substitute for that purpose themselves, and for this purpose when Mangold Wurzel is combined with cut chaff and Linseed or other meal, it excels as a feeding root, but used in large quantities by itself is of comparatively little value. The crops of the last year have been sufficiently tested to ascertain the result: the Wheat yields about 6 bushels per acre above an average crop, and Oats and Peas in the same proportion; Barley can hardly be considered so much; and the Bean crop is a failure altogether. This may be taken as the fair estimate upon the light and mixed soils of this country; but upon the heavy clay land the yield is not above an average one. Our south-down wether sheep have been feeding upon Swede Turnips sliced for the last 10 weeks, with the addition of ¾ lb. of oil-cake per diem. The Turnips, however, have certainly less fattening property than usual, and the cost of the cake is so high as to institute a loss; it is considered that 1 cwt. of good oil-cake will not produce more than 8 lbs. of mutton, and therefore with cake at 12*s.* to 13*s.* per hundredweight, a loss of 7*s.* to 7*s.* 6*d.* takes place upon each hundredweight fed out; that is, assuming that each ton of Turnips will keep a sheep of 9 stones 77 days (and this is the exact quantity consumed), in addition to ¾ lb. of best American cake per diem, equal to 51 lbs., or, in round numbers, 56 lbs. for that period. The cake will be 6*s.* 6*d.*, the Turnips and labour 10*s.*, altogether 16*s.* 6*d.* per head; deduct a moiety for manure gives 8*s.* 3*d.* to meet the intrinsic value of the animal, or 1 stone of 8 lbs. at 5*s.* for the Turnips and 3*s.* 3*d.* for the half cwt. of oil-cake, pretty much in accordance with the before-stated computation. The price of Potatoes is very high, 3*s.* to 3*s.* 6*d.* per bushel of 60 lbs., but the quality is excellent. Grass hay realises 70*s.* to 80*s.* per ton; but good Clover yields 90*s.* to 110*s.* A larger proportion to the Wheat and Barley crop than usual has already found a market. The process of steam-threshing is extending in every direction, and the facility of supplying the market rendered so easy without staying the other processes of the farm, that a regular and liberal supply has been afforded. This day (Christmas), is exceedingly mild, and Roses and other flowers may be seen in abundance.

Notices to Correspondents.

Poultry Prize List, Birmingham. We had not room for a full list of the winners of the prizes at the Poultry Show in Bingley Hall; and we cannot give one now: but we regret to have occasion to correct the list we gave, which included merely the names of those receiving first prizes, whether silver vases or otherwise, in the more important classes. In the class of Poland (white crested white) *chickens,* the name of W. G. Vivian, Esq., Singleton, Glamorganshire, was omitted. In the class of Dorkings (coloured) the first prize (silver vase) was awarded to Rev. S. Donne, of Oswestry, whose name is also omitted. And among the Cochin China classes the 1st prize (silver vase) in class 23 was awarded to C. Punchard, Esq., Haverhill, Suffolk.

Rotation: *W H B.* The eight-field course recommended to you is an improvement on your present practice, and it is, we believe, suitable to your light land. Lime may be applied on the Wheat stubble. Twenty-five acres of Swedes, &c. (which may include Mangold Wurzel, Cabbage, and even a few acres of Rye sown on the Wheat stubble, and ploughed up for Turnips), will be ample green food for your purpose.

SPLENDID NEW RHUBARB.
SALT'S CRIMSON PERFECTION.

ROBERT SALT begs leave to inform the Gentry, Nurserymen, Gardeners, &c., that this splendid variety of Rhubarb is now ready for distribution. It is universally allowed to be the most early, prolific and delicious variety ever offered to the Public.

See *Gardeners' Chronicle,* June 11, 1853: "Very good, and of a most beautiful crimson; compared with others, it is remarkable for the small amount of acidity it contains."—Ed.

Certificates of Merit were awarded for specimens exhibited at the Meeting of the Horticultural Society, Regent Street, London, June 28th, 1853—at Nottingham, May 24th, 1854—at Derby Midland, May 25th, 1854—at Ormskirk, Lancashire, August 30th, 1854. Price 7*s.* 6*d.* per root, 3 for one guinea, and 6 for 2*l.*

Orders addressed to Robert Salt, Longton, Staffordshire; or the following agents, will have immediate attention: Messrs. Hurst & M'Mullen, 6, Leadenhall Street, London; Messrs. Burgess & Kent, Penkhull, Staffordshire; Mr. Wood, Nurseryman, Coppice, near Nottingham; Messrs. Francis & Arthur Dickson, East-gate Street, Chester; Messrs. Jas. Dickson & Sons, 102, East-gate, Chester, and 106, Deansgate, Manchester; Mr. Salisbury, Melbourne, Derbyshire. A liberal discount allowed to the trade. A Post-office order from unknown correspondents.—Longton, Dec. 30.

A. VERSCHAFFELT, Nurseryman, Ghent, Belgium, begs to offer to the trade:—

Lilium lancifolium album, strong bulbs, ...	per 100	£3	0	0
„ „ speciosum „ ...	„	5	0	0
„ Browni (true). ... „ ...	„	0	7	6

The Bulbs are strong and healthy.

A. V. begs to offer also good and fresh Seed of the fine LILIUM GIGANTEUM at the following prices:—A Parcel of 50 Seeds, 7*s.* 6*d.*; ditto 100 ditto, 13*s.*

P.S. The last number of the first volume of Verschaffelt's L'ILLUSTRATION HORTICOLE is just out, and contains:—1, Magnolia Lenné; 2, Gentiana Fortunei; 3, a plate with seven new Geraniums (Odier); 4, Azalea indica alba illustrata; and 5, a View of the Editor's Horticultural Establishment.

R. PARKER begs to offer the following CHOICE SEEDS, all of which are warranted new and true to name:

GODFREY'S (BLACK SPINE) CUCUMBER, the finest variety in cultivation, packets containing 12 seeds 1*s.* 6*d.*

Also the following esteemed varieties of CUCUMBERS and MELONS, in packets containing 12 seeds, at 1*s.* each:—

CUCUMBERS.	MELONS.
Henderson's Black Spine.	Victory of Bath.
Improved Patrick.	Beechwood.
Walker's Long Rambler.	Bromham Hall.
Manchester Prize.	Canteloupe.
Hunter's Prolific.	Duke of Bedford.
Superlative Improved.	Golden Perfection (extra fine).
Cuthill's Black Spine.	Scarlet Flesh (Anderson's).

Ohio Squasha Custard Gourd, 6*d.* ... ... per packet.
Antirrhinum, from named flowers, 6*d.* ... „
Calceolaria, from fine varieties, 1*s.* 6*d* and 2*s.* 6*d.* „
Hollyhock, from fine named varieties, 1*s.* 6*d.* and 2*s.* 6*d.* „
Lilium giganteum, the most distinct and noble species of the genus, packets containing 20 seeds, 2*s.* 6*d.*

*** A remittance or reference to accompany all orders from unknown correspondents.

Paradise Nursery, Hornsey Road, Islington.

BANKS' NEW SEEDLING FUCHSIAS FOR 1855.

W. J. EPPS begs to state that he has purchased the following Seedling Fuchsias, raised by that celebrated grower, E. Banks, Esq., of Sholden Lodge, Deal; they were the first selection from his splendid batch of Seedlings of 1854, and have been thoroughly proved. They are distinct, rich, and the greatest advance upon any of the kinds known, and cannot fail to give the highest satisfaction.

CLIMAX.—(named by Mr. Banks).—Tube stout, sepals very broad reflex, with a pretty curve or half circle, the points of the petals touching the seed vessel; colour, rich velvety crimson—the corolla is very large, of a splendid violet blue and great substance: habit, robust, and blooms particularly free. 7*s.* 6*d.*

FAIRY QUEEN.—Very distinct and striking, immense bloomer, beautiful waxy white tube and sepals, tinged with lemon; long well-proportioned flower; corolla large, and of a very rich plum colour puce. 7*s.* 6*d.*

GRAND SULTAN.—A very noble flower, and will be many years before it is equalled; beautiful foliage, and first-rate for exhibiting; flowers large, very stout, sepals reflex, similar to the Turn Cap Lily, and of a very rich crimson colour; corolla large, and very dark velvety purple. 7*s.* 6*d.*

MAID OF KENT.—This Fuchsia is pronounced by the following judges, viz., Mr. Edwards, Secretary to the Floricultural Society; Mr. Barnes, of Camden Nursery; Mr. Todd, of Sutton, to be the prettiest and most distinct Fuchsia yet raised; habit, dense and bushy, producing great clusters of pretty reflexed blooms, of great substance, very clear waxy white, with a rich plum-coloured puce corolla, and exceedingly striking. 10*s.* 6*d.*

BEAUTY OF THE BOWER.—A very rich and perfect formed flower, scarlet tube and sepals, which reflex over the tube, displaying a beautiful dark purple corolla of great substance: habit, perfect. 7*s.* 6*d.*

OMER PACHA.—A large and well-proportioned flower, with dark crimson tube and sepals: corolla, intensely dark velvety purple: habit, excellent and very graceful. 7*s.* 6*d.*

The Set will be sent out in April.—Strong Plants, at 42*s.*
The usual discount to the Trade where three of each are taken.

Agent:—Hurst and M'Mullen, Seed Merchants, Leadenhall Street, London.—Bower Nurseries, Maidstone.

WILLIAM BARRATT, Landscape Gardener, Wakefield.
*** Plans and Estimates furnished.

GREEN AND HOT-HOUSES made by machinery, at J. LEWIS'S Horticultural Works, Stamford Hill, Middlesex. Sent to all parts of the United Kingdom. These buildings are warranted of the best materials, and put together in a superior manner. Being manufactured by steam-power, they are considered the cheapest and best made in England. The Trade and Merchants supplied at wholesale prices. List of Prices by enclosing two postage stamps.

GARDEN NETS, FISHING NETS, SHEEP NETS, and RABBIT NETS, made by Machinery, and supplied at very low terms. Samples sent free.—R. Richardson, 21, Tonbridge Place, New Road, near King's Cross, London.

WIRE FENCING, 6¾*d.* per square yard, in various widths, from 6 feet to 15 inches, mesh less than 2 inches. An effectual fence against Hares, Rabbits, Sheep, Deer, &c., and for the enclosure of Poultry, Pheasants, &c. 4-inch mesh, 4*d.* per square yard.

R. Richardson, 21, Tonbridge Place, New Road, London.

SUBSTITUTE FOR GARDEN MATS.—Waxed Sheeting nearly 2 yards wide, 1*s.* per yard run—admits light and excludes cold; thick Canvas Tarpauling, 1*s.* per square yard; thick Canvas Waxed Sheeting, 1*s.* per square yard, may be had various widths. These Canvases are excellent for roofing Sheds and Outhouses, as they are quite waterproof.—R. Richardson, 21, Tonbridge Place, Judd Street, New Road, London. N.B. Waterproof Capes, large size, 3*s.*; Police Capes, 18*s.* and 24*s.* per dozen; Driving Aprons, Capes, and Coats of India Rubber, Horses' Loin Cloths, Waggon and Cart Covers, Sacks, &c.

GLASS FOR CONSERVATORIES, ETC.

HETLEY and CO. supply 16-oz. SHEET GLASS of British Manufacture, at prices varying from 2*d.* to 3*d.* per square foot, for the usual sizes required, many thousand feet of which are kept ready packed for immediate delivery.

Lists of Prices and Estimates forwarded on application, for PATENT ROUGH PLATE, THICK CROWN GLASS, GLASS TILES and SLATES, WATER-PIPES, PROPAGATING GLASSES, GLASS MILK PANS, PATENT PLATE GLASS, ORNAMENTAL WINDOW GLASS, and GLASS SHADES, to James Hetley & Co., 35, Soho Square, London.

See *Gardeners' Chronicle* first Saturday in each month.

GLASS FOR CONSERVATORIES.

THOMAS MILLINGTON'S present prices for good 16 oz. sheet glass, boxes included.

6 in. by 4 in. to 6 in. by 5½ in. ...	13*s.*	3*d.*	per 100 feet.
7 by 5 to 8 by 6	13	6	
8½ by 6½ to 10 by 8	14	0	
10½ by 8½ to 14½ by 10½	16	0	
17 by 10 to 18 by 12	18	0	

A great variety of sizes. Particulars had on application.

ORCHARD HOUSE SQUARES on Mr. Rivers's plan, to whom I have sold some thousands of feet.

Large Sheets for cutting up, in cases, at 2½*d.* and 3*d.* per foot.

HARTLEY'S IMPROVED ROUGH PLATE GLASS, Sheet and Rough Plate, Tiles, Milk Pans, Bee and Propagating Glasses, Wasp Traps, Cucumber Tubes, Preserve Jars, with and without covers; Fern Glasses.

Plate, Sheet, Crown, and Ornamental Window Glass. Crystal Glass Shades for ornaments.

Greenhouses, erected in either wood or iron. Garden Lights and Frames.

87, Bishopsgate Street Without, London—same side as Eastern Counties Railway.

GLASS FOR CONSERVATORIES, GREENHOUSES, PIT FRAMES, ETC.

JAMES PHILLIPS and Co. have the pleasure to hand their present prices of Glass for Cash:—

SHEET SQUARES. In Boxes of 100 feet.		CROWN SQUARES In Boxes of 100 feet
Under 6 by 4	£0 12*s.* 6*d.* ...	8*s.* 6*d.*
6 by 4, and 6½ by 4½	0 13 0 ...	12 6
7 „ 5, — 7½ „ 5¼ / 8 „ 6, — 8½ „ 6½	0 15 0 ...	14 0
9 „ 7, —10 „ 8, 12 by 9, 12 by 10, 14 by 10	1 0 0	

Larger Sizes, not exceeding 40 inches long.
16 oz. from 3*d.* to 3½*d.* per square foot, according to size.
21 oz. „ 4½*d.* to 5*d.* „ „ „
26 oz. „ 6*d.* to 7½*d.* „ „ „

SIXTEEN-OUNCE SHEET GLASS OF ENGLISH MANUFACTURE FOR ORCHARD HOUSES, the same quality as we supply to Mr. Rivers, and of various dimensions, always on hand,

Double-crown Glass of various dimensions in 100 feet boxes.

Glass Tiles, ¼ of an inch thick, packed in cases, containing 50, at 1*l.* 17*s.* 6*d.* per case. Packages 2*s.* each extra, but allowed for when returned.

Glass Milk Pans, 21*s.* per dozen; Propagating and Bee Glasses, Cucumber Tubes, Lactometers, Lord Camoys' Milk Syphons, Wasp Traps; Plate, Crown, and Ornamental Glass, Shades for Ornaments, Fern Shades, and every article in the trade.

Horticultural Glass Warehouse, 116, Bishopsgate Street Without, London.

CLAYTON, SHUTTLEWORTH, and CO.'S PRIZE PORTABLE STEAM-ENGINES, and COMBINED THRASHING, STRAW SHAKING, RIDDLING, and WINNOWING MACHINE may be seen at their London Establishment, 6, Fitzroy Terrace, New Road, where all information relative thereto can be obtained. These Machines are constructed to horn Barley, and make a perfect separation of the chaff from the pulse. They are fitted with Elevators, which deposit the grain into bags, and beyond the feeder of Machine require no hands except to take away the Corn, &c., as thrashed, the whole of the operations being performed by self-acting machinery, whereby the Corn, Straw, Chaff, and Pulse are delivered in the places assigned for them.

C. S. and Co. have paid special attention to this class of Machinery, and Fixed Barn Machinery, and from the position they have taken at the Royal and all the leading agricultural shows of England, flatter themselves that for efficiency, durability, and simplicity, their Engines and Machines are not surpassed by any other maker in England. All letters forwarded to the Works at Lincoln will have immediate attention; and Illustrated Catalogues forwarded to all parts of the kingdom postage free.

SHOOTING.

WANTED, within 40 miles of London, the exclusive right of Shooting over from 400 to 1000 acres of good Cover and Partridge Ground; not particular to present stock of game. Early possession will be required.—Address to W. A., 2, King's Road, Bedford Row, London.

TO NURSERYMEN, GARDENERS, AND OTHERS.

PERSONS desirous of giving in TENDERS for the forming, making, and completing the Walks and Carriage Drives, and for the Levelling, Draining, and Planting the Ground for the DONCASTER CEMETERY (about 7 acres and a half), may see the Plan and Specification at Mr. Alexander's Office, in St. George-gate, Doncaster, from Monday, the 8th, to Monday, the 15th of January, 1855. The Tenders endorsed "Tender for making the Roads and Walks, and for Levelling, Draining and Planting the Doncaster Cemetery Ground," to be addressed, under cover, to the Clerk to the Commissioners on or before the 20th of January, 1855.

T. B. Mason, Clerk to the Commissioners.
Town Clerk's Office, Doncaster, Dec. 28, 1854.

BRAMAH POOTRA FOWLS.

TO BE SOLD, a few Pairs of this breed. The birds are pure bred, in good health, and the Pullets now laying.—For particulars, apply to R. J. Simpson, Sandbach, Cheshire.

SEBRIGHT BANTAMS, remarkably handsome and well feathered, price 5*s.* each, basket 1*s.* Forwarded to any part on receipt of Post Office Order made payable to Mr. Gervase Freeman, Lullington, Burton-on-Trent.

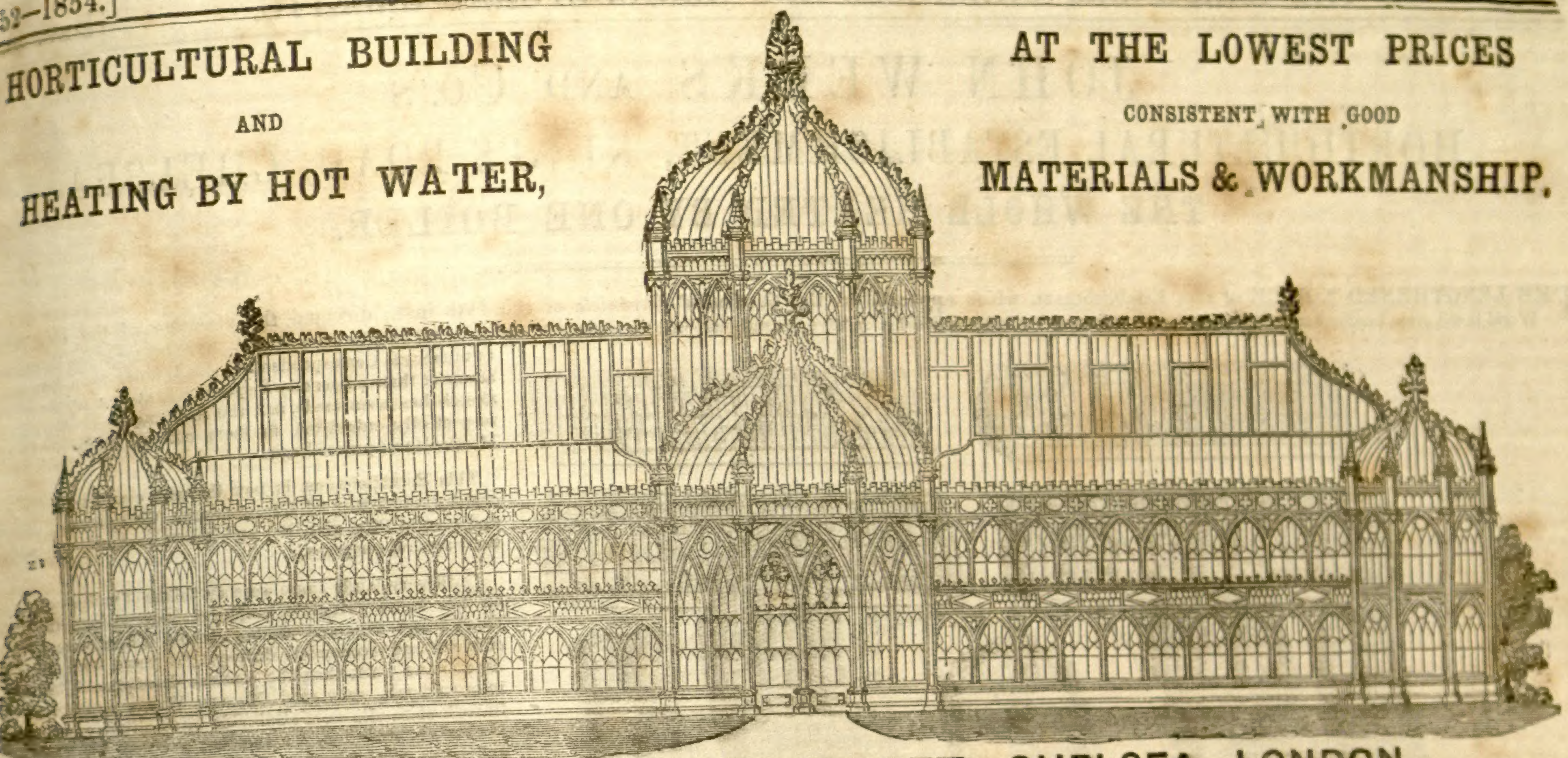
TO BE SOLD, BUFF COCHIN CHICKENS, from first class Prize Birds, Brahma Pootra Chickens, from imported American Prize Birds, and Spanish Chickens. Also some very good one-year-old Birds of the above descriptions. Wire, Game, and Poultry Netting, Poultry Hurdles, Hen-houses, Chicken Coops, Flower Stands, and Trainers, Garden Arches, and every kind of Wire Work, useful and ornamental.—T. H. Fox's, City of London Wire Works, 44, Skinner Street, and 6 & 8, Snow Hill.

Illustrated Catalogues forwarded post free.

FANCY POULTRY—PERIODICAL SALE.

MR. J. C. STEVENS will Sell by Auction at his Great Room, 38, King Street, Covent Garden, on TUESDAY, January 2d, at 12 o'clock precisely, a selection of very choice POULTRY, from the yard of Mrs. Hosier Williams, of Eaton Mascott, consisting of all the favourite varieties. Also many first class Birds from C. J. Mold, Esq., of Belper; Mr. Gibbs, Henfield; Mr. Ely, Hounslow, including White and Buff Cochins, Spanish, Polands, Hamburghs, Dorkings, Choice Fancy Pigeons, &c.—Catalogues by enclosing a stamped directed envelope to Mr. J. C. Stevens, 38, King Street, Covent Garden.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER, AT THE LOWEST PRICES CONSISTENT WITH GOOD MATERIALS & WORKMANSHIP.

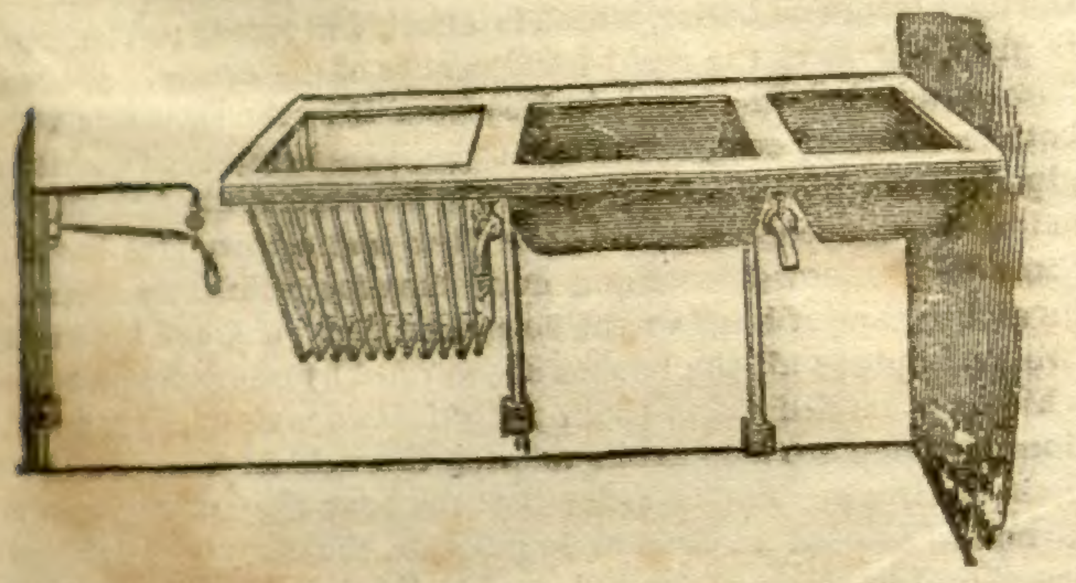


GRAY & ORMSON, DANVERS STREET, CHELSEA, LONDON.

GRAY AND ORMSON, Danvers Street, Chelsea, having had considerable experience in the construction of Horticultural Erections, which, for elegance of design, good materials, and workmanship, combined with economy and practical adaptation, cannot be surpassed by anything of the kind in the country, are in a position to execute orders on the lowest possible terms.

G. & O. have been extensively employed by the Nobility, Gentry, and London Nurserymen; and they can with the greatest confidence give the most satisfactory references to all by whom they have been favoured with orders. Their Hot-water Apparatus is also constructed on the most approved and scientific principles, for all purposes to which the application of Heating by Hot Water can be made available.

COTTAM'S NEW PATENT FOR STABLE REQUISITES.



COTTAM AND HALLEN, the original projectors of the above arrangement of MANGER, RACK, and WATER-TROUGH, as one Fixture, which obtained the Great Exhibition Prize Medal, and universally approved of, have added all the latest improvements to their invention (secured by patent), which includes an entirely new method of attaching the halter, ball, and rein, giving to the horse greater freedom, and being noiseless in their operation, add much to its comfort whilst feeding and convenience when at rest.

COTTAM'S ENAMELLED MANGERS

are constructed in the best possible manner, both as to form and utility, are cleanly in appearance, durable and impervious to infection; manufactured PLAIN, GALVANISED, or ENAMELLED.

IMPROVED PUMPS,

OF THE BEST WORKMANSHIP AND WARRANTED.

The VALVES and SUCKERS of these Pumps are constructed upon an entirely new and SIMPLE principle; they are not likely to get out of order; should they do so, can easily be repaired, as the Pump is so contrived that the valves can readily be got at.

An Improved CAST IRON TRAP, strongly recommended by the Sanitary Commissioners, and suitable for Sugar Bakers, Slaughter Houses, &c. &c. It is so formed that the Trap-plate will pass any matter the top grating will let through, and therefore is not liable to stoppages; and well adapted to Stables and Stable-yards, for saving the best part of Liquid Manure.

Improved Stable Guttering, with moveable safety covers, Sanitary Traps, Stable Pumps, Double Corner Mangers, Harness-room Appendages, and every article in Stable Furniture. Chaff Cutters and Oat Bruisers, kept on show.

A STALL fitted up, complete, exhibited at the Crystal Palace, Sydenham, Stand No. 19, Agricultural Department; and at

COTTAM & HALLEN'S WORKS, 2, Winsley Street, Oxford Street, London.

WARMING AND VENTILATING.—Descriptive Catalogues and Estimates on application.

Just published.

SUTTON'S PRICED SEED AND PLANT LIST, WITH INSTRUCTIONS ON CULTIVATION, CALENDAR OF OPERATIONS, and other Useful Information is now published, price Sixpence; and being entered at Stationers' Hall is copyright.

As this publication is compiled principally for the use of Messrs. SUTTON'S CUSTOMERS, it is requested that those who have not yet received it will forward their Address, when a copy will be sent gratis, and post free. Other persons will receive it post free in return for six postage or receipt stamps.

Address JOHN SUTTON & SONS, Seed Growers, Reading, Berks.

RENDLE'S PRICE CURRENT AND GARDEN DIRECTORY FOR 1855, *with Newspaper Stamp to go Free by Post, is now published.*

The proprietors of this well-known Publication have endeavoured, in the present edition, to render it even more complete than the last; and have again obtained the valuable assistance of Mr. Robert Errington, Gardener to Sir P. Egerton, Oulton Park, who is acknowledged to be one of the best practical writers on Horticulture of the day.

It will contain a very valuable descriptive list of KITCHEN GARDEN SEEDS, with prices affixed to every article, and in addition to the descriptions, there will be short and concise cultural remarks for every kind of Vegetable, pointing out the best varieties for early, medium, and general crops.

The List of FLOWER SEEDS has been much improved, and contains descriptions of all the leading sorts, with directions for sowing seeds, and other useful practical remarks; and in this department Mr. Errington has written expressly for the work an original article on ANNUAL AND OTHER FLOWER SEEDS, which will be read with much interest.

The CALENDAR OF OPERATIONS for the whole of the year has also been revised, and will be found even more useful than the one in the last edition.

There will be a good Garden ALMANACK as usual, and the detailed quantities of seeds contained in their useful COLLECTIONS OF SEEDS are given in full.

A valuable report of the experiments in their TRIAL GROUNDS is also given, and descriptions of the NEWLY INVENTED CLOCHE, or Hand Glass, and of the new CHINESE POTATO (DIOSCOREA BATATAS). The following original articles have also been written expressly by Mr. Errington—on VEGETABLE FORCING, LIGHT AND AIR, LIQUID MANURE, and ROTATION OF CROPS. And in addition to the above, the Proprietors have been favoured with an original paper by J. B. Lawes, Esq., of Rothamstead Park:—"ON THE ARTIFICIAL MANURES MOST SUITABLE FOR THE GROWTH OF BARLEY.

At the request of several correspondents the Publishers have printed the present Edition the size of the "Gardeners' Chronicle," so that those who wish it can bind it with the present volume of that valuable Paper. It contains 32 folio Pages, "Chronicle" size.

Copies can be procured, price 6*d*. each, or free to purchasers of seeds; and can be obtained through the medium of any bookseller in the United Kingdom, from the

LONDON PUBLISHING OFFICE, 294, STRAND;

Or from the Proprietors, WILLIAM E. RENDLE & CO., Seed Merchants, Plymouth.

Now ready, price One Shilling,

THE NATIONAL GARDEN ALMANACK, HORTICULTURAL TRADE DIRECTORY, AND FLORISTS' DIARY FOR 1855. By JOHN EDWARDS, F.H.S.

Wholesale Packets for the nursery trade may be obtained at 2*l*., containing 50 copies; 1*l*., containing 24 copies; 10*s*. 6*d*., containing 12 copies from the author only. They will be delivered free to any of the London Seedsmen, or otherwise in town, as may be directed.

London: CHAPMAN and HALL, 193, Piccadilly.

THE JOURNAL OF AGRICULTURE, AND THE TRANSACTIONS OF THE HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND, FOR JANUARY, 1855. No. XLVII. Price 3*s*., or 12*s*. per annum.

WILLIAM BLACKWOOD & SONS, Edinburgh and London.

PROFESSOR JOHNSTON'S

CHEMISTRY OF COMMON LIFE. Volume II., Completing the Series, is now published, with a Copious Index, price 6*s*. 6*d*., bound in cloth.

The First Volume has been reprinted, price 5*s*., in cloth.

W. BLACKWOOD & SONS, Edinburgh and London.

COMPLETION OF

M'INTOSH'S BOOK OF THE GARDEN. The Second Division, comprising PRACTICAL GARDENING, is now published, in one large volume, royal 8vo, pp. 876. Illustrated with engravings on wood, and containing carefully compiled Select Lists of Vegetables, Fruits, Flowers, &c. Price 1*l*. 17*s*. 6*d*., handsomely bound in cloth.

WILLIAM BLACKWOOD & SONS, Edinburgh and London.

PEOPLE'S EDITION OF

ALISON'S HISTORY OF EUROPE.

This day is published,

PART XXVIII. Price One Shilling.

VOL. VIII. Price Four Shillings, bound in cloth.

ATLAS OF MAPS AND PLANS. Part VII. Price 2*s*. 6*d*.

WILLIAM BLACKWOOD & SONS, Edinburgh and London.

A SUPPLEMENT, GRATIS, WITH THE WEEKLY DISPATCH, EVERY WEEK UNTIL FURTHER NOTICE.—The unexampled interest which attaches to every incident connected with the operations of the Allied Armies in the East has determined the Proprietors of the WEEKLY DISPATCH to devote a greater space to the intelligence from the seat of war than the ordinary limits of this, the largest newspaper published, could possibly afford; and, with the view of giving the amplest details, they have resolved upon the issue of a SERIES OF SUPPLEMENTS, GRATIS, which will include every particular of interest connected with the Siege and decision of the contest at Sebastopol, and will be continued whenever demanded by the progress of the Campaign.

By the publication of these Supplements the portion of the Paper usually devoted to incidents of domestic and political importance will be reserved intact, and the engrossing subject of the War will receive the fullest and most varied illustration.

A SUPPLEMENT WILL BE PUBLISHED ON SUNDAY NEXT (GRATIS), and on every succeeding week until further Notice.—Orders may be given to all Newsvenders in town and country; and to the publisher, at the *Dispatch* Office, 139, Fleet Street, London.

LAND DRAINAGE.

MR. BAILEY DENTON'S TABLES OF COST, &c., price 1*s*. 4*d*. Sold by METCHIM, Parliament Street.

MR. BAILEY DENTON'S WORKMAN'S A LEVEL, price 1*l*. 10*s*. Sold by JONES & Co., High Holborn, London.

Illustrated London News.

THE YEAR 1855 bids fair to be one of the most important and eventful of modern history. On the 6th of January, 1855, will be issued the first number of a new volume of the ILLUSTRATED LONDON NEWS, and not merely a new volume, but of a New Year—each volume being perfect and complete in itself—containing, for the time, a faithful record, pictorial and descriptive, of all Events of Interest in every part of the world. To that limited portion of the public who do not subscribe to this Journal it may be stated that no period could be selected more opportune for commencing,—the whole expense being but 26*s*. per annum, exclusive of double numbers, which are issued on rare occasions, when it would be impossible to crowd the important events and Engravings into a single number; for this small sum the subscriber will receive 24 large pages—72 columns—of the most interesting information, carefully selected from the News of the Week, interspersed with a variety of charming Articles on the chief topics of the day.

The ILLUSTRATED LONDON NEWS has, by its impartial and consistent advocacy of the welfare of the public, secured for itself a political influence scarcely second to any Newspaper in the Empire; and reference can, with some pride, be made to the support afforded to all beneficial measures proposed and adopted by the English Parliament.

Foreign Politics will ever command the attention which ought to be devoted to so important a feature of a Newspaper. On the question of the Russian War, during the year 1854, ONE THOUSAND ENGRAVINGS appeared in the ILLUSTRATED LONDON NEWS. Extensive arrangements, calculated to improve this popular Journal, and engagements such as will greatly enrich its Literary, Scientific, and other departments, have been made, and will thus combine on this Paper the greatest talent of the day.

The ILLUSTRATED LONDON NEWS has been established 13 years, during which period it has received a greater degree of encouragement and approbation than any Journal ever published. This is proved by the Return of Stamps issued from time to time by order of Parliament. The Stamps applied for the first six months of 1854 were upwards of 2,734,000—showing a WEEKLY CIRCULATION OF UPWARDS OF ONE HUNDRED AND THIRTY THOUSAND COPIES!

Terms (for payment in advance)—Half-year, 13*s*. 6*d*.; Year, 26*s*.

Any of the Volumes of the ILLUSTRATED LONDON NEWS, from the commencement to the present time, may now be had, in paper or cloth. Covers for Binding the Volumes 2*s*. 6*d*. each.

All Numbers may be sent free by post to any part of the Kingdom and the Colonies.

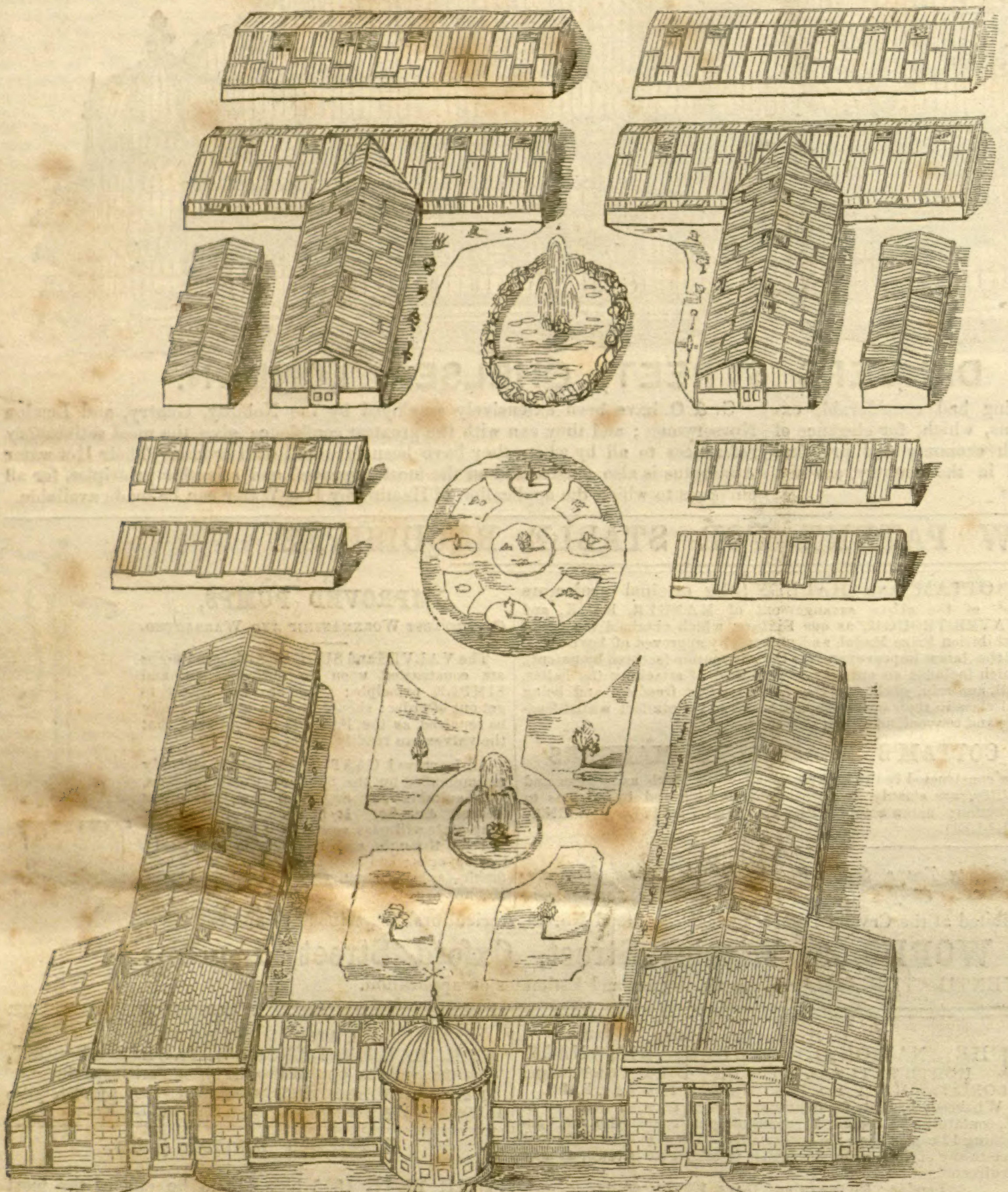
Give an order for six months to ensure all the gratuitous Prints and Supplements. Supplied by all Booksellers and Newsmen.

The ILLUSTRATED LONDON NEWS is published in London every Saturday, stamped, to go free by post, 6*d*. per copy.

Office, 198, Strand, London.

JOHN WEEKS AND Co.'S
HORTICULTURAL ESTABLISHMENT, KING'S ROAD, CHELSEA.
THE WHOLE HEATED BY ONE BOILER.

THE LENGTHENED NOTICE of this Establishment, which appeared in the *Gardeners' Chronicle* of the 16th inst., directed the attention of the Horticultural World to the great improvements made by Messrs. Weeks & Co. in the method they have recently adopted for heating it, and in order to give some idea of the character of the Establishment to numerous Correspondents whose distance from town does not admit of their personally inspecting it at present, the adjoining sketch has been made, and the following observations are most respectfully submitted to them and all others interested in Horticultural proceedings.



This Establishment is now the most complete of any in the country, consisting of Conservatories, Greenhouses, Hothouses, and several Pits, with top and bottom heat, all appropriated to their several purposes.

Until very lately there were six boilers of various sizes, but all on the same principle, employed here to heat the different Houses and Pits, and although those boilers were found both efficient and economical during eight years, each doing three imes more work than the common description of boiler, recent improvements convinced Messrs. Weeks & Co. that highly important results were attainable by substituting one boiler, of a similar construction, for the six; and now, the whole of this extensive establishment is heated effectually by *one* boiler, 5 feet high by 3 feet 6 inches in diameter, exposing to the immediate action of the fire a surface of 340 feet, superficial. The expense attending this great alteration of connecting all the pipes f the various houses and pits to one boiler will be fully repaid in one season. The boiler is fed from the top, which is nearly on a level with the surface of the surrounding ground, but there are furnace doors, and the usual openings in the brickwork below, from which it is cleared out, and to cause a draft. The glass-houses, which may be said to be built round the four sides of a long square, or parallelogram, which has a gentle fall to the end farthest from the boiler, are certainly well placed for being all warmed from one boiler, which is effected as follows:—The boiler is placed at, say, the right-hand corner of the square. A 4-inch flow pipe is led in a straight line from it on the same side to the bottom of the square, or as far as there are houses, and the return pipe is brought back to the boiler in the same drain immediately below it. Another main 4-inch flow and return pipe is taken through the show houses and down the other side of the square, to furnish means of heating the houses on that side, and from these two main pipes all the houses are warmed by connecting the pipes which are carried round them with the two main pipes just mentioned, which are also made to pass through as many houses as lie in their way; and in order that the heat they contain may be turned to as good an account as possible, the drains in which they are placed have been covered, inside the houses, with neat iron gratings, which permit the warmth to pass through into the house.

The whole of the several Houses and Pits can be heated at one time, or separately, with a full command of heat, and any part regulated at pleasure.

If the Houses and Pits were placed in a line, they would extend about 1000 feet, exposing to the atmosphere upwards of 16,000 superficial feet of glass. The water circulates in the various Houses and Pits through 5000 feet of pipe.

An experience of upwards of thirty-six years as Horticultural Builders, and Hot Water Apparatus Manufacturers, having afforded Messrs. Weeks & Co. constant opportunities for effecting important practical improvements in Building and Heating, induced them to build their present Nursery, so that the Nobility and Gentry about to erect Horticultural Buildings, might have the means afforded them of inspecting an extensive variety of Horticultural Houses and Pits with the Heating Apparatus in full operation.

The extraordinary efficiency and economy of the heating apparatus will perhaps be better understood by the following comparison of the work it does in Messrs. Weeks' Establishment, and the work done by the 12 boilers at the Great Palm House, at the Royal Gardens, Kew:—

THE HOUSES AND PITS AT MESSRS. WEEKS AND CO.'S

Measure in length	1,000 feet
Superficial feet of surface covered	13,480 „
Surface of glass exposed to the atmosphere	16,000 „
Length of pipe to heat the whole	5,000 „
Fuel consumed in 24 hours during the winter months, at a cost of 3s. per day	3 sacks of coke.

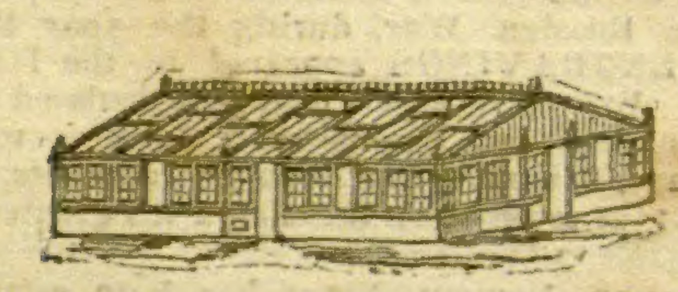
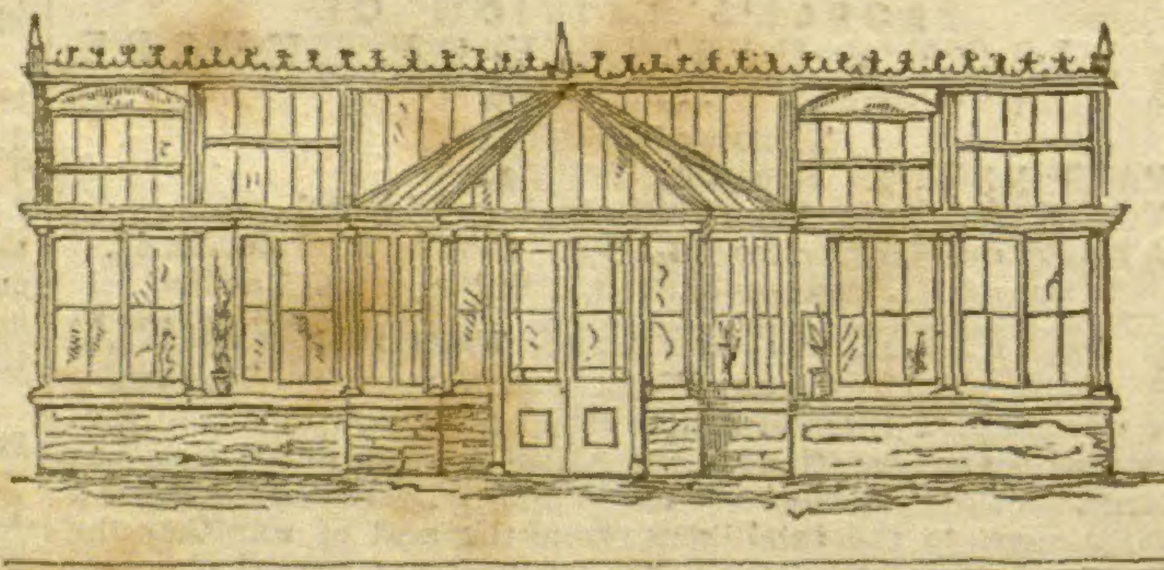
The boiler requires attention only once in 12 hours, and then but for one hour; thus occupying a man but for two hours out of the 24, at a cost of say 8*d*. per day.

THE GREAT PALM HOUSE, KEW,

Measures in length	355 feet
Superficial feet of surface covered	23,900 „
Surface of glass exposed to the atmosphere	42,200 „
Length of pipe to heat the whole	15,000 „
Fuel consumed in 24 hours during the winter months, being two parts coke and one part coal, at a cost of 4*l*. 16*s*. per day	72 sacks

The boilers, 12 in number, occupy the whole attention of two men by day and one by night, at a cost of say 10*s*. per day.

It results from the foregoing statements that the Apparatus of Messrs. Weeks, with one boiler, is doing about as much work as four boilers do in the Kew Palm House; and that with three, or, at most, four boilers such as Messrs. Weeks have now in use, the Great Palm House at Kew could be heated at a cost in fuel and labour of 14*s*. 8*d*. per day, effecting a saving of, say 1095*l*. per annum. Messrs. Weeks assert that there is not in the kingdom an apparatus doing anything like the same work with one boiler, nor, under any circumstances, at so trifling an expense.

The Nobility and Gentry who may honour this Establishment with a visit will be no less struck with the extensive and splendid collection of STOVE and GREEN-HOUSE PLANTS, which are kept in the highest state of cultivation and are for sale at very low prices, than they will be by the very perfect arrangements above described for supplying each compartment with the necessary warmth. They will also find a fine assortment of strong GRAPE VINES in pots from eyes, all of the best sorts, and STRAWBERRY PLANTS for Forcing in the finest condition.

Plans, Models, and Estimates of Horticultural Buildings; also Catalogues of Plants, Vines, Seeds, &c., forwarded on application to

JOHN WEEKS & CO., King's Road, Chelsea, London.

Printed by William Bradbury, of No. 13, Upper Woburn Place, in the Parish of St. Pancras, and Frederick Mullett Evans, of No. 27, Victoria Street, in the Parish of St. Margaret and St. John, Westminster, both in the County of Middlesex, Printers, at their Office in Lombard Street, in the Precinct of Whitefriars, in the City of London; and published by them at the Office, No. 5, Charles Street, in the Parish of St. Paul's, Covent Garden, in the said County, where all Advertisements and Communications are to be Addressed to the Editor.—Saturday, December 30, 1854.